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

Illustrations may show optional equipment not supplied with standard unit, or may show similar 3-point models and their options.
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Important Safety Information

Look for Safety Symbol

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

Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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

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

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

Prepare for Emergencies

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

Be Familiar with Safety Decals

▲ Read and understand “Safety Decals” on page 6, thoroughly.
▲ Read all instructions noted on the decals.
▲ Keep decals clean. Replace damaged, faded and illegible decals.
Wear Protective Equipment

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

▲ Waterproof, wide-brimmed hat
▲ 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.
▲ Cartridge-type respirator approved for pesticide vapors unless label specifies another type of respirator.
▲ Waterproof apron.
▲ 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 may need to be destroyed according to national or local regulations. Read chemical label for specific instructions.
▲ Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.
▲ Prolonged exposure to loud noise can cause hearing impairment or loss. Wear suitable hearing protection such as earmuffs or earplugs.
▲ Avoid wearing entertainment headphones while operating machinery. Operating equipment safely requires the full attention of the operator.

Avoid High Pressure Fluids

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

▲ Avoid the hazard by relieving pressure at other remotes, and shutting down tractor before connecting, disconnecting or inspecting hydraulic lines.
▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
▲ If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.
Use A Safety Chain

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

Keep Riders Off Machinery

Riders obstruct the operator’s view. Riders could be struck by foreign objects or thrown from the machine.
▲ Never allow children to operate equipment.
▲ Keep all bystanders away from machine during operation.

Use Safety Lights and Devices

Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
▲ Use flashing warning lights and turn signals whenever driving on public roads.
▲ Use lights and devices provided with implement.

Transport Machinery Safely

Maximum transport speed for implement is 32 kph, 22 kph in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
▲ Do not exceed 32 kph. 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 96.
▲ Do not fold or unfold the planter while the tractor is moving.
Handle Chemicals Properly
Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

- Read and follow chemical supplier instructions.
- Wear protective clothing.
- Handle all chemicals with care.
- Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.
- Inhaling smoke from any type of chemical fire is a serious health hazard.
- Store or dispose of unused chemicals as specified by the chemical manufacturer.
- If chemical is swallowed, carefully follow the chemical manufacturer's recommendations and consult with a doctor.
- If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.
- Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.
- Wash hands and face before eating after working with chemicals. Shower as soon as application is completed for the day.
- Apply only with acceptable wind conditions. Wind speed must be below 8 kph. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.
- Never wash out a hopper within 30 m of any freshwater source or in a car wash.

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. Employ trained personnel using correct tools and equipment.

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

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

▲ Work in a clean, dry area.

▲ Lower the 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 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 tube supporting meter pressurization manifold; 1 total

Red Reflectors
838-266C

All configurations:
on the rear face of the outside seed hoppers (rear row on twin- or triple-row),
With Markers:
On the rear face of the inner arm, above daytime reflectors;
2 or 4 total
Amber Reflectors
838-265C

On the front face of the front tool bar, each end, on the outside face of the mainframe, front corner, and on the outside face of the outside seed hopper frames (rear units if twin- or triple-row); 6 total

Daytime Reflectors
838-267C

On the back of two center seed hoppers (rear seed hoppers on twin-row planters) and on the back of the inner marker arm (Option), below red reflector; 2 or 4 total
Warning: Speed
818-337C

On top of tongue near hitch; 1 total

Warning: High Pressure Fluid
818-339C

On top of tongue near hitch; 1 total

Warning: Markers (Option)
818-682C

On front face of inner marker arm; 2 total

Warning: Moving Parts Hazard
838-363C

On left outside face of Fertilizer transmission; 1 total
Warning: Rotating Fan
848-508C
On fan intake cage; 1 total

Warning: High Pressure Fluid Hazard
848-517C
On top of tongue near hitch; 1 total

Warning: Possible Chemical Hazard
848-520C
On the top of each fertilizer hopper lid; 3 total

Warning: Crushing Hazard
848-523C
On front face of the front tool bar, right of hitch; 1 total
Caution: Read Operator's Manual
818-587C

On top of tongue near hitch;
1 total

Caution: Read Operator's Manual
848-512C

On top of tongue near hitch;
1 total

Caution: Tire Pressure and Bolt Torque
848-708C

On valve stem side of each wheel;
4 total
See also “Tire Inflation Chart” on page 96.
Great Plains welcomes you to its growing family of new product owners. The 18-Row 110 cm Yield-Pro® Air Planter (YP625PD) has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

Models Covered

YP625PD18TP110 Yield-Pro® Model 625, Pull-Type, Dry Fertilizer, 18-Row, Triple-Row, 110 cm triple-row spacing

YP625TD and YP925TD (3-Point) models have a separate Operator manual (401-755M).

Description of Unit

The YP625PD Planter is a towed precision planting implement for use in conventional till, minimum-till, or light no-till conditions.

The YP625PD is optimized for planting on beds 18 cm high.

The YP625PD includes a dry fertilizer system, and optional frame-mounted coulters and/or row cleaners. Coulters make it suitable for light to moderate no-till conditions only. The YP625PD includes 25AP Series openers with Air-Pro® meters supporting a wide choice of seed disks.

Intended Usage

Use the YP625PD 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 YP625PD.

Document Family

401-754M Owner’s Manual (this document)
401-754B Seed and Fertilizer Rate manual
401-754P Parts manual
113-870M Marker installation manual
207-016M Terra-Tine™ Operator/Parts manual
11001-1372 DICKEY-john® PM300-332-400 Planter Monitor Operator’s Manual
Bulletin A-27 Dwyer Magnehelic® instructions

a. For planting on flat ground, see “Appendix C - Flat Ground Planting” on page 113.
present. "optional" indicates an operator action that is not required.

**Owner Assistance**

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

*Refer to Figure 2*

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

Record your YP625PD Planter model and serial number here for quick reference:

Model Number: __________________________
Serial Number: __________________________

Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

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.

For further assistance write to:

**Product Support**
Great Plains Mfg. Inc., Service Department
PO Box 5060
Salina, KS 67402-5060 USA

gp_web_cs@greatplainsmfg.com
785-823-3276
Preparation and Setup

This section helps you prepare your tractor and YP625PD Planter for use, and covers tasks that need to be done seasonally, or when the tractor/planter configuration changes.

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

Initial Setup

See "Appendix B - Initial Setup" on page 107 for first-time/infrequent setup tasks, including:

- Install seed monitor console in tractor (page 107).
- Set marker extension (Option, page 110).
- Install any Options not factory- or dealer-installed.

Post-Delivery/Seasonal Setup

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

- Bleed hydraulic system (page 79).
- 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 grease fittings are in place and lubricated. See "Lubrication" on page 85.
- Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See "Safety Decals" on page 6.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See "Tire Inflation Chart" on page 96.
Hitching Tractor to Planter

**DANGER**

Crushing Hazard:
Do not stand or place any body part 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 parking brake before attaching cables and hoses.

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

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

Refer to Figure 4
2. After hitching tractor to planter, store jack on storage tube ② on top of planter tongue.
3. Secure planter safety chain to an anchor on the tractor capable of pulling the unit.

Electrical Hookup

Refer to Figure 5 (depicting an SAE J560b lighting connector; your connector may vary if it has been replaced due to different electrical conventions)

Your planter is equipped with systems that require separate electrical connections. For future reference, note any optional connectors on this checklist.

- ① Lighting connector (standard)
- ② Monitor connector (standard)
- ③ Speed Sensor connector (standard)
- ④ ________________

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

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

⚠️ WARNING

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

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

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

Refer to Figure 6

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

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Fan</td>
</tr>
<tr>
<td>Green</td>
<td>Markers</td>
</tr>
<tr>
<td>Blue</td>
<td>Lift</td>
</tr>
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</table>

Refer to Figure 6

To distinguish hoses on the same hydraulic circuit, refer to the cylinder symbols on the clamps.

- The hose under an extended-cylinder symbol feeds a cylinder base end or motor return line.
- The hose under a retracted-cylinder symbol feeds a cylinder rod end, or motor pressure line.

⚠️ NOTICE

Low Population Risk:
If the motor hose connections are reversed (relative to operator expectations), the motor runs in reverse, but at a speed and air flow too low for correct seed metering.

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

Refer to Figure 7

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

To level the planter, the distance 1 from bottom of the mainframe tube to the ground, must be:

1 66 cm

with the planter lowered into planting position.

With the openers in the ground, this tool bar height normally requires a hitch height 2 of:

2 36.8 cm

measured from the bottom of the tongue to the ground.

Refer to Figure 8 (showing one of two hitch bolts)

To obtain the correct height, remove the two hitch bolts 3, and reposition the planter hitch 4 on the tongue.

NOTICE

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

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

Wheel Adjustment for Leveling

Refer to Figure 9

If the target tool bar height cannot be achieved with the frame level, an adjustment can be made by relocating the wheel axles in the arms. This lowers the planter by about 5.1 cm.

Block up the frame to remove weight from tires. Remove bolts 5, located in lower holes, securing transport ground tire assembly to unit. Move wheel assembly and secure assembly to upper hole 6 using previously removed bolt.
Monitor Setup

Refer to Figure 21

The standard DICKEY-john® PM400 system monitors the following elements of a YP625PD planter:

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

See “Seed Monitor Console Installation” on page 107.

Refer to the DICKEY-john® DICKEY-john® PM300-332-400 Planter Monitor Operator’s Manual (11001-1372) for monitor operations.

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

Row spacing data may be found in the Appendix.

For speed setup, Great Plains recommends using the 122 m (400-foot) calibration described in the DICKEY-john® manual, rather than using the theoretical “# of pulses” shown in Appendix B. Perform the calibration run in representative field conditions, as soil conditions, surface looseness and other tillage practices can cause variations in the effective rolling radius of the ground drive wheel.

Prior to each planting session, set any desired limits for speed and population for the current crop.

Marker Setup (Option)

Prior to first use, check and adjust:

- “Marker Speed Adjustment” on page 110.

Prior to first use, and whenever changing row spacings, set or reset:

- “Marker Extension” on page 110.

Prior to each planting session, check and adjust:

- “Marker Disk Adjustment” on page 46.
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 YP625PD planter to the field.

- Carefully read “Important Safety Information” on page 1.
- Treated seed, or Fertilizer Option: Review the application instructions and Material Safety Data Sheet (MSDS) for the seed and/or fertilizer(s).
- Install seed disks appropriate for crop. See “Air-Pro® Meter Disk Installation” on page 55.
- Lubricate planter as indicated under “Lubrication” on page 85.
- Check all tires for proper inflation. See “Tire Inflation Chart” on page 96.
- Check all bolts, pins, and fasteners. Torque as shown in “Torque Values Chart” on page 98.
- 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.

⚠️ WARNING

High Pressure Fluid Hazard:

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

Refer to Figure 11

Planter raising and lowering relies on four lift cylinders. To raise or lower the planter, move the lever for the Lift circuit.

**CAUTION**

**Gradual Crushing Hazard:**
Do not rely on hydraulic pressure alone to keep the planter raised. Use transport/lift locks (page 19) when working around a raised planter. The bypass orifices in the re-phasing system cause it to slowly lower.

**Re-Phasing Lift System**

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

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

1. Lower the planter completely, and hold the hydraulic lever or switch in Retract for several seconds after the planter reaches full lowering, or until all cylinders are fully retracted.

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

**Lift Cylinder Locks**

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

Refer to Figure 12

Transport locks are present on all wheel modules. To install cylinder stops:

1. Raise planter to transport position (page 19).

2. Pivot cylinder stops (1) into engagement with lift cylinder rods. The stop channels snap into position.

3. Lower planter onto stops.

Raise planter, and hold at raised, before releasing transport locks.
Transport

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

The planter can weigh over 7000 kg, depending on configuration and seed load. The tractor MUST be rated for the load and must weigh at least 67% of the load. If the tractor is not rated for at least 7000 kg, calculate or obtain a scale weight of the planter. See chart at right for typical configuration weights.

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

⚠️ CAUTION
Braking and Loss of Control Hazard:
Do not exceed 20 mph (32 kph).

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

Typical YP625PD Planter Weights

<table>
<thead>
<tr>
<th>Approximate Weights of Representative</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configurations</td>
<td>YP625PD18TP110</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Planter</td>
<td>4000 kg</td>
</tr>
<tr>
<td>Typical¹ Empty</td>
<td>4500 kg</td>
</tr>
<tr>
<td>Typical¹ Full</td>
<td>5800 kg</td>
</tr>
<tr>
<td>Maximum² Empty</td>
<td>5300 kg</td>
</tr>
<tr>
<td>Maximum² Full</td>
<td>6600 kg</td>
</tr>
</tbody>
</table>

¹ Typical: No Coulters, Markers, Fertilizer or Row Cleaners.
² Maximum: Zone Coulters, Markers, Terra-Tine Row Cleaners
Transport Steps
Transport only with markers stowed (page 32).
1. Check that planter is securely hitched to a sufficient tractor or towing vehicle (page 14).
2. Always use a locking-style hitch pin sized to match holes in hitch and draw-bar (minimum 1-inch-diameter, heat-treated pin).
3. Attach safety chain to tractor or towing vehicle with enough slack to permit turning (page 14).
4. Verify correct operation of lights.
5. Fold markers if unfolded (Option, page 32).
6. Raise planter (page 19).
7. Install cylinder locks (page 19).
8. Unload hoppers and tank(s) before transporting if at all possible. The planter can be transported with a full material load, but the added weight increases stopping distance and decreases maneuverability.

**NOTICE**

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

9. If any seed is in hoppers or delivery hoses, close seed inlet shutters at meters (page 56).
10. Check that tires are properly inflated (page 96).
11. Plan the route. Avoid steep hills.
12. Always have lights on for highway operation.
13. Do not exceed 32 kph. Comply with all national, regional and local laws when traveling on public roads.
14. Remember that the planter may be wider than the tractor or towing vehicle. Allow safe clearance.
15. Transport slowly over uneven or rough terrain.

---

**WARNING**

**EXCESSIVE SPEED HAZARD**
To Prevent Serious Injury or Death:
Do Not Exceed 20 mph maximum transport speed. Loss of vehicle control and/or machine damage can result.

---

"Transport Steps" section from the operating instructions manual.
Loading Materials

Hopper Operations

Refer to Figure 13 and Figure 14

Hopper lids ① have distinct ends:

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

To open a hopper:

1. Pull the rear of the lid edge to the rear.
2. Swing the lid up at rear.
3. Disengage the lid at the front lugs.
4. Park the lid on the front lip of the hopper, using the hook-plate feature inside the lid (see Figure 15 on page 23).

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

Loading Seed

5. Install correct seed disks (page 55).
6. Close all seed inlet shutters (page 56).
7. Check that each hopper is correctly seated and secured:
   - ④ pivot hooks engage at front,
   - ⑤ latch engaged at rear,
   - ⑥ seed hose secured to
   - ⑦ discharge weldment with
   - ⑧ clamp.
8. The hopper slide gate ⑨ may be left open (by pulling back), and doing so slightly increases seed capacity.

If slide gate is open for seed loading, seed inlet shutters must be closed unless the planter is already at the field. Transporting with both gates and shutters open can plug meters.

9. Open hopper lid ①.
10. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See "Material Clean-Out" on page 72.
Loading Seed, continued

**CAUTION**

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

**CAUTION**

**Irritant and Chronic Exposure Hazards:**
Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 4.

11. Pre-mix seed and lubricant. For clean seeds other than milo, cotton, and sunflowers sprinkle Ezee Glide Plus seed lubricant at a rate of 71 ml per 42 liters (one hopper) of seed.

For milo, cotton, and sunflowers double the application to 142 ml (or more) per 42 liters of seed.

**NOTICE**

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

12. Add seed and lubricant to hoppers.

**Refer to Figure 13 and Figure 14 on page 22**

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

**NOTICE**

**Equipment Loss Risk:**
Check that all 3 lid lugs are completely under the hopper lip, or the lid may come off in transport.
Loading Dry Fertilizer

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

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

Suitable Materials

Use only dry granular fertilizer. Granules must flow freely, and must have a maximum diameter smaller than 7 mm (to avoid bridging clogs in the applicator tube outlets).

**CAUTION**

*Agricultural Chemical Hazard:*

Wear protective equipment suitable for the material to be used, and the material previously dispensed from the hoppers. Avoid contact with skin or eyes. Avoid breathing dust.

System Inspection

Verify that both rear cradle pins are installed on all hoppers. See Figure 82 on page 75.

Refer to Figure 16

Remove the lid on each hopper and inspect for:

- residual fertilizer incompatible with next use
- contaminants
- debris that might clog the meter inlets
- trapped animals, lost tools, etc.

If it is necessary to clean a hopper, see “Dry Fertilizer Clean-Out” on page 75.

Hopper Lid Operation

Refer to Figure 17 and Figure 19

To unlock the hopper lid, lift the rubber latches out of the metal keepers.

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

Refer to Figure 18

To open the lid, lift the front edge up and slide the lid back into a vertical position behind the hopper. The lid is held by retaining straps.
Refer to Figure 17, 18 and 19

When closing the lid make sure that:

- the rear catch plates  are under the hopper rear lip,
- the keeper hardware  is under the front lip, and
- the ball of each rubber latch  is seated in the keeper.

(If only the handle “T” is seated, the lid is not secure.)

Dry Fertilizer Operation

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

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

See the Seed and Fertilizer Rate manual (401-754B) for rate charts and detailed information on rate setting.

The outlets of the fertilizer meters are normally connected to fertilizer drop tubes at the dry fertilizer coulters. See page 44 for adjustment of drop tube height and angle.

Refer to Figure 20

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

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

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

Material Loss / Machine Damage Risks:

Pin coupler clear of shaft gap. It may be possible to insert the pin through both the coupler and the driving shaft . Do not do this. This may leave the coupler and driven shaft in contact. Field motion could cause the meters to operate. The coupler and driven shaft could also be damaged.
Monitor Operation

Refer to Figure 21

The standard DICKEY-john® PM400 system monitors the following elements of a YP625PD planter:

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

- Ground speed:

  The standard magnetic pickup\(^a\) at the ground drive allows the monitor to calculate and report population.

  For installation, see "Seed Monitor Console Installation" on page 107. For initial console setup, see "Seed Monitor Console Quick-Start" on page 108.

  Once setup for the planter and your display preferences, and configured for the current crop rates/limits, the monitor is typically used in the "OPERATE" mode. Refer to the DICKEY-john® DICKEY-john® PM300-332-400 Planter Monitor Operator’s Manual (11001-1372) for monitor operation details.

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

---

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

![Diagram of Air System Operation]

Figure 22
Planter Air System for Air-Pro® Seed Metering

<table>
<thead>
<tr>
<th>Meter Pressurization System Elements</th>
<th>shows air direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hydraulic Fan</td>
<td>7 Seed Hose</td>
</tr>
<tr>
<td>2 Butterfly Valve</td>
<td>8 Air-Pro® Seed Meter</td>
</tr>
<tr>
<td>3 Meter Pressurization Air</td>
<td>9 Seed Inlet Shutter</td>
</tr>
<tr>
<td>4 Row Pressurizing Tube</td>
<td>10 Seed Pool (Figure 23)</td>
</tr>
<tr>
<td>5 Seed Hopper</td>
<td>11 Disk Seed Pocket (Cell)</td>
</tr>
<tr>
<td>6 Slide Gate</td>
<td>12 Seed Hose (Figure 23)</td>
</tr>
</tbody>
</table>
Air and Seeding System Overview

Refer to Figure 22, on page 27, and Figure 23.

The hydraulic fan (1) supplies air exclusively for meter operation. Fan rpm is operator-adjusted (page 30), normally via the tractor circuit’s hydraulic flow control.

A manually-adjusted butterfly valve (2) is provided at the fan outlet. See page 30 for valve adjustment.

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

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

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

A manually adjusted inlet shutter (9) controls the size of the seed pool (10) at the base of the meter. The shutter also minimizes air loss back up the seed inlet tube, and is also used during row shut off. See page 53 for shutter adjustments.

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

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

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

The averaged pressure is reported by a Magnehelic® gauge (17) visible to the tractor operator. See page 40 for use of the gauge in making fan adjustments.

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

Use of the special blank disk (page 57), and closing the seed inlet shutter (page 53), are particularly important when a sensor row is shut off.

On any row, running a normal disk with no seed, or with an open empty inlet, unbalances the air system. Doing either at a sensor row causes the gauge to mis-report as well.

---

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

Do not operate in the ground with the fan shut off, or with insufficient manifold pressure. The meters will completely fill with seed. Meter clean-out may be required to resume normal operation.
Fan Circuit Operation

See also "Fan and Adjustment" on page 40.

Refer to Figure 24

Two hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction and at recommended speeds. See "Hydraulic Hose Hookup" on page 15.

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

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

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

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

Correct fan direction is shown at 1. If reversed fan is suspected, observe it during shutoff, as the direction of motion is easier to see at lower rpms as it slows to a stop (initial startup is virtually instantaneous, making observation at start difficult).

Fan speed is controlled by the tractor circuit and butterfly valve (and not the seed monitor).

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

If the fan is connected in reverse, it may not run at all (due to no oil source at the return connection). If oil is present, oil bypass at the check valve prevents the fan from reaching high rpm. A reversed fan may send some air to the meters, but is incapable of providing reliable air flow for planting.

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

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

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

Refer to Figure 25

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

- The objective is to obtain recommended meter pressurization, and maintain it during end-of-pass marker fold, lift and turn.
- For any setup adjustment, operate the tractor engine at typical field rpms, and not at idle.
- Preset the butterfly valve. Use any setting that you previously developed for the crop/disk/range (see Note at right), otherwise:
  
  If the tractor has fine control of remote flow rates, and consistent flow at varying tractor engine rpm, initially set the butterfly valve to 30° or less.

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

- Set the fan circuit flow to bring the gauge reading to near the recommended value.
- Fine tune the meter pressurization with the butterfly valve.
- If the tractor has marginal flow available, or the lift circuit has priority, you may need to experiment with combinations of fan flow and butterfly valve settings.

Always start the fan with a low flow setting.

Gradually bring fan up to the recommended initial meter pressurization.

At excessive rpm, too much air flow can cause:
- oil heating
- slow lift times

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

Butterfly Valve Operation:

To adjust, loosen bolt 1 and rotate the handle 2. Re-tighten bolt.

0° is wide open - maximum air flow.
90° is closed - minimum air flow.

The valve provides the most effect at settings between 20° and 70°.

Starting at 30° reduces the fan workload.

Starting at 45° provides the most adjustment range up or down.

You may find that different crop, seed disk and rate range combinations need different valve settings. If so, make a note of the valve angle on the chart in the Seed Rate manual.

NOTICE

Low Population Risk at Turns:
The fan requires up to 17 liters/min. This figure does not include oil for lift/lower or oil for marker operation. Aggressive lift/lower operations, and simultaneous lift/marker operations, can reduce fan rpm below that needed to pressurize meter disks. If seed falls out of pockets, low population bands will occur shortly after turns.

Unless the tractor has generous oil flow capacity, raise/fold markers before lift, and lift slowly. Watch meter pressurization and tune operations to keep it at planting levels in turns.
Air-Pro® Meter Operation

Refer to Figure 26

The meter disk is driven, top forward, by a chain drive (not shown) always connected to the planter drive shaft. At non-planting rows, use a blank disk (page 57).

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

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

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

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

Meter Operation

1. Install disks for your crop/population range per the Seed and Fertilizer Rate manual and the instructions beginning on page 55 of this manual.

2. Open the shutter at planting rows to the recommended initial setting (from the Seed Rate charts). At unused rows, install a blank disk (page 57) and close shutter.

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

4. Operate fan to achieve suggested manifold pressure (Seed and Fertilizer Rate manual, and page 40).

5. Open slide gates to fill meters.

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

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

See also: “Seed Pool Troubleshooting” on page 63, “Meter Clean-Out” on page 74, and “Meter Brush Maintenance” on page 76.
Marker Operation (Option)

Before Operating Markers

- Make sure cylinders are properly bled. See “Marker Maintenance (Option)” on page 81.
- This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see “Marker Extension” on page 110.
- Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See “Marker Speed Adjustment” on page 110.

Marker Unfold (one side)

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

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

Both Sides Unfolded

With both markers in the upright/tilted positions:

1. Unfold either side, and when completely deployed:

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

Row Marker Operation

To alternate which side is marked:

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

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

3. Return tractor control to neutral/off.

Folding The Markers

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

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

2. Tilt markers down for transport or storage.

Field Set-Up Checklists

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.

Overhead, Crushing and Sharp Object Hazards:

Do not allow anyone to stand near or beyond the end of the wings during marker operations. There is risk of serious injury or death for anyone in the path of a marker. Marker arms are heavy, are under tremendous hydraulic power, and may move suddenly if the hydraulic system is damaged or needs bleeding. Marker discs may be sharp.
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- Safety chain secured to tractor 14
- Parking jack stowed 14

### Electrical Checklist Page
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- Check seed monitor terminal and observe any diagnostic messages 14
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  1. Refer to monitor manual.
  2. Refer to sensor documentation.

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- Inspect connections for leaks 19
- Perform a raise and lower operation 19
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- Install correct DRIVING and DRIVEN sprockets for desired fertilizer rate 25
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- Seed loaded. Lids closed 22
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06/12/2019
Field Operation

Perform all steps in "Pre-Start Checklist" on page 18 and "Field Set-Up Checklists" on page 32.

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<td>1. Slide gates open. Shutters set.</td>
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<td>2. Raise planter and line up at start of first planting row.</td>
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<td>3. Prime meters with seed. Leave fan running.</td>
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<td>5. Pull forward, lower planter, and begin planting for a short distance.</td>
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<td>6. Stop. Assess:</td>
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<tr>
<td>• planting depth</td>
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<td>• seed spacing</td>
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<tr>
<td>6. Resume planting.</td>
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</table>

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

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

When reloading seed and fertilizer, check consumption against anticipated use to that point.

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<td>2. Install transport locks</td>
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<td>3. Lights ON</td>
<td>-</td>
</tr>
<tr>
<td>4. Transport</td>
<td>20</td>
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</table>
Short-Term Parking

1. Fold markers (page 32).
2. Choose a location with level firm ground. Do not unhitch on a steep slope.
3. Fully raise planter.
4. Engage transport locks (page 19).
5. Lower planter onto locks.
6. (Option) Close discharge valves at fertilizer tank(s).
7. Set hydraulic circuits to neutral.
8. Disconnect hydraulic lines. Secure them so that they do not touch the ground.
9. Disconnect electrical cables, capping where provisioned.
10. Move jack from storage position to side of tongue.
11. Slightly raise tongue with jack.
12. Unhitch.
   Restart tractor and pull away from planter.

Long-Term Storage

1. Clean-out fertilizer hoppers per “Dry Fertilizer Clean-Out” on page 75.
2. Complete Parking steps (page 35). Park the planter indoors if possible. Great Plains recommends parking/storing in the raised position with transport locks in place.
3. See “Material Clean-Out” on page 72. Clear all seed from seed container, air box, seed delivery system and meters.
4. Close slide gates and latch hopper lids.
5. Remove seed disks from meters (this is primarily to relieve pressure on brushes). Clean disks of residue build-up (see Caution below). Use mild soap, non-abrasive scrubbers, and hot or warm water. If using sealed storage, dry disks prior to storage.

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

6. Tie or tape a small plastic bag over ends of all seed delivery tubes to prevent insects from entering or nesting.
7. Close seed inlet shutters at meters (to prevent pest entry to seed hoses). Thoroughly clean seed and seed treatment residue from seed meters. See “Meter Clean-Out” on page 74, for more information.
8. Clean planter of mud, dirt, excess oil and grease.
9. Lubricate all points listed in Maintenance.
10. Apply grease to exposed cylinder rods to prevent rust.
11. Inspect planter for worn or damaged parts. Make repairs and service during off season.
12. Use spray paint to cover scratches, chips, and worn areas on the planter to protect the metal.
13. Cover planter with a tarp if stored outside.
To get full performance from your YP625PD planter, you need an understanding of all component operations, and many provide adjustments for optimal field results. Some of these have been covered earlier in this manual. Even if your planting conditions rarely change, some of these items need periodic adjustment due to normal wear.

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\(^a\) SRM: Seed and Fertilizer Rate manual (401-754B)

\(^b\) PM: DICKEY-john\(^\circledR\) DICKEY-john\(^\circledR\) PM300-332-400 Planter Monitor Operator’s Manual (11001-1372)
Setting Material Rates

Full details on rate setting sprocket selection and installation are found in the Seed and Fertilizer Rate manual (pub. number 401-754B). This is a summary. Setting the seeding rate requires the following steps:

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

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

Planting Rate Details

1. Rate: Monitor configuration:
The seed monitor must be set up with the
• correct row count,
• correct row spacing,
• speed calibration and;
• expected population limits, in order to have accurately rate reports and useful alarms.

See the Seed and Fertilizer Rate manual (401-754B) and the DICKEY-john® Planter Monitor operator (PM) manual.

If you only plant with the factory configuration of the planter, you never need to update row count and spacing. If any rows are unused, adjust the monitor setup.

Speed calibration must be done prior to first use, and re-calibration is recommended periodically, particularly if soil conditions change.

2. Rate: Disk Selection:
The Seed and Fertilizer Rate manual (401-754B) has a table of recommended disks. Disks are specific to crops. Some crops have multiple disks available, to cover seed varieties and different populations, within disk rpm limits. Disks have a high and low rpm limit, which also corresponds to a high and low field speed limit. The charts account for these limits.

See “Air-Pro® Meter Disk Installation” on page 55.

If any rows are unused, install special blank disks. See “Row Unit Shut-Off” on page 56.
3. Rate: Range Sprockets

Range sprockets provide coarse control of seed rate.

Refer to Figure 29 and Figure 30

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

To change Range:

a. Rotate the spring-tensioned idler plate ①. Lift chain off the DRIVING and DRIVEN sprockets.

b. Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ②.

There are two or three storage shafts. Their locations vary depending on machine configuration.

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

d. Remount chain (see page 82). Re-engage idler plate.

4. Rate: Transmission Sprockets

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

Refer to Figure 30

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

To change Transmission:

a. Rotate the spring-tensioned idler plate ②. Lift chain off the DRIVING and DRIVEN sprockets.

b. Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ③ at left end of frame.

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

d. Remount chain (see page 82). Re-engage idler plate.
5. Rate: Seed Inlet Shutter

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

Refer to Figure 31

One of the factors that affects seed pickup at the disk is having an optimal seed pool (page 54). The depth of the seed pool is controlled by the seed inlet shutter.

Each Seed Rate chart specifies a suggested initial shutter setting. See "Seed Inlet Shutter Adjustment" on page 53 for setting details, and further adjustment.

At unused rows, set the shutter to zero/closed to prevent loss of meter pressurization air. Install a blank disk. See "Row Unit Shut-Off" on page 56.

6. Rate: Meter Pressurization

Refer to Figure 32

(which depicts a typical reading for some densities of corn)

A major factor that affects seed pickup at the disk is optimal meter pressurization. Fan air holds the seed in the disk pockets until they pass the drop brush (page 31).

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

Manifold pressure is set by a combination of tractor circuit lever and fan butterfly valve (page 30). See "Air System Operation" on page 27.

7. Rate: Checking

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

1. These steps presume that correct seed disks are installed (per Seed Rate Manual), and the seed inlet shutters are set for the seed (page 53).
2. With fan off, check meter pressurization reported by the Magnehelic® gauge. Re-zero as needed.
3. Determine the recommended meter pressurization based on your own notes or the published value in the Seed Rate Manual.
4. Put tractor in Park and set brakes. Set tractor engine speed to typical field rpm. Lift planter.
5. Start the fan. Gradually increase fan speed using the tractor’s hydraulic flow control for the circuit. Using hydraulic flow and/or the butterfly valve, adjust meter pressurization to the developed or suggested value from step 3.
6. Rotate ground drive wheel to fill meters. Meters are filled when seed begins emerging below two or more openers. With fan running, put the tractor in Park and set the brakes. Walk behind the wings, remove several rain covers, and check for seed in meters by looking through the clear disks.
7. Re-check meter pressurization. With meters and disks filled, air loss through empty disk pockets is reduced, and meter pressurization can change.
8. Begin planting. Troubleshoot any obvious problems or optional seed monitor alarms.
9. During the first pass, take note of the average populations reported on the optional seed monitor.

    If the reported seed monitor population varies from your intentions by a significant amount, it is imperative to perform a furrow check.

    For serious rate variances, for which the source of the problem and the solution are not quickly determined, see “Population Troubleshooting Charts” on page 65.

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

    A small varying population deviation between rows is normal. If a row is consistently running lower or higher than the other rows, it could indicate a meter or seed sensor problem that needs attention. “Population Troubleshooting Charts” on page 65.
11. Continue to monitor meter pressurization. When oil reaches operating temperature, fan speed can change. Expect to make periodic adjustments to fan circuit or butterfly valve to maintain ideal meter pressurization.

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

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

Fine-Tuning Meter Pressurization

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

1. Observe the current overall average population reported by the monitor.
2. Adjust the fan speed down, in small steps, waiting 5-10 seconds between adjustments, until skips occur (actual population begins falling below target). Note the pressure at which skips begin.
3. Restore pressure to the initial value at step 1.
4. Adjust the fan speed up, by periodic small increments, until doubles occur (actual population begins rising above target). Note the pressure at which doubles begin.
5. Adjust meter pressurization to a value halfway between the limits established at step 2 and step 4. This is the ideal value for your crop, disk and population, providing equal margin against skips and doubles. Record this value for future use.

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

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

Alternate Skip/Double Check

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

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

- Fertilizer Rate (below), and;
- Applicator tube height (page 44).

**Dry Fertilizer Rate**
The balance of this page is a summary. See Seed and Fertilizer Rate manual (401-754B) for complete details.

Refer to Figure 34
Dry fertilizer rate is set by a pair of Transmission sprockets at the left side of the implement. Sprocket parings for desired application rates and field speeds are given in charts in the Seed and Fertilizer Rate manual.

- Dry fertilizer rate is independent of seed rate. Although the dry fertilizer drive relies on the same ground drive and main shaft as the seed metering system, changes in seed rate do not affect those drive components.

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

**Coulter Adjustments (Option)**
Refer to Figure 35 and Figure 36
Frame-mounted coulters are installed on the front face of the front tool bar. They may have straight shanks (as shown), or offset shanks.

Coulters normally operate resting on their down-stops, rising up against the spring as difficult obstacles are encountered. If the springs are routinely in compression, coulters are set too deep for the field conditions.

There are 4 adjustment for coulters:
1. coulter height / blade depth (below)
2. blade angle (page 43)
3. row alignment (page 43)
4. blade style (page 43)

- Do not adjust the coulter spring length. It is factory preset to 25.0-to-25.4 cm.
Coulter Depth

Refer to Figure 36

Set coulter depth prior to first planting. Suggested depth ⑧ is 6 mm deeper than coulter depth. See page 50 for planting depth.

Suggested shank length ⑥ is:
23 cm
for a normal field tool bar height ⑦ of:
66 cm,
and a typical planting depth ⑤ of:
10 cm.

When crops or field conditions change, review the coulter depth and adjust it as needed.

Coulter blades wear. Inspect blades regularly. Lower the coulters to compensate for wear. If a shank cannot be further adjusted to compensate for wear, replace blade.

New blade disks have a nominal diameter of:
51.6 cm.
When the diameter of a blade disk is worn to:
37 cm,
replace the blade.

To adjust coulter depth:
• Mark the coulter shanks for the new depth desired.
• Raise the planter and install transport locks (page 19).
• Loosen jam nuts and set screws ① at the tool bar.
• Slide the shank up or down as needed. Tighten nuts.

Coulter Blade Angle

Refer to Figure 37

For fields where frequent sharp turns are unavoidable, you can reduce coulter plowing by allowing the coulters to caster at the pivot casting. Loosen the jam nuts at ①. Loosen the set screws ② just enough to allow the casting to swivel. Re-tighten the jam nuts. Do not remove the center stop screw ③.

Coulter to Row Alignment

The factory configuration sets coulters to run in “zone” mode, in between the outside and center openers of each triple. To adjust for other alignments, loosen the mounting bolts ④, and re-position the coulter mount.

Coulter Blade Style

Coulter blades are available in two styles:
• fluted, with radial waves, and;
• turbo, with waves tangent to the hub.

To change blade styles, order replacement blades. See "51 cm (20in) Coulter Blades" on page 92.
Fertilizer Applicator Adjustments (Option)

There are two inter-related adjustment for applicators:
1. release height
2. release angle

Make coulter adjustments before making applicator adjustments.

Applicator Release Height

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

**NOTICE**

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

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

**NOTICE**

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

Applicator Release Angle

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

Changing applicator angle also changes applicator release height.
Dual Terra-Tine™ Adjustment (Option)

Terra-Tine™ row cleaners are aligned on the center-line of the center opener of each triple row set.

With the implement raised, tine height (at the bottom of the tines) is normally set to the same height as the lower edge of the coulter blade (or about 6 mm above opener depth).

There are three adjustments for these row cleaners:

Refer to Figure 39
1. down-force
2. height
3. row alignment

**NOTICE**

Excess Wear Risk:
Check that the Terra-Tine™ row cleaner tines DO NOT touch any other implement components. At least 13 mm clearance is recommended. Tine contact causes excess wear to all parts involved.

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

Terra-Tine™ Down Force

Refer to Figure 40

A series of three holes in the spring adjuster and pivot mount plate provide five combinations for different levels of spring tension. The following table shows the down-force levels available.

<table>
<thead>
<tr>
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<th>Position</th>
<th>Newtons</th>
<th>Pounds</th>
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<tr>
<td></td>
<td>1</td>
<td>53</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>76</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>98</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>120</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>138</td>
<td>31</td>
</tr>
</tbody>
</table>

Changing force also changes height.

Terra-Tine™ Height

Refer to Figure 39

Adjust down-force before adjusting height. To adjust height, loosen both set screws. Slide mount up or down shank. Check row alignment. Tighten set screws.

Terra-Tine™ Row Alignment

The lateral position of the Terra-Tine™ may be changed by loosening the offset shank set screws (and height set screws) and/or the tool bar mount bolts.
Marker Adjustments (Option)

See also:

• "Initial Marker Setup (Option)" on page 110 for marker speed and marker extension
• "Marker Operation (Option)" on page 32; and,
• "Marker Maintenance (Option)" on page 81 for marker shear bolt and marker hydraulic bleeding

Marker Disk Adjustment

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

Refer to Figure 41

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

For a wider mark Ø, increase the angle of the marker with respect to the tube ➀. For a narrower mark Ø, reduce the angle.

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

2. Tighten bolts ②.

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

Gauge Wheel Height Adjustment

The YP625PD is factory pre-set for planting on 18 cm beds. This operating height can be reduced by 5 cm, to 13 cm, by relocating the gauge wheel axles.

For operation on flat ground, do not make this adjustment. Instead adjust the lift cylinder mounts. See "Appendix C - Flat Ground Planting" on page 113.

Refer to Figure 42

1. Raise the planter. Support the frame with jacks or stands. Retract the lift circuit to raise the tires off the ground.

2. Remove the axle bolts ④ from the lower holes ③.

3. Re-install the bolts and axles in the upper holes.

Sharp Overhead Object and Pinch/Crush Hazards:
Never allow anyone near the planter when folding or unfolding the markers. Markers may fall quickly and unexpectedly if the hydraulics fail. Anyone beneath may be injured if hit by an unfolding marker, or caught in a folding
25AP Series Row Unit Adjustments

Refer to Figure 43 (which depicts a row unit populated with most optional accessories supported for use with the YP625PD)

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

1. **Lock-Up Pin Storage Hole** (Hole Standard)
   See “Row Unit Shut-Off” on page 56.

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 48.

3. **Meter Pressurization Air Inlet** (Standard)
   Pressure-regulated air enters the meter here and holds seed in the disk pockets. See “Fan and Adjustment” on page 40.

4. **Seed Delivery Hose Inlet** (Standard)
   When the hopper slide gate (not shown) is open, gravity carries the seed into the meter at the shutter ®. The hose is easily removed for inspection. There are no adjustments.

5. **Air-Pro® Seed Meter** (Standard, Choice of Disks)
   See “Air-Pro® Meter Disk Installation” on page 55.

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 53.

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 51.

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 60.

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 56.

10. **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 50.

11. **Seed Tube with Sensor** (Standard)
    Requires no adjustment.

12. **Scrapers** (Optional, not shown)
    Inside scrapers require no adjustment. For gauge wheel scrapers, see “Adjusting Gauge Wheel Scrapers (Option)” on page 52.

13. **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 59.

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

**NOTICE**

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

Refer to Figure 44

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 45

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 46

Row unit springs provide the primary down pressure necessary for row units 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 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 110 cm rows.

Refer to Figure 48

<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>255</td>
<td>115</td>
</tr>
<tr>
<td>two</td>
<td>265</td>
<td>120</td>
</tr>
<tr>
<td>three</td>
<td>285</td>
<td>130</td>
</tr>
<tr>
<td>four</td>
<td>315</td>
<td>145</td>
</tr>
<tr>
<td>five</td>
<td>345</td>
<td>155</td>
</tr>
<tr>
<td>six</td>
<td>375</td>
<td>170</td>
</tr>
<tr>
<td>tip</td>
<td>Do Not Use</td>
<td></td>
</tr>
</tbody>
</table>

Values are down force with hoppers empty

Use only enough down pressure to cut the seed trench and maintain proper soil-firming over seed. With a full seed load, the force on each row is up to 54 kg higher at start of planting.

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

Refer to Figure 47 (shown at cam setting 2), Figure 48 and Figure 49

To adjust down pressure, use a 29 mm open end wrench or the tool ③ stored at the left end of the planter.

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.
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 51)

Setting Planting Depth

Refer to Figure 50

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 51 and Figure 52

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

The ideal spacing causes the blades to be in contact for about 2.5 cm ④. If you insert two pieces of paper between the blades, they should slide to within zero (touching) to 3.8 cm of each other. If zero, the gap between the blades should not be significantly greater than the thickness of two sheets of paper.

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

Adjusting Disc Contact

1. Raise the 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. Re-assemble and check disk contact.
Side Gauge Wheel Adjustment

Refer to Figure 53 and Figure 54

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

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

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

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

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

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

Refer to Figure 56 on page 52

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 ③ so indicator notch ④ is at 5 o’clock to 7 o’clock.
   □ Use this as the starting point for adjustment.
4. Move wheel arm in so side gauge wheel contacts row unit disk. Tighten hex-head bolt ① to clamp arm around bushing and shank.

Refer to Figure 55

5. Check wheel-to-disk contact at 5.1 cm planting depth. Lift wheel 5 cm, 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. Retighten hex-head bolt ① according to grade:
  1. ½ in Grade 5 bolt, 102 N-m.
  2. ½ in Grade 8 bolt, 149 N-m.

   Use “Torque Values Chart” on page 98 for reference.

6. Keep turning hex adjuster and moving wheel arm until the wheel is adjusted properly. When satisfied, tighten pivot bolt ② to 149 N-m.

---

**Adjusting Gauge Wheel Scrapers (Option)**

*Refer to Figure 57*

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

To adjust scrapers:

1. Loosen nut ⑤.
2. Slide scraper ⑥ toward gauge wheel ⑧ until scraper touches tire.
3. Slide scraper ⑥ away from wheel ⑧ leaving a 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 58

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

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

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

Seed Inlet Shutter Adjustment

Refer to Figure 59 (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 full setting higher than the new setting, then back to the new setting, and lower the pawl into that slot. The plate has detents for full and half steps.

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 Re-Fill</td>
</tr>
<tr>
<td></td>
<td>Small seeds, such as Milo, with little or no treatments</td>
</tr>
<tr>
<td></td>
<td>Small treated seeds and edible beans (such as Soybeans)</td>
</tr>
<tr>
<td></td>
<td>Corn, round popcorn</td>
</tr>
<tr>
<td></td>
<td>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 60
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 61 and Figure 62
For medium size and larger, or heavily treated smaller seeds that flow less easily, the slope runs from at or slightly above the 8:30 (o’clock) position on the housing wall, forward and down to 3-to-6 seeds deep at the base of the rear strip brush (1).

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

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

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

An empty meter causes seed monitor “Row Failure” alarm, with a report of the row number. Row numbers are counted from the left wing (outside row is row 1).

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

If inlet bridging is not the problem, little or no seed flows into the meter with the shutter open wider. In this case, the problem is further up in the seed flow, and may be bridging where the seed hose joins the meter inlet (also check the slide gate). Close the shutter completely for about 15 seconds. This prevents meter pressurization air from opposing seed delivery. Gently tap on the seed inlet. Re-open the shutter and see if seed now fills the meter.

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

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

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

**NOTICE**

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

2. Inspect disks to be installed. Do not install damaged or excessively worn disks. Either can cause irregular seeding. Chips and cracks accelerate brush wear.

3. Remove meter rain cover (page 53).

**Refer to Figure 63 (depicting an empty meter)**

4. Inspect meter (see page 76 for details).

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

**Refer to Figure 64**

6. With the seed pocket side facing the meter housing, place the new seed disk on the disk seat.

7. Rotate disk clamp ① clockwise 45° to clamp disk. Clamp seats into detents ③ in disk hub.

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

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

**NOTICE**

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

Brush seating may be accomplished with or without seed present. With the planter raised, rotate the ground drive wheel, or rotate the meter drive shaft, top forward, with a 23 mm open-end wrench.

8. Reset seed inlet shutter ④ to setting recommended by Seed Rate Chart, or to your own developed value.

9. On the seed monitor console, select the new Material, seed disk Cell Count, and target population.

10. Re-install rain cover (page 53).
Removing a Seed Disk

Refer to Figure 66

1. Remove rain cover. If seed is present, close shutter 4 to prevent more seed from entering meter. Attach funnel (page 74) or place a tarp under the row to collect seed.
2. Hold seed disk in meter. Rotate disk clamp 1 counterclockwise 45° to release disk.
3. Tilting top of disk toward meter, slowly remove disk, allowing seed to collect in funnel or to control flow to tarp. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean seat (2 in Figure 63 page 55), so that new disks can seat fully. Inspect brushes for excess wear and damage. See "Meter Brush Maintenance" on page 76.
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 78.
6. Re-install the rain cover (page 53).

Row Unit Shut-Off

Skip-row operations, such as switching from 110 cm triple-row to 110 cm single-row, requires shutting down unused rows.

Shutting off seeding at a row involves 4 to 6 steps:
1. Identify the rows to shut off (page 57).
2. Fully close seed inlet shutter (page 57).
3. Replace seed disk with blank disk (page 57).
4. Lock up row unit to reduce wear (optional, page 57).
5. Reset marker extension (Option, page 110).
6. Reset monitor active row pattern and row spacing to avoid nuisance alarms (see Monitor manual).

⚠ Meter drive is not disabled on 25AP row units during shut-off.
1. Identify Rows to Shut Off
On triple-row planters, openers are installed with two short-mounts on the outside of each triplet, and the long-mount opener in the center of each triplet. For twin-row operation, shut off the left (short-mount) opener of each triplet. For 55 cm operation, shut off the center (long-mount) opener of each triplet.
If not locking up rows, any rows may be shut off.

2. Close Seed Shutter
Refer to Figure 67 on page 56
Lift the handle ② away from the plate. Move it to the top position, and release the handle into the notch.
Closing the shutter ① prevents meter pressurization air from leaking into the bulk seed air system, resulting in lower pressures in adjacent rows, with risk of skips.
The shutter also stops seed flow from a row as soon as the meter is empty. Bulk seed flow to the row falls to nil as soon as the seed backs up to the air release vent at the top of the meter.

3. Install Blank Disk
Refer to Figure 68
Clean out meter. See “Meter Clean-Out” on page 74. Remove seed disk and install blank disk. See “Air-Pro® Meter Disk Installation” on page 55.
Blank disks (part number 817-841C) are essential in row shut-off, both to maintain consistent meter back-pressure to meter pressurization and to prevent wear on seed disks and minimize wear on brushes.
Blank disks are engineered to simulate a seed disk with seed in all pockets. Blanks are particularly important on the rows with sensor lines to the pressure chamber.

4. Lock-Up Row
Alternate twin-row units (the rear units) can be pinned in the up position to accommodate single-row spacing.
Refer to Figure 69
The lock-up pins ① are located in a storage hole ② in the row unit mount. To lock up a unit, the unit must be raised, and the pin moved to the lock-up hole ③ in the row unit shank.
Lock-up pins are optional. The part number is 805-435C. Order one pin for each row locked-up.

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

**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.
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 49.

4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm. This can be done in several ways, including:
   a. use a hoist at the rear of the shank
   b. use a jack under the shank extension

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

   **Refer to Figure 70 (which depicts a 4-spring 25 Series opener)**

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

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

**Sprocket Indexing (Stagger)**

- Indexed - deliberate pair spacing provides maximum plant separation
- Non-Indexed - arbitrary pair spacing

If you are planting:
- twin-row crops,
- at seed interval spacings above 16.5 cm,

you can synchronize each pair of adjacent meters in a twin row so that you achieve the maximum seed-to-seed spacing between the units of the pair.

Refer to the Seed and Fertilizer Rate manual (401-754B) for instructions and charts.
Seed Firmer Adjustments

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

**CAUTION**

Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton® seed firmer, lower the 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 71*

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 72*

To lock up a Seed-Lok® wheel:
1. Raise planter. Insert lift assist cylinder locks.
2. Push up on Seed-Lok® wheel ② until wheel arm latches up.

To release a Seed-Lok® wheel:
1. Lift up at Seed-Lok® wheel ② to reduce force required to release lever.
2. Flip lever ③ up slightly until Seed-Lok® wheel releases.

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a. Keeton® is a registered trademark of Precision Planting, Inc.
Press Wheel Adjustment

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

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

There are three adjustments available on the press wheel assembly:

Refer to Figure 73
1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 75 on page 61)

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 48.

Press Wheel Stagger

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

Refer to Figure 74
1. Raise the planter and install the transport locks. See “Lift Cylinder Locks” on page 19.
2. Remove the bolt ⑤, nut ⑥ and lock-washer ⑦ for the left press wheel ⑧.
3. Move the spacer ⑦ and wheel ⑧ to the forward of the two mounting holes at ⑨.
4. Re-install the bolt, lock washer and nut. Tighten.

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 48.
Press Wheel Centering

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

Refer to Figure 75

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 Locks" on page 19.
3. Loosen the $\frac{1}{2}$in 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 3, 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.
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 seed monitor.

Also during start up it is common to encounter alarms and readouts on the seed monitor 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 monitor setup to eliminate nuisance alarms.

Before entering the troubleshooting charts to remedy a monitor or population problem, it is helpful to use the following flowchart to get a handle on what may be wrong. The basis for finding what is wrong comes from knowing exactly what the 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 population reported by the optional seed monitor 1/3 the actual or is the reported population too high by a factor of 3?  
   No: Go to step 3.
   Yes: An incorrect row spacing value entered in the seed monitor can cause this.
   Example:
   18 rows at 110 cm “Row Spacing” (incorrect 1980 cm effective swath), instead of:
   18 Rows at a swath of 660 cm (correct 36.7 cm effective row spacing).
   Correct the row spacing error on the seed monitor console.
   The system can also be off by a large factor if incorrect range sprockets are installed. Check seed rate charts against range and transmission sprockets on the planter.

3. Is the population reported by the optional seed monitor 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”.

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”.
## Seed Pool Troubleshooting

### Normal: Filled
Inlet is filled to seed box. Seed move slowly down as singulated by meter.

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

### Bridging: Inlet Shutter
A bridge at the shutter is blocking flow. Causes may include:
- oversize seed
- shutter setting too low
- oversize matter in seed
- excessive or sticky seed treatment

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

### Bridging: Seed Hose
Oversize matter in seed has caused a bridge at the top of the inlet. Causes may include:
- oversize seed
- oversize matter in seed
- excessive or sticky seed treatment

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

### Empty Hopper
No seed arriving from box. Causes may include:
- seed run-out
- slide gate closed
- back-flow (1) is also occurring, which can reduce meter pressurization at other rows

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

---

![Figure 76](image_url)

Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions
Magnehelic® Gauge Troubleshooting

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

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

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

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

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

Winter testing/maintenance advisory:
Gauge readings may be inaccurate or sluggish below -7°C
## Population Troubleshooting Charts

### Population Too Low

<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>Using <em>Seed Rate Manual</em>, check:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• seed disk selection,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Range/Transmission sprocket setup,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• tire size and inflation.</td>
</tr>
<tr>
<td></td>
<td>Empty pockets on disk (skips) due to insufficient air pressure.</td>
<td>Methodically increase the meter pressurization. See &quot;Fan and Adjustment&quot; on page 40.</td>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td>Empty pockets on disk (skips) due to singulation (4 tufted) brush too aggressive.</td>
<td>Check for matted, stuck together fibers. Wash, scrape clean, or replace as needed.</td>
</tr>
<tr>
<td></td>
<td>Empty pockets on disk (skips) due to seed too big for pocket.</td>
<td>Select the correct disk for the seed size.</td>
</tr>
<tr>
<td></td>
<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>
</tr>
<tr>
<td></td>
<td>Air pressure too low, as confirmed by gauge.</td>
<td>Increase fan speed or reduce butterfly valve setting.</td>
</tr>
<tr>
<td></td>
<td>Air pressure too low, but gauge reading is within range or reading high.</td>
<td>• Inspect the 6.4 cm sample lines from the row units up to the sensor chamber for leaks (page 64).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Make sure all non-planting rows have blank disks and shutters are closed (page 57).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Re-zero the gauge with the fan off (page 64).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check gauge vent line for kinks, pinches or plugging (page 64).</td>
</tr>
<tr>
<td></td>
<td>Excess field speed</td>
<td>Plant within speed ranges recommended in <em>Seed Rate Manual</em>.</td>
</tr>
<tr>
<td></td>
<td>Incorrect speed sensor constant.</td>
<td>Perform speed calibration per seed monitor manual.</td>
</tr>
<tr>
<td></td>
<td>Incorrect magnetic speed sensor gap.</td>
<td>Check and adjust (page 78).</td>
</tr>
<tr>
<td></td>
<td>(Option) Incorrect radar speed sensor angle.</td>
<td>With planter lowered, check radar speed sensor angle per Dickey-john® recommendations.</td>
</tr>
<tr>
<td><strong>Overall Low Population, cont.</strong></td>
<td>Pass gaps too large</td>
<td>Check marker extension (page 110). For GPS, check planter size programmed.</td>
</tr>
<tr>
<td></td>
<td>Actual field size is different</td>
<td>Population may be correct, and calculations are not.</td>
</tr>
<tr>
<td></td>
<td>Seed monitor reporting excess area</td>
<td>Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.</td>
</tr>
</tbody>
</table>
## Population Too Low

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Population, Single Row</strong></td>
<td>Shutter opening too narrow - starving meter of seed (low seed pool)</td>
<td>Adjust shutter to higher setting.</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to bridging at shutter</td>
<td>Re-adjust for shutter bridging (page 54). If seed is treated, increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to blockage above inlet</td>
<td>Clear blockage (page 54).</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 54). Increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Incorrect seed disk on one row</td>
<td>Install correct seed disk.</td>
</tr>
<tr>
<td></td>
<td>Chain skipping at row unit.</td>
<td>Check chain, idler and sprocket condition.</td>
</tr>
<tr>
<td></td>
<td>Skips due to low meter pressurization at one or several rows</td>
<td>Check shutter setting. Check for excess wear on seed drop brush. Check for loose or leaking pressure hose.</td>
</tr>
<tr>
<td></td>
<td>Skips due to skipping chain</td>
<td>Check for worn chain, worn idlers, low chain slack (page 82) and failed meter bearing.</td>
</tr>
<tr>
<td></td>
<td>Skips due to debris in disk pockets</td>
<td>Remove rain covers. Inspect and clean out disks.</td>
</tr>
<tr>
<td></td>
<td>Row has blank disk installed</td>
<td>Replace with seeding disk.</td>
</tr>
<tr>
<td></td>
<td>Seed tube plugged</td>
<td>Raise planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td><strong>Low or Erratic Seed Flow</strong></td>
<td>Seed meter plugged, due to operation with fan shut off, or manifold pressure too low.</td>
<td>Close shutters. Clean-out meters. Set fan for correct manifold pressure. Resume planting.</td>
</tr>
</tbody>
</table>

## Population Too High

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall High Population</strong></td>
<td>Incorrect seed rate</td>
<td>Check seed rate charts</td>
</tr>
<tr>
<td></td>
<td>Two seeds per pocket on the disk (doubles), due to excess meter pressurization</td>
<td>Methodically decrease the meter pressurization. See &quot;Fan and Adjustment&quot; on page 40.</td>
</tr>
<tr>
<td></td>
<td>Two seeds per pocket on the disk (doubles), due to pockets too large for the seed</td>
<td>Select a disk with smaller pockets.</td>
</tr>
<tr>
<td></td>
<td>The meter pressurization is too high, as confirmed by gauge</td>
<td>Reduce fan speed or increase butterfly valve setting.</td>
</tr>
<tr>
<td></td>
<td>Air meter pressure too high due to pressure sensor not zeroed properly.</td>
<td>Re-zero the gauge with the fan off.</td>
</tr>
</tbody>
</table>
## Population Too High

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
</table>
| **Overall High Population, cont.** | Air pressure too high, but gauge is within range or reading low. | Check:  
- Inspect the 6.4 cm sample lines from the row units up to the sensor chamber for leaks (page 64).  
- Make sure all non-planting rows have blank disks (page 57).  
- Check that rubber pressure relief plug is seated in gauge (page 64). |
| 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 seed monitor manual. |
| Incorrect magnetic speed sensor gap. | Check and adjust (page 78). |
| (Option) Incorrect radar speed sensor angle. | With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations. |
| Doubles due to incorrect disk for crop or seed size | Use recommended disk for crop and seed size. |
| Sticky seeds: excess seed treatment | Increase seed lubricant. |
| Incorrect speed sensor constant | Perform speed calibration per DICKEY-john® monitor manual. |
| Overlapping passes | Check marker extension (page 110). For GPS, check planter size programmed. |
| Actual field size is different | Population may be correct, and calculations are not. |
| Seed monitor under-reporting area | Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns. |
| **High Population, Single Row** | Excess meter pressurization causing doubles | Check shutter. |
| Worn seed-drop brush and/or strip brushes allowing excess seed to pass | Replace worn brushes. |
| Worn meter bearing causing seed disk wobble and doubles | Replace meter bearing. |
| Incorrect seed disk with higher cell count. | Install correct disk. |
## Population Related

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Population Alarms</strong></td>
<td>False alarms or actual rate errors due to monitor setup with incorrect [active] row count or spacing</td>
<td>When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup.</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 magnetic speed sensor</td>
<td>Check speed sensor on planter for a gap to toothed wheel of: 0.5-1.0mm. 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 monitor manual.</td>
<td></td>
</tr>
<tr>
<td>(Option) Incorrect radar speed sensor angle</td>
<td>With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
<td></td>
</tr>
<tr>
<td>Seed run-out. Due to unequal outlets per box division, and if planting across slopes, some rows will run out before others.</td>
<td>Re-distribute seed to favor rows that have run out, and plan to re-fill shortly.</td>
<td></td>
</tr>
<tr>
<td><strong>Mismatch Between Reported and Furrow Population</strong></td>
<td>Small seeds (example milo) are not reliably sensed in the seed tube</td>
<td>Run with rain covers in place to minimize ambient light intrusion. Use the Population Adjust factor in the seed monitor system to compensate for missed seeds. Remember to set this back to 100% for large seeds.</td>
</tr>
<tr>
<td>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><strong>Excessive Seed Cracking</strong></td>
<td>Incorrect seed pocket size</td>
<td>Use correct disk for seed.</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>
<tr>
<td><strong>Skips and Bare Spots After Turns</strong></td>
<td>Fan was turned off at turns</td>
<td>Leave fan running; meter pressurization must be maintained during turns, or seed will fall out of disk pockets.</td>
</tr>
<tr>
<td>Insufficient hydraulic flow to keep fan running at speed required to maintain meter pressurization</td>
<td>Check tractor capability against requirements (page 96). If sufficient: • Fold markers before engaging lift. • Use a less aggressive lift rate. • Monitor meter pressurization during end-of-pass operations.</td>
<td></td>
</tr>
<tr>
<td><strong>Seed too shallow or scattered on ground from a single row</strong></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>Row not penetrating in tire tracks</td>
<td>Increase down force on parallel arm springs.</td>
<td></td>
</tr>
<tr>
<td>Opener depth too shallow.</td>
<td>Change side depth wheel setting.</td>
<td></td>
</tr>
<tr>
<td><strong>Twin Rows were timed but became out of time.</strong></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>Chain has jumped.</td>
<td>Check sprockets and chain for excessive wear or rusty stuck links.</td>
<td></td>
</tr>
</tbody>
</table>
## General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population Alarms</strong></td>
<td>See “Population Troubleshooting Charts” on page 65.</td>
<td></td>
</tr>
<tr>
<td><strong>Excess Seed Remaining</strong></td>
<td>See “Population Troubleshooting Charts” on page 65.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field size different.</td>
<td>After ruling out population problems, re-check geography.</td>
</tr>
<tr>
<td></td>
<td>Excessive gaps between planter passes.</td>
<td>Adjust marker, page 110.</td>
</tr>
<tr>
<td><strong>Seed Consumption Too High</strong></td>
<td>See “Population Troubleshooting Charts” on page 65.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field size different.</td>
<td>After ruling out population problems, re-check geography.</td>
</tr>
<tr>
<td></td>
<td>Excessive overlap.</td>
<td>Adjust marker, page 110.</td>
</tr>
<tr>
<td><strong>Rows Not Planted</strong></td>
<td>If not detected by optional 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><strong>Uneven seed spacing</strong></td>
<td>See “Population Troubleshooting Charts” on page 65.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Unclean seed.</td>
<td>Use clean seed.</td>
</tr>
<tr>
<td></td>
<td>Damaged seed tube</td>
<td>Inspect; repair or replace.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® plugging.</td>
<td>Lock up Seed-Lok®, page 59.</td>
</tr>
<tr>
<td></td>
<td>Row-unit discs not turning.</td>
<td>See “Row-unit discs not turning freely” in this Troubleshooting chart.</td>
</tr>
<tr>
<td></td>
<td>Worn/rusted sprockets and/or chain idler or bearings.</td>
<td>Check and replace any worn/rusted sprockets or chain idlers.</td>
</tr>
<tr>
<td></td>
<td>Partially plugged row-unit seed tube.</td>
<td>Lift up planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td></td>
<td>Lack of proper seed lubrication on seed.</td>
<td>See “Seed Lubricants” on page 90.</td>
</tr>
<tr>
<td><strong>Uneven seed depth</strong></td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
</tr>
<tr>
<td></td>
<td>Incorrect coulter depth setting.</td>
<td>See coulter manual or set unit mounted coulter.</td>
</tr>
<tr>
<td></td>
<td>Excessive or improper row unit down pressure spring setting.</td>
<td>See “Row Unit Down Pressure” on page 48.</td>
</tr>
<tr>
<td></td>
<td>Damaged seed tubes.</td>
<td>Check seed tubes for damage.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® building up with dirt.</td>
<td>Lock up Seed-Lok®, page 59.</td>
</tr>
<tr>
<td></td>
<td>Row-unit not penetrating low spots.</td>
<td>Adjust row-unit, see instructions beginning on page 48.</td>
</tr>
<tr>
<td></td>
<td>Rough planting conditions.</td>
<td>Rework the field.</td>
</tr>
<tr>
<td></td>
<td>Seed firmer not in place and set to correct tension.</td>
<td>See “Seed Firmer Adjustments” on page 59.</td>
</tr>
</tbody>
</table>
## General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<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 tool bar height page 16</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 51.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® is plugging row-unit.</td>
<td>Lock up Seed-Lok®, page 59.</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 60.</td>
</tr>
<tr>
<td></td>
<td>Insufficient row unit down-force</td>
<td>See “Row Unit Down Pressure” on page 48.</td>
</tr>
<tr>
<td></td>
<td>Use of incorrectly shaped tire for your conditions.</td>
<td>Wedge shaped wheels work best on narrow spacings and in wet conditions. Round edge wheels work best in wider row spacings and drier conditions.</td>
</tr>
<tr>
<td></td>
<td>Not level front to rear.</td>
<td>Check tongue height and top link adjustment.</td>
</tr>
<tr>
<td></td>
<td>Wheel stagger needs adjustment for conditions</td>
<td>See “Press Wheel Adjustment” on page 60.</td>
</tr>
<tr>
<td></td>
<td>Too wet or cloddy</td>
<td>Wait until drier weather or rework ground.</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></td>
<td>Needle valve(s) plugged.</td>
<td>Open needle valves, cycle markers slowly and reset needle valves, refer to page 110.</td>
</tr>
<tr>
<td>Marker disk does not mark</td>
<td>Disk angle too straight for soil conditions</td>
<td>Reverse marker disk to pull or throw dirt.</td>
</tr>
<tr>
<td>Speed Reading Doesn’t Match Tractor</td>
<td>Monitor speed reading, using optional radar, will only match tractor with planter lowered. (Speed reading with magnetic pickup falls to zero when lifted.)</td>
<td>If speeds don’t agree during planting (with planter lowered), re-calibrate radar speed sensor with planter lowered.</td>
</tr>
</tbody>
</table>
## Dry Fertilizer Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Fertilizer Flow, All Rows</td>
<td>Hopper empty</td>
<td>Check / refill hopper.</td>
</tr>
<tr>
<td></td>
<td>Chain missing at one or more drive stages</td>
<td>Check all five chains from ground drive to hoppers. See “Dry Fertilizer Chains” on page 105.</td>
</tr>
<tr>
<td>No Fertilizer Flow, Some Rows</td>
<td>Hopper plugged</td>
<td>Clean out any material clogging discharge port. See “Dry Fertilizer Clean-Out” on page 75.</td>
</tr>
<tr>
<td></td>
<td>Shaft disconnected</td>
<td>Check couplers along final drive shaft.</td>
</tr>
<tr>
<td>No Fertilizer Flow, One Row</td>
<td>Applicator tube plugged with soil</td>
<td>Disconnect hose at top of applicator tube. Remove blockage from below. Raise release height (page 44).</td>
</tr>
<tr>
<td></td>
<td>Applicator tube plugged with fertilizer.</td>
<td>Disconnect hose at top of applicator tube. Remove blockage from below. Use finer grained fertilizer, or dry out the fertilizer if coagulation is the problem.</td>
</tr>
<tr>
<td>Low Flow</td>
<td>Incorrect Transmission sprockets</td>
<td>Re-check Seed and Fertilizer Rate manual (401-754B). Exchange DRIVING and DRIVEN sprockets as needed.</td>
</tr>
<tr>
<td></td>
<td>Field speed too high for Transmission sprockets selected</td>
<td>Apply at a lower speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is lower at high speeds.</td>
</tr>
<tr>
<td></td>
<td>Ground drive wheel slipping</td>
<td>Check lowered tool bar height (page 16). Operate at a lower field speed. Field conditions may be too wet for reliable meter drive.</td>
</tr>
<tr>
<td></td>
<td>Meter flutes worn</td>
<td>Inspect meter flutes (page 24). Replace as needed.</td>
</tr>
<tr>
<td>High Flow</td>
<td>Incorrect Transmission sprockets</td>
<td>Re-check Seed and Fertilizer Rate manual (401-754B). Exchange DRIVING and DRIVEN sprockets as needed.</td>
</tr>
<tr>
<td></td>
<td>Field speed too low for Transmission sprockets selected</td>
<td>Apply at a higher speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is higher at low speeds.</td>
</tr>
<tr>
<td>Fertilizer on Surface</td>
<td>Release height too high</td>
<td>Lower release height (page 44).</td>
</tr>
<tr>
<td></td>
<td>Coulter depth too shallow</td>
<td>Increase coulter depth (page 43).</td>
</tr>
</tbody>
</table>
Maintenance and Lubrication

Maintenance

Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime, and repair. Always turn off and remove the tractor key before making any adjustments or performing any maintenance.

**WARNING**

**Crushing Hazard:**
Always have transport locks in place when working on implement. You may be severely injured or killed by being crushed under a falling implement.

**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 85.
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, and fertilizer, if the fertilizer system is present and was used.

The seed clean-out topic begins on this page.

Fertilizer clean-out begins on page 75.

Seed Clean-Out

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

**CAUTION**

**Possible Dust and Chemical Residue and Fume Hazards:**
Wear a respirator, and any other protective equipment specified by the seed supplier, seed treatment supplier and/or fertilizer supplier. Expect chemical residue, dust and fumes during clean-out.
Refer to Figure 78

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

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

Funnel Conversion

Materials and tools needed:

- a length of 3.49 cm (1\(\frac{3}{8}\) in.) I.D. hose
- a worm drive clamp with a working diameter of approximately 3.4 cm to 5.7 cm
- a hacksaw with fine-toothed blade

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

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

Seed Clean-Out (Container)

1. Scoop or vacuum as much seed as possible from the top of the hoppers.
2. Perform a meter clean-out per page 74.

Seed Clean-Out (Funnel)

1. Close slide gate at hopper.
2. Attach funnel as for meter clean-out (page 74), with hose routed to bucket or other larger container.
3. Use slide gate to control seed flow until meter, inlet and hopper are empty.

---

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

Refer to Figure 80

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

- The funnel does not fit rows to the left of gauge wheels on twin-row planters. Use vacuum or tarp collection on those rows.
- It may be necessary to raise a twin-row planter to obtain clearance for the funnel. Use transport locks (page 19) if the planter is raised.

1. Close the seed inlet shutter on the meter (page 53). This minimizes the seed volume at disk removal.
2. Remove the rain cover (page 53). The funnel cannot be snapped in place with the cover installed.
3. Align the left (rear) end of the funnel lip ③ with the top of the lower (rear) cover latch ear. Place the right (front) end of the funnel lip ④ between the meter housing and the seed tube.
4. Rotate the funnel forward until the slot at lip center engages a tab on the bottom center of the meter housing.
5. Remove the seed (page 56).
6. Slowly open the seed shutter (page 53) to empty the seed up to the slide gate.
7. If seed remains in the hopper, use the slide gate to control the volume of flow.

Refer to Figure 79

8. Clean seed from all brushes (shop vac recommended).
9. Inspect brushes (page 76).
10. Rotate funnel clockwise, remove and empty.
11. For imminent operations: Install next seed wheel or blank disk (page 57) for operations. Set inlet shutter for next seed (page 53).
12. For storage:
   - Close seed inlet shutter. Leave disk out.
   - Close Y-tube (if any).
13. Re-install rain cover (page 53).

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

Alternate Meter Clean-Out

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

- Close the seed shutter.
- Release the meter clamp, hold the disk against the meter.

- Tip the top of the disk away from the meter.
- Insert hose nozzle and remove seed.
- Open shutter to allow seeds in inlet and drop hose to flow to vac nozzle.
Dry Fertilizer Clean-Out

**CAUTION**

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

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

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

**NOTICE**

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

Refer to Figure 81
3. At each end of the hopper, remove the pin ① at the shaft coupler ②. Slide coupler onto adjacent shaft.

Refer to Figure 82
4. At the rear of each hopper, remove two cotter ③ and two cradle pins ④.

Refer to Figure 83
5. Open the hopper lid (see page 24).
6. With one person at each end of the hopper, carefully tilt it forward to empty it.
7. Operate the hopper drive shaft to clear the meter.
8. Tilt the hopper upright. Secure at rear with pins.

**CAUTION**

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

**CAUTION**

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

Refer to Figure 84

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.

---

a. HEPA: high efficiency particulate air
Meter Brush Replacement
Consult the Parts manual (401-754P) for current replacement part numbers.

Refer to Figure 85

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

Strip Brush Replacement
\( \text{Do not loosen or remove any of the three} \ 5 \times 16-18 \text{ cap screws} \ (\text{15}) \text{ retaining the brush holder.} \)
1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps \( \text{(13)} \). Turn each snap clockwise to release brush holder \( \text{(14)} \).
2. Prepare to catch the drop brush \( \text{(16)} \) (which will fall lose). Slide brush holder left and up to free front edge from under washer \( \text{(17)} \). Remove brush holder.
3. Remove used strip brushes from the holder by sliding them downward out of the grooves.

Refer to Figure 86
4. Insert replacement strip brushes into grooves at holder bottom so that notched ends \( \text{(18)} \) are at the bottom.

Refer to Figure 85
5. Check strip brush positioning with a trial re-insertion of the brush holder. The ends of the long brush must fit snugly into meter housing grooves at top \( \text{(19)} \) and lower rear \( \text{(20)} \). The bottom end of the short brush must fit snugly in the lower front housing groove \( \text{(20)} \). If any significant force is required to re-seat the brush holder, a strip brush is likely too high or too low.
6. Relax the position of the brush holder, re-position the drop brush (see below), and re-seat the brush holder.
7. Starting with the bottom snap, swing snaps \( \text{(13)} \) back into engagement.
Seed Disk Maintenance

Refer to Figure 87

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

Replace disks for conditions including:

- Chips at circumference 3. These will leak air.
- Chips at edges or in sculpted surfaces of cell pockets 1. These can leak air and/or adversely affect singulation.
- Cracks over 5 cm long in the working face 4 of the disk, or any cracks in support webs or to an edge.
- Warping - if any part of the disk does not press firmly on the seed drop brushes (page 55) in operation, replace the disk.
- Wear - if a wiper ridge is worn away, replace the disk. If the seed pockets are worn through, or the air ports 5 have enlarged, replace the disk.

Cleaning and Storing Seed Disks

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

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

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

Speed Sensor Gap

Refer to Figure 88

1. Raise planter (page 19). Rotate ground drive wheel until a disk tooth is directly at sensor center-line.
2. Check that wheel teeth are on sensor center-line side-to-side. As needed, loosen collars on either side of disk and adjust.
3. Check that center-line of sensor is pointed at center-line of transfer shaft. As needed, loosen mounting bolts 6 and adjust.
4. Check gap 7 between top of sensor and toothed wheel for a dimension of: 1.6mm

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

Possible Chemical Hazard:

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

As with any hydraulic system, contamination is the most common cause of performance problems and premature wear. Make a special effort to properly clean quick couplers prior to attaching the hoses to tractor, and never let them fall to the ground.

**WARNING**

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

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

**NOTICE**

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

**NOTICE**

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

**Bleeding Lift Hydraulics**

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

If it is necessary to further bleed lift system, see "Lift Cylinder Bleeding" on page 80.

**Bleeding Marker Hydraulics**

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

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

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

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

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

When all cylinders are fully retracted, momentarily reverse (Extend) the control to lower the planter 12mm.

Lift Cylinder Bleeding

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

Refer to Figure 89

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

1. Consult lift circuit hydraulic diagram on page 99
   (repeated at right in smaller scale)
2. Check that tractor hydraulic reservoir is full. Set hydraulics for low flow rate.
3. Lower planter.
4. Loosen the JIC fittings ① at the rod ends (bottom) of the three left lift cylinders. Leave the right undisturbed.
5. Extend the lift circuit until fluid appears at each the loosened fittings. As fluid appears, set control lever to neutral and secure each fitting.
6. Retract the circuit. Set control lever to neutral.
7. Extend the lift circuit until both cylinders are fully extended.
8. Loosen the JIC fitting ② at the base (top) ends of the three right lift cylinders. Leave the left undisturbed.
9. Retract the circuit until fluid appears at each loosened fitting. As it appears, set control lever to neutral and secure each fitting.
10. Set circuit control to neutral and secure fitting.
11. Unless it is suspected that a large amount of air is in the line between the cylinders, rely on the normal re-phasing operation to purge it. Otherwise...
12. Loosen the JIC fitting at the base (top) end of the left cylinder ③.
13. Retract lift circuit until fluid appears.
14. Set circuit to neutral and secure fitting.
15. Extend and retract circuit several times.
Drive-Line Shear Pin

Refer to Figure 90

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

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

**NOTICE**

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

**Marker Maintenance (Option)**

See also:
"Initial Marker Setup (Option)" on page 110, "Marker Operation (Option)" on page 32, and "Marker Disk Adjustment" on page 46

**Marker Shear Bolt Replacement**

Refer to Figure 91

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt ④ at the fold, pivot on a second bolt (not visible in Figure), and swing back.

The shear bolt is a hex head cap screw, 5\*10-18 x 1\*1/2 in Grade 5, Great Plains part number 802-012C, plus a 5\*10-18 lock nut, Great Plains part number 803-011C.

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

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

**Marker Grease Seal Cap**

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

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

See also “Chain Routing” on page 102.

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 92, 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 (cm per meter):
   Long chains (over 91 cm): 2.1 cm/m
   Vertical short chains: 2.1 cm/m
   Horizontal short chains: 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 93 (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 94 (which depicts planter raised, and depicts a 4-spring opener, used on other planter models)

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

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

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

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

Check chain clip orientation. Check chain routing at shank idler(s) ⑤ (see page 106).
Spreaders and Scrapers

Appears to all row unit Series.

Refer to Figure 95

1. Remove side gauge wheels from arms to access row-unit disks and scrapers.
2. With the unit raised, check blade spreader for wear. Replace spreader if it is 13 mm wide or narrower. To replace, remove disk blades, drive out roll pins, and install new spreader.
3. When reinstalling disk blades, put two shims between bearing and shank on each blade. Tighten bolts.
4. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See “Opener Disc Contact Region” on page 50.
5. Check that outside disk scrapers are formed to disk blades to help remove any mud. Bend/twist scrapers to fit blades as needed. Every 200 acres of operation, check outside scrapers for adjustment and wear. Replace outside scrapers as necessary.

Row-Unit Side Wheels

Refer to Figure 96

1. Lift opener side wheel off the ground. Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.
2. Side wheels are preset at the factory. Due to normal wear it may become necessary to make adjustments so the wheel remains close to the disk. To prevent plugging, loosen clamp bolt and slide arm inward to take up gap between side wheel and disk blade. If more adjustment is needed, go to step 3.
3. Remove bolt and wheel. Remove shims from the inside of wheel and place them on the outside of wheel. Always place removed shims from the inside to the outside. When installed, wheel should turn freely and not hit the arm at the curve. Do not add any more shims than necessary.
4. Disassemble side gauge wheel arm from unit. Remove bushing from sleeve and check for wear. If necessary, replace bushing.
5. When reinstalling side gauge wheels, align tab on hex adjustment with notch in bushing. Replace bolt and tighten.
6. Adjust side gauge wheels. Refer to see “Side Gauge Wheel Adjustment” on page 51.

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

You may need fewer washers under worn disks.

Sharp Object Hazard: Be careful when working in this area. Disk edges are sharp.
Seed Flap Replacement

Refer to Figure 97

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

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

Figure 97
Seed Tube Flap
Lubrication

Opener Side Wheel Bushing

2 zerks per bushing,
2 bushings (4 zerks) per row;
72 zerks total (18-row planter)
Type of Lubrication: Grease
Quantity: Until grease emerges

Gauge Wheel Module Forward Pivot

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

Markers (Option)

4 zerks per marker,
two markers;
8 total
Type of Lubrication: Grease
Quantity: Until grease emerges
Coulter Hubs (Option)

1 zerk per coulter,
12 total
Type of Lubrication: Grease
Quantity: Until resistance is felt
Re-pack seasonally.

Chain: Contact Drive, Lower

As Required

1 chain
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly
Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

Chain: Contact Drive, Upper

As Required

1 chain
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly
Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.
Chains: Fertilizer Drive (Option)

3 chains
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

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

Chains: Meter Drive

1 chain each meter
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

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

Chain: Range Drive

1 chain
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

- Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.
Chain: Transmission Drive

As Required

- 1 chain
- Type of Lubrication: Chain Lube
- Quantity = Coat thoroughly

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

Coulter Pivot (Option)

- 1 zerk per coulter,
- 12 total
- Type of Lubrication: Grease
- Quantity: Until grease emerges

Tire Pressures

- 2 gauge wheels,
- 2 lift-assist wheels (twin- and triple-row only);
- 2 or 4 tires total

Check tire pressures more frequently on a new implement, and with new tires. Check tire pressures before making any level adjustments, and whenever there are application problems.
Ground Drive Wheel Hub

![Image](image1)

| 50 |

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

Gauge Wheel Hubs

![Image](image2)

| Seasonal |

1 zerk each spindle; 2 total
Type of Lubrication: Grease
Quantity: Until resistance is felt

Markers: Disk Hub

![Image](image3)

| Seasonal |

4 bearings; 2 races each marker
Type of Lubrication: Grease
Quantity: Re-pack
Seed Lubricants
To maximize performance of Great Plains metering systems, it is imperative to use “Ezee Glide Plus” or Bayer Seed Fluency Agent.

Ezee Glide Plus Talc+Graphite Mix
821-069C bucket, 5 gallon (19 liter)

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

Recommended usage:
For clean seeds other than milo, cotton, and sunflowers sprinkle one cup of Ezee Glide Plus Talc per 4 bushels or units (170 ml per 100 liters) of seed.
For milo, cotton, and sunflowers double the application to one cup (or more) per 2 bushels or units (335 ml per 100 liters) of seed.
For canola or mustard, 1 cup (240 ml) per 30 pound (13.6 kg) bag is a minimum starting value. Mix the seed lubricant early during the seed loading. Use more lubricant in extremely dry conditions.

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

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

**CAUTION**

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

Bayer Seed Fluency Agent
821-074C Fluency Powder, case quantity
821-075C Fluency Powder, single 4.4 pound bucket

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

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

Dual Sequenced Markers

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

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-110 PT PLTR FLAT FOLD MKR</td>
<td>113-862A</td>
</tr>
</tbody>
</table>

See “Marker Operation (Option)” on page 32.

Marker installation is documented in manual part number 113-870M.

Frame-Mounted Row Accessories

Frame-Mounted Coulters

Coulters required for dry fertilizer delivery. They include 51 cm blades, and dry fertilizer applicator tubes. The bundles below provide two coulters for each triple-row.

Coulters are sold separately to provide a choice of blade disks.

<table>
<thead>
<tr>
<th>Coulter Bundle</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP625 PT 18 DRY FRT CLTR 20 TB</td>
<td>407-591A</td>
</tr>
<tr>
<td>(12 coulters with Turbo blades)</td>
<td></td>
</tr>
<tr>
<td>YP625 PT 18 DRY FRT CLTR 20 FT</td>
<td>407-592A</td>
</tr>
<tr>
<td>(12 coulters with Fluted blades)</td>
<td></td>
</tr>
</tbody>
</table>

See page 42 and page 44 for adjustments.
51 cm (20in) Coulter Blades

<table>
<thead>
<tr>
<th>Blade Type</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>COULTER BLADE 20 FLUTED</td>
<td>820-074C</td>
</tr>
<tr>
<td>(8 mm wave at edge of full 51.9 cm)</td>
<td></td>
</tr>
<tr>
<td>5/8 WAVY-20&quot; TURBO BLADE</td>
<td>820-180C</td>
</tr>
<tr>
<td>(18.8 mm wave at edge of full 51.4 cm)</td>
<td></td>
</tr>
</tbody>
</table>

Dual Terra-Tine™ Row Cleaners

These row cleaners are frame-mounted behind the coulters and ahead of the openers. The bundle below includes 12 dual row cleaners, which mount in-line with the center row of each triple.

Order one kit per planter:

<table>
<thead>
<tr>
<th>Terra-Tine</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP625-18TP FM DOUBLE TT</td>
<td>207-251A</td>
</tr>
</tbody>
</table>

For operations, See “Dual Terra-Tine™ Adjustment (Option)” on page 45.

Row-Mounted Accessories

Lock-Up Pins

If rows are shut off, you can reduce unnecessary wear on the unused row units by locking them up. Order one per row unit locked-up.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN HITCH 1 X 6 W/HAIRPIN</td>
<td>805-435C</td>
</tr>
</tbody>
</table>

See “Row Unit Shut-Off” on page 56.
Seed Meter Disks

Air-Pro® meters accept a variety of seed disks, plus a special blank disk for row shut-off. Choices include:

<table>
<thead>
<tr>
<th>Meter Disks</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola, 150 Cell</td>
<td>837-148C</td>
</tr>
<tr>
<td>Canola, 250 Cell</td>
<td>817-991C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Large; Flat)</td>
<td>817-836C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Large; Round)</td>
<td>817-794C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Medium; Round)</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; Round)</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>Edible Bean, 56 Cell (Large)</td>
<td>817-967C</td>
</tr>
<tr>
<td>Edible Bean, 60 Cell (Medium)</td>
<td>837-065C</td>
</tr>
<tr>
<td>Hill Drop Cotton, 12 Cell</td>
<td>837-186C</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, Pelletized Sugar Beet, 65 Cell</td>
<td>817-849C</td>
</tr>
<tr>
<td>Milo, Pelletized Sugar Beet, 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 Oil, 24 Cell (Large)</td>
<td>817-851C</td>
</tr>
<tr>
<td>Sunflower Oil, 60 Cell (Medium)</td>
<td>837-235C</td>
</tr>
<tr>
<td>Sunflower Oil, 60 Cell (Small)</td>
<td>837-234C</td>
</tr>
<tr>
<td>Wheat, Rice, 84 Cell (Volumetric)</td>
<td>817-867C</td>
</tr>
</tbody>
</table>

Inside Disk Scrapers

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

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

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

See page 111 for scraper installation. The spring-loaded carbide scraper requires no adjustment.

See “Seed Meter Setup and Adjustment” on page 53.
Gauge Wheel Scrapers
When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise result in shallow planting.
Order one part per wheel (2 per opener).

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

The scrapers mount on the bottom rear of the depth wheel arm, using existing hardware. The slot in the scraper is long enough to clear the lower grease zerk, and allow adjustment as wheel and scraper wear.

For operations, see: “Adjusting Gauge Wheel Scrapers (Option)” on page 52.

Seed Firmers
The base YP625PD planter requires a choice of row unit bundles which include one of three firmers: seed flap, Keeton®, or Seed-Lok®. Only one type of seed firmer may be installed at the same time. Order one per row.

Seed-Lok® Seed Firmer

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

For operations, see: “Seed Firmer Adjustments” on page 59.

Keeton® Seed Firmer
The Seed-Lok® seed firmer supports low-rate fertilizer delivery. For this use, a liquid fertilizer system must also be installed.

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

For operations, see: “Seed Firmer Adjustments” on page 59.
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 60.

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 90.

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>

See “Funnel Conversion” on page 73.
See “Meter Clean-Out” on page 74.
## Appendix A - Reference Information

### Specifications and Capacities

<table>
<thead>
<tr>
<th></th>
<th>YP625PD-18TP110</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Count</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>110 cm</td>
</tr>
<tr>
<td><strong>Swath Averaged Row Spacing</strong></td>
<td>36.7 cm</td>
</tr>
<tr>
<td><strong>Width, no Markers</strong></td>
<td>695 cm</td>
</tr>
<tr>
<td><strong>Width, with Markers</strong></td>
<td>705 cm</td>
</tr>
<tr>
<td><strong>Span (between end openers)</strong></td>
<td>600.8 cm</td>
</tr>
<tr>
<td><strong>Swath (Channel Width)</strong></td>
<td>660.0 cm</td>
</tr>
<tr>
<td><strong>Seed Monitor</strong></td>
<td>DICKEY-john® PM400*</td>
</tr>
<tr>
<td><strong>Seed Capacity</strong></td>
<td>761 liters</td>
</tr>
<tr>
<td><strong>Transport Length</strong></td>
<td>490 cm</td>
</tr>
<tr>
<td><strong>Field length</strong></td>
<td>495 cm</td>
</tr>
<tr>
<td><strong>Transport Height, no markers</strong></td>
<td>247 cm</td>
</tr>
<tr>
<td><strong>Transport Height, w/ markers</strong></td>
<td>275 cm</td>
</tr>
<tr>
<td><strong>Working Height, no markers</strong></td>
<td>195 cm</td>
</tr>
<tr>
<td><strong>Working Height, w/ markers</strong></td>
<td>223 cm</td>
</tr>
<tr>
<td><strong>Transport Clearance</strong></td>
<td>35.6 cm</td>
</tr>
<tr>
<td><strong>Minimum Tractor Power¹</strong></td>
<td>153 - 160 kW</td>
</tr>
<tr>
<td><strong>Hitch</strong></td>
<td>Pull-Type</td>
</tr>
<tr>
<td><strong>Hydraulic Circuits Req.</strong></td>
<td>2 or 3 Remotes, Closed-Center, 155 bar, 53 liters/min</td>
</tr>
<tr>
<td><strong>Weight (empty, base)²</strong></td>
<td>4000 kg</td>
</tr>
<tr>
<td><strong>Weight (maximum, full)³</strong></td>
<td>6600 kg</td>
</tr>
<tr>
<td><strong>Transport Tire Size</strong></td>
<td>8R19.5 LT</td>
</tr>
<tr>
<td><strong>Opener Down Pressure</strong></td>
<td>138 to 247 kg</td>
</tr>
<tr>
<td><strong>Opener Travel (Up - Down)</strong></td>
<td>25 cm</td>
</tr>
<tr>
<td><strong>Opener Depth Range</strong></td>
<td>0 to 8.9 cm</td>
</tr>
</tbody>
</table>

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

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures, fertilizer rate

### Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel/Transport Gauge</th>
<th>Tire Size</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8R19.5 LT</td>
<td>110 psi (760 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.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Web site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firestone</td>
<td><a href="http://www.firestoneag.com">www.firestoneag.com</a></td>
</tr>
<tr>
<td>Goodyear</td>
<td><a href="http://www.goodyearag.com">www.goodyearag.com</a></td>
</tr>
<tr>
<td>BKT</td>
<td><a href="http://www.bkt-tires.com">www.bkt-tires.com</a></td>
</tr>
<tr>
<td>Titan</td>
<td><a href="http://www.titan-intl.com">www.titan-intl.com</a></td>
</tr>
<tr>
<td>Gleason</td>
<td><a href="http://www.gleasonwheel.com">www.gleasonwheel.com</a></td>
</tr>
</tbody>
</table>

06/12/2019
Dimensions

Dimensions in cm:
- Transport: 275 cm
- Field: 223 cm
- 110 cm
- 550 cm
- 25.4 cm
- 495 cm
- 695 cm
- 705 cm
- 247 cm
- 195 cm
- 166 cm
- 142 cm
### Torque Values Chart

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-tpi</td>
<td>N-m</td>
<td>ft-lb</td>
<td>N-m</td>
</tr>
<tr>
<td>1/4-20</td>
<td>7.4</td>
<td>5.6</td>
<td>11</td>
</tr>
<tr>
<td>1/4-28</td>
<td>8.5</td>
<td>6.2</td>
<td>13</td>
</tr>
<tr>
<td>5/16-18</td>
<td>15</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>5/16-24</td>
<td>17</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>3/8-16</td>
<td>27</td>
<td>20</td>
<td>42</td>
</tr>
<tr>
<td>3/8-24</td>
<td>31</td>
<td>22</td>
<td>47</td>
</tr>
<tr>
<td>7/16-14</td>
<td>43</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td>7/16-20</td>
<td>49</td>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>1/2-13</td>
<td>66</td>
<td>49</td>
<td>105</td>
</tr>
<tr>
<td>5/8-13</td>
<td>75</td>
<td>55</td>
<td>115</td>
</tr>
<tr>
<td>9/16-12</td>
<td>95</td>
<td>70</td>
<td>150</td>
</tr>
<tr>
<td>9/16-18</td>
<td>105</td>
<td>79</td>
<td>165</td>
</tr>
<tr>
<td>9/16-11</td>
<td>130</td>
<td>97</td>
<td>205</td>
</tr>
<tr>
<td>9/16-18</td>
<td>150</td>
<td>110</td>
<td>230</td>
</tr>
<tr>
<td>3/4-10</td>
<td>235</td>
<td>170</td>
<td>360</td>
</tr>
<tr>
<td>3/4-16</td>
<td>260</td>
<td>190</td>
<td>405</td>
</tr>
<tr>
<td>7/8-9</td>
<td>225</td>
<td>165</td>
<td>585</td>
</tr>
<tr>
<td>7/8-14</td>
<td>250</td>
<td>185</td>
<td>640</td>
</tr>
<tr>
<td>1-8</td>
<td>340</td>
<td>250</td>
<td>875</td>
</tr>
<tr>
<td>1-12</td>
<td>370</td>
<td>275</td>
<td>955</td>
</tr>
<tr>
<td>1 1/8-7</td>
<td>480</td>
<td>355</td>
<td>1080</td>
</tr>
<tr>
<td>1 1/8-12</td>
<td>540</td>
<td>395</td>
<td>1210</td>
</tr>
<tr>
<td>1 1/4-7</td>
<td>680</td>
<td>500</td>
<td>1520</td>
</tr>
<tr>
<td>1 1/4-12</td>
<td>750</td>
<td>555</td>
<td>1680</td>
</tr>
<tr>
<td>1 1/2-6</td>
<td>890</td>
<td>655</td>
<td>1990</td>
</tr>
<tr>
<td>1 1/2-12</td>
<td>1010</td>
<td>745</td>
<td>2270</td>
</tr>
<tr>
<td>1 1/8-6</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
</tr>
<tr>
<td>1 1/8-12</td>
<td>1330</td>
<td>980</td>
<td>2970</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Class 5.8</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm x pitch</td>
<td>N-m</td>
<td>ft-lb</td>
<td>N-m</td>
<td>ft-lb</td>
</tr>
<tr>
<td>M 5 X 0.8</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>M 6 X 1</td>
<td>7</td>
<td>5</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>M 8 X 1.25</td>
<td>17</td>
<td>12</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>M 8 X 1</td>
<td>18</td>
<td>13</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>M10 X 1.5</td>
<td>33</td>
<td>24</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>M10 X 0.75</td>
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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.
Hydraulic Diagrams
Lift Hydraulics
Fan Hydraulics
Marker Hydraulics (Option)
Chain Routing
See also “Chain Maintenance” on page 82.

Legend:

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

Ground Drive Arm Chain
Transfer Shaft and Range Chains

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

30T

107P

56P

31789
Transmission Chain

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

Transmission Sprockets:
17T, 19T, 2@23T, 24T, 25T, 26T, 27T, 28T
Dry Fertilizer Chains

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

Legend:

- **34T**  
  Sprocket or idler Tooth count

- **56P**  
  Chain Pitch count

- **0**  
  Direction of chain in motion

25P: Meter Drive (Front type)

- **①** No idlers on mount.
- **①** top chain passes over single idler on shank
- **②** be sure to reconnect idler spring

25P: Meter Drive (Mid type)

- **②** be sure to reconnect idler spring
- **③** top chain passes between 2 idlers at mount
- **④** top chain passes between 2 idlers at shank

25P: Meter Drive (Rear type)

- **②** be sure to reconnect idler spring
- **③** top chain passes between 2 idlers at mount
- **④** top chain passes between 2 idlers at shank
Appendix B - Initial Setup

This Appendix covers setup tasks performed only once, or at infrequent intervals. Routine setup tasks are covered in “Preparation and Setup” on page 13. Perform Appendix B tasks first. Some of these items may already have been done by your Great Plains dealer:

a. Seed monitor console installation (below)
b. Frame-mounted row options (see manual supplied with accessory)
c. Marker setup (Option, page 110)
d. Scrapers (Option, page 111)

Post-Delivery Checklist

1. Read and understand “Important Safety Information” on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See “Lubrication” on page 85.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “Safety Decals” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “Tire Inflation Chart” on page 96.

Seed Monitor Console Installation

Refer to Figure 98

The planter’s standard PM400 seed monitor system includes a console ① that needs to be mounted in the cab of the tractor to be used with the planter.

CAUTION

Transport and Field Safety Risk:
Mount the module so it is easy to monitor during planting, but does not interfere with safe operation of the tractor in the field or on public roads.

The monitor includes cables for power ②, speed sensor ③ and sensor harnesses ④. Installation instructions are found in the included DICKEY-john® manual.

Power required is 12Vdc. Power color code is:
+ positive: red
- negative: black

The included bracket ⑤ requires customer-supplied fasteners.
Seed Monitor Console Quick-Start

The PM400 factory defaults need to be changed to metric mode, the row configuration of your YP625PD planter, and the speed sensing used on these planters.

The pages 108 through 109 describe setting:

- metric data mode,
- planter row count,
- planter (swath-averaged) row spacing, and;
- initial speed calibration.

The monitor must be connected to +12Vdc power to enter these settings (the monitor does not need to be connected to the implement harness).

See the DICKEY-john® 11001-1372 manual for setting limits and alarms.

Power-Up The Console

Refer to Figure 98 on page 107

1. Connect the monitor power leads ② to a +12Vdc source. Optionally connect the monitor sensor harness ③ to the planter harness, and the monitor speed sensor lead ④ to the planter speed sensor lead. If the harnesses are not connected, expect an error screen at step 2.

Refer to Figure 99

2. Press the power On/Off key ⑤. Wait for the power-up screen to complete. If the next screen displayed is the Operate screen, continue at step 4.

Refer to Figure 100

3. If an error screen appears, with an alert tone, press either the Alarm Cancel ⑥ or the ESCAPE ⑦ keys to silence the alert and display the Operate screen.

Set Metric Mode

4. Press the DISPLAY & SERVICE ⑧ key.
5. If the icon pair at the lower left is ⑨, metric mode is already set. Skip to step 10.

Refer to Figure 101

6. Press the Down Arrow ⑩ key twice to highlight the Units ⑪ icon.
7. Press the ENTER ⑫ key to modify the Units.
8. Press either the Up or Down Arrow (⑬ or ⑭) to change the large “E” to an “M” ⑮ as shown in Figure 101.
9. Press the ENTER ⑫ key to save this change.
Set Planter Row Count

The PM400 supports three row configurations pre-defined by you.

Refer to Figure 102

At first power-up, the PM400 usually has an incorrect row count for your planter. The row spacing usually defaults to 15 inches (38.1 cm), which is also incorrect.

10. Press the PLANTER SETUP key.
   Note that the Planter Configuration Indicator is under the “1” in the Configuration block. This change is for Configuration 1.
11. Press the Right Arrow key to highlight the Number of Rows field.
12. Press the ENTER key to modify the # of Rows.

NOTICE

Population Error Risk:
For twin- and triple-row, use the actual opener count and the swath-averaged row spacing provided at right. Do not use the nominal [row-group] spacing (except for single-row operation). The monitor always assumes that the data is for single-row spacing, which is incorrect for twin-row and triple-row.

Refer to Figure 103 and the table below

13. Use the Left and Right Arrow keys ( or ) to select the digits to modify. Use the Up or Down Arrow keys ( or ) to increment or decrement. Change the row count to the table value for your planter model and operating configuration.
14. Press the ENTER key to save the correct row count.

Set Planter Row Spacing

15. Press the Down Arrow key ( ) to select the Row Spacing field.
16. Use the Left and Right Arrow keys ( or ) to select the digits to modify. Use the Up or Down Arrow keys ( or ) to increment or decrement. Change the row spacing to the value from the table on page 109 for your planter model and operating configuration.
17. Press the ENTER key to save the corrected row spacing.

<table>
<thead>
<tr>
<th>Planter Models: YP625PD18TP110, YP625TD18TP110</th>
<th># of Rows</th>
<th>Row Spacing</th>
<th>Swath</th>
</tr>
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<tr>
<td>110cm Triple All Rows</td>
<td>18</td>
<td>36.7 cm</td>
<td>6.60 m</td>
</tr>
<tr>
<td>110cm Single Center Rows</td>
<td>6</td>
<td>110.0 cm</td>
<td>6.60 m</td>
</tr>
<tr>
<td>110cm Twin Left Pairs</td>
<td>12</td>
<td>55.0 cm</td>
<td>6.60 m</td>
</tr>
<tr>
<td>110cm Twin Right Pairs</td>
<td>12</td>
<td>55.0 cm</td>
<td>6.60 m</td>
</tr>
<tr>
<td>55cm Single Outside Rows</td>
<td>12</td>
<td>55.0 cm</td>
<td>6.60 m</td>
</tr>
</tbody>
</table>
Initial Marker Setup (Option)
Marker Speed Adjustment

⚠️ **CAUTION**

*Overhead Sharp Object and Crushing 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 discs may be sharp.

**Refer to Figure 104 and Figure 105**

Adjust folding speed for dual markers with hex adjustment screws on the sequence valve body. The valve sequence body is top center of main tool bar. Loosen jam nuts before making adjustments.

There is one adjustment screw for raising speed (①) and one for lowering speed (②). You can identify adjustment screws by markings stamped in valve body.

Turn adjustment screws clockwise (S: slower) to decrease folding speed and counterclockwise (F: faster) to increase folding speed.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Excessive folding speed could damage markers and void the warranty.

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

**Marker Extension**

Marker extension needs to be adjusted once for the initial YP625PD planter setup, and later only if changing row spacing (including row shut-off for twin- or single-row operation on a triple-row planter).

1. Move the planter to a location where both markers may be safely unfolded.
2. Lower the planter. Pull forward and lower rows into ground.

Due to the relatively steep arm angles of short markers, extension measurements are likely to be incorrect if the main tool bar is not at normal operating height (66 cm).
3. Tilt up and unfold one marker.
Find the suggested initial marker Extension in the table on this page.

When using twin-row spacings, marker extensions are different for left and right.

Refer to Figure 106 and Figure 107

4. Measure out the Extension distance from each outside end row unit (whether in use or not). Do not measure to center of row pair or triplet.
5. Mark the ground at this point.
6. 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.
7. Repeat steps 3 through 6 for the other side.
8. With the planter still lowered, drive forward a few feet for each side.
9. Check the mark locations. Adjust to obtain the table value.

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 108 and Figure 109

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 50).
2. Select one each:
   85 802-024C HHCS 3/8-16X3 GR5
   84 129BXT824 BRACKET FOR 890-929C FIRMER
   83 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
   Insert the bolt 83, from the rear, through the lowest hole of the bracket 84. Place the tube 83 over the bolt.
3. Select one scraper set:
   87 890-928C 25 SER AIR DESIGN IN SCRAPER
   Place the shoulder washer 2 on bolt 85 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:
   \( 89 \) 804-011C WASHER FLAT 3/8 USS PLT  
   \( 90 \) 804-013C WASHER LOCK SPRING 3/8 PLT 
   \( 87 \) 803-014C NUT HEX 3/8-16 PLT

Place the flat washer \( 89 \) on the bolt \( 85 \), followed by the lock washer \( 89 \) and nut \( 87 \). Tighten bolt and nut to 3\( \times 8 \)-16GR5 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:
   \( 86 \) 802-172C HHCS 5/16-18X2 1/2 GR5  
   \( 88 \) 803-043C NUT HEX WHIZ 5/16-18 PLT

Insert the scraper assembly \( 6 \) between the middle four lower square holes \( 7 \) of the opener frame. Secure with bolts \( 86 \) and whiz nuts \( 88 \).

7. Re-mount the removed disc blade.

Figure 109
Scraper Installation
Appendix C - Flat Ground Planting

The YP625PD planter is optimized for planting on beds 18 cm high. For planting on flat ground, the gauge wheels need to be elevated to run 18 cm higher.

The ground drive wheel does not need to be reset to operate on flat ground.

Refer to Figure 110

To prepare the planter for flat ground planting, raise the gauge wheels by inverting the cylinder mounting blocks 1. This adjustment raises the planter by about 6.4cm.

Standard (bed) planting is shown at 2.
Flat ground planting is shown at 3.

1. Block up the frame to remove weight from tires.
2. At each of the four lift cylinders, remove the four 5/8in cap screws attaching the mounting blocks to the frame.
3. Invert mounting blocks and reinstall cap screws. Torque to specification.
4. Make the same adjustment at both wheels.
2-Year Limited Warranty (Yield-Pro Planters)

Great Plains Mfg., Inc. warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the original purchase date when used as intended under normal service conditions for personal use. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing and the installation by the dealer of any such replacement part during the first year of operation. Second year warranty covers parts only, excluding general ground engaging parts and labor. Items covered under the second year warranty are as follows (parts only): hitch and main frame, gauge wheels, markers, air box/ manifold, Y- splitter tubes, fan and housing, row unit weldments, unit mounted attachments and frame mounted attachments. Great Plains Mfg., Inc. reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship. This Warranty does not apply to any part or product which, in the judgment of Great Plains Mfg., Inc., shall have been misused or damaged by accident; or, lack of normal maintenance or care; or, which has been repaired or altered in a way which adversely affect its performance or reliability; or, which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour. Soils containing rocks, stumps or other obstructions may void the warranty in its entirety.

Claims under this Warranty must be made to the dealer which originally sold the unit and all warranty adjustments must be made through such dealer. Great Plains Mfg., Inc. reserves the right to make changes in materials or design of the product at any time without notice. This Warranty shall not be interpreted to render Great Plains Mfg., Inc. liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Great Plains Mfg., Inc. shall not be liable for damages resulting from any cause beyond its control. This Warranty does not extend to loss of crop, losses caused by harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Mfg., Inc. within 10 days from the date of original date of purchase.

This Warranty does not cover damage caused by acts of God or accidents.

This Warranty does not cover units with excess use or units used in custom farming.

NOTE: Effective August 17, 2007; The Extended 2 Yr. Warranty covers only units utilizing these configurations: 1) Yield-Pro (YP) Frames, 2) 25 Series Row Units, and 3) Singulating Meters. All three criteria must be met to qualify for 2-Year Limited Warranty.
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