Operator Manual

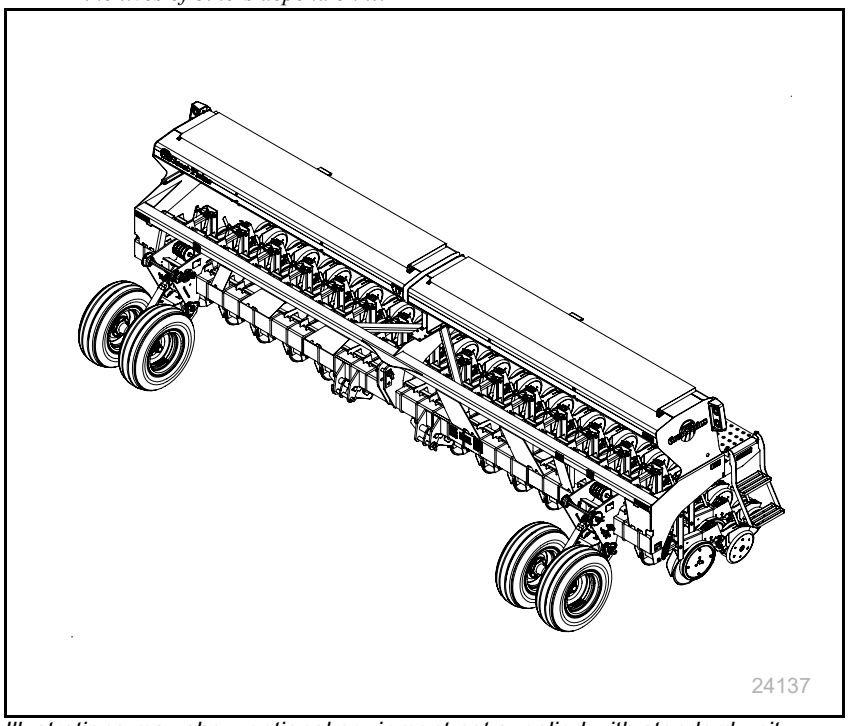
2020F, 2025F, 2520F and 2525F

3-Point Fluted Feed Drills

Great Plains Manufacturing, Inc.

www.greatplainsmfg.com

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.

ORIGINAL INSTRUCTIONS

EN

 Printed 02/26/2024 118-232M

Machine Identification

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

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

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Year of Construction	
Delivery Date	
First Operation	
Accessories	

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

Dealer's Customer No.: _____

⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Table of Contents

Important Safety Information

Look for Safety Symbol

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

Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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

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

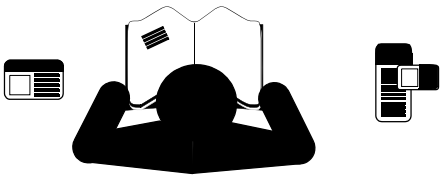
CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Prepare for Emergencies

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

Be Familiar with Safety Decals

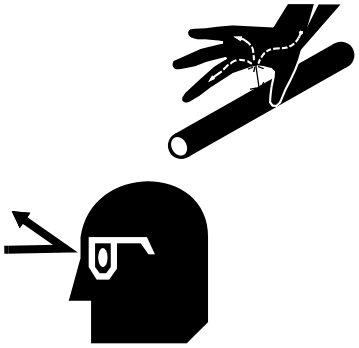
- *Read and understand "**Safety Decals**" on page 5, thoroughly.*
- *Read all instructions noted on the decals.*
- *Keep decals clean. Replace damaged, faded and illegible decals.*



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.*



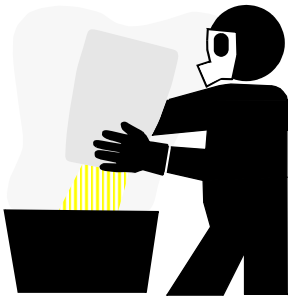
Wear Protective Equipment

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

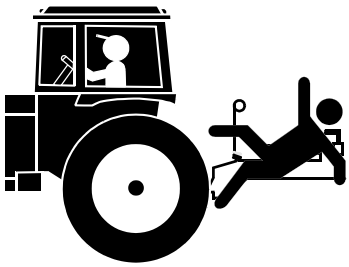
Handle Chemicals Properly

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

- *Read and follow chemical manufacturer's instructions.*
- *Wear protective clothing.*
- *Handle all chemicals with care.*
- *Avoid inhaling smoke from any type of chemical fire.*
- *Never drain, rinse or wash dispensers within 100 feet 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 reuse.*



Keep Riders Off Machinery



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

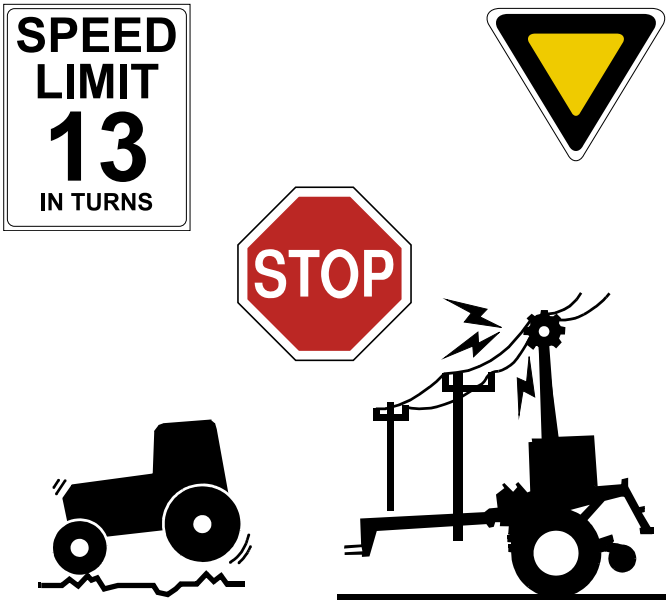
- *Never allow children to operate equipment.*
- *Keep all bystanders away from machine during operation.*

Use Safety Lights and Devices

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

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

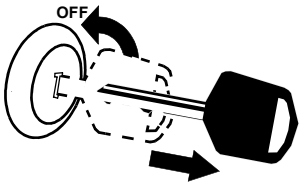
Transport Machinery Safely



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

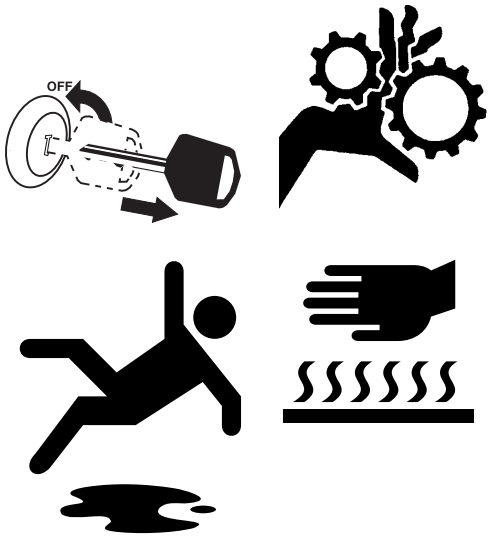
- *Do not exceed 20 mph (32 kph). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- *Comply with state and local laws.*
- *Follow your tractor manual recommendations for maximum 3-point implement loads and suitcase weight ballasting. Insufficient weight on 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 64.*

Shutdown and Storage



- *Drain and safely store or dispose of residual liquids.*
- *Secure drill using blocks and any stands provided.*
- *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.*

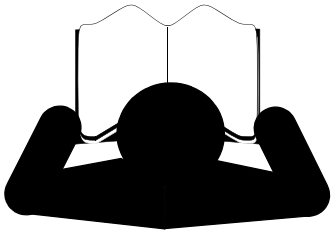
Tire Safety

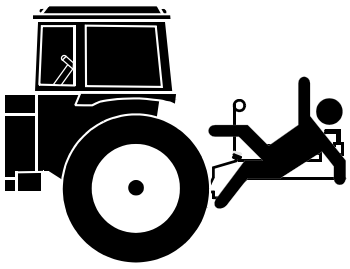
Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

- *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 raising drill. Make sure all persons are clear of working area.*

Safety Decals

Safety Reflectors and Decals

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

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

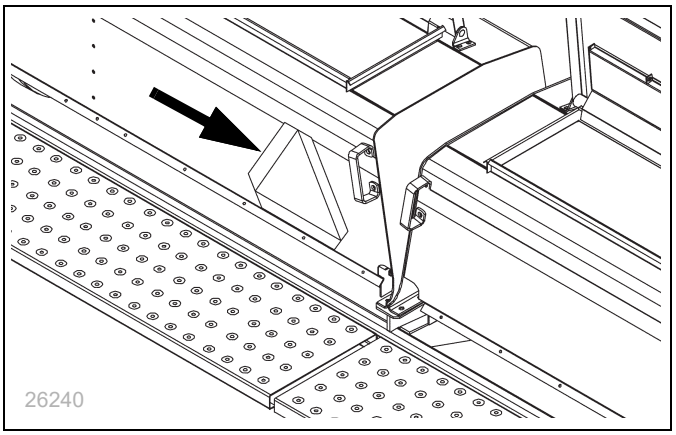
To install new decals:

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

Slow Moving Vehicle Reflector

818-055C

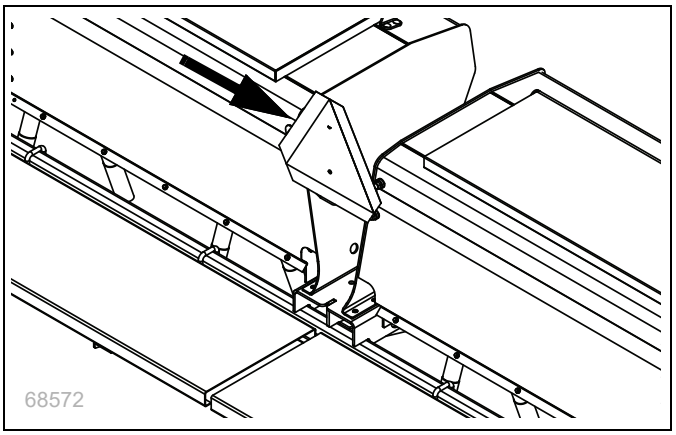
On the back of the seed box, frame center; 1 total



S/N 1638SS-

818-055C

On the mounting bracket attached to right-hand rear corner of left-hand seed box; 1 total

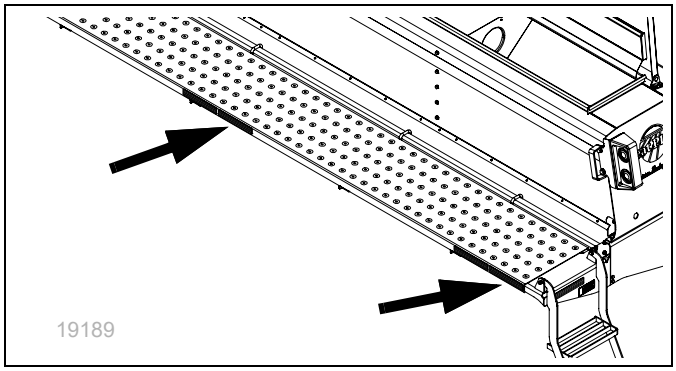


S/N 1639SS+

Red Reflectors

838-266C

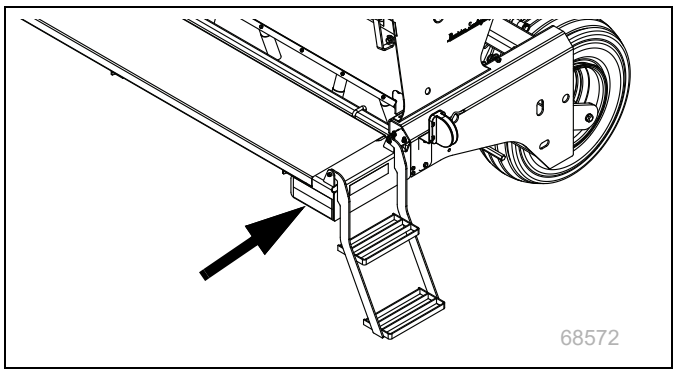
On the outside ends and off-center of walkboard; 4 total



S/N 1638SS-

838-266C

On the outside ends and off-center of walkboard; 4 total

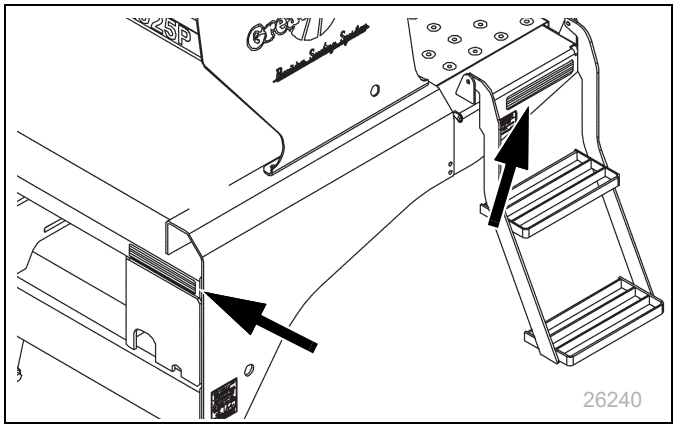


S/N 1639SS+

Amber Reflectors

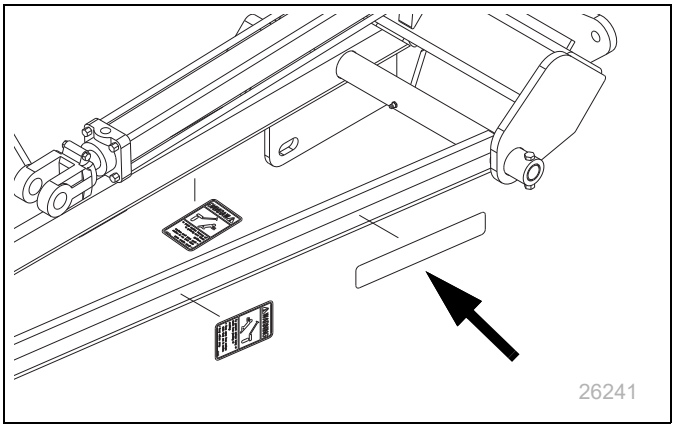
838-265C

On the main frame front corners, on each end of walkboard; 4 total.



838-265C (Optional Marker)

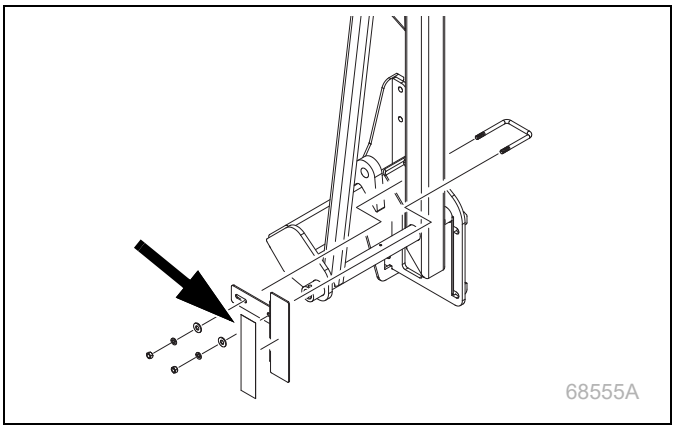
Back arm of each marker; 2 total



S/N 1638SS-

838-265C (Option Marker)

Back arm of each marker; 2 total

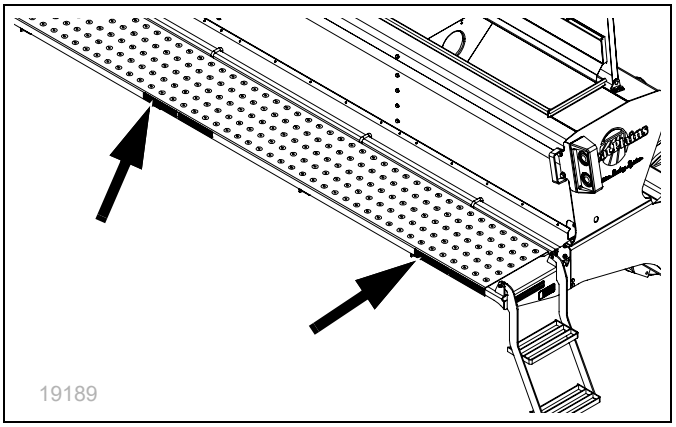


S/N 1639SS+

Daytime Reflectors

838-267C

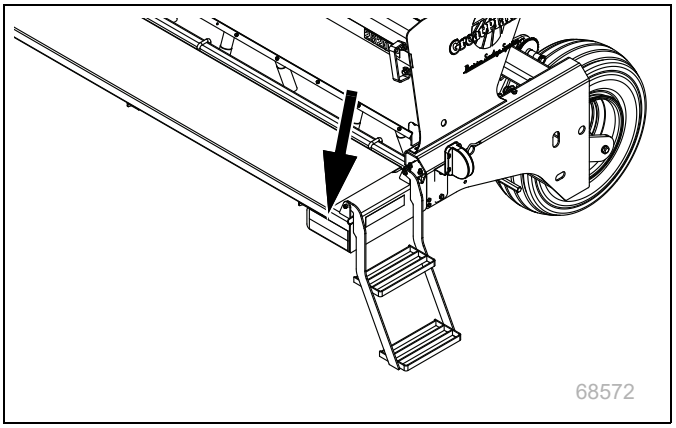
On the inside ends and off-center of walkboard; 4 total



S/N 1638SS-

838-267C

On the inside ends and off-center of walkboard; 4 total

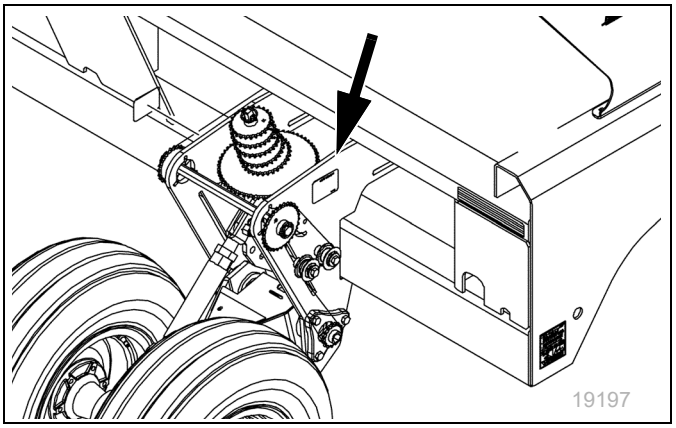


S/N 1639SS+

Caution: Tires Not A Step

818-398C

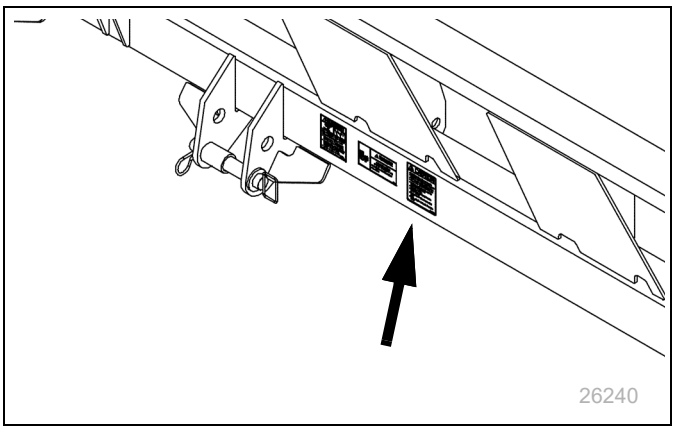
Above each transport wheel set; 2 total



Caution: Read Manual

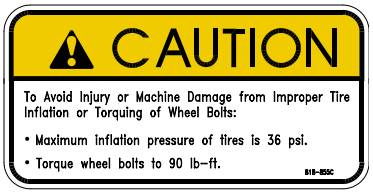
818-587C

On the main tool bar at hitch; 1 total

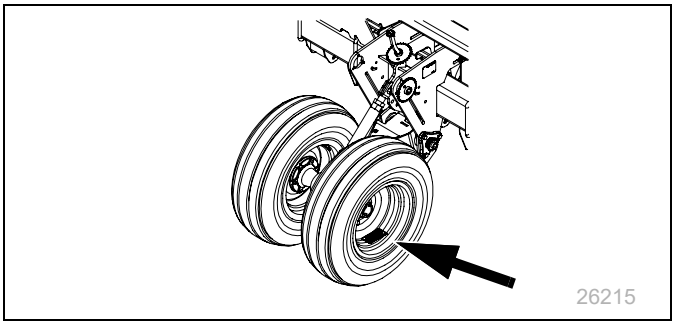


Caution: Tire Pressure

818-855C

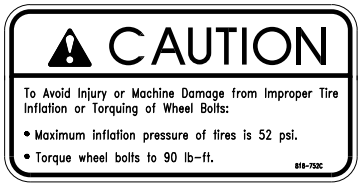


One decal each rim of double gauge wheels; 4 total on 4-wheel drills

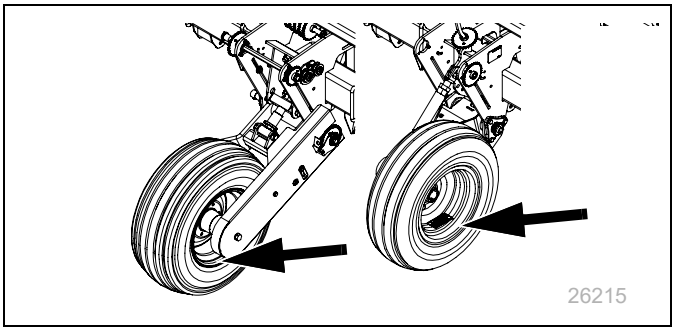


Caution: Tire Pressure

818-752C



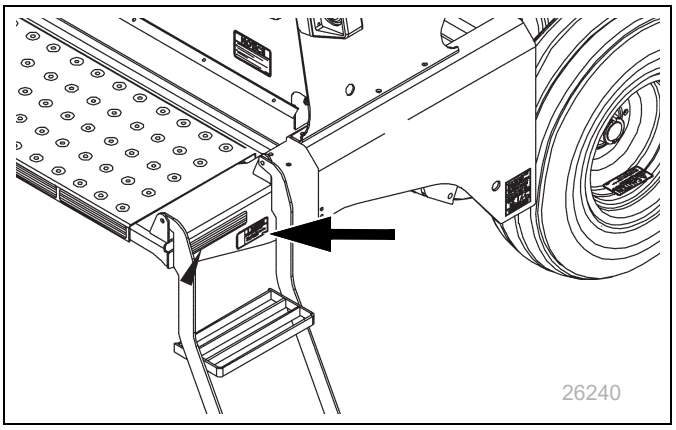
One decal each rim of single gauge wheels; 2 total on 2-wheel drills



Danger: Walkboard Falling Hazard

838-102C

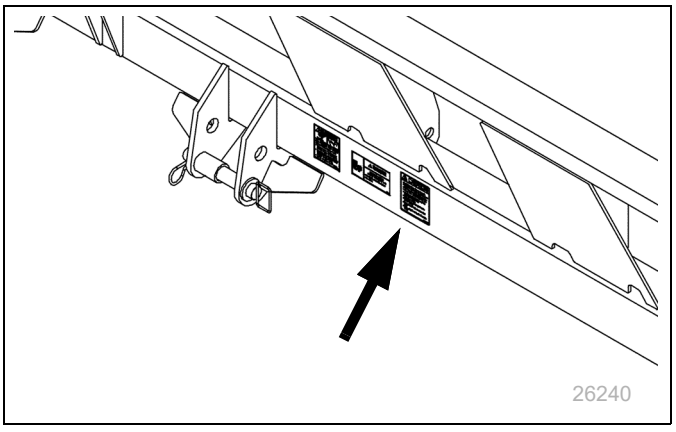
At ladder end of walkboard; 1 total



Warning: Excessive Speed Hazard

818-337C

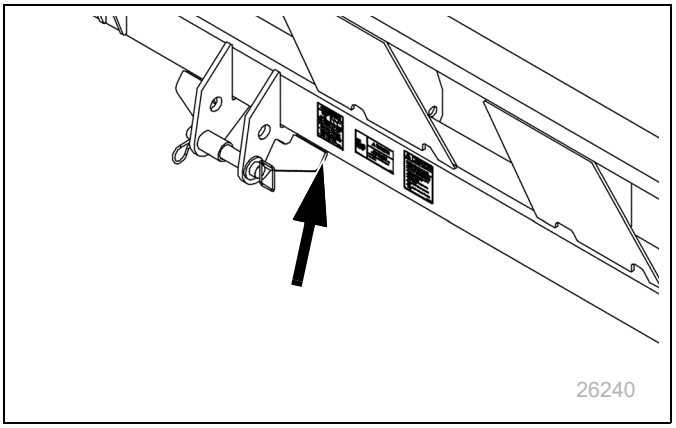
On the main tool bar at hitch; 1 total



Warning: High Pressure Fluid Hazard

818-339C

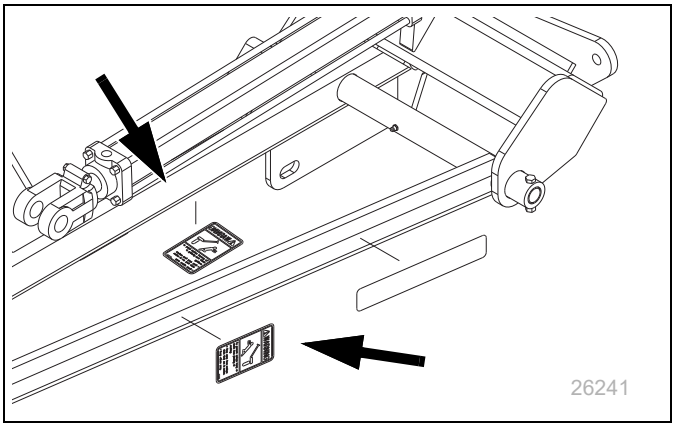
On the main tool bar at hitch; 1 total



Warning: Marker Pinch/Crush Hazard

818-682C

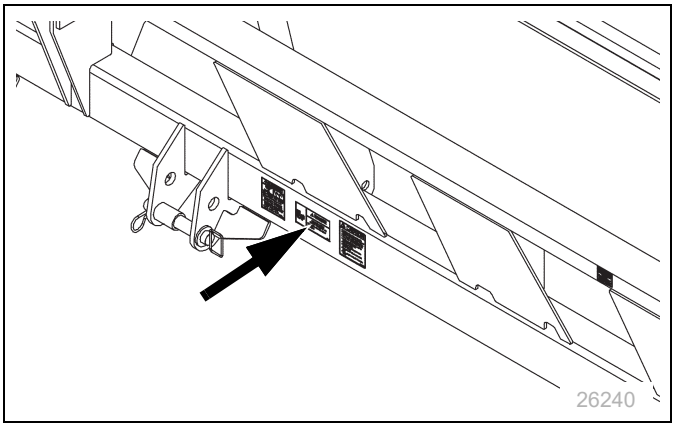
Two on first section of each marker; 4 total



Danger: Hitch Crushing Hazard

818-590C

On the main tool bar at hitch; 1 total



Introduction

Great Plains 2020F, 2025F, 2520F and 2525F drills are pull-type units designed for seed production agriculture crops only. Every machine we build is designed and built with care using only quality materials. For the best user experience, read this manual and follow all instructions carefully. These pages will guide you through operation and contain tips for easier adjustment and maintenance.

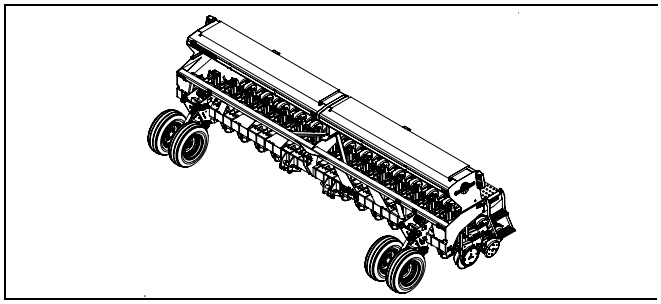
All information in this manual is current as of publication. Information contained within is subject to change to ensure top performance.

Document Family

118-232M Owner's Manual (this document)
118-232B Seed Rate Charts
118-232P Parts Manual

Covered Models

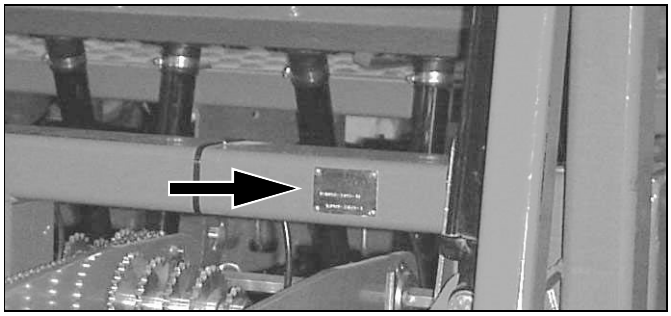
Models	Row Spacing	Row Count	
		20 Foot	25 Foot
2020F-12TR36 2025F-12TR36 2520F-16TR36 2525F-16TR36	TR 36 inch (10 / 15 inch TR gap)	12 rows	16 rows
2020F-12TR38 2025F-12TR38 2520F-16TR38 2525F-16TR38	TR 38 inch (10 / 15 inch TR gap)	12 rows	16 rows
2020F-12TR40 2025F-12TR40 2520F-16TR40 2525F-16TR40	TR 40 inch (10 / 15 inch TR gap)	12 rows	16 rows
2020F-16TR30 2025F-16TR30 2520F-20TR30 2525F-20TR30	TR 30 inch (10 inch TR gap)	16 rows	20 rows
2020F-1615 2025F-1615 2520F-2015 2525F-2015	15 inch	16 rows	20 rows
2020F-2410	10 inch	24 rows	N/A
2020F-2695 2025F-2695 2520F-3295 2525F-3295	9.5 inch	26 rows	32 rows
2020F-3008 2025F-3008 2520F-3608	8 inch	30 rows	36 rows
2020F-3275 2520F-4075	7.5 inch	32 rows	40 rows



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.

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-hand end of the seed box tool bar.



Record your machine's model and serial number on the inside cover of this manual for quick reference.

Further Assistance

Great Plains Manufacturing, Inc. wants you to be satisfied with your new product. If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please speak to your dealer or contact:

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

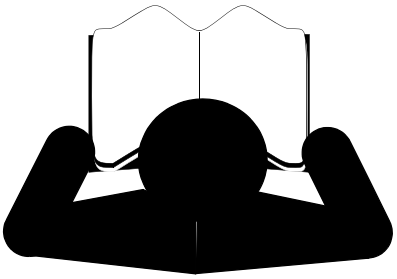
Or go to **www.greatplainsag.com** and follow the contact information at the bottom of your screen for our service department.

Preparation and Setup

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

Pre-Setup Checklist

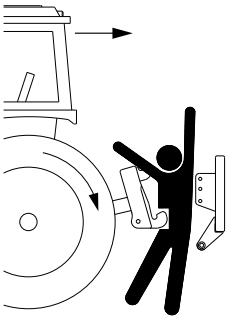
1. Read and understand "**Important Safety Information**" on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See "**Lubrication**" on page 57.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See "**Safety Decals**" on page 5.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. "**Appendix**" on page 64.



Hitching Tractor to Drill

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 drill and moving tractor. Stop tractor engine and set park brake before installing the hitch pin.



1. Raise or lower tractor three-point arms as needed and pin lower arms to drill.
2. Pin upper arm to drill. For category III and III-N tractors, install hitch pin in the lower hole. For category IV-N tractors, install hitch pin in the upper hole.
3. Slowly raise drill. Watch for cab interference.
4. Adjust top three-point link so that top edge of drill box is parallel with ground when drilling.

📖 NOTE: Do not use link to adjust opener depth. For opener adjustments, refer to page 40.

5. Set your tractor 3-point-draft control to Float position.
6. Make hydraulic connections (page 12).
7. Plug leads from drill light harness and seed monitor harness into tractor receptacles (page 14).
8. On Model 20P, remove parking stands and store inverted in stand mounts. See page 24 for illustration.

Parts Manual QRC

The QR Code to the left will take you to this machine's parts manual. Use your smart phone or tablet to scan and start viewing.

Product Manuals QRC

The QR Code to the left will take you to Great Plains' catalog of product manuals. Use your smart phone or tablet to scan and start viewing.

Making Hydraulic Connections

⚠ WARNING

Only trained personnel should work on system hydraulics!

⚠ WARNING

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

Older style Hydraulic Connections

Refer to Figure 4

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.

Color	Hydraulic Function
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.

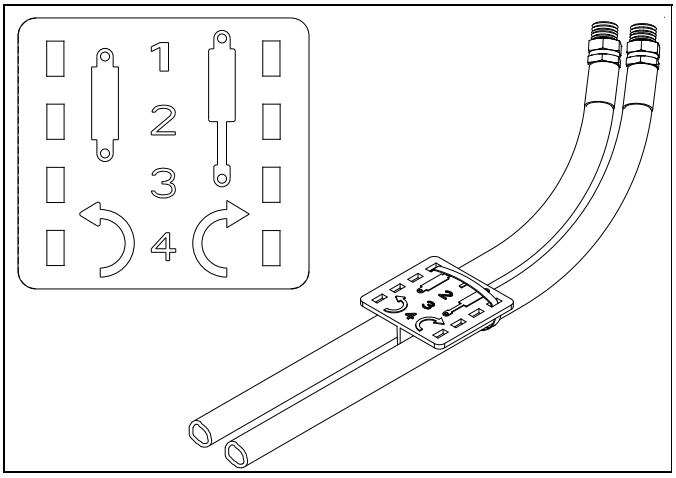


Figure 1
Plastic Hose Label

817-348c
17641

Newer Style Hydraulic Connections

Refer to Figure 2

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

Color	Hydraulic Function
Blue	Transport Lift Cylinders
Orange	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.

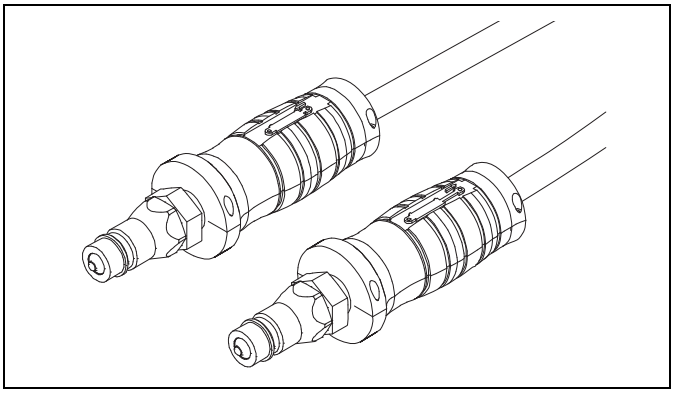


Figure 2
Color Coded Hose Grips

31733

Making Electrical Connections

Refer to Figure 3

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

1. Mate the lighting plug ① to the outlet connector on the drill.
2. Mate any accessory or aftermarket device connections.
3. Secure cables so they are clear of moving parts of the 3-point hitch.

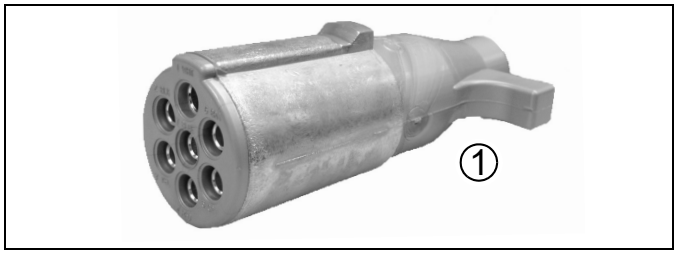


Figure 3 25236
Lighting Connector

Leveling the Drill

20 Series Opener Height

Refer to Figure 4

Using 3-point hitch, initially adjust drill so bottom of opener tool bar tube runs 24 in (61cm) above ground when drill is lowered in the field.

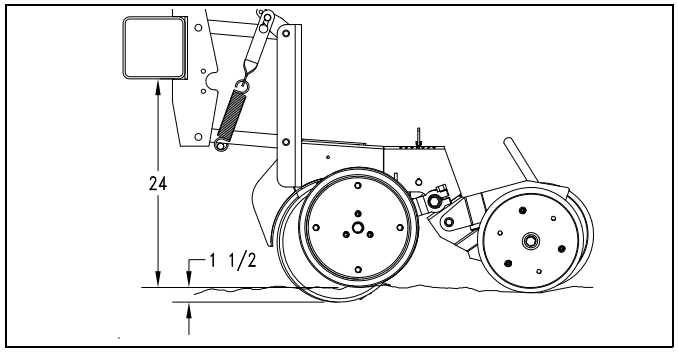


Figure 4 24301
20 Series Initial Height

Refer to Figure 5

📖 NOTE: When drill is level, parallel links will be running slightly uphill towards the front.

The 1in (2.5 cm) dimension shown is a general dimension that will vary with planting conditions.

NOTICE

Make sure the opener mount is running higher than the opener body. This will ensure an ample reserve for opener up-float in case the opener strikes a rock or other object.

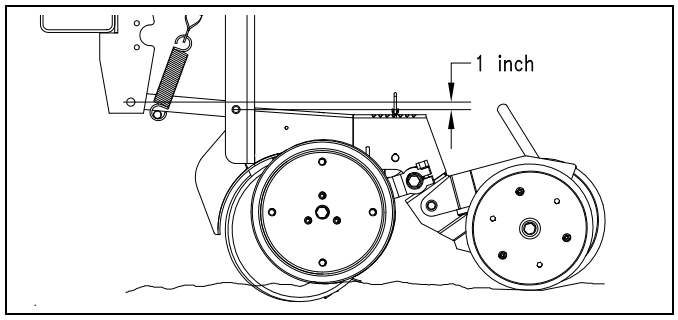


Figure 5 23402
20 Series Front/Back Level

25 Series Opener Height

Refer to Figure 6

Using 3-point hitch, initially adjust drill so bottom of opener tool bar tube runs 26 in (66 cm) above ground when drill is lowered in the field.

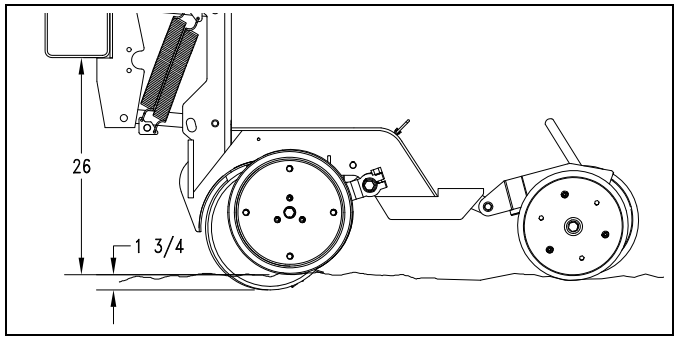


Figure 6 26242
25 Series Initial Height

Refer to Figure 7

🕮 NOTE: When drill is level, parallel links will be running level or slightly uphill towards the front.

The 1 inch (2.5 cm) dimension shown is a general dimension that will vary with planting conditions.

NOTICE

Make sure the opener mount is running higher than the opener body. This will ensure an ample reserve for opener up-float in case the opener strikes a rock or other object.

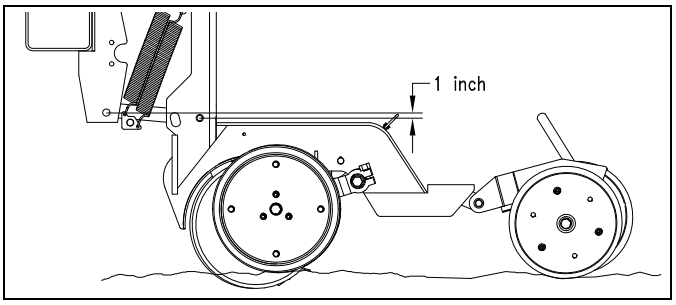


Figure 7
25 Series Front/Back Level
26243

Frame Height

Drill operating height affects the working range of the drill openers. Initially adjust frame height as explained under "**Leveling the Drill**" on page 14. You can make further adjustments to compensate for field conditions.

🕮 NOTE: If your drill has 25 Series openers, the gauge wheel height may need adjustment. Gauge wheels are set for 20 Series at the factory, and your dealer may not have readjusted them.

Link-Adjust Gauge Wheels

Refer to Figure 8

	20 Series	25 Series
non-bedded	top hole ③; 6 1/8 in (15.6 cm), reveal: 3/4 in (19 mm)	top hole ③; c/l: 6 1/2 in (16.5 cm), reveal: 3/8 in (9.5 mm)
bedded	bottom hole ②; 6 1/8 in (15.6 cm), reveal: 3/4 in (19 mm)	bottom hole ②; c/l: 6 1/2 in (16.5 cm), reveal: 3/8 in (9.5 mm)

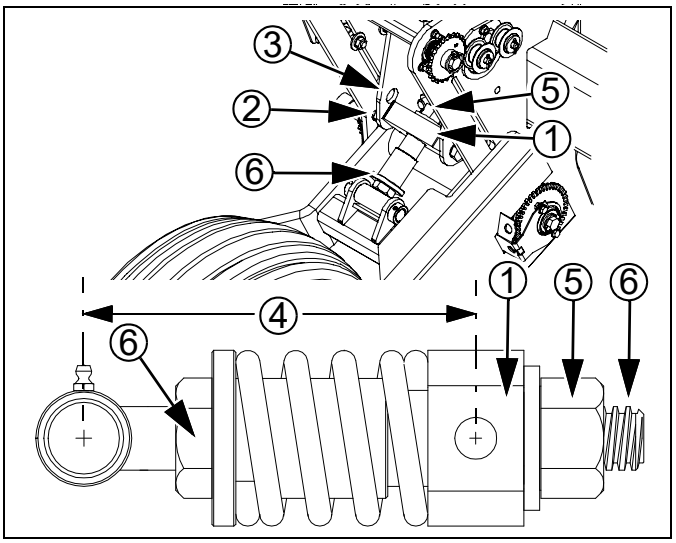


Figure 8
Link-Adjust
Gauge Wheel
26216
26217

Make sure block mount ① of the spring linkage is in the correct mount hole ②, ③ for bedded/non-bedded.

Set spring linkage length. Dimensions are provided for both centerline-to-centerline distance ④ and length of reveal ⑥ on the threaded rod:

Loosen top nut ⑤. Turn spring linkage ⑥ to shorten or lengthen. Retighten by turning spring linkage ⑥ into top nut ⑤. Single-link is right-hand threaded.

Turnbuckle-Adjust Gauge Wheels

Refer to Figure 9

	20 Series	25 Series
non-bedded	top hole ②; 17 1/2 in (44.5 cm)	second hole ③; 17 1/2 in (44.5 cm)
bedded	second hole ③; 20 3/4 in (52.7 cm)	second hole ③; 21 1/2 in (54.6 cm)

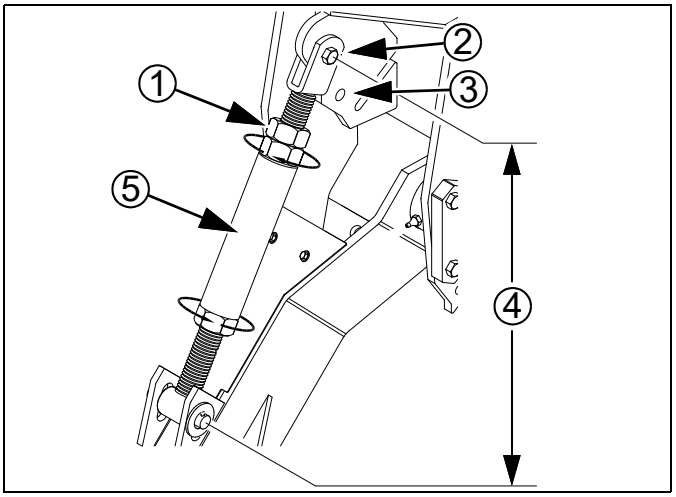


Figure 9
Turnbuckle-Adjust
Gauge Wheel
22845

1. Loosen jam nut ① near top clevis of each gauge-wheel turnbuckle. Jam nut is left-hand threaded.
2. Make sure upper clevis ② is in correct mount hole for row unit Series, and bedded/non-bedded.
3. Adjust turnbuckle length ④ per the following table:
4. After setting both gauge wheel assemblies to the same configuration, tighten jam nuts ①.

When adjusting the linkage length, remember:

- Lengthening linkage/turnbuckle raises drill.
- Shortening linkage/turnbuckle lowers drill.
- Level drill with top three-point link.

📖 NOTE: Reducing opener height increases the risk of opener damage on rocks or obstructions.

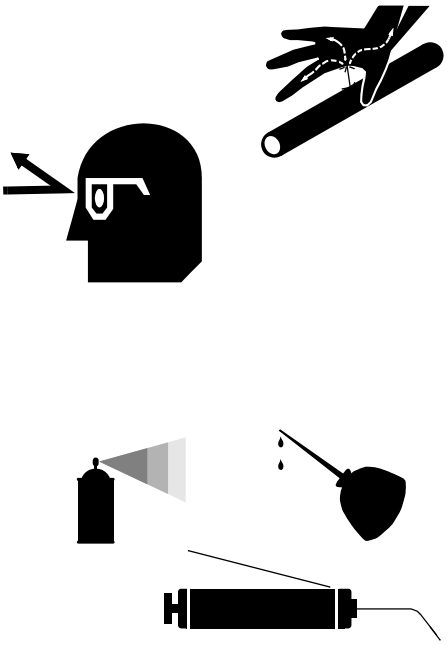
Operating Instructions

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

Pre-Operation Checklist

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 injured, seek immediate medical assistance from a physician familiar with this type of injury.



1. Carefully read "**Important Safety Information**" on page 1.
2. Lubricate drill as indicated under "**Lubrication**" on page 57.
3. Check all tires for proper inflation. See "**Tire Inflation Chart**" on page 64.
4. Check all bolts, pins and fasteners. Torque as shown in "**Torque Values Chart**" on page 65.
5. Check drill for worn or damaged parts. Repair or replace parts before going to the field.
6. Check hydraulic hoses, fittings and cylinders for leaks. Repair or replace before going to the field.
7. On Model 20P, remove parking stands and store inverted in stand mounts. See page 24 for illustration.
8. Rotate both gauge wheels to see that the drive and seed cups are working properly and free from foreign material.

DANGER

Falling Hazard:
Watch your step when walking on drill ladder and walkboard. Falling from drill could cause severe injury or death.

Transporting

WARNING

Loss of Control Hazard: *Transporting 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. Check that your tractor has enough ballast to handle the weight of the drill. Refer to your tractor operator's manual for ballast requirements.*

📖 NOTE: For transporting with drill attached to a hitch, refer to your hitch operator's manual.

Before transporting the drill, follow and check these items:

Check Tractor Capacity and Configuration

3-point implements can dangerously reduce weight on tractor steering wheels. Consult your tractor manual for 3-point limitations. Add weights to tractor as required.

When determining the weight of your drill, be sure to include the weight of any seed loaded, coulters installed, weight kits installed and weights mounted.

Unload Seed Box

Unload seed box before transporting if at all possible. To do so:

- Place tarp under drill or a bucket under each row unit.
- Use large bucket to empty box as much as possible. Make sure any seed cup plugs are removed. Open seed cup door handle to clean-out position to empty seed out of seed box and seed cup.

The drill can be transported with a full box of grain, but the added weight will increase stopping distance and decrease maneuverability.

📖 NOTE: To maintain steering control, you may need to add ballast to your tractor front end. Refer to your tractor operator's manual for ballast required.

Comply with all federal, state and local safety laws when traveling on public roads.

Refer to Figure 10

Clearance. Remember that the drill is wider than the tractor. Allow safe clearance. Fold up walkboard ladder for maximum clearance.

Transporting with Markers

Always transport markers in the folded position and marker hydraulic circuit(s) in neutral (to prevent unintended marker movement in cradles).

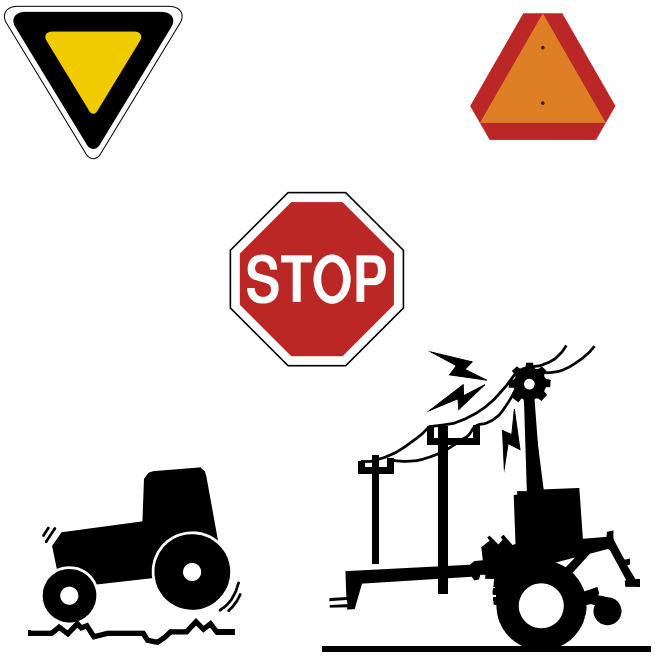


Figure 10 22878
Walkboard Ladder Folded

Acremeter Operation

A battery-operated electronic acremeter 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.

Acremeter Console 80377

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. The meter tallies all movements with the drill unfolded, whether planting or not.

There are three buttons on the face of the acremeter:

Select - Navigates to the next screen. If the current screen has any settings, pressing the Select button will also save the current screen's settings.

Pressing Select while the screen is inactive will activate display mode starting on screen A1.

Up Arrow - Increments current value. If the current screen only displays a reading, then arrow buttons can be used to reset current reading or for navigation.

Down Arrow - Decrements current value. If the current screen only displays a reading, then arrow buttons can be used to reset current reading or for navigation.

Operating Instructions

The electronic acremeter operates in two modes: sleep and entry. In sleep mode, the display is blank, and the counter is accumulating acres. Sleep mode will be entered if a button is not pressed for 20 seconds. In entry mode, the display is on, and the operator can enter values.

To access entry mode, press and hold the SELECT button, the acre counter will cycle through the functions that it can perform. The available screens, in order, are:

- Field Acre Count
- Total Acre Count
- Battery Life
- Password
- Pulses per 400ft
- Swath Width
- Calibration
- Units of Measurement
- Sensor Count
- Change Password

Acremeter Screens

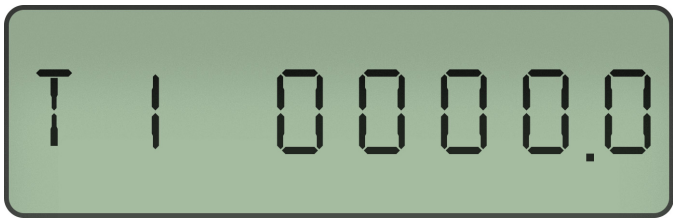
Field Acre Count

Displays the number of acres covered since the field acre counter was last reset. if there is an additional acre counting sensor on the machine, an A2 screen will immediately follow the A1 and T1 screens.

Pressing Select navigates to screen T1 or T2.

Press and hold both arrow buttons to reset the current field acre counter.

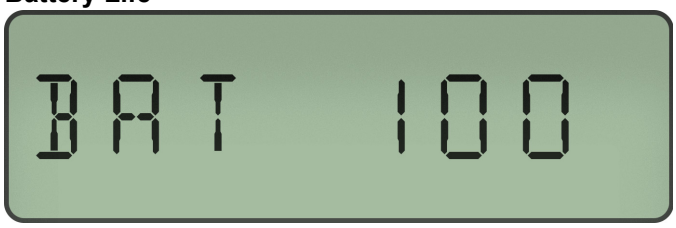
Total Acre Count



Displays the total number of acres covered since the total acre counter was last reset. if there is an additional acre counting sensor on the machine, a T2 screen will immediately follow the T1 and A2 screens.

Pressing Select navigates to screen BAT or A2.

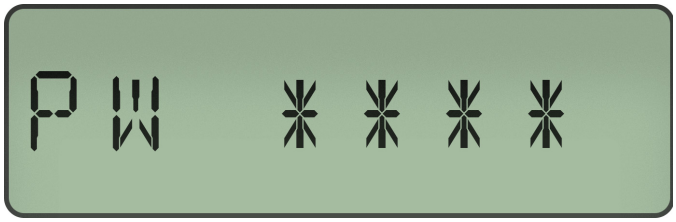
Battery Life



Displays the percentage of remaining battery life.

Pressing Select navigates to screen PW.

Password



Displays the password screen. Entering your system password enables access to configuration parameters.

Use the arrow buttons to enter your 4 digit password.

Pressing Select while password is salted - **** - will navigate to the A1 screen.

Pressing Select while the correct password value is entered will navigate to the P1 screen. If the password is incorrect, the PW screen is reset.

Pulses Per Distance

Displays the pulse scaling factor. This value affects the number of pulses emitted per 400ft traveled.

Use the arrow buttons to increase or decrease the scaling factor.

Pressing Select will save the configuration and navigate to the P2 or SW screen.

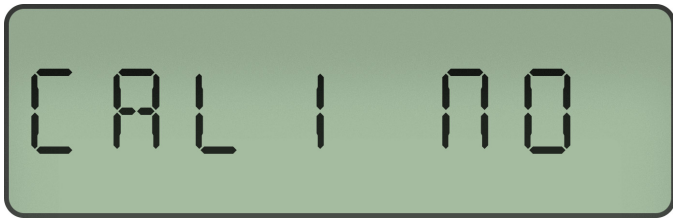
Swath Width

Displays the machine's swath width. To correctly calculate the number of acres planted, the acre meter needs the swath width of the drill.

Use the arrow buttons to increase or decrease the swath width.

Pressing Select will save the configuration and navigate to the CAL1 screen.

Calibration



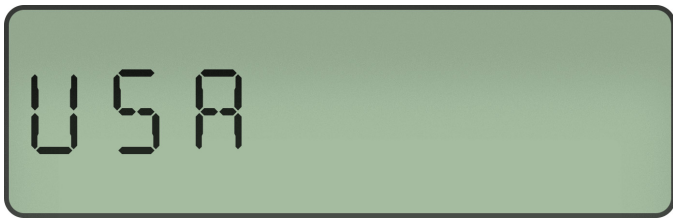
Displays either the calibration request status or the current calibration value.

If displaying the request status - YES or NO - and status is YES, pressing Select begins sensor calibration.

If displaying the request status and status is NO, pressing Select does not begin sensor calibration and instead navigates to the UNITS or CAL2 screen.

When calibrating and calibration value is greater than the acremeter's minimum required value, pressing Select saves the calibration value and navigates to the UNITS or CAL2 screen.

Units of Measurement



Displays the units of measurement used by the acre meter.

Use the arrow buttons to change the units of measurement to either USA - Imperial - or METRIC.

Pressing Select saves the unit selection, converts the swath width value, and navigates to the SENSOR screen.

Sensor Count

Displays the number of active sensors in the system.

Use the arrow buttons to change the entry value.

Pressing Select saves the sensor count configuration and navigates to the CHPW screen.

Change Password

Displays either the password change status or the new password value.

If displaying the change status - YES or NO -, use the arrow buttons to switch the change status.

If displaying a new password value, use the arrow buttons to increase or decrease the new password value. Holding the arrow buttons will automatically increase or decrease the password value.

If displaying the change status - YES or NO - and the status is YES, pressing Select allows for a new password to be entered.

If displaying the status and status is NO, pressing Select navigates to the A1 screen.

Field Operation

1. Hitch drill to a suitable tractor or hitch and stow any parking stands. See "**Hitching Tractor to Drill**" on page 12 or your hitch operator's manual.

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 drill and moving tractor. Stop tractor engine and set park brake before installing pins.

Refer to Figure 11

2. Set all seed Seed Cup Door handles to the same seed size. See page 27.

Refer to Figure 12

3. Set sprockets identically on both gauge wheel assemblies, per the Drive Type from the seed rate charts. See page 25.

Refer to Figure 13

4. Set both Seed Rate Handles to the same rate, per the Handle Setting from the seed rate charts. See page 26.
5. Load box with clean seed.
6. Raise drill. Rotate gauge wheel. Check that seed seed cups and seed tubes are working properly and free from foreign material by looking for seed flow under each opener.
7. Record acremeter readout. Subtract initial reading from later readings to determine acres drilled.

📖 NOTE: Acremeter readings are imprecise. They also vary with wheel slippage, field shape, turn-around loop sizes and other factors.

8. Pull forward, lower drill and begin seeding.
9. Always raise drill out of the ground when turning at row ends and for other short-radius turns. Seeding will stop automatically as drill is raised.

NOTICE

Machine Damage Risk:
Never back up with row units in the ground. Seed tube and opener disk plugging is almost certain, and row unit damage is possible.

If your drill has been exposed to the elements for a period of time with seed in the boxes, check to make sure the seed in the seed tubes and seed cups has not become wet.

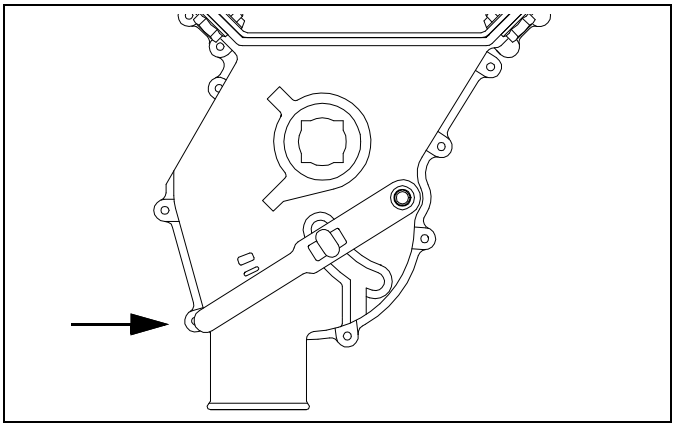


Figure 11 26211
Seed Cup Door

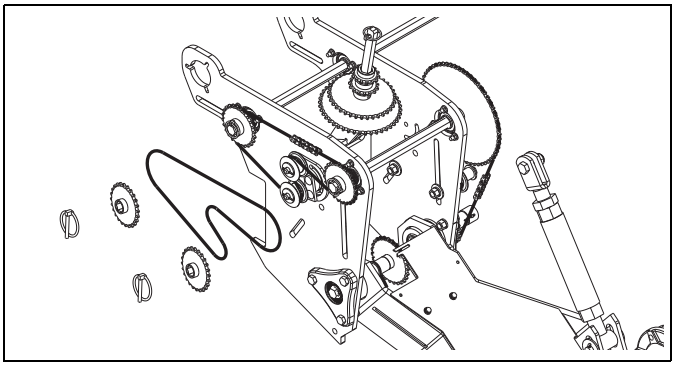


Figure 12 26210
Drive Type

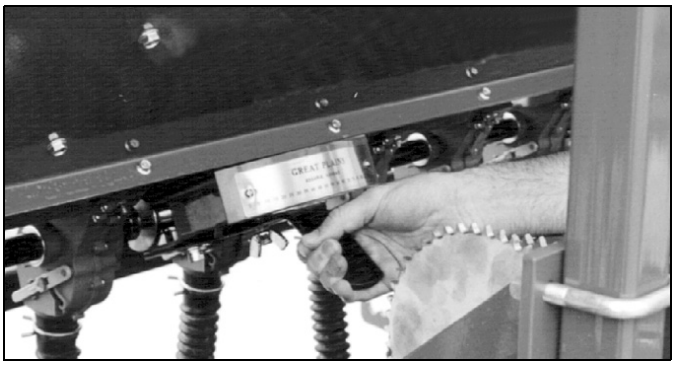


Figure 13 17617
Seed Rate

Marker Operation

Optional marker attachments are available from your Great Plains dealer.

The operating procedure is different, depending on whether dual-circuit independent markers or single-circuit sequenced markers are installed.

When fully extended or folded during operations or transport, leave circuit control in neutral. Set circuit to float only for unhitching.

Before operating markers, make sure hydraulics are properly bled as described under "**Marker Maintenance**" on page 51.

This section presumes correct marker length for your pass spacing. If this has not been set, or needs to be changed, see "**Marker Width**" on page 28

This section presumes correct marker chain slack. If your chain has been replaced, repaired or stretched, adjust the links to the correct slack length. see "**Marker Chain Adjustment**" on page 29.

You can adjust marker folding speed. See "**Marker Speed**" on page 29, and adjust folding speed to a safe rate. Folding markers at high speed can damage markers.

📖 NOTE: If one or both markers are extended, they may drag or shove if left extended during drill raise or lower operations. To avoid this, fold markers prior to raise or lower.

Dual-Circuit Marker Operation

Each marker is on a dedicated tractor hydraulic circuit. Either or both may be extended or retracted independently by operating the circuit for that marker.

Single-Circuit Sequenced Marker Operation

Dual markers equipped with a sequence valve are powered by the same hydraulic circuit. Starting with both markers folded, the folding sequence is:

1. Activate lever - Right-hand unfolds; left-hand stays folded.
2. Reverse lever - Right-hand folds; left-hand stays folded.
3. Activate lever - Left-hand unfolds; right-hand stays folded.
4. Reverse lever - Left-hand folds up; right-hand stays folded.
5. Sequence repeats.

Both Sides Unfolded (with Sequence Valve)

With both markers in their cradles:

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

Parking

Empty seed box before unhitching drill to prevent drill from falling backward.

📖 NOTE: For parking with drill attached to an auxiliary hitch, refer to your hitch operator's manual.

1. Empty seed box.

Model 20F Only:

Refer to Figure 14

2. Raise drill.
3. Remove pin ① from mount ② and remove parking stand ③ from storage position.
4. Insert stand ③ into bottom of mount ② as shown in and secure with pin ①.
5. Repeat for stand on other side of drill.

All Models:

6. Park drill on a level, solid surface.
7. Lower tractor three-point hitch until drill is on the ground.
8. Extend or retract the top link of the tractor until top three-point pin is free. Remove pin.
9. Remove pins from lower links.

Storage

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

1. Unload seed box:
   - Place tarp under drill or a bucket under each row unit.
   - Use a large bucket to empty box as much as possible. Make sure seed cup door handles are set to clean-out.
2. Thoroughly clean seed and seed-treatment residue from boxes and seed cups.
3. Plug or cap the bottom end of seed tubes to prevent pest entry.
4. Remove any dirt and debris that can hold moisture and cause corrosion.
5. Lubricate and adjust all chains.
6. Lubricate areas noted under "**Lubrication**" on page 57.
7. Inspect drill for worn or damaged parts. Make repairs and service during the off season.
8. Use paint to cover scratches, chips and worn areas on the drill to protect the metal.
9. Cover with a tarp if stored outside.

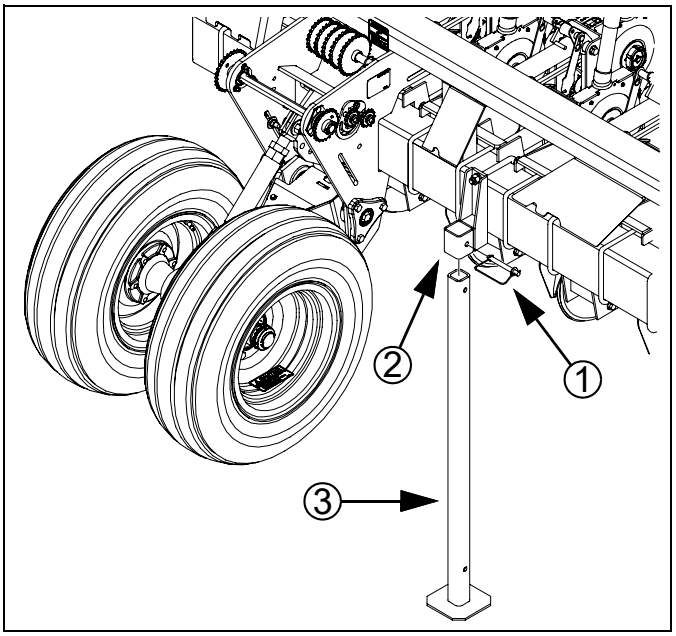


Figure 14 26221
Model 20F Parking Stand

Adjustments

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

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

Ground Drive Adjustments

Before setting the Drive Type, rotate the gauge wheels. Check that seed cups and seed tubes are working properly and free from foreign material.

Setting Drive Type

Drive type is a ground drive sprocket combination that must be mounted identically on both gauge wheel assemblies.

Select the drive type from the seed rate charts. The drive type varies by seed type and intended population.

Refer to Figure 15

1. Find your drive type in the Seed Rate Charts manual.
2. Find the drive type sprocket pair required in the table on this page.
3. Loosen idlers ① and remove chain ②.
4. Remove retaining pins ③ from shafts.
5. From the sprockets in use and those on the storage tree ④, select the required pair. Sprockets are identified by tooth count, which is stamped into the side of the sprocket.

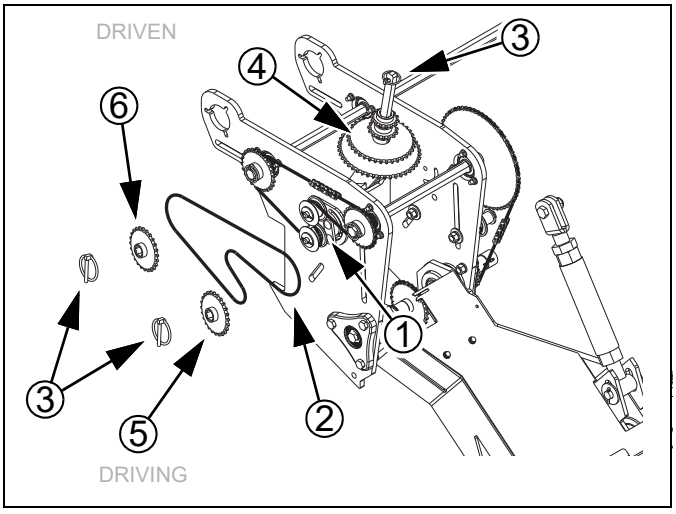


Figure 15 26210
Drive Type Sprockets

6. Install the DRIVING sprocket on shaft ⑤ and the DRIVEN sprocket on shaft ⑥.

📖 NOTE: Make sure the correct sprockets have been installed in the DRIVER and DRIVEN locations as shown.

7. Replace unused sprockets back on the storage tree ④.
8. Pin all shafts.
9. Mount the chain ②, engage the idlers ①, and tighten the idlers until there is $^{1}/_{4}$ in slack in the longest span.
10. Set the same drive type sprocket combination on the other gauge wheel assembly.

📖 NOTE: Each gauge wheel drives its half of the drill. If a chain breaks or is removed, that half of the drill does not plant.

Drive Type	Driving	Driven	Speed
Type 1	14T	44T	Slowest
Type 2	24T	36T	2x Type 1
Type 3	24T	24T	3x Type 1
Type 4	24T	15T	5x Type 1

Setting Seed Rate Handle

Refer to Figure 16

There are identical seed rate handles for each half of the drill. Generally, both need to be set identically. You can stop seed flow to one half of the drill by setting a handle to zero (for point-row planting, for example).

The seed rate handle controls the percent engagement of the seed sprocket in each seed cup.

1. Loosen wing nut ① under handle.
2. Set indicator ② to about 10 past value from Seed Rate Chart, then move handle back to target value.
3. Tighten wing nut.

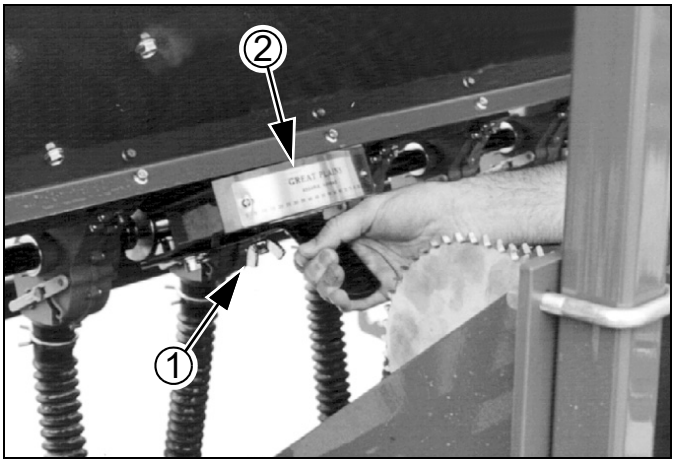


Figure 16 17618
Seed Rate Handle

Position Seed Cup Doors

Refer to Figure 17, which depicts the seed cup door handle in position ③.

At each 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 clean-out, not planting. If set to this position with seed loaded, it may be difficult to reset it to a normal operating position.

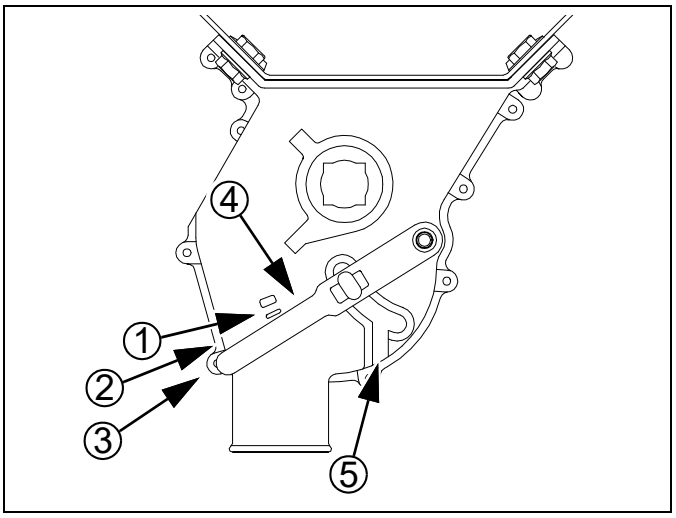
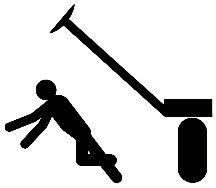


Figure 17 26211
Seed Cup Door Handle

Marker Adjustments

⚠ WARNING

Pinch, Crush and Sharp Object Hazards: *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.*



There are four operating adjustments for markers:

- Marker Width (Extension)
  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/or are off the ground when the drill is raised.
- Marker Speed
  Once initially set by your dealer, this rarely needs modification.

There are also three maintenance items for markers:

- "**Marker Cylinder Bleeding**" on page 51.
- "**Marker Shear Bolt Replacement**" on page 52.
- "**Marker Transport Carrier**" on page 52.

Marker Width

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

See “**Marker Extension**” on page 66 for initial values for marker extension.

Refer to Figure 18

To adjust marker width, loosen jam nuts ① and ½ in set screws ②. Move marker disk tube in or out to get the proper dimension.

Refer to Figure 70 through Figure 119 beginning on page 66.

The diagrams shows marker width for the different opener spacings and opener configurations.

To measure for marker width adjustment:

1. Lower drill in the field and drive forward a few feet.
2. Measure from the centerline of the outside row unit (not pair, and whether that row is in use or not) to the mark in the ground made by the marker disk.

Marker Disk Adjustment

CAUTION

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

Refer to Figure 19

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

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

Tighten bolts ②.

📖 NOTE: The direction of travel Ⓣ tends to drive the disk angle to Wide. If bolts are not tight enough, or loosen over time, the disk will slip into the Wide mark configuration.

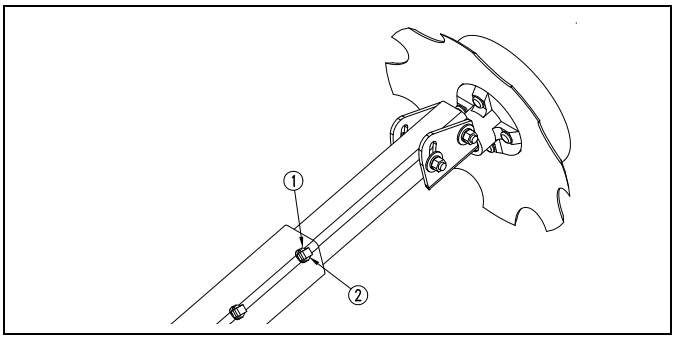


Figure 18 19204
Marker Extension Adjustment

📖 NOTE: Extension for left-hand and right-hand sides may not be identical in some drill configurations.

📖 NOTE: For some row unit configurations, the inner marker tube is too long. If your adjustment causes it to interfere with other drill components, cut off just enough of the excess length to eliminate the interference.

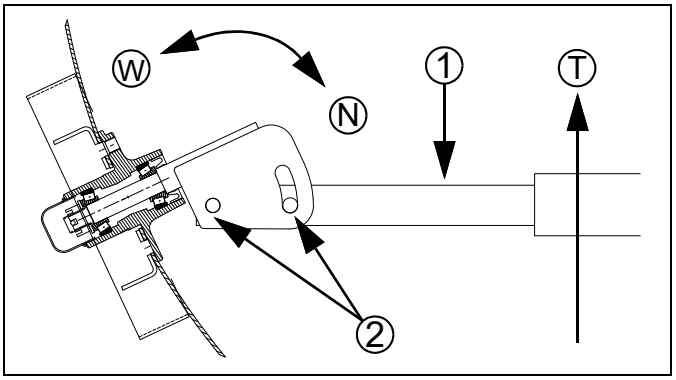


Figure 19 11757
Marker Disk Angle

Marker Chain Adjustment

There are two, interrelated adjustments for the marker chain. Make these adjustments in the following order.

Refer to Figure 20

Marker Lifting Slack

1. Unfold marker.
2. Loosen jam nuts ① on both sides of channel at adjuster bolt ②.
3. Thread bolt in (up) until head is flush with inside jam nut and both are flush with inside of channel.
4. Slowly fold marker while observing disk. If marker disk drags across ground more than 12in (30cm) before lifting, the chain is too long.
5. Shorten chain one or two links by moving clevis bolt ② up chain a few links. Check adjustment by repeating folding process.
6. If chain is too short when marker is unfolded, it will prevent end of marker from dropping into field depressions, causing skips in your marker line. Correct this condition by lengthening chain one or two links at clevis ②.

Folding Slack

1. Fold marker.
2. Extend adjustment bolt ② to take slack out of chain while marker is folded. Extend bolt until there is no chain slack.
3. Lock bolt in this position by tightening jam nuts ① on either side of upright channel.

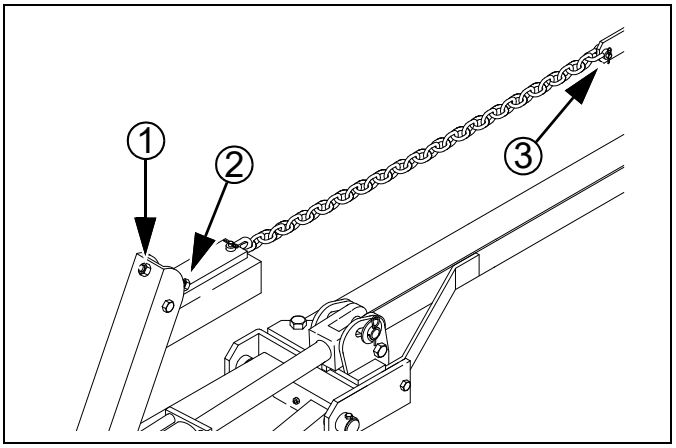


Figure 20 15669
Marker Chain

Marker Speed

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

Dual-Circuit/Needle Valve Speed

This applies only to markers plumbed separately (left-hand and right-hand are each on their own tractor hydraulic circuit).

Refer to Figure 21

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.

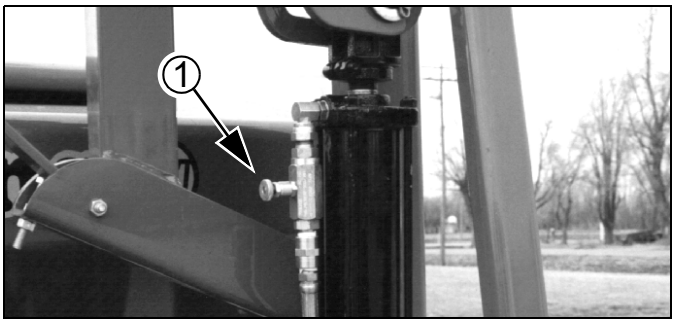


Figure 21 17620
Needle valve Adjustment

Single-Circuit/Sequence Valve Speed

Refer to Figure 22

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 (Ⓢ: slower) to decrease [un]folding speed and counterclockwise (Ⓕ: 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.

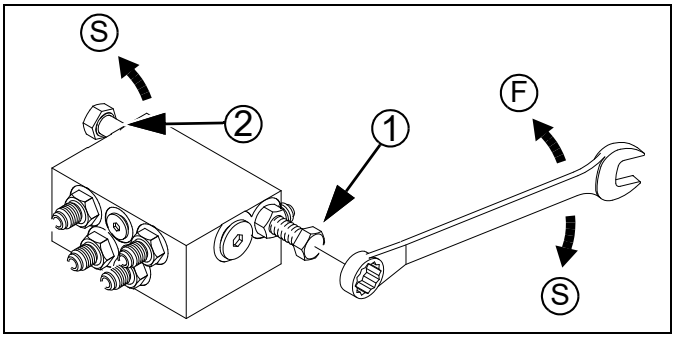


Figure 22 14048
Sequence Valve Adjustment

Row Unit Adjustments

Refer to Figure 23

(Figure 28 depicts a 25-Series row unit fully populated with all optional accessories supported for use with the 2020F, 2025F, 2520F and 2525F drill)

From front to back, a 20 or 25 Series seed cup row unit can include the following capabilities (some optional):

1. Down Pressure Springs: standard
   Each row unit is mounted on the drill with parallel arms which allow each row unit to independently move up and down while staying horizontal. Adjustable springs provide the force to get the row unit and attachments into the soil. See "**Row Unit Down Pressure**" on page 32.
2. Disk Coulter: optional, choice of blades (25 Series only)
   Coulters cut trash, and create a groove for light no-till planting. The down force needed to cut and widen the coulter groove is supplied by the row unit. The depth relative to the opener is set by a choice of hub mounting holes. See "**25 Series Coulter Adjustments**" on page 37.
3. Disc Blades: standard, 2 per row unit
   Double disc blades widen the coulter groove, creating the seed bed. Setup controls depth and width. See "**Row-Unit Opener Disk Adjustments**" on page 39.
4. Depth Side Gauge Wheels: standard
   The depth gauge wheels have adjustments for spacing and angle. See "**Side Gauge Wheel Adjustment**" on page 40.
5. Seed delivery tubes: standard
   No adjustments are necessary.
6. Seed firmer (optional):
   Keeton seed firmer (shown mounted)
   Improves seed-soil contact. See "**Keeton Seed Firmer Adjustment**" on page 42.
7. Seed-Lok™ firming wheel (shown in inset)
   Improves seed-soil contact. See "**Seed-Lok™ Seed Firmer Lock-Up (older style)**" on page 43.
8. Gauge Wheel Scraper: optional
   The depth gauge wheels also accept an optional scraper. See "**Adjusting 25 Series Gauge Wheel Scrapers**" on page 41.
9. Press wheels: standard (choice of types)
   These close the seed trench. See "**Press Wheel Adjustment**" on page 43.

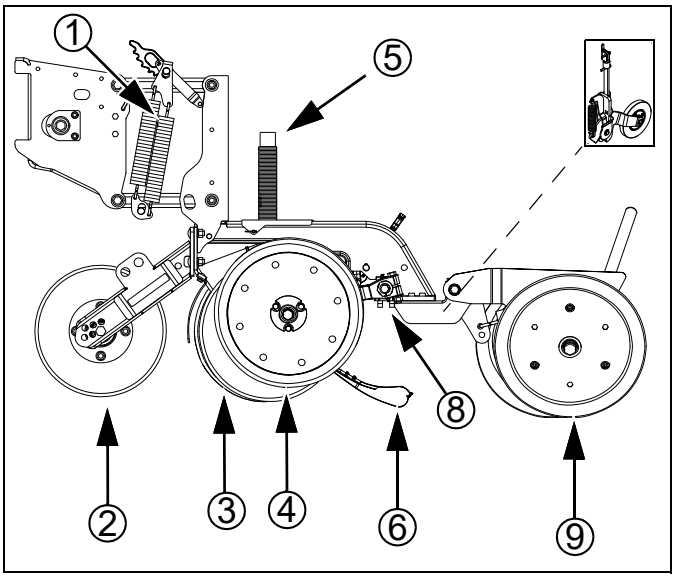


Figure 23
25 Series Row Unit

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NOTICE

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

Row Unit Down Pressure

Refer to Figure 24

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

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

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

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

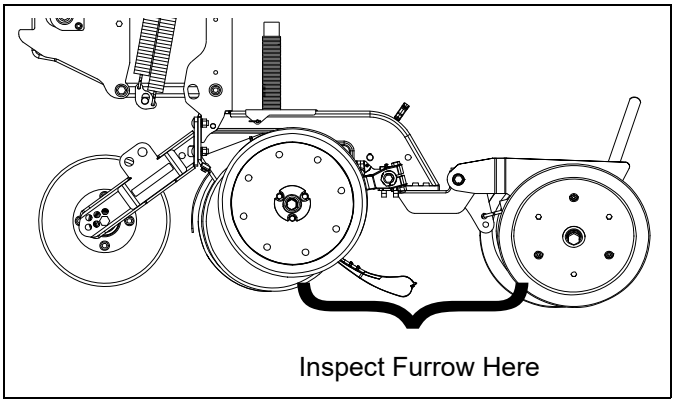


Figure 24
Checking Furrow
29126

Refer to Figure 25

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

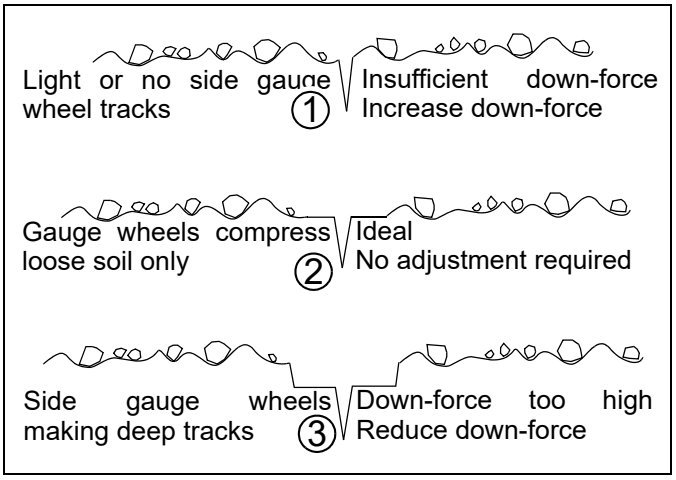


Figure 25
Assessing Down-force

Adjusting Row Unit Down Force

Row unit springs provide the primary down pressure necessary for row unit disks to open a seed trench.

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

The adjustment process is different for 20-Series and 25-Series row units.

If you cannot achieve enough down force, adding a weight kit may help. See “**Weight Bracket Kit**” on page 61.

Adjusting 20-Series Down-Force

Refer to Figure 26

An adjuster cam ① sets row unit spring ② down pressure individually for each row unit. This is useful for penetrating hard soil and planting in tire tracks. For best results always adjust tractor tires so they are not ahead of twin rows.

Cam Notch	Pounds
zero (out of notch)	Maintenance Only
one	100
two	165
three	225
tip	Do Not Use

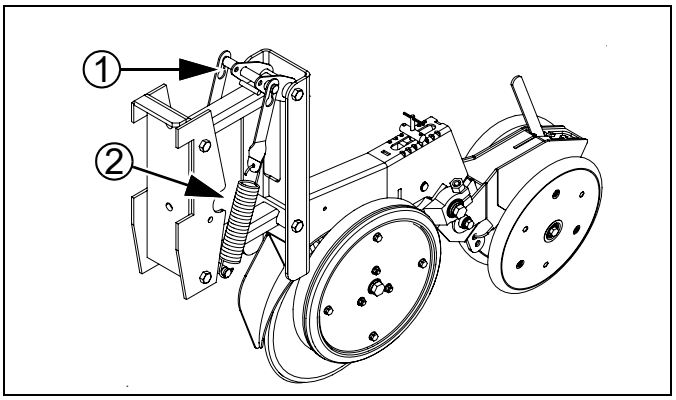


Figure 26 20451
20 Series Row Unit Springs

Refer to Figure 27 and Figure 30

To adjust down pressure, use the spring adjustment tool ③ (part 198-810H) stored under the walkboard.

1. Raise the drill. Although this adjustment can be made with the drill lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.
2. Put tractor in Park and shut it off.
3. Position tool in the hole ④.

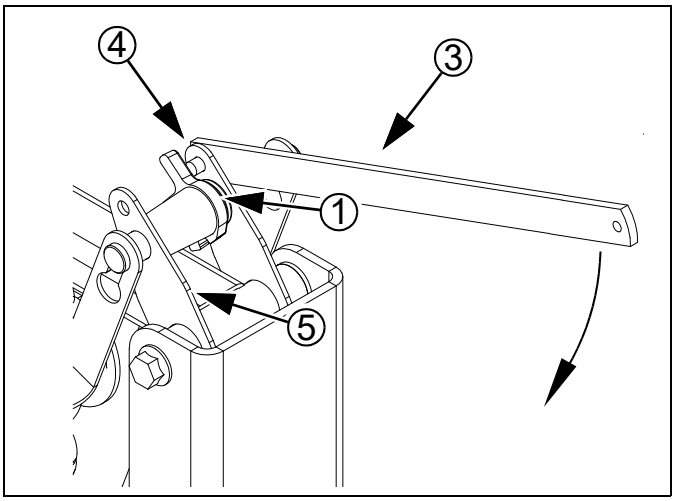


Figure 27 20450
20 Series Row Unit
Spring Adjustment

Refer to Figure 28

4. Pull upper spring link ⑤ back.
5. Move the adjustment cam ① to the new setting on the spring adjust bar ⑥.

📖 NOTE: Do not set all rows higher than notch two. Using high settings across all rows causes uneven planting. Individual rows may be set higher if running in tire tracks.

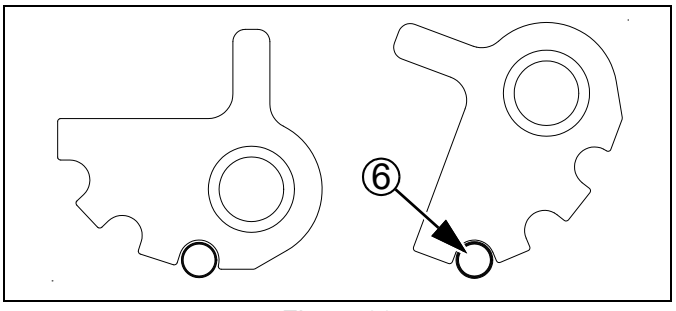


Figure 28 12104
Row Unit Minimum & Maximum

Adjusting 25-Series Down-Force

Refer to Figure 29

An adjuster cam ② sets row unit spring ① down pressure individually for each row unit. This is useful for penetrating hard soil and planting in tire tracks. For best results always adjust tractor tires so they are not ahead of twin rows.

Cam Notch	Pounds
zero (out of notch)	Use Only for Lock-Up
one	345
two	370
three	400
four	450
five	500
six	550
tip	Do Not Use

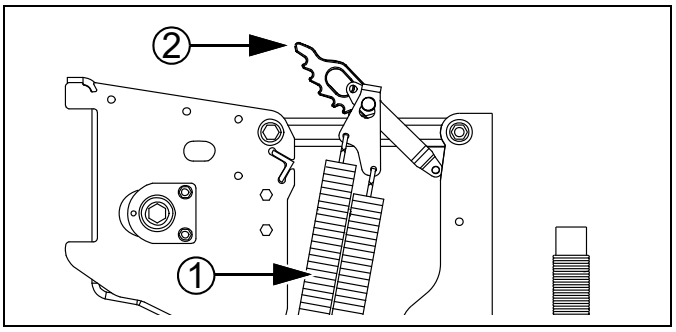


Figure 29 29126
25 Series Row Unit Springs

Refer to Figure 31

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

Refer to Figure 30 (shown at cam setting 2)

To adjust down pressure, use a $1\frac{1}{8}$ in open end wrench or the 403-265D tool ③ stored under the walkboard.

1. Raise the drill. Although this adjustment can be made with the drill lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.
2. Put tractor in Park and shut it off.
3. Position wrench on the fixed nut ④ near or slightly forward of vertical.

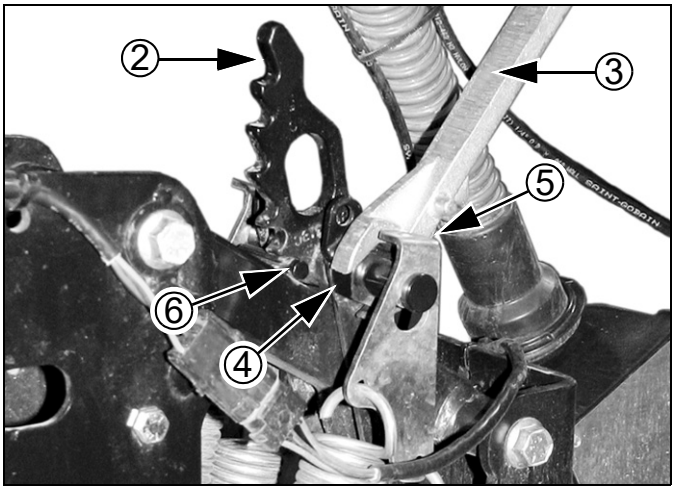


Figure 30 25268
25 Series Row Unit
Spring Adjustment

4. Pull upper spring link ⑤ back.
5. Move the adjustment cam ② to the new setting on the spring adjust bar ⑥.

📖 NOTE: Do not set all rows higher than notch four. Using high settings across all rows causes uneven planting. Individual rows may be set higher if running in tire tracks.

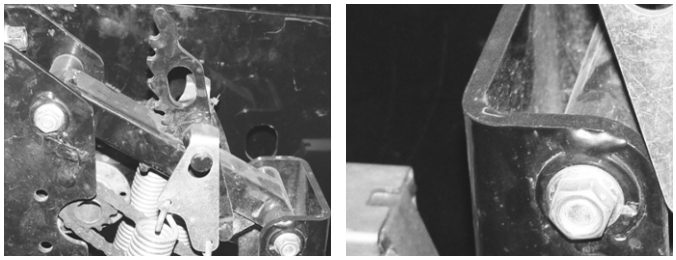


Figure 31 21966 21967
Row Unit Minimum & Maximum

Row Unit Shutoff

Refer to Figure 32

Row unit shutoff is necessary for various routine procedures, including:

- point-row planting
- seed box clean-out
- twin-row lockup (25 Series only)
- calibration (shutting off unmeasured rows)

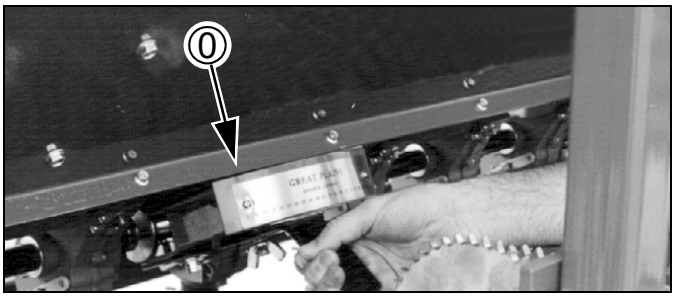


Figure 32 17618
Seed Rate Shutoff

Seed Flow Shutoff (Half Drill)

Seed flow to either half of the drill may be shut off by setting the Seed Rate Handle for that side to zero (0).

Seed Flow Shutoff (Rows)

Refer to Figure 33

Seed flow to one or more seed cups may be shut off above the seed cup by inserting an optional seed cup plug. This is easiest to accomplish prior to loading seed.

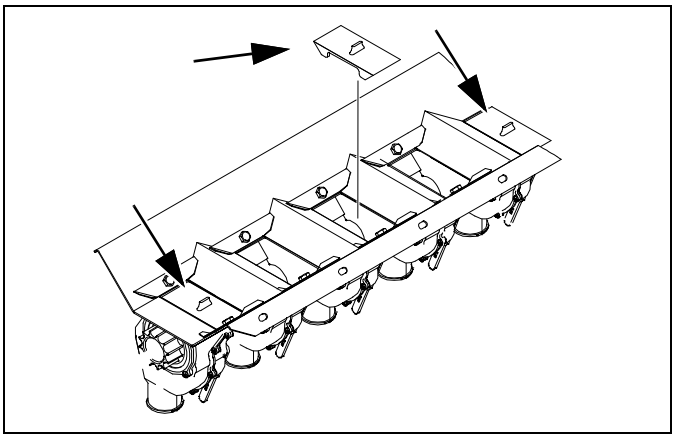


Figure 33 26279
20 Series: Seed Cup Plugs

25 Series Row Unit Lock-Up

Alternate 25 Series twin-row units can be raised and pinned to accommodate alternate spacings. It is generally easier to lock up the rear row unit of twin-row pair.

Refer to Figure 34 and Figure 35

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

📖 NOTE: Replacement pin part number is 805-033C

1. Raise the drill. Although this adjustment can be made with the drill lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Set the down pressure springs be set to the minimum setting, per the instructions on page 32.
3. Raise the row unit high enough that the hole for the pin is above the lower parallel arm: a. use a hoist at the rear of the shank ④, or b. use a jack under the shank extension ⑤

⚠ CAUTION

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

Refer to Figure 35

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

Refer to Figure 36

6. Insert an optional plug in the seed cup, inside the seed box.
7. Repeat for all rows needing lock-up.
8. Reset marker extension (page 28).
9. Check row unit down-force on the active rows.

NOTICE

Certain Machine Damage:
Do not pin the row unit while it is in the lowered position. If the pin is inserted below the parallel arm, unit damage will occur when planting begins.

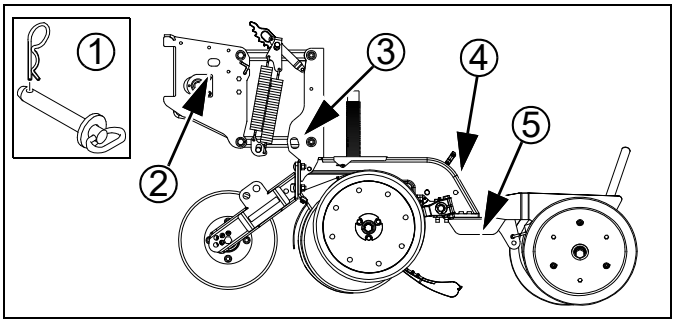


Figure 34 25269 29126
25 Series Lock-Up Pin

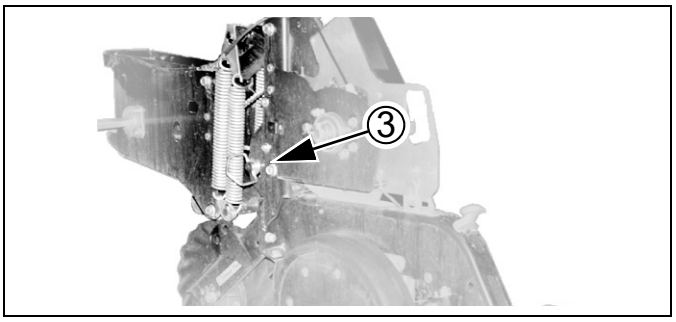


Figure 35 25270
25 Series Row Unit Locked Up

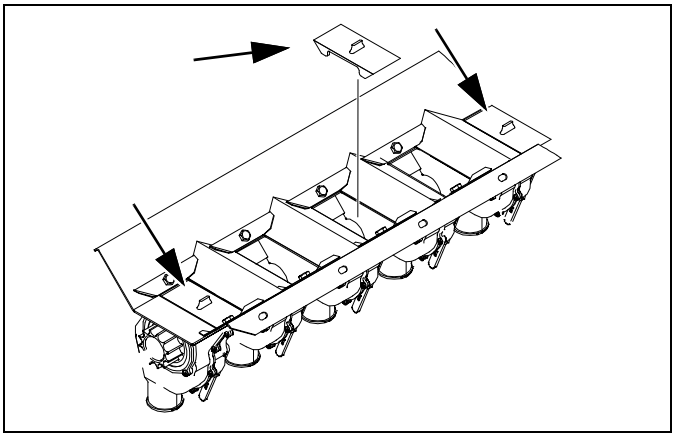


Figure 36 26279
25 Series: Seed Cup Plugs

25 Series Coulter Adjustments

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

Coulter Depth Adjustment

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

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

Refer to Figure 37 and Figure 38

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

To adjust coulter depth:

1. Determine the present opener and coulter depths.
2. Note which bracket hole the coulter is presently using.
3. Determine which new hole will position the coulter closer to the 1/4 in (6 mm)-above depth. See the table below.
4. Remove the 5/8-11 x 4 in bolt, lock washer and nut (⑦ in Figure 37).
5. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.

Hole No.	Depth of (new) coulter blade relative to (new) opener blades
②	1 in (2.5 cm) above
③	5/8 in (1.6 cm) above
⑤	1/4 in (6 mm) above
①	0
④	3/8 in (1 cm) below
⑥	3/4 in (1.9 cm) below

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

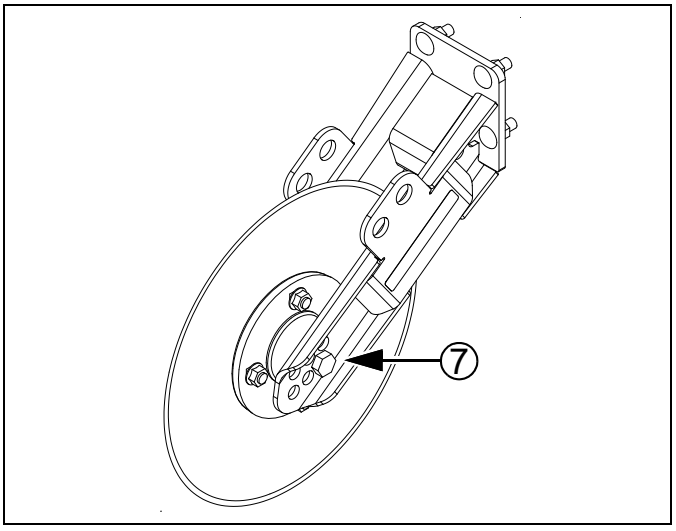


Figure 37 29124
25 Series Unit-Mounted Coulter

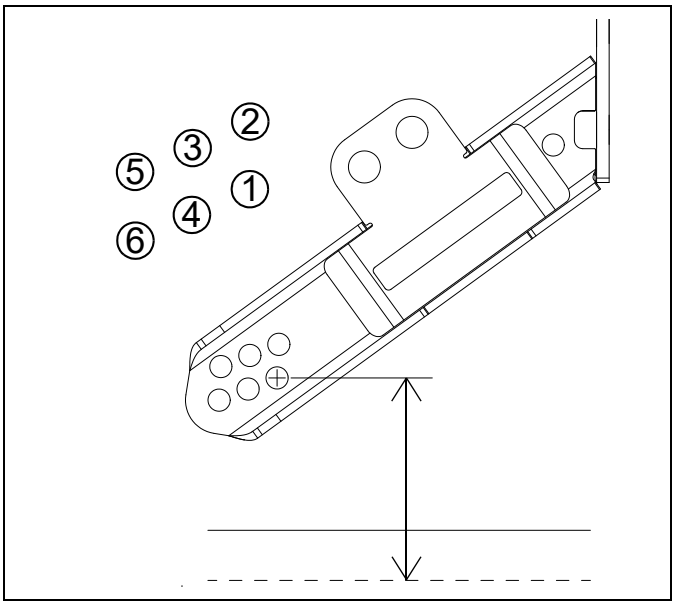


Figure 38 29125
Coulter Blade Mounting Holes

25 Series Coulter Row Alignment

Refer to Figure 39

For 25 Series unit-mounted coulters, the ideal alignment is for the blade to open a furrow directly ahead of the opener discs.

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

The exacting test of correct alignment is field results. Operate the drill on some test ground (no seed required), and verify that the opener blades are in the groove opened by the coulter, and that the press wheels are centered over the furrow. See "**Press Wheel Adjustment**" on page 43 for press wheel alignment.

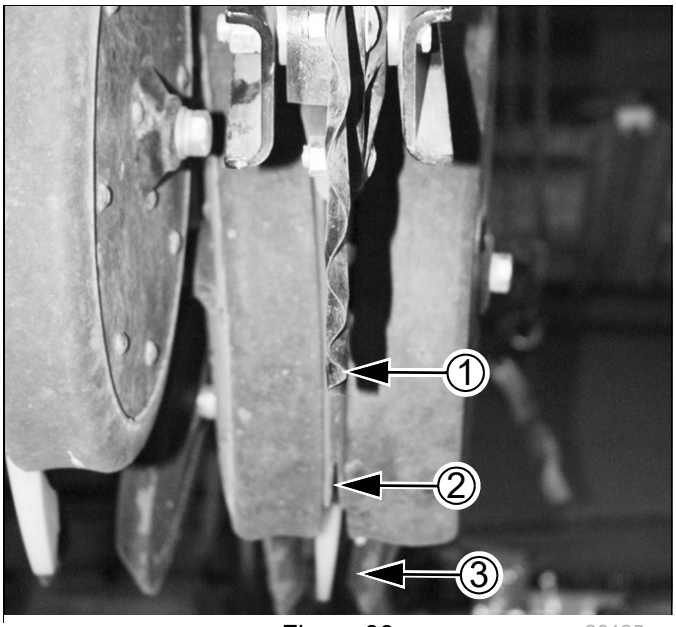


Figure 39 26125
25 Series Coulter Alignment

Refer to Figure 40

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

Keep the coulter blade vertical while adjusting.

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

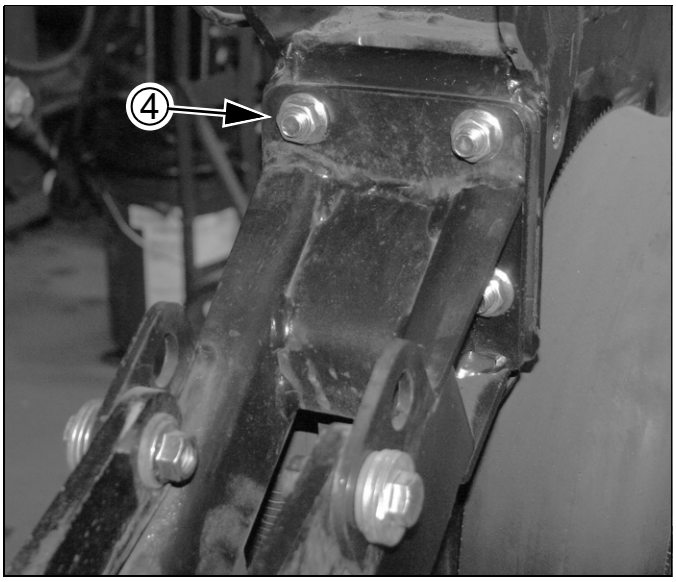


Figure 40 29135
25 Series Coulter Mount

Row-Unit Opener Disk Adjustments

20 and 25 Series openers have three adjustments:

1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disk clearance

Setting Planting Depth

Refer to Figure 41

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

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

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

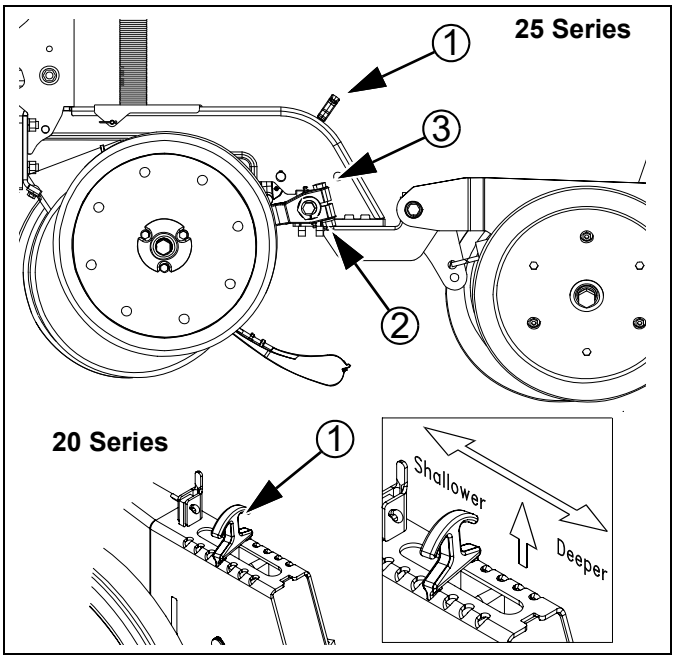


Figure 41
Opener Adjustments
29126
18285

Opener Disk Contact Region

Refer to Figure 42

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

The ideal spacing causes the blades to be in contact for about one inch ①. If you insert two pieces of paper between the blades, they should slide to within about 1.5 in of each other.

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.

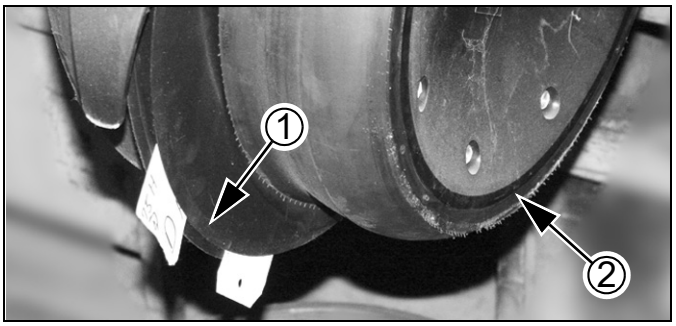


Figure 42
Opener Disc Contact Region
26127

Adjusting Disc Contact

Refer to Figure 42 and Figure 43

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

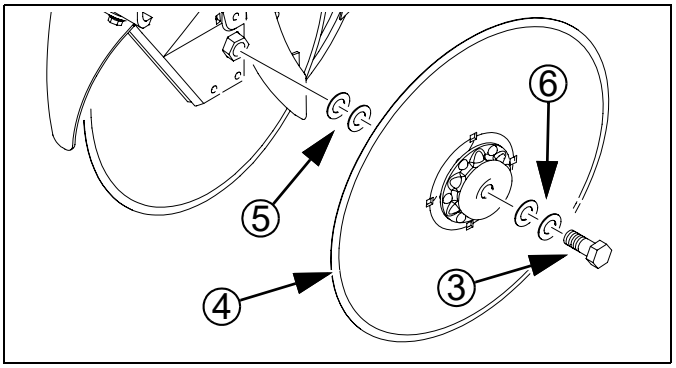


Figure 43
Opener Disc Spacers
26128

Side Gauge Wheel Adjustment

Refer to Figure 44

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

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

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

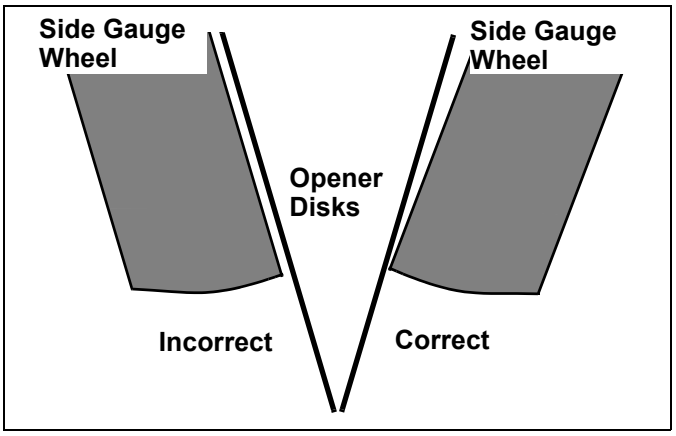


Figure 44
Disk/Gauge Wheel Alignment

Refer to Figure 45

For 2 in (5 cm) planting depth, adjust side gauge wheel angle so wheels contact row unit disks at the bottom of wheel. Check with row units in soil so wheels are held up.

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

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

Refer to Figure 47 on page 41

To adjust side gauge wheels:

1. Raise the drill.
2. Loosen hex-head bolt ①. Move wheel and arm out on O-ring bushing.
3. Loosen pivot bolt ② Turn hex adjuster ③ so indicator notch ④ is at 5 o’clock to 7 o’clock.

📖 NOTE: Use this as the starting point for adjustment.

4. Move wheel arm in so side gauge wheel contacts row unit disk. Tighten hex-head bolt ① to clamp arm around bushing and shank.
5. Check wheel-to-disk contact at 2 in (5 cm) planting depth, as shown in Figure 46. Lift wheel 2 in (5 cm), check contact and release. When let go, wheel should fall freely.

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

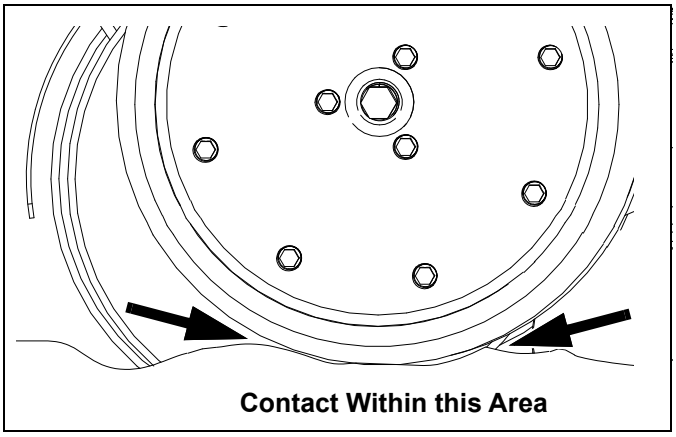


Figure 45 22531
Opener-Gauge Wheel Contact

Figure 46 26129
Checking Wheel/Disc Contact

- *If wheel does not fall freely*, loosen hex-head bolt ① and slide wheel arm out just until wheel and arm move freely. Tighten hex-head bolt ① according to grade:
  ½ in Grade 5 bolt on 25 series, 75 ft-lbs.
  ½ in Grade 8 bolt on 25 series, 110 ft-lbs.

📖 NOTE: Use “**Torque Values Chart**” on page 65 for reference.

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

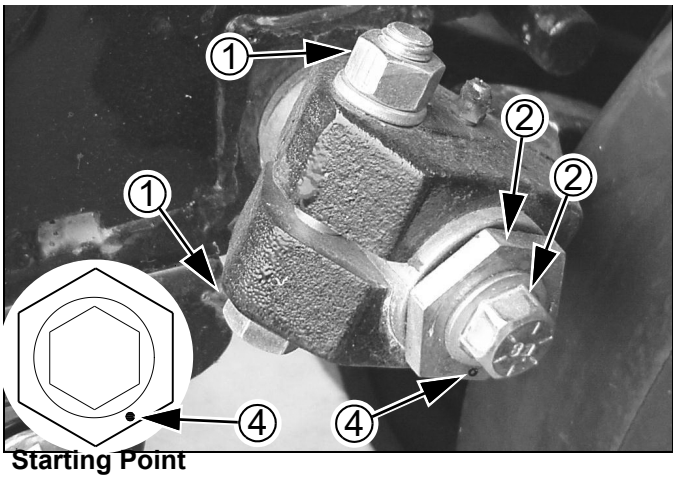


Figure 47 22524 22525
Disk/Gauge Wheel Adjustment

Adjusting 25 Series Gauge Wheel Scrapers

Refer to Figure 48

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

To adjust scrapers:

1. Loosen nut ①.
2. Slide scraper ② toward gauge wheel ③ until scraper touches tire.
3. Slide scraper ② away from wheel ③ leaving a ⅛ in gap at ④.
4. Rotate scraper left and right around bolt, making sure it cannot touch tire if bumped in field. If it can touch tire, back scraper away from wheel until it cannot.
5. Center scraper angle on bolt ① until gap ④ is constant.
6. Tighten nut ①.

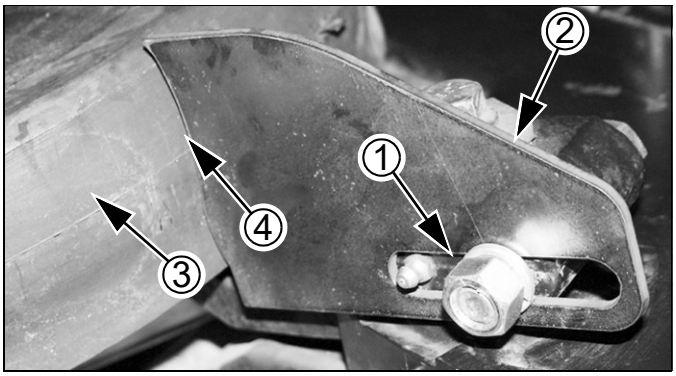


Figure 48 25273
Gauge Wheel Scraper

Seed Firmer Adjustments

20 and 25 Series row units accept one of two optional seed firmers.

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 49

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.

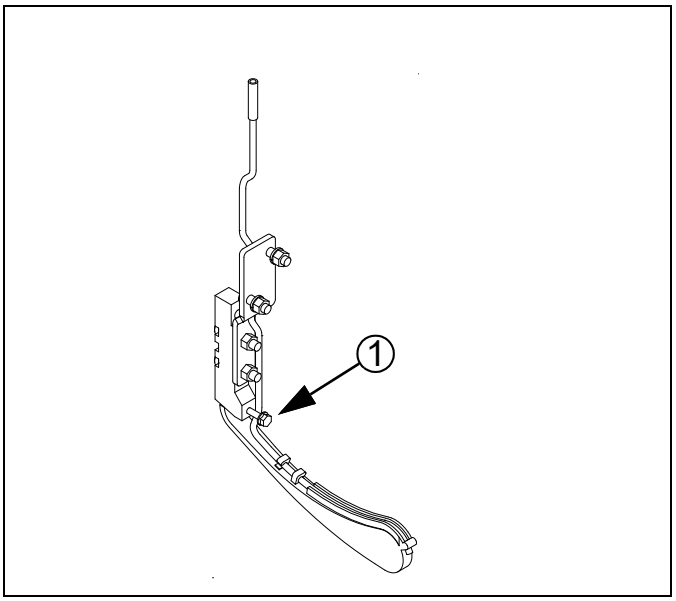


Figure 49 20327
Keeton Seed Firmer

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

To lock up Seed-Lok® wheels:

1. Raise planter. Insert lift assist cylinder locks.
2. Lift Seed-Lok® lock-up handle ① until lever stop ② is free to rotate.
3. Rotate lever stop to side/idle position ③. Release lock-up handle ①.
4. Push up on Seed-Lok® wheel ④ until wheel arm latches up ⑤.

To release a locked-up Seed-Lok®:

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

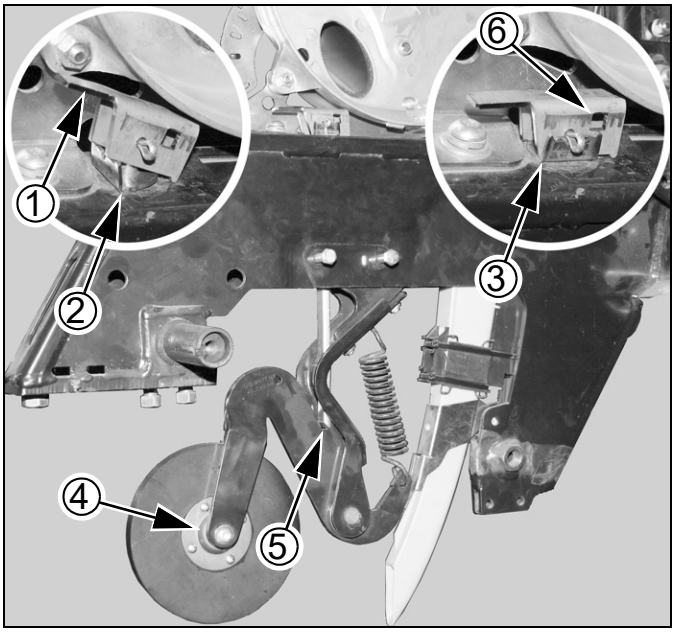


Figure 50 31543
.eps
99.7%
Seed-Lok® Lock-Up

📖 NOTE: Engage the lever stop under the handle ② when Seed-Lok® is in use. If left disengaged ③, a furrow obstruction could cause unintended lock-up.

Seed-Lok™ Seed Firmer Lock-Up (older style)

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

Refer to Figure 51

To lock up Seed-Lock wheels:

1. Raise drill.
2. Rotate Seed-Lok™ lock-up handle ① 90 degrees down on top of row unit body.
3. Push up on Seed-Lok™ wheel ② until wheel arm latches up.

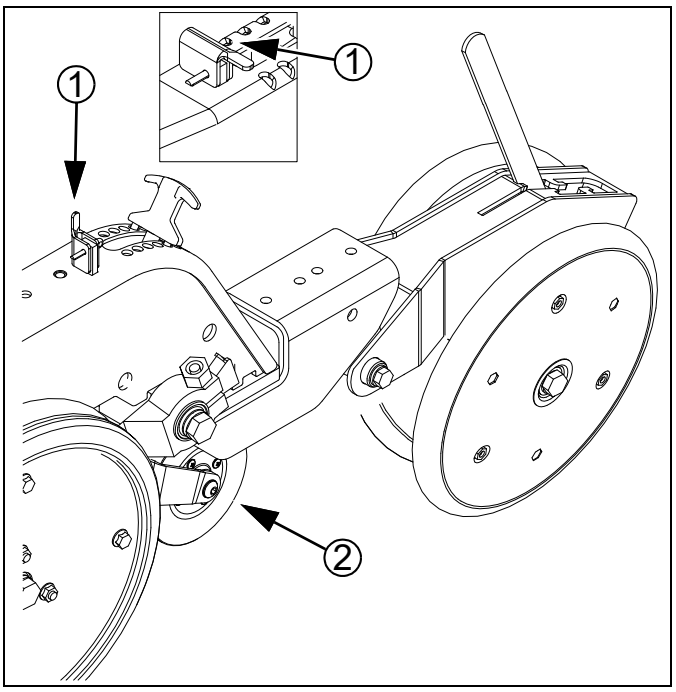


Figure 51 22909
Seed-Lok™ Lock-Up (older style)

Press Wheel Adjustment

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

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

There are three adjustments available on the press wheel assembly and a fourth option on press wheel assemblies with cast wheels:

Refer to Figure 52

1. Down pressure
2. Wheel stagger (shown staggered)
3. Centering (see Figure 54 on page 44)
4. Cast Wheel Plow Angle (see Figure 55 on page 45)

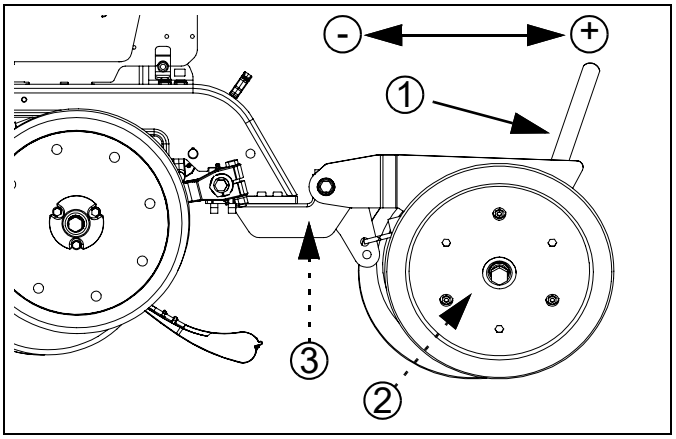


Figure 52 25118
Press Wheel Adjustments

Press Wheel Down Pressure

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

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

🕮 NOTE: Higher press wheel down pressures reduce the down force on the main row unit shank components, such as the openers. High press wheel settings may require an increase in overall row unit down force. See page 32.

Press Wheel Stagger

The factory stagger setting has been found optimal for residue flow. If your conditions appear to require even press wheels, try one row before reconfiguring the entire drill.

To change the stagger:

Refer to Figure 53

1. Raise the drill.
2. Remove the bolt ④, nut ⑤ and lock-washer ⑥ for the left-hand press wheel ⑧.
3. Move the spacer ⑦ and wheel ⑧ to the forward of the two mounting holes at ②.
4. Install the bolt, lock washer and nut. Tighten.

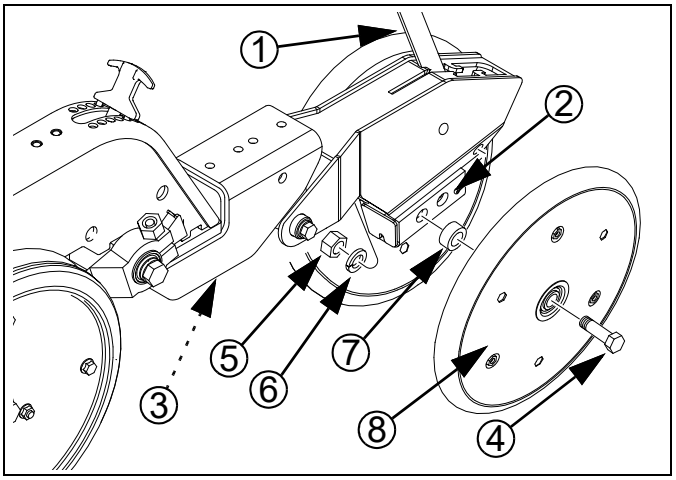


Figure 53 22907
Press Wheel Force & Stagger

Press Wheel Centering

If one press wheel is running in the seed trench, or the wheels are not centered over the trench, the angle ① of the press wheel assembly can be adjusted as follows:

Refer to Figure 54

1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
2. Raise drill.
3. Loosen the $^{1}/_{2}$ in hex-head bolts ② and ③.

🕮 NOTE: Do not loosen the square-head bolts forward of the hex-head bolts.

4. Turn the hex head cam ④ under the forward hex head jam bolt ③, and move the required amount.
5. Tighten both hex head bolts ③.

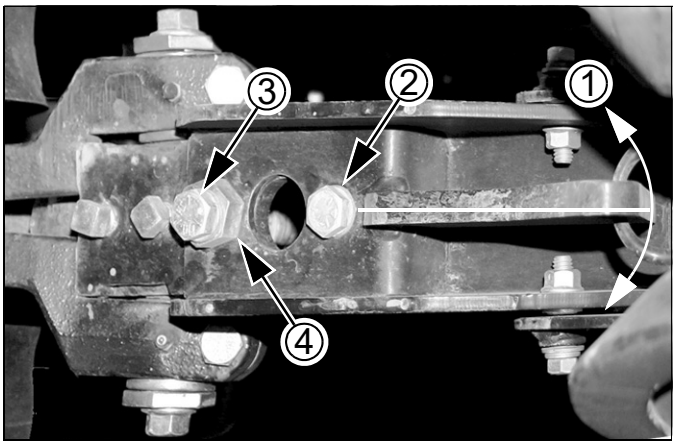


Figure 54 25277
Press Wheel Centering

Press Wheel Assembly with Cast Wheels

Tight soil may require the need to drag/plow the trench closed. The factory setting on press wheel assemblies with cast wheels is 4°(maximum plow). If the conditions in your region appear to require less plow, there are two additional settings: 2° (less plow) and 0° (no plow). To change the plow setting:

Refer to Figure 55

1. Raise drill.
2. Remove the bolt ①, lock-washer ② and spacers ③ for the press wheel ⑨.
3. Remove bolt ④, flat washer ⑤ and hex nut ⑥ for casting ⑦.
4. Place a $^{3}/_{4}$ in open end wrench on tab ⑦ of casting. Rotate casting until the desired angle setting (4°, 2° or 0°) hole lines up with a hole on the press wheel mount weldment ⑧ (only one set of holes will line up for each setting).
5. With holes lined up replace casting bolt ④ and flat washer ⑤. Secure with hex nut ⑥.
6. Reinstall press wheel.

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

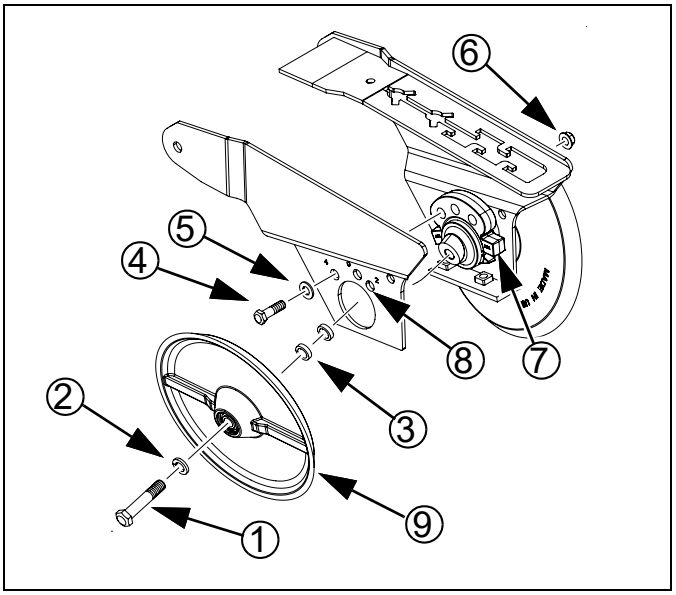


Figure 55 34011
Press Wheel Plow Angle Setting

Troubleshooting

Problem	Cause	Solution
Planting too little	Seed Cup Door setting too low for seed size	Open seed cup door one step.
	Incorrect Seed Rate Handle setting	Check against Seed Rate Charts. Verify calibration.
	Incorrect Drive Type.	Check against Seed Rate Charts. Verify calibration.
	Excessive field speed.	Reduce speed
	Incorrect tire size or air pressure.	Correct tire size and air pressure, page 64.
	Seed size and weight vary from chart.	Calibrate. Adjust Seed Rate to compensate.
	Excessive gaps between drill passes.	Adjust marker, page 27.
	Check seed level in seed box.	Fill seed box.
	Actual field size is different.	Verify field size.
	Build up of seed treatment in seed cup.	Clean out seed cup, page 54. Consider adding a seed lubricant.
	Seed cup plug installed.	Check seed flow shut off, page 35.
	Plugged seed hose.	Clean out seed tube hose.
	Plugged opener seed tube.	Lift up drill, expose bottom of seed tube and clean out.
	Seed cup sprocket damaged.	Replace seed cup sprocket
	Obstruction in seed cup or seed tubes (foreign material or uncleaned seed).	Clean seed cup and seed tube.
	Thrown or worn chains.	Check drive chains.
Planting too much	Seed Cup Door setting too high or set to clean-out.	Reset seed cup door.
	Incorrect Seed Rate Handle setting	Check against Seed Rate Charts. Verify calibration.
	Seed cup drive disengaged.	Check ground drive and Drive Type.
	Incorrect Drive Type.	Check against Seed Rate Charts. Verify calibration.
	Seed size and weight vary from chart.	Adjust transmission or tire pressure.
	Actual field size is different.	Verify field size.
	Excessive overlap. Irregular shaped field.	Adjust marker, page 28.
	Incorrect tire size or air pressure.	Correct tire size and air pressure, page 64.
	Seed cup sprocket damaged	Replace if damaged.

Problem	Cause	Solution
Uneven seed spacing	Excessive field speed.	Reduce speed.
	Unclean seed.	Use clean seed.
	Build up of seed treatment in seed cup.	Clean out seed cup, page 54. Add more talc lubricant.
	Seed-Lok™ plugging.	Lock up Seed-Lok™, page 43.
	Damaged or missing seed flap.	Replace seed flap.
	Opener disks not turning.	See “Row unit disks not turning freely.” in this Troubleshooting chart.
	Plugged opener seed tube.	Raise drill, expose bottom of seed tube and clean out.
	Seed cup wheel damaged or worn.	Check seed cup sprocket and replace.
	Plugged seed hose.	Clean out seed tube hose.
	Seed cup door needs to be opened one step for this seed.	Adjust seed cup door.
Uneven seed depth	Excessive field speed.	Slow down. Check Seeding Rate Chart for correct maximum field speed.
	Coulter depth adjustment	Check hitch operator’s manual.
	Planting conditions too wet.	Wait until drier weather.
	Drill frame height incorrect.	Check drill frame height, page 15.
	Drill not level front-to-back in field.	Readjust top link to level drill.
	Opener side depth wheels are set too deep for soil conditions or coulter depth.	Check opener adjustments, page 40.
	Opener press wheel spring force is set too high.	Check press wheel adjustments, page 43.
	Incorrect spring pressure on openers.	Correct spring pressure, page 32.
	Seed-Lok™ building up with dirt.	Lock up Seed-Lok™, page 43.
		Engage Seed-Lok™ only in dry conditions
	Damaged or missing seed flaps.	Replace seed flaps.
	Damaged opener seed tube.	Check disk spreader, page 39.
	Row-unit not penetrating low spots.	See “**Row Unit Down Pressure**” on page 32.
	Partially plugged opener seed tube.	Raise drill, expose bottom of seed tube and clean out.
	Incorrect choice of coulter.	See hitch operator’s manual.
Excessive seed cracking	Excessive field speed.	Slow down. Check Seeding Rate Chart for correct maximum field speed.
	Seed cup door needs to be opened one step for this seed.	Adjust seed cup door.
	Seed Rate too low for seed size	Increase Seed Rate Handle setting, and reduce Drive Type setting.
	Unclean seed.	Use clean seed.
	Damaged, old or dry seed.	Use clean, new seed.

Problem	Cause	Solution
Row unit disks not turning freely.	Opener plugged with dirt.	Clean opener.
	Planting conditions too wet.	Wait until drier weather.
	Seed-Lok™ is plugging opener.	Lock up Seed-Lok™, page 43.
	Drill frame height incorrect.	Check drill frame height, page 15.
	Drill not level front-to-back in the field.	Readjust top link to level drill.
	Opener side depth wheels not adjusted correctly. too tight - dragging on blade too loose - allowing dirt between blade and wheel	Check opener adjustments, page 40.
	Opener press wheel spring force is set too high.	Check press wheel adjustments, page 43.
	Too much blade-to-blade contact.	Take shims under head of bolt and put between opener and disk bearing, see page 39 for information.
	Failed disk bearings.	Replace disk bearings.
	Bent or twisted opener frame.	Replace opener frame.
	Partially plugged opener seed tube.	Raise drill, expose bottom of seed tube and clean out.
Hydraulic marker functioning improperly	Leaks in hose fittings or connections.	Check all hose fittings and connections for leaks.
	Low tractor hydraulic oil level.	Check tractor hydraulic oil level.
	Loose or missing bolts or fasteners.	Check all bolts and fasteners.
	Air in lines.	See “**Marker Cylinder Bleeding**” on page 51.
	Needle valve plugged.	Open needle valve, cycle markers slowly and reset needle valve, refer to page 29.
Marker disk does not mark	Marker folding linkage does not have enough slack to allow marker disk to drop into field depressions.	Maximum down float should be limited by the slot at the rod end of the marker cylinder, refer to page 29.
	Insufficient disc angle for conditions	Increase disc angle, or reverse marker disc entirely. See page 28.
Drill boxes do not empty evenly	Right-hand and left-hand Drive Type, Seed Rate Handles and/or Seed Cup Doors are not set the same.	Readjust rates, see Seed Rate Charts manual.
	Tire sizes or tire inflation not equal on right-hand and left-hand gauge wheels.	Correct tire size or tire inflation, page 64.
	Seed tube plugs present.	Remove plugs.
	Opener seed tube plugged.	Raise drill, expose bottom of seed tube and clean out with wire.
	Plugged seed hose.	Clean out seed tube hose.
	Drive torque requirements different on right-hand and left-hand gauge wheel drives.	Check gauge wheels and tires.
	Unequal number of active seed cups in each box compartment.	Left-hand/right-hand seed consumption will not match in this case. Compensate at loading.
	Planting around fields vs. back-and-forth.	Correct planting operation.
	Rough field conditions may move seed in the box.	
Chain	Debris in retainer clip	Be sure open end of retainer clip is facing opposite direction of chain travel. Consult chain routing diagrams in Appendix.

Problem	Cause	Solution
Drill is not pulling level front-to-back	Incorrect top link adjustment.	Readjust top hitch link to level drill.
Press wheel or row units plugging	Planting conditions too wet.	Wait until drier weather.
	Drill not running level front-to-back in the field.	Readjust top link to level drill.
	Drill frame height incorrect.	Adjust drill frame height, page 15.
	Coulters not set deep enough to cut residue.	Check coulter adjustment in hitch operator's manual.
	Opener set too deep.	Readjust, page 40.
	Opener spring force too high.	Readjust, page 32.
	Press wheel spring force too high.	Check press wheel adjustments, page 43.
	20 or 25 Series Openers 1 x 12 press wheel stagger adjustment not correct.	Correct press wheel stagger.
	Backed up with drill in the ground	Clean out and check for damage.
	Failed disk bearings	Replace disk bearings.
	Disk blades worn.	Adjust or replace disk blades, page 39.
	Opener side depth wheels not adjusted correctly.	Readjust, page 40
	Scraper worn or damaged.	Replace scraper.
	Openers plugging in no-till conditions.	Drill at a slight angle to the rows.
Press wheels not compacting the soil as desired	Too wet or cloddy.	Wait until drier weather or rework ground.
	Incorrect spring handle setting	See "**Press Wheel Adjustment**" on page 43.
	Coulter set too shallow.	Check coulter adjustment
	Drill not running level front-to-back in the field.	Readjust top link to level drill.
	Opener spring pressure too high.	Reduce opener spring pressure.
	Incorrect press wheel depth.	Reset press wheel depth, page 44.
	Openers - not enough pressure on press wheels.	Check opener adjustment, page 32.
Acremeter does not measure accurately 📖 NOTE: Acremeter is most accurate when seeding back and forth with markers with few headlands, curves and point-rows.	Acremeter readings are approximate, and may not be precise for your row configuration. They are also affected by gauge wheel slippage and passes on curves. Readings count all motion, including pass turn-arounds.	
	Incorrect tire size or air pressure	Correct tire size or air pressure, page 64.
	Excessive overlap or gaps between passes.	Avoid overlap or gaps. Check marker adjustment, page 28.
	Soil conditions.	Loose soil and slippage will cause variations in acres registered.
	Check that acremeter is for your width of drill.	Refer to drill parts manual.
	Actual field size different.	Verify field size.

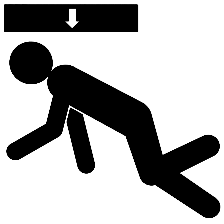
Maintenance and Lubrication

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.

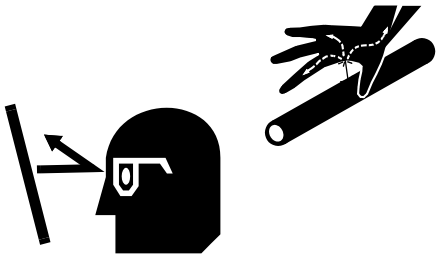
WARNING

Crushing Hazard:
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.



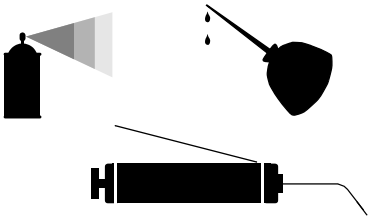
WARNING

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 injured, seek immediate medical assistance from a physician familiar with this type of injury.



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

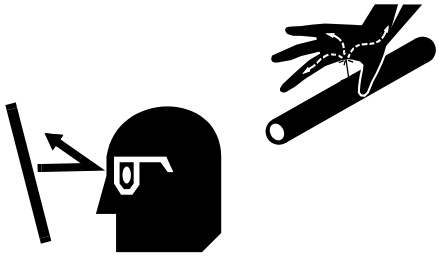
1. Lubricate areas listed under “**Lubrication**” on page 57.
2. Adjust idlers to remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
3. Inflate tires as specified on “**Tire Inflation Chart**” on page 64.
4. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. “**Safety Decals**” on page 5.



Marker Maintenance

⚠ 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 injured, seek immediate medical assistance from a physician familiar with this type of injury.*



Marker Cylinder Bleeding

Refer to Figure 56

NOTICE

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

NOTICE

JIC fittings do not require high torque. JIC and O-ring fittings do not require sealant. Always use liquid pipe sealant when adding or replacing (NPT) pipe-thread fittings. To avoid cracking hydraulic fittings from over tightening, and to keep tape fragments from clogging filters, do not use plastic sealant tape.

1. Begin with drill lowered, and with both marker sides extended. For sequenced markers, see "**Both Sides Unfolded (with Sequence Valve)**" on page 23.
2. Note the position of the cylinder stop.
3. Remove the pins from the rod ends of the marker cylinders. Orient the cylinders so that the rods can extend without striking marker components.
4. Loosen the JIC fitting ① at the base end of one marker cylinder.
5. Extend the circuit until fluid appears at the loosened fittings. It may be necessary to extend-retract-extend to cycle the sequence valve to that marker. Set circuit to Neutral. Secure fittings.
6. Loosen the JIC fitting ② at the rod end of that same marker cylinder.
7. Retract the circuit until fluid appears at the loosened fittings. Set circuit to Neutral. Secure fittings.
8. Repeat for the other side.
9. Reorient cylinder stop to position noted at step 2.

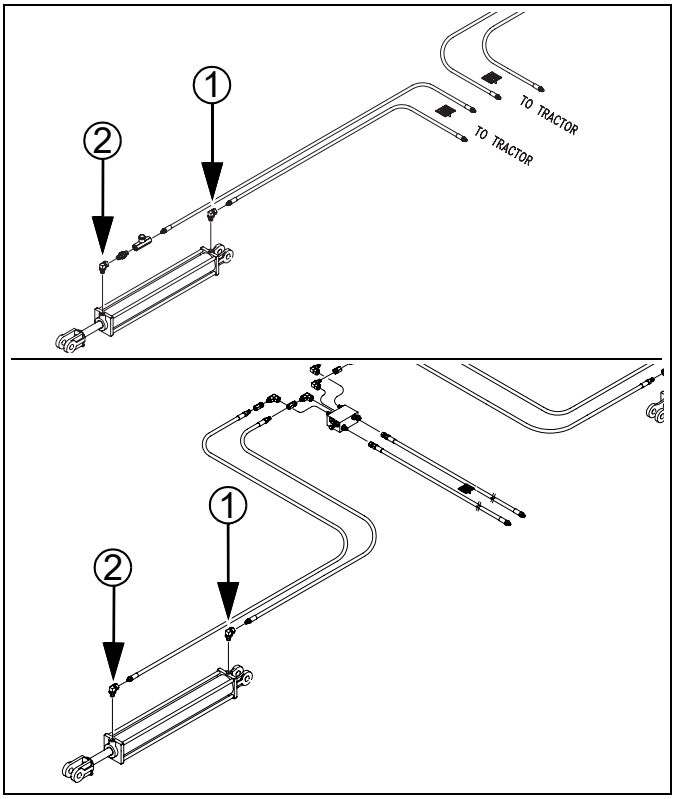


Figure 56
Marker Bleed

17643
26222

10. Install the pins in the rod ends of the marker cylinders.

Marker Shear Bolt Replacement

Refer to Figure 57

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt ① at the fold, pivot on a second bolt ②, and swing back.

The shear bolt ① is a hex head cap screw, $^{3}/_{8}$-16 x 2 in Grade 2, Great Plains part number 802-266C, plus a $^{3}/_{8}$-16 lock nut, Great Plains part number 803-013C.

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

NOTICE

Do not use a higher grade bolt, or marker hang-ups may result in machine damage.

📖 NOTE: Do not use a smaller or lower grade bolt, or you may experience nuisance shears.

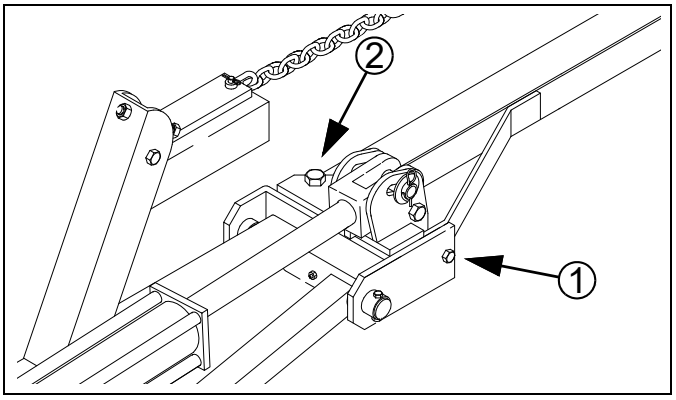


Figure 57 15669
Marker Shear Bolt

Marker Transport Carrier

When marker is folded, the second section should rest in transport-carrier saddle.

Refer to Figure 58

To adjust front-to-rear position of saddle, loosen the $^{5}/_{8}$x7 in U-bolts ① that fasten transport-carrier mount onto box frame. Slide transport-carrier assembly forward or back as needed.

To adjust height of saddle, loosen $^{1}/_{2}$x2 in U-bolts ② that hold carrier tube to mounting bracket. Slide carrier tube up or down as needed.

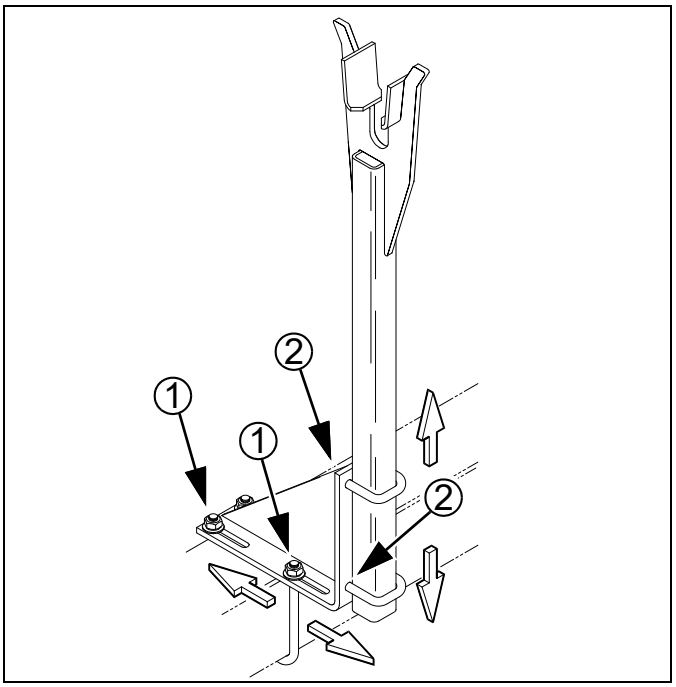


Figure 58 15632
Marker Transport Carrier

Drive System Maintenance

Refer to Figure 59

For proper operation and to prevent downtime and repair, keep drive chains properly adjusted and lubricated. Regularly check drive chains for excess slack and wear.

Adjust idlers to remove any excess slack from chains.

NOTE: Be sure chain is installed with the chain connector link retainer facing out for ease of access and inspection, and the clip opening (split end) facing the opposite direction of chain travel.

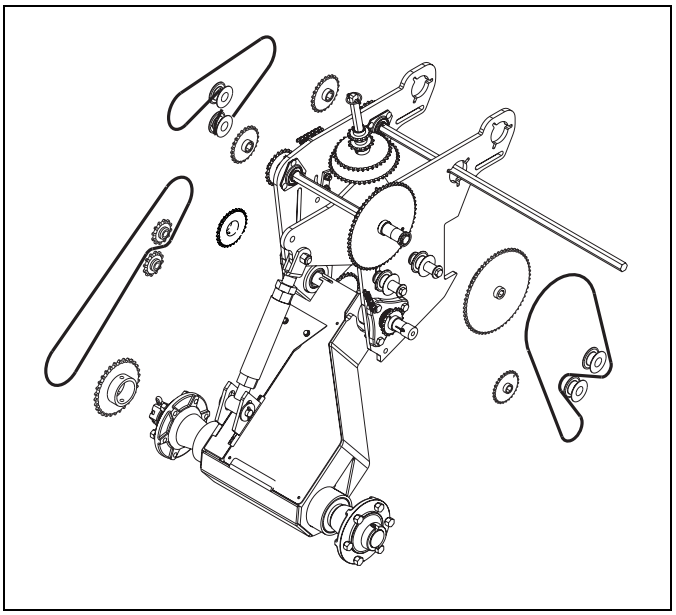


Figure 59 26251
Drive Chains

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

1. Measure the span ① for allowable slack: Locate the longest span of each chain (usually the span which does not run through the idlers).
2. Determine the ideal slack: Long chains over 36 in (91 cm): $\frac{1}{4}$ in per foot Vertical short chains: $\frac{1}{4}$ in per foot (2.1 cm/m) Horizontal short chains: $\frac{1}{2}$ in per foot (4.2 cm/m).
3. Measure the current slack ②: Acting at a right angle to the chain span at the center of the span, deflect the chain in both directions. The slack is the distance of the movement.
4. Adjust the idlers for ideal slack.

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

Refer to Figure 61 (arrow shows chain direction)

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

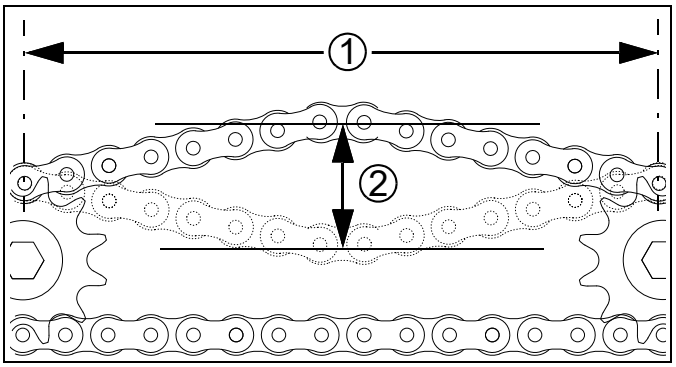


Figure 60 27264
Measuring Chain Slack

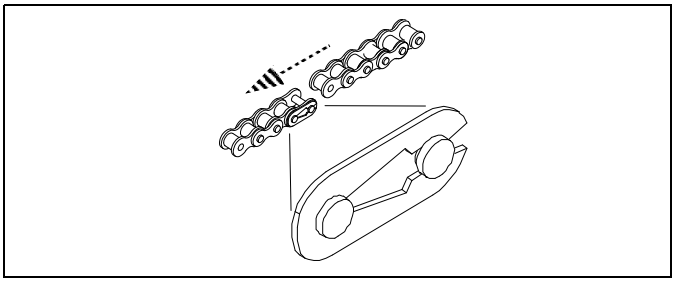


Figure 61 26482
Chain Clip Orientation

Row Unit Maintenance

Seed Cup Clean-Out

Refer to Figure 62, which depicts the seed cup door handle ① in a normal operating position.

1. Set the Seed Rate Handle to zero (0) for the side 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 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. When all seed has been removed, set Seed Rate handle to 100, raise drill, and have an assistant rotate gauge wheel. Inspect the sprockets at each seed cup for excess wear or damage.

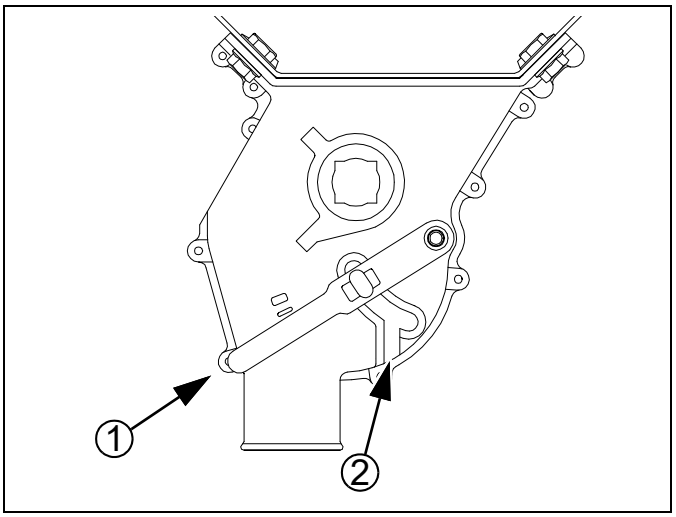


Figure 62 26211
Seed Cup Door Handle

📖 NOTE: It is not necessary to rotate the gauge wheels for clean-out. With the Seed Rate set to zero, nothing moves inside the seed cups.

Opener Side Wheel Maintenance

Refer to Figure 63

1. Lift opener side wheel off the ground. Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.
2. The side wheels are preset at the factory. However, because of normal wear it may become necessary to make adjustments so the wheel remains close to the disk. To prevent plugging, loosen clamp bolt ① and slide arm inward to take up gap between side wheel and disk blade. If more adjustment is needed, go to step 3.
3. Remove bolt ② and wheel ③. Remove shims ④ from the inside of wheel ③ and place them on the outside of wheel. Always place removed shims from the inside to the outside. When installed, wheel should turn freely and not hit the arm at the curve. Do not add any more shims than necessary.
4. Disassemble side gauge wheel arm ⑤ from unit. Remove bushing ⑥ from sleeve ⑦ and check for wear. If necessary, replace bushing.
5. When reinstalling side gauge wheels, align tab on hex adjustment ⑧ with notch in bushing. Replace bolt and tighten.
6. Adjust side gauge wheels. See “**Side Gauge Wheel Adjustment**” on page 40.

⚠ CAUTION

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

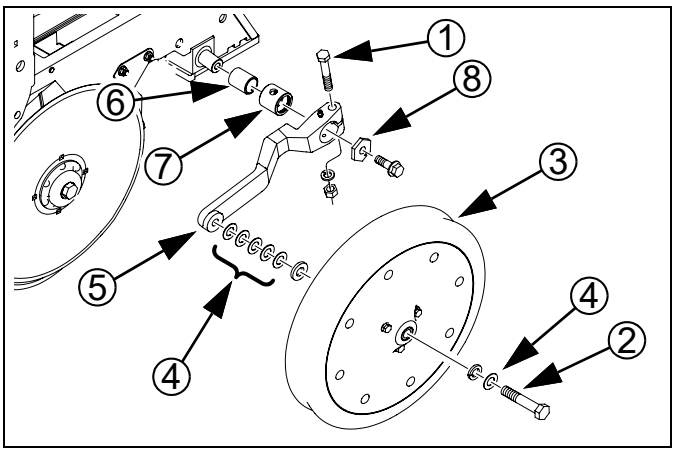


Figure 63 21894
Side Gauge Wheel Shims

Opener Disc Maintenance

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

1. Remove side gauge wheels from arms to access row-unit disks and scrapers.
2. While performing this maintenance, check blade contact per the procedure on page 39.

📖 NOTE: You may need fewer shims on worn disks.

20 Series Spreaders and Scrapers

Refer to Figure 64

3. With the unit raised, check blade spreader ① for wear. Replace spreader if it is $^{3}/_{4}$ in (19 mm) wide or narrower. To replace, remove disk blades ③, drive out roll pins ②, and install new spreader.
4. When reinstalling disk blades, put three shims ④ between bearing and shank on each blade. Store any removed shims on the outside of the disk ⑤.
5. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See "**Opener Disk Contact Region**" on page 39.

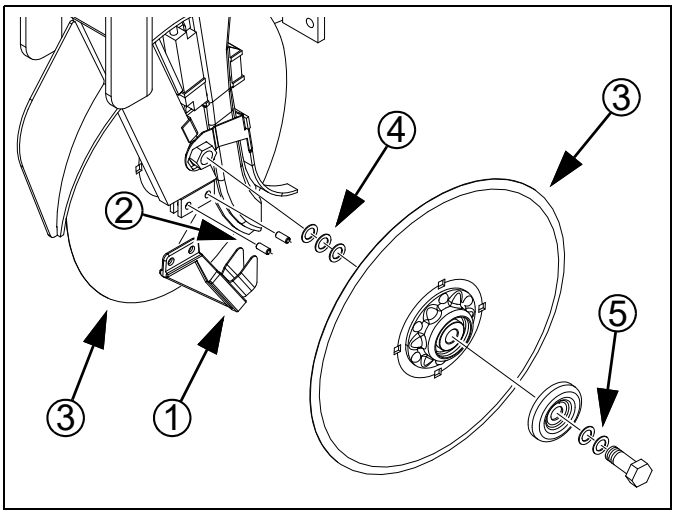


Figure 64: 20 Series Spreaders and Scrapers 20433

25 Series Disk Spreaders and Scrapers

Refer to Figure 65

3. With the unit raised, check blade spreader ① for wear. Replace spreader if it is $^{1}/_{2}$ in (12.7 mm) wide or narrower. To replace, remove disk blades ③, drive out roll pins ②, and install new spreader.
4. When reinstalling disk blades, put two shims ④ between bearing and shank on each blade.
5. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See "**Opener Disk Contact Region**" on page 39.
6. Check that outside disk scrapers ⑤ are formed to disk blades to help remove any mud. Bend and twist scrapers to fit blades as necessary. After every 200 acres of operation, check outside scrapers for proper adjustment and wear. Replace outside scrapers as necessary.

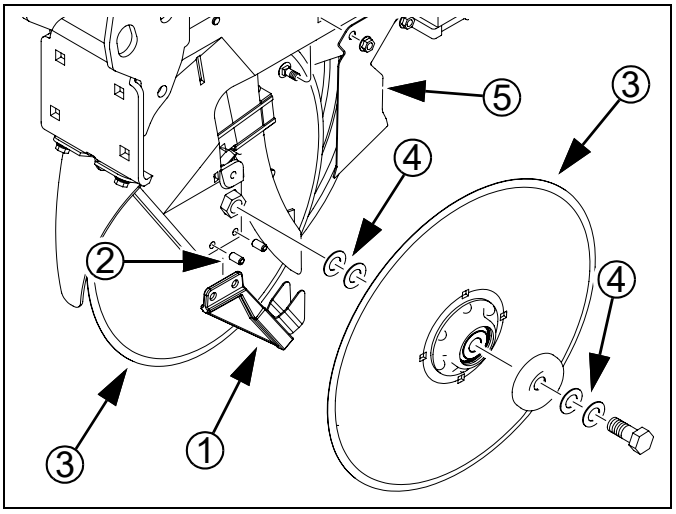


Figure 65: 25 Series Spreaders and Scrapers 22839

Seed Flap Replacement (2010+)

Refer to Figure 66

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

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

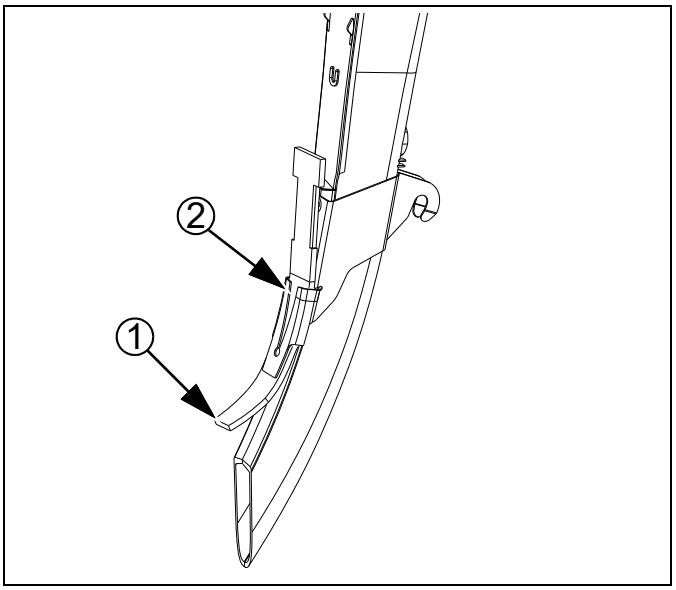


Figure 66 31047
816-302C Seed Tube Flap

Seed Flap Replacement (2009-)

Refer to Figure 67

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.

If replacing with 816-302C: See seed flap replacement instructions below.

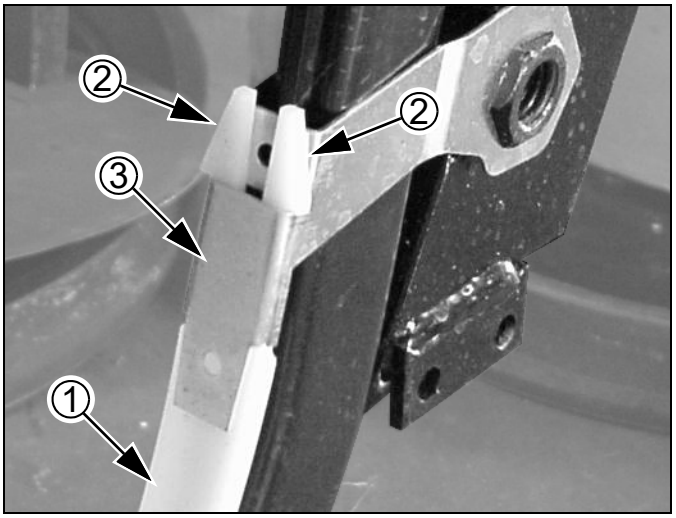
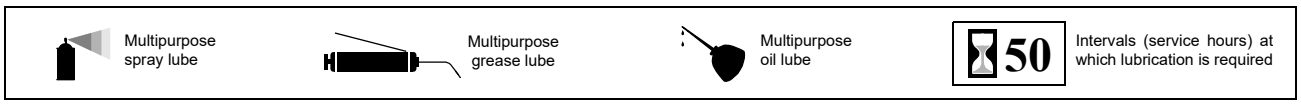
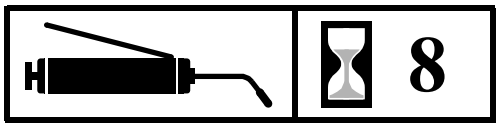


Figure 67 19398
817-349C Seed Tube Flap

Lubrication

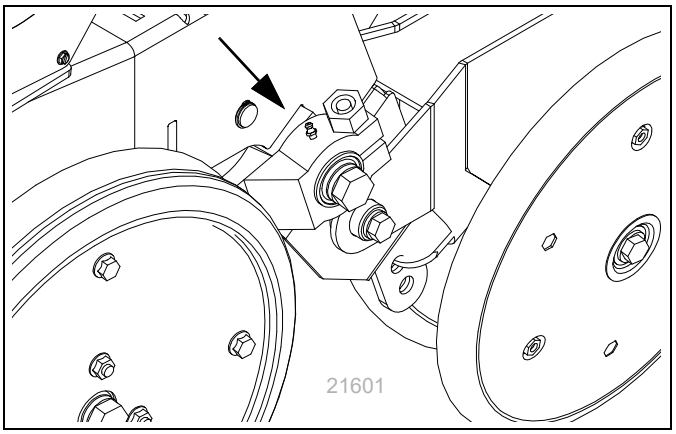


Row Unit: Side Wheel Bushing

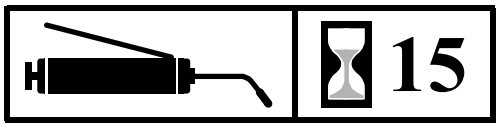


20 Series: 2 zerks per row unit; one each side
25 Series: 4 zerks per row unit; two each side

Type of Lubrication: Grease
Quantity: Until Grease emerges

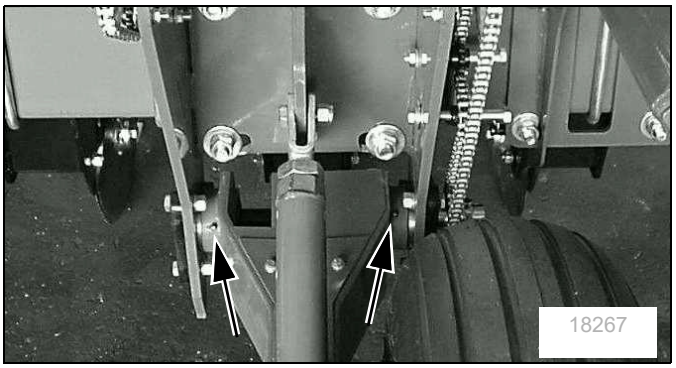


Gauge Wheels: Arm Pivots

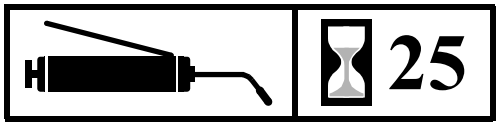


4 zerks per row unit; two each drive assembly

Type of Lubrication: Grease
Quantity: Until Grease emerges

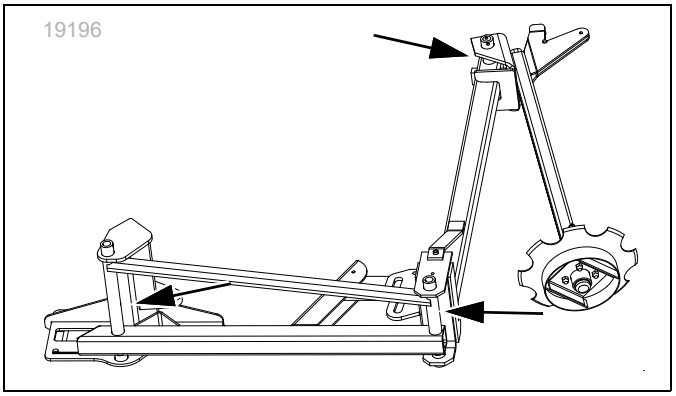


Markers: Hinge Points

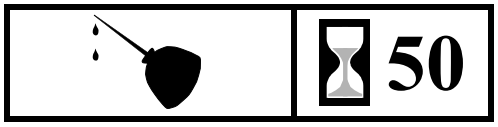


6 zerks; 3 per marker (at the center of each hinge tube)

Type of Lubrication: Grease
Quantity: Until Grease emerges



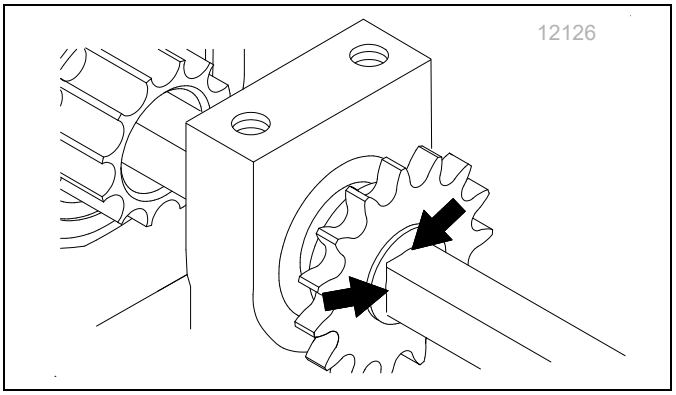
Seed Cup Drive Shaft Sprocket



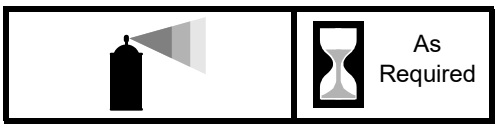
2 sliding sprockets; one each side

Type of Lubrication: Oil
Quantity: Coat thoroughly

Move the Seed Rate adjustment handle back and forth to get oil back into the square bore. Perform this with no seed in seed box, or handle may be difficult to return to zero.



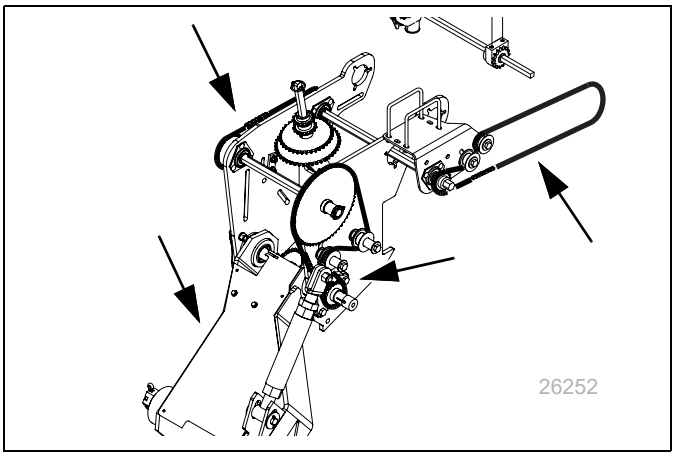
Gauge Wheel Chains



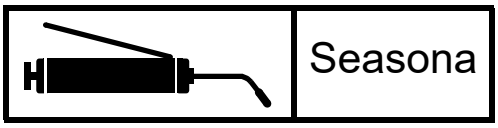
(Ground Drive only)
4 chains, 1 each side; 8 total
Remove chain guard for access to lower chain.

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

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

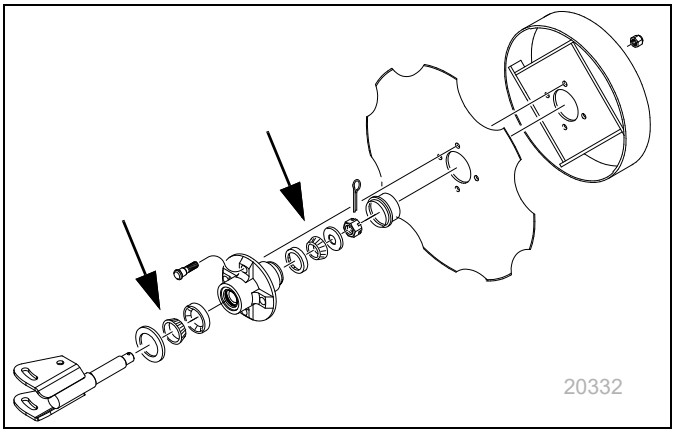


Markers: Disk Hubs

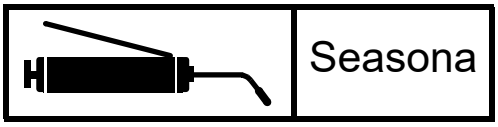


4 bearings; 2 each marker

Type of Lubrication: Grease
Quantity: Repack

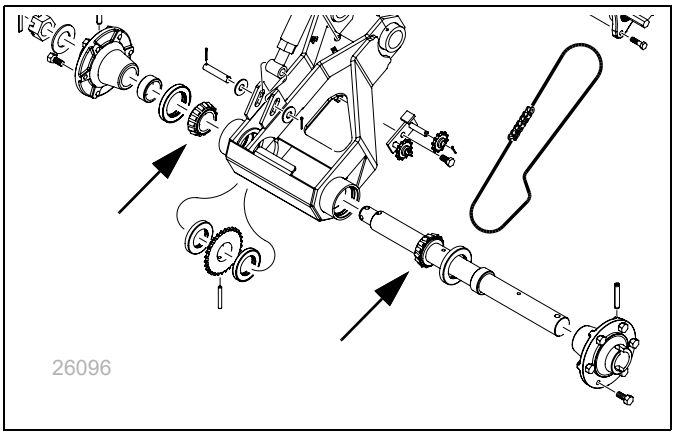


Gauge Wheels: Wheel Bearings



4 bearings; 2 each gauge wheel assembly

Type of Lubrication: Grease
Quantity: Repack



Options

Hitch Setback Kit

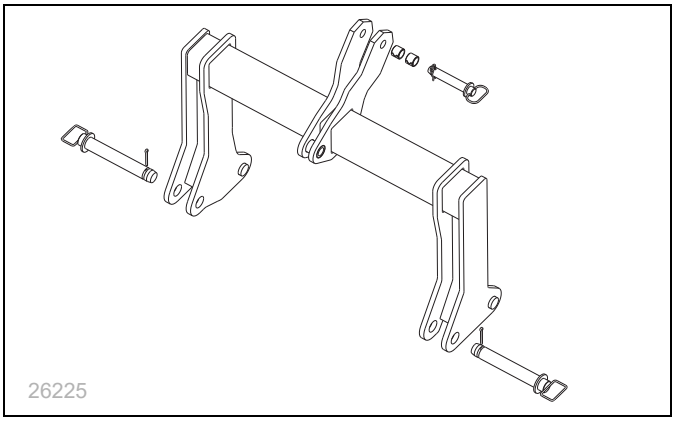
This accessory extends the 3-point hitch to eliminate interference with:

- auxiliary hitches (such as Great Plains SSH)

when the drill has:

- 25 Series row units, or 10 Series HD openers and
- unit-mounted coulters.

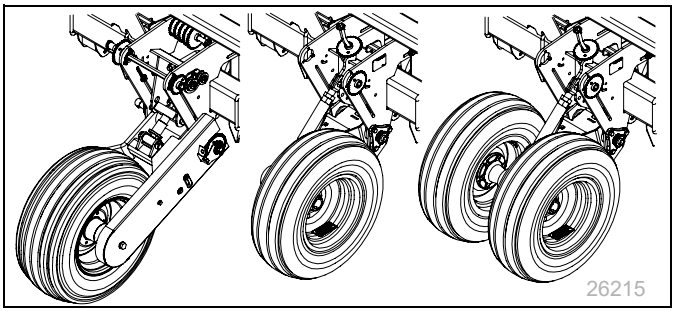
Description	Part Number
25 SERIES SSH SETBACK KIT	118-130A



Gauge Wheels

All models offer a choice of single or dual gauge wheels.

On twin-row models, the single gauge wheel is offset for planting in beds.



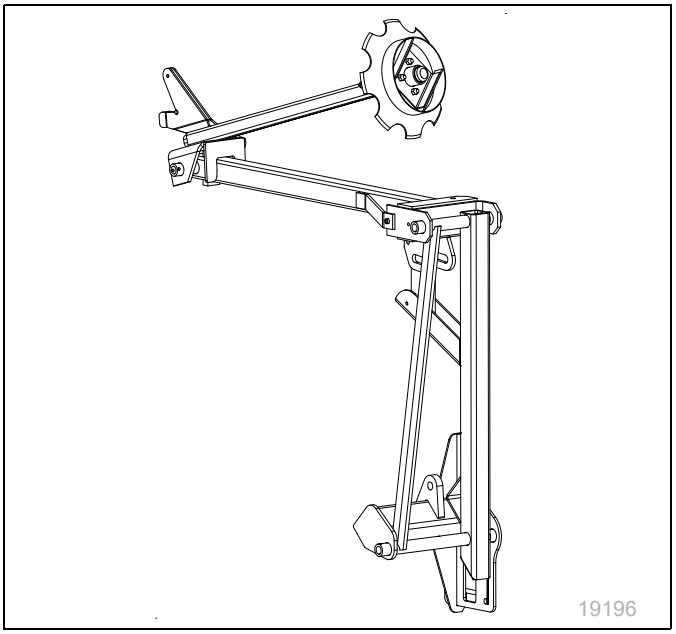
Markers

Hydraulic markers are available for all models as dual-circuit, with each side operated by a separate dedicated tractor hydraulic circuit.

For 20-foot 2020F and 2025F, markers are also available as single-circuit, with an automatic sequence valve for fold/unfold on each side.

Description	Order Number
2020F and 2025F Flat Fold Markers with sequence valve	113-694A
2020F and 2025F Flat Fold Markers for separate circuits	113-704A
2520F and 2525F Flat Fold Markers for separate circuits	113-784A

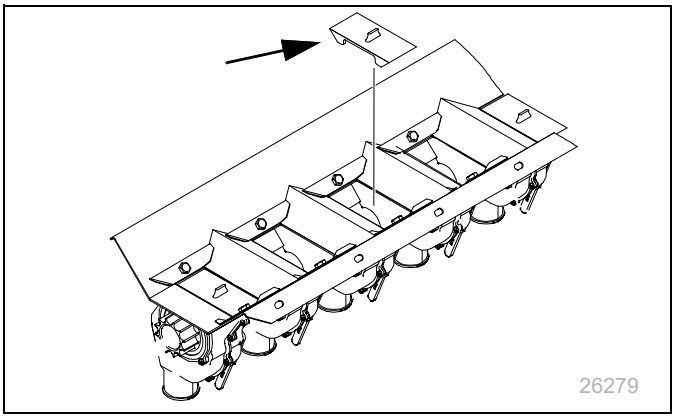
For operations, see: “**Marker Operation**” on page 23 “**Marker Adjustments**” on page 27, and “**Marker Maintenance**” on page 51.



Seed Tube Plug

This plug stops seed flow from the seed box at the top of a seed tube. It prevents flow independently of the sliding sprocket in the seed cup. Order one per row to set inactive.

Description	Part Number
Seed tube plug	817-087C

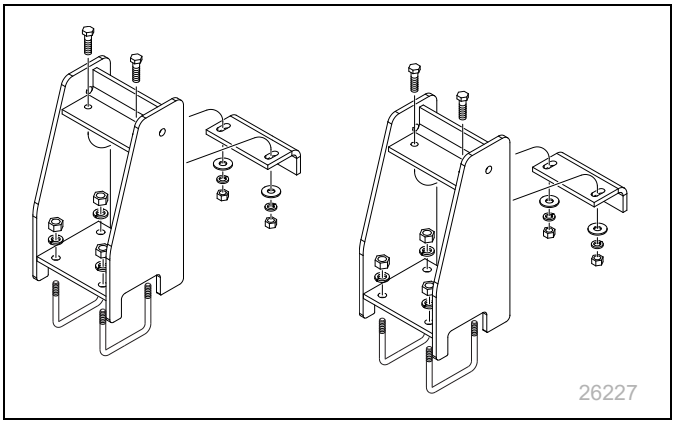


Weight Bracket Kit

The optional weight bracket kit is used to add standard “suitcase” weights to the drill frame, increasing the amount of down-force available to row units, and improving gauge wheel ground contact.

To order the Weight Bracket Kit, contact your Great Plains dealer.

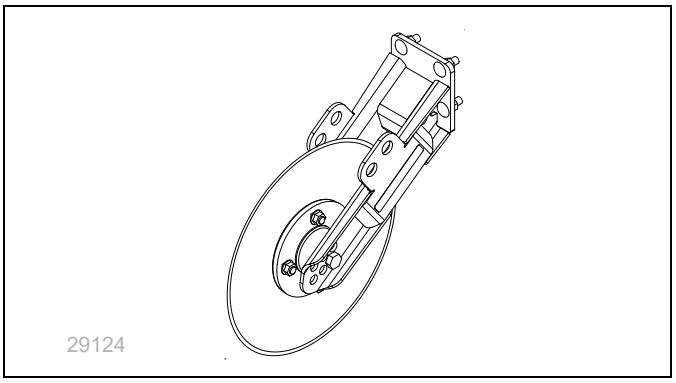
Description	Order Number
20F and 25F Weight Bracket Kit	118-071A



Unit-Mounted Disk Coulters

Optional unit-mount disk coulters are available for 25 Series drills (2025F and 2525P). Order one per row unit.

Description	Part Number
Coulter with 15 in Fluted Blade	204-616L
Coulter with 15 in Turbo Blade	204-617L

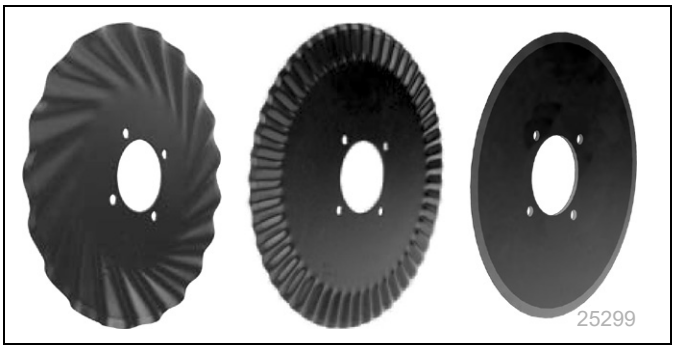


Coulter Blades

Replacement and alternate coulter blades include (qty. 1 per row unit):

Description	Part Number
Fluted, 15 in (50 flutes)	820-331C
Turbo, 15 in (20 flutes)	820-327C

For operations, see: “**25 Series Coulter Adjustments**” on page 37.



Scrapers

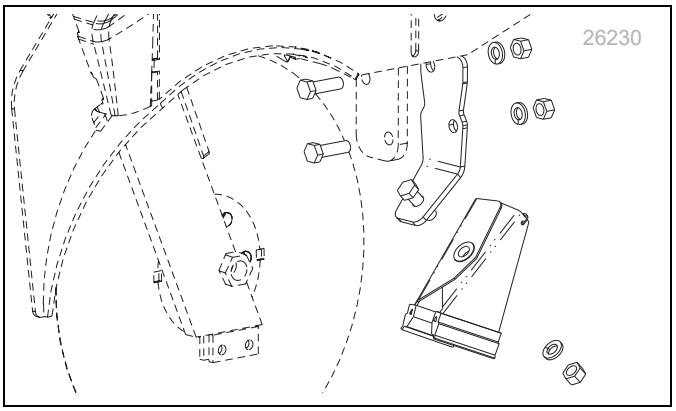
20 Series Inside Scrapers

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

Description	Part Number
carbide disc scraper	122-259K

These scrapers cannot be used with Seed-Lok seed firmers installed.

For operations, see "**Row-Unit Opener Disk Adjustments**" on page 39.



25 Series Gauge Wheel Scrapers

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

Order one part per wheel (2 per opener).

Description	Part Number
2 1/2 in Gauge wheel scraper	404-194D
3 in Gauge wheel scraper	404-195D
4 in Gauge wheel scraper	404-196D

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

For operations, see: "**Adjusting 25 Series Gauge Wheel Scrapers**" on page 41.

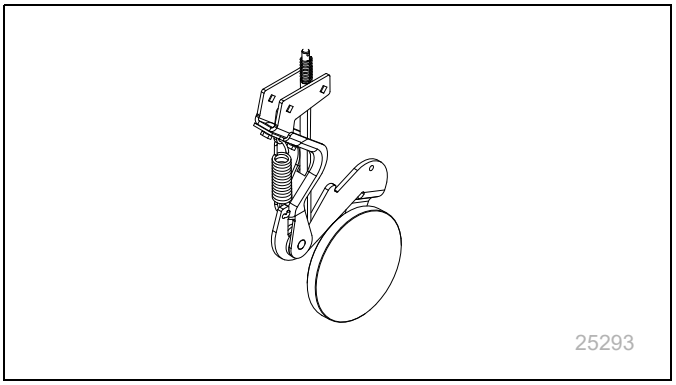
Seed-Lok® Seed Firmer

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.

The Seed-Lok® seed firmer may not be mounted if the optional 20 Series carbide inner disc scraper is installed.

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

For operations, see: "**Seed Firmer Adjustments**" on page 42.

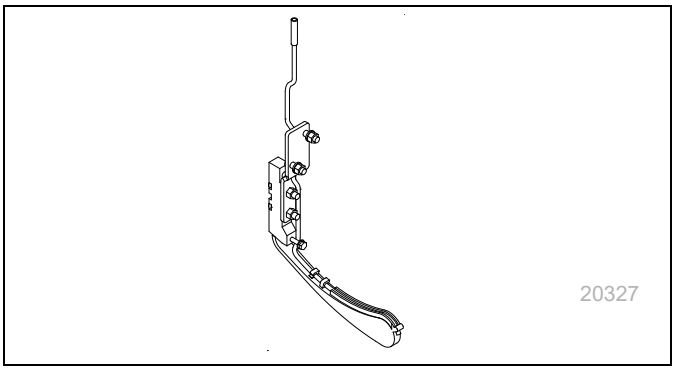


Keeton Seed Firmer

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. If your drill has seed flaps, they need to be removed when Keeton firmers are installed.

Description	Part Number
Keeton seed firmer (per opener)	404-171S

For operations, see: "**Seed Firmer Adjustments**" on page 42.

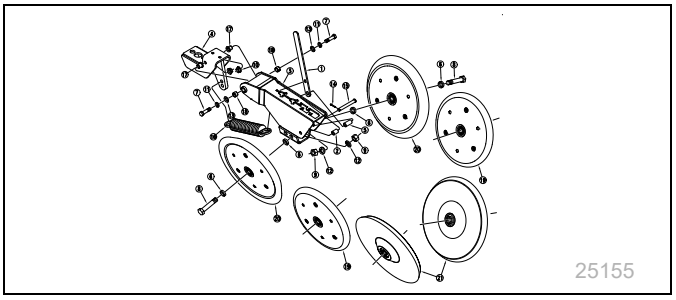


Row Unit Press Wheels

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

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

For operations, see: "**Press Wheel Adjustment**" on page 43.



Acremeter

One digital electronic acremeter is standard on the drill. If you require a replacement, or alternate units of measure, order one of the parts below.

Units of Measure	Acremeter Part Number
20P Acres	823-495C
20P Hectares	823-495C
25P Acres	823-495C
25P Hectares	823-495C

See "**Acremeter Operation**" on page 19.

Figure 68
Electronic Acremeter

Appendix

Specifications and Capacities

	2020F	2025F	2520F	2525F
Tractor Requirements	Category III and IV-N tractors			
Raised Hitch Load (without markers, seed, coulters or weight kits)	4816 to 8376 lb 2185 to 3799 kg	5346 to 8598 lb 2425 to 3900 kg	6183 to 10439 lb 2805 to 4735 kg	6888 to 10616 lb 3124 to 4815 kg
Hydraulic Circuits	1 or 2 (markers)			
Hitch	3-point			
Width	21 ft (6.4 m)		25 ft 2 in (7.67 m)	
Length	9 ft 9 in (2.97 m)			
Clearance	{depends on tractor 3-point lift height}			
Height	6 ft 2 in (188 cm) without markers 7 ft 2 in (218 cm) with markers		6 ft 1 in (185 cm) without markers 8 ft (244 cm) with markers	
Seed Box Height	5 ft 11 in (180 cm)			
Seed Box Capacity	48 bu		54 bu	
Tire Sizes	Single: 11L-15SL 12 Ply Straight Rib Dual: 11L-15 8 Ply Straight Rib			
Opener Travel	10 in (25.4 cm)	10 in (25.4 cm)	10 in (25.4 cm)	10 in (25.4cm_
Opener Depth Range	0-3.5 in (8.9cm)	0-4 in (10.1cm)	0-3.5 in (8.9cm)	0-4 in (10.1 cm)
Opener Down Pressure (per row)	100 to 225 lb 45 to 102 kg	200 to 500 lb 91 to 227 kg	100 to 225 lb 45 to 102 kg	200 to 500 lb 91 to 227 kg

Tire Inflation Chart

Wheel	Tire Size	Inflation
Single-Wheel Ground Drives	11L-15SL 12 Ply Straight Rib	52 psi 359 kPa
Dual-Wheel Ground Drives	11L-15 8 Ply Straight Rib	36 psi 248 kPa

Tire Warranty Information

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

Manufacturer	Web Site
Firestone	www.firestoneag.com
Goodyear	www.goodyearag.com
BKT	www.bkt-tires.com
Titan	www.titan-intl.com
Gleason	www.gleasonwheel.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

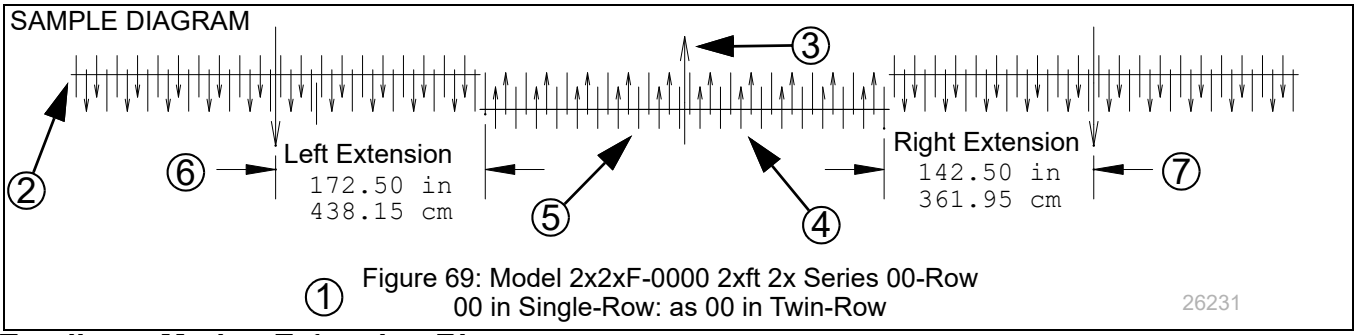
d. ft-lb = foot pounds

Torque tolerance + 0%, -15% of torquingvalues. Unless otherwise specified use torquevalues listed above. 25199

Marker Extension

The diagrams in this section show marker extension distances for all supported row unit configurations of all drills covered by this manual.

Measure from the centerline of the outside row unit present (not the outside row unit *in use*) on each side.



① Figure 69: Model 2x2xF-0000 2xft 2x Series 00-Row 00 in Single-Row: as 00 in Twin-Row

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Reading a Marker Extension Diagram

Refer to Figure 69

Find the chart for your drill width (20 ft or 25 ft), row unit Series (20 or 25), and row spacing.

The Figure title block ① identifies the drill model, size, row unit type, default row count, default row spacing, and whether the diagram applies to a modified row spacing.

Each illustration shows three drills, their tool bars represented by the horizontal lines ②. The large arrows ③ show the direction of travel.

The small arrows ④ show active row units. For modified row spacings, the short vertical lines ⑤ (no arrows) show which row units to shut off.

Note that Left-hand ⑥ and Right-hand ⑦ extension dimensions may not be the same, and can be substantially unequal.

Model 2020F Marker Extension

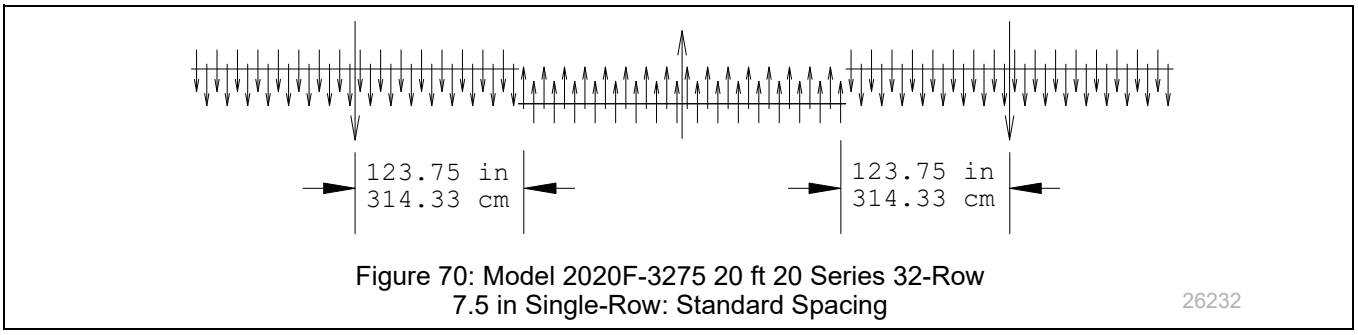

Figure 70: Model 2020F-3275 20 ft 20 Series 32-Row 7.5 in Single-Row: Standard Spacing

26232

118-232M2020F, 2025F, 2520F and 2525F

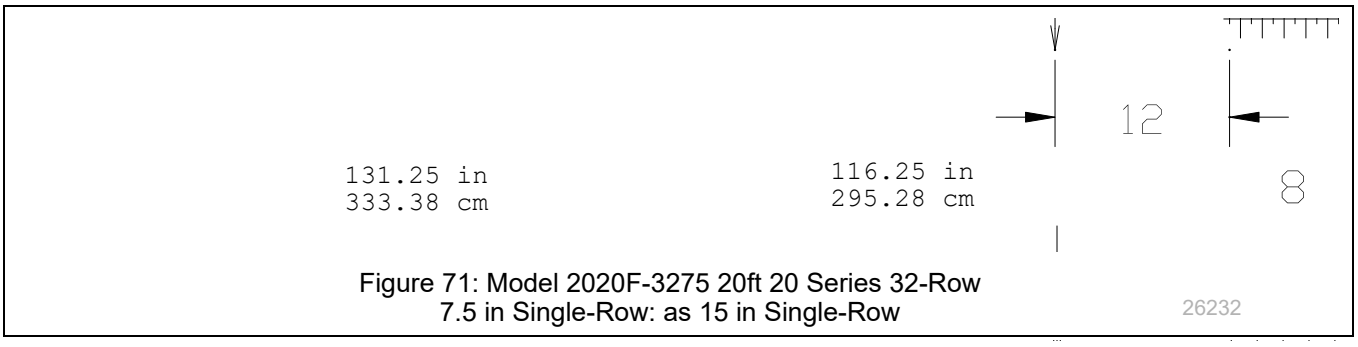

Figure 71: Model 2020F-3275 20ft 20 Series 32-Row 7.5 in Single-Row: as 15 in Single-Row

26232

Model 2020F Marker Extension, cont...

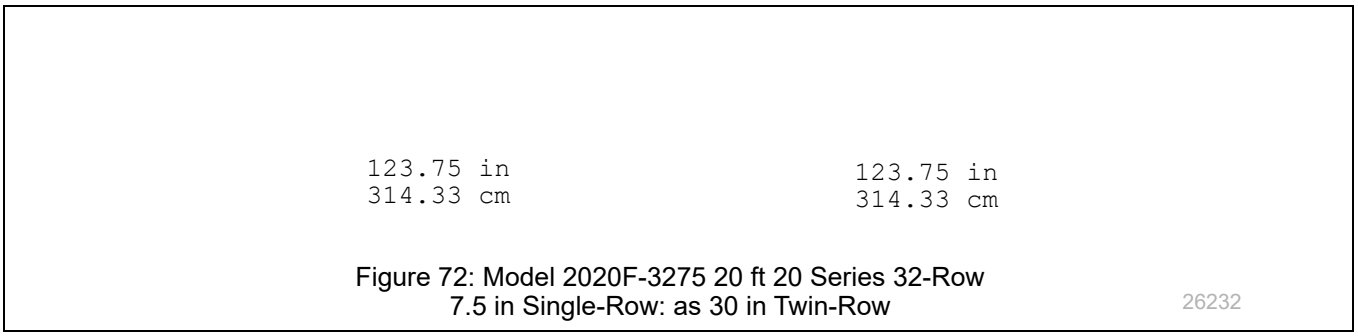

Figure 72: Model 2020F-3275 20 ft 20 Series 32-Row
7.5 in Single-Row: as 30 in Twin-Row

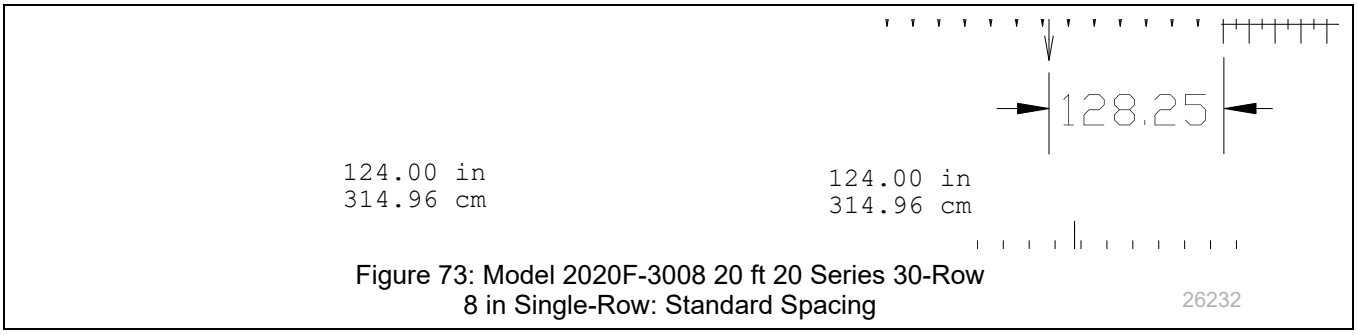

Figure 73: Model 2020F-3008 20 ft 20 Series 30-Row
8 in Single-Row: Standard Spacing

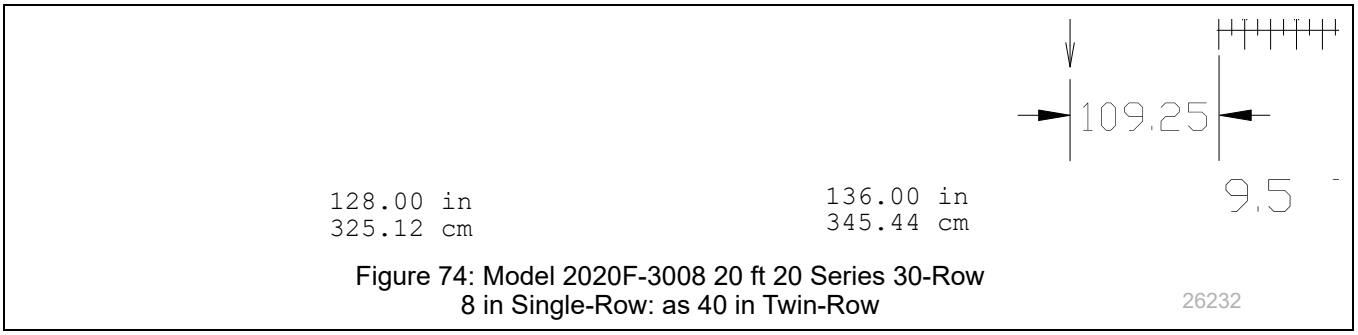

Figure 74: Model 2020F-3008 20 ft 20 Series 30-Row
8 in Single-Row: as 40 in Twin-Row

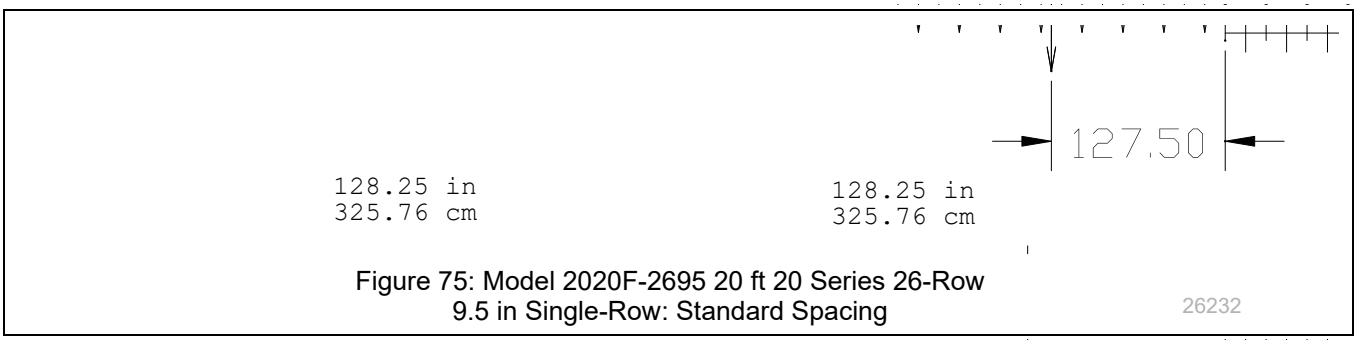

Figure 75: Model 2020F-2695 20 ft 20 Series 26-Row
9.5 in Single-Row: Standard Spacing

Model 2020F Marker Extension, cont...

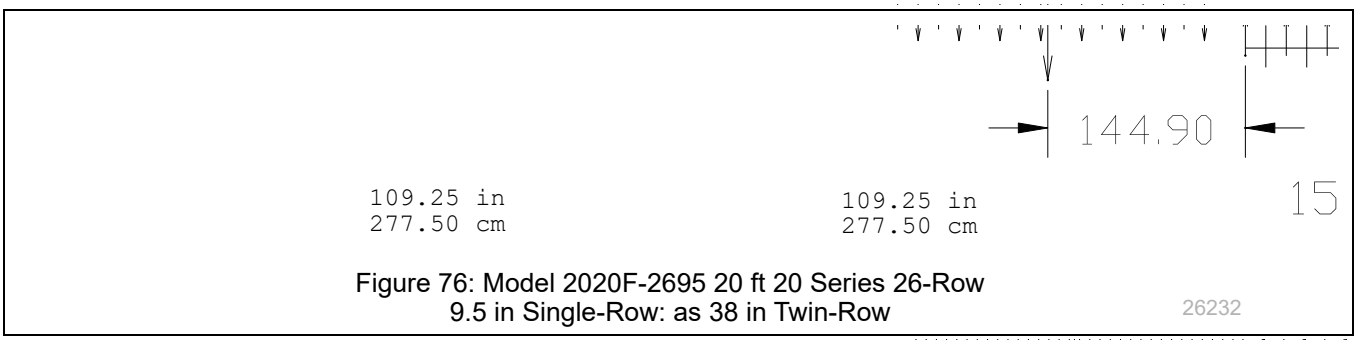

Figure 76: Model 2020F-2695 20 ft 20 Series 26-Row
9.5 in Single-Row: as 38 in Twin-Row

26232

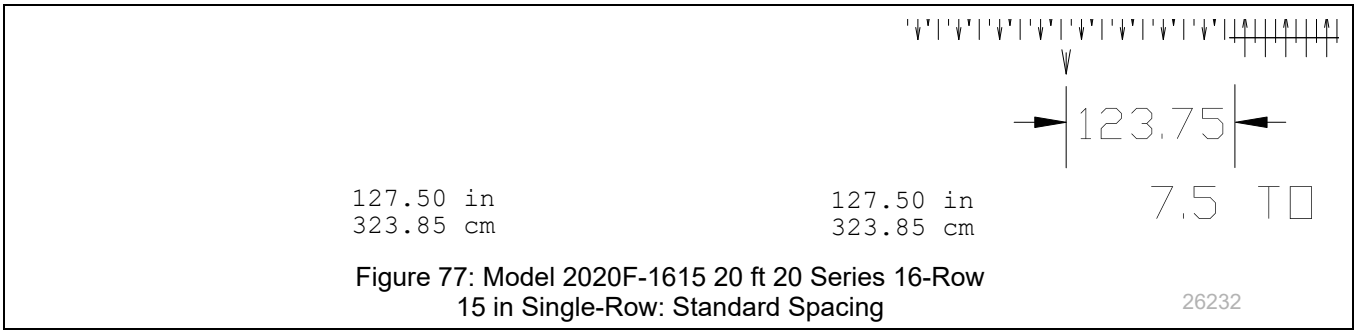

Figure 77: Model 2020F-1615 20 ft 20 Series 16-Row
15 in Single-Row: Standard Spacing

26232

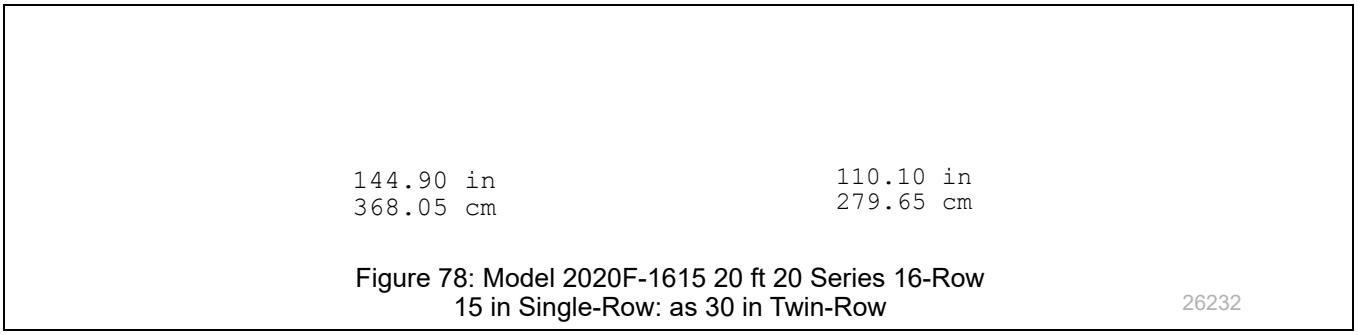

Figure 78: Model 2020F-1615 20 ft 20 Series 16-Row
15 in Single-Row: as 30 in Twin-Row

26232

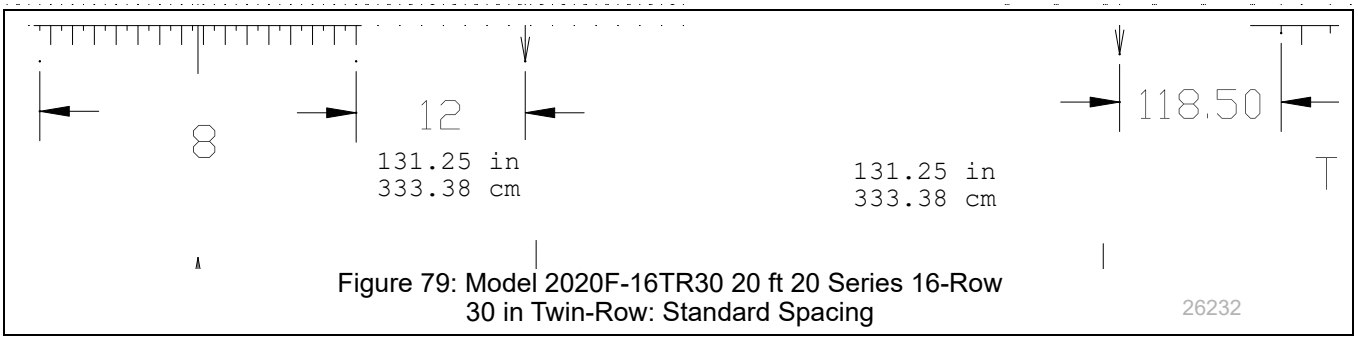

Figure 79: Model 2020F-16TR30 20 ft 20 Series 16-Row
30 in Twin-Row: Standard Spacing

26232

Model 2020F Marker Extension, cont...

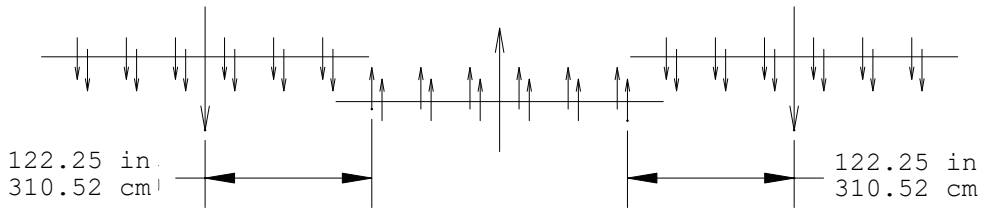

Figure 80: Model 2020F-12TR36 20 ft 20 Series 12-Row 36 in Twin-Row (7.5 in pairs): Standard Spacing

26232

Figure 81: Model 2020F-12TR3615 20 ft 20 Series 12-Row 36 in Twin-Row (15 in pairs): Standard Spacing

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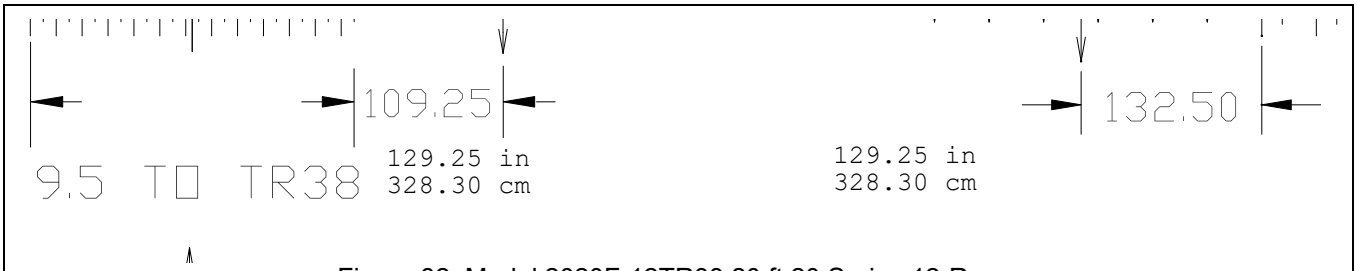


Figure 82: Model 2020F-12TR38 20 ft 20 Series 12-Row 38 in Twin-Row (7.5 in pairs): Standard Spacing

26232

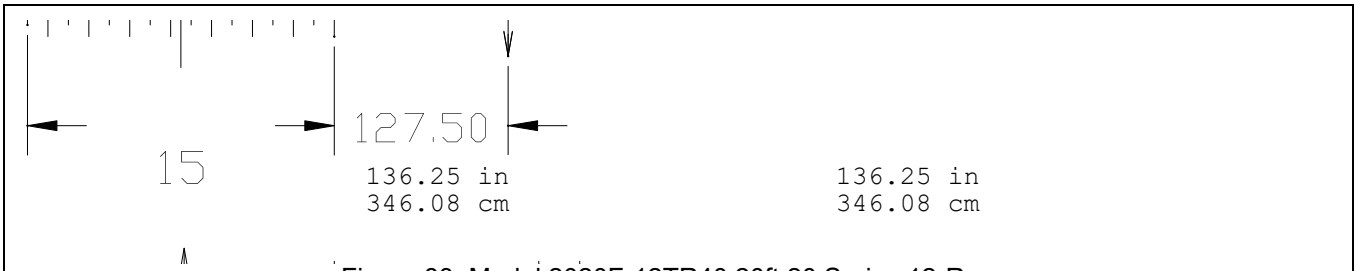


Figure 83: Model 2020F-12TR40 20ft 20 Series 12-Row 40 in Twin-Row (7.5 in pairs): Standard Spacing

26232

Model 2020F Marker Extension, cont...

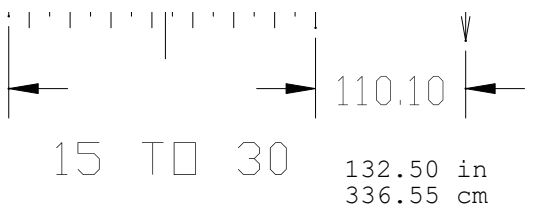


Figure 84: Model 2020F-12TR4015 20 ft 20 Series 12-Row 40 in Twin-Row (15 in pairs): Standard Spacing

26232

Model 2025F Marker Extension

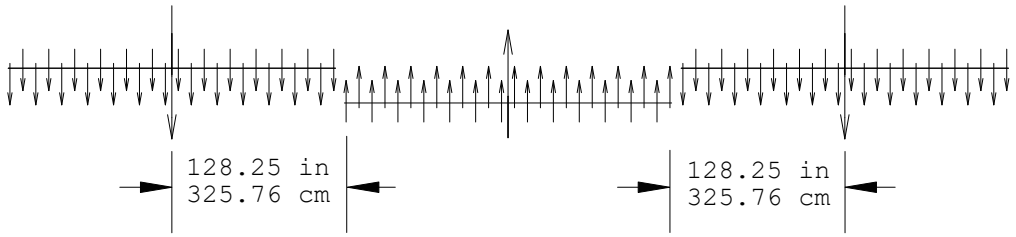


Figure 85: Model 2025F-2695 20 ft 25 Series 26-Row 9.5 in Single-Row: Standard Spacing

26233

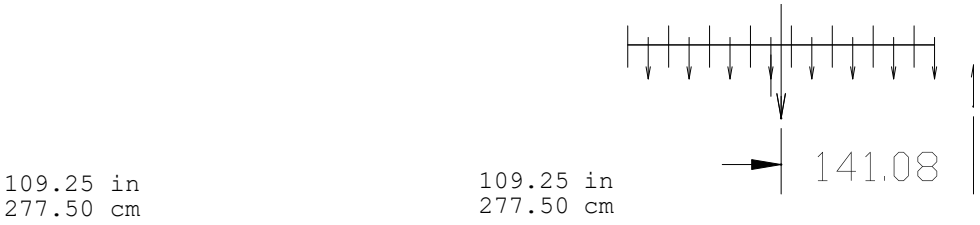


Figure 86: Model 2025F-2695 20ft 25 Series 26-Row 9.5 in Single-Row: as 38 in Twin-Row

26233

Figure 87: Model 2025F-1615 20 ft 25 Series 16-Row 15 in Single-Row: Standard Spacing

26233

Model 2025F Marker Extension, cont...

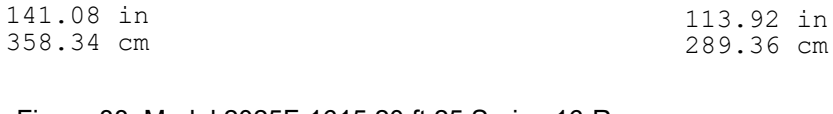


Figure 88: Model 2025F-1615 20 ft 25 Series 16-Row
15 in Single-Row: as 30 in Twin-Row

26233

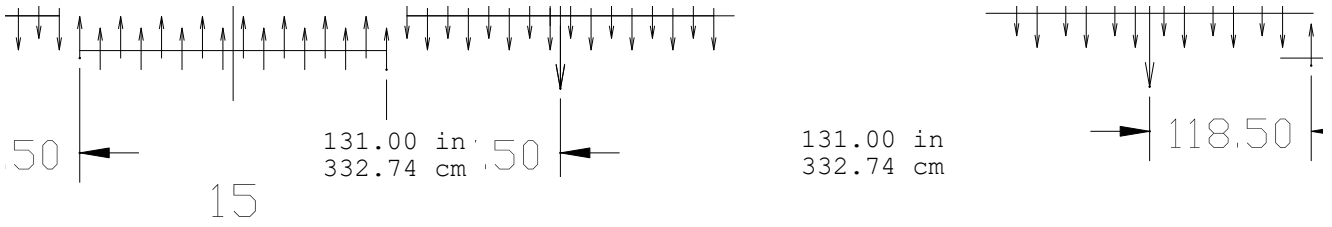


Figure 89: Model 2025F-16TR30 20 ft 25 Series 16-Row
30 in (8 in pairs) Twin-Row: Standard Spacing

26233

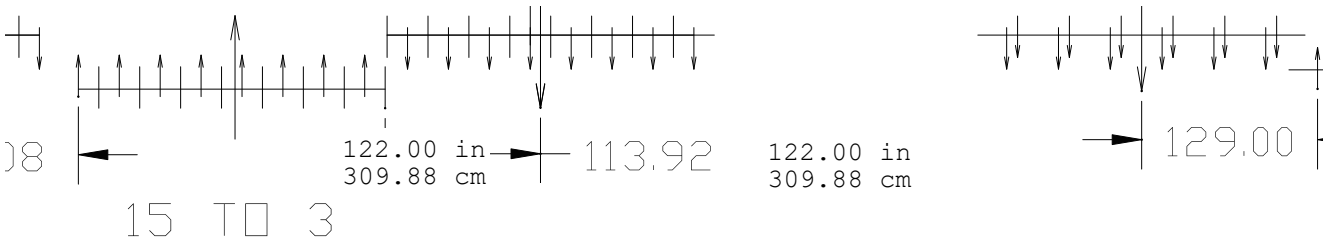


Figure 90: Model 2025F-12TR36 20 ft 25 Series 12-Row
36 in (8 in pairs) Twin-Row: Standard Spacing

26233

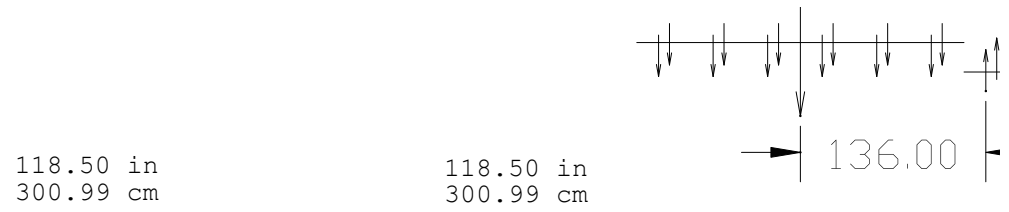
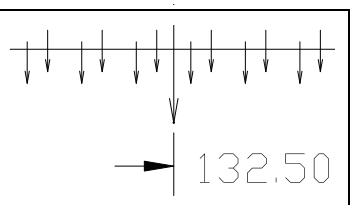


Figure 91: Model 2025F-12TR3615 20 ft 25 Series 12-Row
36 in (15 in pairs) Twin-Row: Standard Spacing

26233

Model 2025F Marker Extension, cont...



129.00 in
327.66 cm

129.00 in
327.66 cm

Figure 92: Model 2025F-12TR38 20 ft 25 Series 12-Row
38 in (8 in pairs) Twin-Row: Standard Spacing

26233

136.00 in
345.44 cm

136.00 in
345.44 cm

Figure 93: Model 2025F-12TR40 20 ft 25 Series 12-Row
40 in (8 in pairs) Twin-Row: Standard Spacing

26233

.

132.50 in
336.55 cm

132.50 in
336.55 cm

Figure 94: Model 2025F-12TR4015 20 ft 25 Series 12-Row
40 in (15 in pairs) Twin-Row: Standard Spacing

26233

Model 2520F Marker Extension

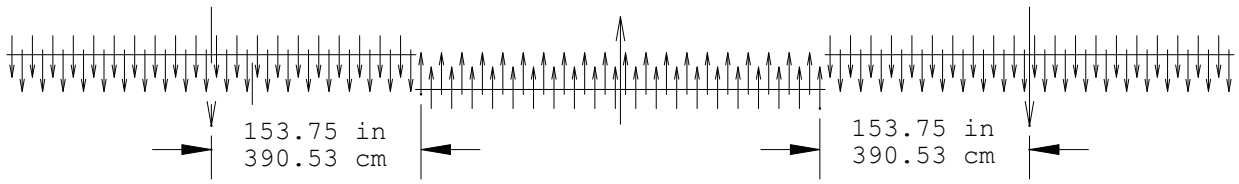


Figure 95: Model 2520F-4075 25 ft 20 Series 40-Row 7.5 in Single-Row: Standard Spacing

26231

Model 2520F Marker Extension, cont...

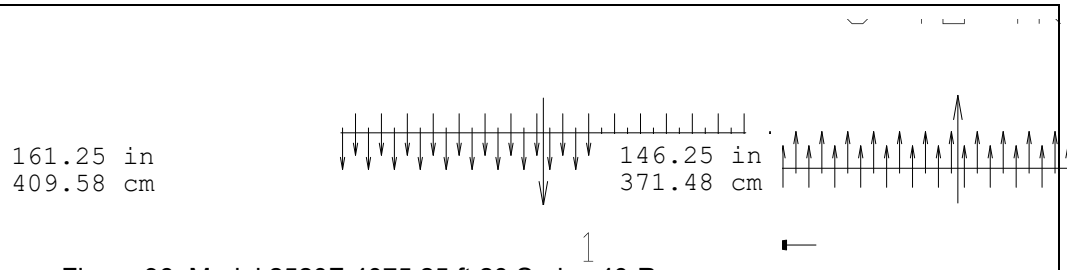


Figure 96: Model 2520F-4075 25 ft 20 Series 40-Row 7.5 in Single-Row: as 15 in Twin-Row

26231

Figure 97: Model 2520F-4075 25 ft 20 Series 40-Row 7.5 in Single-Row: as 30 in Twin-Row

26231

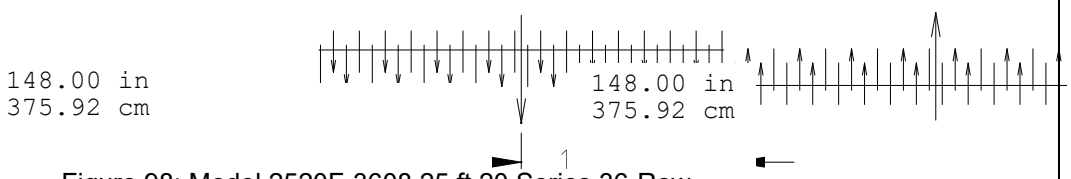


Figure 98: Model 2520F-3608 25 ft 20 Series 36-Row 8 in Single-Row: Standard Spacing

26231

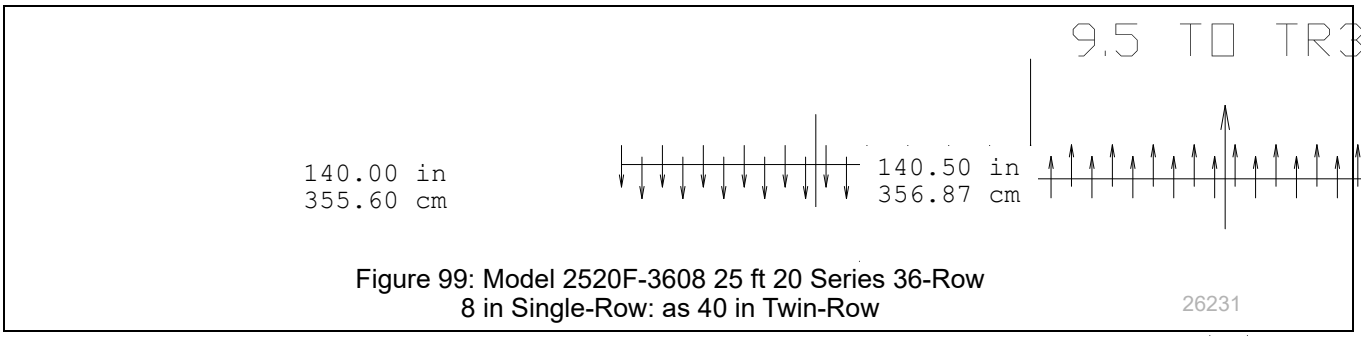


Figure 99: Model 2520F-3608 25 ft 20 Series 36-Row
8 in Single-Row: as 40 in Twin-Row

Model 2520F Marker Extension, cont...

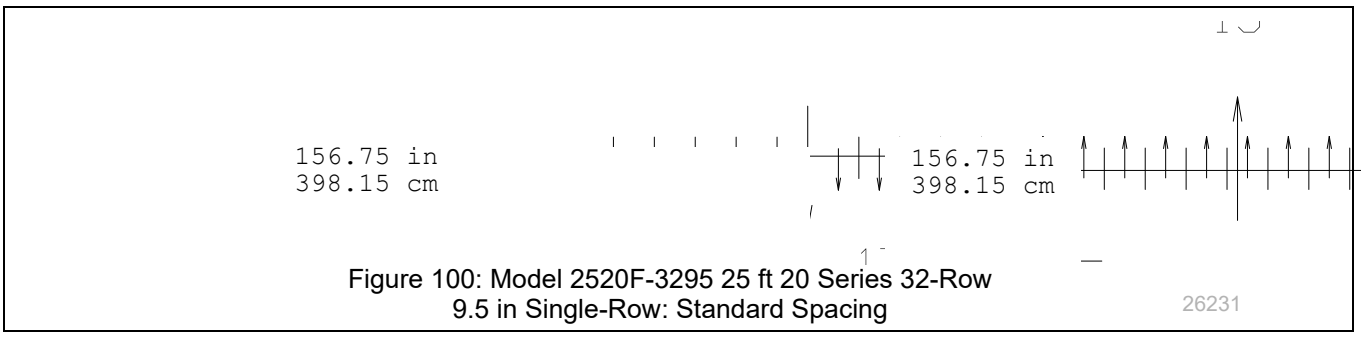


Figure 100: Model 2520F-3295 25 ft 20 Series 32-Row
9.5 in Single-Row: Standard Spacing

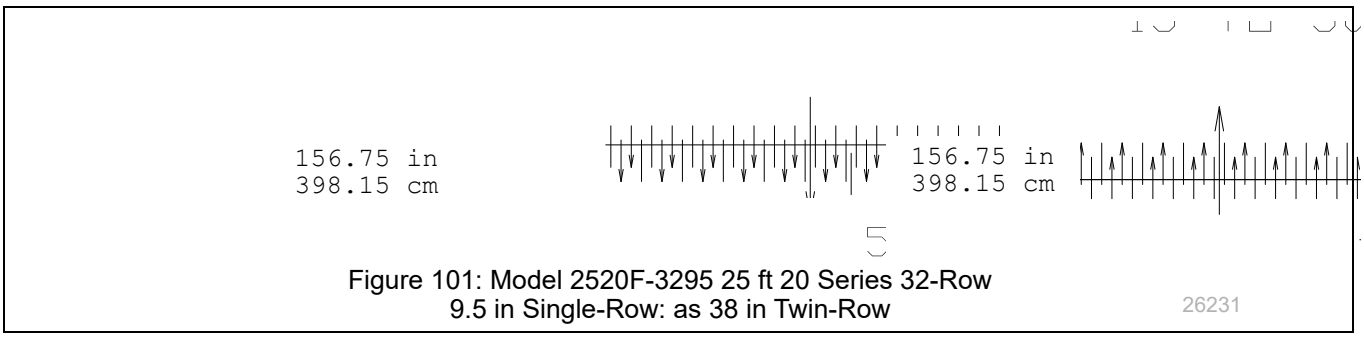


Figure 101: Model 2520F-3295 25 ft 20 Series 32-Row
9.5 in Single-Row: as 38 in Twin-Row

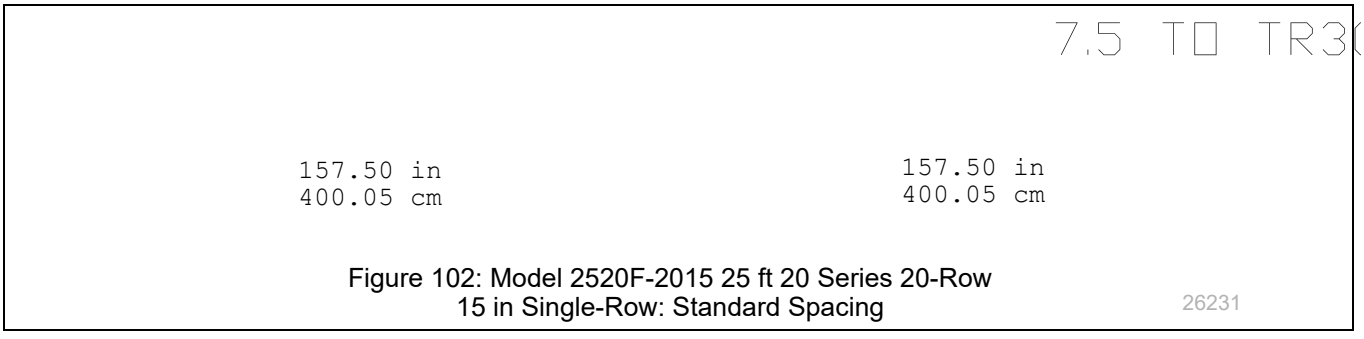


Figure 102: Model 2520F-2015 25 ft 20 Series 20-Row
15 in Single-Row: Standard Spacing

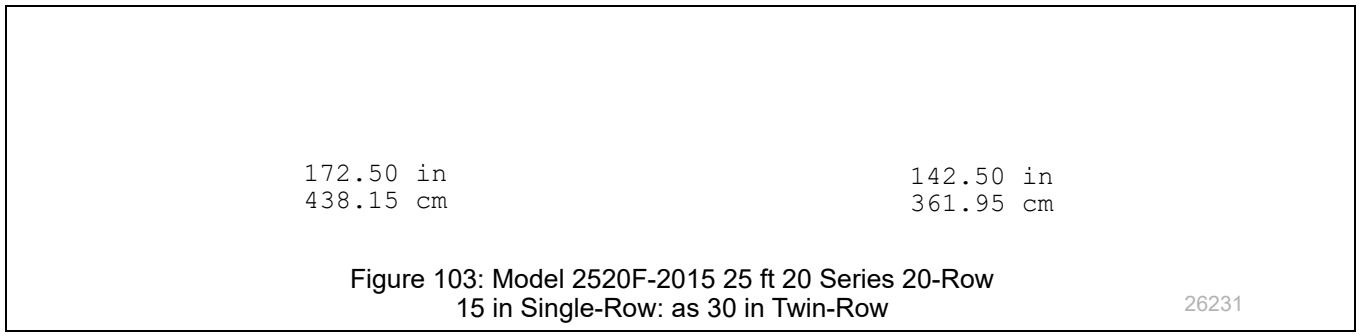


Figure 103: Model 2520F-2015 25 ft 20 Series 20-Row
15 in Single-Row: as 30 in Twin-Row

26231

Model 2520F Marker Extension, cont...

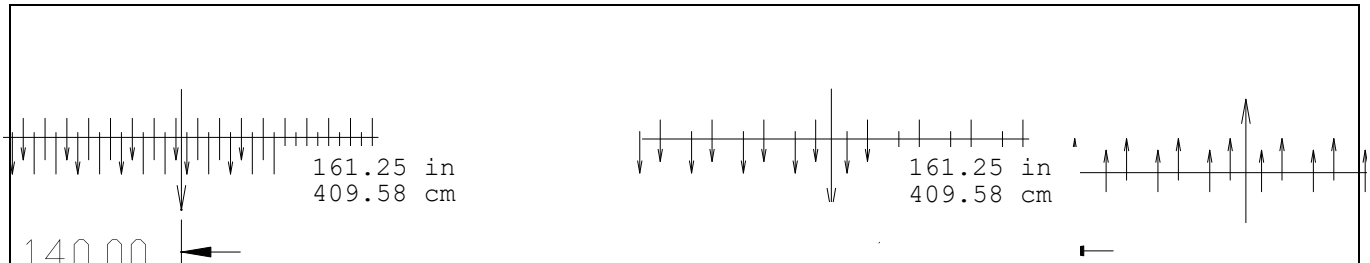


Figure 104: Model 2520F-20TR30 25 ft 20 Series 20-Row
30 in (7.5 in pairs) Twin-Row: Standard Spacing

26231

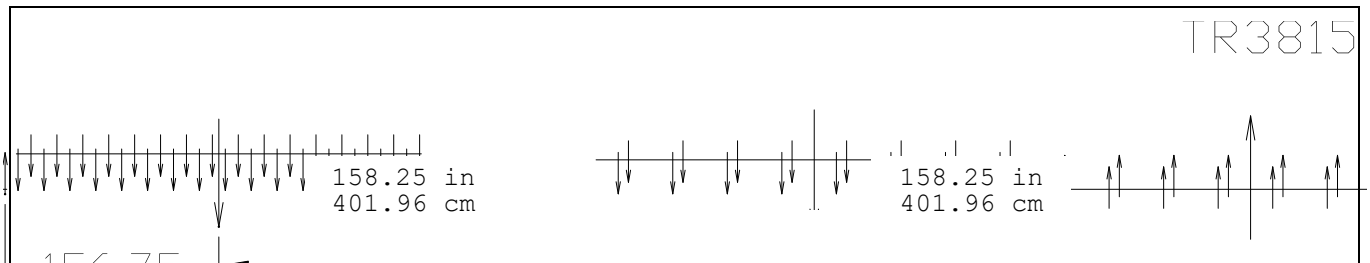


Figure 105: Model 2520F-16TR36 25 ft 20 Series 16-Row
36 in (7.5 in pairs) Twin-Row: Standard Spacing

26231

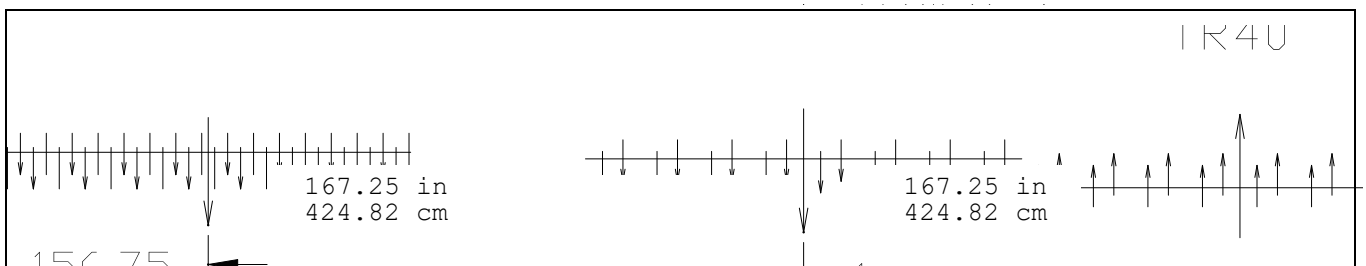


Figure 106: Model 2520F-16TR38 25 ft 20 Series 16-Row
38 in (7.5 in pairs) Twin-Row: Standard Spacing

26231

Figure 107: Model 2520F-16TR3815 25 ft 20 Series 16-Row 38 in (15 in pairs) Twin-Row: Standard Spacing

26231

Model 2520F Marker Extension, cont...

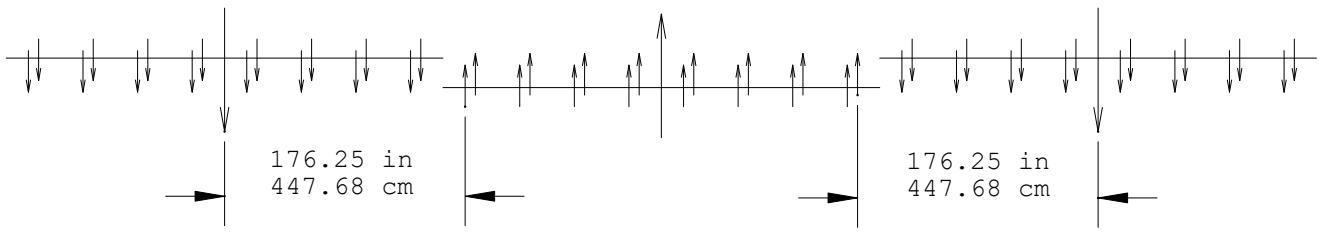


Figure 108: Model 2520F-16TR40 25 ft 20 Series 16-Row 40 in (7.5 in pairs) Twin-Row: Standard Spacing

26231

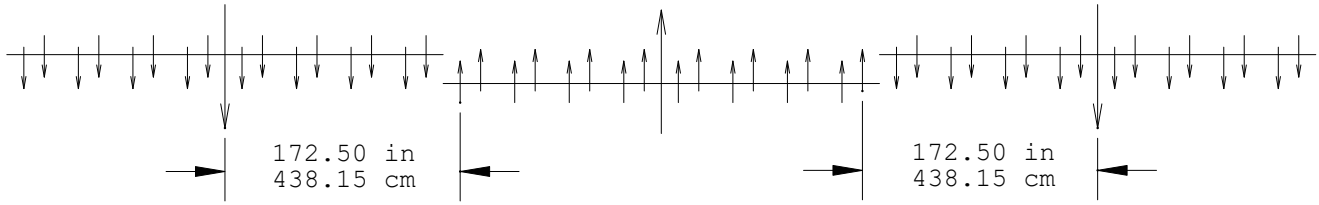


Figure 109: Model 2520F-16TR4015 25 ft 20 Series 16-Row 40 in (15 in pairs) Twin-Row: Standard Spacing

26231

Model 2525F Marker Extension

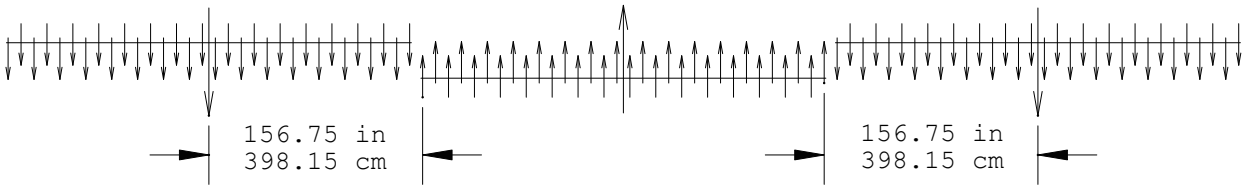


Figure 110: Model 2525F-3295 25 ft 25 Series 32-Row
9.5 in Single-Row: Standard Spacing

26234

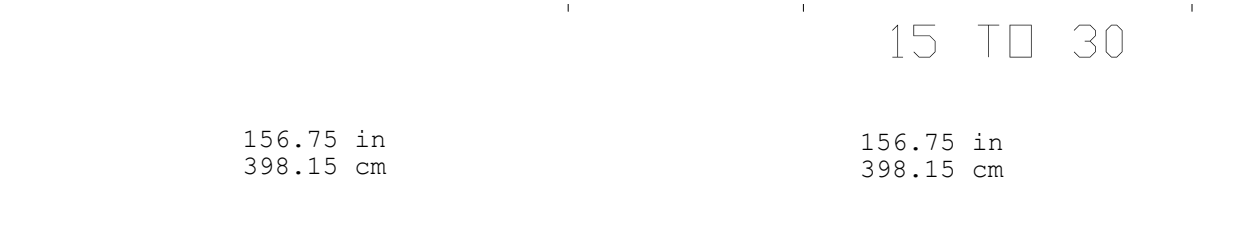


Figure 111: Model 2525F-3295 25 ft 25 Series 32-Row
9.5 in Single-Row: as 38 in Twin-Row

26234

Model 2525F Marker Extension, cont.

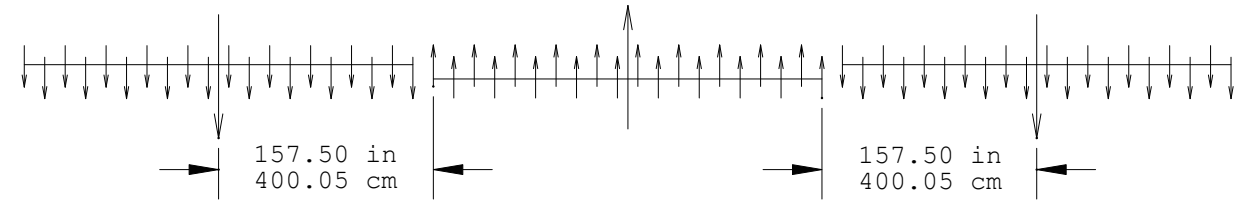


Figure 112: Model 2525F-2015 25 ft 25 Series 20-Row
15 in Single-Row: Standard Spacing

26234

Figure 113: Model 2525F-2015 25 ft 25 Series 20-Row
15 in Single-Row: as 30 in Twin-Row

26234

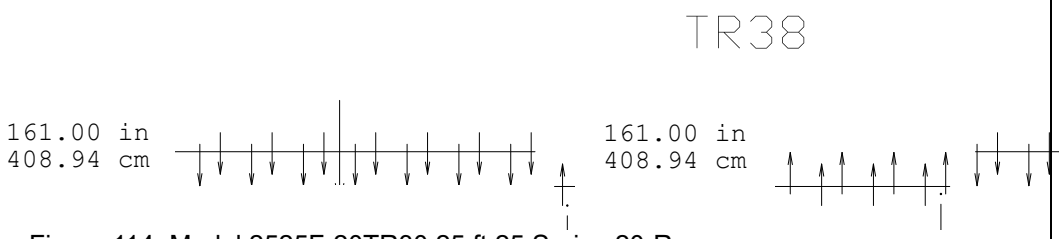


Figure 114: Model 2525F-20TR30 25 ft 25 Series 20-Row 30 in (8 in pair) Twin-Row: Standard Spacing

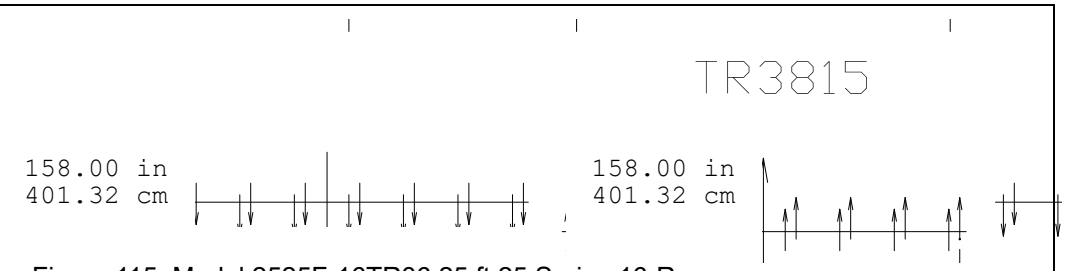


Figure 115: Model 2525F-16TR36 25 ft 25 Series 16-Row 36 in (8 in pair) Twin-Row: Standard Spacing

Model 2525F Marker Extension, cont...

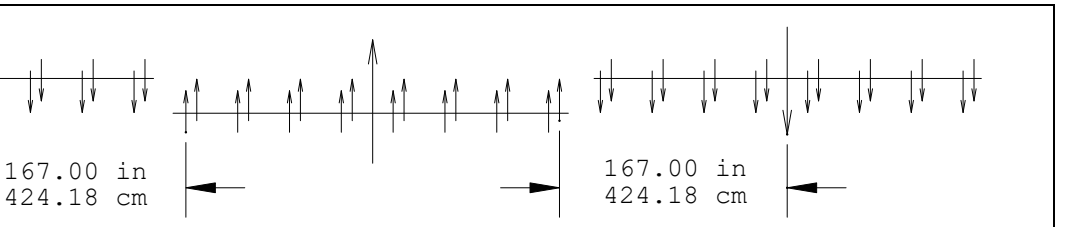


Figure 116: Model 2525F-16TR38 25 ft 25 Series 16-Row 38 in (8 in pair) Twin-Row: Standard Spacing

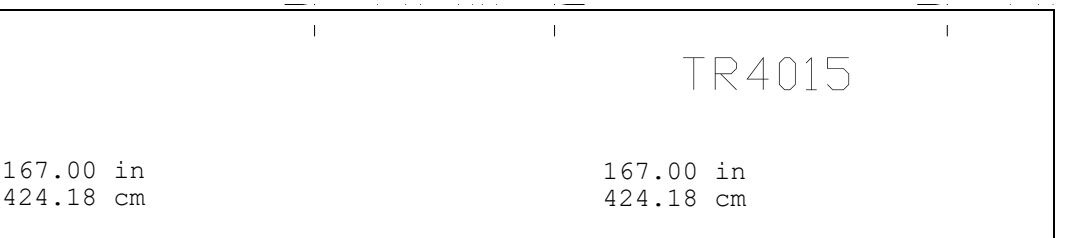


Figure 117: Model 2525F-16TR3815 25 ft 25 Series 16-Row 38 in (15 in pair) Twin-Row: Standard Spacing

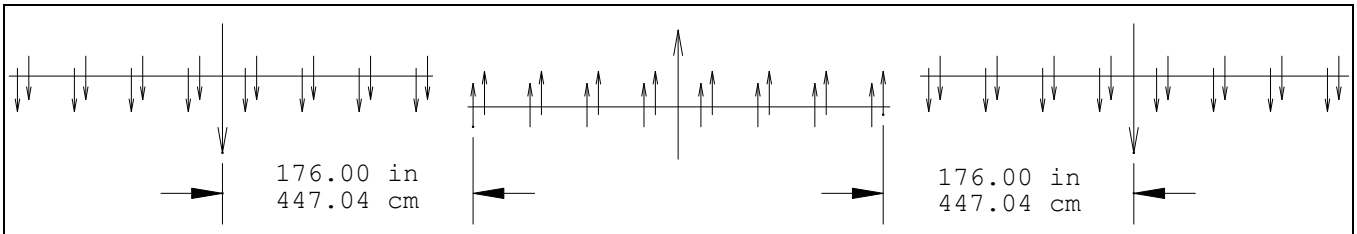


Figure 118: Model 2525F-16TR40 25 ft 25 Series 16-Row
40 in (8 in pair) Twin-Row: Standard Spacing

26234

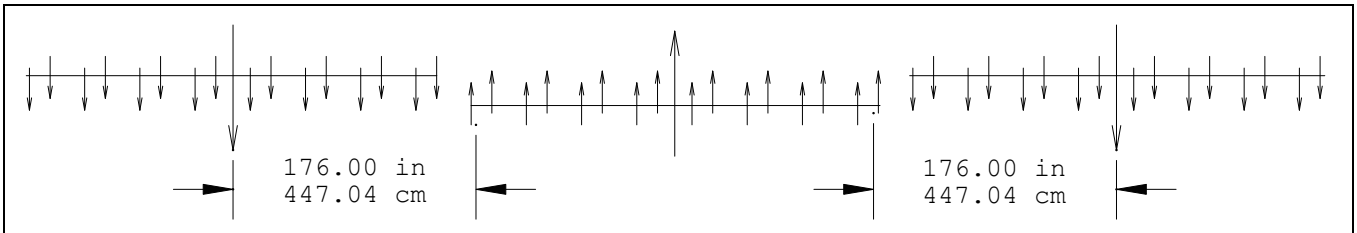
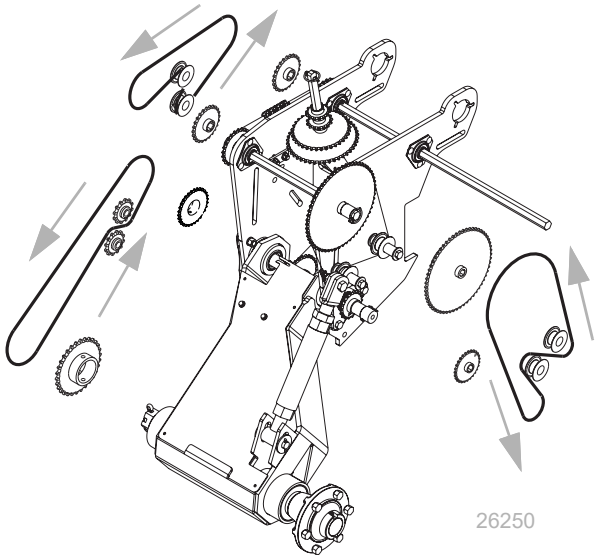


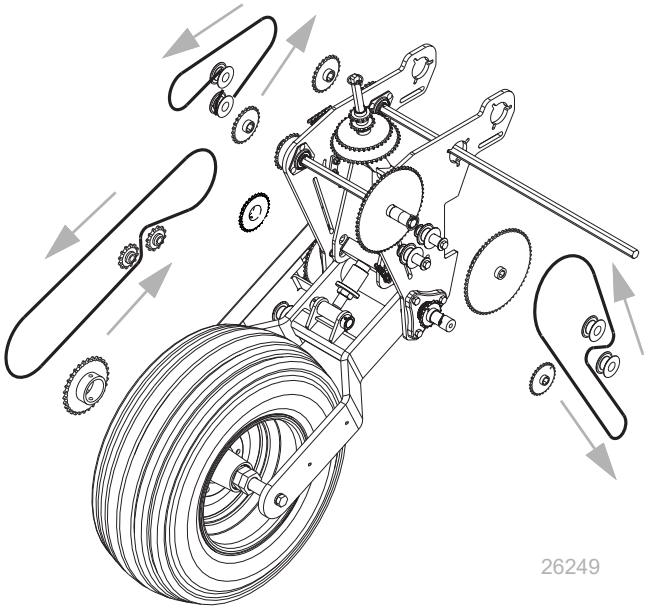
Figure 119: Model 2525F-16TR4015 25 ft 25 Series 16-Row
40 in (15 in pair) Twin-Row: Standard Spacing

26234

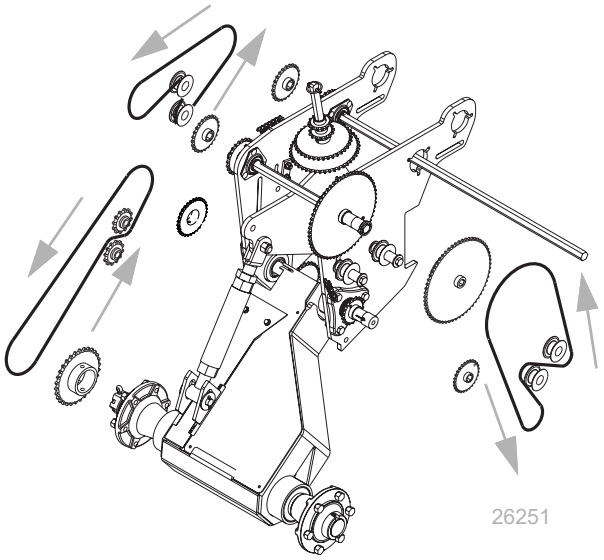
Chain Routing



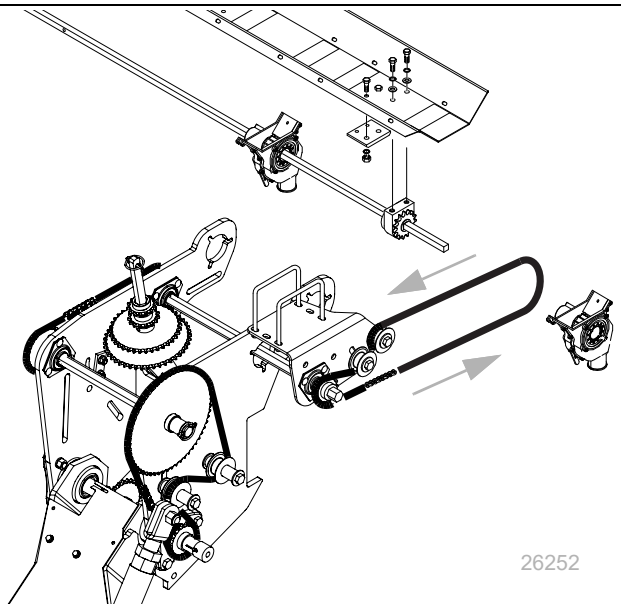
Offset Single-Wheel Drive



Single-Wheel Drive

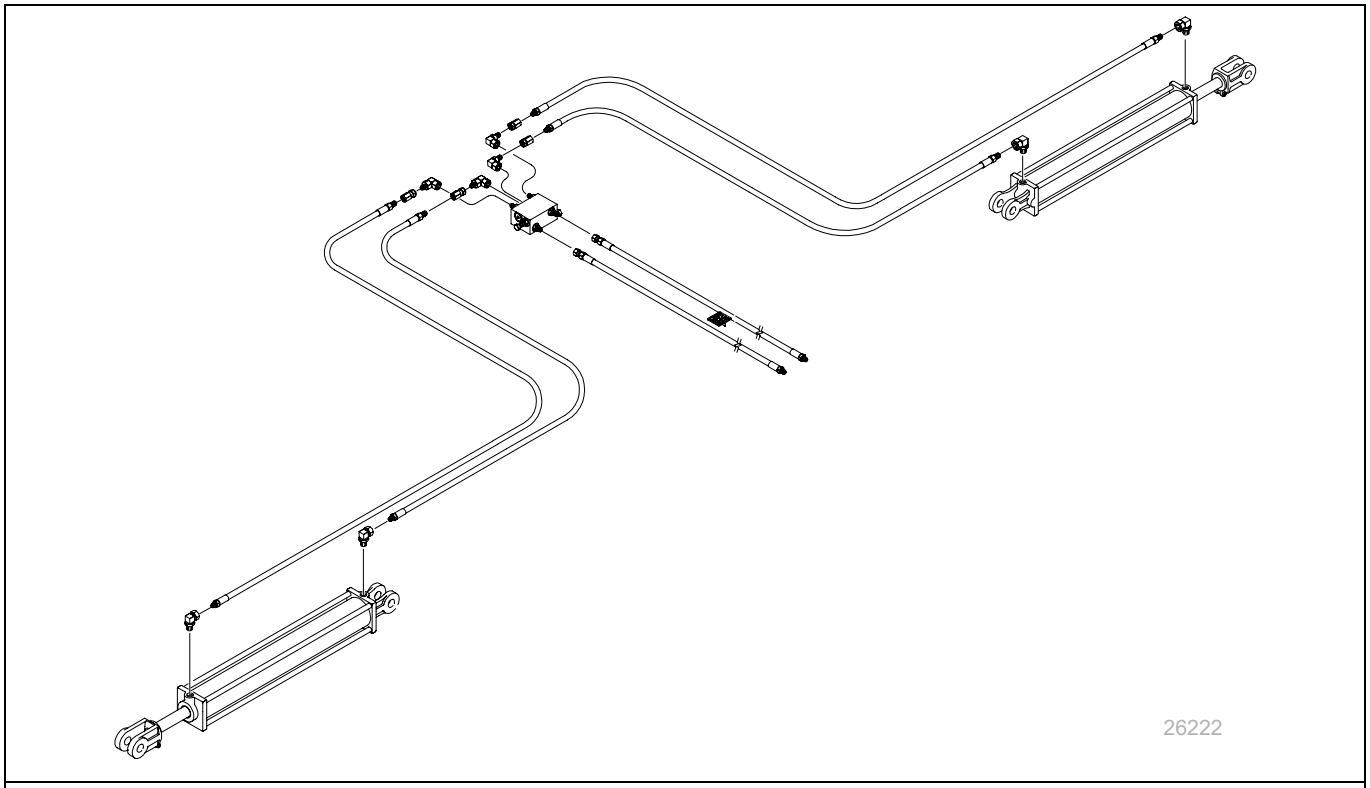


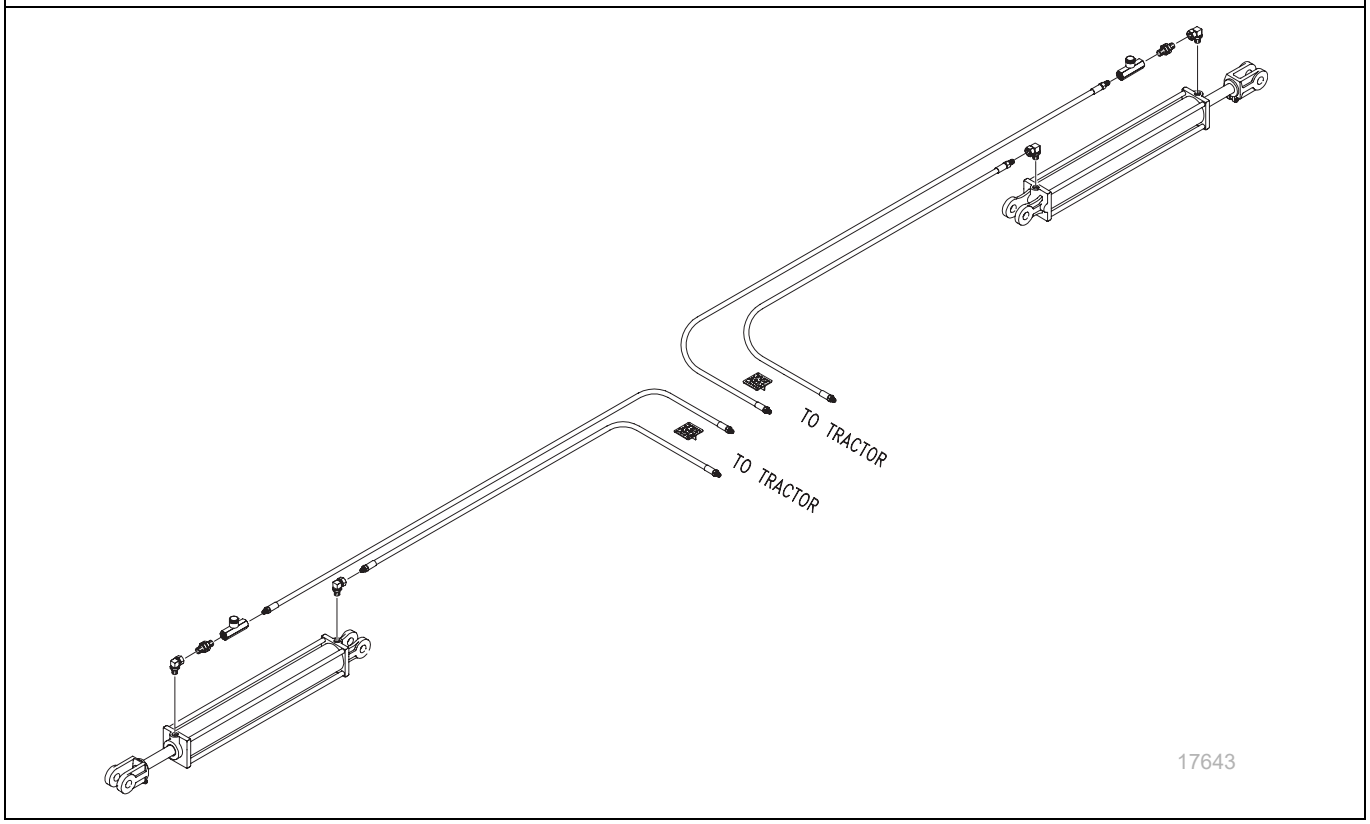
Dual-Wheel Drive



Ground Drive to Seed Cup Shaft

Hydraulic Diagrams





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WARRANTY

Great Plains (a division of Great Plains Manufacturing, Inc.) warrants to the original purchaser that this Great Plains machine will be free from defects in material and workmanship for a period of one year (Parts & Labor) from the first use date when used as intended for personal use; ninety days for custom/commercial or rental use.

Second year limited warranty covers Parts ONLY (personal usage only, excluding labor and wear items). This warranty is limited to the replacement of any defective part by Great Plains. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

The following items and/or conditions are **NOT COVERED UNDER WARRANTY:** Failures resulting from the abuse or misuse of the equipment, failures occurring as a result of accidental damage or Force Majeure, failures resulting from alterations or modifications, failures caused by lack of normal maintenance as outlined in the operator's manual, repairs made by non-authorized personnel, items replaced or repaired due to normal wear (such as wear items and ground-engaging components includiing, but not limited to, disc blades, chisel points, tires, bushings, and scrapers), repeat repair due to improper diagnosis or improper repair by the dealer, temporary repairs, service call and /or mileage to and from customer location, overtime premium, or unit hauling expenses. The warranty may be voided if the unit is towed at speeds in excess of 20 miles per hour (32 kilometers per hour), or failures occurring from soils with rocks, stumps, or other obstructions.

Great Plains reserves the right to make changes in materials or design of the product at any time without notice. The warranty shall not be intepreted to render Great Plains liable for damages of any kind, direct or consequential or contingent to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its control. This warranty does not extend to crop loss, losses caused by planting or harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

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

This warranty is not valid unless registered by a certified Great Plains dealer.

Effective July 15, 2020

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