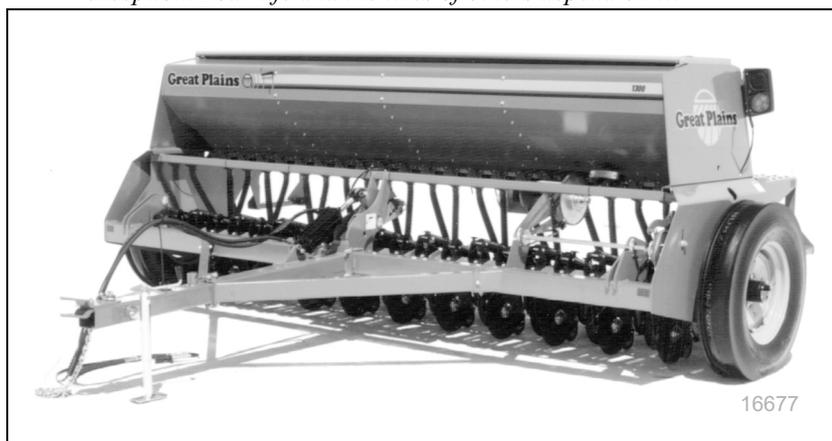


# Operator Manual

1300 and 1300F  
13-Foot/4 Meter End-Wheel Drill



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



*Cover illustration may show optional equipment not supplied with standard unit.*

ORIGINAL INSTRUCTIONS



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Printed 2024-02-26

175-157M

## 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.

<b>Model Number</b>	
<b>Serial Number</b>	
<b>Machine Height</b>	
<b>Machine Length</b>	
<b>Machine Width</b>	
<b>Machine Weight</b>	
<b>Year of Construction</b>	
<b>Delivery Date</b>	
<b>First Operation</b>	
<b>Accessories</b>	 <hr/> <hr/> <hr/>

## Dealer Contact Information

**Name:** \_\_\_\_\_

**Street:** \_\_\_\_\_

**City/State:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Dealer's Customer No.:** \_\_\_\_\_

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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## Important Safety Information

### Look for Safety Symbol

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



### Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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



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



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



### Be Familiar with Safety Decals

- ▲ *Read and understand "Safety Decals" on page 6, thoroughly.*
- ▲ *Read all instructions noted on the decals.*
- ▲ *Keep decals clean. Replace damaged, faded and illegible decals.*



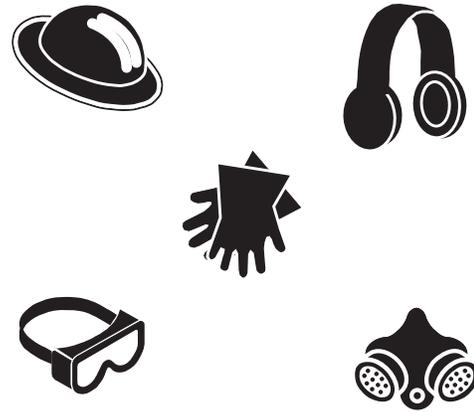
### Prepare for Emergencies

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



## Wear Protective Equipment

- ▲ *Wear protective clothing and equipment.*
- ▲ *Cartridge-type respirator approved for treatment dust unless label specifies another type of respirator.*
- ▲ *Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.*
- ▲ *Do not wear contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal clothing must be laundered separately from household articles.*
- ▲ *Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection such as earmuffs or earplugs.*
- ▲ *Because operating equipment safely requires your full attention, avoid wearing entertainment headphones while operating machinery.*



## Handle Chemicals Properly

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

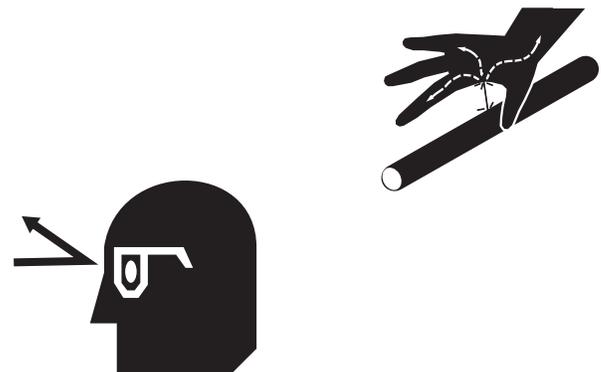
- ▲ *Read and follow chemical manufacturer's instructions.*
- ▲ *Wear protective clothing.*
- ▲ *Handle all chemicals with care.*
- ▲ *Avoid inhaling smoke from any type of chemical fire.*
- ▲ *Store or dispose of unused chemicals as specified by chemical manufacturer.*



## Avoid High Pressure Fluids

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

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



## Use A Safety Chain

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



## Use Safety Lights and Devices

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

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



## Keep Riders Off Machinery

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

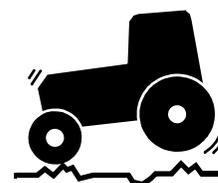
- ▲ Never allow children to operate equipment.
- ▲ Keep all bystanders away from machine during operation.



## Transport Machinery Safely

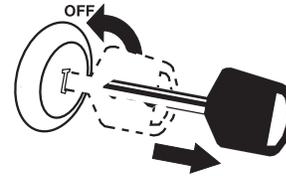
Maximum transport speed for drill is 20 mph (30 km/h). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ Install transport lock and disengage the lock-out hub before transport.
- ▲ Do not exceed 20 mph (30 km/h). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
- ▲ Comply with national, regional and local laws.
- ▲ Follow your tractor manual recommendations for maximum hitch loads. Insufficient weight on tractor steering wheels will result in loss of control.
- ▲ Carry reflectors or flags to mark drill in case of breakdown on the road.
- ▲ Keep clear of obstructions when transporting. Refer to transport dimensions under "Specifications and Capacities" on page 58.



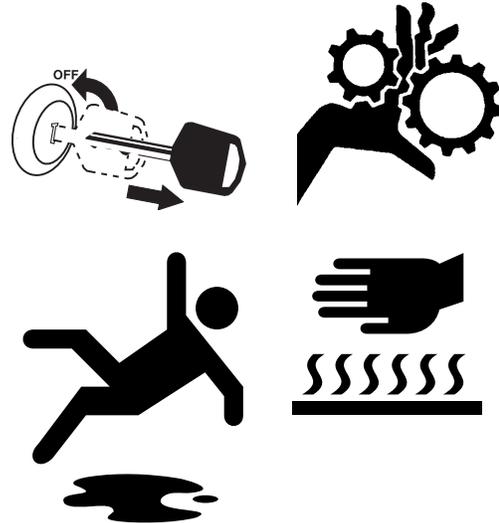
## Shutdown and Storage

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



## Practice Safe Maintenance

- ▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.
- ▲ Work in a clean, dry area.
- ▲ Put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Make sure all moving parts have stopped and all system pressure is relieved.
- ▲ Use caution when working on or near row units. Opener disk edges are sharp.
- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on drill.
- ▲ Inspect all parts. Make sure parts are in good condition and installed properly.
- ▲ Remove buildup of grease, oil or debris.
- ▲ Remove all tools and unused parts from drill before operation.



## Tire Safety

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

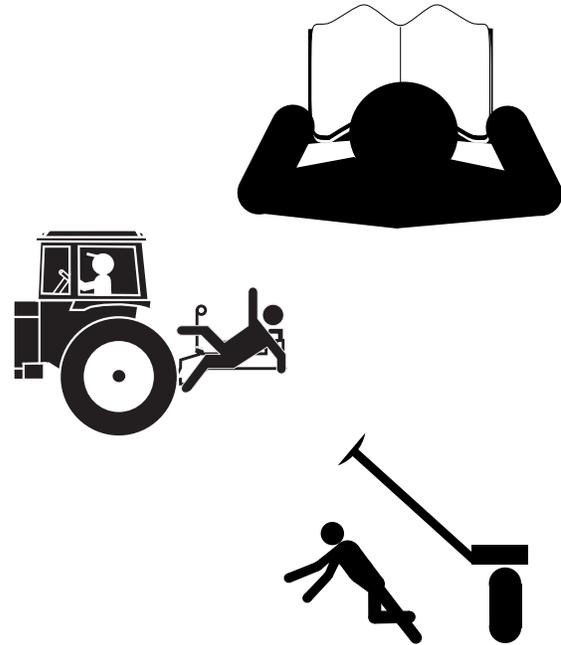
- ▲ When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.
- ▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.



## Safety At All Times

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

- ▲ *Be familiar with all drill functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave drill unattended with tractor engine running.*
- ▲ *Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.*
- ▲ *Do not stand between the tractor and drill during hitching.*
- ▲ *Keep hands, feet and clothing away from power-driven parts.*
- ▲ *Wear snug fitting clothing to avoid entanglement with moving parts.*
- ▲ *Watch out for wires, trees, etc., when folding and raising drill. Make sure all persons are clear of working area.*
- ▲ *Do not turn tractor too tightly, causing drill to ride up on wheels. This could cause personal injury or equipment damage.*



## Safety Decals

### Safety Reflectors and Decals

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

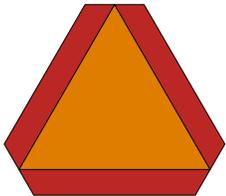
- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts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

To install new decals:

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

### Slow Moving Vehicle Reflector

818-003C



Center of walkboard;  
1 total

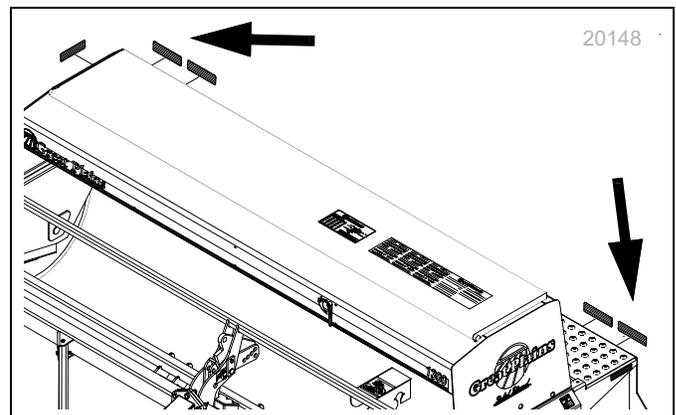


### Red Reflectors

838-266C



On rear walkboard face, outside corners;  
2 total

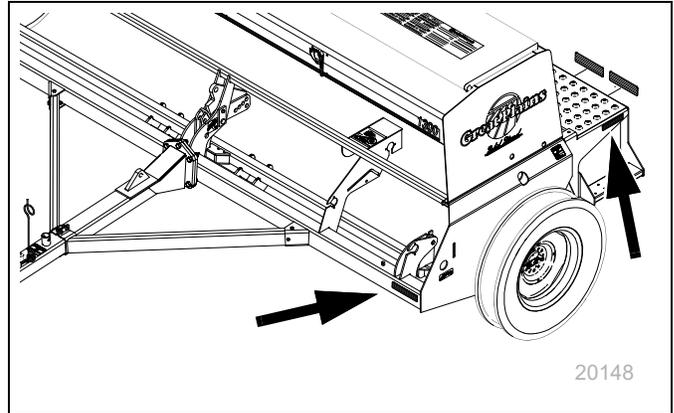


### Amber Reflectors

838-265C



On wing walkboard end faces, above steps, front face of frame, outside corners; 4 total

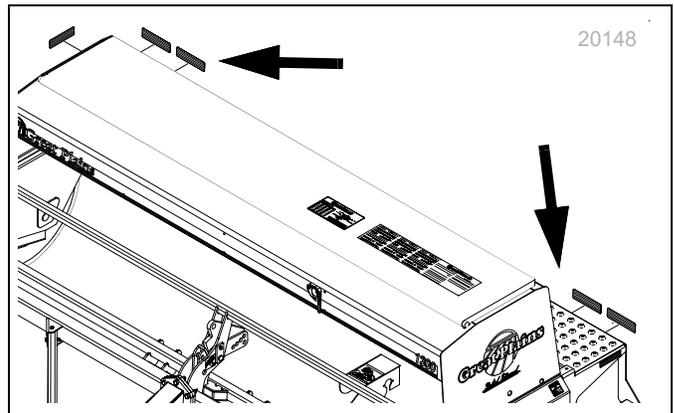


### Daytime Reflectors

838-267C



On rear walkboard face (inboard of red reflectors); 2 total

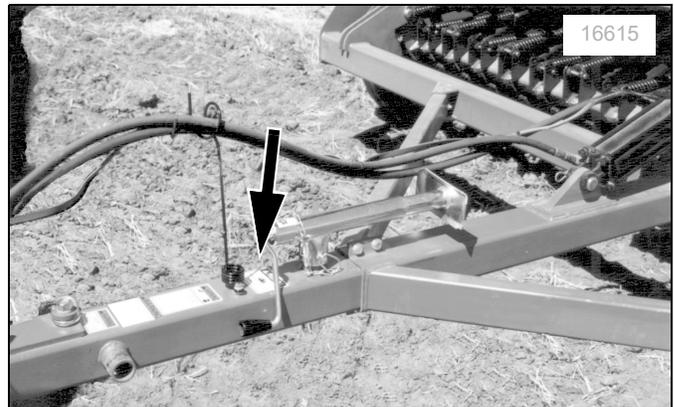


### Danger: Read Manual

848-512C



On tongue at hitch; 1 total

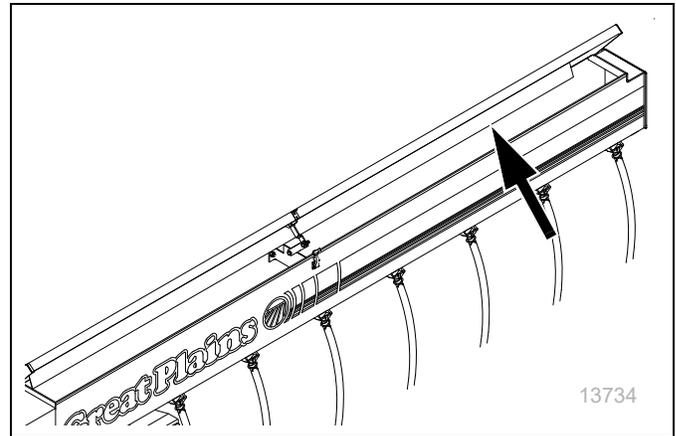


### Danger: Possible Chemical Hazard

838-467C (Option)



Under Small Seeds box lid;  
1 total

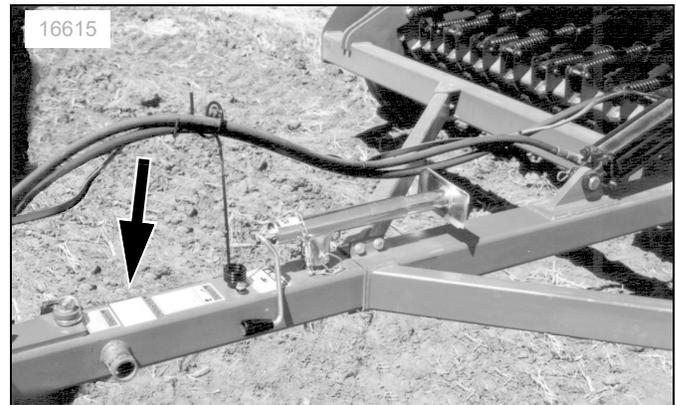


### Warning: Negative Tongue Weight

818-019C



On tongue at hitch;  
1 total

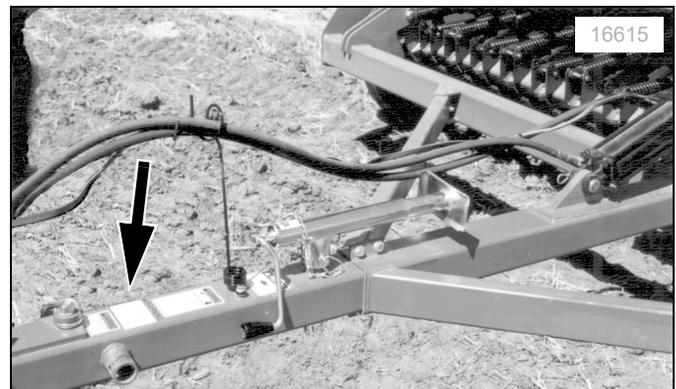


### Warning: Excessive Speed Hazard

818-337C



On tongue near hitch;  
1 total

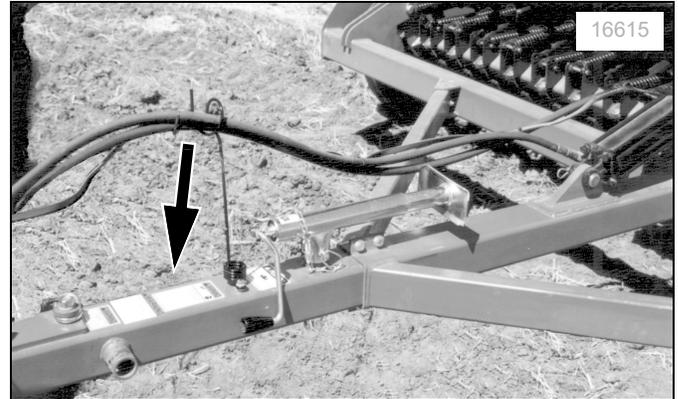


**Warning: High Pressure Fluid**

818-339C



On tongue near hitch;  
1 total

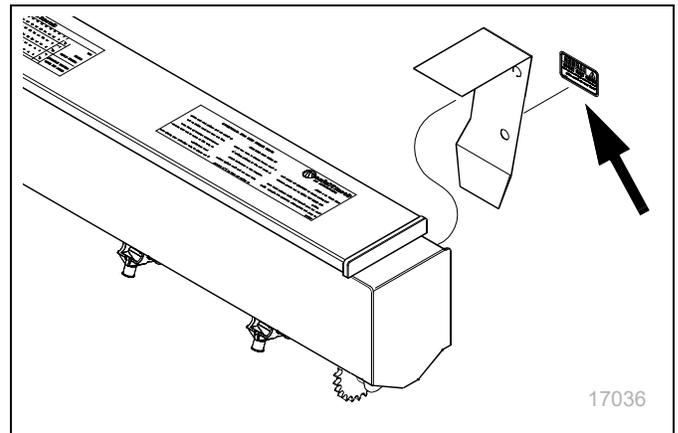


**Caution: Moving Chain**

818-518C (Option)



On Small Seeds chain guard;  
1 total

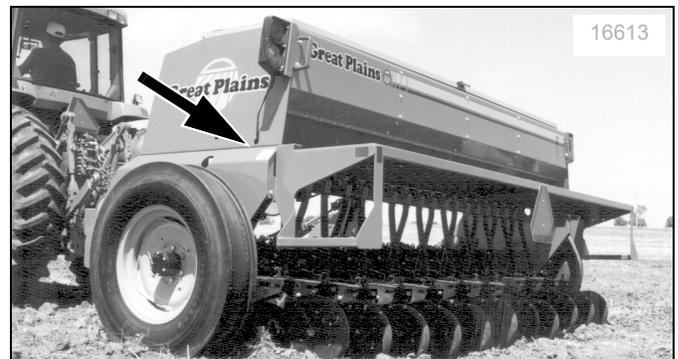


**Caution: Tires Not A Step**

818-398C



Upper rear of side frames;  
2 total

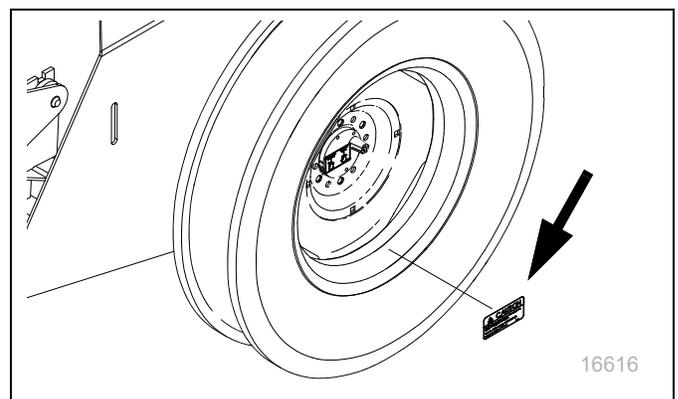


**Caution: Tire Pressure and Wheel Bolt Torque**

844-116C (With 16 Ply Tire)

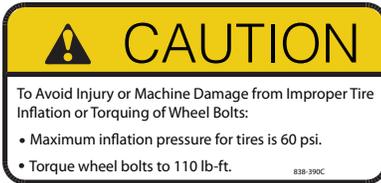


On rim of each end wheel with 4 ply tire;  
2 total

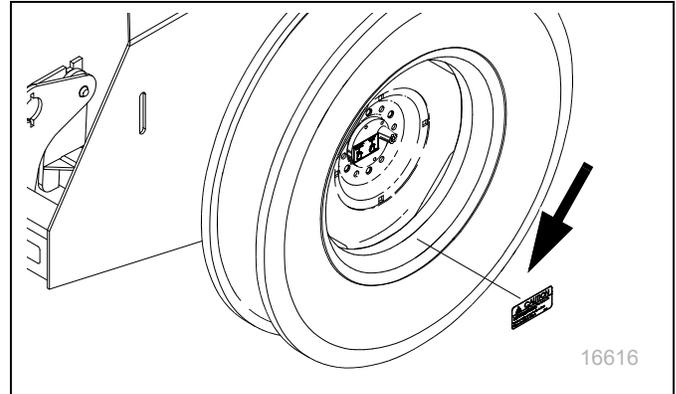


## Caution: Tire Pressure and Wheel Bolt Torque

858-390C(With 10 Ply Tire)



On rim of each end wheel with 10 ply tire;  
2 total





# Introduction

Great Plains welcomes you to its growing family of new product owners. Your 13-Foot/4 Meter End-Wheel Drill has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use from the machine.

## Description of Unit

The 1300 and 1300F is a towed seeding implement. This drill has a working width of 13 feet (4 m). The drill has straight arm, double disk openers. The opener disks make a seed bed, and seed tubes mounted between the disks place seed in the furrow. Press wheels following the opener disks close the furrow and gauge opener seeding depth. A T-handle on the opener body is for seeding depth adjustments.

## Intended Usage

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

## Using This Manual

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

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

## Models Covered

Standard 1300 Models have 00 Series openers and a main seed box used entirely for seed. F Models add fertilizer meters and divide the main box for this purpose. Either model may add optional Small Seeds capability.

### 1300 Models

1300-1610	16 row 10 inch (25.4 cm)
1300-2175	21 row 7.5 inch (19.1 cm)
1300-2606	26 row 6 inch 9 (15.2 cm)

### 1300F (Fertilizer) Models:

1300F-1610	16 row 10 inch (25.4 cm)
1300F-2175	21 row 7.5 inch (19.1 cm)
1300F-2606	26 row 6 inch 9 (15.2 cm)



### 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.

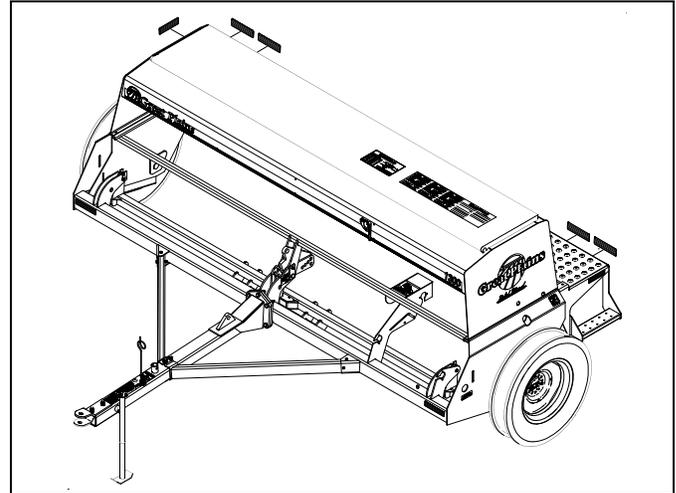


Figure 1  
1300 and 1300F Drill

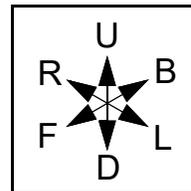
20148

## Document Family

175-157M	Owner's Manual (this document)
175-157P	1300 and 1300F Parts Manual
175-157B	Seed Rate Manual

## Definitions

The following terms are used throughout this manual.



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

## NOTICE

**Economic or Liability Risk:** Paragraphs in this format present a crucial point of information related to the current topic. Read and follow the directions to: remain safe, avoid serious damage to equipment and ensure desired field results.

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



### 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.

## Owner Assistance

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

### **Refer to Figure 2**

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

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

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

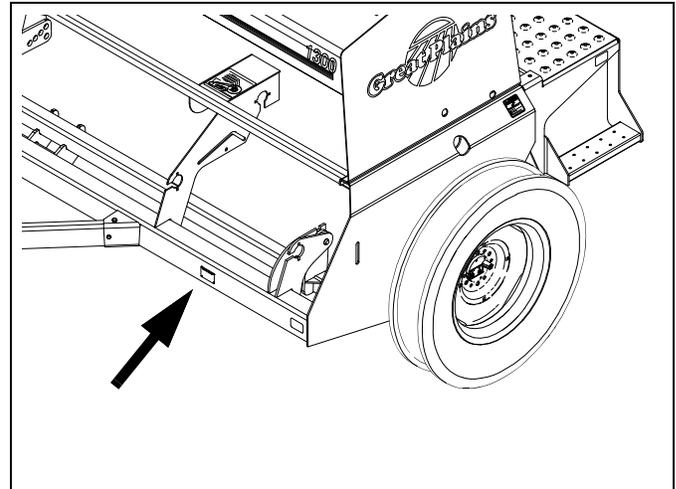


Figure 2  
Serial Number

16643

## Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new 1300/F. If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please take the following actions first:

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

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

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

Or go to [www.greatplainsag.com](http://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 also setup the drill.

## Pre-Setup Checklist

1. Read and understand “**Important Safety Information**” on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 48.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. “**Appendix A Reference Information**” on page 58.

## Hitch Preparation

### **WARNING**

#### **Crushing**

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

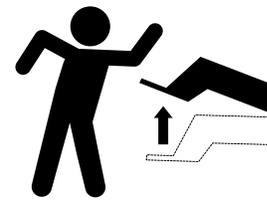
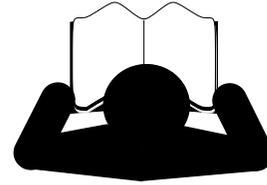
#### **Hazard:**

### Adjusting the Drill Hitch

Adjust the drill hitch to match tractor drawbar height so your drill frame runs level in the field.

#### Refer to Figure 3

1. Back your tractor up as if hitching to the drill. Park the tractor several yards from the drill. Set the brake and turn off the tractor.
2. Crank the drill jack until the top of the drill box is parallel with the ground. Compare the height of the drill hitch to your tractor drawbar.
3. If necessary, adjust the drill hitch to match your tractor drawbar. To adjust the hitch, remove the  $\frac{3}{4}$  inch nuts, bolts and washers. Reposition and install the clevis hitch.



### **WARNING**

#### **Negative**

#### **Tongue**

#### **Weight**

#### **Hazard:**

This drill can have positive and negative tongue weight, which can work the hitch pin loose during transport. To avoid serious injury or death due to a road accident, always check that the drill is hitched before raising the openers. Lower the openers before unhitching.

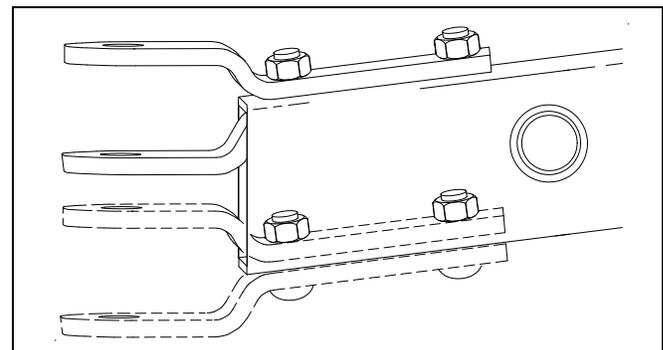


Figure 3  
Clevis Hitch Positions

16645

## Hitching

### **WARNING**

#### **Crushing**

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

1. Slowly back the tractor toward the drill. When within a few yards of the drill, stop and park the tractor.
2. Crank the drill jack until the drill hitch matches the tractor drawbar height.
3. Continue backing the tractor until the drawbar and hitch are aligned. Stop and park the tractor. Adjust the drill tongue height until you can install the hitch pin.
4. Install a hitch pin. Install a retaining clip to keep the pin from working out of the hitch.
5. Secure the drill safety chain to an anchor on the tractor capable of pulling the drill.
6. Use crank to raise jack foot. Remove pin and jack. Store jack on top of tongue.

### **WARNING**



**Negative Tongue Weight Hazard:** This drill can have positive and negative tongue weight, which can work the hitch pin loose during transport. To avoid serious injury or death due to a road accident, always check that the drill is hitched before raising the openers. Lower the openers before unhitching.

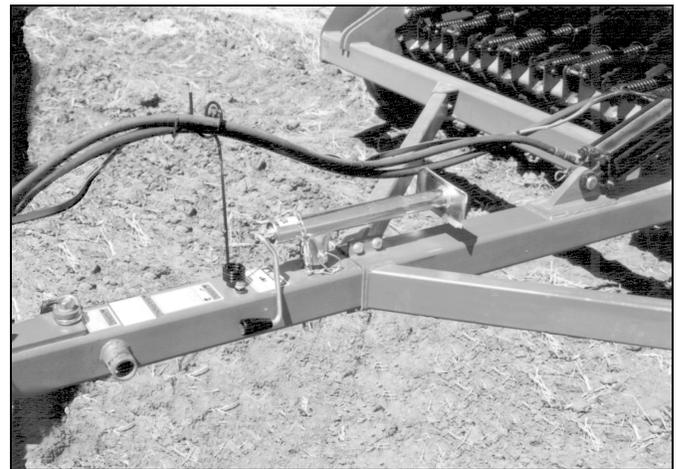


Figure 4  
Jack in Storage Position

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## Electrical Connections

### **Refer to Figure 5**

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

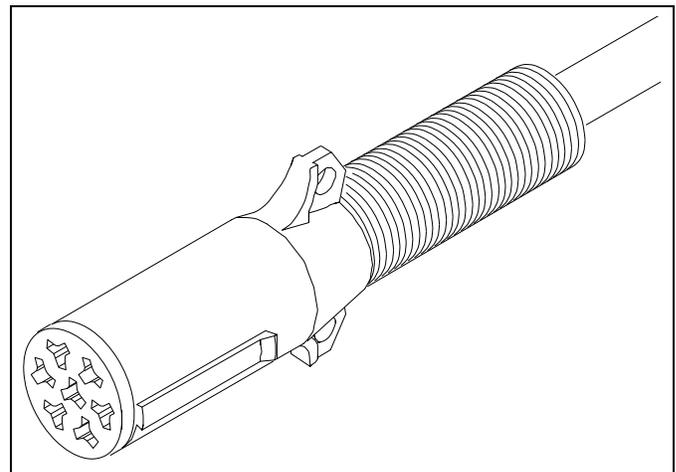


Figure 5  
Lighting Connector

26467

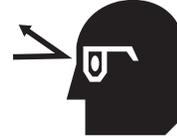
## Hydraulic Hose Hookup

### **WARNING**

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

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

8. Set tractor circuit for opener lift to float.
9. Plug cylinder base and rod end hoses into circuit extend and retract ports.





# Operating Instructions

This section covers general operating procedures. It assumes that setup items have been completed.

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

## General Description

Field operations are controlled by a tractor cab hydraulic lever. When openers are lowered, a mechanical clutch engages, and the left end wheel drives the seed meter shaft.

Seed and fertilizer meters operate at a rate proportional to ground speed, as set by sprockets and/or rate handles, based on the rate charts, and calibration.

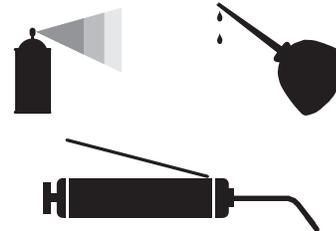
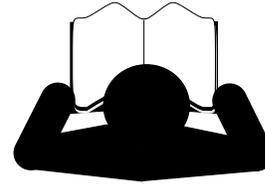
Seeding depth and furrow coverage are controlled by drill down pressure and row unit setup.

## Pre-Start Checklist

- ☐ Lubricate the drill as indicated under Lubrication, “**Maintenance and Lubrication**” on page 43.
- ☐ Check the tires for proper inflation according to “**Appendix A Reference Information**” on page 58.
- ☐ Check for worn or damaged parts and leaks. Repair or replace before going to the field.
- ☐ Check all nuts, bolts and screws. Tighten bolts as specified on “**Torque Values Chart**” on page 60

## **WARNING**

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



## Raising Openers for Transport

Opener sub-frame is on a dedicated hydraulic circuit. The openers raise and lower as a group, controlled from a tractor cab lever.

The following instructions presume that the openers are lowered, and need to be raised for transport.

### Opener Pivot Stop

Refer to Figure 6

1. Hitch the drill to a suitable tractor. See “**Hitching**” on page 14.
2. If markers are installed, verify that markers are folded and secured with transport pins. See “**Secure Markers**” on page 18. If not, secure them during lift operations to secure pivot stop for transport.

### **WARNING**

**Marker Pinch/Crush/Sharp Object Hazards:** Secure markers before setting pivot pin. Moving markers can pinch at mounts crush under arms. Marker disks are sharp. If not secured by transport pins, markers **will** fold and unfold during lift and lower operations.

3. Retract the opener lift cylinder to fully raise the openers. Put the tractor circuit control in Neutral to hold cylinder position.
4. Note which lettered (A-E) down-pressure pin hole ① was previously in use. This is likely to be the same hole used when the drill next plants.
5. Remove the pin from the down-pressure adjustment hole.

### **WARNING**

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

Refer to Figure 7

6. Insert and secure the pin ② in its transport lock position ③.

### **WARNING**

**Loss of Control Hazard:** Failure of the hydraulic cylinder during transport causes the openers to drop suddenly, which could lead to serious road accidents, injury or death. To prevent an accident, always install the pivot-stop pin in the transport-lock position before transporting the drill.

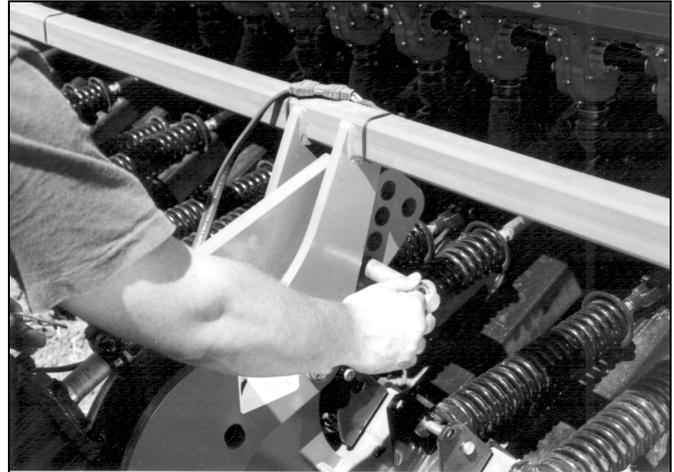


Figure 6  
Removing Down-Pressure Pin

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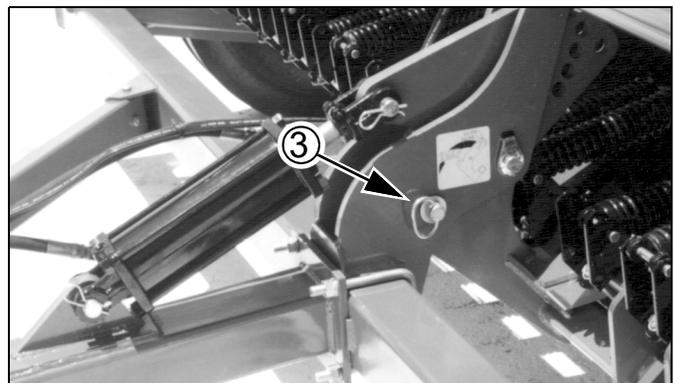
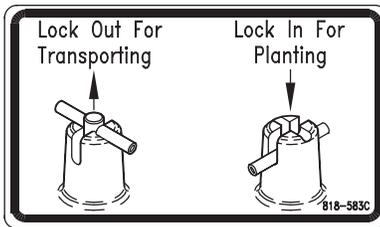


Figure 7  
Openers Locked for Transport

16649

## Lock-Out Hub



### Refer to Figure 8

7. Disengage the lock-out hub on the left end-wheel. Pull out on the cross-pin, lifting it out of the deeper detents. Rotate it 90 degrees and release it into the shallower detents.
  8. To engage the lock-out hub for planting, reverse the above step.
- NOTE:** The cross-pin may not fully seat when released into the deep detents. The cross-pin will seat during the next rotation of the wheel.



Figure 8  
Wheel LockOut Hub

16654  
818583C

## Secure Markers

If markers are installed, they must be folded and locked for transport.

### **WARNING**

**Transport/Crush/Sharp**      **Object**      **Hazards:**  
Do not transport with markers unsecured by pins. A lowering marker arm could cause a serious highway accident or strike other objects and persons outside of the lane. A circuit in Float, a disconnect at the hitch, or hydraulic hose damage could result in a marker arm descending. Secure markers before transport.

1. To avoid excess wear on opener discs, raise openers and secure at raised with opener pivot stop (page 17).

### Refer to Figure 9

2. Check that marker transport pins are not in transport holes ① (outboard holes).
3. As needed, fold a marker on each side using the lift circuit (page 32). As each marker reaches fully folded, set the lift circuit to Neutral.
4. Insert and secure the lock pin.

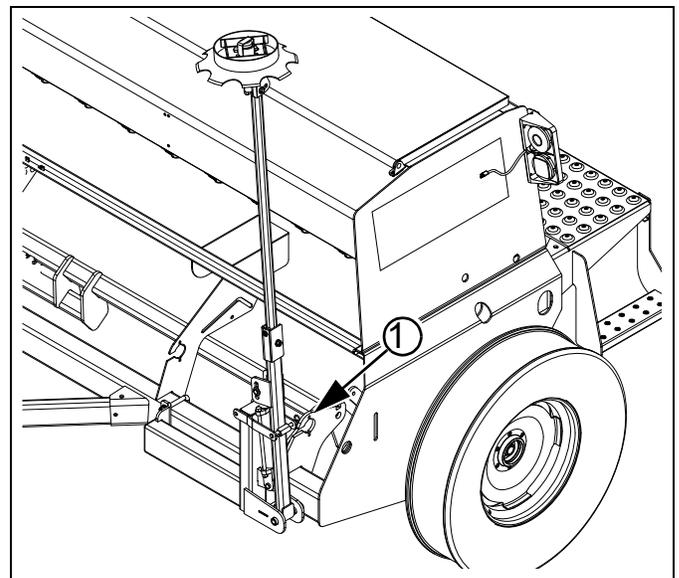


Figure 9  
Marker Transport Pin

36274

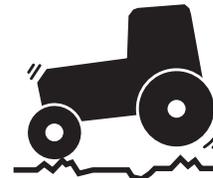
## Transport

### **WARNING**

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

- ▲ Do not exceed 20 mph (30 km/h).
- ▲ Do not tow a drill that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.

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



### Weights for Tractor Requirements

Model	Basic <sup>1</sup> Model		Maximum <sup>2</sup> Configuration	
	Empty	Full	Empty	Full
1300-1610	3500 pounds (1570 kg)	6260 pounds (2480 kg)	4000 pounds (1815 kg)	6960 pounds (3160 kg)
1300-2175	3800 pounds (1725 kg)	6560 pounds (2975 kg)	4300 pounds (1950 kg)	7260 pounds (3290 kg)
1300-2606	4200 pounds (1905 kg)	6960 pounds (3160 kg)	4700 pounds (2130 kg)	7660 pounds (3475 kg)
1300F-1610	3900 pounds (1770 kg)	7100 pounds (3220 kg)	4500 pounds (2040 kg)	7900 pounds (3580 kg)
1300F-2175	4200 pounds (1905 kg)	7400 pounds (3360 kg)	4800 pounds (2180 kg)	8200 pounds (3720 kg)
1300F-2606	4600 pounds (2085 kg)	7800 pounds (3540 kg)	5200 pounds (2360 kg)	8600 pounds (3900 kg)

1. Main seed only. No small seeds or markers.
2. Small seeds and markers.

### Transport Checklist

Before transporting the drill, check the following items:

- q Transport only with a tractor of proper size. See “**Specifications and Capacities**” on page 58.
- q **Safety Chain in Place** (page 13): Attach safety chain to an anchor on tractor.
- q **Drill Securely Hitched** (page 13).
- q **Openers Raised and Locked Up** (page 17).
- q **Tires**: Check tires for proper inflation. “**Appendix A Reference Information**” on page 58
- q **Lockout Hub** (page 18) Disengaged.
- q **Markers** (page 18): Folded and locked.
- q **Bystanders**: Check that no one is in the way before moving. Do not allow anyone to ride on the drill.
- q **Warning Lights**: Always use tractor and drill warning lights in transport.
- q **Clearance** (page 58): Know the maximum dimensions of the drill in transport and follow a route that provides adequate clearance from all obstructions.
- q **Stopping Distance**: Allow sufficient stopping distance and reduce speed prior to any turns or maneuvers. If the drill is transported full, allow extra stopping distance.
- q **Road Rules**: Comply with all national, regional and local laws when transporting on public roads.

## Opener Operation

Opener sub-frame is on a hydraulic circuit that is shared with markers if markers are installed. The openers raise and lower as a group, controlled from a tractor cab lever.

If markers are installed, and unlocked, each marker side unfolds and refolds, alternating left-to-right, with each opener lift and lower cycle.

## Lowering and Raising Openers

The following instructions presume that the openers are raised and locked up for transport.

1. Determine the down-pressure pin hole ①, (lettered A-E), to be used for the current conditions. If you have no preference developed, plan to use hole "E". See page 34 for further information.
2. If markers are installed, verify that markers are folded and secured with transport pins. See "**Secure Markers**" on page 18. If not, secure them during lift operations to secure pivot stop for transport.

### Refer to Figure 10

3. With the drill hitched to a suitable tractor, retract the lift cylinder slightly to free the pin ② in its transport lock hole ③ position.
4. Put the tractor circuit control in neutral to hold cylinder position.
5. Remove the pin from the transport lock position and transfer it to the desired down-pressure adjustment hole. Secure the pin.
6. Extend the circuit to lower the openers.
7. When the lift cylinder has reached the end of its travel, set the tractor circuit lever to Neutral to hold it there. Do not set the circuit to Float, or down pressure is significantly reduced.

At the start of planting, stop early in the first pass and check drill level. The most consistent planting is achieved when the drill frame is level with the ground, and the tops of the opener frames are level with the ground.

If planting is unsatisfactory in tractor tire tracks, see "**Opener Height**" on page 37.

Check periodically during planting. Drill weight changes as seed and fertilizer are applied.

## ⚠ DANGER

### Crushing

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

### Hazard:



## ⚠ WARNING

### Negative

### Tongue

### Weight

### Hazard:

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



## ⚠ WARNING

### Marker Pinch/Crush/Sharp Object Hazards:

*Secure markers before setting pivot pin. Moving markers can pinch at mounts and crush under marker arms. Marker disks are sharp. If not secured by transport pins, markers will fold and unfold during lift and lower operations.*

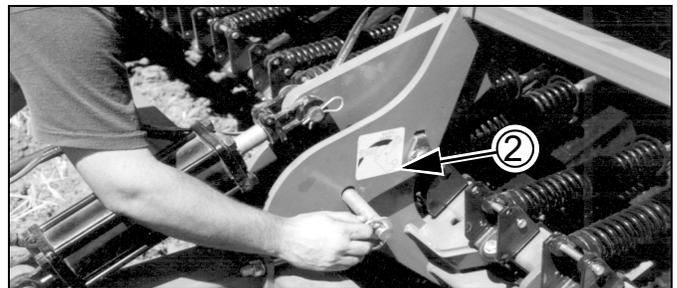


Figure 10  
Unlocking Openers

16636

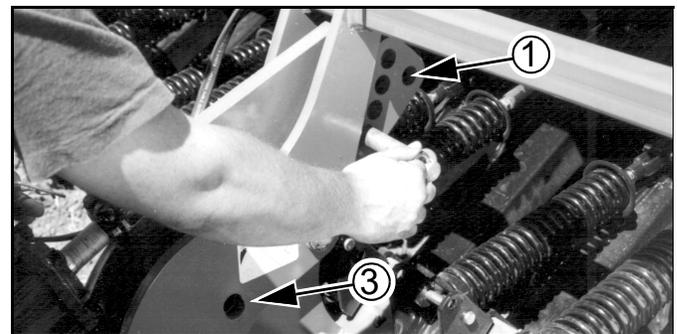


Figure 10  
Setting Down-Pressure Pin

16652

## Loading Materials

The drill must be hitched for seed loading. Seed may be loaded in the field or prior to transport.

To determine the weight of a fully loaded drill, see “**Weights for Tractor Requirements**” on page 19. Use this weight when checking tractor capability.

The mainframe may be raised or lowered. Lowered places the walkboards closer to the ground, reducing effort when manually loading bagged seed. If equipped with ladders, swing them down.

Load slightly more material than needed, because consumption rates can vary between compartments even though the furrow rates are identical.

### NOTICE

*Do not overfill boxes. Contents should be level with the bottom of the lid opening. Overfilling can damage boxes and hinge supports.*

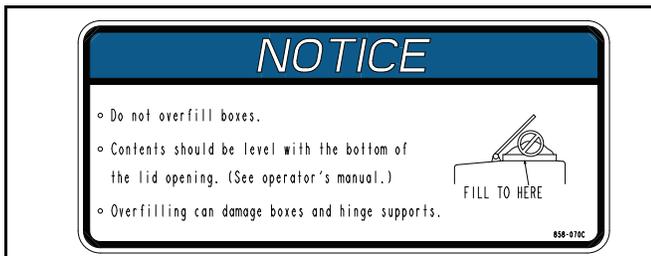


Figure 11  
Fill Decal

858-070C

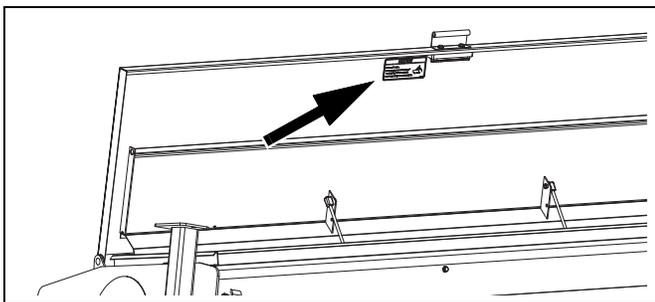


Figure 12  
Fill Decal on Bottom of Box Lid

68472

### WARNING

**Possible Agricultural Chemicals Hazards:**  
*Take all necessary materials safety precautions when loading dusty seed, treated seed or fertilizer.*



## Loading Main Seed Box

1. Check that all meter doors are positioned for the seed size, and not set for clean-out. See Seed Rate Manual. If loading prior to transport, set them to position 1 (smallest seed).
2. Install or remove optional seed plugs as desired for the row spacing planned. See “**Seed Tube Plug (Small Seeds)**” on page 56.
3. If loading prior to transport, and calibration has not yet been done, set Seed Rate Handles to 0. At 0, and with the doors at 1, no seed can leak during transport.
4. On 1300F (fertilizer-capable) drill models:
  - Check that any offset box dividers are set to the desired compartment ratio. See “**Offset Box Divider**” on page 55.
  - Check that the seed/fertilizer flap is set as desired (separate compartments, or all seed). See “**Fertilizer Box Operation**” on page 24.
  - If seeding only from the forward (seed) compartment, flip the spill flap to the rear to prevent seed from entering the fertilizer compartment. See “**Fertilizer Box Operation**” on page 24.
5. Take all necessary materials safety precautions if the seed is treated.
6. Load material into box. Make sure material is loaded or spread evenly across all partitions. Use tool or gloved hand. Do not over fill boxes.
7. To reduce wear, remove main shaft drive chains for small seed boxes.

## Loading Small Seeds Box

1. If loading prior to transport, and calibration has not yet been done, set Seed Rate Handles to 0. At 0, no seed can leak during transport.
2. Take all necessary materials safety precautions if the seed is treated.
3. Load material. Make sure material is loaded or spread evenly across all partitions. Use tool or gloved hand. Do not over fill boxes.
4. To reduce wear, remove main shaft drive chains for main seed boxes.

## Loading Fertilizer Compartment

Load fertilizer after transport if possible. Some spillage can occur through meters during transport, even with the drive system disengaged.

### **WARNING**

**Possible Agricultural Chemicals Hazards:**  
Take all necessary materials safety precautions when loading dusty seed, treated seed or fertilizer.



#### Refer to Figure 13

1. Clean any seed or debris from fertilizer compartment. Close and latch the clean-out door. Make sure all door latches ① are engaged before loading fertilizer compartment.
2. Check that any offset box dividers are set to the desired compartment ratio. See “Offset Box Divider” on page 55.

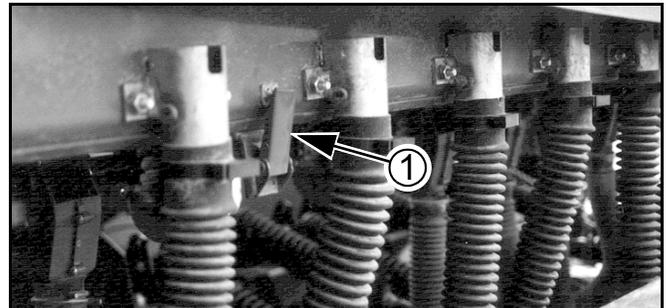


Figure 13  
Latch for Fertilizer Clean-out Door

16383

#### Refer to Figure 14

3. Close the seed/fertilizer flap so seed and fertilizer cannot pass between compartments.

Flap flips forward to block passage. The flap top edge is secured to the dividers. Rotate the bent clips to engage the edge of the flap, and tighten the knobs ①.

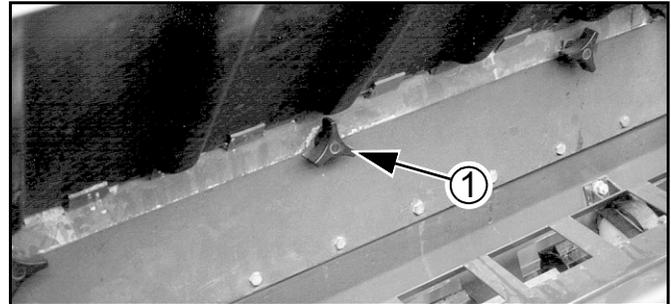


Figure 14  
Seed/Fertilizer Flap Closed

16383

#### Refer to Figure 15

4. Open spill flap ① over fertilizer compartment and swivel back until it rests against open drill-box lid. The spill flap serves as a spill guard to keep fertilizer out of the seed compartment.
5. Fill fertilizer compartment. Make sure material is loaded or spread evenly across all partitions. Use tool or gloved hand. Do not overfill boxes.
6. To reduce wear, remove main drive shaft chains for main seed boxes.

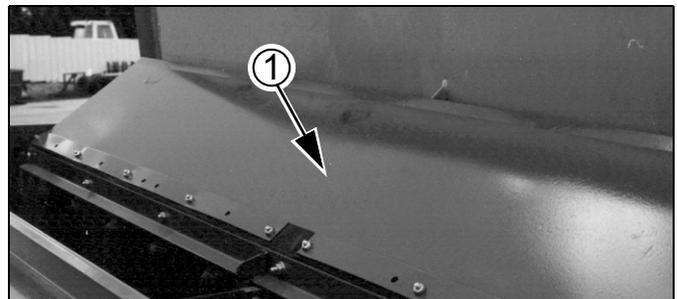


Figure 15  
Spill Flap

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## Setting Materials Rates

Seeding and application rates are independent for all boxes (changing rates on one does not affect the others). Rate setting steps, and rate calibration, are different for each box. See Seed Rate Manual (175-157B).

All of the boxes use fluted-feed meters. Actual rates frequently vary from chart rates due to variations in materials, conditions and application speed. Calibration is strongly encouraged. It is also wise to monitor material consumption in the field, both to confirm the calibration, and to catch any stoppages or other malfunctions.

Calibration is described in the rate setting topics of the **Adjustments** section.

 **NOTE:** No meters operate if the lock-out hub is disengaged. Be sure to engage the hub after transport and calibration.

## Initial Seeding Depth

Refer to Figure 16

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

For information on opener adjustments, see “**Row Unit Adjustments**” on page 36. For information on troubleshooting opener problems, see “**Troubleshooting**” on page 41.

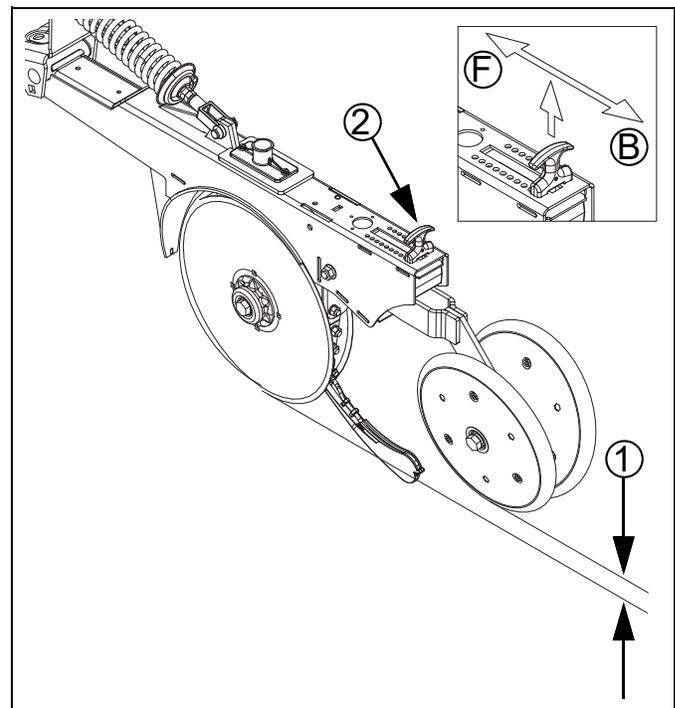


Figure 16  
Initial Opener Depth

26441

## Fertilizer Box Operation

The 1300F models are equipped with a main box capable of planting seed only, or seeding and applying fertilizer in the same field pass. Use only dry, granular fertilizer in the fertilizer box.

### Applying Seed and Fertilizer

1. Clean any seed or debris from fertilizer compartment. See “**Fertilizer Box Clean-Out**” on page 31.

#### Refer to Figure 17

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

The standard dividers partition the drill box into: 60% seed : 40% fertilizer, or; 100% seed.

The optional offset dividers partition the drill box into: 68% seed : 32% fertilizer, 55% seed : 45% fertilizer, or; 100% seed.

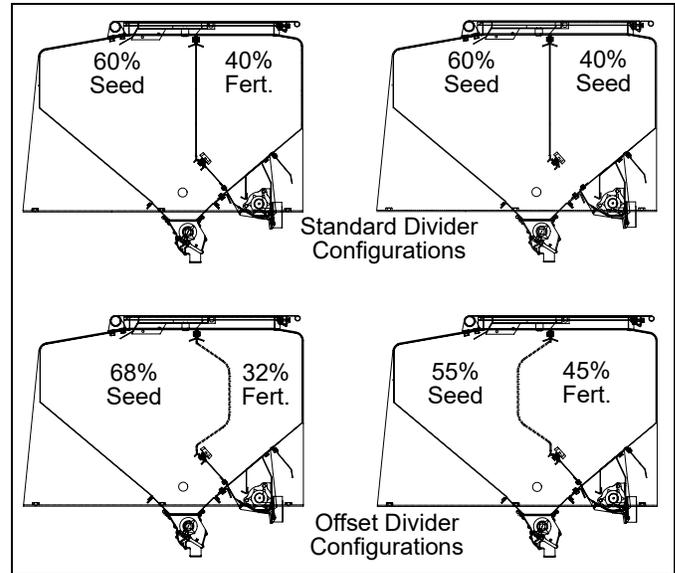


Figure 17  
Seed Box Divider

27003

### Divided Capacities

Divider	Capacity Ratio		Total Capacity	
	Seed	Fertilizer	Seed	Fertilizer
None	100%	0%	43.2 bu (1523 l.)	0
Standard	60%	40%	25.9 bu (914 l.)	17.3 bu (609 l.)
Offset to rear	68%	32%	29.4 bu (1036 l.)	13.8 bu (487 l.)
Offset to front	55%	45%	23.8 bu (838 l.)	19.4 bu (685 l.)

### Divider Removal

Refer to Figure 18 (which depicts a smaller 9 foot box for clarity - the 13 foot box has four partitions)

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

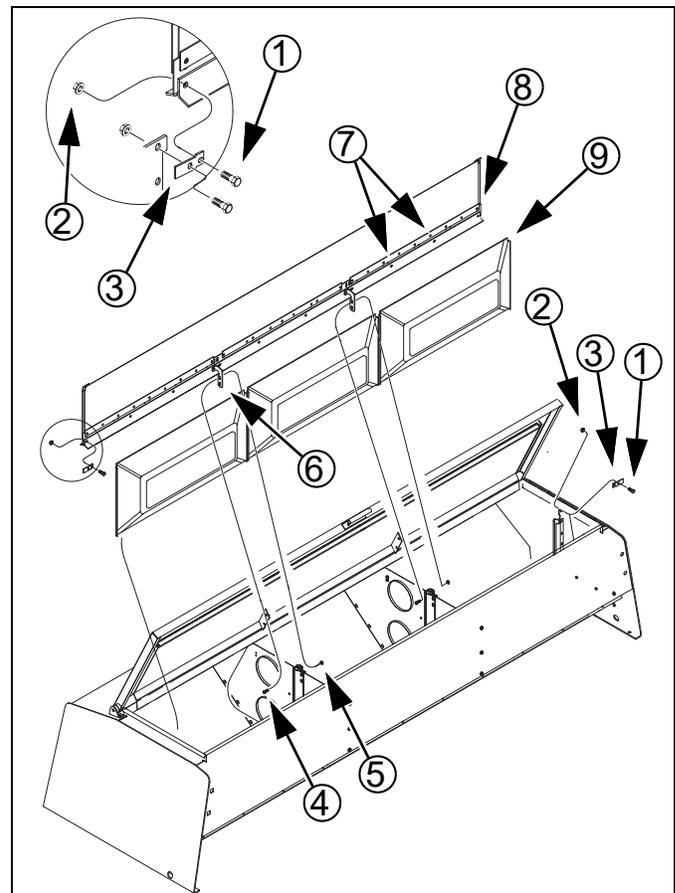


Figure 18  
Box Divider Removal

27050

### Using Fertilizer Compartment

Refer to “**Loading Materials**” on page 21 and see

“**Loading Fertilizer Compartment**” on page 22.

## Seeding with Both Compartments

1. Clean out boxes. See “Main Box Clean-Out” on page 31 and “Fertilizer Box Clean-Out” on page 31.

### Refer to Figure 19

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

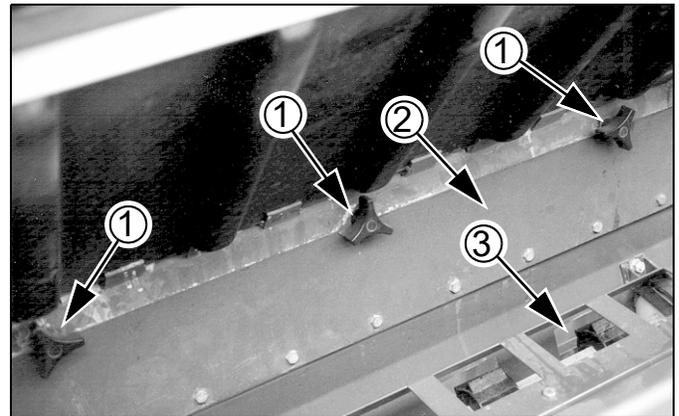


Figure 19  
Open Seed/Fertilizer Flap

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### Refer to Figure 20

4. With seed/fertilizer flap ② covering fertilizer openings, lower vinyl dew shield ④ to hold seed/fertilizer flap over fertilizer openings and away from divider.

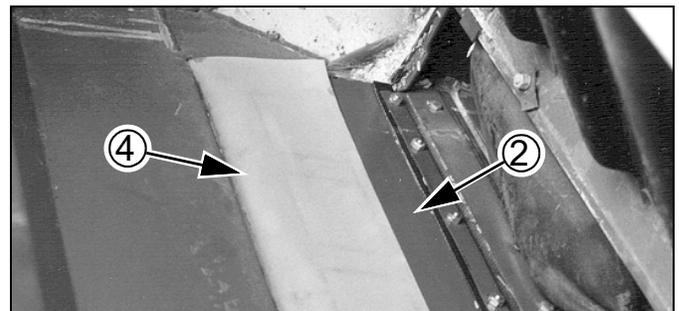


Figure 20  
Seed/Fertilizer Flap Secured

16380

### Refer to Figure 21

5. To avoid unnecessary wear, remove the chain from the clutch shaft to the fertilizer drive.

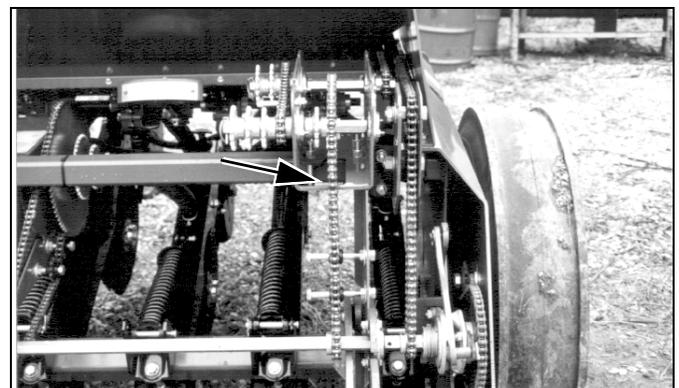


Figure 21  
Fertilizer Drive Chain

17047

## Marker Operation (Option)

### Prepare Markers for Field Use

If markers are not to be used for field operations, leave the pins in their transport lock positions. There is no harm in operating the lift circuit with markers locked up.

1. Set the lift circuit remote to Float to relieve pressure. Set the circuit to Neutral to prevent movement. Shut off the tractor.

#### Refer to Figure 22

2. At each marker, remove the transport pin ① from the (outboard) locking holes.
3. Move the pin to the (inboard) storage holes ②, and secure with hairpin cotter.

If marker fold and unfold speeds are known to be satisfactory, the markers are now ready for field use. To adjust marker speed, see page 46.

### Marker Field Operations

Markers share a common remote circuit with the lift cylinder. Marker cylinders are controlled by an automatic sequence valve that restricts oil flow to one marker at a time.

- Whenever a lift operation is performed, an extended marker folds.
- Whenever a lower operation is performed, a folded marker extends.

You may need to allow extra time for both opener and marker operations to complete, compared to just raising and lowering openers.

#### Operating One Side Only

Leave the unused side in transport lock.

Operate the lift circuit twice for each raise and lower cycle.

#### Two Sides Out

it is possible to both deliberately and unintentionally deploy markers on both sides.

At the start of lower/unfold, briefly reverse the level for the lift circuit, then resume lower (before the lowering marker is fully raised). This causes the other side to enter unfold as well.

If two markers are out unintentionally, perform a fold. Upon the next unfold, only one side deploys.

#### Folding with Both Sides Out

Perform two complete lower/raise operations. The markers fold one side at a time. Install lock pins as appropriate for the next movement.

## **⚠ WARNING**

### *Transport/Crush/Sharp*

### *Object*

### *Hazards:*

*Verify that the lift circuit is in Float or Neutral before removing transport pins. Keep all persons well clear of markers during lift/lower marker fold/unfold operations. Un-pinned markers fold and unfold when the lift circuit is extended or retracted. Markers have multiple pinch points. Lowering arms can crush. Marker disks are sharp.*

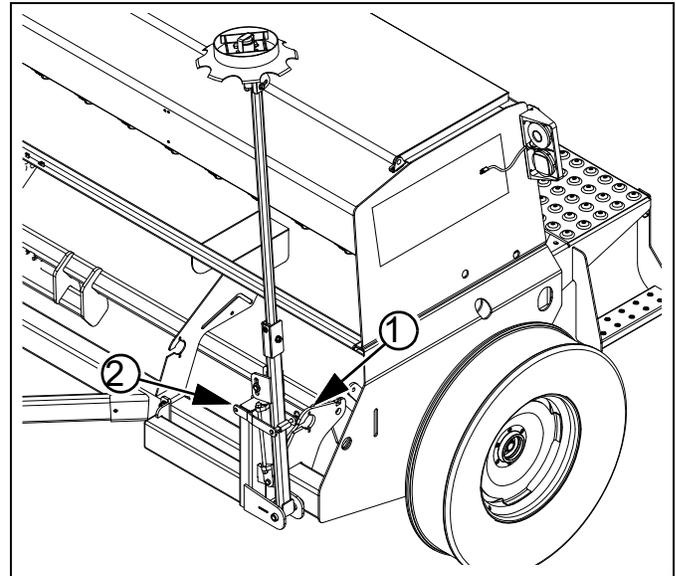


Figure 22  
Marker Transport Pin Release

36274

## Acrometer Operation

A battery-operated electronic acrometer 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.



Acrometer Console

80377

## Operating Instructions

The electronic acrometer 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

The acrometer 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 acrometer:



**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.

## Acrometer 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.

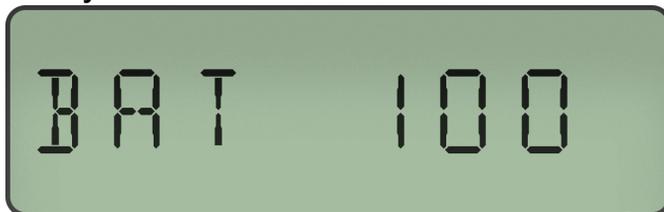
### Total Acre Count



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.

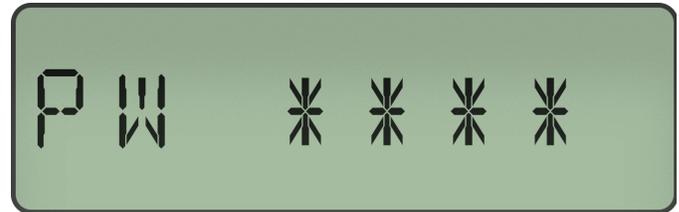
### Battery Life



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

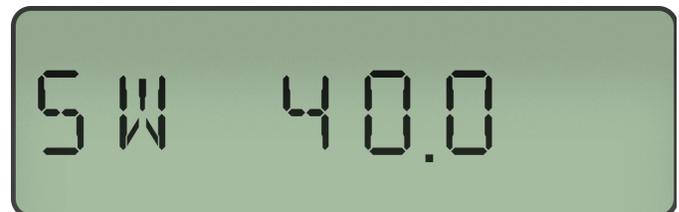


Displays the pulse scaling factor. This value affects the number of pulses emitted per 400ft traveled.

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.

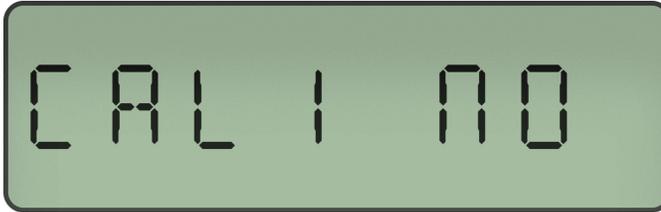
### Swath Width



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 Operations

### Final Field Checklist

- q Drill hitched and chained. See page 14.
  - q Seed and fertilizer rates set per charts and calibration. See Seed Rate Manual.
  - q Lockout hub engaged. See page 18.
  - q Record acremeter reading if acreage monitoring is desired.
  - q Down-pressure adjustment pin configured. See page 20.
  - q One or both markers released from transport lock (if installed and to be used). See page 26.
  - q Materials loaded. See page 21.
1. Pull the raised drill into starting position at the first pass.
  2. Lower the drill (page 20).
  3. If markers are installed and to be used, verify that the desired marker side is deployed, otherwise raise and lower a second time.
  4. Pull forward at the intended planting speed.  
  
Optimum planting speed depends on conditions, and is typically between 5 to 8 mph (8 to 13 km/h). If openers are bouncing, or not operating at a consistent penetration depth, reduce speed.
  5. Stop shortly into the first pass and check drill level. Both drill frame and opener frames need to be parallel to the ground for most consistent results. Also check the seed furrow in between the openers and press wheels, and make sure that seed is being delivered, and being covered.
  6. At the end of each pass, retract the tractor circuit for opener lift. Seeding stops automatically when the openers are raised.
  7. Check material consumption to ensure that it is being used at expected rates, and that you don't run out.
  8. Check opener level and planting depth, which can change as the drill empties and becomes lighter.
  9. At the conclusion of planting, raise the openers and lock them up by moving the down-force adjustment pin back to the transport lock hole (page 17).
  10. If substantial quantities of materials remain, consider performing a clean-out prior to transport (page 31), to make a safer load, and reduce wear on the tires.

 **NOTE:** If re-using calibrated rates from a prior planting, make sure that meter scales are correctly set, and not still at zero for transport. make sure chains are in place for boxes to be used.

### NOTICE

<i>Field</i>	<i>Results</i>	<i>Risk:</i>

*For consistent opener down pressure, fully extend the cylinder every time you lower the openers.*

<i>Equipment</i>	<i>Damage</i>	<i>Risk:</i>

*Do not make sharp turns with openers in the ground.*

### NOTICE

<i>Equipment</i>	<i>Damage</i>	<i>Risk:</i>

*Never back up with openers in the ground. Seed tube plugging and equipment damage is likely.*

 **NOTE:** Some row spacings have unequal numbers of row units served by each box compartment. The compartments with more rows run out of material first.

## Materials Clean-Out

### Main Box Clean-Out

Refer to Figure 23, which depicts the seed cup door handle ① in a normal operating position.

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

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

Set the Seed Rate Handles to 100 and disengage the lock-out hub. With openers lowered to engage the clutch, the seed meter jackshaft can be slowly turned with the calibration crank, while another person inspects the flutes from the open seed boxes.

### Fertilizer Box Clean-Out

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

#### Refer to Figure 24

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

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

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

#### Refer to Figure 25

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

Let drill boxes dry before closing clean-out doors.

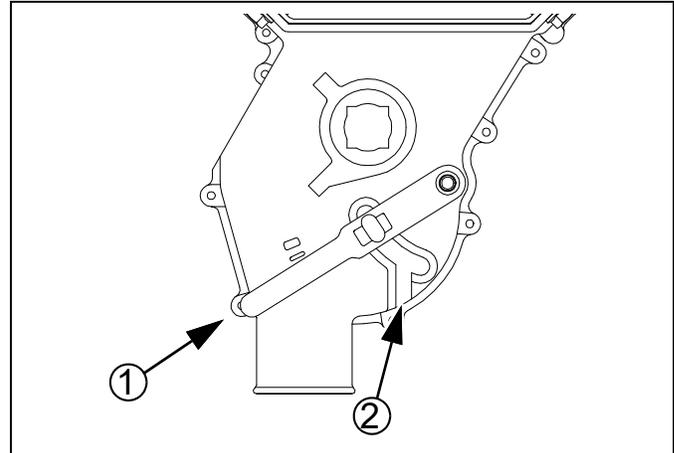


Figure 23  
Seed Cup Clean-out

26211

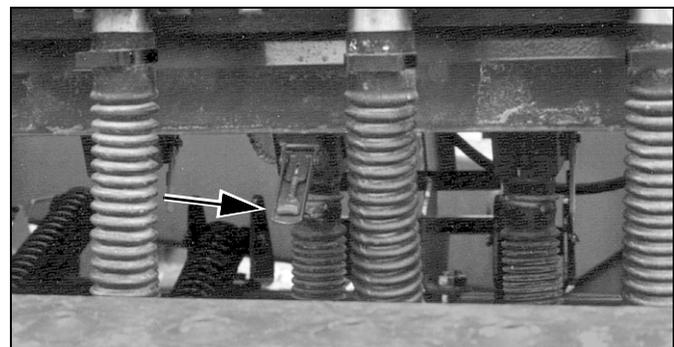


Figure 24  
A Fertilizer Clean-out Latch

16376



Figure 25  
Dew Shield at Openings

16382

## Small Seeds Box Clean-Out

1. Open lid of each box and scoop out as much seed as possible.
2. To recover remaining seed, place a collection tarp under the small seeds tubes at the openers.
3. Raise drill.
4. Set seed rate handles to 100.
5. Rotate calibration crank or end wheel until no seed flows.
6. If a vacuum cleaner is available, remove any residual seed from top of meters.

## Parking

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

1. Fold and lock both markers (page 26, if markers installed and used).
2. Position drill on a level, solid area.
3. Remove jack from storage location on top of tongue and pin it on post on the top of the tongue as shown on page 14. Extend jack until weight of tongue is on jack. Leave tractor hitched for the moment.
4. Lower openers and reduce hydraulic circuit pressure to zero (Float circuit).
5. Unplug drill hydraulic hoses and electrical lines from tractor.
6. Remove hitch pin first, then safety chain from tractor drawbar.

## Storage

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

1. Plug or cap seed delivery and fertilizer tubes to prevent pest entry.
2. Unpin the rod end of the lift cylinder. Fully retract the cylinder to prevent rust.
3. Perform the drill Parking checklist.
4. Lubricate the drill at all points listed under "**Lubrication**" on page 48.
5. Check all bolts, pins, fittings and hoses. Tighten, repair or replace parts as needed.
6. Check all moving parts for wear or damage. Make notes of any parts needing repair before the next season.
7. Use touch-up paint to cover scratches, chips and worn areas to prevent rust.



### **WARNING**

**Negative Tongue Weight Hazard:**  
*This drill has a negative tongue weight when openers are raised. Lower openers and remove hydraulic pressure before unhitching the drill in the unfolded position. Unhitching with the openers raised will result in sudden elevation of the tongue, causing injury or death.*

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



## Adjustments

To get full performance from your drill, you need an understanding of all component operations, and many provide adjustments for optimal field results. Even if planting conditions rarely change, some adjustment items need periodic attention due to normal wear.

The 1300 and 1300F have double-disk openers with depth-controlling press wheels mounted on floating opener frames. Opener bodies are staggered for easy soil flow. All openers pivot on a common axis to maintain consistent depth as the opener frames follow contours. A spring provides the down pressure necessary for opener double disks to open a seed furrow. The spring allows openers to float down into depressions and up over obstructions. Individual openers can be adjusted to account for tire tracks.

### Planting Depth

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

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

### Seed and Fertilizer Rate

Details are found in the Seed Rate Manual (175-157B).

Materials are applied by fluted feed meters driven by the left end wheel. Independent mechanisms main seed, fertilizer and optional small seeds application.

Adjustment	Page	The Adjustment Affects
Main Box Seed Rate		Refer to Seed Rate Manual (175-157B)
Fertilizer Rate		Refer to Seed Rate Manual (175-157B)
Small Seeds Rate		Refer to Seed Rate Manual (175-157B)
Hitch Preparation	13	Frame Level
Opener Frame Down-Force	34	Consistent seeding depth
<b>Marker Adjustments</b>		
Marker Disk Angle	35	Visibility of marker groove in field
Marker Speed	46	Time required for raise/lower cycle
Marker Extension	69	Correct offset for passes
<b>Row Unit Adjustments</b>		
Opener Height	37	Seeding depth in tire tracks
Row Unit Down Pressure (Spring)	37	Level row units and consistent seeding depth in tire tracks
Disk Blade Adjustments	38	Consistent seeding depth
Disk Scraper Adjustments	38	Consistent seeding depth
Seed Firmer Adjustments	39	Consistent seed placement and coverage
Opener Depth (Press Wheel Height)	40	Seeding depth.

## Opener Frame Down-Force

To properly adjust seeding depth, you need an understanding of how the opener frame, opener springs, disks and press wheels work. The opener frame adjustment affects all rows at once.

**Refer to Figure 26 and Figure 27**

The openers are mounted on a pivoting tube ①. A hydraulic cylinder mounted on a floating lug controls the openers. Springs on the opener bodies provide down pressure for the opener disks to cut a seed furrow. An adjustable pivot-stop pin ② limits the rotation of the floating lug and thereby controls spring length and down pressure on all openers.

Changing the position of the pivot-stop pin changes opener down-pressure across the drill. You can also change the spring length or mounting height of individual openers, such as in tire tracks.

Press wheels are mounted on the opener bodies behind the opener disks, and perform two functions:

- They close the furrow and firm the seed bed. To provide consistent seed firming, the press wheels are free to move down from their normal operating position. This maintains pressing action even if the opener arm lifts at obstructions.
- The press wheels control opener depth. The higher the press wheels run, the deeper seed is placed.

### Spring Down Pressure—All Openers

The amount of down pressure needed for the opener disks to penetrate the soil varies with field conditions.

The objective in selecting a pivot-stop pin hole, and a press wheel height, is to achieve the desired planting depth while keeping the drill frame and the row unit frames level with the ground.

**NOTE:** The setting of the pivot-stop pin ② interacts with the setting of the press wheel height. When adjusting one, recheck the other.

To increase or decrease all-rows spring down pressure:

1. Raise the drill (to free the pin).
2. Move the pivot-stop pin ②. The holes ③ in the floating lug are lettered: A provides the greatest down pressure and E provides the least.

As the pin is moved to hole ④ for transport, keep records of what hole is optimal for fields and conditions worked.

**NOTE:** To maintain consistent opener down pressure, fully extend the hydraulic cylinder each time you lower the openers.

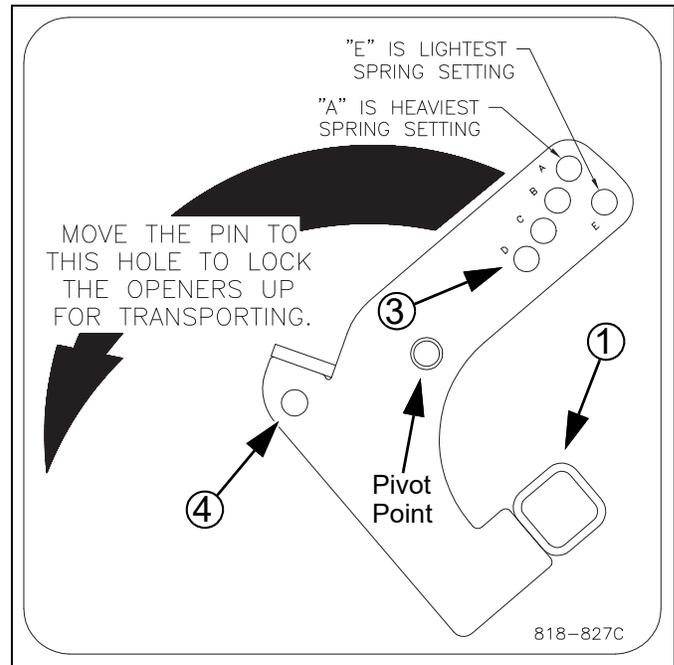


Figure 26  
Down-Pressure Decal

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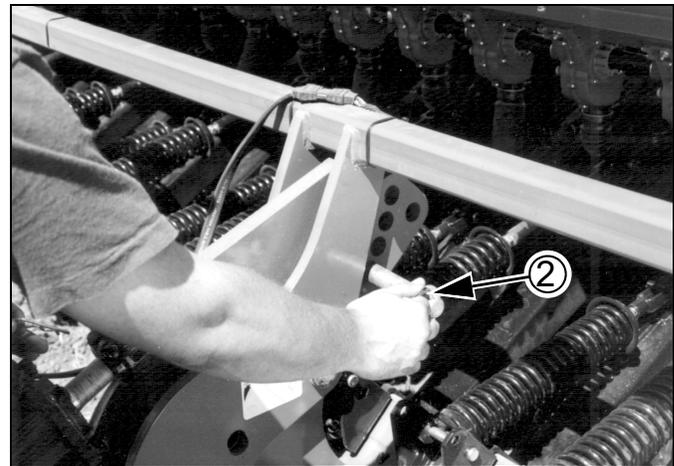


Figure 27  
Adjusting Down-Pressure Pin

16652

## Marker Disk Angle Adjustment

### **CAUTION**

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

#### Refer to Figure 28

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

For a wider mark (W), increase the angle of the marker with respect to the tube ②. For a narrower mark (N), reduce the angle.

You can also invert the disk blade on the hub to change the direction of throw.

Tighten bolts ①.

**NOTE:** The direction of travel (T) 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.

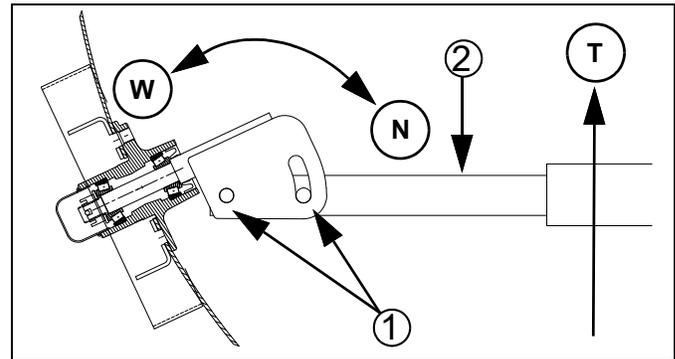


Figure 28  
Marker Disk Angle

11757

## Row Unit Adjustments

Refer to Figure 29 (which depicts a row unit fully populated with all optional accessories [except scraper and Keeton®] supported for use with the 1300 and 1300F drills)

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

1. Opener height adjustment: standard  
If a few rows need to run deeper, such as in tire tracks, the arm's pivot point may be lowered. See "**Opener Height**" on page 37.
2. Single Down Pressure Spring: standard  
Each row unit is mounted on the drill as a pivoting arm which allows the row unit to independently move up and down. The adjustable spring provides the force to get the row unit and attachments into the soil. See "**Row Unit Down Pressure (Spring)**" on page 37.
3. Disc Blades: standard, 2 per row unit  
Double disc blades open a furrow, creating the seed bed. Spacers adjust the blades for a clean furrow. See "**Disk Blade Adjustments**" on page 38.
4. Seed delivery tube: standard  
No adjustments are necessary.
5. Disk Scraper: standard (not shown)  
In sticky soils, a scraper helps keep the opener disks operating freely. A slotted scraper is standard. A spring-loaded carbide scraper is optional. See "**Carbide Disk Scraper**" on page 56.
6. Seed flap (not shown) standard.  
Seed-Lok® firming wheel (shown)  
Improves seed-soil contact. See "**Seed-Lok® Seed Firmer Lock-Up**" on page 39.
- Keeton® seed firmer (not shown)  
Improves seed-soil contact, and provides a stable arm for a low-rate liquid fertilizer delivery tube. See "**Keeton® Seed Firmer Adjustment**" on page 39.
7. Press wheels: standard (choice of types)  
These close the seed trench. The wheels also support the free end of the row unit, and provide the primary control over seeding depth. See "**Opener Depth (Press Wheel Height)**" on page 40.

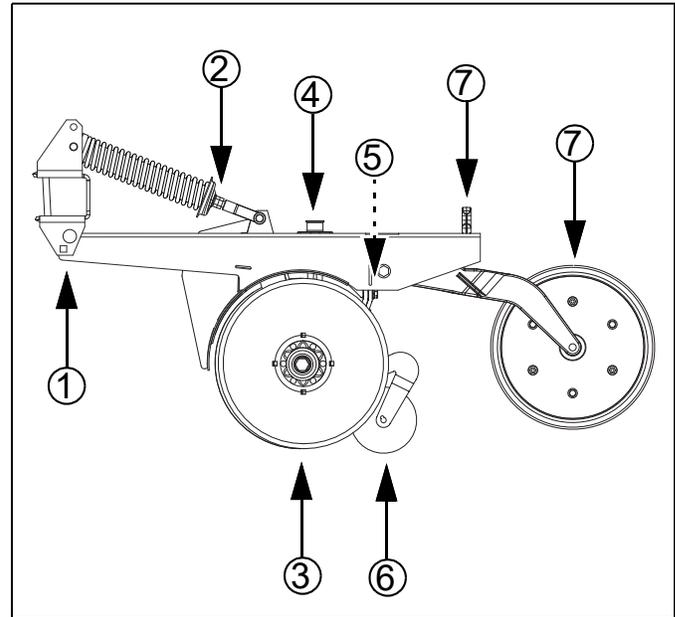


Figure 29  
00 Series Row Unit

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### NOTICE

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

## Opener Height

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

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

### Refer to Figure 30

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

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

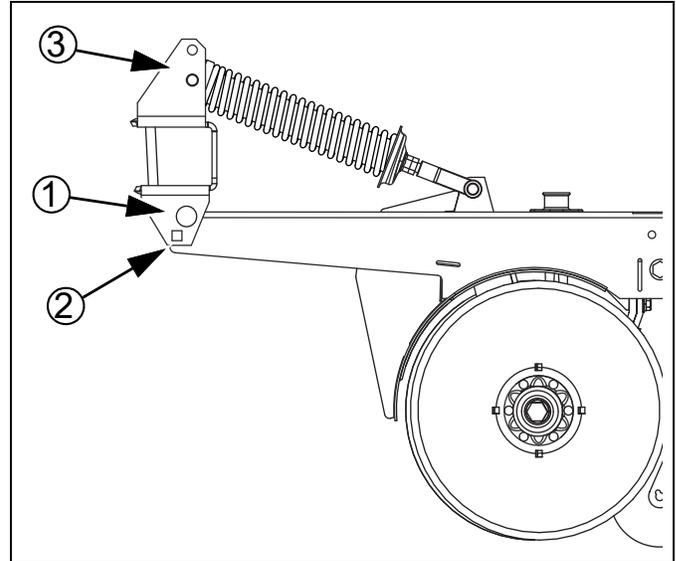


Figure 30  
Pivot Point Bolt Holes

26382

## Row Unit Down Pressure (Spring)

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

Adjusting pressure at the springs for all rows is not recommended. Use the opener frame pivot pin (page 34).

### Refer to Figure 31 and Figure 32

To increase spring pressure:

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

 **NOTE:** Each  $\frac{1}{4}$  inch adjustment adds about 13 pounds of force at opener disk (approximately 9 kg per cm). Do not tighten nut more than one inch (2.5 cm).

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

The length ② of the spring is factory-set to:  $13\frac{5}{16}$  inch (33.8 cm).

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

The factory preset length is recommended for conventional till and min-till conditions. Shorten it for rows in tire tracks or more difficult min-till conditions. The minimum recommended length is:  $12\frac{5}{16}$  inch (31.3 cm).

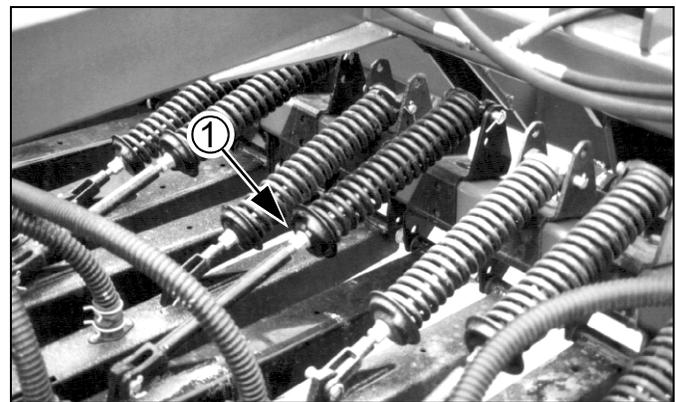


Figure 31  
Row Unit Spring Tension

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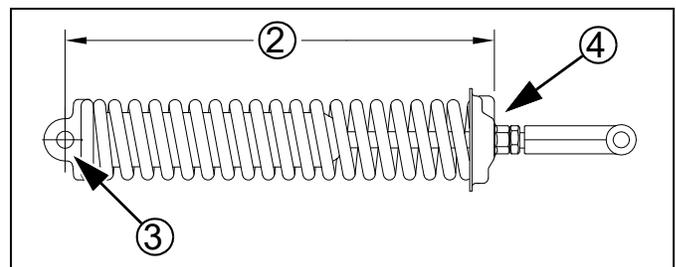


Figure 32  
00 Series Spring Length

26454

## Disk Blade Adjustments

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

### Refer to Figure 33

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

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

### Adjusting Disc Contact

#### **CAUTION**

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

### Refer to Figure 34

1. Raise the openers and lock them with the transport pin.
2. Remove the bolt retaining the opener disc on one side. Carefully remove the disc, noting how many spacers are outside the disc and inside the disc. Do not lose the hub components and spacer washers.
3. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside to the outside of the disc.
4. Reassemble and check disc contact.

## Disk Scraper Adjustments

To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as disks rotate. Standard 00 Series row units include a double-disk slotted scraper. A carbide scraper is optional (page 56).

### Refer to Figure 35

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

#### **CAUTION**

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



Figure 33  
Checking Disk Contact

26451

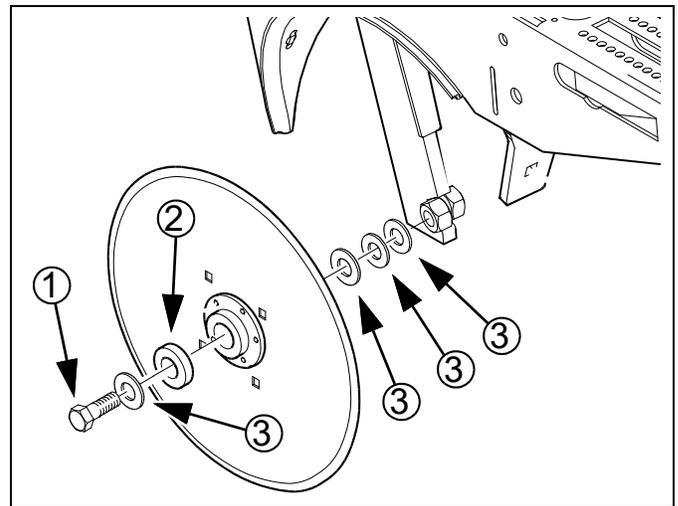


Figure 34  
Adjusting Disk Spacers

26385

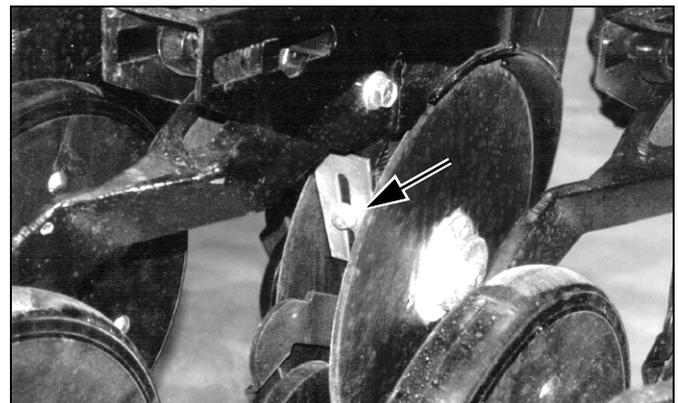


Figure 35  
Opener Disk Scraper

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## Seed Firmer Adjustments

Depending on row option originally specified, 00 Series row units include a seed flap or Seed-Lok<sup>®</sup>. An optional Keeton<sup>®</sup> seed firmer may be ordered separately.

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

### **CAUTION**

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

To adjust the Keeton<sup>®</sup> seed firmer, lower the drill until the disks of the row units are resting on the ground.

### Keeton<sup>®</sup> Seed Firmer Adjustment

The optional Keeton<sup>®</sup> 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 36

The firmer is provided with a preset tension which is recommended for using the first year. The tension screw ① can be tightened in subsequent years according to your needs. Firmers should provide just enough tension to push seeds to the bottom of the trench.

### Seed-Lok<sup>®</sup> Seed Firmer Lock-Up

Optional Seed-Lok<sup>®</sup> 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 37 (shown with an opener disk removed for clarity - this task can be performed with disks mounted)**

To lock up Seed-Lok<sup>®</sup> wheels:

1. Pull catch wire aside ①.
2. Pull firming-wheel arm ② up and release wire to catch arm.

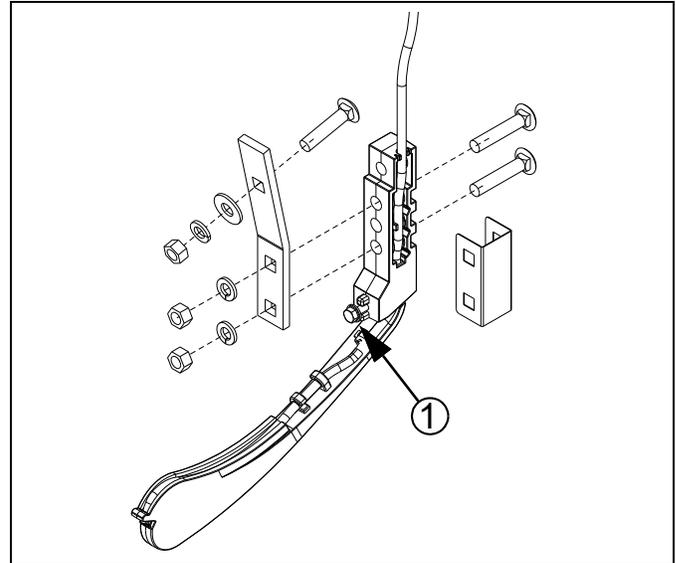


Figure 36  
Keeton<sup>®</sup> Seed Firmer

26390

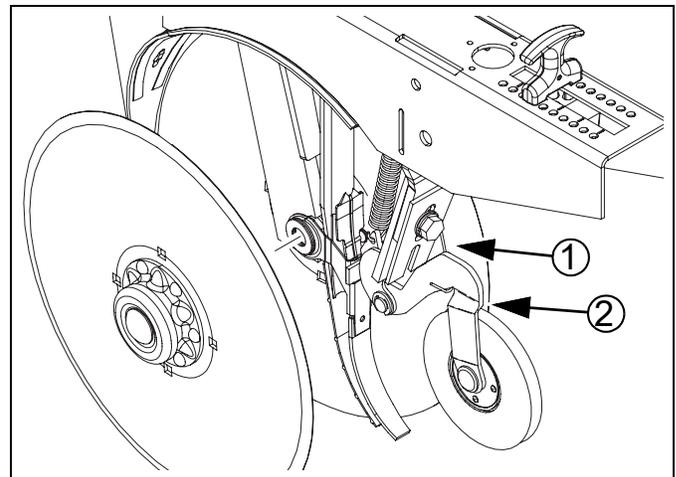


Figure 37  
Seed-Lok<sup>®</sup> LockUp

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## Opener Depth (Press Wheel Height)

### Refer to Figure 38

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

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

- For more shallow seeding, slide T handles forward ⑤ toward implement.
- For deeper seeding, slide T handles rearward ⑥ away from implement.

If press wheels are lifting off ground, increase down pressure at the opener frame (page 34).

If press wheels are digging into ground, reduce down pressure at the opener frame.

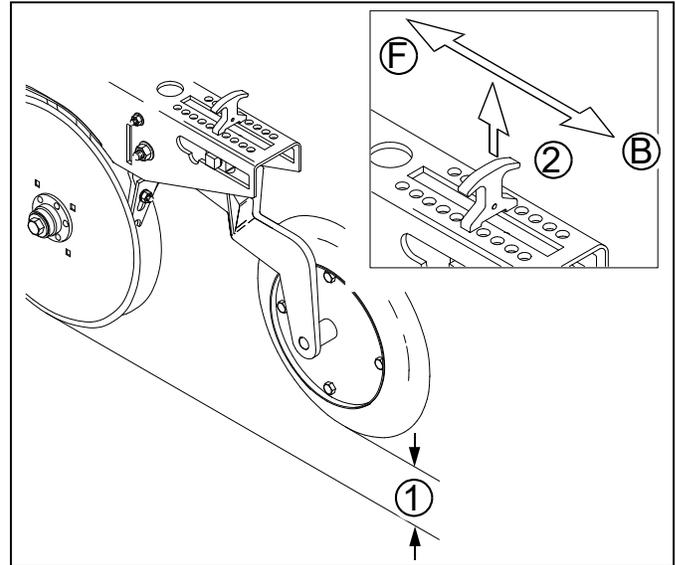


Figure 38  
Adjusting Opener Depth

15659



## Troubleshooting

Problem	Solution
<b>Uneven seed spacing or uneven stand</b>	Check for plugging in seed cup.
	Check if seed tubes are plugged.
	Reduce ground speed.
	Check that opener disks turn freely.
	Use a faster drive type and close seed cup doors to narrower position.
	Check if opener frame has too little down pressure to penetrate soil. Increase down pressure on openers if necessary. See <b>“Opener Frame Down-Force”</b> on page 34.
	Check if opener frame has too much down pressure, and rows are not running level. Decrease down pressure if necessary. See <b>“Opener Frame Down-Force”</b> on page 34.
	Check for trash or mud buildup on Seed-Lok <sup>®</sup> wheels. Lock up if necessary. See <b>“Seed-Lok<sup>®</sup> Seed Firmer Lock-Up”</b> on page 39.
	Chain skipping check for loose idlers and excess slack.
	End Wheel slippage conditions may be too wet for planting.
<b>Opener disks not turning freely</b>	Check for trash or mud buildup between disks.
	Check disk scraper adjustment (standard slotted scraper.)
	Check for trash or mud buildup on disk scrapers.
	Check disk bearings.
	Check opener frame for possible damage.
	If opener disks turn freely by hand but not in field, reduce down pressure. See <b>“Opener Frame Down-Force”</b> on page 34.
	Check presswheel adjustment for seeding depth. See <b>“Opener Depth (Press Wheel Height)”</b> on page 40.
<b>Actual seeding rate is different than desired</b>	Check tire pressure. See <b>“Appendix A Reference Information”</b> on page 58.
	Check end wheels. Proper size is 7.5 x 20, 4-ply Rib Implement.
	Check for buildup of seed treatment. Regularly clean off buildup.
	Check seed rate setting. See Seed Rate Manual.
	Consider your seed weight. Seed rate charts are based on average seed weights.
<b>Excessive seed cracking</b>	Use slower drive type and open seed cup doors to a wider position.
<b>Acremeter doesn't measure accurately</b>	Meter readings are not precise. Acremeters are factory-programmed for average drill swath, but not particular row spacings. Also, they include a compensation for nominal wheel slippage that may vary from your conditions.
	Check tire size and pressure. See <b>“Appendix A Reference Information”</b> on page 58.
	Check planting operation for excessive overlap or gaps between passes.
	Check that your acremeter is for your drill. Verify revolutions per acre when display is active. See <b>“Perform two complete lower/raise operations. The markers fold one side at a time. Install lock pins as appropriate for the next movement.”</b> on page 26.
<b>Uneven seeding depth</b>	See <b>“Opener Depth (Press Wheel Height)”</b> on page 40.
	See <b>“Opener Frame Down-Force”</b> on page 34.
	Check that drill tongue matches tractor drawbar height. See <b>“Hitch Preparation”</b> on page 13.
<b>Chain debris/retainer clip</b>	Be sure retainer clip is facing opposite way of chain travel.
<b>Press wheel not compacting the soil as desired</b>	Reset presswheel depth. See <b>“Opener Depth (Press Wheel Height)”</b> on page 40.
	Increase down pressure. See <b>“Opener Frame Down-Force”</b> on page 34.

Problem	Solution
<b>Grain box not emptying evenly</b>	Certain models do not have the same number of seed cups between each bulkhead divider. The section with more seed cups empties faster.
<b>Press wheel or openers plugging</b>	Consider soil conditions. Drilling in damp or wet conditions can increase this problem.
	Reduce down pressure. See <b>“Opener Frame Down-Force”</b> on page 34.
	Do not back up or allow drill to roll rearward with openers in ground.
	Check Seed-Lok <sup>®</sup> wheels for mud accumulation. Lock up wheels if necessary. See <b>“Seed-Lok<sup>®</sup> Seed Firmer Lock-Up”</b> on page 39.
<b>Seed cup sprockets locked up or seed drive shaft twisted</b>	Check for foreign material lodged in seed cup sprockets.
	Check for buildup of dried liquid insecticide in seed cups. Remove the build up by disassembling each seed cup and scraping the foreign substance from the turning surfaces.
<b>Openers drill too deep (Bulldozing)</b>	If operating at high down-pressures, See <b>“Opener Frame Down-Force”</b> on page 34.
	Reduce down pressure on openers. See <b>“Opener Frame Down-Force”</b> on page 34.
	Check presswheel adjustment. See <b>“Opener Depth (Press Wheel Height)”</b> on page 40.
<b>Openers raise when tractor hydraulic lever is held forward and lower when lever is held back</b>	Reverse hydraulic hoses at tractor quick couplers.
<b>Opener frames do not float over uneven terrain</b>	Check that hydraulic circuit is in Neutral.
<b>Marker Disk Not Marking</b>	Marker arm cylinder may not be fully extended. Move circuit remote lever in opener lower direction briefly.
	Marker disk angle may need adjustment for conditions. See page 35.
<b>Markers Won't Unfold</b>	Transport pins may be in place. See page 26 for safe field preparation steps.
	Sequence valve speed adjusters (needle valves) may be too tight or closed. Readjust to increase marker unfold speed.
<b>Markers Won't Fold</b>	Sequence valve speed adjusters (needle valves) may be too tight or closed. Readjust to increase marker fold speed.
<b>Marker Movements Tardy, Sudden, Jerky or Unexpected</b>	Check all hoses and fittings for leaks and loose connections. Check tractor hydraulic oil level. Check all bolts and pins. Perform a circuit bleed (page 45) if any hydraulic problems were corrected.



# Maintenance and Lubrication

## General Information

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**

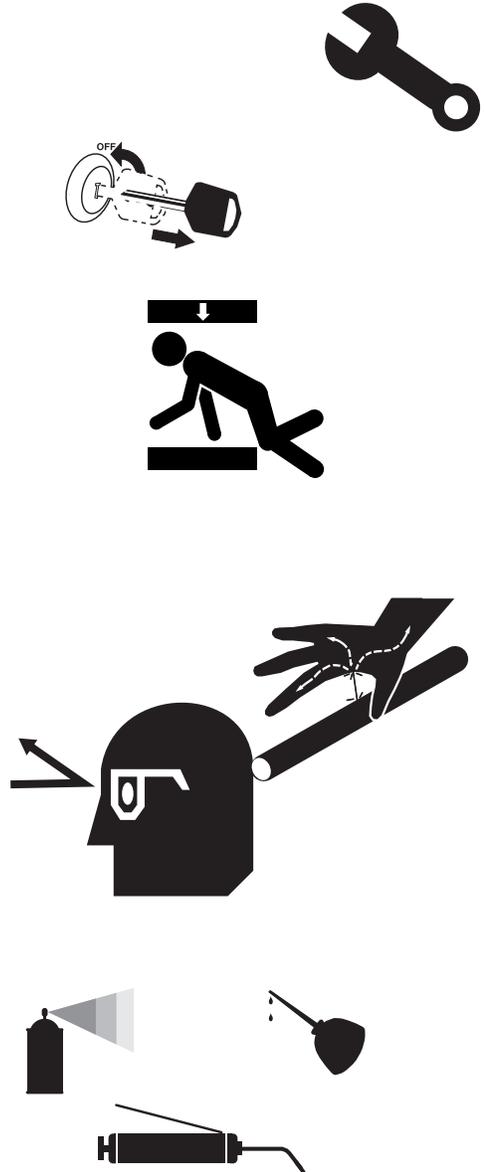
*You may be severely injured or killed by being crushed under a falling implement. Always have frame sufficiently blocked up when working on, and particularly under implement.*

### **WARNING**

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

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

1. Securely block drill before working on it.
2. Lubricate areas listed under “**Lubrication**” on page 48.
3. Clean any fittings that do not take grease.
4. Inflate tires as specified. See “**Appendix A Reference Information**” on page 58.
5. Inspect hydraulic hoses for cuts, cracks and aging. Check fittings for evidence of leaks.
6. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. See “**Safety Decals**” on page 6.



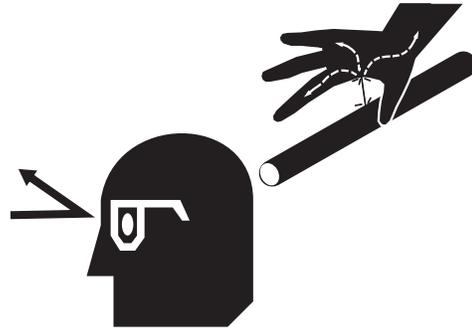
## Maintenance

### Bleeding Hydraulics

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

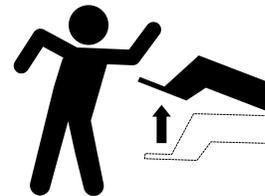
#### **WARNING**

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



#### **WARNING**

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



#### **NOTICE**

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

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

#### Hydraulic System Capacity

System capacity for the lift (only) cylinder system is:

0.45 gallon						(1.7 liters).
Capacity	for	lift	plus	markers		is:
0.67 gallon (2.5 liters)						

## Bleeding Lift and Marker Hydraulics

To function properly, the hydraulics must be free of air. With air in the system, the hydraulics will move in jerky, uneven motions. If you install or replace a hydraulic component, follow these steps.

1. Check the fluid level in the tractor hydraulic reservoir. Bleeding the hydraulics with a low fluid level will draw air into the system.

**Refer to Figure 39 (depicting a cylinder support block - you can also set the cylinder vertically, pinned in the mount)**

2. If markers are installed, disconnect the rod ends of both cylinders and lay the markers on the ground. Support the cylinders so that the rod ends are free of obstructions.

**Refer to Figure 40**

3. Lower the openers to the ground. Unpin the rod end of the cylinder from the floating lug. Wire, block up, or otherwise safely support the cylinder so the rod will not contact anything when fully extended.
4. Operate the lift circuit to retract the lift cylinder. If markers are installed, this will also retract one marker cylinder.
5. Loosen a JIC or NPT connection between the hoses and fittings of:
  - lift cylinder base end (cylinder retracted)
  - marker cylinder base end (cylinder retracted)
6. With the tractor idling, slowly work the tractor remote lever as if extending the lift cylinder. As oil seeps from a fitting, stop extension and tighten each hose connection.
7. Continue working the lever until the lift cylinder and active marker cylinder rods are completely extended.
8. Loosen a JIC or NPT connection between the hoses and
  - lift cylinder rod-end fitting
  - marker cylinder rod end
9. With the tractor idling, slowly work the tractor remote lever in the opposite direction as if retracting the lift cylinder. As oil seeps from a fitting, stop retraction and tighten each hose connection.
10. If markers are installed, repeat step 4 through step 9 for the other marker side.
11. Reconnect the marker cylinders. Cycle the system to fold and lock each marker with its pin.
12. Continue working the lever until the lift cylinder is completely extended. Pin the cylinder to the floating lug.

## **⚠ WARNING**

**Crushing and Sharp Object Hazards:** Keep all persons well clear of markers during lift/lower marker fold/unfold operations. Un-pinned markers fold and unfold when the lift circuit is extended or retracted. Markers have multiple pinch points. Lowering arms can crush. Marker disks are sharp.

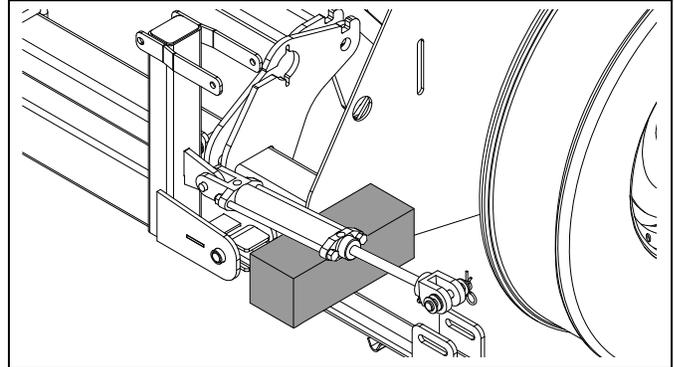


Figure 39  
Marker Cylinder Bleed

36276

**NOTE:** When bleeding cylinders, begin with them retracted (loosening base end connection), and end with them extended (loosening rod end connection).

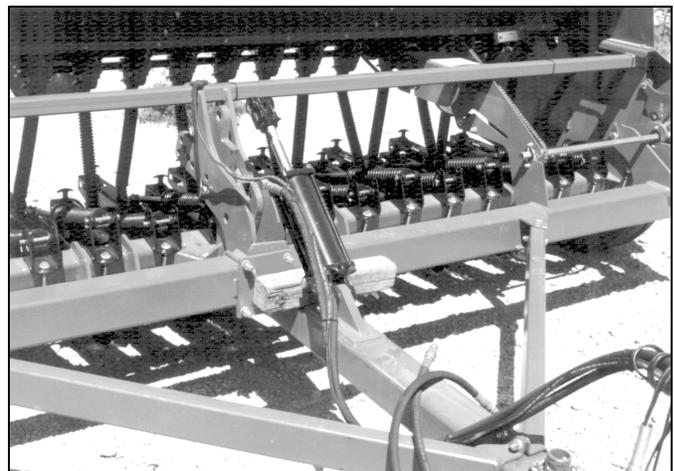


Figure 40  
Opener Lift Cylinder Supported

16675

## Marker Maintenance

### Marker Speed Adjustment

Refer to Figure 41

Adjust folding speed for dual markers with hex adjustment screws on sequence valve body. There is an adjustment screw for raising speed ① and one for lowering speed ②. You can identify adjustment screws by markings stamped in the valve body.

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

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

### Marker Shear Bolt

Refer to Figure 42

If a marker gets caught or hits an obstruction, it is designed to fail a Grade 5 shear bolt ③① at the fold, pivot on a pin, and swing back. If the bolt shears, chances are the washers and lock nut will be lost as well.

The	replacement	parts	are:
③①	802-197C	HHCS	
③②	803-011C	NUT	
③③	804-010C WASHER FLAT 5/16 USS PLT		

Install the replacement bolt from implement front.

## NOTICE

**Equipment**                      **Damage**                      **Risk:**  
 Using a lower Grade bolt can result in nuisance shears.  
 Using a higher Grade bolt can result in machine damage.  
 Using lower strength washers can result in machine damage.  
 Using a plain nut can result in non-shear arm swings as the nut loosens.

If exact replacement parts are not immediately available, temporarily substitute a metric M8 Class 8.8 bolt, heavy duty washers and lock nut. If a lock nut is not available, insert a split lock washer in between the nut and the rear flat washer.

### Marker Grease Seal Cap Check

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

## ⚠ WARNING

**Crushing and Sharp Object Hazards:** Keep all persons well clear of markers during lift/lower marker fold/unfold operations. Unpinned markers fold and unfold when the lift circuit is extended or retracted. Markers have multiple pinch points. Lowering arms can crush. Marker disks are sharp.

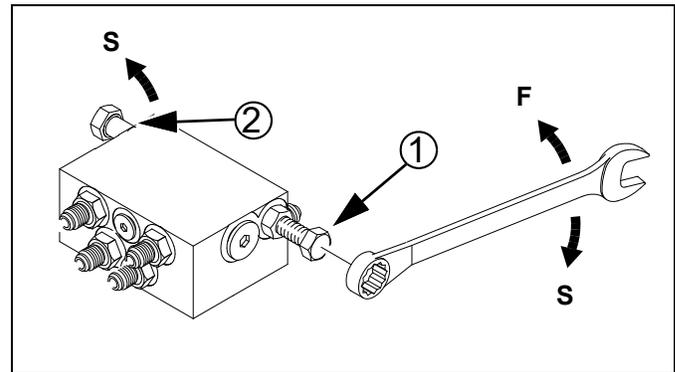


Figure 41  
Marker Extension Adjustment

14048

5/16-18X2	3/4	GR5
LOCK	5/16-18	PLT

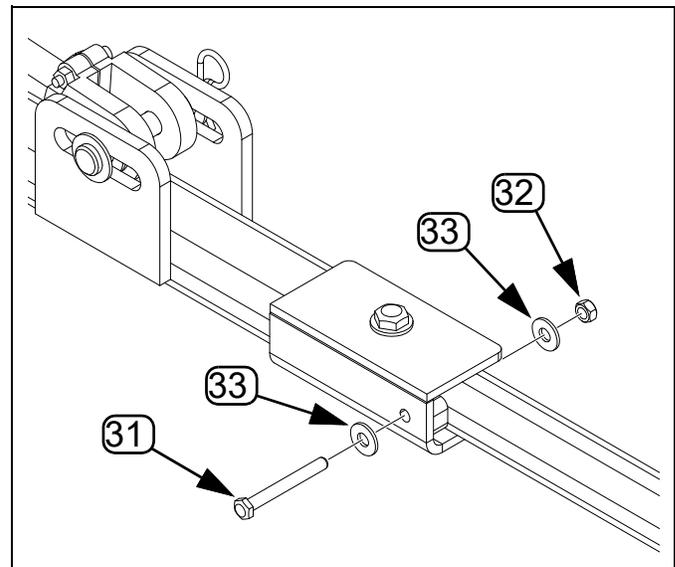


Figure 42  
Marker Shear Bolt

36276

## 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.

All chains are #40 roller chains.

### Chain Slack

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

**Refer to Figure 43, which, for clarity, greatly exaggerates slack, and omits the idlers.**

1. Measure the span ① for allowable slack: Locate the longest span of each chain (usually the span which does not run through the idlers). The ideal slack is between 2% and 4% of the span. For example: A slack of 1 cm is appropriate for a 30 cm span.
2. Measure the current slack ②: Acting at a right angle to the chain span at the center of the span, deflect the chain in both directions with a force of about 9 pounds (4 kg). The slack is the distance of the movement.
3. Adjust the idlers for ideal slack.

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

**Refer to Figure 44**

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

## Seed Flap Replacement

### Current Style Seed Flaps

1. Remove one opener disc for easier seed flap replacement.

**Refer to Figure 45**

2. To replace pull the seed flap up out of metal bracket.
3. Push new seed flap down through metal bracket until seed flap is in place.

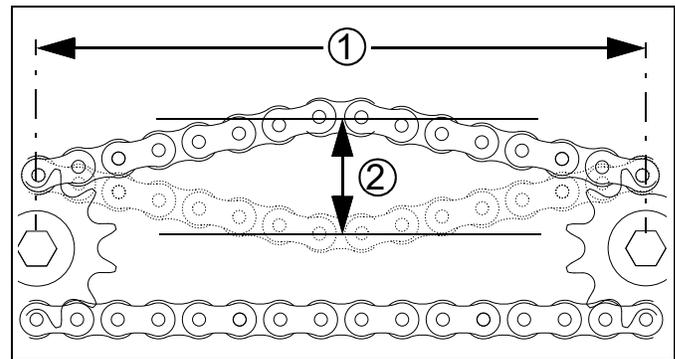


Figure 43  
Measuring Chain Slack

27264

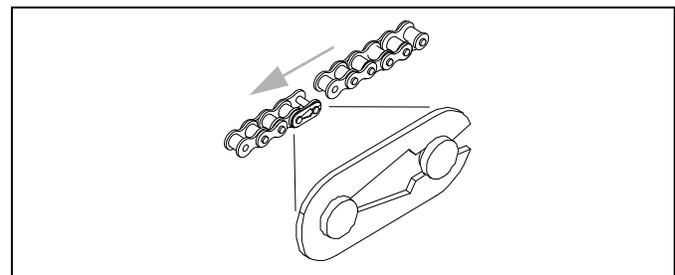


Figure 44  
Chain Clip Orientation

26482

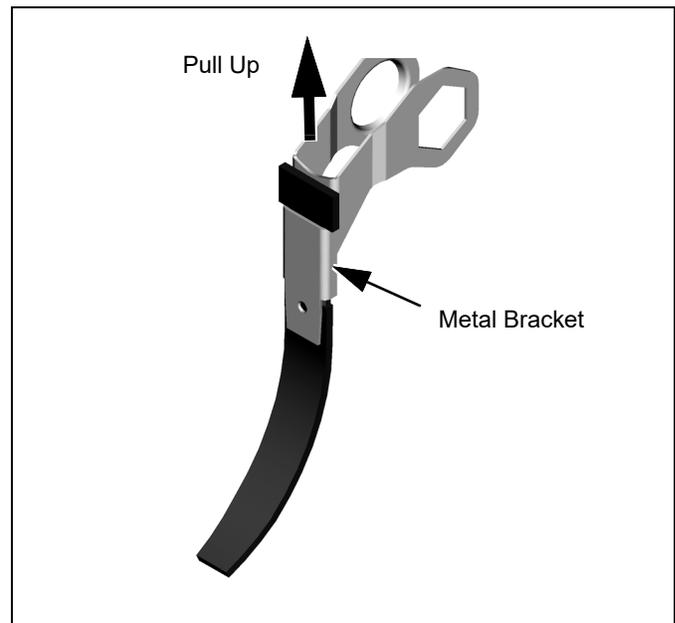


Figure 45  
Seed Flap Replacement

18945

**Older Style Seed Flaps**

**Refer to Figure 46**

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.

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

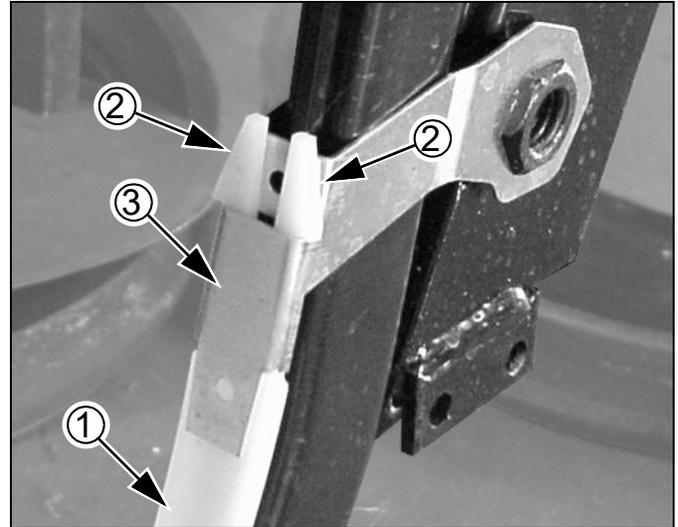


Figure 46  
Seed Flap

19398

**Lubrication**

 Multi-purpose spray lubricant	 Multi-purpose grease lubricant	 Multi-purpose oil lubricant	 Inspection	 50 Intervals (operating hours) at which service is required
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**Drive Shaft Clutch**

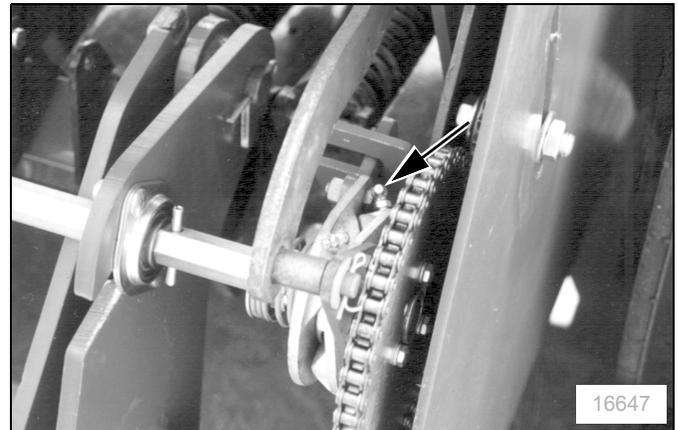
	 8
---	---

2 grease fittings total

Type of Lubrication:  
Quantity: Until grease

Grease emerges

Also smear grease on clutch engagement.



16647

**Opener Frame Pivots**

	 10
---	--

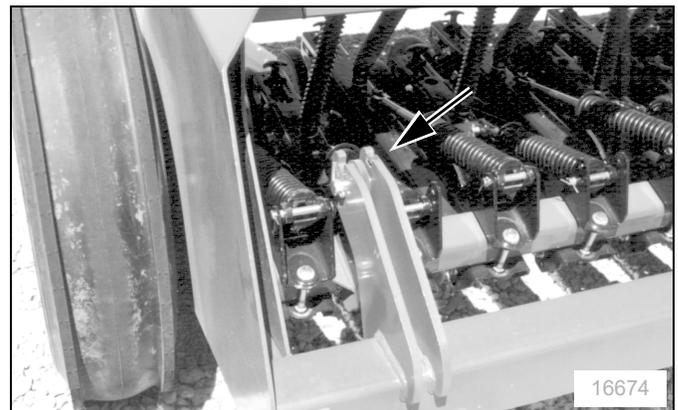
1 bushing each

2 total

Type of Lubrication:  
Quantity: Coat thoroughly

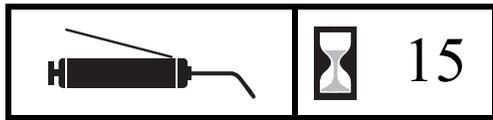
end;

Oil



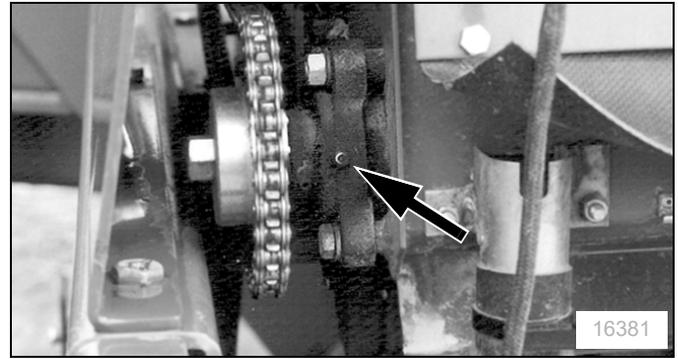
16674

### Fertilizer Shaft Bearings (1300F only)

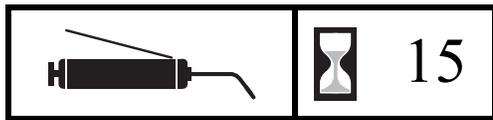


1 grease fittings each bearing, 2 per shaft; 2 total

Type of Lubrication: Grease  
Quantity: Until resistance is felt

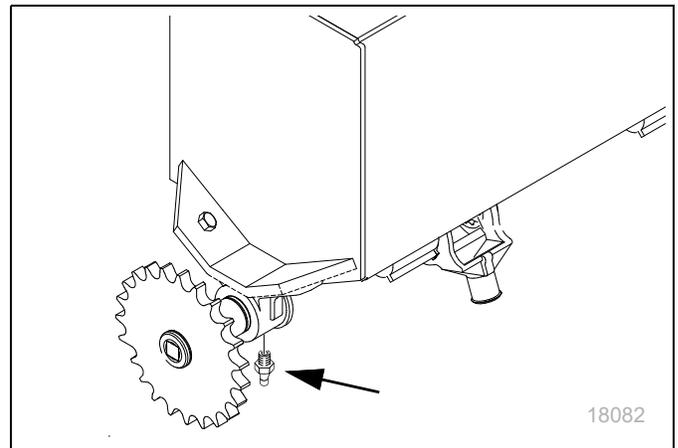


### Small Seeds Shaft Bearing (Option)

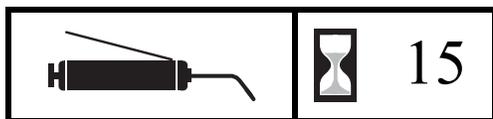


1 grease fitting total

Type of Lubrication: Grease  
Quantity: Until grease emerges

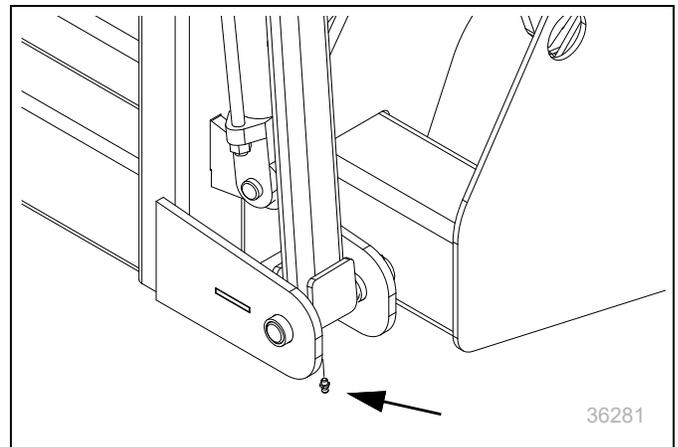


### Marker Arm Pivot (Option)



1 grease fitting each side, 2 total

Type of Lubrication: Grease  
Quantity: Until grease emerges

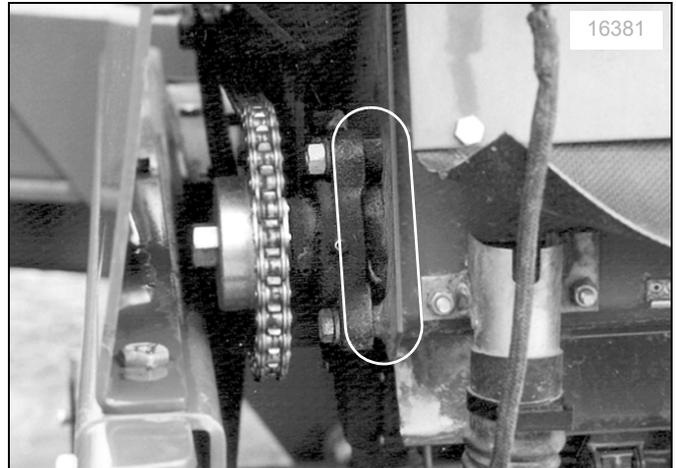


### Felt Barrier Seals (1300F only)

	 30
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1 seal at each shaft end, 2 total

Type of Lubrication: Oil  
 Quantity: Soak seal

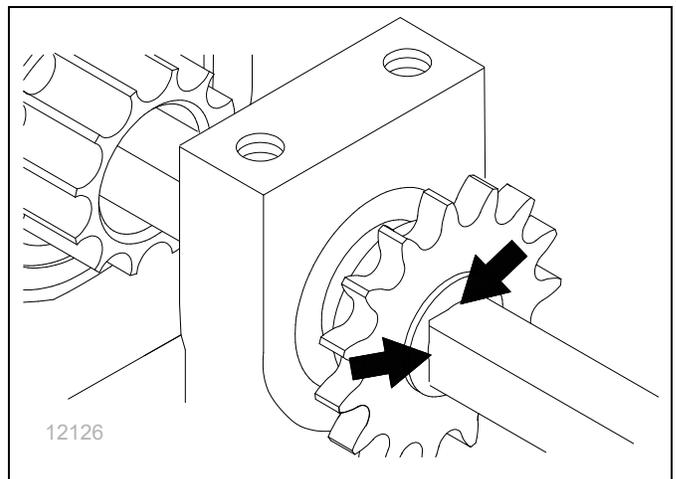


### Seed Cup Drive Shaft Sprocket

	 50
---	--

1 sliding sprocket  
 Type of Lubrication: Oil  
 Quantity: Coat thoroughly

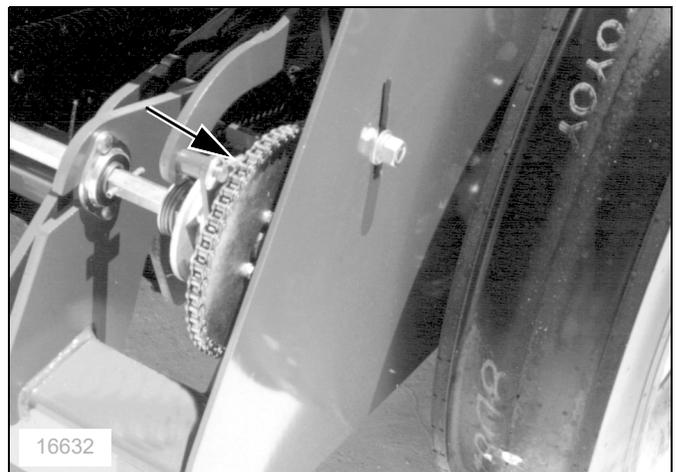
Move the Seed Rate adjustment handle back and forth to get oil into the square bore. Perform this with seed box empty, or handle may be difficult to set to 100.



### Clutch Shaft Input Chain

	 As Required
---	---

1 chain  
 Type of Lubrication: Chain Lube  
 Quantity: Coat thoroughly  
 Slack: 1/2 inch (13 mm) in top span



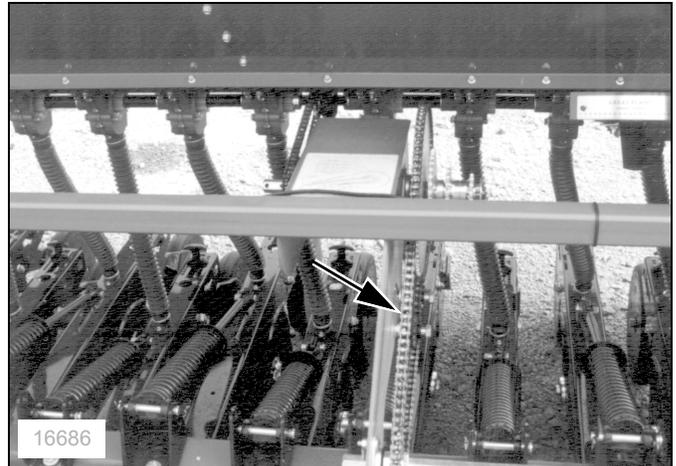
### Main Seed Jackshaft Input Chain

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

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



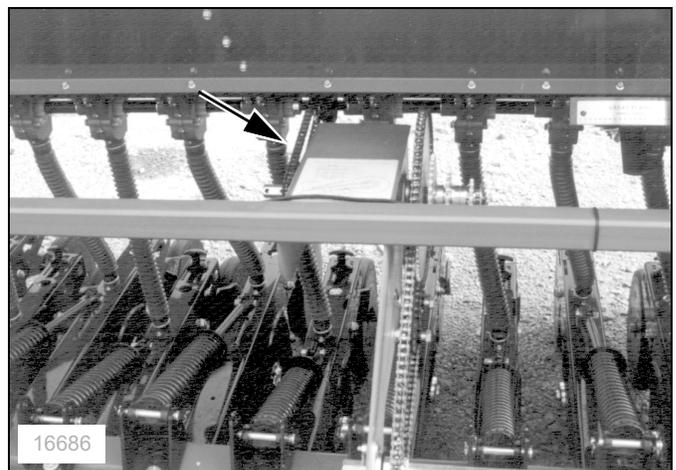
### Main Seed Meter Drive Chain

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

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



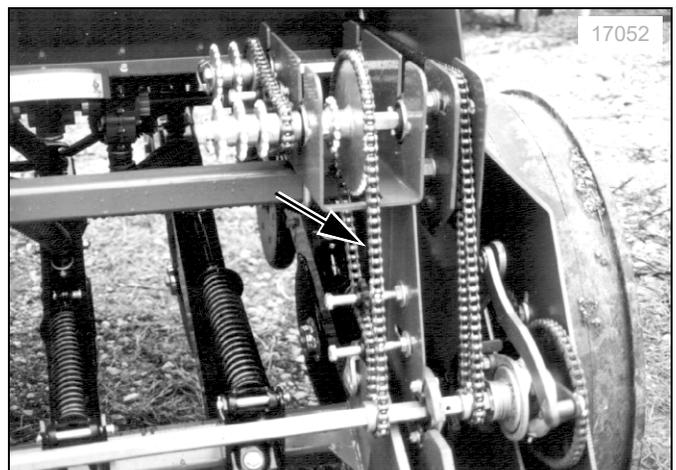
### Fertilizer Range Chain (1300F only)

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

Slack: 1/2 inch (13 mm) in front span



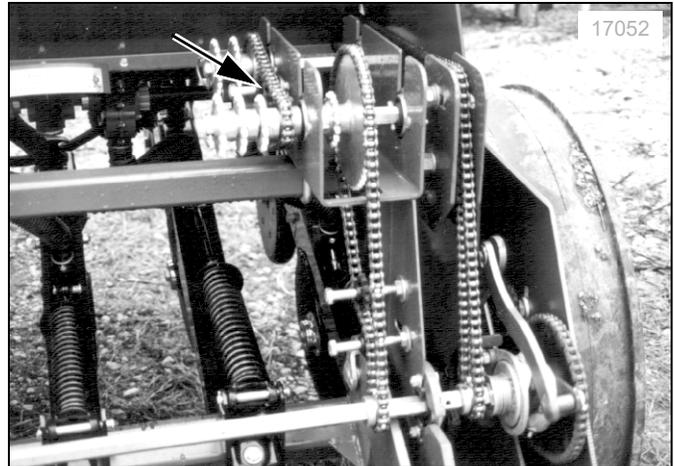
**Fertilizer Transmission Chain (1300F only)**

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

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



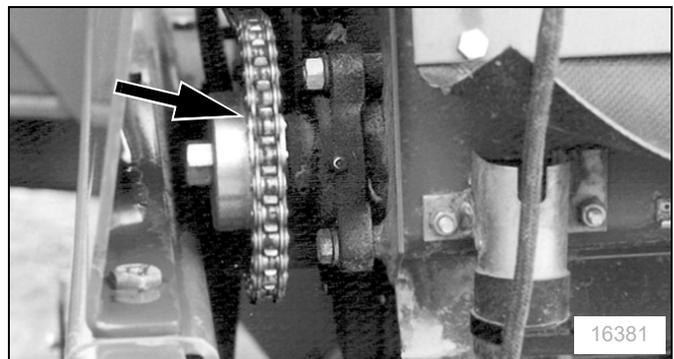
**Fertilizer Meter Drive Chain (1300F only)**

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

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



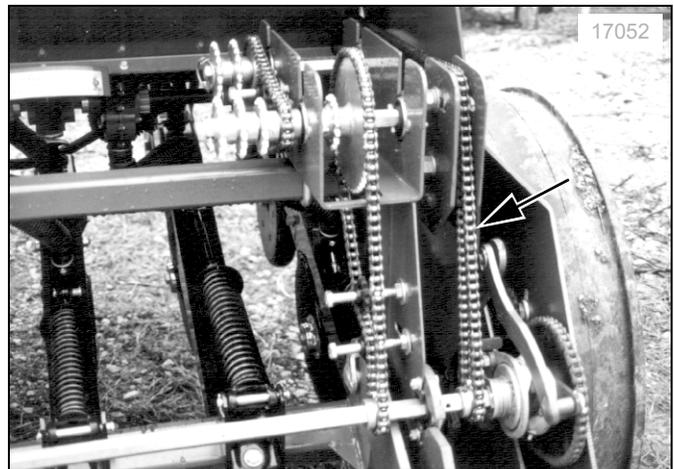
**Small Seeds Jackshaft Input Chain (Option)**

		<b>As Required</b>
---	---	------------------------

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

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



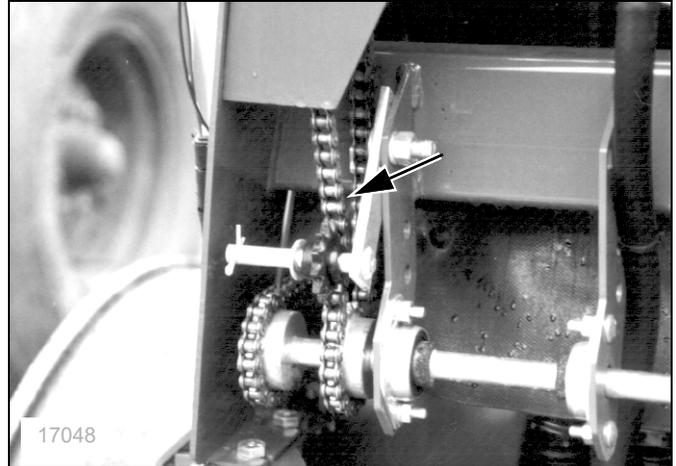
### Small Seeds Meter Drive Chain (Option)

	 <p style="text-align: center; font-size: 24pt;"><b>As Required</b></p>
---	--

1 chain

Type of Lubrication: Chain Lube  
Quantity: Coat thoroughly

Slack: 1/4 inch (6 mm) in front span

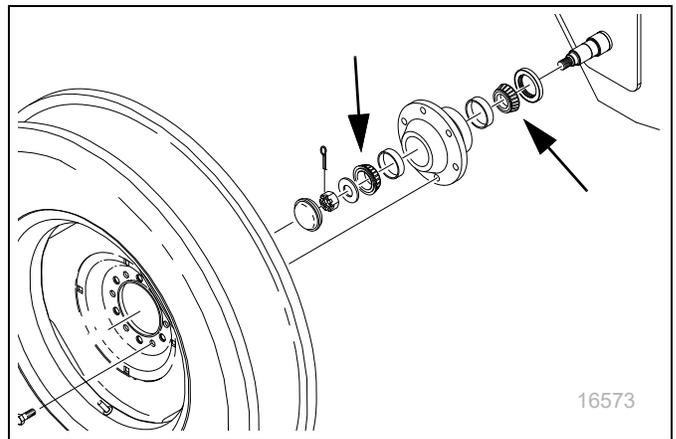


### End Wheel Bearings

	 <p style="text-align: center; font-size: 24pt;"><b>2-3 Years</b></p>
---	--

2 races each of 2 wheels;  
4 total

Type of Lubrication: Grease  
Quantity: Repack



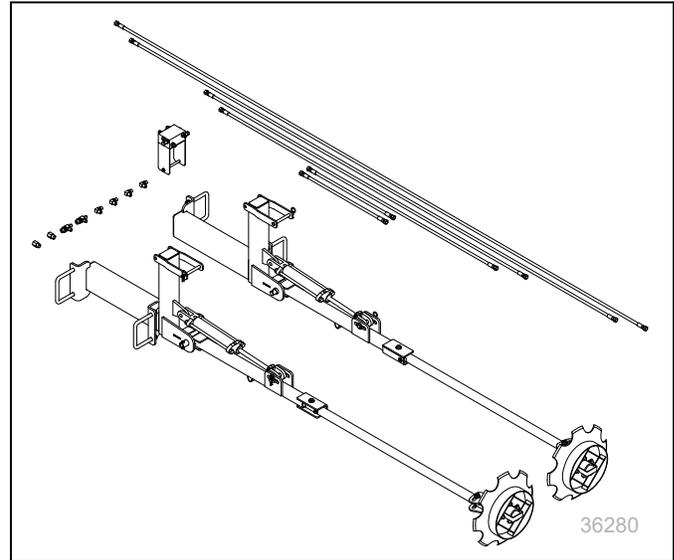


# Options

## Field Markers

This kit provides a left and right marker for providing precise pass-to-pass row alignment. The hydraulically operated markers share the lift circuit, so no additional remotes are required. The included sequence valve automatically deploys one side, then the other, with each lift/lower cycle.

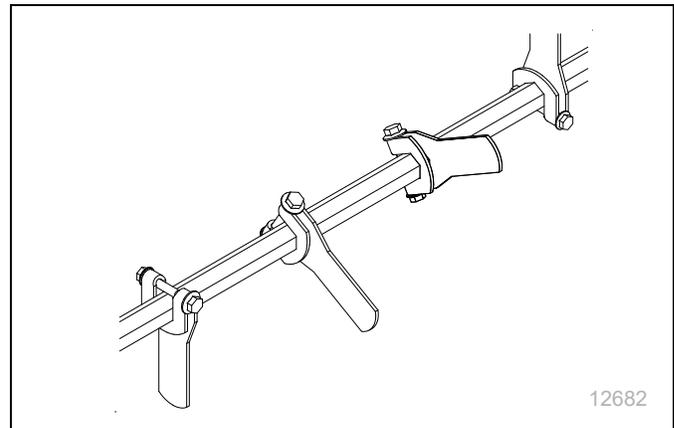
Description	Part Number
13' EW Row Marker Assy	113-935A



## Seed Box Agitator

An optional agitator can be added to the main seed box. The agitator stirs the seed directly above the metering cups. The agitator helps prevent bridging of light, fluffy seeds and separates soybeans that are sticky with inoculant.

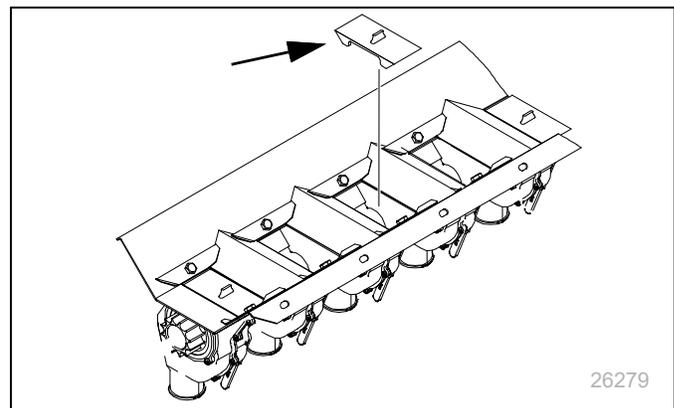
Description	Part Number
1300 AGIT UPGRADE BDL 6	175-205A
1300 AGIT UPGRADE BDL 7 1/2	175-206A
1300 AGIT UPGRADE BDL 10	175-207A



## Seed Tube Plug (Main Seeds)

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

Description	Part Number
Fluted Feed Meter Plug	817-087C

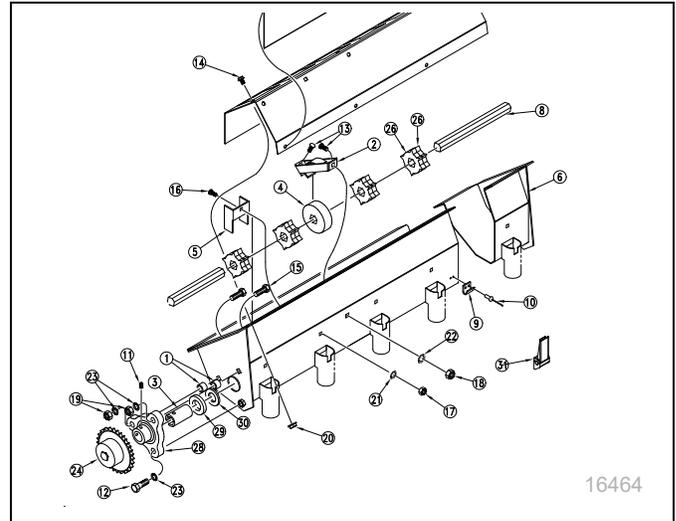


## Fertilizer

These kits upgrade a Model 1300 to a 1300F. They add an independent fertilizer drive system, fertilizer metering system, and divide the main seed box into seed and fertilizer compartments. The kits include a flat divider, providing 60% seed and 40% fertilizer, or 100% and 0%. For other ratios, also order an offset box divider.

Description	Part Number
1300 FERT UPGRADE 6	175-209A
1300 FERT UPGRADE 7 1/2	175-210A
1300 FERT UPGRADE 10	175-211A

See “**Fertilizer Box Operation**” on page 24 and Seed Rate Manual.



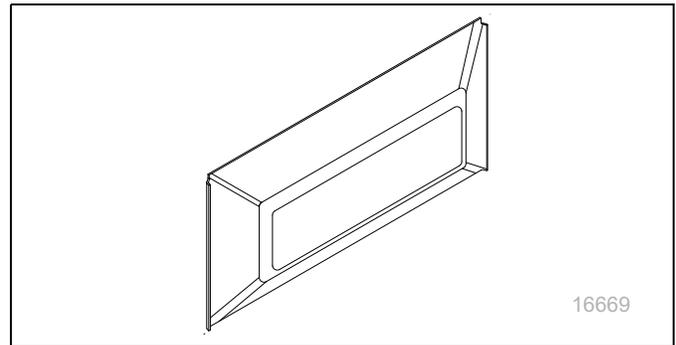
## Offset Box Divider

This reversible divider replaces the standard 1300F flat 60/40 partition, and supports application at: 100% seed, 0% fertilizer, 68% seed, 32% fertilizer, or; 55% seed, 45% fertilizer.

Order 4 dividers per box, 8 per drill.

Description	Part Number
1300F Offset Divider	817-322C

See “**Applying Seed and Fertilizer**” on page 24.



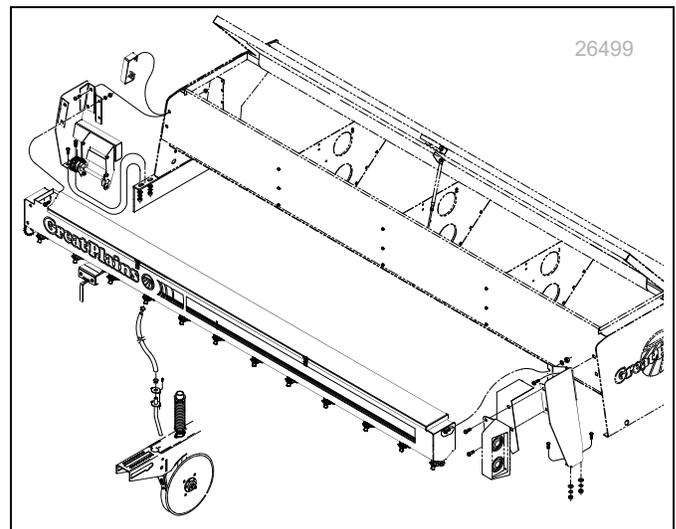
## Small Seeds Attachment

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

Small Seeds capability may be specified on the initial drill order (Sequence No. 91 or 93), or added later.

Description	Part Number
1300 SML SDS PKG 6	133-075A
1300 SML SDS PKG 7.5	133-076A
1300 SML SDS PKG 10	133-077A

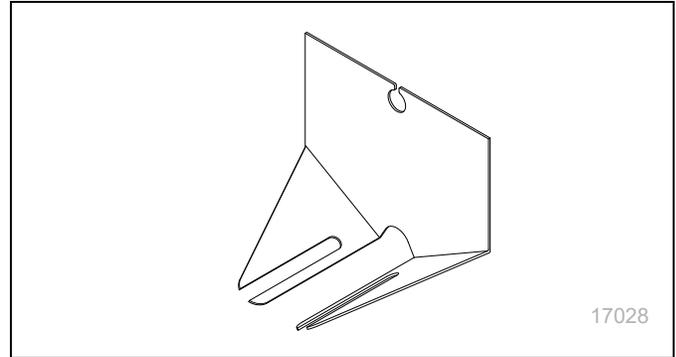
See “**Weights for Tractor Requirements**” on page 19 for weight added to drill. See “**Loading Materials**” on page 21 and Seed Rate Manual.



## Removable Partition

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

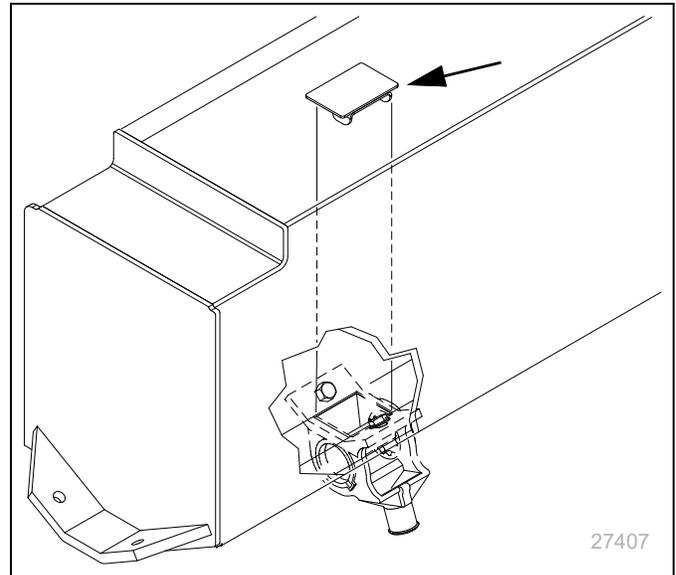
Description	Part Number
RMVBL SMALL SEED BOX PARTITION	123-409D



## Seed Tube Plug (Small Seeds)

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

Description	Part Number
SML SDS CUP PLUG	133-315H



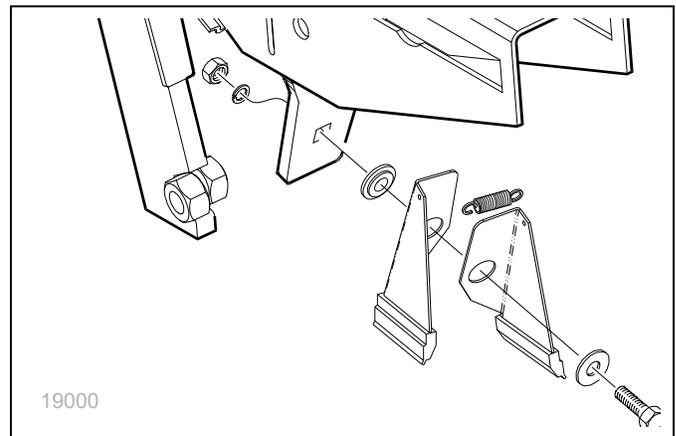
## Carbide Disk Scraper

Slotted scrapers are standard.

Optional carbide disk scrapers are spring-loaded and require no periodic adjustment. Scrapers are compatible with the standard seed flap and Seed-Lok®, but not Keeton®.

Description	Part Number
SPRING SCRAPER ASSEMBLY	121-781A

See “**Scraper Installation**” on page 68.



## Seed Firmers

The standard 1300 and 1300F drill includes seed flaps. A choice of firmers is an option in the product bundles, or may be field installed as kits. Only one type of seed firmer may be installed at the same time. Order one firmer kit per opener.

### Seed-Lok® Seed Firmer

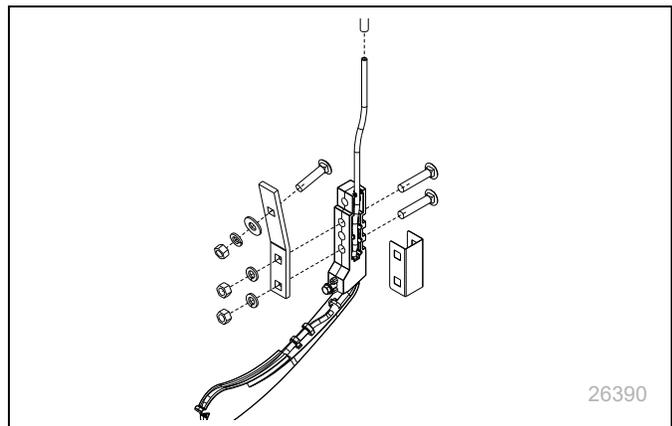
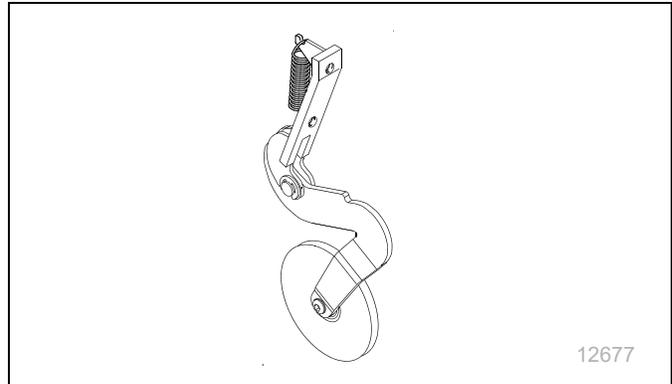
Description	Part Number
Series Seed-Lok® kit	122-193K

For operations, see “Seed Firmer Adjustments” on page 39.

### Keeton® Seed Firmer

Description	Part Number
Keeton® seed firmer (per opener)	890-810C

For operations, see “Seed Firmer Adjustments” on page 39.

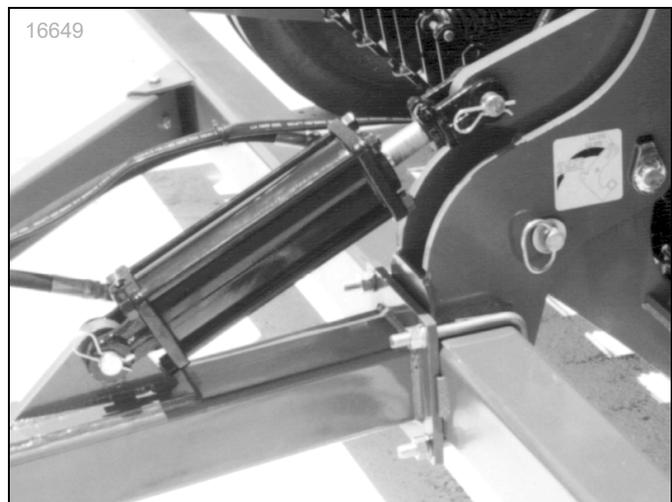


## Hydraulic Cylinder Kit

For older drills where this was not standard, an optional kit is available to provide lift hydraulics. The kit contains all parts needed to operate the openers, including a hydraulic cylinder, hoses and fittings.

For information on installing the kit, see “Installing Drill Hydraulics” on page 70.

Description	Part Number
13' EW CYLINDER KIT	175-174A



## Press Wheels

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



## Appendix A Reference Information

### Specifications and Capacities

#### Standard Models 1300

Model	1300-1610	1300-2175	1300-2606
Row Count	16 Rows	21 Rows	26 Rows
Row Spacing	10 inches (24.5 cm)	7.5 inches (19.1 cm)	6 inches (15.2 cm)
Nominal Width	13 feet (4.0 m)		
Swath	160 inches (406.4 cm)	158 inches (400.1 cm)	156 inches (396.2 cm)
Transport Width	15 feet 7 inches (4.74 m)		
Transport/Field Length	12 feet 6 inches (3.81 m)		
Height (no markers) Height (with Markers)	5 feet 6 inches (1.68 m) 8 feet 7 inches (2.61 m)		
Minimum Tractor Required	65 hp (50 kwh)		
Hitch	Pull-type 1 or 1-1/8 inch pin		
Tool bar	3 x 3 x 5/16 inch (18 x 18 1 cm)		
Hydraulic circuits	Closed-Center or Open-Center, 1 Remote		
Hydraulic Power Required with Markers	2250 psi, 2 gal/min (155 bar, 8 liters/min) 2250 psi, 5 gal/min (155 bar, 19 liters/min)		
Minimum Weight, Empty	3500 pounds (1570 kg)	3700 pounds (1680 kg)	4200 pounds (1880 kg)
Maximum Weight, Full	7000 pounds (3170 kg)	7200 pounds (3280 kg)	7700 pounds (3490 kg)
Row Travel (Up - Down)	4 inches up, 4 inches down (10.2 cm up, 10.2 cm down)		
Transport Clearance	9 inches (23 cm)		
Wheel Bolt Torque	110 ft-lb (149 N-m)		
Gauge Wheels Tires	255/70/R22.5 16-ply Rib implement (814-751C) 7.5 x 20 10-ply Rib implement		
Gauge Wheel Tire Pressure	16-ply Tire - 100 psi (689 kPa) 10-ply Tire - 60 psi (414 kPa)		

**Fertilizer Models 1300F**

Model	1300F-1610	1300F-2175	1300F-2606
Row Count	16 Rows	21 Rows	26 Rows
Row Spacing	10 inches (24.5 cm)	7.5 inches (19.1 cm)	6 inches (15.2 cm)
Nominal Width	13 feet (4.0 m)		
Swath	160 inches (406.4 cm)	158 inches (400.1 cm)	156 inches (396.2 cm)
Transport Width	15 feet 7 inches (4.74 m)		
Transport/Field Length	12 feet 6 inches (3.81 m)		
Height (no markers)	5 feet 6 inches (1.68 m)		
Height (with Markers)	8 feet 7 inches (2.61 m)		
Minimum Tractor Required	65 hp (50 kW)		
Hitch	Pull-type 1 or 1-1/8 inch pin		
Tool bar	3 x 3 x 5/16 inch (18 x 18 1 cm)		
Hydraulic circuits	Closed-Center or Open-Center, 1 Remote		
Hydraulic Power Required with Markers	2250 psi, 2 gal/min (155 bar, 8 liters/min) 2250 psi, 5 gal/min (155 bar, 19 liters/min)		
Minimum Weight, Empty	3900 pounds (1760 kg)	4100 pounds (1880 kg)	4600 pounds (2090 kg)
Maximum Weight, Full	7400 pounds (3370 kg)	7700 pounds (3480 kg)	8100 pounds (3690 kg)
Row Travel (Up - Down)	4 inches up, 4 inches down (10.2 cm up, 10.2 cm down)		
Transport Clearance	9 inches (23 cm)		
Wheel Bolt Torque	110 ft-lb (149 N-m)		
Gauge Wheels Tires	255-70/R22.5 16-ply Rib implement (814-751C) 7.5 x 20 10-ply Rib implement		
Gauge Wheel Tire Pressure	16-ply Tire - 100 psi (689 kPa) 10-ply Tire - 60 psi (414 kPa)		

**Tire Warranty Information**

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

**Manufacturer Website**Firestone [www.firestoneag.com](http://www.firestoneag.com)Goodyear [www.goodyearag.com](http://www.goodyearag.com)BKT [www.bkt-tires.com](http://www.bkt-tires.com)Titan [www.titanintl.com](http://www.titanintl.com)Gleason [www.gleasonwheel.com](http://www.gleasonwheel.com)

## Torque Values Chart

Bolt Size in-tpi <sup>a</sup>	Bolt Head Identification						Bolt Size mm x pitch <sup>c</sup>	Bolt Head Identification					
	Grade 2		Grade 5		Grade 8			Class 5.8		Class 8.8		Class 10.9	
	N-m <sup>b</sup>	ft-lb <sup>d</sup>	N-m	ft-lb	N-m	ft-lb		N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
1/4-20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4-28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16-18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16-24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8-16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
3/8-24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
7/16-14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
7/16-20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
1/2-13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
1/2-20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
9/16-12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160
9/16-18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
5/8-11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
5/8-18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
3/4-10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
3/4-16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
7/8-9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
7/8-14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1-8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1-12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1 1/8-7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1 1/8-12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1 1/4-7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
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							

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

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

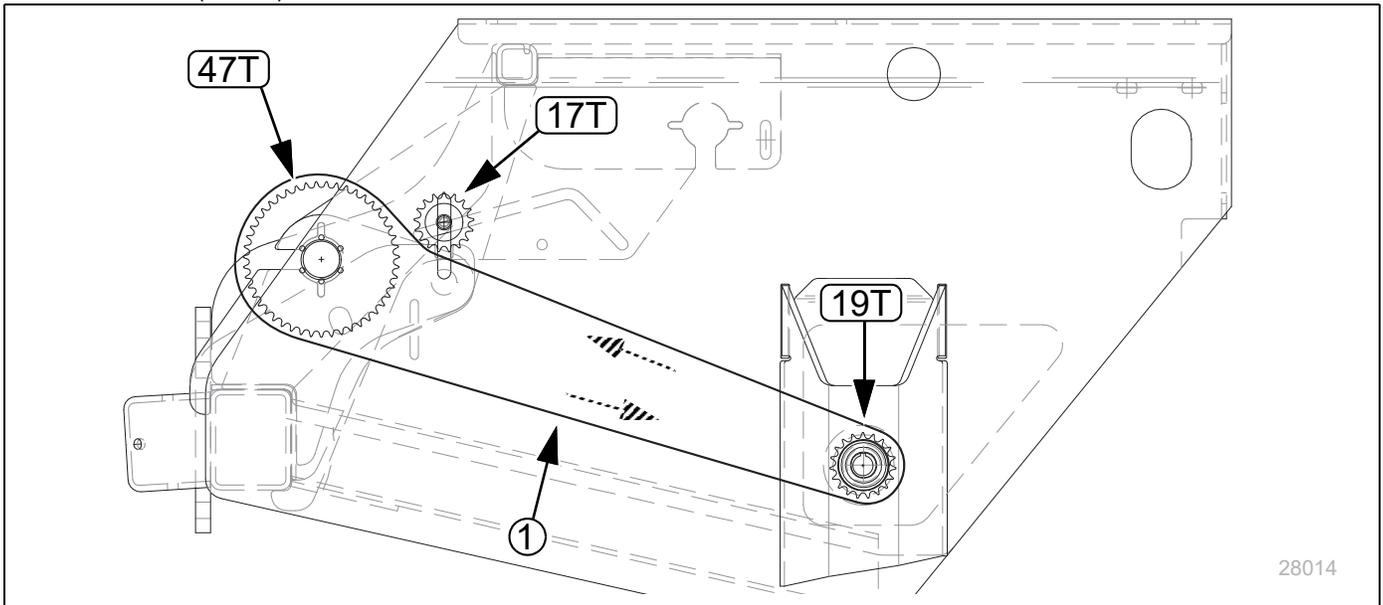
25199

## Chain Routing

Gray arrows show chain direction.

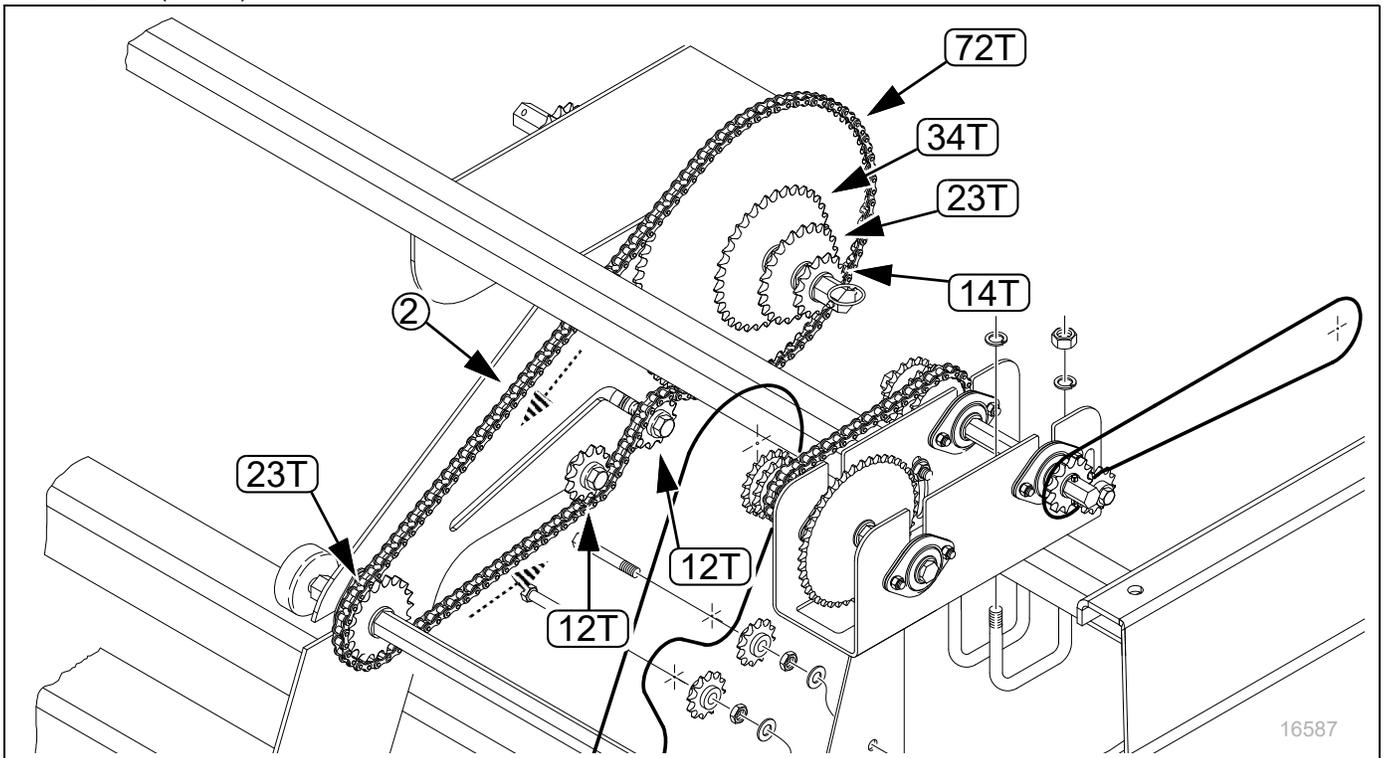
### End Wheel to Main Jackshaft Chain

Slack ①: 1.25in (3.2cm)



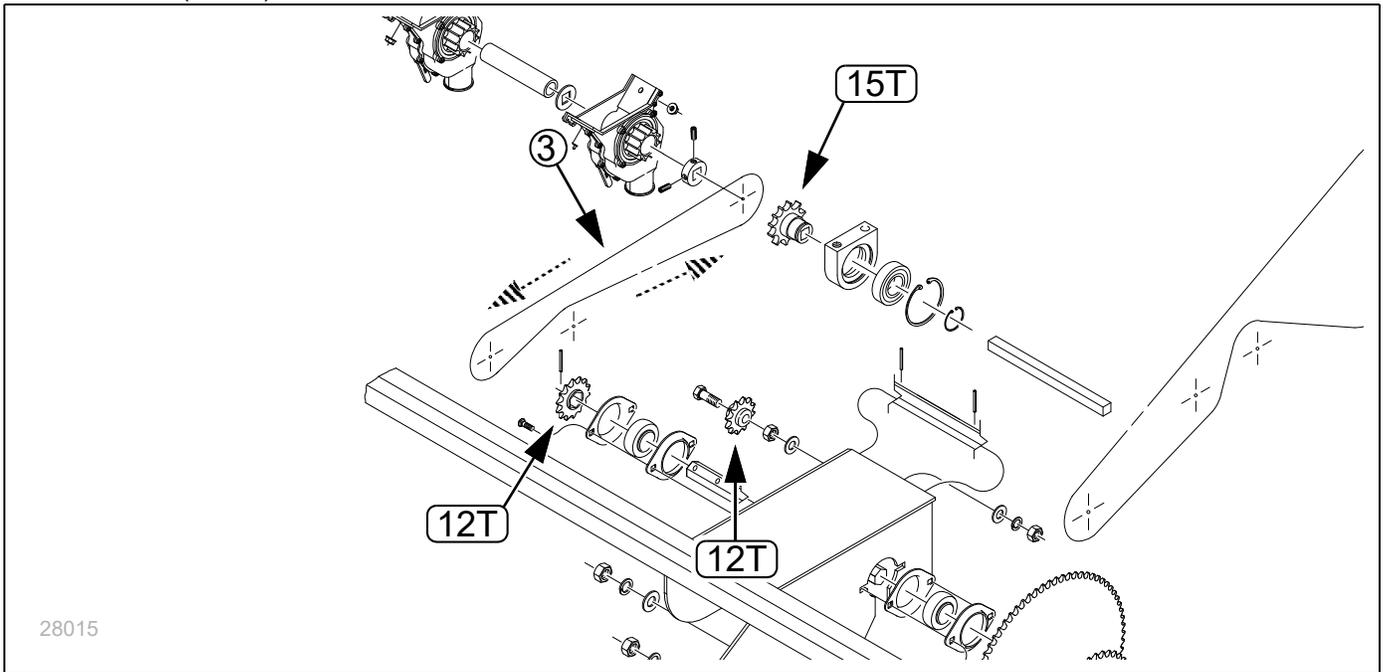
### Main Jackshaft to Main Seed Jackshaft Chain

Slack ②: 1in (2.5cm)



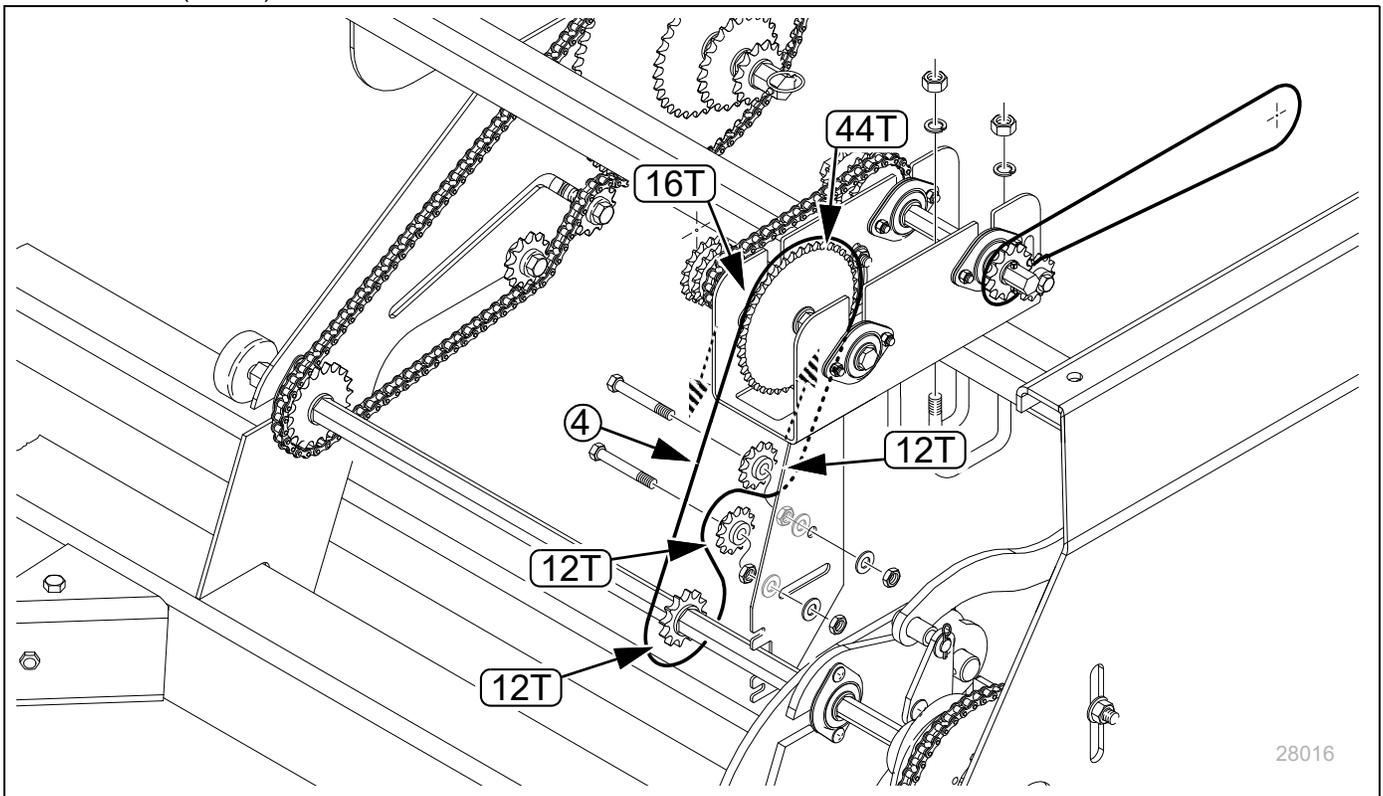
### Main Seed Jackshaft to Meter Drive Chain

Slack ③: 0.5in (13mm)



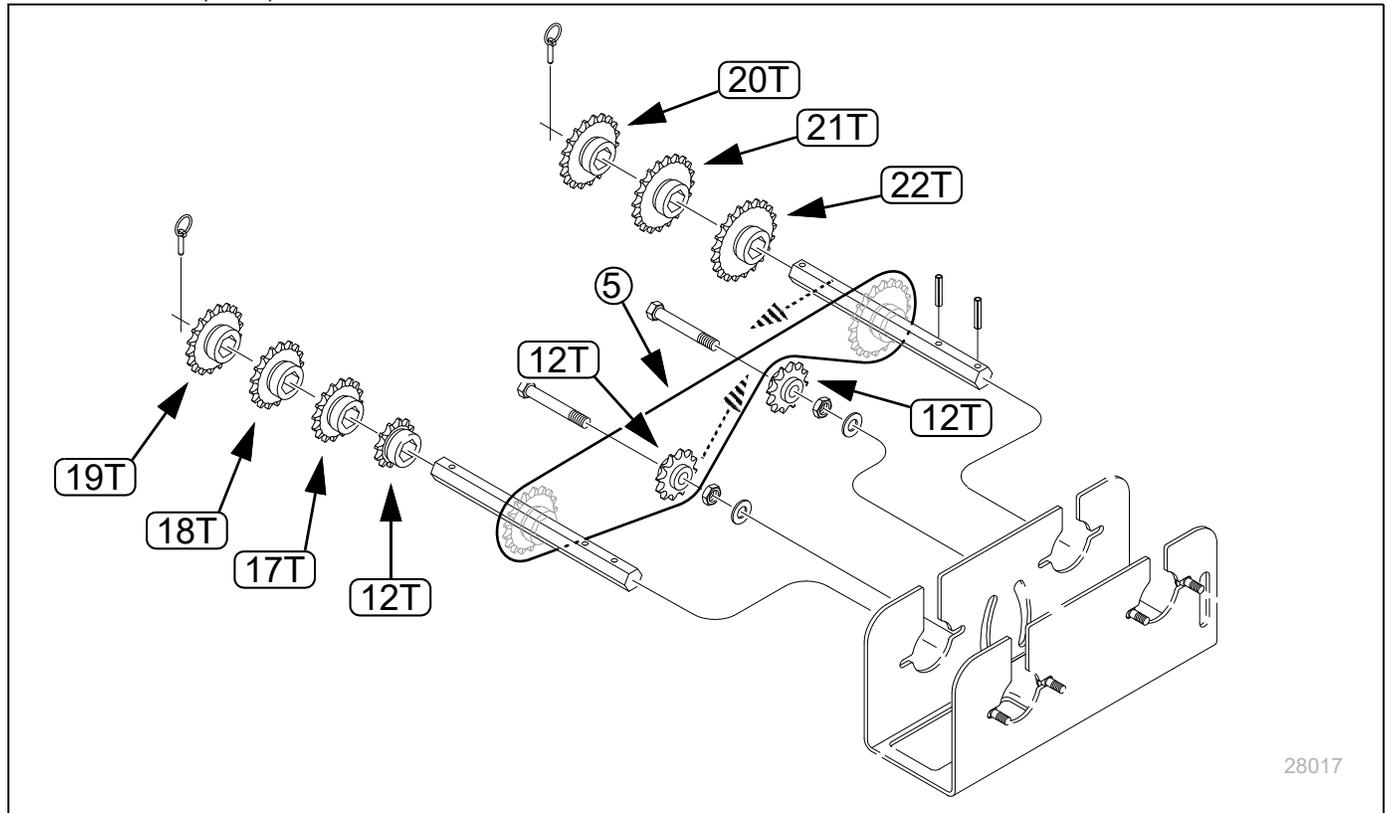
### Fertilizer Range Chain

Slack ④: 0.5in (13mm)



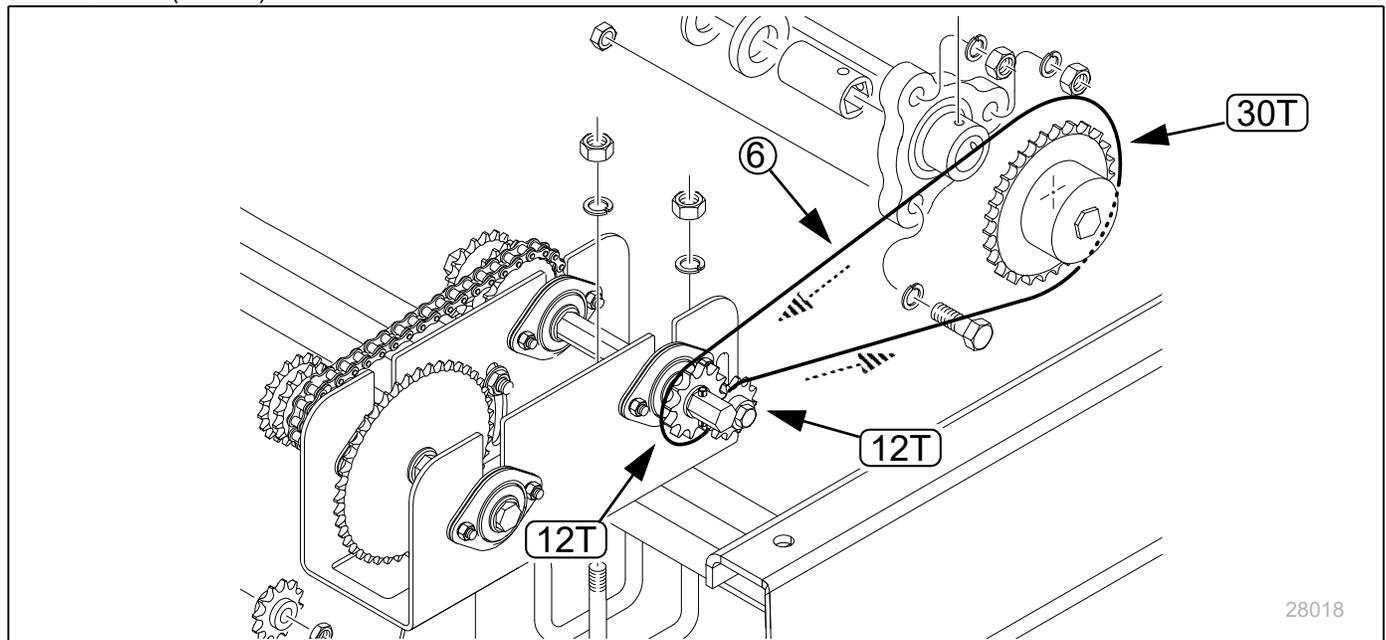
### Fertilizer Transmission Chain

Slack ⑤: 0.25in (6mm)



### Fertilizer Meter Drive Chain

Slack ⑥: 1 in (2.5 cm)



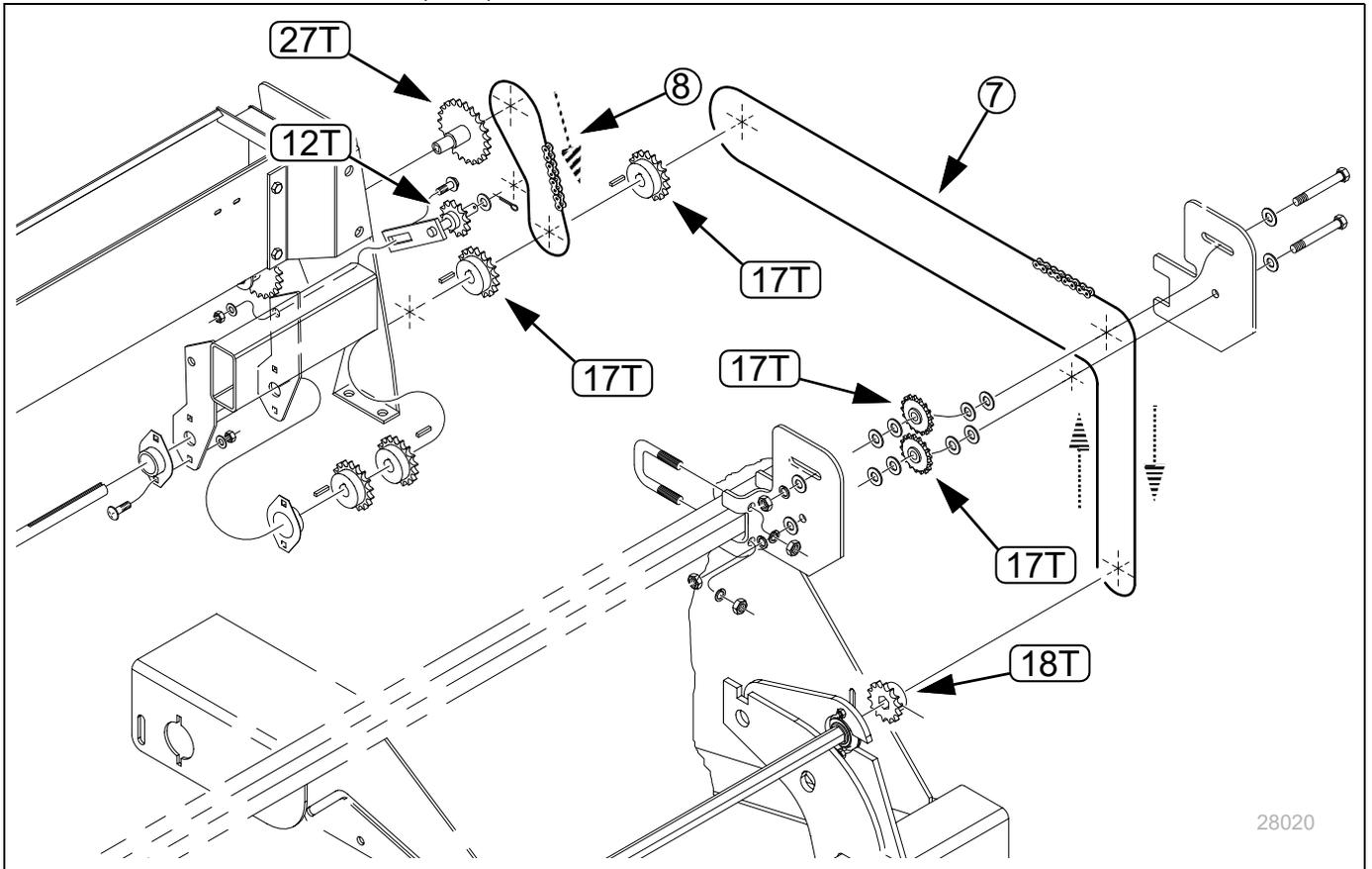
### Small Seeds Chains

If Slack Jackshaft Small Seeds Meter Drive ⑧: 0.25in (6mm)

Agitator also Input ⑦:

installed, see 2in (5.1cm)

page 65.

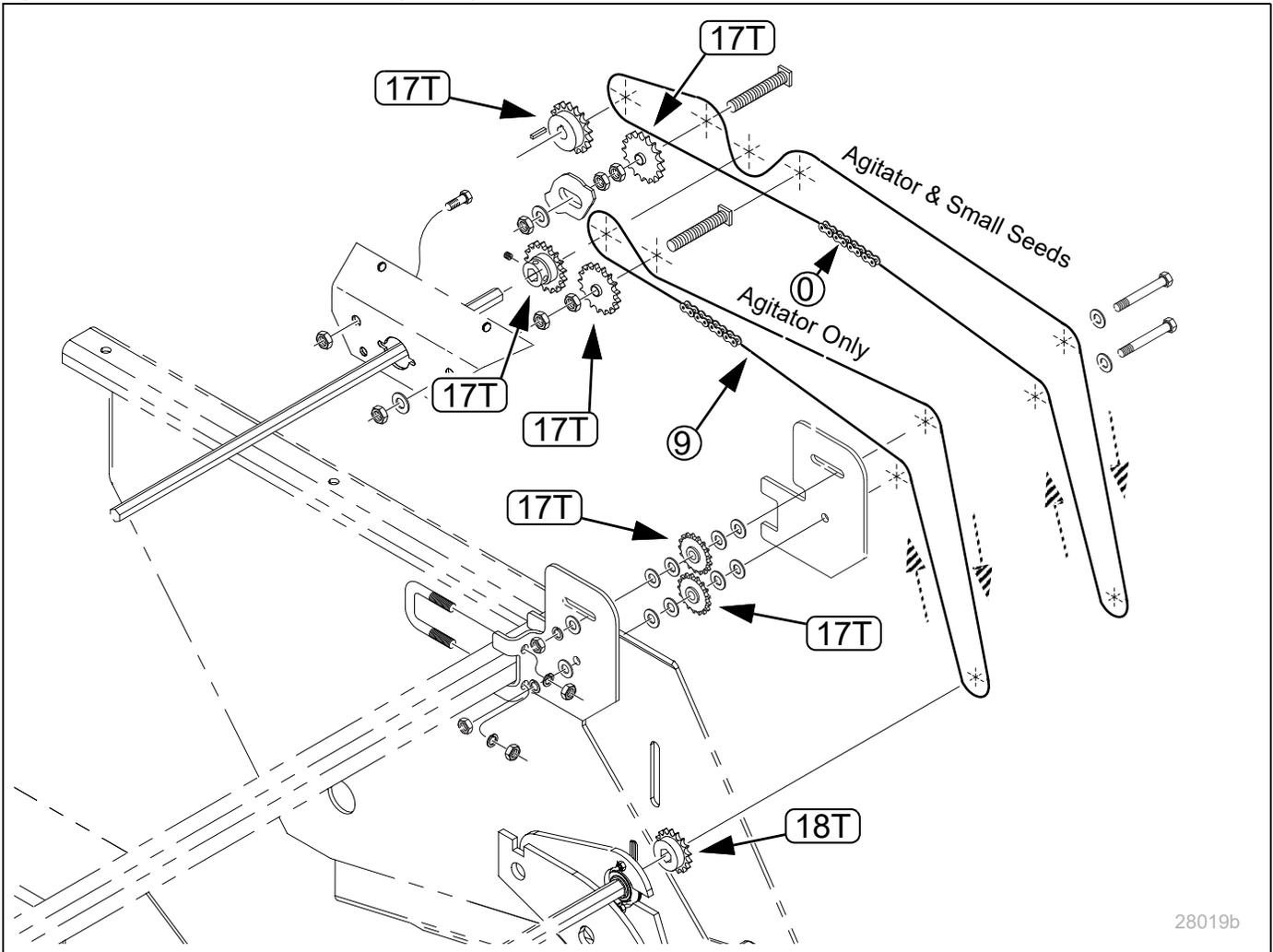


### Agitator Chain

Slack

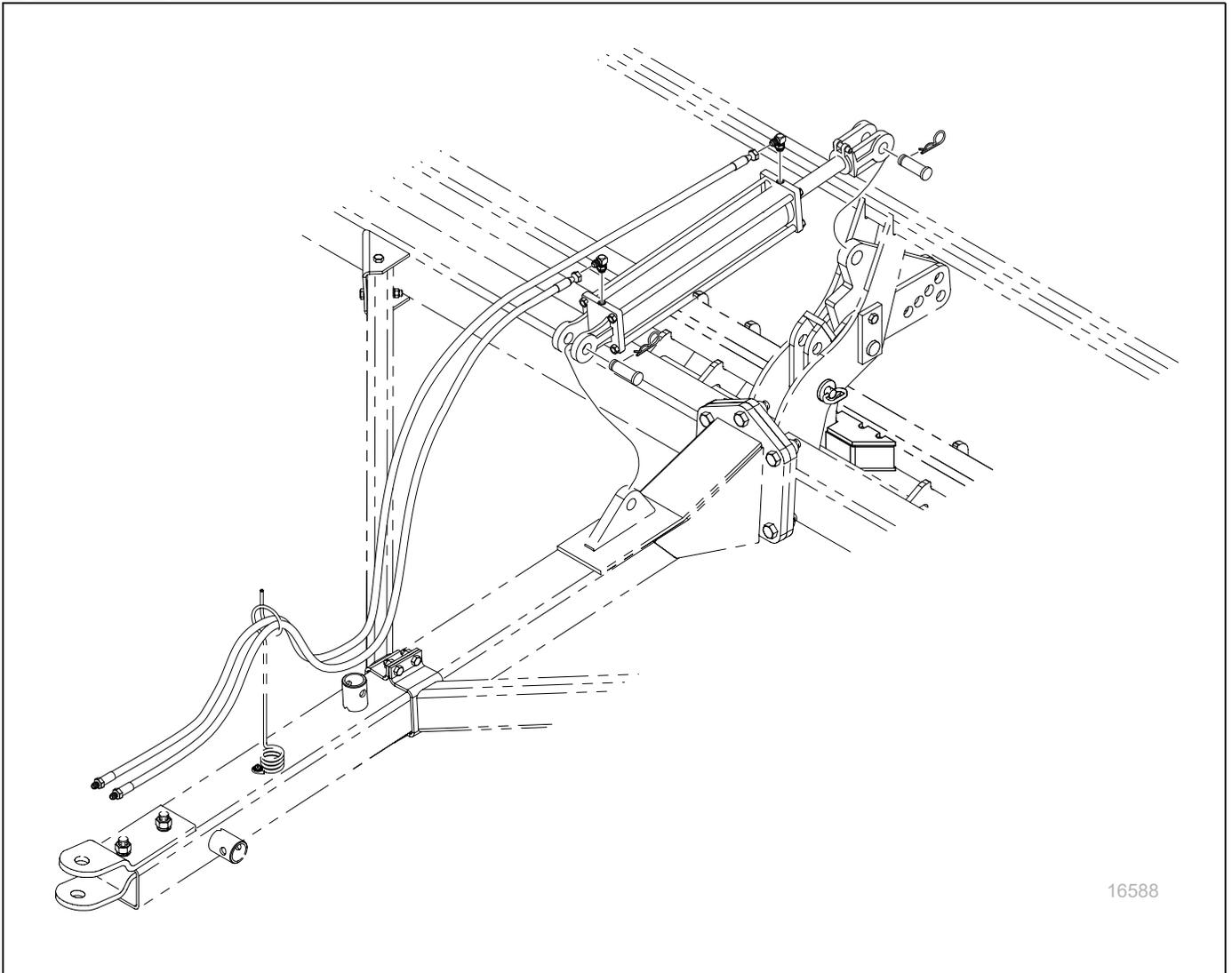
Agitator only ⑨: 1.75in (4.4cm)

Agitator and Small Seeds ⑩: 2.25in (5.7cm)

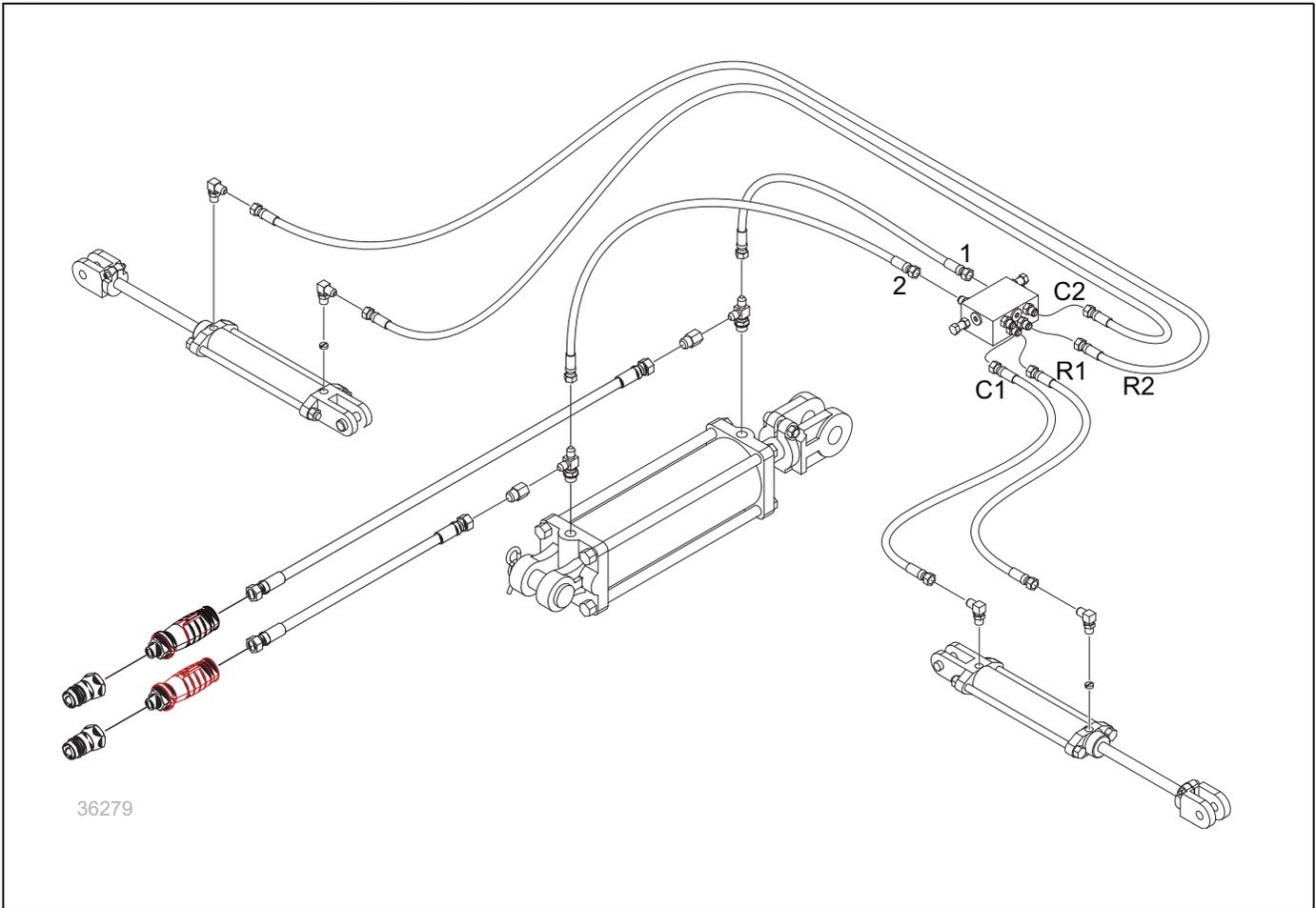


## Hydraulic Diagrams

### Opener Lift (No Markers)



### Opener Lift and Markers (Option)





## Appendix B Initial Setup

### Acremeter Installation

#### Refer to Figure 47

The acremeter may be supplied for shaft or frame mount. For shaft mount, see the acremeter manual included with the drill for installation instructions.

See **“Perform two complete lower/raise operations. The markers fold one side at a time. Install lock pins as appropriate for the next movement.”** on page 26.



Figure 47  
Acremeter

34937  
34776

### Scraper Installation

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

1. Remove one or both disk blades to gain safe access to the mount. Note the position of bushings and spacers for correct reassembly (page 38).
2. Remove the existing slotted scraper.

#### Refer to Figure 48

3. If Seed-Lok<sup>®</sup> is present, or also being mounted, do not use the hex nut ① supplied with the scraper, and place the lock washer ② under the bolt ③ head.
4. Place the flat washer ④ on the bolt ③.
5. Insert the bolt through the scraper blades ⑤, the spacer ⑥, and the mount ⑦. Secure with lock washer ② and hex nut ① (If Seed-Lok<sup>®</sup> is present, screw bolt into thread hole in Seed-Lok<sup>®</sup>).
6. If the blade spring ⑧ was not preassembled, connect it between the upper holes of the blades ⑤.
7. Tighten bolt ③.
8. Remount the removed disk blade.

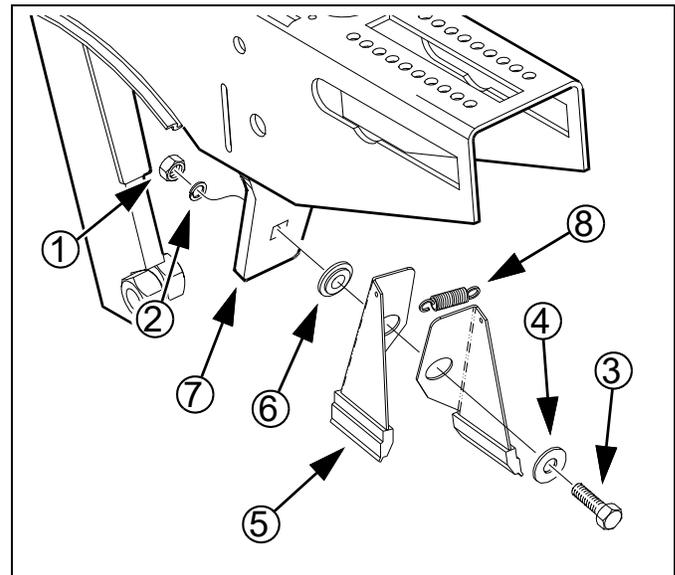


Figure 48  
Scraper Installation

19000

## Marker Setup

Marker extension needs to be set up prior to first use, and whenever the marker disk is inverted (page 35) or the disk angle is significantly changed.

### Refer to Figure 49

To set up extension for a marker side:

1. Unfold the marker side in field conditions. See “**Marker Operation (Option)**” on page 26.
2. Lower the drill and openers. Pull forward ten feet (3 m) or so.
3. At a right angle to the marker or opener furrow, measure the distance between these two furrows. For precise one-row offset of opposing passes the marker extension ① values should be:

Drill Model	Marker Extension ①
1300-1610 1300F-1610	85.0 inches (215.9 cm)
1300-2175 1300F-2175	82.5 inches (209.6 cm)
1300-2606 1300F-2606	81.0 inches (205.7 cm)

To adjust marker extension:

4. Loosen the nuts on the U-bolts that secure the marker mount to the drill mainframe.
5. Slide the mount left or right to obtain the desired marker extension. Secure the U-bolts.

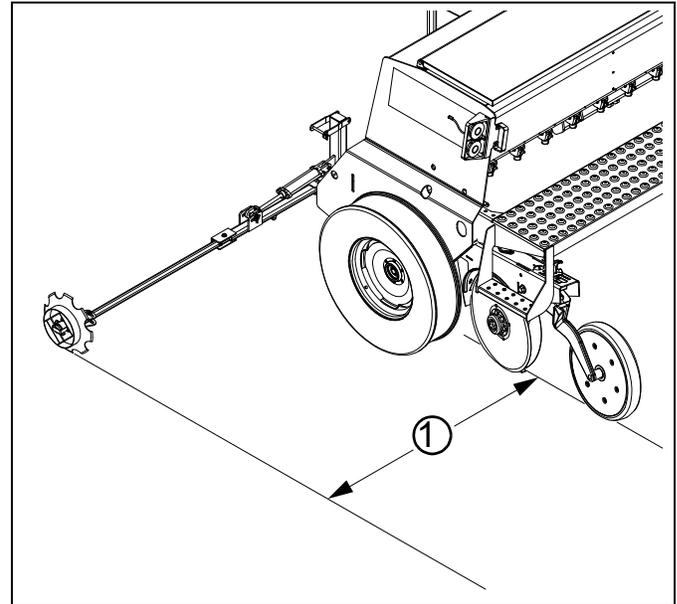


Figure 49  
Marker Extension

36273

## Installing Drill Hydraulics

Older production of the model 1300 and 1300F did not include drill hydraulics. These older drills require a hydraulic cylinder with:

- a 3<sup>1</sup>/<sub>2</sub> or 4inch (8.9 to 10.2 cm) bore,
- an 8inch (20.3 cm) stroke and;
- a 20<sup>1</sup>/<sub>4</sub>inch (51.4 cm) pin-to-pin retracted length.

A cylinder, hoses and fittings are available through your Great Plains dealer. For ordering information, see “**Hydraulic Cylinder Kit**” on page 57.

If hydraulics have not been installed, follow these steps.

Refer to Figure 50

1. Mount the cylinder base end over the lug on the drill tongue. Pin it in position.
2. If the cylinder hoses are already attached and the assembly is fully charged with hydraulic fluid, skip to step 7.
3. Install elbow fittings in the cylinder ports.
4. Connect the female end of the hydraulic hoses to the fittings.
5. Route the hoses along the drill tongue and through the hose holder.
6. Perform the hydraulic bleed per the instructions on page 44.
7. Connect and pin the rod end clevis to the floating lug on the opener frame.
8. Secure all pins with cotter keys, hairpin clips or other means.



Figure 50  
Opener Lift Cylinder

16649



## 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 including, 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 interpreted to render Great Plains liable for damages of any kind, direct or consequential or contingent to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its control. This warranty does not extend to crop loss, losses caused by planting or harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

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

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

Effective July 15, 2020

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pivot-stop .....	17	T handles .....	23	818-789C, decal .....	9
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