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

Illustrations may show optional equipment not supplied with standard unit.
**Machine Identification**

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

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

<table>
<thead>
<tr>
<th>Model Number</th>
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<tr>
<td>Serial Number</td>
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<td>Machine Height</td>
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<td>Machine Length</td>
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<td>Year of Construction</td>
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<td>First Operation</td>
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<td>Accessories</td>
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</table>

**Dealer Contact Information**

Name: ___________________________
Street: _________________________
City/State: _____________________
Telephone: ______________________
Email: __________________________
Dealer’s Customer No.: __________

⚠️ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
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*Printed in the United States of America*
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

▲ Wear protective clothing and equipment.
▲ Wear clothing and equipment appropriate for the job.
  Avoid loose-fitting clothing.
▲ Because prolonged exposure to loud noise can cause
  hearing impairment or hearing loss, wear suitable
  hearing protection such as earmuffs or earplugs.
▲ Because operating equipment safely requires your full
  attention, avoid wearing entertainment headphones while
  operating machinery.

Handle Chemicals Properly

Agricultural chemicals can be dangerous. Improper use
can seriously injure persons, animals, plants, soil and
property.
▲ Read and follow chemical manufacturer’s instructions.
▲ Wear protective clothing.
▲ Handle all chemicals with care.
▲ Avoid inhaling smoke from any type of chemical fire.
▲ Store or dispose of unused chemicals as specified by
  chemical manufacturer.

Avoid High Pressure Fluids

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

Use A Safety Chain

(Optional hydraulic hitch only. 3-Point has no chain.)
▲ Use a safety chain to help control drawn machinery
  should it separate from tractor draw-bar.
▲ Use a chain with a strength rating equal to or greater than
  the gross weight of towed machinery.
▲ Attach chain to tractor draw-bar support or other
  specified anchor location. Allow only enough slack in
  chain to permit turning.
▲ Replace chain if any links or end fittings are broken,
  stretched or damaged.
▲ Do not use safety chain for towing.
Use Safety Lights and Devices

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

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

Keep Riders Off Machinery

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

Transport Machinery Safely

Maximum transport speed for implement is 20 mph (32 kph), 13 mph (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 20 mph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
▲ Comply with state and local laws.
▲ Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.
▲ Carry reflectors or flags to mark 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 125.
▲ Do not fold or unfold the planter while the tractor is moving

Shutdown and Storage

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

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

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

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

Practice Safe Maintenance

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

▲ Work in a clean, dry area.

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

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

▲ Allow planter to cool completely.

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

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

▲ Remove buildup of grease, oil or debris.

▲ Remove all tools and unused parts from planter before operation.
Safety At All Times

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

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

Safety Reflectors and Decals

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

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

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

Note: See manual 403-362M for decals specific to the dry fertilizer system.

818-055C

Slow Moving Vehicle Reflector

On the back of the walkboard platform; 1 total

838-266C

Red Reflectors

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

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

838-265C

**Amber Reflectors**
On the front of the center section front lower tool bars, on the rear of the wing tool bars, and on the sides of the seed box frame; six total.
818-590C

Danger: Crushing Hazard
Top center of 3-point hitch; one total
(not present with hydraulic tongue option)

848-512C

Danger: Read Manual
On tongue at hitch;
1 total

818-045C

Warning: Pinch/Crush
On marker base, inside face, each end,
On forward transport wheel arms, each side
On rear axle by seed hopper, each side;
eight total
818-188C

**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 can result.

**Warning: Speed**
On front of center section, one total

818-339C

**WARNING**

HIGH PRESSURE FLUID HAZARD
To Prevent Serious Injury or Death:
- Release pressure on system before inspecting, adjusting, or disassembling.
- Wear proper head and eye protection when inspecting for leaks. Use mask or cover all exposed skin and hands.
- Keep all components in good repair.

**Warning: High Pressure Fluid Hazard**
On side of tongue; one total

818-682C

**WARNING**

Submit component for replacement or repair if:
- Item is bent, broken, or damaged.
- Item is missing.
- Item is missing.

**Warning: Markers: Pinch/Crush**
One each side or marker upright arm, each side; four total

838-599C

**DANGER**

ELECTROCUTION HAZARD
To prevent serious injury or death:
- Stop engine before transporting, servicing, or folding implement.
- Electrocutation can occur without touching power lines.

**Warning: Electrocution Hazard**
One each side or marker upright arm, each side; four total
818-587C

Caution: Read Operator’s Manual
On center tool bar; one total

818-351C

Caution: Transport Locks
Hitch tongue; one total
818-398C

Caution: Tires Not A Step
One front face each wing gauge wheel,
One each side front center axle;
6 total

838-426C (S/N A1113Q-)

Caution: Pressure and Torque
On outside rim each transport tire;
10 total

858-773C (S/N A1114Q+)

Caution: Pressure and Torque
On outside rim each transport tire;
10 total
Caution: Pressure and Torque

On ground drives;
2 total
Introduction

Great Plains welcomes you to its growing family of new product owners. The 60 Foot Yield-Pro® Planter (YP24) 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.

Document Family

401-406M Owner’s Manual (this document)
401-406B Seed Rate Charts
401-406P Parts Manual
403-362M Dry Fertilizer Manual (YP2425F only)
110011375 Dickey-john® seed monitor manual
110011439 5 inch VT MANUAL
110011440 10 inch VT MANUAL
110011429 YP2425-48TR Quick-Start guide
110011430 YP2425-4715 Quick-Start guide
110011431 YP2425-2430 Quick-Start guide
110011432 YP2425-3620 Quick-Start guide
110011433 YP2425-2470 Quick-Start guide

Description of Unit

The YP24 is a pull-type implement for use in conventional till, minimum-till, or light no-till conditions. The YP24 accepts optional unit mounted and frame-mounted row accessories. Coulters make it suitable for light to moderate no-till conditions only. The YP24 is outfitted with 25 Series, side-depth-control row-units supporting Singulator Plus or finger pickup precision seed meters. The YP24 folds for transport.

Intended Usage

Use the YP24 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 YP24.

Models Covered

YP2425-2430 24 Row, 30 Inch Spacing
YP2425-2470 24 Row, 70 cm Spacing
YP2425F-2470 24 Row, 70 cm, Dry Fertilizer
YP2425-3620 36 Row, 20 Inch Spacing
YP2425-4715 47 Row, 15 Inch Spacing
YP2425-48TR 48 Row (24 Twin), 30 Inch Spacing

This manual covers all vintages of YP2425 planters but does not include YP2425A (with Air-Pro® meters).

Using This Manual

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

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

Definitions

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

NOTICE

A crucial point of information related to the preceding topic. Read and follow the directions to remain safe, avoid serious damage to equipment and ensure desired field results.

Note: Useful information related to the preceding topic.
Owner Assistance

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

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

Record your YP24 model and serial number here for quick reference:
Model Number:__________________________
Serial Number: __________________________

Further Assistance

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

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

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

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

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

This section helps you prepare your tractor and YP24 for use, and covers tasks that need to be done seasonally, or when the tractor/planter configuration changes.

Before using the YP24 in the field, you must hitch the planter to a suitable tractor, inspect systems, level the planter. Before using the planter for the first time, and periodically thereafter, certain adjustments and calibrations are required.

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

- Install seed monitor console in tractor (page 144).
- Bleed hydraulic system (page 92).
- Wing leveling and alignment (page 94).
- Marker setup (page 55).
- Radar calibration (page 144).
- 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 and Scheduled Maintenance” on page 103.
- 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 127.
Hitching Tractor to Planter

**DANGER**

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

**WARNING**

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

If Weight Transfer is Installed

If the optional weight transfer system is not installed, or a PTO pump is installed, continue at "Current Style Color Coded Hose Handles" on page 19.

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

To allow cylinder flex:
- connect at least the fan case drain and fan return lines to suitable receptacles, or
- install the shipping links (see page 145).

**NOTICE**

Machine Damage Risk:
Do not move the planter with a hydraulically locked weight transfer system. Relieve the system or install shipping links. If the cylinders are not free to flex, oil loss will result from even minor movement flexing.
Hitching with 3-Point

Refer to Figure 4

1. Connect your tractor 3-point to the planter 3-point hitch. If using quick hitch be sure planter locks into hitch securely.
2. Raise tractor 3-point just enough to relieve pressure from parking stands.
3. Swing up and pin up 3-point stands. See “Storing 3-Point Parking Stands” on page 22.

![Figure 4](21924)

**NOTICE**

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

6. Remove and store main tongue parking stand. See “Store Main Parking Stand” on page 21.

Hitching with Hydraulic Tongue (Option)

Refer to Figure 5

1. Move the tractor to near hitching position.
2. Connect the hydraulic hoses for the tongue circuit. This needs to be done before hitching in order to raise and lower the tongue. See “Hydraulic Hose Hookup” on page 18. Allow slack for hitch movements. Close the tongue cylinder bypass valve.
3. Make electrical connections for at least the planter control circuit (necessary to control planter hydraulic systems). See page 21.
4. Check that hitch local bypass valve ① is closed.

Refer to Figure 6

5. Set the cab Clutch Folding Module Lift/Hitch switch ② to Hitch.
6. Retract the Hitch/Lift circuit to set the tongue height to clear the draw-bar. Back the tractor into alignment and pin the draw-bar.
7. Connect safety chain to a suitable anchor point on the tractor.

![Figure 5](28477)
8. Connect all other hydraulic hoses.
10. Extend the Hitch/Lift circuit to raise the hydraulic tongue just enough to relieve pressure from the parking stand.
11. Remove and store main tongue parking stand. See “Store Main Parking Stand” on page 21.

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

With the standard 3-point hitch, the planter tongue is raised and lowered by raising and lowering the 3-point. With the optional hydraulic tongue, the planter tongue is raised by extending the hitch cylinder, and lowered by retracting the hitch cylinder.

Hydraulic Hose Hookup

**WARNING**

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

Only trained personnel should work on system hydraulics!
Refer to Figure 7

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

Current Style Color Coded Hose Handles

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray</td>
<td>Wing Fold / Marker Fold / Auxiliary</td>
</tr>
<tr>
<td>Blue</td>
<td>Lift / (and Hitch if hydraulic tongue)</td>
</tr>
<tr>
<td>Black</td>
<td>Fan</td>
</tr>
<tr>
<td>Yellow</td>
<td>Hydraulic Drive</td>
</tr>
</tbody>
</table>

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

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

The fan motor further requires hookup of a third line, which returns hydraulic fluid from the fan motor case.
Older Style Hose Handles with Color Ties

Refer to Figure 8

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

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Wing Fold / Marker Fold / Auxiliary</td>
</tr>
<tr>
<td>Blue</td>
<td>Lift / (and Hitch if hydraulic tongue)</td>
</tr>
<tr>
<td>Orange</td>
<td>Fan</td>
</tr>
<tr>
<td>Yellow</td>
<td>Hydraulic Drive</td>
</tr>
</tbody>
</table>

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

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

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

Protecting Fan Hydraulic Motor Seals

Low Pressure (Case) Drain Connection

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

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

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

3. Connect hydraulic hoses to tractor remotes.

**NOTICE**

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

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

**NOTICE**

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

Figure 8
Older Style Hoses w/Label
Electrical Hookup

Refer to Figure 9

Your YP24 is equipped with standard and optional devices that require separate electrical connections. Make sure tractor is shut down with accessory power off before making connections. These connections may be made in any order.

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

Store Main Parking Stand

Refer to Figure 10 and Figure 11

1. Remove the lower pin 1 and the upper pin 2 holding the parking stand 3.
2. Move the stand from under the tongue to an inverted position in the bracket on the left side on the tongue.
Storing 3-Point Parking Stands

Refer to Figure 12 (shown without tractor for clarity)

1. For the standard 3-point hitch, store stands by either of the following methods:
   - Remove lower pins. Swing stand under hitch. Reinsert pin beneath stand at inner hole.
   - Remove both pins. Invert stand. Re-pin.

2. Adjust the top link of a 3-point long enough so the ball swivel does not bottom out when fully raised.

3. Secure hoses so they do not get caught in ball swivel. Failure to do so could cause hose to be crushed requiring hose replacement.

Tank Cart Hitching

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

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

**NOTICE**

Open hose and inlet valves when ready to begin planting. Close them when not in use.

Fertilizer Connection Types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2-section, planter manifold and pump: Starter inlet only</td>
</tr>
<tr>
<td>3</td>
<td>3-section, cart manifold and pump: Left, Center, Right inlets &amp; Gauge line</td>
</tr>
</tbody>
</table>
Making Fertilizer Connections

YP2425 Planter with Type 2 and Type 3 Manifolds, & Ground Drive Pump(s)

<table>
<thead>
<tr>
<th>Planter Inlet</th>
<th>Left Type 3</th>
<th>Center Type 3</th>
<th>Right Type 3</th>
<th>Type 2</th>
<th>Gauge Line(^a)</th>
</tr>
</thead>
</table>

YP2425 Planter with Type 3 Manifold (only)

<table>
<thead>
<tr>
<th>Planter Inlet</th>
<th>Left Type 3</th>
<th>Center Type 3</th>
<th>Right Type 3</th>
<th>Gauge Line(^a)</th>
</tr>
</thead>
</table>

YP2425 Planter with Type 2 (only) & Ground Drive Pumps

<table>
<thead>
<tr>
<th>Planter Inlet</th>
<th>Type 2</th>
</tr>
</thead>
</table>

\(^a\) Gauge Line is supplied with PFC1600 or PFC2000 tank cart

Heights and Leveling

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

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

1. Before making any adjustments be sure the lift cylinders are re-phased and operating properly. If not, “Re-Phasing Lift System” on page 34
2. Complete “Bleeding Hydraulics” on page 92.
3. Unfold the planter fully (page 28).

Set Tongue Height

Planter must be unfolded for this procedure.

Refer to Figure 14

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

- For standard 3-point hitch:
  
  Set depth stop to capture this working height.
  
  If desired height cannot be attained with normal range of hitch, swivel coupler weldment may be relocated in tongue bolt holes.

**NOTICE**

Field Results Risk:
Level frame in planting conditions. Failure to do so may result in implement not producing desired results.
Note: Tractor 3-point control must be in Depth Control mode, and not Draft Control mode.

• For hydraulic tongue:

  Note the scale reading on the tongue for this height. (Re)set the tongue height to this value when planting.

Checking Planter Leveling Side to Side

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

When lowering the planter for the first time on the planting ground:
1. Completely lower the main tool bar. If necessary, first lift off transport locks, remove and stow locks.
2. Set hitch to planting height.
3. Pull forward a short distance.

**NOTICE**

Planter must be fully lowered to field position (with openers into ground) and hitch height must be set before making side-to-side adjustments.

Center Section Level Check

Vertical height and side-to-side level of the center section is set at the factory and cannot be field-adjusted. It does need to be verified before checking/adjusting the wings. Soil accumulation on the wheels, for example, can cause the center section to tilt.

Refer to Figure 15 on page 24

4. Measure the elevation of both left and right sides of the planter center section, at the ends of the center section tool bar (location 1 in Figure 15).

Note: Any unevenness in ground that tilts the wings or center section causes the inner wing ends to move up or down slightly with respect to the center frame.
Wing Leveling

Wing Leveling, Inboard End

Wing leveling check/adjustment is required prior to first use of the YP24, and periodically thereafter, for example, if soil conditions change dramatically.

Before performing this operation:

• Check center section height and level (page 23).
• Row unit coulter/planting depths, and row unit down-pressures must all be equal.
5. Measure the height of the inboard end of each wing, near the wing flex pivot (location 2 in Figure 15).
6. Compare this height to that of the center section obtained at step 4 on page 24.
7. If the heights differ by more than 1 inch, check them again after leveling the wing ends. If they still differ, the thrust washers in the wing pivots may be worn and in need of replacement.

Wing Leveling, Outboard End

Refer to Figure 16 and Figure 17

1. Measure from the bottom of the wing tool bar to the ground at the outer end of each wing (location 3 in Figure 16).
2. Compare to the measurement at the outer end of the center tool bar, at the wing pivot location. All measurements should be identical, and close to 26 inches (66 cm).
3. If measurements do not match, loosen upper gauge wheel lock nut 1, and adjust eyebolt link length with adjuster nut 2.
4. If adjustments are needed on either side, re-check the other side after each adjustment, and re-adjust it as needed.
5. Once level, tighten the lock nut 1.
Lock Up Fertilizer Drive
YP2425 serial number A1072Q+

**WARNING**

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

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

**Note:** Do not operate planter pump when not applying material.

*Refer to Figure 18*

For YP2425 planters:

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

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

Pre-Start Checklist

Perform the following steps before transporting the YP24 to the field.

**WARNING**

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

- Carefully read “Important Safety Information” on page 1.
- Install seed rate meters appropriate for crop. To change meters, see “Seed Meter Setup and Adjustment” on page 77.
- Install seed wheels appropriate for crop. To change wheels, see “Singulator Plus™ Meter Wheel Replacement” on page 79. With finger meters, make sure correct 6- or 12-finger units are installed for the intended row spacing.
- Lubricate planter as indicated under “Lubrication and Scheduled Maintenance” on page 103.
- Check all tires for proper inflation. See “Tire Inflation Chart” on page 127.
- Check all bolts, pins, and fasteners. Torque as shown in “Torque Values Chart” on page 128.
- 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.
Unfolding The YP24

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

**WARNING**

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

- ▲ Fold only on hard level ground. Allow ample room.
- ▲ If it is desired that the tractor not move, make sure tractor is in Park and/or has parking brakes set, otherwise the telescoping movement of the planter is likely to result in tractor movement.
- ▲ Do not allow anyone to be on or near the planter during unfolding.
- ▲ Stay clear of the wing sweep arcs. The sweep arcs of the wings have numerous pinch and crush points in the mechanism. Coulters and row openers are sharp.
- ▲ Allow no one near planter. The seed structure usually moves forward during unfolding.
- ▲ Do not unfold with planter lowered, or machine damage will result.
- ▲ Unfold only with markers resting in transport cradles.
- ▲ Unfold only if hydraulics are bled free of air and fully charged with hydraulic oil.

1. Move to level ground.

**Refer to Figure 19**

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

3. If the folded planter is lowered, raise mainframe (see “Raising/Lowering Planter” on page 30).

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

**Refer to Figure 20**

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

**Refer to Figure 19**

6. Set CFM Marker/Fold switch 4 to Fold. LED above switch blinks continuously.
Unfolding, Continued ...

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

**NOTICE**

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

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

9. Operation is complete when tongue lock engages.

Refer to Figure 23

**NOTICE**

*Machine Damage Risk:*
Do not operate planter when unfolded unless tongue lock is engaged.

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

11. For imminent lowered operations, remove lift cylinder locks (see “Lift Cylinder Lock-Up” on page 34).

Refer to Figure 20

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

13. Set hitch height to planting position (“Raising/Lowering Tongue” on page 18).  

**NOTICE**

*Machine Damage Risk:*
Unfolding and folding planter must be done at a controlled pace. Adjust hydraulic flow so that it takes a minimum of 60 seconds to fold or unfold machine.
Raising/Lowering Planter

Refer to Figure 24

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

The planter must be raised for folding and unfolding.

The planter will not fully lower if transport locks are installed. See “Lift Cylinder Lock-Up” on page 34.

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

NOTICE

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

NOTICE

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

NOTICE

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

Local Float on Hydraulic Tongue

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

WARNING

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

Stand clear and open it slowly.

1. Float hitch circuit before lowering while folded.
2. Set CFM Lift/Hitch switch to Lift for raising/lowering.
Raising Planter
Refer to Figure 28

1. If the planter has hydraulic hitch, set the Lift/Hitch switch to LIFT.

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

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

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

**NOTICE**

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

*Do Not Set for Continuous Mode.*

For transport, maintenance or storage, install lift cylinder locks. See “Lift Cylinder Lock-Up” on page 34.

---

Lowering Planter
Refer to Figure 29

1. If lift cylinder locks are installed, first fully raise the planter, and remove the locks. See “Raising Planter” on page 31 and “Lift Cylinder Lock-Up” on page 34.

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

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

**NOTICE**

**Machine Damage Risk:**
Never lower planter while fully folded, if it is equipped with the hydraulic tongue hitch, or machine damage can occur unless a special procedure is followed (see page 30). A planter with a 3-point hitch may be lowered while folded.

**NOTICE**

**Machine Damage Risk:**
Never lower planter while partially unfolded (with either hitch). Wing row units can strike main transport wheels.
Folding the YP24

Fold the YP24 for moves between fields and over public roads, and for storage. The distance between the tractor and the seed structure increases by 12 feet (3.7 m) during unfolding. Planter, tractor, or both will move during this operation.

**WARNING**

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

- Fold only on hard level ground. Allow ample room.
- If it is desired that the tractor not move during folding, make sure tractor is in Park and/or has parking brakes set, otherwise the telescoping movement of the planter is likely to result in tractor movement.
- Do not allow anyone to be on or near the planter during folding.
- Stay clear of the wing sweep arcs. The sweep arcs of the wings have numerous pinch and crush points in the mechanism. Coulters and row openers are sharp.
- Allow no one behind the planter. The seed structure moves backward during folding.
- Do not fold with planter lowered, or machine damage will result.
- Fold only with markers resting in transport cradles.
- Fold only if hydraulics are bled free of air and fully charged with hydraulic oil.


Refer to Figure 24

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

3. Raise planter mainframe (see “Raising/Lowering Planter” on page 30). Do not raise (hydraulic) hitch at this point.

4. Install lift cylinder locks (see “Lift Cylinder Lock-Up” on page 34).
Folding, Continued ...

Refer to Figure 32

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

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

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

Refer to Figure 33

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

8. Activate (normally Extend) tractor Marker/Fold hydraulic circuit to fold wings. Sequence begins with releasing of tongue latch (Refer to Figure 23 on page 29). Before folding completes ...

9. Raise planter tongue ("Raising/Lowering Tongue" on page 18). This must be done before folding completes.

Refer to Figure 34

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

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

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

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

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

12. Set Marker/Fold circuit lever to Neutral.

13. 3-point: lower hitch completely

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

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

Hydraulic tongue, if installed, must be in Float.
Re-phasing Fold System
In typical use during a single planting operation, it is normal for the fold cylinders to get slightly out of phase, resulting in uneven folding and unfolding of the YP24.

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

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

Install transport locks.

Refer to Figure 35
1. If planter is folded, confirm hitch is in Float. If planter is unfolded, hitch may be in any configuration.
2. Raise the planter mainframe. See “Raising/Lowering Planter” on page 30.
3. Remove the transport locks from their storage positions ①. Install the transport locks on the cylinder rods ②, securing them with the same pins used for storage.
4. Lower the lift cylinders onto the locks.

Re-Phasing Lift System
In typical use during a single planting operation, it is normal for the lift cylinders to get slightly out of phase, resulting in uneven raising and lowering of the YP24.

Every 8- to 10 passes, or if lifting is uneven, re-phase the cylinders with this procedure:
1. Raise the planter completely, and hold the hydraulic lever or switch in Extend for several seconds after the planter reaches full elevation, or until all cylinders are fully extended.
2. When all cylinders are fully extended, momentarily reverse (Retract) the control to lower the planter 1/2 inch (13 mm).
Transporting the Planter

⚠️ DANGER ⚠️

Loss of Control Hazard:
Ensure that the towing vehicle is adequate for the task. Using an inadequate tow vehicle is extremely unsafe, and can result in loss of control, serious injury and death.

The planter can weigh up to 50,000 pounds (22780 kg), depending on configuration and seed load. A tank cart hitched to the planter (“in train”) can add another 5,000 pounds (2268 kg) empty. The tractor unit MUST be rated for the load. If the tractor is not rated for at least 50,000 pounds, calculate the actual weight of the planter and cart.

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

⚠️ DANGER ⚠️

Loss of Control Hazard:
A tank cart in train must be EMPTY. A full PFC tank cart weighs nearly 30,000 pounds (13608 kg), and, when hitched to the planter, represents an unsafe highway load regardless of the rating of the towing vehicle. If a cart must be transported loaded, tow it separately.

⚠️ WARNING ⚠️

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

⚠️ NOTICE ⚠️

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

- If heading to the field, before departing, ensure that opener depth, seed rate and fertilizer rate have been determined, or that the necessary data is with you.
- Plan the route. If towing a cart hitched to the planter, plan the route so that no reverse movements will be necessary. Avoid steep hills. Keep Clearances in mind. Folded, your YP24 may be nearly 15 feet (4.6 m) wide and 13 feet (4 m) high.
- Close slide gates on hoppers or seed boxes.
- Hitch. Make both electrical and hydraulic connections. See “Hitching Tractor to Planter” on page 16.
- If markers are unfolded, fold them. See “Folding the Markers” on page 41.
- Raise planter. See “Raising/Lowering Planter” on page 30.
- Install lock-up channels on lift cylinders. See “Lift Cylinder Lock-Up” on page 34.
- If planter wings are unfolded, fold them. See “Folding the YP24” on page 32. Make sure wing locks are engaged.
- Make sure caster locks are disengaged on newer planters so equipped. See “Folding the YP24” on page 32.
- 3-point hitch: Lower hitch fully to ensure wings remain locked. Hydraulic hitch: Confirm CFM set to Hitch and hitch circuit in Float.
- Always have lights on for highway operation.
- Comply with all federal, state and local safety laws when traveling on public roads.
- Travel with caution.

⚠️ CAUTION

Do not exceed 20 mph when driving straight.

⚠️ CAUTION

Do not exceed 13 mph in turns.

### Steering

Never exceed 13 mph (22 kph) in turns. The YP24 is extremely heavy, and can cause “over-steer” with most tractors. The leading gauge wheels, rear-most transport wheels, PFC tank cart lead wheel and SML tank cart trailing wheels fully caster, and provide no resistance to side sway by the planter or cart.

⚠️ NOTICE

Never exceed 3 mph (5 kph) in reverse.

⚠️ NOTICE

Never back up with the planter lowered or with a fertilizer tank hitched to the planter.
Field Set-Up Checklist

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

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<tr>
<th>Mechanical Checklist</th>
<th>Page</th>
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</thead>
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<tr>
<td>□ Tongue height preset on 3-point</td>
<td>23</td>
</tr>
<tr>
<td>□ Planter unfolded</td>
<td>28</td>
</tr>
<tr>
<td>□ Tongue front latch hook engaged</td>
<td>29</td>
</tr>
<tr>
<td>□ Side-to-side level at gauge wheels</td>
<td>24</td>
</tr>
<tr>
<td>□ Marker initial length set</td>
<td>55</td>
</tr>
<tr>
<td>□ Marker disc angle set</td>
<td>55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Verify electrical hookups solid</td>
<td>21</td>
</tr>
<tr>
<td>□ Check seed monitor terminal and observe any diagnostic messages</td>
<td>a</td>
</tr>
<tr>
<td>□ With hydraulic circuits in neutral, check switches and indicator lights on Clutch Folding Module switch panel. Confirm Master OFF.</td>
<td>-</td>
</tr>
<tr>
<td>□ Verify that, when planter is lowered, radar speed sensor is pointed at ground, at an angle approximately 35° below horizontal.</td>
<td>b</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Air System Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Manifold to seed box or hopper seal</td>
<td>-</td>
</tr>
<tr>
<td>□ Add 1 cup of seed lubricant to each air box, prior to first use, and prior to loading seed</td>
<td>112</td>
</tr>
<tr>
<td>□ Seed loaded</td>
<td>46</td>
</tr>
<tr>
<td>□ Tube gates turned on to correct rows</td>
<td>44</td>
</tr>
<tr>
<td>□ No air leaks (except from seed box)</td>
<td>-</td>
</tr>
<tr>
<td>□ Hose routings - no sags, no pinches (check wing-folded &amp; field positions)</td>
<td>-</td>
</tr>
<tr>
<td>□ Hoses fully connected to meters and locked</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frame Mounted Checklist</th>
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<td>□ Row cleaner depth setting</td>
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<td>□ Coulter depth and alignment</td>
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<th>Row Units Checklist</th>
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<tbody>
<tr>
<td>□ Preset depth handles to 7 holes showing above “T”</td>
<td>74</td>
</tr>
<tr>
<td>□ Preset down force springs to first notch (lightest) setting for most conditions, 2nd notch otherwise</td>
<td>68</td>
</tr>
<tr>
<td>□ Set all unit-mounted coulters to 1/4 in shallower than opener blades.</td>
<td>72</td>
</tr>
<tr>
<td>□ Check coulter alignment to row</td>
<td>73</td>
</tr>
<tr>
<td>□ Check closing wheel alignment</td>
<td>86</td>
</tr>
<tr>
<td>□ Set closing wheels to first notch (light setting)</td>
<td>85</td>
</tr>
<tr>
<td>□ Engage meter coupling for all desired rows</td>
<td>77</td>
</tr>
<tr>
<td>□ Check action and contact of side depth wheels</td>
<td>75</td>
</tr>
<tr>
<td>□ Gauge wheel scraper gap (if installed)</td>
<td>76</td>
</tr>
</tbody>
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<tr>
<th>Treatments (Options) Checklist</th>
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</thead>
<tbody>
<tr>
<td>□ Confirm Clutch Folding Module “Fert.Pump” switch OFF</td>
<td>50</td>
</tr>
<tr>
<td>□ Check tractor-mounted components</td>
<td>a</td>
</tr>
<tr>
<td>□ Ground drive wheel, chain</td>
<td></td>
</tr>
<tr>
<td>□ Nurse Tank: Execute Cart Checklist</td>
<td>b</td>
</tr>
<tr>
<td>□ Check for correct orifice plates</td>
<td>c</td>
</tr>
<tr>
<td>□ Fill system with 100 gallons of water, and check for leaks</td>
<td>-</td>
</tr>
<tr>
<td>□ Check all row unit lines are connected, free of kinks, and discharge tube/nozzles are clear</td>
<td>-</td>
</tr>
<tr>
<td>□ Inlet and hose valves open</td>
<td></td>
</tr>
<tr>
<td>□ SmartBox system loaded, powered up</td>
<td></td>
</tr>
</tbody>
</table>

b. See SML or PFC2000/PFC1600 Manual.
c. Check Seed Rate manual, and manual for fertilizer pump system.
### Hydraulic System Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check tractor hydraulic reservoir full</td>
<td>-</td>
</tr>
<tr>
<td>Inspect connections for leaks</td>
<td>-</td>
</tr>
<tr>
<td>Perform a raise and lower operation</td>
<td>30</td>
</tr>
<tr>
<td>Check fan speed and airflow direction</td>
<td>a</td>
</tr>
<tr>
<td>Confirm Clutch Folding Module Master switch off, and check hydraulic planter drive rotation</td>
<td>43</td>
</tr>
<tr>
<td>Set Clutch Folding Module switch “Marker/Fold” to “Marker”</td>
<td>40</td>
</tr>
</tbody>
</table>

- Operate fan briefly and observe rotor blades spinning toward exit port. Check rpm on seed monitor.

### Hydraulic Planter Drive Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check chain lubrication and slack</td>
<td>107</td>
</tr>
<tr>
<td>Input initial values for desired population</td>
<td>a</td>
</tr>
<tr>
<td>Pre-run system using manual ground speed mode on seed monitor. Reset to digital frequency source after test running.</td>
<td>b</td>
</tr>
<tr>
<td>Calibrate radar speed sensor pulses with planter lowered.</td>
<td>b</td>
</tr>
<tr>
<td>Lubricate slider joints on drive shafts</td>
<td>109</td>
</tr>
<tr>
<td>Check clutch operation</td>
<td>43</td>
</tr>
</tbody>
</table>

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

### Meters Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct meters for seed</td>
<td>a</td>
</tr>
<tr>
<td>Correct wheels for seed</td>
<td>a</td>
</tr>
<tr>
<td>Correct finger meters for seed (6-finger for twin-row, 12-finger for single-row)</td>
<td>a</td>
</tr>
<tr>
<td>Close clean-out doors</td>
<td>96</td>
</tr>
<tr>
<td>Corn?</td>
<td>a</td>
</tr>
<tr>
<td>Check timing of meters for twin-row</td>
<td>a</td>
</tr>
<tr>
<td>Check chain tension</td>
<td></td>
</tr>
<tr>
<td>Check meter assemblies secured</td>
<td>80</td>
</tr>
<tr>
<td>Engage drive couplers</td>
<td>80</td>
</tr>
</tbody>
</table>

- a. Refer to Seed Rate manual.
Field Operation

First Pass Operation Checklist

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Raise planter and line up at start of first planting row</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>Set tractor 3-point hitch to “depth control” operation (and not load control)</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Unfold marker on next-row side.</td>
<td>41</td>
</tr>
<tr>
<td>4.</td>
<td>Set fan hydraulic circuit to low flow, engage circuit. Gradually adjust hydraulic flow to 3800 rpm.</td>
<td>45</td>
</tr>
<tr>
<td>5.</td>
<td>Engage drive via seed monitor. Refer to seed monitor manual.</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>If planter has a fertilizer system integrated with the DICKEY-john seed monitor, set the “Fert.Pump” switch on the Clutch Folding Module to ON.</td>
<td>50</td>
</tr>
<tr>
<td>7.</td>
<td>In the CLUTCH cluster of the Clutch Folding Module, set all switches, including Master, to ON.</td>
<td>43</td>
</tr>
<tr>
<td>8.</td>
<td>Pull forward, lower planter, and begin planting for a short distance.</td>
<td></td>
</tr>
</tbody>
</table>
| 9. | Stop. Assess:  
  - planting depth  
  - seed spacing  
  - press wheel operation  
  - fertilizer application (if in use) |   |
| 10. | Make necessary adjustments | 53 |

Sharp Field Turns Checklist

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fold marker</td>
<td>41</td>
</tr>
<tr>
<td>2.</td>
<td>Raise planter</td>
<td>30</td>
</tr>
<tr>
<td>3.</td>
<td>Make turn</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Lower planter</td>
<td>30</td>
</tr>
<tr>
<td>5.</td>
<td>Unfold marker on next-row side.</td>
<td>41</td>
</tr>
<tr>
<td>6.</td>
<td>Resume planting.</td>
<td></td>
</tr>
</tbody>
</table>

Suspending Planting Checklist

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Stop tractor</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Fan hydraulic circuit to Float or Neutral</td>
<td>45</td>
</tr>
<tr>
<td>3.</td>
<td>Raise planter</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Fold Marker</td>
<td>41</td>
</tr>
</tbody>
</table>

Ending Planting Checklist

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Suspend operations as above, then</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Install lift locks</td>
<td>34</td>
</tr>
<tr>
<td>3.</td>
<td>Lights ON</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Transport</td>
<td>35</td>
</tr>
</tbody>
</table>
Marker Unfolding

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

If your YP24 has markers, unfolding of the markers is performed only after unfolding the wings.

The Marker/Aux valve on the left wing must be set to “Marker”. See “Auxiliary Hydraulics” on page 49.

Before operating markers, make sure cylinders are properly bled. See “Bleeding Hydraulics” on page 92.

This section presumes correct marker length for your pass spacing. If this has not been set, or needs to be changed, see “Marker Extension” on page 55.

This section presumes correct marker chain slack. If your chain has been replaced, repaired or stretched, adjust the links to the correct slack length. See “Marker Chain Length Adjustment” on page 56.

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

Folding speed of dual markers is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. See “Dual Marker Speed Adjustment” on page 57.

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

*Refer to Figure 36 and Figure 38*

1. If the Auxiliary Hydraulic circuit has been used recently, confirm that the manual Marker/Aux valve on the left wing is set to “Marker”.
2. On the DICKEY-john® Clutch Folding Module (CFM), set “Marker/Fold” switch 1 to Marker (up). The LED above the switch illuminates steadily for normal operation.
3. Move tractor hydraulic control (lever or switch) for the marker circuit to Extend. Hold until marker is completely unfolded. Do not leave tractor control in detent.
4. If the marker side operating is not the desired side, let it unfold part way, and move the tractor’s circuit control to “Retract”. When the marker is folded, move the circuit control to Extend to activate the other side.

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

Row Marker Operation

To alternate which side is marked:

1. Move the tractor’s circuit control to fold marker. Hold until marker is folded.
2. Reverse the tractor’s circuit control. Hold until the new side’s marker is fully unfolded.
3. Return tractor control to neutral.

Folding the Markers

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

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

Unusual Marker Operations

Both Sides Unfolded

With both markers in their cradles:

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

**NOTICE**

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

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

See “Marker Gauge Wheel Adjustment” on page 56.

Monitor Operation

Monitor operation is described in a separate manual supplied with your YP24.
Operations covered in that manual (and therefore not in this manual) include:
- hydraulic drive control
- seed rate calibration
- planting rate
- fertilizer rate
- setting rate limits and detecting out-of-limits
- GPS integration
- fan rpm
Planting

When all checklist items are complete, a planting pass normally consists of a few simple steps:

1. Lower planter mainframe
2. Extend a marker
3. Drive forward
5. Raise marker
6. Raise planter mainframe
7. Turn
8. Extend marker as needed for next pass
9. Subsequent Passes resume at step 1.

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

A clutch enables or disables groups of row units. The standard YP24 planter has three clutches in the seed meter drive system.

The standard clutch system is strictly operator controlled. Monitor control of sections requires the optional Swath Command™ system (page 44).

The switches Left 2 / Center 3 / Right 4 correspond to the left wing row units, center section row units and right wing row units respectively. The data in the table below is normally preset at the factory for your planter configuration.

The Master 1 switch controls all row units, regardless of drive type. For all switches, “OFF” (down) removes power from the clutch, disengaging that set of row units. When any switch (plus Master) is ON, the LED for that switch illuminates steadily.

### Clutch Switch Coverage

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

### Electric Clutch Lock-Up

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

**Refer to Figure 41 and Figure 42**

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

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

The optional Swath Command™ system replaces the standard 3-section operator-controlled clutches with 12 sections of clutches under seed monitor control. If you have the standard clutches, see "Electric Clutch Operation" on page 43.

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

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

Swath Command™ ordering information is found on page 120.

Weight Transfer Operation (Option)

This option provides a control valve ①, plumbed into the hydraulic drive circuit, and a cylinder ② for each wing. Up to 1000 pounds (450 kg) of mainframe weight may be transferred to each wing when oil is being supplied to the hydraulic drive circuit.

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

1. Unfold and lower the planter in field conditions.
2. Supply oil to the hydraulic drive circuit (or operate the PTO at field rpm if using a PTO pump that supplies the hydraulic drive). The hydraulic drive motor itself does not need to be operated.
3. Loosen the lock disc ⑤ at the valve block. Adjust the knob ④ until the gauge ⑥ reads approximately 1000 psi. Tighten the lock disc.
4. Lower the planter. Engage the hydraulic drive (with seeding disabled) Pull forward at normal field speed for a short distance. Stop.
5. Check that the wings are level.
   - If the wings ends are lower than the center, decrease the pressure at the valve ⑤.
   - If the wing ends are higher than the center, increase the pressure.

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

See page 16 and page 145 for important information about movements without a suitable tractor. See page 147 for ordering information.
Y-Tubes

Refer to Figure 45

Y-tube gates can be shut off to feed only one row for single-row planting on a twin-row machine. In the photograph, both meter tubes are open.

You can also shut off the Y-tube gates to clean out the air system and meters. See “Cleaning Out Air System” on page 97.

Airbox Operation

Refer to Figure 46

The function of each airbox is to mix seed with turbulent air from the hydraulic fan, which then exits through a manifold (not shown) to the seed tubes which serve the row unit meters.

Fan Operation

All three (3) fan hydraulic lines must be properly connected. See “Hydraulic Hose Hookup” on page 18.

Use tractor remote hydraulic valve flow control to set fan speed. Start with a very low speed and verify that fan impeller is spinning in the correct direction (toward air exit port). Air moves toward the air box in either direction of fan rotation, but reverse spinning airflow is too low to operate the air box.

Start with flow on low setting. 8-12 gpm (30-45 liters/min) is average flow.

Note: Do not apply pressure to the return line or operate with restricted return line or motor seals will be damaged.

Recommended butterfly valve setting is 0°. Recommended fan speed depends on planter configuration:

- 3800 rpm planter using 2007+ 82bu or 150bu hoppers (or older hoppers with the vent line update)
- 3500 rpm planter using bulk seed boxes or unvented hoppers

Do not run the fan at speeds over 4500 rpm or speeds under 3000 rpm. A fan speed too high creates too much air flow causing seed to plug up the meter box. Fans operating too slowly do not create enough air flow to push the seed to the meter, causing the seed tube to plug or meters to run empty. If air system does not operate suitably with fan speeds between 3000-4500 rpm, refer to the troubleshooting chart, and then adjust the fan butterfly valve. See “Fan Adjustments” on page 60.

Watch monitor and adjust fan speed by increasing or decreasing hydraulic flow from tractor. When starting empty you must blow seed out to the meters for two to four minutes to fill meters. The monitor has a level sensor below the hopper or seed box to warn when seed box is empty. There are three to four acres of seed in the system when the sensor first indicates box empty, depending on seeding rate.

Note: Before the first planting each season, or when using new meters or meter wheels for the first time, or at the start of each season, before filling with seed, add 1/3 cup (80 ml) graphite to bottom of airbox.
82 Bu. Hopper Operation

**CAUTION**

*Tipping Hazard:*
Load an 82 bu hopper only when mounted on the cart. A full hopper can weigh over 5,000 lbs (2268 kg), which is above the lifting and balance capability of most tractors and farm forklifts.

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

**Adding Seed to 82 bu. Hopper**

1. When using new meters for the first time, or at the start of each season, measure out approximately 4 gallons (15 liters) of seed into a pail. Add 1/2 cup (120 ml) of lubricant to the pail. Mix and pour into air box before mounting hopper.

2. If no seed containers are present, or the previous operation was using a bulk seed boxes, mount the empty 82 bu. hoppers on the cart. See “Changing the Seed Box or 82 Bu. Hopper” on page 47.


4. Turn off seed box fan.

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

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

   If loading with a hydraulic auger, see “Auxiliary Hydraulics” on page 49.

**Note:** Auger height capability required is:
- PROBOX®, planter lowered: 9 feet 1 1/4 inches (2.78 m)
- PROBOX®, planter raised: 11 feet 4 3/4 inches (3.47 m)
- 82 bu. hopper, planter lowered: 9 feet 4 1/4 inches (2.85 m)
- 82 bu. hopper, planter raised: 11 feet 7 1/2 inches (3.54 m)

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

---

**Figure 47**
Hopper Capacities (bu)

Approximate capacity of bulk seed hopper, in bushels, at 10 inch increments.
Changing the Seed Box or 82 Bu. Hopper

Note: The YP2425 & YP2425F 60 Foot Yield-Pro® Planter accepts Great Plains 82 bu. hoppers or bulk seed boxes that meet the Pioneer® PROBOX® specification.

Note: Hoppers for the YP24 are provisioned as a pair. To provide convenient walkboard access to the lid, the lid hinge is on the left for the left hopper, and on the right for the right hopper. They are otherwise identical.

CAUTION

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

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

Refer to Figure 48

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

Refer to Figure 49

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

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

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

**NOTICE**

*Plugging and Inconsistent Population Risk:*
Talc+graphite lubricant mix is mandatory for all seed, especially treated or inoculated seed when using precision meters. However, DO NOT use talc with finger pickup meters. Use graphite lubricant with finger pickup meters. See “Seed Lubricants” on page 112.

*Refer to Figure 50*

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

**CAUTION**

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

**NOTICE**

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

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

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

17. Install the box retaining pins in frame corners.

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

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

20. Open the slide gate.

**Checking Planting Rate**

Although your seed monitor will report useful full pass results, cautious practice includes manually checking the seed rate early in the first pass.

The Seed Rate Chart book for this planter (manual part number 401-406B) contains sampling instructions.
Auxiliary Hydraulics

Refer to Figure 51, Figure 52 and Figure 53

The YP24 planter includes, as standard equipment, an auxiliary hydraulic circuit, intended to power a seed auger for loading bulk hoppers.

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

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

**Operating Auxiliary Hydraulics**

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

1. Fold any extended markers and set the tractor lever for the marker/aux circuit to Neutral.
2. If no markers were unfolded, set the Clutch Folding Module Marker/Fold switch ② to “Marker”.
3. If the machine has markers, at the left wing tool bar, move the lever on the manual valve ③ from Marker ⑤ (lever pointing forward) to Aux ⑤ (lever pointing back).
4. Connect the implement requiring hydraulic power.
5. Briefly Extend the tractor lever for the Marker circuit, engage local valve/switch on implement, and confirm proper implement operation (auger rotation in the correct direction).
6. Set tractor circuit lever to Extend, and operate implement with local controls.
7. When operation is complete, set tractor circuit to Float or Neutral, and set wing valve ⑤ back to Marker ⑤.
Trailer Operations

The YP24 planter optionally includes a trailing pintle hitch, intended for use with Great Plains PFC1600 or PFC2000 fertilizer tank carts. Hitching/hookup and operating instructions are found in the tank cart Operator’s Manual.

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

**Loss of Control Hazard:**
Do not attempt reverse operations with a pull-type trailer, such as a PFC tank cart, hitched to the planter. Trailer direction is extremely difficult to control.

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

---

**Figure 54**
Tank Cart Hitched to Planter

**Figure 55**
CFM: Tank Pump Control
Short-Term Parking

1. Fold markers. See “Folding the Markers” on page 41.
2. Choose a location with level firm ground. Do not unhitch on a slope.
4. Fold the planter (optional). See “Folding the YP24” on page 32.
5. Block tires.
6. Reinstall the parking stand (“Hitching Tractor to Planter” on page 16).

Refer to Figure 56 (shown without tractor for clarity)

7. For the standard 3-point hitch, deploy the two forward stands ⑤. Remove the inner pin ④, swing the stand ⑤ out, down and vertical around the bottom pin ⑥, and re-insert the pin at ⑦.

For hydraulic hitch planters, adjust hitch cylinder to relieve weight from draw-bar.
8. Insert transport locks on all lift cylinders.
9. Disconnect hydraulic lines. Secure them so that they do not touch the ground.
10. Disconnect electrical cables, capping where provisioned.
Long-Term Storage

Complete Parking steps first.

1. Park the YP24 indoors if possible, per the steps above. Great Plains recommends parking/storing in the raised configuration, folded, on the parking stands and with all lift cylinder locks installed.

2. If no hoppers or seed boxes are mounted, cap the air boxes.

3. If empty seed boxes or hoppers are mounted, close the seed gates and the lids.

4. If partially-loaded seed boxes are mounted, close seed gates, and remove seed boxes. If partially loaded hoppers are present, unload seed via clean-out doors on air box. Store planter only without seed.


6. Close air box clean-out doors. Using planter fan, blow seed to meters, cleaning out the lines.

7. Open meter clean-outs. Clean out residual seed.

8. Close all clean-out doors and ports. Shut off all Y-tubes.

9. If seed meters are removed, tie or tape a small plastic bag over ends of all seed delivery tubes, to prevent insects from entering or nesting.

10. Apply grease to exposed cylinder rods to prevent rust.

11. Flush fertilizer lines (if present). Flush system with RV anti-freeze if there is any chance of freezing prior to next implement use.

12. Empty and clean fertilizer strainers.

13. Lubricate all points listed in Maintenance to prevent rust.

14. Clean planter of mud, dirt, excess oil and grease.
Adjustments

To get full performance from your YP24, you need an understanding of all component operations, and many provide adjustments for optimal field results. Some of these have already been covered earlier in this manual.

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

<table>
<thead>
<tr>
<th>Adjustment</th>
<th>Page</th>
<th>The Adjustment Affects</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Refer to Seed Monitor manual</td>
</tr>
</tbody>
</table>
Gauge/Transport Wheel Adjustments

The gauge/transport wheels serve two functions:

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

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

   The wing gauge wheels 3 may be slightly raised or lowered by adjusting a nut on the cylinder rod. See "Wing Leveling, Inboard End" on page 25.

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

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

Marker Adjustments

There are six adjustments for markers:

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

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

- Marker Support Wheels
  Three bolt holes are available for adjusting height.

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

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

- Marker Speed
  Once initially set by your dealer, this rarely needs modification.

**CAUTION**

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

**CAUTION**

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

**Refer to Figure 59**

1. To change angle of cut, and the width of the mark, loosen \( \frac{1}{2} \)-inch bolts \( 2 \) holding the disk assembly.

   For a wider mark \( \bigcirc \), increase the angle of the marker with respect to the tube \( 1 \). For a narrower mark \( \bigcirc \), reduce the angle.

**Note:** Do not set a marker angle wider than need to make a useful mark. Excess angle increases wear on all marker components.

2. Tighten bolts \( 2 \).

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

**Marker Extension**

Marker width needs to be adjusted once for the initial YP24 setup, and later only if changing row spacing (including locking up row units for single-row operation on a twin-capable planter).

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

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

**Refer to Figure 60 and Figure 61**

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

4. Mark the ground at this point.

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

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

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

8. Check the mark locations. Adjust to obtain the table value.

---

<table>
<thead>
<tr>
<th>Row Spacing</th>
<th>Marker Extension ( E )</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 inch Single</td>
<td>360 inches (914 cm)</td>
</tr>
<tr>
<td>20 inch Single</td>
<td>370 inches (940 cm)</td>
</tr>
<tr>
<td>70 cm Single</td>
<td>945 cm (372 inches)</td>
</tr>
<tr>
<td>30 inch Single</td>
<td>375 inches (952.5 cm)</td>
</tr>
<tr>
<td>30 inch Twin-Row</td>
<td>371 inches (942 cm)</td>
</tr>
<tr>
<td>30 inch Twin, rear units locked-up</td>
<td>371 in. Left Side (942 cm) 379 in. Right Side (963 cm)</td>
</tr>
</tbody>
</table>
Marker Gauge Wheel Adjustment

Refer to Figure 62

The purpose of the marker support wheel 1 is to carry the weight of the inner section of the marker arm.

If the wheel is not touching the ground, or is often off the ground during marker operations, remove the bolts 2 and move the wheel to a lower hole.

If the marker disc is frequently off the ground, the support wheel mount may need to be moved to a higher set of holes.

Marker Shear Bolt Replacement

Refer to Figure 62

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

The shear bolt is a hex head cap screw, 3 \( \frac{1}{2} \)-13 x 2\( \frac{1}{2} \) inch Grade 5, Great Plains part number 802-130C, plus a 4 \( \frac{1}{2} \)-13 lock nut, Great Plains part number 803-019C.

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

Great Plains suggests checking marker chain slack every few years. If any maintenance or repairs cause the chain to be disconnected, correct slack needs to be set on reinstallation.

Perform any checks and adjustments with the marker folded and tilted down into its cradle.

Refer to Figure 63

Lift the free end of the lift arm weldment 5 until horizontal. Re-attach chain so that it is taut.

Ideally, the unfolding marker reaches the ground 2 to 3 feet (60 to 90 cm) before the marker is completely unfolded.

NOTICE

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

⚠️ CAUTION ⚠️

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

Refer to Figure 64 and Figure 65

Adjust folding speed for dual markers with hex adjustment screws on the sequence valve body. The valve sequence body is located on top of the left wing frame.

Loosen jam nuts before making adjustments.

There is one adjustment screw for unfolding speed ① and one for folding speed ②. You can identify adjustment screws by markings stamped in valve body.

Turn adjustment screws clockwise ( Satoshi: slower) to decrease [un]folding speed and counterclockwise ( Satoshi: faster) to increase [un]folding speed.

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

After adjusting the folding speed, tighten jam nuts on hex adjustment screws to hold settings.
Height Switch Adjustment
S/N A1062Q+

Refer to Figure 66

Planters S/N A1062Q+ and later include a sensing switch ① that signals the seed monitor (and activates the optional hydraulic meter drive), when the planter is lowered for planting. The switch is located at the rear cross tube on the planter's left side.

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

⚠️ DANGER ⚠️

Crushing Hazard:
Exercise extreme caution when adjusting the switch.

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

Note: Switch is in “Neutral” position when planting. Switch is “Activated” when raised.
Height Switch Adjustment
S/N A1061Q-

Refer to Figure 67

Planters S/N A1061Q- and earlier include a sensing switch ① that signals the seed monitor (and activates the optional hydraulic meter drive), when the planter is lowered for planting.

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

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

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

Refer to Figure 68

1. Lower the planter to the height at which seed delivery is to begin.
2. Loosen U-bolt ② holding switch bracket ③ to link.
3. Move bracket forward or rearward so that switch toggle arm ④ makes contact with tool bar ⑤.
4. Move switch/bracket forward 1/2 inch (13 mm) Tighten nuts.
Fan Adjustments

Fans on PTO

For fans powered by an optional PTO kit (page 113), the fan speed is set at the kit’s flow control valve. See manual 411-015M for details.

Fans on Hydraulic Remotes

Refer to Figure 69

There are three butterfly valves at the fan outlet:

1. common,
2. left air box, and
3. right air box,

Recommended butterfly valve setting is 0° for all three valves. Recommended fan speed depends on planter configuration:

- 3800 rpm: planter using 2007+ 82 bu. or 150 bu. hoppers (or older hoppers with the vent line update)
- 3500 rpm: planter using bulk seed boxes or unvented hoppers

Adjust the basic fan rate with the tractor hydraulic system and the fan rpm display of the seed monitor. Do not run the fan at speeds over 4500 rpm or speeds under 3000 rpm.

A fan operating at too high a speed creates too much air flow causing seed to plug up the meter box, and meters to run empty. A fan operating too slowly does not create enough air flow to push the seed to the meter, causing meters to run empty. If air system does not operate suitably with fan speeds between 3000-4500 rpm, refer to the troubleshooting chart, and then adjust the fan butterfly valve only as needed.

Normally, each seed meter will be full of seed, up to the top of the bypass screen at the base of the inlet neck. If the meter has less seed, check for blockage upstream. If there is no blockage, check for insufficient fan airflow: low rpm and/or butterfly valve(s) at too high an angle.

The butterfly valve may be helpful if your tractor can maintain a high, but irregular fan rpm. Set left/right valves 2/3 to 0°. Set the rpm to above 3800 rpm with valve 1 completely open (0°). Adjust valve 1 angle in the 20 to 30° range until you achieve the desired seed flow consistency. Adjust valve 2 or 3 (but not both) only to balance airflow.

Note: The YP2425F has two fans. See manual 403-362M for operational details.
Liquid Fertilizer Setup

Liquid fertilizer distribution systems\(^a\) are optional on the YP24 and are optimized for use with the Great Plains PFC2000 tank.

The dry fertilizer system of the YP2425F is covered in a separate manual, 403-362M.

If installed, there are several points of fertilizer setup and/or adjustment:

1. Pump setting dial or sprockets
   Basic pumping rate is adjusted at pumps.

   For the cart-mounted pump and newer wing ground-drive pumps, a dial on the pump sets rate.

   For prior wing ground-drive pumps, sprocket selection sets rate.

   Refer to the Seed Rate manual and the tank cart Operator's manual.

2. Row orifice setup
   Orifice plate sizes are chosen to assure consistent pressure at all nozzles. Refer to the Seed Rate manual.

3. Relief valve setting
   See “Fertilizer Relief Valve” on page 63.

4. Inlets
   Both Type 2 (2-section, single inlet) and Type 3 (3-section, 3-inlet) systems have quick-connect inlets and shutoff valves at the back of the planter. See page 22 for hookup details.

5. Strainer setup
   The optional ground drive pumps include a strainer. The mesh screen size must be compatible with the orifice plates in the distribution system. Refer to the Seed Rate manual.

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

The liquid fertilizer system is designed to operate (ideally) between 15 and 40 psi, but in no case more than 65 psi. Several system elements affect system pressure, and need initial setup, periodic maintenance, and adjustment when changing seed rates.

\(^a\) Type 2, Type 3, or both, with or without planter-mounted ground drive pumps for Type 2. See page 23 for details.
John Blue Ground Drive Pump

Refer to Figure 70

With newer Type 2 fertilizer systems, the pumps ① are driven by a ground contact wheel ②. Fertilizer rate is independent of seed rate. Fertilizer coarse rate is set by a driving sprocket ③ on the ground drive assembly, and fine rate is adjusted at the setting hub (dial) ④ on the pump.

NOTE

Equipment Damage/Material Loss Risks:
The ground drive contact wheel and chain system will operate whenever the planter is lowered and in motion. If planting without fertilizing, the pump must not be allowed to run dry. Disconnect the chain or remove a sprocket.

Note: When a Type 3 fertilizer system is installed, the pump is mounted at the source (not on the planter), usually on a tank cart.

For sprocket and dial settings, refer to the Seed Rate manual.

Hypro Ground Drive Pump

Refer to Figure 71

With older Type 2 fertilizer systems, the pumps ① are driven by a ground contact wheel ②. Fertilizer rate is independent of seed rate. Fertilizer rate is set by driving ③ and driven ⑤ sprockets on the ground drive assemblies.

NOTE

Equipment Damage/Material Loss Risks:
The ground drive contact wheel and chain system will operate whenever the planter is lowered and in motion. If planting without fertilizing, the pump must not be allowed to run dry. Disconnect the chain or remove a sprocket.

Note: When a Type 3 fertilizer system is installed, the pump is mounted at the source (not on the planter), usually on a tank cart.

For sprocket settings, refer to the Seed Rate manual.
Liquid Fertilizer Strainer(s)

The optional ground drive fertilizer pump systems include a strainer at each pump. The Type 3 system relies on strainers at the source, usually on a tank cart. The strainer(s) are delivered with a mesh screen. You need to check that each screen is an appropriate size for the orifice plates you plan to use.

If changing screen sizes, keep in mind the following:

- Generally, select a mesh screen the same or slightly smaller than the orifice size.
- A substantially smaller mesh (e.g. 100) will reduce manifold orifice plates plugging so often, but the strainer screen will have to be cleaned more often.
- A much larger mesh (e.g. 50 or 30) will pass more material but should only be considered when using large manifold orifice plates.
- A plugged or partially plugged screen will starve the pump and will result in a reduced application rate.

Fertilizer Relief Valve

Refer to Figure 73

When a “Type 2” fertilizer system is installed, a relief valve and pressure gauge are mounted at each ground drive pump. The relief valve protects the manifold, lines and fittings from excessive pressure. Any product that dumps over the relief valve will discharge from the dump line in relative safety.

To set relief valve:

1. Unlock plastic jam nut from relief valve knob.
2. Unscrew knob clockwise (looking down) until it loses contact with internal spring.
3. Screw knob counterclockwise two turns. Start at this setting.
4. Observe manifold gauge and watch for relief valve dump line discharge while operating in the field.
5. If valve is dumping product and gauge reads under 65 psi, stop tractor and turn knob clockwise 1/4 turn. Continue operating at normal field speed. Repeat this step as needed until no product is discharged from relief valve dump line.
6. If the pressure gauge reads above 65 psi, change to a larger orifice. Go to step 2 and repeat.
Fertilizer Orifice Plates

⚠️ DANGER

Agricultural Chemical Hazard:
Wear protective gloves when changing orifice plates.

Refer to Figure 74

In general, the orifice needs to be small enough to create at least 15 psi pressure in the manifold but large enough to prevent the manifold pressure from exceeding 65 psi.

The minimum pressure is required to even out the flow of fertilizer between rows. To reduce orifice plugging and pump wear, use the largest orifice practical for your fertilizer application rate. Alternate orifice plates are listed in the Seed Rate manual.

The best pressure range to maintain is 20 to 40 psi to ensure optimum distribution while minimizing leakage. Built-in check valves at the row units prevent flow below 15 psi.

The Seed Rate Chart book for this planter (manual part number 401-406B) contains a table of orifice sizes in gallons per acre.

⚠️ NOTICE

Orifice plates do not set fertilizer rate. Rate is set at the pump.
Frame-Mounted Row Accessories

Terra-Tine™ Adjustments

Refer to Figure 75 through Figure 77

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

Equipment Damage Risk:
Be sure to check that the Terra-Tine Row Cleaner tines DO NOT touch the coulter blade or any other attachments. Such contacts will cause excess wear to all parts involved. At least 1/2 inch (13 mm) clearance is recommended.

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

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

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

Using Terra-Tines with Coulters

Refer to Figure 75 and Figure 76

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

4. Fore-to-aft adjustment is accomplished by adding or removing the extension arm 5 to place the Terra-Tine Row Cleaner to either side of the coulter hub depending on the desired position or clearance between other attachments. Testing has shown better performance behind the hub, but available space may dictate the mounting position.
Frame-Mounted Coulter Adjustments

Refer to Figure 77
Frame-mounted coulters may be run on-row or between rows.

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

Between Row (or Off-Row at least 2 inches)
At the shaft ①, adjust the coulter depth for a running depth ② of 4 to 4 1/2 inches (10.1 to 11.4 cm) below ground level ③. Refer to the Vantage I manual (204-376M) for further adjustments.

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

Vantage I Fertilizer Adjustments

Refer to Figure 78
At the back plate ①, adjust the tine height for a running depth ② of 1 inch (2.5 cm) below ground level ③. Refer to the Vantage I manual (204-376M) for further adjustments.
25 Series Row Unit Adjustments

Refer to Figure 79 (which depicts a row unit fully populated with all optional accessories supported for use with the YP24 planter).

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

1. Dual Down Pressure Springs: standard
   Each row unit is mounted on the planter with parallel arms which allow each row unit to independently move up and down while staying horizontal. Adjustable springs provide the force to get the row unit and attachments into the soil. See “Row Unit Down Pressure” on page 68.

2. Row cleaners: optional
   Row cleaners clear trash from the row. Twin-row planters support single-arm cleaners. Single-row planters support single- or double-arm cleaners. See “Unit-Mount Cleaner Adjustments” on page 71.

3. Disk Coulter: optional, choice of blades
   Coulters cut any remaining trash, and create a groove for light no-till planting. The down force needed to cut and widen the coulter groove is supplied by the row unit. The depth relative to the opener is set by a choice of hub mounting holes. See “Coulter Adjustments” on page 72.

4. Disc Blades: standard, 2 per row unit
   Double disc blades widen the coulter groove, creating the seed bed. Setup controls depth and width. See “Row-Unit Opener Disk Adjustments” on page 74.

5. Depth Side Gauge Wheels: standard
   The depth gauge wheels have adjustments for spacing and angle. See “Side Gauge Wheel Adjustment” on page 75.

6. Seed meter: required, choice of models/features
   Meters deliver singulated or volumetric seed. See “Seed Meter Setup and Adjustment” on page 77.

7. Seed delivery tube: standard (not shown)
   No adjustments are necessary.

8. Seed firmer (optional):
   Keeton® seed firmer (shown mounted)
   Improves seed-soil contact, and provides a stable arm for a low-rate liquid fertilizer delivery tube. See “Keeton Seed Firmer Adjustment” on page 83.

   Seed-Lok® firming wheel (shown in inset)
   Improves seed-soil contact. See “Seed-Lok® Seed Firmer Lock-Up (older style)” on page 84.

9. Gauge Wheel Scraper: optional
   The depth gauge wheels also accept an optional scraper. See “Adjusting Gauge Wheel Scrapers” on page 76.

10. Press wheels: standard (choice of types)
    These close the seed trench. See “Press Wheel Adjustment” on page 85.

**NOTICE**

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

Refer to Figure 80

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.

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

Refer to Figure 81

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 82

Row unit springs 1 provide the primary down pressure necessary for row unit disks to open a seed trench. The weight of the row units themselves contributes about 145 pounds (66 kg) of the total force.

The springs allow the row units to float down into depressions and up over obstructions. Springs also provide down force on coulters when using optional row mounted coulters, and provide the primary down force on row cleaners (optional), seed firmers (optional) and press wheels.
An adjuster cam ② sets down pressure individually for each row unit. This is useful for penetrating hard soil and planting in tire tracks. For best results always adjust tractor tires so they are not ahead of 30 inch or 70 cm rows.

Refer to Figure 84

<table>
<thead>
<tr>
<th>Cam Notch</th>
<th>Pounds</th>
<th>Kilograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>zero (out of notch)</td>
<td></td>
<td>Maintenance Only</td>
</tr>
<tr>
<td>one</td>
<td>345</td>
<td>156</td>
</tr>
<tr>
<td>two</td>
<td>370</td>
<td>168</td>
</tr>
<tr>
<td>three</td>
<td>400</td>
<td>181</td>
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<td>450</td>
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<td>228</td>
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<tr>
<td>six</td>
<td>550</td>
<td>249</td>
</tr>
<tr>
<td>tip</td>
<td></td>
<td>Do Not Use</td>
</tr>
</tbody>
</table>

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

Refer to Figure 83 (shown at cam setting 2), Figure 84 and Figure 85

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

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.
2. Install lift cylinder locks.
3. Put tractor in Park and shut it off.
4. Position wrench on the fixed nut ④ near or slightly forward of vertical.
5. Pull upper spring link ⑤ back.
6. Move the adjustment cam ② to the new setting on the spring adjust bar ⑥.

Note: 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 Lock-Up

Alternate twin-row units can be pinned in the up position to accommodate single-row spacing. It is generally easier to lock up the rear row unit of each pair.

**Refer to Figure 86**

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

**Note:** Replacement pin part number is 805-033C

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Install lift cylinder locks.
3. Set the down pressure springs be set to the minimum setting, per the instructions on page 68.
4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm:
   a. use a hoist at the rear of the shank ④, or
   b. use a jack under the shank extension ⑤

**CAUTION**

**Crushing and Sharp Object Hazards:**

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

**Refer to Figure 87**

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

**Refer to Figure 88**

7. Uncouple meter drives for the locked-up rows. Pull shaft out and park pin in shallow detents.

**NOTICE**

**Machine Damage Risk:**

*Do not disable meters by removing them or chain drive damage will occur.*

8. Shut off Y-tube port for the current row unit.
9. Repeat for all rows needing lock-up.
10. Reset marker extension (page 55).
11. Reset monitor active row pattern and row spacing to avoid nuisance alarms.

**NOTICE**

**Certain Machine Damage:**

*Do not pin the row unit while it is in the lowered position. If the pin is inserted below the parallel arm, unit damage will occur when planting begins.*
Unit-Mount Cleaner Adjustments

Refer to Figure 89 and Figure 90

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

There are two adjustments:

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

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

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

Suggested initial depth is tine tips at ground level.

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

To adjust the row cleaner:

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

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

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

Coulter Depth Adjustment

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

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

Refer to Figure 91 and Figure 92

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

To adjust coulter depth:

1. Determine the present opener and coulter depths.
2. Note which bracket hole the coulter is presently using.
3. Determine which new hole will position the coulter closer to the \( \frac{1}{4} \text{ inch-above depth} \). See table below.
4. Remove the \( \frac{5}{8} \times 11 \times 4 \text{ inch bolt, lock washer and nut (7 in Figure 91)} \).
5. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.
6. Re-adjust row cleaners, if installed.

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

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

Figure 91
25 Series Unit-Mounted Coulter

Figure 92
Coulter Blade Mounting Holes
Coulter Row Alignment

Refer to Figure 93

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

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

The exacting test of correct alignment is field results. Operate the planter on some test ground (no seed required), and verify that the opener blades are in the groove opened by the coulter, and that the press wheels are centered over the furrow. See “Press Wheel Adjustment” on page 85 for press wheel alignment.

Refer to Figure 94

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

Keep the coulter blade vertical while adjusting.

If the blade cannot be brought into alignment, check that the blade spindle itself is using the same hole location on each side of the bracket.
Row-Unit Opener Disk Adjustments

25 Series openers have three adjustments:
1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disk clearance

Setting Planting Depth

Refer to Figure 95

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

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

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

Opener Disc Contact Region

Refer to Figure 96

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

The ideal spacing causes the blades to be in contact for about one inch ①. If you insert two pieces of paper between the blades, they should slide to within zero (touching) to 1.5 inches (3.8 cm) of each other. If zero, the gap between the blades should not be significantly greater than the thickness of two sheets of paper.

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

Adjusting Disc Contact

Refer to Figure 96 and Figure 97

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

Refer to Figure 98

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

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

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

Refer to Figure 99

For 2 inches (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.

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

Refer to Figure 101

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.

Note: 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.
5. Check wheel-to-disk contact at 2 inches (5.2 cm) planting depth, as shown in Figure 100. Lift wheel 2 inches, check contact and release. When let go, wheel should fall freely.

- If wheel does not contact disk at bottom to area where blade leaves contact with soil, move hex adjuster until wheel is angled for proper contact with disk.
• If wheel does not fall freely, loosen hex-head bolt ① and slide wheel arm out just until wheel and arm move freely. Retighten hex-head bolt ① according to grade:
  ½ in. Grade 5 bolt on 25 series, 75 ft-lbs (102 N-m).
  ½ in. Grade 8 bolt on 25 series, 110 ft-lbs (149 N-m).

Note: Use “Torque Values Chart” on page 128 for reference.

6. Keep turning hex adjuster and moving wheel arm until the wheel is adjusted properly. When satisfied, tighten pivot bolt ② to 110 ft-lbs (149 N-m).

Adjusting Gauge Wheel Scrapers

Refer to Figure 102

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

To adjust scrapers:
1. Loosen nut ①.
2. Slide scraper ② toward gauge wheel ③ until scraper touches tire.
3. Slide scraper ② away from wheel ③ leaving a ¹⁄₈ inch (3 mm) gap at ④.
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 ① until gap ④ is constant.
6. Tighten nut ①.
Seed Meter Setup and Adjustment

Your YP24 was originally supplied with a specific seed meter type and internal components optimized for a particular crop. Depending on the meter type and configuration, there may be adjustments available.

You can also entirely change the meter, or swap internal components, as your crop mix changes. This manual section assumes that you need to install new meters, then describes their internal configuration, and finally any adjustments.

The YP24 planter supports

- Great Plains Singulator Plus™ meters and
- Finger pick-up meters.

The YP24 planter does not support feeder cups. Use a Singulator Plus™ meter with specific wheels for volumetric applications.

**Meter Removal**


   **Refer to Figure 103**

2. Slide the retaining ring up on the seed hose, and remove the seed hose.

   **Refer to Figure 104**

3. Release the lower latch.

   **Refer to Figure 105**

4. Release the upper latch and swing the drive mount away from the meter.
**Refer to Figure 106**

5. Lift up, then back, and remove the meter.

**Refer to Figure 107**

6. While the meter is removed, take time to inspect the meter drive chain ①, idlers ② and drive sprocket ③, and perhaps perform the periodic chain lubrication.

   Meter drive chain idlers are spring-loaded, and require no adjustment for chain slack.
Singulator Plus™ Meter Wheel Replacement

Choose the correct seed meter wheel for the type of seed you will be using. Be sure to use the same wheel type on all meters.

**NOTICE**

Meter Wheels Not Interchangeable:
Seed meter wheels for the 25 Series row units are made of a green color material and are not interchangeable with the other Great Plains seed meter wheels for other machines. Use only green wheels in 25 Series row units.

1. Clean out meter. For more information, see "Meter Removal" on page 77.

Refer to Figure 108
2. Push in spring-loaded wheel retainer and make 1/4 turn. Pull off wheel retainer and spring.

Refer to Figure 109
3. Pry the seed meter wheel out about 1/4 inch (6 mm) using the tool stored under the walkboard, and spin backward to clean out seeds from top pockets.

Note: If wheel is not free of all seed, wheel removal is much more difficult, as pocketed seeds will shear against meter parts.

Refer to Figure 110
4. Remove seed meter wheel.
Refer to Figure 111

Note: With the seed meter wheel removed, you may want to check the meter for internal damage or trash.

Note: Some wear on top edge of slide 1 is normal. Excess wear is cause for replacement.

5. When changing crops be sure to clean out air system before installing new meters or wheels. See “Cleaning Out Air System” on page 97.

6. Place new wheel on meter wheel shaft. Tilt it slightly forward to engage and push back on the slide. Seat wheel fully on cross-pin.

7. Replace spring-loaded wheel retainer. Make 1/4 turn to seat cross-pin in shallow groove of retainer.

Meter Installation

Installation is the reverse of the removal process, with two steps omitted.

Refer to Figure 112

1. Insert the meter.
   ① Insert the top meter tab (with the hook).
   ② Align the meter base with the latch plate ears.
   ③ Insert the bottom meter tab.
   Mind the lower latch, as it tends to swing under the meter base and block mating with the latch plate.

Refer to Figure 104 on page 77

2. Engage the upper latch, and swing the mounting plate into engagement with the meter.

Note: Always engage upper latch first.

Refer to Figure 105 on page 77

3. Engage the lower latch.

Refer to Figure 106 on page 78

4. Slide the seed hose over the meter inlet tube, and then slide the retaining ring down the seed hose.
Finger Meter Adjustments

The finger pick-up meter has an adjustable brush, and alternate inserts are available for the backing plate. The brush has been pre-set to the optimum setting for most seed sizes. The factory-installed insert is the “A” insert.

Optimum planting speed is $4 \frac{1}{2}$ to 5 miles per hour (7.2 to 8 kph). Excess speed causes poor spacing performance due to seed tube bounce, and may also cause improper depth control due to row unit bounce.

Finger Meter Brush Adjustment

The brush reduces or eliminates “doubles” (delivering two seeds per finger), but if set too aggressively can cause “skips” (delivering no seed on some fingers). As needed, adjust for minimal doubles and skips.

**Note:** These instructions describe the current finger pickup meter shipped with new Great Plains planters, which has an integrated adjustment lever for the brush. If you have added pre-existing finger meters after purchase, there is some chance that you may have the previous model meter, adjusted by screwdriver rather than lever. If so, rely on counting detents to determine the setting. Not all have 9 detents.

Refer to Figure 113

The adjustable brush provides additional flexibility to accommodate a wide range of seed sizes. Use lever $\text{L}$ to gently rotate the brush into position.

The settings range from 1 to 5 with detents at each half step, for a total of 9 detents. The factory default setting is $2 \frac{1}{2}$. Although the numbers are molded into the meter housing, only “1” and “5” may be visible. To ensure consistency, rotate the lever $\text{L}$ fully counter-clockwise (1), and count detents as you advance it to the desired setting.

Always pay attention to your planter monitor. Compare actual seed usage to your estimates.

Fine-tune your planter by thoroughly checking all key components including: seed tubes, chains, sprockets, tire pressure, seed monitor, double disk openers, gauge wheels, seed firmer, closing wheels, parallel arms, and the row unit itself.

### Table: Finger Meter Brush Settings

<table>
<thead>
<tr>
<th>Bag Weight (80,000 seeds)</th>
<th>Seeds Per Pound</th>
<th>Brush Setting</th>
<th>Seeds Per Kilogram</th>
<th>Bag Weight (80,000 seeds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65 lbs</td>
<td>1230 or less</td>
<td>1</td>
<td>2710 or less</td>
<td>29.5 kg</td>
</tr>
<tr>
<td>65 to 55 lbs</td>
<td>1230 to 1450</td>
<td>2</td>
<td>2710 to 3195</td>
<td>29.5 to 24.9 kg</td>
</tr>
<tr>
<td>55 to 45 lbs</td>
<td>1450 to 1780</td>
<td>3</td>
<td>3195 to 3925</td>
<td>24.9 to 20.4 kg</td>
</tr>
<tr>
<td>45 to 35 lbs</td>
<td>1780 to 2300</td>
<td>4</td>
<td>3925 to 5070</td>
<td>20.4 to 15.9 kg</td>
</tr>
<tr>
<td>35 lbs</td>
<td>2300 or more</td>
<td>5</td>
<td>5070 or more</td>
<td>15.9 kg</td>
</tr>
</tbody>
</table>

Flats

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>45 lbs</td>
<td>1780 or less</td>
<td>1</td>
<td>3925 or less</td>
</tr>
<tr>
<td>45 to 35 lbs</td>
<td>1780 to 2300</td>
<td>2</td>
<td>3925 to 5070</td>
</tr>
<tr>
<td>35 lbs</td>
<td>2300 or more</td>
<td>3</td>
<td>5070 or more</td>
</tr>
</tbody>
</table>

Use the general guidelines in the table at right to adjust the brush position to your seed size and shape. The numbers listed correspond to the numbers printed on the outer housing of your meter. If there is a decal on your meter, its units are seed size in pounds per 80,000 seed bag.
Sprocket Indexing (Stagger)

Indexed - deliberate pair spacing provides maximum plant separation

Non-Indexed - arbitrary pair spacing

If you are planting:
- finger-metered,
- twin-row crops,
- at seed interval spacings above 6 1/2 inches (16.5 cm),

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

Refer to the Seed Rate manual for details.

Finger Meter Inserts

Refer to Figure 114

The backing plate is equipped with an “A” insert 1. In tests, this insert provides the best performance in most seed sizes. However, there are two alternative inserts that can be used. Before changing to a different insert, please consult with a Great Plains service representative for a recommendation.

The identification of the insert type is molded into the back of the insert.

NOTICE

Plugging and Inconsistent Population Risks:

Be cautious in using seed treatments, additives, and other chemicals when possible. They can cause meter performance problems and premature wear to meter parts. Avoid the use of graphite with the precision meter. If graphite must be used, use Precision™ Planting graphite or Great Plains graphite which is less abrasive. Generally, seeds coated with Maxi or similar coatings, such as Captan, benefit from graphite. Always store meters in a dry, secure place. Moisture, temperature, nest-building insects and rodents can create problems. Always pay attention to your seed monitor and operating manual. Monitor the amount of seed you are planting compared to your expectations. Always investigate abnormalities!
Seed Firmer Adjustments

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

**CAUTION**

*Sharp Object Hazard:*
Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton® Seed Firmer, lower the planter until the disks of the row units are resting on the ground.

**Keeton Seed Firmer Adjustment**

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

Refer to Figure 115

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

To lock up Seed-Lok® wheels:

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

To release a locked-up Seed-Lok®:

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

**Note:** Engage the lever stop under the handle 2 when Seed-Lok® is in use. If left disengaged 3, a furrow obstruction could cause unintended lock-up.
Seed-Lok® Seed Firmer Lock-Up (older style)

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

Refer to Figure 117

To lock up Seed-Lok® wheels:

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

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

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

There are three adjustments available on the press wheel assembly:

Refer to Figure 118
1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 120 on page 86)

Press Wheel Down Pressure

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

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

Note: 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 68.

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 119
1. Raise the planter and install the lift assist cylinder locks. See “Lift Cylinder Lock-Up” on page 34.
2. Remove the bolt ④, nut ⑤ and lock-washer ⑥ for the left press wheel ⑧.
3. Move the spacer ⑦ and wheel ⑧ to the forward of the two mounting holes at ②.
4. Re-install the bolt, lock washer and nut. Tighten.
Press Wheel Centering
If one press wheel is running in the seed trench, or the wheels are not centered over the trench, the angle 1 of the press wheel assembly can be adjusted as follows:

Refer to Figure 120
1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
2. Raise planter and install lift assist cylinder locks. See "Lift Cylinder Lock-Up" on page 34.
3. Loosen the 1/2 inch hex-head bolts 2 and 3.
Note: 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 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.
## Troubleshooting

### General Troubleshooting

For planters equipped with Row-Pro™, see also “Row-Pro™ Troubleshooting” on page 155.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planting too little</strong></td>
<td>Incorrect seed size for meter wheel can cause skips</td>
<td>Replace meter wheels to match seed</td>
</tr>
<tr>
<td></td>
<td>Meter drive not engaged</td>
<td>Engage drive coupler, page 70</td>
</tr>
<tr>
<td></td>
<td>Worn meter components</td>
<td>Replace worn components</td>
</tr>
<tr>
<td></td>
<td>Incorrect seed rate.</td>
<td>Check seed rate information.</td>
</tr>
<tr>
<td></td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Seed size and weight may vary.</td>
<td>Finger meter brush may need adjustment, page 81.</td>
</tr>
<tr>
<td></td>
<td>Incorrect tire size or air pressure.</td>
<td>Correct tire size and air pressure, page 121.</td>
</tr>
<tr>
<td></td>
<td>Incorrect fan air flow</td>
<td>Adjust fan speed and/or fan baffle, page 60</td>
</tr>
<tr>
<td></td>
<td>Excessive gaps between planter passes.</td>
<td>Adjust marker, page 54.</td>
</tr>
<tr>
<td></td>
<td>Plugged row-unit seed tube.</td>
<td>Raise planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td></td>
<td>Thrown or worn drive chains</td>
<td>Check drive chains.</td>
</tr>
<tr>
<td></td>
<td>Worn/rusted sprockets, chains and/or chain idlers.</td>
<td>Replace sprockets, chains and/or chain idlers.</td>
</tr>
<tr>
<td></td>
<td>Improper sprocket.</td>
<td>Check sprockets</td>
</tr>
<tr>
<td></td>
<td>Speed sensor calibration</td>
<td>Perform calibration per DICKEY-john® documentation with planter lowered.</td>
</tr>
<tr>
<td></td>
<td>Speed sensor angle.</td>
<td>With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
</tr>
<tr>
<td></td>
<td>Meter wheel or finger pickup has fewer cells than indicated on seed rate chart.</td>
<td>Charts are based on either 6 finger or 12 finger meters or various wheel cell counts.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planting too much</strong></td>
<td>Incorrect seed size for meter wheel can cause doubles</td>
<td>Replace meter wheels to match seed</td>
</tr>
<tr>
<td></td>
<td>Worn meter components</td>
<td>Replace worn components</td>
</tr>
<tr>
<td></td>
<td>Meter clean-out door left open</td>
<td>Close door</td>
</tr>
<tr>
<td></td>
<td>Incorrect seed rate.</td>
<td>Check seed rate information in the seed monitor manual.</td>
</tr>
<tr>
<td></td>
<td>Actual field size is different.</td>
<td>Verify field size.</td>
</tr>
<tr>
<td></td>
<td>Excessive overlap.</td>
<td>Adjust marker, page 54.</td>
</tr>
<tr>
<td></td>
<td>Irregular shaped field.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Incorrect tire size or air pressure.</td>
<td>Correct tire size and air pressure, page 127.</td>
</tr>
<tr>
<td></td>
<td>Improper sprocket.</td>
<td>Check sprockets</td>
</tr>
<tr>
<td></td>
<td>Speed sensor calibration</td>
<td>Perform calibration per DICKEY-john® documentation with planter lowered.</td>
</tr>
<tr>
<td></td>
<td>Speed sensor angle.</td>
<td>With planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
</tr>
<tr>
<td></td>
<td>Brush too loose on finger pickup meter</td>
<td>Adjust brush, page 81</td>
</tr>
<tr>
<td></td>
<td>Meter wheel or finger pickup has more cells than indicated on seed rate chart.</td>
<td>Charts are based on either 6 finger or 12 finger meters or various wheel cell counts.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Uneven seed spacing</td>
<td>Hydraulic meter drive motor rpm too low for</td>
<td>1. Increase field speed.</td>
</tr>
<tr>
<td></td>
<td>reliable control by proportional valve.</td>
<td>2. Use a seed wheel with lower cell count.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switch from 12 finger meters to 6 finger meters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Install a low speed kit (page 114).</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>Seed-Lok® plugging.</td>
<td>Lock up Seed-Lok®, page 84.</td>
</tr>
<tr>
<td></td>
<td>Row-unit disks not turning.</td>
<td>See &quot;Row-unit disks not turning freely,&quot; in this Troubleshooting chart.</td>
</tr>
<tr>
<td></td>
<td>Plugged row-unit seed tube.</td>
<td>Raise planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td></td>
<td>Worn/rusted sprockets, chains and/or chain</td>
<td>Check and replace any worn/rusted sprockets, chains or chain idlers.</td>
</tr>
<tr>
<td></td>
<td>idler or bearings.</td>
<td>Partially plugged row-unit seed tube.</td>
</tr>
<tr>
<td></td>
<td></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 112.</td>
</tr>
<tr>
<td></td>
<td>Use of excessively sticky or wet seed treatment.</td>
<td>Check your treatment.</td>
</tr>
<tr>
<td>Uneven seed depth</td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
</tr>
<tr>
<td></td>
<td>Incorrect coulter depth setting.</td>
<td>See coulter manual.</td>
</tr>
<tr>
<td></td>
<td>Excessive or improper row unit down</td>
<td>See “Row Unit Down Pressure” on page 68.</td>
</tr>
<tr>
<td></td>
<td>pressure spring setting.</td>
<td>Damaged seed tubes.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok building up with dirt.</td>
<td>Lock up Seed-Lok, page 84.</td>
</tr>
<tr>
<td></td>
<td>Row-unit not penetrating low spots.</td>
<td>See “Row Unit Down Pressure” on page 68.</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</td>
<td>See “Seed Firmer Adjustments” on page 83.</td>
</tr>
<tr>
<td></td>
<td>tension.</td>
<td>Population Alarms</td>
</tr>
<tr>
<td></td>
<td>False alarms or actual seed rate errors due</td>
<td>Review planter configuration and monitor setup.</td>
</tr>
<tr>
<td></td>
<td>to monitor setup with incorrect row count and/or spacing.</td>
<td>False alarms due to build-up on seed sensors.</td>
</tr>
<tr>
<td></td>
<td>Incorrect side depth wheel adjustment</td>
<td>See “Seed Tube Clean-Out” on page 96.</td>
</tr>
<tr>
<td></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>Seed-Lok® is plugging row-unit.</td>
<td>Lock up Seed-Lok®, page 84.</td>
</tr>
<tr>
<td></td>
<td>Failed disk bearings.</td>
<td>Replace disk 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>Raise planter, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td>Excessive seed cracking.</td>
<td>Incorrect seed meter wheel</td>
<td>Replace wheels with those matching seed</td>
</tr>
<tr>
<td></td>
<td>Unclean seed.</td>
<td>Use clean seed.</td>
</tr>
<tr>
<td></td>
<td>Damaged, old or dry seed.</td>
<td>Use clean, new seed.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Press wheels not compacting the soil as desired.</td>
<td>Incorrect spring handle setting</td>
<td>See “Press Wheel Adjustment” on page 85.</td>
</tr>
<tr>
<td>Press wheel or row-units plugging</td>
<td>Wheel stagger needs adjustment for conditions</td>
<td>See “Press Wheel Adjustment” on page 85.</td>
</tr>
<tr>
<td></td>
<td>Insufficient row unit down force</td>
<td>See “Row Unit Down Pressure” on page 68.</td>
</tr>
<tr>
<td></td>
<td>Too wet or cloddy.</td>
<td>Wait until drier weather or rework ground.</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>Press wheels not compacting the soil as desired.</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>Backed up with planter in the ground.</td>
<td>Clean out and check for damage.</td>
</tr>
<tr>
<td></td>
<td>Failed disk bearings.</td>
<td>Replace disk bearings.</td>
</tr>
<tr>
<td></td>
<td>Disk blades worn.</td>
<td>Replace disk blades.</td>
</tr>
<tr>
<td></td>
<td>Scraper worn or damaged.</td>
<td>Replace scraper.</td>
</tr>
<tr>
<td>Air lines plugging between air box and Y splitters</td>
<td>Improper air hose routing.</td>
<td>With planter unfolded, hoses should form a gentle horizontal “S” shape through the holders with no big sags.</td>
</tr>
<tr>
<td></td>
<td>Air leaks between manifold and splitters</td>
<td>Check for leaks and correct as needed.</td>
</tr>
<tr>
<td></td>
<td>Fan air flow too low.</td>
<td>Speed up fan. If already at 3800 rpm, increase airflow by reducing butterfly valve angle, before increasing rpm.</td>
</tr>
<tr>
<td>Seed blowing out of Pro-Box door area</td>
<td>Fan air flow too high.</td>
<td>Slow down fan. If already at or below 3000 rpm, set fan at 3800 rpm and use fan butterfly valve to reduce airflow.</td>
</tr>
<tr>
<td></td>
<td>Seal on top of airbox damaged or out of adjustment.</td>
<td>Seal should be compressed approximately 1/2 inch when hopper or box is installed.</td>
</tr>
<tr>
<td>Hydraulic marker functioning improperly</td>
<td>Marker circuit set to Aux</td>
<td>Set Marker/Aux valve on wing to Marker. See page 49.</td>
</tr>
<tr>
<td></td>
<td>Air in lines or valves</td>
<td>Rephase Marker cylinders, then see “Marker Cylinder Bleeding” on page 93.</td>
</tr>
<tr>
<td></td>
<td>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 plugged.</td>
<td>Open needle valve, cycle markers slowly and reset needle valve. See page 57.</td>
</tr>
<tr>
<td></td>
<td>Needle valve(s) in sequence valve plugged.</td>
<td>Open needle valves, cycle markers slowly and reset needle valves. See page 57.</td>
</tr>
<tr>
<td></td>
<td>Wing Fold Switch ON</td>
<td>Turn Wing Fold switch OFF</td>
</tr>
<tr>
<td>Marker disk does not mark</td>
<td>Marker folding linkage does not have enough slack to allow marker disk to drop into field depressions.</td>
<td>See “Marker Chain Length Adjustment” on page 56.</td>
</tr>
<tr>
<td></td>
<td>Marker disc needs adjustment</td>
<td>Increase disc angle. If still no mark, reverse marker disk to pull or throw dirt.</td>
</tr>
<tr>
<td>Hydraulic Hitch Won't Stay Raised</td>
<td>Bypass valve is open at hitch</td>
<td>Close valve.</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Speed Reading Doesn't Match Tractor</td>
<td>Monitor speed reading will only match tractor</td>
<td>If speeds don’t agree during planting (with planter lowered), re-calibrate radar speed sensor with planter lowered.</td>
</tr>
<tr>
<td></td>
<td>with planter lowered.</td>
<td></td>
</tr>
</tbody>
</table>

### Airbox Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Fix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single row doesn't fill or keep up with other rows.</td>
<td>Y tube is bent/angled off feed pipe.</td>
<td>Loosen and rotate pipe so the bend is straight down and Y-tube is not pointing to front or rear of air pipe.</td>
</tr>
<tr>
<td>Both rows on one meter outlet low or not keeping up with other rows.</td>
<td>Blockage in air slot in top of airbox.</td>
<td>Clear by using a long slim tool and taking hose off hose outlet or clean-out door. <strong>Note:</strong> May be necessary to take top off airbox to clear debris from slot, or use side access doors.</td>
</tr>
<tr>
<td>Note: This is more likely to occur on end outlets.</td>
<td>Bad hose routing between delivery hose and airbox on wing.</td>
<td>Correct hose routing.</td>
</tr>
<tr>
<td>Multiple rows fail for lack of seed.</td>
<td>Fan speed too high/too low.</td>
<td>Check/adjust fan speed, butterfly valve.</td>
</tr>
<tr>
<td></td>
<td>Out of seed.</td>
<td>Add seed.</td>
</tr>
<tr>
<td>Single or multiple hoses plugging just ahead of airbox.</td>
<td>Fan speed too high/too low.</td>
<td>Check/adjust fan speed, butterfly valve.</td>
</tr>
<tr>
<td></td>
<td>Possible air leak.</td>
<td>Check for air leak downstream between box and top of meter.</td>
</tr>
<tr>
<td>All rows fail.</td>
<td>Lack of seed.</td>
<td>Add seed.</td>
</tr>
<tr>
<td></td>
<td>Fan speed too high.</td>
<td>Adjust fan speed or butterfly valve.</td>
</tr>
<tr>
<td>1, 2, 3, or more outlets fail.</td>
<td>Foreign matter in seed chamber in bottom of airbox.</td>
<td>Clean out seed chamber.</td>
</tr>
<tr>
<td>Note: Outlets can be side-by-side or random.</td>
<td>Incorrect airbox air slot to seed chamber.</td>
<td>Contact Great Plains Service dept. for assistance.</td>
</tr>
<tr>
<td>Plugging may also move from one outlet to another.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little or no seed to many rows, with heavily treated seed.</td>
<td>Seed treatment sticky.</td>
<td><strong>Note:</strong> Do not use liquid seed treatments. Add talc to seed to dry out seed treatment.</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:*
You may be severely injured or killed by being crushed under the falling implement. Always have transport locks in place and frame sufficiently blocked up when working on implement.

**WARNING**

*High Pressure Fluid Hazard:*
Escaping fluid under pressure can have sufficient pressure to penetrate the skin. 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. 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.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.
Bleeding 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 92 below.

Bleeding Fold Cylinder Hydraulics

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

Erratic gage wheel behavior, such as wandering back and forth in the field, or failing to rotate fully into place while folding, are signs that the fold cylinders need to be bled.

If it is necessary to further bleed fold system, see "Fold Cylinder Bleeding" on page 93.

Lift Cylinder Bleeding

Refer to Figure 121

1. Unfold and lower planter.
2. Un-pin rod ends of all lift cylinders. Position cylinders so that rod ends may extend without striking machine parts.
3. Loosen the JIC fittings ① at the base end of each master lift cylinder.
4. Extend the circuit until fluid appears at the loosened fittings. Set circuit to Neutral and secure fittings.
5. Loosen the JIC fittings ② at the base end of each slave lift cylinder.
6. Extend the circuit until fluid appears at the loosened fittings. Set circuit to Neutral and secure fittings.
7. Re-pin rod ends.

NOTICE

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

NOTICE

Machine Damage Risk:
Bleed lines only at:
JIC (Joint Industry Conference, 37° flare) or NPT (National Pipe Thread, tapered thread) fittings.
Never bleed at:
ORB (O-Ring Boss) or QD (Quick Disconnect) fittings.

Figure 121
Lift Bleed
Fold Cylinder Bleeding

Refer to Figure 122

1. Begin with planter raised and lift cylinder locks installed.
2. Un-pin cylinder rod ends. Orient cylinders so that rod ends may extend without striking planter parts.
3. Loosen the JIC fittings 1, 2 at the base end of all cylinders.
4. Extend the circuit until liquid (non-foamy) appears at the loosened fittings and cylinders are fully extended. Set circuit to Neutral and secure fittings.
5. Loosen the JIC fittings 3, 4 at the rod end of all fold cylinders.
6. Retract the circuit until fluid appears at all fittings. Set circuit to neutral and secure fittings.
7. Extend cylinders and re-pin cylinder rod ends.

Bleeding Marker Hydraulics

To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motions, see “Marker Cylinder Bleeding” on page 93.

Marker Cylinder Bleeding

Refer to Figure 123

1. Begin with planter unfolded and lowered, and with both marker sides extended. See “Unusual Marker Operations” on page 41.
2. Note the position of the gravity pin lock (above and latched on rod-end pin when folded, hanging down when unfolded).
3. Un-pin the rod end of the marker cylinders, and orient the cylinders so that the rods may extend without striking marker components.
4. Loosen the JIC fitting 1 at the base end of one marker cylinder.
5. Extend the circuit until fluid appears at the loosened fittings. It may be necessary to extend-retract-extend to cycle the sequence valve to that marker. Set circuit to Neutral. Secure fittings.
6. Loosen the JIC fitting 2 at the rod end of that same marker cylinder.
7. Retract the circuit until fluid appears at the loosened fittings. Set circuit to Neutral. Secure fittings.
8. Repeat for the other side.
9. Reorient gravity pin lock to position noted at step 2.
10. Re-pin marker rod ends.
**Wing Alignment**

To check and adjust wing alignment:


*Refer to Figure 124 and Figure 125*

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

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

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

5. Be sure both wings are adjusted equally or the planter will tend to pull sideways behind the tractor.
Air Box Residue Clean-Out

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

Refer to Figure 126 and Figure 127 (Figure 126 depicts a partially and a completely plugged agitation port, and buildup in the RH plenum chamber)

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

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

1. Spot the planter at a suitable location for clean-out and follow the parking instructions (page 51).
2. If seed is loaded, close the slide gate for the hopper or bulk seed box (page 47).
3. Set out a tarp for recovery of any expected seed still in the airbox. Open the airbox clean-out door ①.
4. Remove the inspection port covers from each end of the airbox (not shown in figures).
5. Use an indelible marker to identify the hoses on seed hose ports ⑤ 1 through 16. Disconnect the clamps and hoses.

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

6. Inspect the agitation ports ②. Break up any buildup. Use a hooked tool or wire to pull smaller fragments down through the ports. For larger fragments, reach in through the inspection ports or vacuum them out via those ports.
7. Inspect the entire plenum area ③ for buildup. Break up any deposits. Vacuum them out through the inspection ports.
8. From the seed hose ports ⑪, inspect the seed air ports ⑬. Break up any deposits. Vacuum out from clean-out door.
9. With all ports and doors still open, operate the planter fan to blow up any remaining loose residues.
10. Reconnect the seed hoses. Reinstall the inspection port doors. Close the clean-out door.

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

Precision Meter

Refer to Figure 128 (finger meter shown, but step is identical)

1. Place a bucket or pan under meter to catch any seed during clean-out.
2. Slide the retaining ring up and remove the seed hose.

Refer to Figure 129

3. Pull clean-out door away from the opening and allow seed to fall.
4. Remove the seed meter wheel for thorough cleaning. See "Meter Removal" on page 77 for more information.

Finger Pickup Meter

Refer to Figure 128

1. Place a bucket or pan under meter to catch any seed during clean-out.
2. Slide the retaining ring up and remove the seed hose.

Refer to Figure 130

3. Pull clean-out door away from the opening and allow seed to fall.

Seed Tube Clean-Out

Newer planters include a seed tube brush (page 124). This brush removes buildup of dust and seed treatments that can cause false skip indications at the seed sensor. With the planter raised, insert the brush from the bottom of the side tube. You can also remove the meter, and insert the brush from the top of the seed tube.
Cleaning Out Air System

1. Shut off sliding door at bottom of seed boxes or bulk hoppers.
2. Place a pan or tarp under the manifold to catch the seed.
3. Open manifold door to empty seed from the manifold.
4. Shut doors under manifolds.
5. Turn on the fan and let it run.

Refer to Figure 131

Note: 30 inch single-row planters do not have Y-tubes.
   Go meter to meter, open clean-out door and blow out seed.
6. Shut off the gates at all of the Y-tubes.
7. Start at one end of planter and open the meter clean out door for the end row-unit. Place a bucket under the meter to catch the seed.
8. Open the Y-tube gate feeding that meter. Let the air blow seed out of the meter. Keep the meter open for a couple of minutes after the seed stops blowing out.
9. Close the Y-tube gate feeding that meter. Close the meter clean out door.
10. Repeat procedure on the next meter in line. Continue with this procedure until you have reached the opposite end of the planter.

Meter Drive Chain

Refer to Figure 132

Remove the seed meter and check the chain and sprocket for wear. See “Meter Removal” on page 77 for more information.
Finger Set Installation Instructions

Installation Steps

Great Plains recommends having the meter service performed by a recognized professional repair facility, such as a certified Meter Max representative. Improper servicing will result in reduced meter performance.

If you choose to service them yourself, follow these procedures when installing the finger sets.

Refer to Figure 133

11. Be sure the belt is oriented as shown in Figure 133.
12. Slide the finger set over the shaft and rotate clockwise until it sits against the backing plate.

Note: You will hear a click.
13. Firmly press the finger set against the backing plate while tightening the nut.
14. Tighten the nut until contact is made between the nut and the finger set. Turn \( \frac{1}{4} \) to \( \frac{1}{2} \) flat (\( \frac{1}{24} \) to \( \frac{1}{12} \) of a turn) (a flat is one of the six sides of the nut) after contact is made. This equals about four inch-pounds of torque on the nut.
15. Place the slotted nut cover on and carefully align the slotted nut cover with the shaft hole. Insert the cotter pin.
16. Rotate the finger set clockwise and make sure the fingers open and close properly. Fingers should be closed at the 8:00 to 2:00 position (exit hole) and open at the 2:00 to 8:00 position.

Annual Maintenance

Finger sets should be inspected on an annual basis. After cleaning, carefully inspect the fingers and springs for wear or other abnormalities that may develop. Excessive wear may disrupt singulation performance.

Precautions

1. Make sure the finger set is properly torqued against the backing plate. Improperly torqued finger sets may disrupt seed singulation.
2. Avoid seed treatments, additives, and other chemicals when possible. They can cause meter performance problems, premature wear to meter parts, and may cause undesired chemical reaction or deterioration to the finger sets. Always use Precision Planting or Great Plains graphite when using seed treatments, See “Seed Lubricants” on page 112. Graphite from other sources may cause premature wear.
3. Always pay attention to your seed monitor, pay attention to your operating manual, and monitor the amount of seed you are planting compared to your expectations. Always investigate abnormalities!
25 Series Spreaders and Scrapers

Refer to Figure 134

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

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

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

4. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See “Opener Disc Contact Region” on page 74.

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

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

25 Series Row-Unit Side Wheels

Refer to Figure 135

1. Lift opener side wheel off the ground. Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.

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

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

5. When reinstalling side gauge wheels, align tab on hex adjustment 8 with notch in bushing. Replace bolt and tighten.

6. Adjust side gauge wheels. Refer to see “Side Gauge Wheel Adjustment” on page 75.

Note: You may need fewer washer shims on worn disks.
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 138.

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 136, which, for clarity, greatly exaggerates slack, and omits the idlers.

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

2. Determine the ideal slack:
   Long chains (over 36 inches / 91 cm):
   \( \frac{1}{4} \) inch per foot (2.1 cm per meter)
   Vertical short chains:
   \( \frac{1}{4} \) inch per foot (2.1 cm/m)
   Horizontal short chains:
   \( \frac{1}{2} \) inch per foot (4.2 cm/m).

3. Measure the current slack 2:
   Acting at a right angle to the chain span at the center of the span, deflect the chain in both directions. The slack is the distance of the movement.

4. Adjust the idlers for ideal slack.

Chain Clips

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

Refer to Figure 137 (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).
Seed Flap Replacement (s/n A1067Q+)

Refer to Figure 138

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

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

Seed Flap Replacement (s/n A1066Q-)

Refer to Figure 139

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

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

If replacing with 816-302C:
See seed flap replacement instructions above.
Liquid Fertilizer System Maintenance

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

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

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

Liquid Fertilizer Strainer

Refer to Figure 140

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

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

In Season Filter Cleaning

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

End of Season Filter Cleaning

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

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

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

Wing Casters: Parallel Arms

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

Wing Casters: Lift Cylinder Ends

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

Wing Casters: Pointing Cylinders

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

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

Wing Frames

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

Rockshaft to Frame

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

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

Lift Cylinders: Rod End

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

Center Links: Aft End

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

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

25 Series Side Wheel Bushing

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

Ground Drive Fertilizer Pump (Option)

4 chains, 2 each side
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

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

As Required

4 chains in mainframe center section
Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

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

Meter Drive Chains

As Required

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

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

Frame-Mounted Coulter (Option) Hub

20

Type of Lubrication: Grease
Quantity = Until grease emerges

Note: Unit-mount coulter bearings are sealed, and require no lubrication or re-pack.
Frame-Mounted Coulter (optional) Pivot

1 zerk each swivel mount casting
Type of Lubrication: Grease
Quantity = Until grease emerges

Wing Casters: Pivot

2 zerks; one each wing
Type of Lubrication: Grease
Quantity: Until Grease emerges

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

Hitch Parallel Arms

(Hydraulic Tongue only)
4 zerks, 1 each end of each arm
Type of Lubrication: Grease
Quantity: Until grease emerges

Tongue Latch

Type of Lubrication: Spray lube
Quantity: Coat working surfaces
Tongue Slide Roller

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

Wing Transfer Drive Shafts

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

Wing Fold Cylinders: Rod End

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

Row Cleaner Bearings

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

Seasonally

1 port per gearbox; 2 total
Type of Lubrication: High Quality SAE 5W-30 oil
Quantity: 6.5 pints (3.1 liters)

Wing Casters: Wheel Hubs

Seasonally

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

Markers: Disk Hubs

Seasonally

4 bearings; 2 each marker
Type of Lubrication: Grease
Quantity: Re-pack
Transport Wheels: Wheel Hubs

8 bearings; 2 each of 4 wheels
Type of Lubrication: Grease
Quantity: Re-pack

Gauge Wheel Bearings

4 bearings, 2 each side
Type of Lubrication: Grease
Quantity = Re-pack
Seed Lubricants

Singulator Plus Meters (all seeds)
Ezee Glide Plus Talc-Graphite Mix
   821-069C  bucket, 5 gallon (19 liter)
Ezee Glide Plus Lubricant
To maximize performance of Great Plains metering systems, it is imperative to use only "Ezee Glide Plus" lubricant. "Ezee Glide Plus" Talc-Graphite lubricant is mandatory for all seeds, especially treated or inoculated seed. Thorough mixing of seed and added lubricant is required.

Recommended usage:
For clean seeds other than milo and cotton sprinkle one cup of Ezee Glide Plus Talc per 4 bushels or units (170 ml per 100 liters) of seed.
For milo and cotton double the application to one cup (or more) per 2 bu. or units (335 ml per 100 liters) of seed.
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.

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.

Finger Pickup Meters
EZ-Slide Graphite Powder
   821-042C bottle, 1 pound (450 grams)
   821-060C jug, 5 pound (2.3 kg)
For Finger Pick Up Meters Only
Use only approved Graphite Powder available from Great Plains Mfg. Inc. or Precision Planting to ensure proper lubrication of finger pickup corn seed meters.
Recommended usage:
For finger pickup meters, add one tablespoon (15 ml) of graphite for each unit of seed corn (80,000 kernels).
In high humidity conditions, or seeds with heavy seed treatments, increase the application to two tbsp (30ml).
If delivery of seed from the hopper to the finger meter is an issue, add "Ezee Glide Plus" talc and graphite blend at a rate of one cup (237 ml) per 4 units of seed. Adjust until issue is resolved.

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.
Options

Hydraulic Tongue
A 3-point hitch is standard on the YP24, but a hydraulic tongue may be substituted.

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

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

A 1000 rpm PTO is required with either:
- 13/4 inch (44.5 mm) 20-spline shaft, or
- 13/8 inch (35 mm) 21-spline shaft.

Order one kit and one coupler.

<table>
<thead>
<tr>
<th>Kits and Couplers</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP24 PTO KIT</td>
<td>401-943A</td>
</tr>
<tr>
<td>For model YP2425</td>
<td></td>
</tr>
<tr>
<td>YP24F PTO HYDRAULIC PUMP KIT</td>
<td>411-014A</td>
</tr>
<tr>
<td>For model YP2425F</td>
<td></td>
</tr>
<tr>
<td>1 3/4-20 PTO COUPLER</td>
<td>826-777C</td>
</tr>
<tr>
<td>1 3/8-21 PTO COUPLER</td>
<td>826-778C</td>
</tr>
</tbody>
</table>

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

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

If the remedies in the Troubleshooting chart (page 88) are not available, order a low speed kit to replace the standard motor output sprocket with one having fewer teeth that increases motor speed by 160%.

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

See “402-520A Low Speed Kit Installation” on page 147.

Color Seed Monitor Consoles

New YP24 seed monitor systems include a 10 inch (25 cm) LCD color display console, or (with Swath Command™, a 12 inch/30 cm console). Either is available separately to upgrade planters with smaller displays, such as the 5 inch monochrome.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DICKEY-john® IntelliAg® 10 inch AI100a color monitor</td>
<td>823-255C</td>
</tr>
</tbody>
</table>

a. Formerly the model A1+.

Markers

Markers are a standard factory-installed feature on the YP24, but may be optionally deleted (line item 113-486A), for example, if all planting is done via GPS navigation.

If any possible future planting (or resale considerations) might require markers, do not delete them from the initial YP24 order.

For operations, see:
“Bleeding Marker Hydraulics” on page 93,
“Marker Unfolding” on page 40,
“Folding the Markers” on page 41, and
“Marker Adjustments” on page 54.
Trailer Hitch Weldment
This accessory provides a 20 ton pintle hook intended for use with either the PFC1600 or PFC2000 tank carts.

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

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

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

Fertilizer Carts

**Pull-Type Fertilizer Carts**
These tank carts were designed for use with the YP24 Type 3 Fertilizer manifold. The cart's pump is controlled by the DICKEY-john® seed monitor on the planter. The PFC2000 (shown at right) is for use with both Type 2 and Type 3 manifolds.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 gallon (6057 liter) Tank and Pump</td>
<td>PFC1600</td>
</tr>
<tr>
<td></td>
<td>(not shown)</td>
</tr>
<tr>
<td>1600 g. (6057 l.) Tank &amp; Pump w/400 gal (1514 liter) Tank</td>
<td>PFC2000</td>
</tr>
<tr>
<td></td>
<td>(shown at right top)</td>
</tr>
</tbody>
</table>

Use of either tank with the YP24 requires the Trailer Hitch Weldment and at least one Fertilizer Manifold system.

The smaller 400 gallon tank on model PFC2000 does not include a pump, and relies on a planter-mounted Ground Drive Fertilizer pump (ordered separately).

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

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

Use of either tank with the YP24 requires at least one Fertilizer Manifold system and a planter-mounted Ground Drive Fertilizer pump (both ordered separately).
Ground Drive Fertilizer Pump

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

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

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

Fertilizer Manifolds

The YP24 supports either/both of optional “wet” fertilizer distribution systems for fertilizer application.

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

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

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

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

Manifold Selection

Order the (quantity) of parts listed for your configuration.

<table>
<thead>
<tr>
<th>Delivery Systems</th>
<th>Great Plains PFC Systems</th>
<th>Great Plains SML and Aftermarket Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PFC2000 only</td>
<td>PFC1600 only</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PFC1600, 1 saddle tank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SML Cart, 1 tank, no pumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aftermarket Cart, 1 tank, 1 pump a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aftermarket Cart, 2 tanks, 2 pumps a</td>
</tr>
<tr>
<td>One</td>
<td>(1) PFC2000</td>
<td>(1) PFC1600</td>
</tr>
<tr>
<td></td>
<td>(1) 407-138A</td>
<td>(1) 407-138A</td>
</tr>
<tr>
<td></td>
<td>(1) 401-467A</td>
<td>(1) 401-467A</td>
</tr>
<tr>
<td></td>
<td>(1) 407-213A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>(1) 407-215A</td>
<td>(1) 407-215A</td>
</tr>
<tr>
<td></td>
<td>(1) 401-467A</td>
<td>(1) 401-467A</td>
</tr>
<tr>
<td>Two</td>
<td>(1) PFC2000</td>
<td>(1) PFC1600</td>
</tr>
<tr>
<td></td>
<td>(1) 407-213A</td>
<td>(1) 407-138A</td>
</tr>
<tr>
<td></td>
<td>(1) 407-215A</td>
<td>(1) 407-215A</td>
</tr>
<tr>
<td></td>
<td>(1) 401-467A</td>
<td>(1) 401-467A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) 407-215A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) 401-467A</td>
</tr>
</tbody>
</table>

a. Aftermarket equipment must provide its own On/Off and Rate control.
b. This configuration presumes switching between tanks using the same material.
c. Order two pumps for extremely high rate Type 2 boom operations.
d. If aftermarket cart or pumping system has point-row capability, order (1) 407-138A and (1) 407-215A.
Type 2 Fertilizer Manifold
The Type 2 system includes all plumbing from the bulkhead at the rear hitch weldment to the row unit drop lines. The boom systems are separate for each wing.

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

The system does not include, and requires:
- pump(s), such as the 407-213A Ground Drive pump on page 116 (one on each wing)
- 401-467A trailer hitch weldment (page 115)
- tank for low-rate fertilizer, such as an SML or the second tank on a PFC2000 (the PFC1600 has only one tank, and if used for Type 2 applications, cannot simultaneously be used for Type 3 applications)

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

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

The system does not include, and requires:
- pump, usually provided by the tank
- 401-467A trailer hitch weldment (page 115)
- tank (PFC1600 and PFC2000 both include a Type 3-capable pump).

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

<table>
<thead>
<tr>
<th>Orifice Size</th>
<th>Great Plains Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>832-052C</td>
</tr>
<tr>
<td>28</td>
<td>832-056C</td>
</tr>
<tr>
<td>34</td>
<td>832-053C</td>
</tr>
<tr>
<td>48</td>
<td>832-054C</td>
</tr>
<tr>
<td>59</td>
<td>832-057C</td>
</tr>
<tr>
<td>80</td>
<td>832-055C</td>
</tr>
<tr>
<td>98</td>
<td>832-059C</td>
</tr>
</tbody>
</table>
82 Bushel Seed Hoppers

82 bu. (2890 liter) hoppers may be purchased with the YP24 or added later. Only the 82 bu. size is supported on the YP24. Left and right refer to the side of the planter and the side hopper with the lid hinge, allowing convenient access from the walkboard.

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

The 82 bu. hoppers have no prerequisites on the planter, but you will need a means of top-loading seed when the hopper is mounted on the seed box. This hopper is usually too heavy too be safely fork-lifted onto the planter if already pre-loaded with seed. For operations, see: “82 Bu. Hopper Operation” on page 46.

Seed Lubricants

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite (1 pound / 0.45 kg bottle)</td>
<td>821-042C</td>
</tr>
<tr>
<td>Graphite (5 pound / 2.3 kg jug)</td>
<td>821-060C</td>
</tr>
<tr>
<td>Ezee Glide Plus Talc-Graphite Mix (5 gallon / 18.9 liter container)</td>
<td>821-069C</td>
</tr>
</tbody>
</table>

For use, see “Seed Lubricants” on page 112.

Frame-Mounted Row Options

Terra-Tines

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Coulter-Mounted Terra-Tine Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>204-638A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>204-645A</td>
</tr>
<tr>
<td>YP2425-4715</td>
<td>204-656A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stand-Alone Terra-Tine Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>204-195A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>207-199A</td>
</tr>
<tr>
<td>YP2425-4715</td>
<td>204-203A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>207-191A</td>
</tr>
</tbody>
</table>

Note: No combination of unit mounted and frame mounted attachments may be mixed.

See “Terra-Tine™ Adjustments” on page 65.
Frame-Mounted (Zone) Coulters

Vantage I Coulters

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

Frame-Mounted Coulter Only

<table>
<thead>
<tr>
<th>15 inch Fluted Blade Packages</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>204-635A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>204-642A</td>
</tr>
<tr>
<td>YP2425-4715, on every row</td>
<td>204-651A</td>
</tr>
<tr>
<td>YP2425-4715, on 30 inch rows</td>
<td>204-653A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

15 inch Turbo Blade Packages

<table>
<thead>
<tr>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>204-636A</td>
</tr>
<tr>
<td>204-643A</td>
</tr>
<tr>
<td>204-652A</td>
</tr>
<tr>
<td>204-654A</td>
</tr>
<tr>
<td>-</td>
</tr>
</tbody>
</table>

SmartBox® Mounting Kit

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

<table>
<thead>
<tr>
<th>Planter Model</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430 (30 in. single), YP2425-2470, YP2425F-2470</td>
<td>403-218A</td>
</tr>
<tr>
<td>YP2425-3620 (20 in. single)</td>
<td>403-219A</td>
</tr>
<tr>
<td>YP2425-4715 (15 in. single)</td>
<td>403-218A</td>
</tr>
<tr>
<td>YP2425-48TR (30 in. twin)</td>
<td>403-220A</td>
</tr>
</tbody>
</table>

Mounting kits include brackets only. SmartBox® sets, with additional mounting hardware specific to the YP24, must be ordered from AMVAC. SmartBox® systems are field-installed.
Unit-Mounted Row Options

Row-Pro™

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

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

No need to stop and manually reset all 24 cams. Row-Pro™ is presently available only as a factory-installed option with the original planter order.

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Option</th>
<th>Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROW-PRO YP24a</td>
<td>60</td>
<td>n/a</td>
</tr>
</tbody>
</table>

a. Not presently available for YP2425F.

Swath Command™

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

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

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

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

The system includes:

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

The system does not include, but also requires:

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

Great Plains also offers Trimble® AgGPS® receivers and RTK solutions. See Options in the Swath Command™ Operator manual (403-857M) for ordering information.
Row Cleaners
Optional Martin row cleaners are unit-mounted, using either a coulter disk mounting bracket (1, with or without a disk), or “stand-alone”, using a unit-mount assembly (2).

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

<table>
<thead>
<tr>
<th>Single-Wheel, Coulter-Mount</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>-</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>-</td>
</tr>
<tr>
<td>YP2425-4715</td>
<td>-</td>
</tr>
<tr>
<td>YP2425-48TR, on every row</td>
<td>207-188A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Double-Wheel, Coulter-Mount</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470, on every row</td>
<td>207-192A</td>
</tr>
<tr>
<td>YP2425-3620, on every row</td>
<td>207-196A</td>
</tr>
<tr>
<td>YP2425-4715, on 30-in rows</td>
<td>207-200A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>-</td>
</tr>
</tbody>
</table>

Unit-Mounted Disk Coulters
Optional unit-mount disk coulters are available with 15 inch (38.1 cm) fluted blades, 15 inch turbo blades or 14 inch (35.6 cm) straight blades. For complete coulters, with unit mount and blade, the selection includes:

<table>
<thead>
<tr>
<th>15 inch Fluted Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>204-632A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>204-639A</td>
</tr>
<tr>
<td>YP2425-4715, on every row</td>
<td>204-646A</td>
</tr>
<tr>
<td>YP2425-4715, on 30-in rows</td>
<td>204-648A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>204-629A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15 inch Turbo Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430, YP2425-2470, YP2425F-2470</td>
<td>204-633A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>204-640A</td>
</tr>
<tr>
<td>YP2425-4715, on every row</td>
<td>204-647A</td>
</tr>
<tr>
<td>YP2425-4715, on 30-in rows</td>
<td>204-649A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>204-630A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14 inch Straight Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP2425-2430</td>
<td>204-634A</td>
</tr>
<tr>
<td>YP2425-3620</td>
<td>204-641A</td>
</tr>
<tr>
<td>YP2425-4715, on 30-in rows</td>
<td>204-650A</td>
</tr>
<tr>
<td>YP2425-48TR</td>
<td>204-631A</td>
</tr>
</tbody>
</table>
Coulter Blades
Replacement and alternate coulter blades include the following. Order one blade per row unit.

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

For operations, see: “Coulter Adjustments” on page 72.

Gauge Wheel Scrapers
When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise result in shallow planting.

Order one part per wheel (2 per opener).

<table>
<thead>
<tr>
<th>Wheel Scrapers</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 1/2 in. (6.4 cm) Gauge wheel scraper</td>
<td>404-194D</td>
</tr>
<tr>
<td>3 in. (7.6 cm) Gauge wheel scraper</td>
<td>404-195D</td>
</tr>
<tr>
<td>4 in. (10.2 cm) Gauge wheel scraper</td>
<td>404-196D</td>
</tr>
</tbody>
</table>

The scrapers mount on the bottom rear of the depth wheel arm, using the existing bolt and lock washer. 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” on page 76.

Seed Meters
Seed meters are not standard in the base YP24 configuration. Normally, one or more sets are ordered with the original planter. One set is factory-installed.

Meters are simple to change. Available models include (part numbers are for a single row unit; each Singulator Plus includes one seed wheel).

<table>
<thead>
<tr>
<th>Meters</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singulator Plus</td>
<td>403-156K</td>
</tr>
<tr>
<td>12FP 12-Finger Pick-Up (30 inch)</td>
<td>403-158K</td>
</tr>
<tr>
<td>12FP 12-Finger Pick-Up (sunflower)</td>
<td>403-203K</td>
</tr>
<tr>
<td>6FP 6-Finger Pick-Up (Twin/20 inch)</td>
<td>403-169K</td>
</tr>
</tbody>
</table>

For operations, see: “Seed Meter Setup and Adjustment” on page 77.
Seed Meter Wheels
Singulator Plus meters accept a variety of seed wheels, each optimized for specific seeds. Wheels are simple to change. 25 Series meters accept only green seed wheels. Choices include:

<table>
<thead>
<tr>
<th>Singulating Meter Wheels</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean (1700-2000 seeds/lb, 3748-4409 seeds/kg)</td>
<td>403-122D</td>
</tr>
<tr>
<td>Soybean (2000-2700 seeds/lb, 4409-5952 seeds/kg)</td>
<td>403-123D</td>
</tr>
<tr>
<td>Soybean (2700-3200 seeds/lb, 5952-7055 seeds/kg)</td>
<td>403-124D</td>
</tr>
<tr>
<td>Soybean (3200-3600 seeds/lb, 7055-7937 seeds/kg)</td>
<td>403-125D</td>
</tr>
<tr>
<td>Soybean (3600-4000 seeds/lb, 7937-8818 seeds/kg)</td>
<td>403-126D</td>
</tr>
<tr>
<td>Soybean (4000-4600 seeds/lb, 8818-10141 seeds/kg)</td>
<td>403-133D</td>
</tr>
<tr>
<td>Soybean (4600-5200 seeds/lb, 10141-11464 seeds/kg)</td>
<td>403-134D</td>
</tr>
<tr>
<td>Soybean (5200-6000 seeds/lb, 11464-13228 seeds/kg)</td>
<td>403-135D</td>
</tr>
<tr>
<td>Cotton (4000-4600 seeds/lb, 8818-10141 seeds/kg)</td>
<td>403-133D</td>
</tr>
<tr>
<td>Cotton (4600-5200 seeds/lb, 10141-11464 seeds/kg)</td>
<td>403-134D</td>
</tr>
<tr>
<td>Cotton (5200-6000 seeds/lb, 11464-13228 seeds/kg)</td>
<td>403-135D</td>
</tr>
<tr>
<td>Milo® (low rate/solid, 51 pockets)</td>
<td>403-136D</td>
</tr>
<tr>
<td>Milo® (low rate/row, 102 pockets)</td>
<td>403-137D</td>
</tr>
<tr>
<td>Milo (high rate/solid, 135 pockets, 10,500-14,000 seeds/lb, 23149-30865 seeds/kg)</td>
<td>403-138D</td>
</tr>
<tr>
<td>Milo (high rate/solid, 135 pockets, 12,000-18,000 seeds/lb, 26455-39683 seeds/kg)</td>
<td>403-140D</td>
</tr>
<tr>
<td>Milo (high rate/row, 135 pockets, 10,500-14,000 seeds/lb, 23149-30865 seeds/kg)</td>
<td>403-139D</td>
</tr>
<tr>
<td>Milo (high rate/row, 135 pockets, 12,000-18,000 seeds/lb, 26455-39683 seeds/kg)</td>
<td>403-141D</td>
</tr>
</tbody>
</table>

Volumetric Meter Wheels

<table>
<thead>
<tr>
<th>Volumetric Meter Wheels</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat Narrow</td>
<td>403-118D</td>
</tr>
<tr>
<td>Wheat, Wide, High-Rate</td>
<td>403-119D</td>
</tr>
<tr>
<td>Wheat, V3</td>
<td>403-120D</td>
</tr>
</tbody>
</table>

a. Also suitable for pelletized sugar beets.
Seed Firmers

The base YP24 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.

**Seed-Lok® Seed Firmer**

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

For operations, see: “Seed Firmer Adjustments” on page 83.

**Keeton® Seed Firmer**

The Keeton® seed firmer supports low-rate fertilizer delivery. For this use, the optional fertilizer system (page 116) must also be installed.

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

For operations, see: “Seed Firmer Adjustments” on page 83.

Seed Tube Brush

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

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

See “Seed Tube Clean-Out” on page 96.

Row Unit Press Wheels

The base Yield Pro planter includes a choice of press wheels. Additional wheels are available, and all may be field-installed.

This manual does not list kit part numbers as the available wheels are often region-specific. Consult your Great Plains dealer.

For operations, see: “Press Wheel Adjustment” on page 85.
## Appendix A - Reference Information

### Specifications and Capacities

#### North American Models

<table>
<thead>
<tr>
<th>Specifications</th>
<th>YP2425</th>
<th>-2430</th>
<th>-3620</th>
<th>-4715</th>
<th>-48TR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Openers</td>
<td></td>
<td>24</td>
<td>36</td>
<td>47</td>
<td>48</td>
</tr>
<tr>
<td>Row Spacing</td>
<td></td>
<td>30 in. (76 cm)</td>
<td>20 in. (51 cm)</td>
<td>15 in. (38 cm)</td>
<td>30 in. (76 cm) pairs</td>
</tr>
<tr>
<td>Hitch Load</td>
<td></td>
<td>1,000 to 1,200 pounds (454-544 kg) depending on configuration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Circuits</td>
<td></td>
<td>4 closed center circuits, 2850 psi, 53.7 gal/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch</td>
<td></td>
<td>Pull-Type, 3-point or Hydraulic Tongue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Width</td>
<td></td>
<td>15 feet 3 in. (4.7 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Width</td>
<td></td>
<td>58 feet 10 in. (17.9 m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swath</td>
<td></td>
<td>720 inches (1828.8 cm)</td>
<td>720 inches (1828.8 cm)</td>
<td>705 inches (1790.7 cm)</td>
<td>720 inches (1828.8 cm)</td>
</tr>
<tr>
<td>Transport Length</td>
<td></td>
<td>51 feet 7 in. (15.7m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Length</td>
<td></td>
<td>38 feet 4 in. (11.7m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Clearance</td>
<td></td>
<td>21 in. (53 cm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Height</td>
<td></td>
<td>13 feet 2 in. (4.0m) with markers; 11 feet 9 in. (3.6m) without markers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Box Heights</td>
<td></td>
<td>Minimum forklift: 54.59 in. (139 cm) lowered, 81.84 in. (208 cm) raised ProBox refill: 109.5 in. (278 cm) lowered, 136.75 in. (347 cm) raised 82bu Hopper Fill: 112.25 in. (285 cm) lowered, 139.5 in. (354 cm) raised</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (Approx.)</td>
<td></td>
<td>25,900 to 31,200 lbs (11748 to 14152 kg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row Spacing (inches)</td>
<td></td>
<td>15 inch single, 20 inch single, 30 inch single, 30 inch twin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Hopper Capacity</td>
<td></td>
<td>164 bu. (5779 liters): two 82 bu. hoppers or two PROBOX®</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tire Sizes</td>
<td></td>
<td>Transport/Caster: 15-19.5 NHS 12 PLY Marker: 18x9.50-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Travel</td>
<td></td>
<td>10 in. (25.4 cm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Depth Range</td>
<td></td>
<td>0 to 4 in. (0 to 10.2 cm)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Down Pressure</td>
<td></td>
<td>345 to 550lb (156 to 249 kg) per row</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HP Requirements</td>
<td></td>
<td>220 hp (164kW), estimated minimum§</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

§ Without coulters
## Metric Model Specifications

<table>
<thead>
<tr>
<th></th>
<th>YP2425-2470</th>
<th>YP2425F-2470</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Openers</strong></td>
<td>24</td>
<td></td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>70 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Hitch Load</strong></td>
<td>454-544 kg, depending on configuration</td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic Circuits</strong></td>
<td>4 closed center circuits, 196 bar, 203 liters/min</td>
<td></td>
</tr>
<tr>
<td><strong>Hitch</strong></td>
<td>Pull-Type, 3-point or Hydraulic Tongue</td>
<td></td>
</tr>
<tr>
<td><strong>Transport Width</strong></td>
<td>4.7 m</td>
<td></td>
</tr>
<tr>
<td><strong>Working Width</strong></td>
<td>17.9 m</td>
<td></td>
</tr>
<tr>
<td><strong>Swath</strong></td>
<td>1828.8 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Transport Length</strong></td>
<td>15.7 m</td>
<td></td>
</tr>
<tr>
<td><strong>Working Length</strong></td>
<td>11.7 m</td>
<td></td>
</tr>
<tr>
<td><strong>Ground Clearance</strong></td>
<td>53 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Transport Height</strong></td>
<td>4.0 m with markers, 3.6 m without markers</td>
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</tr>
<tr>
<td><strong>Seed Box Heights</strong></td>
<td>Minimum forklift: 139 cm lowered, 208 cm raised</td>
<td>ProBox refill: 278 cm lowered, 347 cm raised</td>
</tr>
<tr>
<td></td>
<td>82bu Hopper Fill: 285 cm lowered, 354 cm raised</td>
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</tr>
<tr>
<td><strong>Weight (Approx.)</strong></td>
<td>11748 to 14152 kg</td>
<td></td>
</tr>
<tr>
<td><strong>Row Spacing (inches)</strong></td>
<td>70 cm single</td>
<td></td>
</tr>
<tr>
<td><strong>Hopper Capacities</strong></td>
<td>seed: 5779 liters</td>
<td>seed: 1340 liters</td>
</tr>
<tr>
<td></td>
<td>two 82 bu. hoppers or two PROBOX®</td>
<td>fertilizer: 2880 liters</td>
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<tr>
<td><strong>Tire Sizes</strong></td>
<td>Transport/Caster: 15-19.5 NHS 12 PLY, Marker: 18x9.50-8</td>
<td></td>
</tr>
<tr>
<td><strong>Opener Travel</strong></td>
<td>25.4 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Opener Depth Range</strong></td>
<td>0 to 10.2 cm</td>
<td></td>
</tr>
<tr>
<td><strong>Opener Down Pressure</strong></td>
<td>156 to 249 kg per row</td>
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</tr>
<tr>
<td><strong>HP Requirements</strong></td>
<td>164 kW estimated minimum (without coulters)</td>
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## Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tire Size</th>
<th>Inflation</th>
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<tbody>
<tr>
<td>Transport/Caster (S/N A1113Q-)</td>
<td>15-19.5 NHS 12 PLY</td>
<td>60 psi</td>
</tr>
<tr>
<td>Transport/Caster (S/N A1114Q+)</td>
<td>FS24380/80R19.5</td>
<td>73 psi</td>
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<tr>
<td>Ground Drive Wheel</td>
<td>7.60-15 6 ply</td>
<td>40 psi</td>
</tr>
<tr>
<td>Marker</td>
<td>18x9.50-8</td>
<td>24 psi</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>Gleason</td>
<td><a href="http://www.gleasonwheel.com">www.gleasonwheel.com</a></td>
</tr>
<tr>
<td>Titan</td>
<td><a href="http://www.titan-intl.com">www.titan-intl.com</a></td>
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</tbody>
</table>
## Torque Values Chart

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
<th>Grade 5.8</th>
<th>Grade 8.8</th>
<th>Grade 10.9</th>
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<tbody>
<tr>
<td>in-tpia</td>
<td>N-m</td>
<td>ft-lb</td>
<td>N-m</td>
<td>ft-lb</td>
<td>N-m</td>
<td>ft-lb</td>
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<td>1/4-20</td>
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<td>16</td>
<td>12</td>
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<tr>
<td>1/4-28</td>
<td>8.5</td>
<td>6</td>
<td>13</td>
<td>10</td>
<td>18</td>
<td>14</td>
</tr>
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<td>5/16-18</td>
<td>15</td>
<td>11</td>
<td>24</td>
<td>17</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>5/16-24</td>
<td>17</td>
<td>13</td>
<td>26</td>
<td>19</td>
<td>37</td>
<td>27</td>
</tr>
<tr>
<td>3/16-16</td>
<td>27</td>
<td>20</td>
<td>42</td>
<td>31</td>
<td>59</td>
<td>44</td>
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<tr>
<td>3/16-24</td>
<td>31</td>
<td>22</td>
<td>47</td>
<td>35</td>
<td>67</td>
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<td>32</td>
<td>67</td>
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<td>1/2-13</td>
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<td>105</td>
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<td>9/16-12</td>
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<td>9/16-18</td>
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<td>170</td>
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<td>3/8-11</td>
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<td>205</td>
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<td>5/16-10</td>
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<td>375</td>
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<td>3/8-16</td>
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<td>295</td>
<td>570</td>
<td>420</td>
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<td>210</td>
<td>380</td>
<td>270</td>
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<td>475</td>
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<td>670</td>
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<td>250</td>
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<td>645</td>
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<td>910</td>
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<td>955</td>
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<td>1350</td>
<td>995</td>
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<td>1-8</td>
<td>480</td>
<td>355</td>
<td>1080</td>
<td>795</td>
<td>1750</td>
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<tr>
<td>1-12</td>
<td>540</td>
<td>395</td>
<td>1210</td>
<td>890</td>
<td>1960</td>
<td>1440</td>
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<tr>
<td>5/8-7</td>
<td>680</td>
<td>500</td>
<td>1520</td>
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<td>2460</td>
<td>1820</td>
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<td>11/16-12</td>
<td>750</td>
<td>555</td>
<td>1680</td>
<td>1240</td>
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<td>2010</td>
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<tr>
<td>7/8-6</td>
<td>890</td>
<td>655</td>
<td>1990</td>
<td>1470</td>
<td>3230</td>
<td>2380</td>
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<tr>
<td>7/8-6</td>
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<td>745</td>
<td>2270</td>
<td>1670</td>
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<td>11/16-6</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
<td>1950</td>
<td>4290</td>
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<td>11/16-12</td>
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<td>980</td>
<td>2970</td>
<td>2190</td>
<td>4820</td>
<td>3560</td>
</tr>
</tbody>
</table>

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

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
Hydraulic Diagrams
Auxiliary Hydraulics (standard)
Standard (Single) Fan
YP2425F (Dual) Fan
Hydraulic Drive
Hydraulic Tongue (Optional)
Markers

![Markers Diagram](image-url)
Wing Fold (S/N A1060Q-)
Wing Fold (S/N A1061Q+)
Chain Routing

Final Meter Drive

Legend:

- **34T**: Sprocket or idler Tooth count
- **56P**: Chain Pitch count

- ❄️ Direction of chain in motion

**Note**: ❄️ No idlers on mount.

1. Top chain passes over single idler on shank
2. Be sure to reconnect idler spring

**Meter Drive (Front type)**

**Note**: ❄️ Be sure to reconnect idler spring

3. Top chain passes between 2 idlers at mount
4. Top chain passes between 2 idlers at shank

**Meter Drive (Mid type)**

**Note**: ❄️ Be sure to reconnect idler spring

3. Top chain passes between 2 idlers at mount
4. Top chain passes between 2 idlers at shank

**Meter Drive (Rear type)**

**Note**: ❄️ Be sure to reconnect idler spring

3. Top chain passes between 2 idlers at mount
4. Top chain passes between 2 idlers at shank
Hydraulic Drive Chain Routing
Fertilizer Pump Ground Drive Chain Routing
(Option)

JohnBlue Pump Ground Drive
Lower Drive Chain

Hypro Pump Ground Drive
Lower Drive Chain

Hypro Pump Ground Drive
Upper Drive Chain

15T

138P

120P

25T

47T

[L]: Lower (Driving) Sprocket, is one of:
12T, 15T, 18T, 19T, 20T, 36T, 38T, 40T, 45T, 47T, 49T

[U]: Upper (Driven) Sprocket, is one of:
12T, 13T, 14T, 15T, 18T, 20T, 40T

[S]: Storage of balance
Refer to Seed Rate Manual for sprocket pairings.
Seed Hose Routing

Mechanical Routing, Left Side
Facing forward with planter folded.

### YP2425-48TR, 30 inch Twin-Row, 48 Row Units

<table>
<thead>
<tr>
<th>Section</th>
<th>Air Box</th>
<th>L16</th>
<th>L15</th>
<th>L14</th>
<th>L13</th>
<th>L01</th>
<th>L02</th>
<th>L03</th>
<th>L04</th>
<th>L11</th>
<th>Left Center</th>
<th>L05</th>
<th>L06</th>
<th>L12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose Guide</td>
<td>m</td>
<td>n</td>
<td>p</td>
<td>q</td>
<td>w</td>
<td>v</td>
<td>u</td>
<td>s</td>
<td>r</td>
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<td>-</td>
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<tr>
<td>Hose Rack</td>
<td>K</td>
<td>H</td>
<td>G</td>
<td>F</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>X</td>
<td>Y</td>
<td>Z</td>
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</tr>
<tr>
<td>Splitter</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Row Unit</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<td>8</td>
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<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
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### YP2425-4715, 15 inch Single Row, 47 Row Units

<table>
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<th>Air Box</th>
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<th>L15</th>
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<th>L02</th>
<th>L03</th>
<th>L04</th>
<th>L11</th>
<th>Left Center</th>
<th>L05</th>
<th>L06</th>
<th>L12</th>
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</thead>
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<td>p</td>
<td>q</td>
<td>w</td>
<td>v</td>
<td>u</td>
<td>s</td>
<td>r</td>
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</tr>
<tr>
<td>Hose Rack</td>
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<td>H</td>
<td>G</td>
<td>F</td>
<td>E</td>
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<td>Y</td>
<td>Z</td>
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<td>Splitter</td>
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<tr>
<td>Row Unit</td>
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<td>3</td>
<td>4</td>
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### YP2425-3620, 20 inch Single Row, 36 Row Units

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<th>L11</th>
<th>Left Center</th>
<th>L05</th>
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<td>n</td>
<td>p</td>
<td>q</td>
<td>w</td>
<td>v</td>
<td>u</td>
<td>s</td>
<td>r</td>
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<tr>
<td>Hose Rack</td>
<td>K</td>
<td>H</td>
<td>G</td>
<td>F</td>
<td>E</td>
<td>D</td>
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### YP2425-2430, YP2425-2470, YP2425F-2470, 24 Row Units

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<th>L04</th>
<th>L11</th>
<th>Left Center</th>
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<tbody>
<tr>
<td>Hose Guide</td>
<td>m</td>
<td>n</td>
<td>p</td>
<td>q</td>
<td>w</td>
<td>v</td>
<td>u</td>
<td>s</td>
<td>r</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>K</td>
<td>H</td>
<td>G</td>
<td>F</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td>A</td>
<td>X</td>
<td>Y</td>
<td>Z</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Splitter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row Unit</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>
Facing forward with planter folded.

### YP2425 Machine Right Side Seed Hose Routing

<table>
<thead>
<tr>
<th>Section</th>
<th>Right Center</th>
<th>Right Wing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Box</td>
<td>R05 R11 R12</td>
<td>R06 R13 R14 A15 R16 R04 R03 R02 R01</td>
</tr>
<tr>
<td>Hose Guide</td>
<td>- - -</td>
<td>r s u v w q p n m</td>
</tr>
<tr>
<td>Hose Rack</td>
<td>X Y Z A B C D E F G H K</td>
<td></td>
</tr>
<tr>
<td>Splitter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row Unit</td>
<td>25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48</td>
<td></td>
</tr>
</tbody>
</table>

#### YP2425-48TR, 30 inch Twin-Row, 48 Row Units

#### YP2425-4715, 15 inch Single Row, 47 Row Units

#### YP2425-3620, 20 inch Single Row, 36 Row Units

#### YP2425-2430, YP2425-2470, YP2425F-2470, 24 Row Units
Appendix B - Initial Setup

Seed Monitor Console Installation

The YP24’s standard seed monitor system includes a virtual terminal and switch panel that must be mounted in the tractor cab. As supplied by DICKEY-john®, the kit includes a flat bracket for the modules, and a ball swivel for mounting the bracket in the tractor.

**NOTICE**

Mount the modules so that they are easy to monitor during planting, but do not interfere with safe operation of the tractor in the field or on public roads.

The ball swivel includes four 10-32 screws. You or your dealer must provide the mounting holes for the screws. Your dealer may have alternate suction cup or clamping brackets available if you prefer to avoid drilling holes.

Refer to the included DICKEY-john® manual for harness connections.

Radar Calibration

At the first opportunity to operate the planter in the field (with or without planting), the radar component of the seed monitor needs to be calibrated. The seed monitor manual describes the procedure.

**Note:** The planter must be in the lowered/field position for this calibration. The angle of the sensor changes when the planter is raised, and readings during planting will be incorrect if calibrated in the raised configuration.

**Note:** Due to this angle change, seed monitor speed readings will not match tractor speedometer reading during transport.
Weight Transfer Shipping Links

When a planter is on customer premises, and further movements will only be done with a tractor or towing vehicle having hydraulic motor return and case drain remote ports, remove the weight transfer shipping links.

1. Use a hoist or a second worker to support the weight of the outboard end of a weight transfer cylinder.

2. Remove both cotter pins and clevis pins:
   - 805-058C PIN COTTER 3/16 X 2
   - 805-396C PIN CLVS 1.0X3.13 USBL
   from each end of a shipping link:
   - 411-175H WT SHIP LINK
   Remove the link.

3. Swing the cylinder down. Align the clevis with the wing lug. Secure with one of the clevis pins and cotters.

4. Store the other clevis pin and cotter in the clevis end of the link. Store the link for future use.

5. Repeat step 1 through step 4 for the other wing.

To install a link, complete step 4 through step 1 in reverse order.

See page 44 for initial weight transfer setup.
### Appendix C - Option Installation

#### 122-278S Scraper Installation

Optional carbide disc scrapers are not factory installed. Start with row 1 (left-most row unit).

**Note:** If a Keeton® seed firmer is also installed, see the Parts Manual for assembly details.

**Note:** This scraper is not compatible with Seed-Lok®.

*Refer to Figure 143 and Figure 144*

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 reassembly (page 99).

2. Select one each:
   - ① 802-024C HHCS 3/8-16X3 GR5
   - ② 129BXT824 BRACKET FOR 890-929C FIRMER
   - ③ 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
   Insert the bolt ①, from the rear, through the lowest hole of the bracket ②. Place the tube ③ over the bolt.

3. Select one scraper set:
   - ④ 890-928C 25 SER AIR DESIGN IN SCRAPER
   Place the shoulder washer ④ on bolt ① with the larger diameter to the rear (toward bolt head). Place the left scraper blade ⑤ on the washer, followed by the right scraper blade ⑥.

4. Select one each:
   - ⑦ 804-011C WASHER FLAT 3/8 USS PLT
   - ⑧ 804-013C WASHER LOCK SPRING 3/8 PLT
   - ⑨ 803-014C NUT HEX 3/8-16 PLT
   Place the flat washer ⑦ on the bolt ①, followed by the lock washer ⑧ and nut ⑨. Tighten bolt and nut to 3/8-16 GR5 torque spec. Make sure blades pivot freely.

5. Select the scraper spring ⑩. Connect the spring between the blades, using the small top holes.

6. Select two sets:
   - ⑪ 802-172C HHCS 5/16-18X2 1/2 GR5
   - ⑫ 803-043C NUT HEX WHIZ 5/16-18 PLT
   Insert the scraper assembly ⑩ between the middle four lower square holes ⑪ of the opener frame. Secure with bolts ⑪ and whiz nuts ⑫.

7. Remount the removed disc blade.

*Callout, Part & Description cross-references are drawn from a Reference Page.*

---

*Figure 143: Scraper Pre-Assembly

*Figure 144: Scraper Installation*
Weight Transfer System

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

<table>
<thead>
<tr>
<th>Option Package</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP24 WEIGHT TRANSFER</td>
<td>411-174A</td>
</tr>
</tbody>
</table>

This option is factory-installed if ordered with the planter (feature code 70). See page 44 for operation.

402-520A Low Speed Kit Installation

See "Low Speed Kit" on page 114 for the purpose of this installation.

1. Shut off any hydraulic source that powers the hydraulic seed meter drives (dedicated remotes or PTO).

Refer to Figure 145

2. At the hydraulic drive motor, loosen the idler nut ①. Slide the idler out of engagement with the existing chain ③. Remove and save the existing chain:
   ③ 136-247D CHAIN RL #60 41 PITCHES

3. Loosen the set screws securing the existing 16T sprocket ⑨. Remove and save the sprocket:
   ⑨ 808-388C SPKT 60B16 X 1 BORE W/KWAY, SS
   Leave the woodruff key ② in place.

4. Select one new 10T sprocket:
   ⑩ 808-479C SPKT 60B10 X 1 BORE W/KWAY 2SS
   Install it on the motor shaft. Secure it with the woodruff key and two set screws provided.

5. Select one new:
   ⑪ 136-285D CHAIN RL #60 38 PITCHES
   Consult page 100 and the directional arrows " " shown on the page for proper chain clip orientation. Install the new chain on the new sprocket and existing driven sprocket.

   Engage the idler for 1/4 inch (2.1 cm/m) slack. Secure the idler nut ①.

Field Results Risk:
Do not change the sprocket ratios in the DICKEY-john® IntelliAg® hydraulic drive setup.
Appendix R - Row-Pro™

Preparation and Setup

Row-Pro™ Setup (Option)

The factory default setting for down-force is likely to differ from that required by your next field conditions.

Before modifying the monitor setting for down-force, determine what actual down force is ideal for the initial use of the planter. One method of determining an initial setting involves operating in the field (without seeding).

1. Set planting depth at T-handles (page 74).
2. Review unit-mount coulter depth relative to opener disc. Adjust as needed (page 66).
3. Start with the row unit down pressure springs in the lowest, or second-lowest notch (page 69).

**Note:** Adjustment to the spring pressure may need to be made if the depth is reset or the closing wheel down pressure is adjusted.

4. Operate in the field for a short distance.
5. Evaluate the seed trench (page 68).
6. Adjust the springs until depth and closure are ideal. If the ideal setting seems to be in between two notch values, use the higher setting. Rows in wheel tracks may be higher still.
7. Engage the Row-Pro™ system. Set the initial target weight at 80 pounds.
8. Operate in the field. Evaluate furrow and closing. Adjust Row-Pro™ force setting for optimal results.
9. When verifying the final setting, and when planting, watch for Unable to Control alarms, which may indicate that the cams are a notch or more too high or too low.

**Note:** If the IntelliAg® alarm indicates a value too high, reduce spring pressure. If the IntelliAg® alarm indicates a value too low, increase spring pressure.

The actual target rate is going to be different depending on the field conditions, soil type and other factors. The best way to gauge where you want the setting is to operate the system for a short time then go behind the planter and check the furrow.

---

a. Optionally operate the Row-Pro™ system in Monitor Only mode, and note the forces reported.
Operating Instructions

Refer to Figure 146

Row-Pro™ is a factory installed option for implements with 25-series openers that are equipped with DICKEY-john® IntelliAg®. It helps the spring down force system to maintain a user-determined, ideal weight for the side depth gauge wheels. Once the springs are set, Row-Pro™ pneumatically increases/decreases pressure on the openers.

**Note:** The row units are already getting their down pressure from the springs on the parallel arms. Row-Pro only acts to vary that pressure as needed to maintain consistency in different soil conditions.

There is one cylinder ① for each row located between the parallel arms. Based on loading on the side depth wheels, Row-Pro™ adjusts air pressure in the air cylinders.

Refer to Figure 147

There is one valve set per opener section, located in the center of the section. It allows each section to be controlled independently.

**Note:** For twin row there are two valve sets ② per section: one for the front openers and one for the rear openers.
Row-Pro™ Components

Refer to Figure 148 and Figure 149

The main systems of Row-Pro™ consist of:

1. **An air compressor system:** one 12VDC air compressor [11] with air tank [12], two extension cables [13], and one fuse assembly [14].

2. **A load sensing system:** DPLCM (Down Pressure Load Cell Module) [15] and the load cells [16].

3. **An adjusting system:** valves [17] and air cylinders [18].

Load Cell, DPLCM and Valves

The DPLCM [15] and valves [17] are mounted together on a plate and are connected to the DICKEY-john® Row-Pro™ wiring harness [19].

Two leads on the Row-Pro™ harness each connect to a load cell [16] which is located in the opener body (see fig.162). Four leads connect to the valve sets. There is one pair (one air intake, one exhaust) for each valve.

**Note:** For single row planters:
- There is one load cell and one valve set per each opener section located at mid section.

**Note:** For twin row planters:
- There are two load cells and two valve sets per each opener section located on the long and short center row unit of the section.

The Row-Pro™ harness connects to the planter’s CANbus at connector ends [20].

The load cell provides feedback so the system can maintain the target pressures.

The DPLCM uses the readings from the load cell to regulate the air valves in order to increase or decrease pressure in the air cylinders.
Row-Pro™ Air Compressor System

Row-Pro™ Air Compressor

Refer to Figure 150

The 12VDC compressor requires both an electrical connection and a mounting location. It should be mounted in a location on the tractor or planter where most convenient. Mount where cool clean air can get to it. The battery connection is equipped with one large 60 amp spade fuse (automotive type).

Note: If your tractor has an on-board engine driven compressor capable of 150 psi, it can be used instead of the one supplied with the planter. Hook the on-board compressor to the air tank with lines provided.

The air filter should be placed in the tractor cab where it can pull clean air from the cab. The remote air filter line should be as short as possible.

The air compressor pressurizes the air tank reservoir.

Row-Pro™ Air Tank

Refer to Figure 151

An air tank is provided and mounted on the wing. Open the air tank petcock once daily to drain water accumulation.

The air tank is used in conjunction with the air valves to maintain a set pressure value for the air cylinders.

Air valves are used to increase or decrease the amount of air provided to the air cylinders.

Row-Pro™ Air Tank Lines

Refer to Figure 152

The air tank has two lines. A 3/8 inch line attaches the compressor to the air tank. A 1/4 inch line splits at a T-junction and goes to the valves while the remaining end attaches to the compressor plate where it activates the pressure switches.

Note: If an on-board compressor is used, plug/bypass the pressure switch branch.
Row-Pro™ Air Pressure Gauge  

Refer to Figure 153

Row-Pro™ is designed to run at 150 psi. When the psi drops to 135 the compressor engages and builds back up to 150 psi. Duty cycle varies based on air usage.

Check for Air Leaks

Before going to the field check for air leaks.

1. Turn the compressor on to pressure up the primary system until it automatically shuts off. If the system loses pressure, check for leaks.

2. Use the Leak Test mode to cycle through the sections and check for leaks.
Row-Pro™ Adjustments

Refer to Figure 154

Load Cell Reading

These readings are displayed and adjusted from the IntelliAg® seed monitor console.

**Control Mode:** Auto is the normal running mode. Manual is used to control the valves only when the operator touches the increase or decrease icon on the work screen.

**Monitor Only:** This screen disables control, but still reports sensor feedback. From there, press the Down Pressure Diagnostic key and then press the Float Mode ON button to release all of the air from the system. Next, press the Float Mode OFF button. Stay on the Diagnostic screen and make a planting pass. Note the pressure displayed on the Diagnostic screen and then evaluate the seed trench. If the seed trench results are acceptable, use the displayed pressure as your target rate.

**Front-Rear Linked:** “Enabled” links the front and rear row units so that the same amount of pressure increase/decrease set at the screen is applied to front/rear row units. When “Disabled” - front/rear row units are not linked. Two sets of buttons appear on the screen that allow for adjustments of front and rear rates independently.

**Target Rate:** This is the desired down pressure on the side depth wheels. The target rate to be entered is the set rate (pounds) of the down force to determine how much pressure is applied. The system monitors and adjusts pressure to meet the defined rate set at this screen.

**Note:** Pressure displayed on screen and target pressure both refer to the amount of weight carried by the side depth gauge wheels, and not overall row unit down pressure.

Inc/Dec: Sets the amount that the Target Rate is changed with each key press during planting operations.
**Sensitivity Adjust:** Determines how responsive the Controller is to input from the DPLCM. The range is from -10 to +10. Zero (0) is the average setting. Going below 0 decreases the reaction time. Going above 0 increases the reaction time.

**Disable Down Pressure Modules:** Modules interfacing with feedback sensors can be independently disabled so that down pressure to rear and/or front row units are not monitored or controlled. Modules that have been disabled are ignored by the system and will not report down pressure data or react to soil conditions.

(The IntelliAg® screen shows both row modules enabled ☑. An unchecked box indicates disabled.)

If a section fails, that individual section can be turned on and off to locate the problem.

Refer to Figure 157

**Reset Offset Value:** Resetting Offset Values clears previous down pressure readings and resets values to zero.

1. At Main WORK SCRN press NEXT PAGE button.
2. Press MODULE CFG button.
3. At Module Configuration screen, press DPRESS SET.
4. At the Down Pressure Setting screen press OK to clear values.

**IMPORTANT:** The implement must be lifted and the implement lift switch in the up state before the OK button appears and values can be cleared.

**Note:** Make sure side depth wheels are all in the lowered position so there is no tension on the load cell. Values other than OFF or 1-6 mV may indicate stuck side depth wheels. If the reading is 0 mV, there may be a problem with load cell grounding. See “Row-Pro™ Troubleshooting”, page 178.

**Note:** Initial Setup: Zero out the load cell reading.
## Row-Pro™ Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressor won’t turn on</td>
<td>Switch turned “off”.</td>
<td>Turn switch “on”.</td>
</tr>
<tr>
<td></td>
<td>Poor electrical connection.</td>
<td>Clean connections and reassemble.</td>
</tr>
<tr>
<td></td>
<td>Fuse blown.</td>
<td>Replace fuse (60A).</td>
</tr>
<tr>
<td>Compressor won’t turn off (runs continuously)</td>
<td>Section opener valves are installed in reverse.</td>
<td>Install opener valves correctly.</td>
</tr>
<tr>
<td></td>
<td>Stuck pressure switch(es).</td>
<td>Replace pressure switch(es).</td>
</tr>
<tr>
<td>Compressor cycles more than normal</td>
<td>Water build-up in air tank.</td>
<td>Drain tank to keep reserve volume at proper size.</td>
</tr>
<tr>
<td>Erratic down pressure reading</td>
<td>Poor electrical connection to load cell.</td>
<td>Clean connection and reassemble.</td>
</tr>
<tr>
<td></td>
<td>Load cell malfunction.</td>
<td>Replace load cell.</td>
</tr>
<tr>
<td>Persistent “high” alarm</td>
<td>Row unit spring tension too high.</td>
<td>Lower spring tension.</td>
</tr>
<tr>
<td></td>
<td>Air leak preventing cylinders from holding pressure.</td>
<td>Fix leak.</td>
</tr>
<tr>
<td>Persistent “low” alarm</td>
<td>Row unit spring tension too low.</td>
<td>Raise spring tension.</td>
</tr>
<tr>
<td></td>
<td>Air leak preventing cylinders from holding pressure.</td>
<td>Fix leak.</td>
</tr>
<tr>
<td>System won’t hold air pressure</td>
<td>Pinched/torn hose.</td>
<td>Replace hose.</td>
</tr>
<tr>
<td></td>
<td>Hose not pushed into quick connect fitting far enough.</td>
<td>Push hose in until fully seated.</td>
</tr>
<tr>
<td>Voltage reads “0” on monitor, or is unaffected by load on load cell</td>
<td>Signal wire grounded to frame.</td>
<td>Inspect for pinched or broken wiring harness between the load cell and DPLCM. Replace damaged wiring.</td>
</tr>
</tbody>
</table>

## Row-Pro™ Maintenance
Check the tractor cab air filter as per manufacturer recommendation.
Yield-Pro® Planter Warranty

Great Plains (a division of Great Plains Manufacturing, Inc.) warrants to the original purchaser that this Great Plains unit will be free from defects in material and workmanship for a period of one year from the first use date when used as intended and under normal service and conditions for personal use; ninety days for custom/commercial or rental use.

A Second year limited warranty covers units utilizing Yield-Pro (YP) planter frames with 25 series row units and singulating type meters. The second year limited warranty covers parts only (personal usage only excluding labor and wear items) on the following: hitch main frame, gauge wheels, and markers, air box/manifold, Y-splitter tubes, and fan and housing, row unit weldments, unit mounted attachments, and frame mounted attachments.

This Warranty is limited to the replacement of any defective part by Great Plains and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

The following items and/or conditions are not covered under warranty: failures resulting from abuse or misuse of the equipment, failures occurring as a result of accidental damage or acts of God, failures resulting from alterations or modifications, failures caused by lack of normal maintenance as outlined in the operator’s manual, repairs made by non-authorized personnel, items replaced or repaired due to normal wear (such as wear items and ground engaging components), repeat repair due to improper diagnosis or repair by the dealer, temporary repairs, service calls and/or mileage to and from customer location, overtime premium, or unit hauling expenses. The warranty may be voided if the unit is towed at speeds in excess of 20 miles per hour (32 kilometers per hour), or is used in soils with rocks, stumps, or other obstructions. Great Plains reserves the right to make changes in materials or design of the product at any time without notice. The warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct or consequential or contingent to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its control. This warranty does not extend to crop loss, losses caused by planting or harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

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

This warranty is not valid unless the unit is registered with Great Plains within 10 days from the date of the original purchase.
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