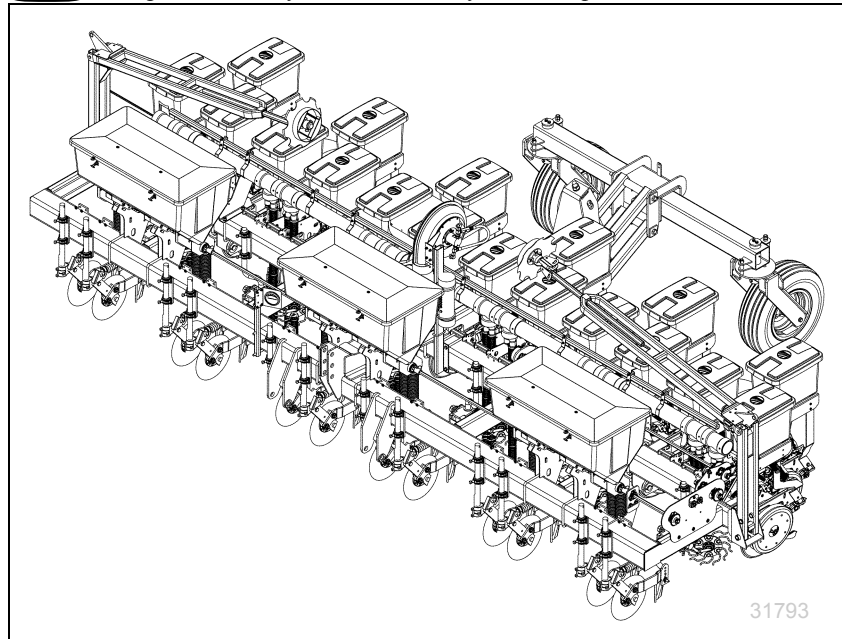


Operator Manual

YP625TD and YP925TD
3-Point 65 and 110 cm Yield-Pro® Air Planters
with Air-Pro® Seed Meters



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



Illustrations may show optional equipment not supplied with standard unit, or may show similar pull-type models and their options.



Table of Contents

Important Safety Information	1	Setting Material Rates.....	39
Safety Decals	6	Planting Rate Details	39
Introduction	12	1. Rate: Monitor configuration:	39
Models Covered	12	2. Rate: Disk Selection:.....	39
Description of Unit.....	12	3. Rate: Range Sprockets	40
Intended Usage	12	4. Rate: Transmission Sprockets	40
Document Family	12	5. Rate: Seed Inlet Shutter.....	41
Using This Manual.....	13	6. Rate: Meter Pressurization.....	41
Definitions.....	13	7. Rate: Checking.....	41
Owner Assistance	13	Fan and Adjustment.....	42
Preparation and Setup	14	Furrow Check:.....	42
Initial Setup.....	14	Fine-Tuning Meter Pressurization	43
Post-Delivery/Seasonal Setup.....	14	Alternate Skip/Double Check	43
Pre-Planting Setup	14	Dry Fertilizer Adjustment.....	44
Hitching Tractor to Planter.....	15	Dry Fertilizer Rate	44
Electrical Hookup	15	Frame-Mounted Accessory Adjustments	44
Hydraulic Hose Hookup.....	16	Coulter Adjustments (Option).....	44
Leveling Planter.....	17	Coulter Depth	45
Monitor Setup	18	Coulter Blade Angle	45
Marker Setup (Option).....	18	Coulter to Row Alignment	45
Operating Instructions	19	Coulter Blade Style	45
Pre-Start Checklist	19	Fertilizer Applicator Adjustments (Option).....	46
Raising/Lowering Planter	20	Applicator Release Height.....	46
Lift Locks	20	Applicator Release Angle.....	46
Transport.....	21	Dual Terra-Tine™ Adjustment (Option)	47
Transport Weights	21	Terra-Tine™ Down Force	47
Transport Steps	22	Terra-Tine™ Height	47
Loading Materials	23	Terra-Tine™ Row Alignment.....	47
Hopper Operations	23	Marker Adjustments (Option).....	48
Loading Seed	23	Marker Disk Adjustment	48
Loading Dry Fertilizer	25	Gauge Wheel Adjustments	49
Suitable Materials	25	Yoke Spring Adjustment	49
System Inspection	25	Wheel Axle Adjustment.....	49
Hopper Lid Operation	25	25AP Series Row Unit Adjustments.....	50
Dry Fertilizer Operation	26	Row Unit Down Pressure	51
Monitor Operation.....	27	Adjusting Down-Force	51
Air System Operation	28	Unit-Mount Cleaner Adjustments	53
Air and Seeding System Overview.....	29	Row-Unit Opener Disk Adjustments.....	54
Fan Circuit Operation	30	Setting Planting Depth	54
Fan General Operating Information.....	31	Opener Disc Contact Region	54
Butterfly Valve Operation:.....	31	Adjusting Disc Contact	54
Air-Pro® Meter Operation	32	Side Gauge Wheel Adjustment.....	55
Meter Operation	32	Adjusting Gauge Wheel Scrapers (Option)	56
Marker Operation (Option)	33	Seed Meter Setup and Adjustment	57
Before Operating Markers	33	Meter Rain Cover	57
Marker Unfold (one side).....	33	Seed Inlet Shutter Adjustment	57
Both Sides Unfolded.....	33	Optimal Seed Pool Slopes	58
Row Marker Operation	33	Meter Refill	58
Folding The Markers	33	Air-Pro® Meter Disk Installation	59
Field Set-Up Checklists	34	Removing a Seed Disk.....	60
Field Operation.....	36	Row Unit Shut-Off	60
Short-Term Parking	37	Sprocket Indexing (Stagger)	62
Long-Term Storage	37	Seed Firmer Adjustments	63
Adjustments.....	38	Keeton® Seed Firmer Adjustment.....	63
		Seed-Lok® Seed Firmer Lock-Up	63
		Press Wheel Adjustment.....	64
		Press Wheel Down Pressure	64

Press Wheel Stagger	64	Seed Lubricants	96
Press Wheel Centering	65	Options	97
Troubleshooting	66	Lock-Up Pins	98
Planting Rate Problems	66	Appendix A - Reference Information	102
Suggested Furrow Check:	66	Specifications and Capacities	102
Seed Pool Troubleshooting	67	Dimensions	103
Magnehelic® Gauge Troubleshooting	68	YP625TD12TR110 Dimensions	103
Population Troubleshooting Charts	69	YP625TD18TP110 Dimensions	104
Maintenance and Lubrication	76	YP925TD0965 Dimensions	105
Maintenance	76	Tire Inflation Chart	106
Material Clean-Out	77	Torque Values Chart	106
Seed Clean-Out	77	Hydraulic Diagrams	107
Funnel Conversion	77	Chain Routing	110
Seed Clean-Out (Container)	77	Appendix B - Initial Setup	115
Seed Clean-Out (Funnel)	77	Post-Delivery Checklist	115
Meter Clean-Out	78	Seed Monitor Console Installation	115
Alternate Meter Clean-Out	78	Seed Monitor Console Quick-Start	116
Dry Fertilizer Clean-Out	79	Power-Up The Console	116
Meter Brush Maintenance	80	Set Metric Mode	116
Meter Brush Replacement	81	Set Planter Row Count	117
Seed Disk Maintenance	82	Set Planter Row Spacing	117
Cleaning and Storing Seed Disks	82	Check Swath	118
Speed Sensor Gap	82	Row Setup	118
Hydraulic Maintenance	83	Set Ground Speed Constant	118
Lift Cylinder Bleeding	84	Manual Speed Calibration Entry	118
Driveline Shear Pin	84	Initial Marker Setup (Option)	119
Marker Maintenance (Option)	85	Marker Speed Adjustment	119
Marker Shear Bolt Replacement	85	Marker Extension	119
Marker Grease Seal Cap	85	122-278S Scraper Installation	121
Chain Maintenance	86	Appendix C - Flat Ground Planting	122
Meter Drive Chain	86	Elevate Gauge Wheels	122
Spreaders and Scrapers	87	Elevate Lift-Assist Wheels	122
Row-Unit Side Wheels	87	Warranty	123
Seed Flap Replacement	88	Index	125
Lubrication	89		

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.



120



Be Familiar with Safety Decals

Read and understand “Safety Decals” on page 6, thoroughly.

Read all instructions noted on the decals.

Keep decals clean. Replace damaged, faded and illegible decals.



Wear Protective Equipment

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

Waterproof, wide-brimmed hat

Face shield, goggles or full face respirator.

Goggles with side shields or a full face respirator is required if handling or applying dusts, wettable powders, or granules.

Cartridge-type respirator approved for pesticide vapors unless label specifies another type of respirator.

Waterproof apron.

Waterproof, unlined gloves. Neoprene gloves are recommended.

Cloth coveralls/outer clothing changed daily; waterproof items if there is a chance of becoming wet with spray

Waterproof boots or foot coverings

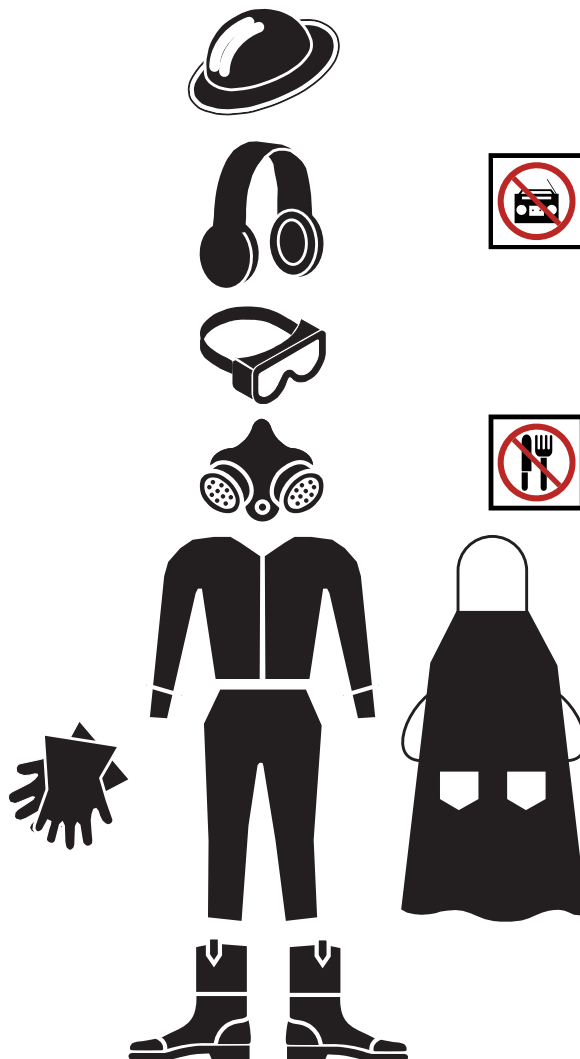
Do not wear contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal clothing must be laundered separately from household articles.

Clothing contaminated with certain pesticides may need to be destroyed according to national or local regulations. Read chemical label for specific instructions.

Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.

Prolonged exposure to loud noise can cause hearing impairment or loss. Wear suitable hearing protection such as earmuffs or earplugs.

Avoid wearing entertainment headphones while operating machinery. Operating equipment safely requires the full attention of the operator.



Avoid High Pressure Fluids

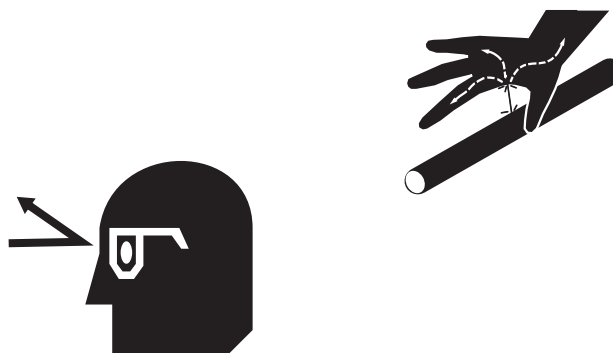
Escaping fluid under pressure can penetrate the skin, causing serious injury. This Planter requires a Power-Beyond port, which is always under pressure when the tractor is running.

Avoid the hazard by relieving pressure at other remotes, and shutting down tractor before connecting, disconnecting or inspecting hydraulic lines.

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

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

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



Use A Safety Chain

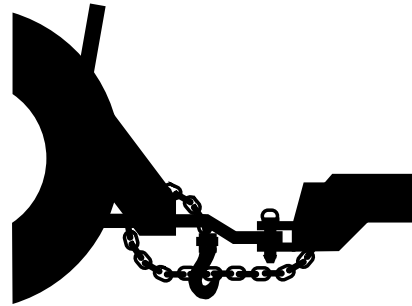
Use a safety chain to help control drawn machinery should it separate from tractor draw-bar.

Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.

Attach chain to tractor draw-bar support or specified anchor location. Allow only enough slack in chain for turns.

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

Do not use safety chain for towing.



Keep Riders Off Machinery

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

Never allow children to operate equipment.

Keep all bystanders away from machine during operation.



Use Safety Lights and Devices

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

Use flashing warning lights and turn signals whenever driving on public roads.

Use lights and devices provided with implement.



Transport Machinery Safely

Maximum transport speed for implement is 32 kph, 22 kph in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

Do not exceed 32 kph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.

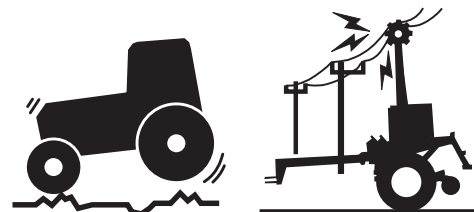
Comply with state and local laws.

Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.

Carry reflectors or flags to mark Planter in case of breakdown on the road.

Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under "Specifications and Capacities" on page 105.

Do not fold or unfold the Planter while the tractor is moving.



Handle Chemicals Properly

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

Read and follow chemical supplier instructions.

Wear protective clothing.

Handle all chemicals with care.

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

Inhaling smoke from any type of chemical fire is a serious health hazard.

Store or dispose of unused chemicals as specified by the chemical manufacturer.

If chemical is swallowed, carefully follow the chemical manufacturer's recommendations and consult with a doctor.

If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.

Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.

Wash hands and face before eating after working with chemicals. Shower as soon as application is completed for the day.

Apply only with acceptable wind conditions. Wind speed must be below 8 kph. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.

Never wash out a hopper within 30 m of any freshwater source or in a car wash.

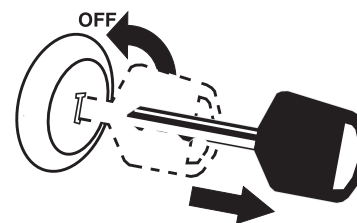


Shutdown and Storage

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

Secure Planter using blocks and supports provided.

Detach and store Planter in an area where children normally do not play.



Tire Safety

Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

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

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



Practice Safe Maintenance

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

Work in a clean, dry area.

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

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

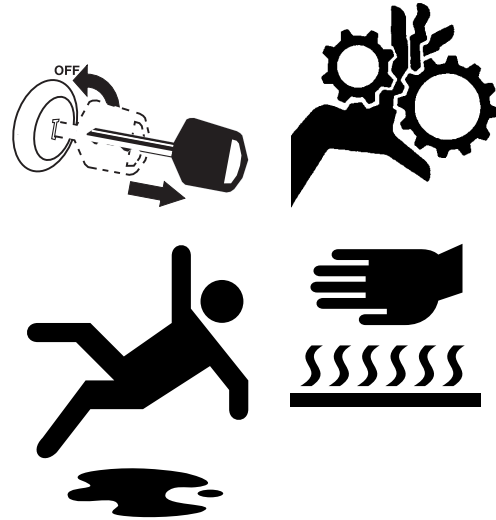
Allow Planter to cool completely.

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

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

Remove buildup of grease, oil or debris.

Remove all tools and unused parts from Planter before operation.



Safety At All Times

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

Be familiar with all Planter functions.

Operate machinery from the driver's seat only.

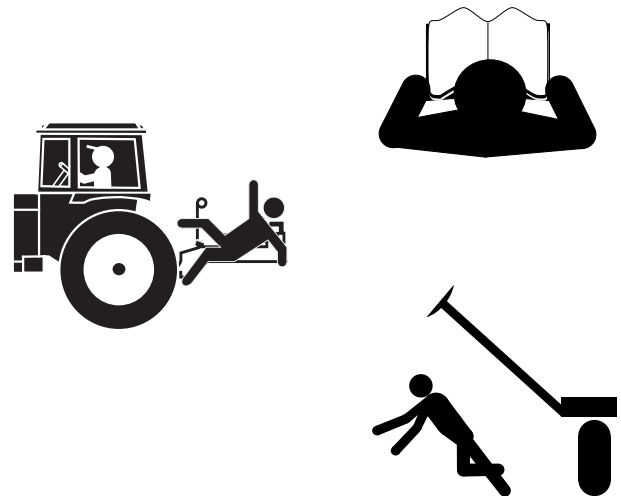
Do not leave Planter unattended with tractor engine running.

Do not stand between the tractor and Planter during hitching.

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

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

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



Safety Decals

Safety Reflectors and Decals

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

Read and follow decal directions.

Keep lights in operating condition.

Keep all safety decals clean and legible.

Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.

When ordering new parts or components, also request corresponding safety decals.



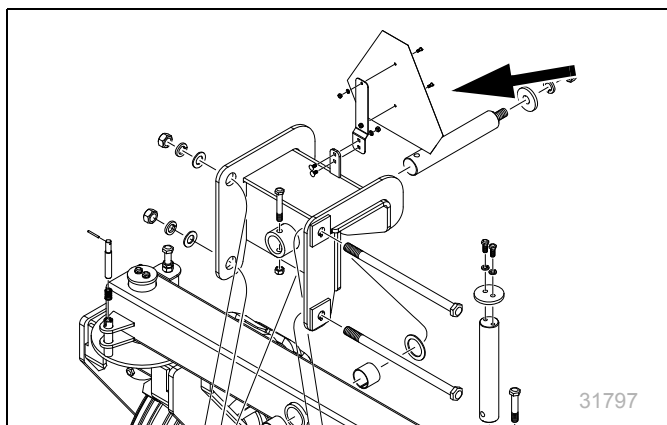
818-055C

Slow Moving Vehicle Reflector

Model YP625TD: On the lift assist pivot mount;
Model YP825TD: On the meter pressurization manifold;
1 total

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.



838-266C Red Reflectors

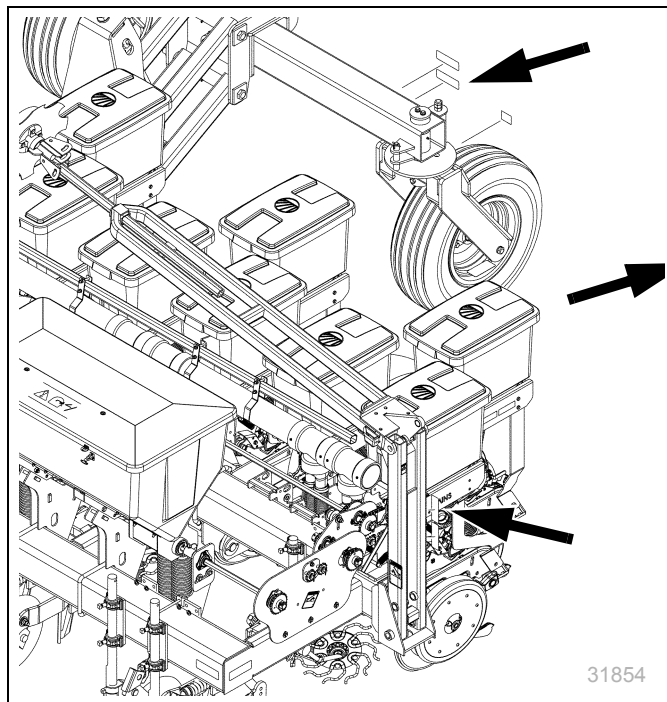
All configurations:

on the rear face, each end, of the lift assist cross-tube,
below the daytime reflectors,

With Markers:

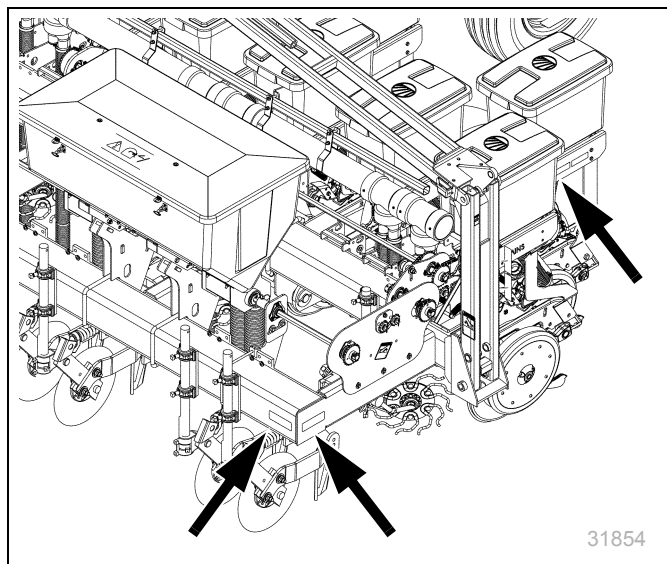
on the rear face of the inner arm, above/outboard of the
daytime reflectors,

4 total



838-265C Amber Reflectors

On the front face of the front tool bar, each end,
on the outside face of the mainframe, front corner,
on the outside face of the rear outside hopper frames;
6 total



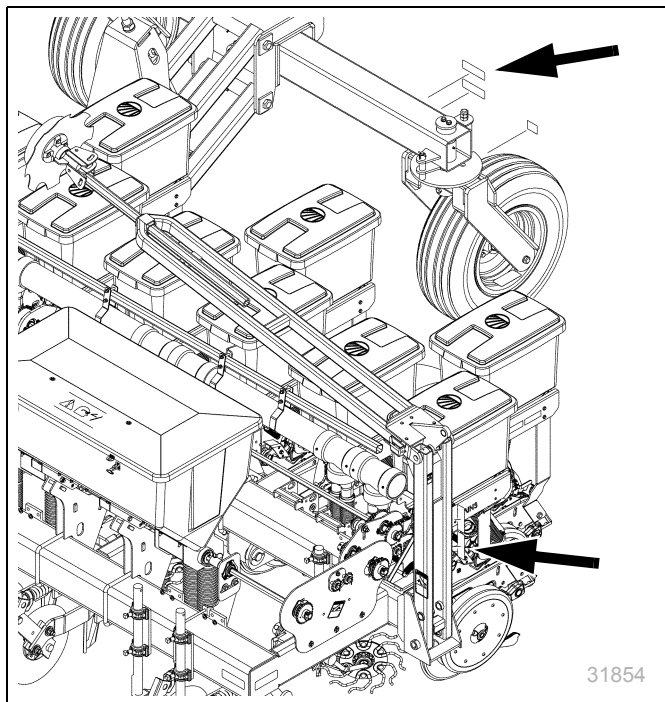
838-267C Daytime Reflectors

All configurations:
on the rear face, each end, of the lift assist cross-tube,
above the red reflectors,

With Markers:
on the rear face of the inner arm, below/inboard of the
red reflectors,

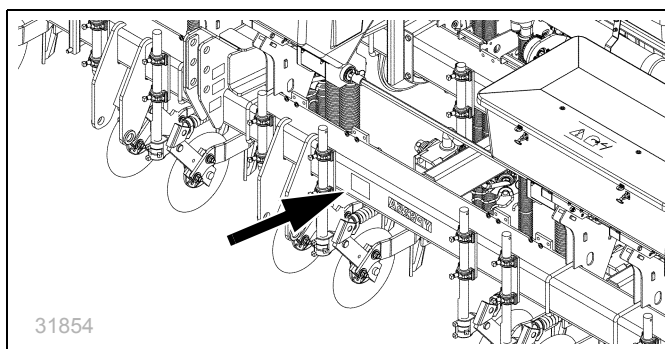
Without markers:

4 total



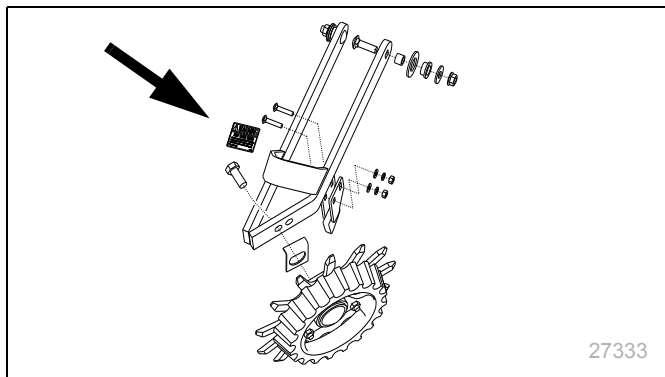
818-337C Warning: Speed

On front face of front tool bar, left of hitch;
1 total



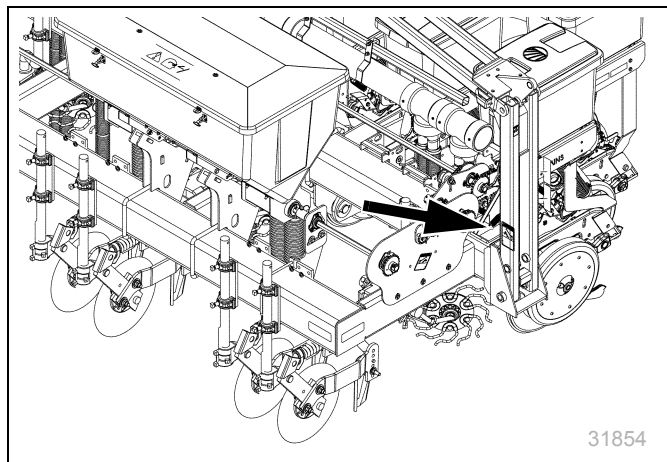
818-525C Warning: Sharp Object (Option)

Front face of each row cleaner frame;
9 or 12 total



**818-682C****Warning: Markers (Option)**

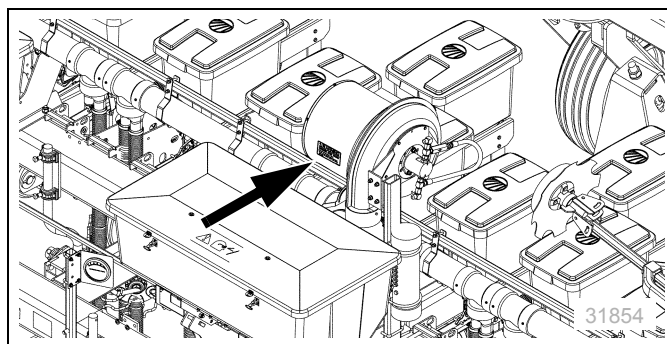
On front face of inner marker arm;
2 total



31854

**848-508C****Warning: Rotating Fan**

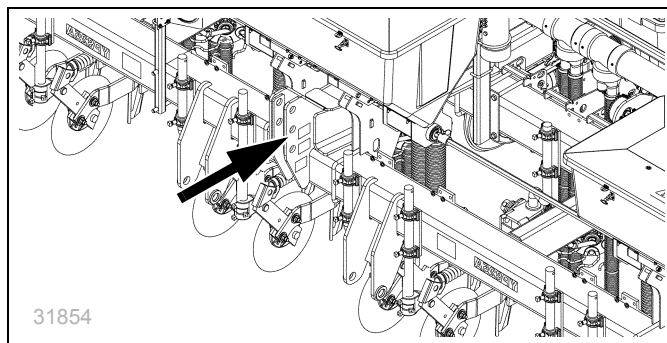
On fan intake cage; 1 total



31854

**848-517C****Warning: High Pressure Fluid Hazard**

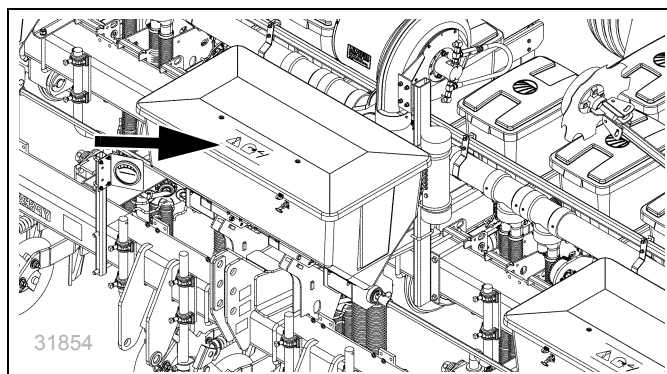
On top of tongue near hitch; 1 total



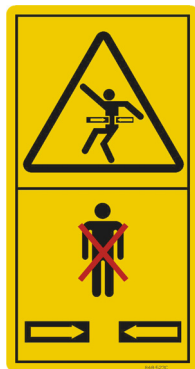
31854

**848-520C****Warning: Possible Chemical Hazard**

On the top of each dry fertilizer hopper lid;
3 total



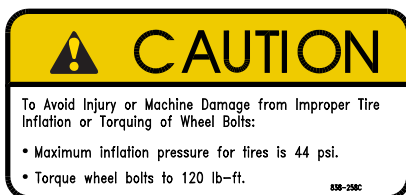
31854

**848-523C****Warning: Crushing Hazard**

On front face of the front tool bar, right of hitch;
1 total

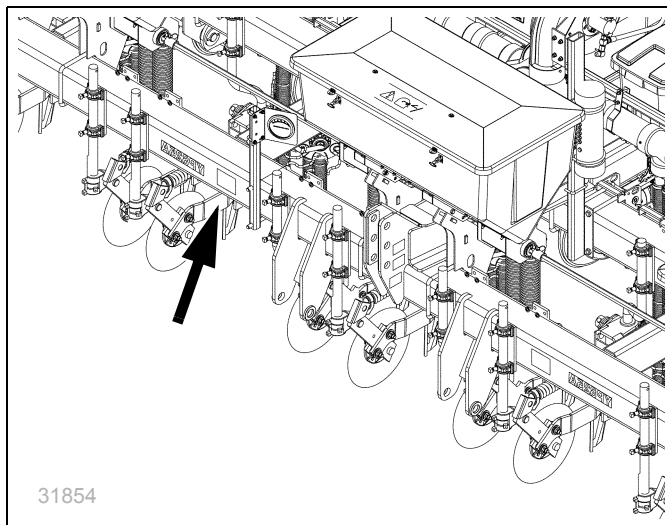
**818-587C****Caution: Read Operator's Manual**

On top of tongue near hitch; 1 total

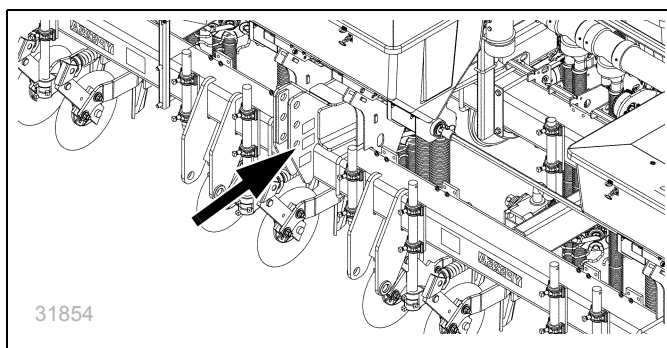
**838-258C****Caution: Tire Pressure and Bolt Torque**

on valve stem side of lift-assist wheel,
twin- and triple-row Planters only;
2 total

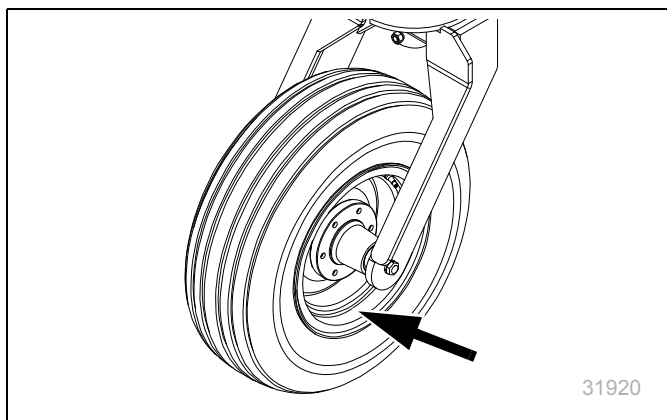
See also "Tire Inflation Chart" on page 109.



31854



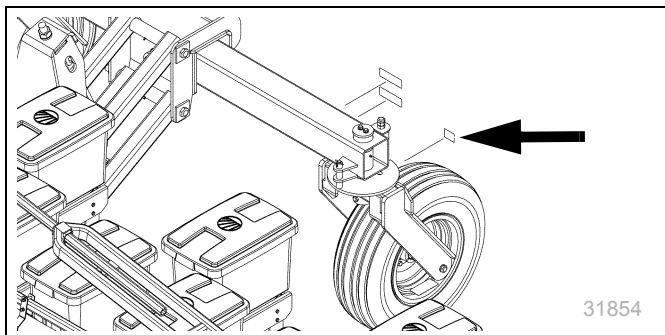
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31920

**838-362C****Caution: Tires Not A Step**

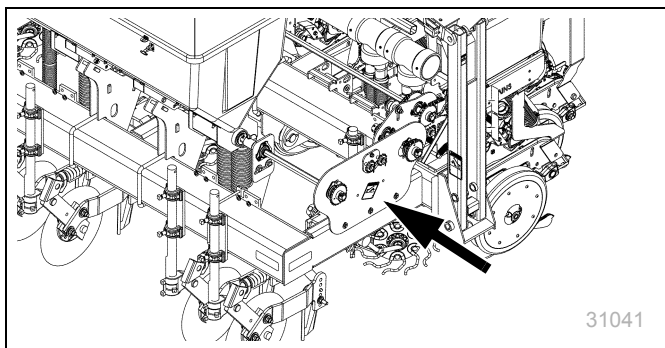
On trailing face of caster yoke; 2 total



31854

**838-363C****Caution: Moving Parts Hazard (Option)**

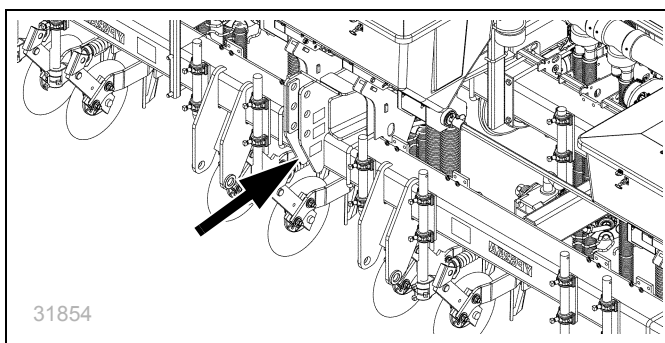
on left outside face of Fertilizer transmission;
1 total



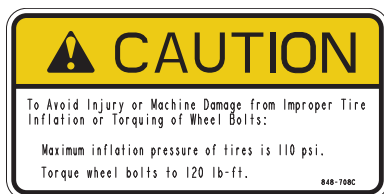
31041

**848-512C****Caution: Read Operator's Manual**

On top of tongue near hitch; 1 total

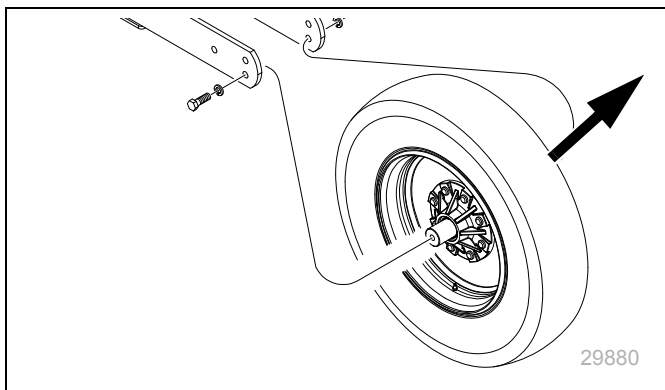


31854

**848-708C****Caution: Tire Pressure and Bolt Torque**

on valve stem side of each gauge wheel;
2 total

See also "Tire Inflation Chart" on page 109.



29880

Introduction

Great Plains welcomes you to its growing family of new product owners. The 3-Point 65 and 110 cm Yield-Pro® Air Planter (YP625TD & YP925TD) has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

Models Covered

- YP625TD12TR110 Yield-Pro® Model 625, Two-Point, Dry Fertilizer, 12-Row, Twin-Row, 110 cm twin-row spacing
- YP625TD18TP110 Yield-Pro® Model 625, Two-Point, Dry Fertilizer, 18-Row, Triple-Row, 110 cm triple-row spacing
- YP925TD0965 Yield-Pro® Model 625, Three-Point, Dry Fertilizer, 9-Row, Single-Row, 65 cm row spacing

Note: The YP625PD (Pull-Type) model has a separate Operator manual (401-754M).

Description of Unit

The YP625TD & YP925TD twin- and triple-row Planters are semi-mounted (2-Point) precision planting implements with lift-assist.

The YP925TD0965 Planter is a 3-point precision planting implement.

The YP625TD & YP925TD are optimized for planting on beds^a 18 cm high.

The YP625TD & YP925TD includes 25AP Series openers with Air-Pro® meters supporting a wide choice of seed disks.

All are suitable for use in conventional till, minimum-till, or light no-till conditions. They include a dry fertilizer system, and optional frame-mounted coulters and/or row cleaners. Coulters make them suitable for light to moderate no-till conditions only.

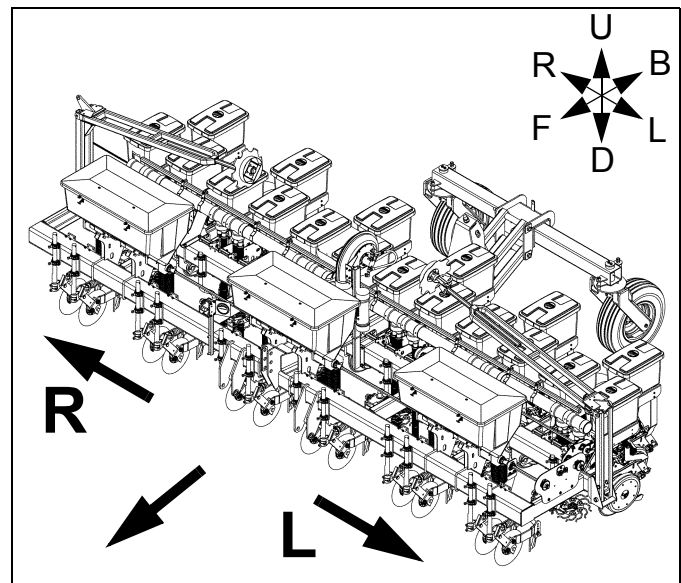


Figure 1
YP625TD18TP110 Planter

31793

Intended Usage

Use the YP625TD & YP925TD Planter to seed production-agriculture crops only. Do not modify the Planter for use with attachments other than Great Plains options and accessories specified for use with the YP625TD & YP925TD.

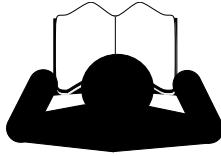
Document Family

401-755M	Owner's Manual (this document)
401-754B	Seed and Fertilizer Rate Manual
401-755P	Parts Manual
113-870M	Marker installation Manual
204-085M-A	Rigid Row Cleaner Manual
207-016M	Terra-Tine™ Operator/Parts Manual
11001-1372	DICKEY-john® PM300-332-400 Planter Monitor Operator's Manual
Bulletin A-27	Dwyer Magnehelic® instructions

a. For planting on flat ground, see "Appendix C - Flat Ground Planting" on page 125.

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.

“Option” indicates a feature or capability that is optional on the original Planter purchase, and may not be present. “optional” indicates an operator action that is not required.

Owner Assistance

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

Refer to Figure 2

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

Record your YP625TD & YP925TD Planter model and serial number here for quick reference:

Model Number: _____

Serial Number: _____

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

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

Definitions

The following terms are used throughout this manual.

NOTICE

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

Note: Useful information related to the preceding topic.

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

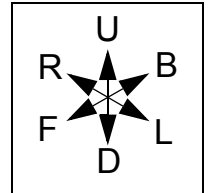
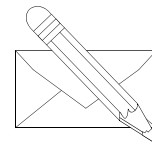


Figure 2
Serial Number Plate

31941

For further assistance write to:

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



gp_web_cs@greatplainsmfg.com

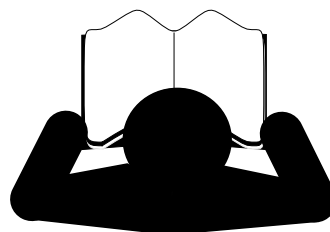
785-823-3276



Preparation and Setup

This section helps you prepare your tractor and YP625TD and YP925TD Planter for use, and covers tasks that need to be done seasonally, or when the tractor/Planter configuration changes.

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



Initial Setup

See “**Appendix B - Initial Setup**” on page 118 for first-time/infrequent setup tasks, including:

- Install seed monitor console in tractor (page 118).
- Set marker extension (Option, page 122).
- Install any Options not factory- or dealer-installed.

Post-Delivery/Seasonal Setup

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

- Bleed hydraulic system (page 85).
- Degrease exposed cylinder rod if so protected at last storage.

Pre-Planting Setup

Complete this checklist before routine setup:

Read and understand “**Important Safety Information**” on page 1.

Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.

Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 91.

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 109.

Hitching Tractor to Planter

The Planter has a Category IV^a hitch. The YP625TD12TR110 and YP625TD18TP110, which have lift-assist, are normally hitched as 2-point semi-mounted. The YP925TD0965 uses full 3-point hitching.

⚠ DANGER

Crushing Hazard:

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

1. To prevent soil compaction on rows, set tractor wheel center-to-center spacing to place wheels between Planter rows. For hillsides and steep slopes, set tractor wheels as wide as possible for stability.

Refer to Figure 3

2. Adjust tractor lower links ① to maximize lifting height.
3. Set tractor sway blocks to minimize side sway. Set tractor hitch lift control to Float.
4. Back tractor up to Planter. Align lower links with the lower hitch pins ② on Planter.
5. For Planter model YP925TD0965, align upper link ③ with upper 3-point pin holes ④ on Planter. Insert or relocate upper pin (not shown) as needed.
6. Raise tractor 3-point hitch until parking stand base plates ⑤ are slightly above ground.
7. Remove the pin ⑥ in each parking stand. Slide the stand up in the mount, and re-pin using one of the holes near the base plate.

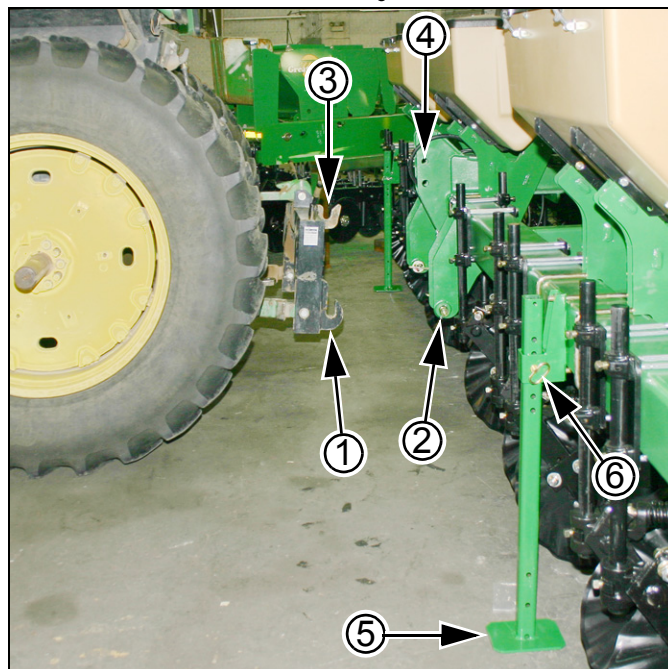
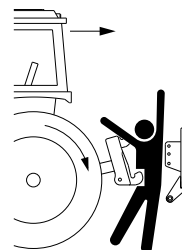


Figure 3
Hitching and Stands

31884

a. ASAE (ASABE) S217.12 DEC2001 (ISO 730-1:1994) Hitch Category

Electrical Hookup

Refer to Figure 4 (depicting an SAE J560b lighting connector - your connector may vary if it has been replaced due to different electrical conventions)

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

- Ⓐ Lighting connector (standard)
- Ⓑ Monitor connector (standard)
- Ⓒ Speed Sensor connector (standard)

Make sure tractor is shut down with accessory power off before making connections. These connections may be made in any order. The key requirement is that all connections be made prior to Planter movement.



Figure 4
Connector Identification

25236
31033
31950

Hydraulic Hose Hookup

⚠ WARNING

High Pressure Fluid Hazard:

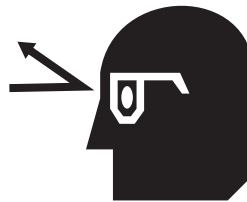
*Shut down tractor before making hydraulic connections.
Only trained personnel should work with system hydraulics.*

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

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

Refer to Figure 5

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



Color	Hydraulic Function
Black	Fan
Green	Marker (Option)
Blue	Lift (2-Point semi-mounted Planters)

Refer to Figure 5

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

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

NOTICE**Low Population Risk:**

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

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

Leveling Planter

For row units to function correctly, Planter must be:

- level from side to side,
- level from front to back, and;
- at correct tool bar height.

Perform this setup on level ground in representative field conditions.

Refer to Figure 6

1. Raise Planter so that gauge wheels are just off ground.
2. At each gauge wheel, measure the pre-compressed, no-load length of the yoke spring ①.

Both axles and yokes should be in the same (upper or lower) arm and mount holes. All springs should have this same length. Note this length for step 9.

See page 49 for factory setting, and adjustments for local conditions.

3. Check tire pressures of gauge wheels. As necessary, inflate to specifications (page 109).

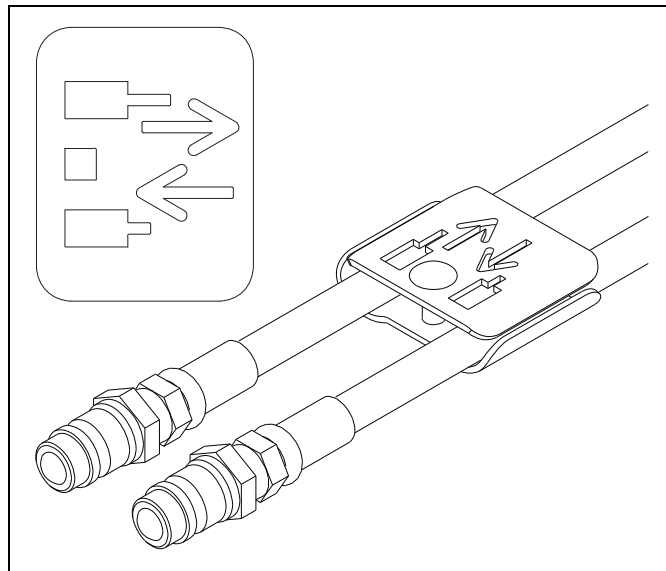


Figure 5
Hose Clamps

27270

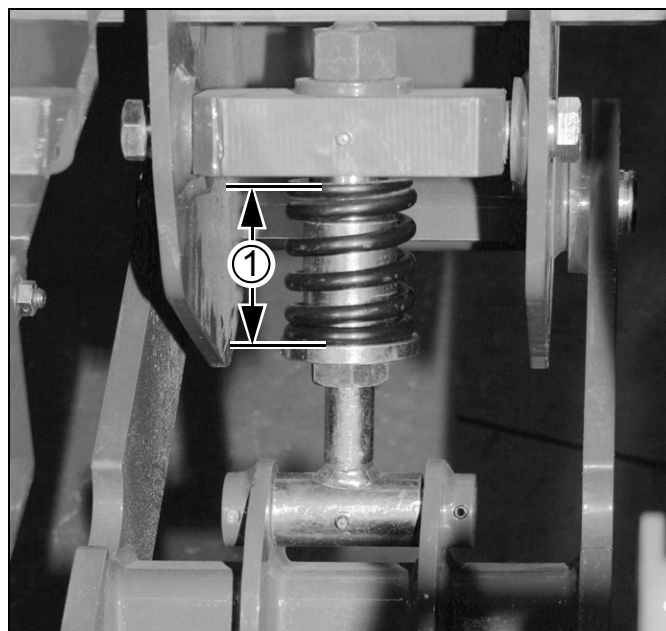


Figure 6
Gauge Wheel Yoke

31053

Refer to Figure 7

4. Measure height ② from bottom of main tool bar to ground, at each end. If this dimension differs by more than 6.4 mm at each end, adjust lower links of tractor to level side-to-side.

Note the current height for step 7, and what lowering would be required to make that 66 cm.

5. Check front-to-back level at top of main tool bar. If unlevel, adjust top of tractor three-point to level.
6. Pull forward slowly, and lower the Planter to approximately 66 cm. Stop the tractor and set the parking brake.
7. Check the tool bar height ②. Adjust the hitch height until it is 66 cm. If available, set a hitch stop control to capture this height.
8. Check that the row units are running level with the ground.
9. Check that the gauge wheels are all in solid ground contact, tires slightly compressed, and that the springs are slightly compressed from the length checked at step 2.

Hitch hydraulic circuit configuration during planting can vary between tractor models, and due to field conditions. Great Plains recommends starting with the hitch set to Float or Position/Depth Control (and not Load Control or Draft Control).

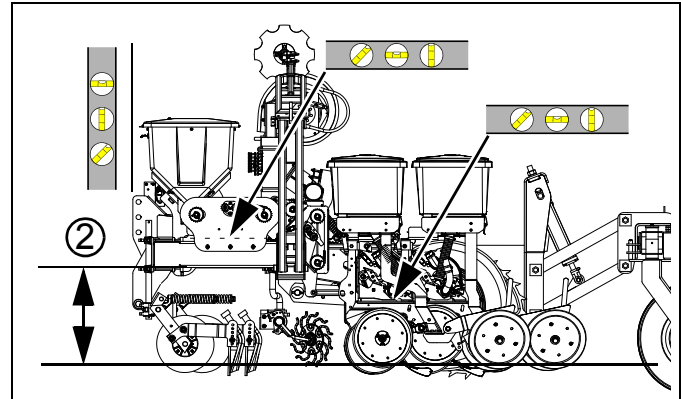


Figure 7
Tool Bar Height and Leveling

31857

Monitor Setup

Refer to Figure 18

The standard DICKEY-john® PM400 system monitors the following elements of a YP625TD and YP925TD Planter:

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

See **“Seed Monitor Console Installation”** on page 118.

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

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

Row spacing data may be found in the Appendix.

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

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

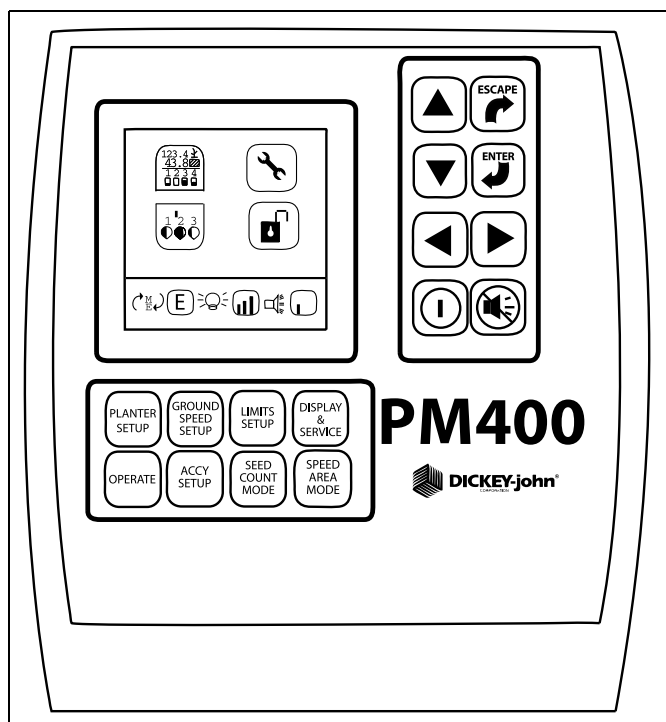


Figure 8
Monitor Primary Screen

31807

Marker Setup (Option)

Prior to first use, check and adjust:

- **“Marker Speed Adjustment”** on page 122.

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

- **“Marker Extension”** on page 122.

Prior to each planting session, check and adjust:

- **“Marker Disk Adjustment”** on page 48.

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 YP625TD & YP925TD Planter to the field.

Carefully read “**Important Safety Information**” on page 1.

Treated seed, or fertilizer: Review the application instructions and Material Safety Data Sheet (MSDS) for the seed and/or fertilizer.

Install seed disks appropriate for crop. See “**Air-Pro® Meter Disk Installation**” on page 61.

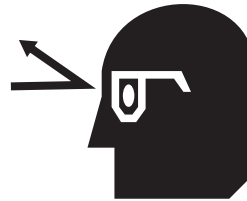
Lubricate Planter as indicated under “**Lubrication**” on page 91.

Check all tires for proper inflation. See “**Tire Inflation Chart**” on page 109.

Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 109.

Check Planter for worn or damaged parts. Repair or replace parts before going to the field.

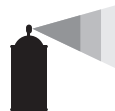
Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.



WARNING

High Pressure Fluid Hazard:

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



Raising/Lowering Planter

A 3-point Planter is raised and lowered using the tractor 3-point hitch.

A 2-point/lift-assist Planter is raised using the 3-point hitch in front, and the hydraulic lift assist cylinder at the rear of the Planter.

When lowering in field conditions, drive forward while lowering openers into ground. Never back up with openers in ground.

Hitch hydraulic circuit configuration during planting can vary between tractor models, and due to field conditions. Great Plains recommends starting with the hitch set to Float or Position/Depth Control (and not Load Control or Draft Control).

Lift Locks

Use parking stands (page 15) to hold front of implement at raised for parking, maintenance and storage. Raise parking stands for transport.

On twin- and triple-row models, use the lift-assist cylinder lock to hold the Planter rear at raised for transport, parking, maintenance and storage.

Refer to Figure 9

To install the cylinder lock channel:

1. Remove pin and lock channel ① from storage hole ② in right side of lift-assist weldment.
2. Raise Planter to transport position (page 20). Set lift circuit to Neutral to hold at raised.
3. Install lock channel on cylinder rod. Secure with pin.
4. If parking, storing or performing maintenance or adjustments, lower parking stands (page 15).
5. Lower Planter onto stands and lock channel.

Raise Planter, and hold at raised, before removing lock channel.

NOTICE

Machine Damage Risks:

Always fold markers (page 33) before raising or lowering.

Always raise the Planter for any reverse/backing.

Except on pavement, begin forward motion before lowering, as rows move backward slightly as arms swing up.

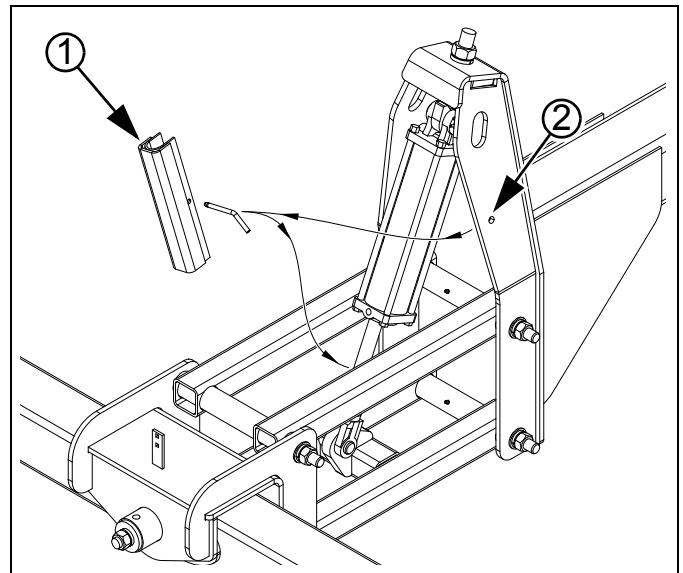


Figure 9
Lift-Assist Lock Channel

31920

Transport

⚠ DANGER

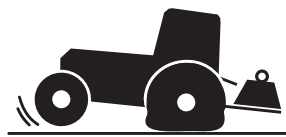
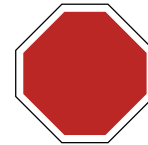
Loss of Control Hazard:

Do not transport with insufficient ballast or with an inadequate tractor.

Check that your tractor has enough ballast for the weight of the drill. A tractor with insufficient ballast has insufficient traction at the front wheels, causing loss of control, leading to a serious road accident, injury or death. Refer to your tractor operator manual for ballast requirements.

Check that tractor is rated for the fully-ballasted load. An inadequate tractor may be damaged by over-loading. It is also at risk for loss of control in turns and braking, leading to a serious road accident, injury or death.

The Planter can weigh nearly 7000 kg, depending on configuration and material load. The tractor MUST be rated and ballasted for the load. Do not tow if Planter exceeds the load rating of the vehicle. See chart at right for typical configuration weights.



⚠ CAUTION

Braking and Loss of Control Hazard:

Do not exceed 32 kph.

NOTICE

Reduction of Control Risk:

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

Approximate Weights of Representative Configurations

	YP625TD-12TR110	YP625TD-18TP110	YP925TD-0965
Base Planter	3400 kg	4100 kg	2700 kg
Typical¹ Empty	4000 kg	4600 kg	3100 kg
Typical¹ Full	5100 kg	6000 kg	4200 kg
Maximum² Empty	4600 kg	5400 kg	3800 kg
Maximum² Full	5800 kg	6700 kg	4800 kg
Center of Gravity³	-170 cm	-165 cm	-173 cm

1. Typical: Coulters. No Markers or Row Cleaners.

2. Maximum: Coulters, Row Cleaners, Markers.

Transport Steps

Transport only with markers stowed (page 33).

1. Check that Planter is securely hitched to a sufficient tractor (page 15).
2. Verify correct operation of lights.
3. Fold markers if unfolded (Option, page 33).
4. Raise Planter (page 20).
5. Raise parking stands (page 15).
6. If the Planter has lift-assist, install the cylinder lock (page 20).
7. Unload seed and fertilizer hoppers before transporting if at all possible. The Planter can be transported with a full material load, but the added weight increases stopping distance and decreases maneuverability.

NOTICE

Increased Hazards and Wear Risks:

Seed may be loaded prior to travel, but increases stopping distance, increases the need for caution in turns and braking, and increases tire wear.

8. If any seed is in hoppers or delivery hoses, close seed inlet shutters at meters (page 62).
9. Check that tires are properly inflated (page 109).
10. Plan the route. Avoid steep hills.
11. Always have lights on for highway operation.
12. Do not exceed 32 kph. Comply with all national, regional and local laws when traveling on public roads.
13. Remember that the Planter may be wider than the tractor or towing vehicle. Allow safe clearance.
14. Transport slowly over uneven or rough terrain.



Loading Materials

Hopper Operations

Refer to *Figure 10* and *Figure 11*

Hopper lids ① have distinct ends:

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

To open a hopper:

1. Pull the rear of the lid edge to the rear.
2. Swing the lid up at rear.
3. Disengage the lid at the front lugs.
4. Park the lid on the front lip of the hopper, using the hook-plate feature inside the lid (see *Figure 12* on page 24).

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

Loading Seed

5. Install correct seed disks (page 61).
6. Close all seed inlet shutters (page 62).
7. Check that each hopper is correctly seated and secured:
 - ④ pivot hooks engage at front,
 - ⑤ latch engaged at rear,
 - ⑥ seed hose secured to
 - ⑦ discharge weldment with
 - ⑧ clamp.
8. The hopper slide gate ⑨ may be left open (by pulling back), and doing so slightly increases seed capacity.

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

9. Open hopper lid ①.
10. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See **Material Clean-Out** on page 79.

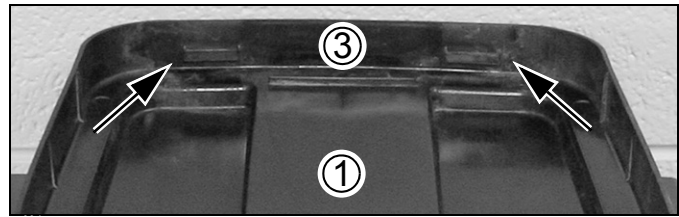


Figure 10
Hopper Lid Hinge Lugs

28131

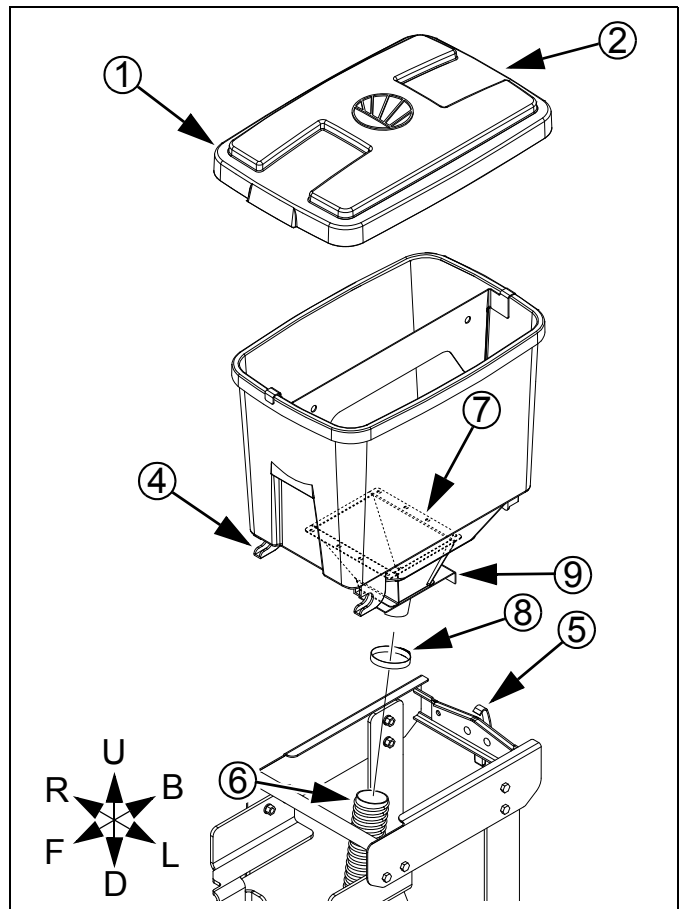


Figure 11
Air-Pro® Row Hopper

29975

Loading Seed, continued

CAUTION

Possible Agricultural Chemical Hazards:

Read and follow all supplier cautions for safe handling of treated seed.

CAUTION

Irritant and Chronic Exposure Hazards:

Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 2.

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

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

NOTICE

Population Risk:

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

12. Add seed and lubricant to hoppers.

Refer to Figure 10 and Figure 11 on page 23

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

NOTICE

Equipment Loss Risk:

Check that all 3 lid lugs are completely under the hopper lip, or the lid may come off in transport.

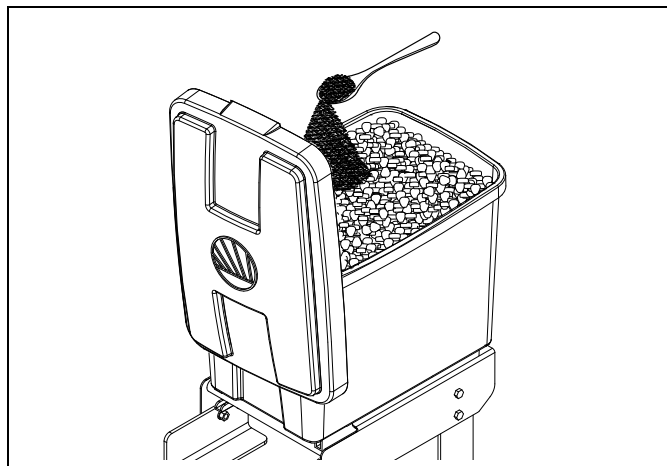


Figure 12
Adding Seed Lubricant

29976

Loading Dry Fertilizer

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

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

Suitable Materials

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

CAUTION

Agricultural Chemical Hazard:

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

System Inspection

Verify that both rear cradle pins are installed on all hoppers. See Figure 81 on page 81.

Refer to Figure 13

Remove the lid on each hopper and inspect for:

- residual fertilizer incompatible with next use
- contaminants
- debris that might clog the meter inlets ①
- trapped animals, lost tools, etc.

If it is necessary to clean a hopper, see “Dry Fertilizer Clean-Out” on page 81.

Hopper Lid Operation

Refer to Figure 14 and Figure 16

To unlock the hopper lid, lift the rubber latches ② out of the metal keepers ③.

Note: The keeper hardware ④ tends to snag under the hopper lip. Pull the lid edge forward and lift.

Refer to Figure 15

To open the lid, lift the front edge up and slide the lid back into a vertical position behind the hopper. The lid is held by retaining straps ⑤.

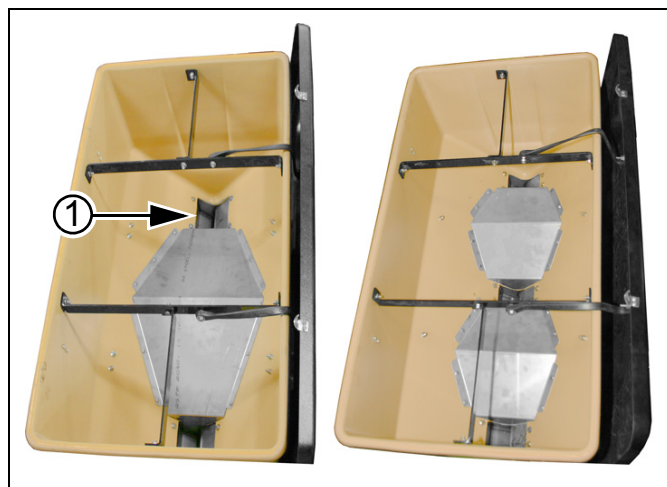


Figure 13
Empty 2- and 3-Outlet Hoppers

31866

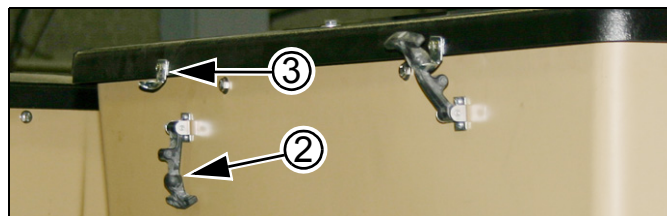


Figure 14
Hopper Latch Open and Closed

31866

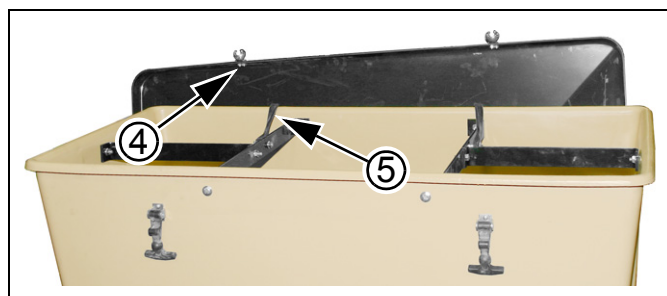


Figure 15
Hopper Lid Open

31865

Refer to Figure 14, 15 and 16

When closing the lid make sure that:

- the rear catch plates ⑤ are under the hopper rear lip,
- the keeper hardware ④ is under the front lip, and
- the ball of each rubber latch ② is seated in the keeper. (If only the handle "T" is seated, the lid is not secure.)

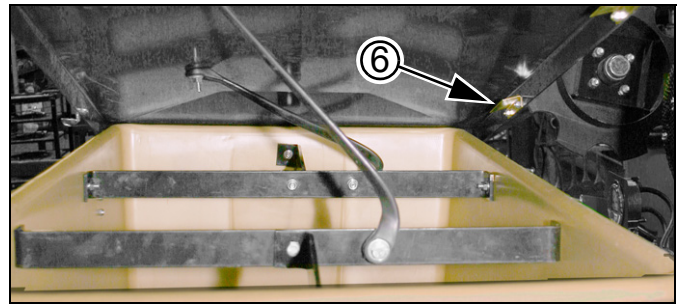


Figure 16
Hopper Lid Rear Catch Plate

31864

Dry Fertilizer Operation

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

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

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

The outlets of the fertilizer meters are normally connected to fertilizer drop tubes at the dry fertilizer coulters. See page 46 for adjustment of drop tube height and angle.

Refer to Figure 17

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

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

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

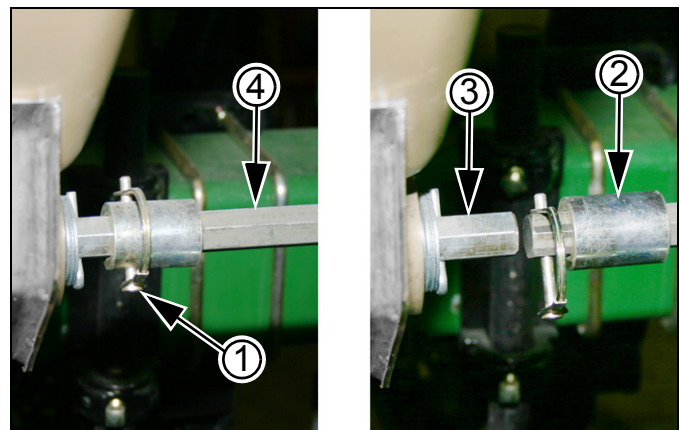


Figure 17
Dry Fertilizer Drive Coupler

31897

NOTICE

Material Loss / Machine Damage Risks:

Pin coupler clear of shaft gap. It may be possible to insert the pin through both the coupler ② and the driving shaft ④.

Do not do this. This may leave the coupler and driven shaft in contact. Field motion could cause the meters to operate. The coupler and driven shaft ③ could also be damaged.

Monitor Operation

Refer to Figure 18

The standard DICKEY-john® PM400 system monitors the following elements of a YP625TD and YP925TD Planter:

- Seeds at each row unit seed tube:

Medium and larger seeds are individually counted with high accuracy. Small seed sensing may be limited to seed stoppage ("blockage") detection.

- Ground speed:

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

For installation, see "**Seed Monitor Console Installation**" on page 118. For initial console setup, see "**Seed Monitor Console Quick-Start**" on page 119.

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

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

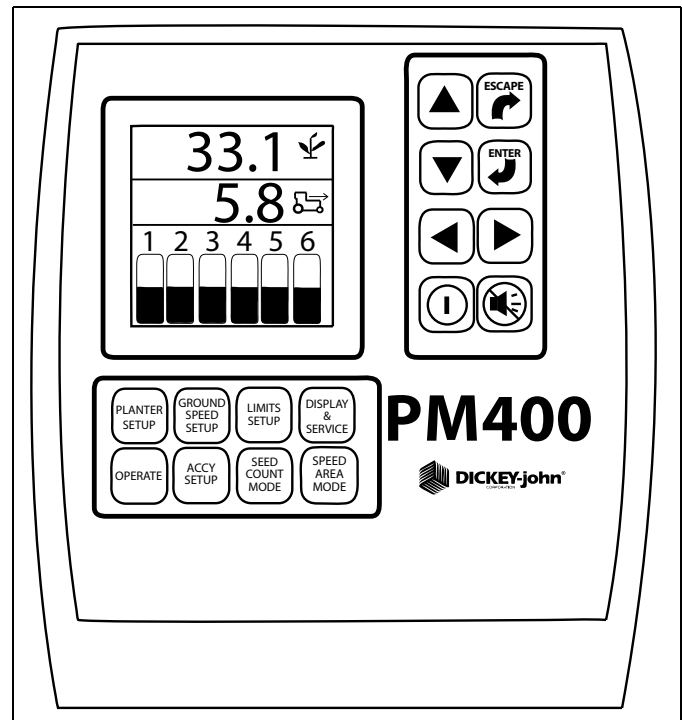


Figure 18
Monitor: Typical Operate Screen

31808

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

Air System Operation

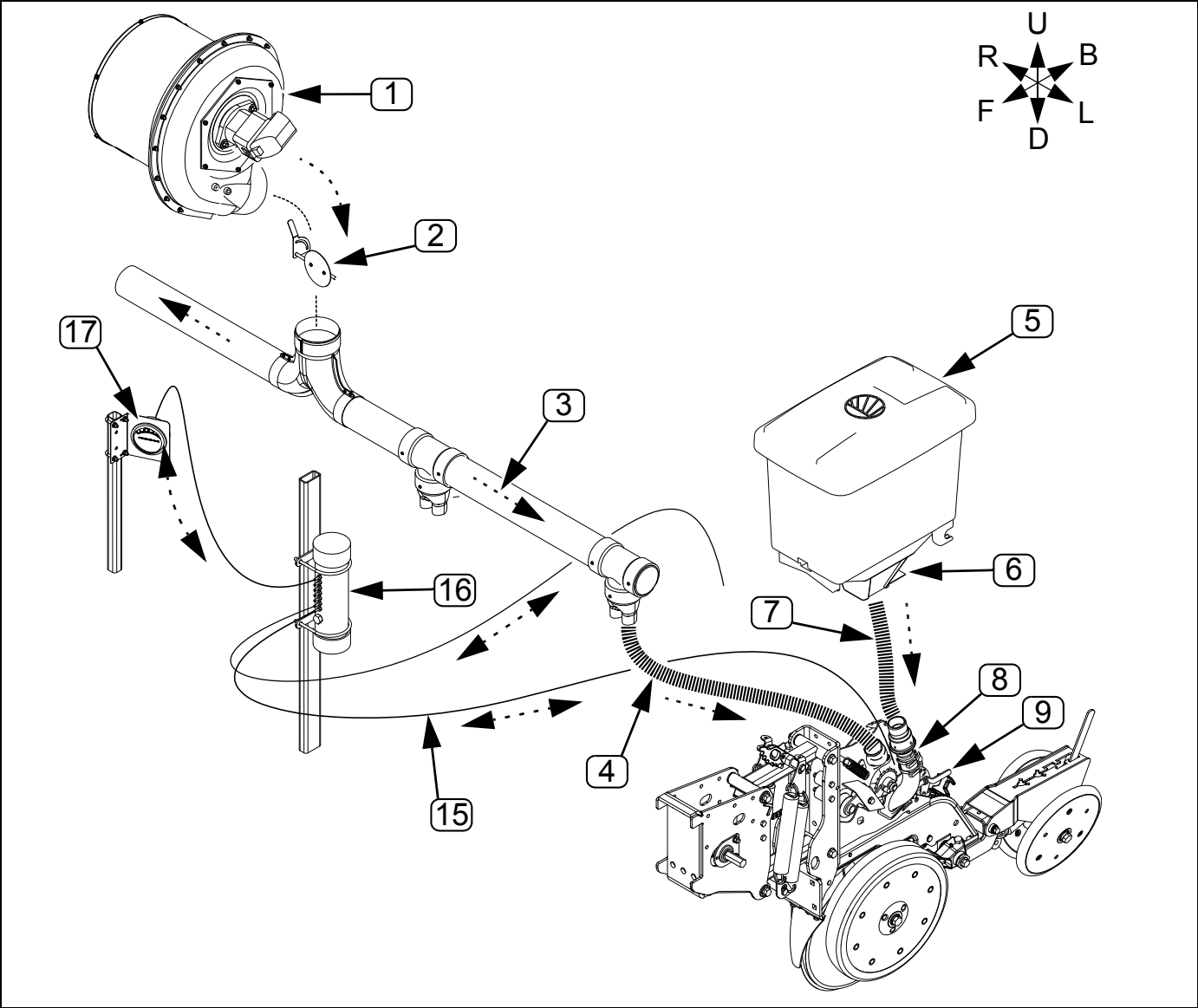


Figure 19
Planter Air System for Air-Pro® Seed Metering

29973

Meter Pressurization System Elements (-----► shows air direction)		
① Hydraulic Fan	⑦ Seed Hose	⑬ Seed Tube Sensor (Figure 20)
② Butterfly Valve	⑧ Air-Pro® Seed Meter	⑭ Sensor Port (Figure 20)
③ Meter Pressurization Air	⑨ Seed Inlet Shutter	⑮ Pressure Sensor Lines
④ Row Pressurizing Tube	⑩ Seed Pool (Figure 20)	⑯ Pressure Sensor Chamber
⑤ Seed Hopper	⑪ Disk Seed Pocket (Cell)	⑰ Magnehelic® Pressure Gauge
⑥ Slide Gate	⑫ Seed Hose (Figure 20)	

Air and Seeding System Overview

Refer to Figure 19, on page 28, and Figure 20.

The hydraulic fan (1) supplies air exclusively for meter operation. Fan rpm is operator-adjusted (page 31), normally via the tractor circuit's hydraulic flow control.

A manually-adjusted butterfly valve (2) is provided at the fan outlet. See page 31 for valve adjustment.

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

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

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

A manually adjusted inlet shutter (9) controls the size of the seed pool (10) at the base of the meter. The shutter also minimizes air loss up the seed inlet tube, and is used during row shut off. See page 59 for shutter adjustments.

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

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

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

The averaged pressure is reported by a Magnehelic®a gauge (17) visible to the tractor operator. See page 42 for use of the gauge in making fan adjustments.

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

Note: Use of the special blank disk (page 63), and closing the seed inlet shutter (page 59), are particularly important when a sensor row is shut off.

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

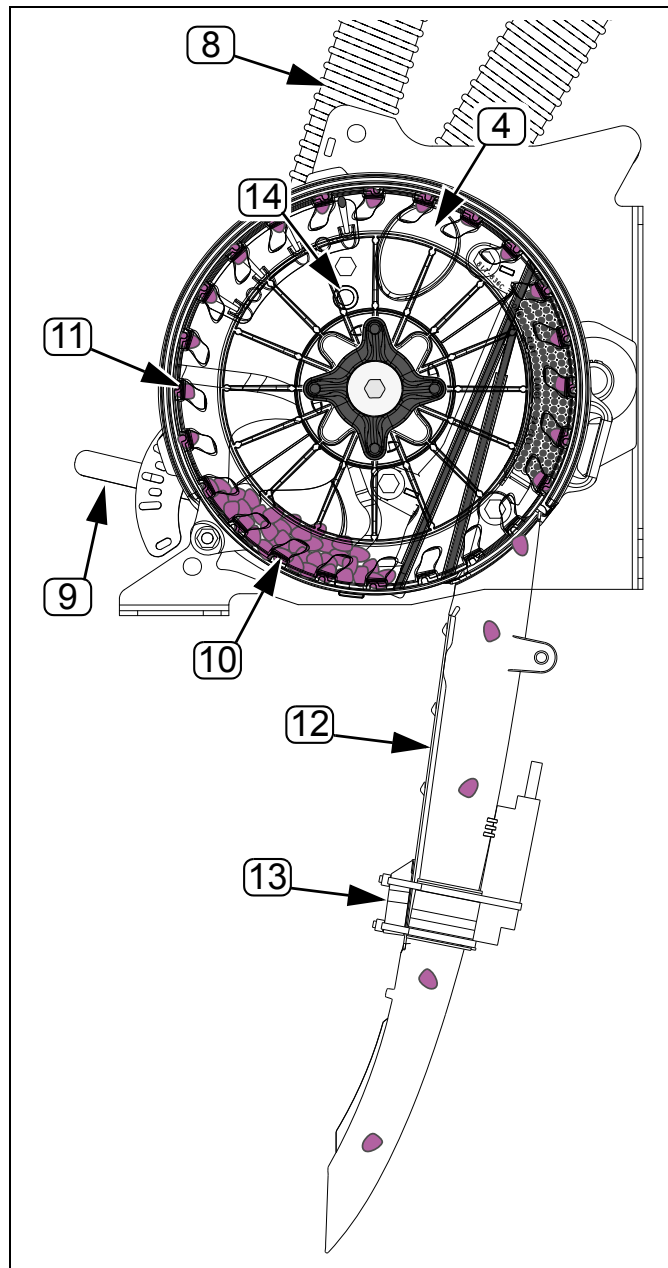


Figure 20
Air-Pro® Meter, Disk Side

31040

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

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

Fan Circuit Operation

See also “**Fan and Adjustment**” on page 42.

Refer to Figure 21

—▶ **Operating flow**

----▶ **Shut-off flow (fan coasting to stop)**

Two hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction ①, and at recommended speeds. See “**Hydraulic Hose Hookup**” on page 16.

1. Connect the motor return line ②, to remote circuit return (Extend port) or to sump.

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

2. Connect the motor inlet line ③ to a tractor remote capable of 20 liters per minute. If a priority remote is available, use it for the fan.
3. The fan hydraulic circuit includes a check valve ④, which provides a relief path for oil at motor shutoff. If the fan is connected in reverse, flow through this valve results in low fan rpm, providing strong indication reversed connection.

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

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

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

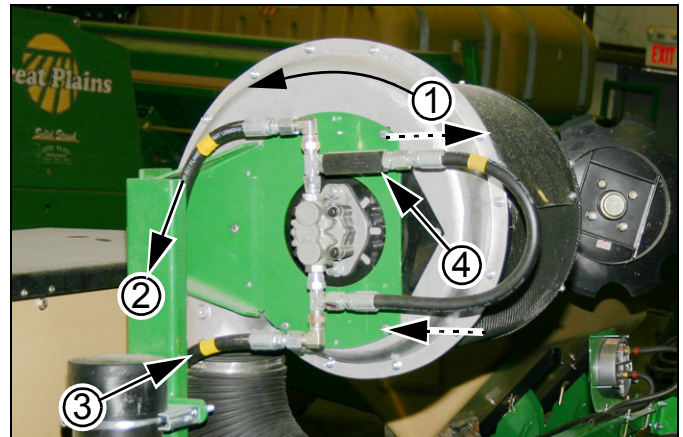


Figure 21
Hydraulics at Fan

31869

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

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

Fan General Operating Information

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

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

Refer to Figure 22

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

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

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

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

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

Always start the fan with a low flow setting.

Gradually bring fan up to the recommended initial meter pressurization.

At excessive rpm, too much air flow can cause:

- oil heating
- slow lift times

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

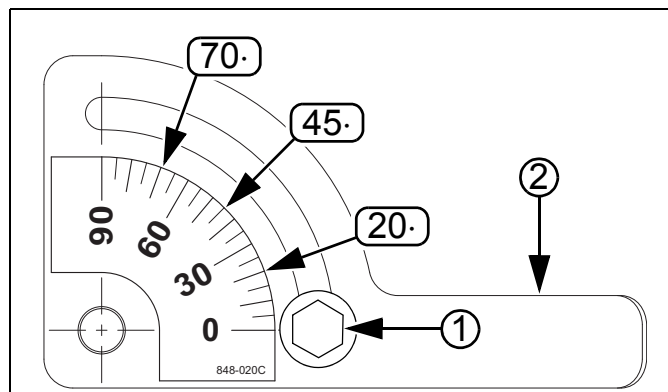


Figure 22
Fan Butterfly Valve Handle

25137

Butterfly Valve Operation:

To adjust, loosen bolt ① and rotate the handle ②. Tighten bolt.

0° is wide open - maximum air flow.

90° is closed - minimum air flow.

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

Starting at 30° reduces the fan workload.

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

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

NOTICE

Low Population Risk at Turns:

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

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

Air-Pro® Meter Operation

Refer to Figure 23

The meter disk is driven, top forward, by a chain drive (not shown) always connected to the main drive shaft. At non-planting rows, use a blank disk (page 63).

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

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

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

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

Meter Operation

1. Install disks for your crop/population range per the **Seed and Fertilizer Rate manual** and the instructions beginning on page 61 of this manual.
2. Open the shutter at planting rows to the recommended initial setting (from the Seed Rate charts). At unused rows, install a blank disk (page 63) and close shutter.
3. Set sprocket indexing if staggering a twin-row crop (see **Seed and Fertilizer Rate manual** for details).
4. Operate fan to achieve suggested manifold pressure (**Seed and Fertilizer Rate manual**, and page 42).
5. Open slide gates to fill meters.
6. With all rows primed, rotate meters one turn to fill pockets to edge of drop brush. Rotate the drive shaft (top forward) with a 23 mm wrench, or raise and rotate ground drive wheel (top forward).
7. Leave fan running (to keep seed in top pockets). Re-install rain covers. Commence planting. Meter operation is automatic from this point on.

See also:

“**Seed Pool Troubleshooting**” on page 69,
 “**Meter Clean-Out**” on page 80, and
 “**Meter Brush Maintenance**” on page 82.

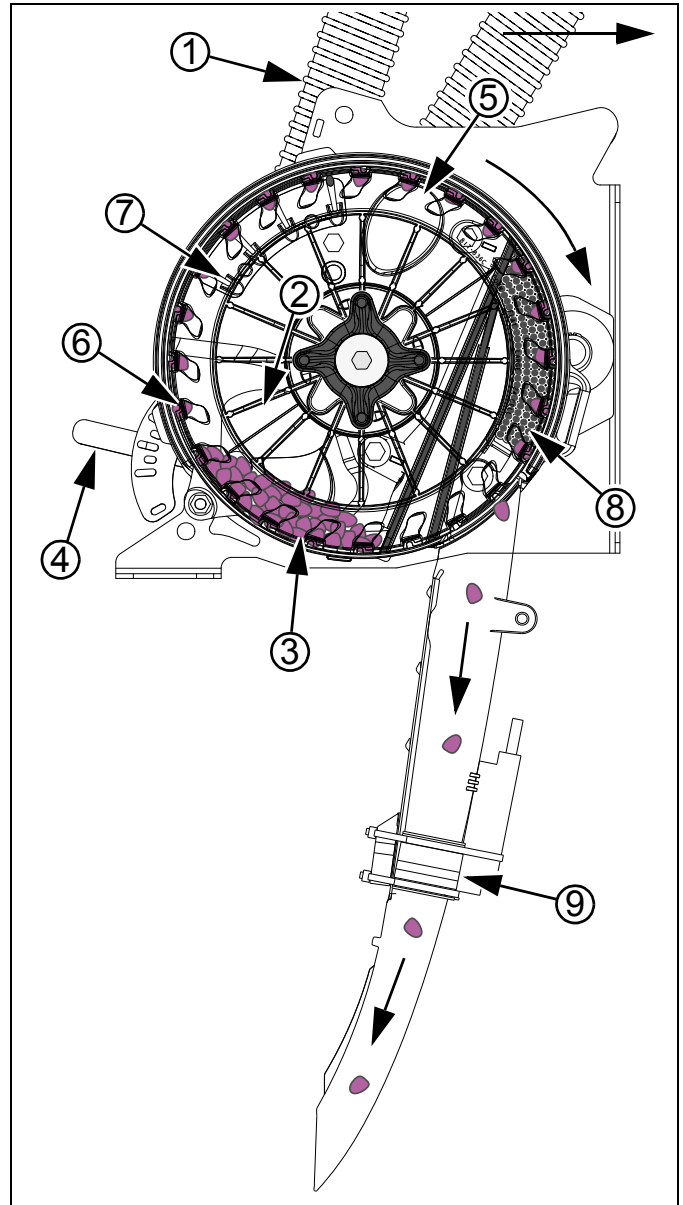


Figure 23
Air-Pro® Seed Meter at Row

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Marker Operation (Option)

Before Operating Markers

- Make sure cylinders are properly bled. See “**Marker Maintenance (Option)**” on page 87.
- This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see “**Marker Extension**” on page 122.
- Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See “**Marker Speed Adjustment**” on page 122.

Marker Unfold (one side)

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

Both Sides Unfolded

With both markers in the upright/tilted positions:

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

Row Marker Operation

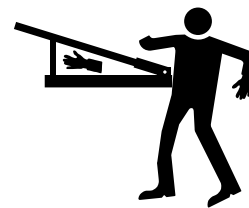
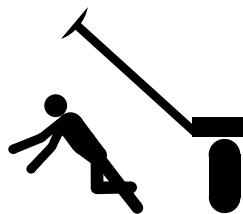
To alternate which side is marked:

1. Move the tractor's circuit control to Retract. Hold until marker is folded.
2. Move the tractor's circuit control to Extend. Hold until the new side's marker is fully unfolded.
3. Return tractor control to neutral/off.

Folding The Markers

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

1. Move the tractor's circuit control to Retract. Hold until marker is folded.
2. Tilt markers down for transport or storage.



WARNING

Overhead, Crushing and Sharp Object Hazards:

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

Field Set-Up Checklists

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

Mechanical Checklist (Hitching)	Page
☐ Planter hitched	15
☐ Parking stands raised	15
☐ Lift-assist lock channel installed	20

Electrical Checklist	Page
☐ Verify electrical hookups solid	15
☐ Check seed monitor terminal and observe any diagnostic messages	a
☐ Option: Verify that, when Planter is lowered, optional radar speed sensor is pointed at ground, at an angle approximately 35° below horizontal.	b

a. Refer to monitor manual.

b. Refer to sensor documentation.

Hydraulic System Checklist	Page
☐ Check tractor hydraulic reservoir full	-
☐ Inspect connections for leaks	-
☐ Perform a raise and lower operation	20
☐ Check fan speed and airflow direction	a

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

Mechanical Checklist (post-Hitching)	Page
☐ Raise Planter. Remove lift-assist lock	20
☐ Front-to-rear level	17
☐ Marker extension set	122
☐ Marker disc angle set	48
☐ Markers folded (unless already at start of first planting row)	33

Air System Checklist	Page
☐ Fan butterfly valve set	31
☐ Seed loaded. Lids closed.	23
☐ Meter shutters open to chart value	59
☐ No air leaks (except from seed hoppers)	
☐ Hoses and tubing - no sags, no pinches Check both manifold and sensor lines	
☐ Hoses fully connected to meters	

Planter Meter Drive Checklist	Page
☐ Check chain lubrication and slack	88
☐ Calibrate speed sensor pulses with Planter lowered.	a
☐ Seeding: Set/check Range and Transmission against rate chart	b

a. Refer to seed monitor manual.

b. Refer to Seed and Fertilizer Rate manual.

Row Units Checklist	Page
☐ Preset depth handles alike.	56
☐ Preset down force springs alike, except in tire tracks.	53
☐ Check closing wheel alignment	66
☐ Set press wheels alike, except in tracks.	66
☐ Check action and contact of side depth wheels	57
☐ Check wheel scraper gaps (if installed)	58
☐ Slide gates open	23

Fertilizer Checklist	Page
☐ Disengage left drive coupler if no fertilizer is being applied, otherwise ...	26
☐ Install correct DRIVING and DRIVEN sprockets for desired fertilizer rate	a
☐ Check and adjust applicator tubes	46
☐ Load fertilizer at field	25

a. Check Seed and Fertilizer Rate manual.

Meters Checklist	Page
☐ Corn? Check timing of meters for twin-row or triple-row	a
☐ Check chain tension. Reconnect any loose idler tensioning springs.	-
☐ Correct disks for seed	a
☐ Start fan. Operate at field manifold pressure.	30
☐ Rotate meter drive shafts one turn disks with seed.	32

a. Refer to Seed and Fertilizer Rate manual.

Field Operation

Perform all steps in “**Pre-Start Checklist**” on page 19 and “**Field Set-Up Checklists**” on page 34.

First Pass Operation Checklist	Page
1. Slide gates open. Shutters set.	32
2. Raise Planter and line up at start of first planting row.	20
3. Prime meters with seed. Leave fan running.	32
4. Unfold marker on next-row side.	33
5. Pull forward, lower Planter, and begin planting for a short distance.	20
6. Stop. Assess: • planting depth • seed spacing • press wheel operation • fertilizer application (if in use)	-
7. Make necessary adjustments	38
8. Resume planting.	-

Sharp Field Turns^a Checklist	Page
1. Fold marker	33
2. Raise Planter when fold is complete	20
3. Make turn	
4. Lower Planter	20
5. Unfold marker on next-row side.	33
6. Resume planting.	

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

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

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

Suspending Planting Checklist	Page
1. Stop tractor	-
2. Fan hydraulic circuit to Float or Neutral	30
3. Hydraulic drive circuit to Float or Neutral	-
4. Fold Marker	33
5. Raise Planter	20

Ending Planting Checklist	Page
1. Suspend operations as above, then	
2. Install lift-assist lock	20
3. Lights ON	-
4. Transport	21

Short-Term Parking

1. Fold markers (page 33).
2. Choose a location with level firm ground. Do not unhitch on a steep slope.
3. Fully raise Planter.
4. Lower parking stands (page 15).
5. Engage lift assist lock (page 20, if the Planter has lift-assist).
6. Lower Planter onto stands and lock.
7. Set hydraulic circuits to neutral.
8. Disconnect hydraulic lines. Secure them so that they do not touch the ground.
9. Disconnect electrical cables, capping where provisioned.
10. Unhitch.
Restart tractor and pull away from Planter.

Long-Term Storage

1. Clean-out fertilizer hoppers per “**Dry Fertilizer Clean-Out**” on page 81.
2. Complete Parking steps (left). Park the Planter indoors if possible. Great Plains recommends parking/storing on the parking stands in the raised position, with lift-assist lock installed (if the Planter has lift-assist).
3. See “**Material Clean-Out**” on page 79. Clear all seed from seed container, air box, seed delivery system and meters.
4. Close slide gates and latch hopper lids.
5. Remove seed disks from meters (this is primarily to relieve pressure on brushes). Clean disks of residue build-up (see Caution below). Use mild soap, non-abrasive scrubbers, and hot or warm water. If using sealed storage, dry disks prior to storage.

CAUTION

Possible Chemical Hazard:

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

6. Tie or tape a small plastic bag over ends of all seed delivery tubes to prevent insects from entering or nesting.
7. Close seed inlet shutters at meters (to prevent pest entry to seed hoses). Thoroughly clean seed and seed treatment residue from seed meters. See “**Meter Clean-Out**” on page 80, for more information.
8. Clean Planter of mud, dirt, excess oil and grease.
9. Lubricate all points listed in Maintenance.
10. Apply grease to exposed cylinder rods to prevent rust.
11. Inspect Planter for worn or damaged parts. Make repairs and service during off season.
12. Use spray paint to cover scratches, chips, and worn areas on the Planter to protect the metal.
13. Cover Planter with a tarp if stored outside.



Adjustments

To get full performance from your YP625TD and YP925TD Planter, you need an understanding of all component operations, and many provide adjustments for optimal field results. Some of these have been covered earlier in this manual.

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

Adjustment	Page	The Adjustment Affects
Frame height	49	Planting depth consistency
Frame level	17	Planting consistency
Flat ground Planting	125	Planting when not on 18 cm beds
Air System	28	
Fan Speed	31	Optimal seed distribution
Meter Pressurization (values from SRM ^a)	42	Consistent seed flow and disk singulation
Planting Rate	SRM ^a	Refer to Seed and Fertilizer Rate manual
Marker Adjustments		
Marker Extension	122	Intended swath spacing
Marker Speed Adjustment	122	Reliable marker operation
Dry Fertilizer Adjustments		
Fertilizer Rate	SRM ^a	Application rate
Dry Fertilizer Release	46	Fertilizer placement
Frame-Mounted Row Accessories (Options)		
Terra-Tine Row Cleaners (Option)	47	Row preparation
Frame-Mounted Coulters (Option)	44	Row pre-furrow depth and trash cutting
25AP Row Unit Adjustments		
Opener Depth	56	Planting depth
Row Unit Down Pressure	53	Planting depth uniformity
Row Unit Lock-Up	64	Single/twin-row operation
Rigid Row Cleaner Adjustments (Option)	55	Row preparation
Opener Disk Adjustments	56	Seed depth, seed-to-soil contact
Side Depth Wheels	56	Seed depth, prevents plugging
Adjusting Gauge Wheel Scrapers	58	Consistent seed furrow depth
Seed Meter Setup and Adjustment	59	Consistent seed population
Seed Firmer Adjustments (Option)	65	Seed-soil contact
Press Wheel Adjustment	66	Effective soil coverage
Monitor Adjustments	PM ^b	Refer to Seed Monitor manual

a. SRM: **Seed and Fertilizer Rate manual** (401-754B)

b. PM: DICKEY-john® **DICKEY-john® PM300-332-400 Planter Monitor Operator's Manual** (11001-1372)

Setting Material Rates

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

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

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

Planting Rate Details

1. Rate: Monitor configuration:

The seed monitor must be set up with the

- correct row count,
- correct row spacing,
- speed calibration and;
- expected population limits, in order to have accurately rate reports and useful alarms.

See the Seed and Fertilizer Rate manual (401-754B) and the DICKEY-john® DICKEY-john® PM300-332-400 Planter Monitor Operator's Manual manual (11001-1372).

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

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

2. Rate: Disk Selection:

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

See **"Air-Pro® Meter Disk Installation"** on page 61.

If any rows are unused, install special blank disks. See **"Row Unit Shut-Off"** on page 62.

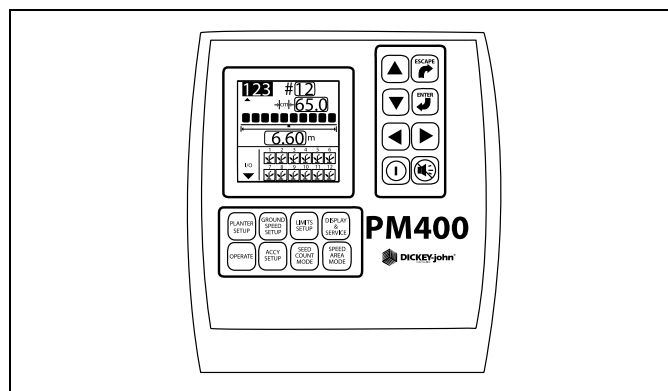


Figure 24
Monitor Setup Screen

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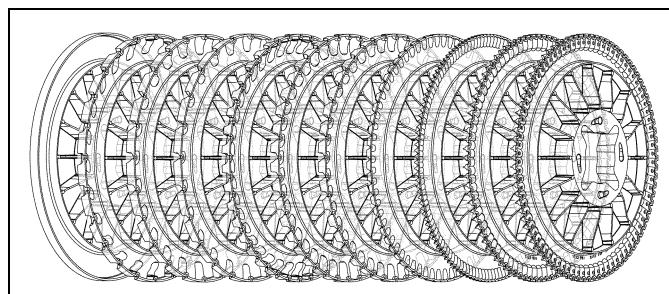


Figure 25
Air-Pro® Seed Disks

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3. Rate: Range Sprockets

Range sprockets provide coarse control of seed rate.

Refer to Figure 26 and Figure 27

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

To change Range:

- Rotate the spring-tensioned idler plate ①.
Lift chain off the DRIVING and DRIVEN sprockets.
- Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ②.

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

- Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.
- Remount chain (see page 88). Re-engage idler plate.

4. Rate: Transmission Sprockets

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

Refer to Figure 27

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

To change Transmission:

- Rotate the spring-tensioned idler plate ④.
Lift chain off the DRIVING and DRIVEN sprockets.
- Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft ③ at left end of frame.
- Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.
- Remount chain (see page 88). Re-engage idler plate.

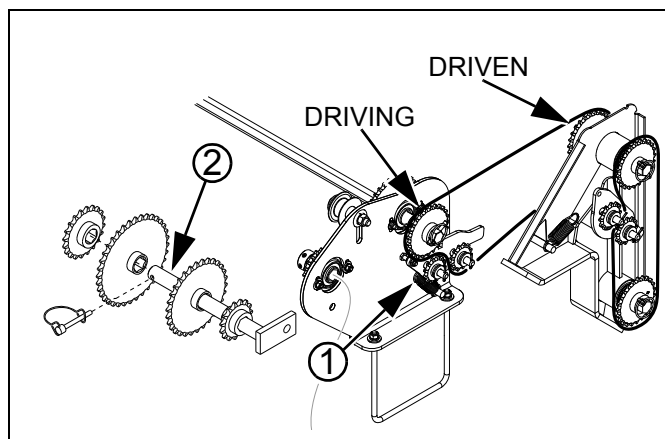


Figure 26
Range Sprockets

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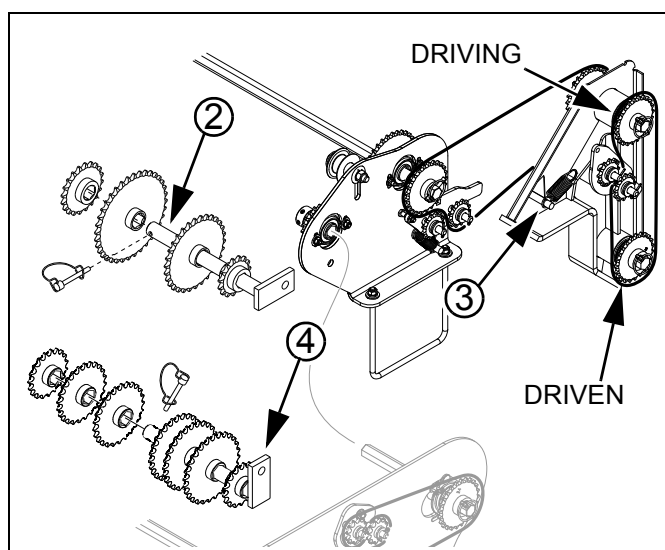


Figure 27
Transmission Sprockets

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5. Rate: Seed Inlet Shutter

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

Refer to Figure 28

One of the factors that affects seed pickup at the disk is having an optimal seed pool (page 60). The depth of the seed pool is controlled by the seed inlet shutter ⑤.

Each Seed Rate chart specifies a suggested initial shutter setting. See “**Seed Inlet Shutter Adjustment**” on page 59 for setting details, and further adjustment.

At unused rows, set the shutter to zero/closed to prevent loss of meter pressurization air. Install a blank disk. See “**Row Unit Shut-Off**” on page 62.

6. Rate: Meter Pressurization

Refer to Figure 29

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

A major factor that affects seed pickup at the disk is optimal meter pressurization. Fan air holds the seed in the disk pockets until they pass the drop brush (page 32).

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

Manifold pressure is set by a combination of tractor circuit lever and fan butterfly valve (page 31). See “**Air System Operation**” on page 28.

7. Rate: Checking

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

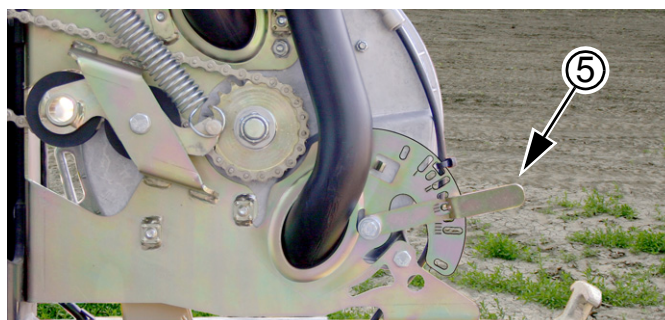


Figure 28
Seed Inlet Shutter: Setting III

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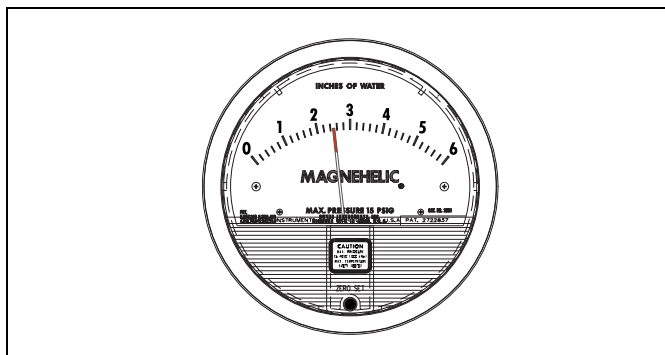


Figure 29
Meter Pressure Gauge

29842

Fan and Adjustment

1. These steps presume that correct seed disks are installed (per **Seed Rate Manual**), and the seed inlet shutters are set for the seed (page 59).
2. With fan off, check meter pressurization reported by the Magnehelic® gauge. Re-zero as needed.
3. Determine the recommended meter pressurization based on your own notes or the published value in the **Seed Rate Manual**.
4. Put tractor in Park and set brakes. Set tractor engine speed to typical field rpm. Lift Planter.
5. Start the fan. Gradually increase fan speed using the tractor's hydraulic flow control for the circuit. Using hydraulic flow and/or the butterfly valve, adjust meter pressurization to the developed or suggested value from step 3.
6. Rotate ground drive wheel to fill meters. Meters are filled when seed begins emerging below two or more openers. With fan running, put the tractor in Park and set the brakes. Walk behind the wings, remove several rain covers, and check for seed in meters by looking through the clear disks.
7. Re-check meter pressurization. With meters and disks filled, air loss through empty disk pockets is reduced, and meter pressurization can change.
8. Begin planting. Troubleshoot any obvious problems or optional seed monitor alarms.
9. During the first pass, take note of the average populations reported on the optional seed monitor.

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

For serious rate variances, for which the source of the problem and the solution are not quickly determined, see "**Population Troubleshooting Charts**" on page 71.

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

10. Resume planting.

A small varying population deviation between rows is normal. If a row is consistently running lower or higher than the other rows, it could indicate a meter or seed sensor problem that needs attention. "**Population Troubleshooting Charts**" on page 71.

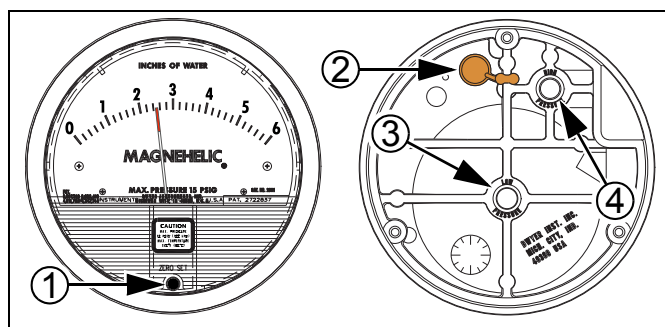


Figure 30
Magnehelic® Gauge

29842

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

Port ID for Troubleshooting:

- ② Over-pressure relief port (with plug in place)
- ③ Low-pressure port (breather/atmospheric pressure)
- ④ High-pressure port (from manifold chamber)

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

Furrow Check:

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

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

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

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

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

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

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

Fine-Tuning Meter Pressurization

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

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

Alternate Skip/Double Check

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

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

Dry Fertilizer Adjustment

There are two adjustment for dry fertilizer:

- Fertilizer Rate (below), and;
- Applicator tube height (page 46).

Dry Fertilizer Rate

This page is a summary. See **Seed and Fertilizer Rate manual** (401-754B) for complete details.

Refer to Figure 31

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

Note: Dry fertilizer rate is independent of seed rate.
Changes in seed rate do not affect fertilizer rate.

NOTICE

Application Rate Risk:

Make field checks to assure you are applying fertilizer at the desired rate. Fertilizer application rates vary with speed, material density, material granularity and atmospheric conditions. The charts provide only approximate rates for a specific density. See “Dry Fertilizer Rate Check” in the Seed and Fertilizer Rate manual.

Frame-Mounted Accessory Adjustments

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

Coulters Adjustments (Option)

Refer to Figure 32 and Figure 33

Frame-mounted coulters are installed on the front face of the front tool bar. They may have straight shanks ⑤ (as shown), or offset shanks.

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

There are 4 adjustment for coulters:

1. coulters height / blade depth (below)
2. blade angle (page 45)
3. row alignment (page 45)
4. blade style (page 45)

Note: Do not adjust the coulters spring length ⑨.
It is factory preset to 25.0-to-25.4 cm.

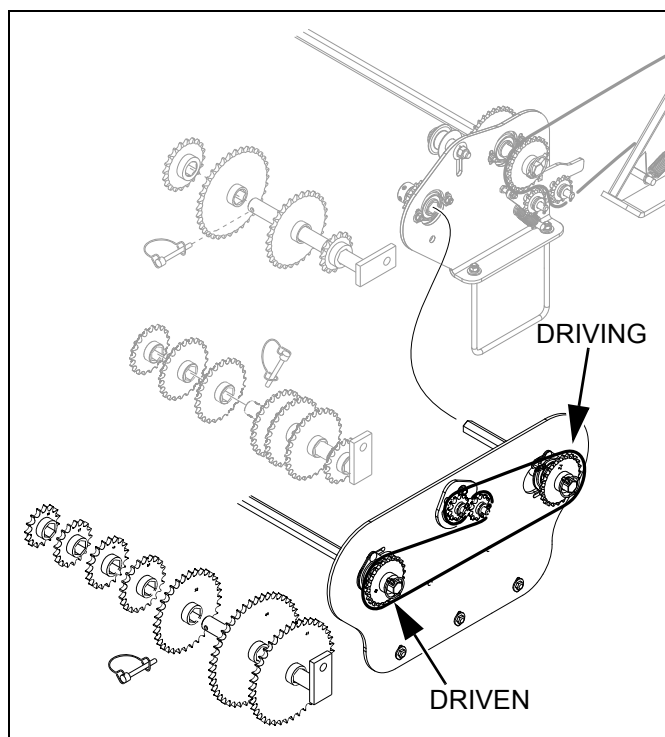


Figure 31
Fertilizer Transmission

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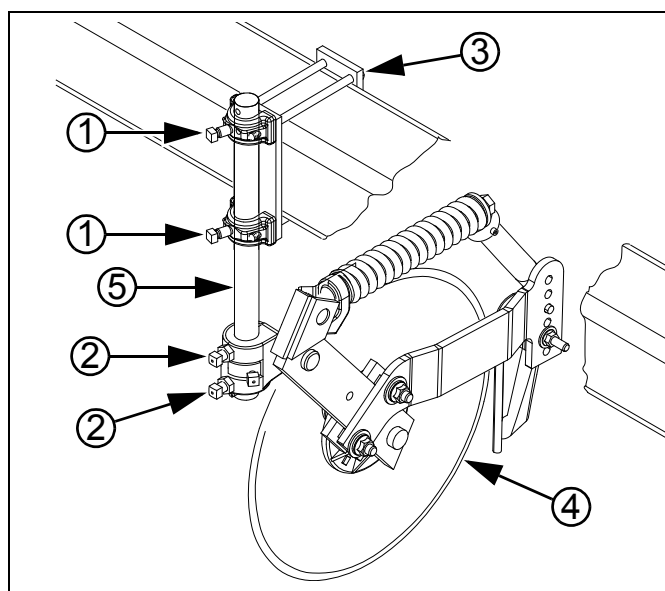


Figure 32
Frame-Mounted Coulters

31874

Coulter Depth

Refer to Figure 33

Set coulter depth prior to first planting. Suggested depth ⑧ is 6 mm deeper than planting depth. See page 56 for planting depth.

Suggested shank length ⑥ is:

23 cm

for a normal field tool bar height ⑦ of:

66 cm,

and a typical coulter depth ⑧ of:

10 cm.

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

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

New blade disks have a nominal diameter of:

51.6 cm.

When the diameter of a blade disk is worn to:

37 cm,

replace the blade.

To adjust coulter depth:

- Mark the coulter shanks for the new depth desired.
- Raise the Planter and install transport locks (page 20).
- Loosen jam nuts and set screws ① at the tool bar.
- Slide the shank up or down as needed. Tighten nuts.

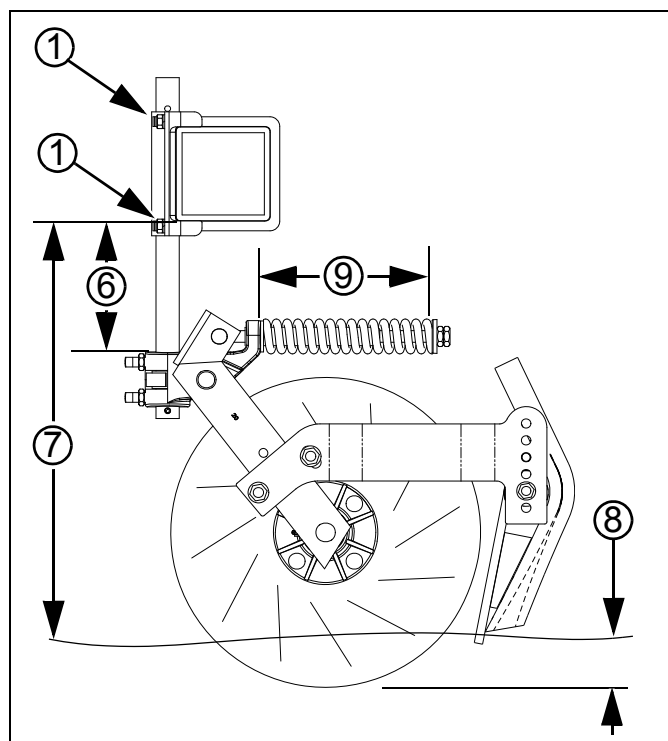


Figure 33
Coulter Depth

31919

Coulter Blade Angle

Refer to Figure 34

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

Coulter to Row Alignment

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

Coulter Blade Style

Coulter blades are available in two styles:

- fluted, with radial waves, and;
- turbo, with waves tangent to the hub.

To change blade styles, order replacement blades. See “51 cm (20in) Coulter Blades” on page 100.

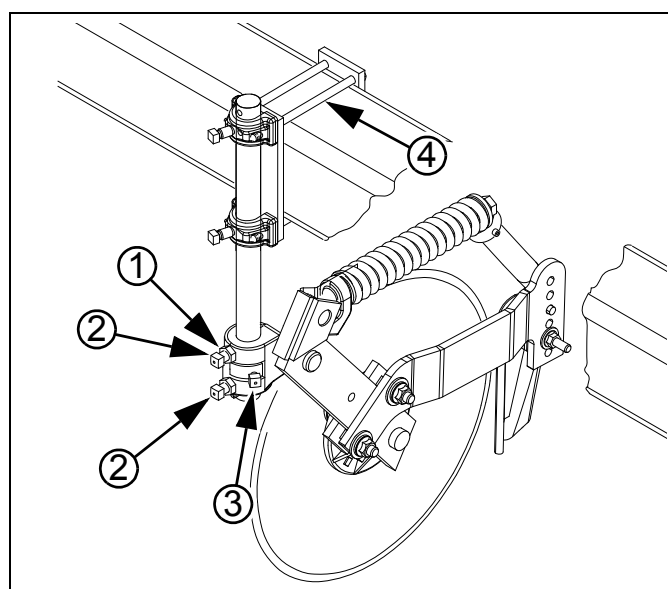


Figure 34
Coulter Blade Angle / Alignment

31874

Fertilizer Applicator Adjustments (Option)

There are two interrelated adjustment for applicators:

1. release height
2. release angle

Note: Make coultter adjustments before making applicator adjustments.

Applicator Release Height

The primary adjustment for release height is the lower four (of six) holes ⑤ at the rear end of the applicator arm. Reposition the applicator mounting bolt to any of the lower four hole. Before tightening the nut, make sure the torsion spring leg ⑥ is also in an arm hole.

NOTICE

Machine Damage Risk:

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

A secondary adjustment for release height is to loosen the clamping bolts ⑦, and slide the applicator arm up or down the coultter arm.

NOTICE

Machine Damage Risk:

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

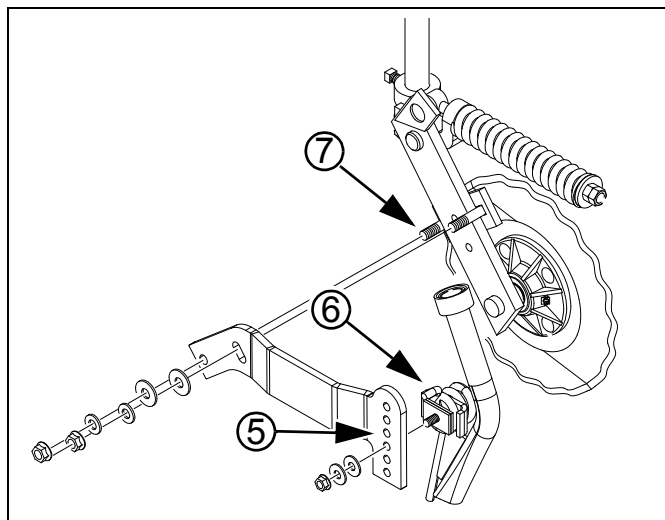


Figure 35
Dry Fertilizer Applicator

31872

Applicator Release Angle

Loosen the clamping bolts ⑦, and rotate the applicator arm at the coultter arm.

Note: Changing applicator angle also changes applicator release height.

Dual Terra-Tine™ Adjustment (Option)

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

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

There are three adjustments for these row cleaners:

Refer to Figure 36

1. down-force
2. height
3. row alignment

NOTICE

Excess Wear Risk:

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

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

Terra-Tine™ Down Force

Refer to Figure 37

A series of three holes in the spring adjuster ① and pivot mount plate ② provide five combinations for different levels of spring tension. The following table shows the down-force levels available.

Terra-Tine™ Spring Tension (per Tine Disc)		
Position	Newtons	Pounds
1	53	12
2	76	17
3	98	22
4	120	27
5	138	31

31875

Note: Changing force also changes height.

Terra-Tine™ Height

Refer to Figure 36

Adjust down-force before adjusting height. To adjust height, loosen both set screws ③. Slide mount up or down shank. Check row alignment. Tighten set screws.

Terra-Tine™ Row Alignment

The lateral position of the Terra-Tine™ may be changed by loosening the offset shank set screws ④ (and height set screws ③) and/or the tool bar mount bolts ⑤.

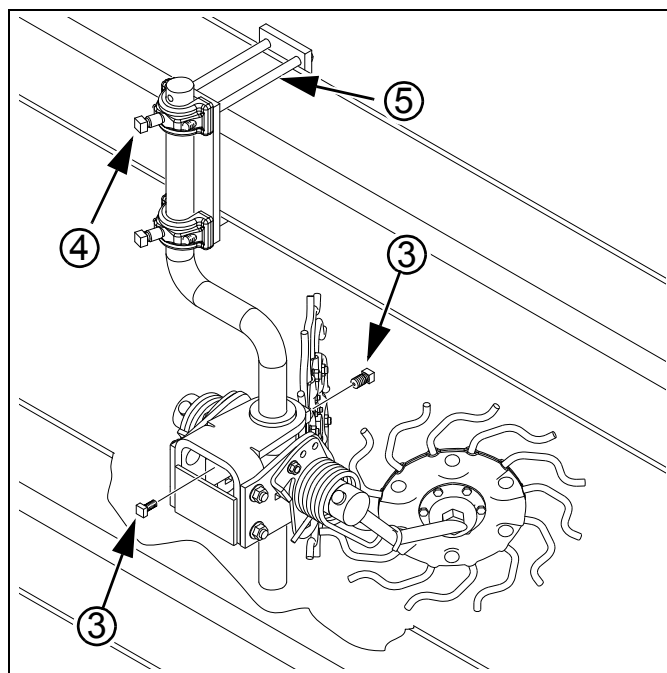


Figure 36
Dual Terra-Tine™

31873

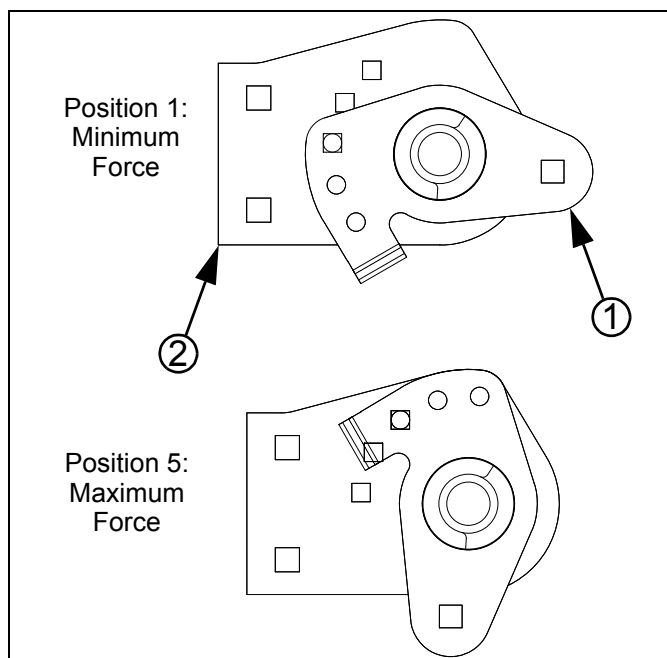


Figure 37
Terra-Tine™ Force

13156

Marker Adjustments (Option)

See also:

- “Initial Marker Setup (Option)” on page 122 for marker speed and marker extension
- “Marker Operation (Option)” on page 33; and,
- “Marker Maintenance (Option)” on page 87 for marker shear bolt and marker hydraulic bleeding

Marker Disk Adjustment

CAUTION

Sharp Object Hazard:

Use caution when making adjustments in this area.
Marker disks may be sharp.

Refer to Figure 38

1. To change angle of cut, and the width of the mark, loosen 1 ½-inch bolts ② holding the disk assembly.

For a wider mark ④, increase the angle of the marker with respect to the tube ①. For a narrower mark ③, reduce the angle.

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

2. Tighten bolts ②.

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



CAUTION

Sharp Overhead Object and Pinch/Crush Hazards:

Never allow anyone near the Planter when folding or unfolding the markers. Markers may fall quickly and unexpectedly if the hydraulics fail. Anyone beneath may be injured if hit by an unfolding marker, or caught in a folding

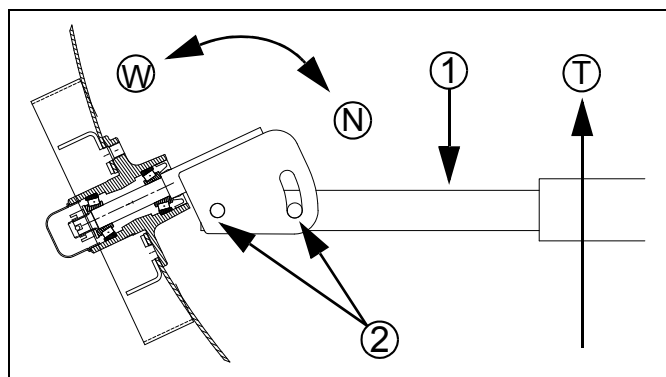


Figure 38
Marker Disk Angle

11757

Gauge Wheel Adjustments

The minimum tool bar height is limited by the gauge wheels. In some conditions, such as ridge planting, you may need to use a tool bar height lower than 26in.

Refer to Figure 39

There are three adjustments for this at the gauge wheels.

1. Gauge wheel yoke spring length: This provides a variable height reduction of up to 5.6 cm.
2. Axle hole change: This provides a 5.1 cm height reduction.
3. Spring yoke mounting hole: This adjustment provides an 18 cm change and is intended for switching between bedded and flat ground planting. See page 125 for details.

Making adjustments 1 and 2 provides up to 10.7 cm of tool bar height reduction.

Yoke Spring Adjustment

Refer to Figure 40

Check the length ④ of all springs before adjusting.

The maximum (and factory set) spring length is:

④ 7.6 cm

The minimum spring length is:

④ 6.0 cm

Each 1 mm of spring compression raises the wheel by approximately 3.5 mm.

To adjust the spring length:

1. Raise the Planter until the gauge wheels are slightly off the ground. Place blocks or jack stands under the frame for safety.

Note: If there is weight on the wheels, the springs may have additional compression and may not be at a length you can usefully measure.

2. Loosen the jam nut ⑤.
3. Rotate the adjuster nut ⑥ to set new spring length.
4. Tighten the jam nut.

Wheel Axle Adjustment

If the target tool bar height cannot be achieved with the spring adjustment, relocate the wheel axles in the arms. This lowers the Planter by about 5.1 cm.

1. Raise the Planter until the gauge wheels are slightly off the ground. Place blocks or jack stands under the frame for safety.
2. Remove bolts ②, located in lower holes, securing transport ground tire assembly to unit.

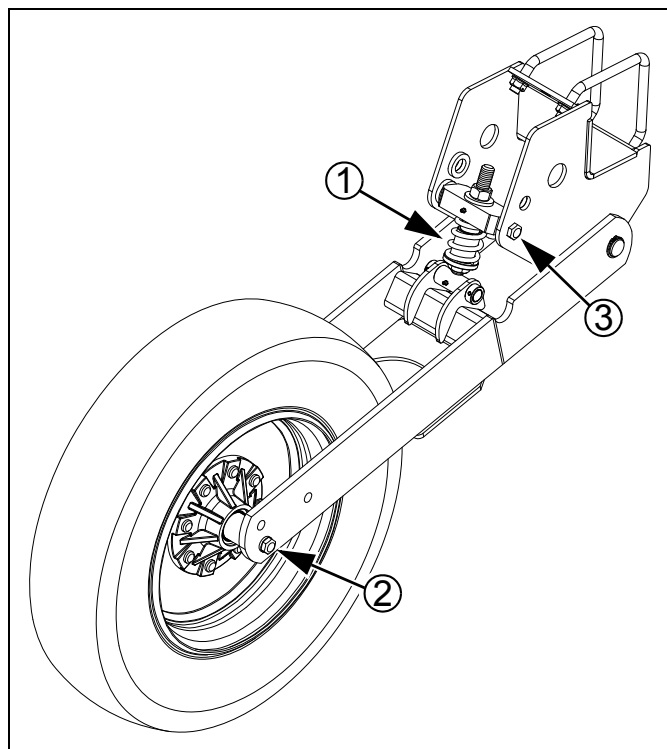


Figure 39
Gauge Wheel Height

31942

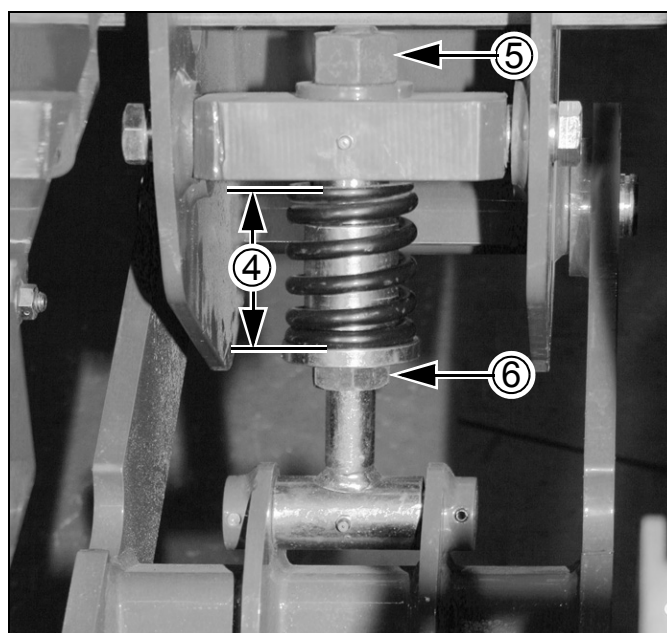


Figure 40
Gauge Wheel Spring Length

31053

3. Move wheel assembly and secure assembly to upper hole using previously removed bolt.

25AP Series Row Unit Adjustments

Refer to Figure 41 (which depicts a row unit populated with most optional accessories supported for use with the YP625TD & YP925TD)

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

1. **Lock-Up Pin Storage Hole** (Hole Standard)
See “**Row Unit Shut-Off**” on page 62.
2. **Down-Pressure Cam** (Standard)
Row units are mounted on parallel arms. This parallel-action mounting allows the row-unit to move up and down while staying horizontal. Springs add an adjustable force, set by the cam, to the row weight. See “**Row Unit Down Pressure**” on page 53.
3. **Meter Pressurization Air Inlet** (Standard)
Pressure-regulated air enters the meter here and holds seed in the disk pockets. See “**Fan and Adjustment**” on page 42.
4. **Seed Delivery Hose Inlet** (Standard)
When the hopper slide gate (not shown) is open, gravity carries the seed into the meter at the shutter ⑥. The hose is easily removed for inspection. There are no adjustments.
5. **Air-Pro® Seed Meter** (Standard, Choice of Disks)
See “**Air-Pro® Meter Disk Installation**” on page 61.
6. **Seed Inlet Shutter** (Standard)
This controls the level of bulk seed at the disk. There are four operating settings, plus fully open (clean-out) and fully closed (shut-off or storage). See “**Seed Inlet Shutter Adjustment**” on page 59.
7. **Side Gauge Wheel Depth** (Standard)
The T-handle sets planting depth by controlling the height of the side gauge wheels relative to the opener discs. See “**Side Gauge Wheel Adjustment**” on page 57.
8. **Press Wheel Force, Angle, Stagger** (Standard)
The press wheels close the furrow, gently pressing the soil over the seed to ensure good seed to soil contact for even emergence. See “**Press Wheel Adjustment**” on page 66.
9. **Row Unit Lock-Up Hole** (Hole Standard)
Pins are standard on some models. With the row unit raised above level, the lock-up pin is inserted here. See “**Row Unit Shut-Off**” on page 62.
10. **Rigid Row Cleaner** (Option)
Row cleaners clear trash from the row, to a depth set by an adjustment on the arms. See “**Unit-Mount Cleaner Adjustments**” on page 55.
11. **Opener Discs** (Standard)
Row-unit double disc openers create the seedbed furrow. They have adjustments for angle and spacing. See “**Row-Unit Opener Disk Adjustments**” on page 56.
12. **Seed Tube with Sensor** (Standard)
Requires no adjustment.
13. **Scrapers** (Optional, not shown)
Inside scrapers require no adjustment. For gauge wheel scrapers, see “**Adjusting Gauge Wheel Scrapers (Option)**” on page 58.
14. **Seed Firmers** (Seed Flap Standard, not shown)
An optional seed firmer (Keeton® shown) minimizes seed bounce and improves soil contact. It may also deliver fertilizer. See “**Seed Firmer Adjustments**” on page 65.
15. **Press Wheel Type** (Choice)
A variety of single and dual press wheel assemblies are available, some region-specific. Consult your Great Plains dealer.

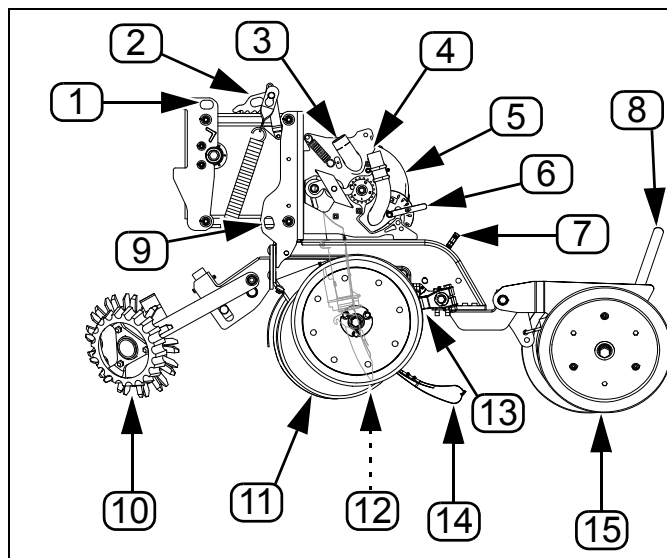


Figure 41
25AP Series Row Unit

31876

NOTICE

Equipment Damage Risk:

Do not back up with row units in the ground. To do so will cause row unit plugging and may result in severe damage.

Row Unit Down Pressure

Refer to Figure 42

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.

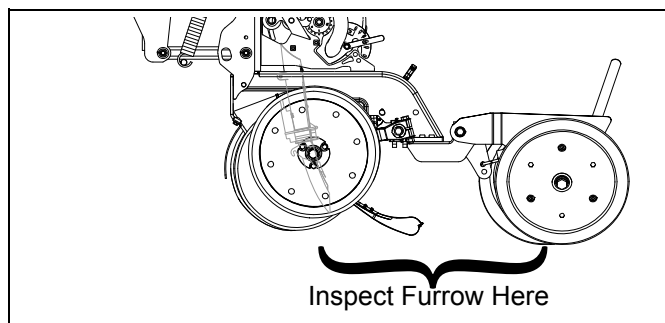


Figure 42
Checking Furrow

31879

Refer to Figure 43

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

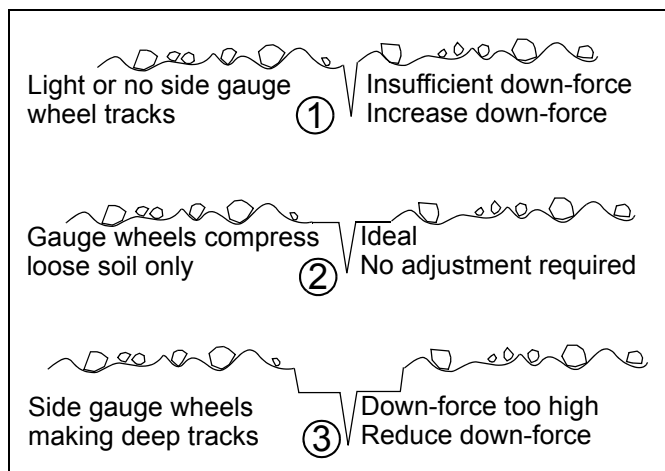


Figure 43
Assessing Down-force

Adjusting Down-Force

Refer to Figure 44

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 59 kg of the total force.

The springs allow the row units to float down into depressions and up over obstructions. Springs also provide down force on coulters when using optional row mounted coulters, and provide the primary down force on seed firmers (optional) and press wheels.

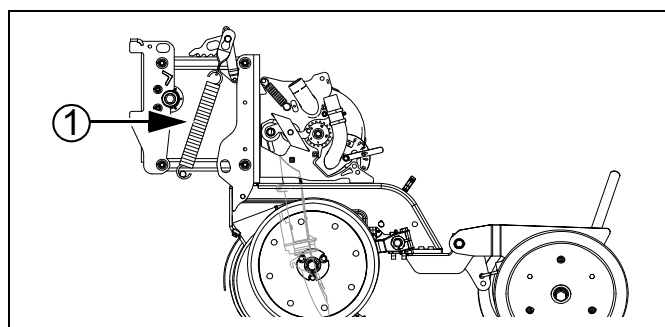


Figure 44
25AP Series Row Unit Springs

31879

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 rows.

Refer to Figure 46

Cam Notch	Pounds	Kilograms
zero (out of notch)	Lock-Up & Maintenance	
one	255	115
two	265	120
three	285	130
four	315	145
five	345	155
six	375	170
tip	Do Not Use	

Values are down force with hoppers empty

31947

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

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

Refer to Figure 45 (shown at cam setting 2), Figure 46 and Figure 47

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

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

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.

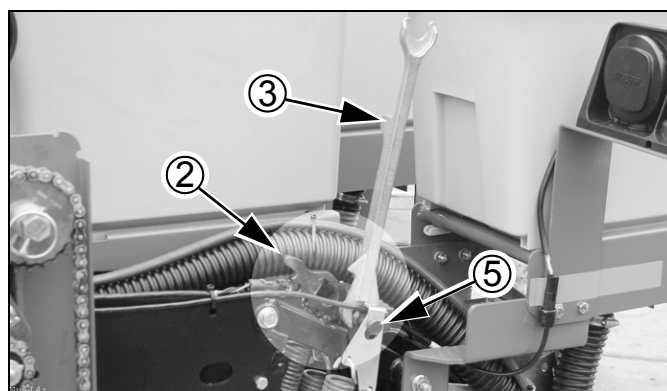


Figure 45
25AP Series Row Unit
Spring Adjustment

31034

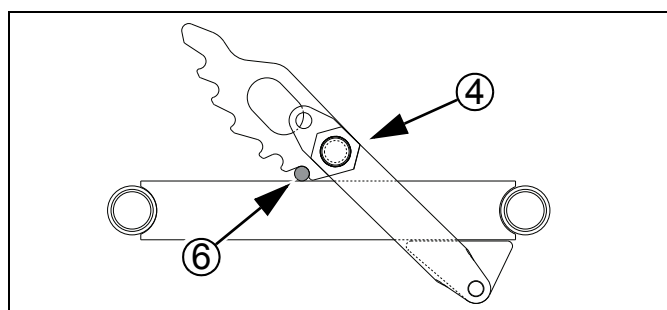


Figure 46
Row Unit Minimum Cam (at 1)

27065

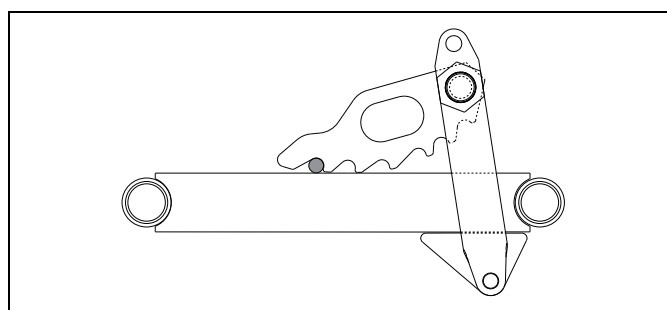


Figure 47
Row Unit Maximum Cam (at 6)

27065

Unit-Mount Cleaner Adjustments

Refer to Figure 48

Optional rigid row cleaners are unit-mounted.

There are two adjustments:

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

The row cleaner needs to be adjusted for your conditions, crop changes, and as 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.

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. Remove cotter pin ③ and bent pin ④.
3. Support arm at desired height.
4. Slide adjustment tube until cross-tube ② contacts arm at target height. Insert bent pin ③ in whichever hole pair is most in alignment. Secure bent pin with cotter pin.
5. Check the new height measurement.

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

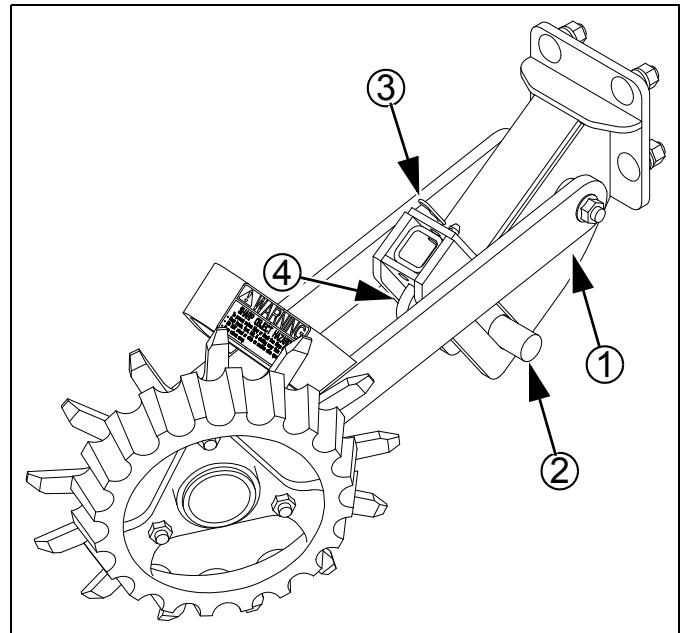


Figure 48
Rigid Row Cleaner Adjustments

27308

CAUTION

Sharp Object Hazard:

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

Row-Unit Opener Disk Adjustments

25 Series openers have three adjustments:

1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disk clearance (page 57)

Setting Planting Depth

Refer to Figure 49

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 50 and Figure 51

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

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

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

Adjusting Disc Contact

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

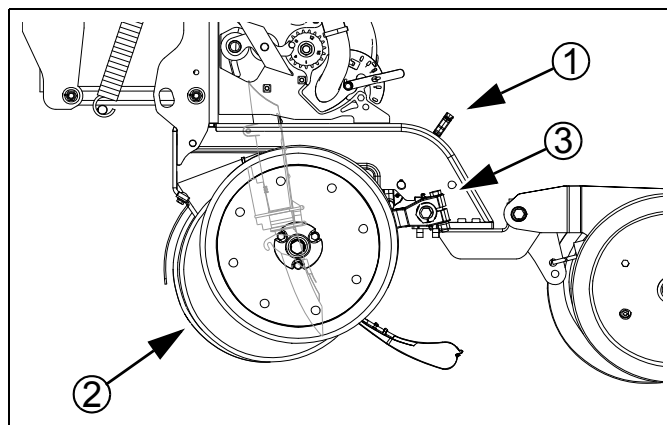


Figure 49
Opener Adjustments

31879

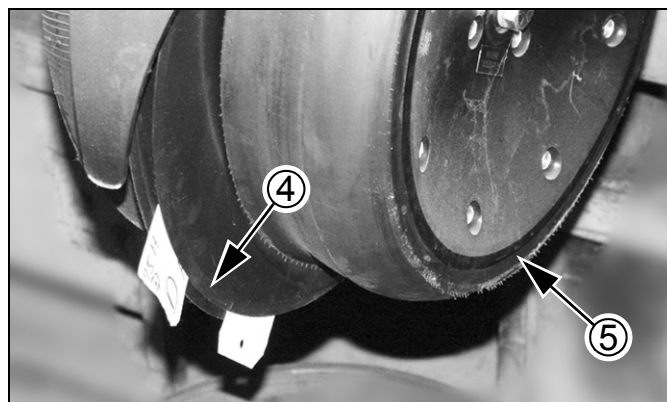


Figure 50
Opener Disc Contact Region

26127

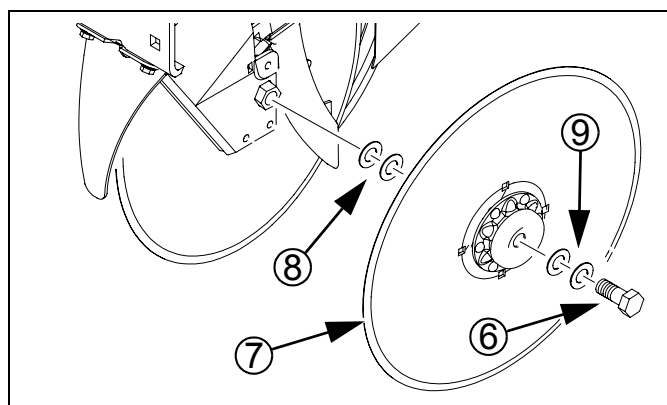


Figure 51
Opener Disc Spacers

26128

Side Gauge Wheel Adjustment

Refer to Figure 52 and Figure 53

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

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

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

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

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

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

Refer to Figure 55 on page 58

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.

Refer to Figure 54

5. Check wheel-to-disk contact at 5.1 cm planting depth. Lift wheel 5 cm, check contact and release. When let go, wheel should fall freely.

- If wheel does not contact disk at bottom to area where blade leaves contact with soil, move hex adjuster until wheel is angled for proper contact with disk.

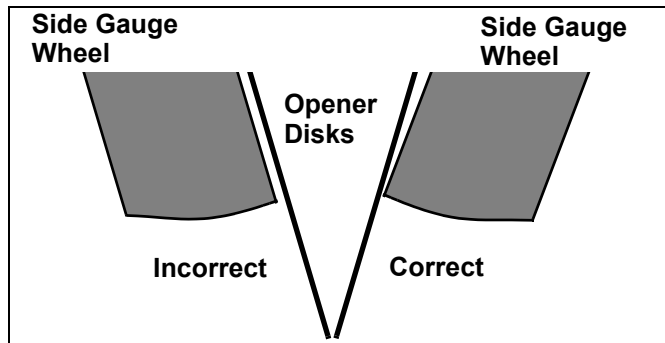


Figure 52
Disk/Gauge Wheel Alignment

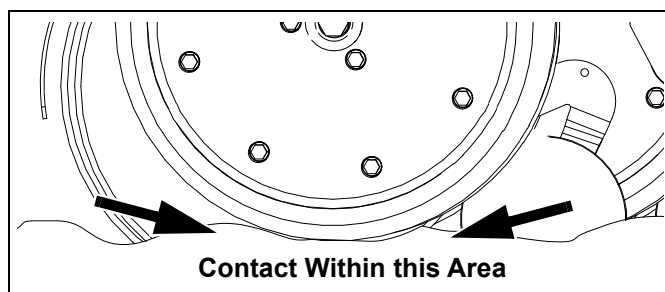


Figure 53
Opener-Gauge Wheel Contact

22531



Figure 54
Checking Wheel/Disc Contact

26129

- If wheel does not fall freely, loosen hex-head bolt ① and slide wheel arm out just until wheel and arm move freely. Retighten hex-head bolt ① according to grade:

1 ♣ 2in Grade 5 bolt, 102 N-m.

1 ♣ 2in Grade 8 bolt, 149 N-m.

Note: Use “**Torque Values Chart**” on page 109 for reference.

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

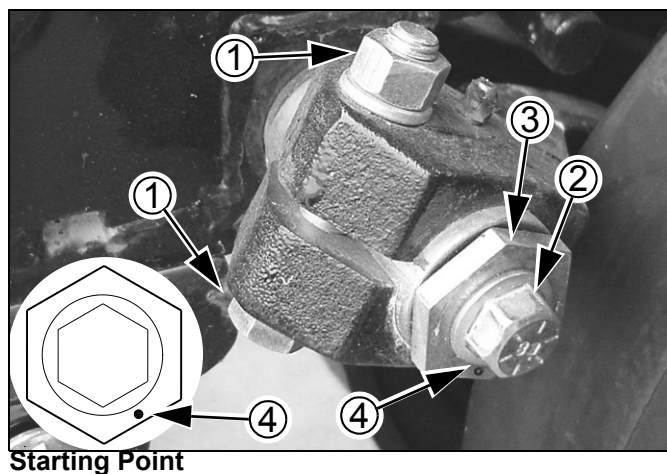


Figure 55
Disk/Gauge Wheel Adjustment

22524
22525

Adjusting Gauge Wheel Scrapers (Option)

Refer to Figure 56

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

To adjust scrapers:

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

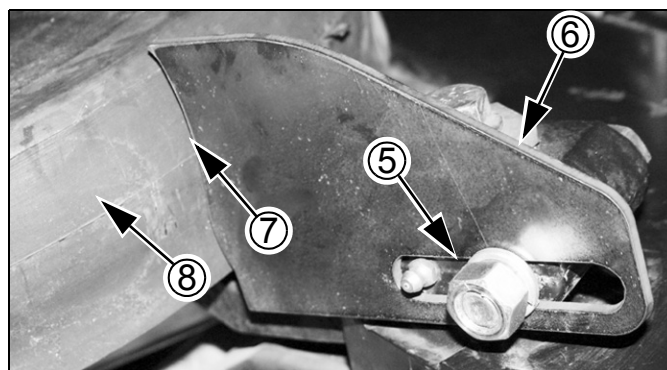


Figure 56
Gauge Wheel Scraper

25273

Seed Meter Setup and Adjustment

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

Meter Rain Cover

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

Refer to Figure 57

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

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

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

Seed Inlet Shutter Adjustment

Refer to Figure 58 (showing the shutter at setting 3)

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

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

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

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

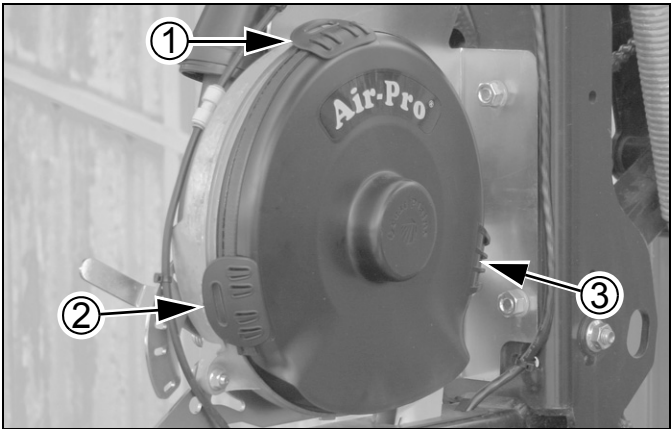


Figure 57
Rain Cover Removal

29606

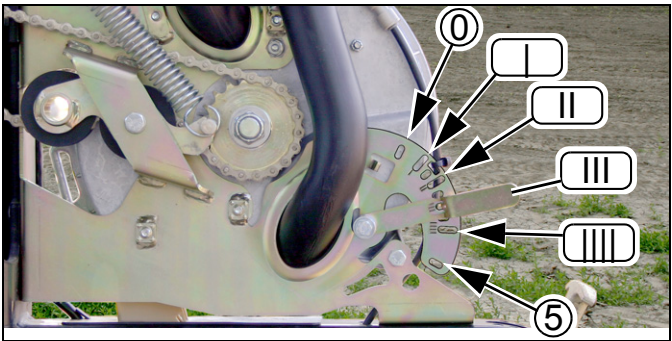


Figure 58
Seed Inlet Shutter

29607

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

Optimal Seed Pool Slopes

The optimal seed slope is one that results in the most consistent seeding, with minimal skips and doubles. The column at right has photographs of pool slopes found to be optimal for representative seeds.

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

Refer to Figure 59

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

Refer to Figure 60 and Figure 61

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

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

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

Meter Refill

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

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

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

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

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

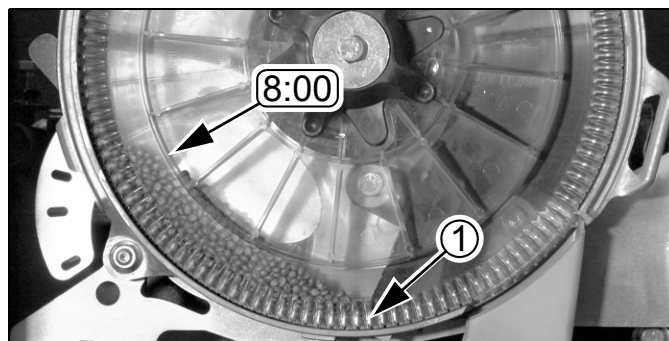


Figure 59
Milo: Seed Inlet Shutter at: 1

29602

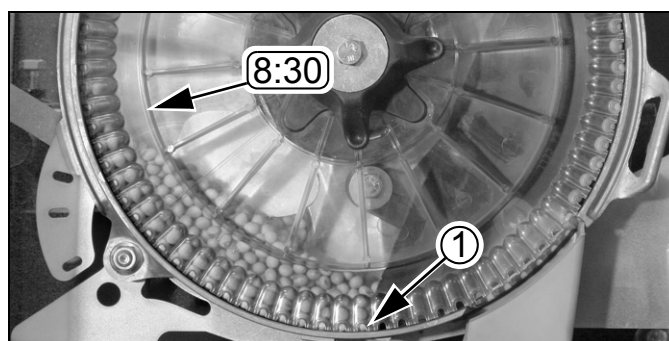


Figure 60
Soybeans: Seed Inlet Shutter at: 2

29604

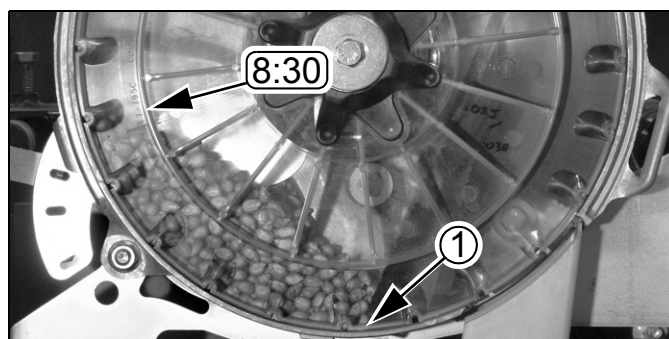


Figure 61
Corn: Seed Inlet Shutter at: 3

29603

NOTICE

Foreign Object Risk:

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

Air-Pro® Meter Disk Installation

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

NOTICE

Population Risk:

Use the same disk in all active rows.

2. Inspect disks to be installed. Do not install damaged or excessively worn disks. Either can cause irregular seeding. Chips and cracks accelerate brush wear.
3. Remove meter rain cover (page 59).

Refer to Figure 62 (depicting an empty meter)

4. Inspect meter (see page 82 for details).
5. Make sure clamp ① is aligned with seat ②.

Refer to Figure 63

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

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

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

NOTICE

Brush Mis-Seating Risk:

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

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

8. Reset seed inlet shutter ④ to setting recommended by Seed Rate Chart, or to your own developed value.
9. On the seed monitor console, select the new Material, seed disk Cell Count, and target population.
10. Re-install rain cover (page 59).

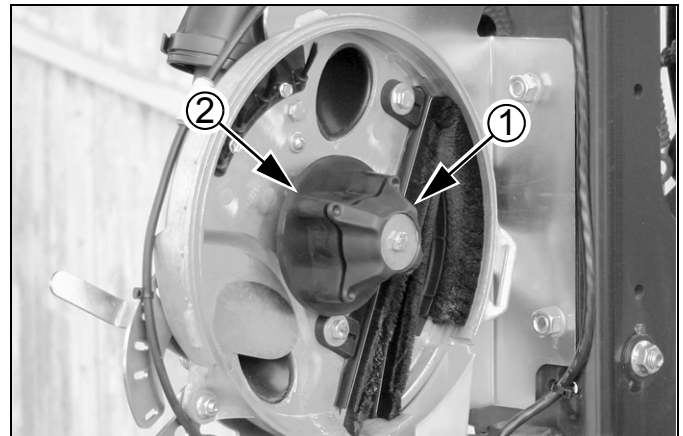


Figure 62
Disk Removed From Meter

29608

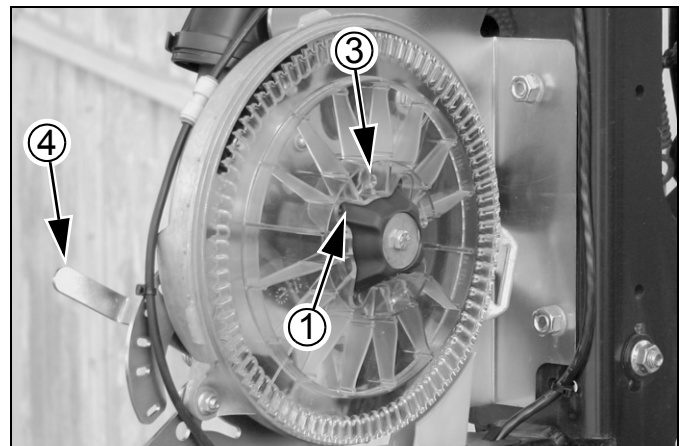


Figure 63
Disk on Clamp and Seat

29611



Figure 64
Disk Clamped

29614

Removing a Seed Disk

Refer to Figure 65

1. Remove rain cover. If seed is present, close shutter ④ to prevent more seed from entering meter. Attach funnel (page 80) or place a tarp under the row to collect seed.
2. Hold seed disk in meter. Rotate disk clamp ① counterclockwise 45° to release disk.
3. Tilting top of disk toward meter, slowly remove disk, allowing seed to collect in funnel or to control flow to tarp. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean disk seat (② in Figure 62 page 61), so that new disks can seat fully. Inspect brushes for excess wear and damage. See **"Meter Brush Maintenance"** on page 82.
5. Inspect removed disks for excess wear and damage. Set aside any disks requiring replacement. Clean other removed disks and place in storage. See **"Seed Disk Maintenance"** on page 84.
6. Re-install the rain cover (page 59).

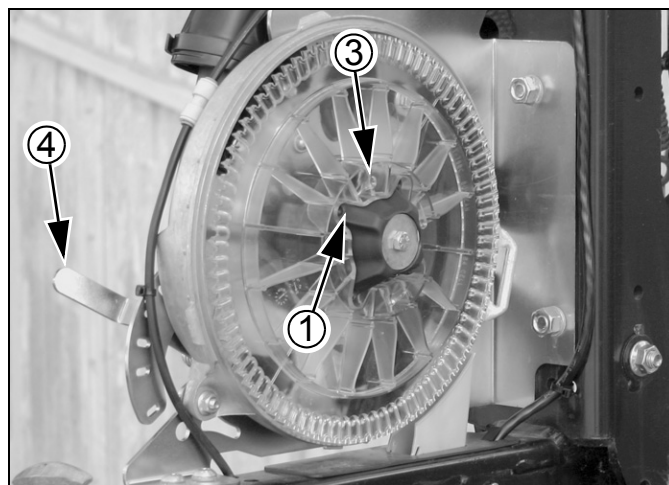


Figure 65
Remove Disk

29611

Row Unit Shut-Off

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

Shutting off seeding at a row involves 4 to 6 steps:

1. Identify the rows to shut off (page 63).
2. Fully close seed inlet shutter (page 63).
3. Replace seed disk with blank disk (page 63).
4. Lock up row unit to reduce wear (optional, page 63).
5. Reset marker extension (Option, page 122).
6. Reset monitor active row pattern and row spacing to avoid nuisance alarms (see Monitor manual).

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

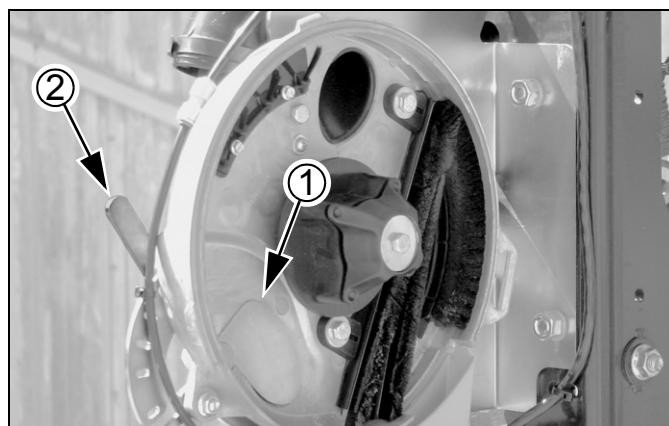


Figure 66
Seed Inlet Shutter Closed

29609

1. Identify Rows to Shut Off

On triple-row Planters, openers are installed with two short-mounts on the outside of each triplet, and the long-mount opener in the center of each triplet. For twin-row operation, shut off the left (short-mount) opener of each triplet. For 55 cm operation, shut off the center (long-mount) opener of each triplet.

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

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

If not locking up rows, any rows may be shut off.

2. Close Seed Shutter

Refer to Figure 66 on page 62

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

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

The shutter also stops seed flow from a row as soon as the meter is empty. Bulk seed flow to the row falls to nil as soon as the seed backs up to the air release vent at the top of the meter.

3. Install Blank Disk

Refer to Figure 67

Clean out meter. See “**Meter Clean-Out**” on page 80. Remove seed disk and install blank disk. See “**Air-Pro® Meter Disk Installation**” on page 61.

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

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

4. Lock-Up Row

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

Refer to Figure 68

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

Note: Lock-up pins are optional. The part number is 805-435C. Order one pin for each row locked-up.



Figure 67
Shutter Closed, Blank Disk Installed

29610

NOTICE

Irregular Seeding Risk:

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

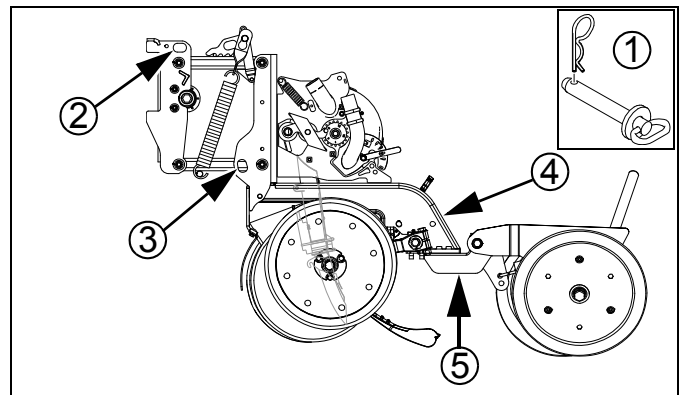


Figure 68
25AP Row Unit Lock-Up Pin

25269

31879

WARNING

Crushing and Sharp Object Hazards:

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

1. Raise the Planter. Although this adjustment can be made with the Planter lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Install lift assist cylinder locks. Lower parking stands.
3. Set the down pressure spring cam to zero, per the instructions on page 54.
4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm. This can be done in several ways, including:
 - a. use a hoist at the rear of the shank ④
 - b. use a jack under the shank extension ⑤

⚠ CAUTION

Crushing Hazard:

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

Refer to Figure 69 (which depicts a 4-spring 25 Series opener)

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

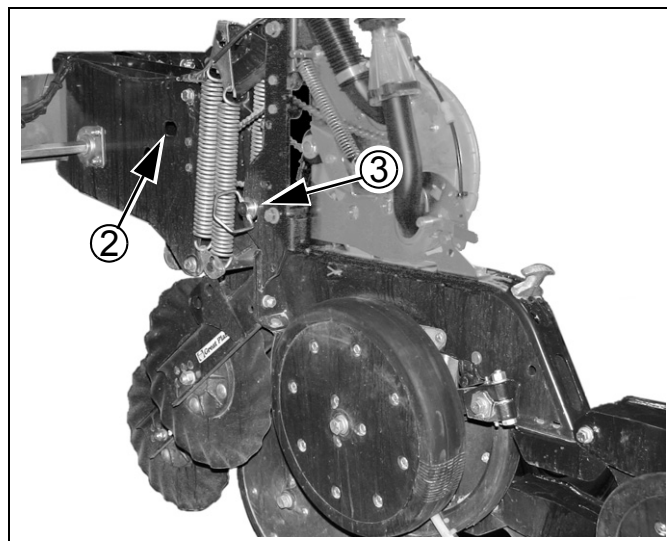


Figure 69
25AP Row Unit Locked Up

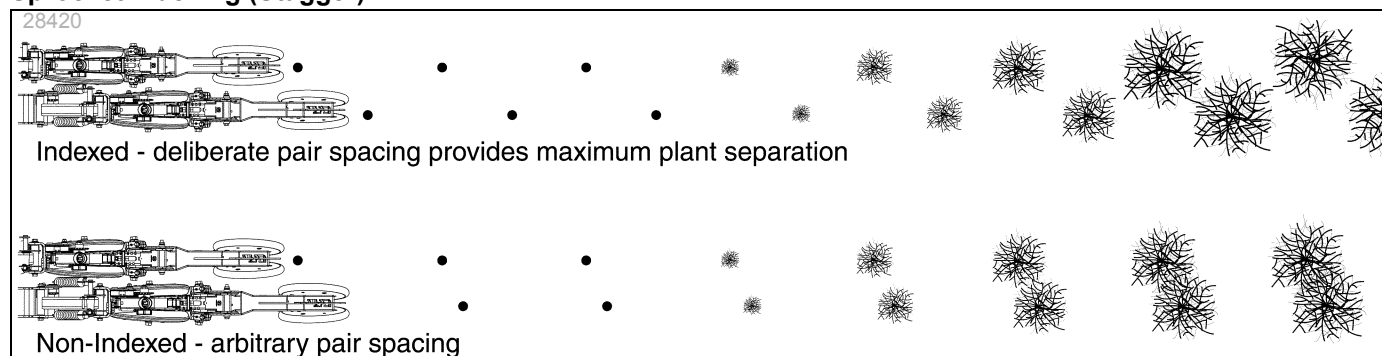
29756

NOTICE

Certain Machine Damage:

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

Sprocket Indexing (Stagger)



If you are planting:

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

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

Seed Firmer Adjustments

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

CAUTION

Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton® seed firmer, lower the Planter until the disks of the row units are resting on the ground.

Keeton® Seed Firmer^a 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 70

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.

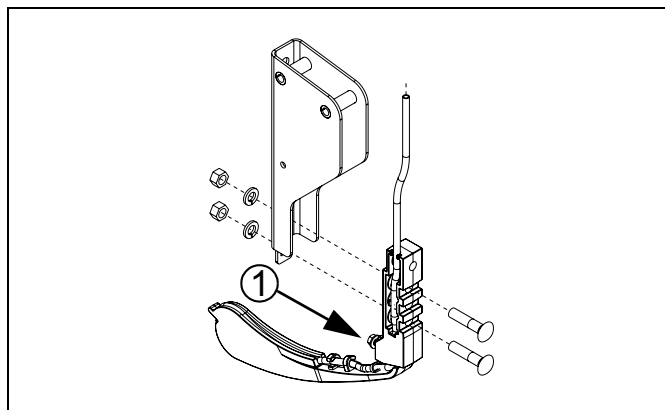


Figure 70
Keeton® Seed Firmer

28316

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 71

To lock up a Seed-Lok® wheel:

1. Raise Planter. Insert lift assist cylinder locks.
2. Push up on Seed-Lok® wheel ② until wheel arm latches up.

To release a Seed-Lok® wheel:

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

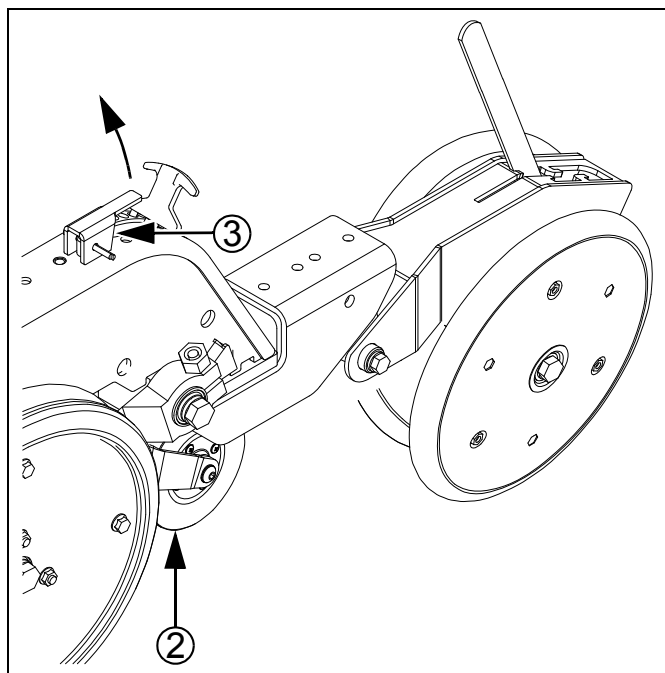


Figure 71
Seed-Lok® Lock-Up

29985

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

Press Wheel Adjustment

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

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

There are three adjustments available on the press wheel assembly:

Refer to Figure 72

1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 74 on page 67)

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 53.

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 53.

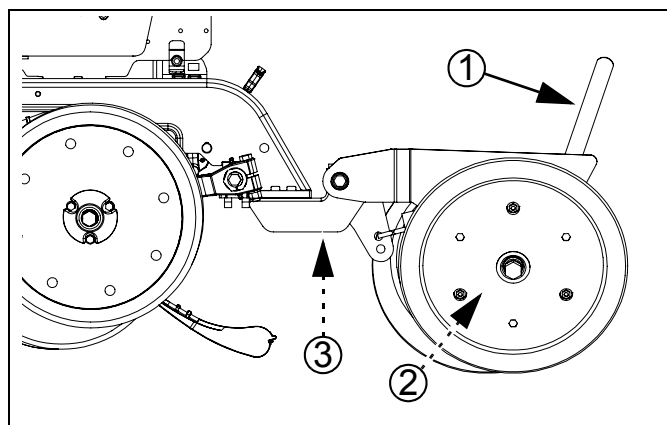


Figure 72
Press Wheel Adjustments

25118

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 73

1. Raise the Planter and install the transport locks. See "Lift Locks" on page 20.
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.

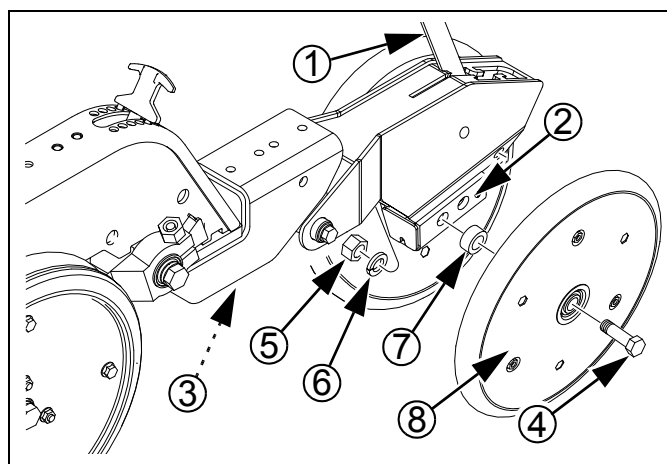


Figure 73
Press Wheel Force & Stagger

22907

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 74

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 Locks**” on page 20.
3. Loosen the $\frac{1}{2}$ in 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 ② and ③.

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

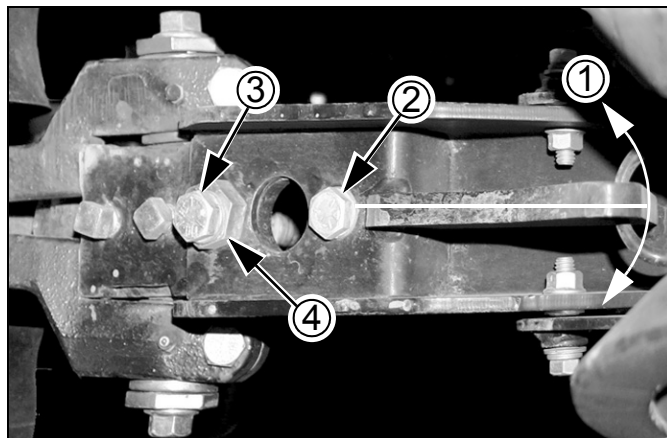


Figure 74
Press Wheel Centering
(View from beneath opener)

25277



Troubleshooting

Planting Rate Problems

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

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

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

Suggested Furrow Check:

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

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

1. Is the spacing on the ground correct?	No:	Check the ground drive transmission and range sprocket selections, or the population settings on a hydraulic drive unit. See also " Population Too Low " or " Population Too High " in the troubleshooting charts.
	Yes:	Go to step 2.
2. Is the population reported by the optional seed monitor ¹ ♣ ₂ or ¹ ♣ ₃ the actual or is the reported population too high by a factor of 2 or 3?	No:	Go to step 3.
	Yes:	An incorrect twin- or triple-row spacing value entered in the seed monitor can cause this. Example: 18 rows at 110 cm using an incorrect "Row Spacing" of 110 cm (18x110 is an incorrect 1980 cm effective swath), instead of: 18 Rows at a swath of 660 cm (or swath-averaged 36.7 cm effective row spacing). Correct the row spacing error on the seed monitor console. The system can also be off by a large factor if incorrect range sprockets are installed. Check seed rate charts against range and transmission sprockets on the Planter.
3. Is the population reported by the optional seed monitor close to the target population?	No:	Check seed rate charts against transmission sprockets selected. See " Population Too Low " or " Population Too High " in the troubleshooting charts.
	Yes:	If slightly under, see " Population Too Low " if slightly over, see " Population Too High ".

Seed Pool Troubleshooting

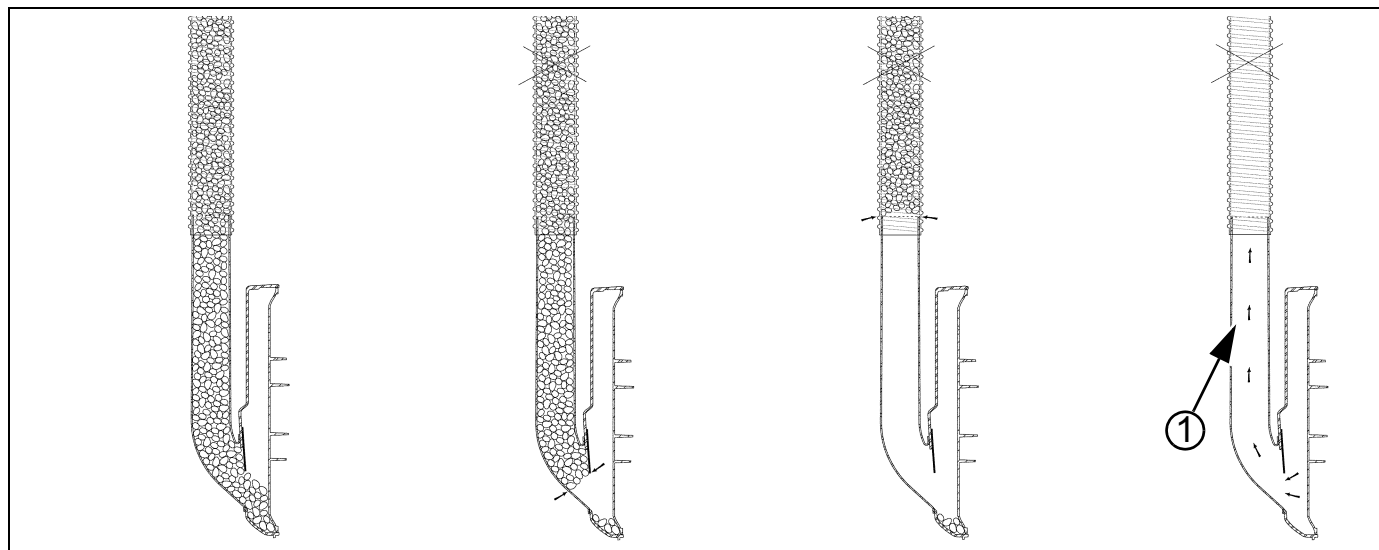


Figure 75
Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions

29986

Normal: Filled	Bridging: Inlet Shutter	Bridging: Seed Hose	Empty Hopper
Inlet is filled to seed box. Seed move slowly down as singulated by meter.	A bridge at the shutter is blocking flow. Causes may include: • oversize seed • shutter setting too low • oversize matter in seed • excessive or sticky seed treatment	Oversize matter in seed has caused a bridge at the top of the inlet. Causes may include: • oversize seed • oversize matter in seed • excessive or sticky seed treatment	No seed arriving from box. Causes may include: • seed run-out • slide gate closed If hopper is empty, air back-flow ① is also occurring, which can reduce meter pressurization at other rows
Actions: No action required. Continue Planting.	Actions: 1. If shutter was at suggested opening, increase one notch. 2. Check seed pool for foreign matter. 3. Resume planting.	Actions: 1. Close shutter. 2. Tap on hose/tube junction. 3. Check seed pool for foreign matter. 4. Resume planting.	Actions: 1. If row is active, add seed or check slide gate. 2. If row is inactive, close shutter. 3. Resume planting.

Magnehelic® Gauge Troubleshooting

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

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

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

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

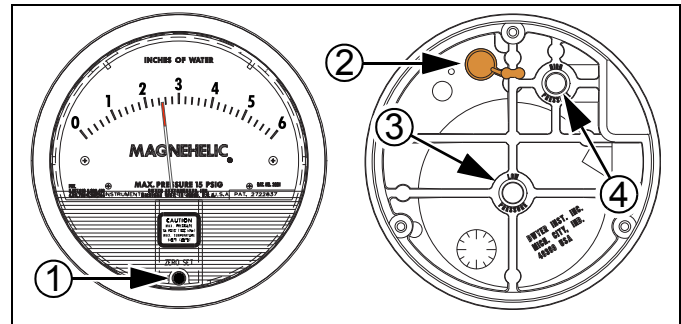


Figure 76
Magnehelic® Gauge

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Port ID for Troubleshooting:

- ② Over-pressure relief port (with plug in place)
- ③ Low-pressure port (breather/atmospheric pressure)
- ④ High-pressure port (from manifold chamber)

Alternate high/low ports are plugged.

Winter testing/maintenance advisory:

Gauge readings may be inaccurate or sluggish below -7°C

Population Troubleshooting Charts

Population Too Low

Problem	Cause	Solution
Overall Low Population	Incorrect seed rate	Using Seed Rate Manual , check: • seed disk selection, • Range/Transmission sprocket setup, and • tire size and inflation.
	Empty pockets on disk (skips) due to insufficient air pressure.	Methodically increase the meter pressurization. See "Fan and Adjustment" on page 42.
	Empty pockets on disk (skips) due to sticky seed treatments not allowing seed to rapidly fill the pockets.	Increase seed lubricant.
	Empty pockets on disk (skips) due to rough field conditions causing seeds to fall from the disks.	Decrease field speed or increase the air pressure in the meter.
	Empty pockets on disk (skips) due to seed pool too low, and seeds are not filling every pocket on the disk.	Open shutter one notch.
	Empty pockets on disk (skips) due to disk speed too high, and pockets are not filling.	Decrease field speed or change to a higher cell count disc.
	Empty pockets on disk (skips) due to singulation (4 tufted) brush too aggressive.	Check for matted, stuck together fibers. Wash, scrape clean, or replace as needed.
	Empty pockets on disk (skips) due to seed too big for pocket.	Select the correct disk for the seed size.
	Seeds are not falling from disk, and get carried past drop zone. Static electricity can cause small, lightweight seeds to cling to the pocket and not fall out.	The graphite component of Ezee Glide Plus addresses this issue. Increase the amount of Easy Glide Plus and/or more thoroughly mix the lubricant into the seed.
	Air pressure too low, as confirmed by gauge.	Increase fan speed or reduce butterfly valve setting.
	Air pressure too low, but gauge reading is within range or reading high.	• Inspect the 6.4 cm sample lines from the row units up to the sensor chamber for leaks (page 70). • Make sure all non-planting rows have blank disks and shutters are closed (page 63). • Re-zero the gauge with the fan off (page 70). • Check gauge vent line for kinks, pinches or plugging (page 70).
	Excess field speed	Plant within speed ranges recommended in Seed Rate Manual .
	Incorrect speed sensor constant.	Perform speed calibration per seed monitor manual.
	Incorrect magnetic speed sensor gap.	Check and adjust (page 84).
	(Option) Incorrect radar speed sensor angle.	With Planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.

Population Too Low

Problem	Cause	Solution
Overall Low Population, cont.	Pass gaps too large	Check marker extension (page 122). For GPS, check Planter size programmed.
	Actual field size is different	Population may be correct, and calculations are not.
	Seed monitor reporting excess area	Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.
Low Population, Single Row	Shutter opening too narrow - starving meter of seed (low seed pool)	Adjust shutter to higher setting.
	Meter starvation due to bridging at shutter	Re-adjust for shutter bridging (page 60). If seed is treated, increase seed lubricant.
	Meter starvation due to blockage above inlet	Clear blockage (page 60).
	Meter starvation due to bridging above inlet, caused by high levels of seed treatment	Clear bridge (page 60). Increase seed lubricant.
	Incorrect seed disk on one row	Install correct seed disk.
	Chain skipping at row unit.	Check chain, idler and sprocket condition.
	Skips due to low meter pressurization at one or several rows	Check shutter setting. Check for excess wear on seed drop brush. Check for loose or leaking pressure hose.
	Skips due to skipping chain	Check for worn chain, worn idlers, low chain slack (page 88) and failed meter bearing.
	Skips due to debris in disk pockets	Remove rain covers. Inspect and clean out disks.
	Row has blank disk installed	Replace with seeding disk.
	Seed tube plugged	Raise Planter, expose bottom of seed tube and clean out.
Low or Erratic Seed Flow	Seed meter plugged, due to operation with fan shut off, or manifold pressure too low.	Close shutters. Clean-out meters. Set fan for correct manifold pressure. Resume planting.

Population Too High

Problem	Cause	Solution
Overall High Population	Incorrect seed rate	Check seed rate charts
	Two seeds per pocket on the disk (doubles), due to excess meter pressurization	Methodically decrease the meter pressurization. See " Fan and Adjustment " on page 42.
	Two seeds per pocket on the disk (doubles), due to pockets too large for the seed	Select a disk with smaller pockets.
	The meter pressurization is too high, as confirmed by gauge	Reduce fan speed or increase butterfly valve setting.
	Air meter pressure too high due to pressure sensor not zeroed properly.	Re-zero the gauge with the fan off.

Population Too High

Problem	Cause	Solution
Overall High Population, cont.	Air pressure too high, but gauge is within range or reading low.	Check: - Inspect the 6.4 cm sample lines from the row units up to the sensor chamber for leaks (page 70). - Make sure all non-planting rows have blank disks (page 63). - Check that rubber pressure relief plug is seated in gauge (page 70).
	False alarms or actual seed rate errors due to monitor setup with incorrect row count, spacing or active rows	When troubleshooting population issues, always first rule out seed monitor setup. Review Planter configuration and monitor setup.
	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Incorrect speed sensor constant.	Perform speed calibration per seed monitor manual.
	Incorrect magnetic speed sensor gap.	Check and adjust (page 84).
	(Option) Incorrect radar speed sensor angle.	With Planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.
	Doubles due to incorrect disk for crop or seed size	Use recommended disk for crop and seed size.
	Sticky seeds: excess seed treatment	Increase seed lubricant.
	Incorrect speed sensor constant	Perform speed calibration per DICKEY-john® monitor manual.
	Overlapping passes	Check marker extension (page 122). For GPS, check Planter size programmed.
	Actual field size is different	Population may be correct, and calculations are not.
	Seed monitor under-reporting area	Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.
High Population, Single Row	Excess meter pressurization causing doubles	Check shutter.
	Worn seed-drop brush and/or strip brushes allowing excess seed to pass	Replace worn brushes.
	Worn meter bearing causing seed disk wobble and doubles	Replace meter bearing.
	Incorrect seed disk with higher cell count.	Install correct disk.

Population Related

Problem	Cause	Solution
Overall Population Alarms	False alarms or actual rate errors due to monitor setup with incorrect [active] row count or spacing	When troubleshooting population issues, always first rule out seed monitor setup. Review Planter configuration and monitor setup.
	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Improper gap on magnetic speed sensor.	Check speed sensor on Planter for a gap to toothed wheel of: 0.5-1.0 mm. Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.
	Incorrect speed sensor constant	Perform speed calibration per monitor manual.
	(Option) Incorrect radar speed sensor angle.	With Planter lowered, check radar speed sensor angle per DICKEY-john® recommendations.
	Seed run-out. Due to unequal outlets per box division, and if planting across slopes, some rows will run out before others.	Redistribute seed to favor rows that have run out, and plan to refill shortly.
Mismatch Between Reported and Furrow Population	Small seeds (example milo) are not reliably sensed in the seed tube	Run with rain covers in place to minimize ambient light intrusion. Use the Population Adjust factor in the seed monitor system to compensate for missed seeds. Remember to set this back to 100% for large seeds.
	Seed tube sensor is not counting all seeds	Clean the seed tube of graphite and dust buildup with long narrow seed tube brush. Replace sensors that malfunction.
Excessive Seed Cracking	Incorrect seed pocket size	Use correct disk for seed.
	Damaged, old or dried-out seed	Use new seed.
	Unclean seed	Use clean seed.
Skips and Bare Spots After Turns	Fan was turned off at turns	Leave fan running; meter pressurization must be maintained during turns, or seed will fall out of disk pockets.
	Insufficient hydraulic flow to keep fan running at speed required to maintain meter pressurization	Check tractor capability against requirements (page 105). If sufficient: • Fold markers before engaging lift. • Use a less aggressive lift rate. • Monitor meter pressurization during end-of-pass operations.
Seed too shallow or scattered on ground from a single row	Bottom of seed tube damaged.	Replace seed tube. Avoid setting Planter straight down. Use forward motion when lowering.
	Row not penetrating in tire tracks.	Increase down force on parallel arm springs.
	Opener depth too shallow.	Change side depth wheel setting.
Twin Rows were timed but became out of time.	Timing will change when a population change has been made.	Re-time meters from the population based timing chart.
	Chain has jumped.	Check sprockets and chain for excessive wear or rusty stuck links.

General Troubleshooting

Problem	Cause	Solution
Population Alarms	See “ Population Troubleshooting Charts ” on page 71.	
Excess Seed Remaining	See “ Population Troubleshooting Charts ” on page 71.	
	Field size different.	After ruling out population problems, re-check geography.
	Excessive gaps between Planter passes.	Adjust marker, page 122.
Seed Consumption Too High	See “ Population Troubleshooting Charts ” on page 71.	
	Field size different.	After ruling out population problems, re-check geography.
	Excessive overlap. Irregular shaped field.	Adjust marker, page 122.
Rows Not Planted	If not detected by optional seed monitor, check for plugged row-unit seed tube	Lift Planter, expose bottom of seed tube and clean out.
Uneven seed spacing	See “ Population Troubleshooting Charts ” on page 71.	
	Excessive field speed.	Reduce field speed.
	Unclean seed.	Use clean seed.
	Damaged seed tube	Inspect; repair or replace.
	Seed-Lok® plugging.	Lock up Seed-Lok®, page 65.
	Row-unit discs not turning.	See “ Row-unit discs not turning freely ” in this Troubleshooting chart.
	Worn/rusted sprockets and/or chain idler or bearings.	Check and replace any worn/rusted sprockets or chain idlers.
	Partially plugged row-unit seed tube.	Lift up Planter, expose bottom of seed tube and clean out.
	Lack of proper seed lubrication on seed.	See “ Seed Lubricant ” on page 104.
Uneven seed depth	Excessive field speed.	Reduce field speed.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect coulter depth setting.	See coulter manual or set unit mounted coulter.
	Excessive or improper row unit down pressure spring setting.	See “ Row Unit Down Pressure ” on page 53.
	Damaged seed tubes.	Check seed tubes for damage.
	Seed-Lok® building up with dirt.	Lock up Seed-Lok®, page 65.
	Row-unit not penetrating low spots.	Adjust row-unit, see instructions beginning on page 53.
	Rough planting conditions.	Rework the field.
	Seed firmer not in place and set to correct tension.	See “ Seed Firmer Adjustments ” on page 65.

General Troubleshooting

Problem	Cause	Solution
Press wheel or row-units plugging	Planting conditions too wet.	Wait until drier weather.
	Too much pressure on row-units.	Reduce down pressure on row-units.
	Coulter set too deep, bring up excess dirt and moisture.	Check coulter adjustment.
	Planter not set to run level from front to rear.	Check tool bar height page 17
	Backed up with Planter in the ground.	Clean out and check for damage.
	Failed disc bearings.	Replace disc bearings.
	Disc blades worn.	Replace disc blades.
	Scraper worn or damaged. Side depth wheels not set correctly.	Adjust side depth wheels page.
Row-unit discs not turning freely	Row-unit plugged with dirt.	Clean row-unit.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect side depth wheel adjustment	See “Side Gauge Wheel Adjustment” on page 57.
	Seed-Lok® is plugging row-unit.	Lock up Seed-Lok®, page 65.
	Failed disc bearings.	Replace disc bearings.
	Bent or twisted row-unit frame.	Replace row-unit frame.
	Partially plugged row-unit seed tube.	Lift up Planter, expose bottom of seed tube and clean out.
Press wheels not compacting the soil as desired.	Incorrect spring handle setting	See “Press Wheel Adjustment” on page 66.
	Insufficient row unit down-force	See “Row Unit Down Pressure” on page 53.
	Use of incorrectly shaped tire for your conditions.	Wedge shaped wheels work best on narrow spacings and in wet conditions. Round edge wheels work best in wider row spacings and drier conditions.
	Not level front to rear.	Check tongue height and top link adjustment.
	Wheel stagger needs adjustment for conditions	See “Press Wheel Adjustment” on page 66.
	Too wet or cloddy	Wait until drier weather or rework ground.
Hydraulic marker functioning improperly, or not at all	Marker/Fold switch set to Fold.	CFM Switch must be set to “Marker”. Set tractor remote circuit to Neutral or Float before operating switch.
	Marker/Aux valve set to Aux	On a Planter with optional Auxiliary Hydraulics, selector valve must be set to Marker for markers to function. Set tractor remote circuit to Neutral or Float before changing valve.
	Air or oil leaks in hose fittings or connections.	Check all hose fittings and connections for air or oil leaks.
	Low tractor hydraulic oil level.	Check tractor hydraulic oil level.
	Loose or missing bolts or fasteners.	Check all bolts and fasteners.
	Needle valve(s) plugged.	Open needle valves, cycle markers slowly and reset needle valves, refer to page 122.

General Troubleshooting

Problem	Cause	Solution
Marker disk does not mark	Disk angle too straight for soil conditions	Reverse marker disk to pull or throw dirt.
Speed Reading Doesn't Match Tractor	Monitor speed reading, using optional radar, will only match tractor with Planter lowered. (Speed reading with magnetic pickup falls to zero when lifted.)	If speeds don't agree during planting (with Planter lowered), re-calibrate radar speed sensor with Planter lowered.

Dry Fertilizer Troubleshooting

Problem	Cause	Solution
No Fertilizer Flow, All Rows	Hopper empty	Check / refill hopper.
	Chain missing at one or more drive stages	Check all five chains from ground drive to hoppers. See "Dry Fertilizer Chains" on page 116.
No Fertilizer Flow, Some Rows	Hopper plugged	Clean out any material clogging discharge port. See "Dry Fertilizer Clean-Out" on page 81.
	Shaft disconnected	Check couplers along final drive shaft.
No Fertilizer Flow, One Row	Applicator tube plugged with soil	Disconnect hose at top of applicator tube. Remove blockage from below. Raise release height (page 46).
	Applicator tube plugged with fertilizer.	Disconnect hose at top of applicator tube. Remove blockage from below. Use finer grained fertilizer, or dry out the fertilizer if coagulation is the problem.
Low Flow	Incorrect Transmission sprockets	Re-check Seed and Fertilizer Rate manual (401-754B). Exchange DRIVING and DRIVEN sprockets as needed.
	Field speed too high for Transmission sprockets selected	Apply at a lower speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is lower at high speeds.
	Ground drive wheel slipping	Check lowered tool bar height (page 17). Operate at a lower field speed. Field conditions may be too wet for reliable meter drive.
	Meter flutes worn	Inspect meter flutes (page 25). Replace as needed.
High Flow	Incorrect Transmission sprockets	Re-check Seed and Fertilizer Rate manual (401-754B). Exchange DRIVING and DRIVEN sprockets as needed.
	Field speed too low for Transmission sprockets selected	Apply at a higher speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is higher at low speeds.
Fertilizer on Surface	Release height too high	Lower release height (page 46).
	Coulter depth too shallow	Increase coulter depth (page 45).



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.



Crushing Hazard:

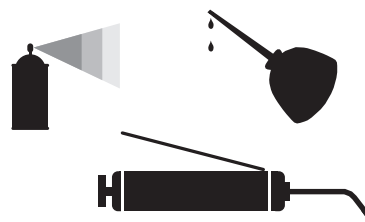
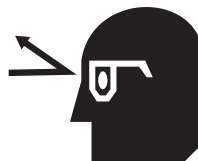
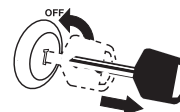
Always have transport locks in place when working on implement. You may be severely injured or killed by being crushed under a falling implement.



High Pressure Fluid Hazard:

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

1. After using your Planter for several hours, check all bolts to be sure they are tight.
2. Remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
3. Maintain proper air pressure in Planter tires.
4. Keep disk scrapers properly adjusted.
5. Clean Planter on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
6. Lubricate areas listed under “**Lubrication**” on page 91.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.



Material Clean-Out

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

The seed clean-out topic begins on this page.

Fertilizer clean-out begins on page 81.

Seed Clean-Out

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

Refer to Figure 77

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

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

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

Funnel Conversion

Materials and tools needed:

- ② a length of 3.49 cm (1 ³/₈ in.) I.D. hose
- ③ a worm drive clamp with a working diameter of approximately 3.4 cm to 5.7 cm
- a hacksaw^b with fine-toothed blade

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

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

Seed Clean-Out (Container)

1. Scoop or vacuum as much seed as possible from the top of the hoppers.
2. Perform a meter clean-out per page 80.

Seed Clean-Out (Funnel)

1. Close slide gate at hopper.
2. Attach funnel as for meter clean-out (page 80), with hose routed to bucket or other larger container.
3. Use slide gate to control seed flow until meter, inlet and hopper are empty.

CAUTION

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

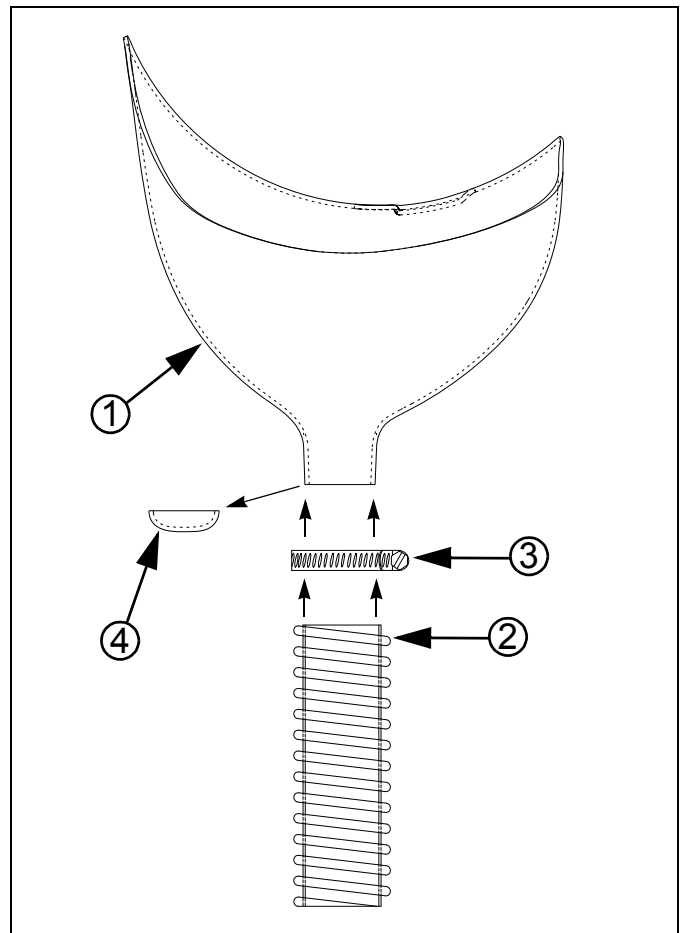


Figure 77
Convert Container to Funnel

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

Meter Clean-Out

Refer to Figure 79

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

Note: The funnel does not fit rows to the left of gauge wheels on twin-row Planters. Use vacuum or tarp collection on those rows.

Note: It may be necessary to raise a twin-row Planter to obtain clearance for the funnel. Use transport locks (page 20) if the Planter is raised.

1. Close the seed inlet shutter on the meter (page 59). This minimizes the seed volume at disk removal.
2. Remove the rain cover (page 59). The funnel cannot be snapped in place with the cover installed.
3. Align the left (rear) end of the funnel lip ③ with the top of the lower (rear) cover latch ear. Place the right (front) end of the funnel lip ④ between the meter housing and the seed tube.
4. Rotate the funnel forward until the slot at lip center engages a tab on the bottom center of the meter housing.
5. Remove the seed (page 62).
6. Slowly open the seed shutter (page 59) to empty the seed up to the slide gate.
7. If seed remains in the hopper, use the slide gate to control the volume of flow.

Refer to Figure 78

8. Clean seed from all brushes (shop vac recommended).
9. Inspect brushes (page 82).
10. Rotate funnel clockwise, remove and empty.
11. For imminent operations:
Install next seed wheel or blank disk (page 63) for operations. Set inlet shutter for next seed (page 59).
12. For storage:
Close seed inlet shutter. Leave disk out.
Close Y-tube (if any).
13. Re-install rain cover (page 59).

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

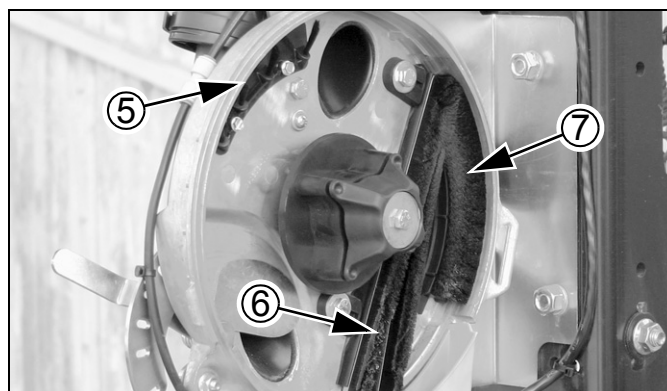


Figure 78
Brush Inspection

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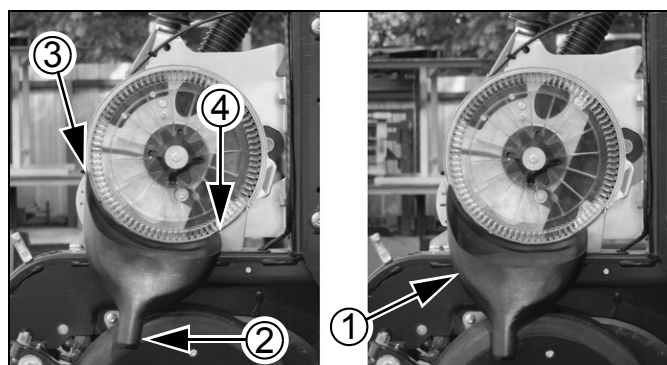


Figure 79
Funnel Positioned and Engaged

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Alternate Meter Clean-Out

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

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

Dry Fertilizer Clean-Out

CAUTION

Possible Agricultural Chemical Hazard:

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

For small amounts of residual fertilizer:

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

For large amounts of remaining fertilizer, or any amount that is not flowing properly through the meters, use this alternate procedure:

1. Raise the Planter.
2. Place a tarp, or large collection containers, under the front of the Planter.

NOTICE

Equipment Damage Risks:

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

Refer to Figure 80

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

Refer to Figure 81

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

Refer to Figure 82

5. Open the hopper lid (see page 25).
6. With one person at each end of the hopper, carefully tilt it forward to empty it.
7. Operate the hopper drive shaft to clear the meter.
8. Tilt the hopper upright. Secure at rear with pins.
9. Rotate drive shaft to align hole with coupler pins. Slide couplers into engagement. Re-install pins.

CAUTION

Heavy Material Flow Hazard:

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

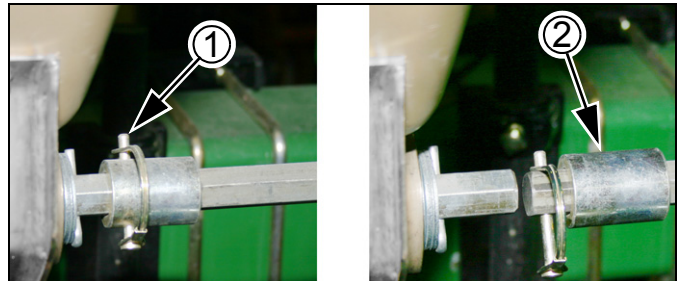


Figure 80
Hopper Drive Coupler

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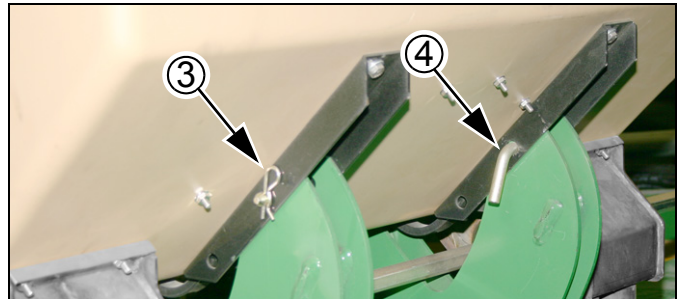


Figure 81
Hopper Cradle Pins

31898

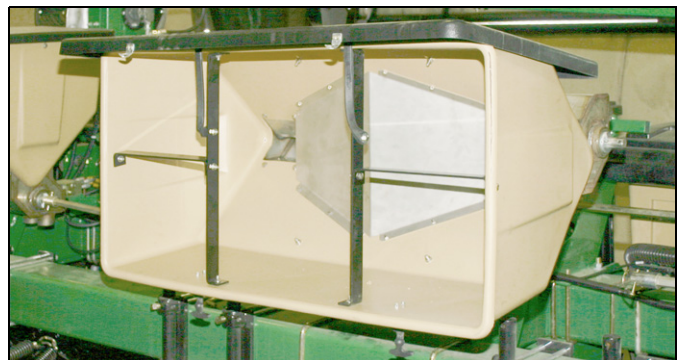


Figure 82
Hopper Tilted for Clean-Out

31899

Meter Brush Maintenance

CAUTION

Possible Chemical Hazard:

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

Refer to Figure 83

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

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

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

Finding an occasional cracked seed “hung up” on a tuft fiber is not uncommon, and is not an indicator that brush maintenance is required. Merely remove the seed.

- If the strip brushes ⑥ are worn/damaged, air pressure regulation may become unstable, or require increasing fan speed over time.

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

In severe cases, seed may leak past the strip brushes, causing spikes in population. If you frequently observe seed in between the strip brushes, one or both may need replacement.

- If the seed drop brush ⑦ is worn/damaged, its anti-static effect may fade, which can result in “skips” due to smaller seeds failing to release, and lower populations.

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

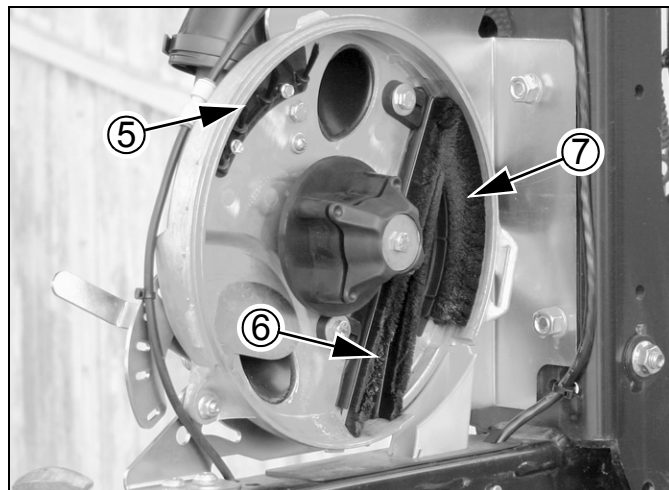


Figure 83
Brushes

29608

^a. HEPA: high efficiency particulate air or high-efficiency particulate arresting

Meter Brush Replacement

Consult the Parts manual (401-755P) for current replacement part numbers.

Refer to Figure 84

Tufted Brush Replacement

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

Strip Brush Replacement

Note: Do not loosen or remove any of the three $5 \times 16-18$ cap screws (15) retaining the brush holder.

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

Refer to Figure 85

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

Refer to Figure 84

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

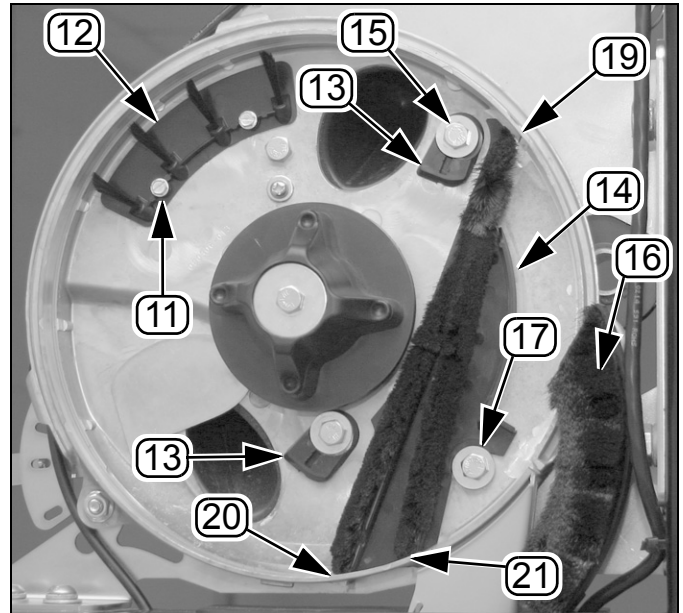


Figure 84
Brush Replacement

29719

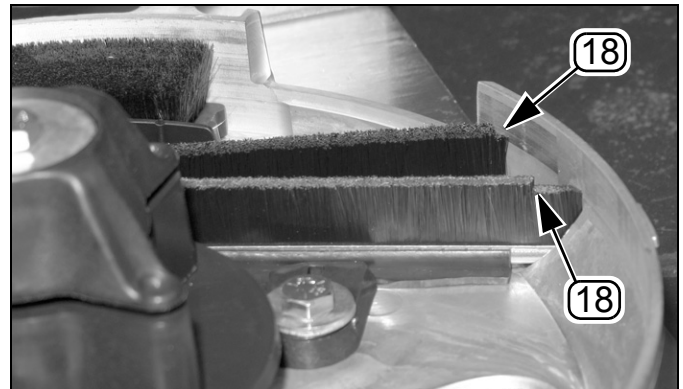


Figure 85
Strip Brush Notches

29720

Seed Disk Maintenance

Refer to Figure 86

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

Replace disks for conditions including:

- Chips at circumference ③. These will leak air.
- Chips at edges or in sculpted surfaces of cell pockets ①. These can leak air and/or adversely affect singulation.
- Cracks over 5 cm long in the working face ④ of the disk, or any cracks in support webs or to an edge.
- Warping - if any part of the disk does not press firmly on the seed drop brushes (page 61) in operation, replace the disk.
- Wear - if a wiper ridge is worn away, replace the disk. If the seed pockets are worn through, or the air ports ⑤ have enlarged, replace the disk.

Cleaning and Storing Seed Disks

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

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

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

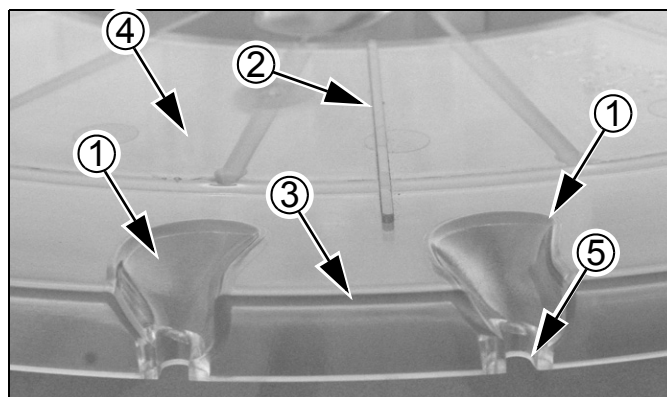


Figure 86
Disk Seed Cells and Wiper

29613

CAUTION

Possible Chemical Hazard:

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

Speed Sensor Gap

Refer to Figure 87

1. Raise Planter (page 20). Rotate ground drive wheel until a disk tooth is directly at sensor center-line.
2. Check that wheel teeth are on sensor center-line side-to-side. As needed, loosen collars on either side of disk and adjust.
3. Check that center-line of sensor is pointed at center-line of transfer shaft. As needed, loosen mounting bolts ⑥ and adjust.
4. Check gap ⑦ between top of sensor and toothed wheel for a dimension of:
1.6 mm

To adjust, loosen jam nut ⑧. Adjust base nut ⑨ to set gap. Tighten jam nut.

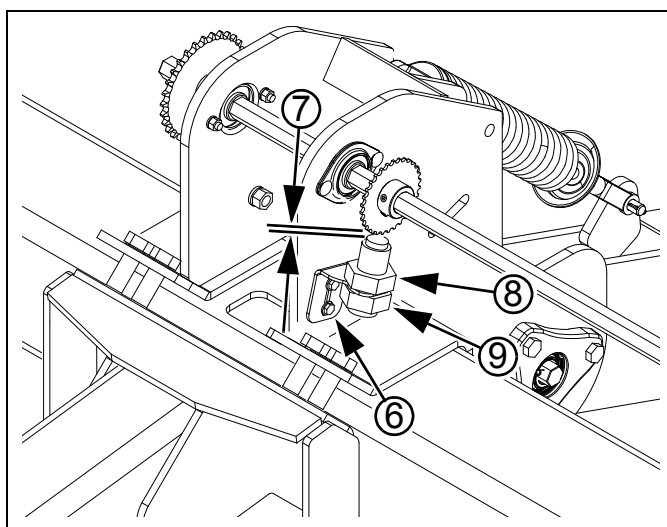


Figure 87
Speed Sensor Gap

31008

Hydraulic Maintenance

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

WARNING

High Pressure Fluid Hazard:

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

Bleed only at JIC and NPT fittings.

Never try to bleed a QD (Quick Disconnect) fitting.

Avoid bleeding at ORB fittings. The O-ring is likely to be torn if any pressure remains in the circuit.

Bleeding Lift-Assist 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 86.

Bleeding Marker Hydraulics (Option)

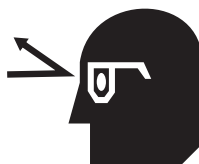
To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motions.

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

NOTICE

System Contamination Risk:

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



JIC Torque Chart

Size	Foot-Pounds	N-m
7 ♣ 16-20	11-12	15-16
1 ♣ 2-20	15-16	20-22
5 ♣ 16-18	18-20	24-28
3 ♣ 4-16	38-42	52-58
7 ♣ 8-14	57-62	77-85
11 ♣ 16-12	79-87	108-119

NOTICE

Over-Torque and Leak Risks:

JIC (Joint Industry Conference 37·Flare) fittings do not require high torque. Excess torque causes leaks. JIC and ORB (O-Ring Boss) fittings do not require sealant.

Lift Cylinder Bleeding

If lift assist movement is jerky, there may be air in the system.

Refer to Figure 88

1. Consult lift circuit hydraulic diagram on page 111 (repeated at right in smaller scale)
2. Check that tractor hydraulic reservoir is full. Set hydraulics for low flow rate.
3. If lock channel is installed on lift cylinder rod, raise Planter and remove lock (page 20).
4. Keep 3-point hitch raised, so that lift-assist cylinder can completely retract.
5. Lower rear of Planter.
6. Loosen the JIC fitting ① at the base end (top) of the lift cylinder.
7. Extend the lift circuit (as if to raise) until fluid appears at the loosened fitting or until the hose is free of air. When fluid appears consistently, set control lever to Neutral and secure the JIC fitting.
8. Full raise the Planter. Install the lift cylinder lock. Set the lift circuit to Neutral.
9. Loosen the JIC fitting ② at the rod (bottom) end of the lift cylinder.
10. Retract the circuit (as if to lower) until fluid appears at the loosened fitting or until the hose is free of air. When fluid appears consistently, set control lever to Neutral and secure the JIC fitting.
11. Raise the Planter. Remove the lock channel.
12. Extend and retract the circuit several times.

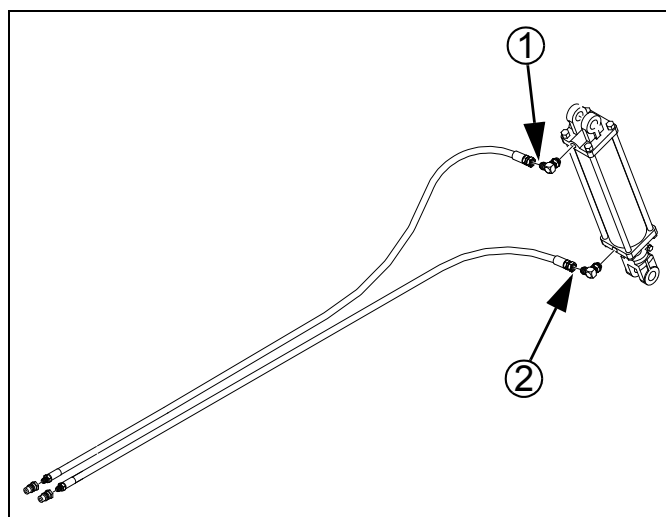


Figure 88
Bleeding Lift System

31881

Driveline Shear Pin

Refer to Figure 89

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

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

NOTICE

Machine Damage / Nuisance Shear Risks:

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

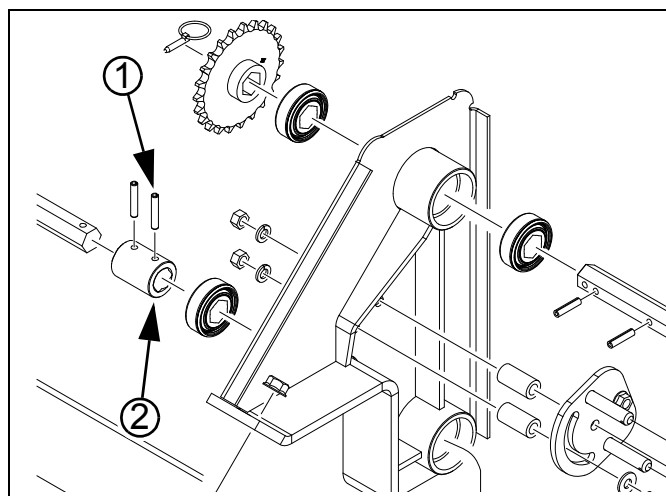


Figure 89
Transmission Shear Pin

29884

Marker Maintenance (Option)

See also:

“Initial Marker Setup (Option)” on page 122,
“Marker Operation (Option)” on page 33, and
“Marker Disk Adjustment” on page 48

Marker Shear Bolt Replacement

Refer to Figure 90

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt ③ at the fold, pivot on a second bolt (not visible in Figure), and swing back.

The shear bolt is a hex head cap screw, ⁵ 16-18 x 1¹ 2 in. Grade 5, Great Plains part number 802-012C, plus a ⁵ 16-18 lock nut, Great Plains part number 803-011C.

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

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

Marker Grease Seal Cap

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

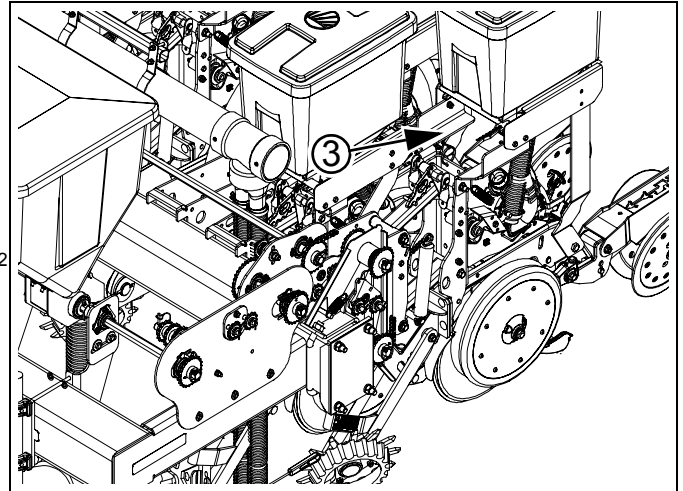


Figure 90
Marker Shear Bolt

31794

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 113.

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

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

Chain Clips

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

Refer to Figure 92 (arrow shows chain direction)

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

Meter Drive Chain

Refer to Figure 93 (which depicts Planter raised, and depicts a 4-spring opener, used on other Planter models)

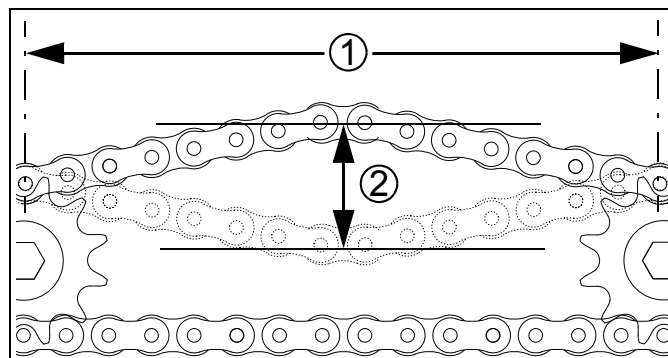
When performing periodic lubrication, check chain condition. Replace chain if any frozen kinks are not corrected by lubrication.

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

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

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

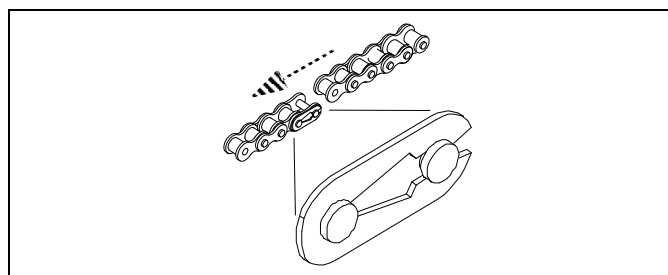
Check chain clip orientation. Check chain routing at shank idler(s) ⑤ (see page 117).



.eps
50%

Figure 91
Measuring Chain Slack

27264



.eps
60%

Figure 92
Chain Clip Orientation

26482

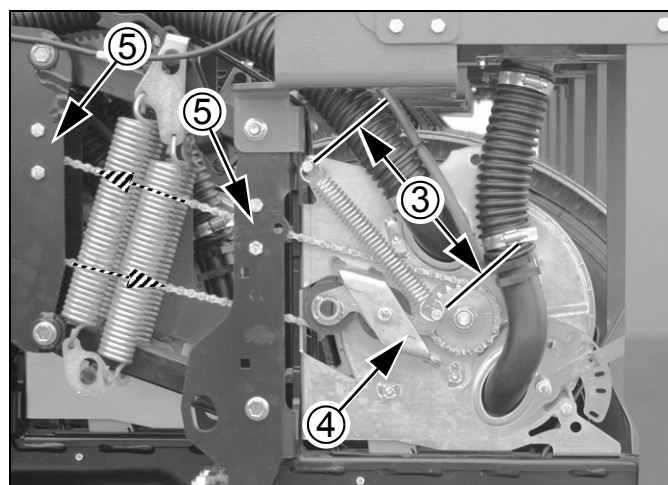


Figure 93
25AP Meter Drive Chain

31032

Spreaders and Scrapers

Note: Applies to all row unit Series.

Refer to Figure 94

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 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 56.
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.

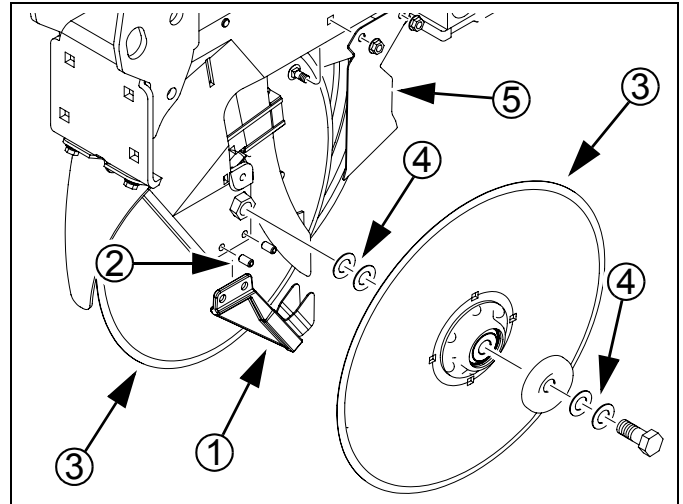


Figure 94: 25AP
Spreaders and Scrapers

22839

Row-Unit Side Wheels

Refer to Figure 95

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 57.

Note: You may need fewer washers under worn disks.

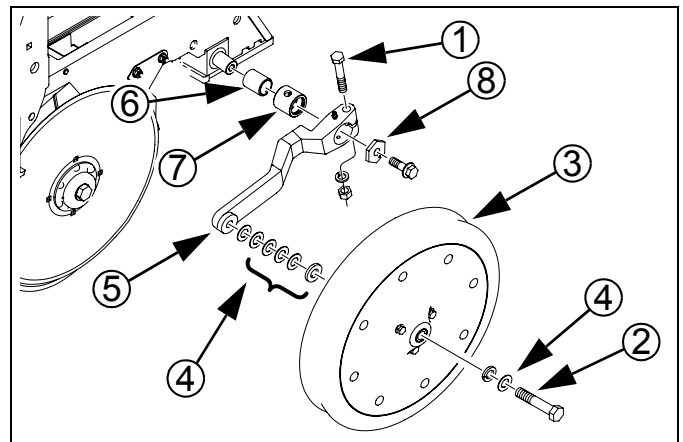


Figure 95
Side Gauge Wheel Shims

21894



Sharp Object Hazard:

Be careful when working in this area. Disk edges are sharp.

Seed Flap Replacement

Refer to Figure 96

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

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

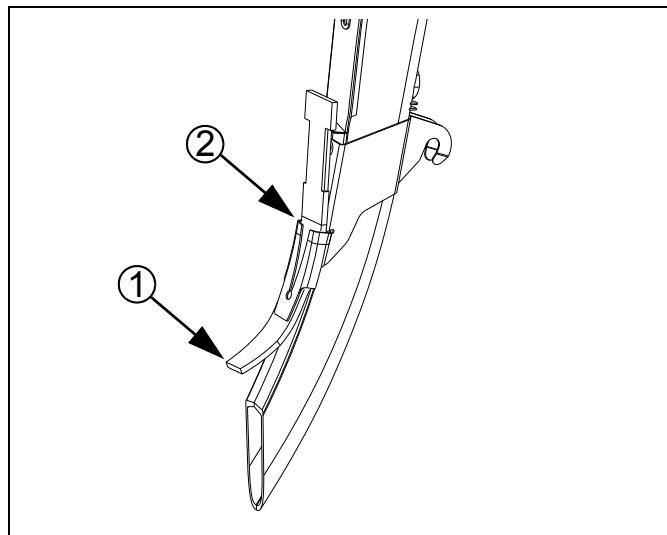


Figure 96
Seed Tube Flap

31047

Lubrication

 Multipurpose spray lube	 Multipurpose grease lube	 Multipurpose oil lube	 50	Intervals (service hours) at which lubrication is required
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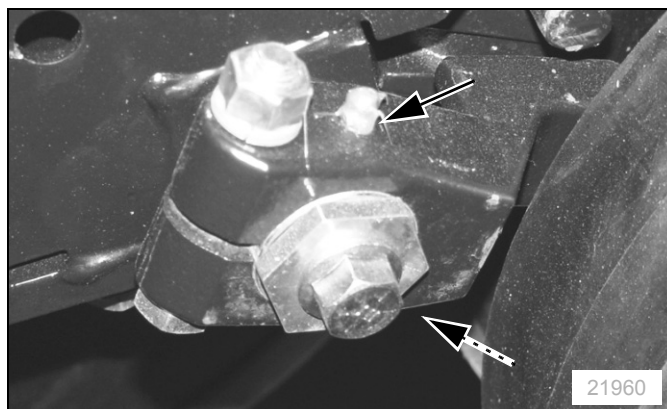
Opener Side Wheel Bushing

	
---	---

2 zerks per bushing,
2 bushings (4 zerks) per row;
36 zerks total (9-row Planter)
48 zerks total (12-row Planter)
72 zerks total (18-row Planter)

Type of Lubrication: Grease

Quantity: Until grease emerges



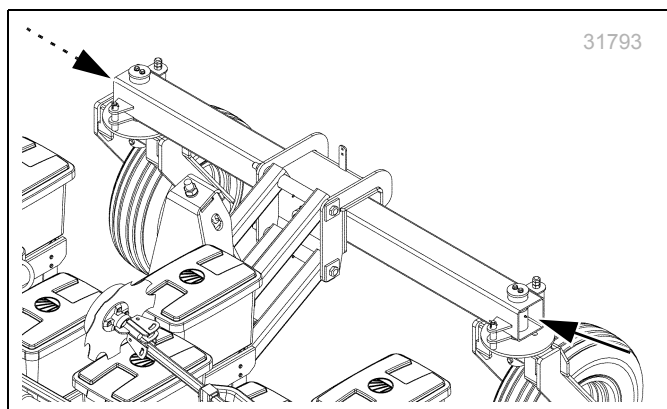
Caster Pivots

	
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1 zerk per pivot,
2 zerks total

Type of Lubrication: Grease

Quantity: Until grease emerges



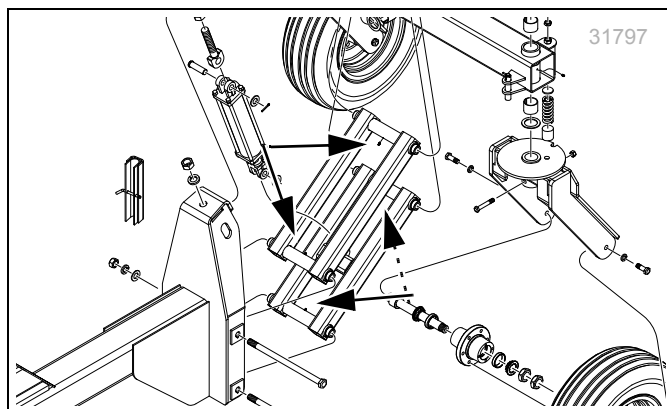
Lift Assist Parallel Arms

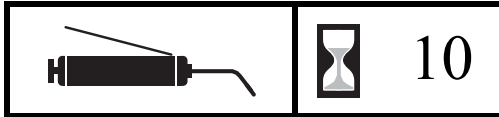
	
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2 zerks per arm weldment,
4 zerks total

Type of Lubrication: Grease

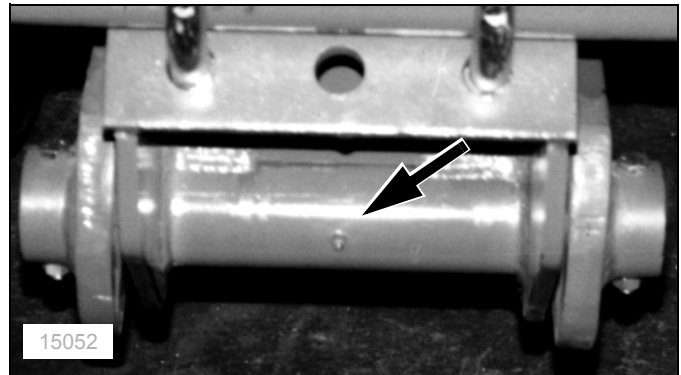
Quantity: Until grease emerges



Gauge Wheel Module Forward Pivot

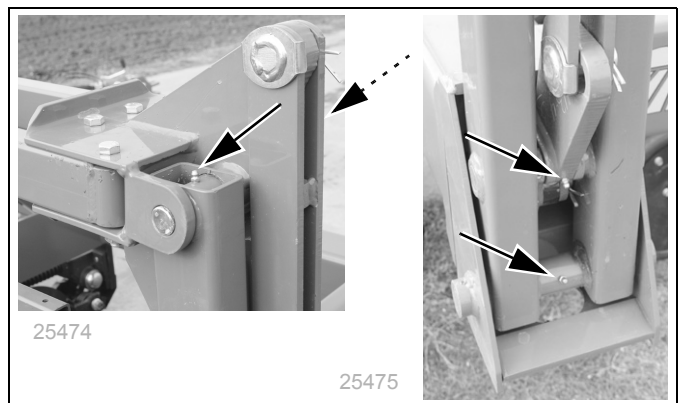
4 modules per Planter,
one zerk per pivot;
4 total

Type of Lubrication: Grease
Quantity: Until grease emerges

**Markers (Option)**

4 zerks per marker,
two markers;
8 total

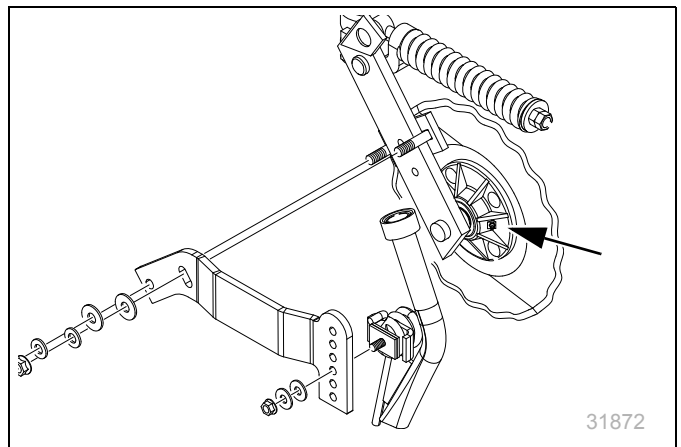
Type of Lubrication: Grease
Quantity: Until grease emerges

**Coulter Hubs (Option)**

1 zerk per coulter,
12 total

Type of Lubrication: Grease
Quantity: Until resistance is felt

Repack seasonally.



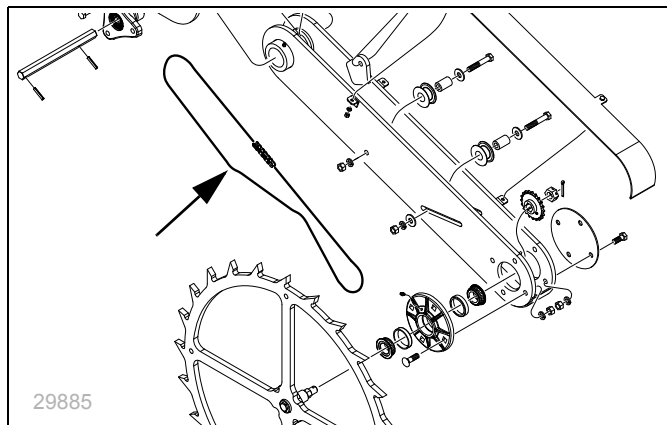
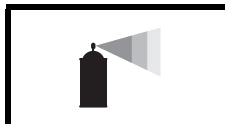
Chain: Contact Drive, Lower**As Required**

1 chain

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.

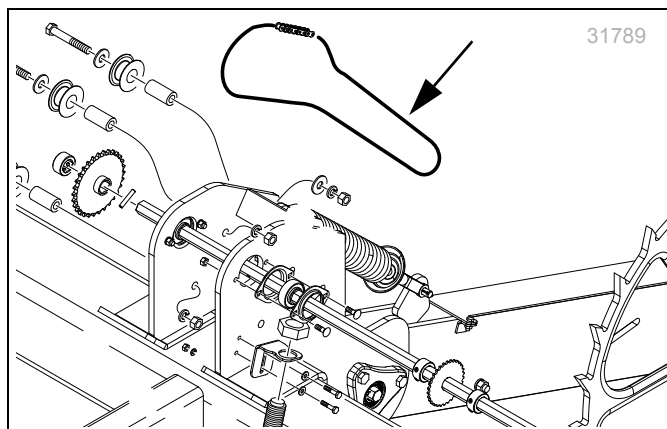
**Chain: Contact Drive, Upper****As Required**

1 chain

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.

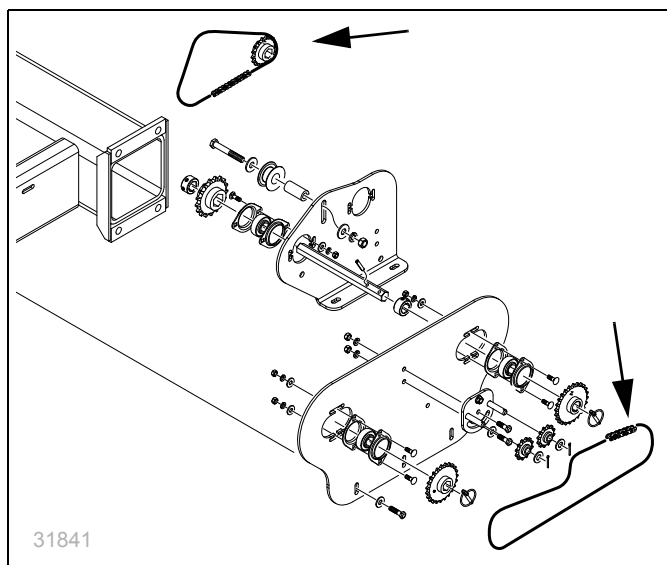
**Chains: Fertilizer Drive (Option)****As Required**

3 chains

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.



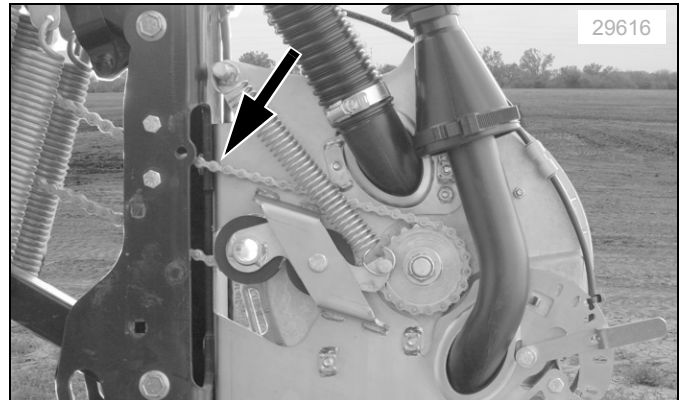
Chains: Meter Drive

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.

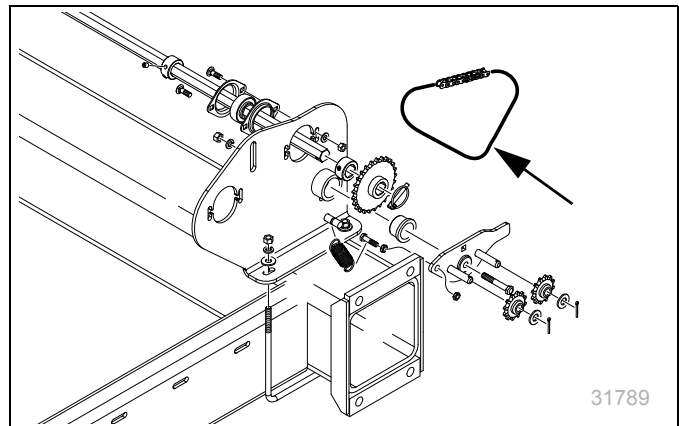
**Chain: Range Drive**

1 chain

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.

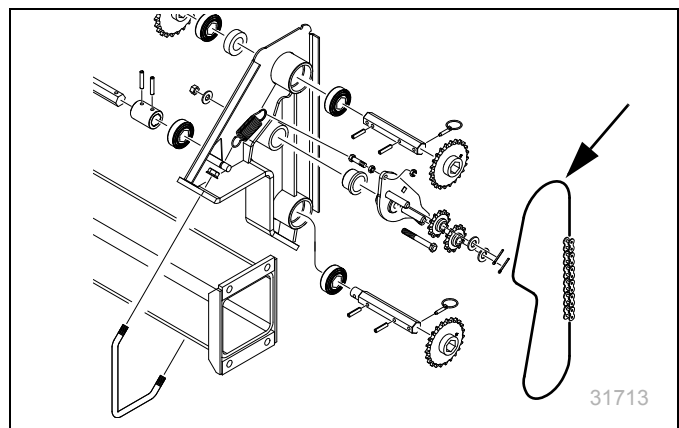
**Chain: Transmission Drive**

1 chain

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.

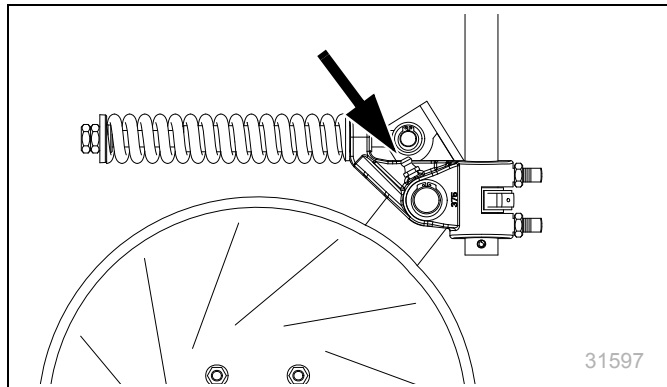
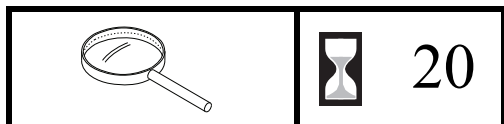


Coulter Pivot

1 zerk per coulter;
12 total

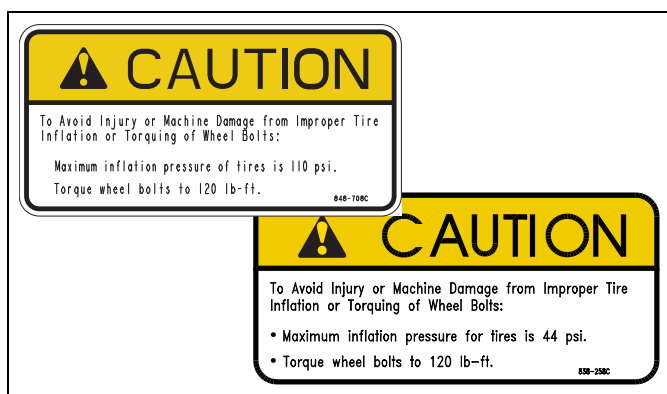
Type of Lubrication: Grease

Quantity: Until grease emerges

**Tire Pressures**

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

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

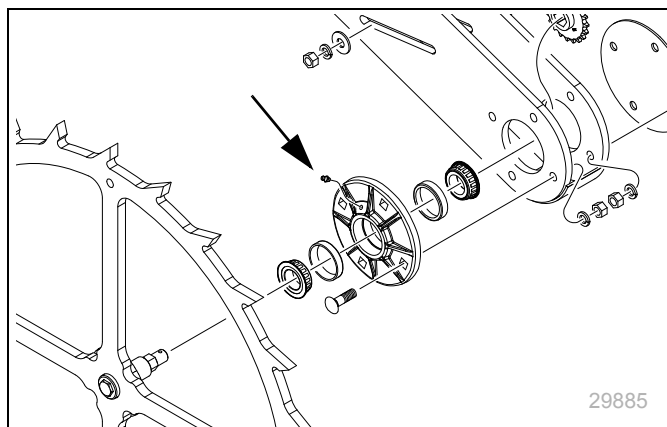
**Ground Drive Wheel Hub**

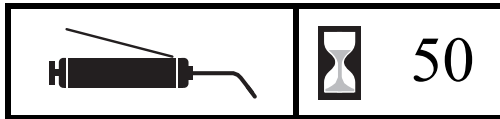
1 zerk at each bearing casting;
4 total

Type of Lubrication: Grease

Quantity: Until grease resistance felt

Repack seasonally.



Row Cleaner Bearings (Option)

1 zerk each wheel, 1 or 2 wheels per row

Type of lubrication: Grease

Quantity: Until resistance is felt

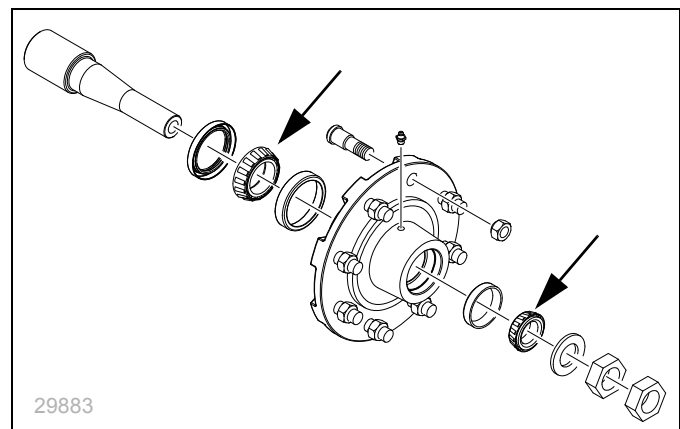
To avoid damaging the seal, do not add grease at high pressure.

**Gauge Wheel Hubs**

1 zerk each spindle;
2 total

Type of Lubrication: Grease

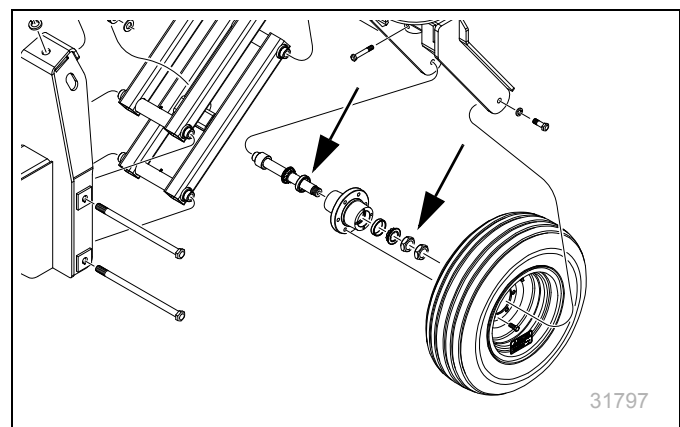
Quantity: Until resistance is felt

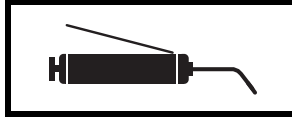
**Lift-Assist Wheel Hubs**

2 bearing races each spindle;
4 total

Type of Lubrication: Grease

Quantity: Repack

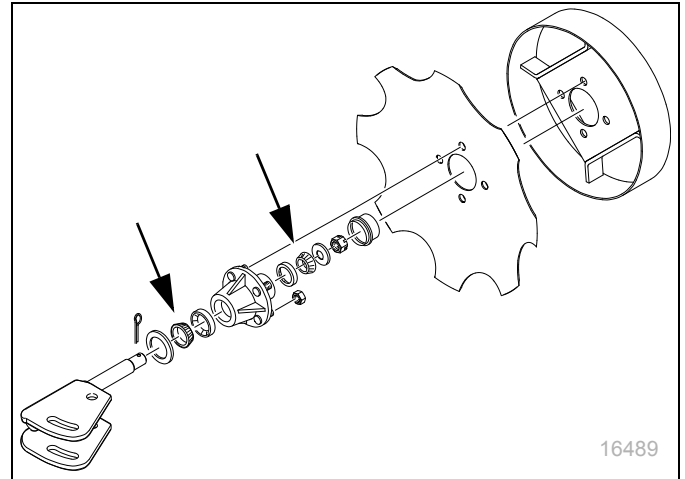


Markers: Disk Hub**Seasonal**

4 bearings; 2 races each marker

Type of Lubrication: Grease

Quantity: Repack



Seed Lubricants

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

Ezee Glide Plus Talc+Graphite Mix

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

Ezee Glide Plus Lubricant

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

Recommended usage:

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

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

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

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

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

CAUTION

Irritation and Chronic Exposure Hazard:

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



Bayer Seed Fluency Agent

821-074C Fluency Powder, case quantity

821-075C Fluency Powder, single 4.4 pound bucket

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

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

CAUTION

Dust and Explosion Hazard:

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

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

Options

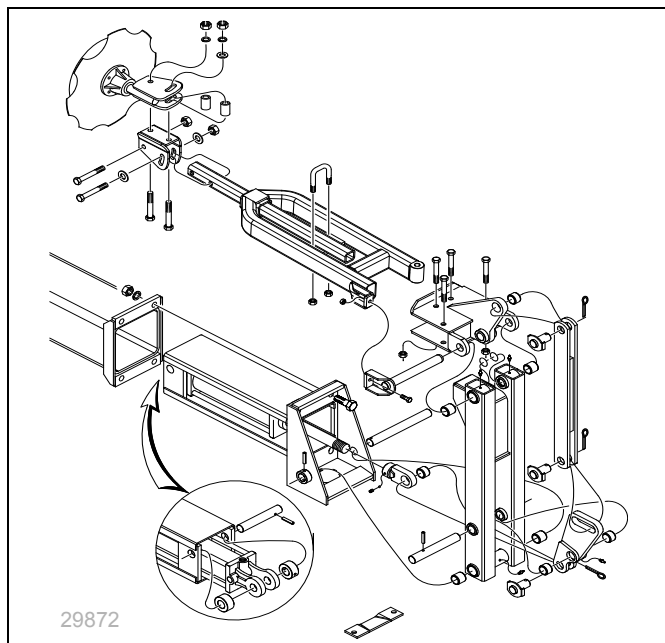
Dual Sequenced Markers

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

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

Description	Order Number
6-110 PT PLTR FLAT FOLD MKR	113-862A
9-65 3P PLTR FLAT FOLD MKR	113-863A

See “**Marker Operation (Option)**” on page 33.



Frame-Mounted Row Accessories

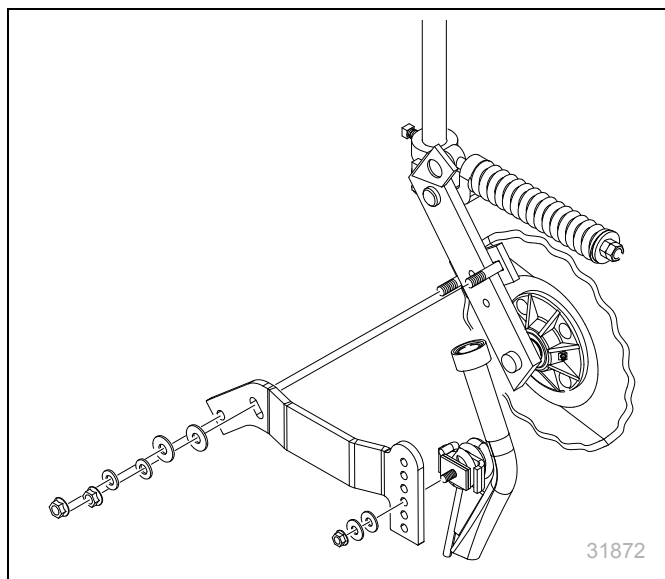
Frame-Mounted Coulters

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

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

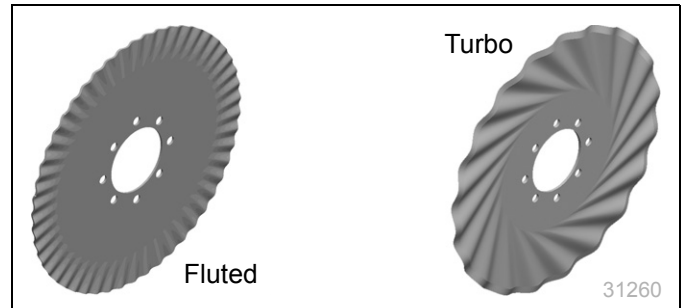
Coulter Bundle	Part Number
YP925 DRY FERT CLTR 20 TURB (9 coulters with Turbo blades)	407-573A
YP925 DRY FERT CLTR 20 FLUT (9 coulters with Fluted blades)	407-574A
YP625 3P 12 DRY FRT CLTR 20 TB (12 coulters with Turbo blades)	407-589A
YP625 3P 12 DRY FRT CLTR 20 FT (12 coulters with Fluted blades)	407-590A
YP625 3P 18 DRY FRT CLTR 20 TB (12 coulters with Turbo blades)	407-571A
YP625 3P 18 DRY FRT CLTR 20 FT (12 coulters with Fluted blades)	407-572A

See page 44 and page 46 for adjustments.



51 cm (20in) Coulter Blades

Blade Type	Part Number
COULTER BLADE 20 FLUTED (8 mm wave at edge of full 51.9 cm)	820-074C
5/8 WAVY-20" TURBO BLADE (18.8 mm wave at edge of full 51.4 cm)	820-180C

**Dual Terra-Tine™ Row Cleaners**

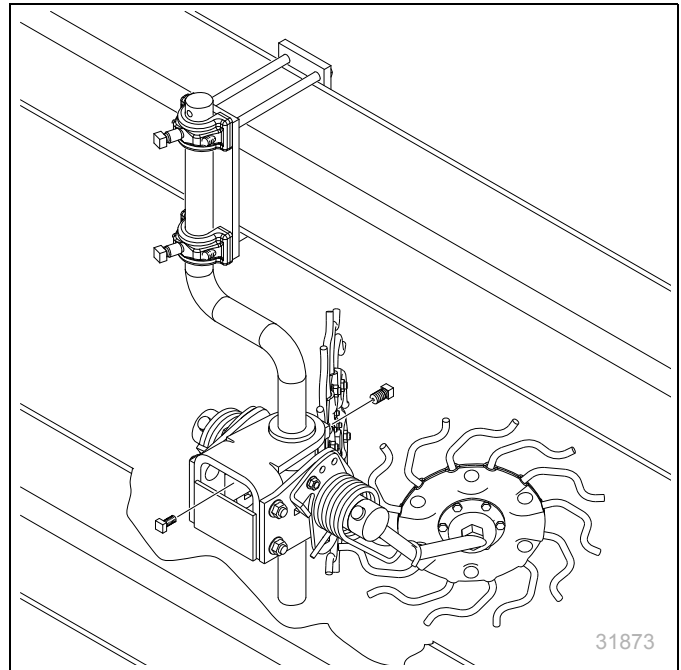
These row cleaners are frame-mounted behind the coulters and ahead of the openers. The bundle below includes 12 dual row cleaners, which mount in line with the center row of each triple.

Twin-row and single-row Planters do not support Terra-Tine™ row cleaners. Use unit-mount rigid row cleaners (page 101).

Order one kit per Planter:

Terra-Tine	Part Number
YP625-18TP FM DOUBLE TT (includes 6 double row cleaners)	207-251A

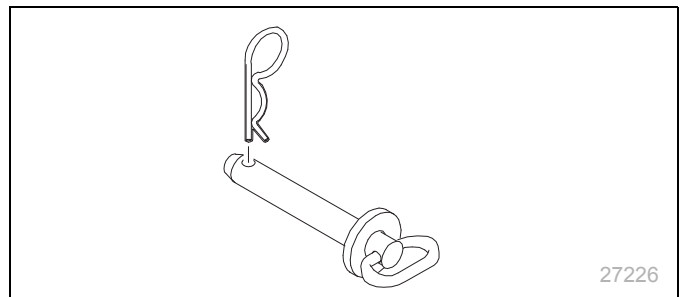
For operations, See “Dual Terra-Tine™ Adjustment (Option)” on page 47.

**Row-Mounted Accessories****Lock-Up Pins**

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

Description	Part Number
PIN HITCH 1 X 6 W/HAIRPIN	805-435C

See “Row Unit Shut-Off” on page 62.



Rigid Row Cleaners

Optional Martin row cleaners are unit-mounted.

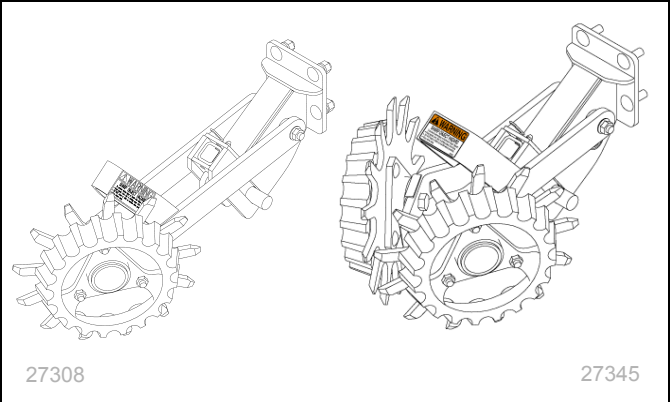
Twin-Row Planters support only single-wheel row cleaners, in alternating left/right cleaner hub orientations.

Triple-row Planters cannot mount rigid row cleaners. Use frame-mounted Terra-Tine™ row cleaners (page 100).

Coulter-mounted (requires coulter):

Unit-Mount RC (UMRC) Kits	Part Number
YP625-TR SINGLE UMRC (includes 6 left and 6 right, 12 mounts)	207-252A
YP925-0965 DOUBLE UMRC (includes 9 doubles and mounts)	207-253A
Manual (not included in above kits)	204-085M-A

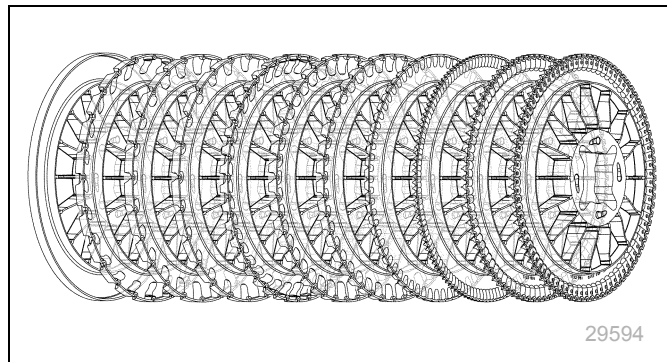
For operations, see:
“Unit-Mount Cleaner Adjustments” on page 55.



Seed Meter Disks

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

Meter Disks	Part Number
Canola, 150 Cell	837-148C
Canola, 250 Cell	817-991C
Corn, 24 Cell (Large, Flat)	817-836C
Corn, 24 Cell (Large, Round)	817-794C
Corn, 24 Cell (Medium, Round)	837-126C
Corn, 24 Cell (Small, Round or Flat)	817-795C
Corn, 40 Cell (Large, Flat)	817-838C
Corn, 40 Cell (Large, Round)	817-796C
Corn, 40 Cell (Medium, Round)	837-127C
Corn, 40 Cell (Small, Round or Flat)	817-797C
Cotton, 60 Cell	817-857C
Edible Bean, Large 56 Cell	817-967C
Edible Bean, Medium 60 Cell	837-065C
Industrial Hemp, 5 Cell	837-364C
Industrial Hemp, 30 Cell	837-386C
Milo, Pelletized Sugar Beet 30 Cell	837-057C
Milo, 65 Cell	817-849C
Milo, 130 Cell	817-800C
Soybeans, 84 Cell	817-798C
Soybeans, 168 Cell	403-551D
Sunflower, 24 Cell	817-851C
Sunflower, 60 Cell (Small)	837-234C
Sunflower, 60 Cell (Medium)	837-235C
Volumetric, No., 84 Cell	817-867C



Meter Disk	Part Number
Blank, 0 Cell	817-841C

See “Seed Meter Setup and Adjustment” on page 59.

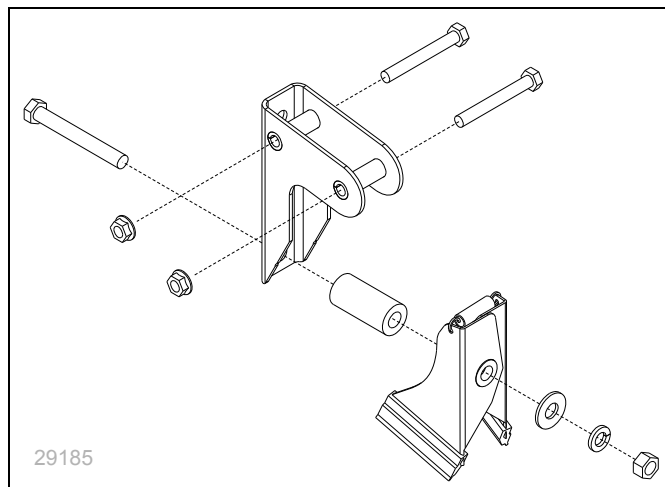
Inside Disk Scrapers

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

Description	Part Number
Inside Scraper	122-278S

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

See page 124 for scraper installation. The spring-loaded carbide scraper requires no adjustment.



Gauge Wheel Scrapers

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

Order one part per wheel (2 per opener).

Wheel Scrapers	Part Number
2 ¹ / ₂ in (6.4 cm) scraper	404-194D
3in (7.6 cm) scraper	404-195D
4in (10.2 cm) scraper	404-196D

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

For operations, see:

“Adjusting Gauge Wheel Scrapers (Option)” on page 58.



Seed Firmers

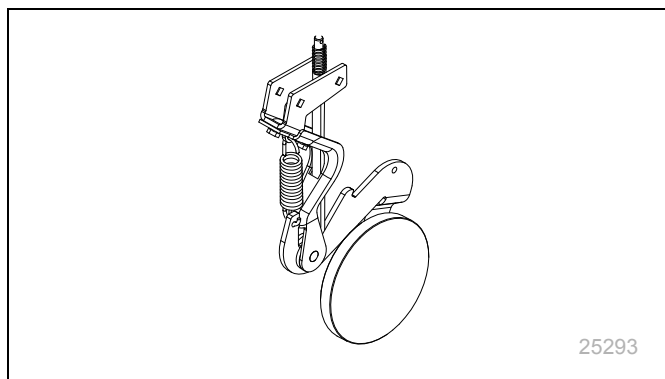
The base YP625TD and YP925TD Planter requires a choice of row unit bundles which include one of three firmers: seed flap, Keeton®, or Seed-Lok®. Only one type of seed firmer may be installed at the same time. Order one per row.

Seed-Lok® Seed Firmer

Description	Part Number
25 Series Seed-Lok® kit (per opener)	404-093K

For operations, see:

“Seed Firmer Adjustments” on page 65.



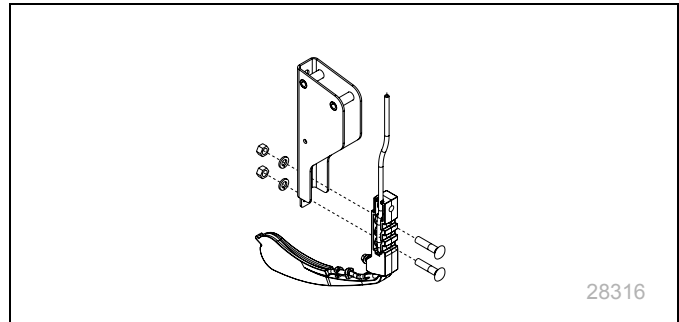
Keeton® Seed Firmer

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

Description	Part Number
Keeton® Seed Firmer (per opener)	890-840C

For operations, see:

“Seed Firmer Adjustments” on page 65.

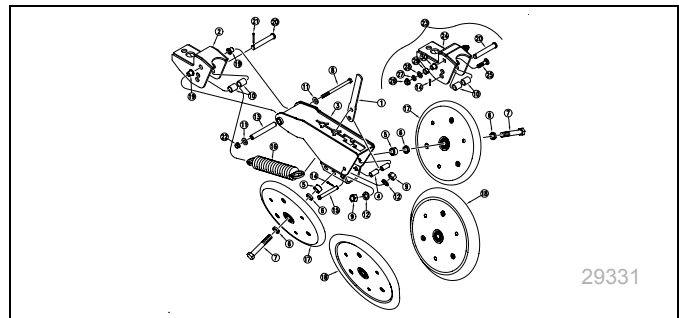
**Row Unit Press Wheels**

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 66.

**Seed Lubricant**

Description	Order Number
Ezee Glide Plus Talc + Graphite Mix (5 gallon /19 liter container)	821-069C

See **“Loading Seed”** on page 23.

See **“Seed Lubricants”** on page 98.

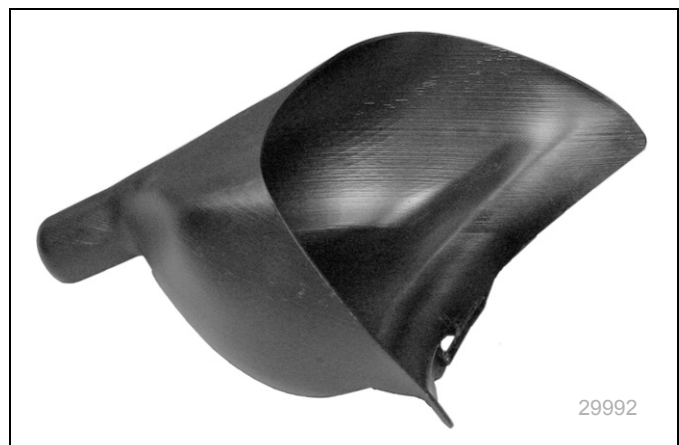
**Clean-Out Container**

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

Description	Order Number
AIR METER CLEAN OUT FUNNEL	817-811C

See **“Funnel Conversion”** on page 79.

See **“Meter Clean-Out”** on page 80.





Appendix A - Reference Information

Specifications and Capacities

Model	YP625TD12TR110	YP625TD18TP110	YP925TD0965
Row Count	12 (6 twin)	18 (6 triple)	9
Row Spacing	110 cm	110 cm	65 cm
Swath-Averaged Row Spacing*	55.0 cm	36.7 cm	65.0 cm
Swath (Channel Width)	660.0 cm	660.0 cm	585.0 cm
Width, no Markers	695.0 cm	695.0 cm	613.1 cm
Width, with Markers	705.0 cm	705.0 cm	623.1 cm
Span (between end openers)	571.3 cm	600.8 cm	520.0 cm
Length	412.0 cm	412.0 cm	280.0 cm
Working Height, w/Markers	223.0 cm	223.0 cm	223.0 cm
Working Height, no Markers	192.0 cm	192.0 cm	192.0 cm
Transport Height, w/Markers	280.0 cm	280.0 cm	280.0 cm
Transport Height, no Markers	252.0 cm	252.0 cm	252.0 cm
Transport Clearance	Depends on Tractor Hitch		
Center of Gravity	-170 cm	-165 cm	-173 cm
Seed Capacity	507 liters	761 liters	381 liters
Fertilizer Capacity	754 liters	754 liters	754 liters
Hitch	2-Point w/Lift-Assist		3-Point
Hitch Category	ASAE (ASABE) S217.12 DEC2001 (ISO 730-1:1994) Hitch Category IV		
Hydraulic Circuits Required	2 or 3 circuits, 155 bar, 74 liters/minute		1 or 2 circuits, 155 bar, 36 liters/minute
Weight (empty, base) ²	3400 kg	4100 kg	2700 kg
Weight (maximum, full) ¹	4000 kg	4600 kg	3100 kg
Gauge Wheel Tire Size	8R19.5 LT 12 Ply 1600 kg load rating		
Lift-Assist Tire Size	9.5Lx15 8-Ply 1100 kg load rating		n/a
Minimum Tractor Required ¹	95 - 100 kW	115 - 125 kW	80 - 85 kW
Seed Monitor	DICKEY-john® PM400, monitoring ³ :Seed Tubes (all), Ground Speed		
Opener Down Pressure	138 to 248 kg		
Opener Travel (Up - Down)	25 cm		
Opener Depth Range	0 to 9 cm		

*. Use this figure for "ROW SPACING" in PM400 monitor setup.

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

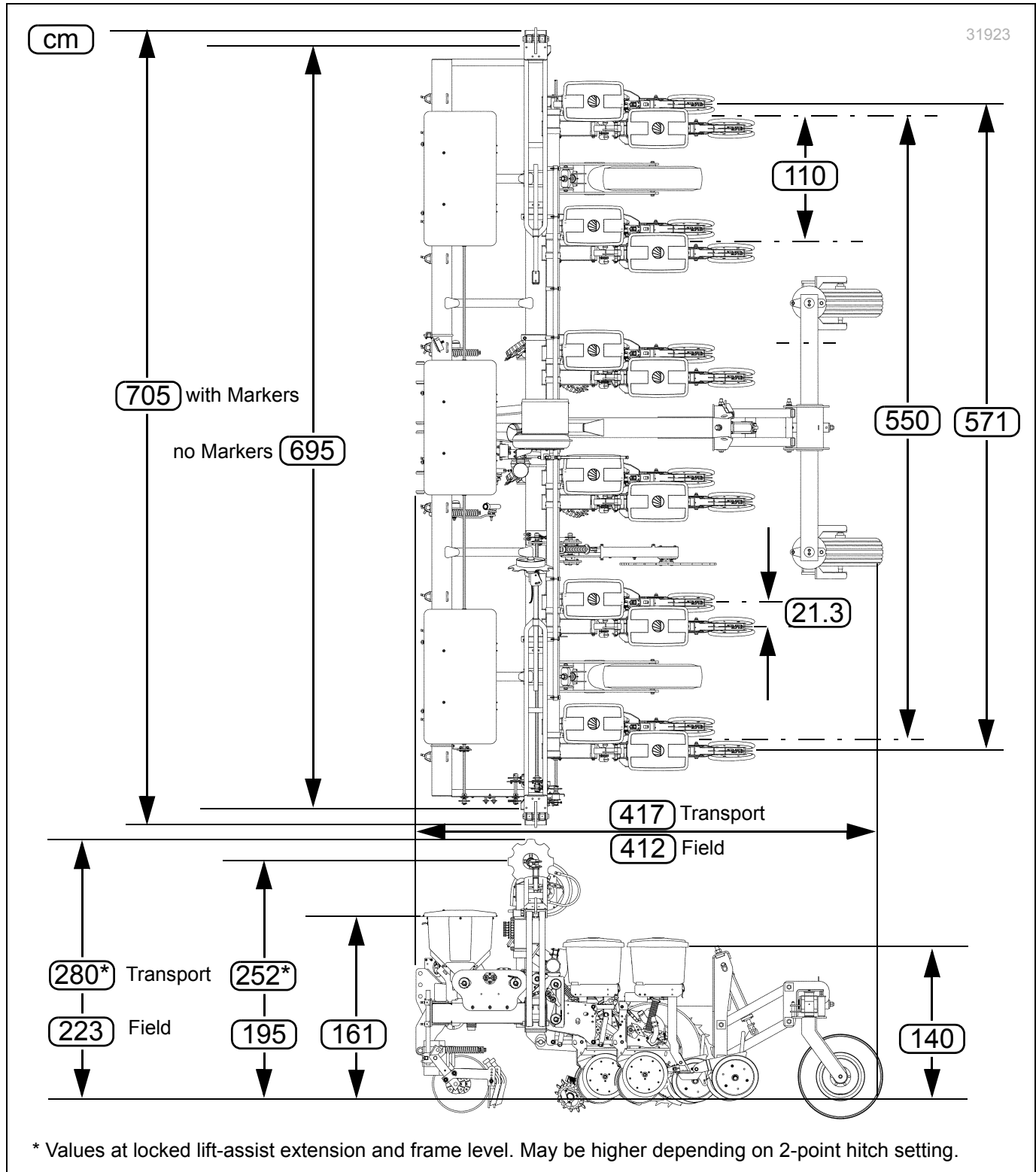
1. Weight can vary by thousands of pounds depending on options installed. See **Transport** topic.

2. Power requirements vary significantly with conditions and practices.

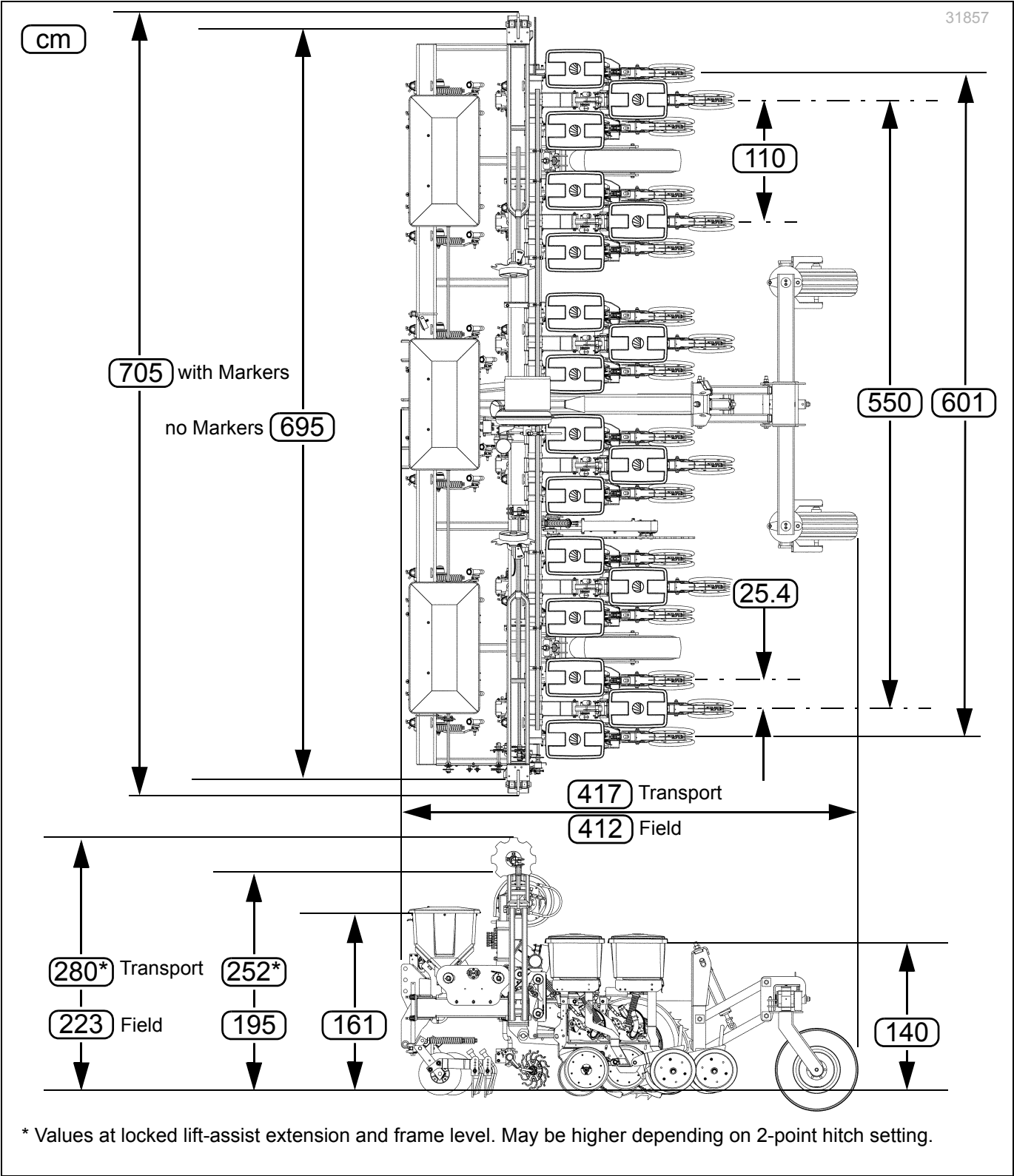
3. Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressure.

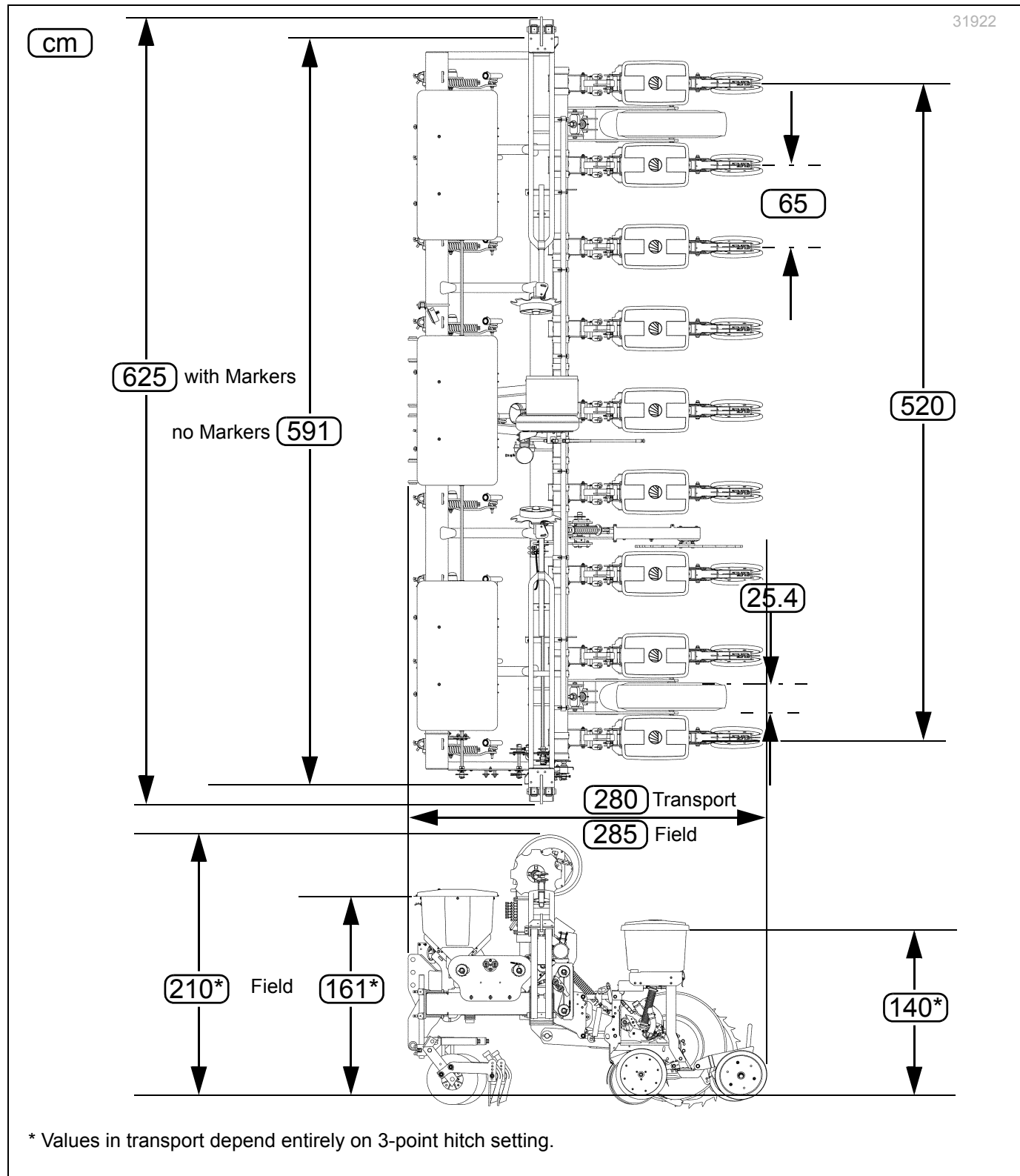
Dimensions

YP625TD12TR110 Dimensions



YP625TD18TP110 Dimensions



YP925TD0965 Dimensions

Tire Inflation Chart

Wheel	Tire Size	Inflation
Gauge	8R19.5 LT	760 kPa (110 psi)
Lift-Assist	9.5Lx15	305 kPa (44 psi)

Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found in the brochures included with your Operator's and Parts Manuals or online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer	Web site
Firestone	www.firestoneag.com
Gleason	www.gleasonwheel.com
Titan	www.titan-intl.com

Torque Values Chart

Bolt Size in-tpi ^a	Bolt Head Identification					
						
	Grade 2		Grade 5		Grade 8	
	N-m ^b	ft-lb ^d	N-m	ft-lb	N-m	ft-lb
1/4-20	7.4	5.6	11	8	16	12
1/4-28	8.5	6	13	10	18	14
5/16-18	15	11	24	17	33	25
5/16-24	17	13	26	19	37	27
3/8-16	27	20	42	31	59	44
3/8-24	31	22	47	35	67	49
7/16-14	43	32	67	49	95	70
7/16-20	49	36	75	55	105	78
1/2-13	66	49	105	76	145	105
1/2-20	75	55	115	85	165	120
9/16-12	95	70	150	110	210	155
9/16-18	105	79	165	120	235	170
5/8-11	130	97	205	150	285	210
5/8-18	150	110	230	170	325	240
3/4-10	235	170	360	265	510	375
3/4-16	260	190	405	295	570	420
7/8-9	225	165	585	430	820	605
7/8-14	250	185	640	475	905	670
1-8	340	250	875	645	1230	910
1-12	370	275	955	705	1350	995
1 1/8-7	480	355	1080	795	1750	1290
1 1/8-12	540	395	1210	890	1960	1440
1 1/4-7	680	500	1520	1120	2460	1820
1 1/4-12	750	555	1680	1240	2730	2010
1 3/8-6	890	655	1990	1470	3230	2380
1 3/8-12	1010	745	2270	1670	3680	2710
1 1/2-6	1180	870	2640	1950	4290	3160
1 1/2-12	1330	980	2970	2190	4820	3560

Bolt Size mm x pitch ^c	Bolt Head Identification					
						
	Class 5.8		Class 8.8		Class 10.9	
	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

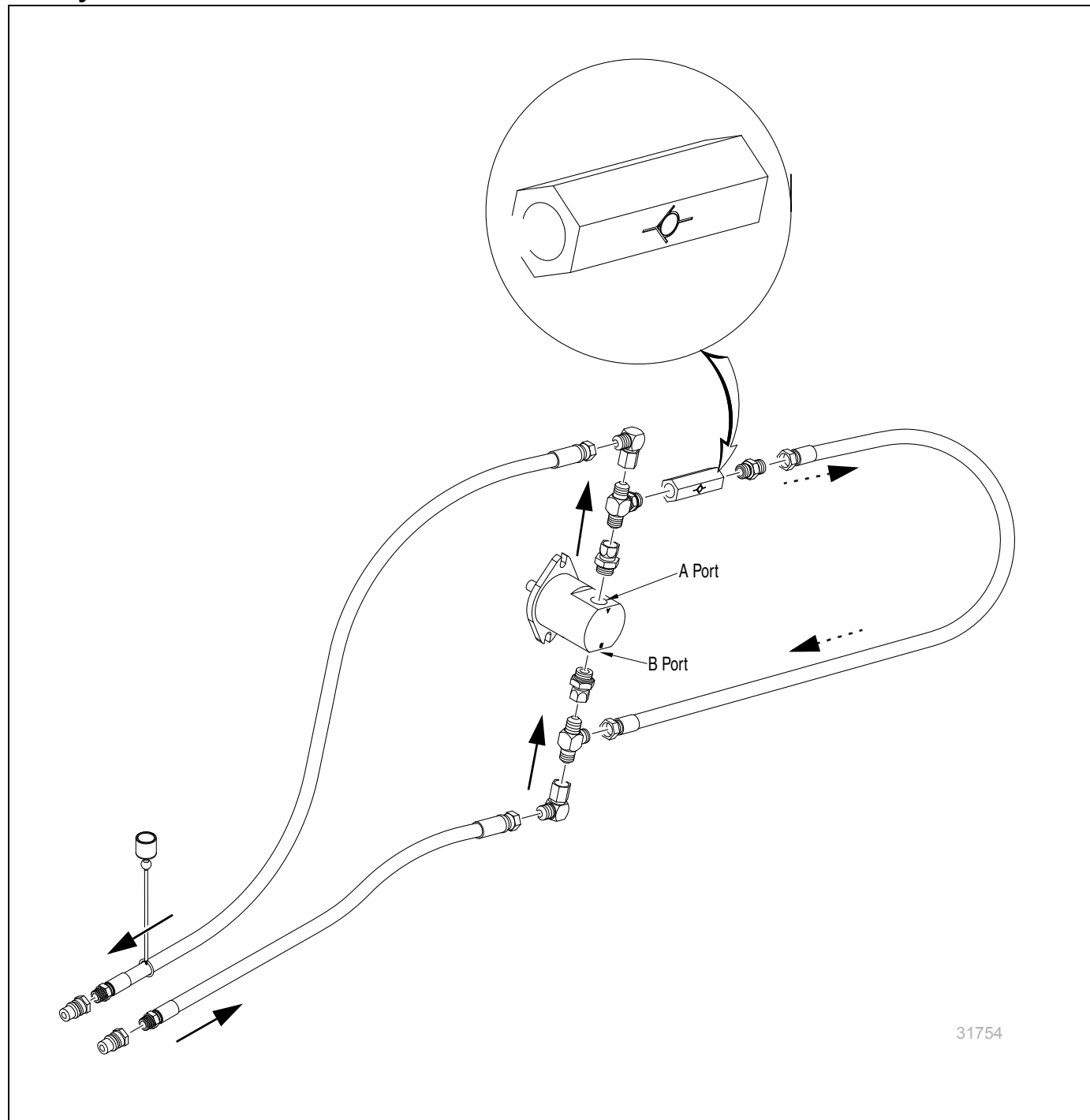
- a. in-tpi = nominal thread diameter in inches-threads per inch
b. N·m = newton-meters
c. mm x pitch = nominal thread diameter in mm x thread pitch
d. ft-lb = foot pounds

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

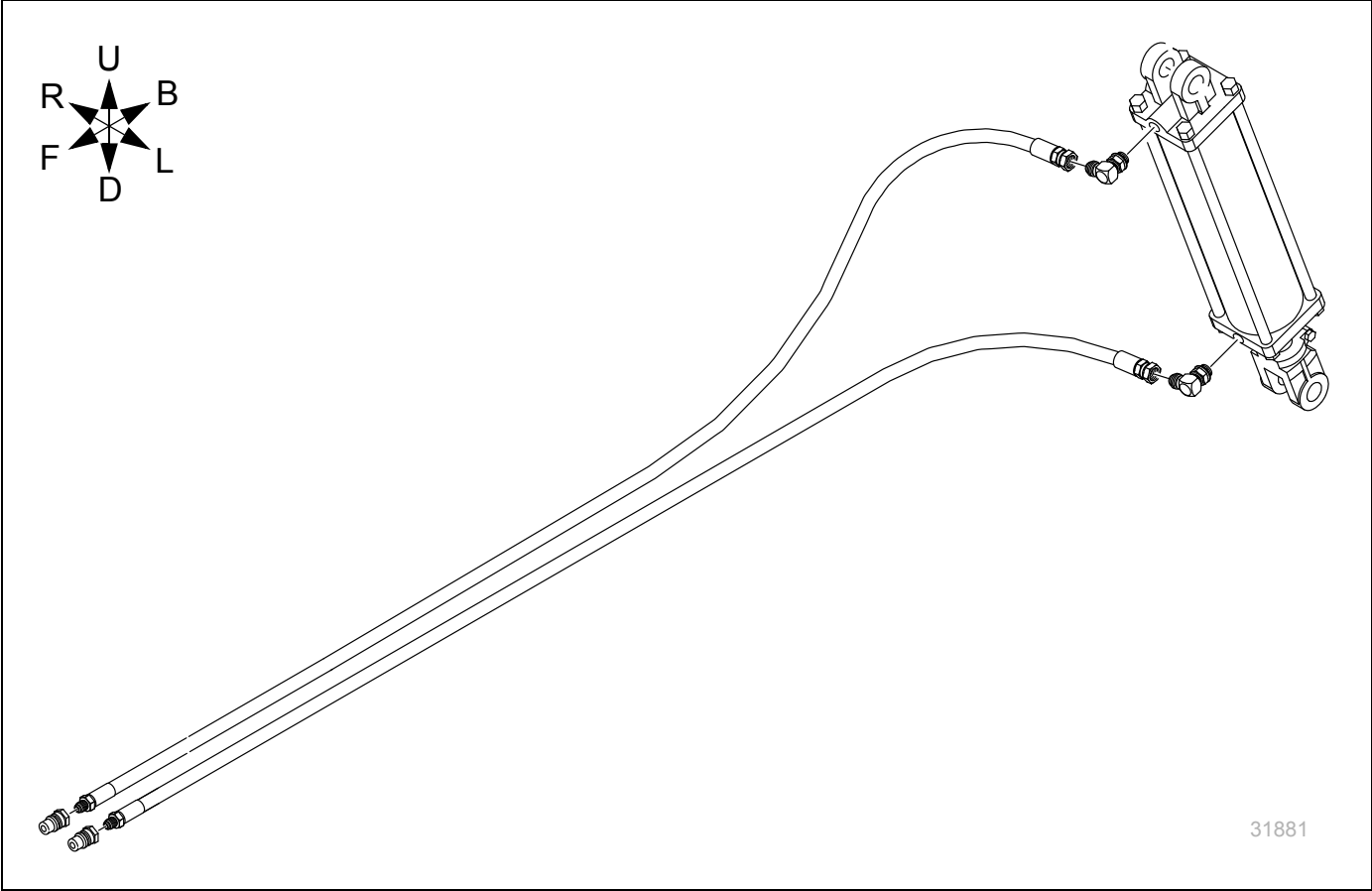
25199

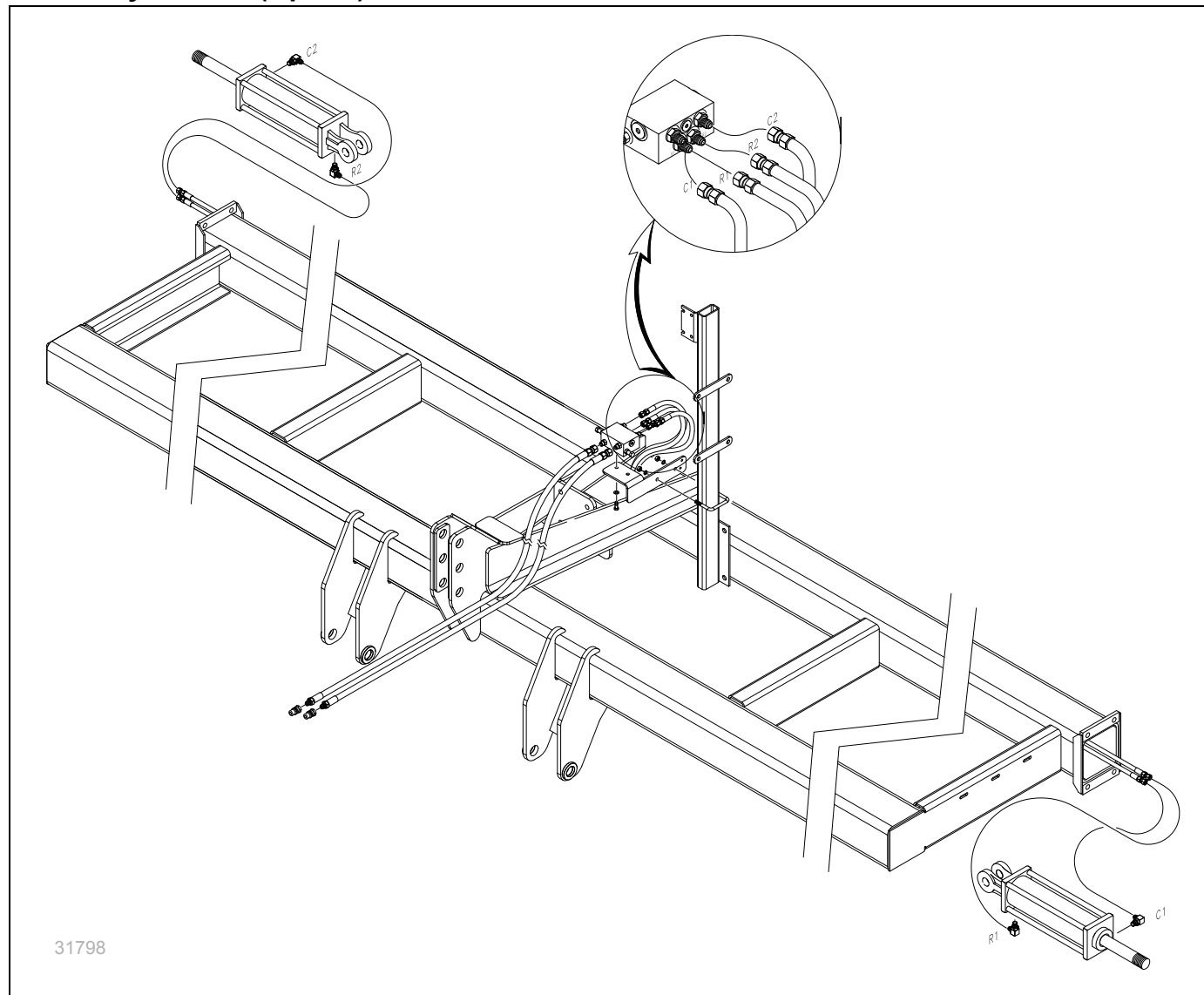
Hydraulic Diagrams

Fan Hydraulics



Lift Assist Hydraulics



Marker Hydraulics (Option)

Chain Routing

See also “Chain Maintenance” on page 88.

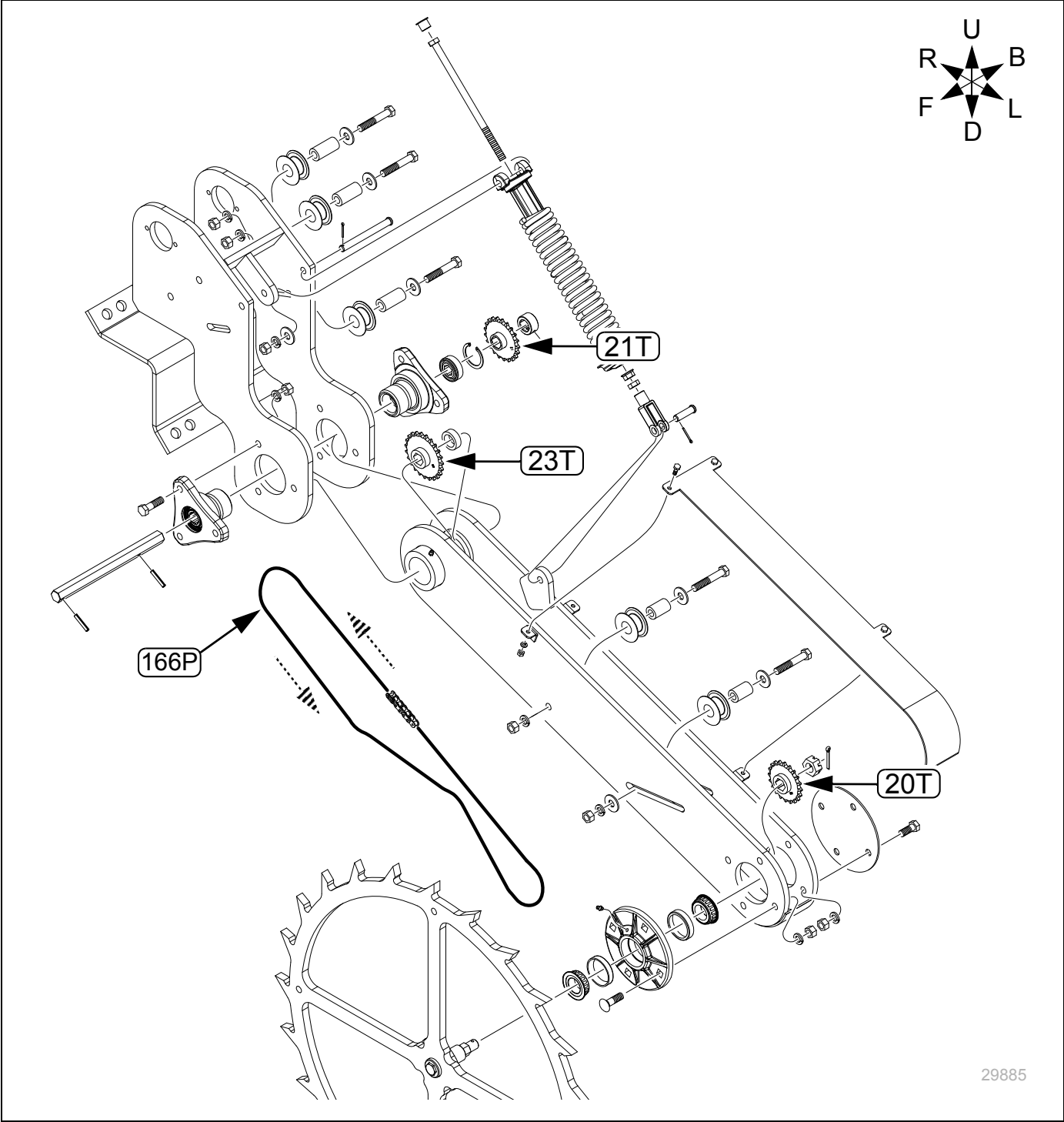
Ground Drive Arm Chain

- Legend:
- 34T

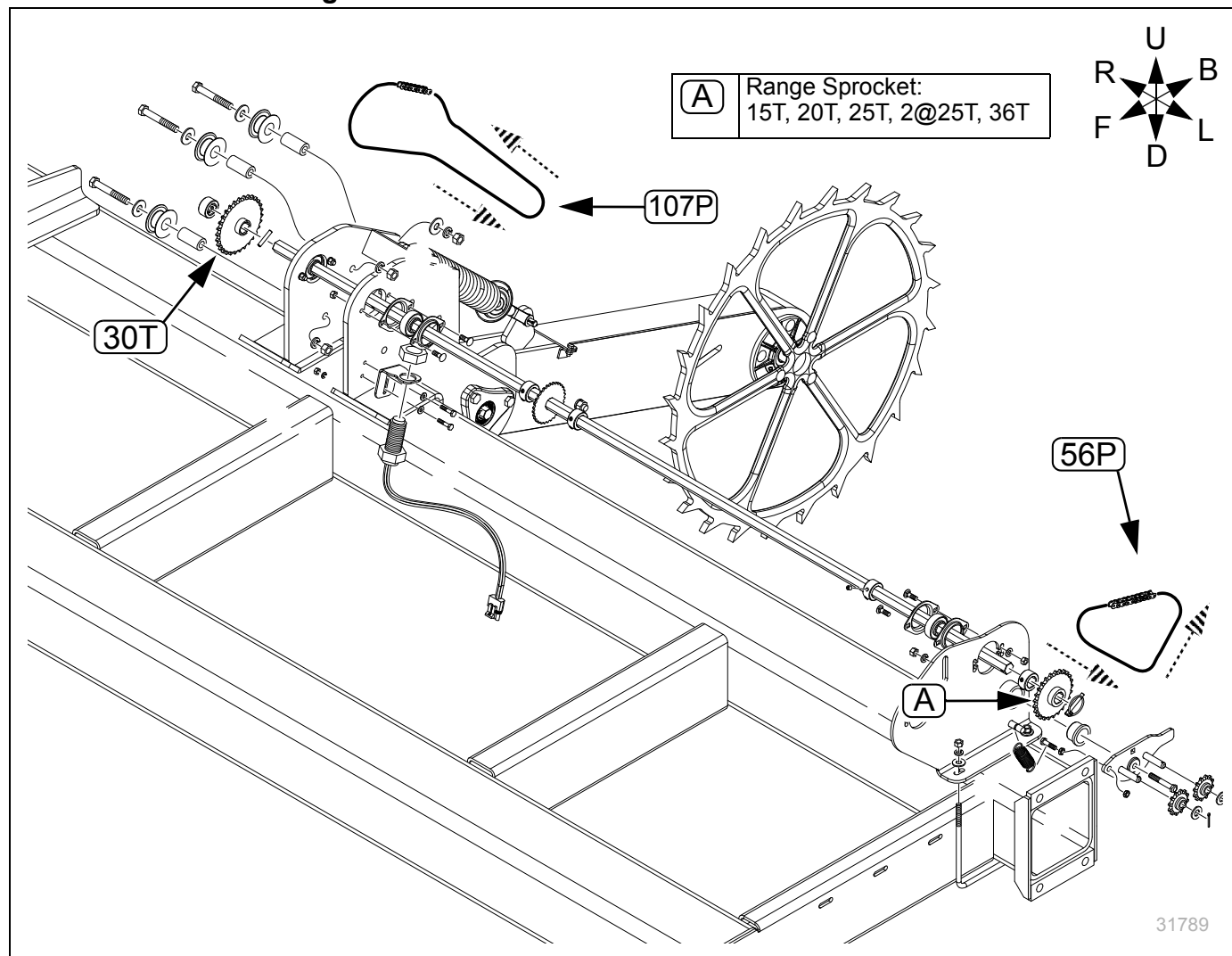
Sprocket or idler Tooth count
- 56P

Chain Pitch count
-

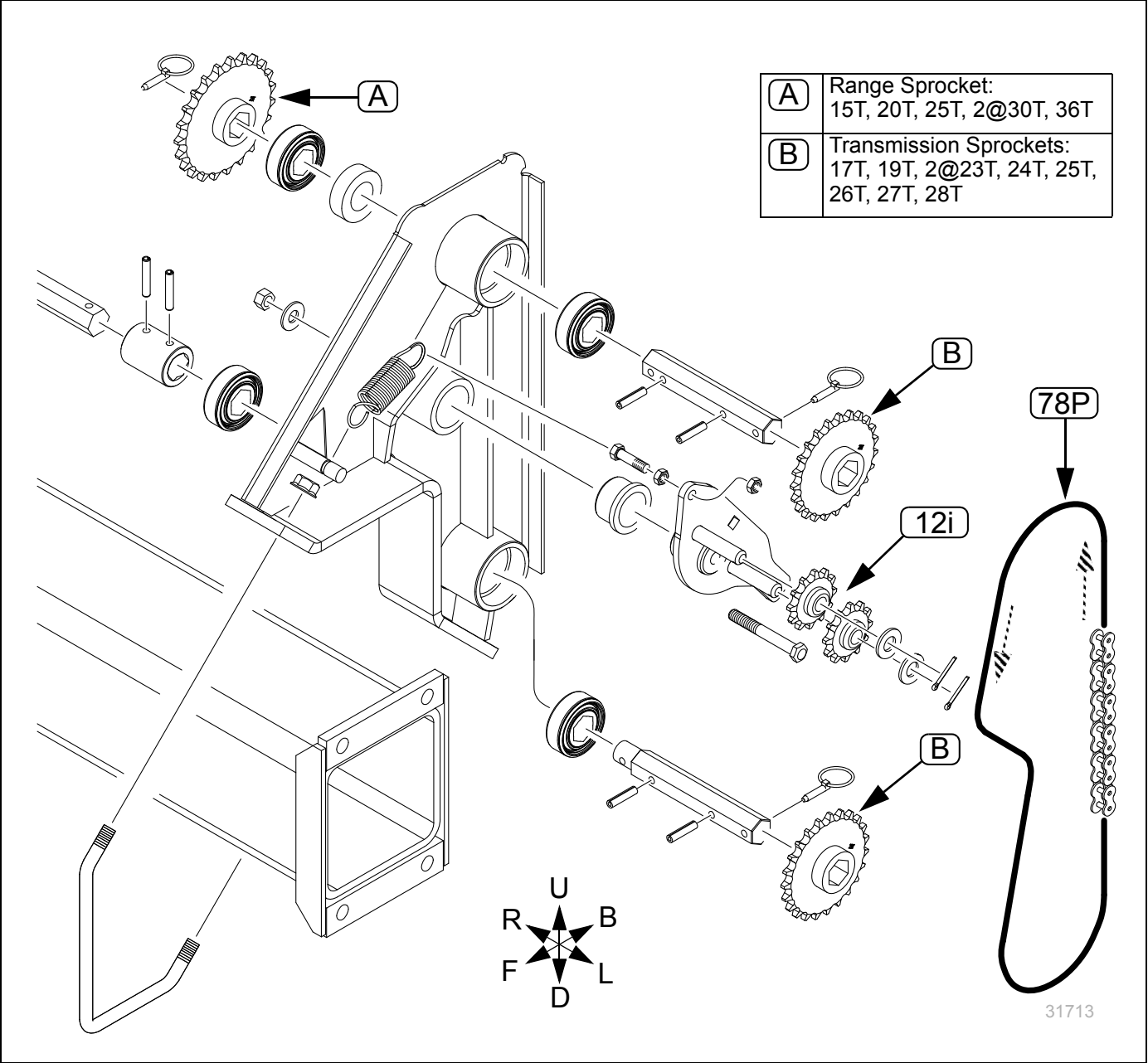
Direction of chain in motion



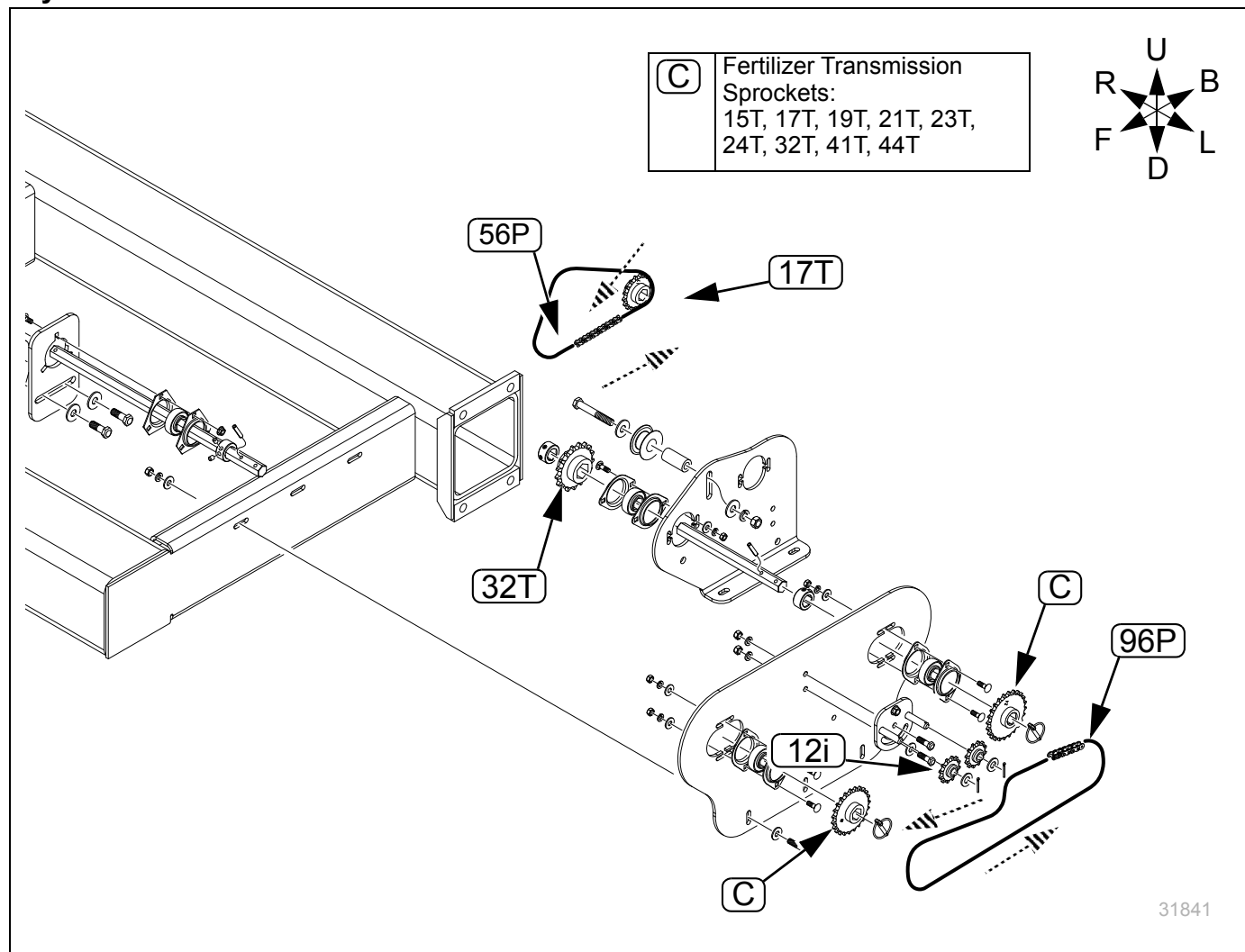
Transfer Shaft and Range Chains



Transmission Chain



Dry Fertilizer Chains



25AP Final Meter Drive

Legend:

34T

Sprocket or idler Tooth count

56P

Chain Pitch count

.....

Direction of chain in motion

Diagram of the 25P: Meter Drive (Front type) showing the chain path and components. The diagram includes labels for sprockets (19T, 12T), chain pitch (94P), and idlers (1, 2, 0). The chain path is indicated by arrows and dashed lines. The diagram is labeled 29619.

25P: Meter Drive (Front type)

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

Diagram of the 25P: Meter Drive (Mid type) showing the chain path and components. The diagram includes labels for sprockets (19T, 12T), chain pitch (120P), and idlers (2, 3, 4). The chain path is indicated by arrows and dashed lines. The diagram is labeled 29620.

Diagram of the 25P: Meter Drive (Rear type) showing the chain path and components. The diagram includes labels for sprockets (19T, 12T), chain pitch (148P), and idlers (2, 3, 4). The chain path is indicated by arrows and dashed lines. The diagram is labeled 29621.

25P: Meter Drive (Mid type)

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

25P: Meter Drive (Rear type)

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

Appendix B - Initial Setup

This Appendix covers setup tasks performed only once, or at infrequent intervals. Routine setup tasks are covered in “**Preparation and Setup**” on page 14. Perform Appendix B tasks first. Some of these items may already have been done by your Great Plains dealer:

- Seed monitor console installation (below)
- Frame-mounted row options (see manual supplied with accessory)
- Marker setup (Option, page 122)
- Scrapers (Option, page 124)

Seed Monitor Console Installation

Refer to Figure 97

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

CAUTION

Transport and Field Safety Risk:

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

The monitor includes cables for power ②, speed sensor ③ and sensor harness ④. Installation instructions are found in the included DICKEY-john® 11001-1372 manual.

Power required is 12Vdc. Power color code is:

- + positive: red
- negative: black

The included bracket ⑤ requires customer-provisioned fasteners.

Post-Delivery Checklist

1. Read and understand “**Important Safety Information**” on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 91.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire Inflation Chart**” on page 109.

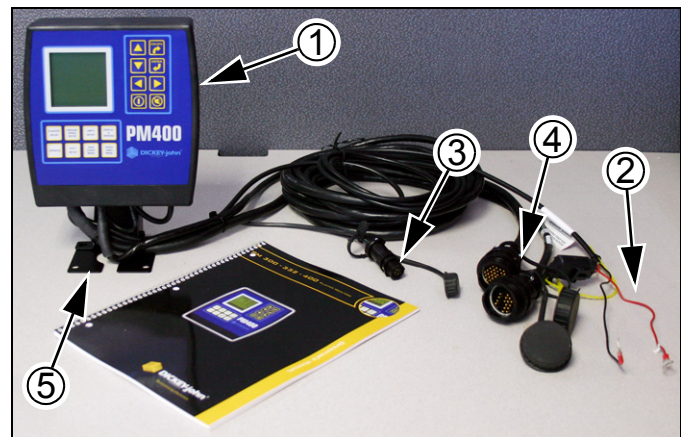


Figure 97
PM400 Tractor Components

32005

Seed Monitor Console Quick-Start

The PM400 factory defaults need to be changed to metric mode, the row configuration of your YP625PD/TD and YP925TD Planter, and the speed sensing used on these Planters.

The pages 119 through 121 describe setting:

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

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

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

Power-Up The Console

Refer to Figure 97 on page 118

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

Refer to Figure 98

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

Refer to Figure 99

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

Set Metric Mode

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

Refer to Figure 100

6. Press the Down Arrow  key twice to highlight the Units  icon.
7. Press the ENTER  key to modify the Units.
8. Press either the Up or Down Arrow ( or ) to change the large “E” to an “M”  as shown in *Figure 100*.
9. Press the ENTER  key to save this change.

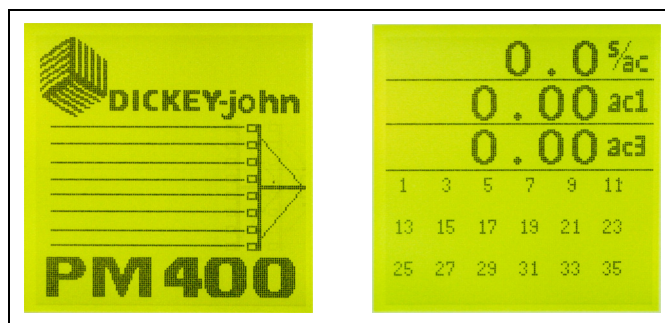


Figure 98
Power-Up, Operate Screens

31928
31930

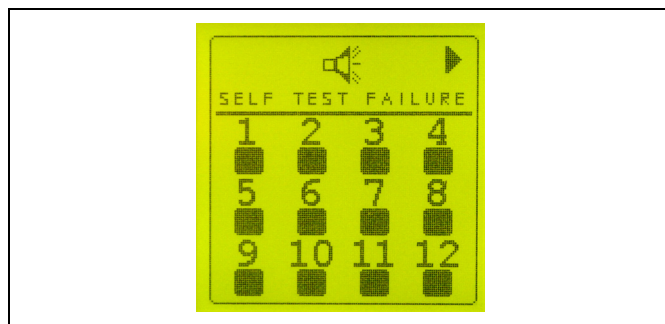


Figure 99
Error Screen (No Harness)

31929



Figure 100
Display: Metric Mode Set

31933

Set Planter Row Count

The PM400 supports three row configurations predefined by you.

Refer to Figure 101

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

10. Press the PLANTER SETUP  key.
Note that the Planter Configuration Indicator  is under the "1" in the Configuration block **123**. This change is for Configuration 1.
11. Press the Right Arrow  key to highlight the Number of Rows **#12** field **a**.
12. Press the ENTER  key to modify the # of Rows.

Refer to Figure 102 and the table below

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

Set Planter Row Spacing

15. Press the Down Arrow key  to select the Row Spacing field **b**.
16. Use the Left and Right Arrow keys ( or ) to select the digits to modify. Use the Up or Down Arrow keys ( or ) to increment or decrement. Change the row spacing to the value from the table on page 120 for your Planter model and operating configuration.
17. Press the ENTER  key to save the corrected row spacing.

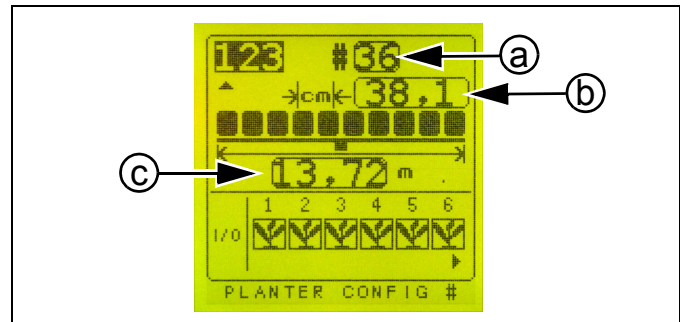


Figure 101
Planter Default Setup

31934

NOTICE

Population Error Risk:

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

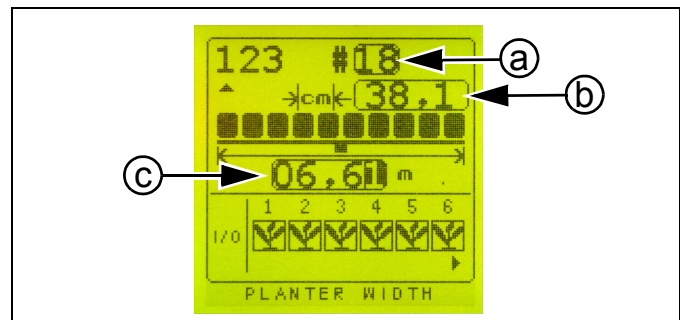


Figure 102
18-Row Triple-Row

31936

Planter YP625PD18TP110, YP625TD18TP110			
Models: Spacing Used	# of Rows	Row Spacing	Swath
110cm Triple All Rows	18	36.7 cm	6.60 m
110cm Single Center Rows	6	110.0 cm	6.60 m
110cm Twin Left Pairs	12	55.0 cm	6.60 m
110cm Twin Right Pairs	12	55.0 cm	6.60 m
55cm Single Outside Rows	12	55.0 cm	6.60 m

Planter Model: YP625TD12TR110			
Spacing Used	# of Rows	Row Spacing	Swath
110cm Twin All Rows	12	55.0 cm	6.60 m
110cm Single Left Rows	6	110.0 cm	6.60 m

Planter Model: YP925TD0965			
Spacing Used	# of Rows	Row Spacing	Swath
65cm Single All Rows	9	65.0 cm	5.85 m

Check Swath

Note that the swath  value was automatically updated when either the # of Rows or Row Spacing were revised and saved.

18. Examine the swath (width) value. It should be very close to the value from the table on page 120. If it has a small round-off error, you can ignore it, or manually set the swath value to match the table value. Use  to select the swath field. Use     to modify. Use ENTER  to save.

Row Setup

When setting up a Planter configuration, the monitor automatically sets all row sensors to On , and clears any previous settings for Off , Disabled  or Flow .

If you are using alternate row spacings (other than all rows on), Great Plains recommends configuring that setup as Planter configuration 2  or 3 . Use configuration 1  for all rows on.

Set Ground Speed Constant

Refer to Figure 103

The monitor factory default for speed constant (sensor pulses per 400 feet) is incorrect for this Planter family. A correct constant is required for accurate monitor reports of hectares planted and seeds per hectare. There are two ways to obtain and enter a useful constant:

- Recommended:
Perform a speed calibration as described in the DICKEY-john® 11001-1372 manual. This creates a number that is accurate for your field conditions and intended planting speed.
- Alternate:
Enter the suggested default constant manually. This number is approximate, and is based on factory tests on fields, and at speeds, that may differ from yours.

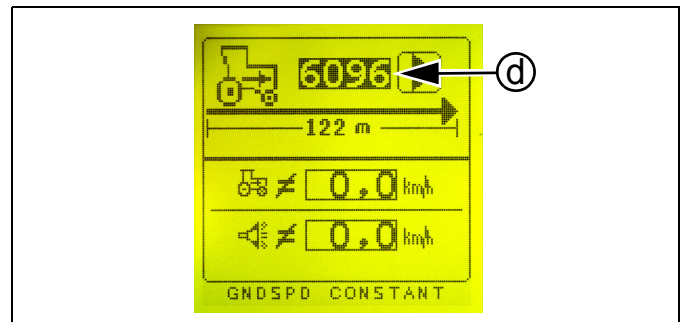


Figure 103
Monitor Factory Default Speed

31937

Manual Speed Calibration Entry

Refer to Figure 104

1. Press the GROUND SPEED SETUP  key. The constant field  is automatically selected. Press ENTER  to modify it.
2. Use the Left and Right Arrow keys ( or ) to select the digits to modify. Use the Up or Down Arrow keys ( or ) to increment or decrement. Set the value to:
871 (pulses in 122m).
3. Press ENTER  to save the number.

Optionally, set the alarm field  to the maximum desired field speed.

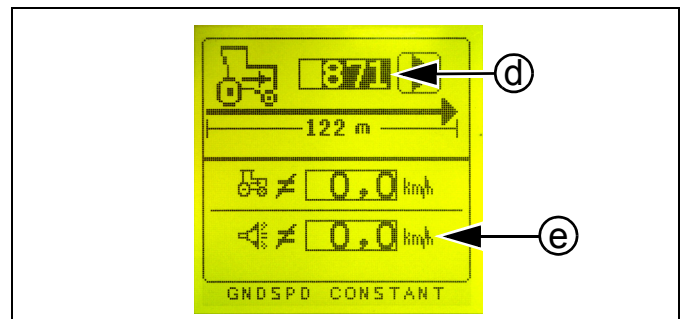


Figure 104
Suggested Default Planter Speed

31938

Initial Marker Setup (Option)

Marker Speed Adjustment

CAUTION

Overhead Sharp Object and Crushing Hazards:
Never allow anyone near the Planter when folding or unfolding the markers. You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail. Marker discs may be sharp.

Refer to Figure 105 and Figure 106

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

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

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

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

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

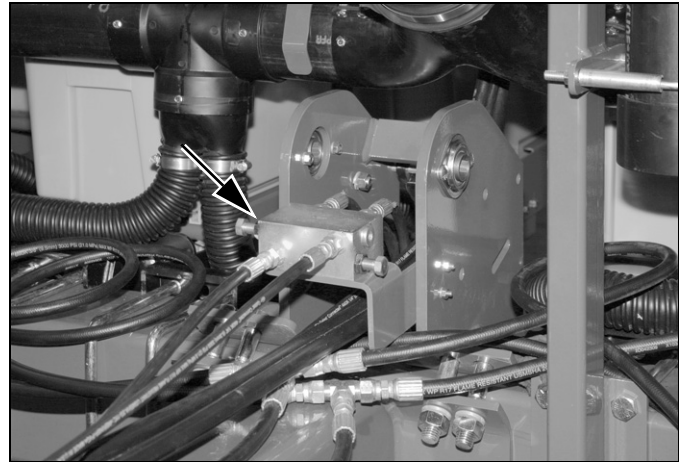


Figure 105
Marker Sequence Valve Location

31007

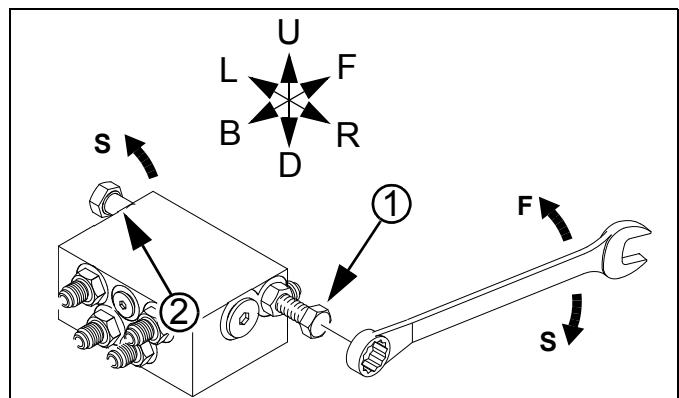


Figure 106
Marker Speed Adjustment

14048

Marker Extension

Marker extension needs to be adjusted once for the initial YP625TD and YP925TD Planter setup, and later only if changing row spacing (including row shut-off for twin- or single-row operation on a triple-row Planter).

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

Note: Due to the relatively steep arm angles of short markers, extension measurements are likely to be incorrect if the main tool bar is not at normal operating height (66 cm).

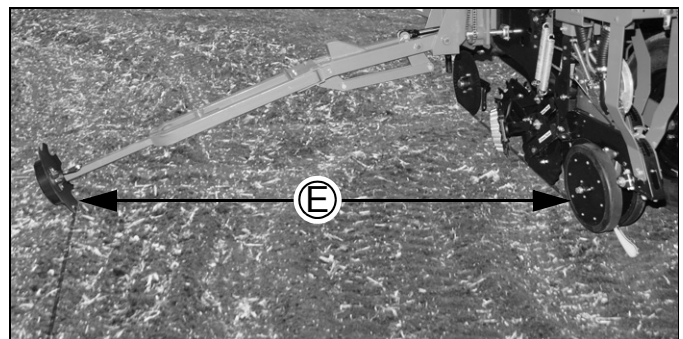


Figure 107
Marker Extension

31039

3. Tilt up and unfold one marker.

Find the suggested initial marker Extension E in the tables on this page.

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

Refer to Figure 107 and Figure 108

4. Measure out the *Extension* E distance from each outside end row unit (whether in use or not). Do not measure to center of row pair or triplet.
5. Mark the ground at this point.
6. To adjust marker width, loosen nuts ① on U-bolts ②. Move marker disk tube ③ in or out to get the proper adjustment. Tighten nuts ①.
7. Repeat steps 3 through 6 for the other side.
8. With the Planter still lowered, drive forward a few feet for each side.
9. Check the mark locations. Adjust to obtain the table value.

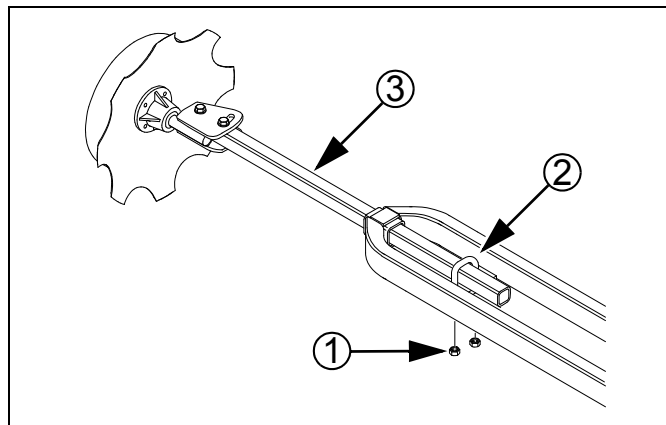


Figure 108
Marker Extension Adjustment

25450

Planter Model: YP625TD18TP110

Spacing Used	Rows Used	Marker Extension	
		Left	Right
110cm Triple	All Rows	375.0 cm	
110cm Single	Center Rows	375.0 cm	
110cm Twin	Left Pairs	385.0 cm	365.0 cm
110cm Twin	Right Pairs	365.0 cm	385.0 cm
55cm Single	Outside Rows	375.0 cm	

Planter Model: YP625TD12TR110

Spacing Used	Rows Used	Marker Extension	
		Left	Right
110cm Twin	All Rows	380.8 cm	
110cm Single	Left Rows	389.2 cm	372.4 cm

Planter Model: YP925TD0965

Spacing Used	Rows Used	Marker Extension	
		Left	Right
65cm Single	All Rows	325.0 cm	

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 109 and Figure 110

1. Remove one or both opener disc blades to gain safe access to the mount ①. Note the position of bushings and spacers for correct re-assembly (page 56).
2. Select one each:
 ⑧⑤ 802-024C HHCS 3/8-16X3 GR5
 ⑧④ 129BXT824 BRACKET FOR 890-929C FIRMER
 ⑧③ 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
 Insert the bolt ⑧⑤, from the rear, through the lowest hole of the bracket ⑧④. Place the tube ⑧③ over the bolt.
3. Select one scraper set:
 ⑨① 890-928C 25 SER AIR DESIGN IN SCRAPER
 Place the shoulder washer ② on bolt ⑧⑤ with the larger diameter to the rear (toward bolt head). Place the left scraper blade ③ on the washer, followed by the right scraper blade ④.
4. Select one each:
 ⑧⑨ 804-011C WASHER FLAT 3/8 USS PLT
 ⑨⑦ 804-013C WASHER LOCK SPRING 3/8 PLT
 ⑧⑦ 803-014C NUT HEX 3/8-16 PLT
 Place the flat washer ⑧⑨ on the bolt ⑧⑤, followed by the lock washer ⑨⑦ and nut ⑧⑦. Tighten bolt and nut to $3 \frac{3}{8}$ 16GR5 torque spec. Make sure blades pivot freely.
5. Select the scraper spring ⑤. Connect the spring between the blades, using the small top holes.
6. Select two sets:
 ⑧⑥ 802-172C HHCS 5/16-18X2 1/2 GR5
 ⑧⑧ 803-043C NUT HEX WHIZ 5/16-18 PLT
 Insert the scraper assembly ⑥ between the middle four lower square holes ⑦ of the opener frame. Secure with bolts ⑧⑥ and whiz nuts ⑧⑧.
7. Remount the removed disc blade.

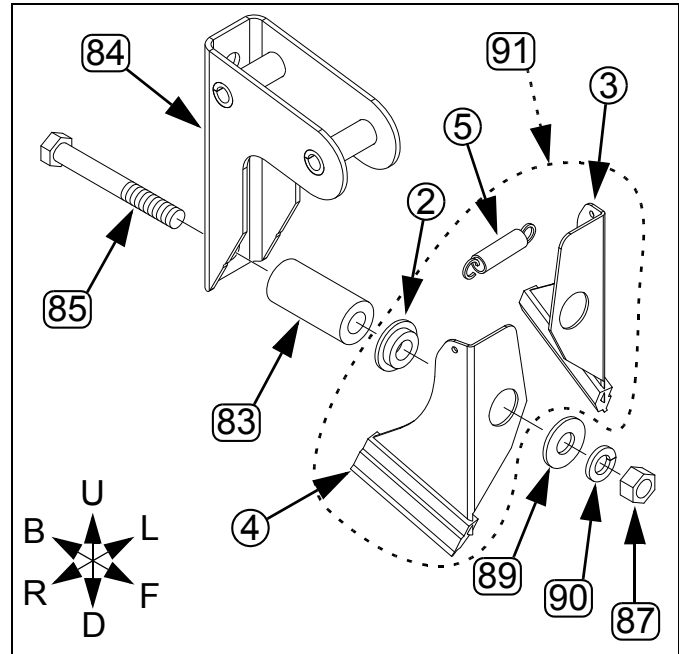


Figure 109
Scraper Pre-Assembly

29227

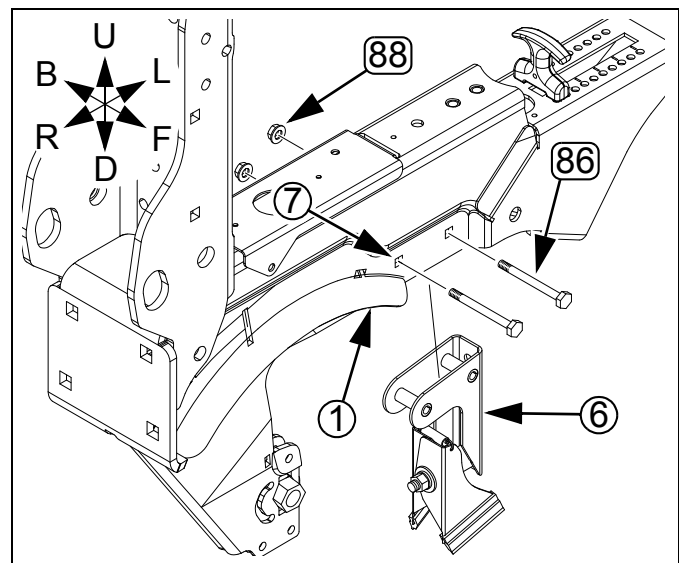


Figure 110
Scraper Installation

29228



Appendix C - Flat Ground Planting

The YP625TD and YP925TD Planters are optimized for planting on beds 18 cm high. For planting on flat ground, the gauge wheels and lift-assist wheels need to be elevated to run 18 cm higher.

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

Elevate Gauge Wheels

You need a hoist for this adjustment. If the Planter also has lift-assist, perform both adjustment on a firm level surface, such as pavement.

1. Raise the Planter with the 3-point hitch, or the 2-point hitch and lift-assist. Extend the parking stands. Install the cylinder lock on the lift-assist.

Refer to Figure 111

2. Attach the hoist to one of the gauge wheels, near the wheel axle ①. Lift the gauge wheel until the yoke adjuster ② is loose.
3. Remove the bolts and sleeves securing the yoke adjuster at the lower/rear holes ③ of the mount.
4. Raise the wheel with the hoist to align the top holes of the adjuster with the upper/forward holes ④ of the mount.
5. Re-install the sleeves and bolts removed at step 3.
6. Repeat step 2 through step 5 for the other gauge wheel.

For model YP925TD0965, the above is the only adjustment necessary.

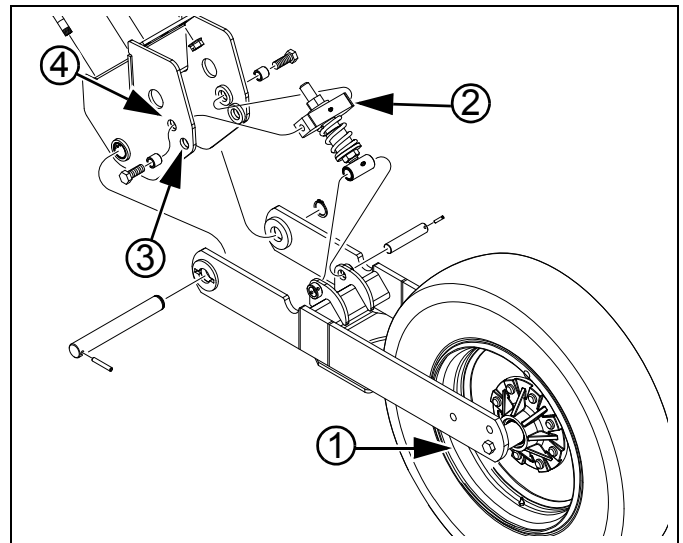
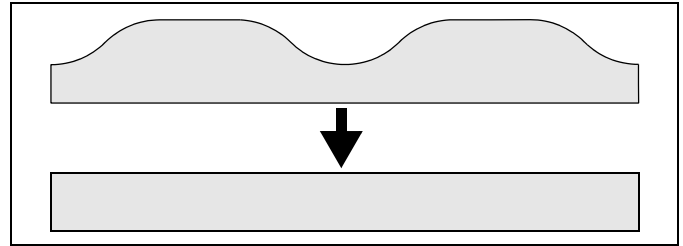


Figure 111
Elevate Gauge Wheel

31940

Elevate Lift-Assist Wheels

Refer to Figure 112

7. With the planter still raised, use a hoist or blocks to support the weight at the lift-assist mount ⑤.
8. Retract the lift-assist cylinder until the wheels are just off the ground. Measure the distance to the ground at the cross-tube.
9. Loosen the lower jam nut ⑥ at the lift-assist cylinder eyebolt. Spin it counter-clockwise, fully down.
10. Use a large wrench to rotate the top nut ⑦. Rotate until the distance measure at step 8 has been increased by 18 cm.
11. Spin the lower jam nut ⑥ fully up and tighten it.
12. Extend the lift-assist circuit. Install the lift lock.

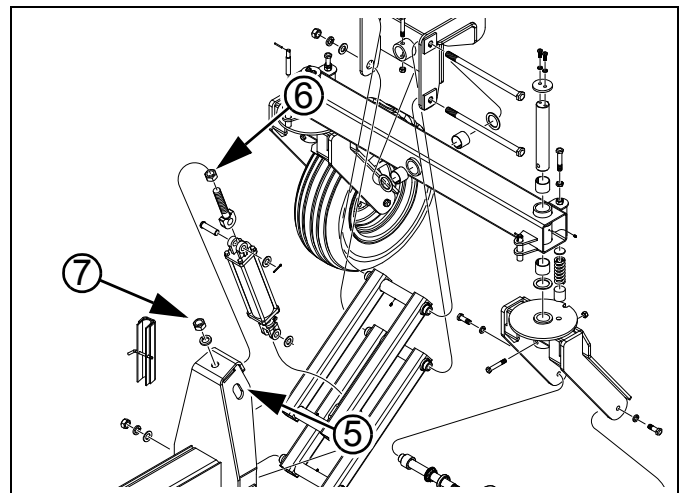


Figure 112
Elevate Lift-Assist

31797

2-Year Limited Warranty (Yield-Pro Planters)

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

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

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

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

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

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

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

27120



A			
ABS	77	chains	
address, Great Plains	13	meter drive	114
adjustments	38	chamber	28
Air Design	121	check valve, fan	30
air release screen	32	checklists	
air system	28	air system	34
Air-Pro®	12, 32	electrical	15, 34
Air-Pro® meter	28	ending planting	36
AirPro® system	28	fertilizer	35
alarm	118	field	34
Alarm Cancel	116	field turns	36
amber reflectors	7	first pass	36
angle of cut	48	hydraulic system	34
angle, radar	34	mechanical	34
automatic sequence valve	33	meter	35
axle hole	49	meter drive	34
axle, wheel	49	pre-setup	14, 115
A-27, manual	12	pre-start	19
		row units	34
B		suspending planting	36
ballast	21	chemicals	2, 4
beans	57	children	3
black	16, 115	chips	82
blade spreader	87	clamps, hose	16
blank disk	29	clean-out	77
bleeding		meter	57, 78
general	83	clip, chain	86
lift	84	clothing	2
bleeding hydraulics	83	color code	
blockage	29	hose	16
blue	16	color code, power	115
bolt, shear	85	connectors	
bracket	115	electrical	15
breather	42, 68	console	115
bridging	67	seed monitor	115
bridging, inlet	58	constant, speed	118
brush		contact Great Plains	13
drop	32, 80	contact, gauge wheel/opener	55
strip	32, 80, 81	contact, opener disk	54
tuft	80	container, clean-out	77, 101
brush maintenance	80	conventional till	12
brush replacement	81	corn	57, 99
butterfly valve	28, 29, 31, 42	coulter	97
		covered models	12
C		cracks	82
calibration, speed	39	customer service	13
cam, row unit	52	cylinder lock	20
capacities	102	cylinder symbols	16
cap, grease seal	85		
carbide scrapers	121	D	
CAUTION, defined	1	DANGER, defined	1
cell	32	daytime reflectors	8
centering, press wheel	64	decals	
chain		caution	
meter drive	86	chain	11
chain clip	86	no step	11
chain maintenance	86	pressure & torque	10, 11
chain routing	110	read manual	10, 11
		warning	
		chemical	9
		crush	10
		high pressure fluid hazard	9
		marker	9
		sharp object	8
		speed	8
		decals	
		decals, safety	6
		definitions	13
		depth control	17
		DICKEY-john®	12, 18, 27, 39, 115, 116
		dimensions	103
		directions	13
		disc-to-disc spacing	54
		dishwasher	37, 82
		disk scraper	87
		disk scraper, inside	100
		DISPLAY & SERVICE	116
		disposal, chemical	4
		double	43
		double disk opener	50
		doubles	42, 43
		down pressure	
		press wheel	64
		row unit	51
		down pressure springs	62
		draft control	17
		DRIVEN	40
		DRIVING	40
		drop brush	32, 80
		dual marker speed	119
		dusts	2
		Dwyer	12
		E	
		email, Great Plains	13
		empty pockets	43
		ENTER	116, 117, 118
		equipment, safety	2
		ESCAPE	116
		excessive rpm	31
		Ezee Glide Plus	96, 101
		F	
		fan	28, 29, 31, 42
		fan hoses	30
		fan operation	30
		fan speed	30
		fertilizer	26
		fertilizer rate setting	44
		field operation	36
		field speed	118
		fire	1

float, hitch	17
fluted	97
fold	
marker	33
funnel	77, 101
furrow	51
furrow check	42

G	
gap, speed sensor	82
gauge wheel	49
gauge wheel scraper	56, 100
gauge, pressure	42
gloves	2
goggles	2
granules	2
graphite	37, 82
grease seal cap	85
green	16
ground speed	118
GROUND SPEED SETUP	118

H	
handle, press wheel	64
harness	115
headphones	2
hearing protection	2
height, tool bar	17, 49
height, wheel	49
HEPA vacuum cleaner	80
herbicide	2
hex adjuster	55
hex head cam	65
high pressure fluids	2
hills	15, 22
hitch configuration	17
hitching	15
hopper	23, 28
hose clamps	16
hoses, hydraulic	16
hydraulic diagram	107
hydraulic flow	31
hydraulic hoses	16
hydraulic safety	2
hydraulics	
lift-assist	108
hydraulics fan	107

I	
inflation	106
inlet bridging	58
inlet shutter	28, 41
inlet shutter, seed	29, 67
inlet, meter	32
inside disk scraper	100
installation	
monitor console	115
scraper	121
installation, marker	12
intended usage	12

J	
JIC torque	83
Joint Industry Conference	83

K	
Keeton	121
Keeton seed firmer	63

L	
leaks	2
left-hand, defined	13
level	17
lid, hopper	23
lift assist cylinder locks	62
lift bleed	84
lift, effect on pressure	31
light no-till	12
lighting	15
lights	3
load control	17
loading materials	23
lock, cylinder	20
low population in turns	31
lowering	20
lubricant, seed	24, 96, 101

M	
Magnehelic®	12, 28, 29, 42, 68
maintenance	
hydraulic	83
marker	85
seed disk	82
maintenance safety	5
manifold	29
manifold pressure	28, 42
manuals	
console	12
PM400	12
manual, row cleaner	53
marker bleed	83
marker installation	12
marker operation	33
marker shear bolt	85
markers	97
marker, effect on pressure	31
Martin row cleaner	99
material clean-out	77
material rate	39
Material Safety Data Sheet	19
medical assistance	2, 16, 19, 76
meter chain	86
meter drive chain	114
meter operation	32
meter pressurization	28, 41
metric mode	116
Milo	43
milo	24, 57, 72, 99
minimum-till	12
model number	13
monitor	15
monitor active row pattern	60
monitor manual	12
monitor power	116
monitor setup	18
MSDS	19
M8x1.25 Class 8.8	85
N	
National Pipe Thread	83

Note, defined	13
NOTICE, defined	13
no-till	12
no-till, light	12
NPT	83
nuisance shears	85

O	
opener disk	50, 54
operation	
marker	33
seed meter	32
optional, defined	13
option, defined	13
ORB	83
orientation rose	13
O-Ring Boss	83
owner assistance	13

P	
paint	37
parallel arms	50
parking	37
parking stand	20
personal safety equipment	2
pesticide	2
phone number, GP	13
pin, shear	84
pin, spirol	84
PLANTER SETUP	117
planting depth	54, 55
planting, ending	36
planting, suspending	36
plastic sealant tape	83
PM300	12
PM332	12
PM400	12, 18, 27, 115
pocket	32
pockets, empty	43
popcorn	57
position control	17
powders, wettable	2
power	115
press wheel	64, 101
press wheels	50
pressure, manifold	42
protective equipment	2
pulses	118

Q	
QD	83
QD coupler	30
quick coupler	83
Quick Disconnect	83

R	
radar	34
rain cover	57
raising	20
raising a row unit	62
range sprocket	40
Range sprockets	39
rate setting	39
rate, material	39
red	115

red reflectors	7	seed treatment	37, 82	tables	
reflectors		seed tube sensor	28	adjustments	38
amber	7	Seed-Lok®	63, 100, 121	air system elements	28
daytime	8	sensor harness	115	document family	12
red	7	sensor line	28	hose color code	16
SMV	6	sensor port	28, 29	marker extension	119
reflectors, safety	6	sensor row	29	models covered	12
relief port	42, 68	sensor, seed tube	28	torque values	106
repair parts	13	sequence valve	33, 119	troubleshooting	
replacement, brush	81	serial number	13	general	73, 75
respirator	2	setup	14	population	69, 70, 72
return line, fan	30	initial	14	talc	37, 82
reverse fan	30	pre-planting	14	talc + graphite	101
reversed fan	30	seasonal	14	talc-graphite lubricant	96
re-zero		shank, row unit	61	tape, pipe	83
gauge	68	shear pin	84	tension, Keeton	63
re-zero, sensor	42	shim	87	Terra-Tine	47
riders	3	shutdown	4	Terra-Tine™	47, 98
ridge planting	49	shut-off, row	57	tine	53
ridge, wiper	82	shutter	32, 37	tire inflation	106
right-hand, defined	13	shutter, seed inlet	28, 29, 41, 57,	tires	4
rose, orientation	13		67	tool bar height	17, 49
row cleaner	47, 50, 53	side gauge wheel	51, 55	tool, walkboard	52
row cleaner manual	53	side wheel	87	torque	
row configuration	116	single-row	61	fastener	106
Row Failure	58	skip	43	JIC	83
row shut-off	57, 60	skips	42, 43	trailer operations	28
Row Spacing	117, 118	slack, chain	86	transmission	84
row unit down pressure	51	slide gate	23, 28	transmission sprocket	40
row unit shank	61	sliding seed tube	29	Transmission sprockets	39
rpm, engine	31	slopes	15	transmission, fertilizer	44
rpm, excessive	31	slope, seed pool	58	transport	21, 22
S		SMV (Slow Moving Vehicle)	6	transport speed	3
safety chain	3	soybeans	57, 99	triple-row	117
safety decal	6	spacer washers	54	troubleshooting	
safety equipment	2	specifications	102	fertilizer	75
safety information	1	speed calibration	39	tuft brush	80
safety symbol	1	speed constant	118	turbo	97
scraper		speed limit forward	21	twin-row	61, 117
gauge wheel	100	speed limit transport	21	U	
inside	87, 100	speed sensor	15, 34, 82, 115	UMC (Unit-Mount Coulter)	99
outside	87	speed, dual marker	119	unit-mount	
scraper installation	121	spreader	87	row cleaner	53
scrapers		springs, row unit	51	Units	116
inside	121	spring, yoke	17, 49	URLs, tires	106
scraper, gauge wheel	56	sprial pin	84	V	
seed	24	sprocket		vacuum cleaner	80
seed discs	99	range	40	valve, sequence	33, 119
seed disk	32, 37, 82	transmission	40	W	
seed firmer	50, 63	sprocket indexing	62	WARNING, defined	1
seed flap	88	stagger	62	warp	82
seed hose	28	press wheel	64	warranty	106, 119, 123
seed inlet shutter	28, 29, 32, 41,	storage	4, 37	weight	21
57,	67	storage, lock-up pin	62	weight, row unit	51
seed lubricant	24, 96, 101	strip brush	32, 80, 81	welding	5
seed meter operation	32	sunflower	99	wettable powders	2
seed meter setup	57	support	13	wheel axle	49
seed monitor	39	swath	118	width	118
seed monitor console	115	swath-averaged	117	width of the mark	48
seed pocket	28, 32	symbol, safety	1	wind	4
seed pockets	29	T		wiper ridge	82
seed pool	28, 29, 58, 67	T handle	54		

Y		
yoke spring	17, 49	
YP625TD	12	
YP625TD12TR110 ...	21, 102, 103, 117	
YP625TD18TP110 ...	21, 102, 104, 117	
YP925TD	12	
YP925TD0965 .	21, 102, 105, 117	
Z		
zero gauge	68	
Numerics		
11001-1372, manual ...	12, 39, 115, 116,	118
113-862A, markers		97
113-863A, markers		97
113-870M, manual		12
118-999B, manual		39
122m		118
122-177D, tube		121
122-278S, scraper	100, 121	
129BXT824, bracket		121
204-085M-A, manual	12, 53, 99	
207-251A, Terra-Tine		98
207-252A, UMRC		99
207-253A, UMRC		99
22 kph		3
25 Series row unit		50
32 kph	3, 21	
35 degrees		34
400 feet		118
401-651P, manual		81
401-754B, manual		12
401-754M, manual		12
401-754P, manual		12
403-551D, seed disc		99
404-093K, Seed-Lok®		100
404-194D, scraper		100
404-195D, scraper		100
404-196D, scraper		100
407-571A, coulters		97
407-572A, coulters		97
407-573A, coulters		97
407-574A, coulters		97
407-589A, coulters		97
407-590A, coulters		97
8R19.5 LT		106
802-012C, bolt		85
802-024C, bolt		121
802-172C, bolt		121
803-011C, nut		85
803-014C, nut		121
803-043C, nut		121
804-011C, washer		121
804-013C, washer		121
805-435C, pin	61, 98	
817-794C, seed disc		99
817-795C, seed disc		99
817-796C, seed disc		99
817-797C, seed disc		99
817-798C, seed disc		99
817-800C, seed disc		99
817-811C, container	77, 78, 101	
817-836C, seed disc		99
817-838C, seed disc		99
817-841C, blank disc		99
817-849C, seed disc		99
817-851C, seed disc		99
818-055C, reflector		6
818-337C, decal		8
818-525C, decal		8
818-587C, decal		10
818-682C, decal		9
820-074C, blade		98
820-180C, blade		98
821-069C, talc + graphite		101
821-074C, seed lubricant		96
821-075C, seed lubricant		96
838-258C, decal		10
838-265C, reflector		7
838-266C, reflector		7
838-267C, reflector		8
838-362C, decal		11
838-363C, decal		11
848-512C, decal		11
848-517C, decal		9
848-520C, decal		9
848-523C, decal		10
848-708C, decal		11
871		118
890-840C, Keeton		101
890-928C, scraper		121

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