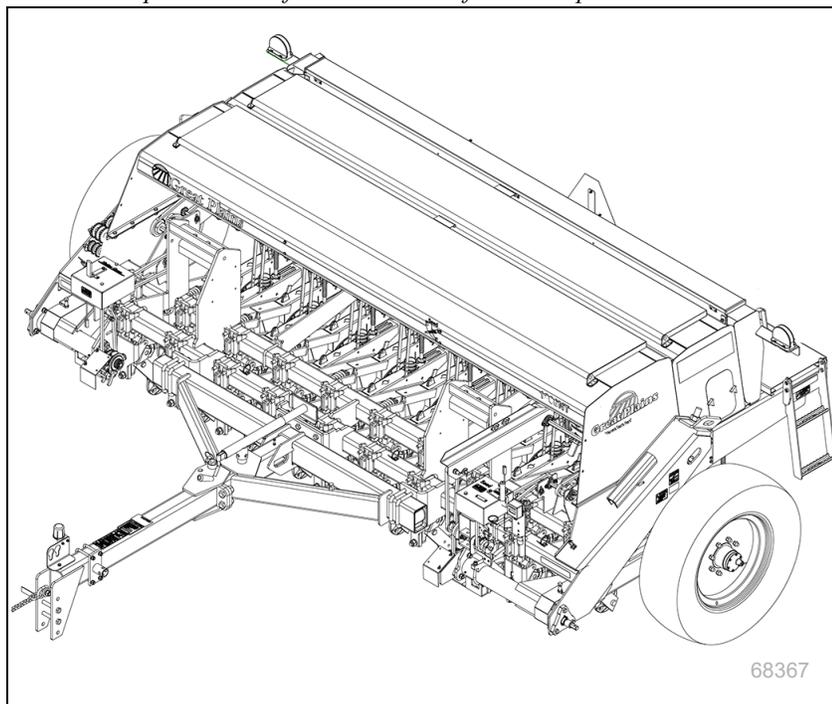


# Operator Manual

1206NT  
End-Wheel, No-Till Drill



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



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

ORIGINAL INSTRUCTIONS



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Printed 2024-02-26

150-166M

## 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.



### Prepare for Emergencies

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



### Be Familiar with Safety Decals

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



## Wear Protective Equipment

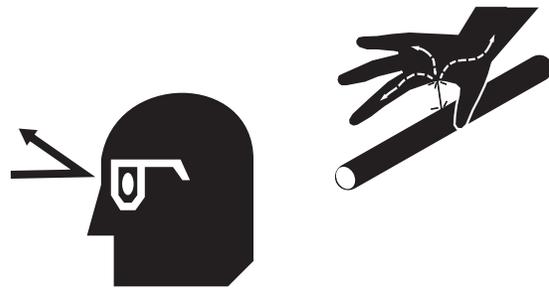
- ▲ *Wear protective clothing and equipment.*
- ▲ *Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.*
- ▲ *Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection such as earmuffs or earplugs.*
- ▲ *Because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



## Avoid High Pressure Fluids

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

- ▲ *Avoid the hazard by relieving pressure before disconnecting hydraulic lines.*
- ▲ *Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.*
- ▲ *Wear protective gloves and safety glasses or goggles when working with hydraulic systems.*
- ▲ *If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.*
- ▲ *If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene can result.*



## Handle Chemicals Properly

- ▲ *Read and follow chemical manufacturer's instructions.*
- ▲ *Wear protective clothing.*
- ▲ *Handle all chemicals with care.*
- ▲ *Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.*
- ▲ *Inhaling smoke from any type of chemical fire is a serious health hazard.*
- ▲ *Store or dispose of unused chemicals as specified by the chemical manufacturer.*
- ▲ *Immediately and thoroughly flush any area of the body that is contaminated by chemicals.*
- ▲ *If chemical is swallowed, carefully follow the chemical manufacturer's recommendations and consult with a doctor.*
- ▲ *If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.*
- ▲ *Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.*
- ▲ *After working with chemicals, wash hands and face before eating. Shower when application is completed for the day.*
- ▲ *Never wash out the tanks within 100 feet (30m) of any*



*freshwater source or in a car wash.*

- ▲ *Rinse out the tank. Apply rinse water on last field treated.*

## Keep Riders Off Machinery

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

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



## Use Safety Lights and Devices

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

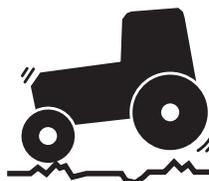
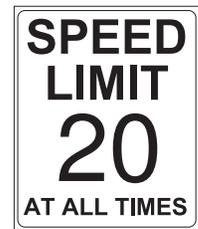
- ▲ *Use flashing warning lights and turn signals whenever driving on public roads.*
- ▲ *Use lights and devices provided with implement*



## Transport Machinery Safely

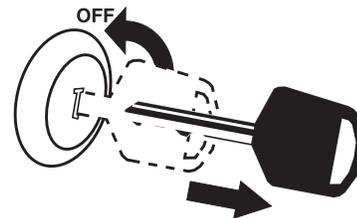
Maximum transport speed for implement is 32 km/h (20 mph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 32 km/h (20 mph). Never travel speeds which do not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Comply with state and local laws.*
- ▲ *Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.*
- ▲ *Carry reflectors or flags to mark drill in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under "Specifications and Capacities" on page 59.*



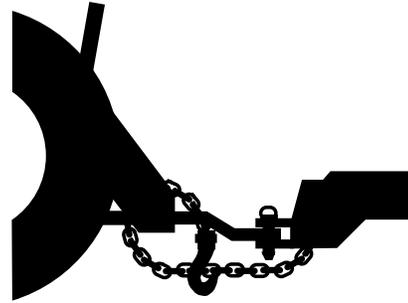
## Shutdown and Storage

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



## Use A Safety Chain

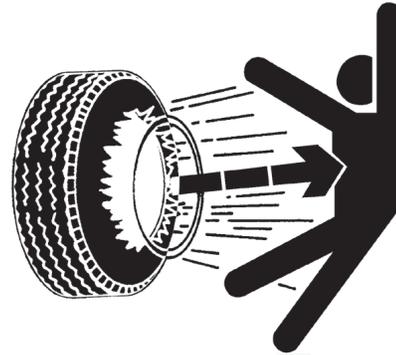
- ▲ Use a safety chain to help control drawn machinery should it separate from tractor drawbar.
- ▲ Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.
- ▲ Attach chain to tractor drawbar support or other specified anchor location. Allow only enough slack 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.



## Tire Safety

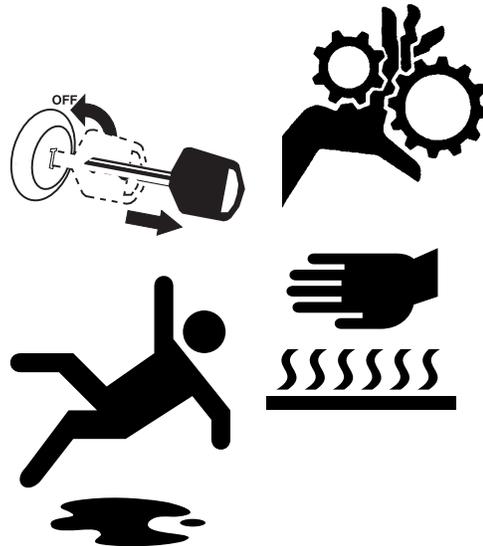
Tire changing can be dangerous and must be performed by trained personnel using correct tools and equipment.

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



## Practice Safe Maintenance

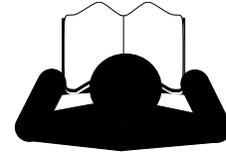
- ▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.
- ▲ Work in a clean, dry area.
- ▲ Lower the drill, put tractor in park, turn off engine, and remove key before performing maintenance.
- ▲ Make sure all moving parts have stopped and all system pressure is relieved.
- ▲ Allow drill to cool completely.
- ▲ 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.



## Safety-optimized 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 product 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 product. 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 implement comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your implement.

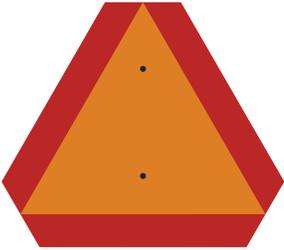
- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts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

### To install new decals:

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

### Slow Moving Vehicle Reflector

818-055C



On the back of the drill, walkboard center;  
1 total

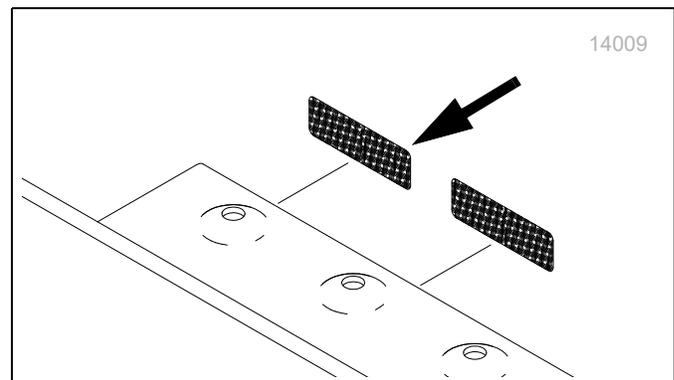
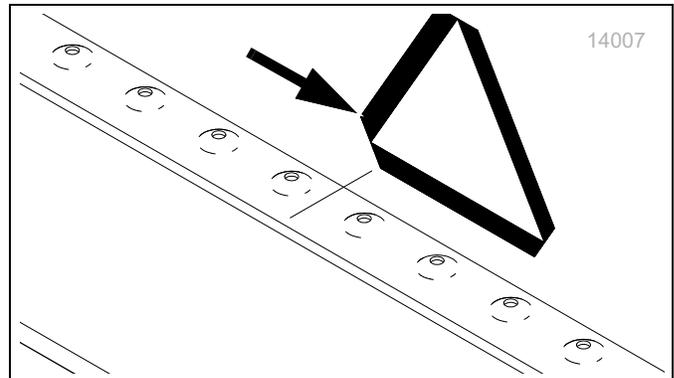
Refer to “Transporting” on page 26.

### Red Reflector (S/N D1181A-)

838-266C



On rear of walkboard at both ends, outboard of daytime reflectors;  
2 total

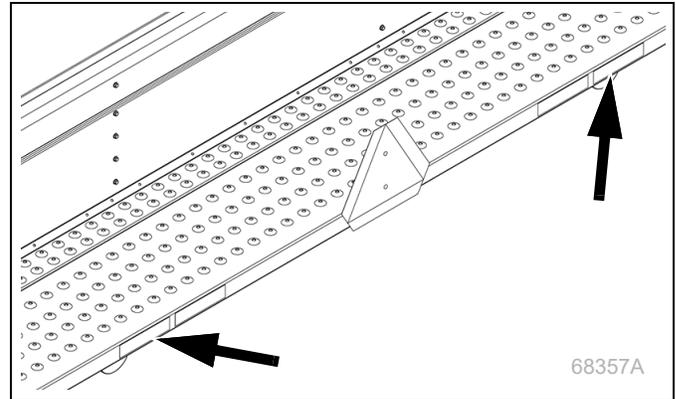


### Red Reflector (S/N D1182A+)

838-266C



On rear of walkboard;  
2 total

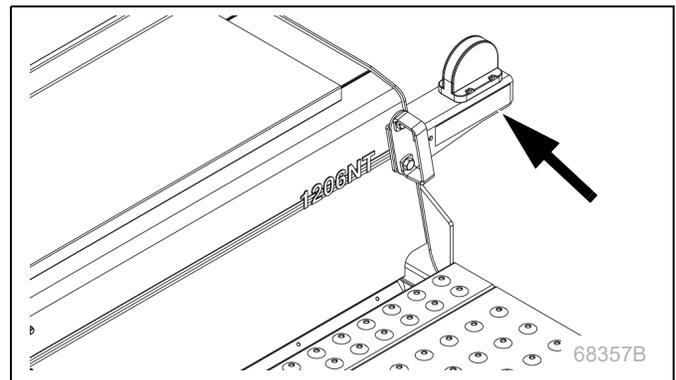


### Red Reflector (S/N D1182A+)

838-266C



On bracket under light at each end of seed box;  
2 total

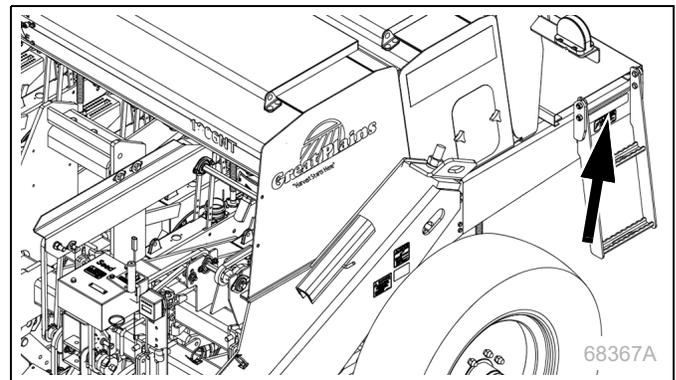


### Amber Reflector

838-265C



On both ends of walkboard;  
2 total

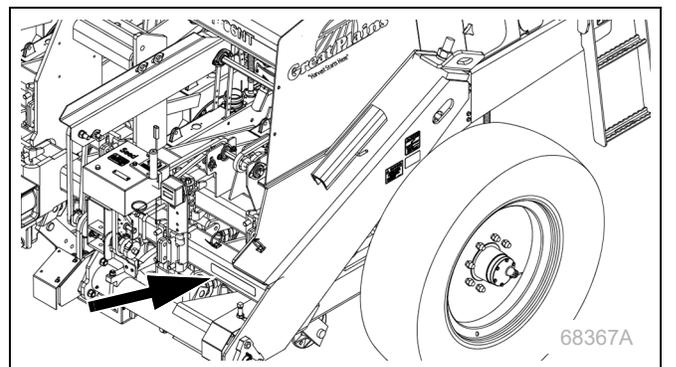


### Amber Reflector (S/N D1182A+)

838-229C



On front tool bar at both ends;  
2 total

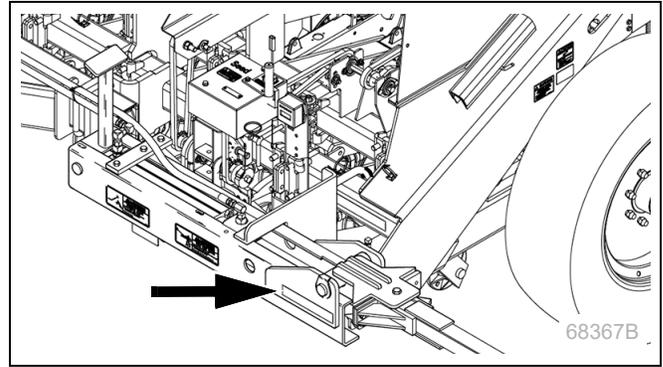


### Amber Reflector

838-229C



On each marker cylinder channel;

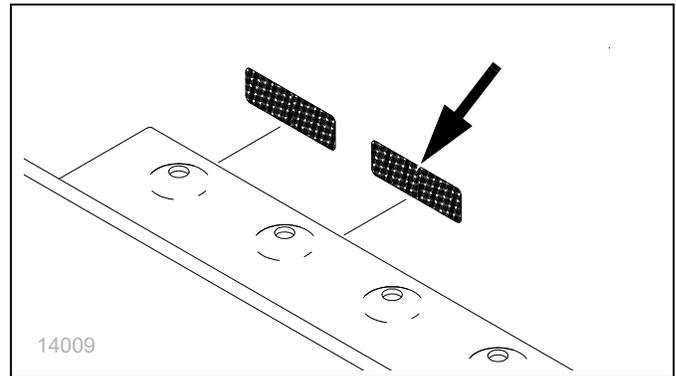


### Daytime Reflector (S/N D1181A-)

838-267C



On rear of walkboard at both ends, inboard of red reflectors; 2 total

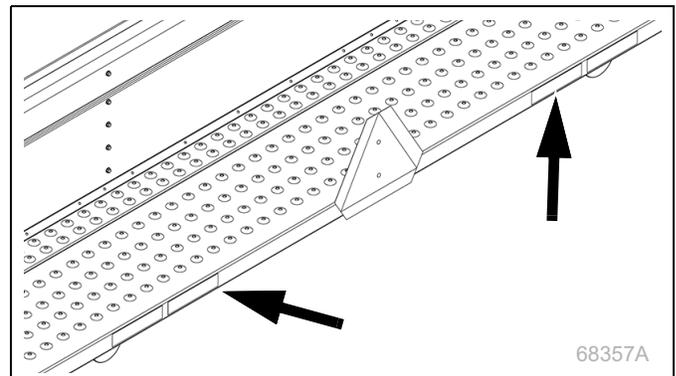


### Daytime Reflector (S/N D1182A+)

838-267C



On rear of walkboard;

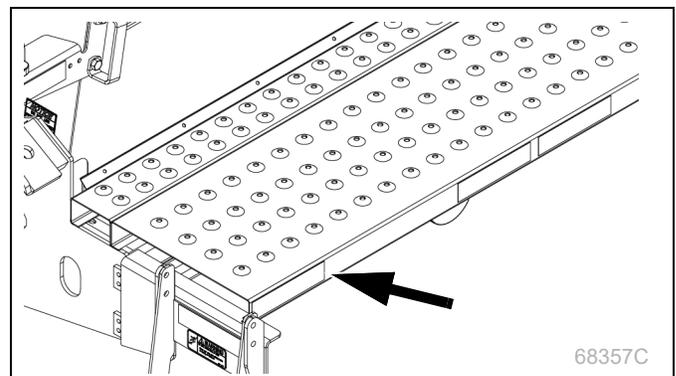


### Daytime Reflector (S/N D1182A+)

838-267C

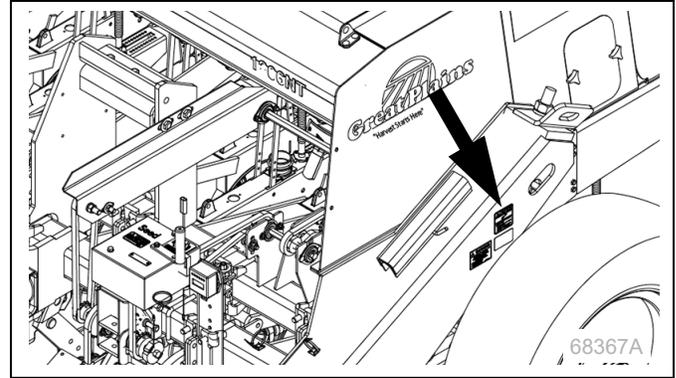


On rear of walkboard at both ends; 2 total



### Caution: Falling Hazard

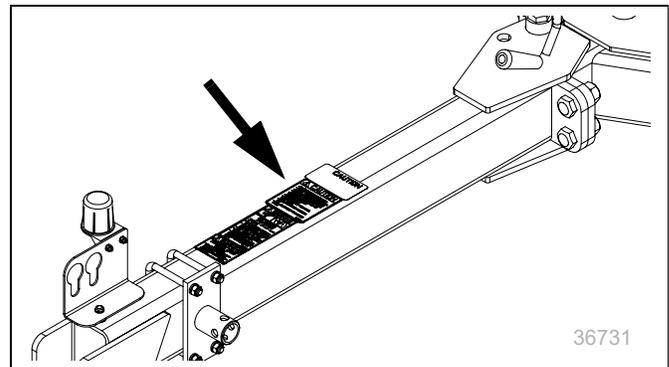
818-398C



On both sides of mainframe;  
2 total

### Caution: General Instructions

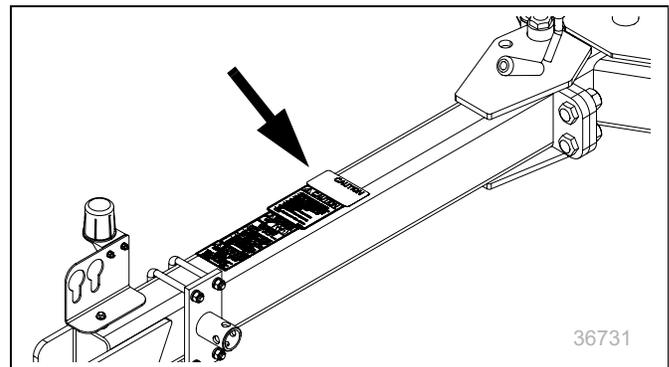
818-587C



On top of tongue;  
1 total

### Caution: General Instructions

818-719C



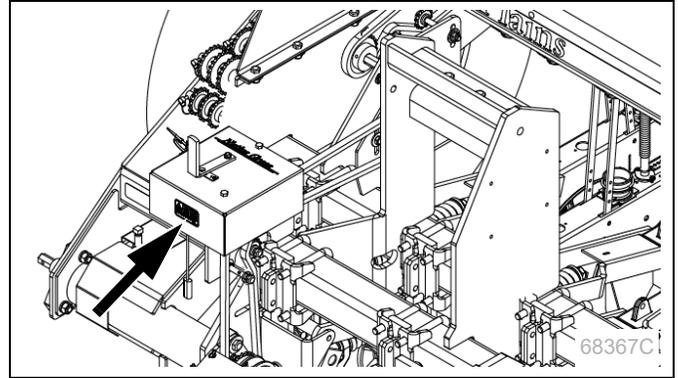
On top of tongue;  
1 total

**Caution: Moving Chain Hazard**

818-518C



On gear box cover;  
1 total

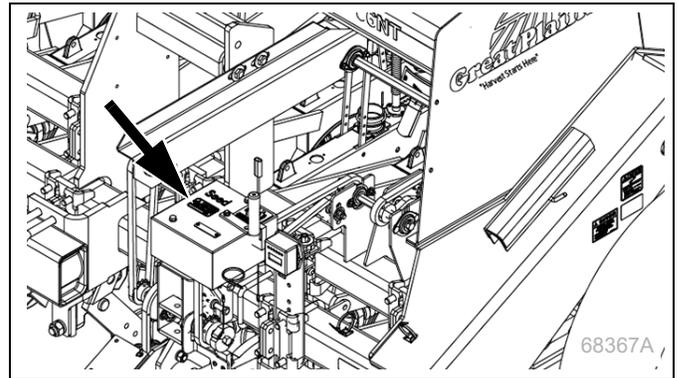


**Caution: Moving Chain Hazard**

818-518C



On gear box cover;  
1 total

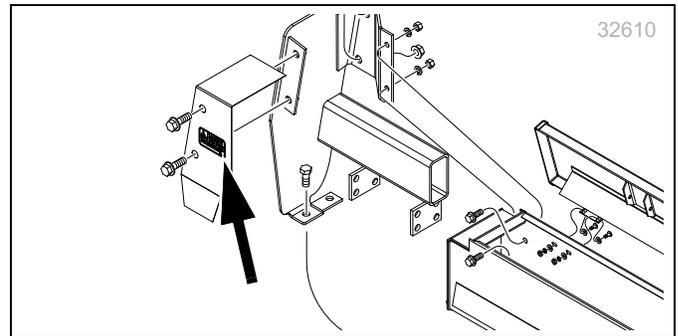


**Caution: Moving Chain (Option)**

818-518C



Small Seeds: On chain guard of Small Seeds option;  
1 total

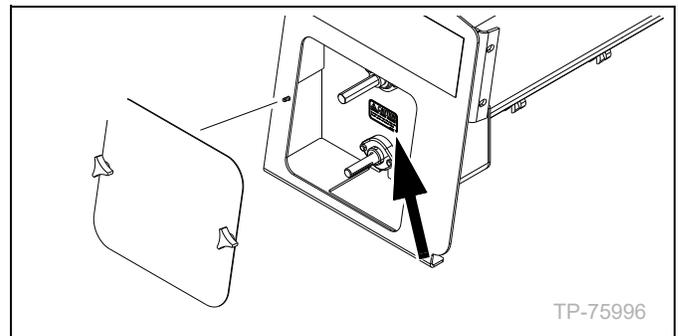


**Caution: Moving Chain (Option)**

818-518C



Native Grass: On chain guard of Native Grass option;  
1 total

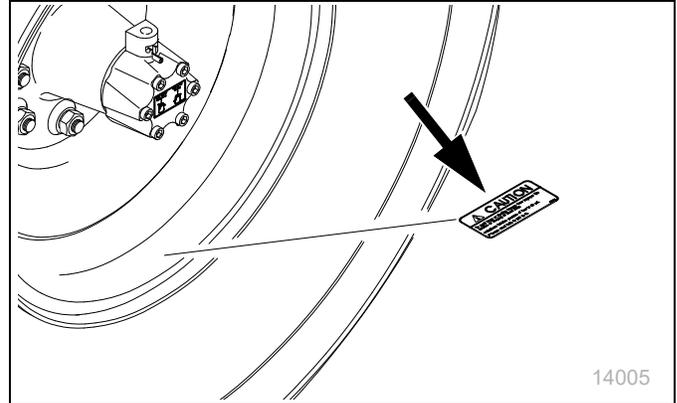


**Caution: High Pressure Hazard**

818-578C



On each wheel;  
2 total

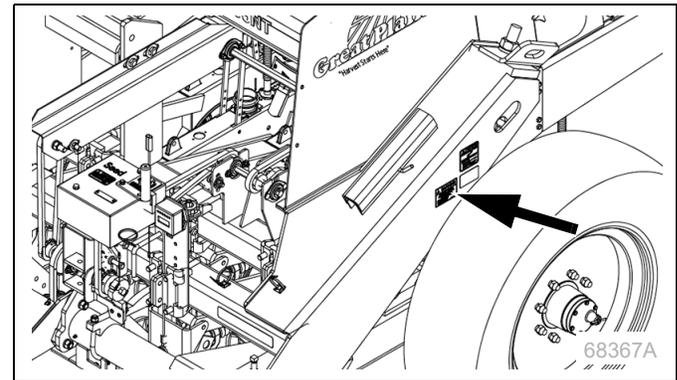


**Warning: Crushing Hazard**

838-057C



On both ends of mainframe;  
2 total

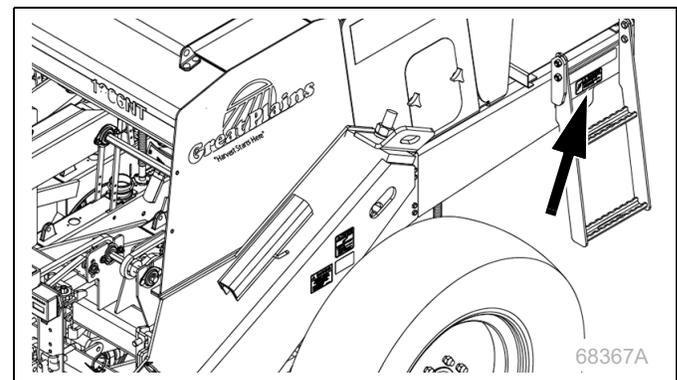


**Warning: Falling Hazard**

838-102C



On both ends of mainframe;  
2 total

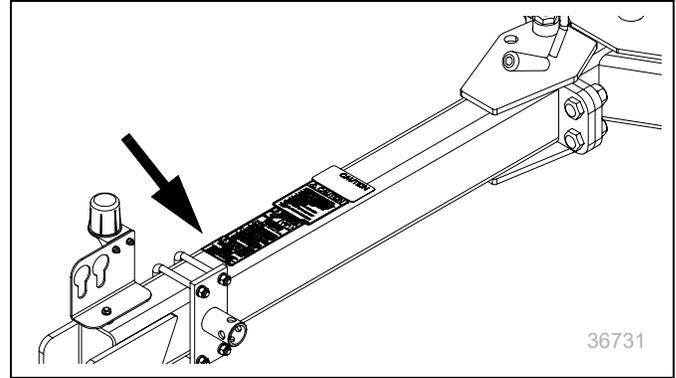


**Warning: Excessive Speed Hazard**

818-337C



On top of tongue;  
1 total

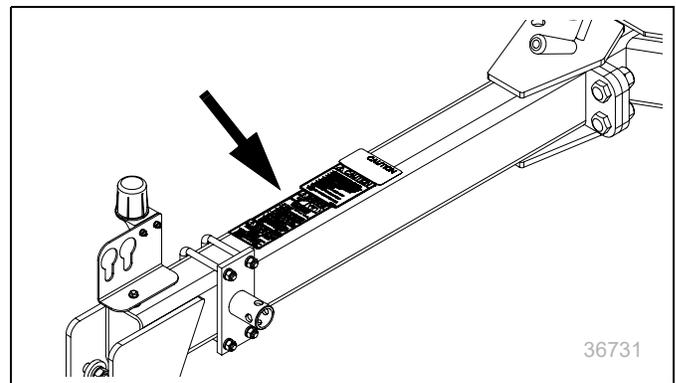


**Warning: High Pressure Hazard**

818-437C



On top of tongue;

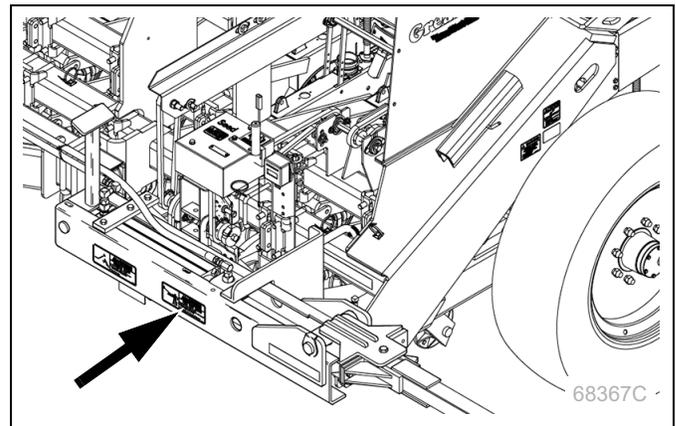


**Warning: Pinch Point Hazard**

818-579C



On front of marker cylinder channel;  
1 per channel

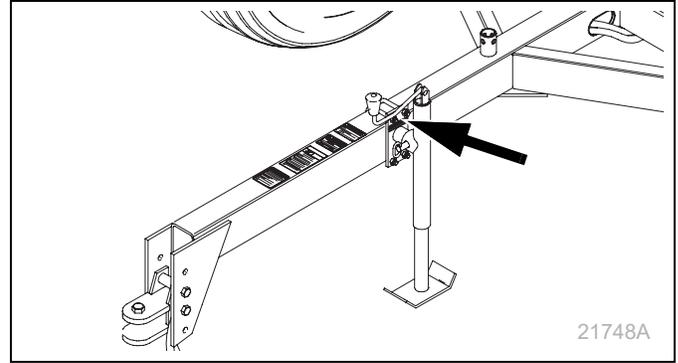


### Warning: Jack Angle

858-895C



On face of jack mount;  
1 total



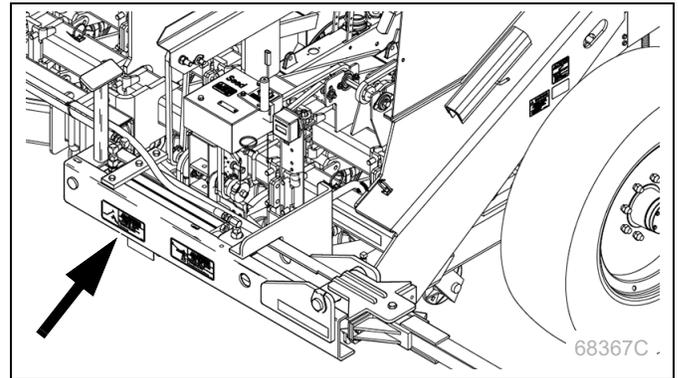
21748A

### Warning: Pinch Point Hazard

818-580C



On front of marker cylinder channel;  
1 per channel



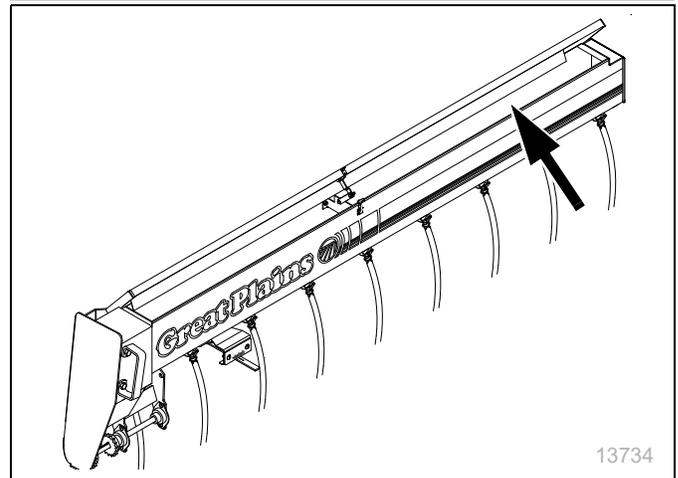
68367C

### Warning: Moving Parts Hazard (Option)

838-467C



On center of optional Small Seeds Box;  
1 total



13734



# Introduction

Great Plains welcomes you to its growing family of new product owners. This product has been designed with care and built by skilled workers. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use.

## Description of Unit

The 1206NT Drill is a 12 foot grain drill of end wheel design which couples Great Plains spring mounted coulter with a straight arm design of our solid stand opener to achieve no-till drilling capabilities. The end wheel design keeps the ground-working components in line with the end wheels for accurate coulter depth and seed placement over uneven terrain and allows the unit to follow field curves without side-loading the openers.

## Intended Usage

This machine is intended to be used primarily for No-Till drilling. It can easily be adapted for conventional drilling applications.

## Covered Models

1206NT-1410	End Wheel No-Till 14-row 10-inch
1206NT-1808	End Wheel No-Till 18-row 8-inch
1206NT-1975	End Wheel No-Till 19-row 7.5-inch
1206NT-2007	End Wheel No-Till 20-row 7-inch

## Document Family

155-166M	Operators Manual 1206NT
155-166P	Parts Manual 1206NT
155-166Q	Pre-Delivery Instructions 1206NT
155-166B	Seed Rate Manual

## Using This Manual

This manual familiarizes you with safety, assembly, operation, adjustments, troubleshooting and maintenance. Read it 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.



### 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.

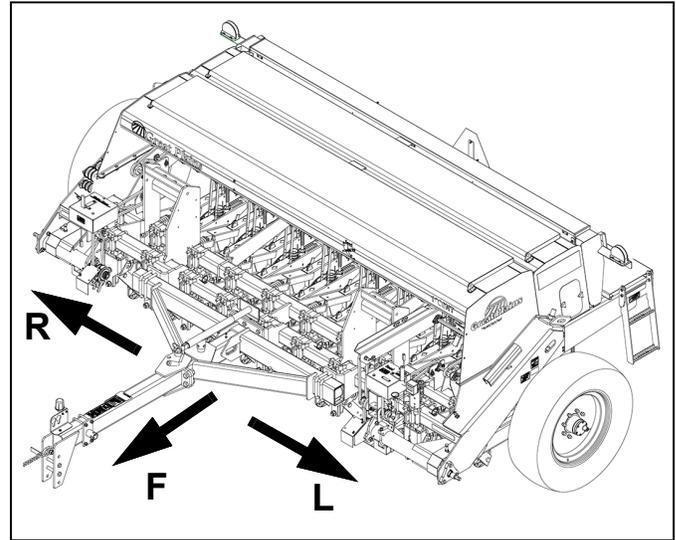


Figure 1  
Left/Right Directions

68367

## Definitions

The following terms are used throughout this manual.

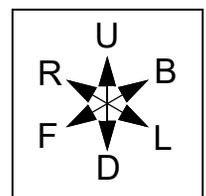
### NOTICE

**Economic and/or Liability Risks:**  
*A crucial point of information related to the current topic. Read and follow the directions to remain safe, avoid serious damage to the equipment and to ensure desired field results.*

### NOTE:

Useful information related to the current topic.

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



### 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 front of the machine as shown.

## Further Assistance

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

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

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

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

Or go to [www.greatplainsag.com](http://www.greatplainsag.com) and follow the contact information at the bottom of your screen for our service department.

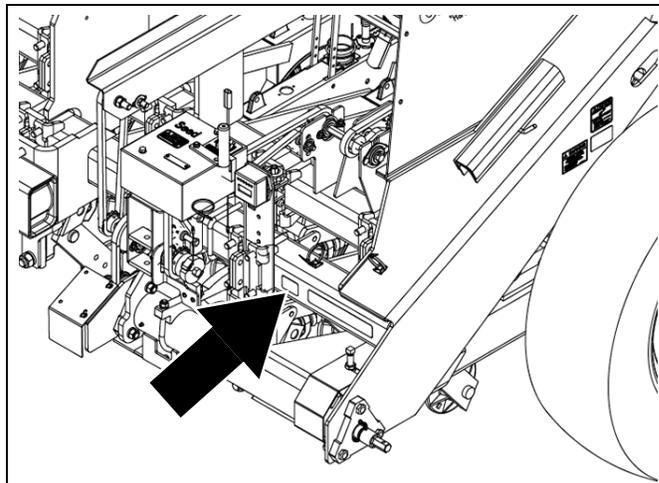


Figure 2  
Serial Number Plate

68367D



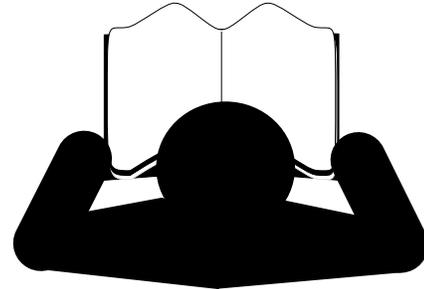
## Preparation and Setup

This section helps you prepare your tractor and drill for use. Before going to the field, you must hitch a tractor to the drill, hook up hydraulics and check that hydraulics have been bled.

### Pre-Start Setup

The balance of this section covers items that need to be completed or checked prior to each field use of the product.

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. Refer to “**Lubrication**” on page 48.
4. Make sure all safety decals and reflectors are correctly located and legible. Replace if damaged. Refer to “**Safety Decals**” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire Information**” on page 60.



## Hitching Tractor to Drill

### **⚠ DANGER**

#### **Crushing**

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

#### **Hazard:**



### Clevis Hitch Assembly

1. Insert upper hitch plate (1) into clevis hitch (2) with a spacer tube (3) on each side of ball swivel.
2. Bolt in place with 1 x 5 1/2 inch bolt (4), flat washer (5) and Nylock nut (6).

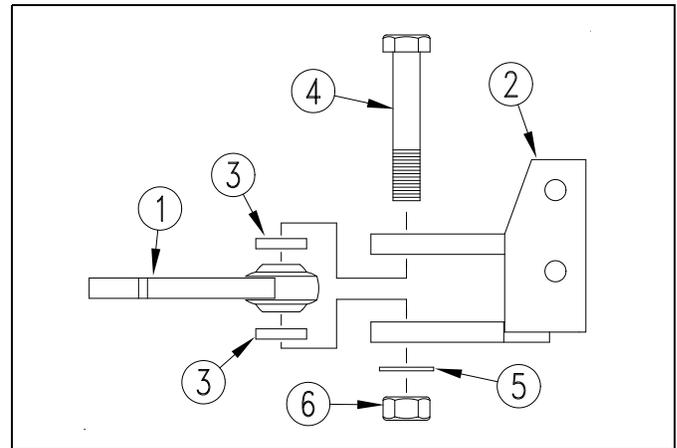


Figure 3  
Hitch Assembly

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### Adjust Hitch Height

Although the specified hitch option (clevis or pintle) is factory-installed, it may not be at ideal tractor height.

If a clevis hitch was specified, it needs to be assembled on the tractor drawbar.

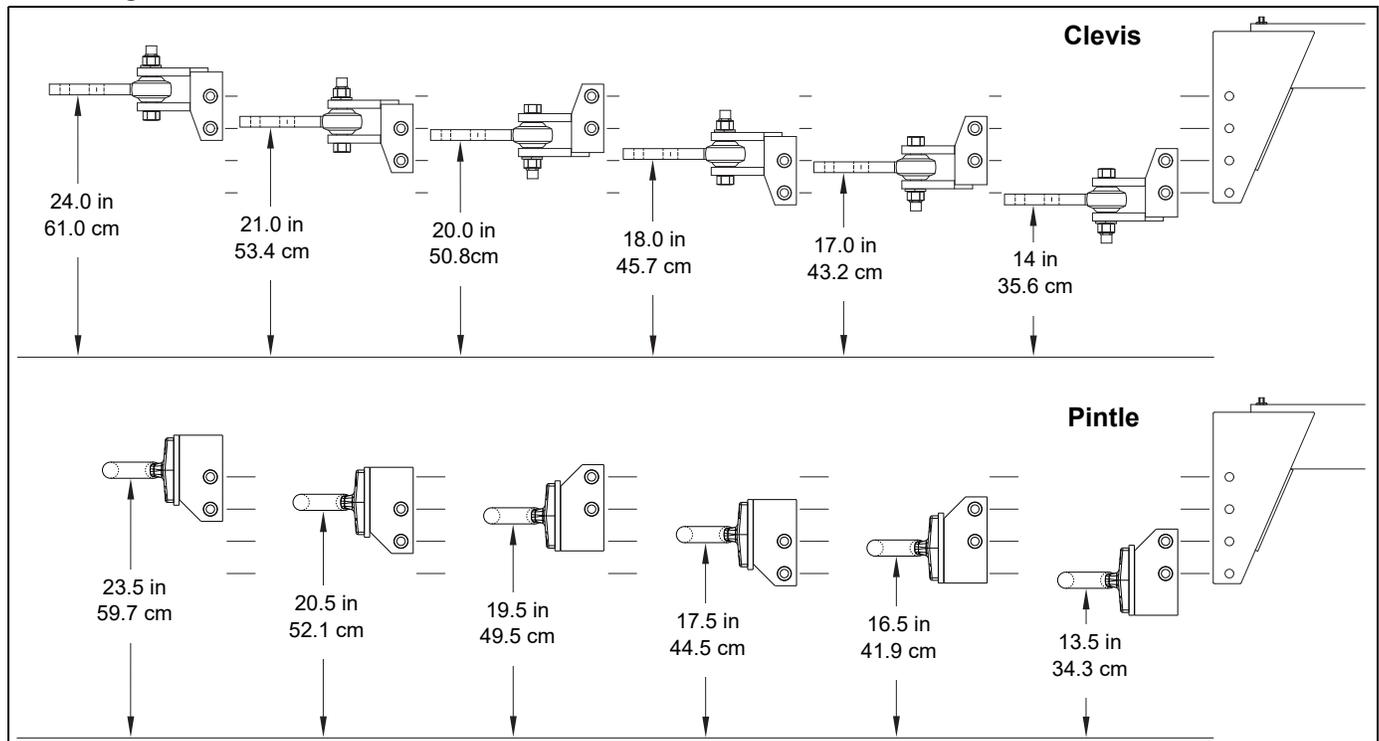
**Hitch Heights**

Figure 4  
Hitch Heights (Tongue Level in Field Position)

28115

)  
The drill operates more effectively if the tongue is level in field position.

The drill needs to be lowered (in field position) for the following measurements and any adjustments.

- If the intended tractor is available, and has an adjustable or invertible drawbar, set the drawbar to the operator's preferred height. If the tractor is not available, obtain a measurement of the height:
  - clevis hitch: to the bottom surface of the drawbar
  - pintle hitch: to the top surface of the lower claw
- Use the parking jack to adjust the tongue until it is level from front to back. If the work surface itself is level, use a carpenter's level on top of the tongue tube. When level, the top of the tube is approximately  $26\frac{3}{4}$  in (68 cm) above ground at the hitch.
- Measure from ground to:
  - clevis hitch: to the top surface of lower lug
  - pintle hitch: to the bottom of ring

## Adjusting Either Hitch

If the proposed hitch adjustment does not involve the hole used for the safety chain, skip step 2 and step 7.

- Determine which tongue mounting holes and which hitch orientation provide the necessary height. See "Adjust Hitch Height" on page 17.
- If chain is presently using either new hole pair, remove and save one each:
  - 802-212C HHCS 3/4-10x2 1/2 GR5
  - 890-182C SAFETY CHAIN 10 000 LB
  - 177-587D SAFETY CHAIN WASHER
  - 804-023C WASHER SPRING LOCK 3/4 PLT
  - 803-027C NUT HEX 3/4-10 PLT

## Adjusting Clevis Ball Hitch

- If new position requires inverting hitch, remove:
  - 802-205C HHCS 1-8X5 1/2 GR5
  - 804-028C WASHER FLAT 1 USS PLT
  - 803-038C NUT HEX 1-8 NYLON INSERT PLT
 Insert bolt (6) from other side of hitch and secure with flat washer, (7) and lock nut (8). Bolt must always be inserted from top in final position.
- Remove:
  - 802-070C HHCS 3/4-10X6 GR5
  - 804-023C WASHER LOCK SPRING 3/4 PLT
  - 803-027C NUT HEX 3/4-10 PLT

Adjust hitch to new position and secure with bolts (9), lock washers (10), and nuts (11).

- If ball swivel mount bottom plate (12) is present, make sure it is under mount weldment (13) and the bolts are inserted from top. Refer to page 17 for details.

## Adjusting Pintle Hitch

- Remove two sets:
  - 802-070C HHCS 3/4-10X6 GR5
  - 804-023C WASHER LOCK SPRING 3/4 PLT
  - 803-027C NUT HEX 3/4-10 PLT
 Adjust pintle hitch (17) to new position and secure with bolts (14), lock washers (15), and nuts (16).

## Install Safety Chain

- Secure the safety chain at the highest available mounting hole. Insert the bolt (1) from the outside of the hitch. Add the safety chain (2), then add the chain washer (3), lock washer (4) and nut (5).

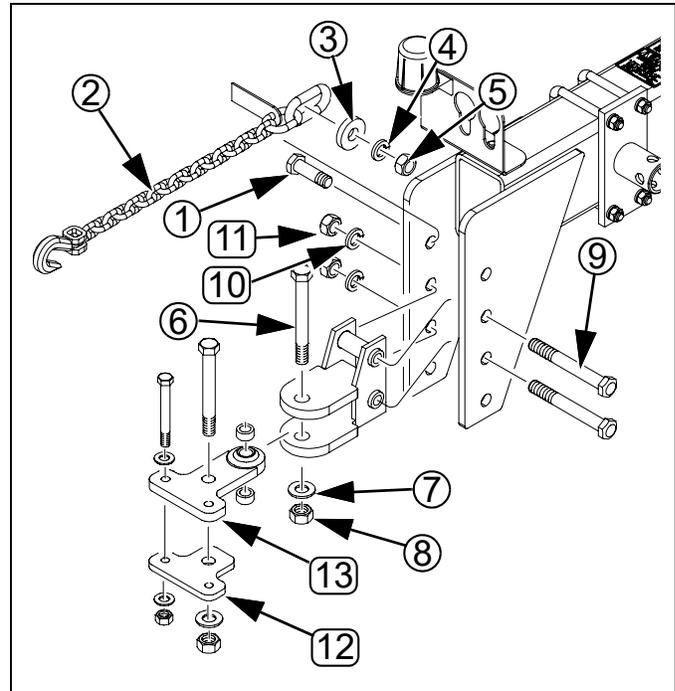


Figure 5  
Clevis Hitch and Chain Detail

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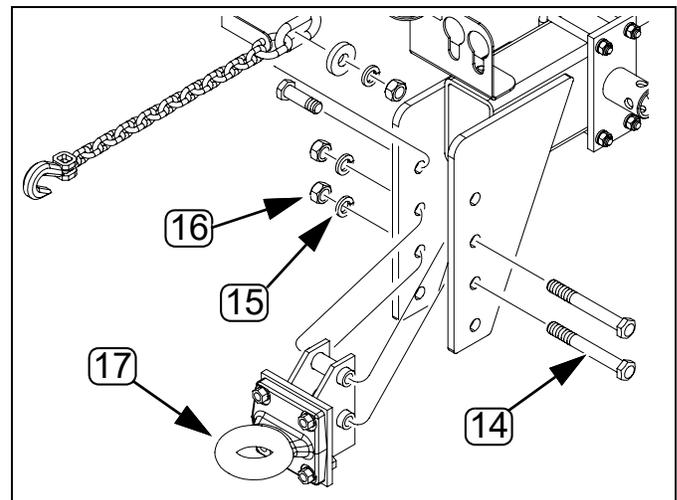


Figure 6  
Pintle Hitch Detail

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## Safety Chain

Connect the safety chain around a suitable anchor location on the tractor. Take up enough chain slack so that no part of the safety chain touches the ground. Make sure there is enough chain slack for turning the tractor and the drill.



## Jack Storage

Retract the foot of the jack (1). Remove the jack from the side of the tongue. Install the jack on the mounting tube (2) on the top of the tongue.

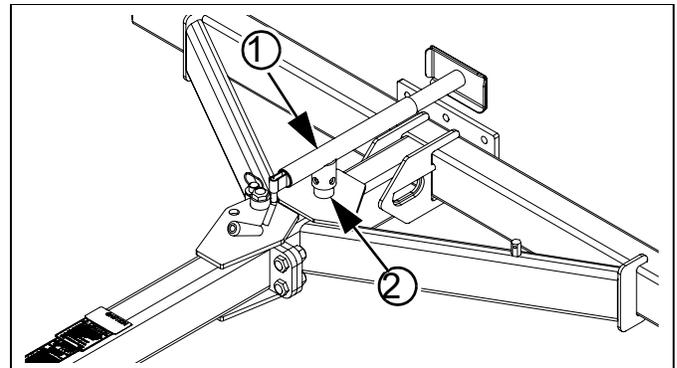


Figure 7  
Jack Storage Position

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## Hydraulic Hookup

### **⚠ WARNING**

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

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

Color	Hydraulic Function
Blue	Transport Lift Cylinders
Orange	Marker Cylinders

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

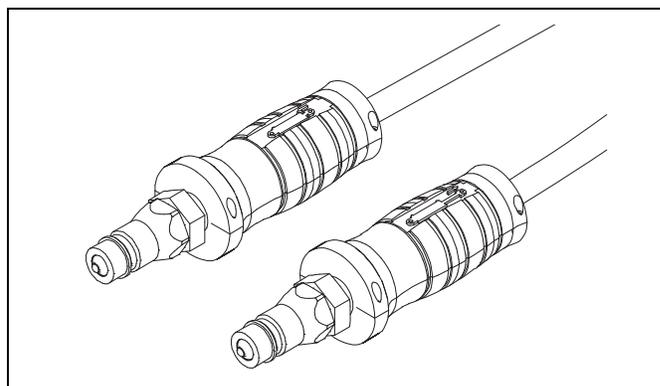
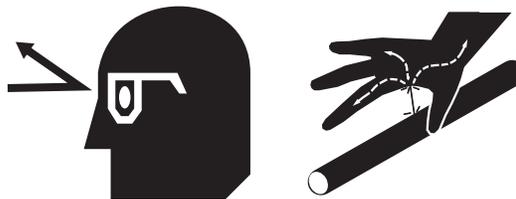


Figure 8  
Color Coded Hose Grips

31733

## Transport Lift Cylinder Flow Setting

Set the flow for the transport lift cylinders at the tractor to no more than 8 gpm (30.3 lpm). Hoses with an extended-cylinder symbol feed cylinder base ends. Hoses with a retracted-cylinder symbol feed cylinder rod ends.

## Bleeding Hydraulics

### **⚠ WARNING**

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

*Only trained personnel should work on system hydraulics!*

The drill lifting system is equipped with rephasing type hydraulic cylinders that require a special procedure for bleeding air from the hydraulic circuits. Read and follow this procedure carefully. Rephasing type cylinders will not function properly with air in hydraulic circuit.

1. Check hydraulic fluid in tractor reservoir and fill reservoir to proper level. Drill-system capacity is about 1 gallon. Add fluid to system as needed. A low reservoir level may draw air back into the system, causing jerky or uneven cylinder movements.
2. With drill attached to tractor, jack drill up and support frame at ends near gauge wheels.
3. With drill raised and supported, unpin cylinders from gauge wheel arms and frame. Turn cylinders "rod end up". Wire or otherwise safely support rod ends higher than base ends.

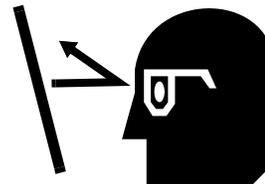
#### **NOTE:**

In order to prevent trapped air pockets, rod end must be higher than any other part of cylinder during bleeding operation.

4. With tractor engine idling, engage tractor hydraulics to extend cylinder rods. When cylinder rods are completely extended, hold remote lever on for one minute.
5. Retract cylinders. Extend cylinders again and hold remote lever on for one more minute. Repeat this step two more times to completely bleed system.
6. Pin cylinders to drill frame and gauge wheel arm with transport cylinder locks in place. If any air still is trapped in either cylinder, the cylinder will have a spongy, erratic movement and drill will not raise evenly. If necessary, repeat bleeding process.
7. Fill tractor hydraulic fluid reservoir to its proper level.

#### **NOTE:**

After the drill is raised, a slight settling will occur due to the action of the rephasing cylinders.



## Rephasing Cylinders

The lift cylinders may, after a period of time, get out of time or phase. The effects of this can be seen when one side of the drill is running too low or too high because its lift cylinder is either over extended or not retracted compared to the other lift cylinder.

To rephase the cylinders, raise drill completely and hold tractor hydraulic lever on for a few seconds to give cylinders time to rephase.

Each time drill is raised out of ground momentarily reverse hydraulic lever immediately after rephasing to allow cylinders to retract approximately 1/2 inch (12.5 mm). This will help in maintaining a level drill.

### NOTE:

Understand that having cylinders become gradually out of time is different than having air trapped in the system from improper bleeding. Each condition is corrected differently.

## Leveling Drill

1. Loosen locknuts (2) and adjust cylinder eyebolts (1) so there is initially about 3 1/16 inch of threads above mounting plate.
2. Raise drill with hydraulics until openers and coulters are 1 to 2 inches off the ground.
3. Measure height of coulters from ground on both ends of drill.
4. Adjust eyebolt to level drill from end to end.
5. Tighten nuts on eyebolts when drill is level.

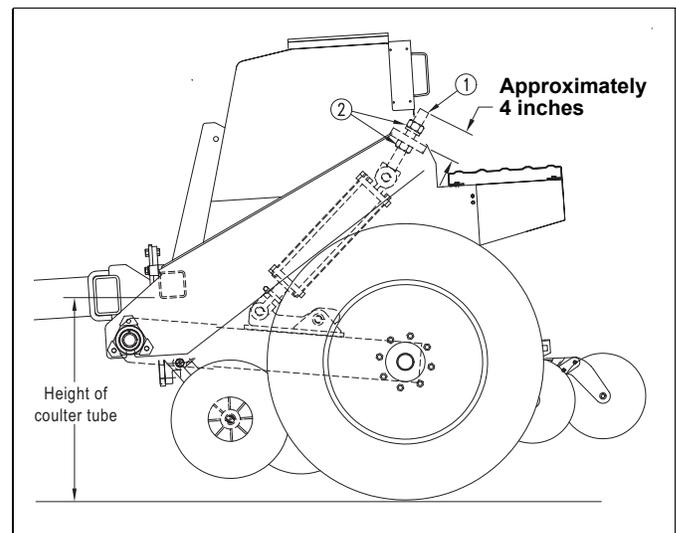


Figure 9  
Leveling Drill

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# Operating Instructions

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

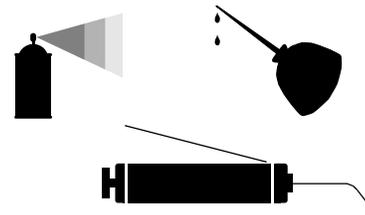
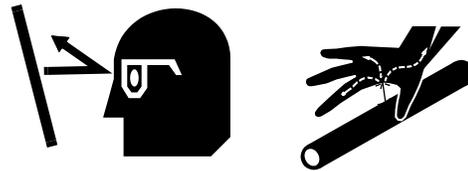
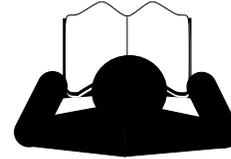
## Pre-Start Checklist

### **WARNING**

**High Pressure Fluid Hazard:**  
*Check all hydraulic lines and fittings before applying pressure. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. 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.*

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

1. Lubricate drill as indicated under “Lubrication,” page 46.
2. Check all tires for proper inflation. See “**Tire Information**” on page 60.
3. Check all bolts, pins and fasteners. Refer to “**Torque Values Chart**” on page 60.
4. Check drill for worn or damaged parts. Repair or replace parts before going to the field.
5. Check hydraulic hoses, fittings and cylinders for leaks. Repair or replace before going to the field.
6. Rotate both gauge wheels to see that the drive and meters are working properly and free from foreign material.
7. Rotate both gauge wheels to see that the drive and meters are working properly and free from foreign material.



### **DANGER**

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

## Field Operation

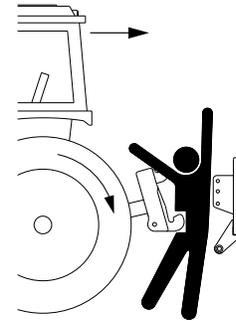
### **DANGER**

#### **Crushing**

#### **Hazard:**

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

1. Hitch drill to a suitable tractor.
2. Refer to the seed rate book and set the seed rate.
3. Load box with clean seed.
4. Raise drill. Rotate gauge wheel. Check that feed cups, seed tubes and drives are working properly and free from foreign material by looking for seed flow under each opener.
5. Record acremeter readout. Subtract initial reading from later readings to determine acres drilled.
6. Pull forward, lower drill and begin seeding.
7. Always lift drill out of the ground when turning at row ends and for other short-radius turns. Seeding will stop automatically as drill is raised.



## Opener Operation

### **NOTICE**

#### **Machine**

#### **Damage**

#### **Risk:**

Never back up with openers in the ground. To do so may cause damage or opener plugging.

For information on opener adjustments, see “**Opener Adjustments**” on page 35. For more information on troubleshooting opener problems, refer to “**Troubleshooting**” on page 43.

## Marker Operation

Optional marker attachments are available from your Great Plains dealer. Before operating markers, make sure hydraulics are properly bled as described under “**Marker Adjustments**” on page 38.

Dual markers equipped with a sequence valve are powered off the same hydraulic circuit. The markers cycle in the following sequence:

1. Right up, left up
2. Right down, left up
3. Right up, left up
4. Right up, left down

You can adjust marker folding speed. Refer to “**Marker Adjustments**” on page 38, and adjust folding speed to a safe rate. Folding markers at high speed can damage markers.

## Transporting

### **WARNING**

**Loss of Control Hazard:** Towing the drill at high speeds or with a vehicle that is not heavy enough could lead to loss of vehicle control. Loss of vehicle control could lead to serious road accidents, injury and death. To reduce the hazard, do not exceed 20 mph. Check that your tractor has enough ballast to handle the weight of the drill. Refer to your tractor operator's manual for ballast requirements.

### **CAUTION**

**Loss of Control Hazard:** Failure of hydraulic cylinders during transport will cause drill to drop suddenly, which could lead to serious road accidents, injury or death. To prevent an accident, always install cylinder locks before transporting drill.

Before transporting the drill, follow and check these items:

**Lock Cylinders.** Cylinder locks (1) are located near both hydraulic cylinders. With drill fully raised, place cylinder lock over rod of cylinder and secure with pin and clip.

#### **NOTE:**

The cylinder locks can be engaged or disengaged only after the drill is fully raised.

**Unload drill box.** The drill can be transported with a full box of grain, but the added weight will increase stopping distance and decrease maneuverability. Unload drill box before transporting if at all possible.

**Clearance.** Remember that the drill is wider than the tractor. Allow safe clearance.

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

**Lock-out Hub.** Make sure drive lock-out hub on left side of drill is disengaged before transporting. This will prevent excessive wear of drive system during transport.

If the drill is equipped with a native grass box, there will also be a lock-out hub on the right side.

### Transporting with Markers

Always transport markers in the folded position.

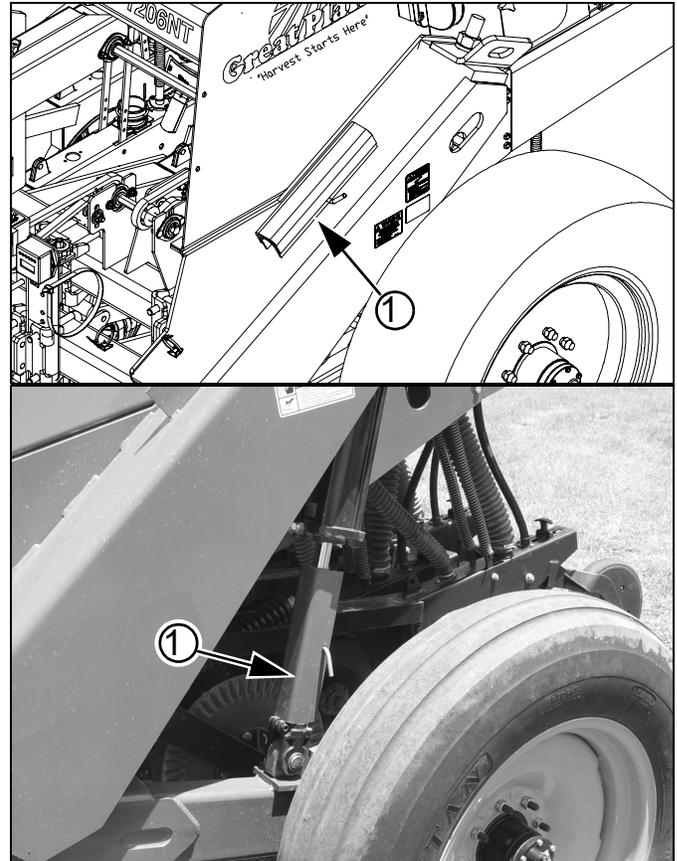


Figure 10  
Cylinder Locks

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21706



Figure 11  
Lock-out Hub

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## Parking and Unhitching

Perform the following steps when parking the drill. Refer to “**Storage**” on page 47, to prepare for long-term storage.

1. Park drill on a level, solid surface.
2. Lower drill until openers are resting on the ground.
3. Securely block tires to prevent rolling.
4. Remove tongue jack (1) from storage mount. Pin the jack on the side of the tongue. Do not extend the jack at this time.

### Refer to Figure 12

5. If the drill has a jack with angle adjustment as shown in the illustration, do the following:

### **WARNING**

*Do not adjust the jack angle without being hitched and connected to a tractor.*

Before operating the jack, make sure the foot (2) of the jack is parallel to the ground.

If the foot is not parallel to the ground, loosen the three nuts (3) in the middle of the jack adjustment plate (4). Rotate the jack so the foot is parallel to the ground and tighten the three nuts.

If the foot is parallel to the ground, make sure the three nuts (3) in the middle of the jack adjustment plate (4) are tight.

6. If ground is soft, place a board or plate under the foot.
7. Extend jack until tongue weight is off tractor drawbar.
8. Unplug hydraulic hoses and wiring harness from tractor. Do not allow hose ends or harness ends to rest on the ground.
9. Remove hitch bolt and safety chain from tractor drawbar.

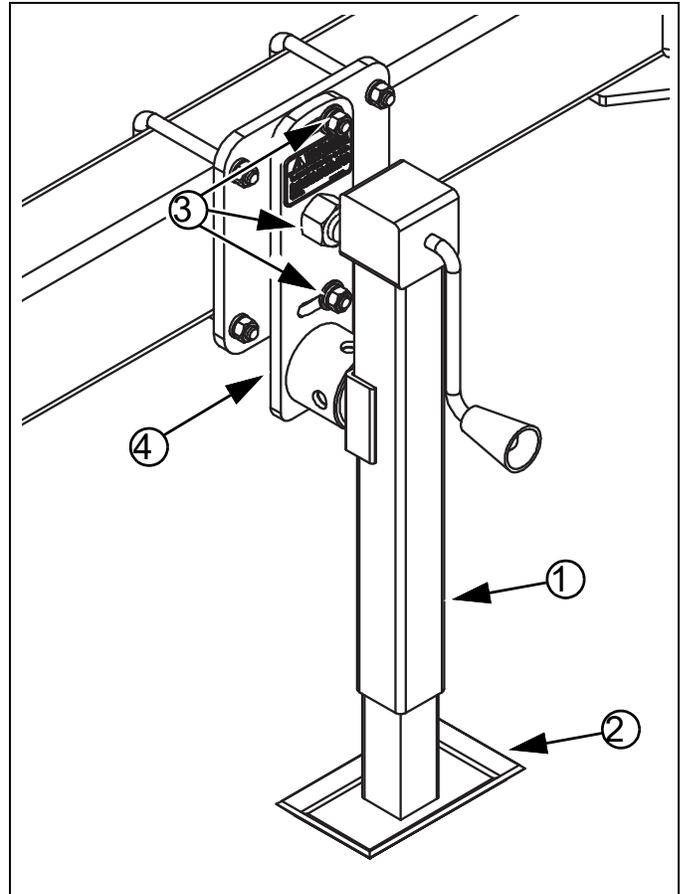


Figure 12  
Jack Adjustment

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## Acremeter Operation

A battery-operated electronic acremeter is supplied with the product. The display module for the system is normally on the front face of the main toolbar near the left gauge wheel.



Acremeter Console

80377

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

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

There are three buttons on the face of the acremeter:



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

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



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



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

## Operating Instructions

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

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

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

## Acremeter Screens

### Field Acre Count



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

Pressing Select navigates to screen T1 or T2.

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

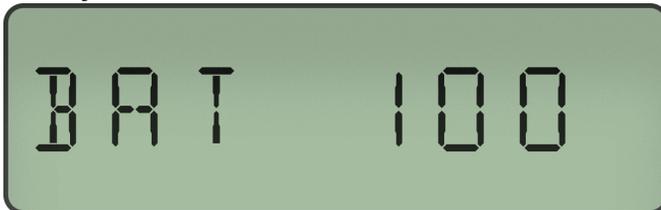
### Total Acre Count



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

Pressing Select navigates to screen BAT or A2.

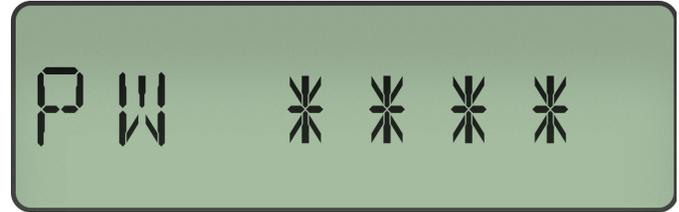
### Battery Life



Displays the percentage of remaining battery life.

Pressing Select navigates to screen PW.

### Password



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

Use the arrow buttons to enter your 4 digit password.

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

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

### Pulses Per Distance

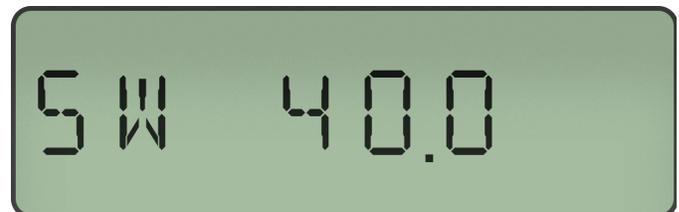


Displays the pulse scaling factor. This value affects the number of pulses emitted per 400ft traveled.

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

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

### Swath Width



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

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.

## Adjustments

### Coulter Adjustments

A no-till coulters (1) is mounted directly ahead of each opener on the drill. The coulters cut through heavy trash and make a groove in the soil for the openers. The coulters are mounted on the drill frame so coulters cutting depth changes as the drill is raised and lowered.

To set drill seeding depth, you must:

1. Set coulters depth with hydraulic stop.
2. Set opener depth with T-handles on press wheels.
3. If soil conditions make it necessary, increase coulters down pressure by adding weights.

If necessary, adjust individual coulters or openers to seed in tire tracks. For individual coulters adjustments, see “**Individual Coulter Adjustments**” on page 34. For opener adjustment, see “**Opener Adjustments**” on page 35.

Coulters cutting depth is controlled by a depth control valve.

The amount of coulters down force needed to cut a soil groove varies with soil conditions. Adding weight or shortening the coulters spring increases coulters down pressure and cutting force.

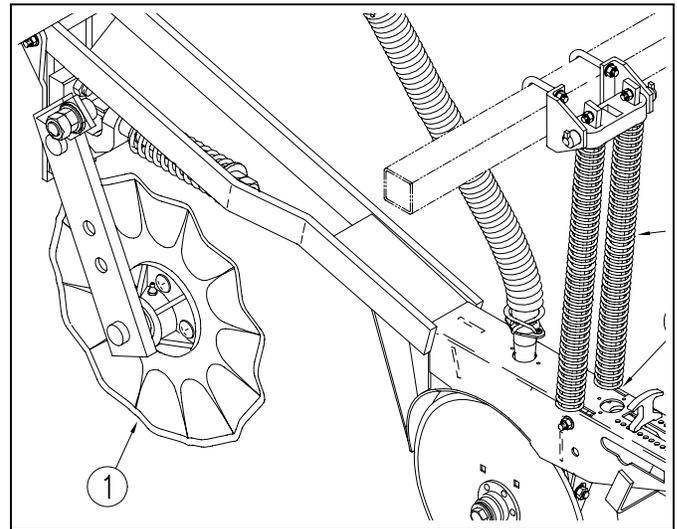


Figure 13  
Coulter

13895

## Initial Coulters Depth Control

### NOTICE

*Coulters depth control is not factory pre-set for planting. Adjustment is required prior to first field use of drill, or planting will be too deep.*

The drill is shipped with the valve and bracket assembly in the highest position, to prevent shipping damage.

The drill lift cylinders control coulters depth. A depth valve (1) regulates the retracted length of the cylinders. The valve is mounted on a bracket that adjusts vertically in a 5 in. (12.7cm) slot.

- Coarse adjustment of the valve operating point is provided by a depth stop engagement arm (2), mounted by U-bolts on the rockshaft (3).
- Fine adjustment of the valve operating point is provided by a knob (4) controlling the vertical position of the valve bracket. The valve needs to be slightly above center in the slot to provide a useful adjustment range.

If planting depth is known, and suitable conditions are available, perform this adjustment in the field. Otherwise, to roughly adjust for a presumed 2 in. (5cm) coulters depth:

1. Fully raise drill, to provide freedom of adjustment.
2. Turn adjustment knob counter-clockwise (“SHALLOWER”) to place the valve bracket at the upper  $\frac{1}{3}$  of travel.
3. Lower drill until coulters just touch the ground.
4. Loosen the nuts on the arm U-bolts, and adjust the arm ② until it just touches the valve ① actuator.
5. Raise drill. Turn knob clockwise (“DEEPER”) a few turns.
6. Lower drill and confirm that valve is stopping downward movement at or above ground.
7. Adjust knob, then raise and lower drill a few times to recheck depth, until movement stops with coulters at ground level.
8. Turn knob to adjust coulters depth. Each rotation lowers the coulters approximately  $\frac{1}{4}$  in. (6mm). This is 8 turns clockwise for 2 in. (5cm) depth.



#### NOTE:

Changing depth of coulters affects planting depth of openers. In field conditions, adjust press wheels to compensate.

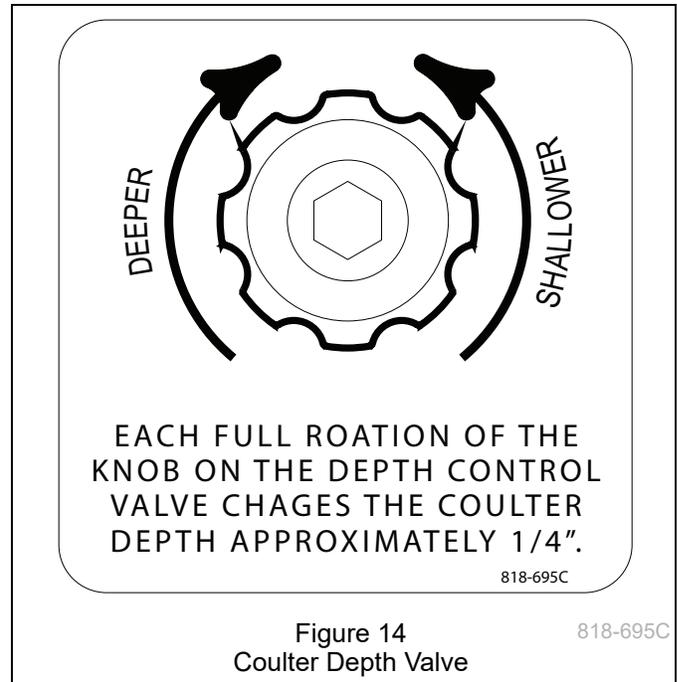


Figure 14  
Coulters Depth Valve

818-695C

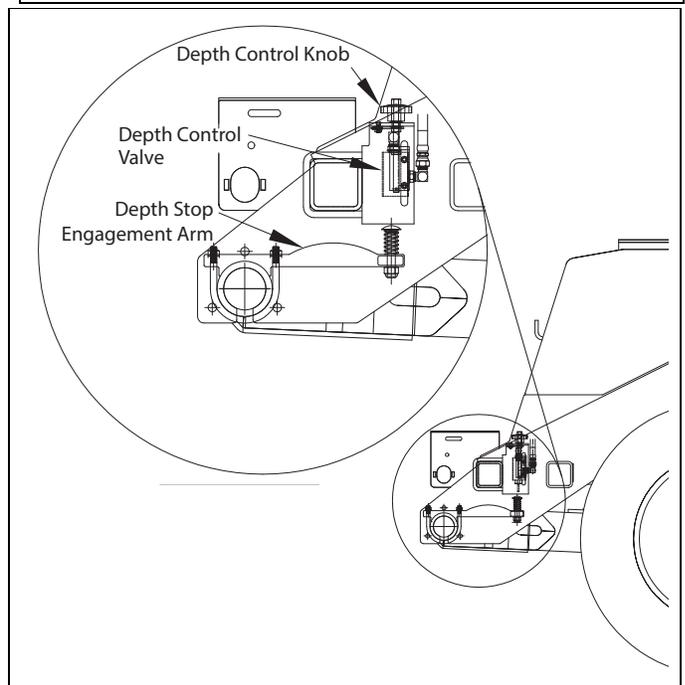


Figure 15  
Coulters Depth Control

21708

## Coulter Down Pressure

**Weights.** If more weight is required for your soil conditions, add weights to weight brackets located on box frame. No more than 1200 pounds (600 pounds per side) should ever be added. Add an equal amount of weight to each end of drill.

Pounds Per Coulter				
	7 inch	7.5 inch	8 inch	10 inch
Empty Drill	274	282	290	363
Drill with 300 pounds added	304	314	323	406
Drill with 600 pounds added	334	345	356	449

**Spring Length.** Coulter springs are preset at 10 inches (254mm), giving coulters an initial operating force of 400 pounds (181.4kg). This setting is adequate for many difficult no-till conditions.

### NOTICE

**Equipment**                      **Damage**                      **Risk:**  
*Resetting coulters shorter than 9.75 inches (247.7 mm) may contribute to premature failure of parts and warranty will be voided. If additional force is needed, add weights to drill.*

For lighter no-till conditions where rocks or other obstructions are a problem, you can lengthen coulters to protect coulters from impact. See “**Individual Colter Adjustments**” on page 34.

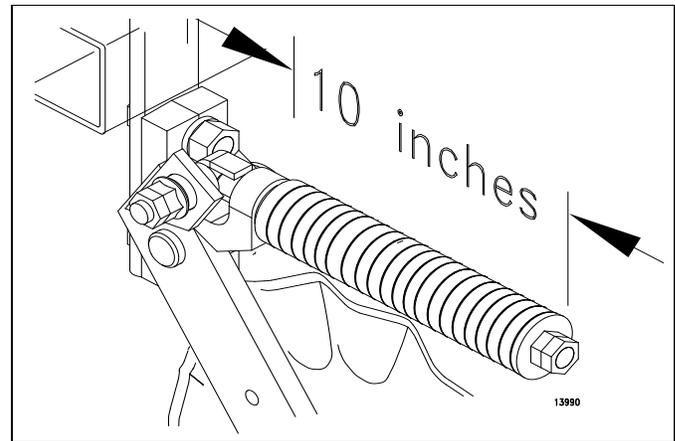


Figure 16  
Coulter Spring Length

13990

## Individual Coulters Adjustments

Individual coulters can be lowered if coulters follow in tractor tire tracks and do not give satisfactory depth. To do so:

1. Loosen 5/8 inch jam nuts on 5/8 inch square head set screws. Then loosen set screws.
2. Lower coulters to desired depth.
3. Tighten set screw on side of coulters clamp first. This squares coulters bar in clamp.
4. Tighten set screw on front of coulters clamp. Then tighten both 5/8 inch jam nuts on each set screw.

 **NOTE:**

Torque 5/8 inch set screws 85-100 ft-lbs to obtain adequate holding force.

Spring Length	Initial Vertical Coulters Force
10 1/2 inches	175 pounds
10 1/4 inches	300 pounds
10 inches	400 pounds
9 3/4 inches	525 pounds

## Opener Adjustments

### Opener Down Pressure

Opener springs provide the down pressure necessary for opener disks to open a seed trench. The springs allow the openers to float down into depressions and up over obstructions.

Each opener spring can be adjusted for down pressure. This is useful when penetrating hard soil and for planting in tractor tire tracks.

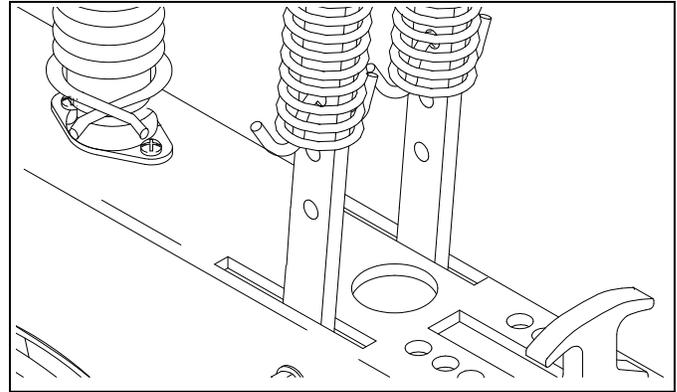


Figure 17  
Opener -Maximum Down Pressure

12103

To adjust the pressure, remove “W” clip at bottom of spring. Place “W” clip in a higher hole in spring rod for more pressure or in a lower hole for less pressure.

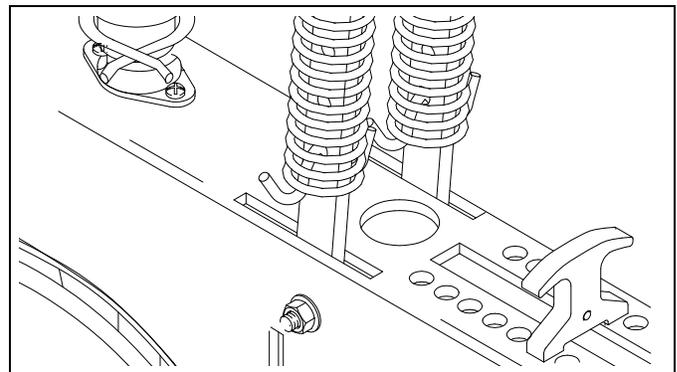


Figure 18  
Opener -Minimum Down Pressure

12102

### Opener Seeding Depth

A press wheel attached to each opener body controls seeding depth. To maintain consistent depth, the relationship between the bottom of the opener disks and press wheel is fixed upwardly by an adjustable stop on each opener.

The press wheels also close the seed trench and gently press soil over seed. To provide consistent soil firming, press wheels are free to move down from normal operating position. This maintains pressing action even if opener disks encounter obstructions or hard soil.

Set opener seeding depth by adjusting press-wheel height. To adjust, first raise drill slightly, then lift and slide T-handles on top of openers as shown.

- For shallower seeding, slide T-handles toward drill.
- For deeper seeding, slide T-handles away from drill.

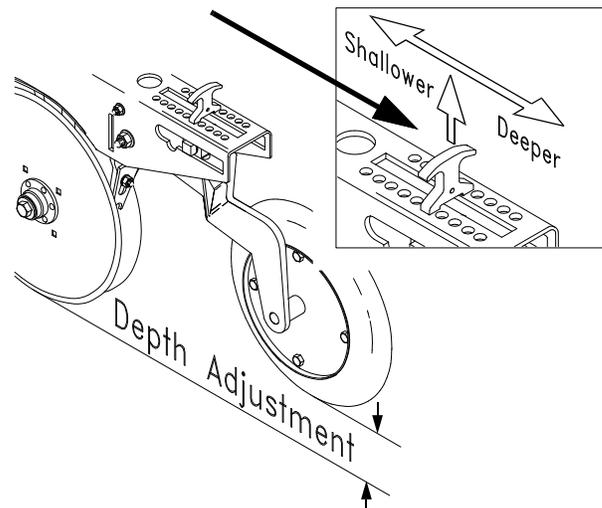


Figure 19  
Press Wheel Attachments

15659

## Disk Scraper Adjustment

To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as the disks rotate. As field conditions vary, scrapers may need to be adjusted. In damp conditions, scrapers may need to be lowered. If openers are not turning freely, scrapers may need to be raised.

To adjust scrapers, loosen 3/8 inch bolt (1) and move scraper as needed.

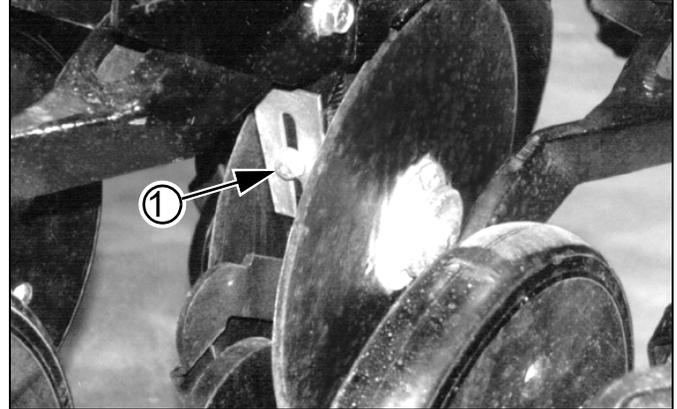


Figure 20  
Disk Scraper Adjustments

16163

## Gauge Wheel Idler Adjustment

Located inside the left hand gauge wheel arm is two idler sprockets which must be adjusted after the first 100 acres of drill use. From then on, adjust at the beginning of each season.

### NOTE:

On drills equipped with a native grass attachment, there is a similar idler on the right hand gauge wheel arm.

To adjust, move front idler sprocket on top of chain down by loosening jam nut (1) and turning the adjustment stud (2).

Tighten jam nut to maintain idler position.

### NOTE:

Do not over-tighten chains. To do so will cause excessive wear.

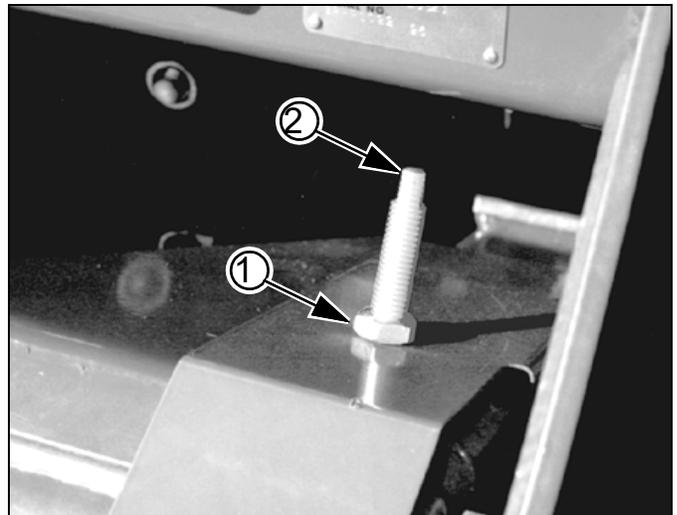


Figure 21  
Gauge Wheel Idler Adjustment

14744

## Drive Clutch

The main drive clutch on your drill is a mechanical-release, jaw-style design. You may need to adjust the clutch for proper engagement and disengagement.

When properly adjusted, the cam plates will disengage the clutch jaws completely when the drill is raised. When lowered in field position, clutch jaws should be engaged.

To adjust, loosen bolts on clutch tab. Slide tab up or down to change point at which cam plates meet. When satisfied with adjustment, Tighten bolts on clutch tab.

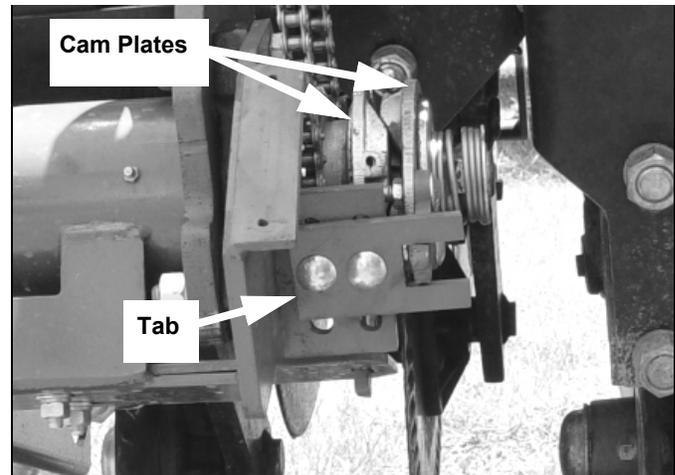


Figure 22  
Drive Clutch

21709

## Drive Train Operation

Check all chain idlers at beginning of each season for proper adjustment. Check that each idler is taking up excess chain slack. The access door is located on the top side of the gage wheel arm near the pivot end.

After first 100 hours of use and at beginning of each season, readjust idler sprocket in left wheel arm. To access idlers, remove access door.

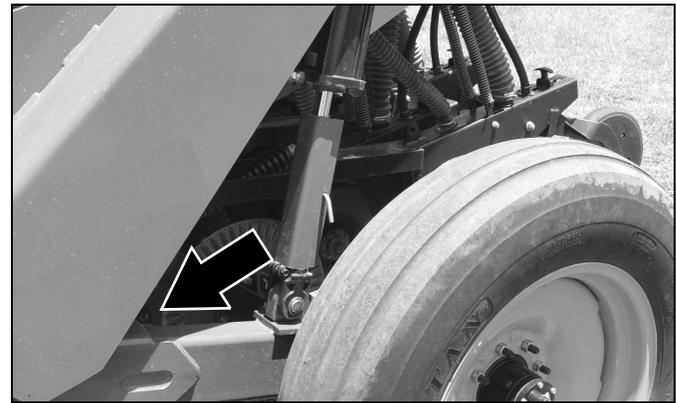


Figure 23  
Access Door

21781

To adjust idler sprocket, move top idler sprocket (1) down into chain by loosening jam nut and screwing in adjustment stud (2). Tighten jam nut to maintain idler position.

### NOTE:

Do not over-tighten chains. Over-tightening chains will cause excess wear on idlers and drive components. Be sure chain is installed with the chain connector link retainer towards the centerline and the clip opening (split end) faces the opposite way of the chain travel.

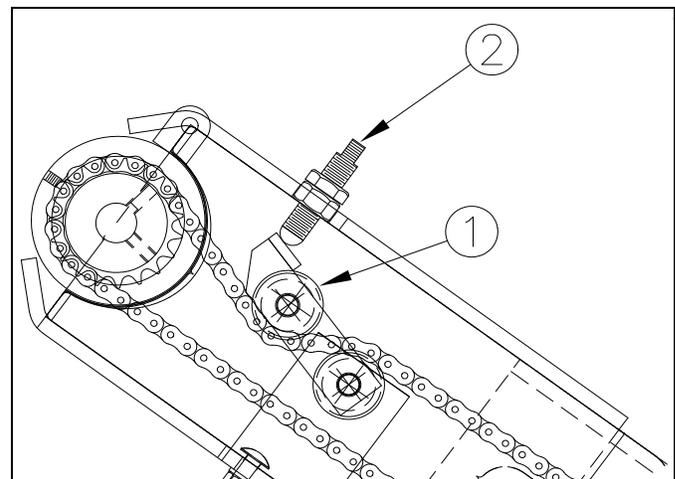


Figure 24  
Idler Sprocket Adjustments

21782

## Marker Adjustments

### Bleeding Marker Hydraulics

The markers must be properly bled to displace air in the hydraulic system and for the sequence valve to work properly. Failure to do so could cause marker to drop quickly and cause damage to marker voiding the warranty.

#### **CAUTION**

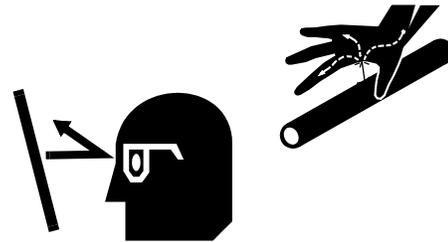
**Overhead and Crushing Hazard:**  
Keep others away when folding or unfolding markers. Markers may fall quickly and unexpectedly if hydraulics fail.



#### **WARNING**

**High Pressure Fluid Hazard:**  
Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury.

Check that tractor hydraulic reservoir is full before bleeding the hydraulics. A low reservoir level may draw air back into the system, causing jerky or uneven cylinder movements.



#### **NOTICE**

JIC fittings do not require high torque. JIC and O-Ring fittings do not require sealant. Always use liquid pipe sealant when adding or replacing pipe thread fittings. To avoid possible danger of cracking hydraulic fittings from over-tightening, do not use plastic sealant tape.

## Dual Markers with Sequence Valve

1. Fold markers manually into transport position when charging hydraulic system for the first time.
2. Disconnect cylinder pin (1) from rod end of cylinders and marker link arms (2). Swing marker link arm up and out of the way.
3. Connect hoses to tractor remote hydraulic outlets.
4. Loosen hose hydraulic fittings at rod end of marker cylinders (3).
5. With tractor at idle speed, slowly work tractor remote lever in the direction which would retract the cylinder.

### NOTE:

Do not try to retract cylinder. The goal is to push air from the lines leading to the cylinder. The position of the sequence valve determines which cylinder will react first.

6. When the air is expelled, oil will seep out around a loosened fitting. Tighten the hose fitting.
7. Move tractor remote lever to fully extend cylinder and hold for a few seconds. This will shift the sequence valve which will allow you to bleed the other cylinder.
8. Repeat steps 4 through 6 for the other cylinder.
9. When the system is bled, move the tractor remote lever several times until both cylinders stop when fully extended.
10. Connect cylinders to marker link arms.

## Single/Dual Markers without Sequence Valve

1. Fold markers manually into transport position when charging hydraulic system for the first time.
2. Disconnect cylinder pin (1) from rod end of cylinders and marker link arms (2). Swing marker link arm up and out of the way.
3. Connect hoses to tractor remote hydraulic outlets.
4. Loosen hose hydraulic fittings at rod end of marker cylinders (3).
5. With tractor at idle speed, slowly work tractor remote lever in the direction which would retract the cylinder.

### NOTE:

Do not try to retract cylinder. The goal is to push air from the lines leading to the cylinder. The position of the sequence valve determines which cylinder will react first.

6. When the air is expelled, oil will seep out around a loosened fitting. Tighten the hose fitting.
7. Move tractor remote lever to fully extend cylinder and hold for a few seconds.

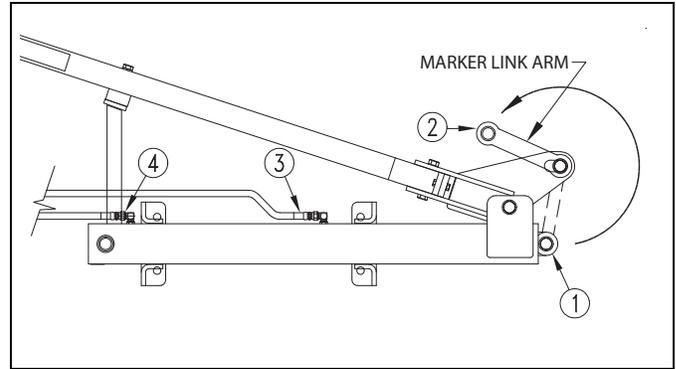


Figure 25  
Bleeding Marker Hydraulics

14021

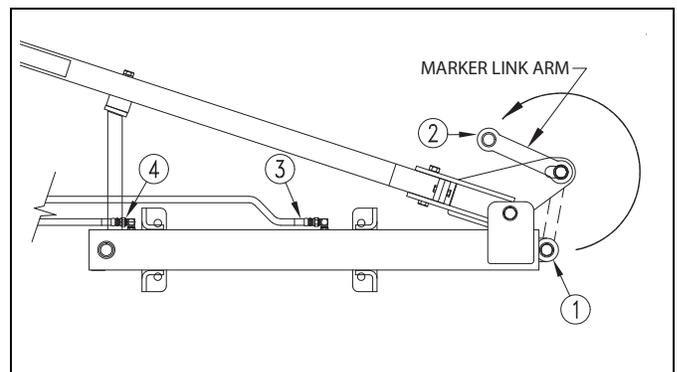


Figure 26  
Bleeding Marker Hydraulics

14021

8. If you have dual markers, repeat steps 4 through 6.
9. When the system is bled, move the tractor remote to fully extend marker cylinders.
10. Reconnect cylinders to marker link arms.

### Folding Speed with Sequence Valve

The marker hydraulic system is equipped with needle valves to control how fast each marker operates. The needle valves are built into the sequence valve body.

Adjust folding speed with hex adjustment screws on the sequence valve body. There is one adjustment screw for raising speed (1) and one for lowering speed (2). Identify adjustment screws by markings stamped in valve body.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Turn adjustment screws clockwise to decrease folding speed and counterclockwise to increase folding 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.

Markers cycle in the following sequence:

1. Right up, Left up
2. Right down, Left up
3. Right up, Left up
4. Right up, left down
5. Sequence repeats

### Folding Speed with Needle Valve

Needle valves control the speed of each marker and are located at the rod ends of the marker cylinders.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Turn adjustment knob (1) clockwise to reduce folding speed or counterclockwise to increase folding speed. Excessive folding speed could damage markers and void the warranty.

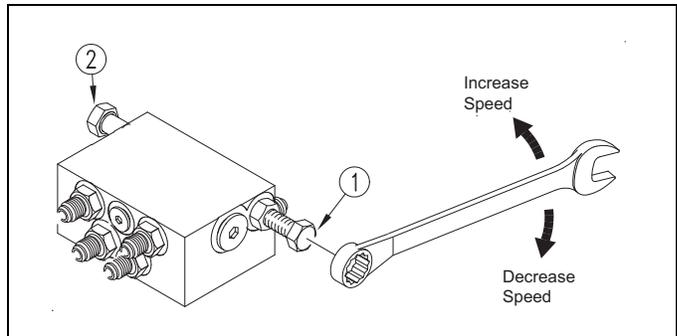


Figure 27  
Marker Sequence Valve

14048.epsi

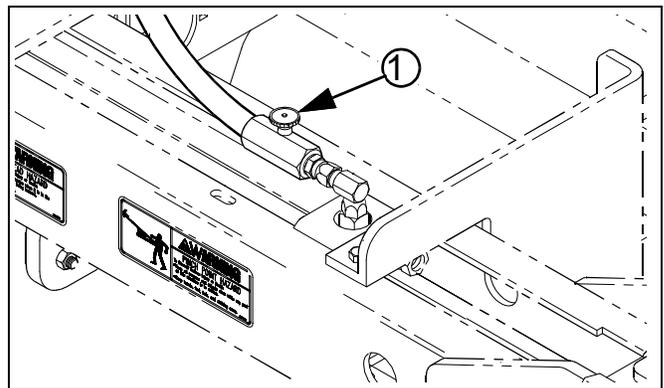


Figure 28  
Single Marker Needle Valve

14062

### Marker Disk Adjustment

The aggressiveness and mark left by the disk can be changed by two methods.

#### Changing Disk Angle.

To change angle of cut, loosen two 1/2 inch bolts (1) and rotate disk assembly. Tighten bolts.

**Changing Disk Tip.** To change the tip of the disk, loosen two 1/2 inch bolts (2) and rotate disk assembly until marker disk is square with the ground.

#### Marker Width Adjustment

To change marker width, loosen marker tube U-bolt (3). Slide the marker tube in or out to desired width. Tighten U-bolt.

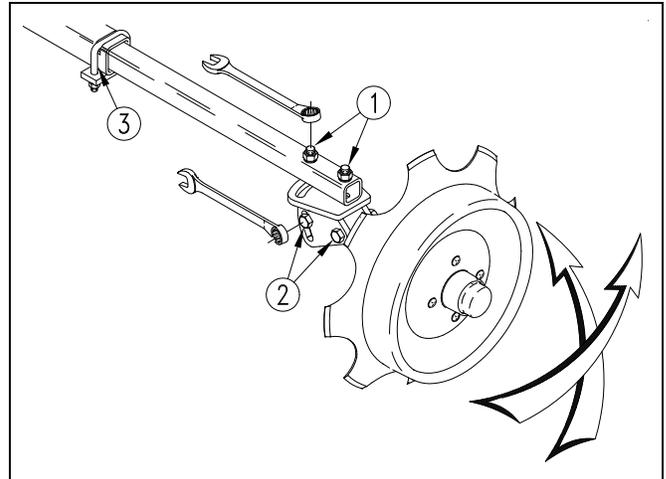


Figure 29  
Marker Disk Adjustment

14061

### Seed Lok Lock Up

Optional Seed-Lok firming wheels provide additional seed-to-soil contact. The wheels are spring loaded and do not require adjusting. In some wet and sticky conditions the wheels may accumulate soil.

To lock up the firming wheels, hook one end of the chain in the opener-body hole just above the wheel arm (1). Pull the firming-wheel arm (2) up as high as possible and wrap the chain around the arm. Hook the other end of the chain in a link. Leave no slack in the chain; secure the wheel arm in the highest position.

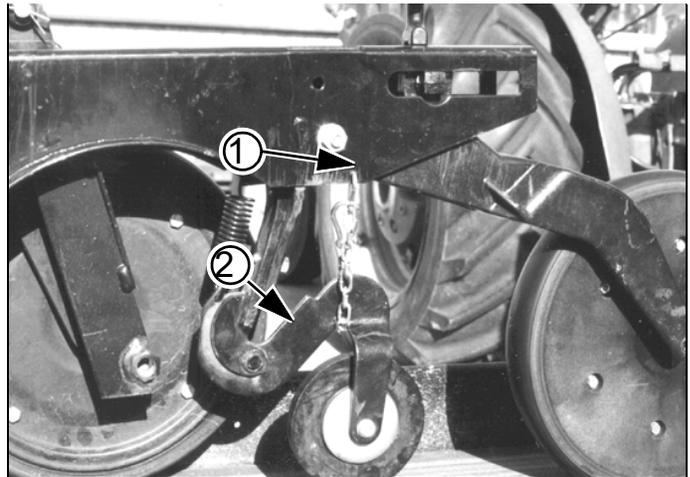


Figure 30  
Seed -Lok Lock Up

16586

## Spring Tine Harrow

### Harrow Tine Angle

The illustration shows a successful harrow position for no-till and minimum-till conditions. Because of different soil moisture, trash levels and trash types, you may need to reposition the tube frame or tines. Initially position the frame and tines as shown, then readjust as necessary.

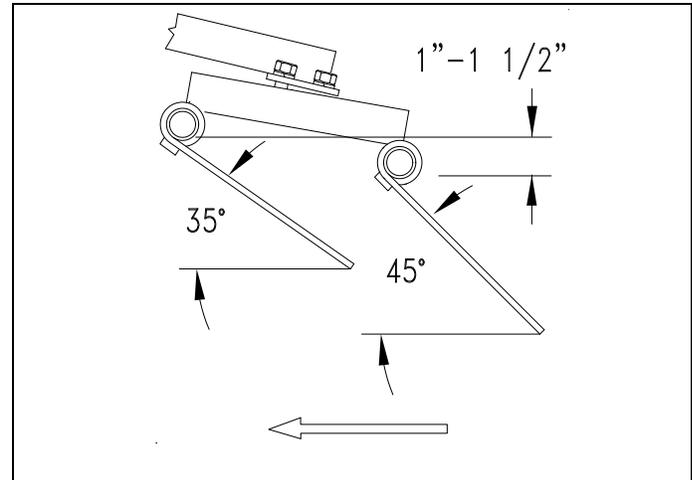


Figure 31  
Tine Angle

12437

### Harrow Frame and Tine Adjustment

To adjust harrow frame loosen the four hex nuts (1) on the U-bolts and rotate frame tube (2) as necessary.

To adjust tines, loosen the four 1/2-inch hex nuts (3) on the 1/2-inch U-bolts (4) on the support bar (5). Rotate tine tubes (6) so tines (7) are against stop bushings (8) and are angled back as necessary. Tighten hex nuts on U-bolts.

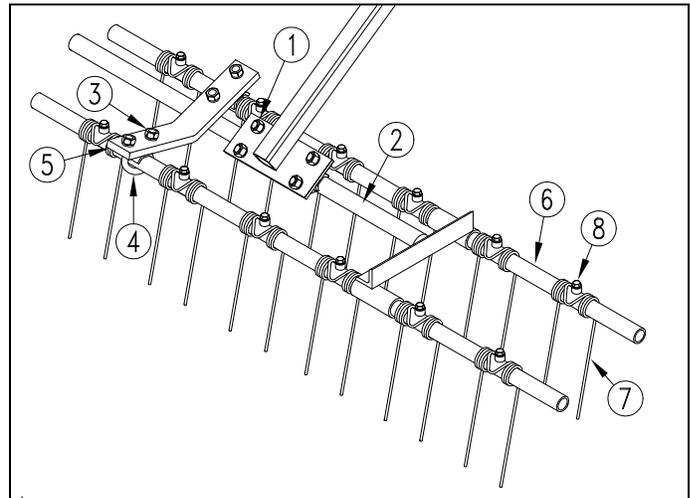


Figure 32  
Frame and Tine Adjustments

16297

### Harrow Chain

In clean, tilled, extremely loose soils, harrow chain may need to be shortened to lift harrow off the ground.

## Troubleshooting

Problem	Cause	Solution
<b>Uneven seed spacing or uneven stand</b>	Excessive field speed.	Reduce field speed.
	Feed cups plugging.	Clean out feed cups.
	Seed tubes plugging.	Clean out seed tubes.
	Opener disks not turning freely.	Refer to “Opener disks not turning freely” in this Troubleshooting section.
	Opener not penetrating low spots.	Adjust opener, page 35.
	Trash or mud build up on Seed -Lok.	Lock up Seed -Lok, page 41.
		Use faster drive type speed and close feed cup flutes to a more narrow position.
<b>Uneven seed depth</b>	Excessive field speed.	Reduce field speed.
	Planting conditions too wet.	Wait until drier weather.
	Drill not level.	Level drill, page 23.
	Incorrect hitch height.	Adjust hitch height, page 17.
	Seed -Lok building up with dirt.	Lock up Seed -Lok.
<b>Opener disks not turning freely</b>	Trash or mud build up on disk scraper.	Adjust scraper, page 36.
	Scraper adjusted too tight, restricting movement.	Adjust scraper, page 36.
	Failed disk bearings.	Replace disk bearings.
	Bent or twisted opener frame.	Replace opener frame.
	Planting conditions too wet.	Wait until drier weather.
	Seed -Lok is plugging opener.	Lock up Seed -Lok, page 41.
	Too much opener down pressure.	Readjust opener down pressure, page 35.
	Incorrect press wheel adjustment.	Readjust press wheel, page 35.
<b>Actual seeding rate different than desired</b>	Improper tire size or air pressure.	Check tire size and air pressure, page 59.
	Build up of seed treatment in feed cup.	Clean out seed treatment from feed cups.
	Incorrect rate adjustment.	Check gearbox setting and seed-rate handle setting Refer to the seed rate book.
<b>Excessive seed cracking</b>	Excessive field speed.	Reduce field speed.
	Feed cup flutes not open enough.	Open feed cups to a wider position.
	Feed cup door handle not open enough.	Open feed cup door handle to a lower position.
<b>Acrometer does not measure accurately.</b> <b>NOTE:</b> Acrometer is most accurate when seeding back and forth with markers with few headlands, curves and pointrows.	Incorrect tire size or air pressure.	Correct tire size or air pressure, page 59.
	Excessive overlap or gaps between passes.	Avoid overlap or gaps. Check marker adjustment, page 38.
	Soil conditions.	Loose soil and slippage will cause variations in acres registered.
	Acrometer not for your width of drill.	Refer to parts manual.
	Actual field size different.	Verify field size.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
<b>Press wheels not compacting soil as desired</b>	Too wet or cloddy.	Wait until drier weather or rework ground.
	Incorrect hitch height.	Adjust hitch height, page 17.
	Press wheel depth does not match coulter depth.	Adjust press wheel depth, page 35.
	Not enough down pressure on disk openers.	Increase down pressure on openers, page 35.
<b>Grain box not emptying evenly</b>	Some models do not have same number of feed cups between each divider of bulkhead.	
<b>Press wheel or openers plugging</b>	Planting conditions too wet.	Wait until drier weather.
	Too much down pressure on openers.	Reduce down pressure on openers, page 35.
	Backed up with drill in the ground.	Clean out and check for damage.
	Failed disk bearings.	Replace disk bearings.
	Scraper worn or damaged.	Replace scraper.
<b>Raising and lowered drill is rough or uneven</b>	Wheel arm pivot casting needs lubricating.	Lubricate wheel arm pivot castings.
	Leaking hydraulic fittings.	Check all hose fittings and connections for oil leaks. Refer to Avoid High Pressure Fluids on page 2 for safety message.
	Rephasing cylinders not bled properly.	Refer to page 22 for information.
<b>Feed cup sprockets locked up or twisted feed cup drive shaft</b>	Foreign matter lodged in one or more feed cup sprockets.	Clean out feed cup sprockets. Use clean seed.
	Dried liquid insecticide inside feed cups.	Remove build up by disassembling each feed cup and scraping foreign substance from turn surfaces.
<b>Coulters not going deep enough</b>	Not enough weight.	Refer to page 33 for correct weight.
<b>Coulters and drill going too deep</b>	Too much weight.	Refer to page 33 for correct weight.
	Incorrect depth control setting.	Reset depth control, page 32.
	Incorrect press wheel adjustment.	Set press wheels to a shallower depth.
<b>Coulters and openers plugging in no-till conditions</b>		Drill at a slight angle to rows.
<b>Small seeds box not emptying evenly</b>	Adjustable divider not set evenly.	Move adjustable divider to create more volume in areas that run out first.
<b>Marker functioning improperly</b>	Hose fittings or connections not tight.	Check all hose fittings and connections for oil leaks. Refer to Avoid High Pressure Fluids on page 2 for safety message.
	Low tractor hydraulic oil level.	Add hydraulic oil.
	Missing or loose bolts or fasteners.	Check and tighten all bolts and fasteners.
	Needle valve plugged.	Open needle valve, cycle markers slowly and reset needle valve, refer to page 39 or page 39.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
<b>Marker disk does not mark</b>	Marker folding linkage does not have enough slack to allow marker disk to drop into field depressions.	Maximum down float should be limited by the slot at rod end of marker cylinder. Make sure marker cylinder is fully extended.
		Reverse marker disk to pull or throw dirt.
<b>Chain</b>	Debris, retainer clip	Be sure retainer clip is facing opposite way of chain travel.



# Maintenance and Lubrication

## Maintenance

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

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

### **WARNING**

#### **Crushing**

#### **Hazard:**

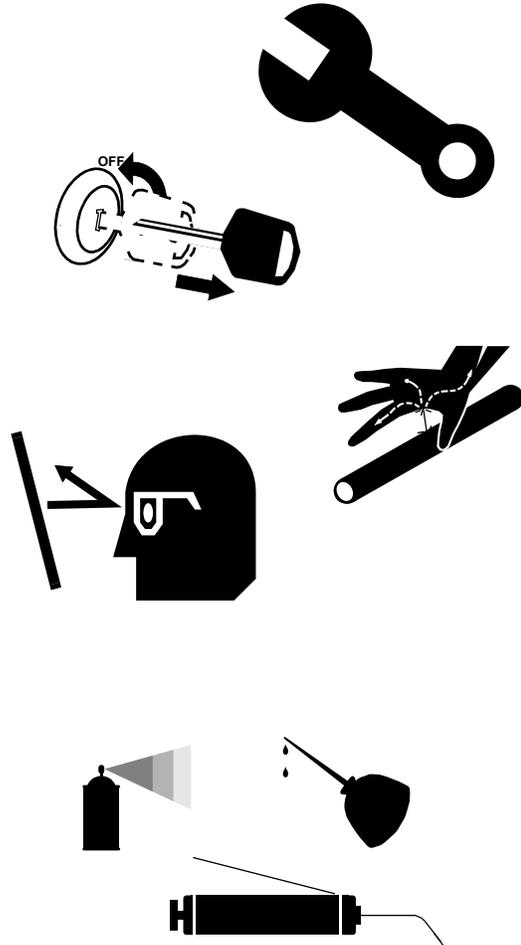
You may be severely injured or killed by being crushed under the falling implement. Always have transport locks in place and frame sufficiently blocked up when working on implement.

### **WARNING**

#### **High Pressure Fluid Hazard:**

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

1. After using the drill for several hours, check all bolts to be sure they are tight.
2. Lubricate areas listed under “Lubrication”, page 48.
3. Adjust idlers to remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
4. Inflate tires as specified. Refer to “**Tire Information**” on page 60.
5. Clean out build up of seed treatment in feed cups.
6. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. See “**Safety Decals**” on page 6.



## Folding Marker Breakaway

The marker arm has a pivot at the hinge which is connected rigid with a 5/16 inch bolt (1). The shear bolt will break if excessive force is put on marker during operation allowing marker arm to swing away rather than cause damage to the marker.

### NOTE:

The shear bolt is a 5/16 x 1 1/2 inch grade 5 bolt and is identified by three markings on the head. Refer to the Torque Values Chart for an illustration of the markings. The shear bolt must be replaced by an equivalent grade 5 bolt to prevent marker damage.

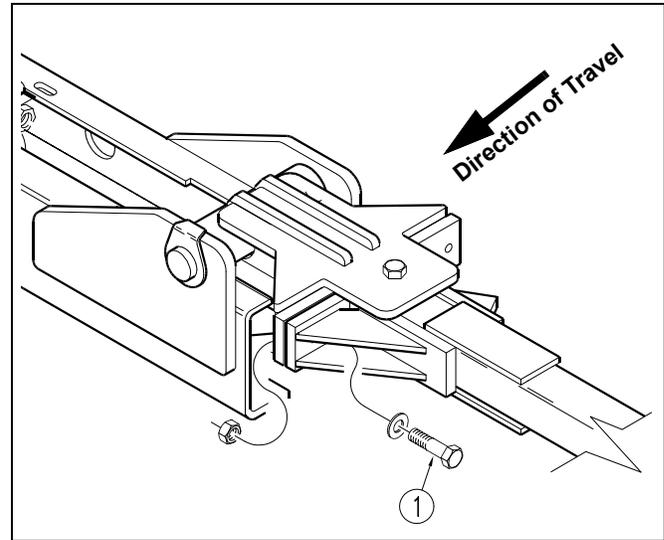


Figure 33  
Folding Marker Breakaway

14047.espi

## Storage

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

1. Unload seed box.
2. Thoroughly clean seed and seed-treatment residue from boxes and feed cups.
3. Remove any dirt and debris that can hold moisture and cause corrosion.
4. Lubricate and adjust all roller chains.
5. Take special care to oil feed cup drive sprocket in its square bore.
6. Lubricate areas noted under "**Lubrication**" on page 48.
7. Inspect drill for worn or damaged parts. Make repairs and service during the off season.
8. Use spray paint to cover scratches, chips and worn areas on the drill to protect the metal.
9. Disconnect seed hoses from openers. Permanent elongation and premature cracking of hoses may occur if stored connected.
10. Cover with a tarp if stored outside.

# Lubrication

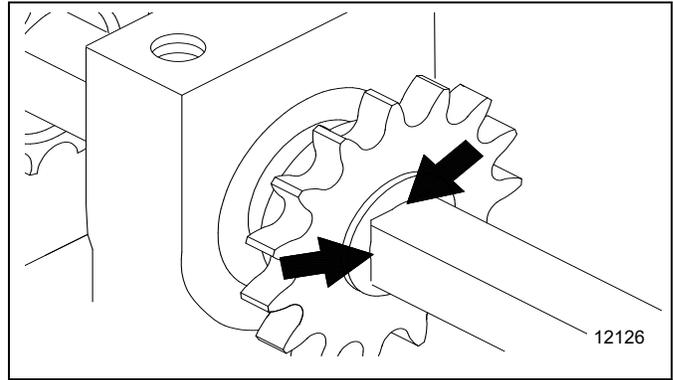
 Multi-purpose spray lubricant	 Multi-purpose grease lubricant	 Multi-purpose oil lubricant	 Inspection	 50 Intervals (operating hours) at which service is required
---	--	---	---	---

## Feed Cup Drive Sprocket Bore

	 10
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Type of Lubrication: Oil

Quantity = Coat sprocket bore thoroughly; move seed-rate handle back and forth to get oil into sprocket bore.

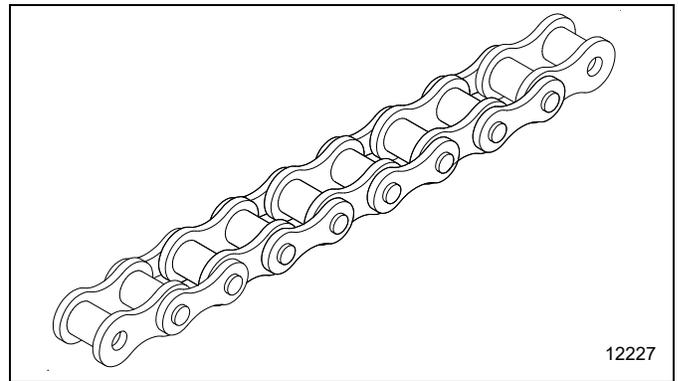


## Drive Chains

	 As Required
---	---

Type of Lubrication: Chain Lube

Quantity = Coat thoroughly

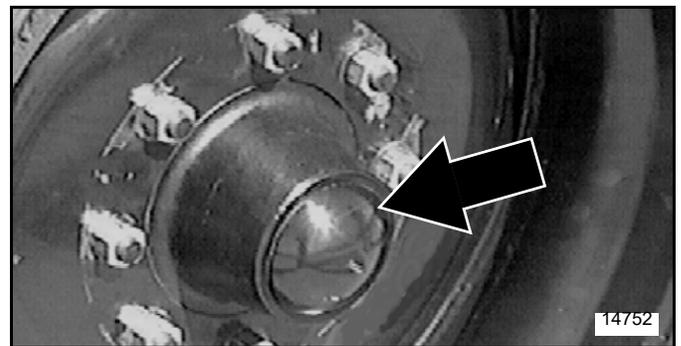


## Wheel Bearing

	 Seasonally
---	--

Type of Lubrication: Grease

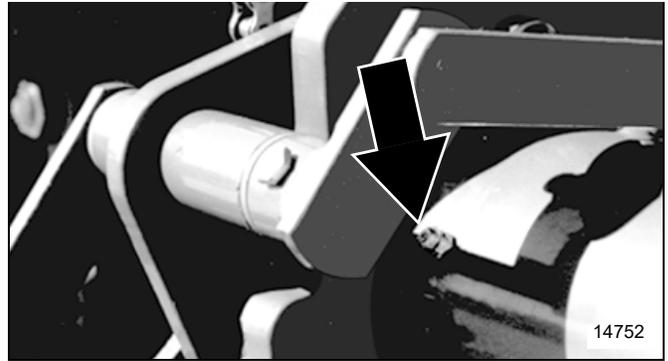
Quantity = Pack



**Gauge Wheel Arms**

	 <span style="font-size: 24pt; vertical-align: middle;">15</span>
---	--

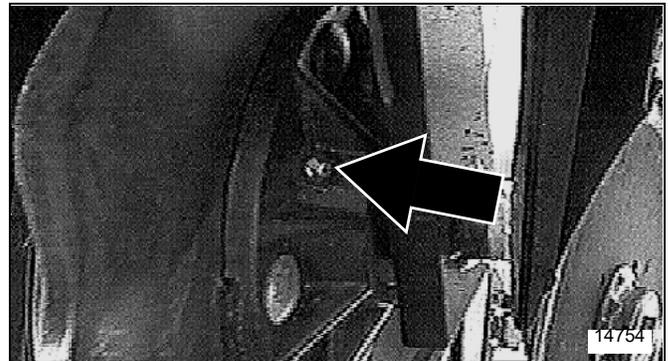
Type of Lubrication: Grease  
 Quantity = Until grease emerges



**Coulter Hub Bearings**

	 <span style="font-size: 24pt; vertical-align: middle;">Seasonally</span>
---	--

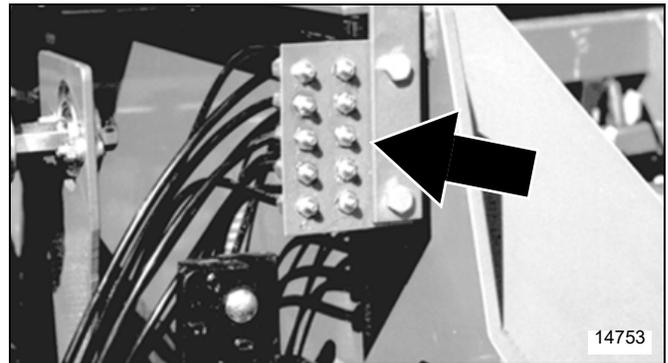
Type of Lubrication: Grease  
 Quantity = Until resistance is felt



**Grease Banks**

	 <span style="font-size: 24pt; vertical-align: middle;">8</span>
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Type of Lubrication: Grease  
 Quantity = Until grease emerges

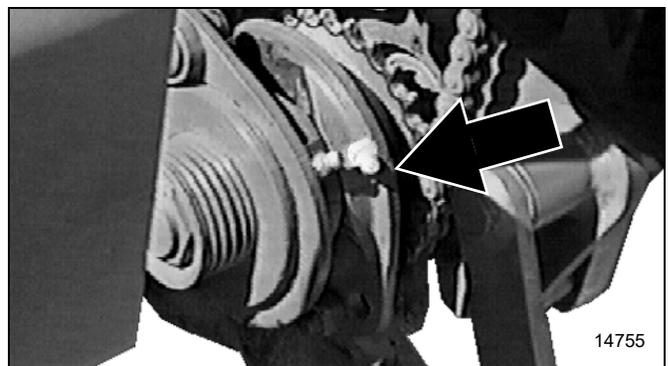


**Clutches**

	 <span style="font-size: 24pt; vertical-align: middle;">8</span>
---	---

Two grease fittings on each.  
 Smear grease on clutch engagement teeth.

Type of Lubrication: Grease  
 Quantity = Until grease emerges



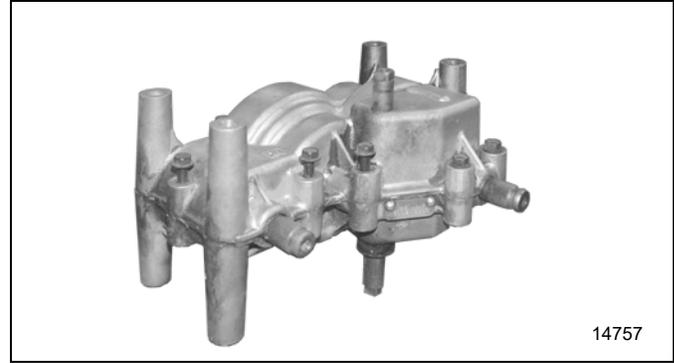
**Gearbox**

The gearbox is lubricated and sealed at the factory. Under normal conditions, it does not require maintenance or lubrication.

If the gearbox has been opened for repair, repack all gears and around shaft bearings using at least 7 oz. of gear lube, Great Plains Part No. 788067.

Keep moisture and dirt out of gearbox. Inspect (replace if needed) the rubber seals on gearbox drive and shifter shafts.

Spread a small skin coat of anaerobic sealant (Loctite 525 or equivalent) to gear case mating surfaces before bolting them back together.



14757

**NOTICE**

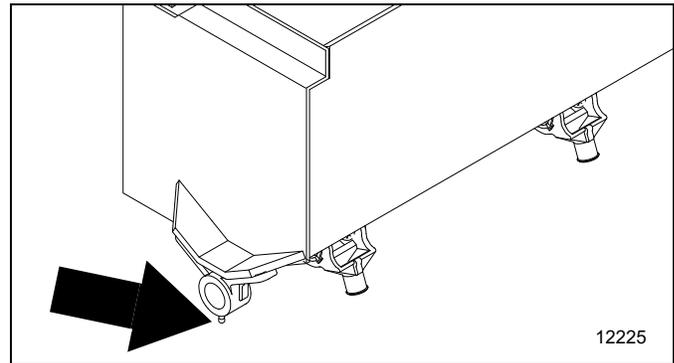
*Use sparingly. Excess sealant may squeeze off the intended surface and lock bearings or gears.*

**Small Seeds Drive Sprocket Hanger Bearing**

--	--

Type of Lubrication: Grease

Quantity = Until grease emerges



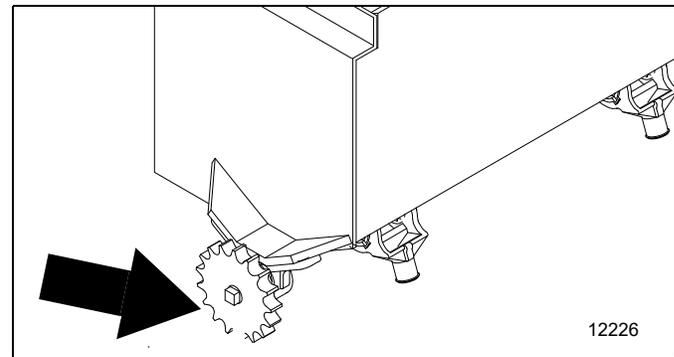
12225

**Small Seeds Feed Cup Drive Sprocket**

--	--

Type of Lubrication: Oil

Quantity = Coat sprocket bore thoroughly



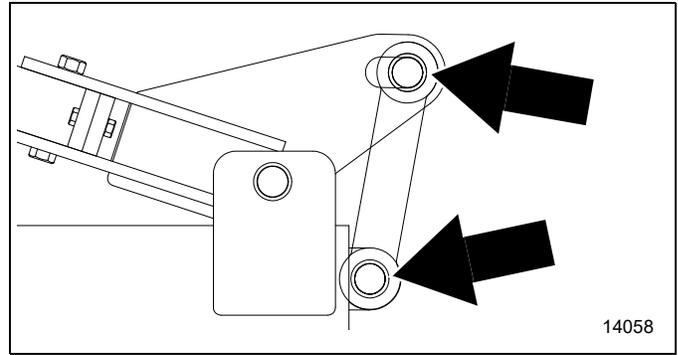
12226

**Marker Link Arm**

	 <span style="font-size: 24pt; font-weight: bold;">10</span>
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Type of Lubrication: Multi-purpose oil

Quantity = Coat thoroughly

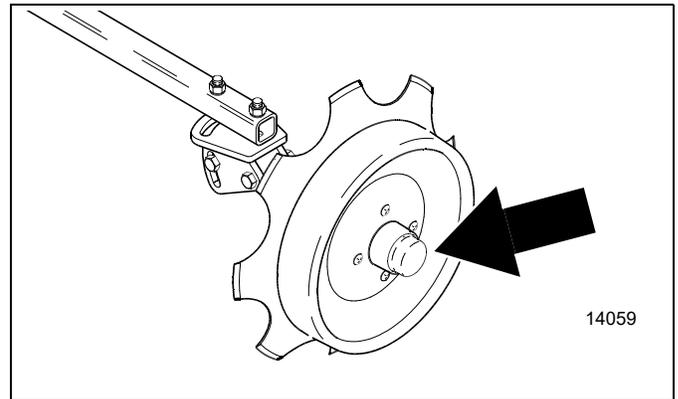


**Marker Disk Bearings**

	 <span style="font-size: 24pt; font-weight: bold;">Seasonally</span>
---	---

Type of Lubrication: Grease

Quantity = Repack

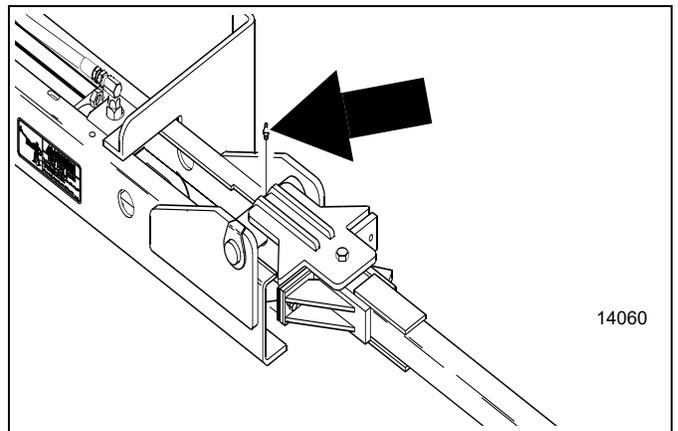


**Marker Hinge Points**

	 <span style="font-size: 24pt; font-weight: bold;">10</span>
---	---

Type of Lubrication: Grease

Quantity = Until grease emerges



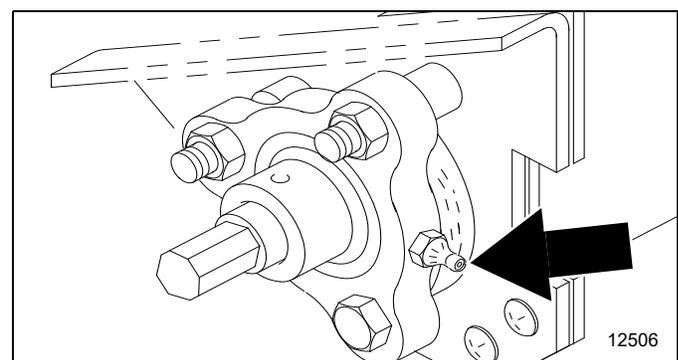
**Fertilizer Tray Bearings**

	 <span style="font-size: 24pt; font-weight: bold;">10</span>
---	---

Both ends of shaft

Type of Lubrication: Grease

Quantity = Until grease emerges

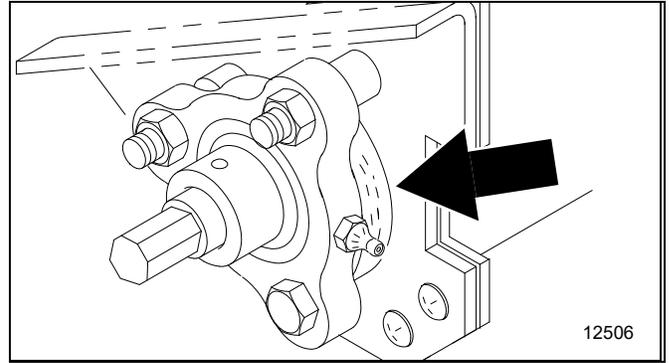


### Fertilizer Felt Barrier Washers

		10
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Next to each fertilizer-tray bearing

Type of Lubrication: Oil



## Seed Lubricants

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

### Ezee Glide Plus Talc+Graphite Mix

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

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

Recommended usage:

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

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

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

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

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

### **CAUTION**

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



29248



36369

### Bayer Seed Fluency Agent

821-074C Fluency Powder, case quantity

821-075C Fluency Powder, single 4.4 pound bucket

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

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

### **CAUTION**

**Dust and Explosion Hazard:**  
*Avoid exposure to dust when mixing this powder into seed. Avoid creating dust in any confined space with ignition sources present, as specific concentrations can be explosive. Consult the instruction booklet and SDS<sup>a</sup> for further cautions.*

a. SDS: Safety Data Sheet.



# Options and Accessories

## Seed Box Agitator

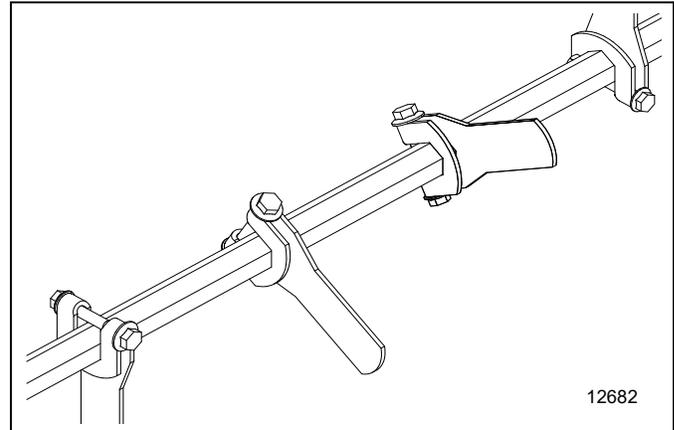
The seed box agitator is designed to stir the seed directly above the metering cups. It is intended to cut down on the “bridging” of light fluffy seeds, and help to separate individual soybeans that become sticky from inoculate.

**NOTE:**

The seed box agitator will not guarantee consistent seeding of hard to meter seeds such as Brome Grass or “bin run” seed that contains crop residue.

For lubrication points, see “**Lubrication**” on page 48.

To order the seed box agitator, contact your Great Plains dealer.



12682

	Agitator Packages Row Spacing (inches)				Part Number
	7	7.5	8	10	
Without small seeds or fertilizer	2				118-604A
		2			118-605A
			2		118-606A
				2	118-607A
With small seeds or fertilizer	2				118-608A
		2			118-609A
			2		118-610A
				2	118-611A

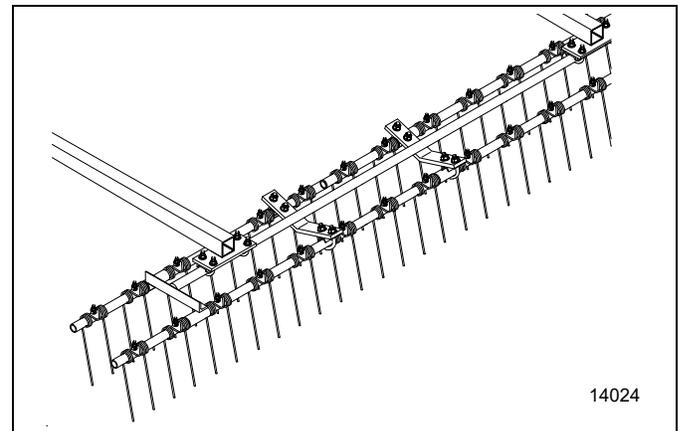
## Harrow Attachment

The coil-tine harrow finishes no-till surfaces by leveling and distributing residue for enhanced seed germination.

For information on how to adjust the harrow, see “**Harrow Frame and Tine Adjustment**” on page 42.

To order the harrow attachment, contact your Great Plains dealer.

Harrow Packages	Part Number
Harrow Attachment	116-162A



14024

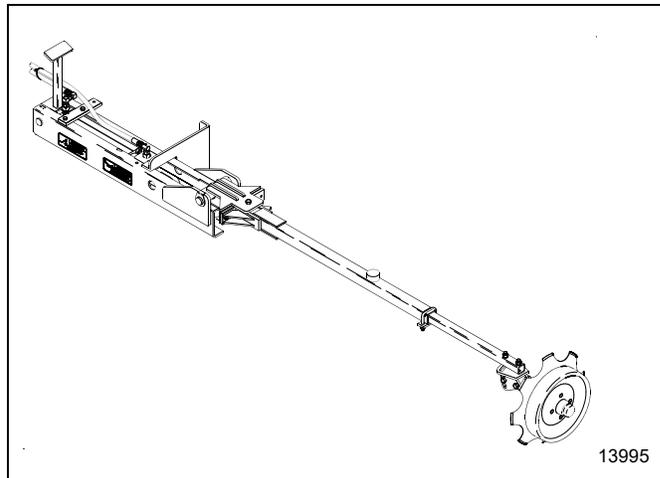
## Folding Marker

The folding marker is a center ground marking disk unit which can be mounted on either the right or left side or both sides of the drill. When mounted on both ends, the controls can be on separate hydraulic circuits or, by means of a sequence valve.

For information on how to adjust the marker, see “**Bleeding Marker Hydraulics**” on page 38. For lubrication points, see “**Lubrication**” on page 48.

To order the folding marker, contact your Great Plains dealer.

Marker Packages	Part Number
Dual Markers with sequence valve	113-532A
Single Marker - Left Hand	113-540A
Single Marker - Right Hand	113-546A

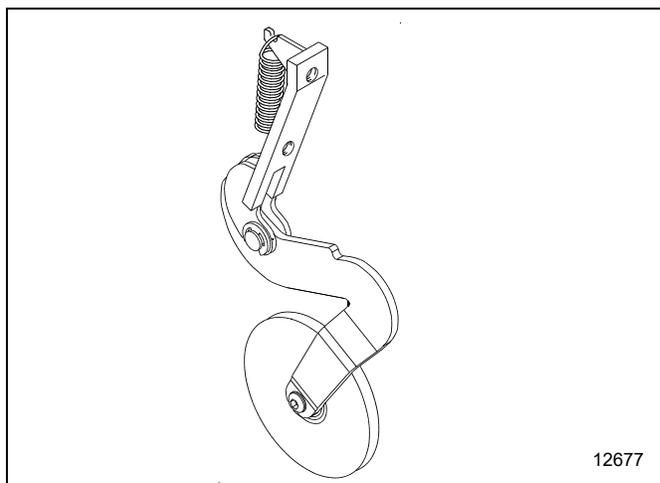


## Seed-Lok® Firming Wheels

The spring-loaded Seed-Lok firming wheel presses seed directly into the bottom of the seed bed. The Seed-Lok option provides more even emergence since seeds are planted and firmed at the same depth.

To order the Seed-Lok firming wheels, contact your Great Plains dealer.

Seed -Lok Packages	Part Number
Seed -Lok Assembly	122-193K



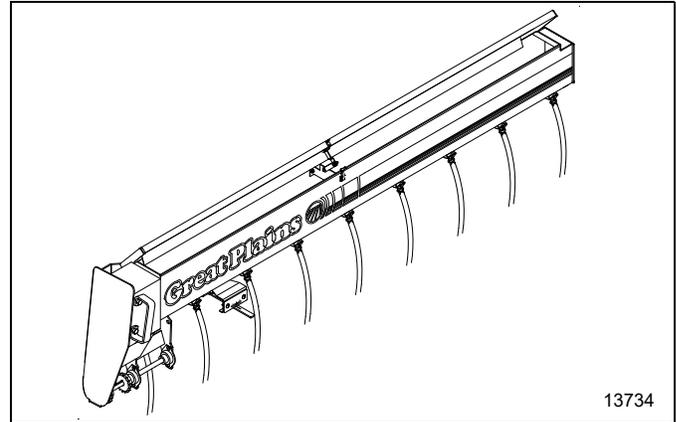
## Small Seeds Attachment

The small seeds attachment is designed to meter various small seeds. It is driven independently of the main seed box. The small seeds box is 0.24 bushel per foot (27.7 liters/meter) with a total capacity of 2.62 bushels (92.3 liters).

For seed rates and adjustments, see “**Small Seed Attachment**” in the seed rate book.

For lubrication points, see “**Lubrication**” on page 48.

To order the small seeds attachment, contact your Great Plains dealer.



Row Spacing for Small Seeds Packages				
Spacing in Inches	7	7.5	8	10
Main Seed Box Only	133-421A	133-422A	133-423A	133-424A
With Fertilizer	133-429A	133-430A	133-431A	133-432A
With Native Grass	133-425A	133-426A	133-427A	133-428A

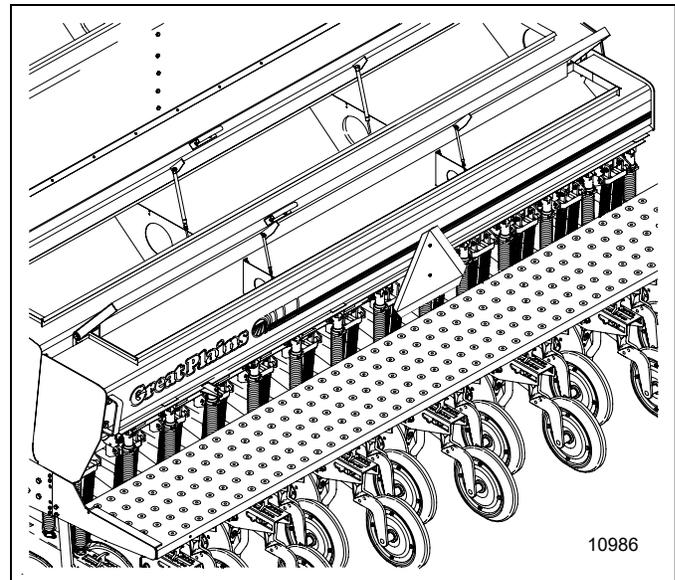
## Fertilizer Attachment

The fertilizer attachment allows you to plant seed and apply fertilizer in the same field pass. The fertilizer box mounts on the rear of the main drill box. A fertilizer drive meters dry, granular fertilizer.

For fertilizer meter rate calibrating and charts, refer to the seed rate book. For lubrication points, see “**Lubrication**” on page 48.

To order the fertilizer attachment, contact your Great Plains dealer.

**NOTE:**  
The drill cannot be equipped with both a native grass attachment and a fertilizer attachment.



Row Spacing for Fertilizer Packages				
Spacing in Inches	7	7.5	8	10
Without Small Seeds	141-010A	141-012A	141-015A	141-017A
With Small Seeds	141-019A	141-021A	141-023A	141-025A

## Native Grass Series II Attachment

The native grass attachment is designed to seed fluffy, hard-to-plant grasses.

For seed rates and adjustments, refer to “Native Grass Attachment” in the seed rate book.

To order the native grass attachment, contact your Great Plains dealer.

**NOTE:**  
The drill cannot be equipped with both a native grass attachment and a fertilizer attachment.



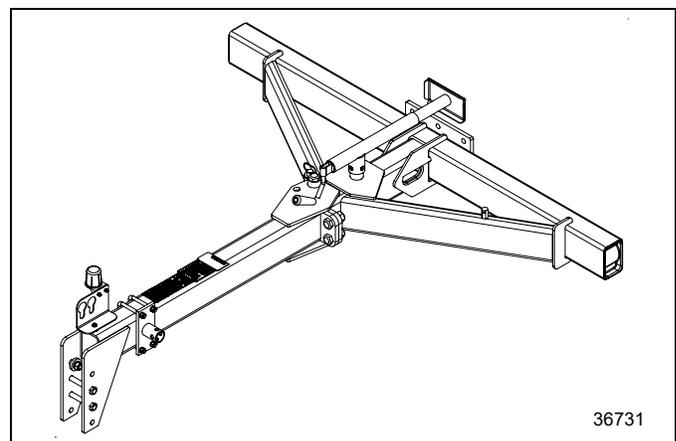
Row Spacing for Native Grass Packages				
Spacing in Inches	7	7.5	8	10
Without Small Seeds	202-687A	202-688A	202-689A	202-690A
With Small Seeds	202-691A	202-692A	202-693A	202-694A

## Folding Tongue

The folding tongue is designed to allow narrower widths for trailer towing of drill and for space saving during storage.

To order the folding tongue, contact your Great Plains dealer.

Folding Tongue Packages	Part Number
1206 Folding Tongue	151-194A

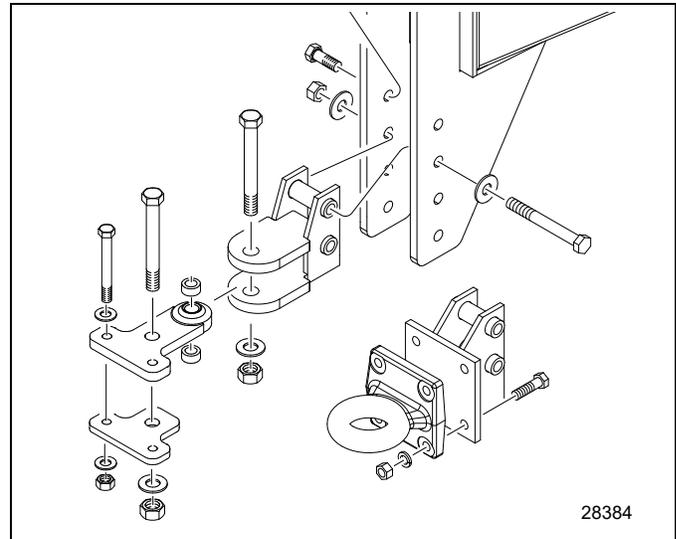


## Hitches

One or two hitch options may be specified at initial drill order. Hitch kits may also be ordered later for field conversion. If only one option is ordered, it is factory-installed.

Description	Option	Part Number
Pintle Hitch Option	(81)	177-534A
Clevis Hitch w/Ball Swivel	(82)	177-537A

See “**Adjust Hitch Height**” on page 17.



## Seed Lubricant

Description	Order Number
Ezee Glide Plus Talc + Graphite Mix (5 gallon / 18.9 liter container)	821-069C
Fluency Powder, case quantity	821-074C
Fluency Powder, single 4.4 pound bucket	821-075C

For use, see “**Seed Lubricants**” on page 53.

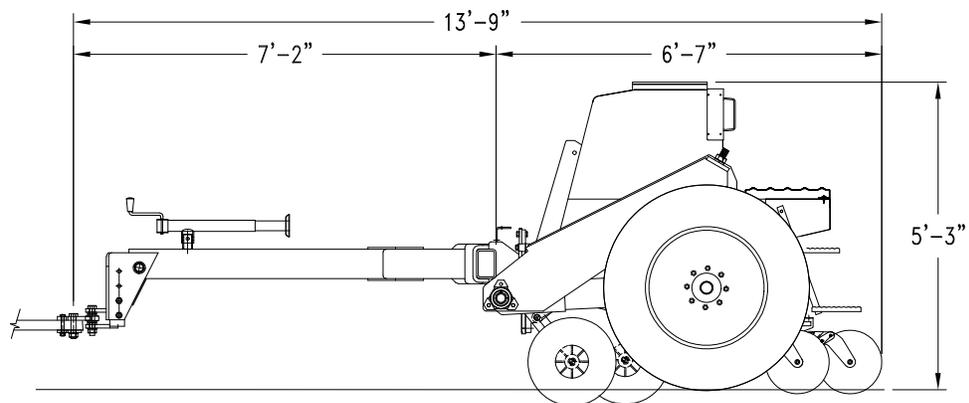


# Appendix A - Reference Information

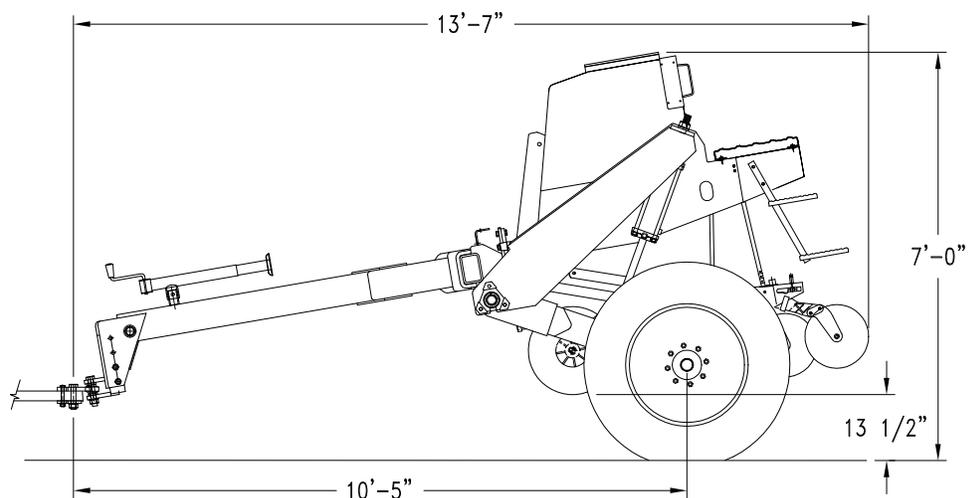
## Specifications and Capacities

Row Spacing, Inches	7	7 1/2	8	10
Rows Per Drill	20	19	18	14
Weight, Pounds	6100	5965	5830	5290
Transport Width	15 feet 7 inches			
Seedbox Capacity	2.4 bushel per foot			
Tire Size	295/75/R x 22.5"			
Tire Pressure	65 psi (4.5 bar)			
Tractor Requirements	75 horsepower minimum			

**NOTE:** Refer to "Tire Warranty Information" on page 55.



**Planting Position**



**Transport Position**

13938

**NOTE:** Dimensions and weights are for a drill with main seed box only.

## 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

## Tire Information

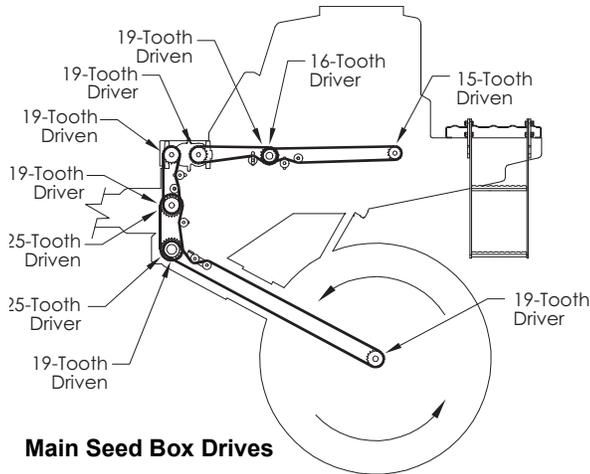
Tire Inflation Chart		
Tire Size	Inflation	Torque
295/75/R 22.5 Rib Implement	65 psi (448 kPa)	240 lb ft (325 Nm)

Tire Warranty Information	
All tires are warranted by the original manufacturer of the tire. Tire warranty information is found in the brochures included with your Operator's and Parts Manuals or online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.	
<b>Manufacturer</b>	<b>Web site</b>
Firestone	<a href="http://www.firestoneag.com">www.firestoneag.com</a>
Gleason	<a href="http://www.gleasonwheel.com">www.gleasonwheel.com</a>
Titan	<a href="http://www.titan-intl.com">www.titan-intl.com</a>
Galaxy	<a href="http://www.atgtire.com">www.atgtire.com</a>
BKT	<a href="http://www.bkt-tire.com">www.bkt-tire.com</a>

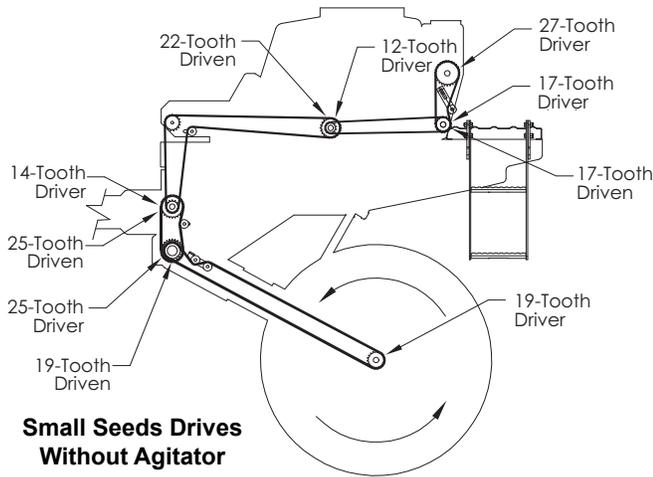
# Chain Routing

## Seed Chain Routing

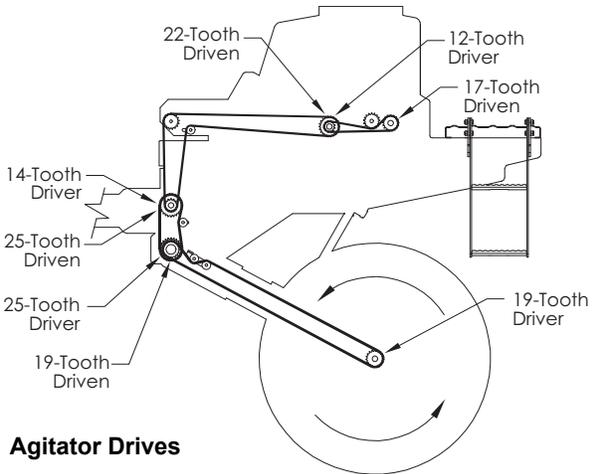
### Transport Position



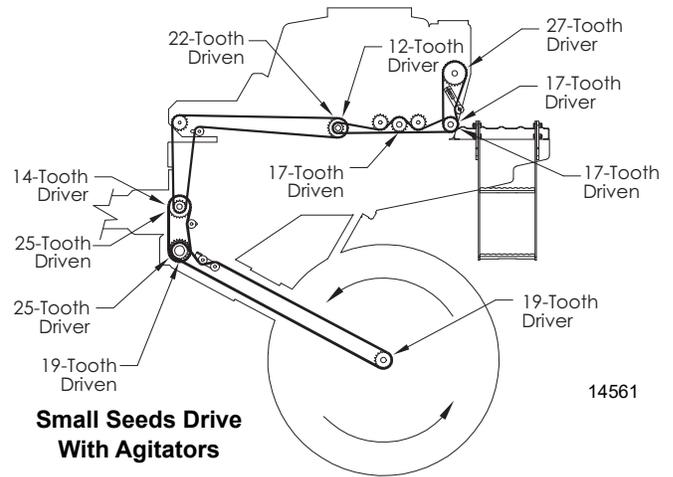
### Main Seed Box Drives



### Small Seeds Drives Without Agitator



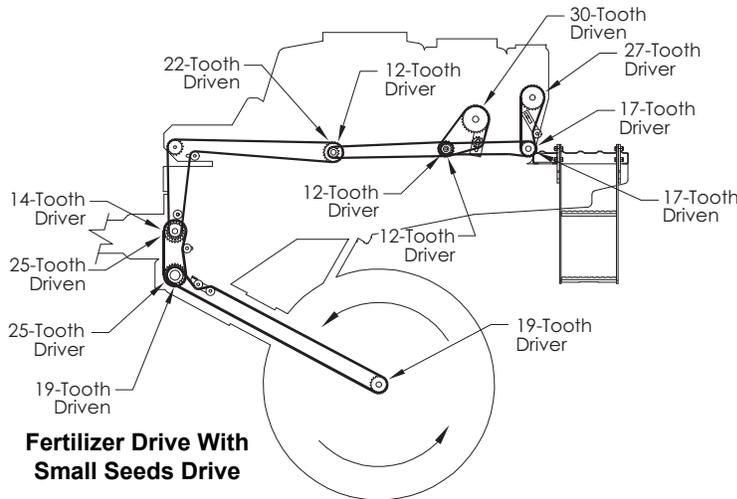
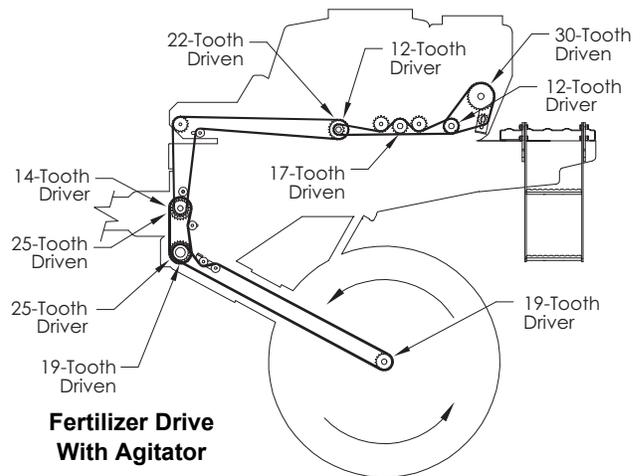
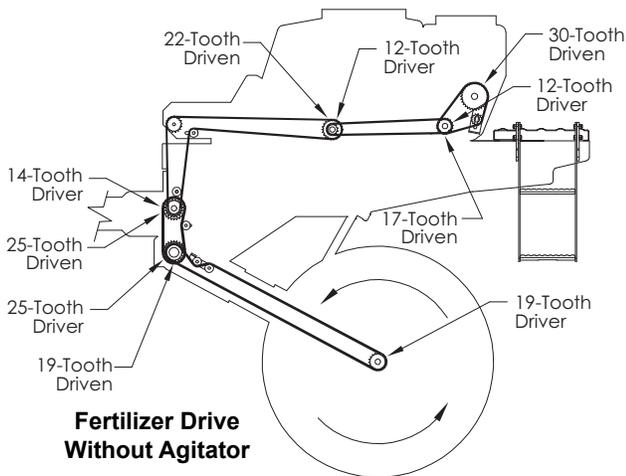
### Agitator Drives



### Small Seeds Drive With Agitators

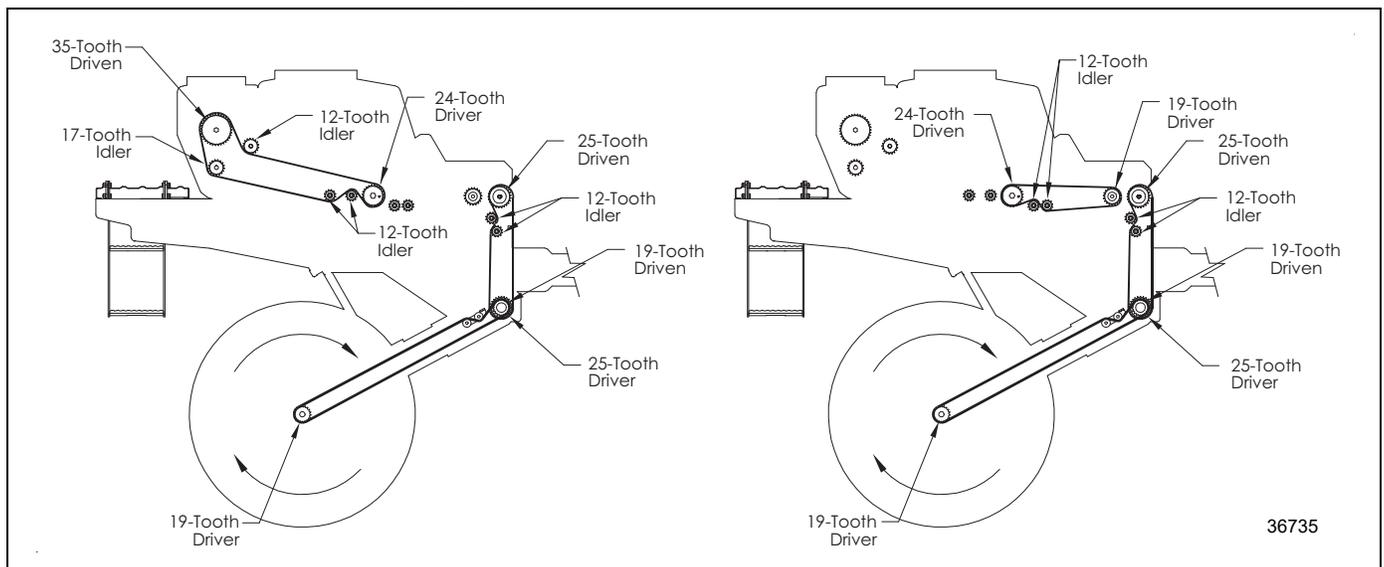
14561

### Dry Fertilizer Meter Chains (Option)



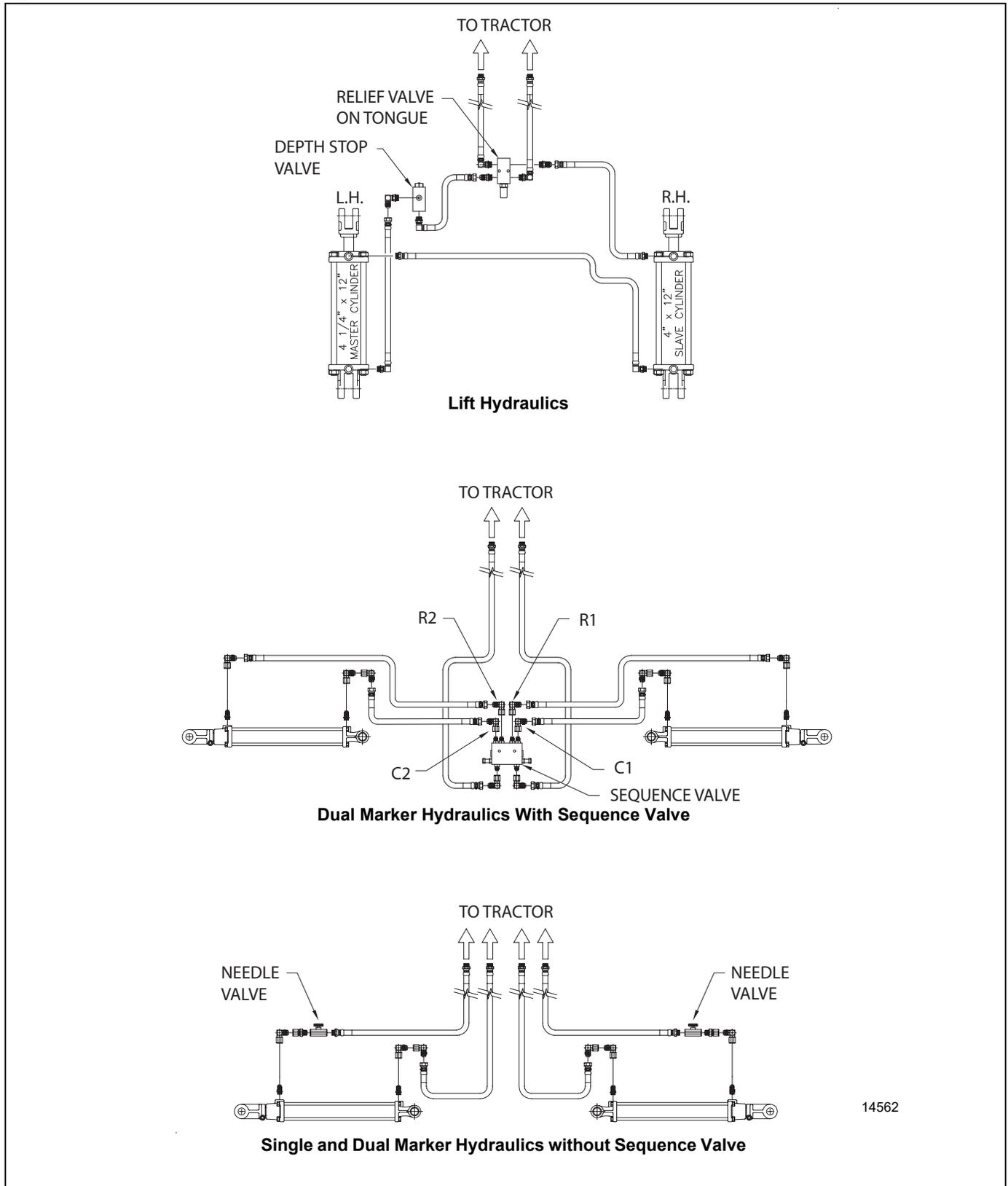
14561

### Native Grass Meter Chains (Option)



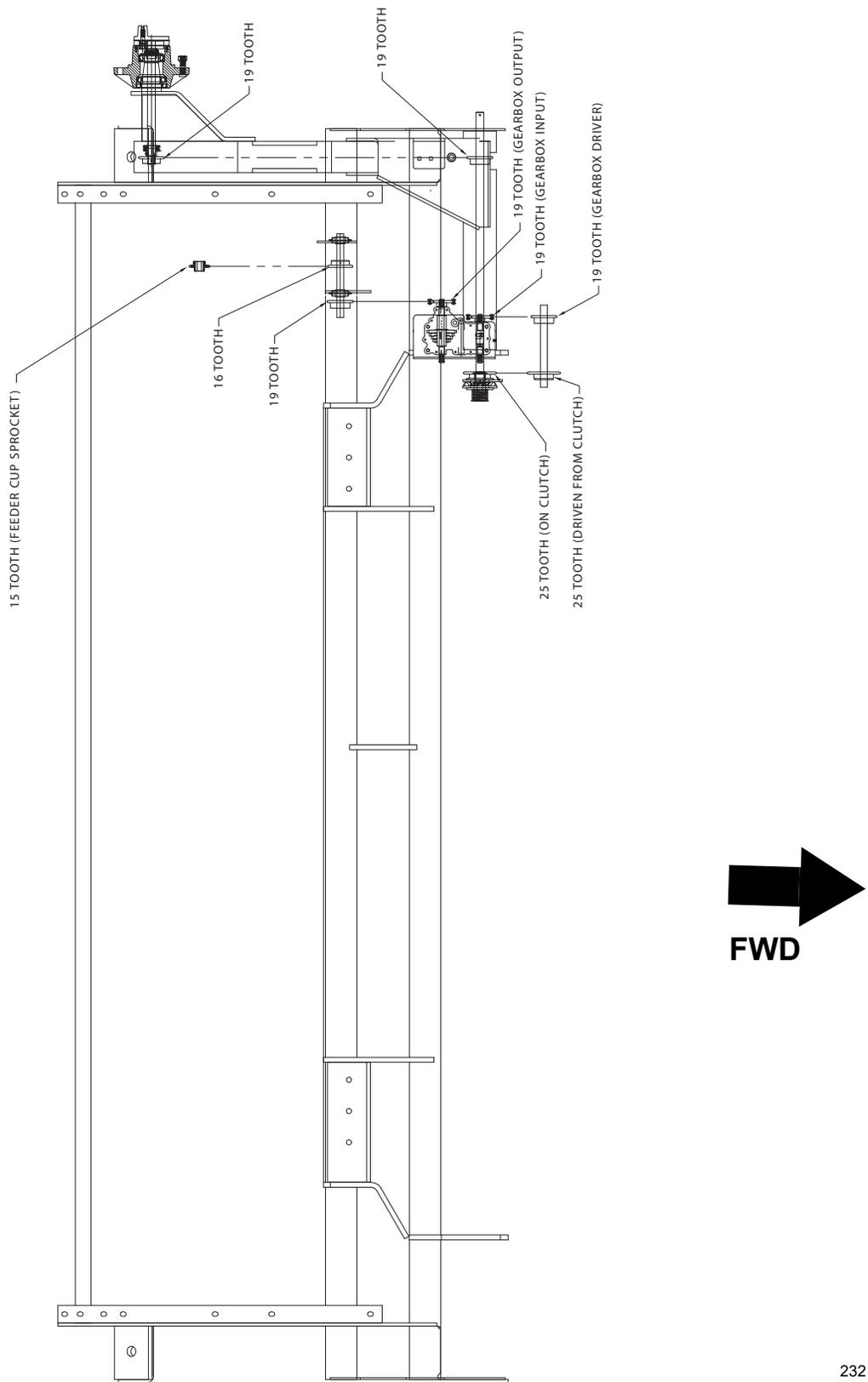
36735

### Hydraulic Schematics



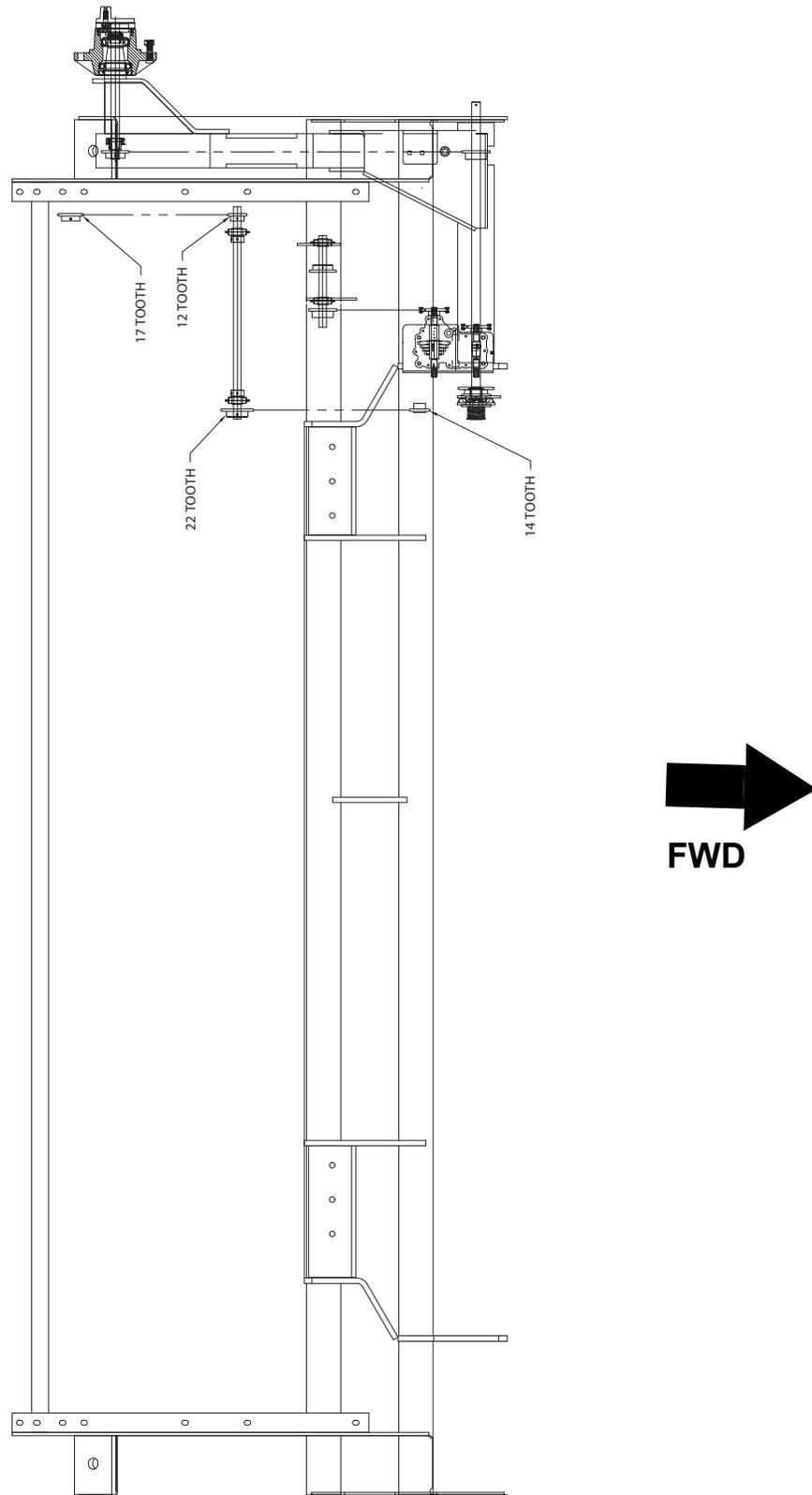
14562

### Seed Box Sprocket Configuration



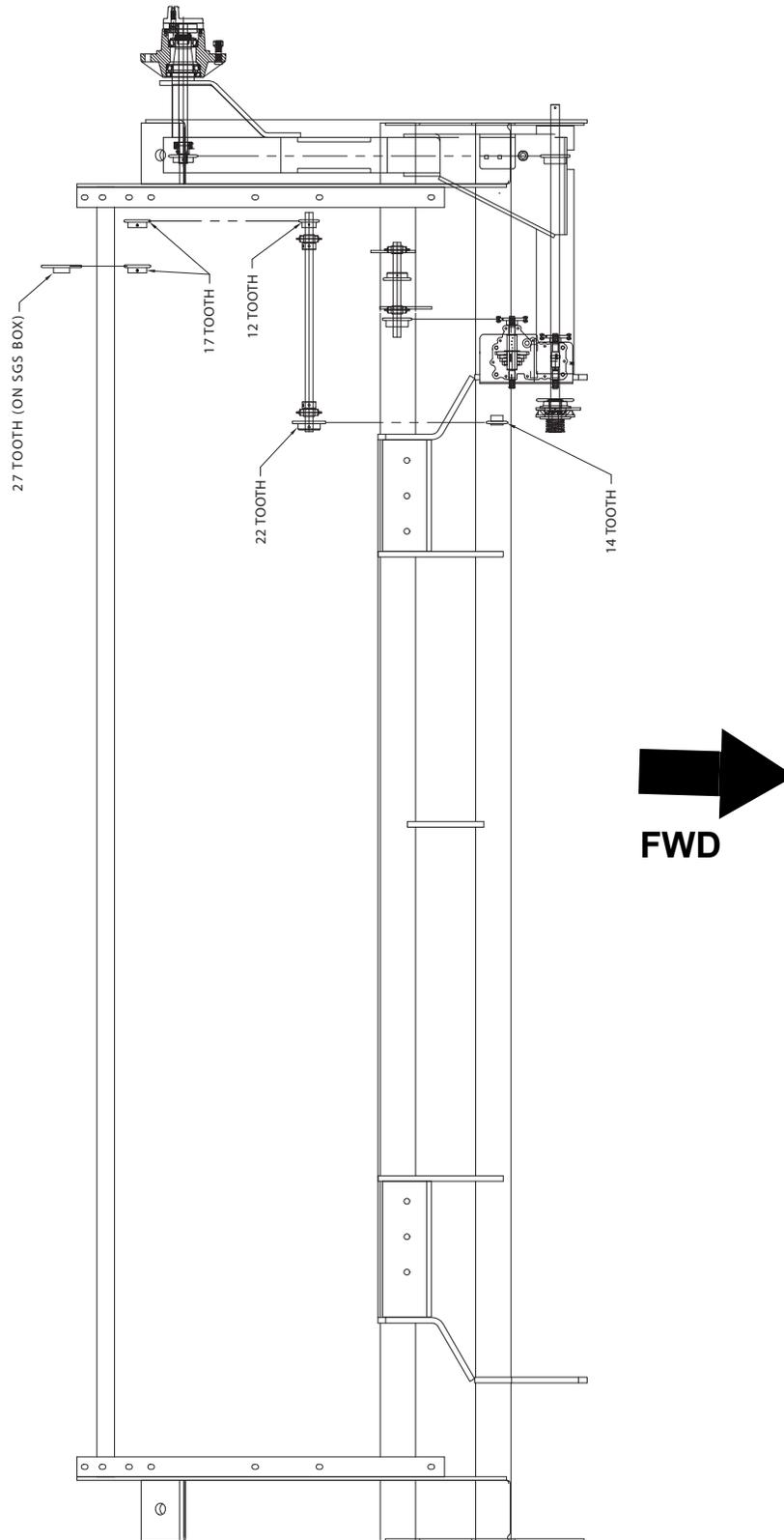
23214

### Seed Box Agitation Sprocket Configuration



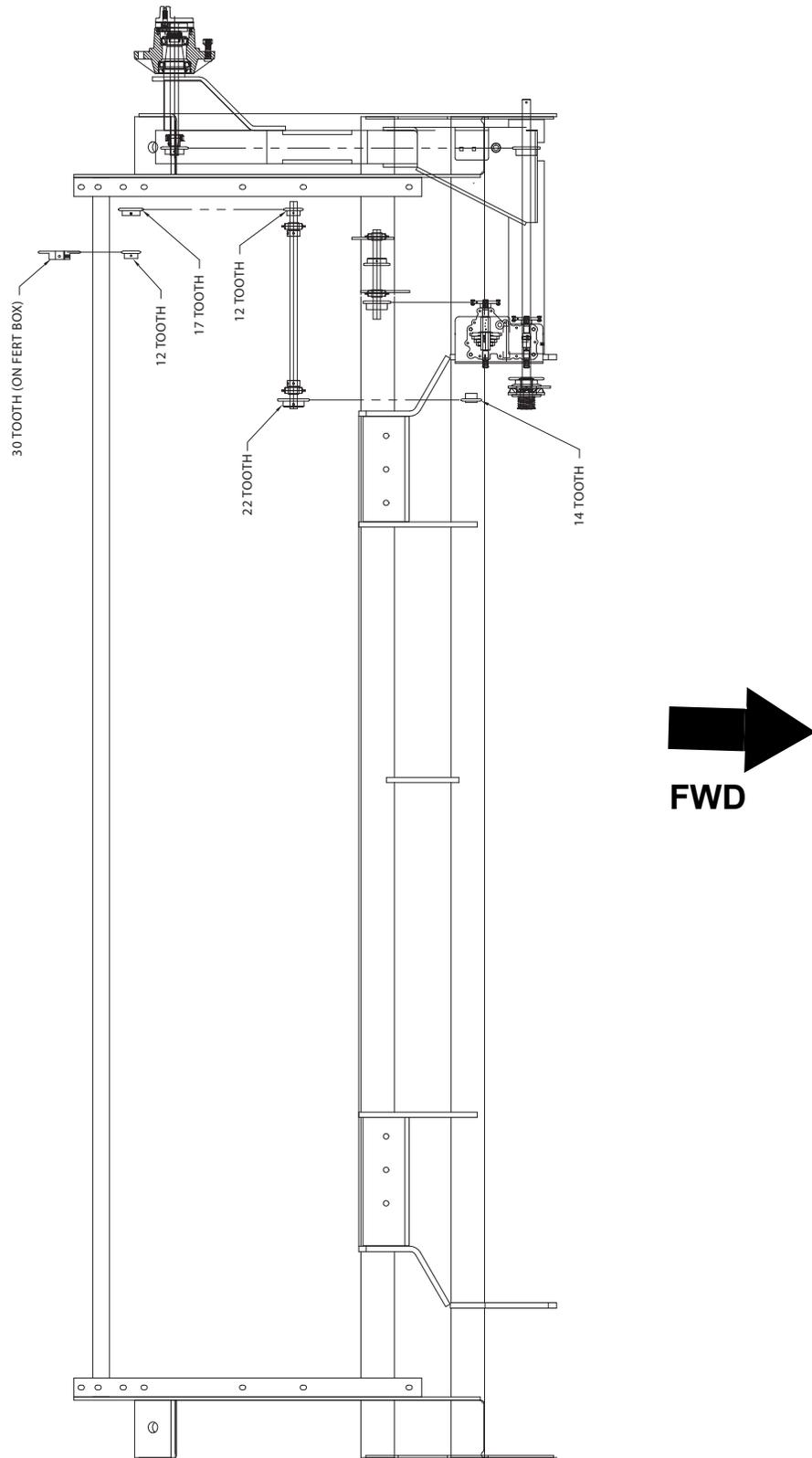
23215

### SGS Sprocket Configuration



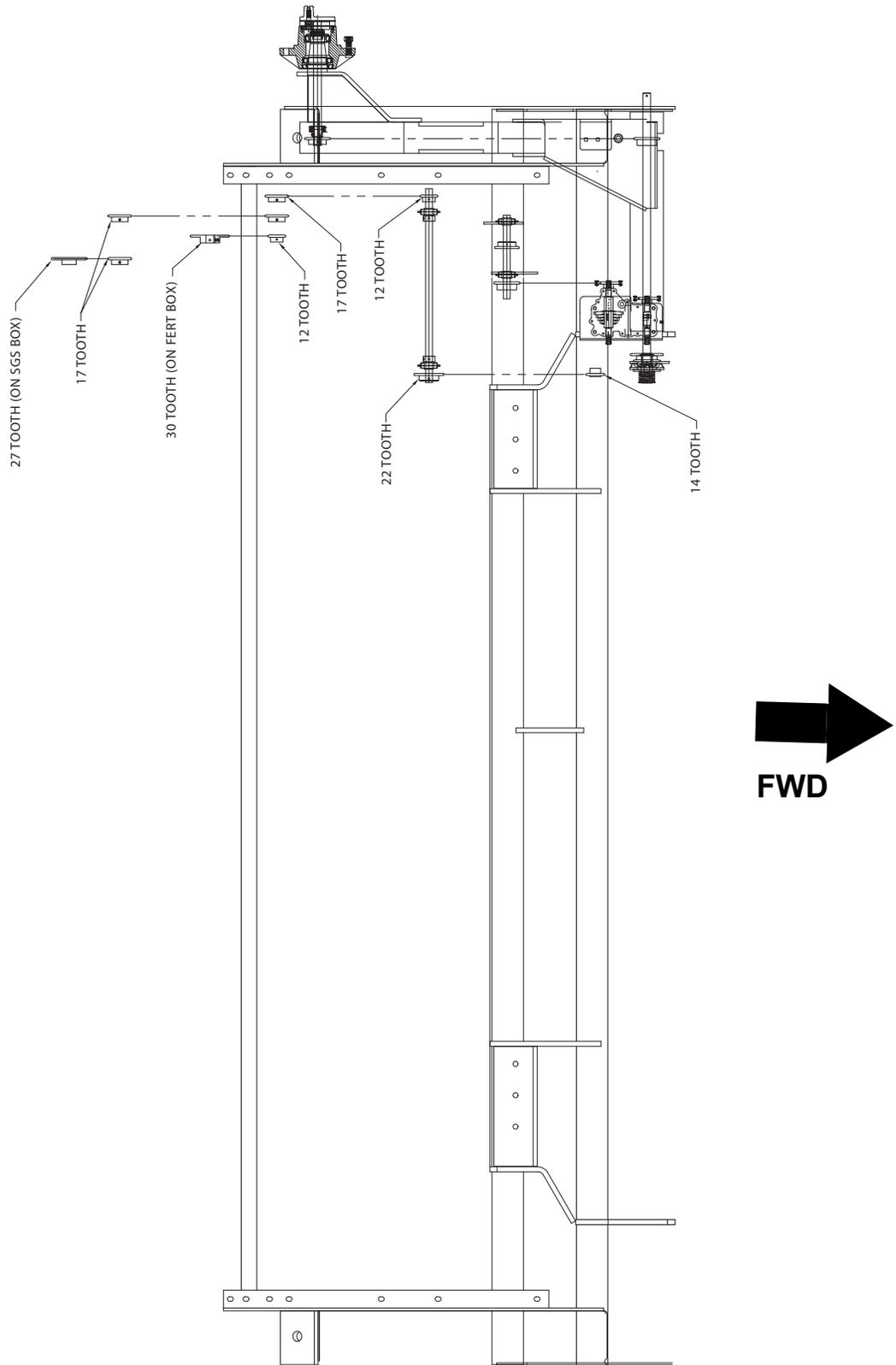
23216

### Fertilizer Sprocket Configuration



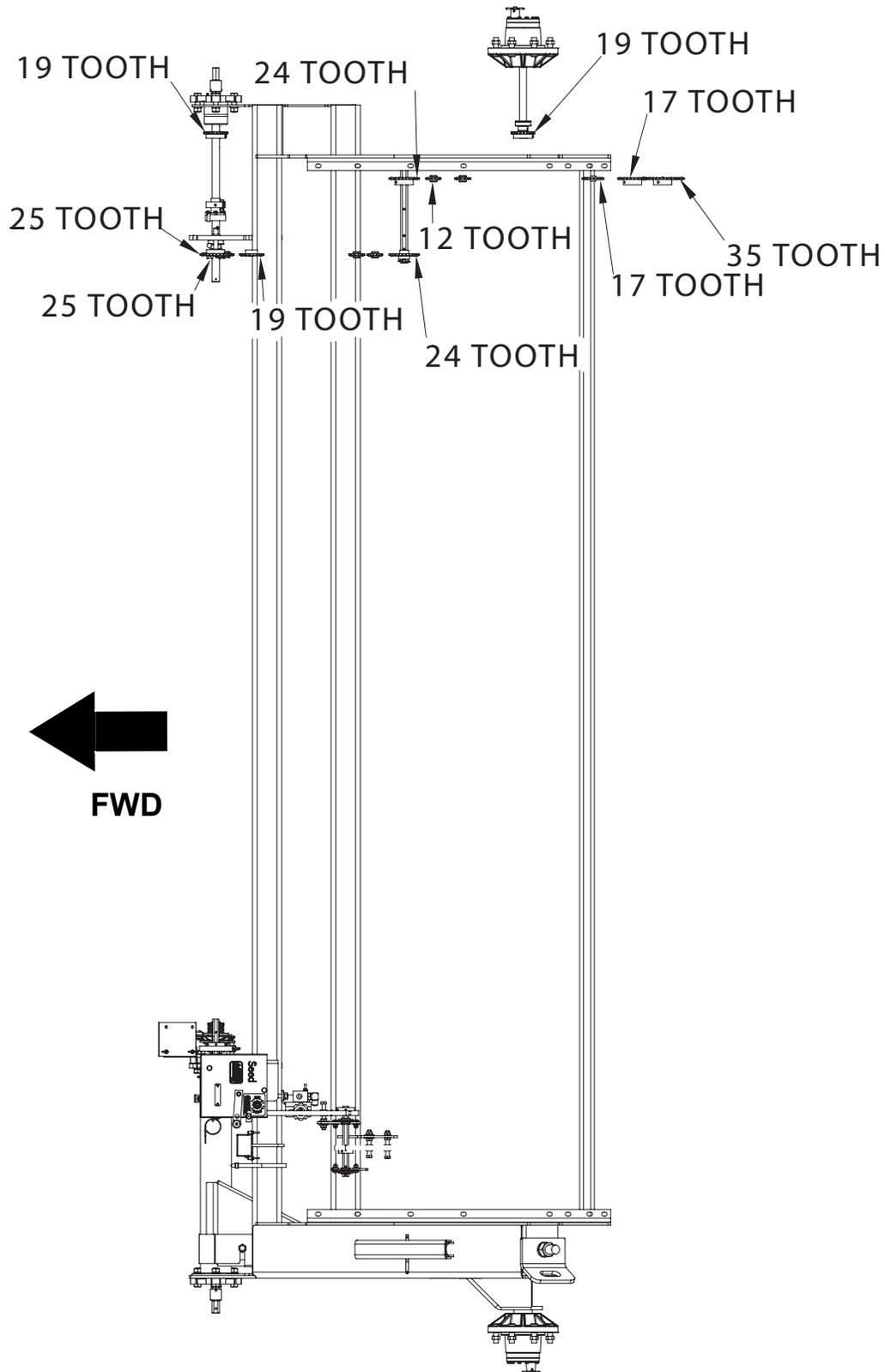
23217

### Fertilizer with SGS Box Sprocket Configuration



23218

### Native Grass Sprocket Configuration



36736



## 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 alteration 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 repairs 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 calls and/or mileage to and from customer location, overtime premium, or unit hauling expenses. The warranty may be voided if the unit is towed at speeds in excess of 20 miles per hour (32 kilometers per hour), or 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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