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

Illustrations may show optional equipment not supplied with standard unit or may depict similar models where a topic is identical.
**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.
PTO-Specific Hazards

Applies only to optional PTO pump. Even if you are experienced in PTO operations, review the “Using PTO Safely” topic on page 2 of the PTO manual (411-015M). Topics in that manual dealing with PTO hazards include this PTO alert symbol.

PTO hazards include:

▲ **Entanglement:** resulting in abrasions, lacerations, crushing, dismemberment or death. Loose clothing, cuffs, frays, laces, coattails, drawstrings, hair or scarves are taken up by a PTO faster than you can react, and with overpowering torque.

▲ **Flailing machinery:** resulting from an unsecured torque arm, resulting in serious injury or death.

▲ **High pressure fluid sprays:** due to hydraulic hose failure, resulting from PTO shaft over-speed or damaged hoses.

Avoid High Pressure Fluids

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

▲ **Avoid the hazard by relieving pressure before disconnecting hydraulic lines.**

▲ **Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.**

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

▲ **If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.**

Use A Safety Chain

(Optional hydraulic hitch only. 3-Point has no 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 other specified anchor location. Allow only enough slack in chain to permit turning.**

▲ **Replace chain if any links or end fittings are broken, stretched or damaged.**

▲ **Do not use safety chain for towing.**
Wear Protective Equipment

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

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

Handle Chemicals Properly

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

- Read and follow chemical manufacturer’s instructions.
- Wear protective clothing.
- Handle all chemicals with care.
- Avoid inhaling smoke from any type of chemical fire.
- Store or dispose of unused chemicals as specified by chemical manufacturer.
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

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.

Transport Machinery Safely

- Maximum transport speed for implement is 20 mph (32 km/h).
- Maximum speed in turns is 13 mph (22 km/h).
- Maximum speed when backing is 3 mph (5 km/h).
- Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
- Do not transport cart in train with material in the tank.
- Do not back planter if PFC cart is attached.

▲ 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 planter in case of breakdown on the road.

▲ Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “Specifications and Capacities” on page 136.

▲ Do not fold or unfold the planter while the tractor is moving.

Shutdown and Storage

▲ Lower planter, put tractor in park, turn off engine, and remove the key.

▲ Secure planter using blocks and supports provided.

▲ Detach and store planter in an area where children normally do not play.
Tire Safety

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

▲ When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.

▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.

Practice Safe Maintenance

▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.

▲ Work in a clean, dry area.

▲ Lower the planter, put tractor in park, turn off engine, and remove key before performing maintenance.

▲ Make sure all moving parts have stopped and all system pressure is relieved.

▲ Allow planter to cool completely.

▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on planter.

▲ Inspect all parts. Make sure parts are in good condition and installed properly.

▲ Remove buildup of grease, oil or debris.

▲ Remove all tools and unused parts from planter before operation.

Safety At All Times

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

▲ Be familiar with all planter functions.

▲ Operate machinery from the driver’s seat only.

▲ Do not leave planter unattended with tractor engine running.

▲ Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.

▲ Do not stand between the tractor and planter during hitching.

▲ Keep hands, feet and clothing away from power-driven parts.

▲ Wear snug-fitting clothing to avoid entanglement with moving parts.

▲ Watch out for wires, trees, etc., when folding and raising planter. Make sure all persons are clear of working area.
Safety Decals

Safety Reflectors and Decals

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

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

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

Slow Moving Vehicle Reflector
818-055C

On the back of the walkboard platform; 1 total

Red Reflectors
838-266C

On the back of seed box support structure each end (above wheels, outside Daytime reflectors); two total
Daytime Reflectors
838-267C

On the back of seed box support structure each end (above wheels, inside of red reflectors); two total

Amber Reflectors
838-265C

On the front of the center section front lower tool bars, on the rear of the wing tool bars, and on the sides of the seed box frame; six total.

Danger: Crushing Hazard
818-590C

Top center of 3-point hitch; one total (not present with hydraulic tongue option)
Danger: Read Manual
848-512C

On tongue at hitch; 1 total

Danger: Electrocution Hazard
838-599C

One each side or marker upright arm, each side; four total

Danger: Rotating Driveline
858-030C (Option)

On front face of hydraulic reservoir; one total
Warning: Pinch/Crush
818-045C

On forward transport wheel arms, each side
On rear axle by seed hopper, each side;
five total

Warning: Speed
818-188C

On front of center section, one total

Warning: High Pressure Fluid Hazard
818-339C

On side of tongue; one total
Warning: Markers: Pinch/Crush 818-682C

One each side or marker upright arm, each side; four total

Warning: Hot Fluid 858-004C (Option)

On front face of hydraulic reservoir; one total

Caution: 1000 rpm PTO 818-240C (Option)

On front face of hydraulic reservoir; one total

Caution: Read Operator Manual 818-587C

On center tool bar; one total
Caution: Transport Locks
818-351C

Hitch tongue,
Rock shaft face, forward center transport wheels,
front of wing casters;
five total

Caution: Tires Not A Step
818-398C

One front face each wing gauge wheel,
One each side front center axle;
6 total

Caution: Pressure and Torque
838-426C (S/N B1113G-)

On outside rim each transport tire;
10 total
Caution: Pressure and Torque
858-773C (S/N B1114G+)

To Avoid Injury or Machine Damage from Improper Tire Inflation or Torquing of Wheel Bolts:
- Maximum inflation pressure of tires is 73 psi.
- Torque wheel bolts to 170 lb-ft.

On outside rim each transport tire; 10 total
Great Plains welcomes you to its growing family of new product owners. The 60 Foot Yield-Pro® Planter with Air-Pro® Meters (YP2425A) 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.

**Description of Unit**

The YP2425A Planter is a pull-type implement for use in conventional till, minimum-till, or light no-till conditions. The YP2425A Planter accepts optional unit mounted and frame-mounted row accessories. Coulters make it suitable for light to moderate no-till conditions only. The YP2425A Planter is outfitted with 25 Series, side-depth-control row-units and Air-Pro® seed meters. The YP2425A Planter folds for transport.

**Intended Usage**

Use the YP2425A Planter to seed production-agriculture crops only. Do not modify the planter for use with attachments other than Great Plains options and accessories specified for use with the YP2425A Planter.

**Models Covered**

- YP2425A-2430 24 Row, 30 Inch Spacing
- YP2425A-2470 24 Row, 70 cm Spacing
- YP2425A-3620 36 Row, 20 Inch Spacing
- YP2425A-4715 47 Row, 15 Inch Spacing
- YP2425A-48TR 48 Row (24 Twin), 30 Inch Spacing

**Document Family**

- 401-626M Owner’s Manual (this document)
- 401-626B Seed Rate Charts
- 401-626P Parts Manual
- 411-015M PTO Operate/Install manual
- DICKEY-john® IntelliAg® Manuals:
  - 11001-1662 Planter/Drill Control, User Level 1
  - 11001-1501A Planter/Drill Control, User Level 2&3
  - 110011518 YP2425A-48TR Quick-Start Guide
  - 110011519 YP2425A-4715 Quick-Start Guide
  - 110011520 YP2425A-2430 Quick-Start Guide
  - 110011521 YP2425A-3620 Quick-Start Guide
  - 110011522 YP2425A-2470 QSG

**NOTICE**

A crucial point of information related to the current 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.
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 1

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 left end of the seed cart tool bar, as shown.

Record your YP2425A Planter 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 planter. 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 YP2425A Planter for use, and covers tasks that need to be done seasonally, or when the tractor/planter configuration changes.

Before using the YP2425A Planter in the field, you must hitch the planter to a suitable tractor, inspect systems, level the planter. Before using the planter for the first time, and periodically thereafter, certain adjustments and calibrations are required.

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:

- Install seed monitor console in tractor (page 153).
- Bleed hydraulic system (page 105).
- Wing leveling and alignment (page 107).
- Marker setup (page 61)
- Radar calibration (page 153).
- 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 112.
- 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 “Specifications and Capacities” on page 136.
Hitching Tractor to Planter

**DANGER**

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

**Hydraulic Hose Hookup**

**WARNING**

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

**If Weight Transfer is Installed**

If the optional weight transfer system is not installed, or a PTO pump is installed, continue at “Color Coded Hydraulic Hoses” on page 17.

The weight transfer cylinders must be free to flex during all planter movements where the system is not in active use.

To allow cylinder flex:

- connect at least the fan case drain and fan return lines to suitable receptacles (see page 17), or
- install the shipping links (see page 154).

**NOTICE**

**Machine Damage Risk:**
Do not move the planter with a hydraulically locked weight transfer system. Relieve the system or install shipping links. If the cylinders are not free to flex, oil loss will result from even minor movement flexing.
Color Coded Hydraulic Hoses

Refer to Figure 3

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

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.

If the PTO pump option is installed, there are no hoses at the hitch for fan, hydraulic meter drive, or optional hydraulic fertilizer pump.

Current Style Color Coded Hose Handles

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

Older Style Hoses with Color Ties

Refer to Figure 4

To distinguish hoses on the same hydraulic circuit, refer to hose label. The hose under an extended-cylinder symbol feeds a cylinder base end. The hose under a retracted-cylinder symbol feeds a cylinder rod end.

Protecting Fan Hydraulic Motor Seals

**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.*

*Hydraulic Motor Performance Risk:*
DO NOT hook case drain line to a “power-beyond port”

*Low Pressure (Case) Drain Connection*

1. Attach case drain hose to low pressure drain connection.

   Case drain hose has the smaller 1/4 inch I.D. hose and small, flat-face, connector.

2. Connect low pressure motor return hose to low pressure return connector. It is distinguished by a large (1.06 inch / 2.7 cm diameter) quick coupler.

3. Connect hydraulic hoses to tractor remotes.
Electrical Hookup

Refer to Figure 5 (which depicts the North American lighting connector 1, seed monitor connector 2 and a DC power connector 3 for Row-Pro™ or Swath Command™)

Your YP2425A Planter is equipped with standard and optional devices that require separate electrical connections. Make sure tractor is shut down with accessory power off before making connections. These connections may be made in any order.

The switch control module should be mounted in your tractor cab in a location with easy access. Route wiring harnesses with enough slack to allow for tractor movement, especially on articulating tractors.

Hitching with 3-Point

Refer to Figure 6

4. Connect your tractor 3-point to the planter 3-point hitch. If using quick hitch be sure planter locks into hitch securely.
5. Raise tractor 3-point just enough to relieve pressure off of the parking stand.
6. Store 3-point stands 3. There are two methods:
   b. Remove both pins. Invert stand. Re-pin.

CAUTION

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

7. Remove and store main tongue parking stand. See “Store Main Parking Stand” on page 20.
8. Adjust the top link of a 3-point long enough so the ball swivel does not bottom out when fully raised.
9. Secure hoses so they do not get caught in ball swivel. Failure to do so could cause hose to be crushed requiring hose replacement.
Hitching with Hydraulic Tongue (Option)

Refer to Figure 7

10. Move the tractor to near hitching position.

11. Connect the hydraulic hoses for the tongue circuit. This needs to be done before hitching in order to raise and lower the tongue. See “Hydraulic Hose Hookup” on page 16. Allow slack for hitch movements. Close the tongue cylinder bypass valve.

12. Make electrical connections for at least the planter control circuit (necessary to control planter hydraulic systems). See page 18.

13. Check that hitch local bypass valve ① is closed.

Refer to Figure 8


15. Retract the Hitch/Lift circuit to set the tongue height to clear the draw-bar. Back the tractor into alignment and pin the draw-bar.

16. Connect safety chain to a suitable anchor point on the tractor.

17. Extend the Hitch/Lift circuit to raise the hydraulic tongue just enough to relieve pressure from the parking stand.

18. Remove and store main tongue parking stand. See “Store Main Parking Stand” on page 20.

Local Float on Hydraulic Tongue

Refer to Figure 7

The hydraulic tongue must be in Float during planter moves.

If it is necessary to move the planter without first connecting it to a tractor that has a float-capable circuit for the hydraulic tongue, open the bypass valve ① on the tongue cylinder. This provides local floating capability at the tongue.
Store Main Parking Stand
Refer to Figure 9 and Figure 10
1. Remove the lower pin ① and the upper pin ② holding the parking stand ③.
2. Move the stand from under the tongue to an inverted position in the bracket on the left side on the tongue.

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

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

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

If using a fertilizer cart, consult the cart manual for:
- hitching cart tongue to planter
- connecting pump control electronics to planter
- connecting fertilizer feed hoses to planter

Complete the tractor-planter hookup before making any tank cart connections.

**NOTICE**

**Material Loss Risk:**
Open hose and inlet valves when ready to begin planting. Close them when not in use. Damage to hoses when not applying material can result in rapid tank depletion.

### Fertilizer Connection Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1-section, planter manifold and pump: Inlet only (bypass is local on SML cart; a user-provisioned cart may use the boom gauge line connection)</td>
</tr>
<tr>
<td>3</td>
<td>3-section, cart manifold and pump: Left, Center, Right inlets &amp; Gauge line</td>
</tr>
</tbody>
</table>

### Making Fertilizer Connections

**YP2425A Planter with Type 2 and Type 3 Manifolds, & Ground Drive Pump(s)**

<table>
<thead>
<tr>
<th>Planter Inlet</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><img src="L" alt="Type 3" /></td>
<td><img src="C" alt="Type 3" /></td>
</tr>
<tr>
<td><img src="S" alt="Type 2" /></td>
<td><img src="G" alt="Gauge Line" /></td>
</tr>
</tbody>
</table>

**YP2425A Planter with Type 3 Manifold (only)**

<table>
<thead>
<tr>
<th>Planter Inlet</th>
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</tr>
</thead>
<tbody>
<tr>
<td><img src="L" alt="Type 3" /></td>
<td><img src="C" alt="Type 3" /></td>
</tr>
<tr>
<td><img src="G" alt="Gauge Line" /></td>
<td></td>
</tr>
</tbody>
</table>

**YP2425A Planter with Type 2 (only) boom, SML cart with on-board hydraulic pump**

<table>
<thead>
<tr>
<th>Planter Inlet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="S" alt="Type 2" /></td>
<td></td>
</tr>
</tbody>
</table>

a. Gauge Line is supplied with PFC1600 or PFC2000 tank cart
Heights and Leveling

All frame sections must be at the correct height and level to maintain even planting depth.

Periodic frame-leveling adjustments should not be necessary. If you are having problems with uneven depth, check planter levelness and follow these procedures.

1. Before making any adjustments be sure the lift cylinders are re-phased and operating properly. If not, see “Rephasing Lift System” on page 32.
2. Complete “Hydraulics” on page 105.
3. Unfold the planter fully (page 26).

Set Tongue Height

Planter must be unfolded for this procedure.

Refer to Figure 12

Set the initial tongue height, using 3-point or hydraulic tongue cylinder. Distance is measured at top of tongue to ground level.

- For standard 3-point hitch:
  Set depth stop to capture this working height.

- If desired height cannot be attained with normal range of hitch, swivel coupler weldment may be relocated in tongue bolt holes.

- Tractor 3-point control must be in Depth Control mode, and not Draft Control mode.

- For hydraulic tongue:
  Note the scale reading on the tongue for this height. [Re]set the tongue height to this value when planting.

Checking Planter Leveling Side to Side

The planter is designed to operate with all sections of the main tool bar nominally 26 in (66 cm) above the planting surface. The height of the center section is not routinely adjustable. Set planting depth with row unit adjustments.

When lowering the planter for the first time on the planting ground:

1. Completely lower the main tool bar. If necessary, first lift off transport locks, remove and stow locks.
2. Set hitch to planting height.
3. Pull forward a short distance.

NOTICE

Height Mis-adjustment Risk:

Fully lower planter to field position (with openers into ground) and set hitch height before making side-to-side adjustments.
Center Section Level Check
Vertical height and side-to-side level of the center section is set at the factory and cannot be field-adjusted. It does need to be verified before checking/adjusting the wings. Soil accumulation on the wheels, for example, can cause the center section to tilt.

Refer to Figure 13 on page 22

4. Measure the elevation of both left and right sides of the planter center section, at the ends of the center section tool bar (location 1 in Figure 13).

Wing Leveling
Wing Leveling, Inboard End
Wing leveling check/adjustment is required prior to first use of the YP2425A Planter, and periodically thereafter, for example, if soil conditions change dramatically.

Before performing this operation:
• Check center section height and level (page 22).
• Row unit coulter/planting depths, and row unit down-pressures must all be equal.
5. Measure the height of the inboard end of each wing, near the wing flex pivot (location 2 in Figure 13).
6. Compare this height to that of the center section obtained at step 4 on page 23.
7. If the heights differ by more than 1 in., check them again after leveling the wing ends. If they still differ, the thrust washers in the wing pivots may be worn and in need of replacement.

Wing Leveling, Outboard End
Refer to Figure 14 and Figure 15

1. Measure from the bottom of the wing tool bar to the ground at the outer end of each wing (location 3 in Figure 14).
2. Compare to the measurement at the outer end of the center tool bar, at the wing pivot location. All measurements should be identical, and close to 26 in. (66 cm).
3. If measurements do not match, loosen upper gauge wheel lock nut 1, and adjust eyebolt link length with adjuster nut 2.
4. If adjustments are needed on either side, recheck the other side after each adjustment, and readjust it as needed.
5. Once level, tighten the lock nut 1.

Any unevenness in ground that tilts the wings or center section causes the inner wing ends to move up or down slightly with respect to the center frame.
Lock Up Fertilizer Drive
YP2425A serial number B1029G+

**WARNING**

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

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

Do not operate planter pump when not applying material.

**Refer to Figure 16**

For YP2425A planters:

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

![Figure 16 Locked Up Fertilizer Drive](image)
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 YP2425A Planter to the field.

- Carefully read “Important Safety Information” on page 1.
- Lubricate planter as indicated under “Lubrication” on page 112.
- Check all tires for proper inflation. See “Specifications and Capacities” on page 136.
- Check all bolts, pins, and fasteners. Torque as shown in “Torque Values Chart” on page 152.
- Check planter 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.
- Install seed disks appropriate for crop. To change disks, see “Air-Pro® Meter Disk Installation” on page 80.

Fold/Unfold Lock Overview

The YP2425A planter includes five sets of locks for the frame, wings and casters:

1. Wing locks: Hooks on the tongue engage locks on the wings to prevent unfolding in transport. Tongue must be raised to engage/release. See page 27.
2. Lift cylinder lock channels: These are operator-installed on a raised planter, these prevent lowering in transport or when parked. See page 32.
3. Fold cylinder and Caster swing arm cylinder lock valves: Switch-controlled solenoid valves prevent motion of the fold cylinders and caster swing arm cylinders, in transport and field. See page 144.
4. Tongue lock: This engages automatically at unfold, and lock the tongue/draw bar geometry for field operations. See page 27.
5. Caster pivot locks: operator-engaged after unfold, these prevent caster swiveling in the field, which aids in tracking across hillsides. See page 26.

WARNING

High Pressure Fluid Hazard:
Relieve pressure before disconnecting 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.
Unfolding the YP2425A Planter

The distance between the tractor and the seed structure decreases by 12 feet (3.7 m) during unfolding. Planter, tractor, or both will move during this operation.

**WARNING**

**Crushing, Pinch-Point and Overhead Hazards:**

To prevent serious injury or death:

▲ Fold only on hard level ground. Allow ample room.

▲ If it is desired that the tractor not move, make sure tractor is in Park and/or has parking brakes set, otherwise the telescoping movement of the planter is likely to result in tractor movement.

▲ Do not allow anyone to be on or near the planter during unfolding.

▲ Stay clear of the wing sweep arcs. The sweep arcs of the wings have numerous pinch and crush points in the mechanism. Coulters and row openers are sharp.

▲ Allow no one near planter. The seed structure usually moves forward during unfolding.

▲ Do not unfold with planter lowered, or machine damage will result.

▲ Unfold only with markers resting in transport cradles.

▲ Unfold only if hydraulic motions are smooth.

1. Move to level ground.

**Refer to Figure 18**

2. On the Clutch Folding Module (CFM), set the following switches to OFF (down):
   - MASTER switch ① in the CLUTCH cluster ②, and Fert.Pump ③.

3. If the folded planter is lowered, raise mainframe (See “Raising/Lowering Planter” on page 28).

4. If equipped with hydraulic hitch, the CFM Lift/Hitch switch ⑤ must be set to Hitch.

**Refer to Figure 19**

5. At each wing caster, check that lock control handles ⑥ and indicators ⑦ are in the ROAD position, allowing the casters to swivel. If they are not, set handle to ROAD position and fully raise and lower planter to release load on lock plates to allow them to come open.

**Refer to Figure 18**
6. Set CFM Marker/Fold switch ✪ to Fold. LED above switch blinks continuously.

7. Raise tractor 3-point hitch or extend planter hydraulic tongue until tongue wing locks ✪ rise and disengage.

**NOTICE**

**Machine Damage Risk:**
Raise hitch before unfolding. If hitch is not raised, wing locks remain in transport hooks. Wings cannot unfold, and machine damage is possible.

8. Activate (normally Retract) tractor hydraulic circuit to unfold wings.

Refer to Figure 22

9. Operation is complete when tongue lock engages.

**NOTICE**

**Machine Damage Risk:**
Do not operate planter when unfolded unless tongue lock is engaged. When unlocked, the pull bar system experiences excess loads. The openers may be damaged by not tracking straight forward.

10. When fully unfolded, set Marker/Fold hydraulic circuit to Neutral.

11. Disable lock valve solenoids by setting CFM Marker/Fold switch to Marker.

truth Set switch to “Marker” even if markers are not installed.

12. For imminent lowered operations, remove lift cylinder locks (see “Lift Cylinder Lock-Up” on page 32).

Refer to Figure 19

13. For operations across hillsides, engage caster locks. Set wire handles to FIELD. Casters will lock into straight trailing position during operation.

14. Set hitch height to planting position (“Raising/Lowering Tongue” on page 20).

**NOTICE**

**Machine Damage Risk:**
Unfold and fold slowly. Adjust hydraulic flow to take a minimum of 60 seconds to unfold or fold. Wings are massive, and damage can occur if they reach the end of travel at high speed. At lower speeds you also have time to check for hose pinching or kinking, as well as react to anything unexpected in the sweep arc.
Raising/Lowering Planter

Refer to Figure 23

Planter raising/lowering relies on the four lift cylinders at the mainframe and wing end gauge wheels.

The planter must be raised for folding and unfolding. The planter will not fully lower if transport locks are installed. See “Lift Cylinder Lock-Up” on page 32.

When unfolded, if one or both markers are extended, they may drag or shove if left extended during raise or lower operations. To avoid this, fold markers prior to raise or lower.

**NOTICE**

**Machine Damage Risk (Hydraulic Hitch Only):**
Do not lower planter while folded without using the special procedure below (this is a hydraulic hitch restriction - planter may be lowered while folded with standard 3-point hitch).

**NOTICE**

**Machine Damage Risk:**
Do not lower while any planter folding operations are underway or partially complete, with either hitch.

**NOTICE**

**Machine Damage Risk:**
Always raise the planter for any reverse/backing operations.

Local Float on Hydraulic Tongue

A hydraulic hitch planter may be raised or lowered while folded if the hitch has the local float valve.

**WARNING**

**Crushing Hazard:**
Tongue or planter components may drop suddenly when circuit is floated. Before raising or lowering, set CFM Lift/Hitch switch to Hitch and set tractor circuit to Float. If tractor is not available, use bypass valve on hitch.

Stand clear and open it slowly.

1. Float hitch circuit before lowering while folded.
   Float hitch circuit before raising while folded.
2. Set CFM Lift/Hitch switch to Lift for raising/lowering.
Raising Planter

Refer to Figure 27

1. If the planter has hydraulic hitch, set the Lift/Hitch switch \( \text{LIFT} \) to LIFT.

\( \text{If the planter has the standard 3-point hitch, this switch has no function. The hydraulic circuit is always in Lift (Raise/Lower) mode.} \)

2. Move the cab lever to Extend the circuit for Lift/Hitch.

3. Move lever to Neutral (not Float) to hold at lift.

**NOTICE**

**Machine Damage Risk:**

On tractors with electronic timer controls for hydraulic circuits, lift timers must be set to no more than 2 seconds longer than needed to fully raise planter.

*Do Not Set for Continuous Mode.*

For transport, maintenance or storage, install lift cylinder locks. See "Lift Cylinder Lock-Up" on page 32.

Lowering Planter

Refer to Figure 28

1. If lift cylinder locks are installed, first fully raise the planter, and remove the locks. See "Raising Planter" on page 29 and "Lift Cylinder Lock-Up" on page 32.

2. If equipped with hydraulic hitch, set the Lift/Hitch switch \( \text{LIFT} \) to LIFT. On 3-point hitch, this switch has no function and the circuit is in Lift mode at all times.

3. Move the cab lever to Retract the circuit for Lift/Hitch. When fully lowered, return lever to neutral.

**NOTICE**

**Machine Damage Risk (Hydraulic Hitch Only):**

Never lower planter while fully folded, if it is equipped with the hydraulic tongue hitch, or machine damage can occur unless a special procedure is followed (see page 28). A planter with a 3-point hitch may be lowered while folded.

**NOTICE**

**Machine Damage Risk:**

Never lower planter while partially unfolded (with either hitch). Wing row units can strike main transport wheels.
Folding the YP2425A Planter

Fold the YP2425A Planter for moves between fields and over public roads, and for storage. The distance between the tractor and the seed structure increases by 12 feet (3.7 m) during unfolding. Planter, tractor, or both will move during this operation.

**WARNING**

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

▲ Fold only on hard level ground. Allow ample room.

▲ If it is desired that the tractor not move during folding, make sure tractor is in Park and/or has parking brakes set, otherwise the telescoping movement of the planter is likely to result in tractor movement.

▲ Do not allow anyone to be on or near the planter during folding.

▲ Stay clear of the wing sweep arcs. The sweep arcs of the wings have numerous pinch and crush points in the mechanism. Coulters and row openers are sharp.

▲ Allow no one behind the planter. The seed structure moves backward during folding.

▲ Do not fold with planter lowered, or machine damage will result.

▲ Fold only with markers resting in transport cradles.

▲ Fold only if hydraulic motions are smooth.


Refer to Figure 23

2. On the cab Clutch Folding Module (CFM), set the following switches to OFF (down):
   - MASTER switch 1 in the CLUTCH cluster, and
   - Fert.Pump 2.

3. Raise planter mainframe (see “Raising/Lowering Planter” on page 28). Do not raise (hydraulic) hitch at this point.

4. Install lift cylinder locks (see “Lift Cylinder Lock-Up” on page 32).
Folding, Continued …

Refer to Figure 31

If caster locks are engaged (wire handle 4 and indicator 5 in FIELD position), they must be released before folding.

5. At each wing caster, move the lock control handle 4 to the ROAD position.

6. If the indicator end of the lock 5 does not immediately snap up from FIELD to ROAD, some pivot tension is holding the pawl end of the lock 5 in the plate detent 7. Raise and lower planter fully to release load on lock plates to allow them to come open. Move the planter forward or back a short distance until both locks unlock.

Refer to Figure 32

7. Set CFM Marker/Fold switch 3 to Fold. LED above switch blinks continuously.

8. Activate (normally Extend) tractor Marker/Fold hydraulic circuit to fold wings. Sequence begins with releasing of tongue latch (Refer to Figure 22 on page 27). Before folding completes …

9. Raise planter tongue (“Raising/Lowering Tongue” on page 20). This must be done before folding completes.

Refer to Figure 33

If tongue is not raised prior to folding complete, wing locks will be above transport hooks and unable to secure wings to tongue.

If this happens, partially unfold planter, raise tongue, and refold.

10. When fully folded, lower tongue so that wing locks 8 engage transport hooks 9.

11. Set CFM Marker/Fold switch 3 to Marker.

Set switch to Marker even if markers are not installed. This switch position sets the fold and caster swing arm cylinder solenoid valves off, providing additional protection against unfolding.

12. Set Marker/Fold circuit lever to Neutral.

13. 3-point: lower hitch completely

Hydraulic tongue: Set hitch circuit to Float (not Neutral).

CAUTION

Transport Hazard:
Wing locks must be engaged for safe transport, and planter tongue must be lowered to keep wings locked.

Hydraulic tongue, if installed, must be in Float.
Rephasing Fold System

In typical use during a single planting operation, it is normal for the fold cylinders to get slightly out of phase, resulting in uneven folding and unfolding of the YP2425A Planter.

Every few planting days, rephase the cylinders with this procedure:

1. Raise, unfold and fold the planter completely, and hold the fold hydraulic lever or switch in Extend for several seconds after the planter reaches full folding, or until all cylinders are fully extended.
2. When all cylinders are fully extended, reverse (Retract) the control to unfold and return to planting.

Lift Cylinder Lock-Up

When moving the raised planter more than a short distance, or over any public road, or when performing adjustments or maintenance, do not rely solely on the lift cylinders to keep the mainframe raised.

Install transport locks.

Refer to Figure 34

1. If planter is folded, confirm hitch is in Float. If planter is unfolded, hitch may be in any configuration.
2. Raise the planter mainframe. See “Raising/Lowering Planter” on page 28.
3. Remove the transport locks from their storage positions ①. Install the transport locks on the cylinder rods ②, securing them with the same pins used for storage.
4. Lower the lift cylinders onto the locks.

Rephasing Lift System

In typical use during a single planting operation, it is normal for the lift cylinders to get slightly out of phase, resulting in uneven raising and lowering of the YP2425A Planter.

Every 8- to 10 passes, or if lifting is uneven, rephase the cylinders with this procedure:

1. Raise the planter completely, and hold the hydraulic lever or switch in Extend for several seconds after the planter reaches full elevation, or until all cylinders are fully extended.
2. When all cylinders are fully extended, momentarily reverse (Retract) the control to lower the planter \( \frac{3}{8} \) inch (13 mm).
Transporting the Planter

⚠️ DANGER
Loss of Control Hazard:
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 planter can weigh up to 50,000 pounds (22,780 kg), depending on configuration and seed load. A tank cart hitched to the planter (“in train”) can add another 5000 pounds (2268 kg) empty. The tractor unit MUST be rated for the load. If the tractor is not rated for at least 50,000 pounds, calculate the actual weight of the planter and cart.

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

⚠️ DANGER
Loss of Control Hazard:
A tank cart in train must be EMPTY. A full PFC2000 tank cart weighs nearly 30,000 pounds (13,608 kg), and, when hitched to the planter, represents an unsafe highway load regardless of the rating of the towing vehicle. If a cart must be transported loaded, tow it separately.

⚠️ WARNING
Loss of Control Hazard:
The CFM switch must be set to Hitch, and the hydraulic circuit must be in FLOAT during transport. Failure to do this may result in hydraulic system damage, transport hooks unlatching, and major planter/tractor damage.

⚠️ CAUTION
Braking and Loss of Control Hazard:
Do not exceed 20 mph (32 km/h) when driving straight.

The planter is extremely heavy, and can cause “over-steer” with most tractors. Do not exceed 13 mph (22 km/h) in turns.

Never exceed 3 mph (5 km/h) in reverse.

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

NOTICE
Reduction of Control Risk:
Do not transport cart in train with material in the tank.

NOTICE
Reduction of Control Risk:
Never back up with the planter lowered or with a pintle hitch fertilizer tank hitched to the planter.

Never back up the planter if PFC cart is attached.
Transport Checklist

- If heading to the field, before departing, ensure that opener depth, seed rate and fertilizer rate have been determined, or that the necessary data is with you.

- Plan the route. If towing a cart hitched to the planter, plan the route so that no reverse movements will be necessary. Avoid steep hills. Keep clearances in mind. Folded, your planter may be nearly 15 feet (4.6 m) wide and 13 feet (4 m) high.

- Close slide gates on hoppers or seed boxes.

- Hitch.
  - Make both electrical and hydraulic connections. See “Hitching Tractor to Planter” on page 16. For hydraulic hitch, check that safety chain is anchored.

- If markers are unfolded, fold them.
  - See “Folding the Markers” on page 40.

- Raise planter.
  - See “Raising/Lowering Planter” on page 28

- Install lock-up channels on lift cylinders.
  - See “Lift Cylinder Lock-Up” on page 32.

- If planter wings are unfolded, fold them.
  - See “Folding the YP2425A Planter” on page 30. Make sure wing locks are engaged.

- Make sure caster locks are disengaged. See “Folding the YP2425A Planter” on page 30.

- 3-point hitch:
  - Lower hitch fully to ensure wings remain locked.
  - Hydraulic hitch:
    - Confirm CFM set to Hitch and hitch circuit in Float.

- Check all lights. Always have lights on for highway operation.

- Comply with all national, regional and local safety laws when traveling on public roads.

- Travel with caution.
Loading Materials
For trailing tank cart, see the Operator manual for the cart.

82 Bushel Hopper Operation

**CAUTION**

*Tiping Hazard:*
Load an 82 bu. hopper only when mounted on the cart. A full hopper can weigh over 5000 lbs (2268 kg), which is above the lifting and balance capability of most tractors and farm forklifts.

Fork lift height capability required is:
- Planter lowered: 4 feet 6 5/8 inches (139 cm)
- Planter raised: 6 feet 9 7/8 inches (208 cm).

**Adding Seed to 82 bu. Hopper**

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

2. If no seed containers are present, or the previous operation was using a bulk seed boxes, mount the empty 82 bu. hoppers on the cart. See "Changing the Seed Box or 82 bu. Hopper" on page 36.


4. Turn off seed box fan.

5. Open slide gates at base of hoppers. Open lids.

6. Measure the lubricant required, and if loading seed by bag, determine the amount of lubricant per bag.

   If loading with a hydraulic auger, see “Auxiliary Hydraulics” on page 38.

**CAUTION**

*Entanglement, Chemical and Falling Hazards:*
Observe all safety precautions for material handling and use of loading equipment (particularly augers).

Auger height capability required is:
- PROBOX®, planter lowered: 9 feet 13/8 in. (2.78 m)
- PROBOX®, planter raised: 11 feet 4 3/4 in. (3.47 m)
- 82 bu. hopper, planter lowered: 9 feet, 4 1/4 inches (2.85 m)
- 82 bu. hopper, planter raised: 11 feet 7 3/8 inches (3.54 m).

7. Add seed, mixing in lubricant continuously or per bag.

**NOTICE**

*System Plugging Risk:*
Do not use liquid seed treatments.
Changing the Seed Box or 82 bu. Hopper

The Planter 60ft Yield-Pro® Planter accepts Great Plains 82 bu. hoppers or bulk seed boxes that meet the Pioneer® PROBOX® specification.

Hoppers for the YP2425A Planter are provisioned as a pair. To provide convenient walkboard access to the lid, the lid hinge is on the left for the left hopper, and on the right for the right hopper. They are otherwise identical.

⚠️ CAUTION

Tipping Hazard:
Place or remove an 82 bu. hopper only when empty. A full hopper can weigh over 5,000 lbs, which is above the lifting and balance capability of most tractors and farm forklifts.

1. Move the planter to an area of level ground and sufficient room to maneuver a tractor or fork-loader.
2. Unhitch tank cart if present.
3. Raise the planter. This causes the rear transport wheels to move forward, providing closer access for the lifter.
4. Back up the planter about three feet. This causes the rear transport wheels to caster forward, further reducing the reach required for lifting.
5. Turn off the seed box fan.
7. Close the slide gates at the base of the hoppers or seed boxes.

Refer to Figure 36

8. Remove the two pins ①, one back left, one back right, used to retain the seed box or hopper. Remove these pins even if no container is presently mounted.

Refer to Figure 37

9. Align the lifting forks with the slots in the rear of the seed box or hopper. Slowly drive forward until the forks are completely under the container.
10. Slowly lift the seed container above the bracket, and back away from the planter.
11. Lower the container to the ground for exchange with the next seed box.

a. PROBOX® is a registered trademark of Pioneer Hi-Bred International, Inc.
12. If mounting a seed box for the first time in a season, open the new seed box and measure out approximately 3 gallons (11 liters) of seed into a pail. Add 1/3 cup (80 ml) of Ezee Glide Plus. Mix and pour into air box before mounting new seed box.

13. If mounting a seed box, add lubricant to the seed box at this time. It may be easier to add it while the box is still at ground level.

**NOTICE**

**Plugging and Inconsistent Population Risks:**
Ezee Glide Plus lubricant mix is mandatory for all seed, especially treated or inoculated seed. Insufficient seed lubricant can cause system plugging, skips and doubles.

**Refer to Figure 38**

14. Approach the hopper or seed box from the back (the side with the slide gate).

**CAUTION**

**Tipping Hazard:**
Do not let anyone stand under or in front of the elevated seed box. Make sure your tractor or fork lift is rated for and configured to lift the weight. A full seed box can weight over 2500 lbs (1134 kg); a full 82 bu. hopper, over 5000 lbs (2270 kg).

It is possible to lift the hopper or seed box from any side, but it will only function properly if the seed gate is to the rear of the planter.

15. If mounting a seed hopper, confirm that the hopper is the correct version for that side. The left hopper has the lid hinge on the left. The right hopper has the lid hinge on the right.

16. Slowly lift the full seed box or empty hopper, and place it in the planter air box frame.

17. Install the box retaining pins in frame corners.

18. It may be necessary to make a one-time adjustment to the seal on the top of the air box, to obtain full contact between air box and seed box/hopper.

19. If installing an empty hopper for planting, load seed (and lubricant).

20. Open the slide gate.
**Auxiliary Hydraulics**

*Refer to Figure 39, Figure 40 and Figure 41*

The Planter planter includes, as standard equipment, an auxiliary hydraulic circuit, intended to power a seed auger for loading bulk hoppers.

The Aux quick-disconnect ports ① are on the frame. This circuit is shared with the markers (if installed).

If markers are not installed, the Aux/Marker circuit is always in Aux mode.

**Operating Auxiliary Hydraulics**

The planter needs to be unfolded for convenient access to the manual hydraulic valve.

1. Fold any extended markers and set the tractor lever for the marker/aux circuit to Neutral.
2. If no markers were unfolded, set the Clutch Folding Module Marker/Fold switch ② to "Marker".

3. If the machine has markers, at the left wing tool bar, move the lever on the manual valve ③ from Marker ④ (lever pointing forward) to Aux ⑤ (lever pointing back).
4. Connect the implement requiring hydraulic power.
5. Briefly Extend the tractor lever for the Marker circuit, engage local valve-switch on implement, and confirm proper implement operation (auger rotation in the correct direction).
6. Set tractor circuit lever to Extend, and operate implement with local controls.
7. When operation is complete, set tractor circuit to Float or Neutral, and set wing valve ③ back to Marker ④.
Marker Operation

Overhead Hazard:
To prevent serious injury or death, do not allow anyone to stand near or beyond the end of the wings during marker operations. Marker arms are heavy and marker discs may be sharp.

If your YP2425A Planter has markers, unfolding of the markers is performed only after unfolding the wings.

The Marker/Aux valve on the left wing must be set to “Marker”. See “Auxiliary Hydraulics” on page 38.

This section presumes correct marker length for your pass spacing. If this has not been set, or needs to be changed, see “Marker Extension” on page 61.

This section presumes correct marker chain slack. If your chain has been replaced, repaired or stretched, adjust the links to the correct slack length. See “Marker Chain Length Adjustment” on page 62.

Dual markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment.

Electrocution Hazard:
Beware of overhead electrical lines. If the markers get too near to lines, the tractor, raised planter and any cart can become “hot” with no indication. A person standing on the ground and near equipment can complete the circuit. Serious injury or death is likely. At higher voltages electrocution can occur without direct contact.
**Marker Unfold (one side)**

*Refer to Figure 42 and Figure 44*

1. If the Auxiliary Hydraulic circuit has been used recently, confirm that the manual Marker/Aux valve on the left wing is set to “Marker”.

2. On the DICKEY-john® Clutch Folding Module (CFM), set “Marker/Fold” switch 1 to Marker (up). The LED above the switch illuminates steadily for normal operation.

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

4. 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.

On the CFM, leave the “Marker/Fold” switch in “Marker” during normal field operations.

**Row Marker Operation**

To alternate which side is marked:

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

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

3. Return tractor control to neutral.

**Folding the Markers**

If your planter has markers, they must be folded and secured before folding the wings.

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

2. Set circuit control to neutral.

**Unusual Marker Operations**

**Both Sides Unfolded**

With both markers in their cradles:

1. Unfold either side, and when completely deployed:

2. Move lever/switch to Retract momentarily, and return to Extend to deploy other side.

**Machine Damage Risk:**

If the marker gauge wheel (at the hinge) is not routinely in ground contact, machine damage can occur.

Verify that the planter is fully lowered, the marker is fully extended, and the marker chain has adequate slack. If only one side is out of contact, check for debris in the outer hinge.

See “Marker Gauge Wheel Adjustment” on page 62.
Electric Clutch Operation

A clutch enables or disables groups of row units. The standard YP2425A planter has three clutches in the seed meter drive system.

The standard clutch system is strictly operator controlled. Monitor control of sections requires the optional Swath Command™ system (page 42).

The switches Left  / Center  / Right  correspond to the left wing row units, center section row units and right wing row units respectively. The data in the table below is normally preset at the factory for your planter configuration.

The Master  switch controls all row units, regardless of drive type. For all switches, “OFF” (down) removes power from the clutch, disengaging that set of row units. When any switch (plus Master) is ON, the LED for that switch illuminates steadily.

Clutch Switch Coverage

<table>
<thead>
<tr>
<th></th>
<th>Left 2 Rows</th>
<th>Center 3 Rows</th>
<th>Right 4 Rows</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-Row (30 in. or 70 cm)</td>
<td>1-9</td>
<td>10-15</td>
<td>16-24</td>
</tr>
<tr>
<td>36-Row (20 in. Single)</td>
<td>1-14</td>
<td>15-22</td>
<td>23-36</td>
</tr>
<tr>
<td>47-Row (15 in. Single)</td>
<td>1-18</td>
<td>19-29</td>
<td>30-47</td>
</tr>
<tr>
<td>48-Row (30 in. Twin)</td>
<td>1-18</td>
<td>19-30</td>
<td>31-48</td>
</tr>
</tbody>
</table>

Electric Clutch Lock-Up

In case of electric clutch failure, an electric clutch can be mechanically engaged.

Refer to Figure 46 and Figure 47

1. Remove the rubber plugs 1 from the oil shield disc 2 to allow access to the lock-up holes. Plugs simply push out away from the clutch side.
2. Align the cutouts 3 with the holes 4. If you observe half the hole obstructed by a metal disc 5, you are not at a cutout. If the entire hole is obstructed by a metal disc 6, you are not at a cutout.
3. Insert the M8-1.25x14mm long metric bolts 5. When at a cutout, the bolt seats with minimal resistance until the bolt head reaches the clutch face.
4. Reinstall the plugs so they are not lost.

* Use only the provided 14mm length bolts. Longer bolts will damage the clutch. Shorter bolts may not effect a lock-up.
Swath Command™ Clutch Operation

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

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

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

Swath Command™ ordering information is found on page 130.
Air System Operation

![Diagram of Air System Operation]

Figure 49
Yield-Pro® Air System for Air-Pro® Seed Metering

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

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

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

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

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

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

An air release screen (12) above each Air-Pro® meter (13) vents the delivery air. The vent has two functions:
1. It releases delivery air while retaining the delivered seeds.
2. It is a passive control gate for bulk seed delivery. It takes about a minute to initially fill the meters.

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

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

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

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

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

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

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

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

See also “Fan and Meter Pressurization Adjustment” on page 64.

Refer to Figure 50

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 16.

1. Always connect the case drain line ① first.

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

   **NOTICE**

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

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

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

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

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

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

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

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

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

Monitor fan rpm with the seed monitor.

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

Do not run the fan over 4300 rpm or under 2500 rpm.

At excessive rpm, too much air flow can cause:

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

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

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

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

If air system does not operate suitably with fan speeds between 2500 and 4300 rpm.

When starting empty you must blow seed out to the meters for two to four minutes to fill meters.

The monitor has a level sensor below the hopper or seed box to warn when seed box is empty. There are three to four acres of seed in the system when the sensor first indicates box empty, depending on seeding rate.

To set and adjust the air system, see “Fan and Meter Pressurization Adjustment” on page 64

Y-Tubes

Refer to Figure 51

Y-tube gates can be shut off to feed only one row for single-row planting on a twin-row machine. In the photograph, the left meter tube is open and the right closed.

You can also shut off the Y-tube gates to clean out the air system and meters. See “Air System Clean-Out” on page 98.

---

### Recommended Fan Speeds

<table>
<thead>
<tr>
<th>YP2425A</th>
<th>Seed Hopper*</th>
<th>Bulk Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Fan Speed</td>
<td>3300 rpm</td>
<td>3000 rpm</td>
</tr>
<tr>
<td>Oil Consumption</td>
<td>21.2 gpm, 80 liters/min</td>
<td>19.2 gpm, 73 liters/min</td>
</tr>
<tr>
<td>Fan Speed Range</td>
<td>2700 - 4300 rpm</td>
<td>2700 - 3600 rpm</td>
</tr>
<tr>
<td>Oil Consumption</td>
<td>17.2 - 27.8 gpm, 65 - 105 lpm</td>
<td>17.2 - 23.2 gpm, 65 - 88 lpm</td>
</tr>
</tbody>
</table>

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

### Low Population Risk at Turns:

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

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

The Seed Rate manual provides initial values for meter pressurization. Normal readings are in the 0.8 inch to 4.0 inch H₂O range, and vary considerably with crop.

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

Before the first planting each season, or when using new meters or meter wheels for the first time, or at the start of each season, before filling with seed, add 1/3 cup (80 ml) Ezee Glide Plus to bottom of airbox.

---

*Figure 51: Seed Y-Tube*
Weight Transfer Operation (Option)

This option provides a control valve, plumbed into the hydraulic drive circuit, and a cylinder for each wing. Up to 1000 pounds (450 kg) of mainframe weight may be transferred to each wing when oil is being supplied to the hydraulic drive circuit.

Once set, the circuit usually requires little adjustment in normal field operations. To set the circuit:

1. Unfold and lower the planter in field conditions.
2. Supply oil to the hydraulic drive circuit (or operate the PTO at field rpm if using a PTO pump that supplies the hydraulic drive). The hydraulic drive motor itself does not need to be operated.
3. Loosen the lock disc at the valve block. Adjust the knob until the gauge reads approximately 1000 psi. Tighten the lock disc.
4. Lower the planter. Engage the hydraulic drive (with seeding disabled) Pull forward at normal field speed for a short distance. Stop.
5. Check that the wings are level.
   - If the wings ends are lower than the center, decrease the pressure at the valve.
   - If the wing ends are higher than the center, increase the pressure.

A relief valve in the valve block prevents any damage from over-pressure.

See page 16 and page 154 for important information about movements without a suitable tractor. See page 123 for ordering information.

Monitor Operation

Monitor operation is described in a separate manual supplied with your YP2425A Planter.

Operations covered in that manual (and therefore not in this manual) include:

- hydraulic drive control
- seed rate calibration
- planting rate
- fertilizer rate
- setting rate limits and detecting out-of-limits
- GPS integration
- fan rpm
Fertilizer Systems Overview

The YP2425A supports one or two optional fertilizer boom systems:

- one or two Type 2 single-section booms, typically used with on-board tanks, trailing SML cart or the smaller tank on a PFC tank cart, or a user-provisioned trailing cart, supplied by an optional planter- or cart-mounted hydraulic pump system;
- a Type 3 three-section boom, typically used with a Great Plains PFC cart user-provisioned trailing cart, supplied by a pump and manifold on the cart.

Use only pre-mixed liquid fertilizer. Do not use dry fertilizer added to water in the tank.

⚠️ 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 an accident.

If the fertilizer product is at any risk of precipitation, stratification or sedimentation, load it shortly before application. Although the on-board and SML tanks include bypass return ports, the flow through these lines is too low to act as agitation (and may even be shut off).

Refer to Figure 54 above. The “Fert.Pump” switch on the Clutch Folding Module is used only with Great Plains PFC carts. It might be used to control a clutch on a user-provisioned system that has a solenoid-operated clutch.

NOTICE

System Plugging Risk:
Do not allow fertilizer to remain in the tanks for extended periods or settling of material and system plugging will occur.

The next four pages cover plumbing diagrams and system component identification for the available on-board system and the available SML cart system. Operations are described on page 51.
SML Cart Pump System Diagram

Figure 55
Cart Pump Fertilizer System
SML Cart Tank Fertilizer System Elements

Liquid fertilizer system callouts are consistent across this entire manual. No single system includes all elements.

Tank Lid
Tank lids are vented and may be kept tight. Lids have a removable center section for easier hose fill.

Cart Tank
Cart tanks is 500, 735 or 1000 gallons (1900, 2800 or 3750 liters) each. A sight gauge at one end shows current fill level against a scale.

Tank Discharge Shutoff Valve
This valve is normally left open.

Quick-Fill Inlet and Plug
This 2 inch fitting secures either the plug or the fitting of an external hose using cam locks. Always close the valve before removing the plug.

Quick-Fill Shutoff Valve
This valve is opened for filling tanks from a pressurized supply source.

Quick-Fill Inlet Strainer
This fitting contains an element to trap coarse debris in the material. Reverse flow through this strainer is not recommended.

Pump
The centrifugal pump is powered by a hydraulic motor controlled by a proportional valve (not shown). The valve is controlled by the seed monitor.

Pump Outlet
The pump normally operates at a flow rate higher than required for the booms. The pump output is split into a boom flow, and a recirculation/bleed flow.

Air Bleed Line
This small line provides pump priming and recirculation of excess material afield.

Pump Drain Plug
Remove this plug to drain or flush the bleed line or pump.

Pump Recirculation Valve
This valve is normally open. It may be closed for reduced bypass at very high application rates.

Recirculation Lines to Tank(s)
This line provides pump priming and recirculation of excess material afield.

Tank Recirculation Valve(s)
This valve is normally open. It might be closed for maintenance.

Pressure Relief Valve
This valve protects the system from damage in the event of overpressure due to blockage or valve misconfiguration. Above approximately 65 psi, excess material is returned to both the pump and the tanks.

Overpressure Dump Line
This line returns the majority of any overpressure excess material to the tanks.

Pump Outlet Selector Valve
This valve sets the boom flow side of the pump outlet to boom, off or off-load. A decal on the mount indicates handle positions.

Boom Supply Strainer
A filter element in the canister traps large particles that might clog boom orifice plates. See the Seed Rate manual for maintenance and alternate element screen sizes.

Strainer Shut-Off Valve
Normally open, this valve isolates the boom side of the strainer for servicing.

Cart Outlet Valve
This valve is open for field application and normally closed at all other times.

Planter Inlet Valve
This valve is open for field application and normally closed at all other times.

Flow Sensor
This fitting measures material flow to the boom. Readings from this sensor are used by the seed monitor to adjust the pump rate.

Boom Shutoff Valve
This valve is normally open. It might be closed for maintenance.

Passive Manifold
There are separate boom sections for the planter center section and each wing.

Nozzle Body
The standard fitting on an active row is a nozzle body that accepts various size orifice plates.

Nozzle Gasket
The orifice plate sits inside this rubber seal.

Orifice Plate
These stainless steel plates have precisely sized center holes that provide flow resistance for optimum boom pressure. They do not regulate flow rate, but must be sized to the flow rate. Standard booms include sizes 24, 34 and 48.

VeriFlow Nozzle
These optional nozzles are an alternative to changing orifice plates. They are spring loaded to maintain a constant back-pressure over a wide range of rates.

Shutoff Cap
Any unused boom clamps are provisioned with caps instead of nozzles. Caps may also be used to shut off rows when changing row spacing.

End Cap
Each boom section has at least one end cap. These are removed for flushing booms, such as for winterizing.

Nozzle Drop Line
Each active nozzle is connected to the row applicator via tubing.

Row Applicator Tube
All standard 25 Series row units include an applicator tube which can deliver material in-furrow just ahead of the seed tube. Optional Keeton® seed firmers (shown) have a delivery tube for applying material behind the seed tube.
Trailers Operations

Great Plains SML-500, SML-735 and SML-1000 semi-mounted fertilizer carts include a 2-point quick hitch for planter connection. Great Plains PFC1600 or PFC2000 fertilizer tank carts require the optional pintle hitch for the planter (see page 124). Hitching/hookup and operating instructions are found in the tank cart Operator's Manual.

**DANGER**

Uncontrollable Load Hazard:
DO NOT EVER transport the tank cart while hitched to the planter (in train) over roads if there is any liquid in (either) tank. Tank(s) must be empty for transport, or tow the tank separately.

**NOTICE**

Machine Damage Hazard:
Do not attempt reverse operations with a trailer hitched to the planter. Trailer direction is extremely difficult to control.

Fertilizer Systems Operation

Hydraulic Fertilizer Pump

This information applies to planters with Great Plains hydraulic fertilizer pumps. For systems using customer provisioned components (pump, tanks or controllers), consult the documentation for those components.

**Refer to Figure 55 on page 49**

Flow rate (pump rpm) is controlled by a proportional valve at the pump motor inlet, under the control of the IntelliAg® system.

**Refer to Figure 58**

The default rate  is set on the seed monitor console (Material Setup menu). In this example, the material has been named “10-34-0”. See the Seed Rate Manual for details of system setup and configuration.

**Refer to Figure 58**

The field rate  is displayed on the main Work Screen, and may be adjusted via the Inc/Dec softkeys  once they are configured. See the Seed Rate Manual for details.
The hydraulic fertilizer system may be enabled or disabled entirely using the Channel On/Off softkey 3, or by disabling the Channel in the main Channel Setup screen (not shown).

Ground Drive Pump Operation

The PFC1600 and PFC2000 tanks include a ground-driven pump with an electric clutch. The clutch circuit is controlled by the “Fert.Pump” switch 1 on the Clutch Folding Module. Also, as the pump is ground-driven, it automatically starts and stops with planter movement.

AccuShot System (Option)

Some Yield-Pro Planter models have the option of having AccuShot installed for fertilizing crops. AccuShot applies a set amount of liquid fertilizer to a specific location relative to each seed in a furrow. More precise application gives seeds a better chance at germination and improved growth.

If your machine has AccuShot, refer to the AccuShot Operator / Maintenance Manual and AccuShot Quick Start Guide for more information on how to use your application system.

<table>
<thead>
<tr>
<th>Manual Name</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AccuShot Operator Manual</td>
<td>115700-001</td>
</tr>
<tr>
<td>Accushot Quick Start Guide</td>
<td>115700-002</td>
</tr>
</tbody>
</table>

**NOTICE**

This kit is factory install only. Planters cannot be fitted with AccuShot through your dealer.

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

### Electrical Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verify electrical hookups solid</td>
<td>18</td>
</tr>
<tr>
<td>Power-up seed monitor terminal and observe any diagnostic messages</td>
<td>PDC</td>
</tr>
<tr>
<td>Verify Material and Rate, and hydraulic drive and “SPLIT AIR” Channel setup</td>
<td>QSG</td>
</tr>
<tr>
<td>With hydraulic circuits in neutral, check switches and indicator lights on CFM switch panel. Confirm Master OFF.</td>
<td>-</td>
</tr>
<tr>
<td>Verify, with planter lowered, radar speed sensor is pointed at ground, approximately 35° below horizontal.</td>
<td>a</td>
</tr>
</tbody>
</table>

  a. Refer to sensor documentation.

### Hydraulic Hitching Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marker/Aux valve to Marker</td>
<td>38</td>
</tr>
<tr>
<td>Local bypass off (hydraulic hitch only)</td>
<td>19</td>
</tr>
<tr>
<td>Fan case drain to low pressure drain port</td>
<td>17</td>
</tr>
<tr>
<td>Fan return line to low pressure return port</td>
<td>17</td>
</tr>
<tr>
<td>All other hydraulic circuits connected</td>
<td>17</td>
</tr>
<tr>
<td>Check fan direction(^a) and rpm</td>
<td>45</td>
</tr>
<tr>
<td>Check hydraulic drive connection(^b)</td>
<td>16</td>
</tr>
</tbody>
</table>

  a. Operate fan briefly and observe rotor blades spinning toward exit port. Check rpm on seed monitor.
  b. Perform a “FILL DISK” operation via the seed monitor.

### Mechanical Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongue height preset on 3-point</td>
<td>22</td>
</tr>
<tr>
<td>Unfold planter</td>
<td>26</td>
</tr>
<tr>
<td>Tongue front latch hook engaged</td>
<td>27</td>
</tr>
<tr>
<td>Side-to-side level at gauge wheels</td>
<td>23</td>
</tr>
<tr>
<td>Marker initial length set</td>
<td>61</td>
</tr>
<tr>
<td>Marker disc angle set</td>
<td>61</td>
</tr>
</tbody>
</table>

### Air System Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold to seed box or hopper seal</td>
<td>-</td>
</tr>
<tr>
<td>Add seed lubricant to each air box, prior to first use, and prior to loading seed</td>
<td>121</td>
</tr>
<tr>
<td>Seed loaded</td>
<td>51</td>
</tr>
<tr>
<td>No air leaks (except from seed box)</td>
<td>-</td>
</tr>
<tr>
<td>Hose routings - no sags, no pinches (check wing-folded &amp; field positions)</td>
<td>-</td>
</tr>
<tr>
<td>Y-tubes turned on to correct rows</td>
<td>46</td>
</tr>
<tr>
<td>Blank disks at unused rows.</td>
<td>82</td>
</tr>
<tr>
<td>Shutters set the same on all rows</td>
<td>78</td>
</tr>
<tr>
<td>Start fan. Turn on seed monitor active air control. Watch for split air vane movement or air pressure changes.</td>
<td>45</td>
</tr>
<tr>
<td>Activate the “FILL METER” function of the monitor. Watch for air vane movement, or watch meter pressurization go to zero.</td>
<td>PDC</td>
</tr>
<tr>
<td>On a new planter, pre-lubricate the air system with Ezee Glide Plus.</td>
<td>35</td>
</tr>
<tr>
<td>Set the meter pressurization target to the recommended value for the crop.</td>
<td>PDC</td>
</tr>
</tbody>
</table>

### Row Cleaner Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check for correct installation of row cleaners on all rows if equipped.</td>
<td></td>
</tr>
<tr>
<td>Check that row cleaners do not catch on hydraulic hoses.</td>
<td></td>
</tr>
<tr>
<td>Carefully watch when folding and unfolding planter the first time to ensure clearance of row cleaners.</td>
<td></td>
</tr>
</tbody>
</table>

### Frame Mounted Options Checklist

<table>
<thead>
<tr>
<th>Step</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row cleaner depth setting</td>
<td>72</td>
</tr>
<tr>
<td>Coulter depth and alignment</td>
<td>73</td>
</tr>
</tbody>
</table>
### Row Units Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preset depth handles to 7 holes showing above “T”</td>
<td>75</td>
</tr>
<tr>
<td>Preset down force springs to first notch (lightest) setting</td>
<td>70</td>
</tr>
<tr>
<td>for most conditions, 2nd notch otherwise)</td>
<td></td>
</tr>
<tr>
<td>Set all unit-mounted coulters to 1/4 inch shallower than opener</td>
<td>73</td>
</tr>
<tr>
<td>blades.</td>
<td></td>
</tr>
<tr>
<td>Check coulter alignment to row</td>
<td>74</td>
</tr>
<tr>
<td>Check closing wheel alignment</td>
<td>86</td>
</tr>
<tr>
<td>Set closing wheels to first notch (light setting)</td>
<td>86</td>
</tr>
<tr>
<td>Check action and contact of side depth wheels</td>
<td>76</td>
</tr>
<tr>
<td>Gauge wheel scraper gap (if installed)</td>
<td>77</td>
</tr>
</tbody>
</table>

### Treatments (Options) Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirm Clutch Folding Module “Fert.Pump” switch OFF</td>
<td>51</td>
</tr>
<tr>
<td>Check tractor-mounted components</td>
<td>a</td>
</tr>
<tr>
<td>Pump chains(s), drive wheel if ground drive</td>
<td>b</td>
</tr>
<tr>
<td>Execute Tank Cart Checklist</td>
<td></td>
</tr>
<tr>
<td>Check for correct orifice plates</td>
<td>c</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 are connected, free of kinks, and discharge</td>
<td>-</td>
</tr>
<tr>
<td>tube/nozzles are clear</td>
<td></td>
</tr>
<tr>
<td>Inlet and hose valves open</td>
<td></td>
</tr>
<tr>
<td>SmartBox system loaded, powered up</td>
<td></td>
</tr>
</tbody>
</table>

### Hydraulic System Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check tractor hydraulic reservoir full</td>
<td>-</td>
</tr>
<tr>
<td>Inspect connections for leaks</td>
<td>-</td>
</tr>
<tr>
<td>Perform a raise and lower operation</td>
<td>28</td>
</tr>
<tr>
<td>Set Clutch Folding Module switch “Marker/Fold” to “Marker”</td>
<td>39</td>
</tr>
</tbody>
</table>

### Hydraulic Planter Drive Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check chain lubrication and slack</td>
<td>108</td>
</tr>
<tr>
<td>Input initial values for desired population</td>
<td>a</td>
</tr>
<tr>
<td>Calibrate radar speed sensor pulses with planter lowered.</td>
<td>153</td>
</tr>
<tr>
<td>Lubricate slider joints on drive shafts</td>
<td>114</td>
</tr>
<tr>
<td>Check clutch operation</td>
<td>39</td>
</tr>
</tbody>
</table>

### Meters Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct disks for seed</td>
<td>a</td>
</tr>
<tr>
<td>Seed inlet shutters set</td>
<td></td>
</tr>
<tr>
<td>Corn?</td>
<td>a</td>
</tr>
<tr>
<td>Check timing of meters for twin-row</td>
<td></td>
</tr>
<tr>
<td>Check chain tension</td>
<td>a</td>
</tr>
<tr>
<td>Initial meter pressurization set</td>
<td>46</td>
</tr>
</tbody>
</table>

---

a. Refer to Seed Rate manual.

---

- Check supplier manual for tanks and pump. Check fertilizer section of monitor manual.
- See SML or PFC2000/PFC1600 Manual.
- Check Seed Rate manual, and manual for fertilizer pump system.
Field Operation

Perform all steps in "Pre-Start Checklist" on page 25 and "Field Set-Up Checklist" on page 52.

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

---

First Pass Operation Checklist

1. Raise planter and line up at start of first planting row 26
2. Set tractor 3-point hitch to "depth control" operation (and not load control) -
3. Unfold marker on next-row side. 38
4. Set fan hydraulic circuit to low flow, engage circuit. Gradually adjust hydraulic flow to recommended rpm. 43
5. Engage hydraulic drive via seed monitor. Refer to seed monitor manual. -
6. If planter has a fertilizer system integrated with the DICKEY-john® seed monitor, set the ‘Fert.Pump’ switch on the Clutch Folding Module to ON. 44
7. In the CLUTCH cluster of the Clutch Folding Module, set alla switches, including Master, to ON. 39
8. Pull forward, lower planter, and begin planting for a short distance.
9. Stop. Assess:
   - planting depth
   - seed spacing
   - press wheel operation
   - fertilizer application (if in use)
10. Make necessary adjustments 50

   a. Fert. Pump switch has no function for hydraulic fertilizer pump. Use monitor screens to control it.

---

Sharp Field Turns Checklist

1. Fold marker 38
2. Raise planter 26
3. Make turn
4. Lower planter 26
5. Unfold marker on next-row side. 38
6. Resume planting.

---

Suspending Planting Checklist

1. Stop tractor
2. Fan hydraulic circuit to Float or Neutral 46
3. Raise planter 26
4. Fold Marker 38

---

Ending Planting Checklist

1. Suspend operations as above, then
2. Install lift locks 30
3. Lights ON -
4. Transport Transpo rt

---

Skip and Double Checks

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

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

Inspect the arc from just after the top tuft brush to the bottom edge of the seed drop brush. Look for cells (seed pockets) having no seed, or more than one seed. You may need a flashlight to perform this inspection.
Short-Term Parking
1. Fold markers. See “Folding the Markers” on page 40.
2. Choose a location with level firm ground. Do not unhitch on a slope.
3. Raise the planter. See “Raising Planter” on page 29.
5. Block tires.
6. Reinstall the parking stand (“Hitching Tractor to Planter” on page 16).

3 Point Hitch Parking
Refer to Figure 62 (shown without tractor for clarity)
7. For the standard 3-point hitch, deploy the two forward stands ②. Remove the inner pin ①, swing the stand ② out, down and vertical around the bottom pin ③, and reinsert the pin at ④.

Hydraulic Tongue Hitch Parking
Refer to Figure 63
8. Remove pins ⑤ holding main parking stand ⑥ in storage bracket. Remove stand from storage.
9. Use 3-point hitch or tongue cylinder to lift planter high enough to align holes in stand with holes ⑦ in tongue. Insert locking pin in parking stand. Secure stand with pins.

10. If ground is soft, place a thick board under the stand.
11. Use 3-point hitch or tongue cylinder to lower planter onto parking stand.
12. Hydraulic hitch only: Use tongue cylinder to lift tongue off tractor draw bar.

Either Hitch Parking
13. Set all implement hydraulic circuits to Float to relieve pressure in lines.
14. Shut down hydraulics. Unplug hydraulic lines from tractor. Do not allow hose ends to rest on the ground.
15. Unplug planter light cable from tractor.
16. Unplug monitor harness from console.
17. 3-point: Unhook tractor from planter hitch.
18. Pull tractor away.
Long-Term Storage
Complete Parking steps (page 56) first.
Store the YP2425A Planter indoors if possible. Great Plains recommends parking/storing in the raised configuration, folded, on the parking stands and with all lift cylinder locks installed.

1. Empty hopper (page 98).

Refer to Figure 64

2. Close the seed box or hopper clean-out door.
   Clean out the air system (page 98).
3. Remove hopper or seed box (page 36).
4. Cover and seal off the opening at the top of the air box. Leave clean-out door slightly ajar to allow any condensed moisture to drain off.
5. Remove seed disks from meters (this is primarily to relieve pressure on brushes). Clean disks of residue build-up (see Caution at right). Use mild soap, non-abrasive scrubbers, and hot or warm water. If using sealed storage, dry disks prior to storage.
6. Close seed inlet shutters at meters (to prevent pest entry to seed hoses). Thoroughly clean seed and seed treatment residue from seed meters. See “Meter Clean-Out” on page 99, for more information.
7. Apply grease to exposed cylinder rods to prevent rust.
8. Unscrew caps on end of fertilizer booms and flush fertilizer lines (if present). Flush system with RV antifreeze if there is any chance of freezing prior to next implement use.
9. Empty and clean fertilizer strainers.
10. Lubricate all points listed in Maintenance to prevent rust.
11. Clean planter of mud, dirt, excess oil and grease.
12. Inspect planter for worn or damaged parts. Make repairs and service during off season.
13. Use spray paint to cover scratches, chips, and worn areas on the planter to protect the metal.
14. Cover planter with a tarp if stored outside.

Storage: Fertilizer Option
The pump, strainer and manifold system require special attention prior to storage. See “Fertilizer System Maintenance” on page 110.

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.
To get full performance from your YP2425A Planter, you need an understanding of all component operations. Many provide adjustments for optimal field results. Some adjustments were covered earlier in this manual.

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

<table>
<thead>
<tr>
<th>Adjustment</th>
<th>Page</th>
<th>The Adjustment Affects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongue Height</td>
<td>19</td>
<td>Correct draft load to tractor</td>
</tr>
<tr>
<td>Frame height</td>
<td>21</td>
<td>Planting depth consistency</td>
</tr>
<tr>
<td>Frame level</td>
<td>21</td>
<td>Planting consistency</td>
</tr>
<tr>
<td>Height Switch Adjustment</td>
<td>56</td>
<td>Correct off/on state of meter drive</td>
</tr>
<tr>
<td>Wing Leveling</td>
<td>22</td>
<td>Planting consistency</td>
</tr>
<tr>
<td>Clutch Lock-Up</td>
<td>41</td>
<td>Temporary operation with a failed clutch</td>
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<tr>
<td>Air System</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Fan Speed</td>
<td>46</td>
<td>Optimal seed distribution</td>
</tr>
<tr>
<td>Meter Pressurization (values from SRM&lt;sup&gt;a&lt;/sup&gt;)</td>
<td>64</td>
<td>Consistent seed flow and disk singulation</td>
</tr>
<tr>
<td>Planting Rate</td>
<td>SRM&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Refer to Seed Rate manual</td>
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<tr>
<td>Marker Adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marker Width</td>
<td>53</td>
<td>Intended swath spacing</td>
</tr>
<tr>
<td>Marker Chain Length Adjustment</td>
<td>54</td>
<td>Marker folding operation</td>
</tr>
<tr>
<td></td>
<td>55</td>
<td>Reliable marker operation</td>
</tr>
<tr>
<td>Fertilizer Setup (option)</td>
<td>60</td>
<td>Seed germination and growth</td>
</tr>
<tr>
<td>Fertilizer Orifices (option)</td>
<td>SRM&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Refer to YP2425A Planter Seed Rate manual</td>
</tr>
<tr>
<td>Frame-Mounted Row Accessories</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Terra-Tine Row Cleaners</td>
<td>63</td>
<td>Row preparation</td>
</tr>
<tr>
<td>Coulters</td>
<td>64</td>
<td>Row pre-furrow depth and trash cutting</td>
</tr>
<tr>
<td>Vantage I Fertilizer Delivery</td>
<td>64</td>
<td>Fertilizer placement</td>
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<td>25AP Series Row Unit Adjustments</td>
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<td>Row Unit Lock-Up</td>
<td>81</td>
<td>Single/twin-row operation</td>
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<td>Row Unit Down Pressure</td>
<td>66</td>
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<tr>
<td>Row Cleaner Adjustments (Option)</td>
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<td>Row preparation</td>
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<tr>
<td>Coulter Adjustments (Option)</td>
<td>69</td>
<td>Row pre-furrow depth</td>
</tr>
<tr>
<td>Row-Unit Opener Adjustments</td>
<td>71</td>
<td>Seed depth, spacing, coverage</td>
</tr>
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<td>72</td>
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<tr>
<td>Adjusting Gauge Wheel Scrapers</td>
<td>73</td>
<td>Consistent seed furrow depth</td>
</tr>
<tr>
<td>Seed Meter Setup and Adjustment</td>
<td>74</td>
<td>Consistent seed population</td>
</tr>
<tr>
<td>Seed Firmer Adjustments (Option)</td>
<td>80</td>
<td>Seed-soil contact</td>
</tr>
<tr>
<td>Press Wheel Adjustment</td>
<td>81</td>
<td>Effective soil coverage</td>
</tr>
<tr>
<td>Row-Pro&lt;sup&gt;™&lt;/sup&gt; Adjustment</td>
<td>162</td>
<td>Consistent planting depth</td>
</tr>
<tr>
<td>Monitor Adjustments</td>
<td>PDC</td>
<td>Refer to DICKEY-john&lt;sup&gt;®&lt;/sup&gt; Planter/Drill Control manuals</td>
</tr>
</tbody>
</table>

<sup>a</sup> SRM: Seed Rate Manual (401-626B)
Setting Material Rates

Planting Rate
Adjusting the planting rate requires the following:

1. Monitor configuration:
   The seed monitor must be set up with the correct row count, row spacing and disk cell count. See the Seed Rate Manual (SRM) and the DICKEY-john® Planter/Drill Control (PDC).

2. Preparing rows:
   Correct seed disk selection and Y-tube settings are required for correct rate. Meter shutter setting and meter pressurization adjustments assure the rate. See the SRM.

3. Ground speed calibration:
   Seed monitor rate control and reporting is only as accurate as the speed reported by the radar. See the PDC manual.

4. Setting seed rate via seed monitor:
   See the SRM and the PDC manuals.

5. Checking planting rate:
   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 SRM.

Hydraulic Pump Fertilizer Rate
See the Seed Rate manual (401-626B) for full details. The following is a brief summary of steps:

1. Row orifice setup.
2. Relief valve setting.
3. Strainer setup.
4. Set rate on monitor console.

Ground Drive Pump Fertilizer Rate
See the Seed Rate manual (401-626B) for full details. The following is a brief summary of steps:

1. Row orifice setup.
2. Pump setting dial and sprockets.
3. Relief valve setting.
4. Strainer setup.
Gauge/Transport Wheel Adjustments

The gauge/transport wheels serve two functions:

Refer to Figure 68

1. When the planter is lowered, the wheels establish the heights of their respective sections, nominally a tool bar height of 26 inches (66 cm) above the planting surface.

   The main ① and trailing ② wheels are not adjustable in height.

   The wing gauge wheels ③ may be slightly raised or lowered by adjusting a nut on the cylinder rod. See "Wing Leveling, Inboard End" on page 23.

2. When the planter is raised, all of these are the transport wheels. The main wheels ① are rigid, and aid steering. The trailing wheels ② are full castering.

The gauge wheels are usually adjusted only to bring all sections to level.

Marker Adjustments

There are five adjustments and one maintenance item for markers:

- Disk Angle (page 61)
  Even if your row spacing rarely changes, you may need to adjust disk angle for soil conditions and planting speed.

- Marker Extension (page 61)
  Once set for a specific row spacing, this only needs periodic checking to ensure the clamp is secure.

- Marker Support Wheels (page 62)
  Three bolt holes are available for adjusting height.

- Chain Length (page 62)
  This needs to be set if the chain is replaced. It may also need adjustment for unusual terrain.

- Marker Speed (page 63)
  Once initially set by your dealer, this rarely needs modification.

- Shear Bolt Replacement (page 106)
  If a marker hangs up on an obstruction, a bolt at the fold is designed to fail.

Crushing and Sharp Object Hazards:

Never allow anyone near the planter when folding or unfolding the markers. You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail.
Marker Disk Adjustment

**CAUTION**

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

**Refer to Figure 69**

1. To change angle of cut, and the width of the mark, loosen \( \frac{3}{8} \) inch bolts \( 2 \) holding the disk assembly.
   
   For a wider mark \( 3 \), increase the angle of the marker with respect to the tube \( 1 \). For a narrower mark \( 4 \), reduce the angle.

\( \square \) Do not set a marker angle wider than need to make a useful mark. Excess angle increases wear on all marker components.

2. Tighten bolts \( 2 \).

\( \square \) The direction of travel \( 1 \) tends to drive the disk angle to Wide. If bolts are not tight enough, or loosen over time, the disk will slip into the Wide mark configuration.

**Marker Extension**

Marker width needs to be adjusted once for the initial YP2425A Planter setup, and later only if changing row spacing (including locking up row units for single-row operation on a twin-capable planter).

1. Move the planter to a location where both markers may be safely unfolded. Unfold the planter. Lower the planter. Unfold one marker.

2. Find the suggested initial marker Extension \( \circ \) in the table at right. Extension distance is the same for both planter sides unless otherwise noted.

**Refer to Figure 70 and Figure 71**

3. Measure out the Extension \( \circ \) distance from the center-line of each outside end row unit (whether in use or not). Do not measure to center of row pair.

4. Mark the ground at this point.

5. To adjust marker width, loosen nuts \( 1 \) on U-bolts \( 2 \). Move marker disk tube \( 3 \) in or out to get the proper adjustment. Tighten nuts \( 1 \).

6. Repeat step 3 through step 5 for the other side.

7. With the planter still lowered, drive forward a few feet for each side.

8. Check the mark locations. Adjust to obtain the table value.
Marker Gauge Wheel Adjustment

Refer to Figure 72

The purpose of the marker support wheel (1) is to carry the weight of the inner section of the marker arm. If the wheel is not touching the ground, or is often off the ground during marker operations, remove the bolts (2) and move the wheel to a lower hole. If the marker disc is frequently off the ground, the support wheel mount may need to be moved to a higher set of holes.

Marker Chain Length Adjustment

Great Plains suggests checking marker chain slack every few years. If any maintenance or repairs cause the chain to be disconnected, correct slack needs to be set on reinstallation. Perform any checks and adjustments with the marker folded and tilted down into its cradle.

Refer to Figure 73

Lift the free end of the lift arm weldment (5) until horizontal. Reattach chain so that it is taut. Ideally, the unfolding marker reaches the ground 2-3 feet (60-90 cm) before the marker is completely unfolded.

NOTICE

Equipment Damage/Marker Failure Risks:
Set correct chain length. A chain length too long can result in excess loads on the marker and nuisance shears, due to striking the ground too early during unfolding. An under-length chain can also prevent the marker from fully resting in the cradle when folded. A chain too short can result in unsatisfactory marker operations, including loss of ground contact on uneven terrain.
Height Switch Adjustment  
(S/N B1030G+)

Refer to Figure 74

The YP2425A Planter includes a sensing switch ① that signals the seed monitor (and activates the optional hydraulic meter drive), when the planter is lowered for planting. The switch is located at the rear cross tube on the planter’s left side.

Although factory-preset for typical planting conditions, Great Plains recommends adjusting this switch for your exact field conditions and planting depth.

1. Lower the planter to the height at which seed delivery is to begin.
2. Loosen bolt ② holding switch bracket ③ to plate ④.
3. Move bracket forward or rearward so that switch toggle arm ⑤ makes contact with rear cross tube ⑥.
4. Tighten nuts.

Switch is in “Neutral” position when planting. Switch is “Activated” when raised.

Height Switch Adjustment  
(S/N B1029G-)

Refer to Figure 75

The YP2425A Planter includes a sensing switch ① that signals the seed monitor and activates the hydraulic meter drive, when the planter is lowered for planting.

Although factory-preset for typical planting conditions, Great Plains recommends adjusting this switch for your exact field conditions and planting depth. Check the switch seasonally thereafter, or when planting conditions change. Also perform this adjustment if the switch is replaced or dislodged.

The switch is located on the outside of the forward end of the right link arm at the center section tool bar.

Switch is in neutral position when planting. Switch is “activated” when raised.

Refer to Figure 76

1. Lower the planter to the height at which seed delivery is to begin.
2. Loosen U-bolt ② holding switch bracket ③ to link.
3. Move bracket forward or rearward so that switch toggle arm ⑤ makes contact with tool bar ⑥.

Crushing Hazard:
Exercise extreme caution when adjusting the switch.
Fan and Meter Pressurization Adjustment

Fans on PTO
For fans powered by an optional PTO kit (page 123), the fan speed is set at the kit’s flow control valve. See manual 411-015M for details.

Fans on Hydraulic Remotes
1. These steps presume that correct seed disks are installed (Seed Rate Charts), and the seed inlet shutters are set for the seed (page 78).
2. With fan off, check meter pressurization reported by seed monitor. Re-zero as needed (see Seed Monitor manual).
3. Determine recommended fan rpm based on your own notes in the Seed Rate Charts, or the table on page 46.
4. Determine the recommended meter pressurization based on your own notes or the published value in the Seed Rate Charts.
5. Start the fan. Gradually increase fan rpm using the tractor’s hydraulic flow control for the circuit. Adjust to the developed or suggested value from step 3.
6. Check that at least a small amount of pressure is being sensed at the meters and meter pressurization is near suggested value.
7. Perform a “FILL METER” operation for at least one minute (see DICKEY-john® Planter/Drill Control user level 1 manual).
8. Check for meter fill:
   With fan running, put the tractor in Park and set the brakes. Walk behind the wings, remove several rain covers, and check for seed in meters by looking through the clear disks. Rows to check are those with longer hoses or sharper hose bends.
9. Fill the disk pockets with seed:
   Run a “FILL DISK” operation.
10. Check control air system pressure. With meters and disks filled, meter pressurization should be at target value.

The meter pressurization system cannot reach full operating pressure when the hoses, meters and disks are completely empty. Low initial pressures are normal.

If a meter runs completely out of seed (“starved”), back-pressure to the air box manifold may prevent prompt refill. To fill a starved meter, close the seed inlet shutter for about 15 seconds, then restore it to the original setting.
12. During the first pass, take note of the average populations reported on the seed monitor.

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

If the reported population varies from your intentions by a significant amount, it is imperative to perform a furrow check. For serious rate variances, for which the source of the problem and the solution are not quickly determined, see “Population Troubleshooting Charts” on page 90.

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

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

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

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

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

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

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

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

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

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

A small varying population deviation between rows is normal; however, if a row is consistently running lower or higher than the other rows, it could indicate a meter or seed sensor problem that needs attention. “Population Troubleshooting Charts” on page 90.

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.

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

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.
Fine-Tuning Meter Pressurization

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

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

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

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

Seed Delivery Fan Adjustments

Refer to Figure 77

The primary control for seed delivery air is fan rpm. The servo vane (not shown), under the control of the split air system, takes whatever is needed to maintain meter pressurization (the bottom three manifold outlets ③). Remaining air is sent to the top outlets for seed delivery.

There are two butterfly valves at the top fan outlets: left air box ②, and right air box ③. The recommended butterfly valve setting is 0°. Recommended initial fan speed depends on planter configuration. See page 46.

Adjust the basic fan rate with the tractor hydraulic system and the fan rpm display of the seed monitor. Do not run at speeds over 4000 rpm or speeds under 2000 rpm.

Seed Delivery Butterfly Valves

These valves are factory pre-set to the suggested 0° (wide open).

Unusual situations can cause an imbalance of seed flow between left and right sides of the planter, such as dissimilar bulk seed boxes on each side.

If meters on one side of the planter are being starved of seed, first try increasing the fan rpm. If the fan rpm is already high, or increasing it causes other problems, use the valves.

Alternate Skip/Double Check

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

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

In these cases, use one butterfly valve to reduce the airflow to one air box. Leave the valve on the other side at zero.

Set the valve on the high-flow side. Start with a setting in the 20-30° range. Re-prime all meters (page 89), make further valve adjustments until you achieve a balanced airflow.
Frame-Mounted Row Accessories

Terra-Tine™ Adjustments

Refer to Figure 78 through Figure 80

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

NOTICE

Equipment Damage Risk:
Be sure to check that the Terra-Tine Row Cleaner tines DO NOT touch the coulter blade or any other attachments. Such contacts will cause excess wear to all parts involved. At least \( \frac{3}{8} \)in (13mm) clearance is recommended.

1. When the blade is out of the soil, adjust the Terra-Tine lock collar 1 height to set the height of tine fingers 2 flush with the bottom of coulter blade.

2. For side-to-side alignment, rotate the shank mount around the vertical shaft 3 and tighten the square head set screw 4 (set screws not visible in twin-row illustration).

3. If tines are found to be rolling over, rather than moving trash, spring tension 5 can be increased. See the Terra-Tine manual for details.

Using Terra-Tines with Coulters

Refer to Figure 78 and Figure 79

Tines may be set ahead 6 of, behind 7, and to the right 8 or left 9 of frame-mounted coulters.

4. Fore-to-aft adjustment is accomplished by adding or removing the extension arm 10 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 Coulter Adjustments

Refer to Figure 80
Frame-mounted coulters may be run on-row or between rows.

On-Row
If run on-row, or within 2 in. (5.1cm) of the furrow, adjust the shaft ① to set the coulter depth ② to be the planting depth or 1/4 inch (6 mm) shallower.

Between Row (or Off-Row at least 2 in.)
At the shaft ①, adjust the coulter depth for a running depth ② of 4 to 4 3/8 inch (10.1-11.4 cm) below ground level 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 Fertilizer Adjustments

Refer to Figure 81
At the back plate ①, adjust the tine height for a running depth ② of 1 in (2.5cm) below ground level ③. Refer to the Vantage I manual (204-376M) for further adjustments.
25 Series Row Unit Adjustments

Refer to Figure 82
(which depicts a row unit populated with most optional accessories supported for use with the YP2425A planter)

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

1. **Lock-Up Pin Storage Hole** (Hole Standard)
   See “Row Unit Shut-Off” on page 81.

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 70.

3. **Meter Pressurization Air Inlet** (Standard)
   Pressure-regulated air enters the meter here and holds seed in the disk pockets. See “Fan and Meter Pressurization Adjustment” on page 64.

4. **Seed Delivery Hose Inlet** (Standard)
   Air carrying the bulk seed is vented at the bottom of the air release cone. Gravity then carries the seed into the meter at the shutter. 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 80.

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 78.

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 76.

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 85.

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 81.

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 72.

11. **Unit-Mount Coulter** (Option)
    Coulters cut remaining trash and begin opening the seed furrow. Working depth is set by row depth and a mounting hole selection. See “Coulter Adjustments” on page 73.

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 75.

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 77.

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 Firmer Adjustments” on page 84.

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

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**NOTICE**

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

Refer to Figure 83

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

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

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

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

Refer to Figure 84

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 85

Row unit springs ① 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.
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 30 inch or 70 cm rows.

Refer to Figure 87

<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>
<td></td>
</tr>
<tr>
<td>one</td>
<td>330</td>
<td>150</td>
</tr>
<tr>
<td>two</td>
<td>355</td>
<td>160</td>
</tr>
<tr>
<td>three</td>
<td>385</td>
<td>175</td>
</tr>
<tr>
<td>four</td>
<td>435</td>
<td>200</td>
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<td>five</td>
<td>485</td>
<td>220</td>
</tr>
<tr>
<td>six</td>
<td>535</td>
<td>245</td>
</tr>
<tr>
<td>tip</td>
<td>Do Not Use</td>
<td></td>
</tr>
</tbody>
</table>

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

Refer to Figure 86 (shown at cam setting 2), Figure 87 and Figure 88

To adjust down pressure, use a 1 1/8 inch (29 mm) open end wrench or the tool ③ stored under the walkboard.

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force 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 ④ near or slightly forward of vertical.
5. Pull upper spring link ⑤ back.
6. Move the adjustment cam ② to the new setting on the spring adjust bar ⑥.

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 89 and Figure 90

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

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

Suggested initial depth is tine tips at ground level.

Make the adjustment with the planter raised. Install lift-assist cylinder locks. Also check bolt 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 on UMC-RC. Remove bent pin on UMRC.
3. Support arm at desired height.
4. UMRC: Slide adjustment tube until cross-tube contacts arm at target height. Insert bent pin in whichever hole pair is most in alignment.
5. UMC-RC: Slide the down-stop on the arm:
   - back toward the pivot for shallower cleaning, or
   - forward toward the tines for deeper cleaning.
   Tighten the bolts. Each possible hole pairing adjusts the tine height by about \( \frac{3}{4} \) inch (19 mm).
6. Check the new height measurement.

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

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

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

Coulter Depth Adjustment

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

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

Refer to Figure 91 and Figure 92

Raise planter and install cylinder locks before working on coulters. Row unit may be fully lowered or locked up. Do not attempt to move blade when the current or new position causes it to contact the ground during 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 inch bolt, lock washer and nut (7 in Figure 91).
5. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.

6. Readjust row cleaners, if installed.

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

<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>

Figure 91
25 Series Unit-Mounted Coulter

Figure 92
Coulter Blade Mounting Holes
Coulter Row Alignment

Refer to Figure 93
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 centerline 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 planter 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 85 for press wheel alignment.

Refer to Figure 94
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 75)

Setting Planting Depth

Refer to Figure 95

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 96

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 3/16 in. (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

Refer to Figure 96 and Figure 97

1. Raise the planter 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. Reassemble and check disk contact.
Side Gauge Wheel Adjustment

Refer to Figure 98 and Figure 100

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.

Refer to Figure 99

For 2in (5.1cm) 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 101 on page 77

To adjust side gauge wheels:

1. Raise the planter 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 ② 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 bushing and shank.
5. Check wheel-to-disk contact at 2 inches (5.1 cm) planting depth, as shown in Figure 100. Lift wheel 2 inches, 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:
  3/8 inch Grade 5 bolt on 25 series:
  torque: 75 foot-pounds (102 N•m).
  3/8 inch Grade 8 bolt on 25 series:
  torque: 110 foot-pounds (149 N•m).

Use “Torque Values Chart” on page 152 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 102

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 ⑤ toward gauge wheel ⑦ until scraper touches tire.
3. Slide scraper ⑤ away from wheel ⑦ 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 103*

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. Reinstall the seal.

**Seed Inlet Shutter Adjustment**

*Refer to Figure 104 (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.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Setting Typically Used For</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top (0)</td>
<td>Closed: Row Shut-Off, Meter Refill</td>
</tr>
<tr>
<td></td>
<td>(1) Small seeds, such as Milo, with little or no treatments</td>
</tr>
<tr>
<td></td>
<td>(2) Small treated seeds and edible beans (such as Soybeans)</td>
</tr>
<tr>
<td></td>
<td>(3) Corn, round popcorn</td>
</tr>
<tr>
<td></td>
<td>(4) Large corn, or heavily treated corn</td>
</tr>
<tr>
<td>Bottom (5)</td>
<td>Wide Open: Clean-Out</td>
</tr>
</tbody>
</table>
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 105

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 106 and Figure 107

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

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

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

Meter Refill

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 earlier in the seed flow. It may be bridging at the air release screen at the top of the meter. Close the shutter completely for about 15 seconds. This prevents pressurization air from opposing seed delivery air. Delivery air pressure usually collapses the bridge. Re-open the shutter and see if seed now fills the meter.

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

**NOTICE**

**Foreign Object Risk:**
After clearing a bridge, or a delivery blockage upstream, check the seed pool at the meter for any debris that might have been the original cause. Remove such debris from the meter before planting. Don’t run the risk of an object lodging in a seed pocket and causing ongoing 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 78).

Refer to Figure 108 (depicting an empty meter)

4. Inspect meter (see page 101 for details).

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

Refer to Figure 109

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 ④ 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, and may be combined with “FILL DISK”. An alternate method, which avoids running the tractor, monitor and fan, is to rotate the section’s 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 monitor console, select the new Material, seed disk Cell Count, and target population.

10. Reinstall rain cover (page 78).
Removing a Seed Disk

Refer to Figure 111

1. Remove rain cover. If seed is present, close shutter ④ to prevent more seed from entering meter. Attach funnel (page 99).
2. Hold seed disk in meter. Rotate disk clamp ① counterclockwise 45° to release disk.
3. Tilting top of disk toward meter, slowly remove disk, allowing seed to collect in funnel. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean disk seat (② in Figure 108 page 80), so that new disks can seat fully. Inspect brushes for excess wear and damage. See “Meter Brush Maintenance” on page 101.
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 103.
6. Reinstall the rain cover (page 78).

Row Unit Shut-Off

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

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

1. Identify the rows to shut off.
2. Fully close seed inlet shutter (always done).
3. Replace seed disk with blank disk (always done).
4. Close seed flow to row at Y-tube (if present).
5. Lock up row unit to reduce wear (optional).
6. Reset marker extension (if used, page 61).
7. Reset monitor active row pattern and row spacing to avoid nuisance alarms (always done).

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

2. Close Seed Shutter
Refer to Figure 112 on page 81
Lift the handle away from the plate. Move it to the top position, and release the handle into the notch.
Closing the shutter prevents meter pressurization air from leaking into the bulk seed air system, resulting in lower pressures in adjacent rows, with risk of skips.
The shutter also stops seed flow from a row as soon as the meter is empty. Bulk seed flow to the row falls to nil as soon as the seed backs up to the air release vent at the top of the meter. If the row is served by a Y-tube, the Y-tube also needs to be shut off for the row (step 4).

3. Install Blank Disk
Refer to Figure 113
Clean out meter. See "Meter Clean-Out" on page 99.
Remove seed disk and install blank disk. See "Air-Pro® Meter Disk Installation" on page 80.
Blank disks (part number 817-841C) are essential in row shut-off, both to maintain consistent meter back-pressure to meter pressurization and to prevent wear on a seed disk.
Blank disks are engineered to simulate a seed disk with seed in all pockets. Blanks are particularly important on the rows with sensor lines to the pressure chamber.

4. Close Y-Tubes
Refer to Figure 114
If any shut-off rows are served by a Y-tube, close the gate for the branch to that row. Rotate the valve cap until the indicator/handle is perpendicular to the tubes.
Closing the Y-tube prevents seed from entering an unused hose, reducing waste and simplifying clean-out.
5. 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 115

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

**WARNING**

Crushing and Sharp Object Hazards:

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

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

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Install lift assist cylinder locks. Lower parking stands.
3. Set the down pressure spring cam to zero, per the instructions on page 71.
4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm. This can be done in several ways, including:
   a. use a hoist at the rear of the shank ④
   b. use a jack under the shank extension ⑤

**CAUTION**

Crushing Hazard:

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

Refer to Figure 116

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

**NOTICE**

Certain Machine Damage:

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

*Sharp Object Hazard:*
Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton® Seed Firmer, lower the planter 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 117*

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

To lock up Seed-Lok® wheels:
1. Raise planter. Insert lift assist cylinder locks.
2. Lift Seed-Lok® lock-up handle 1 until lever stop 2 is free to rotate.
4. Push up on Seed-Lok® wheel 4 until wheel arm latches up 5.

To release a locked-up Seed-Lok®:
1. Insert a 1/4in tool drive tip in the tool hole 3 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.

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.
3. While holding the handle up, rotate the raised portion of the lever stop ② under both sides ① of the handle at the arm end. Remove the tool.

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

Optional Keeton® 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 118**

To lock up Keeton® wheels:
1. Raise planter. Insert lift assist cylinder locks.
2. Rotate Keeton® lock-up handle ② 90 degrees down on top of row unit body.
3. Push up on Keeton® wheel ③ until wheel arm latches 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 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 120**

1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 122 on page 86)
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 70.

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 reconfiguring the entire planter. To change the stagger:

Refer to Figure 121

1. Raise the planter and install the lift assist cylinder locks. See “Lift Cylinder Lock-Up” on page 32.
2. Remove the bolt ④, nut ⑤ and lock-washer ⑥ for the left press wheel ⑦.
3. Move the spacer ⑦ and wheel ③ to the forward of the two mounting holes at ⑨.
4. Reinstall 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 ① of the press wheel assembly can be adjusted as follows:

Refer to Figure 122

1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
2. Raise planter and install lift assist cylinder locks. See “Lift Cylinder Lock-Up” on page 32.
3. Loosen the 3/8 inch hex-head bolts ② and ③.

Do not loosen the square-head bolts forward of the hex-head bolts.
4. Turn the hex head cam ④ under the forward hex head jam bolt ⑤, and move the required amount.
5. Tighten both hex head bolts ② and ③.

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.
See also “Row-Pro™ Troubleshooting” on page 164.

### Planting Rate Problems

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

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

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

1. Is the spacing on the ground correct?
   - **No:** Check the ground drive transmission and range sprocket selections, or the population settings on a hydraulic drive unit. See also “Population Too Low” or “Population Too High” in the troubleshooting charts.
   - **Yes:** Go to step 2.

2. Is the reported population \(\frac{3}{8}\) the actual or is the reported population too high by a factor of 2?
   - **No:** Go to step 3.
   - **Yes:** An incorrect row spacing value entered in the seed monitor can cause this. Example: 15 inches instead of 30 inches. Correct the row spacing error on the DICKEY-john® console. The system can also be off by a large factor if incorrect range sprockets are installed. Check seed rate charts against range and transmission sprockets on the planter.

3. Is the population on the screen close to the target population?
   - **No:** Check seed rate charts against transmission sprockets selected. See “Population Too Low” or “Population Too High” in the troubleshooting charts.
   - **Yes:** If slightly under, see “Population Too Low” if slightly over, see “Population Too High”.

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

**Suggested Furrow Check:**

Plant a short distance and dig seeds, or run with the closing wheels wired up to leave an open seed trench. Based on seeds found, determine an average distance between seeds. Compare the distance between seeds to the seed spacing listed in the charts for your population. This is listed as “inches per seed”.

**For use in Canada:**

Consult the “TROUBLESHOOTING & ALARMS” section in the DICKEY-john® Planter/Drill Control User Manual.
# Seed Pool Troubleshooting

Seed pool at shutter prevents back-flow of air, allowing seed to flow from delivery system, filling inlet to top of air release screen. Once inlet is filled to top of air release screen, air flow from delivery system is blocked. No further seed arrives until planting reduces the backlog at the inlet.

<table>
<thead>
<tr>
<th>Normal: Filling</th>
<th>Normal: Filled</th>
<th>Delivery Blockage or Back-flow Starvation</th>
<th>Bridging: Screen</th>
<th>Bridging: Shutter</th>
</tr>
</thead>
<tbody>
<tr>
<td>No action required. Continue Planting.</td>
<td>No action required. Continue Planting.</td>
<td>No seed arriving from manifold. Air flow from manifold. Causes may include:</td>
<td>Oversize matter in seed has caused air back-flow. Causes may include:</td>
<td>A bridge at the shutter is blocking flow. Causes may include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>low fan speed</td>
<td>oversize seed</td>
<td>oversize matter in seed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>seed blockage</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no seed available</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Y-tube closed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>meter never primed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Correct cause of blockage.</td>
<td>1. Close shutter.</td>
<td>1. If shutter was at suggested opening, increase one notch.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Resume planting.</td>
<td>3. Tap on screen cone and inspect.</td>
<td>3. Resume planting.</td>
</tr>
</tbody>
</table>

![Figure 123](image-url)  
Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions
Seed Pool Recovery

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

Refer to Figure 124 (which depicts a recovery after an incidence of bridging at air release screen)

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

Figure 124
Seed Pool Recovery
## Population Troubleshooting Charts

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Low Population</strong></td>
<td>Incorrect seed rate</td>
<td>Check seed rate charts</td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to insufficient air pressure.</td>
<td>Methodically increase the controlled air to the meter. See &quot;Fan and Meter Pressurization Adjustment&quot; on page 64.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to sticky seed treatments not allowing seed to rapidly fill the pockets.</td>
<td>Increase seed lubricant.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to rough field conditions causing seeds to fall from the disks.</td>
<td>Decrease field speed or increase the air pressure in the meter.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to seed pool too low, and seeds are not filling every pocket on the disk.</td>
<td>Open shutter one notch.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to disk speed too high, and pockets are not filling.</td>
<td>Decrease field speed or change to a higher cell count disc.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to singulation (4 tufted) brush too aggressive.</td>
<td>Increase seed lubricant.</td>
<td></td>
</tr>
<tr>
<td>Empty pockets on disk (skips) due to seed too big for pocket.</td>
<td>Select the correct disk for the seed size.</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>
| Air pressure too low, false information driving the DICKEY-john® software. | Compare the air pressure reported on the monitor console to the mechanical gage. If they do not match:  
  - Inspect the 1/4 inch sample lines from the row units up to the sensor chamber for leaks.  
  - Make sure all non-planting rows have blank disks. Re-zero the air pressure with the fan off. |
<p>| Low fan speed: meter starvation due to meter pressurization, leaving insufficient air for seed delivery | Increase fan speed. |
| Leaking meters in split row: meter starvation due to meter pressurization leaving insufficient air for seed delivery | Install blank disks and close shutters on unused rows. |
| Excess field speed | Plant within speed ranges recommended in seed rate charts. |
| Speed sensor angle. | With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations. |
| Pass gaps too large | Check marker extension (page 61). For GPS, check planter size programmed. |
| Actual field size is different | Population may be correct, and calculations are not. |
| <strong>Low Population, One Section</strong> | Clutch slipping, due to contaminants in clutch, or wear | Lock-up clutch (page 41) until it can be overhauled or replaced |
| Skipping chain from drive to section | Check chain slack. Replace worn chain. |</p>
<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 wide - interfering with meter pressurization</td>
<td>Adjust shutter to lower setting.</td>
</tr>
<tr>
<td></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>Y-tube partially or completely closed, reducing bulk flow to meter or causing bridging</td>
<td>Open Y-tube for row</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to bridging at shutter</td>
<td>Readjust for shutter bridging (page 79). If seed is treated, increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to bridging above inlet, caused by low seed delivery air flow</td>
<td>Clear bridge (page 79). Check that seed delivery system is getting sufficient fan air, and that there are no other obstructions upstream.</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 79). Increase seed lubricant.</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, and low chain slack (page 108).</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 100).</td>
</tr>
<tr>
<td></td>
<td>Seed tube plugged</td>
<td>Raise planter, expose bottom of seed tube and clean out.</td>
</tr>
</tbody>
</table>

<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 controlled air to the meter. See &quot;Fan and Meter Pressurization Adjustment&quot; on page 64.</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>Air meter pressure too high due to pressure sensor not zeroed properly.</td>
<td>Re-zero the air pressure with the fan off. Make sure the displayed pressure reads 0.00.</td>
</tr>
</tbody>
</table>
| | Air pressure too high, false information driving the DICKEY-john® software. | Compare the air pressure reported on the monitor console to the mechanical gage. If they do not match:  
• Inspect the 1/4 inch sample lines from the row units up to the sensor chamber for leaks.  
• Make sure all non-planting rows have blank disks.  
• Re-zero the air pressure with the fan off. |
| | False alarms or actual seed rate errors due to monitor setup with incorrect row count, spacing or active rows | When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup. |
| | 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 DICKEY-john® monitor manual. See page 153. |
## Troubleshooting

### Overall High Population (cont.)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doubles due to incorrect disk for crop or seed size</td>
<td>Use recommended disk for crop and seed size.</td>
<td></td>
</tr>
<tr>
<td>Sticky seeds: excess seed treatment</td>
<td>Increase seed lubricant.</td>
<td></td>
</tr>
<tr>
<td>Speed sensor angle.</td>
<td>With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
<td></td>
</tr>
<tr>
<td>Incorrect speed sensor constant</td>
<td>Perform speed calibration per DICKEY-john® monitor manual.</td>
<td></td>
</tr>
<tr>
<td>Overlapping passes</td>
<td>Check marker extension (page 61). For GPS, check planter size programmed.</td>
<td></td>
</tr>
<tr>
<td>Actual field size is different</td>
<td>Population may be correct, and calculations are not.</td>
<td></td>
</tr>
</tbody>
</table>

### High Population, Single Row

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess meter pressurization causing doubles</td>
<td>Check shutter.</td>
<td></td>
</tr>
<tr>
<td>Worn seed-drop brush and/or strip brushes allowing excess seed to pass</td>
<td>Replace worn brushes.</td>
<td></td>
</tr>
<tr>
<td>Incorrect seed disk with higher cell count.</td>
<td>Install correct disk.</td>
<td></td>
</tr>
</tbody>
</table>

### Overall Population Alarms

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<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 planter configuration and monitor setup.</td>
<td></td>
</tr>
<tr>
<td>Incorrect cell count</td>
<td>Replace seed disks with correct disks, or reset rate for current disks (if within range).</td>
<td></td>
</tr>
<tr>
<td>Improper gap on speed sensor.</td>
<td>Check speed sensor on planter for 1/16 inch to 1/8 inch (1.6-3.2 mm) gap from wheel. Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.</td>
<td></td>
</tr>
<tr>
<td>Incorrect speed sensor constant</td>
<td>Perform speed calibration per DICKEY-john® monitor manual.</td>
<td></td>
</tr>
</tbody>
</table>

### Mismatch Between Reported and Furrow Population

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<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 adjustment factor in the DICKEY-john® monitor system to compensate for missed seeds. For example, change the DICKEY-john® Population Adjustment values from 100% to 130% or 140% as needed. Remember to set this back to 100% for large seeds.</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
<tr>
<td>Seeds / revolution value in the DICKEY-john® setup does not match the disk cell count.</td>
<td>Correct the value in a setup screen or install the correct cell count disc.</td>
<td></td>
</tr>
</tbody>
</table>

### Excessive Seed Cracking

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect seed pocket size</td>
<td>Use correct disk for seed.</td>
<td></td>
</tr>
<tr>
<td>Damaged, old or dried-out seed</td>
<td>Use new seed.</td>
<td></td>
</tr>
<tr>
<td>Unclean seed</td>
<td>Use clean seed.</td>
<td></td>
</tr>
</tbody>
</table>

### Skips and Bare Spots After Turns

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<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>
<td></td>
</tr>
</tbody>
</table>
| Insufficient hydraulic flow to keep fan running at speed required to maintain meter pressurization | Check tractor capability against requirements (page 136). If sufficient:  
  • Fold markers before engaging lift.  
  • Use a less aggressive lift rate.  
  • Monitor fan rpm during end-of-pass operations. |
<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to adjust air pressure low enough.</td>
<td>Lower limit reached in DICKEY-john® software.</td>
<td>At User Level 2, reduce the controlled air lower limit in the software.</td>
</tr>
<tr>
<td></td>
<td>Fan speed too high, vane rotated to maximum.</td>
<td>Reduce the fan speed.</td>
</tr>
<tr>
<td>Seed too shallow or scattered on ground from a single row</td>
<td>Bottom of seed tube damaged.</td>
<td>Replace seed tube. Avoid setting planter straight down. Use forward motion when lowering.</td>
</tr>
<tr>
<td></td>
<td>Row not penetrating in tire tracks.</td>
<td>Increase down force on parallel arm springs.</td>
</tr>
<tr>
<td></td>
<td>Opener depth too shallow.</td>
<td>Change side depth wheel setting.</td>
</tr>
<tr>
<td>Twin Rows were timed but became out of time.</td>
<td>Timing will change when a population change has been made.</td>
<td>Re-time meters from the population based timing chart.</td>
</tr>
<tr>
<td></td>
<td>Chain has jumped.</td>
<td>Check sprockets and chain for excessive wear or rusty stuck links.</td>
</tr>
<tr>
<td>System is unable to automatically control air meter pressure.</td>
<td>Signal from air pressure sensor lost. (failed sensor or wiring)</td>
<td>Air pressure may be controlled manually, consult DICKEY-john® Planter/Drill Control manual, User Level 2/3.</td>
</tr>
<tr>
<td>Single row doesn't fill or keep up with other rows.</td>
<td>Y tube is bent/angled off feed pipe.</td>
<td>Loosen pipe and spin so the bend is straight down and Y-tube is not pointing to front or rear of air pipe.</td>
</tr>
<tr>
<td></td>
<td>Drop tube to meter is too long, causing seed to pool and plug hose or Y-tube.</td>
<td>Shorten hose (with planter raised, but row units lowered, to ensure hose is not too short).</td>
</tr>
<tr>
<td>Both rows on one meter outlet low or not keeping up with other rows.</td>
<td>Blockage in air slot in top of airbox.</td>
<td>Clear by using a long skinny tool and taking hose off through hose outlet. It may be necessary to take top off airbox or use side access doors to clear junk from slot.</td>
</tr>
<tr>
<td></td>
<td>Bad hose routing between delivery hose and airbox on wing.</td>
<td>Correct hose routing.</td>
</tr>
<tr>
<td>Multiple rows fail for lack of seed.</td>
<td>Fan speed too high/too low.</td>
<td>Check/adjust fan speed.</td>
</tr>
<tr>
<td></td>
<td>Out of seed.</td>
<td>Add seed.</td>
</tr>
<tr>
<td>Single or multiple hoses plugging just ahead of airbox.</td>
<td>Fan speed too high/too low.</td>
<td>Check/adjust fan speed.</td>
</tr>
<tr>
<td></td>
<td>Possible air leak.</td>
<td>Check for air leak downstream between box and top of meter.</td>
</tr>
<tr>
<td>All rows fail.</td>
<td>Lack of seed.</td>
<td>Fan speed too high. Adjust fan speed.</td>
</tr>
<tr>
<td></td>
<td>Extremely high populations may require slightly reduced field speed.</td>
<td></td>
</tr>
<tr>
<td>1, 2, 3, or more outlets fail.</td>
<td>Foreign matter in seed chamber in bottom of airbox.</td>
<td>Clean out seed chamber.</td>
</tr>
<tr>
<td>Outlets can be side-by-side or random. Plugging may also move from one outlet to another.</td>
<td>Seed treatment sticky.</td>
<td>Add Ezee Glide Plus to seed to dry out seed treatment.</td>
</tr>
<tr>
<td></td>
<td>Treatment mixed unevenly and plugging outlets.</td>
<td>Clean out seed. Re-mix.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Population Alarms</td>
<td>See “Population Troubleshooting Charts” on page 90.</td>
<td></td>
</tr>
<tr>
<td>Excess Seed Remaining</td>
<td>See “Population Troubleshooting Charts” on page 90.</td>
<td></td>
</tr>
<tr>
<td>Excessive gaps between planter passes.</td>
<td>After ruling out population problems, re-check geography.</td>
<td></td>
</tr>
<tr>
<td>Seed Consumption Too High</td>
<td>See “Population Troubleshooting Charts” on page 90.</td>
<td></td>
</tr>
<tr>
<td>Field size different.</td>
<td>After ruling out population problems, re-check geography.</td>
<td></td>
</tr>
<tr>
<td>Excessive gaps between planter passes.</td>
<td>Adjust marker, page 61.</td>
<td></td>
</tr>
<tr>
<td>Rows Not Planted</td>
<td>If not detected by seed monitor, check for plugged row-unit seed tube</td>
<td>Lift planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td>Uneven seed spacing</td>
<td>See “Population Troubleshooting Charts” on page 90.</td>
<td></td>
</tr>
<tr>
<td>Hydraulic meter drive motor rpm too low for reliable control by proportional valve.</td>
<td>1. Increase field speed. 2. Use a seed wheel with lower cell count. 3. Install a low speed kit (page 123).</td>
<td></td>
</tr>
<tr>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
<td></td>
</tr>
<tr>
<td>Unclean seed.</td>
<td>Use clean seed.</td>
<td></td>
</tr>
<tr>
<td>Damaged seed tube</td>
<td>Inspect; repair or replace.</td>
<td></td>
</tr>
<tr>
<td>Seed-Lok® plugging.</td>
<td>Lock up Seed-Lok®, page 84.</td>
<td></td>
</tr>
<tr>
<td>Row-unit discs not turning.</td>
<td>See “Row-unit discs not turning freely” in this Troubleshooting chart.</td>
<td></td>
</tr>
<tr>
<td>Worn/rusted sprockets and/or chain idler or bearings.</td>
<td>Check and replace any worn/rusted sprockets or chain idlers.</td>
<td></td>
</tr>
<tr>
<td>Partially plugged row-unit seed tube.</td>
<td>Lift up planter, expose bottom of seed tube and clean out.</td>
<td></td>
</tr>
<tr>
<td>Lack of proper seed lubrication on seed.</td>
<td>See “Seed Lubricants” on page 121.</td>
<td></td>
</tr>
<tr>
<td>Planter does not fold or unfold fully</td>
<td>Fold cylinders out of phase</td>
<td>Rephase cylinders, refer to page 26</td>
</tr>
<tr>
<td>Air in lines</td>
<td>Bleed fold circuit, refer to page 106</td>
<td></td>
</tr>
<tr>
<td>Uneven seed depth</td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
<td></td>
</tr>
<tr>
<td>Incorrect coulter depth setting.</td>
<td>See coulter manual or set unit mounted coulter.</td>
<td></td>
</tr>
<tr>
<td>Excessive or improper row unit down pressure spring setting.</td>
<td>See 25 series row-units, page 70.</td>
<td></td>
</tr>
<tr>
<td>Damaged seed tubes.</td>
<td>Check seed tubes for damage.</td>
<td></td>
</tr>
<tr>
<td>Seed-Lok® building up with dirt.</td>
<td>Lock up Seed-Lok®, page 85.</td>
<td></td>
</tr>
<tr>
<td>Row-unit not penetrating low spots.</td>
<td>Adjust row-unit, see instructions beginning on page 70.</td>
<td></td>
</tr>
<tr>
<td>Rough planting conditions.</td>
<td>Rework the field.</td>
<td></td>
</tr>
<tr>
<td>Seed firmer not in place and set to correct tension.</td>
<td>See “Seed Firmer Adjustments” on page 84.</td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------</td>
<td>-----------------------------------------------</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>Planter not set to run level from front to rear.</td>
<td>Check tongue height page 22</td>
</tr>
<tr>
<td></td>
<td>Backed up with planter 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 76.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® is plugging row-unit.</td>
<td>Lock up Seed-Lok®, page 85.</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 planter, 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 85.</td>
</tr>
<tr>
<td></td>
<td>Insufficient row unit down-force.</td>
<td>See “Row Unit Down Pressure” on page 70.</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.</td>
</tr>
<tr>
<td></td>
<td>Wheel stagger needs adjustment for conditions</td>
<td>See “Press Wheel Adjustment” on page 85.</td>
</tr>
<tr>
<td></td>
<td>Too wet or cloddy</td>
<td>Wait until drier weather or rework ground.</td>
</tr>
<tr>
<td>Seed blowing out of bulk box door area</td>
<td>Fan too fast.</td>
<td>Slow down fan.</td>
</tr>
<tr>
<td></td>
<td>Seal from airbox to hopper damaged or not adjusted.</td>
<td>Inspect and adjust seal. Seal should be intact, and compress to about 3/16 in. (13mm) under seed container.</td>
</tr>
<tr>
<td>Air lines plugging between air box and Y splitters</td>
<td>Fan too slow.</td>
<td>Speed up fan.</td>
</tr>
<tr>
<td></td>
<td>Air leaks between air box manifold and splitters</td>
<td>Check for leaks and correct as needed.</td>
</tr>
<tr>
<td></td>
<td>Improper hose routing, sags or kinks</td>
<td>With planter unfolded, hoses should for a gentle “S” shape through the holders, with no deep sags.</td>
</tr>
<tr>
<td>Air lines plugging between Y-tube and meter</td>
<td>Sag or kink in air hose.</td>
<td>Check air tube placement in tube mount weldment. If correct, shorten any hose that has stretched due to age.</td>
</tr>
<tr>
<td></td>
<td>Meter is shut off but Y-tube is open.</td>
<td>Shut off Y-tube.</td>
</tr>
<tr>
<td></td>
<td>Air tube assembly not positioned on correct tab.</td>
<td>Move assembly to properly position Y-tubes over row meters.</td>
</tr>
<tr>
<td></td>
<td>Sag in air hose due to incorrect frame height</td>
<td>Raise or lower the tongue so center portion of frame is level with gauge wheel area.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<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 planter with optional Auxiliary Hydraulics, selector valve must be set to Marker for markers to function. Set tractor remote circuit to Neutral or Float before changing valve.</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>Marker disk does not mark</td>
<td>Marker folding linkage does not have enough slack to allow marker disk to drop into field depressions.</td>
<td>Maximum down float should be limited by the slot at the rod end of the marker cylinder, refer to page 61. Reverse marker disk to pull or throw dirt.</td>
</tr>
<tr>
<td>Auxiliary Hydraulics Inoperative</td>
<td>Marker/Fold switch set to Fold</td>
<td>CFM Switch must be set to “Marker” for Aux to function. Set tractor remote circuit to Neutral or Float before switching.</td>
</tr>
<tr>
<td></td>
<td>Marker/Aux valve set to Marker</td>
<td>Selector valve must be set to Aux. Set tractor remote circuit to Neutral or Float before changing valve.</td>
</tr>
<tr>
<td>Hydraulic Hitch Won't Stay Raised</td>
<td>Bypass valve is open at hitch</td>
<td>Close valve.</td>
</tr>
<tr>
<td>Speed Reading Doesn't Match Tractor</td>
<td>Monitor speed reading will only match tractor with planter lowered</td>
<td>If speeds don’t agree during planting (with planter lowered), re-calibrate radar speed sensor with planter lowered. See page 153.</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 and frame sufficiently blocked up when working on implement. You may be severely injured or killed by being crushed under the falling implement.

⚠️ WARNING

High Pressure Fluid Hazard:
Check all hydraulic lines and fittings before applying pressure. 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 planter for several hours, check all bolts to be sure they are tight.
2. Remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
3. Maintain proper air pressure in planter tires.
4. Keep disk scrapers properly adjusted.
5. Clean planter on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
6. Lubricate areas listed under “Lubrication” on page 112.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.
Material Clean-Out

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

A complete system clean-out is a 3 step process.
A. Empty airbox (and hopper, if desired).
B. Blow residual seed to meters.
C. Clean out meters with fan running.

CAUTION

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

Air Box Clean-Out

1. Place a tarp or large container under the air box clean-out doors.

Refer to Figure 125

2. Close the slide gates 1 on the hopper or bulk boxes.
3. Open air box clean-out doors.
4. If hoppers are mounted, gradually open hopper slide gates. Leave bulk seed box gates closed, unless the boxes actually need to be emptied.

   Use gates to regulate seed flow while recovering seed.

5. As flow subsides, rapidly open and close the slide gate to dislodge seed in the tracks. Tap on the sides of the hopper to dislodge residual seed.

Air System Clean-Out

Refer to Figure 126 (which also depicts the meter with the rain cover and disk removed - do not remove disk until step 14)

6. Close slide gates.
   Close air box clean-out doors.
7. Set all seed inlet shutters to closed (handle 2 fully raised to the position above setting “I”).

   This step prevents meter pressurization air from leaking back against seed delivery air at meters that have low seed pools or are empty.

WARNING

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

▲ A hopper that is full or merely appears full can be an entrapment hazard. You can sink entirely into the grain, or into an oxygen-deficient void, and suffocate in a matter of seconds. Grain bridges and crusts are especially dangerous.
▲ When hazardous fumes are present, you can be quickly overcome even with the hopper lid open.
▲ Do not enter a hopper for material loading, material unloading, hopper cleaning or meter maintenance.
▲ Clean hopper by power washing from outside hopper top.
Refer to Figure 127

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

9. Turn on the air fan and let it run. Use the “SPLIT AIR -” softkey⁴ to reduce the regulated air pressure to a low value, 1in water or less - this diverts most of the air to the bulk seed delivery system.

Reduce fan speed as necessary to obtain a low meter pressurization.

Clean out meters with fan running. Work from one side of the planter to the other.

Meter Clean-Out

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

Refer to Figure 128

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

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

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

Funnel Conversion

Materials and tools needed:

- A length of 13/8 inch I.D. hose
- A worm drive clamp with a working diameter of approximately 13/8 to 2 1/4 inch
- A hacksawb with fine-toothed blade

Trim the sump ² from the funnel. Slide the hose ³ fully onto the funnel tip. Secure with clamp ⁴ (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.

---

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

b. The funnel wall is thin ABS. Scissor-type pipe-cutting tools may fracture it. Rotary-type pipe cutting tools may slip off.
Refer to Figure 129

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

10. Close the seed inlet shutter on the meter (page 78). This minimizes the seed volume at disk removal.
11. Remove the rain cover (page 78). The funnel cannot be snapped in place with the cover installed.
12. 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.
13. Rotate the funnel forward until the slot at lip center engages a tab on the bottom center of the meter housing.
14. Remove the seed disk (page 81).
15. Slowly open the seed shutter (page 78) to empty the seed up to the Y-tube or wing tube.
16. If the air system is running (and Y-tube open), there may be more seed than the funnel can hold (as a container). Use the shutter to turn seed flow off, and empty funnel.

Refer to Figure 130

17. Clean seed from all brushes (shop vac recommended).
18. Inspect brushes (page 101).
19. Rotate funnel clockwise, remove and empty.
20. For imminent operations:
   Install next seed wheel or blank disk (page 82) for operations. Set inlet shutter for next seed (page 78).
21. For storage:
   Close seed inlet shutter. Leave disk out.
   Close Y-tube (if any).
22. Reinstall rain cover (page 78).

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.
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 131**

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 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 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 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 (401-626P) for current replacement part numbers.

*Refer to Figure 132*

**Tufted Brush Replacement**

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

**Strip Brush Replacement**

Do not loosen or remove any of the three 5/16-18 cap screws (15) retaining the brush holder.

1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps (13). Turn each snap clockwise to release brush holder (14).
2. Prepare to catch drop brush (18) (which will fall lose). Slide brush holder left and up to free front edge from under washer (17). Remove brush holder.
3. Remove used strip brushes from the holder by sliding them downward out of the grooves.

*Refer to Figure 133*

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

*Refer to Figure 132*

5. Check strip brush positioning with a trial reinsertion of the brush holder. The ends of the long brush must fit snugly into meter housing grooves at top (18) and lower rear (20). The bottom end of the short brush must fit snugly in the lower front housing groove (19). 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, reposition the drop brush (see below), and re-seat the brush holder.
7. Starting with the bottom snap, swing snaps (13) back into engagement.

**Seed Drop Brush Replacement**

*Refer to Figure 132*

1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps (13). Turn each snap clockwise to release brush holder (14).
2. Prepare to catch drop brush (18) (which will fall lose). Slide brush holder left and up. Remove drop brush.
3. Position new drop brush so that it is flat against back of meter housing, and under ridges on leading edge of brush holder.
4. Slide holder forward/down to engage drop brush. Swing lower, then upper snap into engagement.
Seed Disk Maintenance

Refer to Figure 134

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

Replace disks for conditions including:

- Chips at circumference ③. These will leak air.
- Chips at edges or in sculpted surfaces of cell pockets ④. These can leak air and/or adversely affect singulation.
- Cracks over 2 inch (5 cm) long in the working face ⑤ 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 80) 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

⚠️ CAUTION

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

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

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

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

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

Refer to Figure 135 and Figure 136 (Figure 135 depicts a partially and a completely plugged agitation port, and build-up in the RH plenum chamber)

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

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

1. Spot the planter at a suitable location for clean-out and follow the parking instructions (page 56).
2. If seed is loaded, close the slide gate for the hopper or bulk seed box (page 98).
3. Set out a tarp for recovery of any expected seed still in the airbox. Open the airbox clean-out door ①.
4. Remove the inspection port covers from each end of the airbox (not shown in figures).
5. Use an indelible marker to identify the hoses on seed hose ports ① through 16. Disconnect the clamps and hoses.

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

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

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

Hydraulics

**WARNING**

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

Only trained personnel should work on system hydraulics!

**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.

Hydraulic Drive Maintenance

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

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

**To change the element:**

Refer to Figure 137

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

Refer to Figure 138

5. Reset pop-out indicator if necessary.

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

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

**NOTICE**

Marker Maintenance

**Marker Shear Bolt Replacement**

Refer to Figure 139

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt at the fold, pivot on a pin, and swing back.

The shear bolt is a hex head cap screw, 3/8-13 x 23/8 inch Grade 5, Great Plains part number 802-130C, plus a 3/8-13 lock nut, Great Plains part number 803-019C.

Install a replacement shear bolt on the vertical faces on the side opposite from the pivot bolt.

**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.

**NOTICE**

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

To check and adjust wing alignment:


Refer to Figure 140 and Figure 141

2. Select a common reference point that is easy to access at the wing-end and center section end row units, such as the back of the press wheel assembly ①. On a twin-row planter, align using only the rear units.

3. Check for proper alignment by running a string line across back of planter toward outer ends of wings. For proper alignment, outside ends of wings ② should be 0 to 1/4 inches ahead of inside ends of wings at center section ③.

4. To adjust wing alignment, shorten or lengthen eye bolts ④ to change the length of the wing pull bar. Adjust eye bolts in or out until dimension ② is 0 to 1/4 inches (6.4 mm) greater than dimension ③.

5. Be sure both wings are adjusted equally or the planter will tend to pull sideways behind the tractor.

Figure 140 Alignment Reference Point

Figure 141 Wing Alignment
**Chain Maintenance**

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

See also “Chain Routing” on page 145.

**Chain Slack**

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

*Refer to Figure 142, which, for clarity, greatly exaggerates slack, and omits the idlers.*

1. Measure the span ① for allowable slack:
   Locate the longest span of each chain (usually the span which does not run through the idlers).

2. Determine the ideal slack:
   - Long chains (over 36 in. / 91cm): 1/4 in. per foot
   - Vertical short chains: 1/4 in. per foot (2.1 cm/m)
   - Horizontal short chains: 3/8 in. per 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 143 (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 144 (which depicts planter raised)*

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

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

Check that idler spring length ⑤, measured from outside of pin to outside of pin, is not shorter than:
   7.0 inches (17.8 cm)

Lift spring off idler assembly ④. Check that idler assembly pivots freely. Reattach spring.

Check chain clip orientation. Check chain routing at shank idler(s) ⑤ (see page 145).
Disc Spreaders and Scrapers

Refer to Figure 145

1. Remove side gauge wheels from arms to access row-unit discs and scrapers.
2. With the unit raised, check blade spreader ① for wear. Replace spreader if it is 3/16 in. (13 mm) wide or narrower. To replace, remove disc blade ②, drive out roll pins ③, and install new spreader.
3. When reinstalling disc blades, put two shim washers ④ between bearing and shank on each blade. Tighten bolts.
   - You may need fewer inside shim washers on worn discs.
4. Check that outside disc scrapers ⑤ are formed to disc blades to help remove any mud. Bend and twist scrapers to fit blades as necessary. After every 200 acres (80 hectares) of operation, check outside scrapers for proper adjustment and wear. Replace outside scrapers as necessary.

25 Series Row-Unit Side Wheels

Figure 146

1. Lift opener side wheel off the ground. Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.
2. The side wheels are preset at the factory. However, because of normal wear it may become necessary to make adjustments so the wheel remains close to the disc. Loosen clamp bolt ⑪ and slide arm ⑫ inward to take up gap between side wheel and disc blade. If more adjustment is needed, continue at step 3.
3. Remove bolt ⑬ and wheel ⑭. Remove shims ⑮ from the inside of wheel and place them on the outside of wheel ⑯. 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 ⑰ from unit. Remove bushing ⑱ from sleeve ⑲ and check for wear. If necessary, replace bushing.
5. When reinstalling side gauge wheels, align tab on hex adjustment ⑳ with notch in bushing. Replace bolt and tighten.
6. Adjust side gauge wheels. See “Side Gauge Wheel Adjustment” on page 76.
Fertilizer System Maintenance

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

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

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

Liquid Fertilizer Strainer

Refer to Figure 147

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

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

In Season Filter Cleaning

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

End of Season Filter Cleaning

1. Load 10 to 15 gallons (40 to 60 liters) of clean water in each supply tank.
2. Pump most of it through the system. If doing this by hand-turning the ground drive wheel, first install the largest drop-line orifice size, and set the pump adjuster to maximum, to increase flow.
3. With valves open, remove the canister. Clean strainer and canister.
4. Drain tanks and lines. Remove boom end-caps to drain wings.
5. Reinstall strainer and canister.
6. Add 2 pints (1 liter) of RV antifreeze to each tank. Pump until tank is just empty (which leaves some fluid in strainer).
7. Open supply line above pump inlet. Introduce RV antifreeze, and operate pump until pump is filled.

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.

Equipment Damage Risk:
Do not leave fertilizer or fertilizer residue in pump. Do not allow air to enter pump. Even for short periods of storage, the entrance of air into the pump causes RAPID and SEVERE CORROSION.
Seed Flap Replacement (S/N B1002E+)

Refer to Figure 148

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

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

Seed Flap Replacement (S/N B1001E-)

Refer to Figure 149

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

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

**Wing Casters: Parallel Arms**

8 zerk; 1 each end of each arm, each wing  
Type of Lubrication: Grease  
Quantity: Until Grease emerges

**Wing Casters: Lift Cylinder Ends**

4 zerk; one each end of each cylinder, each wing  
Type of Lubrication: Grease  
Quantity: Until Grease emerges

**Wing Casters: Pointing Cylinders**

2 zerk; one each rod end of each cylinder, each wing  
Type of Lubrication: Grease  
Quantity: Until Grease emerges
Marker Joints

6 zerks; 3 each marker, each wing
Type of Lubrication: Grease
Quantity: Until Grease emerges

Wing Frames

2 zerks; one each wing at wing-frame to tool bar joint
Type of Lubrication: Grease
Quantity: Until grease emerges

Rockshaft to Frame

2 zerks; one each wheel set
Type of Lubrication: Grease
Quantity: Until grease emerges
Rockshaft to Link Arm

2 zers; pin outside end, each link
Type of Lubrication: Grease
Quantity: Until grease emerges

Lift Cylinders: Rod End

2 zers, one each inside end of pins, each side
Type of Lubrication: Grease
Quantity: Until grease emerges

Center Links: Aft End

2 zers; pin outside end, each link
Type of Lubrication: Grease
Quantity: Until grease emerges
**Caster Pivots**

2 zerks, one each inside end of tool bar, each side
Type of Lubrication: Grease
Quantity: Until grease emerges

**25 Series Side Wheel Bushing**

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

**Ground Drive Fertilizer Pump (option)**

4 chains, 2 each side
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.
Hydraulic Drive Chains

As Required

4 chains in mainframe center section
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.

Meter Drive Chains

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.

Frame-Mounted Coulter (optional) Hub

20

Type of Lubrication: Grease
Quantity = Until grease emerges

Unit-mount coulter bearings are sealed, and require no lubrication or repack.
Frame-Mounted Coulter (option) Pivot

<table>
<thead>
<tr>
<th>20</th>
</tr>
</thead>
</table>
1 zerk each swivel mount casting  
Type of Lubrication: Grease  
Quantity = Until grease emerges

Wing Casters: Pivot

<table>
<thead>
<tr>
<th>50</th>
</tr>
</thead>
</table>
2 zerk; one each wing  
Type of Lubrication: Grease  
Quantity: Until grease emerges

It may be necessary to unfold the planter, place the wing caster locks in FIELD configuration, and move the planter a short distance to engage the lock, and move the indicator arm down enough to provide access to the zerk.

Hitch Parallel Arms

<table>
<thead>
<tr>
<th>50</th>
</tr>
</thead>
</table>
(Hydraulic Tongue only)  
4 zerks, 1 each end of each arm  
Type of Lubrication: Grease  
Quantity: Until grease emerges

Tongue Latch

<table>
<thead>
<tr>
<th>50</th>
</tr>
</thead>
</table>
Type of Lubrication: Spray lube  
Quantity: Coat working surfaces
Tongue Slide Roller

1 zerk; roller end
Type of Lubrication: Grease
Quantity: Until grease emerges

Wing Transfer Drive Shafts

8 zerk, 4 each side:
2 two each outer shaft sleeve
2 one each of 2 universal joints
Type of lubrication: Grease
Quantity = Until grease emerges (joints)
Quantity = 6 pumps (shafts)

Wing Fold Cylinders: Rod End

2 zerk, one each inside end of pins, each side
Type of Lubrication: Grease
Quantity: Until grease emerges

Row Cleaner Bearings

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.
Wing Casters: Wheel Hubs

| 50 |

4 bearings; 2 each wing
Type of Lubrication: Grease
Quantity: Repack

Markers: Disk Hub

| Seasonal |

4 bearings; 2 each marker
Type of Lubrication: Grease
Quantity: Repack

Transport Wheels: Wheel Hubs

| Seasonal |

8 bearings; 2 each of 4 wheels
Type of Lubrication: Grease
Quantity: Repack
Gauge Wheel Bearings

4 bearings, 2 each side
Type of Lubrication: Grease
Quantity = Repack
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.

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

⚠️ **CAUTION**

**Dust and Explosion Hazard:**

Avoid exposure to dust when mixing this powder into seed. Avoid creating dust in any confined space with ignition sources present, as specific concentrations can be explosive. Consult the instruction booklet and SDS\(^a\) for further cautions.

---

\(a\)  SDS: Safety Data Sheet, formerly Material Safety Data Sheet (MSDS).
Options

82 Bushel Seed Hoppers

82 bu. (2890 liter) hoppers may be purchased with the YP2425A Planter or added later. Only the 82 bu. size is supported on the YP2425A Planter. Left and right refer to the side of the planter and the side hopper with the lid hinge, allowing convenient access from the walkboard.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>pair of 82 bu. Bulk Hoppers</td>
<td>403-227A</td>
</tr>
<tr>
<td>right 82 bu. Bulk Hopper</td>
<td>403-143K</td>
</tr>
<tr>
<td>left 82 bu. Bulk Hopper</td>
<td>403-226K</td>
</tr>
</tbody>
</table>

The 82 bu. hoppers have no prerequisites on the planter, but you will need a means of top-loading seed when the hopper is mounted on the seed box. This hopper is usually too heavy to be safely fork-lifted onto the planter if already pre-loaded with seed.

For operations, see: “Trailer Operations” on page 51.

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 / 18.9 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>

For use, see “Seed Lubricants” on page 121.

Hydraulic Tongue

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

<table>
<thead>
<tr>
<th>Option Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factory-Installed, all except 24-row</td>
<td>401-429A</td>
</tr>
<tr>
<td>Field-Installed, all except 24-row</td>
<td>401-430A</td>
</tr>
<tr>
<td>Factory-Installed, 24-row</td>
<td>401-482A</td>
</tr>
<tr>
<td>Field-Installed, 24-row</td>
<td>401-483A</td>
</tr>
<tr>
<td>Category 5 Hitch Adapter Kit</td>
<td>170-072A</td>
</tr>
</tbody>
</table>
Weight Transfer System

This option provides two cylinders and a control valve that transfer up to 1000 pounds (450 kg) of mainframe weight to each wing.

<table>
<thead>
<tr>
<th>Option Package</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP24A WEIGHT TRANSFER</td>
<td>411-179A</td>
</tr>
</tbody>
</table>

This option is factory-installed if ordered with the planter (feature code 70). See page 47 for operation.

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 inch (44.5 mm) 20-spline shaft, or
- 1 3/8 inch (35 mm) 21-spline shaft.

Order one kit and one coupler.

<table>
<thead>
<tr>
<th>Kits and Couplers</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP24A PTO KIT</td>
<td>401-944A</td>
</tr>
<tr>
<td>For model YP2425A</td>
<td></td>
</tr>
<tr>
<td>1 3/4-20 PTO COUPLER</td>
<td>826-777C</td>
</tr>
<tr>
<td>1 3/8-21 PTO COUPLER</td>
<td>826-778C</td>
</tr>
</tbody>
</table>

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

Low Speed Kit

Combinations of narrow row spacings, high cell count or fingers per revolution, low populations and/or low field speed can result in the hydraulic seed meter motor operating at an rpm too low for consistent control by the proportional valve.

If the remedies in the Troubleshooting chart (page 94) are not available, order a low speed kit to replace the standard motor output sprocket with one having fewer teeth that increases motor speed by 160%.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP30,40,44,24 LOW SPEED DRIVE</td>
<td>402-520A</td>
</tr>
</tbody>
</table>

See “402-520A Low Speed Kit Installation” on page 156.
Markers
Markers are a standard factory-installed feature on the YP2425A Planter, but may be optionally deleted (line item 113-486A), for example, if all planting is done via GPS navigation.
If any possible future planting (or resale considerations) might require markers, do not delete them from the initial YP2425A Planter order.

Trailer Hitch Weldment
This a accessory provides a 20 ton pintle hook intended for use with either the PFC1600 or PFC2000 tank carts.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trailer Hitch Weldment</td>
<td>401-467A</td>
</tr>
</tbody>
</table>

When installed, the lower swing-down section of the walkboard ladder is replaced by steps integrated into the hitch weldment.

The trailer hitch weldment is not required (and is incompatible with use of) a semi-mounted fertilizer cart, such as SML-500, -735 and -1000.

Fertilizer Carts
Semi-Mounted Fertilizer Carts
The SML tank carts were designed for use with the Type 2 fertilizer manifold. These carts require a planter-mounted Ground Drive Fertilizer pump (purchased separately), but do not require a planter rear pintle hitch weldment. The carts include 2-point quick-hitch hardware for attaching to the rear seed cart cross-tube.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1035 gallon (3900 liter) Tank Cart</td>
<td>SML-1000 (mid left)</td>
</tr>
<tr>
<td>735 gallon (2800 liter) Tank Cart</td>
<td>SML-735 (upper right)</td>
</tr>
<tr>
<td>510 gallon (1900 liter) Tank Cart</td>
<td>SML-500 (bottom)</td>
</tr>
</tbody>
</table>

Use of either tank with the Planter requires at least one Fertilizer Manifold system and a planter-mounted Ground Drive Fertilizer pump (both ordered separately).
Hydraulic Drive Fertilizer Pump
One pump kit integrates with the Type 2 fertilizer manifold system. The pump mounts on the mainframe (for use with optional planter tanks) or on an optional SML fertilizer cart.

<table>
<thead>
<tr>
<th>Option Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SML FERT CART HYD DRV</td>
<td>417-489A</td>
</tr>
</tbody>
</table>

Pump kit 417-489A is factory-installed if ordered with the cart.

Ground Drive Fertilizer Pump
One or two pump kits integrate with the Type 2 fertilizer manifold system. They are mounted on the wing tool bars. Typical starter fertilizer applications require only one pump. A second pump is necessary at and above 20 gallons per acre.

<table>
<thead>
<tr>
<th>Option Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Drive Fertilizer Pump Kit</td>
<td>407-213A</td>
</tr>
<tr>
<td>Second Pump Kit</td>
<td>407-218A</td>
</tr>
</tbody>
</table>

These pumps are for use with an SML cart or the 400 gallon tank on the PFC2000 cart. Point-row operations are not supported. Pumps operate whenever the row units are lowered. See the Seed Rate manual for use.

Fertilizer Manifolds
The Planter supports either/both of optional “wet” fertilizer distribution systems for fertilizer application.

The Type 3 boom is separately plumbed for each of the 3 planter sections, and relies on an off-planter pump.

The Type 2 boom has a single inlet, and is optimized for use with a ground drive pump on each wing. The Type 2 boom may also be used with off-planter pumps.

Boom systems are factory-installed. All booms have the same number of outlets. Unused outlets are capped on wider row spacings.

An optional ground-drive fertilizer pump is available for the Type 2 system. The Type 3 system relies on a pump at the supply tank.

Both systems rely on off-planter tank systems separately provisioned. The Trailer Hitch Weldment is also required with either fertilizer system. For operations, see the Seed Rate manual.
Manifold Selection

Type 2 Fertilizer Manifold

The Type 2 system includes all plumbing from the bulkhead at the rear hitch weldment to the row unit drop lines. The boom systems are separate for each wing.

<table>
<thead>
<tr>
<th>Description</th>
<th>Initial Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Fertilizer Manifold Kit</td>
<td>407-215A</td>
</tr>
</tbody>
</table>

The system does not include, and requires:

- pump(s), such as:
  - 417-489A hydraulic pump for SML cart (page 125), or
  - 407-213A Ground Drive pump (page 125, one on each wing)
- tank for low-rate fertilizer, such as an SML

Type 3 Fertilizer Manifold

The Type 3 system includes all plumbing from the bulkhead at the hitch weldment to the row unit drop lines. The boom system has separate connections and sections for each planter section (left, center, right), and is compatible with point-row operation.

<table>
<thead>
<tr>
<th>Description</th>
<th>Initial Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 3 Fertilizer Manifold Kit</td>
<td>407-138A</td>
</tr>
</tbody>
</table>

The system does not include, and requires:

- pump, often provided by the tank cart
- 401-467A trailer hitch weldment (page 124)
- user-provisioned tank, pump and manifold.

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>Great Plains Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>832-052C</td>
</tr>
<tr>
<td>28</td>
<td>832-056C</td>
</tr>
<tr>
<td>34</td>
<td>832-053C</td>
</tr>
<tr>
<td>48</td>
<td>832-054C</td>
</tr>
<tr>
<td>59</td>
<td>832-057C</td>
</tr>
<tr>
<td>80</td>
<td>832-055C</td>
</tr>
<tr>
<td>98</td>
<td>832-059C</td>
</tr>
</tbody>
</table>
VeriFlow Nozzles
To eliminate the need to change orifice plates, you can replace the standard Great Plains nozzles with SprayTarget VeriFlow nozzles. These contain a spring-loaded regulator that provides consistent back-pressure over a wide range of rates and pressures. Great Plains offers two models of VeriFlow nozzles:

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOZZLE HI-VERIFLOW1</td>
<td>829-143C</td>
</tr>
<tr>
<td>(0.25 to 2.8 gpm at 15 to 60 psi)</td>
<td></td>
</tr>
<tr>
<td>NOZZLE VERIFLOW1</td>
<td>829-144C</td>
</tr>
<tr>
<td>(0.15 to 1.5 gpm at 15 to 60 psi)</td>
<td></td>
</tr>
</tbody>
</table>

Order one nozzle per active boom clamp.

High-Rate Dribblers
For use only with 25 Series openers.
Dribblers apply liquid fertilizer slightly to the side of the closed furrow behind the press wheel. Dribblers are available in left and right hand offsets, for use on twin rows. Order one dribbler per row.

<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>
Frame-Mounted Row Options

Terra-Tines

These row cleaners are available as frame-mounted, either attached to frame-mounted Vantage-I coulters or stand-alone. Each part number outfits an entire planter:

<table>
<thead>
<tr>
<th>Coulter-Mounted Terra-Tine Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2340, YP2425A-2470</td>
<td>204-638A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-645A</td>
</tr>
<tr>
<td>YP2425A-4715</td>
<td>204-656A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stand-Alone Terra-Tine Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2340, YP2425A-2470</td>
<td>204-195A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>207-199A</td>
</tr>
<tr>
<td>YP2425A-4715</td>
<td>204-203A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>207-191A</td>
</tr>
</tbody>
</table>

For operations, See "Terra-Tine™ Adjustments" on page 67.

Frame-Mounted (Zone) Coulters

Vantage I Coulters

These frame-mounted coulters may be used with or without the Vantage-I fertilizer applicator. Use with Vantage-I requires one or both Fertilizer Manifolds. Each part number outfits an entire planter.

Frame-Mounted Coulter Only

<table>
<thead>
<tr>
<th>15in Fluted Blade Packages</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2340, YP2425A-2470</td>
<td>204-635A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-642A</td>
</tr>
<tr>
<td>YP2425A-4715, on every row</td>
<td>204-651A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30 inch rows</td>
<td>204-653A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15in Turbo Blade Packages</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2340, YP2425A-2470</td>
<td>204-636A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-643A</td>
</tr>
<tr>
<td>YP2425A-4715, on every row</td>
<td>204-652A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30 inch rows</td>
<td>204-654A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

Frame-Mounted Vantage I Coulters

<table>
<thead>
<tr>
<th>17in Blade Packages</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2340, YP2425A-2470</td>
<td>204-637A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-644A</td>
</tr>
<tr>
<td>YP2425A-4715</td>
<td>204-635A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>204-658A</td>
</tr>
</tbody>
</table>

No combination of unit mounted and frame mounted attachments may be mixed.
Smart Box Mounting Kit

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

<table>
<thead>
<tr>
<th>Planter Model</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430 (30 in single)</td>
<td>403-218A</td>
</tr>
<tr>
<td>YP2425A-2470 (70 cm single)</td>
<td></td>
</tr>
<tr>
<td>YP2425A-3620 (20 in single)</td>
<td>403-219A</td>
</tr>
<tr>
<td>YP2425A-4715 (15 in single)</td>
<td>403-218A</td>
</tr>
<tr>
<td>YP2425A-48TR (30 in twin)</td>
<td>403-220A</td>
</tr>
</tbody>
</table>

Mounting kits include brackets only. SmartBoxes, with additional mounting hardware specific to the Planter, must be ordered from AMVAC. SmartBoxes are field-installed.
Unit-Mounted Row Options

Row-Pro™

Row-Pro™ adds a pneumatic cylinder to each row unit, supplement the down-pressure springs. Under control of the DICKEY-john® IntelliAg® seed monitor, the included air system make real-time adjustments to row down force. This has several benefits:

- consistent down-force in varying field conditions;
- the ability to set force levels anywhere in the row's range (and not just at cam notch values); and,
- the ability to vary the force from the tractor cab (by about one cam notch: ±50 pounds, ±23 kg).

No need to stop and manually reset all 24 cams.

Row-Pro™ is presently available only as a factory-installed option with the original planter order.

<table>
<thead>
<tr>
<th>Description</th>
<th>Option</th>
<th>Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROW-PRO YP24</td>
<td>60</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Swath Command™

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

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

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Option</th>
<th>Field Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRU-COUNT YP24 48-ROW</td>
<td>57</td>
<td>402-385A</td>
</tr>
<tr>
<td>TRU-COUNT YP24 47-ROW</td>
<td>57</td>
<td>402-386A</td>
</tr>
<tr>
<td>TRU-COUNT YP24 24-ROW</td>
<td>57</td>
<td>402-387A</td>
</tr>
<tr>
<td>TRU-COUNT YP24 36-ROW</td>
<td>57</td>
<td>402-388A</td>
</tr>
</tbody>
</table>

The system includes:

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

The system does not include, but also requires:

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

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

Optional unit-mount disk coulters are available with 15 inch (38.1 cm) fluted blades, 15 inch turbo blades or 14 inch (35.6 cm) straight blades. If you need complete coulters, with unit mount and blade, the selection includes:

<table>
<thead>
<tr>
<th>15in Fluted Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, YP2425A-2470</td>
<td>204-632A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-639A</td>
</tr>
<tr>
<td>YP2425A-4715, on every row</td>
<td>204-646A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30-in rows</td>
<td>204-648A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>204-629A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15in Turbo Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, YP2425A-2470</td>
<td>204-633A</td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td>204-640A</td>
</tr>
<tr>
<td>YP2425A-4715, on every row</td>
<td>204-647A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30-in rows</td>
<td>204-649A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td>204-630A</td>
</tr>
</tbody>
</table>

Coulter Blades

Replacement and alternate coulter blades include (qty. 1 per row unit):

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

For operations, see: “Coulter Adjustments” on page 73.
Row Cleaners
Optional Martin row cleaners are unit-mounted, using either a coulter disk mounting bracket (1), with or without a disk, or "stand-alone", using a unit-mount assembly (2).
Twin-Row planters support only single-wheel unit-mounted row cleaners, in alternating left/right cleaner hub orientations.

<table>
<thead>
<tr>
<th>Single-Wheel, Coulter-Mount</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, YP2425A-2470</td>
<td></td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td></td>
</tr>
<tr>
<td>YP2425A-4715</td>
<td></td>
</tr>
<tr>
<td>YP2425A-48TR, on every row</td>
<td>207-188A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Double-Wheel, Coulter-Mount</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, on every row</td>
<td>207-192A</td>
</tr>
<tr>
<td>YP2425A-3620, on every row</td>
<td>207-196A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30-in rows</td>
<td>207-200A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single-Wheel, Stand-Alone</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, YP2425A-2470</td>
<td></td>
</tr>
<tr>
<td>YP2425A-3620</td>
<td></td>
</tr>
<tr>
<td>YP2425A-4715</td>
<td></td>
</tr>
<tr>
<td>YP2425A-48TR, on every row</td>
<td>207-189A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Double-Wheel, Stand-Alone</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425A-2430, on every row</td>
<td>207-194A</td>
</tr>
<tr>
<td>YP2425A-3620, on every row</td>
<td>207-198A</td>
</tr>
<tr>
<td>YP2425A-4715, on 30-in rows</td>
<td>207-202A</td>
</tr>
<tr>
<td>YP2425A-48TR</td>
<td></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>2(\frac{3}{8}) in. (6.4 cm) Gauge wheel scraper</td>
<td>404-194D</td>
</tr>
<tr>
<td>3 in. (7.6 cm) Gauge wheel scraper</td>
<td>404-195D</td>
</tr>
<tr>
<td>4 in. (10.2 cm) Gauge wheel scraper</td>
<td>404-196D</td>
</tr>
</tbody>
</table>

The scrapers mount on the bottom rear of the depth wheel arm, using the 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 77.
Seed Meter Disks

Air-Pro® Meters accept a variety of seed disks, each optimized for specific seeds, plus a special blank disk for row shut-off. Disks are simple to change. Choices include:

<table>
<thead>
<tr>
<th>Meter Disks</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank, 0 Cell</td>
<td>817-841C</td>
</tr>
<tr>
<td>Canola, 150 Cells</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>Edible Bean, 60 Cell (Medium)</td>
<td>837-065C</td>
</tr>
<tr>
<td>Edible Bean, 56 Cell (Large)</td>
<td>817-967C</td>
</tr>
<tr>
<td>Industrial Hemp, 5 Cell</td>
<td>837-364C</td>
</tr>
<tr>
<td>Industrial Hemp, 30 Cell</td>
<td>837-386C</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, 24 Cell (Large)</td>
<td>817-851C</td>
</tr>
<tr>
<td>Sunflower, 60 Cell (Medium)</td>
<td>837-235C</td>
</tr>
<tr>
<td>Sunflower, 60 Cell (Small)</td>
<td>837-234C</td>
</tr>
<tr>
<td>Volumetric No. 1, 84 Cell</td>
<td>817-867C</td>
</tr>
</tbody>
</table>
Clean-Out Container
One container is provided with the planter. 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>


Seed Tube Brush
One brush is provided with the planter. 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 100.

Seed Firmer
The base YP2425A Planter requires a choice of row unit bundles which include one of three firmers: seed flap, Keeton®, or Keeton®. Only one type of seed firmer may be installed at the same time.

Seed-Lok® Seed Firmer

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

For operations, see: “Seed Firmer Adjustments” on page 84.

Keeton® Seed Firmer

The Keeton® seed firmer supports low-rate fertilizer delivery. For this use, an optional fertilizer system (page 125) must also be installed.

<table>
<thead>
<tr>
<th>Meters</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 84.
Row Unit Press Wheels

The base Yield-Pro® planter includes a choice of press wheels. Additional wheels are available, and all may be field-installed.

This manual does not list kit part numbers as the available wheels are often region-specific. Consult your Great Plains dealer.

For operations, see:
“Press Wheel Adjustment” on page 85.
## Appendix A - Reference Information

### Specifications and Capacities

#### Specifications/Capacities, North America

<table>
<thead>
<tr>
<th>Model</th>
<th>YP2425A-2430</th>
<th>YP2425A-3620</th>
<th>YP2425A-4715</th>
<th>YP2425A-48TR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Count</strong></td>
<td>24</td>
<td>36</td>
<td>47</td>
<td>48 (24 twin)</td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>30 in.</td>
<td>20 in.</td>
<td>15 in.</td>
<td>30 in.</td>
</tr>
<tr>
<td><strong>Working Width</strong></td>
<td>68 ft. 10 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Span</strong></td>
<td>690 in.</td>
<td>700 in.</td>
<td>690 in.</td>
<td>698 in.</td>
</tr>
<tr>
<td><strong>Swath</strong></td>
<td>720 in.</td>
<td>720 in.</td>
<td>705 in.</td>
<td>720 in.</td>
</tr>
<tr>
<td><strong>Seed Capacity</strong></td>
<td>Optional 820 bu hoppers or PROBOX® 50 unit bulk seed container</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Width</strong></td>
<td>15 ft. 3 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working length</strong></td>
<td>38 ft. 4 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Length</strong></td>
<td>51 ft. 4 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working Height</strong></td>
<td>51 ft. 7 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Height</strong></td>
<td>12 ft. 1 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ground Clearance</strong></td>
<td>21 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Minimum Tractor Requirement</strong></td>
<td>280 - 310 hp</td>
<td>350 - 370 hp</td>
<td>410 - 430 hp</td>
<td>410 - 440 hp</td>
</tr>
<tr>
<td><strong>Hitch</strong></td>
<td>3-Point Hydraulic Tongue Optional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic Circuits Required</strong></td>
<td>Closed-Center, 4 Remotes, 2800 psi, 40 to 45 gallon/min.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em><em>Weight</em> (empty, base configuration)</em>*</td>
<td>18420 lb</td>
<td>23440 lb</td>
<td>23440 lb</td>
<td>23650 lb</td>
</tr>
<tr>
<td><em><em>Weight</em> (full, max. configuration)</em>*</td>
<td>32100 lb</td>
<td>38470 lb</td>
<td>38470 lb</td>
<td>38750 lb</td>
</tr>
<tr>
<td><strong>Transport/Caster Tire Size</strong></td>
<td>15-19.5 Skid Steer NH 12 Ply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Marker Tire size</strong></td>
<td>18x9.50-8 4Ply</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opener Down Pressure</strong></td>
<td>330 to 535 lb</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 4 in.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Weight can vary by thousands of pounds depending on options installed.
Specifications/Capacities, Metric Model

<table>
<thead>
<tr>
<th>Model</th>
<th>YP2425A-2470</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Count</td>
<td>24</td>
</tr>
<tr>
<td>Row Spacing</td>
<td>70</td>
</tr>
<tr>
<td>Working Width</td>
<td>21 m</td>
</tr>
<tr>
<td>Span (width between end rows)</td>
<td>1610 cm</td>
</tr>
<tr>
<td>Swath (channel width)</td>
<td>1680 cm</td>
</tr>
<tr>
<td>Seed Capacity</td>
<td>Optional 820 bu hoppers or PROBOX® 50 unit bulk seed container</td>
</tr>
<tr>
<td>Transport Width</td>
<td>4.6 m</td>
</tr>
<tr>
<td>Working length</td>
<td>11.7 m.</td>
</tr>
<tr>
<td>Transport Length</td>
<td>15.7 m</td>
</tr>
<tr>
<td>Working Height</td>
<td>3.7 m</td>
</tr>
<tr>
<td>Transport Height</td>
<td>3.7 m</td>
</tr>
<tr>
<td>Ground Clearance</td>
<td>6.4 m</td>
</tr>
<tr>
<td>Minimum Tractor Requirement</td>
<td>210 - 245 kW</td>
</tr>
<tr>
<td>Hitch</td>
<td>3-Point Hydraulic Tongue Optional</td>
</tr>
<tr>
<td>Hydraulic Circuits Required</td>
<td>Closed-Center, 4 Remotes, 193 bar, 151 to 170 litres/min.</td>
</tr>
<tr>
<td>Weight* (empty, base configuration)</td>
<td>8366 kg</td>
</tr>
<tr>
<td>Weight* (full, max. configuration)</td>
<td>14560 kg</td>
</tr>
<tr>
<td>Transport/Caster Tire Size</td>
<td>15-19.5 Skid Steer NH 12 Ply</td>
</tr>
<tr>
<td>Marker Tire size</td>
<td>18x9.50-8 4Ply</td>
</tr>
<tr>
<td>Opener Down Pressure</td>
<td>150 to 245 kg</td>
</tr>
<tr>
<td>Opener Travel (up - down)</td>
<td>25 cm</td>
</tr>
<tr>
<td>Opener Depth Range</td>
<td>0 - 10.2 cm</td>
</tr>
</tbody>
</table>

* Weight can vary by thousands of kg depending on options installed.

Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tire Size</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport/ Caster (S/N 1113G-)</td>
<td>15-19.5 NHS 12 PLY</td>
<td>60 psi 415 kPa</td>
</tr>
<tr>
<td>Transport/ Caster (S/N 1114G+)</td>
<td>FS24380/70R19.5</td>
<td>73 psi 503 kPa</td>
</tr>
<tr>
<td>Marker</td>
<td>18x9.50-8</td>
<td>24 psi 165 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
- Firestonewww.firestoneag.com
- Goodyearwww.goodyearag.com
- Titanwww.titan-intl.com
- BKTwww.bkt-tires.com/en
- Gleason Wheelwww.gleasonwheel.com
Hydraulic Diagrams
Auxiliary Hydraulics (standard)

All Configurations

With Markers

Without Markers
Fan
Hydraulic Drive
Hydraulic Tongue (Optional)
Lift

To Tractor
Markers
Chain Routing
25AP Final Meter Drive

Legend:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34T</td>
<td>Sprocket or idler Tooth count</td>
</tr>
<tr>
<td>56P</td>
<td>Chain Pitch count</td>
</tr>
<tr>
<td></td>
<td>Direction of chain in motion</td>
</tr>
</tbody>
</table>

25P: Meter Drive (Front type)

1. No idlers on mount.
2. top chain passes over single idler on shank
3. be sure to reconnect idler spring

25P: Meter Drive (Mid type)

1. No idlers on mount.
2. top chain passes between 2 idlers at mount
3. top chain passes between 2 idlers at shank
4. be sure to reconnect idler spring

25P: Meter Drive (Rear type)

1. No idlers on mount.
2. top chain passes between 2 idlers at mount
3. top chain passes between 2 idlers at shank
4. be sure to reconnect idler spring
Hydraulic Drive Chain Routing
Fertilizer Pump Ground Drive Chain Routing
(optional)

CDS-John Blue® Pump Ground Drive
Lower Drive Chain

CDS-John Blue® Pump Ground Drive
Upper Drive Chain
Seed Hose Routing
Mechanical Routing, Left Side

7 - 10
Are capped off
Facing forward with planter folded.

YP2425A Machine Left Side
Seed Hose Routing

<table>
<thead>
<tr>
<th>Section</th>
<th>Left Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Box</td>
<td>L16 L15 L14 L13 L01 L02 L03 L04 L11</td>
</tr>
<tr>
<td>Hose Guide</td>
<td>m n p q w v u s r</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>K H G F E D C B A X Y Z</td>
</tr>
<tr>
<td>Splitter</td>
<td>A A A A A A A A</td>
</tr>
<tr>
<td>Row Unit</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
</tbody>
</table>

YP2425A-48TR, 30 inch Twin-Row, 48 Row Units

<table>
<thead>
<tr>
<th>Section</th>
<th>Left Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Box</td>
<td>L16 L15 L14 L13 L01 L02 L03 L04 L11</td>
</tr>
<tr>
<td>Hose Guide</td>
<td>m n p q w v u s r</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>K H G F E D C B A X Y Z</td>
</tr>
<tr>
<td>Splitter</td>
<td>A A A A A A A A</td>
</tr>
<tr>
<td>Row Unit</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
</tbody>
</table>

YP2425A-4715, 15 inch Single Row, 47 Row Units

<table>
<thead>
<tr>
<th>Section</th>
<th>Left Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Box</td>
<td>L16 L15 L14 L13 L01 L02 L03 L04 L11</td>
</tr>
<tr>
<td>Hose Guide</td>
<td>m n p q w v u s r</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>K H G F E D C B A X Y Z</td>
</tr>
<tr>
<td>Splitter</td>
<td>A A A A A A A A</td>
</tr>
<tr>
<td>Row Unit</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
</tbody>
</table>

YP2425A-3620, 20 inch Single Row, 36 Row Units

<table>
<thead>
<tr>
<th>Section</th>
<th>Left Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Box</td>
<td>L16 L15 L14 L13 L01 L02 L03 L04 L11</td>
</tr>
<tr>
<td>Hose Guide</td>
<td>m n p q w v u s r</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>K H G F E D C B A X Y Z</td>
</tr>
<tr>
<td>Splitter</td>
<td>A A A A</td>
</tr>
<tr>
<td>Row Unit</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
</tbody>
</table>

YP2425A-2430, 30 inch Single Row, YP2425A-2470, 70 cm Single Row, 24 Row Units

<table>
<thead>
<tr>
<th>Section</th>
<th>Left Center</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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</tr>
<tr>
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<tr>
<td>Row Unit</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
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Great Plains | 401-626M | 2020-07-30

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Facing forward with planter folded.

**YP2425A Machine Right Side Seed Hose Routing**

<table>
<thead>
<tr>
<th>Section</th>
<th>Right Center</th>
<th>Right Wing</th>
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<td>R06 R13 R14 A15 R16 R04 R03 R02 R01</td>
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**YP2425A-48TR, 30in Twin-Row, 48 Row Units**

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**YP2425A-4715, 15in Single Row, 47 Row Units**

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<td>Splitter</td>
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<tr>
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**YP2425A-3620, 20in Single Row, 36 Row Units**

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**YP2425A-2430, 30 inch Single Row, YP2425A-2470, 70 cm Single Row, 24 Row Units**

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## Torque Values Chart

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<td>N-m ft-lb</td>
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<tr>
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<td>7 5</td>
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<td>M 14 X 2</td>
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<td>M 14 X 1.5</td>
<td>99 73</td>
<td>155 115</td>
</tr>
<tr>
<td>M 16 X 2</td>
<td>145 105</td>
<td>225 165</td>
</tr>
<tr>
<td>M 16 X 1.5</td>
<td>155 115</td>
<td>240 180</td>
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<tr>
<td>M 18 X 2.5</td>
<td>195 145</td>
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<td>M 18 X 1.5</td>
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<td>M 20 X 2.5</td>
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<tr>
<td>M 20 X 1.5</td>
<td>310 230</td>
<td>650 480</td>
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<tr>
<td>M 24 X 3</td>
<td>480 355</td>
<td>760 560</td>
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<tr>
<td>M 24 X 2</td>
<td>525 390</td>
<td>830 610</td>
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<tr>
<td>M 30 X 3.5</td>
<td>960 705</td>
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<td>M 30 X 2</td>
<td>1060 785</td>
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</tr>
<tr>
<td>M 36 X 2</td>
<td>1880 1380</td>
<td>2960 2190</td>
</tr>
</tbody>
</table>

a. in-tpi = nominal thread diameter in inches-threads per inch
b. N· m = newton-meters
c. mm x pitch = nominal thread diameter in mm x thread pitch
d. ft-lb = foot pounds

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

Seed Monitor Console Installation

The Planter Planter’s standard seed monitor system includes a virtual terminal and switch panel that must be mounted in the tractor cab. As supplied by DICKEY-john®, the kit includes a flat bracket for the modules, and a ball swivel for mounting the bracket in the tractor.

**NOTICE**

Mount the modules so that they are easy to monitor during planting, but do not interfere with safe operation of the tractor in the field or on public roads.

The ball swivel includes four 10-32 screws. You or your dealer must provide the mounting holes for the screws. Your dealer may have alternate suction cup or clamping brackets available if you prefer to avoid drilling holes.

Refer to the included DICKEY-john® manual for harness connections.

Radar Calibration

At the first opportunity to operate the planter in the field (with or without planting), the radar component of the seed monitor needs to be calibrated. The seed monitor manual describes the procedure.

- The planter must be in the lowered/field position for this calibration. The angle of the sensor changes when the planter is raised, and readings during planting will be incorrect if calibrated in the raised configuration.
- Due to this angle change, seed monitor speed readings will not match tractor speedometer reading during transport.
Weight Transfer Shipping Links

When a planter is on customer premises, and further movements will only be done with a tractor or towing vehicle having hydraulic motor return and case drain remote ports, remove the weight transfer shipping links.

1. Use a hoist or a second worker to support the weight of the outboard end of a weight transfer cylinder.

2. Remove both cotter pins and clevis pins:
   - 805-058C PIN COTTER 3/16 X 2
   - 805-396C PIN CLVS 1.0X3.13 USBL
   from each end of a shipping link:
   - 411-175H WT SHIP LINK
   Remove the link.

3. Swing the cylinder down. Align the clevis with the wing lug. Secure with one of the clevis pins and cotters.

4. Store the other clevis pin and cotter in the clevis end of the link. Store the link for future use.

5. Repeat step 1 through step 4 for the other wing.

To install a link, complete step 4 through step 1 in reverse order.

See page 47 for initial weight transfer setup.
Appendix C - Option Installation

122-278S Scraper Installation

Optional carbide disc scrapers are not factory installed. Start with row 1 (left-most row unit).

* If a Keeton® seed firmer is also installed, see the Parts Manual for assembly details.
* This scraper is not compatible with Seed-Lok®.

Refer to Figure 152 and Figure 153

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 109).
2. Select one each:
   - ⑦ 802-024C HHCS 3/8-16X3 GR5
   - ⑧ 129EXT824 BRACKET FOR 890-929C FIRMER
   - ⑮ 122-177D 10HD25 inside scraper MNT TUBE
   Insert the bolt ⑦, from the rear, through the lowest hole of the bracket ⑧. Place the tube ⑮ over the bolt.
3. Select one scraper set:
   - ⑲ 890-928C 25 SER AIR DESIGN IN SCRAPER
   Place the shoulder washer ② on bolt ⑦ 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:
   - ⑲ 804-011C WASHER FLAT 3/8 USS PLT
   - ⑳ 804-013C WASHER LOCK SPRING 3/8 PLT
   - ⑳ 803-014C NUT HEX 3/8-16 PLT
   Place the flat washer ⑲ on the bolt ⑦, followed by the lock washer ⑳ and nut ⑳. Tighten bolt and nut to 3/8-16 GR5 torque spec. Make sure blades pivot freely.
5. Select the scraper spring ⑤. Connect the spring between the blades, using the small top holes.
6. Select two sets:
   - ⑲ 802-172C HHCS 5/16-18X2 1/2 GR5
   - ⑳ 803-043C NUT HEX WHIZ 5/16-18 PLT
   Insert the scraper assembly ⑤ between the middle four lower square holes ⑷ of the opener frame. Secure with bolts ⑲ and whiz nuts ⑳.
7. Re-mount the removed disc blade.

Callout, Part & Description cross-references are drawn from a Reference Page.
402-520A Low Speed Kit Installation

See “Low Speed Kit” on page 123 for the purpose of this kit.

1. Shut off any hydraulic source that powers the hydraulic seed meter drives (dedicated remotes or PTO).

Refer to Figure 154

2. At the hydraulic drive motor, loosen the idler nut . Slide the idler out of engagement with the existing chain . Remove and save the existing chain:

3. Loosen the set screws securing the existing 16T sprocket . Remove and save the sprocket:

4. Select one new 10T sprocket:

5. Select one new:

Consult page 108 and the directional arrows shown on the page for proper chain clip orientation. Install the new chain on the new sprocket and existing driven sprocket.

Engage the idler for \( \frac{1}{4} \) inch (2.1 cm/m) slack. Secure the idler nut .

Field Results Risk:
Do not change the sprocket ratios in the DICKEY-john® IntelliAg® hydraulic drive setup.
Preparation and Setup

Row-Pro™ Setup (Option)

The factory default setting for down-force is likely to differ from that required by your next field conditions. Before modifying the monitor setting for down-force, determine what actual down force is ideal for the initial use of the planter. One method of determining an initial setting involves operating in the field (without seeding).

1. Set planting depth at T-handles (page 75).
2. Review unit-mount coulter depth relative to opener disc. Adjust as needed (page 68).
3. Start with the row unit down pressure springs in the lowest, or second-lowest notch (page 71).

Adjustment to the spring pressure may need to be made if the depth is reset or the closing wheel down pressure is adjusted.

4. Operate\(^a\) in the field for a short distance.
5. Evaluate the seed trench (page 70).
6. Adjust the springs until depth and closure are ideal. If the ideal setting seems to be in between two notch values, use the higher setting. Rows in wheel tracks may be higher still.
7. Engage the Row-Pro™ system. Set the initial target weight at 80 pounds.
8. Operate in the field. Evaluate furrow and closing. Adjust Row-Pro™ force setting for optimal results.
9. When verifying the final setting, and when planting, watch for Unable to Control alarms, which may indicate that the cams are a notch or more too high or too low.

\(^a\) If the IntelliAg® alarm indicates a value too high, reduce spring pressure. If the IntelliAg® alarm indicates a value too low, increase spring pressure.

The actual target rate is going to be different depending on the field conditions, soil type and other factors. The best way to gauge where you want the setting is to operate the system for a short time then go behind the planter and check the furrow.

---

\(^a\) Optionally operate the Row-Pro™ system in Monitor Only mode, and note the forces reported.
Operating Instructions

Refer to Figure 155
Row-Pro™ is a factory installed option for implements with 25-series openers that are equipped with DICKEY-john® IntelliAg®. It helps the spring down force system to maintain a user-determined, ideal weight for the side depth gauge wheels. Once the springs are set, Row-Pro™ pneumatically increases/decreases pressure on the openers.

The row units are already getting their down pressure from the springs on the parallel arms. Row-Pro only acts to vary that pressure as needed to maintain consistency in different soil conditions.

There is one cylinder ① for each row located between the parallel arms. Based on loading on the side depth wheels, Row-Pro™ adjusts air pressure in the air cylinders.

Refer to Figure 156
There is one valve set per opener section, located in the center of the section. It allows each section to be controlled independently.

For twin row there are two valve sets ② per section: one for the front openers and one for the rear openers.
Row-Pro™ Components

Refer to Figure 157 and Figure 158

The main systems of Row-Pro™ consist of:

1. An air compressor system: one 12VDC air compressor (11) with air tank (12), two extension cables (13), and one fuse assembly (14).
2. A load sensing system: DPLCM (Down Pressure Load Cell Module) (15) and the load cells (16).
3. An adjusting system: valves (17) and air cylinders (18).

Load Cell, DPLCM and Valves

The DPLCM (15) and valves (17) are mounted together on a plate and are connected to the DICKEY-john® Row-Pro™ wiring harness (18).

Two leads on the Row-Pro™ harness each connect to a load cell (16) which is located in the opener body (see fig.162). Four leads connect to the valve sets. There is one pair (one air intake, one exhaust) for each valve.

For single row planters:
There is one load cell and one valve set per each opener section located at mid section.

For twin row planters:
There are two load cells and two valve sets per each opener section located on the long and short center row unit of the section.

The Row-Pro™ harness connects to the planter's CANbus at connector ends (20).

The load cell provides feedback so the system can maintain the target pressures.

The DPLCM uses the readings from the load cell to regulate the air valves in order to increase or decrease pressure in the air cylinders.
Row-Pro™ Air Compressor System

Row-Pro™ Air Compressor

Refer to Figure 159

The 12VDC compressor requires both an electrical connection and a mounting location. It should be mounted in a location on the tractor or planter where most convenient. Mount where cool clean air can get to it. The battery connection is equipped with one large 60 amp spade fuse (automotive type).

If your tractor has an on-board engine driven compressor capable of 150 psi, it can be used instead of the one supplied with the planter. Hook the on-board compressor to the air tank with lines provided.

The air filter should be placed in the tractor cab where it can pull clean air from the cab. The remote air filter line should be as short as possible.

The air compressor pressurizes the air tank reservoir.

Row-Pro™ Air Tank

Refer to Figure 160

An air tank is provided and mounted on the wing. Open the air tank petcock once daily to drain water accumulation.

The air tank is used in conjunction with the air valves to maintain a set pressure value for the air cylinders.

Air valves are used to increase or decrease the amount of air provided to the air cylinders.

Row-Pro™ Air Tank Lines

Refer to Figure 161

The air tank has two lines. A 3/8 inch line attaches the compressor to the air tank. A 1/4 inch line splits at a T-junction and goes to the valves while the remaining end attaches to the compressor plate where it activates the pressure switches.

If an on-board compressor is used, plug/bypass the pressure switch branch.
Row-Pro™ Air Pressure Gauge
Refer to Figure 162

Row-Pro™ is designed to run at 150 psi. When the psi drops to 135 the compressor engages and builds back up to 150 psi. Duty cycle varies based on air usage.

Check for Air Leaks

Before going to the field check for air leaks.

1. Turn the compressor on to pressure up the primary system until it automatically shuts off. If the system loses pressure, check for leaks.

2. Use the Leak Test mode to cycle through the sections and check for leaks.
Row-Pro™ Adjustments

Refer to Figure 163

Load Cell Reading

These readings are displayed and adjusted from the IntelliAg® seed monitor console.

Control Mode: Auto is the normal running mode. Manual is used to control the valves only when the operator touches the increase or decrease icon on the work screen.

Monitor Only: This screen disables control, but still reports sensor feedback. From there, press the Down Pressure Diagnostic key and then press the Float Mode ON button to release all of the air from the system. Next, press the Float Mode OFF button. Stay on the Diagnostic screen and make a planting pass. Note the pressure displayed on the Diagnostic screen and then evaluate the seed trench. If the seed trench results are acceptable, use the displayed pressure as your target rate.

Front-Rear Linked: "Enabled" links the front and rear row units so that the same amount of pressure increase/decrease set at the screen is applied to front/rear row units. When "Disabled" - front/rear row units are not linked. Two sets of buttons appear on the screen that allow for adjustments of front and rear rates independently.

Target Rate: This is the desired down pressure on the side depth wheels. The target rate to be entered is the set rate (pounds) of the down force to determine how much pressure is applied. The system monitors and adjusts pressure to meet the defined rate set at this screen.

Pressure displayed on screen and target pressure both refer to the amount of weight carried by the side depth gauge wheels, and not overall row unit down pressure.

Inc/Dec: Sets the amount that the Target Rate is changed with each key press during planting operations.
**Sensitivity Adjust:** Determines how responsive the Controller is to input from the DPLCM. The range is from -10 to +10. Zero (0) is the average setting. Going below 0 decreases the reaction time. Going above 0 increases the reaction time.

**Disable Down Pressure Modules:** Modules interfacing with feedback sensors can be independently disabled so that down pressure to rear and/or front row units are not monitored or controlled. Modules that have been disabled are ignored by the system and will not report down pressure data or react to soil conditions.

(The IntelliAg® screen shows both row modules enabled 😄. An unchecked box indicates disabled.) If a section fails, that individual section can be turned on and off to locate the problem.

Refer to Figure 166

**Reset Offset Value:** Resetting Offset Values clears previous down pressure readings and resets values to zero.

1. At Main WORK SCRN press NEXT PAGE button.
2. Press MODULE CFG button.
3. At Module Configuration screen, press DPRESS SET.
4. At the Down Pressure Setting screen press OK to clear values.

**IMPORTANT:** The implement must be lifted and the implement lift switch in the up state before the OK button appears and values can be cleared.

- Make sure side depth wheels are all in the lowered position so there is no tension on the load cell. Values other than OFF or 1-6 mV may indicate stuck side depth wheels. If the reading is 0 mV, there may be a problem with load cell grounding. See “Row-Pro™ Troubleshooting”, page 178.

- **Initial Setup:** Zero out the load cell reading.
## Row-Pro™ Troubleshooting

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<th>Solution</th>
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<td>Compressor won’t turn on</td>
<td>Switch turned “off”.</td>
<td>Turn switch “on”.</td>
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<tr>
<td></td>
<td>Poor electrical connection.</td>
<td>Clean connections and reassemble.</td>
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<tr>
<td></td>
<td>Fuse blown.</td>
<td>Replace fuse (60A).</td>
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<tr>
<td>Compressor won’t turn off (runs continuously)</td>
<td>Section opener valves are installed in reverse.</td>
<td>Install opener valves correctly.</td>
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<td></td>
<td>Stuck pressure switch(es).</td>
<td>Replace pressure switch(es).</td>
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<td>Compressor cycles more than normal</td>
<td>Water build-up in air tank.</td>
<td>Drain tank to keep reserve volume at proper size.</td>
</tr>
<tr>
<td>Erratic down pressure reading</td>
<td>Poor electrical connection to load cell.</td>
<td>Clean connection and reassemble.</td>
</tr>
<tr>
<td></td>
<td>Load cell malfunction.</td>
<td>Replace load cell.</td>
</tr>
<tr>
<td>Persistent “high” alarm</td>
<td>Row unit spring tension too high.</td>
<td>Lower spring tension.</td>
</tr>
<tr>
<td></td>
<td>Air leak preventing cylinders from holding pressure.</td>
<td>Fix leak.</td>
</tr>
<tr>
<td>Persistent “low” alarm</td>
<td>Row unit spring tension too low.</td>
<td>Raise spring tension.</td>
</tr>
<tr>
<td></td>
<td>Air leak preventing cylinders from holding pressure.</td>
<td>Fix leak.</td>
</tr>
<tr>
<td>System won’t hold air pressure</td>
<td>Pinched/torn hose.</td>
<td>Replace hose.</td>
</tr>
<tr>
<td></td>
<td>Hose not pushed into quick connect fitting far enough.</td>
<td>Push hose in until fully seated.</td>
</tr>
<tr>
<td>Voltage reads “0” on monitor, or is unaffected by load on load cell</td>
<td>Signal wire grounded to frame.</td>
<td>Inspect for pinched or broken wiring harness between the load cell and DPLCM. Replace damaged wiring.</td>
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## Row-Pro™ Maintenance

Check the tractor cab air filter as per manufacturer recommendation.
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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