

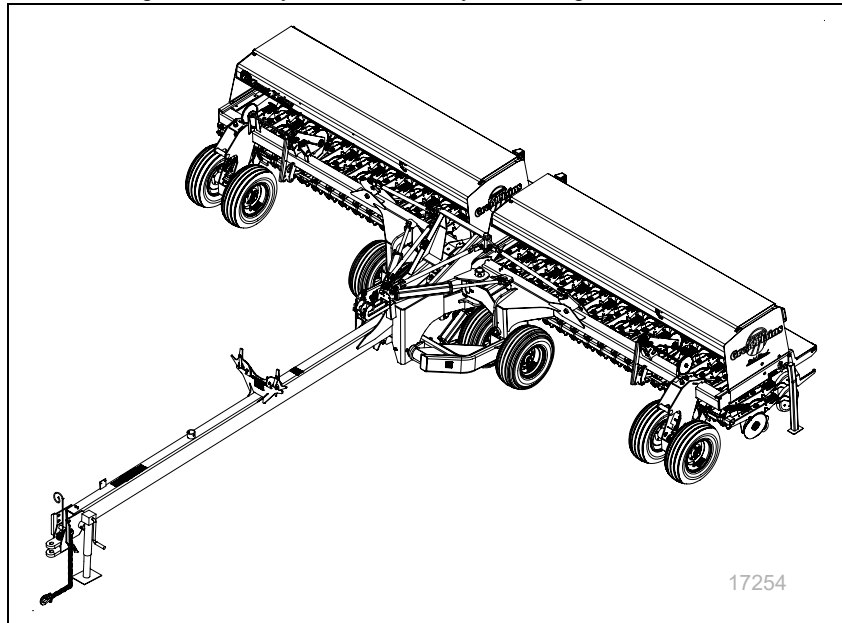
Operator Manual

2S-2600HD

26-Foot Two-Section Folding HD Drill



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



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

ORIGINAL INSTRUCTIONS



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195-069M



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California Proposition 65



WARNING: Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands. For more information see www.P65Warnings.ca.gov/motor-vehicle-parts.

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.

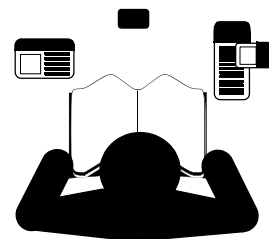


CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



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.



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.



Wear Protective Equipment

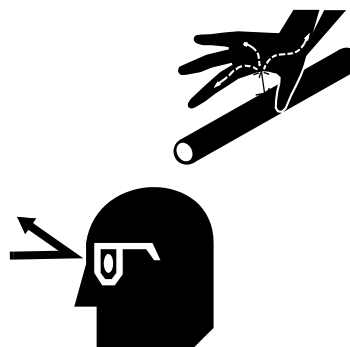
- Wear protective clothing and equipment.
- Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.
- Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection such as earmuffs or earplugs.
- Because operating equipment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



Avoid High Pressure Fluids

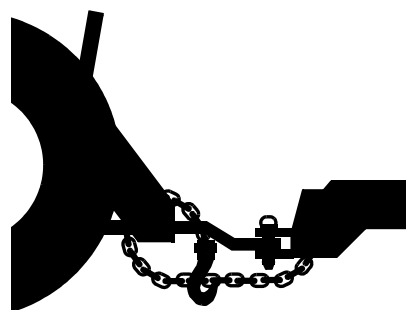
Escaping fluid under pressure can penetrate the skin, causing serious injury.

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



Use A Safety Chain

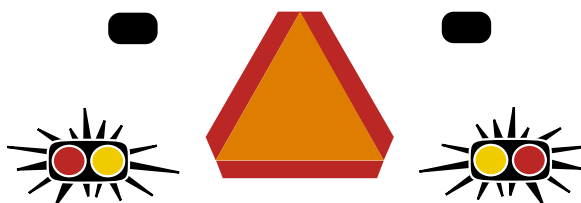
- Use a safety chain to help control drawn machinery should it separate from tractor drawbar.
- Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.
- Attach chain to tractor drawbar support or other specified anchor location. Allow only enough slack in chain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



Use Safety Lights and Devices

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

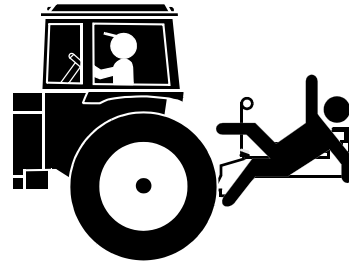
- Use flashing warning lights and turn signals whenever driving on public roads.
- Use lights and devices provided with the drill.



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 when folding/unfolding, raising/lowering markers, raising/lowering openers, and transporting.*



Transport Machinery Safely

Maximum transport speed for drill is 20 mph (32 kph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

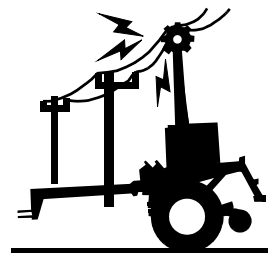
- *Do not exceed 20 mph (32 kph). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- *Comply with national, regional and local laws.*
- *Follow your tractor manual recommendations for maximum hitch loads. Insufficient weight on tractor steering wheels will result in loss of control.*
- *Carry reflectors or flags to mark drill 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 104.*



Check for Overhead Lines

Drill markers contacting overhead electrical lines can introduce lethal voltage levels on drill and tractor frames. A person touching almost any metal part can complete the circuit to ground, resulting in serious injury or death. At higher voltages, electrocution can occur without direct contact.

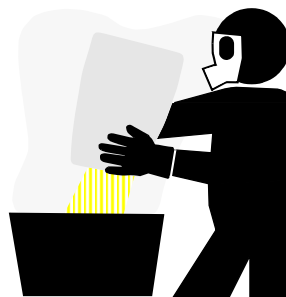
- *Avoid overhead lines during seed loading/unloading and marker operations.*



Handle Chemicals Properly

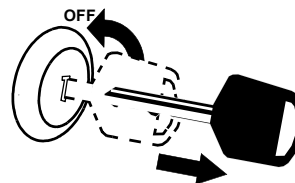
Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

- *Do not use liquid treatments with drill.*
- *Read and follow chemical manufacturer's instructions.*
- *Wear protective clothing.*
- *Handle all chemicals with care.*
- *Avoid inhaling smoke from any type of chemical fire.*
- *Never drain, rinse or wash dispensers within 100 feet (30m) of a freshwater source, nor at a car wash.*
- *Store or dispose of unused chemicals as specified by chemical manufacturer.*
- *Dispose of empty chemical containers properly. Laws generally require power rinsing or rinsing three times, followed by perforation of the container to prevent re-use.*



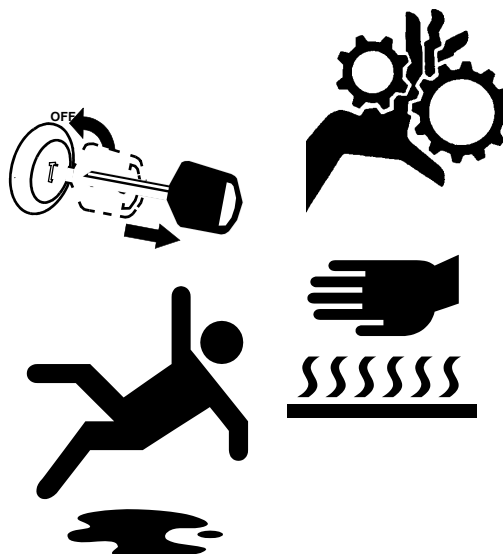
Shutdown and Storage

- *Clean out and safely store or dispose of residual chemicals.*
- *Secure drill using blocks and transport locks. Lock up openers.*
- *Store in an area where children normally do not play.*



Practice Safe Maintenance

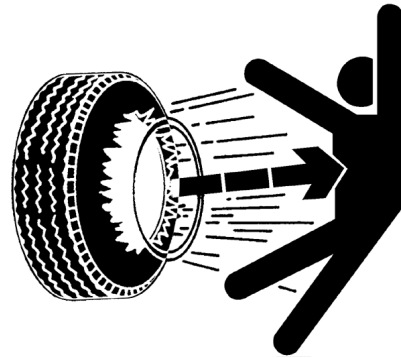
- *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- *Work in a clean, dry area.*
- *Put tractor in park, turn off engine, and remove key before performing maintenance.*
- *Make sure all moving parts have stopped and all system pressure is relieved.*
- *Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on drill.*
- *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 drill before operation.*



Tire Safety

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

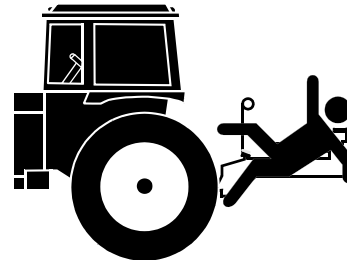
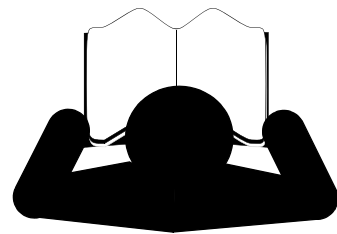
- *When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.*
- *When removing and installing wheels, use wheel-handling equipment adequate for weight involved.*



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 drill functions.*
- *Operate machinery from the driver's seat only.*
- *Do not leave drill unattended with tractor engine running.*
- *Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.*
- *Do not stand between the tractor and drill 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 drill. Make sure all persons are clear of working area.*
- *Do not turn tractor too tightly, causing drill to ride up on wheels. This could cause personal injury or equipment damage.*



Safety Decals

Safety Reflectors and Decals

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

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

To install new decals:

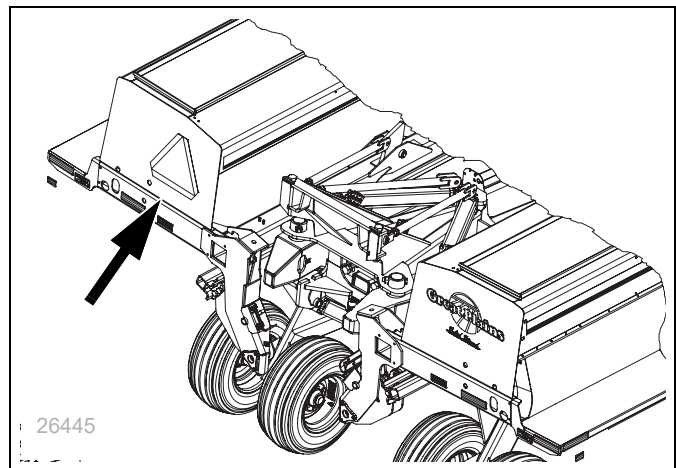
1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

818-055C



Slow Moving Vehicle Reflector

Right end panel of left main seed box;
1 total

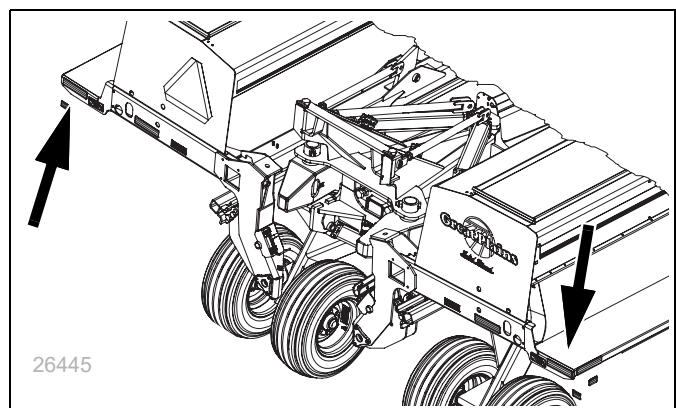


838-266C



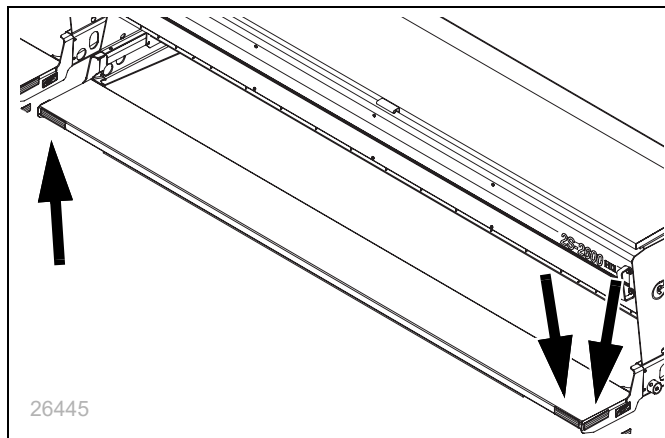
Red Reflectors

On wing walkboard inside end faces
(outside rear corners in transport);
2 total

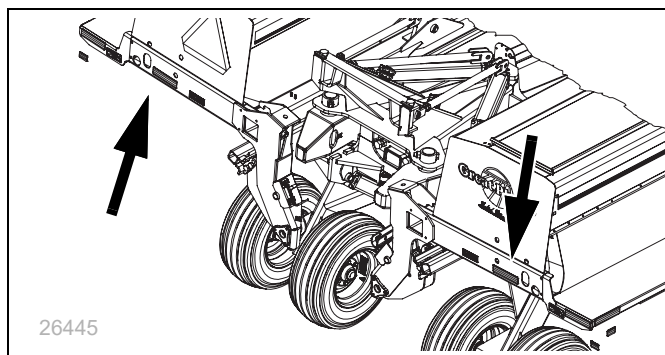


838-265C**Amber Reflectors**

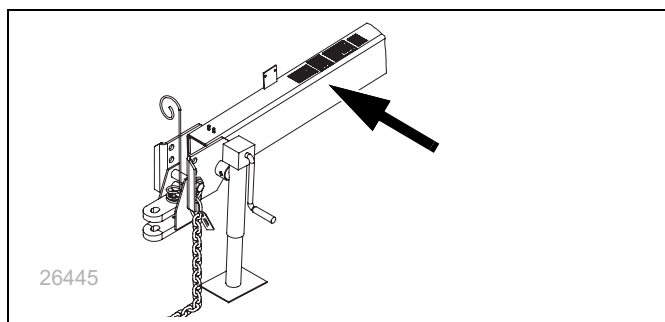
On wing walkboard rear faces, outside corners,
on outside end face of wing walkboards,
6 total

**838-267C****Daytime Reflectors**

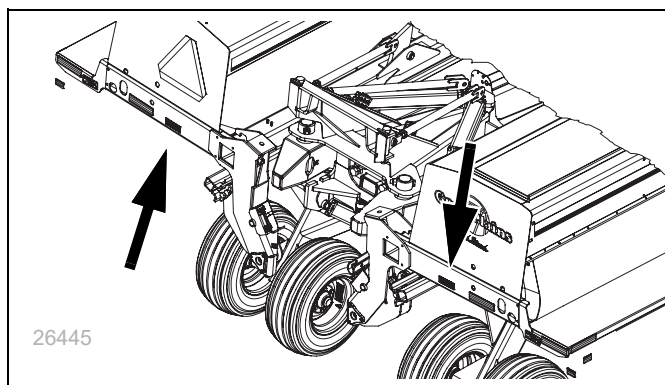
On inside wing frames below seed boxes
(inboard of red reflectors);
2 total

**818-557C****Danger: Cannot Read English**

On tongue at hitch;
1 total

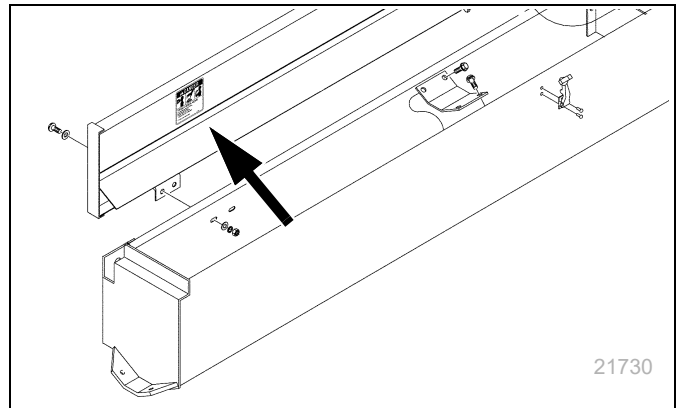
**818-864C****Danger: Pinch/Crush Hazard**

Inside wing frames below seed boxes
(inboard of daytime reflectors);
2 total

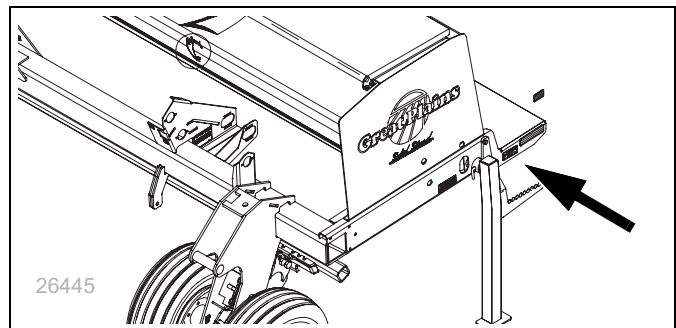


838-467C**Danger: Possible Chemical Hazard**

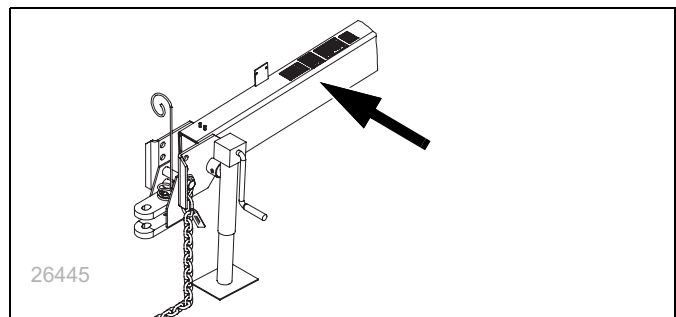
Inside lid of optional Small Seeds box left hand side,
one each box;
2 total

**838-102C****Warning: Falling Hazard**

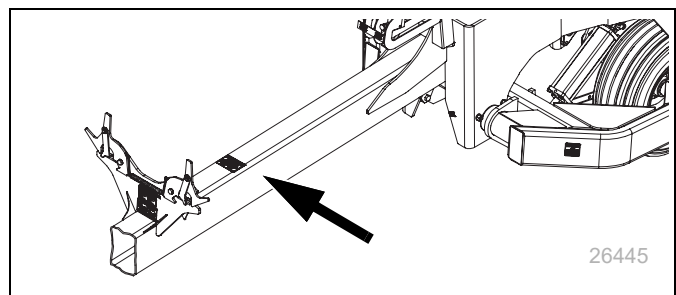
On outside walkboard end above step;
2 total

**818-019C****Warning: Negative Tongue Weight**

On tongue at hitch;
1 total

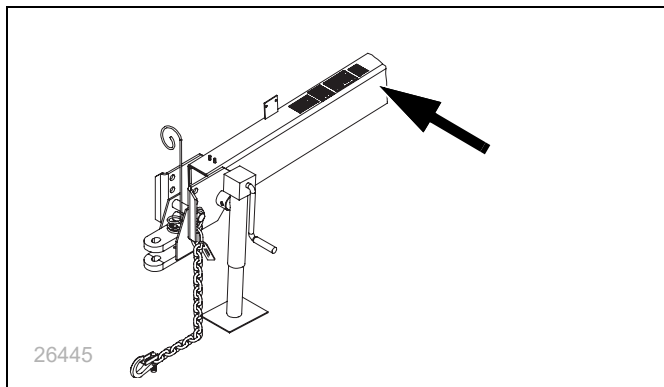
**818-045C****Warning: Pinch/Crush Hazard**

On tongue near transport locks,
(inboard of daytime reflectors);
1 total

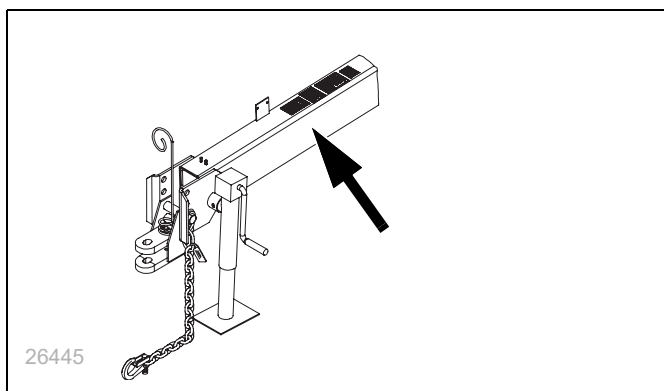


818-337C**Warning: Excessive Speed Hazard**

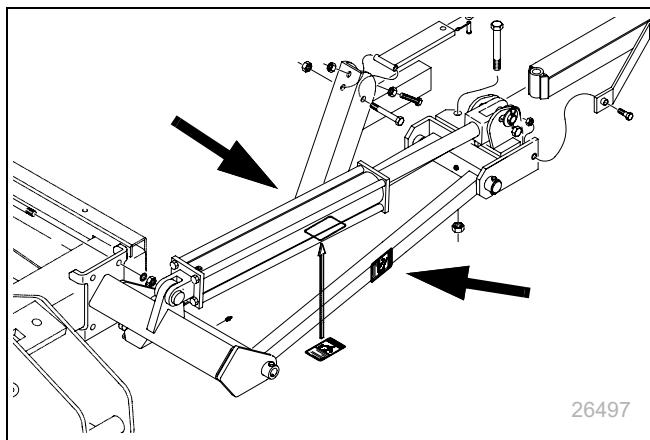
On tongue near hitch;
1 total

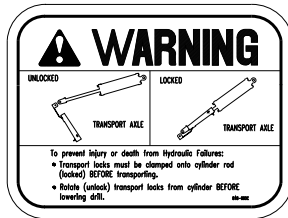
**818-339C****Warning: High Pressure Fluid**

On tongue near hitch;
1 total

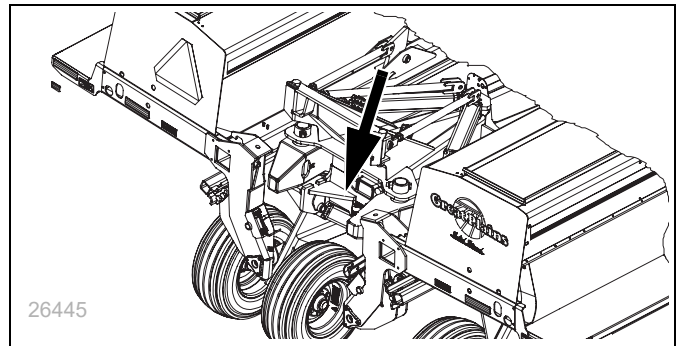
**818-682C****Warning: Marker Pinch Crush**

On front and outside faces of first marker section,
two each marker installed;
2 or 4 total

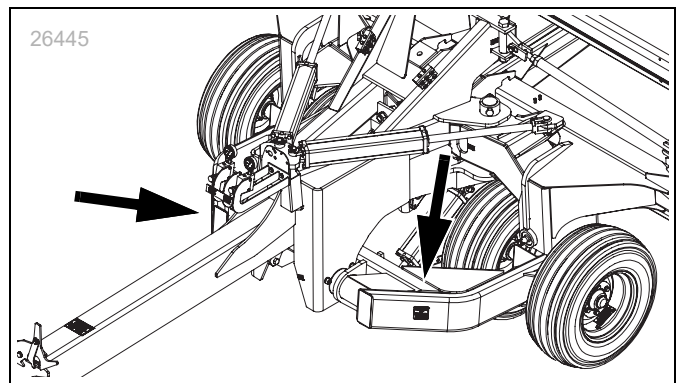
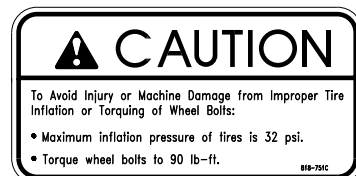


818-861C**Warning: Transport Locks**

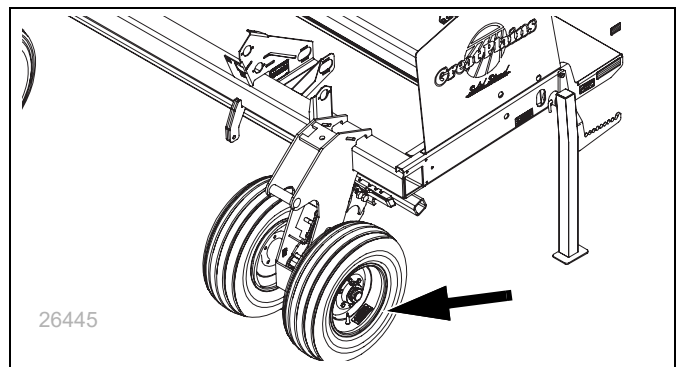
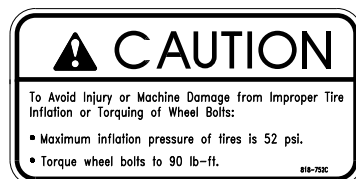
On rear of mainframe;
1 total

**818-398C****Caution: Tires Not A Step**

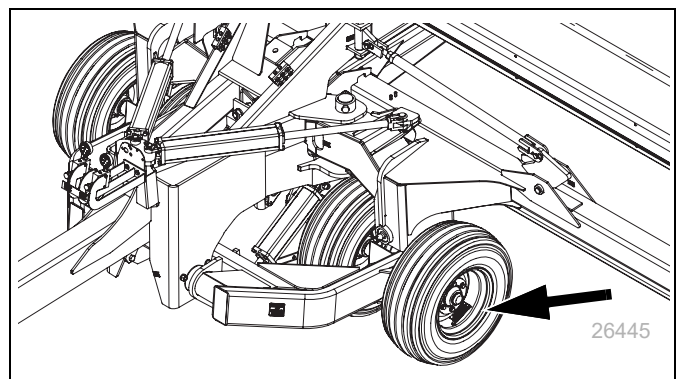
On each axle leg (transport wheels);
2 total

**818-751C****Caution: 32 PSI Tire Pressure**

On rim of each gauge wheel;
4 total

**818-752C****Caution: 52 PSI Tire Pressure**

On rim of each transport wheel;
4 total

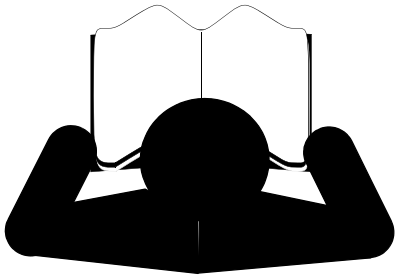


Introduction

Great Plains welcomes you to its growing family of new product owners. Your 26-Foot Two-Section Folding HD Drill has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

Document Family

195-069M	Owner's Manual (this document)
195-069P	2S-2600HD Parts Manual
195-069B	Seed Rate Manual



Description of Unit

The 2S-2600HD is a towed seeding implement. This two section drill has a working width of 26 feet (8m). The drill has straight arm, double disk heavy duty openers. The opener disks make a seed bed, and seed tubes mounted between the disks place seed in the furrow. Press wheels following the opener disks close the furrow and gauge opener seeding depth. A T-handle on the opener body is for seeding depth adjustments. Seeding rates are adjustable with the seed rate adjustment handle and sprocket changes.

The 2S-2600HD features active hydraulic down pressure on the opener frames. When used on a tractor with closed-center hydraulics, constant down pressure ensures even opener penetration in uneven ground. Hydraulic down pressure is adjustable at a single point.

Intended Usage

Use this implement to seed production-agriculture crops in conventional or minimum tillage applications.

Models Covered

HD Models have 00HD Series Heavy Duty openers and a main seed box used entirely for seed. HDF Models add fertilizer meters and divide the main box for this purpose. Standard HD models may add optional Small Seeds capability.

2S-2600HD-3210	32-row, 10in (25.4 cm)
2S-2600HD-4275	42-row, 7.5in (19 cm)
2S-2600HD-5206	52-row, 6in (15 cm)
2S2600HDF-3210	32-row, 10in (25.4 cm)
2S2600HDF-4275	42-row, 7.5in (19 cm)
2S2600HDF-5206	52-row, 6in (15 cm)

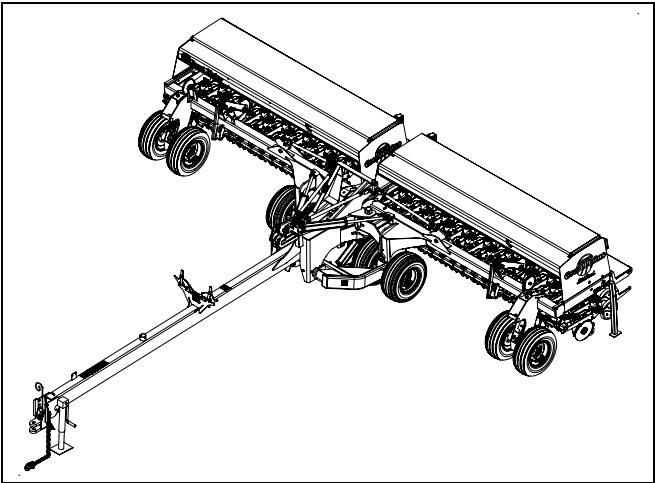


Figure 1

2S-2600HD Drill

17254

Using This Manual

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

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

Definitions

The following terms are used throughout this manual.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated.

NOTICE

Paragraphs in this format present a crucial point of information related to the current topic.

Read and follow the directions to:

- remain safe,
- avoid serious damage to equipment and
- ensure desired field results.

Note: Paragraphs in this format provide useful information related to the current topic.

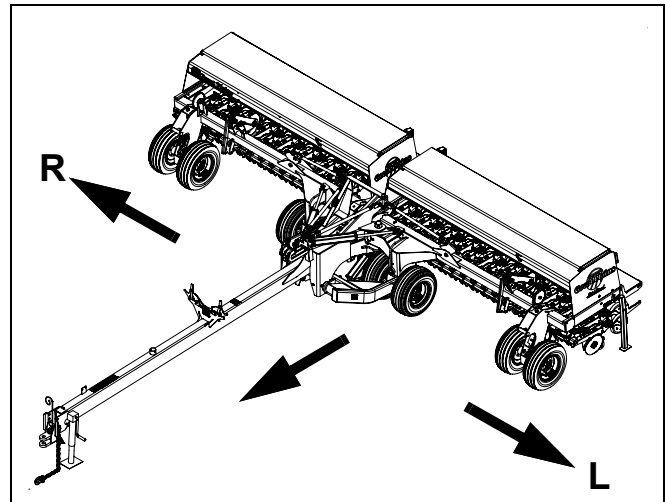


Figure 2
Left/Right Notation

17254

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 3

Your machine's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer. The serial-number plate is located on the left side of the drill frame below the front of the seed box.

Record your drill model and serial number here for quick reference:

Model Number: _____

Serial Number: _____

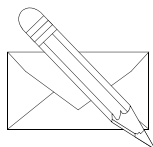
Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

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

For further assistance write to:

Product Support

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



gp_web_cs@greatplainsmfg.com
785-823-3276



Figure 3
Serial Number Plate

17315

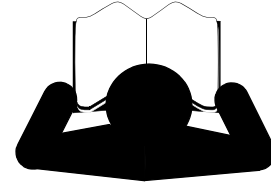


Preparation and Setup

This section helps you prepare your tractor and drill for use. Before using the drill in the field, you must hitch the drill to a suitable tractor and also setup the drill.

Pre-Setup 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. “**Appendix A**” on page 104.



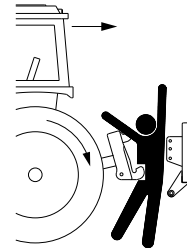
Hitching

⚠ DANGER

Crushing

Hazard:

You may be severely injured or killed by being crushed between the tractor and drill. Do not stand or place any part of your body between machines being hitched. Stop tractor engine and set park brake before installing hitch pins.

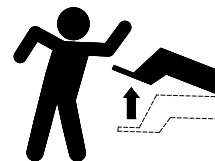


⚠ WARNING

Transport

Hazard:

This drill can have positive and negative tongue weight, which can work the hitch pin loose during transport. To avoid serious injury or death due to a road accident, always use a clevis hitch or clevis drawbar with a locking-style hitch pin.



Choose a drill-hitch option (page 99) that is compatible with your tractor drawbar.

The 2S-2600HD has three hitch options:

- a clevis hitch,
- a small-hole, single-strap hitch or;
- a large-hole, single-strap hitch.

Use the clevis hitch with tractors that have single-tang drawbars. Use the single-strap hitch for tractors with clevis drawbars. Always use a locking-style hitch pin sized to match the holes in the hitch and drawbar.

Refer to Figure 4 and Figure 5

To adjust the drill hitch to match your tractor-drawbar height, mount tongue jack on side of tongue. Use jack to raise drill tongue so lowest hitch hole is 18 inches (45.7cm) above ground level with drill lowered to FIELD position.

Refer to Figure 5

Bolt drill hitch onto drill tongue to match your tractor-drawbar height. You can turn the hitch over for a total of six different hitch heights. Always have two (2) bolts in two holes of both tongue and hitch.

Note: When hitching drill to a different tractor, check for a difference in drawbar heights. If heights are different, readjust hitch height accordingly.

Securely attach safety chain to an anchor on a tractor capable of pulling the drill.



Figure 4
Jack in Lifting Location

15564

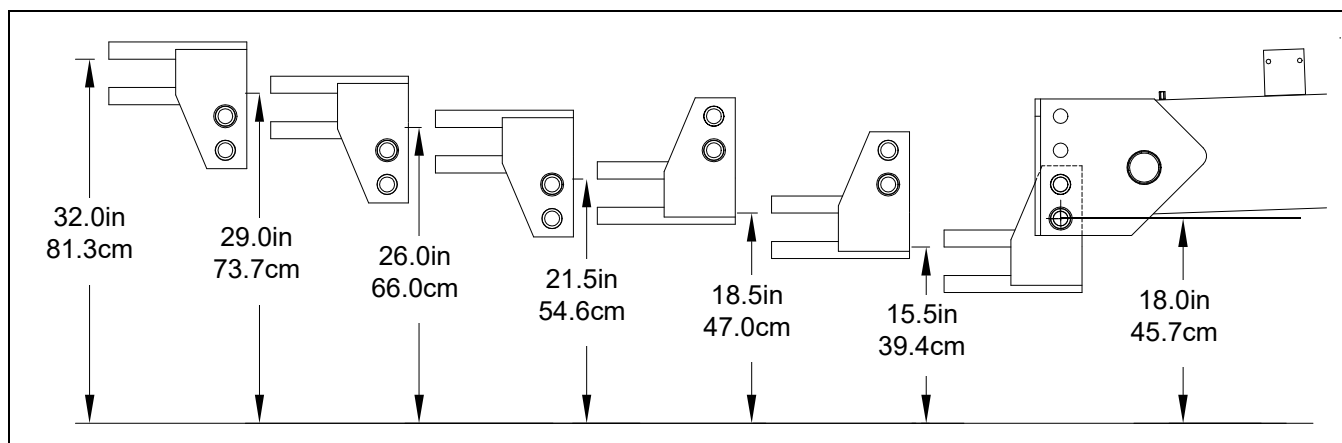


Figure 5
Heights for Various Hitch Positions - Correct Tongue Height

15623

Refer to Figure 6

Use crank to raise jack foot. Remove pin and jack. Store jack on top of tongue.



Figure 6
Jack in Storage Location

15563

Electrical Connections

Refer to Figure 7

Plug drill electrical lead into tractor seven-pin connector. If your tractor is not equipped with a seven-pin connector, contact your dealer for installation.

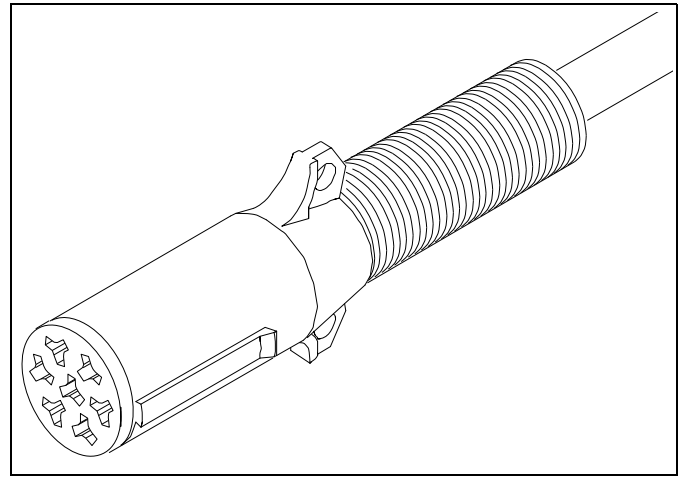


Figure 7
Lighting Connector

26467

Refer to Figure 8

If the drill is equipped with the optional shaft monitor, mate the connector for the cab display.

See “**Shaft Monitor**” on page 100 for ordering information.

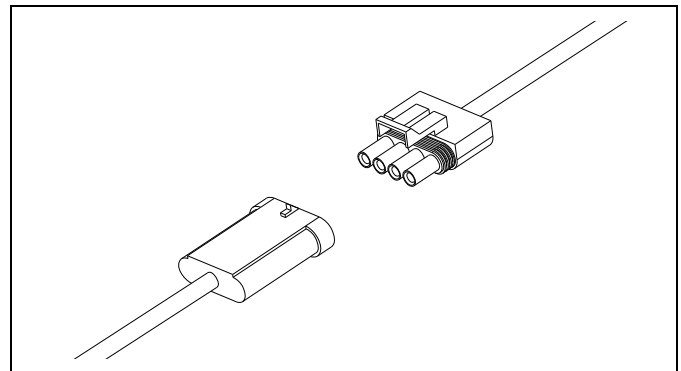


Figure 8
Shaft Monitor Connector

34221

Refer to Figure 9

If the drill is equipped with the point row option, mate the connector for the cab control.

See “**Point Row Clutch**” on page 100 for ordering information.

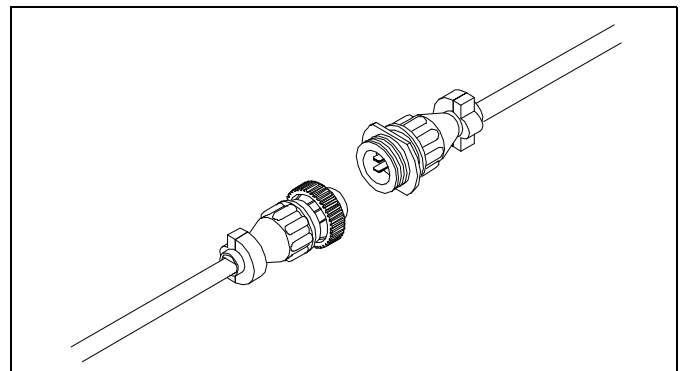


Figure 9
Point-Row Connector

26469

Hydraulic Hose Hookup

⚠ WARNING

High Pressure Fluid Hazard:
Only trained personnel should work on system hydraulics!

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

Refer to Figure 10

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

Current Style Color Coded Hose Handles.

Color	Hydraulic Function
Red	Opener Lift Cylinders
Blue	Transport Lift Cylinders
Gray	Fold Cylinders
Green	Marker Cylinders

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

1. Connect opener-lift hoses to circuit designated for hydraulic-motor control.
2. Connect transport-lift hoses to tractor remote valve.
3. Connect fold hoses to tractor remote valve.
4. Connect marker hoses to tractor remote valve.

Note: If your tractor has only two remote valves, you must install a double-selector valve to combine the transport-lift and opener-lift circuits. See **"Two Outlet Hydraulic Kit"** on page 99.

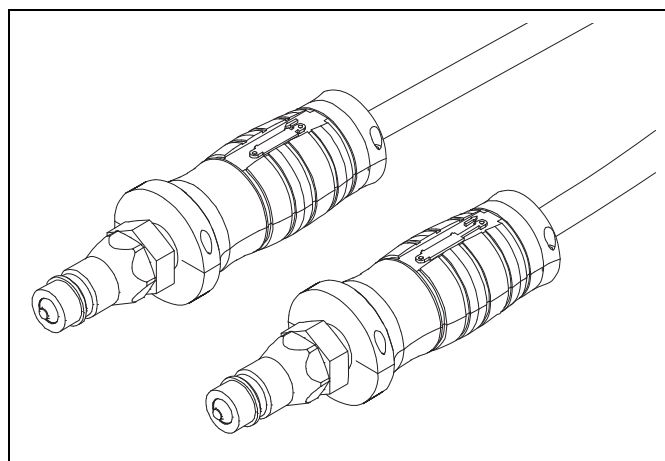
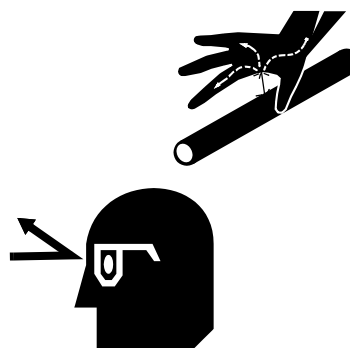


Figure 10
Color Coded Hose Grips

31733

NOTICE

To run drill on tractors with open-center hydraulics or on tractors with fixed-displacement hydraulic pumps, you must install a Great Plains kit, part number 194-143A. If you are not familiar with your tractor hydraulics, consult your tractor dealer.

Older Style Hoses with Color Ties

Refer to Figure 11

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

Color	Hydraulic Function
Red	Opener Lift Cylinders
Blue	Transport Lift Cylinders
White	Fold Cylinders
Orange	Marker Cylinders

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

1. Connect opener-lift hoses to circuit designated for hydraulic-motor control.
2. Connect transport-lift hoses to tractor remote valve.
3. Connect fold hoses to tractor remote valve.
4. Connect marker hoses to tractor remote valve.

Note: If your tractor has only two remote valves, you must install a double-selector valve to combine the transport-lift and opener-lift circuits. See **“Two Outlet Hydraulic Kit”** on page 99.

Check Drill Level

These items are set and verified at the factory, but need to be checked prior to first use.

- **“Opener Frames Level”** on page 84
- **“Link Tube”** on page 85
- **“Wing Box Alignment”** on page 86
- **“Tool Bar Height”** on page 85

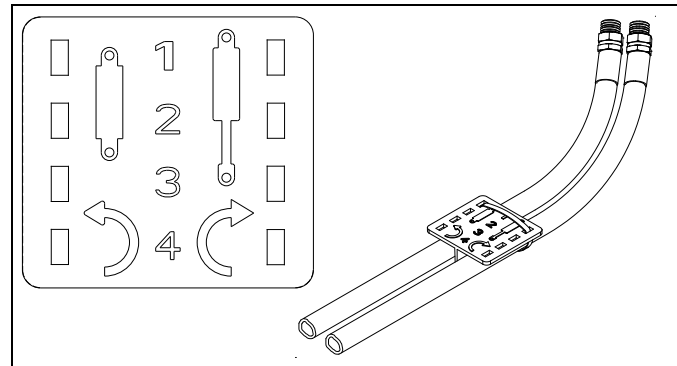


Figure 11
Older Style Hoses with Label

817-348c
17641

NOTICE

To run drill on tractors with open-center hydraulics or on tractors with fixed-displacement hydraulic pumps, you must install a Great Plains kit, part number 194-143A. If you are not familiar with your tractor hydraulics, consult your tractor dealer.

Setting the Bypass Valve

Refer to Figure 12

A bypass valve ① is plumbed into the opener down pressure circuit. Tractors with load-sensing, closed-center hydraulics require this bypass valve to protect the tractor hydraulic system. If you are unsure what type of hydraulic system is on your tractor, contact your tractor manufacturer.

“CENTER” are the two inside opener lift cylinders.
“WING” are the two outside opener lift cylinders.
If the Point Row option is installed, these controls are re-plumbed as entire “LEFT” and “RIGHT” wings.

Turn the locking disc ② counter-clockwise to enable adjustment. Turn the adjustment knob ③ counter-clockwise to increase flow.

Turn the adjustment knob ③ clockwise to decrease flow. Turning it fully clockwise stops all bypass flow.

Tractors with Open Center Hydraulics

Release locking disc. Close bypass valve for no oil flow by turning knob on valve clockwise completely. Tighten locking disc. Always operate the drill with the bypass valve locked closed.

Tractors with Pressure Compensating Closed Center Hydraulics (PC Closed)

Release locking disc. Close bypass valve for no oil flow by turning knob clockwise completely. Tighten locking disc. Always operate the drill with the bypass valve locked closed.

Tractors with Load Sensing Closed Center Hydraulics (LS Closed) or Pressure Flow Compensating (PFC) Systems

1. Release locking disc. Initially close bypass valve for no oil flow by turning knob on valve clockwise completely.
2. With tractor at half throttle, adjust flow-control valve on tractor so openers raise and lower at a reasonable speed. Keep tractor at one-half throttle for remaining steps.

Note: The faster openers raise and lower, the greater potential for oil heating, premature wear or tractor damage.

3. Engage tractor hydraulics and lower openers. Lock hydraulic lever on tractor for continuous operation. See “**Raising and Lowering Openers**” on page 24.

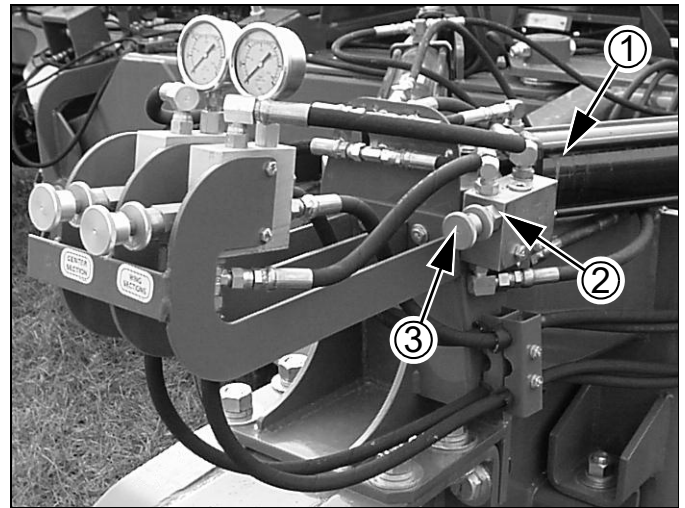


Figure 12
Bypass Valve

19045

NOTICE

Equipment Damage Risk:

Failure to use the bypass valve on load-sensing tractors may cause major tractor damage.

Refer to Figure 12 on page 19 and Figure 13 at right

4. Release locking discs ⑤ on down-pressure valves. Adjust knobs ⑥ on pressure-control valves for opener down pressure so gauges ④ are at 1500 psi.
5. While watching gauges on drill, slowly turn knob on bypass valve counterclockwise. Adjust bypass valve just until needles on gauges begin to move down from 1500 psi. Lock bypass valve at this setting. (See also note below.)
6. Re-adjust pressure-control valves on drill to desired opener down pressure as explained under See **“Opener Frame Down-Force”** on page 62.

Note: The higher the bypass pressure, the greater the potential for oil heating and premature tractor damage. At the same time, for proper opener operation the bypass valve must be set at least 100 psi above the opener down-pressure setting when the tractor is at one-half throttle. Therefore, you should set the bypass valve as low as possible while staying at least 100 psi above the opener down pressure setting.

While 1500 psi is a good starting point for setting the bypass valve, if you consistently operate the drill with low opener down pressure you can set the bypass valve below 2100 psi. If you consistently operate the drill with very high opener down pressure, you may need a bypass-valve setting above 2100 psi. See also **“Opener-Subframe Adjustment”** on page 64.

Adjusting the Counter Balance Valve

On the stem of the valve there is a rubber cap that protects the threads of an adjustment stem. This stem is locked in place with a hex nut. To adjust the valve, loosen the nut and turn the stem using an Allen wrench.

Screwing the stem in (clockwise) pushes on a spring which supplements the pilot line's force on an internal piston. More spring force will let the valve open with a low pilot pressure. Less spring force will require higher pilot pressure to open the valve.

Note: With the screw turned in fully, the spring will develop enough force on the piston to unlock the valve, even with no pilot pressure, causing the openers to settle.

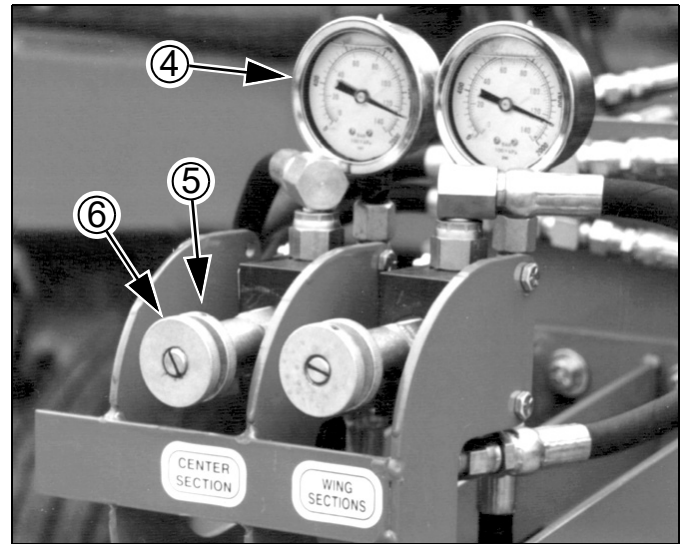


Figure 13
Down Pressure for Bypass

26471

Raise and lower the drill several times then hold hydraulic down pressure on the openers to purge air from the system and to warm the oil. Repeat.

Raise the openers. Observe the openers closely to detect settling. If the openers remain up, no valve adjustment is needed.

If the openers settle, the stem is screwed in too far. Gently back the stem out until it stops, then screw it in one turn. Generally this is a good starting point. Check for settling.

Backing the stem out will lock the valve, screwing it in too far can cause it to unlock.

A small increase in lowering speed can be achieved by screwing the stem in.

Marker Setup

Refer to Figure 14

Markers are field-installed, but usually do not have their extension length $\textcircled{E}$ precisely set. The drill must be leveled per “**Leveling the Drill**” on page 84, and marker(s) must be in correct working order per “**Marker Maintenance**” on page 87.

Row unit centerline stations on 2S-2600HD drills are symmetrical about machine center, so left and right extensions are normally identical, for both opposing and concentric passes.

Set the initial length of the marker(s) as follows:

1. With drill unfolded, lower drill and openers to field position (“**Raising and Lowering Openers**” on page 24).
2. Extend a marker on one side. Pull forward several feet to leave a mark.
3. Sighting parallel to the main tool bar, measure $\textcircled{E}$ from the centerline of the left outside row unit to the mark.
4. Adjust the marker extension $\textcircled{E}$ so that the mark is one half $\textcircled{H}$ the span $\textcircled{S}$ plus one row unit spacing $\textcircled{R}$. See “**Marker Adjustments**” on page 70 for setting marker extension.
5. Pull forward several feet, and re-measure to verify any adjustment. Validate the mark by making a pass to one or both sides.
6. Fold marker. Extend other side and adjust.

Point Row Cab Module

If your drill has the Point Row option, the cab module may already have been installed by your dealer. If not, consult the installation instructions for the option, and mount the module in a convenient location.

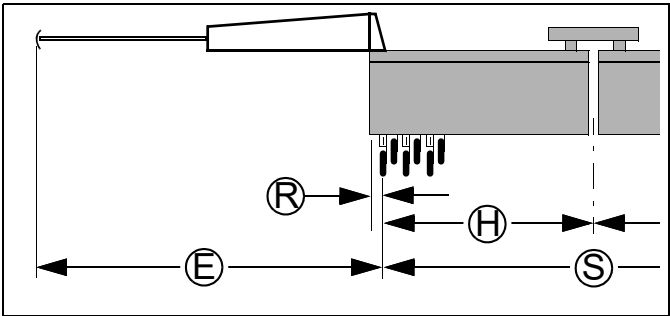


Figure 14
Marker Extension

Model	Spacing $\textcircled{R}$	Extension $\textcircled{E}$
2S-2600HD-3210	10 in	165.0in (419.1cm)
2S-2600HD-4275	7.5 in	161.75in (410.8cm)
2S-2600HD-5206	6 in	160.25in (407.0cm)

Note: If field conditions require inverting the marker disk (page 72), the mark moves, and the extension needs to be re-measured and reset. Marking also changes slightly if the opener frame trunnion position is changed (page 64).

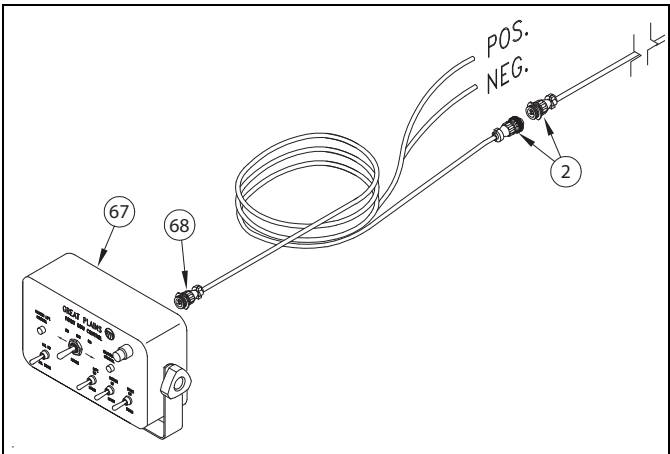


Figure 15
Point Row Cab Module

22692

Shaft Monitor Cab Module

If your drill has the Shaft Monitor option, the cab module may already have been installed by your dealer. If not, consult the installation instructions for the option, and mount the module in a convenient location.

If the cab is particularly noisy, or the operator customarily wears a noise-cancelling headset, the alarms may not be audible. Mount the module where the status indicators are visible during planting operations.

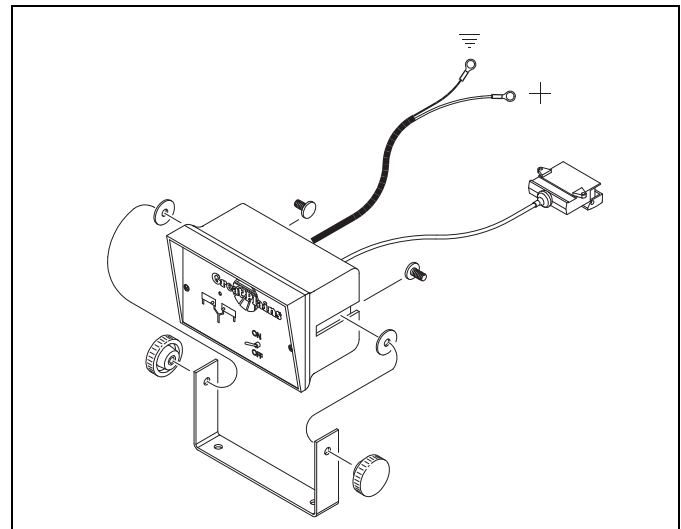


Figure 16
Shaft Monitor Cab Module

27049

Scraper Installation

Optional disk scrapers are not factory installed. To install them in the field:

1. Remove one or both disk blades to gain safe access to the mount. Note the position of bushings and spacers for correct re-assembly (page 67).

Refer to Figure 17

2. Position the inside scraper mount ① to the rear of the seed firmer mount ② on the opener weldment.

Secure it with two HHCS $\frac{3}{8}$ -16x1in hex head bolts, lock washers and nuts. Insert the bolts from the front.

3. Position the scraper blade ③ below and behind the inside scraper mount ①, with the notch on top to machine right.

Secure it loosely with one RHSNB $\frac{3}{8}$ -16x1 round head square neck bolt, flat washer, lock washer and nut.

4. Re-mount the removed disk blade.
5. Adjust the scraper blade per “**Disk Scraper Adjustments**” on page 68.

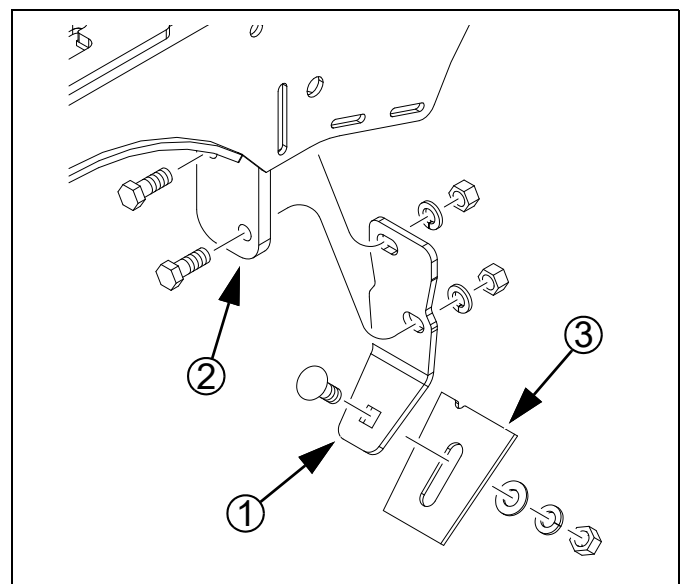


Figure 17
Scraper Installation

26460



Operating Instructions

This section covers general operating procedures. It assumes that setup items have been completed for both drill and tractor.

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

General Description

On the standard 2S-2600HD, field operations are controlled by tractor cab hydraulic levers. When openers are lowered, mechanical clutches engage, and the gauge wheels drive the seed meter shafts. Markers, if installed, are on a separate circuit.

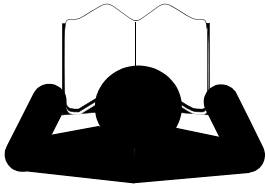
If the Point Row Option is installed, openers are controlled by section (wing), and are raised and lowered by solenoid valves operated by the point row controller.

NOTICE

Both Transport Lift and Opener Lift circuits must be in the raised configuration for folding and unfolding.

Seed meters operate at a rate proportional to ground speed, as set by Drive Type and Seed Rate Handles, based on the Seed Rate charts, and calibration.

Seeding depth and furrow coverage are controlled by drill down pressure and row unit setup.



IMPORTANT!

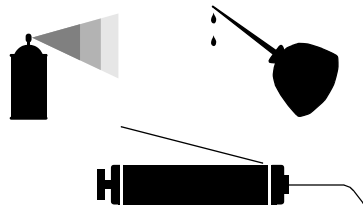
TIRE DAMAGE WILL OCCUR.
UNFOLD DRILL BEFORE LOWERING !

TO UN-FOLD	TO FOLD
1. UNLOCK SUBFRAMES.	1. RAISE OPENERS.
2. UNLOCK AXLE.	2. RAISE DRILL.
3. UNFOLD	3. FOLD.
4. LOWER DRILL.	4. LOCK AXLE.
5. LOWER OPENERS.	5. LOCK SUBFRAMES.

818-8842

Pre-Start Checklist

- Lubricate the drill as indicated under Lubrication, “**Maintenance and Lubrication**” on page 78.
- Check the tires for proper inflation according to “**Tire Inflation Chart**” on page 104.
- Check for worn or damaged parts and repair or replace before going to the field.
- Check all nuts, bolts and screws. Tighten bolts as specified on “**Torque Values Chart**” on page 105.



Raising and Lowering Openers

Opener sub-frames are on a dedicated hydraulic circuit. Openers raise and lower independently of the drill frame (which is raised and lowered by the Transport Lift circuit).

When lowered, the opener circuit can use live hydraulic power to regulate down pressure. To operate with live power, connect the opener lift circuit to the #1 remote hydraulic circuit or the circuit designed for HYDRAULIC MOTOR control. On many CLOSED CENTER or PRES-SURE/FLOW COMPENSATED tractors the #1 circuit is designed to supply live hydraulic power to remotes.

On the standard 2S-2600HD drill, the openers raise and lower as a group, from a tractor cab lever. If the Point Row Option is installed, each section can raise and lower independently, using switches on the point row control module in the tractor cab.

If the Two Outlet conversion kit is installed, a selector valve near the hitch must be operated to switch between Opener Lift and Transport Lift. During field operations, this valve is in the Opener Lift position.

Opener Lock Up

The openers must be raised and locked up for folding, transporting or for working under the drill.

Refer to Figure 18 and Figure 19

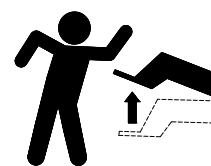
Each of the four opener lift assemblies has wire rod lock handle ①, and a cylinder lock status indicator ② on the lock hook.

Note: Opener transport lock handles ① move with openers up or down, but locks only engage if openers are raised completely or disengage if openers are lowered completely. There are 4 assemblies, one on each wing section near machine center (*Figure 19*), and one on each gauge wheel (*Figure 18*).

Lock Up Openers

1. Position opener transport handles in ROAD position.
2. Raise openers completely.

⚠ WARNING



Negative Tongue Weight: Raising openers on unfolded, unhitched drill will cause drill tongue to rise suddenly, which could cause serious injury or death. Be certain that drill is hitched securely to your tractor drawbar and the safety chain is securely attached to tractor before raising openers and unfolding drill.

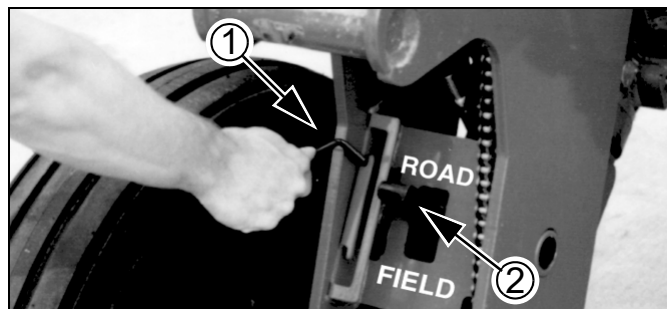


Figure 18
Gauge Wheel Opener Lock-Up

15549

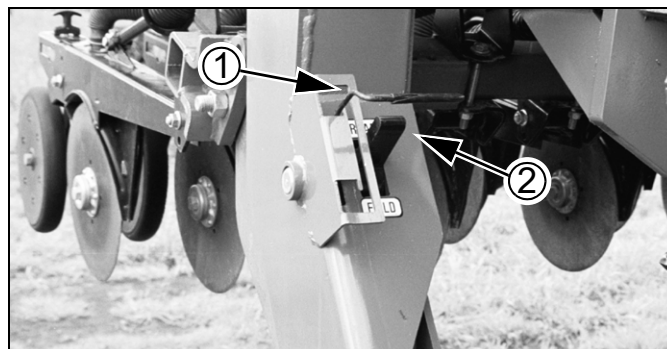


Figure 19
Center Frame Opener Lock-Up

17353

Lowering Openers

Refer to Figure 18

1. Position opener transport lock handles in FIELD position.
2. Raise openers completely, to release locks.
3. Lower openers.

NOTICE

Machine Damage Risk:

Never lower openers with drill folded.

Raising Drill (Transport Lift)

Transport Lift is on a dedicated hydraulic circuit. The center main frame raises and lowers independently of the opener sub-frames (which are raised and lowered by the Opener Lift circuit).

Transport Lift is normally used prior to folding and during rate calibrations. Opener Lift, and not Transport Lift, is used for headland turns in field operations.

Swing-up channels are used to lock the lift cylinders in the raised (extended) configuration, preventing settling during transport, parking, calibrations, servicing and storage.

Refer to Figure 22

Note: Wings flex down before gauge wheels are lifted off the ground during transport lift.

Transport Lift

1. Raise the openers. See “**Raising and Lowering Openers**” on page 24.
2. If the Two Outlet conversion kit is installed, a selector valve near the hitch must be operated to switch between Transport Lift and Opener Lift. See “**Lift Selector Valve Operation**” on page 42.
3. Supply oil to the base (extend) ends of the Transport Lift cylinders.



Figure 20
Opener Unlock

15548



Figure 21
Transport Lift Cylinder

15551

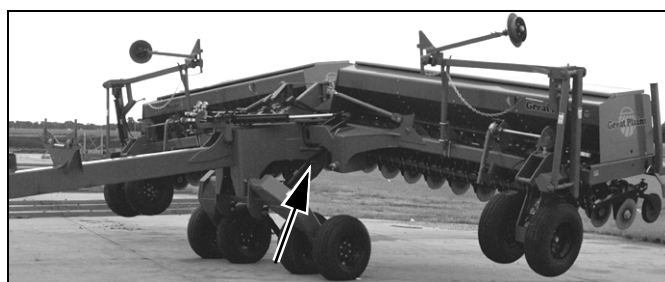


Figure 22
Transport Lift

17349

Refer to Figure 23

- Swing the locks up and onto the transport lift cylinders. They are temporarily held in place with polymer bumpers. They are firmly held in place when the cylinder is relaxed in step 5.

Note: Bumpers hold the transport lift cylinder lock channels in place temporarily. The channels will remain in position when cylinders settle against channels.

- Slowly reverse the Transport Lift circuit lever until both lock channels are resting firmly on the rod ends of the transport lift cylinders. Set circuit lever to off.

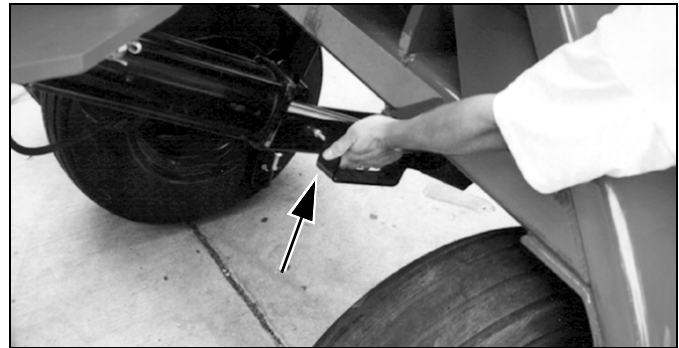


Figure 23
Transport Lift Cylinder Lock

15552

Folding

WARNING

Crushing

Bystanders could be crushed between the folding drill boxes and the drill tongue. To avoid serious injury or death, keep all bystanders well away during folding operation.

Hazard:

- Park tractor and drill on level ground with tractor transmission in Park. Be aware of clearance needed to fold drill.
- Fold up markers if installed. See “**Marker Operation**” on page 41. Return selector valve handle to Fold position.

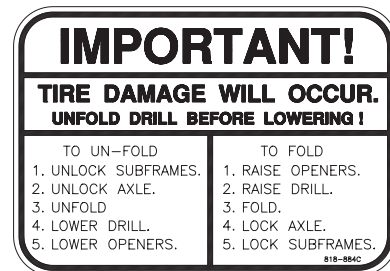
Refer to Figure 24

- Raise openers. Opener subframe must be raised for folding. Position all six opener lock handles in ROAD position and completely raise openers. See “**Raising and Lowering Openers**” on page 24.

Note: The opener transport lock handles are spring loaded and can be moved to ROAD position with openers up or down, but locks only engage when openers are completely raised. There are two locks on each drill section.

- Raise drill, engage lift lock channels and allow drill to settle on lock channels. See “**Raising Drill (Transport Lift)**” on page 25.

Note: During transport lift, wings flex down before lifting off ground.



NOTICE

Machine Damage Risk:

Both Opener and Transport Lift circuits must be raised and locked up before folding, or implement damage will result.



Figure 24 - Fold
Opener Lock Up

15549

Refer to Figure 25, which depicts

- ① the right latch awaiting a wing, and
 - ② the left latch having captured a wing.
5. Slowly supply oil to rod (retract) end of fold circuit. Completely fold wing frames until both wing gauge wheel pins are captured by the folding latches.

NOTICE

Make sure polymer bumpers in lock channels clasp the cylinder rods securely. The bumpers must hold the channels in position until cylinders settle against the channels. Inspect bumpers regularly. Replace as needed.

6. Set Fold circuit to neutral for extra safety.

The drill is now ready for the pre-transport checklist. See “**Transport**” on page 28.

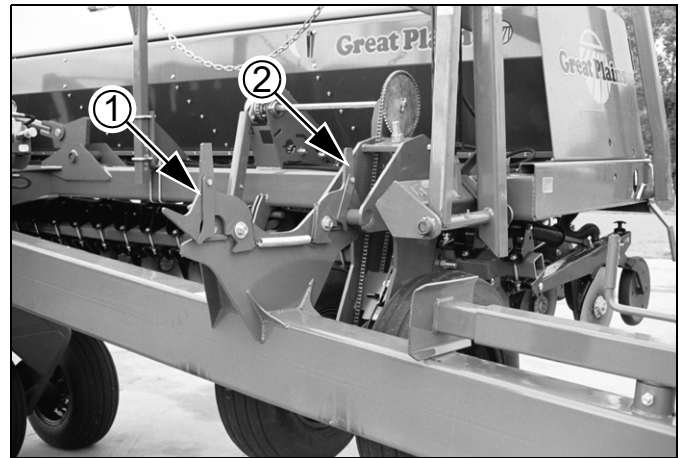


Figure 25
Latch Awaiting Wings

17316

Transport

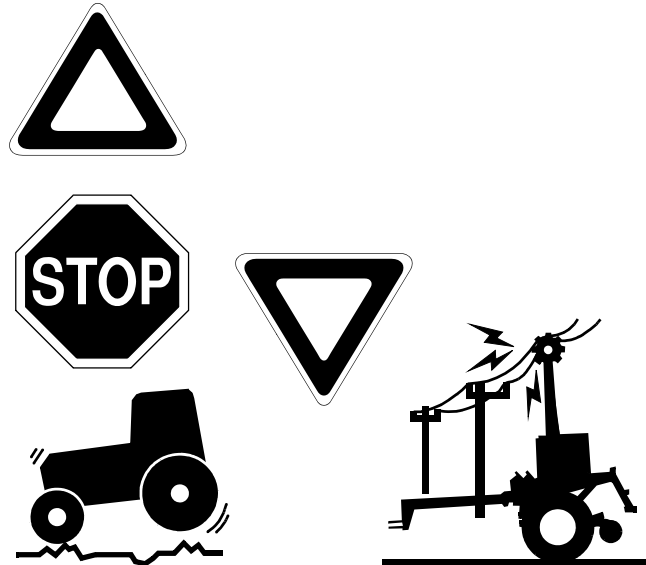
⚠ WARNING

Loss of Control Hazard:
Towing the drill at high speeds or with a vehicle that is not heavy enough could lead to loss of vehicle control. Loss of vehicle control could lead to serious road accidents, injury and death. To reduce the hazard:

Do not exceed 20 mph.

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

In the following table, multiply the total drill weight by 0.67 ($\frac{2}{3}$) to determine minimum tractor weight.



Weights for Tractor Requirements

Drill Weight (Pounds / Kilograms)			
Drill Model	2S-2600HD-5206	2S-2600HD-4275	2S-2600HD-3210
Standard "HD" Drill	10423 lbs / 4728 kg	10404 lbs / 4719 kg	10386 lbs / 4711 kg
For "HDF" Model, add...	+910 lbs / +413 kg	+889 lbs / +403 kg	+869 lbs / +394 kg
With Dual Markers, add...	+887 lbs / +402 kg	+887 lbs / +402 kg	+887 lbs / +402 kg
For Full Main Box Seed Load, add...	+5389 lbs / +2444 kg	+5389 lbs / +2444 kg	+5389 lbs / +2444 kg
Small Seeds Option	+619 lbs / +281 kg	+603 lbs / +273 kg	+586 lbs / +266 kg
Maximum Configuration: (HDF, Dual Markers, Seed Loaded, Small Seeds)	18228 lbs / 8268 kg	18172 lbs / 8243 kg	18117 lbs / 8218 kg

Marker Transportation

Refer to Figure 26

Always transport markers folded flat. Make sure second marker section rests securely on transport carrier.



Figure 26
Marker in Transport Cradle

18857

Transport Checklist

Before transporting the drill, check the following items:

- Transport only with a tractor of proper size. See “**Specifications and Capacities**” on page 104.
- **Safety Chain in Place** (page 14) - Attach safety chain to an anchor on tractor.
- **Drill Securely Hitched** (page 14) - Always use a locking-style pin sized to match holes in hitch and drawbar (minimum of 1in (2.4cm) diameter).
- **Openers Raised and Locked** (page 24) - Lock openers up into ROAD position.
- **Tires** (page 104) - Check that all tires are properly inflated.
- **Bystanders** - Check that no one is in the way before moving. Do not allow anyone to ride on the drill.
- **Warning Lights** - Always use tractor and drill warning lights in transport.
- **Clearance** (page 104) - Know the maximum dimensions of the drill in transport position and follow a route that provides adequate clearance from all obstructions.
- **Stopping Distance** - Allow sufficient stopping distance and reduce speed prior to any turns or maneuvers. If the drill is transported full, allow extra stopping distance.
- **Road Rules** -Comply with all national, regional and local laws when transporting on public roads.
- **Parking Stands Raised** (page 44) - Rotate stands up and pin.
- **Walkboard Ladders Raised** - (if equipped)
- **Drill Raised and Locked** (page 25) - Make sure drill is folded properly. Secure cylinder lock channels on transport-cylinder rods and front box lift cylinders. Allow transport lift cylinders to settle against lock channels.

Unfolding

Drill must be left raised (transport and opener lift) prior to unfolding.

1. Verify that the site has clearance needed to unfold drill.
2. If equipped with markers, set Marker/Fold valve at hitch to Fold.
3. Verify that the Transport Lift circuit is still raised, and transport cylinder lock channels are installed.

Refer to Figure 24

4. Verify that the opener sub-frames are still raised and locked up (handles in ROAD position).

Refer to Figure 28

5. At fold latch, prop both latch pawls ① on the wing pins, raising the latches ② off the pins.
6. Slowly supply oil to base end of fold circuit. Unfold wing frames by completely extending fold cylinders.

If field operations are planned:

7. Lower drill mainframe. See “**Unfolding**” on page 30.
8. Lower opener subframe. See “**Lowering Openers**” on page 25.

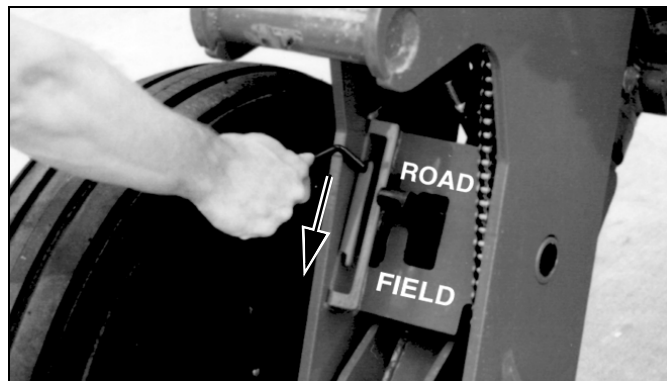
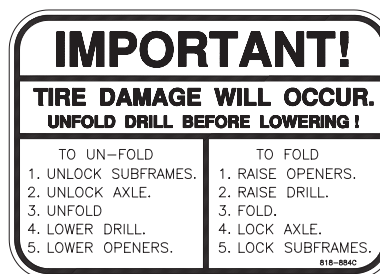


Figure 27 - Unfold Opener Unlock

15549

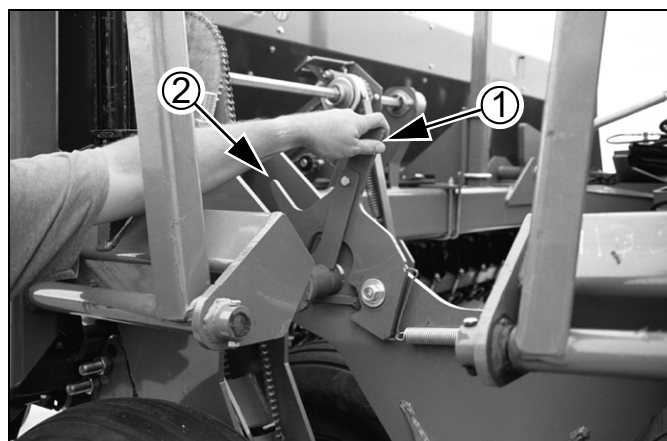


Figure 28 Latch Ready for Unfold

17319

Lowering Drill (Transport Lift)

Lowering from Transport Lift may be done only when the drill is unfolded.

Transport Lift is on a dedicated hydraulic circuit. The main frame raises and lowers independently of the opener sub-frames (which are raised and lowered by the Opener Lift circuit).

Transport Lower

1. Unfold drill. See “**Unfolding**” on page 30.
2. If the Two Outlet conversion kit is installed, confirm that the selector valve, located near the hitch, is set for Transport Lift operations. See “**Lift Selector Valve Operation**” on page 42.
3. Slowly extended the Transport Lift circuit lever until both Transport Lift circuit cylinders are fully extended. Set circuit lever to off or neutral (not float).

Refer to Figure 29

4. Rotate cylinder lock channels down and forward off transport lift cylinders.
5. Slowly reverse the lift circuit lever and begin lowering the drill. Keep the circuit engaged until both cylinders are completely retracted. Set circuit to off or neutral.

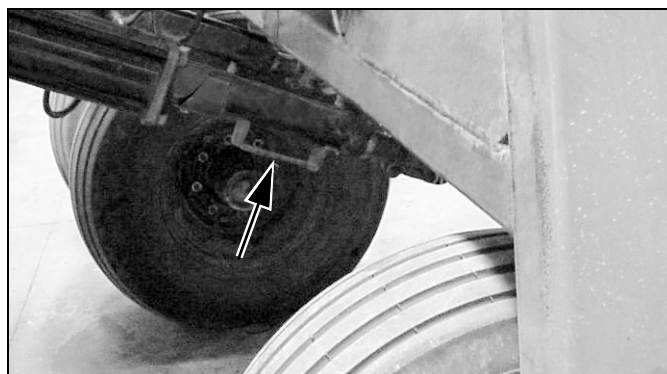
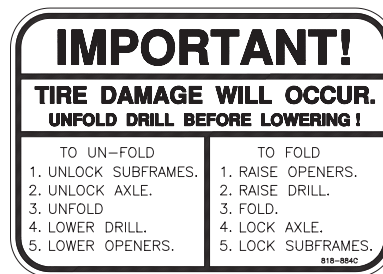


Figure 29
Transport Lift Cylinder Lock

18960

Opener Operation

DANGER

Crushing

Hazard:

You will be seriously injured or killed if you are caught between raising openers and drill frame. Always stop tractor engine, set park brake, and remove key before adjusting or servicing openers. Keep all bystanders well away during drill operation.

The openers are raised and lowered on their own hydraulic circuit. When used with an active hydraulic system, constant hydraulic down pressure is placed on openers for even soil penetration across the drill. To operate openers with live hydraulic power, always connect the opener-lift hoses to the circuit designated for hydraulic-motor control.

To achieve proper opener flotation, the opener hydraulic circuit must be powered by an active hydraulic system. An active hydraulic system requires a tractor with closed-center hydraulics or pressure-flow compensated hydraulics powered by a variable displacement hydraulic pump.

To run drill on tractors with open-center hydraulics or on tractors with fixed-displacement hydraulic pumps, you must install a Great Plains kit, part number 194-143A. Contact your Great Plains dealer for ordering information.

If you are not familiar with your tractor's hydraulics, consult your tractor dealer.

For more information on opener adjustments, see “**Troubleshooting**” on page 75.

WARNING

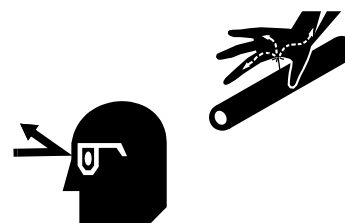
High

Pressure

Fluid

Hazard:

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



Active Hydraulic Systems

1. Lock hydraulic lever forward during field operation for constant hydraulic flow to openers.

John Deere tractors with Sound-Gard ® Body: Use lever lock clip, John Deere part number R52667, to lock lever forward. See your tractor dealer for clip purchase and installation.

John Deere 7000 Series tractors: Rotate valve detent selector to motor position to lock lever in forward position.

John Deere 8000 Series tractors: Set timer to continuous. Push lever forward until detent clicks.

Case-IH Magnum tractors: Lock lever forward in detent position. You may need to turn up detent pressure to its maximum setting. Do not tie hydraulic lever past detent position with a strap. See your tractor dealer for hydraulic-system details.

Other tractors: Lock lever forward in detent position. You may need to turn up detent pressure to maximum or use a mechanical detent holder to hold lever forward. See your tractor dealer for proper means of providing constant flow to openers.

Refer to Figure 30

2. With tractor hydraulic lever locked forward and openers in field position, release lock disk ① and set down pressure with adjustment knob ②. Watch pressure gauge and dial in desired pressure on openers. There is one pressure-control valve for inboard openers ("CENTER") and one for outboard openers ("WING"). If the Point Row option is installed, the controls are Left ("LEFT") and Right ("RIGHT").

Note: Rotate knob clockwise to increase pressure and counterclockwise to decrease pressure.

3. Once pressure is set, set knobs with lock disks ①.
4. In some applications, pressure on inboard end of wings (CENTER) is set slightly higher than the outboard ends (WINGS) to account for additional compaction from drill transport tires and tractor tires. The recommended pressure range for drilling is between 1200 psi and 1800 psi, and initially 1400 psi.
5. For more information on adjusting hydraulic down pressure, see **"Row Unit Down Pressure (Spring)"** on page 66.

NOTICE

Equipment Damage Risk:

Tractors with load-sensing hydraulics must use the bypass valve to operate the 2S-2600HD. Failure to use the bypass valve can cause major tractor damage. Before adjusting opener down pressure, set bypass valve per **"Setting the Bypass Valve"** on page 19.

NOTICE

Equipment Damage Risk:

During operation always raise openers before turning. Never back up or turn sharply with openers in the ground. Doing so will plug openers and may damage equipment.

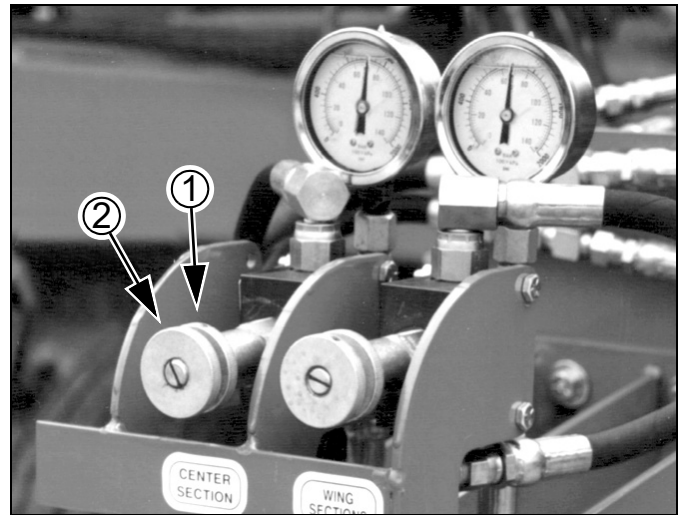


Figure 30 - Active Pressure Control Valves

26477

NOTICE

Inconsistent Population Risk:

Do not operate at pressures so high that the gauge wheels lose traction, or are off the ground, resulting in skips and poor seed metering.

Priority Flow Hydraulic Systems

On some tractors with load-sensing hydraulics, the circuit #1 is capable of taking nearly 100 percent of available hydraulic flow. Operating the openers or markers on circuit #1 will starve the other circuit, making one function inoperable.

To operate markers and constant opener down pressure at the same time, connect the openers to circuit #2 and the markers to circuit #3.

Non-Active Hydraulic System

To run drill with open-center hydraulics or fixed-displacement hydraulic pumps requires a Great Plains kit, part number 194-143A. After installing the kit, refer to the following instructions for opener operation.

1. Lower opener frames by pushing forward on tractor hydraulic lever. Lock lever temporarily in this position while adjusting opener down pressure.

Refer to Figure 31

2. With tractor hydraulic lever locked forward, release lock disk ① and set down pressure with adjustment knob ②. Watch pressure gauge and dial in desired pressure on openers. There is one pressure-control valve for inboard openers ("CENTER") and one for outboard openers ("WING"). If the Point Row option is installed, the controls are Left ("LEFT") and Right ("RIGHT").

Note: Rotate knob clockwise to increase pressure and counterclockwise to decrease pressure.

3. Once pressure is set, set knobs with lock disks ①.
4. After opener down pressure is set, return tractor hydraulic lever to neutral. This locks-in the selected pressure, and opener frames remain fixed in this position.

NOTICE

Equipment Damage Risk:

Open-center tractors and tractors with fixed-displacement pumps are not designed to provide a continuous supply of pressurized oil to remote valves. Locking hydraulic lever forward on these tractors can cause overheating of hydraulic oil and tractor damage. After setting opener down pressure, always return hydraulic lever to neutral.

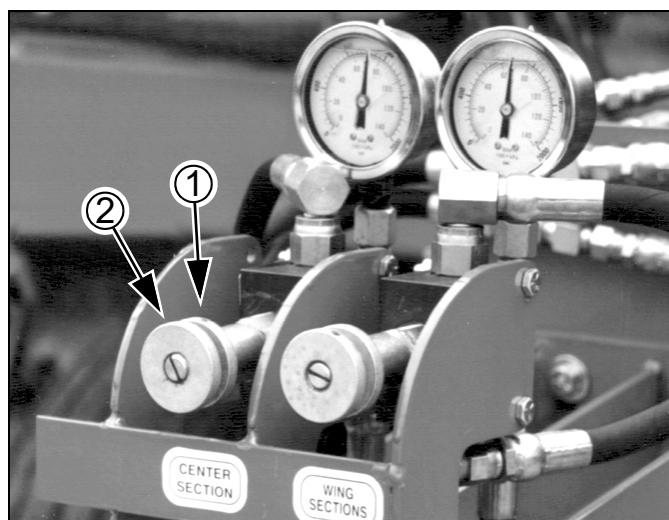


Figure 31 - Non-Active Pressure Control Valves

26477

Note: On some tractors with very positive remote hydraulic checks, a slight increase in the reading on the pressure gauges may occur after tractor remote lever is returned to neutral. This is caused by back pressure on opener cylinders and should be ignored. The net operating pressure on opener cylinders is maintained at the pressure you selected while tractor remote lever was held forward-not at the apparently increased pressure. Reactivating tractor lever forward will confirm this.

During operation:

- Each time openers are lowered, hold tractor remote hydraulic lever forward for a few seconds to recharge circuit, then return it to its neutral position. The tractor and drill should be on level ground when returning tractor lever to neutral.
- When approaching rough terrain where you need active hydraulics to maintain even opener penetration, push tractor hydraulic lever forward momentarily. As soon as you return to level ground, return lever to neutral. Do not activate tractor hydraulic lever for more than 20 seconds at a time, once every 2 minutes. Always wait until tractor and drill are on level ground before returning lever to neutral. You can bump tractor hydraulic lever forward any time on level ground to assure the preset pressure is correctly locked in and to reset the system.
- Always raise openers before turning. Never back up or turn sharply with openers in the ground. Doing so will plug openers and may damage equipment.

Loading Main Seed Box

Seed may be loaded in the field or prior to transport. Fully loaded with dense seed, the drill can weigh an additional 5389 lbs (2444 kg). Include this weight when checking tractor capability.

The drill must be hitched for seed loading. The main-frame may be raised or lowered. Lowered places the walkboards closer to the ground, reducing effort when manually loading bagged seed. If equipped with ladders, swing them down.

Main Seed Box Loading

1. Check that all meter doors are positioned for the seed size, and not set for clean-out. See **“Position Seed Cup Doors”** on page 49. If loading prior to transport, set them to position 1 (smallest seed).
2. Install or remove optional seed plugs as desired for the row spacing planned. See **“Seed Tube Plug (Small Seeds)”** on page 102.
3. If loading prior to transport, and calibration has not yet been done, set Seed Rate Handles to 0. At 0, and with the doors at 1, no seed can leak during transport.
4. On HDF (fertilizer-capable) drill models:
 - Check that any offset box dividers are set to the desired compartment ratio. See **“Offset Box Divider”** on page 101.
 - Check that the divider flap is set as desired (separate compartments, or all-seed). See **“Fertilizer Box Operation”** on page 37.
 - If seeding only from the forward (seed) compartment, flip the top spill flap back to prevent seed from entering the fertilizer compartment. See **“Fertilizer Box Operation”** on page 37.
5. Take all necessary materials safety precautions if the seed is treated.
6. Load seed evenly into seed boxes.
7. To reduce wear, remove main shaft drive chains for small seed boxes.

Small Seeds Box Loading

1. If loading prior to transport, and calibration has not yet been done, set Seed Rate Handles to 0. At 0, no seed can leak during transport.
2. Take all necessary materials safety precautions if the seed is treated.
3. Load seed evenly into seed boxes.
4. To reduce wear, remove main shaft drive chains for main seed boxes.

Initial Seeding Depth

Refer to Figure 32

5. Set opener seeding depth by adjusting press-wheel height ①. To adjust, first raise openers slightly, then lift and slide T handles ② on top of openers. Adjust all press wheels to the same height. T handles adjust at $\frac{1}{4}$ in (6.4mm) seeding depth change per minimum handle step.
 - For more shallow seeding, slide T handles forward ⑥ toward implement.
 - For deeper seeding, slide T handles backward ⑦ away from implement.
6. While seeding, remember:
 - Raise openers before turning. Never back up or turn sharply with openers in the ground. Doing so will plug openers and may damage equipment.
 - Check periodically for plugged openers and hoses.

For information on opener adjustments, “**Row Unit Adjustments**” on page 65. For information on troubleshooting opener problems, see “**Troubleshooting**” on page 75.

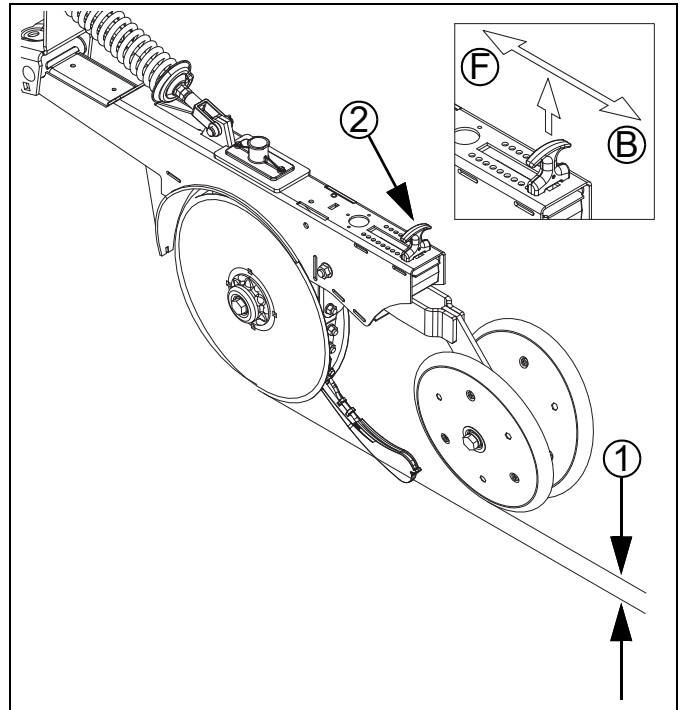


Figure 32
Initial Opener Depth

26441

Fertilizer Box Operation

The 2S-2600HDF models are equipped with a fertilizer compartment capable of planting seed only, or seeding and applying fertilizer in the same field pass.

Use only dry, granular fertilizer in the fertilizer box.

Seeding and applying fertilizer

1. Clean any seed or debris from fertilizer compartment. See “**Fertilizer Box Clean-Out**” on page 89.

Refer to Figure 33

2. Adjust dividers between seed and fertilizer compartments to desired capacity.

The standard fertilizer dividers partition the drill boxes into:

60 percent seed : 40 percent fertilizer, or;
100% seed (see page 40).

The optional offset dividers partition the drill boxes into:

68% seed : 32% fertilizer,
55% seed : 45% fertilizer, or;
100% seed (see page 40).

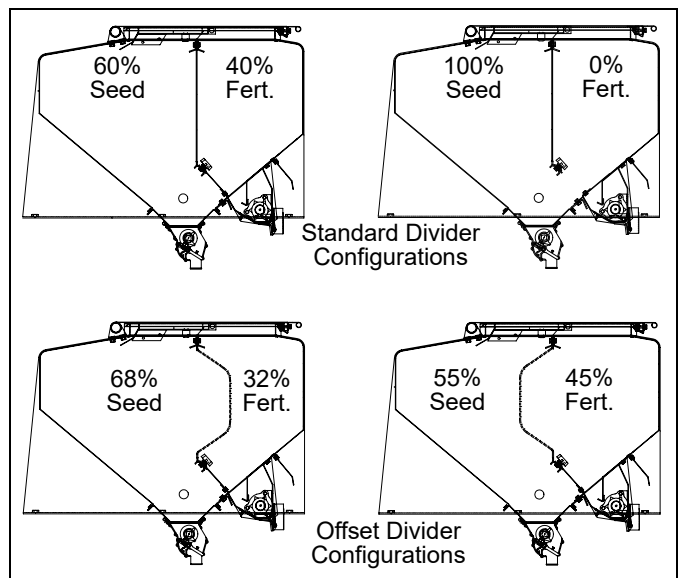


Figure 33
Seed Box Divider

27003

Divided Capacities

Divider	Capacity Ratio		Total Capacity	
	Seed	Fertilizer	Seed	Fertilizer
None	100%	0%	86.4 bu 3045 ltr.	0
Standard	60%	40%	51.8 bu 1827 ltr.	34.6 bu 1218 ltr.
Offset to rear	68%	32%	57.8 bu 2070 ltr.	27.6 bu 974 ltr.
Offset to front	55%	45%	47.5 bu 1675 ltr.	38.9 bu 1370 ltr.

Divider Removal

Refer to Figure 34 (which depicts a smaller 9ft box for clarity - the 13ft box has four partitions)

- Remove $\frac{5}{16}$ in bolts ① and flange nuts ② from tabs ③ at each end of drill box (2 locations).
- Remove $\frac{5}{16}$ in bolts ④ (4) and nuts ⑤ (5) from lid-hinge brackets ⑥ (3 locations).
- Loosen but do not remove $\frac{1}{4}$ in bolts ⑦ and nuts that clamp the lid assembly ⑧ angle irons to the plastic dividers ⑨.
- Lift lid assembly ⑧ out of drill box. Lift dividers ⑨ out of drill box. Reinstall standard or offset dividers.
- Reinstall lid assembly by reversing step d through step a.

Refer to Figure 35

- Check that the seed/fertilizer flap is closed so seed and fertilizer cannot pass between compartments.

Flap flips forward to block passage. The flap top edge is secured to the dividers. Rotate the bent clips to engage the edge of the flap, and tighten the knobs.

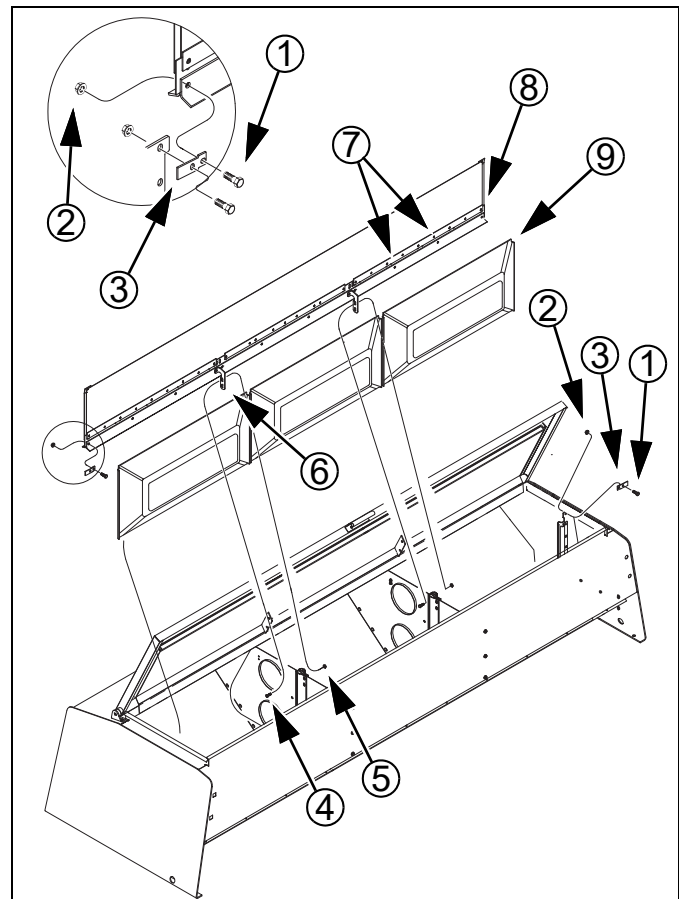


Figure 34
Box Divider Removal

27050



Figure 35
Seed/Fertilizer Flap Closed

16383

Refer to Figure 36

7. Check that fertilizer clean-out door is latched securely ① as shown. Close all door latches before loading fertilizer compartment.

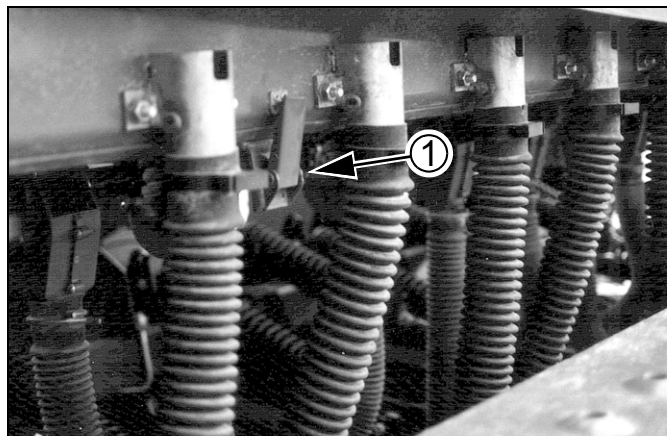


Figure 36
Cleanout Door Latch

16377

Refer to Figure 37

8. Open main seed box lid.
9. Raise spill flap over fertilizer compartment and swing it forward until it rests against open drill-box lid. The spill flap serves as a spill guard to keep fertilizer out of the seed compartment.
10. Fill fertilizer compartment.
11. Calibrate fertilizer-application rate as explained under **"Fertilizer Rate Calibration"** on page 56.

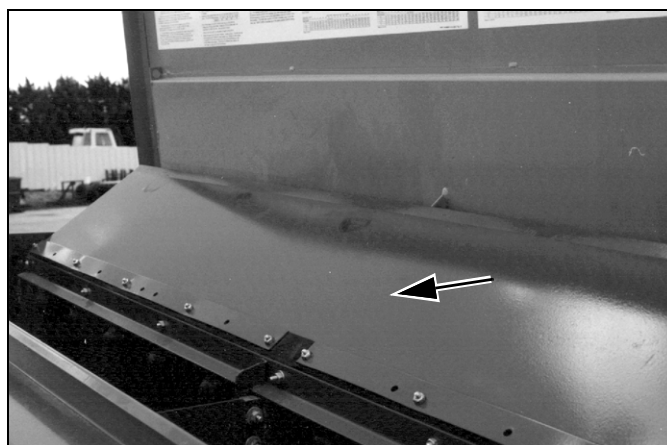


Figure 37
Spill Flap Open to Fertilizer

14875

Seeding with Both Compartments

1. Clean out boxes. See “**Main Box Seed Meter Clean-Out**” on page 89 and “**Fertilizer Box Clean-Out**” on page 89.

Refer to Figure 38

2. Open divider door between seed and fertilizer compartments. To open door, loosen knobs ①. Loosen knobs until bent clips can be turned away from door ①.
3. When all bent clips have been turned, lift vinyl dew shield (not shown) and flip the flap ② backward over fertilizer-tray openings ③.

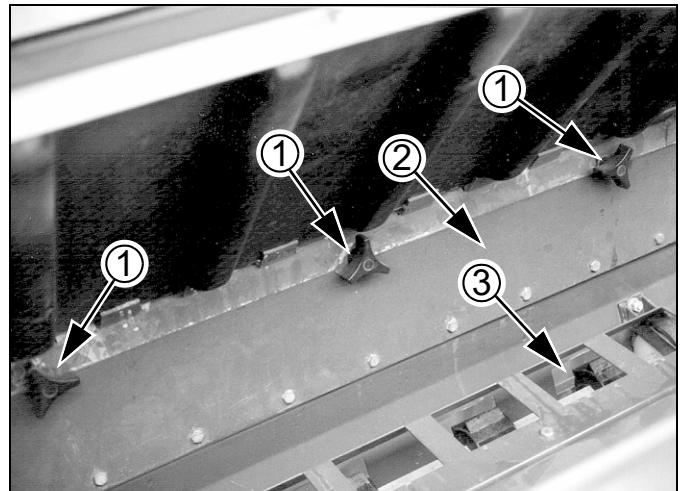


Figure 38
Open Seed/Fertilizer Flap

16383

Refer to Figure 39

4. With seed/fertilizer flap ② covering fertilizer openings, lower vinyl dew shield ④ to hold flap over fertilizer openings and away from divider.
5. To avoid unnecessary wear, remove both fertilizer Range drive chains. “**Setting Fertilizer Drive Range**” on page 54.

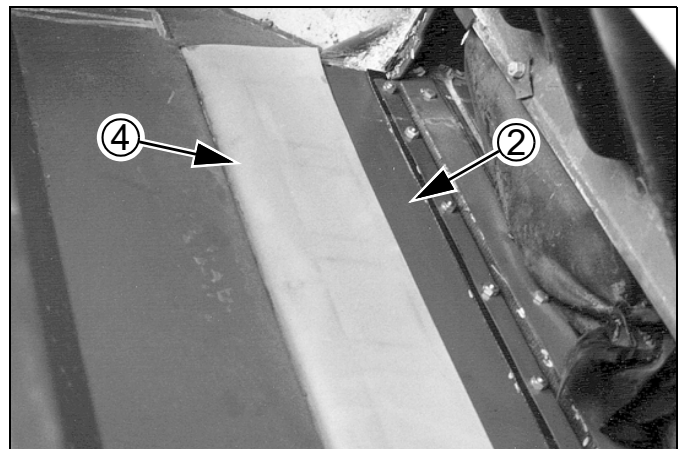


Figure 39
Flap Secured

16380

Marker Operation

Optional markers are equipped with a double-selector valve, on the tongue near the hitch, to combine the box-fold circuit with the marker circuit. On a 2-outlet tractor, there is a second selector valve, for the lift circuits, mounted above the marker/fold selector.

Refer to Figure 40

After drill is unfolded for field operation, move double-selector valve handle from forward fold position ① to marker circuit (back ②). Before operating markers, make sure they are properly bled as described in **"Bleeding Hydraulics"** on page 79.

Single Marker Operations

To operate a single marker, activate tractor remote hydraulic lever to move marker in desired direction.

Single markers are equipped with a needle valve to control marker folding speed. Excessive folding speed can damage markers, so adjust needle valve to a safe operating speed as described under **"Marker Speed"** on page 73.

Dual Marker Operations

Dual markers are equipped with an automatic sequence valve to control lift sequence. Starting with both markers up, the sequence is:

- Activate hydraulic lever; right marker lowers while left marker stays up.
- Reverse hydraulic lever; right marker raises while left marker stays up.
- Activate hydraulic lever; left marker lowers while right marker stays up.
- Reverse hydraulic lever; left marker raises while right marker stays up.

Pattern repeats.

Folding speed of dual markers is adjusted with adjustment screws on sequence-valve body. Excessive folding speed can damage markers, so adjust markers to a safe folding speed as described under **"Marker Adjustments"** on page 70.

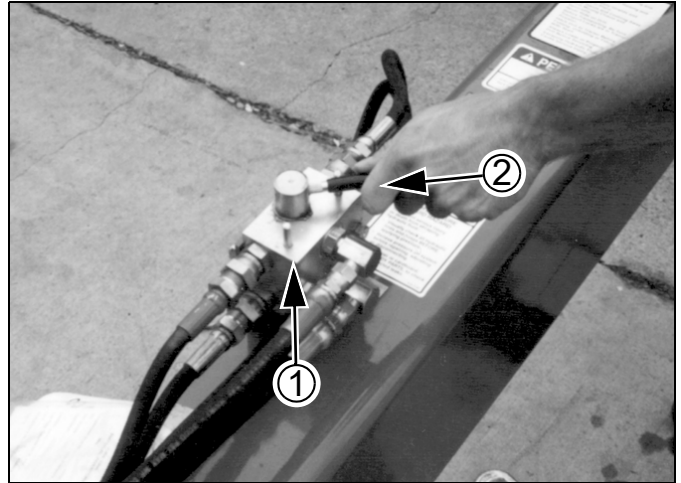


Figure 40
Fold / Marker Selector

15550

Lift Selector Valve Operation

Tractors with only two remote circuits need an optional selector valve, which shares a single tractor circuit between transport lift and opener lift. Two Outlet Tractor Hydraulic Kit Great Plains Part number 194-122A. This combines the transport lift hydraulic circuit and opener lift hydraulic circuit.

If no markers are installed, the lift selector valve is mounted on the standard tongue valve plate near the hitch. If markers are also installed, the lift selector valve mounts above the marker valve on an extension plate.

Refer to Figure 41, which depicts the optional lift selector valve on a drill without markers.

To operate, move handle from forward transport lift position ① to rear opener lift position ②.

Note: Do not rely on this valve to lock up either transport lift circuit or opener subframe circuit. Use the lift locks.

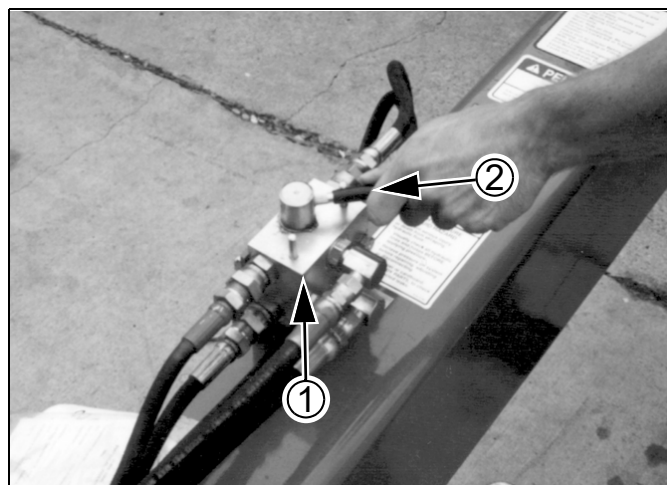


Figure 41
Optional Lift Selector

15550

Point Row Operation

Refer to Figure 41

The optional point-row controller allows you to raise and lower openers on one drill section independently of the other. A POINT ROW CONTROL module in the tractor cab operates solenoid valves on the drill, which raise and lower opener sub-frames independently (or together). The mechanical clutches on each section suspend seeding when raised.

To raise and lower openers on all sections together, set POWER switch ① ON-left, so MASTER LIFT CONTROL indicator ② is illuminated. Raise or lower with the ALL UP / ALL DOWN switch ③ under the indicator.

To raise and lower opener sections independently, set POWER switch ① ON-right so SECTION CONTROL indicator ④ is illuminated. Raise and lower openers on each section by operating the UP / DOWN switches ⑤ illuminated under the SECTION CONTROL.

Note: At the pressure control valves, the “CENTER” and “WING” decals are replaced by “LEFT” and “RIGHT” decals, respectively. The controller’s CENTER control circuit is not used on 2S-2600HD.

Note: Turn Point Row POWER switch ① to OFF-center when tractor is off.

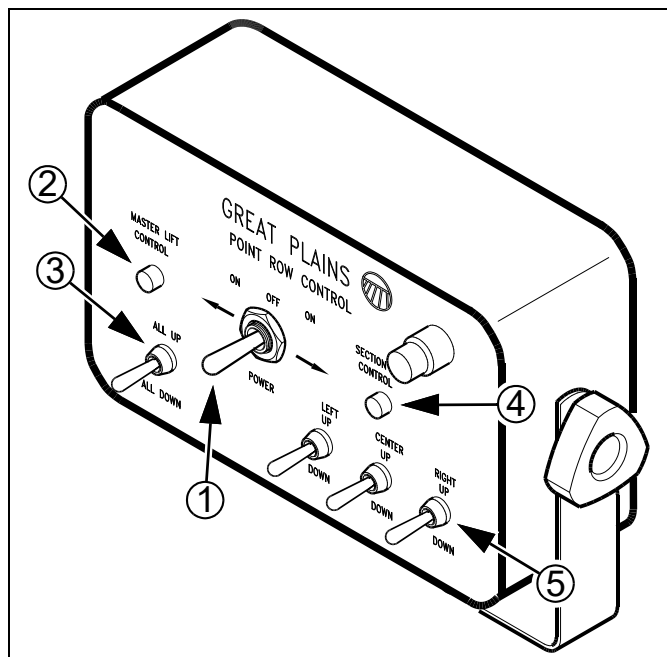


Figure 42
Point Row Controller

17060

Shaft Monitor Operation

The optional shaft monitor generates an alarm if either of the two main seed box meter shafts on the drill stop turning for more than 20 seconds.^a

Refer to Figure 43

To operate shaft monitor, turn system on by activating on-off switch ① on monitor head. If seed-cup shafts are turning, both indicator lights ② are illuminated and no alarm sounds.

If any seed-cup shaft stops for 20 seconds, an alarm sounds and the indicator for that section flashes on the monitor, designating the failed shaft.

Note: The 20-second delay is to prevent nuisance alarms when turning at the end of the field.

Note: If a failure does occur and an alarm sounds, remember you have traveled for 20 seconds without planting with that drill section. If due to wheel lift or low tire pressure, you may have been planting at progressively lower populations before that.

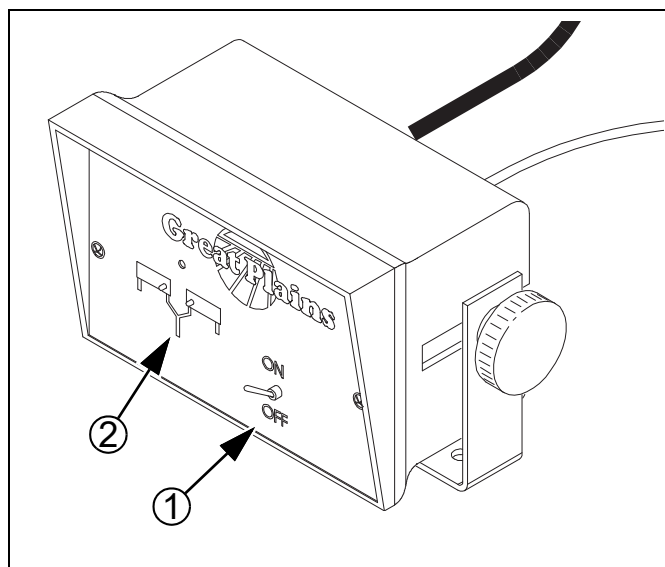


Figure 43
Shaft Monitor Head

27049

Electronic Acremeter

Refer to Figure 44

A battery-operated electronic acre counter is supplied with the drill. The display module for the system is normally on the front face of the main toolbar near the left gauge wheel and close to the sensor. (For 2S-2600 models the meter is mounted on the right hand box frame.)

If your drill was originally equipped with this acremeter, it will have been supplied already programmed.

The acremeter calculates and displays the field acres and total acres accumulated.

The meter counts rotations of the main ground drive shaft before the clutch. It tallies all movements with the drill unfolded, whether planting or not.

The counter operates in one of two modes, in **sleep** mode or in **entry** mode. (See separate manual 194-074M specifically for operations of this meter).

For previous style acremeter used with this drill see **“Appendix B - Previous Style Acremeter”** on page 112.



Figure 44
Electronic Acremeter

34776

a. The older Vansco shaft monitor was 30 seconds.

Parking

Following these steps when parking for less than 36 hours. For longer periods, see *Storage*, the next topic.

Parking with Drill Unfolded

WARNING

This drill has a negative tongue weight when unfolded and openers are raised. Lower parking stand, lower openers and remove hydraulic down pressure before unhitching the drill in the unfolded position. Unhitching in the unfolded position with the openers raised could result in sudden elevation of the tongue, causing injury or death.

1. Remove jack from storage location on top of tongue and pin it on post on left side of tongue as shown on page 15. Extend jack until weight of tongue is on jack. Leave tractor hitched for the moment.

Refer to Figure 45 and Figure 46

2. Lower parking stands located on outer ends of drill by unpinning keeper pin and rotating stands down. Place a block under foot of stand if it does not contact the ground.
3. Lower openers and reduce hydraulic down pressure to zero.
4. Unplug drill hydraulic hoses and electrical lines from tractor.

CAUTION

Use caution when removing the hitch pin. Slight tongue elevation may occur, even with openers and parking stands lowered.

5. Remove hitch pin first, then safety chain from tractor drawbar.

Note: After unhitching the unfolded drill, the tongue may rise above tractor-drawbar height. Lower tongue by connecting the opener-lift circuit and pressurizing openers.

Parking with Drill Folded

1. Raise, lock and fold drill into transport position.
2. Park drill on a level, solid area.
3. Remove tongue jack from its storage location on top of tongue and pin it on post on left side of tongue as shown on page 15. Extend jack until weight of tongue is on jack. If ground is soft, place a board or plate under jack to widen ground-contact area.
4. Unplug hydraulic hoses and electrical lines from tractor.
5. Remove hitch pin first, then safety chain from tractor drawbar.

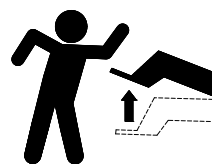


Figure 45
Wing Stand Pinned Up

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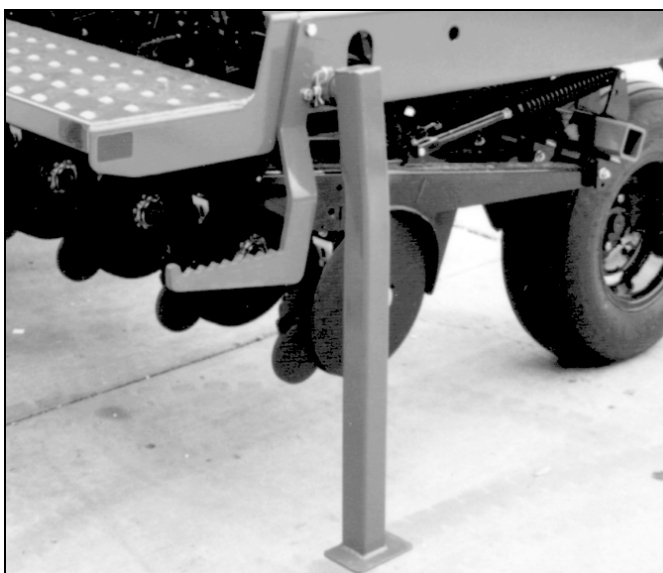


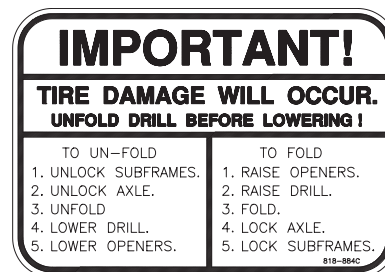
Figure 46
Wing Stand Pinned Down

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Storage

Store the drill where children do not play. If possible, store it inside for longer life.

1. Perform the drill Parking checklist.
2. Lubricate the drill at all points listed under “**Lubrication**” on page 91.
3. Check all bolts, pins, fittings and hoses. Tighten, repair or replace parts as needed.
4. Check all moving parts for wear or damage. Make notes of any parts needing repair before the next season.
5. Raise and lock up openers.
Raise and lock up Transport lift.
Fold drill.
Do not lower openers with drill folded.
6. Plug or cap seed delivery and fertilizer tubes to prevent pest entry.
7. Use touch-up paint to cover scratches, chips and worn areas to prevent rust.





Adjustments

To get full performance from your drill, you need an understanding of all component operations, and many provide adjustments for optimal field results.

The 2S-2600HD has double-disk openers with depth-controlling press wheels mounted on floating opener frames. Opener bodies are staggered for easy soil flow. All openers pivot on a common axis to maintain consistent depth as the opener frames follow contours. A spring provides the down pressure necessary for opener double disks to open a seed furrow. The spring allows openers to float down into depressions and up over obstructions. Individual openers can be adjusted to account for tire tracks.

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

Seed and Fertilizer Rate

Materials are applied by fluted feed meters driven by the gauge wheels. Independent mechanisms control seed and fertilizer application. Optional Small Seeds rate is controlled entirely by Rate Handles.

Main Box Seed rate is controlled by adjustments for:

- Drive Type sprocket (one sprocket each gauge wheel)
- Seed Rate Handle (one handle each seed box)
- Feed Cup Door (one each seed tube)

Fertilizer rate is controlled by:

- Range sprockets (one set each fertilizer box)
- Final Driver/Driven sprockets (one set each box)

Planting Depth

Setting nominal planting depth, and achieving it consistently, is affected by multiple adjustable drill functions, from greatest to least effect they are:

- Opener Depth (Press Wheel Height)
- Opener Frame Down-Force,
- Row Unit Down Pressure (Spring),
- Opener Height,
- Opener-Subframe Adjustment,
- Frame Weight (at higher pressures), and;
- Disk Blade Adjustments (as blades wear).

Adjustment	Page	The Adjustment Affects
Setting Main Box Seed Rate	47	
Setting Drive Type	48	Coarse control of seeding rate
Main Box Seed Rate Handle	49	Fine control of seeding rate
Position Seed Cup Doors	49	Consistent seed delivery for certain seed sizes
Setting Fertilizer Rate	53	
Setting Fertilizer Drive Range	54	Coarse control of application rate
Setting Fertilizer Final Drive	55	Fine control of application rate
Frame Level	60	Section-to-section planting consistency
Small Seeds Rate	58	Small seeds population
Opener Frame Down-Force	62	Consistent seeding depth
Opener-Subframe Adjustment	64	Level row unit running in desired pressure range
Frame Weight	61	Achieving higher down-force settings
Row Unit Adjustments	65	
Opener Height	66	Seeding depth in tire tracks
Row Unit Down Pressure (Spring)	66	Level row units and consistent seeding depth in tire tracks
Disk Blade Adjustments	67	Consistent seeding depth
Seed Firmer Adjustments	68	Consistent seed placement and coverage
Opener Depth (Press Wheel Height)	69	Seeding depth
Marker Adjustments	70	Correctly offset and visible pass marks

Setting Main Box Seed Rate

Accurately obtaining the desired seed population requires four steps:

1. Setting Drive Type sprockets (from chart)
2. Setting initial Seed Rate Handle (from chart)
3. Positioning Seed Cup Door (by seed type)
4. Calibration: checking actual seeding rate

Seed rate charts are found in a separate Seed Rate Manual (which is normally stored in a weatherproof holder on the drill, for field reference). The charts list proper sprocket pairings and seed-rate-handle settings for various seeds and seeding rates.

The seed-rate charts are based on cleaned, untreated seed of average size and test weight. The charts are based on 9.5Lx15 6-ply Rib Implement gauge wheel tires and 11Lx15 12-ply Rib Implement transport tires, inflated to factory specification. Many factors will affect seeding rates including foreign material, seed treatment, seed size, seed weight, field conditions, tire pressure and test weight. Minor adjustments are commonly required. Set and check the seeding rate using the procedures below, then readjust the rate as necessary.

Adjustments | 55

Main Box Seed Rate Charts
Metric charts begin on page 118.

Alfalfa or Rape
Drive Type 1

Seed Rate Handle Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	0	6	8	12	15	18	22	27	32	37	41	45	50	54	59	63	68	73	77	82	86
6 inch	0	6	8	12	15	18	22	27	32	37	41	45	50	54	59	63	68	73	77	82	86
7.5 inch	0	4	7	10	12	15	18	22	25	29	33	36	40	43	47	51	55	59	63	66	69
10 inch	0	3	5	7	9	12	14	16	18	22	25	27	30	33	35	38	41	44	46	49	51

Barley (1 of 3)
Drive Type 1

Seed Rate Handle Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	0	5	8	11	14	18	22	26	30	35	39	43	48	53	57	62	66	70	74	78	82
6 inch	0	5	8	11	14	18	22	26	30	35	39	43	48	53	57	62	66	70	74	78	82
7.5 inch	0	4	6	9	12	15	18	21	24	28	31	35	38	42	46	49	53	56	59	62	65
10 inch	0	3	5	8	11	13	16	18	21	23	26	29	32	34	37	39	42	44	46	48	50

Barley (2 of 3)
Drive Type 2

Seed Rate Handle Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	0	9	16	22	28	37	45	54	62	71	79	87	96	104	114	123	133	142	152	161	170
6 inch	0	9	16	22	28	37	45	54	62	71	79	87	96	104	114	123	133	142	152	161	170
7.5 inch	0	7	13	17	24	30	38	43	49	57	64	70	77	83	91	96	106	114	123	132	141
10 inch	0	5	10	13	18	22	27	32	37	43	48	52	58	63	69	74	80	85	91	96	101

Barley (3 of 3)
Drive Type 4

Seed Rate Handle Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	0	21	30	43	57	73	90	110	131	151	174	198	224	250	278	305	335	368	397	427	456
6 inch	0	21	30	43	57	73	90	110	131	151	174	198	224	250	278	305	335	368	397	427	456
7.5 inch	0	17	21	27	34	42	52	63	75	87	100	113	127	141	156	171	187	204	221	238	255
10 inch	0	13	16	20	24	29	34	40	47	54	62	70	79	88	98	108	118	129	139	150	160

Buckwheat
Drive Type 3

Seed Rate Handle Setting	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Rows	0	11	17	25	32	42	52	65	79	95	112	130	150	170	190	210	230	250	270	290	310
6 inch	0	11	17	25	32	42	52	65	79	95	112	130	150	170	190	210	230	250	270	290	310
7.5 inch	0	9	17	24	34	42	52	62	74	85	98	109	122	134	146	158	171	184	196	209	221
10 inch	0	7	13	18	25	31	39	47	55	64	74	81	90	99	108	117	126	134	143	151	159

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Setting Drive Type

Refer to Figure 47

Drive Type is determined by the size (tooth count) of a sprocket on the seed jackshaft ① of each drill section. If changed, the sprocket must be set identically on each drill section (2 locations).

For correct Drive Type, refer to the charts in the Seed Rate manual. The charts list Drive Types as 1, 2, 3 or 4. Each Drive Type corresponds to a specific sized sprocket, per the table at right, and Figure 48 below.

Changing Drive Type

1. Loosen top idler ② and slide idler well forward, particularly if changing to Drive Type 1.
2. Lift drive chain ③ off sprocket currently in use.
3. Remove lynch pin ④ and rearrange sprockets ⑤ on jackshaft ①. Sprocket corresponding to the required Drive Type is second innermost. Make sure all 4 sprockets are accounted for when remounting them on the shaft.
4. Remount drive chain on the second innermost (Drive Type) sprocket.
5. Re-engage top idler and secure. Allow $\frac{1}{2}$ in (1.3cm) slack in longest (top) span of chain.
6. Set the same Drive Type on both drill sections.

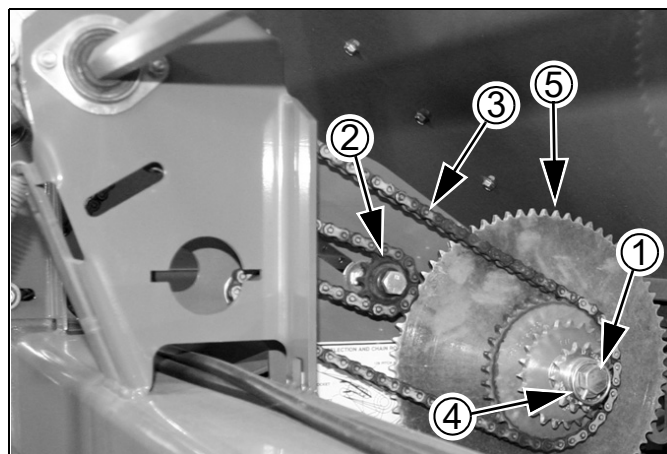


Figure 47
Drive Type 2 Configured

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Drive Type	Sprocket	Relative Speed
1	72 Tooth	Slowest
2	34 Tooth	2.12 times faster than Type 1
3	23 Tooth	3.13 times faster than Type 1
4	14 Tooth	5.14 times faster than Type 1

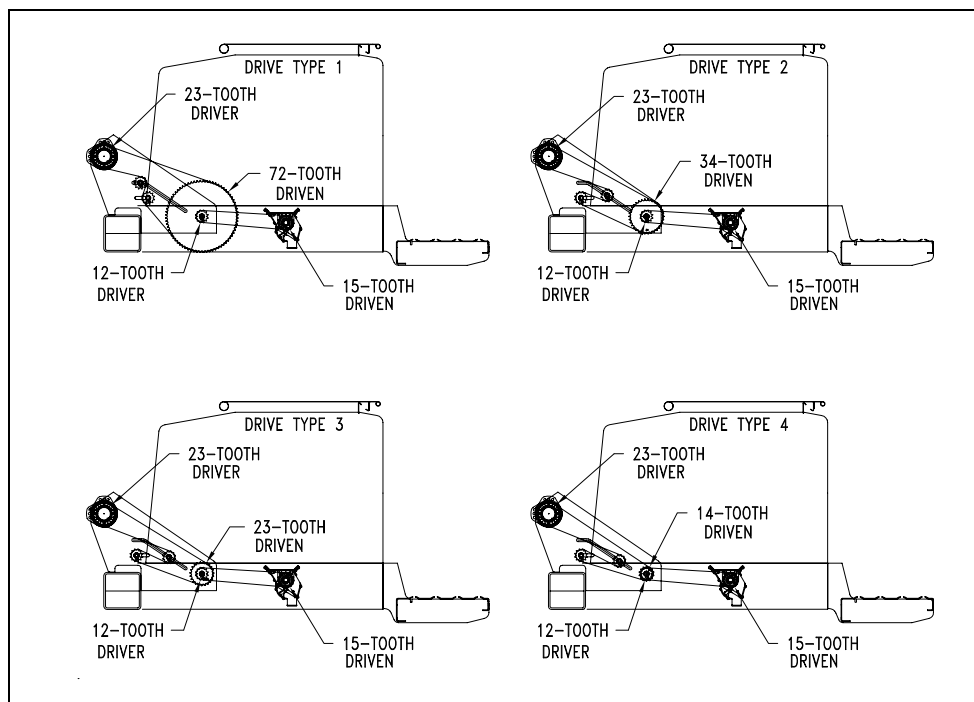


Figure 48
Drive Type Chain Routing

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Main Box Seed Rate Handle

There are main box seed rate handles for each section of the drill (2 handles total). Generally, all need to be set identically, and you need to calibrate only one section.

The seed rate handle controls the percent engagement of the seed sprocket in each seed cup. The initial setting of the handle is given by the Seed Rate Chart.

Note: You can temporarily stop seed flow to a drill section by setting a handle to zero.

To set a handle:

1. Loosen wing nut ① under handle.
2. Move indicator ② from current setting to about 10 past the new desired value from calibration or the Seed Rate Chart, then move it back to the new desired value.
3. Tighten wing nut.

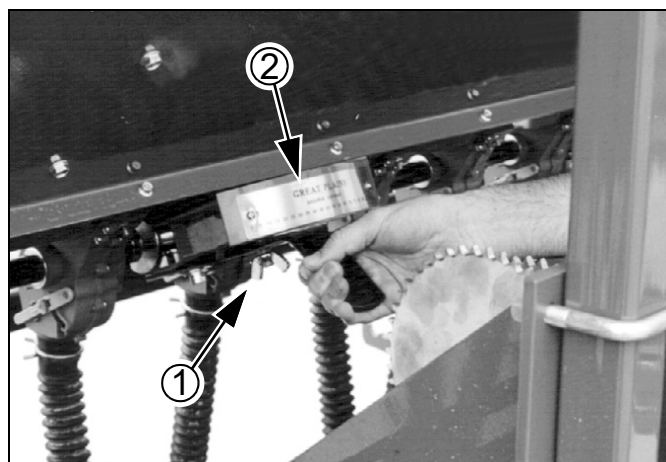


Figure 49
Seed Rate Handle

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Position Seed Cup Doors

Refer to Figure 50,
which depicts the seed cup door handle in position ③.

At each main seed box seed tube, adjust the seed cup door handle ④ for the seed size.

The handle has three normal operating position detents:

- ① (top detent) is for the smallest seeds.
Use it for wheat and similar small seeds.
- ② (middle detent) is for larger seeds.
Use it for soybeans and similar larger seeds.
- ③ (bottom detent) is for oversize or fragile seeds.
If you experience excessive cracking with setting ②, use setting ③.

Note: Handle position ⑤ is used for cleanout, not planting. If set to this position with seed loaded, it may be difficult to reset it to a normal operating position.

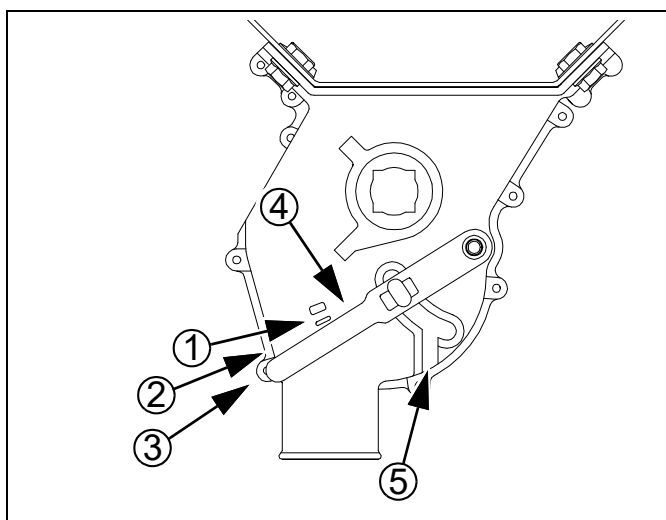


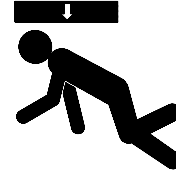
Figure 50
Seed Cup Door Handle

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Main Box Seed Rate Calibration

Differences will exist between the tested seed and field conditions used to generate the Seed Rate Charts, and your seed and conditions. To accurately achieve your target population, Great Plains recommends calibrating.

Perform the calibration with the drill raised for transport, but with the opener frames lowered (if the openers are raised, the clutches disengage). Leave the tractor hitched for movement control. Block the tires not being used in the calibration.



WARNING

Crushing

You may be severely injured or killed by being crushed from a falling implement or openers. Always have transport locks in place and frame sufficiently blocked up when working on the drill.

Hazard:

1. Rotate the gauge wheels and check that the drives and seed cups are engaged, working properly and free from foreign material. If not already done, set the Drive Type, Seed Rate Handle and Seed Cup Doors across the drill. If fertilizer is loaded, remove the fertilizer drive chain (unless you are simultaneously calibrating fertilizer rate).
2. Note the current reading of the acremeter, unless you do not plan to rely on it for the calibration.
3. Check that your gauge-wheel tires are 9.5Lx15 6-ply Rib Implement and properly inflated. See "**Tire Inflation Chart**" on page 104.
4. Record the weight of one to three empty containers collectively large enough to hold seed metered for 6% of one acre.
5. Place several pounds of seed over three seed cups on the outside end of the left drill box. Pull lower end seed hoses off of these drops at the opener end.
6. Turn gauge wheel several times to fill seed cups. Turn until seed drops to ground from each hose.
7. Place empty container(s) under the three hoses to gather metered seed.
8. Turn gauge wheel until one acre is tallied on acremeter (203 wheel rotations). While turning, check that cups have ample seed coming into them.
9. Weigh metered seed. Subtract initial weight of container(s)

For example:
 on a drill with a row spacing of:
 7.5in
 and row count of:
 42
 you desire to plant barley at:
 49 pounds per acre
 which, from the chart, is an initial Seed Rate Handle
 scale setting of:
 40

For example:
 three empty 1.8 pound containers weigh:
 5.4 lbs

Gauge wheel rotations for one acre:
 203

$$\text{NetWeight} = \text{GrossWeight} - \text{ContainerWeights}$$

For example: the containers weighed a total of 8.0
 pounds after test:
 2.6 lbs net

$$2.6 = 8.0 - 5.4$$

10. Divide the net seed weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre seeded.

$$\text{MeasuredRate} = \frac{\text{NetWeight}}{3} \times \text{OpenerCount}$$

For example:
on the 42-row 7.5in drill:
36.4 lbs/ac

$$36.4 = \frac{2.6}{3} \times 42$$

11. The Seed Rate Handle scale is a percentage of meter opening, and is quite linear near scale center. Calculate a new scale setting based on the test.

Set the Seed Rate Handle to the new scale setting.

$$\text{NewScale} = \frac{\text{TargetRate}}{\text{MeasuredRate}} \times \text{OldScale}$$

For example:
the target rate was 49 lbs/ac, and the initial scale 40:
the new scale setting is:
54

$$53.8 = \frac{49}{36.4} \times 40$$

12. You may want to repeat calibration procedure at the new setting if your results varied greatly from the Seed Rate Chart, or if you must operate near the ends of the Seed Rate handle scale (0-20 or 90-100).
13. Set the right drill section to match the now-calibrated left section.
14. With calibration complete, Reinstall fertilizer chain (if removed), reconnect seed hoses, and lower gauge wheel to ground.

When drilling, check seeding rate by noting acres drilled, amount of seed added to drill and seed level in drill box. If you are seeding more or less than desired, adjust rate slightly to compensate for field conditions.

Reading a Seed Rate Chart

- Find your seed. Charts are in alphabetical order by seed name. Charts covering more than one seed may be out of order.
For Rape, see Alfalfa.
For Sudan, see Flax.

This example presumes you desire to plant Barley at 48 pounds per acre with a 7.5in drill.

There are multiple charts for some seeds, and the rates may overlap. Use the chart where your desired rate is closest to 50 on the Seed Rate Handle scale.

In our example, that would be Barley chart 2 of 3.

If your seed is not listed, find one with similar size, shape and density. Density of the test seed used to develop the chart appears under the right end of the handle scale values.

- Note the Drive Type in the upper left corner of the chart for your seed. This number (1-4) is used to determine the seed jackshaft sprocket. See page 48.

In the example, this is Drive Type 2 (34T sprocket).

- Find your row spacing in the far left column.

- Locate your desired seed rate in the table row for your row spacing.

In the example, 49 is the closest to 48.

- Note the Seed Rate Handle setting required, at the top of the column at that seed rate. This is the initial value set on the Seed Rate Handle. See page 49.

In the example, start with a handle setting of 40, and calibrate. When a target rate falls halfway between handle settings, you can adjust the handle slightly to compensate, but calibration is apt to result in further adjustment anyway.

7.5 inch	0	4	6	9	12	15	18
10 inch	0	3	5	6	9	11	13

Barley (2 of 3)

Drive Type							
2	0	5	10	15	20	25	30

Seed Rate Handle Setting											
25	30	35	40	45	50	55	60	65	70	75	80
Seed Rate in Pounds Per Acre											

5	70	75	80	85	90	95	100
(based on 51 pounds/bushel)							
4	114	123	133	142	152	154	156

Barley (2 of 3)

Drive Type							
2	0	5	10	15	20	25	30
Rows							

Rows							
6 inch	0	9	16	22	30	37	
7.5 inch	0	7	13	17	24	30	
10 inch	0	5	10	13	18	22	

Seed Rate in Pounds Per Acre											
22	30	37	45	51	62	71	76	87	96	104	114
17	24	30	36	43	49	57	64	70	77	83	91
13	18	22	27	32	37	43	48	52	58	63	68

Seed Rate Handle Setting											
15	20	25	30	35	40	45	50	55	60	65	70
Seed Rate in Pounds Per Acre											
22	30	37	45	54	62	71	76	87	96	104	114
17	24	30	36	43	49	57	64	70	77	83	91
13	18	22	27	32	37	43	48	52	58	63	68

Setting Fertilizer Rate

The 2S-2600HDF fertilizer meters are driven from the clutch shaft through a series of sprockets. This system is independent of the seed meter drive, and is unaffected by Drive Type. Fertilizer rate is adjusted by changing 1 to 3 sprockets on each drill section (2 sets total).

Fertilizer application rates vary with fertilizer type, density and particle size. Relative humidity and field conditions can also affect application rates. The chart in the Seed Rate Manual is based on fertilizer with average particle size and a density of 65 pounds per cubic foot. Initially set rate according to charts, then calibrate the drill to your material as described on this page.

Perform initial setup and calibration for the left drill box. Once final are determined, set the right box to match.

Accurately obtaining the desired application rate requires four steps:

1. Adjusting target rate for large differences between material and chart density.
2. Setting Range sprocket (from chart)
3. Setting initial Driver / Driven sprockets (from chart)
4. Calibration: checking actual application rate

Adjusting for Density

The fertilizer meter rate chart is based on fertilizer with a density of 65 pounds per cubic foot (1.04 kg/liter). If your fertilizer density is within a few percent of that, you can skip this step and rely on calibration to determine final Driver/Driven setup.

For larger variances, particularly with very low densities, pre-compensating can simplify calibration, by choosing a different target chart value for the application rate.

1. Find your actual material density. Normally, this reported on the container in which it was supplied. If not, weigh a known volume and calculate it.
2. Find your material Density in the table at right, and the Conversion Factor below it.
3. Adjust your target application rate prior to consulting the Fertilizer Rate Chart.
4. Consult the Fertilizer Rate Chart for the Adjusted rate.
5. Calibrate using the sprocket setup for the adjusted rate.

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Fertilizer Rate Chart
Based on 65 pounds per cubic foot (1.04 kg/liter)

6in (15.2cm) Rows					7.5in (19.1cm) Rows					10in (25.4cm) Rows				
Meter Rate	Sprockets		Range		Meter Rate	Sprockets		Range		Meter Rate	Sprockets		Range	
kg/ha	lbs/ac	Driver	Driven		kg/ha	lbs/ac	Driver	Driven		kg/ha	lbs/ac	Driver	Driven	
47	42	Low	12 T	21 T	38	34	Low	12 T	21 T	28	25	Low	12 T	21 T
50	44	Low	12 T	20 T	41	36	Low	12 T	20 T	30	27	Low	12 T	20 T
53	47	Low	12 T	19 T	44	39	Low	12 T	19 T	32	29	Low	12 T	19 T
55	49	Low	12 T	18 T	47	42	Low	12 T	18 T	34	30	Low	12 T	18 T
59	52	Low	12 T	17 T	50	44	Low	12 T	17 T	35	31	Low	12 T	17 T
62	55	Low	12 T	16 T	54	48	Low	12 T	16 T	37	33	Low	12 T	16 T
66	60	Low	12 T	15 T	56	50	Low	12 T	15 T	41	36	Low	12 T	15 T
71	63	Low	17 T	20 T	60	53	Low	17 T	20 T	43	38	Low	17 T	20 T
74	66	Low	17 T	19 T	63	56	Low	20 T	21 T	45	40	Low	17 T	19 T
79	70	Low	20 T	21 T	65	58	Low	21 T	19 T	47	42	Low	20 T	21 T
88	78	Low	21 T	18 T	70	62	Low	21 T	20 T	53	47	Low	20 T	21 T
92	82	Low	21 T	19 T	73	65	Low	21 T	19 T	55	49	Low	21 T	19 T
97	86	Low	21 T	18 T	78	69	Low	21 T	18 T	58	52	Low	21 T	18 T
103	91	Low	21 T	17 T	82	73	Low	21 T	17 T	62	55	Low	21 T	17 T
109	97	Low	21 T	16 T	88	78	Low	21 T	16 T	65	58	Low	21 T	16 T
118	105	Low	17 T	12 T	95	84	Low	17 T	12 T	71	63	Low	17 T	12 T
125	111	Low	18 T	12 T	100	89	Low	18 T	12 T	74	66	Low	18 T	12 T
131	116	High	12 T	21 T	105	93	High	12 T	21 T	79	70	Low	19 T	12 T
132	117	Low	19 T	12 T	108	94	Low	19 T	12 T	79	70	High	12 T	21 T
137	122	High	12 T	20 T	109	97	High	12 T	20 T	82	73	High	12 T	21 T
139	124	Low	20 T	12 T	110	98	Low	20 T	12 T	83	74	Low	20 T	12 T
144	128	High	12 T	19 T	116	103	High	12 T	19 T	87	77	High	12 T	19 T
146	130	Low	21 T	12 T	118	105	Low	21 T	12 T	88	78	Low	21 T	12 T
152	135	High	12 T	18 T	122	108	High	12 T	18 T	91	81	High	12 T	18 T
161	143	High	12 T	17 T	140	121	High	17 T	21 T	97	86	High	12 T	17 T
185	164	High	17 T	21 T	150	135	High	17 T	21 T	112	99	High	17 T	21 T
194	172	High	17 T	19 T	155	138	High	17 T	20 T	116	103	High	17 T	20 T
204	181	High	20 T	21 T	163	145	High	17 T	19 T	123	109	High	21 T	19 T
217	193	High	20 T	12 T	174	154	High	20 T	21 T	131	116	High	20 T	21 T
240	213	High	21 T	20 T	182	160	High	21 T	20 T	144	128	High	21 T	20 T
252	224	High	21 T	19 T	202	179	High	21 T	18 T	151	134	High	21 T	18 T
266	236	High	21 T	18 T	213	189	High	21 T	17 T	160	142	High	21 T	17 T
282	250	High	21 T	17 T	225	200	High	21 T	17 T	169	150	High	21 T	17 T
323	287	High	17 T	12 T	259	230	High	17 T	12 T	194	172	High	17 T	12 T
341	303	High	18 T	12 T	274	243	High	18 T	12 T	205	182	High	18 T	12 T
361	320	High	19 T	12 T	288	256	High	19 T	12 T	216	192	High	19 T	12 T
380	337	High	20 T	12 T	303	269	High	20 T	12 T	228	202	High	20 T	12 T
398	353	High	21 T	12 T	319	283	High	21 T	12 T	239	212	High	21 T	12 T

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Density: lbs/cu-ft (kg/liter)	45.0 (0.72)	50.0 (0.80)	55.0 (0.88)	60.0 (0.96)
Conversion Factor	1.45	1.30	1.20	1.10
Density: lbs/cu-ft (kg/liter)	65.0 (1.04)	70.0 (1.12)	75.0 (1.20)	80.0 (1.28)
Conversion Factor	1.00	0.93	0.87	0.81

$$\text{AdjustedRate} = \text{TargetRate} \times \text{ConversionFactor}$$

Example: Your fertilizer has a density of 45 pounds per cubic foot, and you want to apply 100 pounds per acre with your 7.5in drill.

$$145 = 100 \times 1.45$$

Example: the adjusted 145 rate corresponds to a High Range, and 17T/19T Driver/Driven final drive.

Setting Fertilizer Drive Range

Refer to the Fertilizer Rate Chart in the Seed Rate Manual to find the correct Range sprocket size for your drill's row spacing and target (or adjusted) application rate.

Setting High Range

Refer to Figure 51 (gray arrow shows chain direction)

High Range uses the smaller 16T sprocket ②.

1. Loosen the idler sprocket ③ and remove chain from driving ⑤ and range ① sprockets.
2. Open chain at removable link. Remove and save the 16-pitch section of the chain.
3. Loosen the set screws ④ on the driving sprocket ⑤, and slide it on the shaft until it is in alignment with the small 16T High Range sprocket ①.

Refer to Figure 52

4. Re-assemble and re-mount the chain. Make sure the open ends of all chain clips face away from the direction of chain travel (shown by the gray arrow).
5. Re-engage the idler sprocket ③, allowing $\frac{1}{4}$ in (6.4mm) slack in the top chain span. Tighten set screws ④ on driving sprocket ⑤.
6. If this is the final Range setting, after calibration, repeat step 1 through step 5 for the right drill section.

Setting Low Range

Refer to Figure 51

Low Range uses the larger 44T sprocket ①. If it is already engaged by the chain, no change is necessary.

1. Loosen the idler sprocket ③ and remove chain from driving ⑤ and range ① sprockets.
2. Reinsert the saved 16-pitch section of the chain. This section has clips on each end.
3. Loosen the set screws ④ on the driving sprocket ⑤, and slide it on the shaft until it is in alignment with the large 44T Low Range sprocket ①.
4. Re-assemble and re-mount the chain. Make sure the open ends of chain clips face away from the direction of chain travel (shown by the gray arrow).
5. Re-engage the idler sprocket ③, allowing $\frac{1}{4}$ in (6.4mm) slack in the top chain span. Tighten set screws ④ on driving sprocket ⑤.
6. If this is the final Range setting, after calibration, repeat step 1 through step 5 for the right drill section.

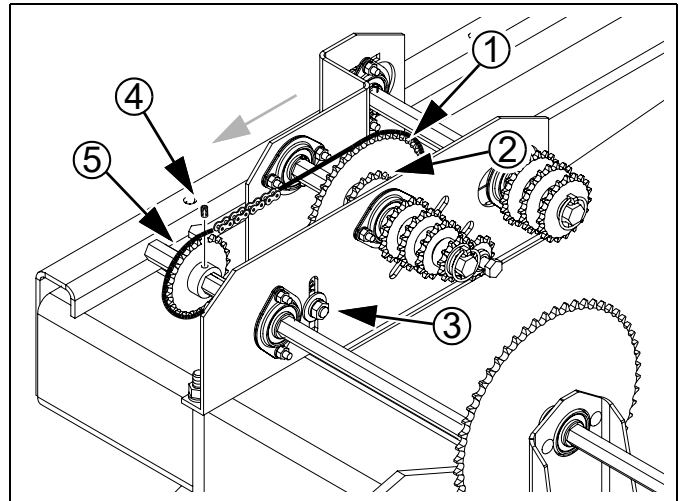


Figure 51
Fertilizer Drive Low Range

21778

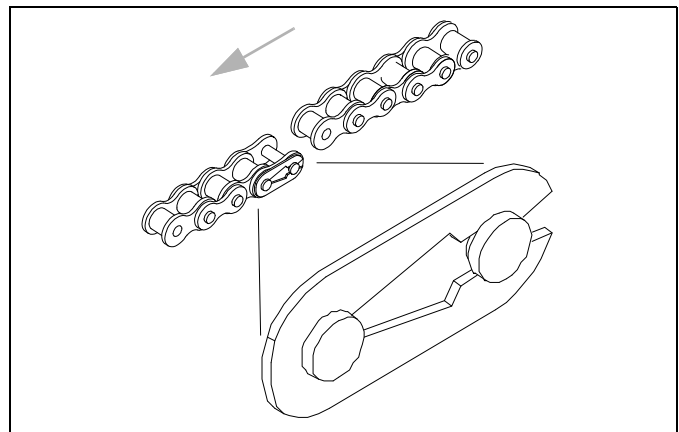


Figure 52
Chain Clip Orientation

26482

Setting Fertilizer Final Drive

Refer to the Fertilizer Rate Chart on in the Seed Rate Manual to find the correct Final Drive sprocket sizes for your drill's row spacing and target (or adjusted) application rate.

Refer to Figure 53

To change the Final Drive setting:

1. Loosen idlers ① and slide idler sprockets out of engagement with chain.
2. Remove linch pins ② from both sprocket shafts, and remove sprockets.
3. Place correct Driver and Driven sprockets on their respective shafts.
4. Store sprockets not used on ends of shafts. Re-install pins.
5. Reinstall chain and engage idlers, allowing $\frac{1}{4}$ in (6.4mm) slack in the top chain span.
6. If this is the final setting, after calibration, repeat step 1 through step 5 for the right drill section.

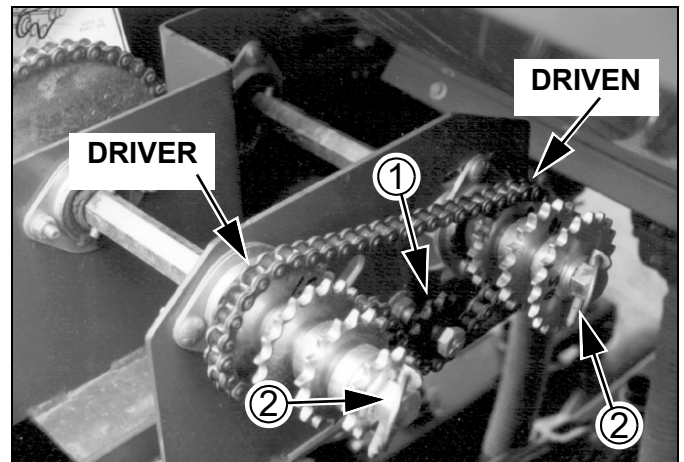


Figure 53
Fertilizer Final Drive

16378

Fertilizer Rate Calibration

Differences will exist between the tested fertilizer and field conditions used to generate the Rate Chart, and your fertilizer and conditions. To accurately achieve your target application, Great Plains recommends calibrating.

Perform the calibration with the drill raised for transport, but with the opener frames lowered (if the openers are raised, the clutches will disengage). Leave the tractor hitched for movement control. Block the tires not being used in the calibration.

1. Rotate the gauge wheels and check that the drives and seed cups are engaged, working properly and free from foreign material. If not already done, set the Range and Final Drive for the left section. If seed is loaded, remove a seed drive chain or set the Seed Rate Handle to 0 (unless you are simultaneously calibrating seed and fertilizer rates).
2. Note the initial reading on the acremeter, unless you do not plan to rely on it for the calibration.
3. Check that your gauge-wheel tires are 9.5Lx15 6-ply Rib Implement and properly inflated. See **"Tire Inflation Chart"** on page 104.
4. Record the weight of one to three empty containers collectively large enough to hold fertilizer metered for 6% of one acre.
5. Place several pounds of fertilizer over three fertilizer openings the outside end of the left drill box. Pull lower end fertilizer hoses off of these drops at the opener end.
6. Turn gauge wheel several times to fill flute cups. Turn until fertilizer drops to ground from each hose.
7. Place empty container(s) under the three hoses to gather metered fertilizer.
8. Turn gauge wheel until one acre is tallied on acremeter (203 wheel rotations). While turning, check that cups have ample fertilizer coming into them.
9. Weigh metered fertilizer. Subtract initial weight of container(s).



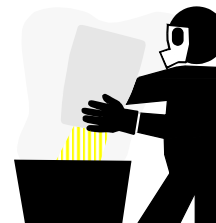
WARNING

Crushing

***Hazard:** You may be severely injured or killed by being crushed from a falling implement or openers. Always have transport locks in place and frame sufficiently blocked up when working on the drill.*

For example:
 you desire to apply 65 lb/cu-ft material at a rate of:
 78 pounds per acre
 on a 7.5in row spacing drill with a row count of:
 42
 Per the table, the drive system setup is:
 Low Range
 21T Driver
 16T Driven
 Gauge wheel revolutions per acre:
 203

For example:
 three empty 1.8 pound containers weigh: 5.4 lbs



CAUTION

***Possible Chemical Hazard:** Follow material supplier recommendations for safety precautions in handling fertilizer.*

$$\text{NetWeight} = \text{GrossWeight} - \text{ContainerWeights}$$

For example:
 the three containers weighed a total of 11.3 pounds after test: 5.9 lbs net

$$5.9 = 11.3 - 5.4$$

10. Divide the net fertilizer weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre applied.

$$\text{MeasuredRate} = \frac{\text{NetWeight}}{3} \times \text{RowCount}$$

For example:
a 42-row (7.5in) drill: 82.6 lbs/ac

$$82.6 = \frac{5.9}{3} \times 42$$

11. Subtract to calculate the difference between the measured rate and the original target rate.

$$\text{Variance} = \text{TargetRate} - \text{MeasuredRate}$$

For example:
the target rate was 78 lbs/ac:
new variance=5

$$4.6 = 82.6 - 78$$

12. If a Density Adjustment was made (see page 53), apply it to the variance.

$$\text{AdjustedVariance} = \text{Variance} \times \text{CorrectionFactor}$$

In the example, we are using 65# material, so no correction factor is applied.

13. Consult the chart for the *chart* rate used for your first calibration run with this material. If the just-measured result was low, add the [adjusted] variance to the previously used chart rate. If the measured result was high, subtract the [adjusted] variance from the previous chart rate.

For example:
Our measured rate was high, so we subtract the variance (5) from the chart rate (78) to obtain a new chart rate (73).
This corresponds to a new drive setup of:

14. Reset the fertilizer Range and Final Drive based on the settings at the new chart rate.

Low Range
21T Driving
18T Driven

15. You may want to repeat calibration procedure if your results varied greatly from the desired target rate.

16. With calibration complete, Reinstall seed chain (if removed) or reset Seed Rate Handle, reconnect hoses, and lower gauge wheel to ground.

17. Set the right drill section to match the now-calibrated left section.

When drilling, check fertilizer rate by noting acres drilled, amount of material added to drill and material level in drill box. If you are applying more or less than desired, adjust rate slightly to compensate for field conditions.

When drilling, check metering rate by noting acres drilled, amount of fertilizer added to drill and level of material in drill box. If you are applying more or less fertilizer than desired, adjust metering rate slightly to compensate for field conditions.

Small Seeds Rate

Seeding rate from the optional Small Seeds Attachment is controlled entirely by seed rate handles on each small seeds box. No sprocket changes are required, and small seeds rate is unaffected by settings for main seed box.

Refer to Figure 54

To set Small Seeds rate, loosen the wing nut ① at each handle, and adjust the lever ② position. Tighten nut.

Set the initial rate based on the chart in the Seed Rate Manual.

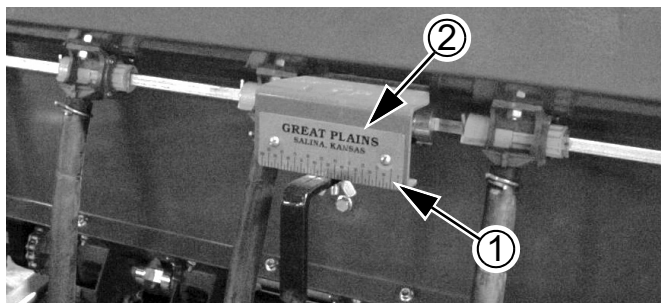


Figure 54
Small Seeds Rate Handle

18511

Small Seeds Rate Calibration

Differences will exist between the tested seed and field conditions used to generate the Small Seeds Rate Charts, and your seed and conditions. To accurately achieve your target population, Great Plains recommends calibrating.

Perform the calibration with the drill raised for transport, but with the opener frames lowered (if the openers are raised, the clutches will disengage). Leave the tractor hitched for movement control. Block the tires not being used in the calibration.

1. Rotate the gauge wheels and check that the drives and seed cups are engaged, working properly and free from foreign material. If not already done, set the Small Seeds Rate Handle. If fertilizer is loaded, remove the fertilizer drive chain (unless you are simultaneously calibrating fertilizer rate).
2. Note the initial reading on the acremeter, unless you do not plan to rely on it for the calibration.
3. Check that your gauge-wheel tires are 9.5Lx15 6-ply Rib Implement and properly inflated. See **"Tire Inflation Chart"** on page 104.
4. Record the weight of one to three empty containers collectively large enough to hold seed metered for 6% of one acre.
5. Place several pounds of seed over three seed cups on the outside end of the left drill box. Pull lower end seed hoses off of these drops at the opener end.
6. Turn gauge wheel several times to fill seed cups. Turn until seed drops to ground from each hose.
7. Place empty container(s) under the three hoses to gather metered seed.
8. Turn gauge wheel until one acre is tallied on acremeter (203 wheel rotations). While turning, check that cups have ample seed coming into them.



WARNING

Crushing

You may be severely injured or killed by being crushed from a falling implement or openers. Always have transport locks in place and frame sufficiently blocked up when working on the drill.

Hazard:

For example:
using a row spacing of:
7.5in
row count:
42
you desire to plant alfalfa at:
10 pounds per acre;
this corresponds to an initial Seed Rate Handle of:
50

For example:
three 0.5 pound (8 oz) containers weigh:
1.5 lbs

Gauge wheel revolutions per acre:
203

9. Weigh metered seed. Subtract initial weight of container(s).

$$\text{NetWeight} = \text{GrossWeight} - \text{ContainerWeights}$$

For example:
the three containers weighed a total 2.3 lbs after test:
0.8 lbs net

$$0.8 = 2.3 - 1.5$$

10. Divide the net seed weight by three. Multiply by number of openers on your drill to determine the total of pounds-per-acre seeded.

$$\text{MeasuredRate} = \frac{\text{NetWeight}}{3} \times \text{RowCount}$$

For example:
a 7.5in drill has 42 rows:
11.2 lbs/ac

$$11.2 = \frac{0.8}{3} \times 42$$

11. The Seed Rate Handle scale is a percentage of meter opening, and is quite linear near scale center. Calculate a new scale setting based on the test.

$$\text{NewScale} = \frac{\text{TargetRate}}{\text{MeasuredRate}} \times \text{OldScale}$$

For example:
new scale:
45

$$44.6 = \frac{10}{11.2} \times 50$$

Note: You may want to repeat calibration procedure if your results varied greatly from the Seed Rate Chart, or if you must operate near the ends of the Seed Rate handle scale (0-20 or 90-100).

12. Set the right drill section to match the now-calibrated left section.
13. With calibration complete, Reinstall fertilizer chain (if removed), reconnect seed hoses, and lower gauge wheel to ground.

When drilling, check seeding rate by noting acres drilled, amount of seed added to drill and seed level in drill box. If you are seeding more or less than desired, adjust rate slightly to compensate for field conditions.

Frame Level

Refer to Figure 55

The 00HD Series openers are designed to produce optimal results when the opener frames are level with the ground. Operating with drill frame level is also recommended, and this is set by hitch height (page 15).

If planting depth is not as desired on just one or two drill sections, first check the setup items for “**Leveling the Drill**” on page 84. Then check and adjust the following items:

- opener sub-frame adjustment: all gauge wheel trunnions in same frame pivot holes - see “**Opener-Sub-frame Adjustment**” on page 64,
- opener pivot height: all openers pivoting in same hole at their mounts (possibly excepting rows in tire tracks) - see page 66,
- opener press wheel height: all row units set the same - see page 69, and;
- opener spring down-force: all row units set the same (possibly excepting rows in tire tracks) - see page 66.

Refer to Figure 56

This photograph illustrates openers too high in front. Increase hydraulic pressure and/or lengthen opener springs.

Check sub-frame pivot in use at higher pressures.



Figure 55
Frame & Openers Level

29131



Figure 56
Openers Too High in Front

29132

Refer to Figure 57

This photograph illustrates openers too low in front, also known as “bulldozing”. Decrease hydraulic pressure and/or shorten opener springs.

Check sub-frame pivot if pressures have recently been reduced.



Figure 57
Openers Too Low in Front

29133

Frame Weight

The standard 2S-2600HD includes 1587 pounds (720kg) of weight bars inside the main tool bar. This, plus the extra weight of 00HD row units, permits adjustment of the full range row unit down forces. If markers are installed, additional force is available.

Although suitcase weight brackets are available for earlier model 2S-2600 (non-HD) drills, these weight kits are not recommended for 2S-2600HD drills.

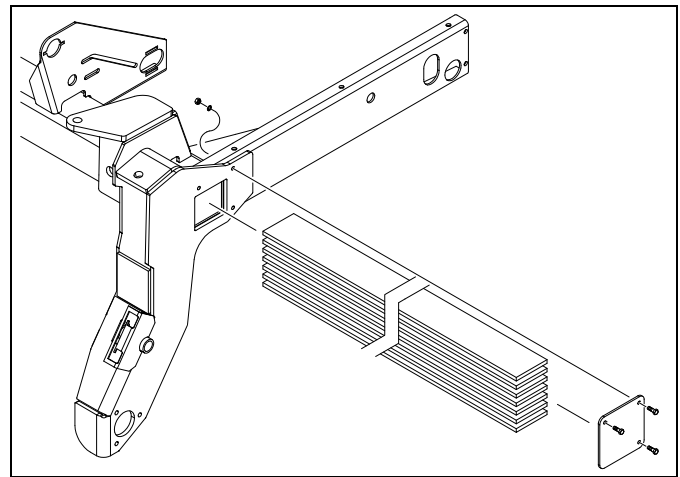


Figure 58
Standard Frame Weights

26014

Opener Frame Down-Force

⚠ DANGER

Crushing Hazard: You will be seriously injured or killed if you are caught between raising openers and drill frame. Always stop tractor engine, set park brake, and remove key before adjusting or servicing openers. Keep all bystanders well away during drill operation.

⚠ WARNING

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

Hydraulic opener down pressure controls drill-wide opener penetration and press-wheel soil firming. Use only enough down pressure to cut a furrow and maintain proper soil-firming over seed. Excessive opener down force may cause bulldozing of the openers in light soil conditions, and leads to premature wear on opener components.

The table at right shows the approximate force at openers for a given pressure at the pressure control valve.

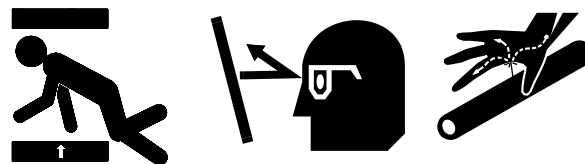
Note: To account for additional compaction from drill and tractor tires, and Point Row option is not installed, set pressure on inboard ("CENTER") openers slightly higher than outboard ("WING") openers.

To run the drill with constant opener down pressure requires an Active Hydraulic System. An Active Hydraulic System requires a tractor with closed-center hydraulics or pressure/flow compensated hydraulics powered by a variable displacement hydraulic pump. (If you are not familiar with your tractor's hydraulics, consult your tractor dealer.)

NOTICE

Equipment Damage Risk: Tractors with load-sensing hydraulics must use the bypass valve to operate the 2S-2600HD. Failure to use the bypass valve can cause major tractor damage. Before adjusting opener down pressure, set bypass valve per "Setting the Bypass Valve" on page 19.

Note: To run the drill on tractors with open-center hydraulics or on tractors with fixed displacement hydraulic pumps you must install a Great Plains kit, part number 194-143A. Contact your Great Plains dealer for ordering information. See "Non-Active Hydraulic System" on page 34.



Gauge Setting	Pounds of Force at Opener Disks		
	Row Spacing		
	6in	7.5in	10in
200 PSI	130	135	144
300 PSI	136	144	155
400 PSI	143	152	167
500 PSI	148	160	179
600 PSI	154	167	189
700 PSI	157	172	196
800 PSI	161	178	205
900 PSI	166	184	213
1000 PSI	171	190	223
1100 PSI	172	194	228
1200 PSI	180	203	240
1300 PSI	184	208	248
1400 PSI	189	215	258
1500 PSI	193	220	264
1600 PSI	198	227	274
1700 PSI	202 ^a	232	281
1800 PSI	209 ^a	240	291
1900 PSI	213 ^a	247	300
2000 PSI	217 ^a	253 ^a	309
2100 PSI	222 ^b	260 ^a	318
2200 PSI	227 ^b	266 ^a	327 ^a
2300 PSI	232 ^b	273 ^b	336 ^a

a. An empty standard drill (no markers, no fertilizer capability and no small seeds capability) may have insufficient available weight to reach these force levels.

b. These down forces may be beyond the capability of a drill with markers.

Setting Hydraulic Down-Pressure

1. Lower openers to the ground. Lock hydraulic lever forward for constant hydraulic flow.

NOTICE

You must lock hydraulic lever forward. See “Opener Operation” on page 32.

Refer to Figure 59

2. Release lock disk ①. Turn knob ② on pressure-control valve while watching pressure gauge, turn knob until gauge shows desired pressure. Turn clockwise to increase pressure. Turn counterclockwise to decrease pressure.

There is one pressure-control valve for inboard wing cylinders (“CENTER SECTION”) and one for out-board wing cylinders (“WING SECTIONS”). If the Point Row option is installed, the controls are for entire Left or Right wings, and the decals read “LEFT” and “RIGHT”.

Refer to the chart on page 62 for approximate force at the openers for a given pressure setting. As a general starting point, set hydraulic down pressure to 1400 psi. Bypass valve (page 19) must be set to at least 100 psi above down-pressure setting. For most field conditions, adjust down pressure between 1200 and 1800 psi.

NOTICE

Inconsistent Population Risk:

Do not operate at pressures so high that the gauge wheels loose traction, or are off the ground, resulting in skips and poor seed metering.

3. Once pressure is set, lock knob with lock disk. If using a non-active hydraulic system to run drill, unlock the hydraulic remote lever and return it to neutral.

NOTICE

Equipment Damage Risk:

Open-center tractors and tractors with fixed-displacement pumps are not designed to provide a continuous supply of pressurized oil to remote valves. Locking hydraulic lever forward on these tractors can cause overheating of hydraulic oil and tractor damage. After setting opener down pressure, always return hydraulic lever to neutral.

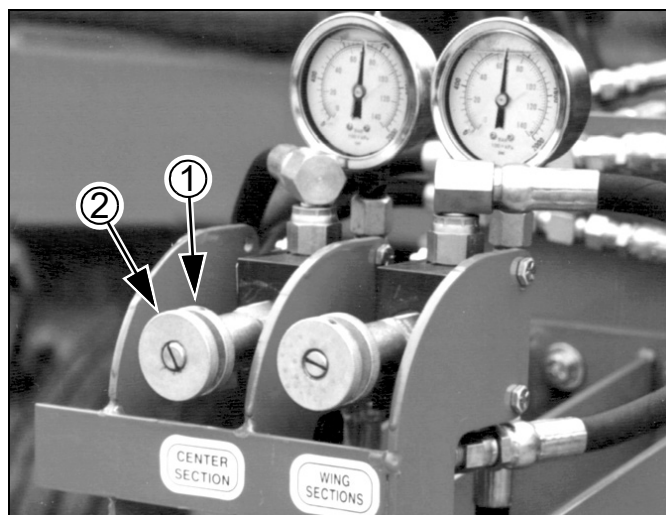


Figure 59
Down-Pressure Valves

26477

Opener-Subframe Adjustment

Refer to Figure 60

Each drill section has an opener frame which pivots ① about the centerline of the drill gauge wheels. These floating opener frames have the ability to rock the openers 15 degrees up and 15 degrees down as a group. By pivoting at the gauge wheels, openers maintain a consistent depth as opener frames rock up and back.

Down pressure for each opener frame is provided by two cylinders working on a constant lever arm. When combined with live hydraulics, the cylinders provide constant down pressure across the width of each opener frame – regardless of how the frame is positioned. Two cylinders per opener frame along with special trunnions ② also provide some ability for one end of an opener frame to rock independent of the other while maintaining constant opener down pressure across the frame.

At higher down-pressures (above 2100 psi), the row units can tend to tip forward. An adjustment to the main-frame/subframe pivot corrects this. The opener frame has one adjustment point ② for two different operating positions.

Refer to Figure 61 (shown in factory default configuration)

You can adjust opener frames between two operating positions—one for normal down pressure and one for higher down pressure. The adjustment is near the opener frame pivots. There are three holes and two bolts. The bottom bolt ③ serves as the pivot. The top bolt is for adjustment.

- For normal drilling conditions, keep top bolt in second (middle) hole ④ at all six frame pivots. Use this setting when drilling with opener down pressure below 2100 psi.
- When drilling with opener down pressure above 2100 psi, place top bolt in top hole ⑤ on all six pivot points across drill.

To change the bolts (to high pressure):

1. Have a jack at hand.
2. Loosen the nuts on all the top bolts ④.
3. Lower the opener sub-frames.
4. Put the tractor hydraulic circuit for the openers in float.
5. Place jack under an opener tool bar at an arm.
6. Lift the tool bar until the bolt is free.
7. Remove the bolt.
8. Repeat step 5 through step 7 the other arm of the subframe.
9. Raise the jack until the top holes are aligned.
10. Insert the bolt in the top hole ⑤ and spin on a nut.
11. Repeat step 5 through step 10 for each sub-frame.
12. Tighten all nuts.

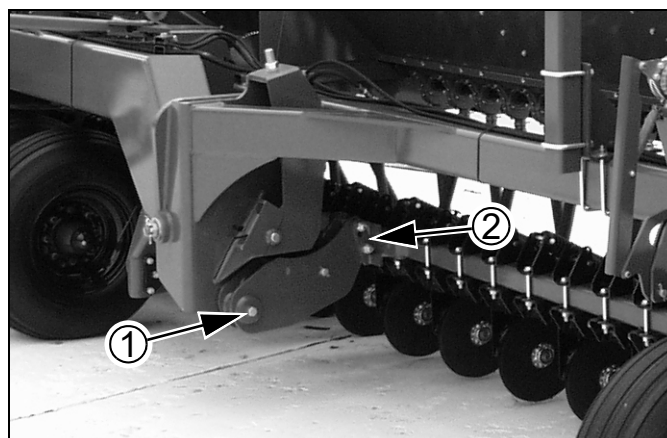


Figure 60
Opener-Frame Pivot

18857

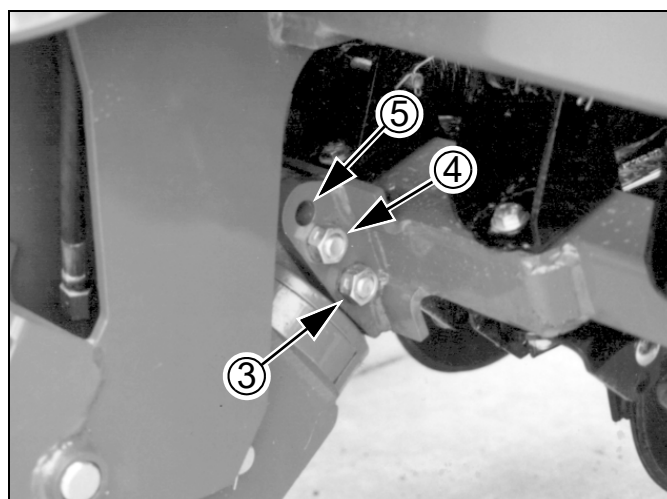


Figure 61
Opener-Frame Adjustment

15558

Row Unit Adjustments

Refer to Figure 62

(which depicts a row unit fully populated with all optional accessories supported for use with the 2S-2600HD drill)

From front to back, a Great Plains 00HD Series row unit can include the following capabilities (some optional):

1. Opener height adjustment: standard
If a few rows need to run deeper, such as in tire tracks, the arm's pivot point may be lowered. See "**Opener Height**" on page 66.
2. Single Down Pressure Spring: standard
Each row unit is mounted on the drill as a pivoting arm which allows the row unit to independently move up and down. The adjustable spring provides the force to get the row unit and attachments into the soil. See "**Row Unit Down Pressure (Spring)**" on page 66.
3. Disc Blades: standard, 2 per row unit
Double disc blades open a furrow, creating the seed bed. Spacers adjust the blades for a clean furrow. See "**Disk Blade Adjustments**" on page 67.
4. Seed delivery tube: standard
No adjustments are necessary.
5. Disk Scraper: optional
In sticky soils, a scraper helps keep the opener disks operating freely. See "**Disk Scraper Adjustments**" on page 68.
6. Fertilizer delivery tube: optional
The tube may be reversed to drop fertilizer with the main seed, or just ahead of the press wheels.
7. Small Seeds delivery tube: optional
The tube may be reversed to drop small seed near the main seed tube, or just ahead of the press wheels.

If fertilizer is also installed, the Small Seeds tube is mounted outside the opener frame.
8. Seed firmer: seed flap (not shown) standard:

Keeton seed firmer (shown)
Improves seed-soil contact, and provides a stable

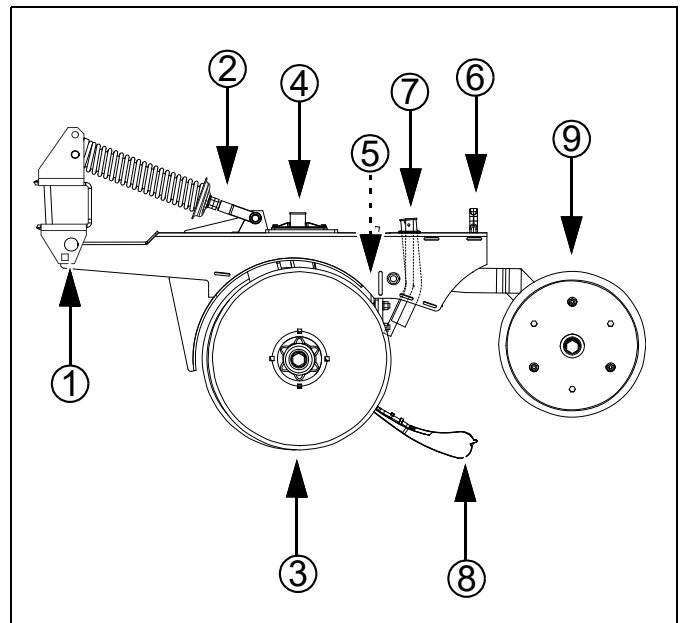


Figure 62
00HD Series Row Unit

26427

NOTICE

Certain Machine Damage:

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

arm for a low-rate liquid fertilizer delivery tube. See "**Keeton Seed Firmer Adjustment**" on page 68.

Seed-Lok™ firming wheel (not shown)
Improves seed-soil contact. See "**Seed-Lok™ Seed Firmer Lock-Up**" on page 69.

9. Press wheels: standard (choice of types)
These close the seed trench. The wheels also support the free end of the row unit, and provide the primary control over seeding depth. See "**Opener Depth (Press Wheel Height)**" on page 69.

Opener Height

The depth to which the opener disk blades penetrate the soil is controlled in front by the tool bar and pivot (opener height), and in the back by the press wheel height.

If the actual ground level is lower for some rows, such as those in tire tracks, you can lower that row unit by lowering the pivot point.

Refer to Figure 63

1. Raise the drill just enough to relieve tension in the down-pressure spring.
2. Remove the bolt from the upper hole ①.
3. Re-position the arm at the lower hole ②, and secure with bolt.

Note: No spring tension or position adjustment is required if opener height is changed. The pivot holes are designed for neutral effect on spring tension. (The bolt at the top end of the spring uses a hole ③ that depends on spring length, and not opener height.)

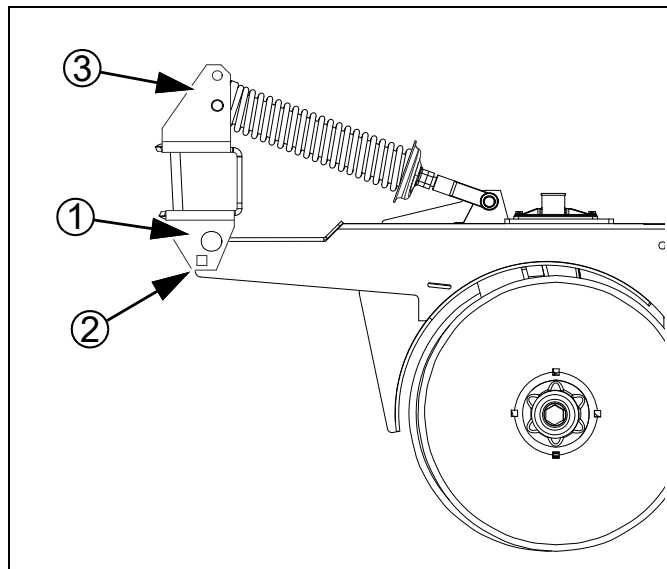


Figure 63
Pivot Point Bolt Holes

26427

Row Unit Down Pressure (Spring)

For planting in tire tracks, and for no-till conditions, you can increase spring pressure on individual openers, or all openers. Adjust the spring in conjunction with the sub-frame down-force, and opener height, to keep the top of the row unit parallel to the ground.

Refer to Figure 64 and Figure 65

To increase spring pressure:

1. Loosen jam nut ① at lower end of opener spring.
2. Tighten flange against spring tension.

Note: Each $\frac{1}{4}$ inch adjustment adds about 17 pounds of force at opener disk (approximately 12 kg per cm).

3. After adjusting, lock flange nut in place with jam nut.

The length ② of the spring is factory-set to: $12\frac{9}{16}$ in (31.9cm).

The reference points for this length are the center of the upper/front clevis pin ③ and the top edge of the lower/rear spring stop cup ④.

The $12\frac{9}{16}$ in factory preset length is recommended for conventional till and min-till conditions.

Shorten it for no-till conditions.

The minimum recommended length is: $12\frac{1}{4}$ in (31.1cm).

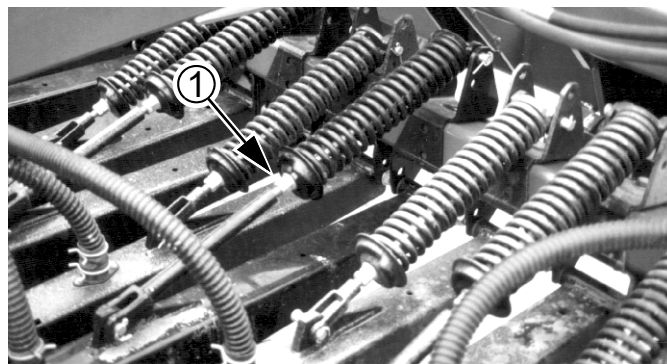


Figure 64
Row Unit Spring Tension

17158

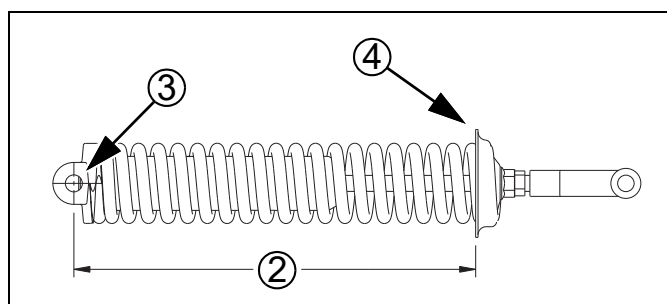


Figure 65
00HD Spring Length

26452

Disk Blade Adjustments

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

Refer to Figure 66

The ideal spacing causes the blades to be in contact for about one inch. If you insert two pieces of paper between the blades, the gap between them should be 0 to 1.75in (0-4.4cm).

If the contact region is significantly larger or smaller (or there is no contact at all), it needs to be adjusted by moving one or more spacer washers. If the contact region varies with blade rotation, one or both blades is likely bent and in need of replacement.

Adjusting Disc Contact



Sharp

Object

Hazard:

Row unit disk blades may be sharp. Use caution when making adjustments in this area.

Refer to Figure 67

1. Raise the drill and lock it up by moving the Transport/Field handle to TRANS.
2. Remove the bolt ① retaining the opener disc on one side. Carefully remove the blade ②, noting how many spacers ③ are outside the flange dust cover ④ and inside the disk. Do not lose the hub components and spacers.
3. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside to the outside of the flange dust cover.
4. Re-assemble and check disc contact.

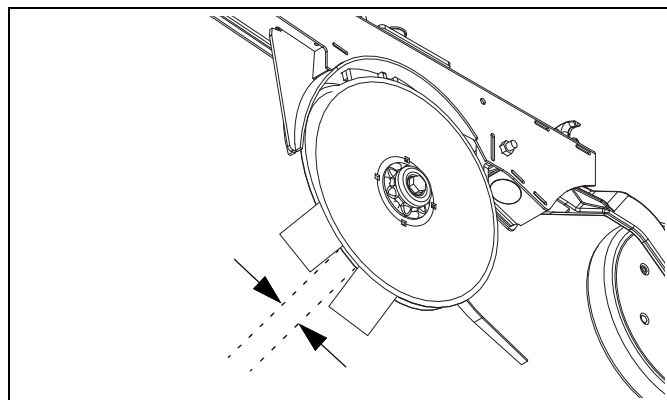


Figure 66
Checking Disk Contact

26395

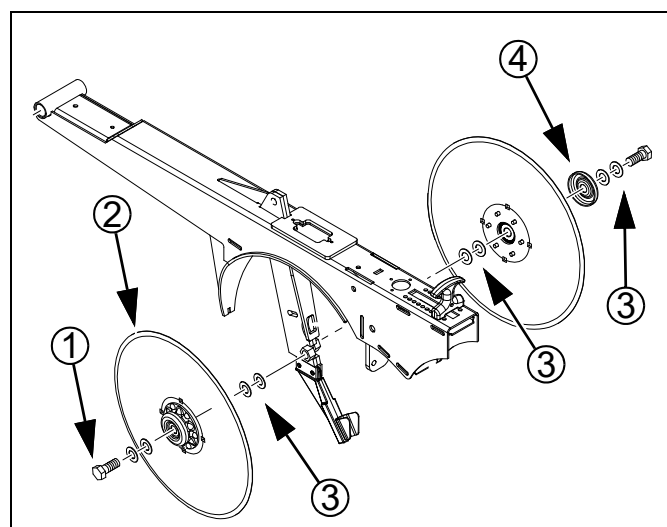


Figure 67
Adjusting Disk Spacers

26385

Disk Scraper Adjustments

Disk scrapers are optional. See page 102 ordering information and page 22 for installation. To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as disks rotate.

Refer to Figure 68

As field conditions vary, scrapers may need to be adjusted. In damp conditions, lower scrapers. If openers are not turning freely, raise scrapers. To adjust, loosen bolt and move scraper as needed.

CAUTION

Sharp **Object** **Hazard:**
Row unit disk blades may be sharp. Use caution when making adjustments in this area.

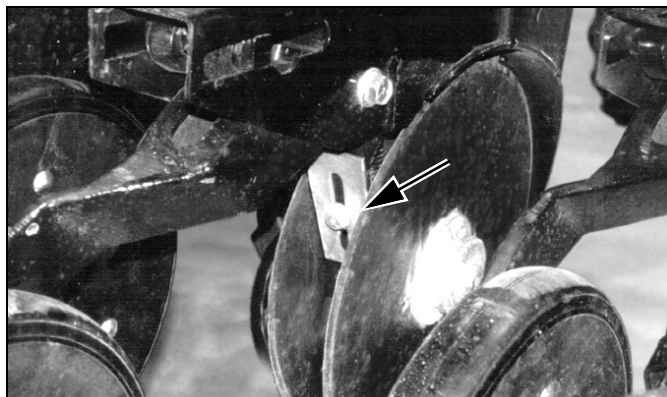


Figure 68
Opener Disk Scraper

26463

Seed Firmer Adjustments

00HD Series row units include a seed flap, and accept one of two optional seed firmers.

The seed flap requires no adjustment, but may need to be replaced if worn, and may need to be shortened if an optional seed firmer is added after initial delivery.

CAUTION

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

Keeton Seed Firmer Adjustment

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

Refer to Figure 69

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.

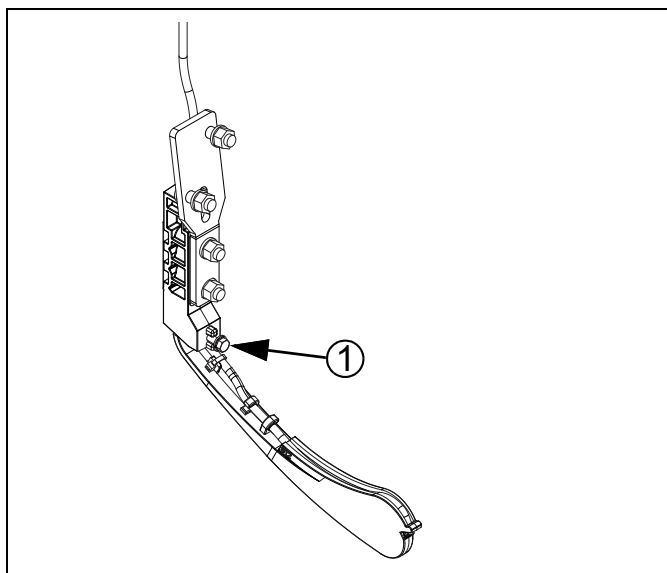


Figure 69
Keeton Seed Firmer

26443

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 70

To lock up Seed-Lok wheels:

1. Pull up on Seed-Lok arm ①.
2. Raise lever ②.

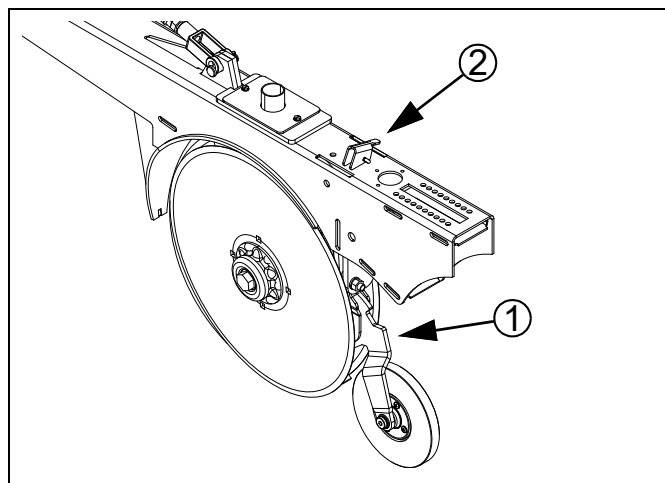


Figure 70
Seed-Lok™ Lock-Up

24453

Opener Depth (Press Wheel Height)**Refer to Figure 71**

Set opener seeding depth ① by adjusting press-wheel height ②.

To adjust, first raise openers slightly, then lift and slide T handles ② on top of openers. Adjust all press wheels to the same height.

- Each increment of the handle adjusts the seeding depth by approximately $\frac{1}{4}$ in (6.3mm). The range is approximately 0 to $3\frac{1}{2}$ in (0-8.9cm) seeding depth.
- For more shallow seeding, slide T handles forward ⑥ toward implement.
- For deeper seeding, slide T handles backward ⑦ away from implement.

If press wheels are lifting off ground, increase hydraulic down pressure.

If press wheels are digging into ground, reduce hydraulic down pressure.

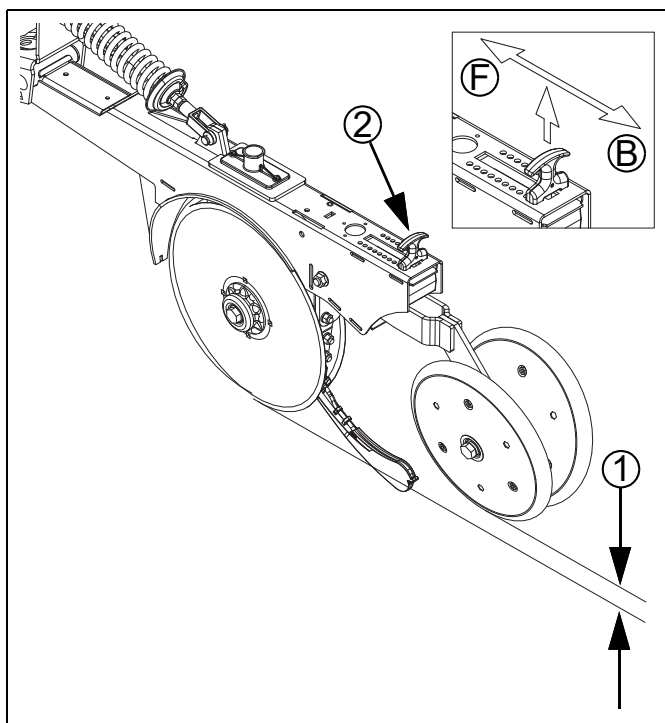


Figure 71
Adjusting 00HD Opener Depth

26441

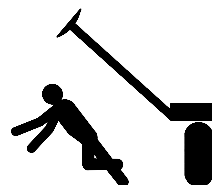
Marker Adjustments

CAUTION

Crushing

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

Hazard:



There are four operating adjustments for markers:

- **Marker Width**
Once set for a specific row spacing, this only needs periodic checking to ensure the clamp is secure.
- **Disk Angle**
Even if your row spacing rarely changes, you may need to adjust disk angle for soil conditions and planting speed.
- **Chain Length**
You may want to adjust the chain length to ensure the markers track uneven ground, and do not drag excessively when markers are folded.
- **Marker Speed**
Once initially set by your dealer, this rarely needs modification.

There are also three maintenance items for markers:

- **“Bleeding Marker Hydraulics”** on page 83
- **“Marker Shear Bolt”** on page 88
- **“Marker Disk”** on page 88

Marker Extension

Marker extension depends on drill size, row unit spacing and row units in use.

See **“Marker Setup”** on page 21 for initial values for marker extension.

Refer to Figure 72

To adjust marker extension, loosen two jam nuts and then their bolts ① and slide arm tube ② in or out. Re-tighten bolts, then the jam nuts.

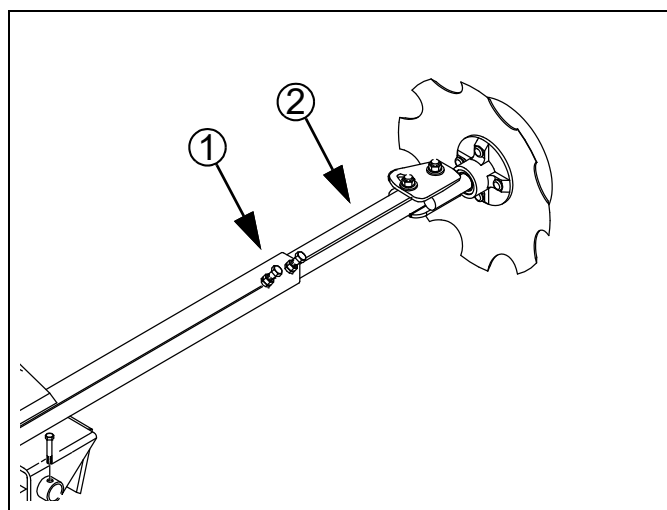


Figure 72
Marker Extension Adjustment

26497

Marker Chain Adjustment

There are two basic adjustments needed on the marker chain, especially in new installation. These adjustments are interrelated and should be done in the following order:

Refer to Figure 73

Marker Lifting Slack

1. Start with the marker in the unfolded position.
2. Loosen jam nuts ①. Back the full threaded adjustment bolt ② toward the head extends as little as possible.
3. Slowly fold the marker, observing the motion of the disk.

If the marker disk slides across the ground more than about a foot (30cm) before the chain and linkage lifts it up, the chain is too long. Shorten the chain by moving the clevis ③ one or two links inboard from the end of the chain. Check the adjustment by repeating the folding process.

If the chain is too short when the marker is unfolded, it will prevent the end of the marker from dropping down to follow a depression in the field. Correct this condition by moving the utility clevis ③ one or two links toward the end of the chain to make it longer.

Marker Folding Slack

1. After the adjustments in step one have been completed, fold the marker.
2. The full threaded adjustment bolt ② is provided to take the slack out of the chain while the marker is in the folded position. Fold the marker and extend this bolt until the slack is out of the chain.
3. Lock the bolt in this position by tightening the jam nuts ① on either side of upright channel.

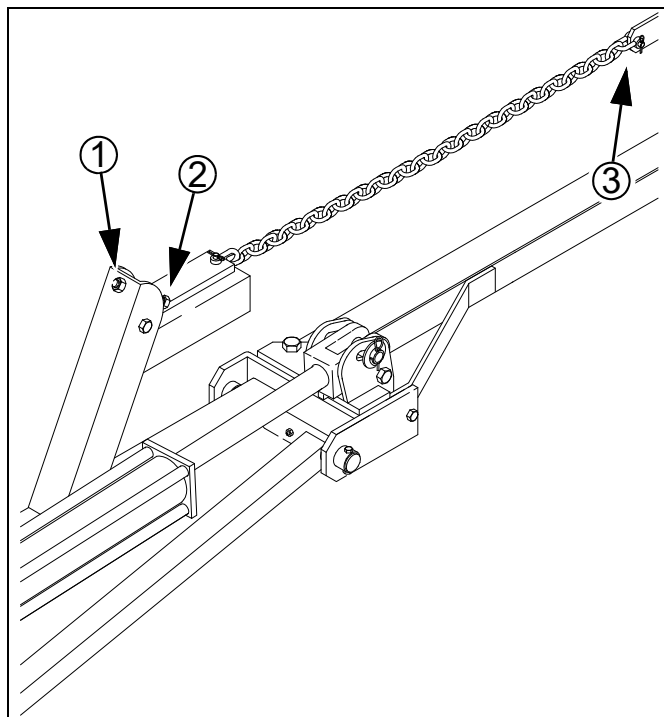


Figure 73
Marker Chain

15669

Marker Disk Adjustment

CAUTION

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

Mark Width

Refer to Figure 74

① is the direction of travel.

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

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

Tighten bolts ②.

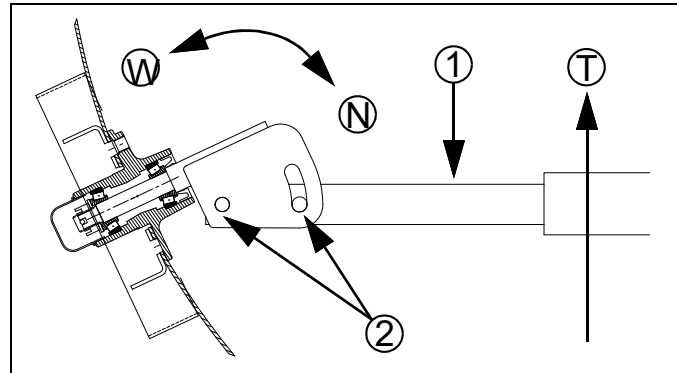


Figure 74
Marker Disk Angle

11757

Direction of Cut

To have the marker throw dirt out, invert the disk on the spindle, and invert the disk assembly.

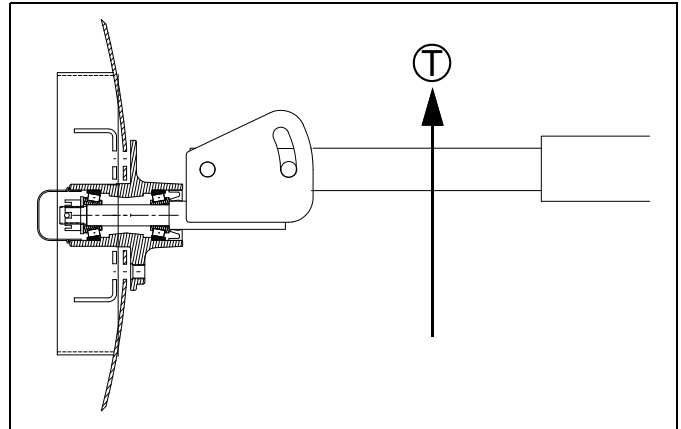


Figure 75
Marker Disk Inverted

11248

Marker Speed

The procedure for adjusting marker speed is different for single marker with needle valve and dual markers with sequence valve.

Single Marker/Needle Valve Speed

Refer to Figure 76

A needle valve controls the folding speed. The needle valve is near the rod end of the marker cylinder.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Turn adjustment knob clockwise to reduce folding speed or counterclockwise to increase folding speed. Excessive folding speed could damage markers and void the warranty.

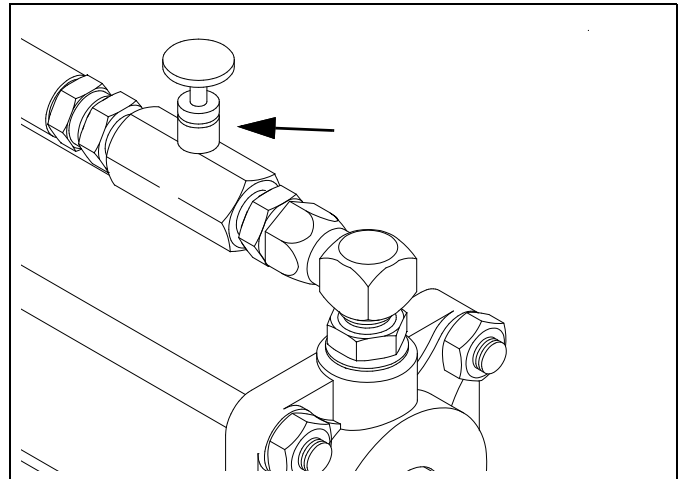


Figure 76
Needle Valve Adjustment

15625

Dual-Marker/Sequence Valve Speed

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

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

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

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

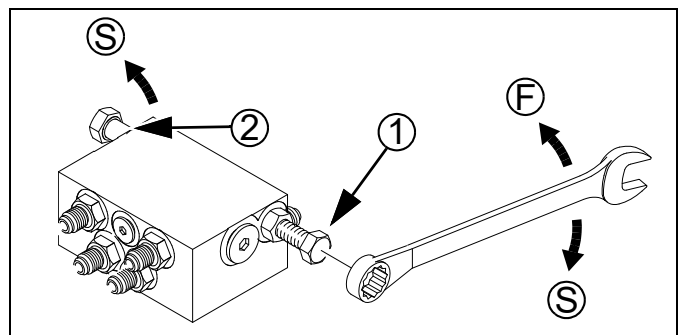


Figure 77
Sequence Valve Adjustment

14048



Troubleshooting

Problem	Solution
Uneven seed spacing or uneven stand	Check for plugging in seed cup.
	Check if seed tubes are plugged.
	Reduce ground speed.
	Check that opener disks turn freely.
	Use a faster drive type and close seed-cup doors to narrower position.
	Check if openers have enough down pressure to penetrate soil. Increase hydraulic down pressure on openers if necessary. See “Setting Hydraulic Down-Pressure” on page 63.
	Check for trash or mud build-up on Seed-Lok wheels. Lock up if necessary. See “Seed-Lok™ Seed Firmer Lock-Up” on page 69.
Opener disks not turning freely	Check if hydraulic down pressure on openers is too high, causing gauge wheels to loose contact with ground. Decrease hydraulic down pressure if necessary. See “Setting Hydraulic Down-Pressure” on page 63.
	Check for trash or mud build-up on disk scrapers. Readjust scrapers if necessary. See “Disk Scraper Adjustments” on page 68.
	Check if scrapers are adjusted too tight, restricting disk movement. Readjust scrapers if necessary. See “Disk Scraper Adjustments” on page 68.
	Check disk bearings.
	Check opener frame for possible damage.
	If opener disks turn freely by hand but not in field, reduce hydraulic down pressure. See “Setting Hydraulic Down-Pressure” on page 63.
Actual seeding rate is different than desired	Check press-wheel adjustment for seeding depth. See “Setting Hydraulic Down-Pressure” on page 63.
	Check tire pressure. See “Tire Inflation Chart” on page 104.
	Check wing gauge wheels. Proper size is 9.5Lx15 6-ply Rib Implement.
	Check for build-up of seed treatment. Regularly clean off build-up.
	Check seed-rate setting. See “Main Box Seed Rate Calibration” on page 50 or “Small Seeds Rate Calibration” on page 58.
Excessive seed cracking	Consider your seed weight. Seed-rate charts are based on average seed weights.
	Use slower drive type and open seed-cup doors to a wider position.
	Check tire pressure. See “Tire Inflation Chart” on page 104.
	Check gauge-wheel tires. Proper size is 9.5Lx15 6-ply Rib Implement.
	Check planting operation for excessive overlap or gaps between passes.
Acrometer doesn't measure accurately	Consider soil conditions. Loose soil and slippage will cause variations in acres registered.
	Check that your acrometer is for your drill. Refer to the 2S-2600 parts manual.
	Check that your acrometer is for your drill. Refer to the 2S-2600 parts manual.
Uneven seeding depth	See “Opener Depth (Press Wheel Height)” on page 69.
	Check that drill tongue matches tractor-drawbar height. See “Hitching” on page 14.

Problem	Solution
Chain-debris/retainer clip	Be sure retainer clip is facing opposite way of chain travel.
Press wheel not compacting the soil as desired	Reset press-wheel depth. See “Opener Depth (Press Wheel Height)” on page 69.
	Increase hydraulic down pressure. See “Setting Hydraulic Down-Pressure” on page 63.
Grain box not emptying evenly	Certain models do not have the same number of seed cups between each bulkhead divider. The section with more seed cups will empty sooner.
	Check that you have the same drive type set on both drill boxes.
Press wheel or openers plugging	Consider soil conditions. Drilling in damp or wet conditions can increase this problem.
	Reduce hydraulic down pressure. See “Setting Hydraulic Down-Pressure” on page 63.
	Do not back up or allow drill to roll backward with openers in ground.
	Check Seed-Lok wheels for mud accumulation. Lock up wheels if necessary. See “Seed-Lok™ Seed Firmer Lock-Up” on page 69.
Seed-cup sprockets locked up or seed-drive shaft twisted	Check for foreign material lodged in seed-cup sprockets.
	Check for build-up of dried liquid insecticide in seed cups. Remove the build up by disassembling each seed cup and scraping the foreign substance from the turning surfaces.
Openers drill too deep (Bulldozing)	If operating at high down-pressures, see “Opener-Subframe Adjustment” on page 64.
	Reduce hydraulic down pressure on openers. See “Setting Hydraulic Down-Pressure” on page 63.
	Check press-wheel adjustment. See “Opener Depth (Press Wheel Height)” on page 69.
Front of openers dropping too low in hard or minimum-till conditions	Set opener-frame bolt in top hole. See “Opener-Subframe Adjustment” on page 64.
	Reduce hydraulic down pressure on openers. See “Setting Hydraulic Down-Pressure” on page 63.
Openers raise when tractor hydraulic lever is held forward and lower when lever is held back	Reverse hydraulic hoses at tractor quick couplers.
Opener frames do not float over uneven terrain	Check that hydraulic lever is locked forward and openers are connected to circuit designed for hydraulic-motor control. See “Opener Operation” on page 32.
Pressure gauges read zero when openers are lowered and tractor hydraulic lever is held forward	Check if hoses are routed incorrectly between pressure-control valves and opener-lift cylinders. See “Bleeding Hydraulics” on page 79 and “Hydraulic Diagrams” on page 106.
Pressure gauges show pressure when the openers are raised	Check if hoses are routed incorrectly between pressure-control valve and opener-lift cylinders. See “Bleeding Hydraulics” on page 79 and “Hydraulic Diagrams” on page 106.
Transport lock channels will not stay in position for transport	Check u-shaped clip in lock channel. Clip must clasp cylinder rod securely. If necessary, tighten or loosen clip by turning the bolt on clip.
	Before transporting, check that hydraulic cylinders have settled against lock channels. The weight of cylinders help hold lock channels in place.

Problem	Solution
Optional hydraulic marker functioning improperly	Check all hose fittings and connections for air and oil leaks.
	Check tractor hydraulic oil level.
	Check all bolts and fasteners.
	If needle valve is plugged, open valve, cycle markers and reset the needle valve.
Optional marker disk does not mark	If blade does not drop down into field depressions, make sure marker cylinder is fully extended.
	Check chain length and adjustment. See “ Marker Maintenance ” on page 87.
	Reverse blade to pull dirt in or throw dirt out depending on soil conditions.



Maintenance and Lubrication

Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime and repair.

Always turn off and remove the tractor key before making any adjustments or performing any maintenance.

WARNING

Crushing

You may be severely injured or killed by being crushed under a falling implement. Always have frame sufficiently blocked up when working on, and particularly under implement.

Hazard:

WARNING

High

Pressure

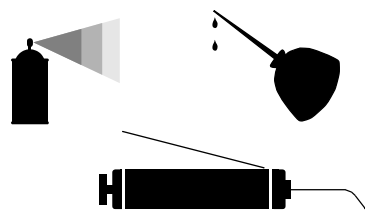
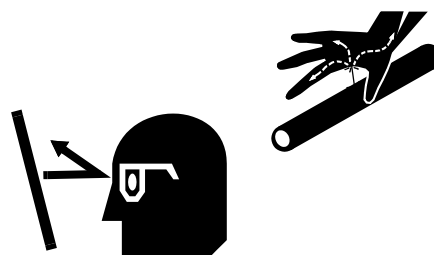
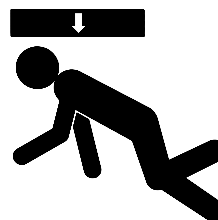
Fluid

Hazard:

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

After using drill for several hours, check all bolts to be sure they are tight.

1. Securely block drill before working on it.
2. Lubricate areas listed under “**Lubrication**” on page 91.
3. Clean any fittings that do not take grease.
4. Inflate tires as specified on “**Tire Inflation Chart**” on page 104.
5. Inspect hydraulic hoses for cuts, cracks and aging. Check fittings for evidence of leaks.
6. Keep disk scrapers properly adjusted.
7. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. See “**Safety Decals**” on page 6.



Bleeding Hydraulics

To function properly, the hydraulics must be free of air. If hydraulics have not been bled, they will operate with jerky, uneven motions and could cause wings to drop rapidly during folding or unfolding. If hydraulics were not bled during initial implement setup or if you replace a part in hydraulic system during the life of the drill, complete the following procedures.

WARNING

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

WARNING

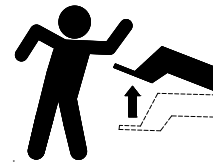
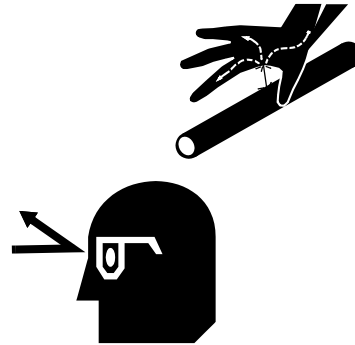
Negative Tongue Weight Hazard:
Raising openers on unfolded, unhitched drill will cause drill tongue to rise suddenly, which could cause serious injury or death. Be certain that drill is hitched securely to your tractor drawbar and the safety chain is securely attached to tractor before raising openers or unfolding drill.

NOTICE

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

Check hydraulic fluid level in tractor reservoir and fill to proper level. Add fluid to system as needed.

Note: System capacity for entire drill is about
4½ U.S. gallons
(17 liters).



Bleeding Opener Lift Hydraulics

Refer to Figure 80

1. Review warnings, bleeding notes and system information on page 79.
2. Make sure opener frames are locked up in ROAD position. Refer to Opener Lock Up, page 24.
3. Turn knob on both pressure-control valves ① completely counterclockwise, then turn valves clockwise far enough to build up 1000 psi (about three turns).
4. Turn knob on bypass valve ② completely clockwise for no oil flow.
5. Loosen two hose-end JIC fittings ③ on the opener-lift circuit where these center two hoses tee at the middle of the mainframe.
6. Slowly supply oil to top side of pressure-control valves until oil begins to appear at a loosened hose fitting. As oil begins to appear at a fitting, tighten that fitting.
7. Slowly supply oil to bottom side of pressure-control valves until oil begins to appear at remaining loosened hose fitting. As oil begins to appear at the fitting, tighten fitting. Continue to supply oil to bottom side of pressure-control valves until all openers are raised completely.
8. Move opener transport locks to FIELD position and cycle openers up and down ten times. Each time you lower openers, hold tractor remote lever until opener circuit builds up to pressure set at control valves.
9. After cycling openers, return opener transport locks to ROAD position, and lock openers up.

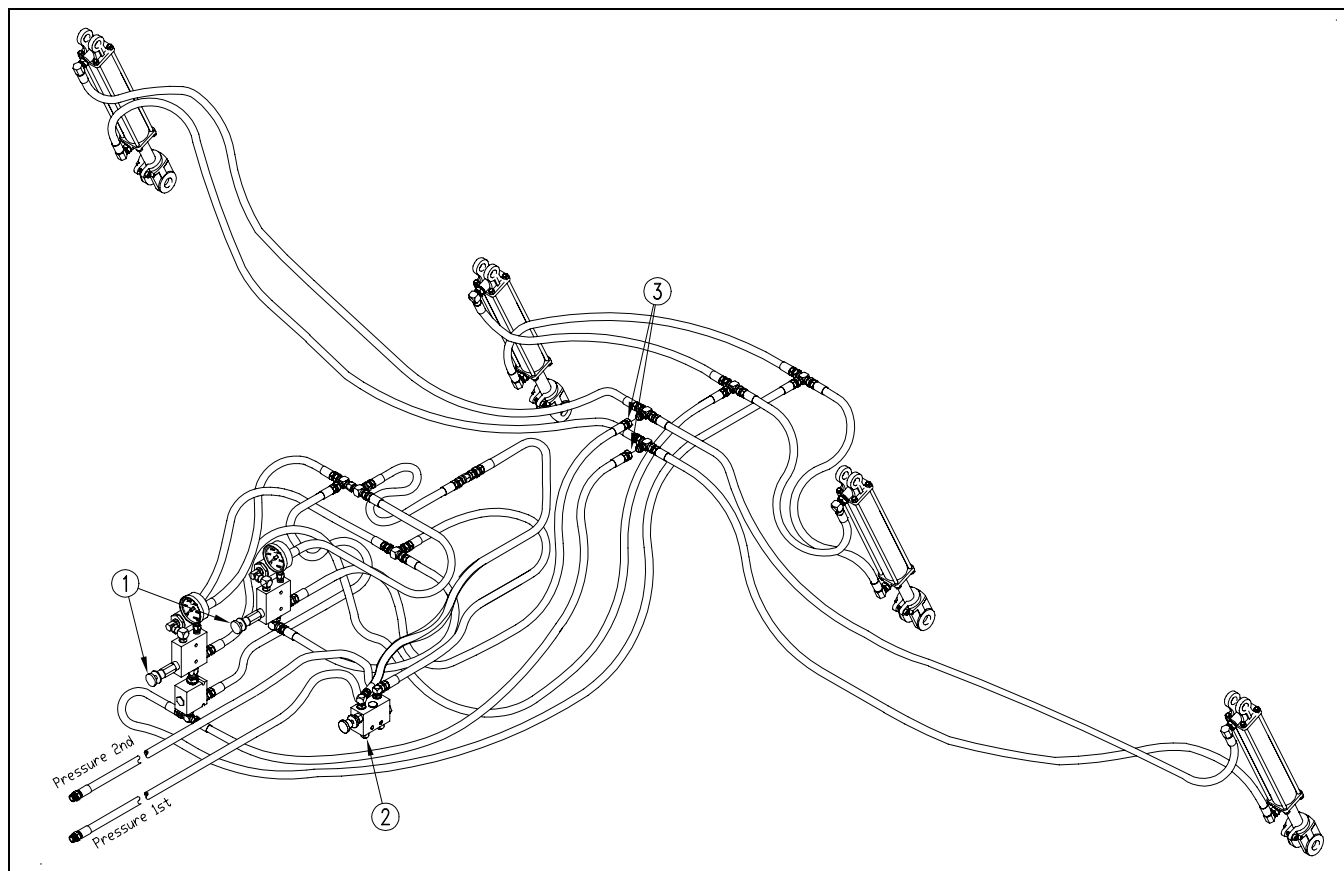


Figure 78
Bleeding Opener Lift Hydraulics

22981

Bleeding Fold Hydraulics

Refer to Figure 78

1. Review warnings, bleeding notes and system information on page 79.
2. With drill unfolded and fold cylinders completely extended, disconnect rod end pins and swing the cylinders so they will not contact anything when extended.
3. Loosen rod end hose JIC fitting ① at elbow on left fold cylinder.
4. Slowly supply oil to rod end of fold cylinders (line noted as "Pressure 1st") until oil appears at loosened hose fitting. Tighten fitting and completely retract fold cylinders.
5. With cylinders completely retracted, loosen base end hose JIC fitting ② at elbow on left fold cylinder.
6. Slowly supply oil to base end of fold cylinders (line noted as "Pressure 2nd") until oil appears at loosened hose fitting. Tighten base end hose fitting and cycle fold cylinders in and out several times.
7. Re-pin cylinder rod clevis.

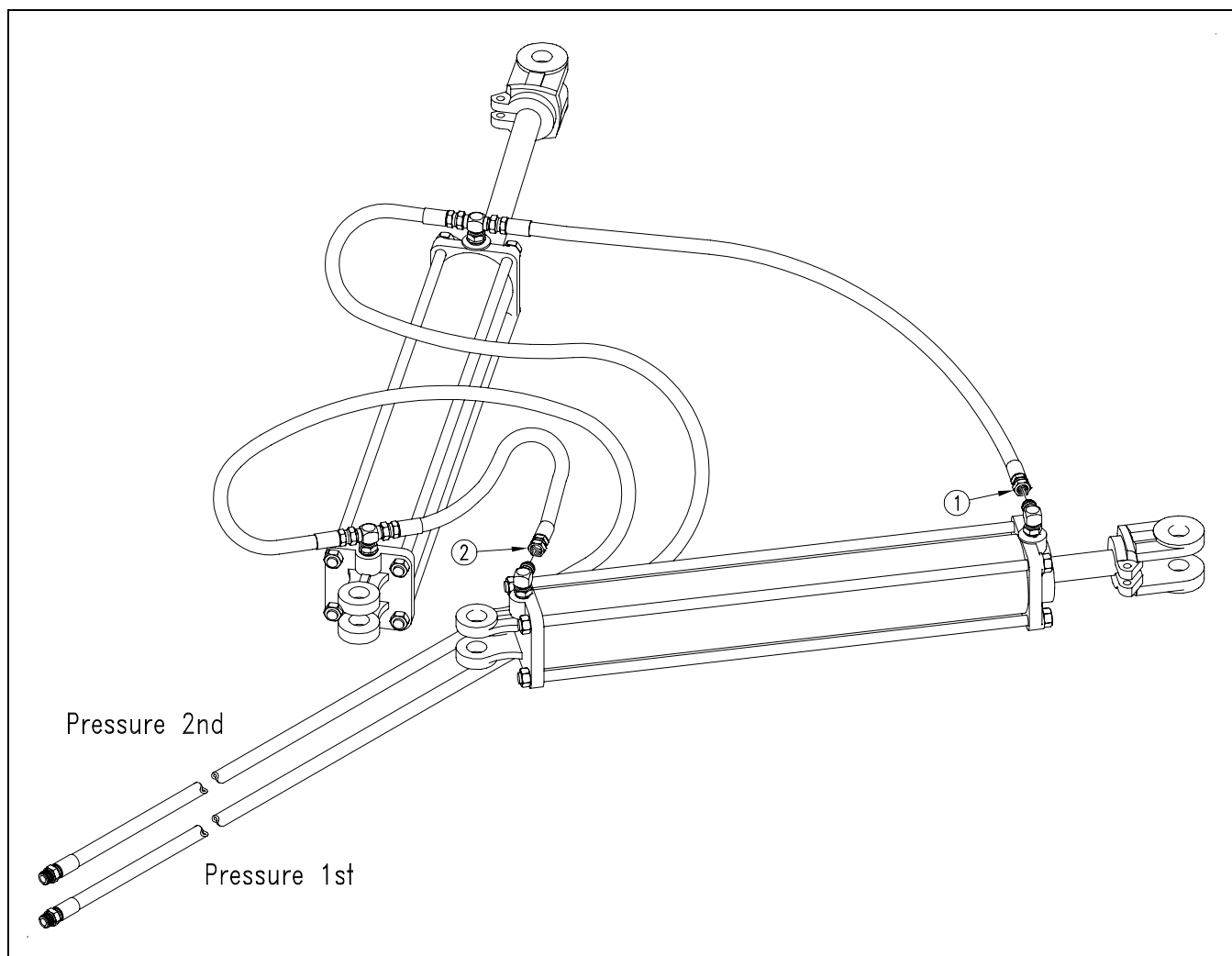


Figure 79
Bleeding Fold Hydraulics

17299

Bleeding Transport Lift Hydraulics

Refer to Figure 80

1. Review warnings, bleeding notes and system information on page 79.
2. With drill lowered into field position, loosen base-end-hose fitting at elbow on right-hand transport-lift cylinder ①.
3. Slowly supply oil to base end of transport-lift cylinders until oil appears at the loosened hose fitting. As oil appears at fitting, tighten that fitting.
4. Completely extend transport-lift cylinders and immediately lock cylinders up by flipping up cylinder lock channels on both transport-lift cylinders. See “**Raising Drill (Transport Lift)**” on page 25.

Crushing

The hydraulics could fail, causing the openers to fall and crush you. To prevent serious injury or death, always secure cylinder lock channels over extended transport-lift cylinders before working under openers.

Hazard:

5. When cylinder lock channels are in place, loosen rod-end-hose fitting at elbow on left transport-lift cylinder ②.
6. Slowly supply oil to rod end of transport-lift cylinders until oil appears at loosened hose fitting. As oil begins to appear at fitting, tighten that fitting.
7. Extend transport-lift cylinders and remove cylinder lock channels. Completely cycle transport-lift hydraulics several times.

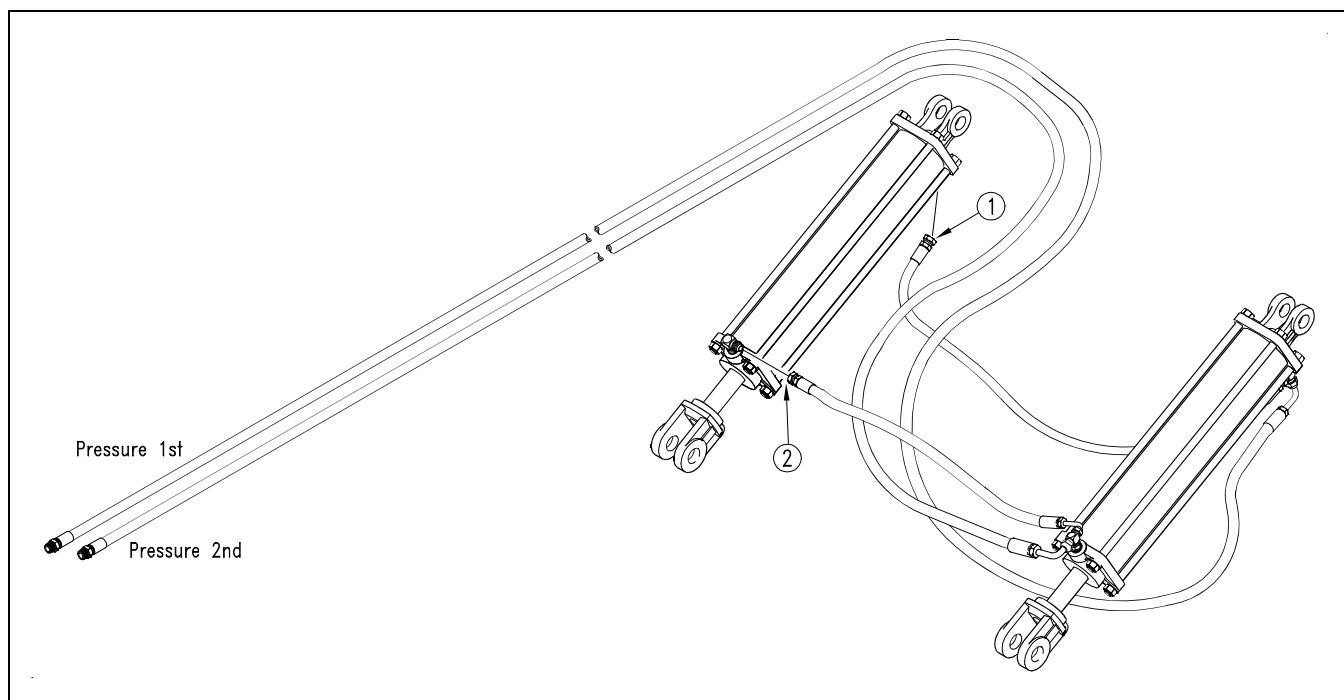


Figure 80
Bleeding Opener Lift Hydraulics

17298

Bleeding Marker Hydraulics

⚠ CAUTION

Crushing

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

Hazard:

1. Review warnings, bleeding notes and system information on page 79.

Refer to Figure 81

2. With markers unfolded in field position, crack hydraulic-hose JIC fittings ① at base and rod ends of each marker cylinder.
3. With tractor at idle speed, activate tractor hydraulic valve forward until oil appears at a fitting. When oil begins to seep out around a fitting, tighten that fitting. Reverse the tractor hydraulic valve until oil appears at opposite hose fitting. Tighten that fitting.
4. If you have dual markers, activate tractor hydraulic valve forward again until oil seeps out around a fitting on the other marker cylinder. Tighten that fitting. Reverse tractor hydraulic valve until oil seeps out around remaining hose fitting and tighten it.
5. Fold and unfold markers slowly to work out all air.

Note: Use caution when folding and unfolding markers for the first time, checking for pinching and kinking of hoses.

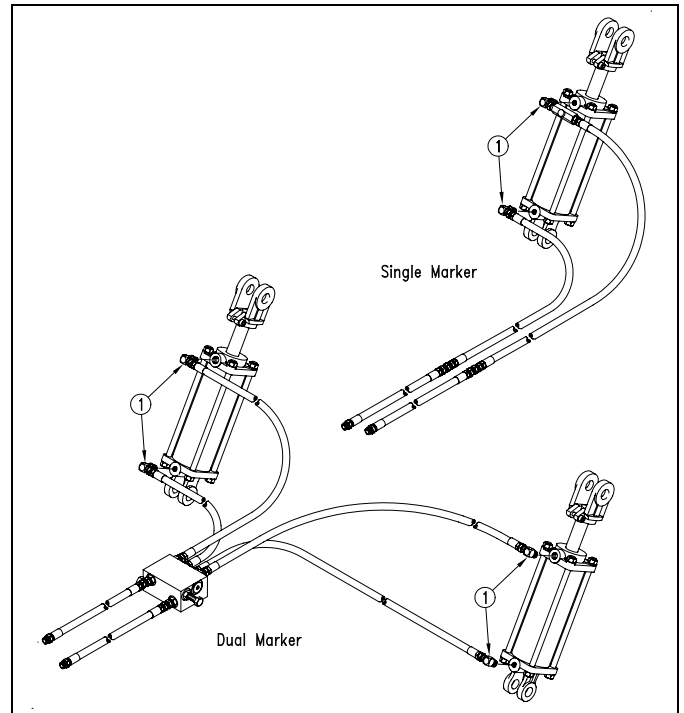


Figure 81
Bleeding Marker Hydraulics

18942

In-Line Filters

If the raising or lowering times of the openers slow noticeably, check the in-line filters and clean if needed.

Refer to Figure 82

Two filters are located on one each of the down-pressure adjustment valves. If the Point Row option is installed, another filter is located on the third adjustment valve.

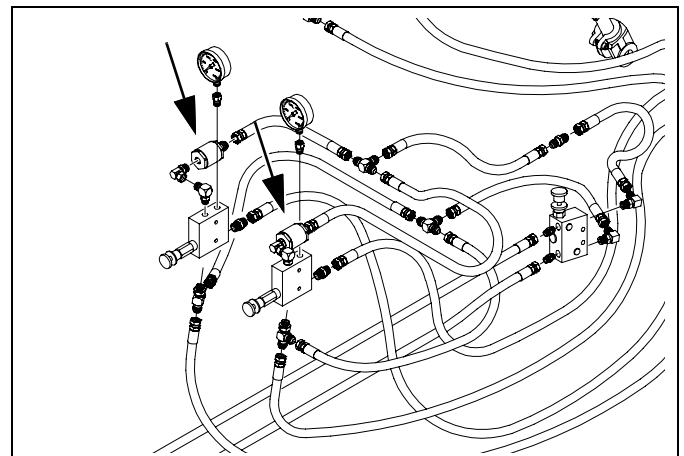


Figure 82
In-Line Filter Locations

22968

Refer to Figure 83

To disassemble unscrew end cap of filter. Remove top retaining washer and screen.

Clean filter screen with solvent and compressed air, or replace if needed.

When reassembling put screen into filter. Place retaining washer on top of filter and screw on end cap.

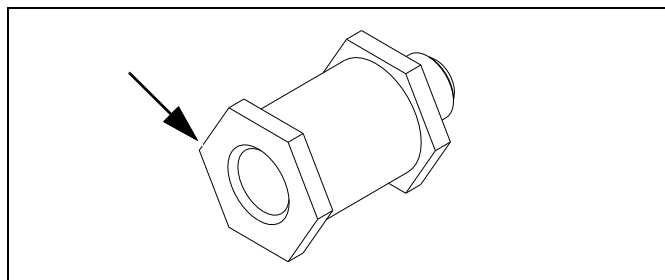


Figure 83
In-Line Filter

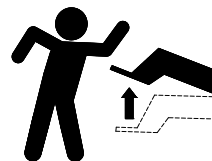
25187

Leveling the Drill

To perform leveling, the drill must be hitched to a tractor, with at least the hydraulics connected.

**Negative****Tongue****Weight:**

Raising openers on unfolded, unhitched drill will cause drill tongue to rise suddenly, which could cause serious injury or death. Be certain that drill is hitched securely to your tractor drawbar and the safety chain is securely attached to tractor before raising openers and unfolding drill.



Opener Frames Level

Refer to Figure 84

Check that opener frames are level across drill. When openers are fully raised, top of opener mounts ① should clear bottom of drill frame tube by at least $\frac{1}{2}$ in (1.3cm).

To adjust opener frames so all openers have same clearance, loosen jam nut ② on opener-lift cylinders and turn adjustment nut ③. When openers are at correct height, retighten jam nut. Repeat at each opener-lift cylinder if necessary.

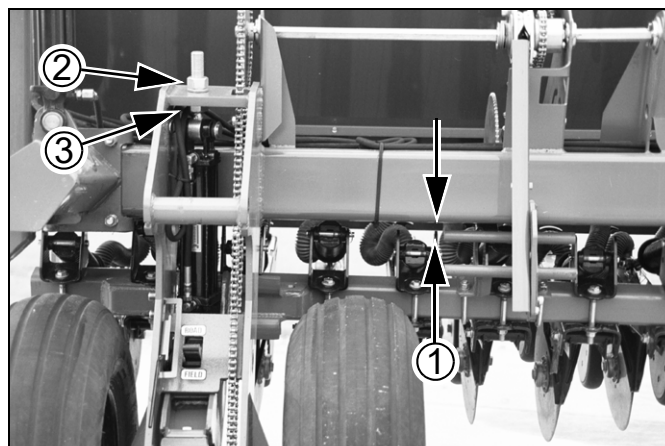


Figure 84
Eyebolt Adjustment

17308

Link Tube

Refer to Figure 85

The link tube controls folding height of outer end of drill box. If a drill box does not catch in folding latch when folding, adjust link length to lower or raise end of box.

1. Unfold and lower drill.
2. Pull upper pin ① from link clevis ③.
3. Unlock jam nut ②.
4. Thread clevis in or out to lengthen or shorten link.
5. Replace pin and tighten nut.

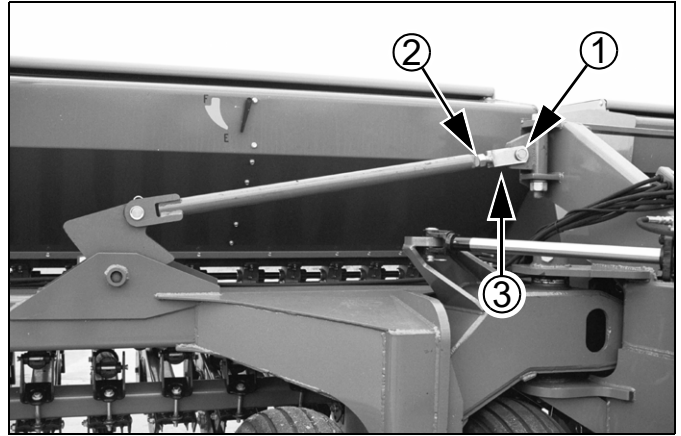


Figure 85
Link Tube Adjustment

17307

Tool Bar Height

Refer to Figure 86

Tool bar height ① above ground level ② is factory set and normally does not require adjustment. If you tear down the drill for repair, or if the tool bar is visibly not level, spacer washers ③ on vertical pivot pins allow for a small amount of tool bar-height adjustment.

To check tool bar height, park drill on a level surface, and check for correct tire inflation. Measure from ground to horizontal pivot pin ①. If dimension on either side of drill varies more than $\frac{1}{4}$ inch (6.4mm), adjust tool bar height.

To adjust tool bar height, reposition spacer washers ③. First lower openers and set enough opener down pressure to help balance frame. Raise tool bar by removing spacer washers from top of the vertical pivot and placing them on bottom side of pivot. Lower tool bar by removing spacer washers from bottom of vertical pivot and placing them on top of pivot.

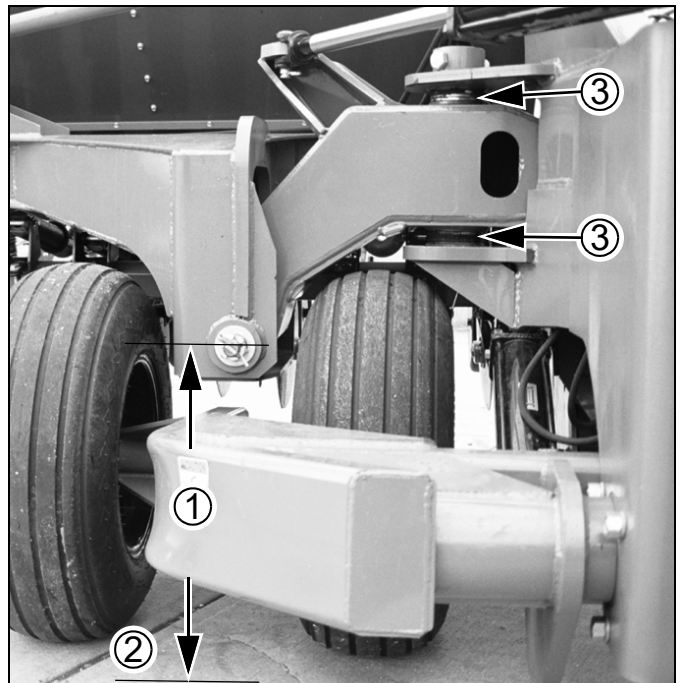


Figure 86
Tool Bar Height

17306

Wing Box Alignment

1. Place a block ahead of the wing gauge wheels.

Refer to Figure 87

2. Pull forward against blocks to rock wing frames back. Pull forward until stop bolts ① are firmly against tool bars.

Refer to Figure 88

3. Check for proper alignment by running a string line across back of drill toward outer ends of wings.
4. For proper alignment, outside ends of boxes A should be about 1in (2.5cm) ahead of inside ends B.
5. To adjust box alignment, shorten or lengthen stop bolts ① to change the contact point with the tool bars. Loosen jam nut and thread stop bolt in or out. Adjust stop bolts in or out until outside ends of boxes are 1in (2.5cm) ahead of inside ends.
6. Tighten jam nut.

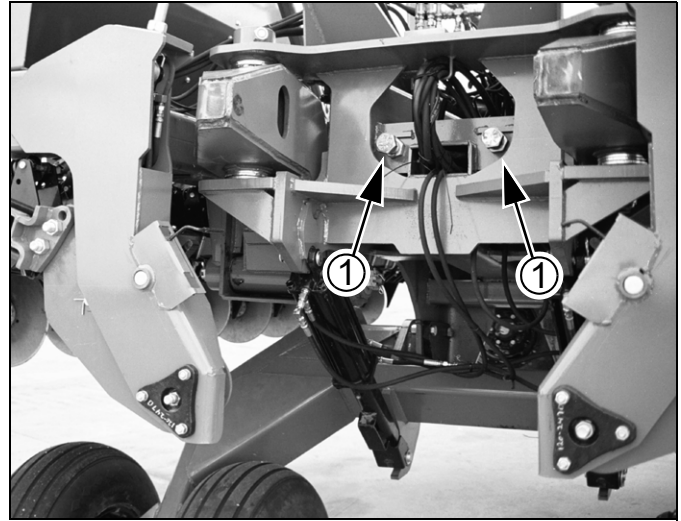


Figure 87
Stop Bolts (Wings Folded)

17357

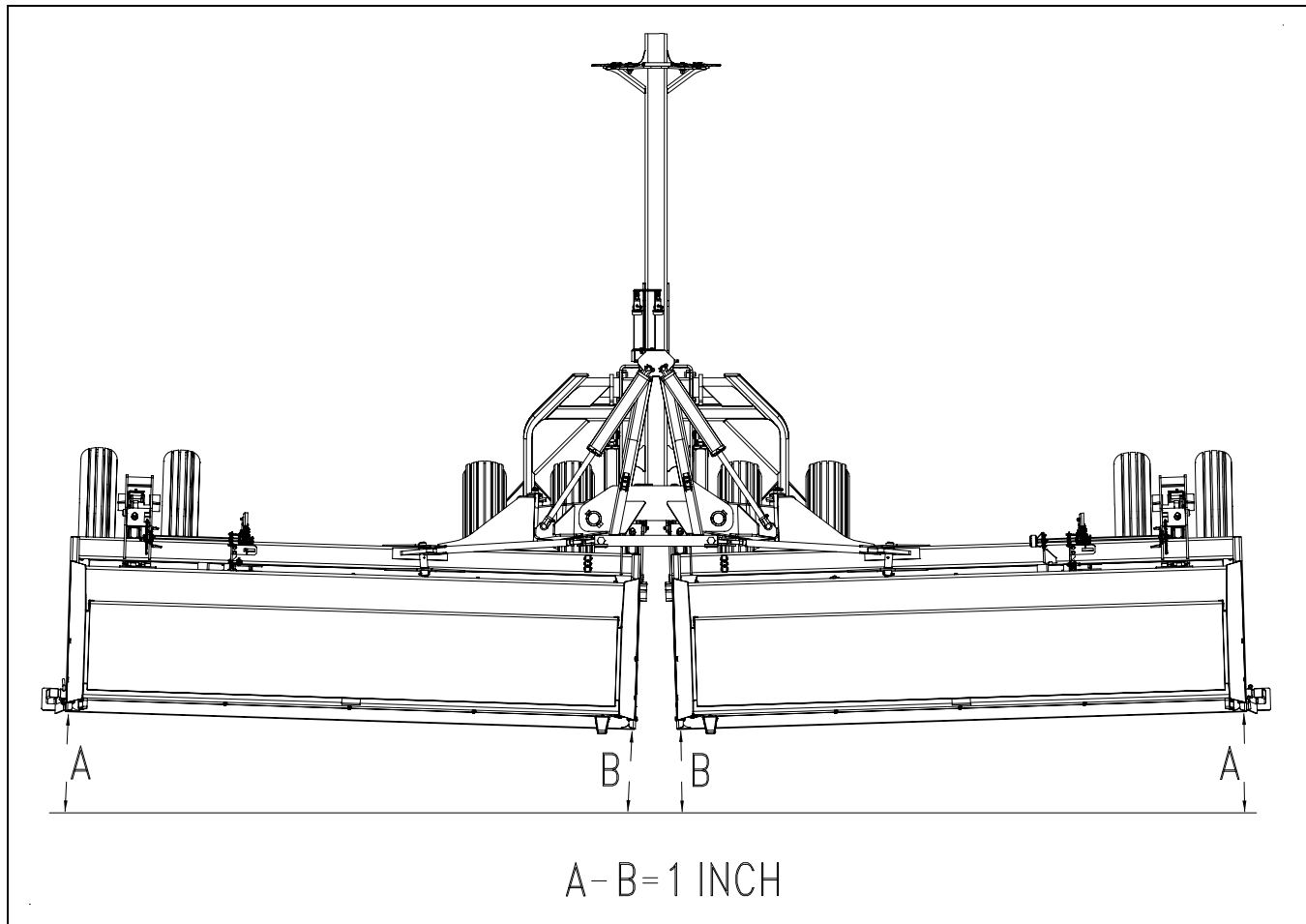


Figure 88
Wing Box Alignment Measurement

17300

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.

Chain Slack

Check slack within the first 8 hours of operation and tighten idlers as necessary.

Refer to Figure 89, 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). The ideal slack is between 2% and 4% of the span.
For example:
A slack of 1cm is appropriate for a 30cm span.
2. 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 with a force of about 9 lbs (4 kg). The slack is the distance of the movement.
3. Adjust the idlers for ideal slack.

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

Refer to Figure 90

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

Marker Maintenance

Marker Transport Carrier

When marker is folded, the second section should be centered in transport carrier saddle and be parallel with top of drill box.

Refer to Figure 91

To adjust height of saddle, loosen $\frac{1}{2}$ x2in U-bolts ① that hold carrier tube to mounting bracket. Slide carrier tube up or down as needed.

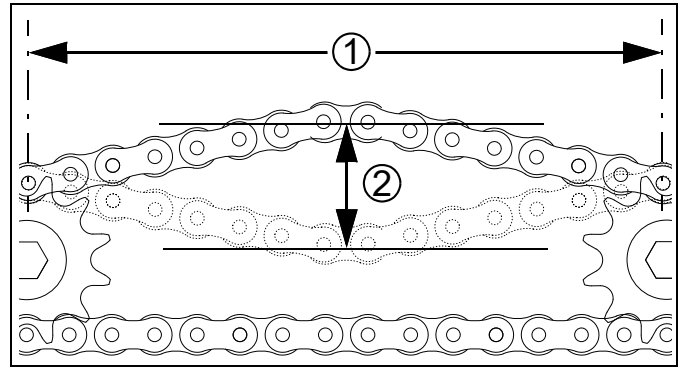


Figure 89
Measuring Chain Slack

27264

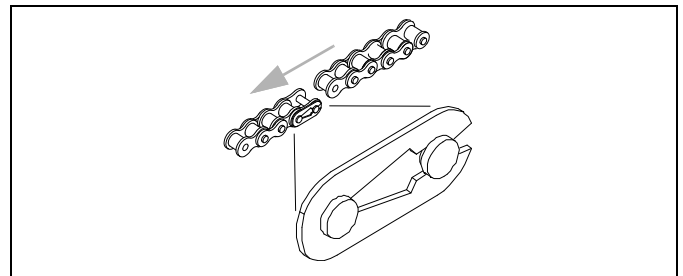


Figure 90
Chain Clip Orientation

26482

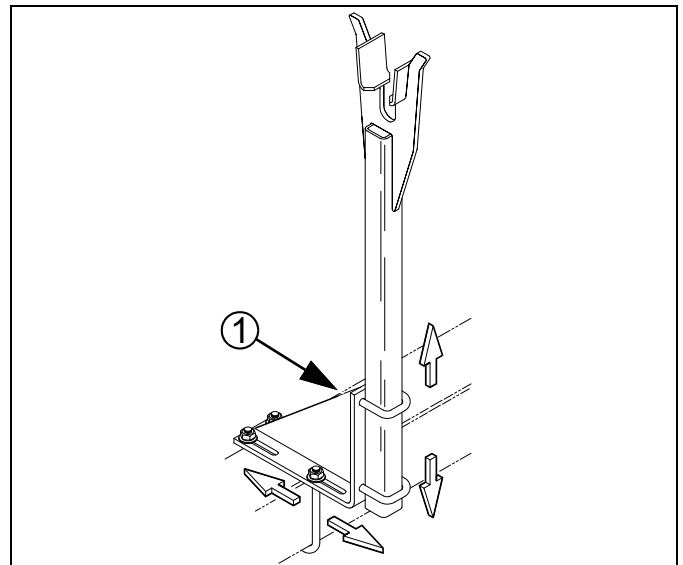


Figure 91
Marker Transport Carrier

15632

Marker Shear Bolt

The marker arm is attached to marker body with a shear bolt ②, which is intended to fail if the marker strikes an obstruction, allowing the marker to swing back around a second bolt ③.

If the shear bolt breaks, replace it with an equivalent $\frac{3}{16}$ -16x2in Grade 2 bolt (Great Plains part 802-266C). If that size is not available in your local market, substitute an M10x1.5 Class 5.8 metric bolt and nut.

Note: Replacing the bolt with a lower grade, or smaller size, can result in nuisance shears.

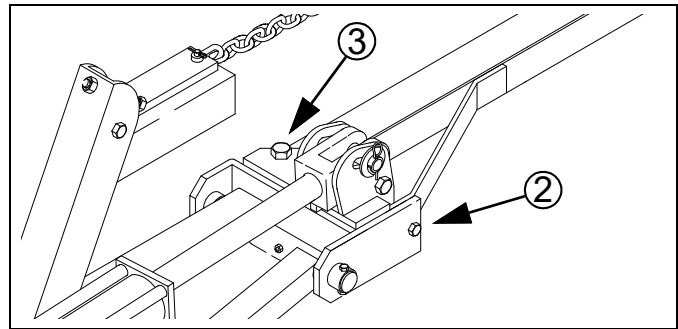


Figure 92
Marker Shear Bolt

15669

NOTICE

Equipment Damage Risk:

Replacing the bolt with a higher grade can result in marker damage.

Marker Disk

Refer to Figure 93

If grease-seal cap ① for marker-disk-hub bearings is damaged or missing, disassemble and clean hub. Repack with grease and install a new seal or grease cap.

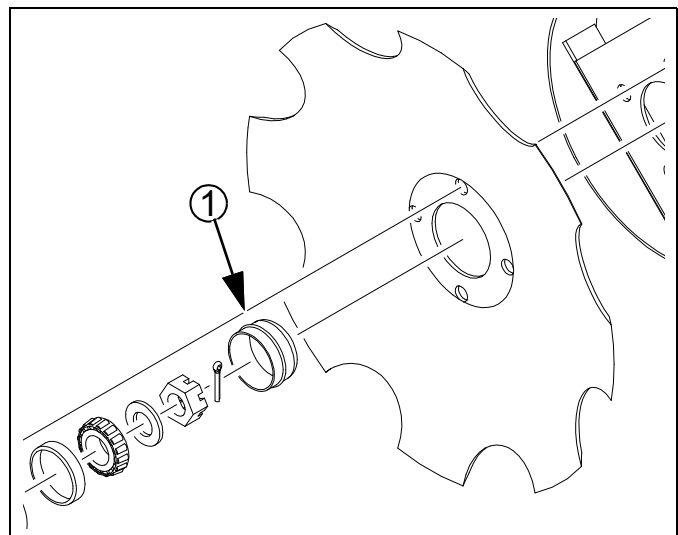


Figure 93
Marker Bearing and Cap

18795

Main Box Seed Meter Clean-Out

Refer to Figure 94, which depicts the seed cup door handle ① in a normal operating position.

1. Set the Seed Rate Handle to zero (0) for the section of the drill to be cleaned out. This moves the seed cup sprockets out of the seed path.
2. Position a tarp or bucket under each row or set of rows to be cleaned out.
3. At the seed cup for that row, pull the door handle ① out of the operating detent range, and swing it down to position ②.
4. Open the main seed box and use a small brush to sweep seed toward seed cups set to clean-out. If seed does not flow freely, inspect seed cup, hose and seed tubes for obstructions.
5. Wash out the seed box with high pressure water.

It is not necessary to operate the seed meter drive shaft for clean-out. With the Seed Rate set to zero, nothing moves inside the seed cups; however, an inspection of the flutes for excess wear and damage does require shaft rotation.

Set the Seed Rate Handles to 100. With openers raised, the seed meter jackshaft can be slowly turned by one person with a $\frac{7}{8}$ in (22mm) open-end wrench, while another inspects the flutes from the open seed boxes.

Fertilizer Box Clean-Out

After applying fertilizer, clean drill boxes as soon as possible. Fertilizers often contain chemicals corrosive to metal.

Refer to Figure 95

With a small scoop or can, remove as much fertilizer as possible from drill boxes.

Clean-out releases material across the entire length of a section box. Have collection equipment prepared.

Release all clean-out latches on a drill section, and open clean-out door. Leave door open until after washout.

Refer to Figure 96

Wash inside of drill boxes with water under high pressure. To aid clean out, lift vinyl dew shield and spray into fertilizer trays (with clean-out door open).

Let drill boxes dry before closing clean-out doors.

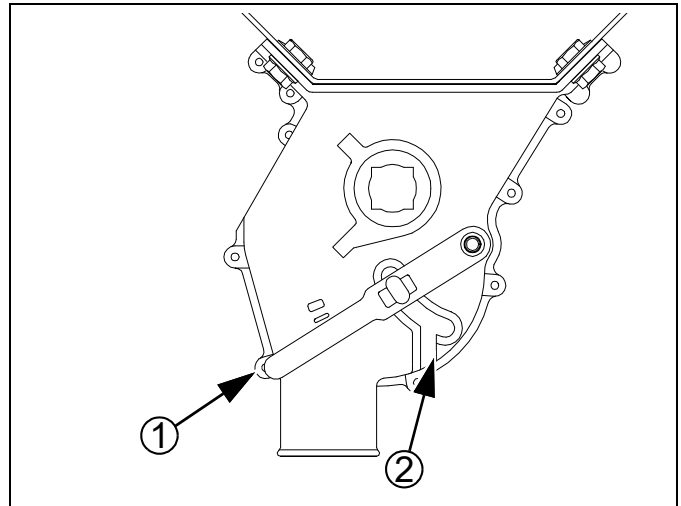


Figure 94
Seed Cup Cleanout

26211

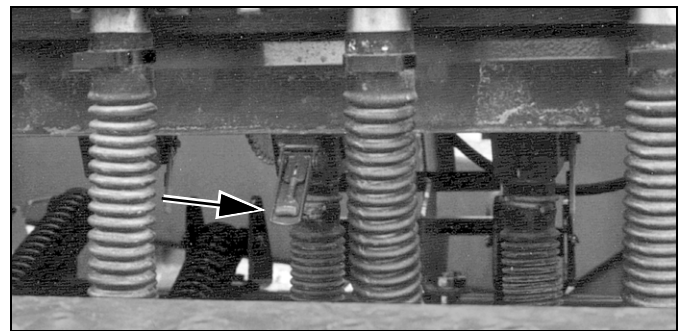


Figure 95
A Fertilizer Cleanout Latch

16376



Figure 96
Dew Shield at Openings

16382

Seed Flap Replacement (s/n DD1497+)

Refer to Figure 97

To replace an 816-302C seed flap ④ use a needle nose pliers or similar tool to grasp “T” top of flap. Pull upward to pull flap up out of metal bracket ⑤.

Push new seed flap ④ down through metal bracket ⑤ until flap snaps into place with “T” top resting on top of bracket.

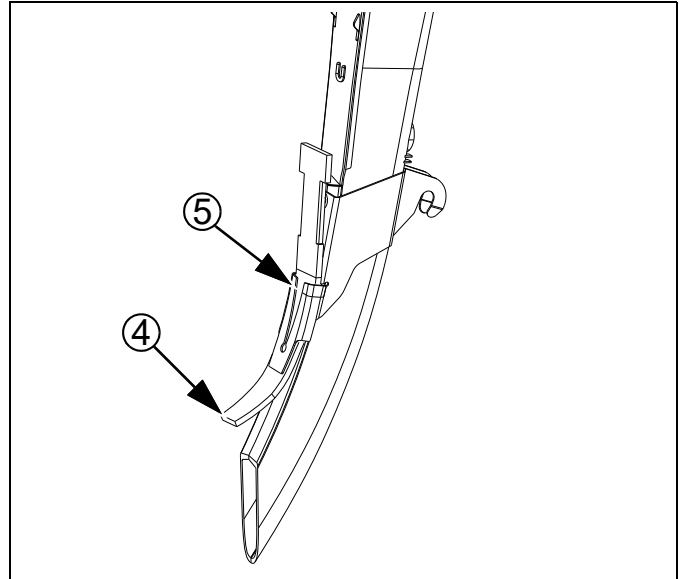


Figure 97
816-302C Seed Tube Flap

31047

Seed Flap Replacement (s/n DD1496-)

Refer to Figure 98

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

If replacing with 817-349C:

Push new seed flap ① up through metal bracket ③ until tabs ② on seed flap snap in place.

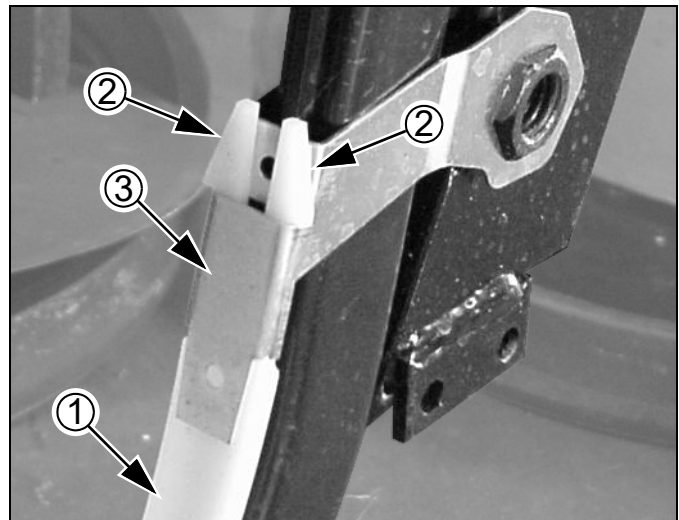


Figure 98
817-349C Seed Tube Flap

19398

Lubrication

Multi-purpose
spray lubricantMulti-pupose
grease lubricantMulti-purpose
oil lubricant

Inspection



50

Intervals
(operating hours)
at which service
is required

Drive Shaft Clutches



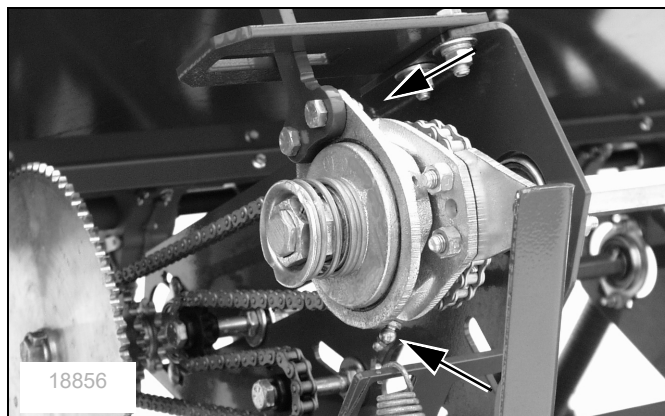
10

2 zerks each of 2 clutches; 4 total

Type of Lubrication: Grease for normal conditions; Graphite spray for dry dusty conditions. In either case, thoroughly clean clutch once per season. Clean grease out before applying graphite spray.

Quantity: Until grease emerges or coated with spray

Also smear grease or spray graphite lubricant on clutch engagement.



18856

Marker Hinge Pivots

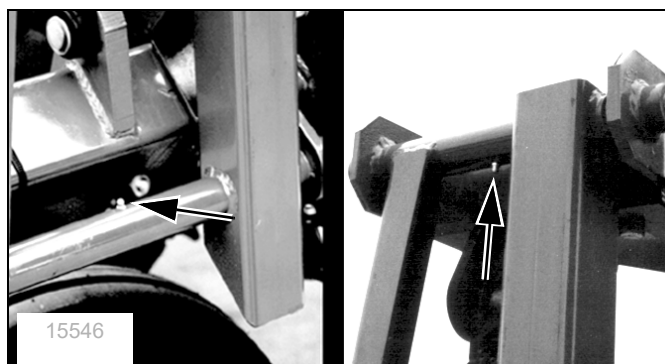


10

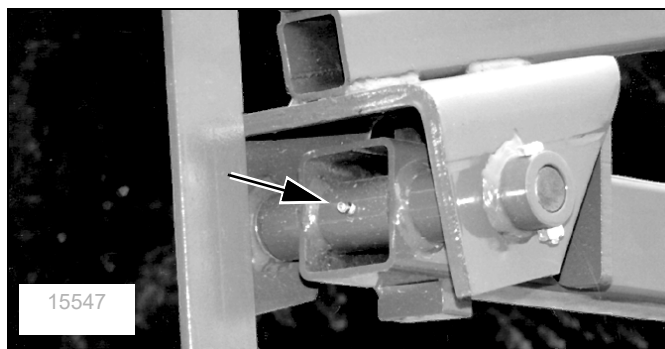
1 zerk at mount pivot,
1 zerk and 1st to 2nd section pivot,
1 zerk at 2nd section to arm pivot;
3 or 6 total

Type of Lubrication: Grease

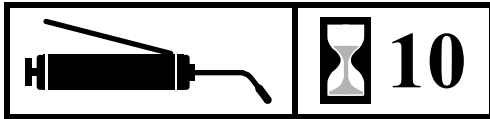
Quantity: Until grease emerges at pivot ends



15546



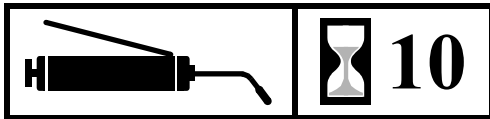
15547

Opener Frame Pivots

1 zerk each wing section; 2 total

Type of Lubrication: Grease

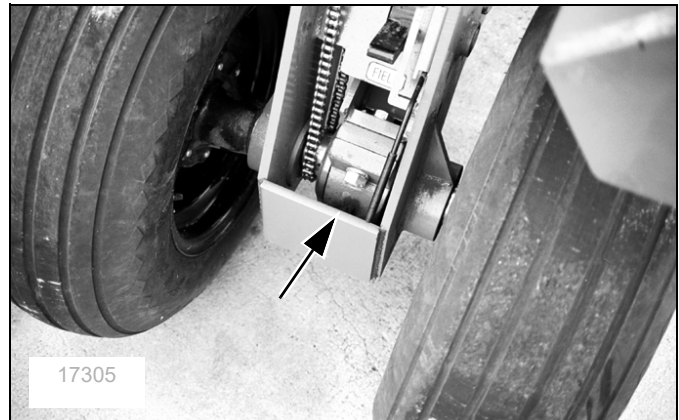
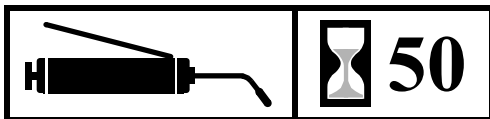
Quantity: Until grease emerges at pivot ends.

**Gauge Wheel Opener Frame Pivots**

1 zerk each gauge wheel pivot; 2 total

Type of Lubrication: Grease

Quantity: Until grease emerges at pivot ends.

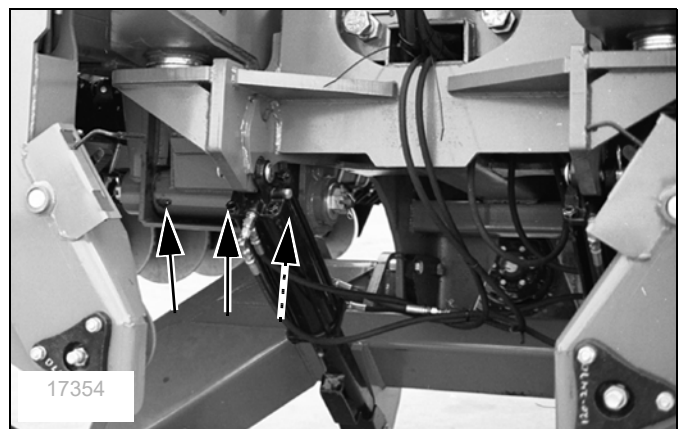
**Wing Horizontal (Flex) Pivots**

3 zerks each pivot; 6 total

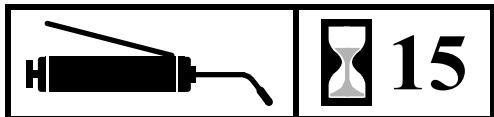
Type of Lubrication: Grease

Quantity: Until grease emerges at pivot ends.

Zerks accessible from rear of folded drill, or front of unfolded drill.



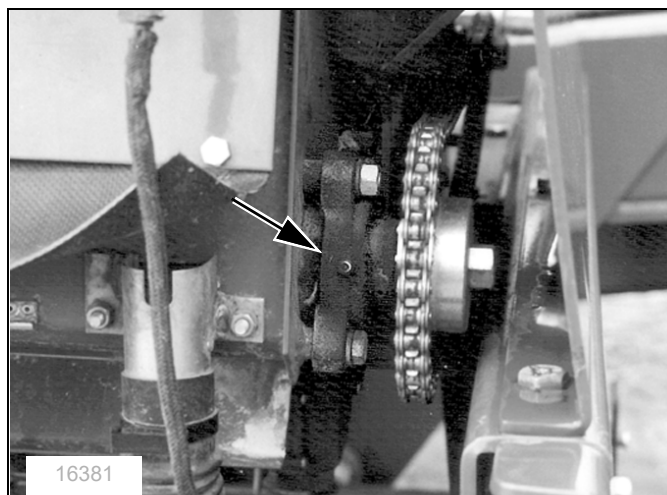
Fertilizer Shaft Bearings



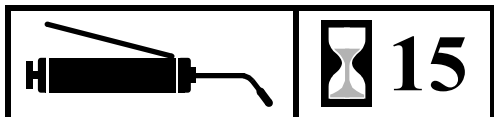
1 zerk each bearing, 2 per shaft; 4 total

Type of Lubrication: Grease

Quantity: Until resistance is felt



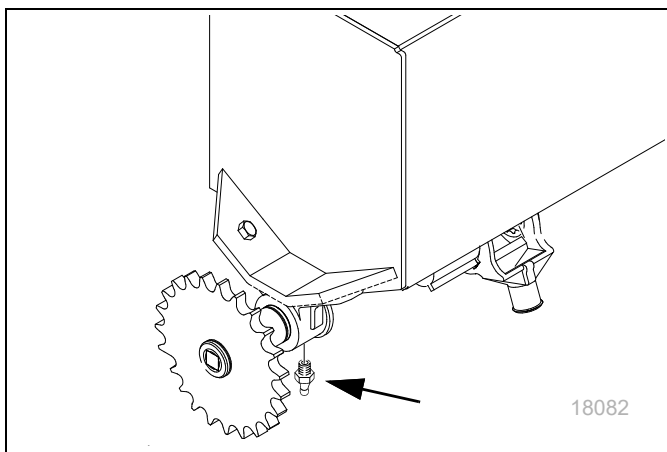
Small Seeds Shaft Bearings



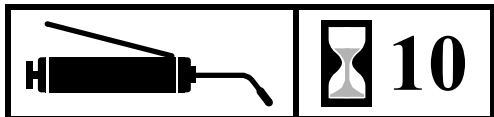
1 zerk each bearing, 1 per shaft; 2 total

Type of Lubrication: Grease

Quantity: Until grease emerges



Adjustment Link Pivots



2 zerks each pivot; 4 total

Type of Lubrication: Grease

Quantity: Until grease emerges at pivot ends.

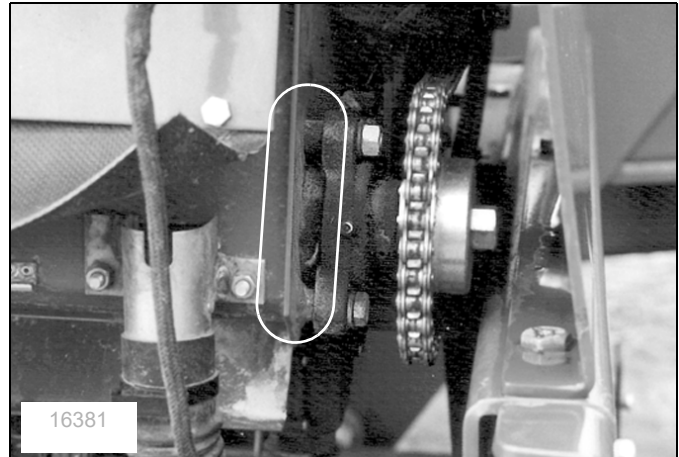
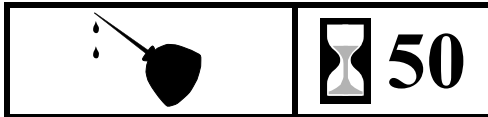


Felt Barrier Seals

1 seal at each shaft end, 2 per shaft; 6 total

Type of Lubrication: Oil

Quantity: Soak seal

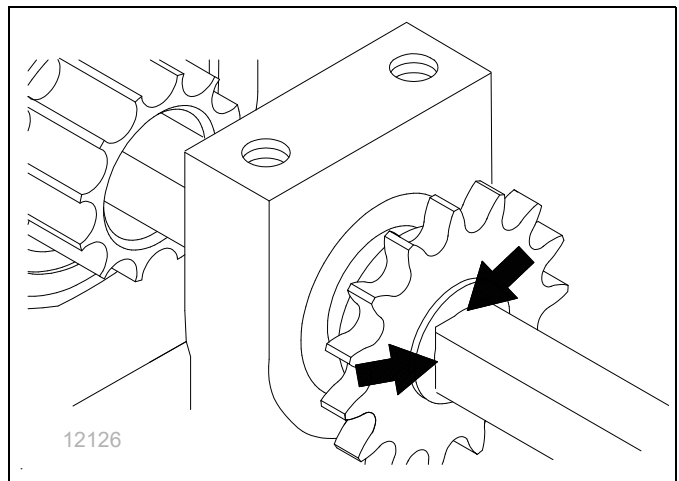
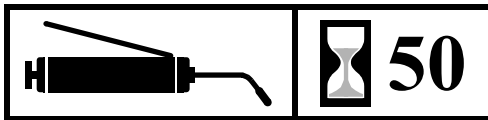
**Seed Cup Drive Shaft Sprocket**

2 sliding sprockets; one each side

Type of Lubrication: Oil

Quantity: Coat thoroughly

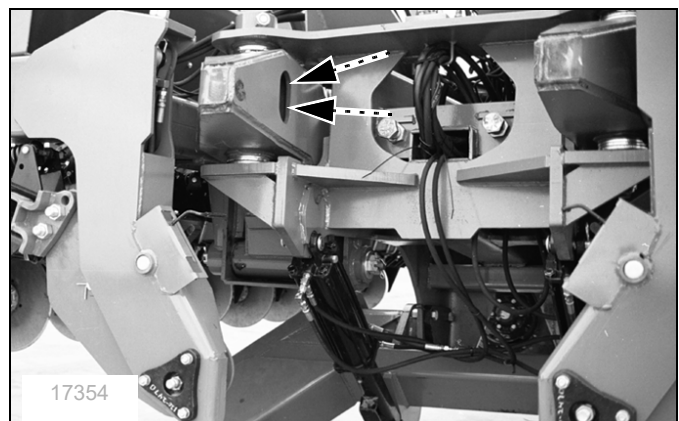
Move the Seed Rate adjustment handle back and forth to get oil into the square bore. Perform this with seed box empty, or handle may be difficult to set to 100.

**Wing Vertical (Fold) Pivots**

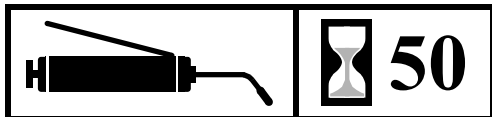
2 zerks each pivot; 4 total

Type of Lubrication: Grease

Quantity: Until grease emerges at pivot ends.



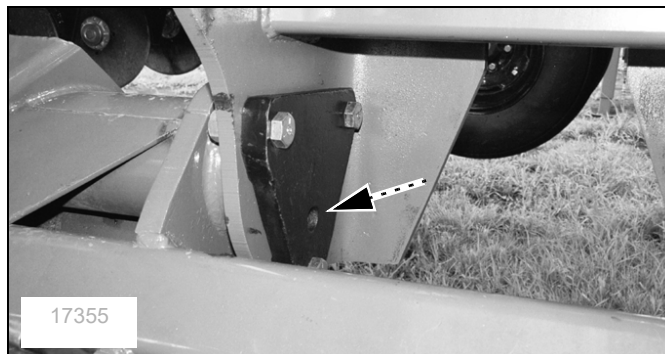
Transport Axle



1 zerk each end of axle, 2 total;

Type of Lubrication: Grease

Quantity: Until grease emerges



Fertilizer Jackshaft to Meter Shaft Chain

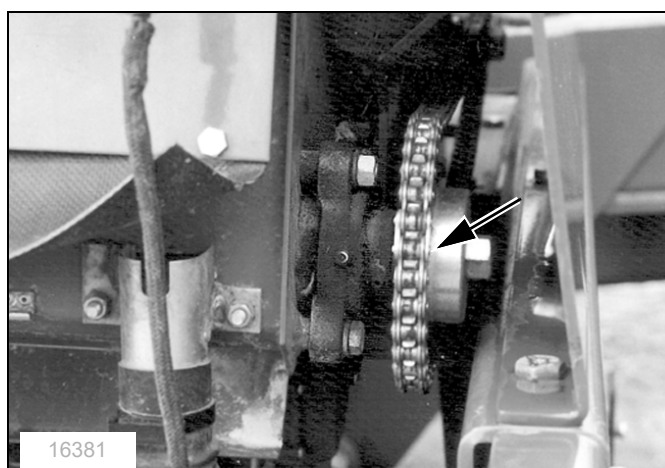


1 chain per section; 2 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: 1/2 in (13mm) in top span



Fertilizer Range to Jackshaft Chain

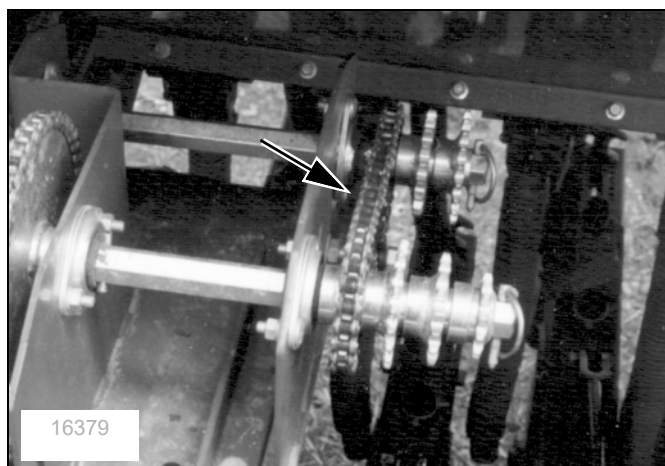


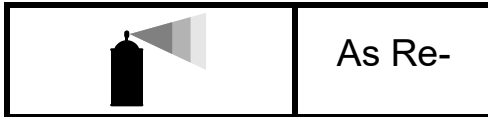
1 chain per section; 2 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: 1/4 in (6mm) in top span



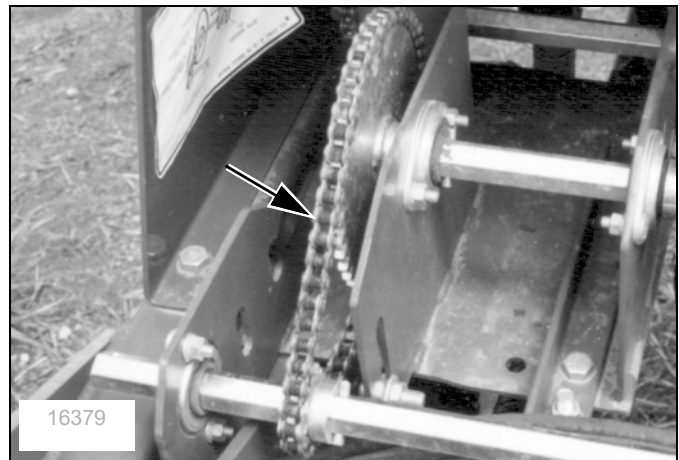
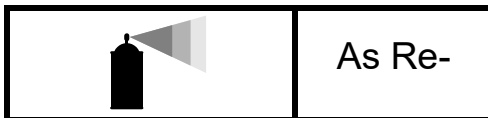
Clutch Shaft to Fertilizer Range Chain

1 chain per section; 3 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: $\frac{1}{4}$ in (7mm) in top span

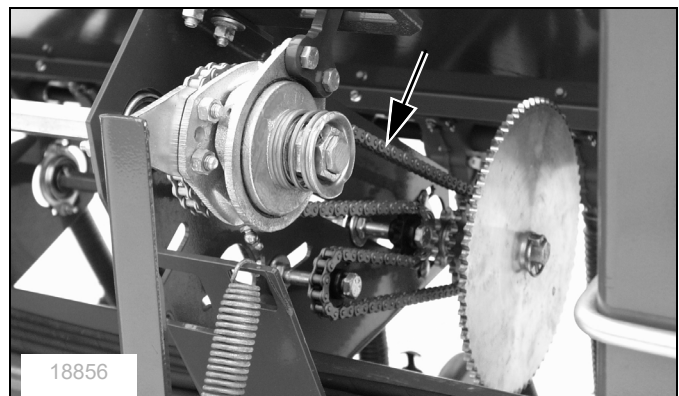
**Clutch to Seed (Drive Type) Jackshaft Chain**

1 chain per section; 2 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: $\frac{1}{4}$ in (7mm) in top span

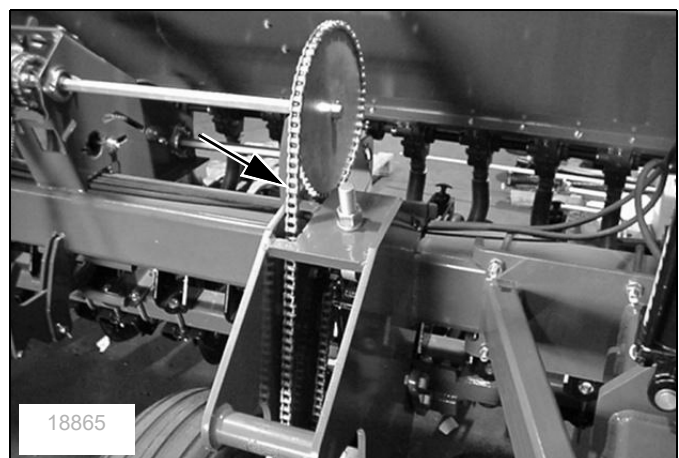
**Gauge Wheel Chain**

1 chain per gauge wheel assembly; 2 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: $\frac{1}{2}$ in (13mm) in top span



Seed Jackshaft to Meter Shaft Chain

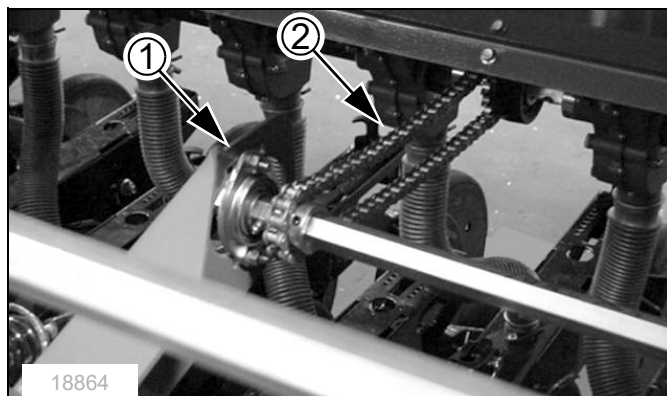
1 chain per section; 2 total

Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack: $\frac{1}{2}$ in (13mm) in top span

To remove slack, loosen bolts securing adjacent bearing flangette ①. Move flangette to obtain desired slack ②, and tighten bolts.

**Small Seeds Drive Chains**

2 chain per section; 4 total

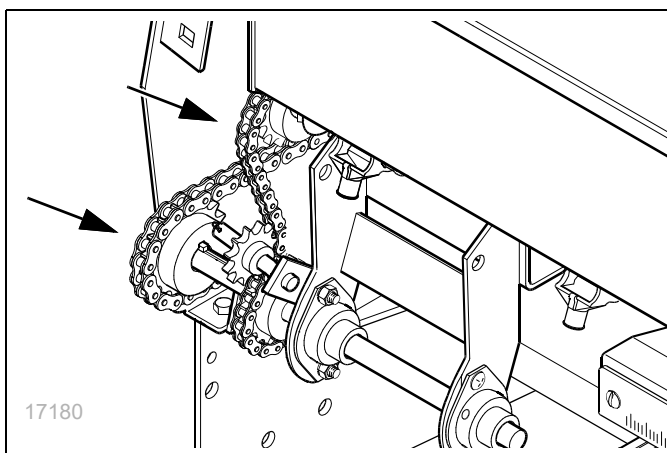
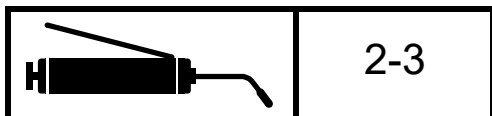
Type of Lubrication: Chain Lube

Quantity: Coat thoroughly

Slack:

$\frac{1}{2}$ in (13mm) in top span of long chain

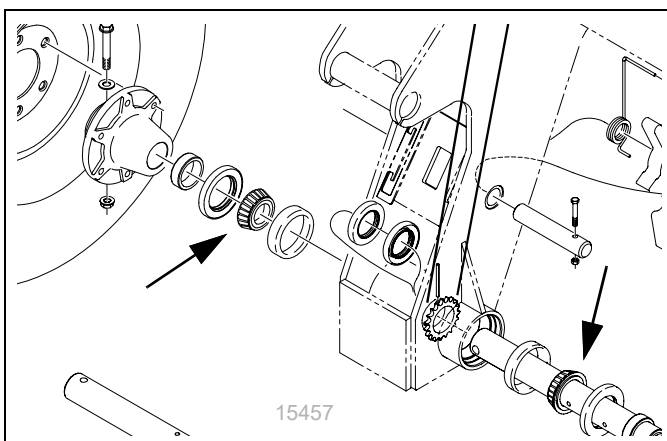
$\frac{1}{4}$ in (7mm) in longest span of final drive chain

**Gauge Wheel Bearings**

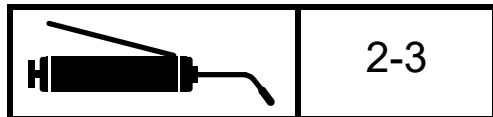
2 races each of 4 wheels; 8 total

Type of Lubrication: Grease

Quantity: Repack



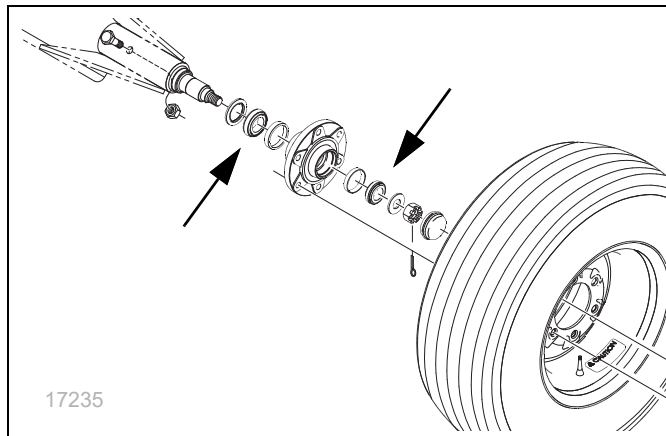
Transport Wheel Bearings



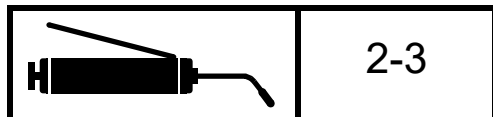
2 races each of 4 wheels; 8 total

Type of Lubrication: Grease

Quantity: Repack



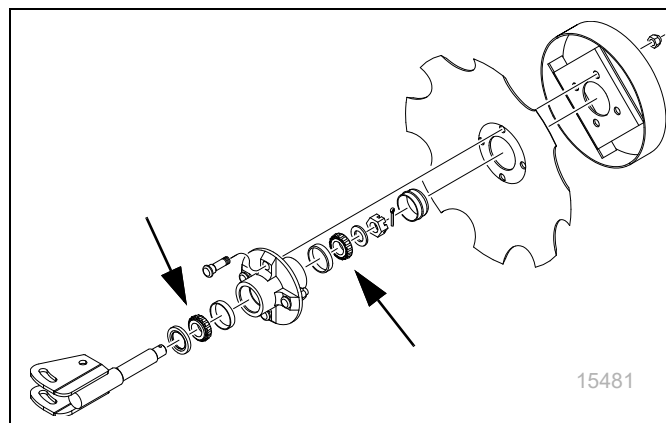
Marker Disk Bearings



2 races each marker; 2 or 4 total

Type of Lubrication: Grease

Quantity: Repack

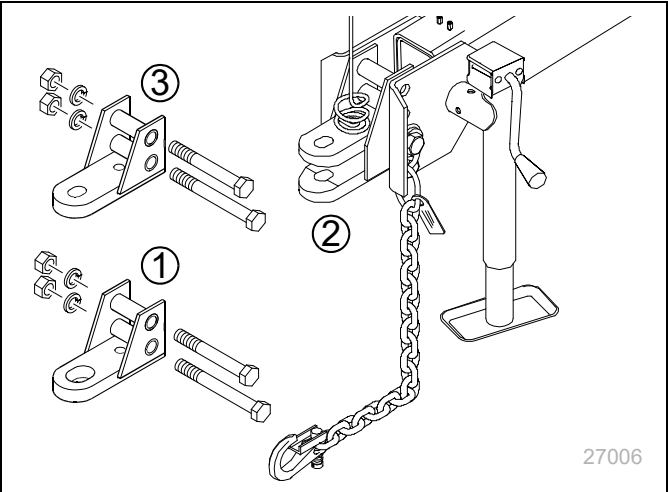


Options

Hitches

One hitch is selected upon initial order of an 2S-2600HD Drill, and includes the spring wire loop, safety chain, and all fasteners. Additional hitches may be ordered for conversion in the field, and include extra hitch mounting bolts, lock washers and nuts.

Hitch Description	Part Numbers
① Large Strap	170-038A
② Clevis	170-039A
③ Small Strap	170-059A

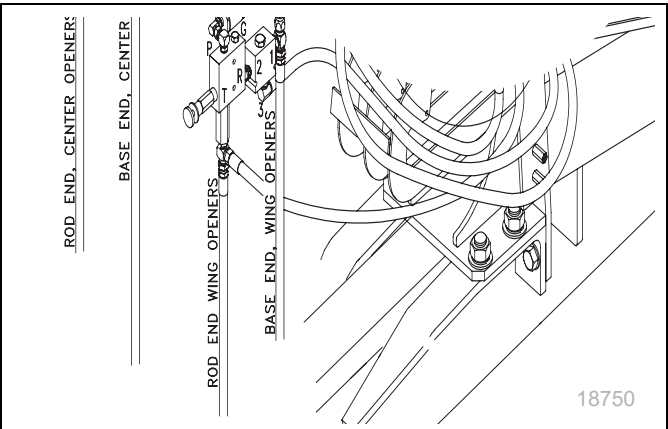


Open Center Conversion

The standard 2S-2600HD drill is compatible with tractors having “active” or “closed center” hydraulic systems. For use with “non-active” or “closed center” tractors, a conversion kit is available. Order one kit per drill.

Description	Part Number
Open Center Hydraulic Kit	194-143A

For operations, see “**Tractors with Open Center Hydraulics**” on page 19.

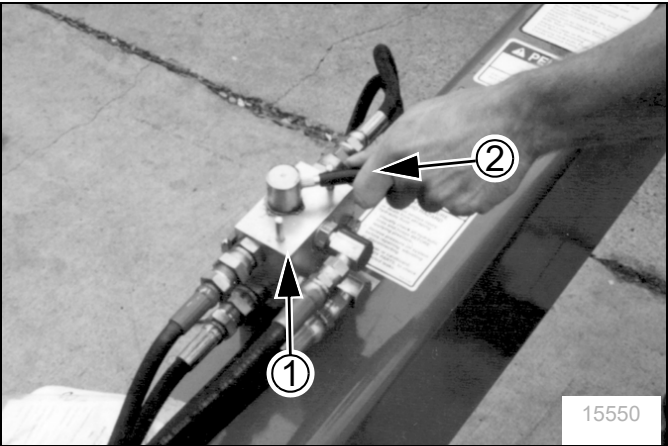


Two Outlet Hydraulic Kit

The standard 2S-2600HD drill requires three remote outlet circuits on the tractor. If only two are available, this kit enables the Transport and Opener Lift circuits to share a single remote, via a selector valve on the tongue at the hitch. Order one kit per drill.

Description	Part Number
Two Outlet Tractor Conversion	194-122A

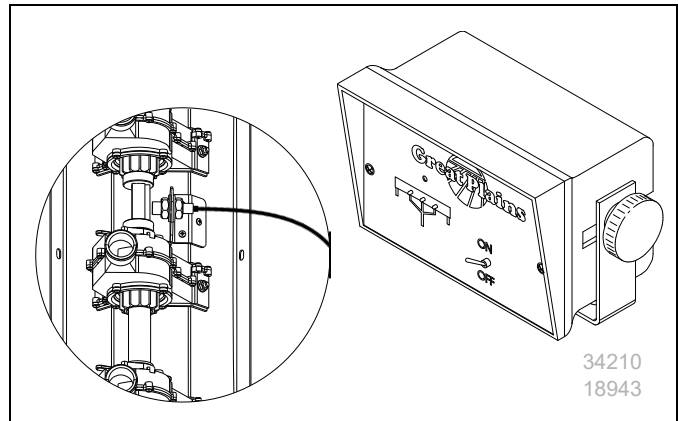
For operations, see “**Lift Selector Valve Operation**” on page 42.



Shaft Monitor

This kit provides a cab alarm in the event that a main box seed meter shaft stops turning (which might result from excess down-pressure lifting a gauge wheel, low tire pressure/flat tire, chain break or clutch malfunction). Order one kit per drill.

Description	Part Number
2-Channel Shaft Monitor	116-282A

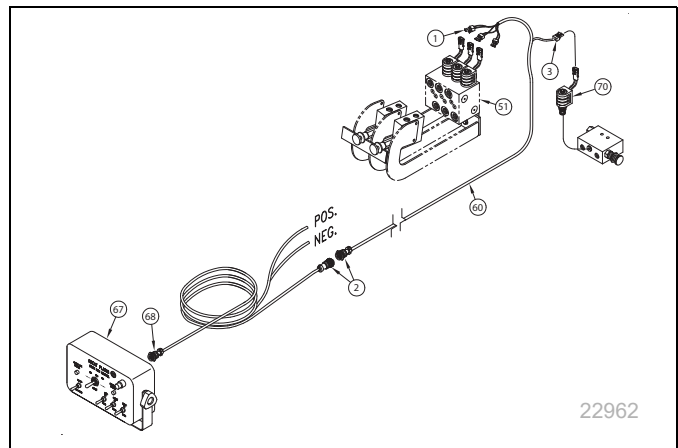


Point Row Clutch

On the standard 2S-2600HD drill, both sections raise and lower simultaneously. Shutting off seed flow on one or two sections requires stopping and making setup changes. The Point Row Clutch option provides cab control of opener lift on a section-by-section basis. Order one kit per drill.

Description	Part Number
2S-2600HD Point Row Accessory	195-306A

For operations, see “**Point Row Operation**” on page 42.



Flat Folding Markers

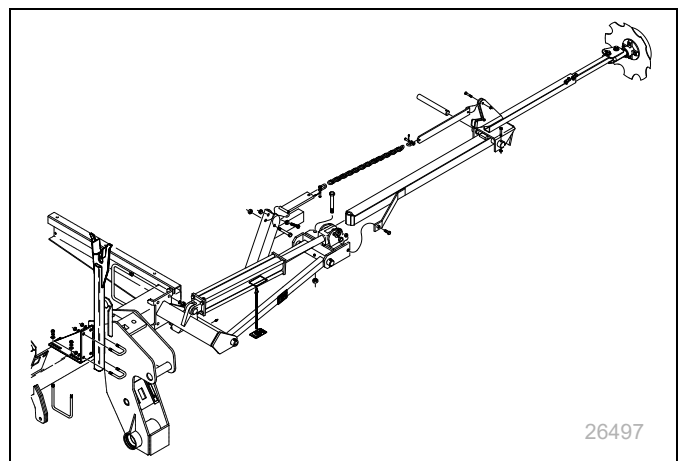
Hydraulically operated markers provide precise pass-to-pass spacing by leaving a user-controlled visible score mark to one side.

The single marker is left-side mounted. Dual markers are operated through an automatic sequence valve. After each fold operation, the next unfold extends the other marker. Order one kit per drill.

Description	Part Number
2S-2600HD Dual Markers	113-553A
2S-2600HD Single (LH) Marker	113-552A

Dual Markers add 887 lbs (402 kg) to the drill.
Single Marker adds 456 lbs (207 kg).

For operation, see “**Marker Operation**” on page 41. See also “**Marker Setup**” on page 21, “**Marker Adjustments**” on page 70 and “**Marker Maintenance**” on page 87.



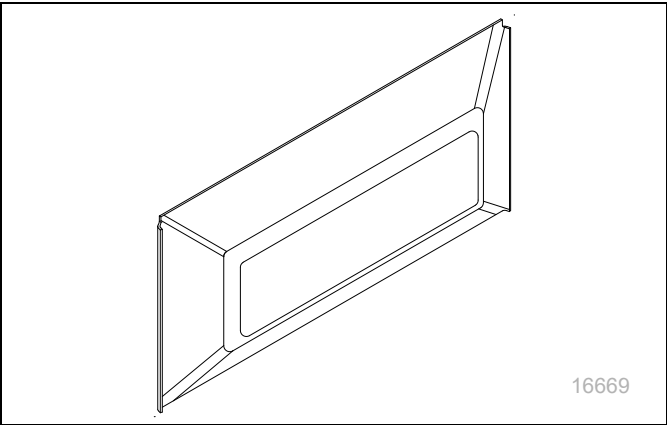
Offset Box Divider

The standard 2S-2600HDF has flat main seed box dividers supporting application at:
100% seed, 0% fertilizer, or
60% seed and 40% fertilizer.

This reversible divider replaces the 60/40 partition, and supports application at:
100% seed, 0% fertilizer,
68% seed, 32% fertilizer, or;
55% seed, 45% fertilizer.

Order 4 dividers per box, 8 per drill.

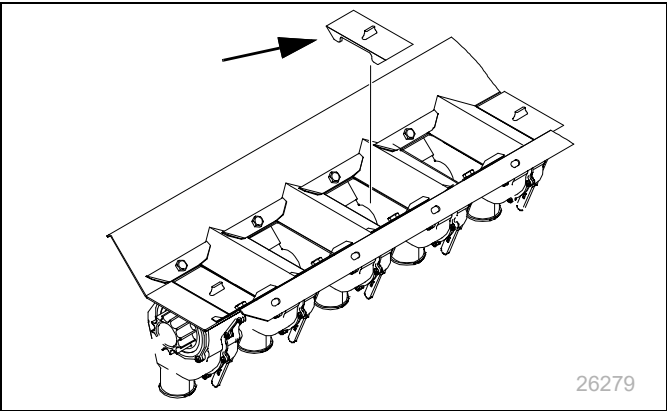
Description	Part Number
2S-2600HD Offset Divider	817-322C



Seed Tube Plug (Main Seeds)

This plug stops seed flow from the main seed box above the meter. Order one per row to be set inactive.

Description	Part Number
Fluted Feed Meter Plug	817-087C

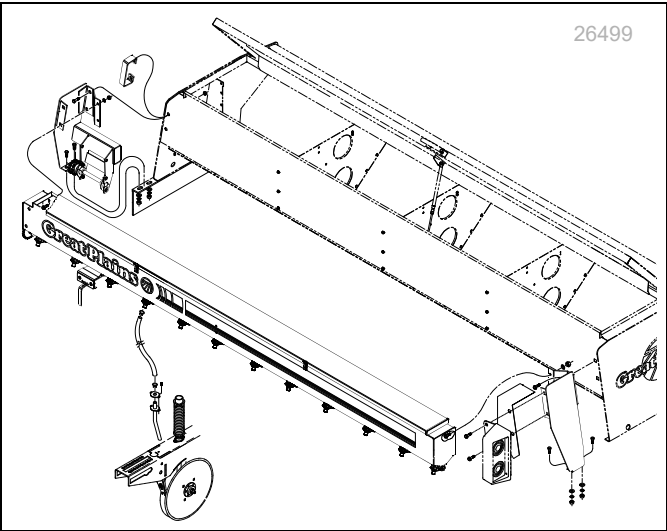


Small Seeds Attachment

These kits deliver the smallest seeds evenly and gently. A kit adds to each main seed box: a clutched drive line, a second seed box, small seed fluted feeder cups, seed drop tubes for each row, and all necessary hardware.

Small Seeds capability may be specified on the initial drill order (Sequence No. 91), or added later. Small Seeds is not presently available with Fertilizer (HDF models).

Description	Part Number
2S-2600HD-3210 10in Small Seeds	133-166A
2S-2600HD-4275 7.5in Small Seeds	133-165A
2S-2600HD-5206 6in Small Seeds	133-164A
2S-2600HDF-3210 10in Small Seeds	133-169A
2S-2600HDF-4275 7.5in Small Seeds	133-168A
2S-2600HDF-5206 6in Small Seeds	133-167A

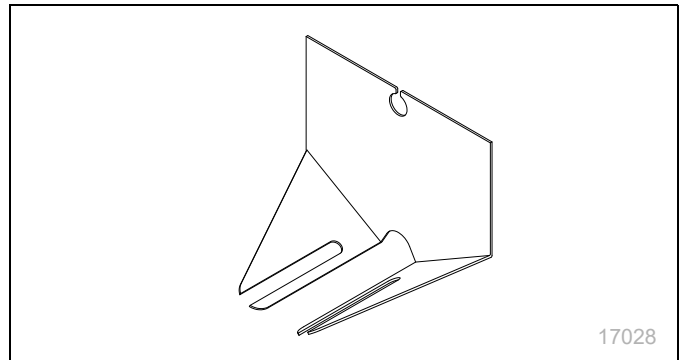


See “Weights for Tractor Requirements” on page 28 for weight added to drill. For operation, see “Loading Main Seed Box” on page 36 and see “Small Seeds Rate” on page 58.

Removable Partition

This partition reduces side-to-side seed flow in the small seeds box. This can prevent seed pile-up when drilling across slopes and in other situations where the seed is particularly fluid. Order one per partition.

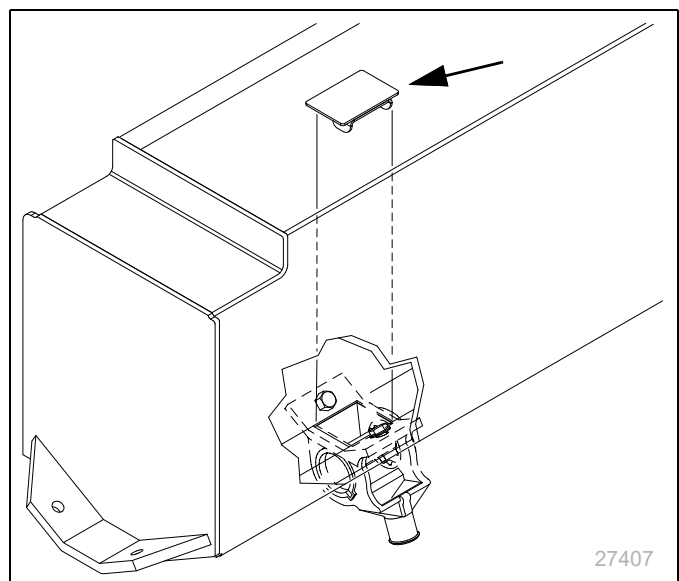
Description	Part Number
RMVBL SMALL SEED BOX PARTITION	123-409D



Seed Tube Plug (Small Seeds)

This plug stops seed flow from the small seeds box above the meter. Order one per row to set inactive.

Description	Part Number
SML SDS CUP PLUG	133-315H

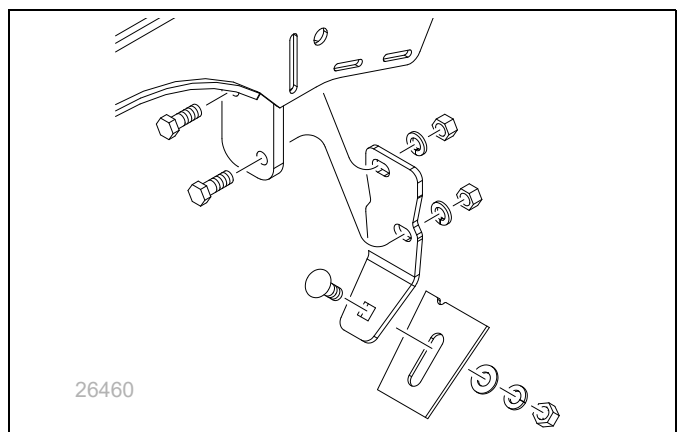


Opener Disk Scraper

Optional disk scrapers help clear any soil and debris not removed by the standard disk spreaders at the seed tube. Scrapers cannot be mounted if optional seed firmers are used. Scrapers are compatible with the standard seed flap.

Description	Part Number
00HD Scraper Assembly (Order one per row)	122-015A

See **“Scraper Installation”** on page 22, and **“Disk Scraper Adjustments”** on page 68.



Seed Firmers

The standard 2S-2600HD drill includes seed flaps. A choice of firmers is an option in the product bundles, or may be field-installed as kits. Only one type of seed firmer may be installed at the same time. Order one firmer kit per opener.

Seed-Lok® Seed Firmer

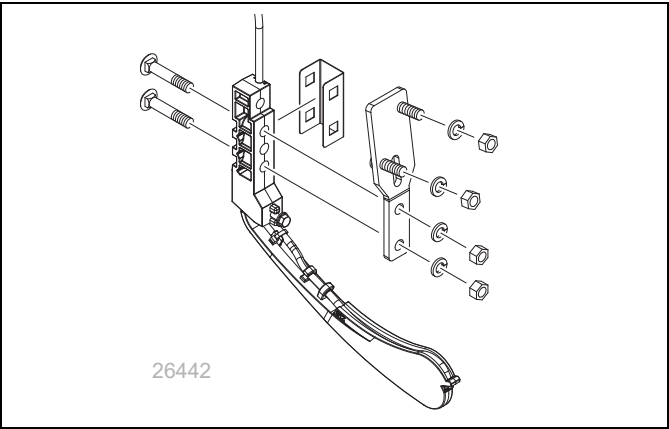
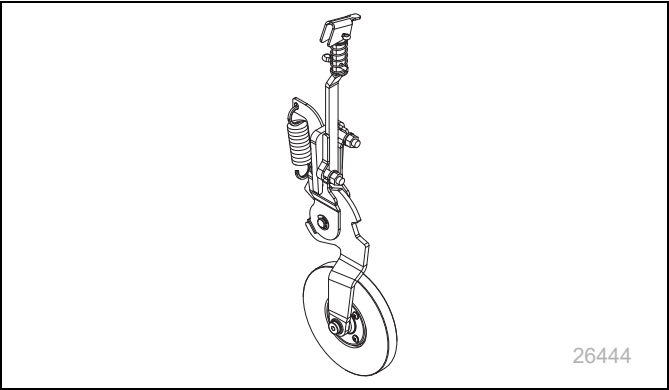
Description	Part Number
Series Seed-Lok® kit	122-009K

For operations, see “Seed Firmer Adjustments” on page 68.

Keeton Seed Firmer

Description	Part Number
Keeton seed firmer (per opener)	890-902C

For operations, see “Seed Firmer Adjustments” on page 68.



Press Wheels

A variety of single and dual press wheels are available, as bundle options at the time of initial drill order. Kits are not presently available to convert these in the field. Parts may be ordered to do so.



Appendix A

Specifications and Capacities

	2S-2600HD-5206	2S-2600HD-4275	2S-2600HD-3210
Row Count	52	42	32
Row Spacing	6 in (15.4 cm)	7.5 in (19.1 cm)	10 in (25.4 cm)
Main Seed Box Capacity	86.4 bushels (3045 liters)		
Tractor Requirements	110 hp minimum		
Weight, standard HD model^a	10423 lbs / 4728 kg	10404 lbs / 4719 kg	10386 lbs / 4711 kg
Weight, standard HDF model^b	11333 lbs (5140 kg)	11293 lbs (5122 kg)	11255 lbs (5105 kg)
Down-Force per Row	130-217 lbs (59-98 kg)	135-266 lbs (61-121 kg)	144-318 lbs (65-144 kg)
Opener Travel	8in (20cm)		
Hydraulic Circuits	3 circuits required, load-sensitive or closed-center 15 to 30 gpm at 2300 psi Optional kits are available for two-circuit, and open center.		
Hitch Load	zz3700 lbs (1678 kg) folded with seed loaded Caution: <i>negative tongue weight when raised and unfolded</i>		
Transport Width	15 feet (4.57m)		
Operating Width	26 ft 2 in (7.97m)	26 ft 4 in (8.02m)	26 ft 10 (8.18m)
Swath (Span plus one row space)	314.5 in (812.8cm)	316.0 in (802.6cm)	320 in (812.8 cm)
Height	8 feet 1.5 inches (248 cm)		
Field Length	27 ft 6 in (8.38m)		
Transport Length	22 ft 7 in (6.88m)		
Tire Sizes	Gauge Wheels: 9.5Lx15 6-ply Rib Implement rib implement 6-bolt rim Transport: 11Lx15 12-ply Rib Implement rib implement 6-bolt rim		

a. See page 28 for additional weight data.

b. See page 28 for additional weight data.

Tire Inflation Chart

Tire Size	Inflation
9.5Lx15 6-ply Rib Implement	32 psi 221 kPa
11Lx15 12-ply Rib Implement	52 psi 359 kPa

Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found online at the manufacturer's websites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

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

Torque Values Chart

Bolt Size	Bolt Head Identification						
							
	Grade 2	Grade 5	Grade 8				
in-tpi ^a	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	Bolt Head Identification						
							
	Class 5.8	Class 8.8	Class 10.9				
mm x pitch ^c	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

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

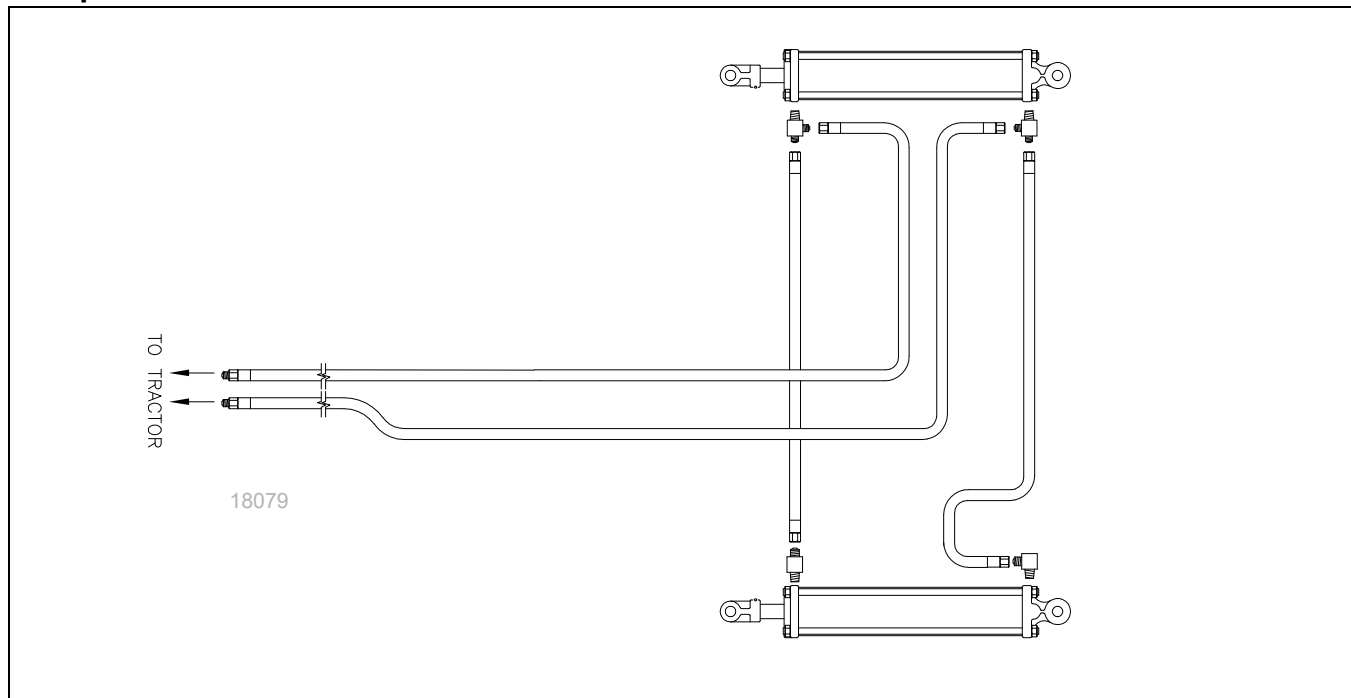
d. ft-lb = foot pounds

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

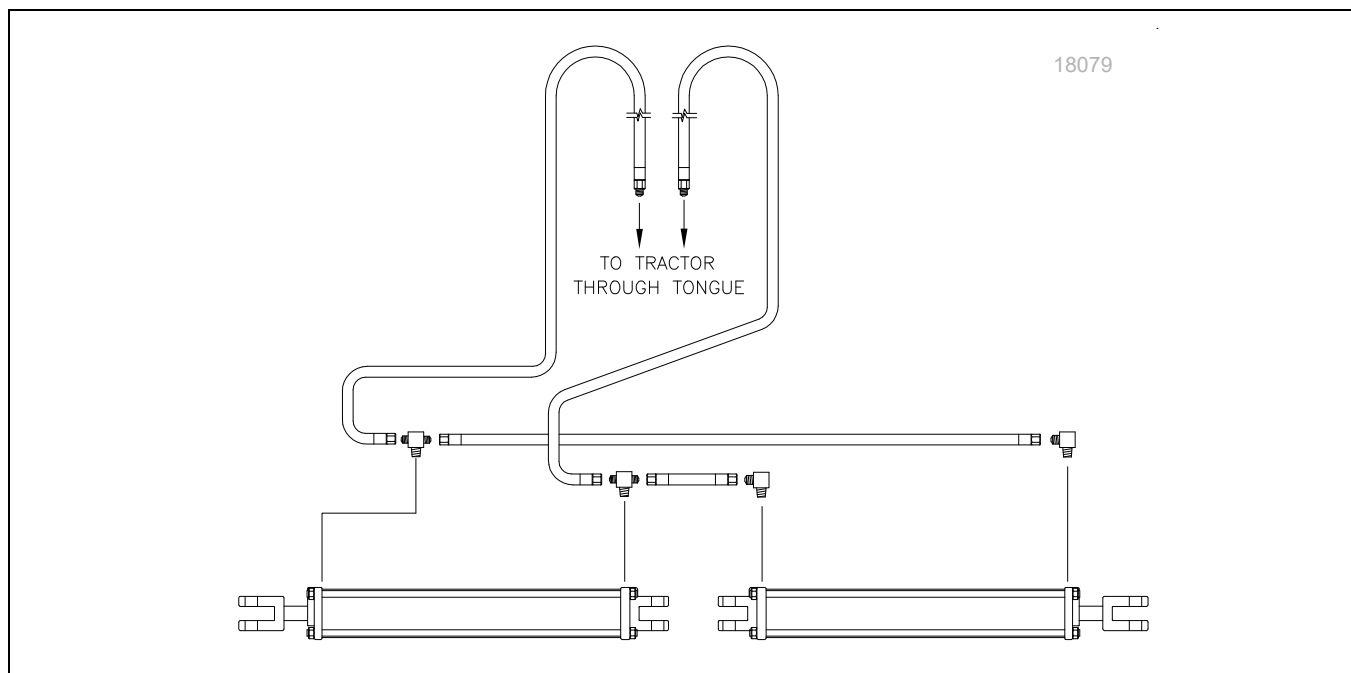
25199

Hydraulic Diagrams

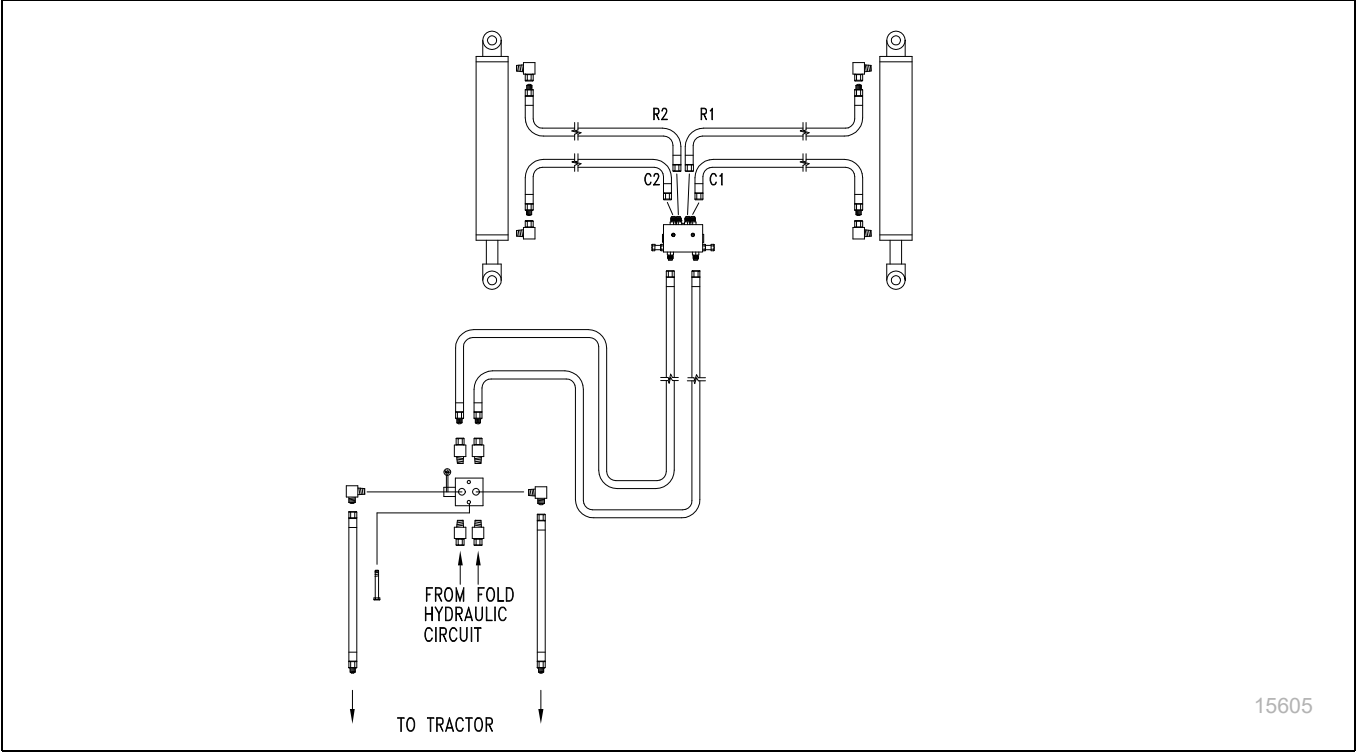
Transport Lift



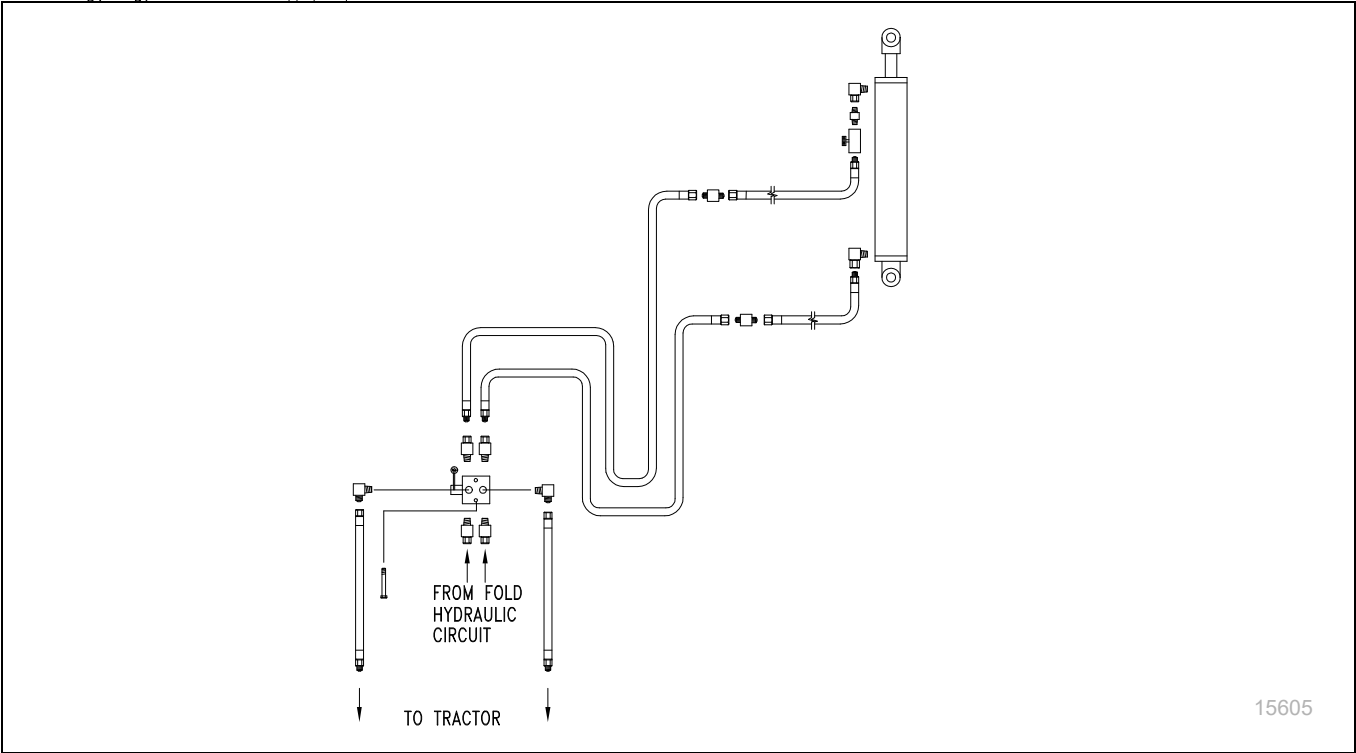
Fold



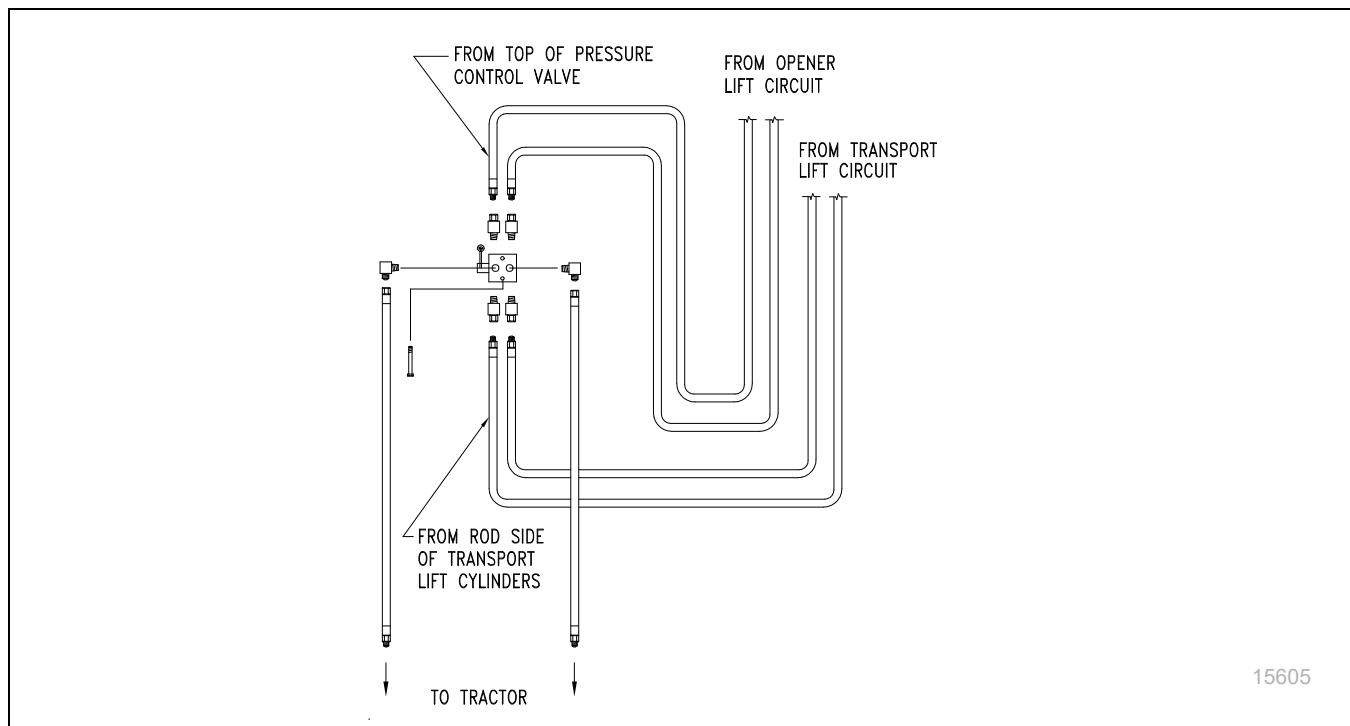
Dual Markers



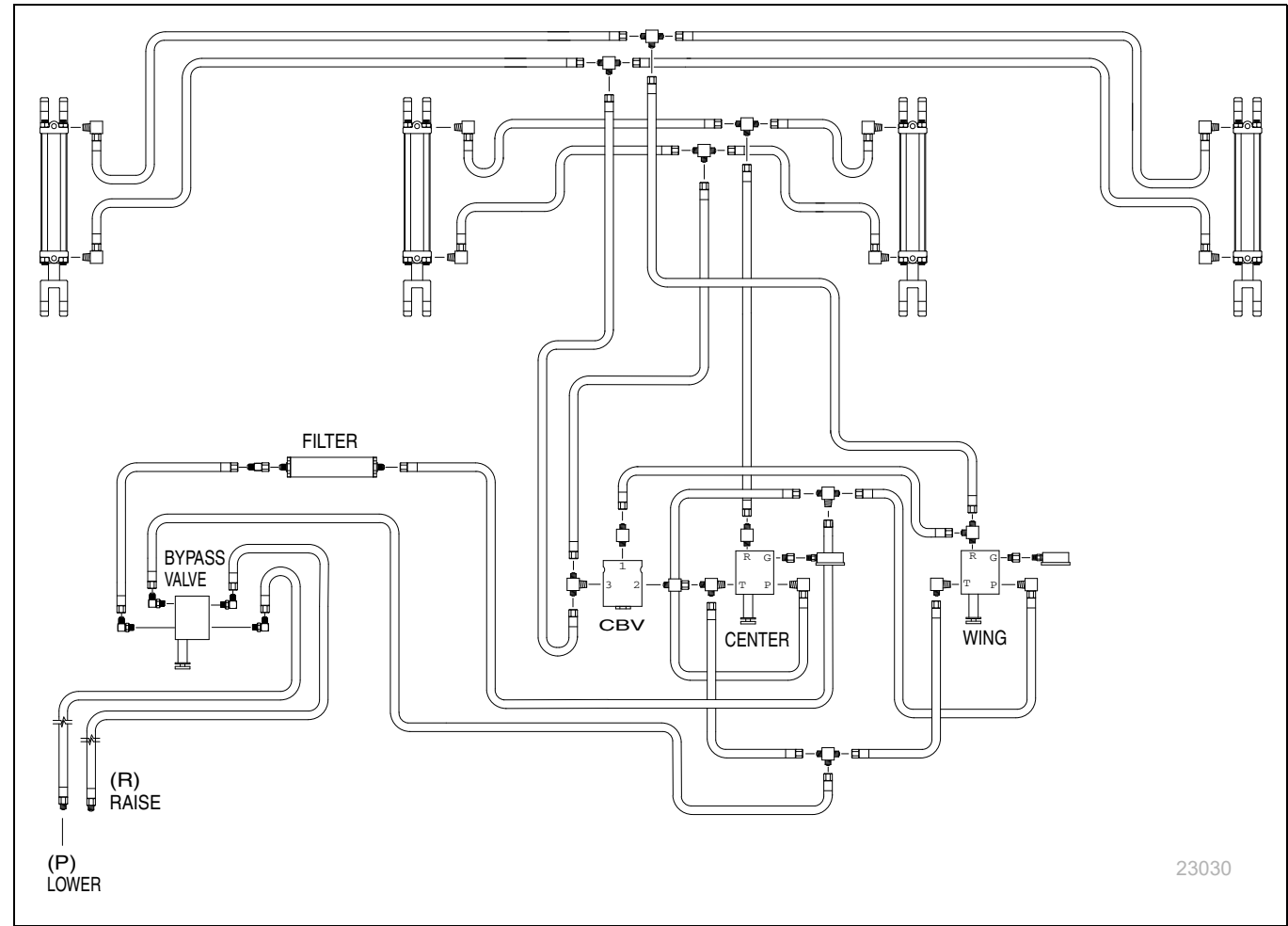
Single Marker

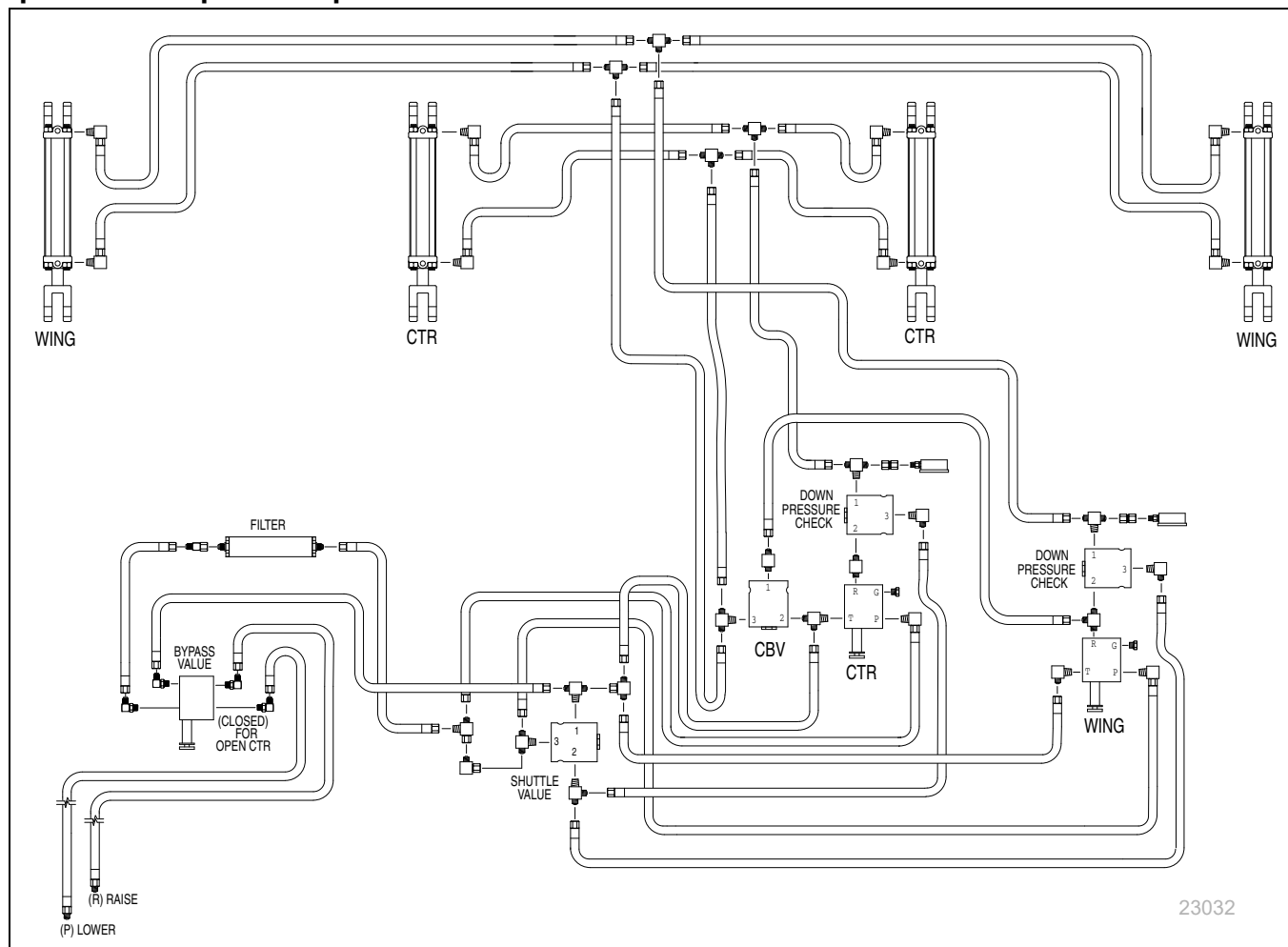


Two Outlet Conversion

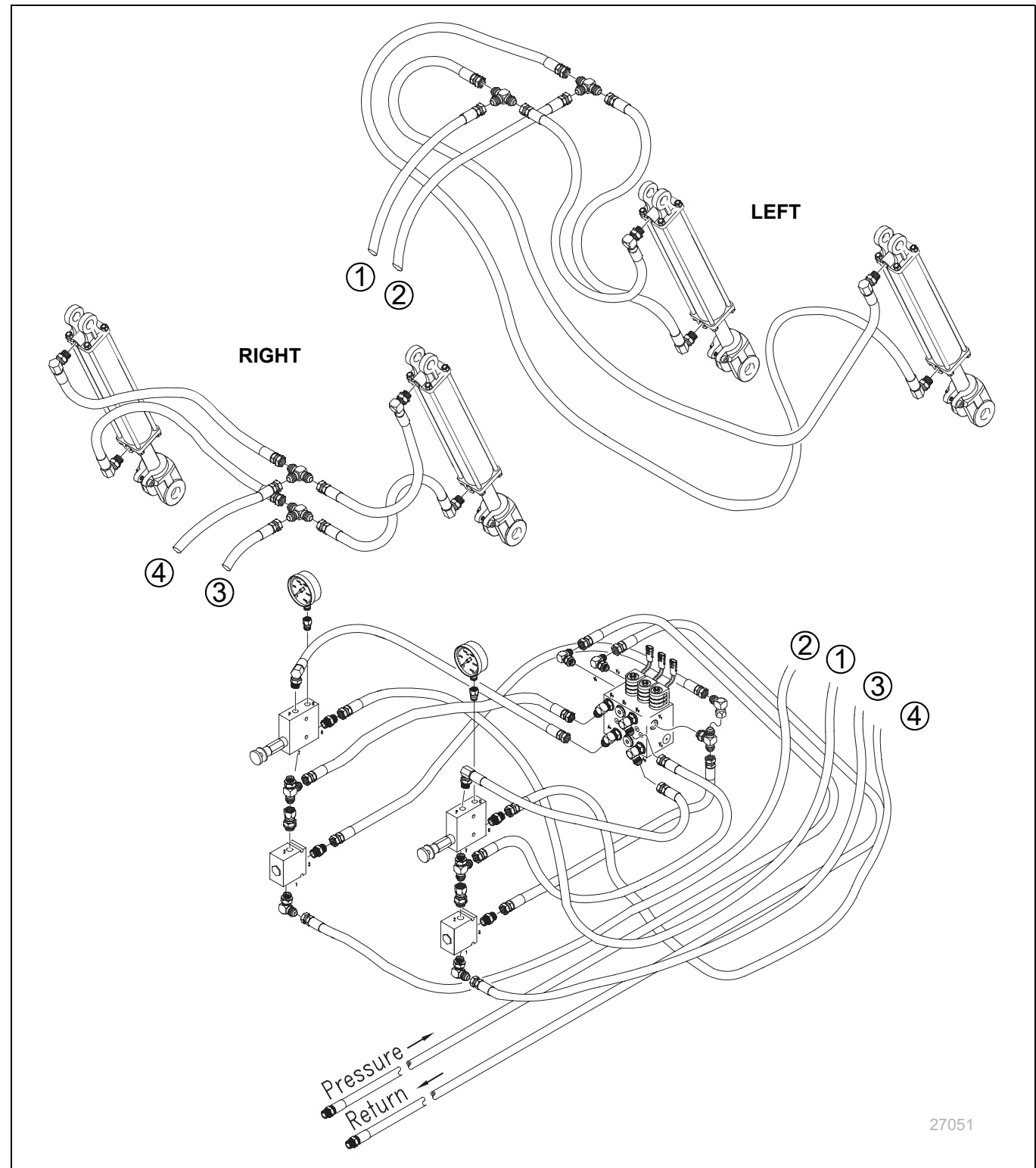


Opener Lift: Standard Closed-Center



Opener Lift: Optional Open-Center

Point-Row





Appendix B - Previous Style Acremeter

Acremeter Installation

Refer to Figure 99

The acremeter ① is factory installed. It is located on the left end of the left main drive shaft ②.

If the acremeter has been removed, screw the threaded end of the meter into the $\frac{1}{2}$ -20 tapped hole ② in the left end of center main drive shaft.

Tighten the threaded end only enough to prevent it from working loose from normal vibration. In use, there is no torque or tension that might tend to unscrew it.

The acremeter counts shaft rotations whenever the shaft is rotating - normally this is only with the drill unfolded, the opener sub-frame lowered, and the drill in motion. The meter is geared to display rotations as acres, when using factory-specified tires and inflations.

Tally field acres by noting the meter reading prior to, and after planting. Subtract the starting from the ending readings.

See “Acremeter Operation” on page 112.

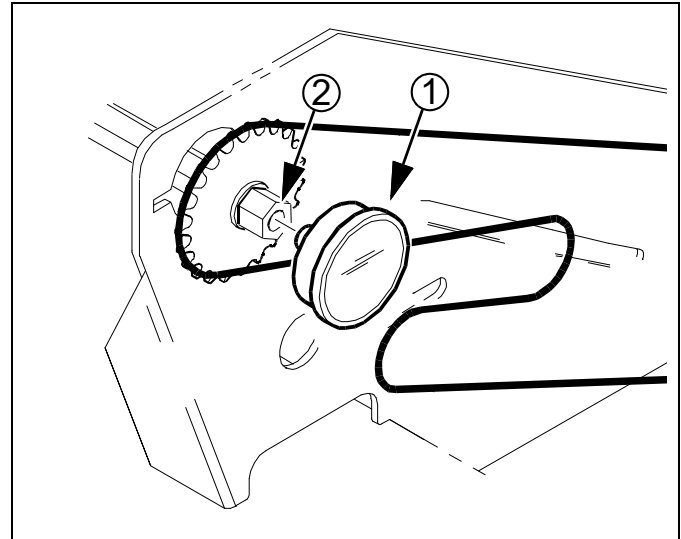


Figure 99
Acremeter

27000

Acremeter Operation

The acremeter, located on the drill clutch shaft, counts shaft rotations whenever the shaft is rotating - this is with the drill lowered and in motion or during calibration crank operation. The meter is programmed to display rotations as acres or hectares, when using all rows, factory-specified tires and tire inflations.

Note: Unusual conditions and/or non-standard row spacings can cause the acremeter tally to vary somewhat from actual acres planted.

Normal Operating Sequence

Note: The acremeter counts rotations during drill calibration (and if so, can be useful for calibration, although the meter must be on, or moved to the shaft being cranked).

1. Record the acremeter reading at the start of planting (and after calibration). The large “12345.6” format display is the grand total area planted since meter installation. The smaller number in the lower left corner is the number of revolutions per acre for which the meter was factory-programmed. If the display is blank, see “Dormant Display” below.
2. Lower drill and plant. Acremeter counts shaft rotations, calculates acres or hectares, and adds to the running grand total.



Figure 100
Acremeter

27378

3. During planting (drill lowered and moving forward), the display blanks (goes dormant), but area tally continues.
4. When raised for turns, obstructions and transport, the drill's ground drive wheel, contact wheel or clutch disengages the drive shaft, and the meter counts no additional (non-planting) rotations.
5. Whenever shaft rotation stops, the LCD display activates after 30 to 60 seconds, and remains visible for 30 to 45 minutes.
6. At the completion of planting, record the final reading of the grand total. If the display goes dormant before you can read it, see "**Dormant Display**".
7. Subtract the reading at Step 1 from the reading at Step 6 for the total planted in the present session.

Dormant Display

Refer to Figure 101

To conserve power, the LCD display blanks itself most of the time. If you need to read the display after it has "timed out" and gone dormant:

- use the calibration crank to turn the jackshaft once, or
- gently tap or wave a magnet at either of the Great Plains logo spots ① on the lower region of the display. Be careful not to scratch the window.



Figure 101
Meter Display

29898

Field Operations

This section presumes that all pre-operation checks have been made on both tractor and drill, and drill is loaded with seed and any treatments.

Final Field Checklist

- Drill hitched, chained and unfolded. See page 14 and page 30.
- Set seed and fertilizer drives per charts and calibration. See page 47 and page 53.
- Set drill selector valves (if present) to Markers and Opener Lift. See page 41 and page 42.
- Record acrometer reading if acreage monitoring is desired.
- If installed, Shaft Monitor power ON.
- If installed, Point Row Control module ON, and set for either ALL or SECTION CONTROL.

Planting Sequence

1. Lower drill openers at initial seeding point.
2. Pull forward and begin planting.
3. Raise drill for turns (meters stop automatically).

Warranty

Great Plains Manufacturing, Incorporated 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 date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains' judgement 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 affects 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.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Great Plains 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 liable for damages of any kind, direct, consequential, or contingent, to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, losses caused by harvest delays or any expense or loss for 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 Manufacturing, Incorporated within 10 days from the date of original purchase.

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