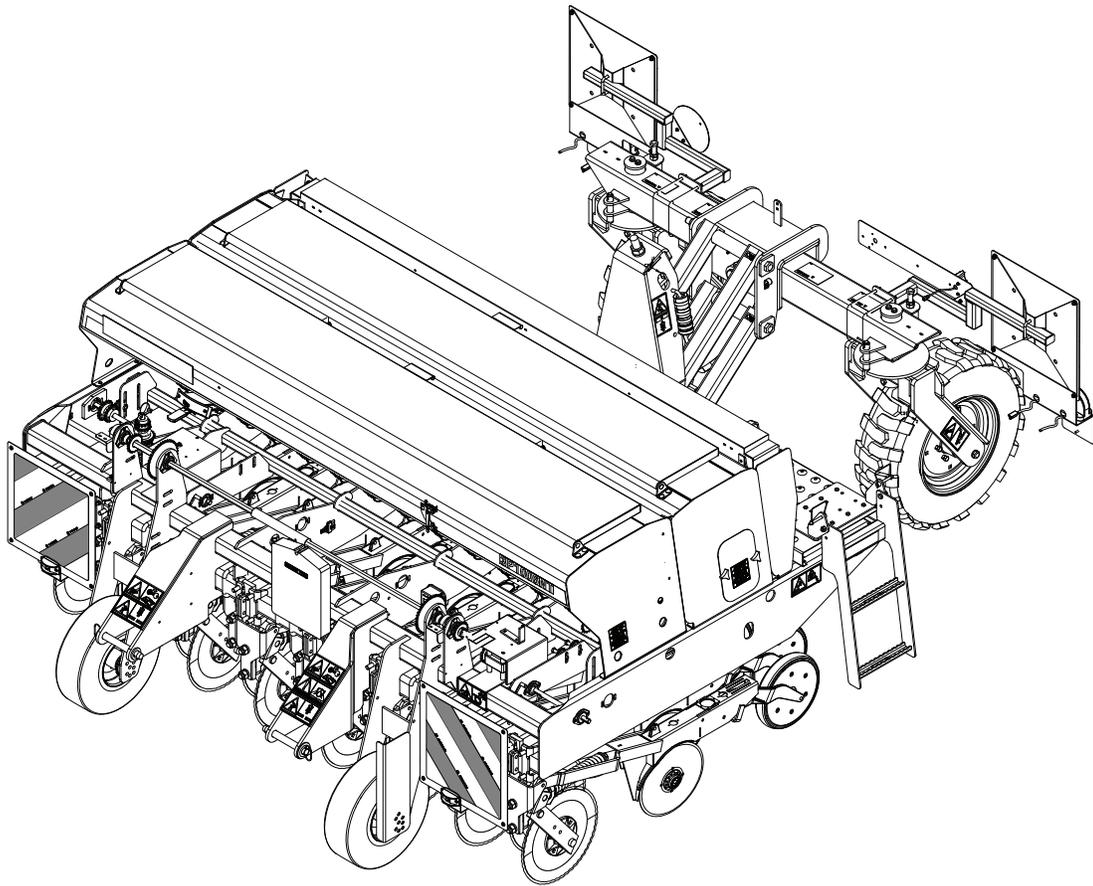


Great Plains

NO-TILL DRILL

OPERATOR MANUAL

MODELS 3P1006NT-1575



Original Instructions 151-144U



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.



Machine Identification

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

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

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

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

Dealer's Customer No.: _____

To our customer:

Congratulations on the purchase of your Great Plains product. Great Plains welcomes you to its growing family of new product owners. Your product has been designed and built by skilled workers using quality materials.

Your dealer has performed the necessary pre-delivery service to your machine, and will advise you of the proper maintenance and operating practices that will give you long, satisfactory use of your machine. Do not hesitate to contact your dealer when you have a question related to your machine.

Your machine has been designed to run efficiently in most operating conditions, and will perform relative to the service it receives. If you need customer service or repair parts, contact your dealer who has trained personnel, repair parts, and equipment specially designed for Great Plains products.

Read this manual carefully before using the machine. It will familiarize you with safety, operation, adjustments, and maintenance of your new equipment. This manual must always be kept with your machine.

Great Plains wants you to be satisfied with your 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 he is aware of any problems so he 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, USA 67402-5060

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Introduction

The Great Plains 3P1006NT drill is a two-point mounted no-till drill with lift-assist wheels for operation and transport.

The standard 3P1006NT model has a main seed box. A second seed box (dual seed), fertilizer, native grass, and/or small seed capability may be added.

■ Intended Use Statement

The 3P1006NT drill with standard equipment and/or authorized attachments and options is intended to be used as a seeding implement when operated according to instructions and safety precautions in this manual, machine decals, or other information provided with the machine.

Use this drill to seed grasses or production-agriculture crops, or to seed over existing grass stands. Use on terrain that is flat to semi-flat or gently rolling.

Any other use, for example, using the machine as a grader or cultivator tool, is not permitted. The manufacturer and dealers are not liable for damage caused by improper use.

The straight arm, double-disk openers disks make a seed bed. Seed tubes mounted between the disks place seed in the furrow. Press wheels following the opener disks close the furrow and gauge the opener seeding depth.

The seed metering system is driven from one or both front gauge wheels. Seeding rates are set by a gearbox, rate adjustment handles, and/or sprocket selection.

Right-hand and left-hand side are determined by facing the direction of forward travel.

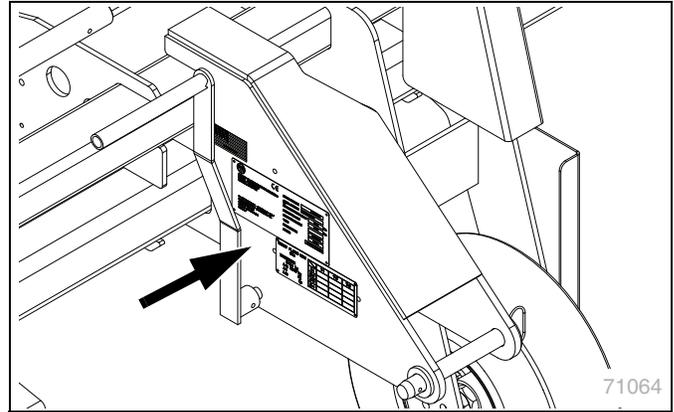
Prohibited Use

Do not use this machine for any purpose or in any way other than what is described in this manual, machine decals, or any other information provided with the machine. These materials define the intended use of the machine.

Unauthorized modifications to the machine will relieve the manufacturer of all liability for any resulting injury or damage.

■ CE Identification

The CE identification is located on the right-hand side of the left gauge wheel.



Machine Identification

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 dealer. Record your drill model and serial number on the inside cover of this manual for quick reference.

■ Target Group for Operator Manual



Simplified Illustrations

Illustrations of the machine in the operator manual are shown without protective equipment - or with the protective equipment open - for better understanding. Be sure to observe the safety information and follow the handling instructions in the operator manual. Serious or fatal injury may be caused as a result.

This operator manual is aimed at trained agriculturists and persons who are otherwise qualified for agricultural activities and have received instruction in working with this machine.

For your safety - You must familiarize yourself with the contents of this operator manual before assembly or initial operation of the machine. In this way, you will achieve optimum work results and operational safety. The operator manual forms an integral part of the machine and must always be kept at hand. This will ensure that you:

- avoid accidents.
- comply with warranty conditions.
- have a fully functional machine in good working order at all times.

Training and Instruction

Your dealer will provide instruction on operation and care of the machine.

Information for the employer - All personnel are to be regularly, at least once a year, instructed on the use of the machine, in accordance with the regulations of the national organization for Health and Safety at Work. Untrained or unauthorized persons are not permitted to use the machine.

You are responsible for ensuring that the machine is operated and maintained safely. Make sure that you and all other persons that operate, maintain, or work in close proximity with the machine are familiar with the operating and maintenance regulations, as well as the corresponding safety instructions in this operator manual.

■ Range of Application

This product is classified as replaceable equipment in accordance with EC directive 2006/42/EC and agricultural implement in accordance with ASABE S390.

Safety Information



The safety symbol indicates a potential safety hazard to persons operating or near the machine and advises on how to avoid it.



The notice symbol indicates a potential for machine or property damage from operator error and advises on how to avoid misuse.



The information symbol indicates useful - but not crucial - information for machine operation, assembly, or adjustment.

■ Before Getting Started



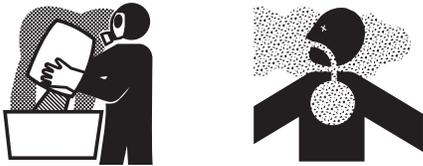
1. Read this manual in its entirety before attempting to start and operate the machine.
2. Only use operators that are thoroughly trained by the owner or trained by someone with the owner's consent. The operator must be familiar with all functions of the tractor and attachments, and be able to handle emergencies quickly.
3. Maintain attention on operation at all times. Do not operate if using a smart phone, tablet, or similar electronic device, and never operate machine while impaired by alcohol, medication, any controlled substance, or while fatigued.
4. Do not ever allow passengers to ride the machine at any time, for any reason.
5. Before operation, make sure that all tractor cab levers are in their neutral positions and that the parking brake is engaged.
6. Check brakes, link pins, and other mechanical parts for wear before using machine.
7. Never wear loose or bulky clothing around machine. Use additional safety equipment, such as hard hats, eye and ear protection, safety boots, etc., as needed.
8. Do not modify the machine. Unauthorized modification can result in unsafe conditions that lead to machine damage or personal injury.

■ Operation



1. Always stop the tractor, put in Park and turn off engine before leaving the cab. Dismounting from a moving tractor can cause serious injury or death.
2. Consider turning radius of tractor and implement in the field. Turning tractor too tight can cause hitched implement to ride up on wheels which can result in injury or equipment damage.
3. Pull machine only from the hitch at the end of the tongue. Never pull from jack stand, safety chain, or any point other than the hitch.
4. Never leave the tractor cab unattended while the implement is running. Remove key and turn off tractor before exiting the tractor cab.
5. Watch your surroundings at all times. Do not operate with bystanders nearby, and avoid contacting overhead obstructions.
6. Check that all guards and shields are undamaged, installed, and secure before operating implement.
7. Keep children out of the work area. Do not operate or turn on machine while children are in the area.
8. Do not operate near ditches, holes, steep slopes, embankments, or other surfaces which may collapse under the machine's weight or tip the machine over.
9. Never stand between tractor and implement unless parking brake is applied.

Handling and Disposing of Chemicals



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

1. Read chemical manufacturer's instructions carefully, and then take appropriate precautions before use.
2. Wear protective clothing.
3. Wash hands and face before eating after working with chemicals. Shower as soon as application is completed for the day.
4. Apply only with acceptable wind conditions. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.
5. Dispose of unused chemicals and chemical waste as specified by the manufacturer. Observe all the local ordinances and regulations in your area.

Operation Noise Hazard

1. Use proper ear protection like headphones or earplugs while working.

PTO



1. Wait until all moving components have completely stopped before adjusting, cleaning, or servicing any PTO driven equipment.
2. Before installing or using PTO driven equipment, read the tractor manual and review the safety labels attached to the equipment.
3. When operating stationary PTO driven equipment, always apply the parking brake and place chocks behind wheels.
4. Stay clear of and never step over any rotating parts.

Maintenance



1. Understand procedure before doing work. Use proper tools and equipment.
2. Work in a clean, dry area.
3. Lower the implement. Put tractor in Park, turn off engine. To prevent unauthorized starting, remove key before performing maintenance or service work.
4. If work must be performed with wings raised, set the wing tilt locks to the road position.
5. Make sure all moving parts have stopped and all system pressure is relieved.
6. Relieve hydraulic pressure before disconnecting hydraulic lines or performing any work on the system.
7. Do not work underneath any hydraulically supported components. Hydraulics can settle, leak, or be accidentally lowered. If working underneath hydraulically supported components is necessary, secure implement with stands or suitable blocking beforehand.
8. Disconnect electronic monitor and lighting harness from the tractor before servicing or adjusting electrical systems.
9. Before welding, disconnect electronic monitor and lighting harness from the tractor. Protect hydraulic lines. Avoid fumes from heated paint.
10. Remove buildup of grease, oil, or debris.
11. Check and replace worn brake lines as needed.
12. Remove all tools and unused parts from implement before operation.

Tire Safety

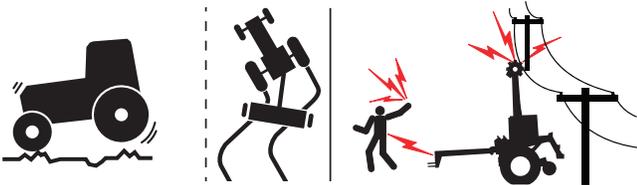
1. Check tires for cuts, bulges, and correct pressure. Replace worn or damaged tires.
2. Tire changing can be hazardous and must be performed by trained personnel using correct tools and equipment.
3. Tire explosion and/or serious injury can result from over inflation. Do not exceed tire inflation pressures.
4. When removing and installing wheels, use wheel-handling equipment adequate for weight involved.
5. Tighten wheel bolts only to the specified torque.

High Pressure Fluids



1. Escaping fluid from holes in hydraulic lines is difficult to spot. Do not use your hands or bare skin to search for suspected leaks; instead, use a piece of cardboard or wood. If injured by escaping hydraulic fluid, see a medical professional immediately. Exposure can result in gangrene or severe allergic reaction.
2. Check that hydraulic fittings are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
3. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

■ Transporting



1. As with transporting any piece of heavy machinery, comply with all local laws and regulations before and during transport process.
2. Transport only at recommended transport speed for implement. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
3. Before towing implement on roads, make sure to empty out all material from the hoppers or boxes.
4. Know transport height and width of implement.
5. Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.
6. Keep clear of overhead power lines and other obstructions when transporting.
7. Do not fold or unfold the implement while the tractor is moving.
8. Reduce speed when turning, and make as wide a turn as possible. Turning tractor too tight can cause implement to tip over.
9. When towing on a trailer, secure implement with tie downs and chains.
10. When towing on a trailer, sudden braking can cause a trailer to swerve and upset. Reduce speed if trailer is not equipped with brakes.

Safety Chain

1. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.
2. Replace chain if any links or end fittings are broken, stretched or damaged.
3. Do not use safety chain for towing.

Safety Lights and Devices

1. Always use safety lighting. Slow-moving tractors and towed machinery can create a hazard when driven on public roads. They are difficult to see, especially at night.
2. If equipped, use flashing warning lights and turn signals whenever driving on public roads.
3. Use safety devices provided with implement.
4. Keep safety lights and signs clean and visible from front and rear of machine.
5. Keep lights in operating condition.

■ Shutdown and Storage

1. Park the tractor and implement on a solid, level surface where children normally do not play.
2. Fold and tilt wings.
3. Put tractor in park or set the parking brake. Turn off engine and remove switch key to prevent unauthorized starting.
4. Wait for all components to come to a complete stop before leaving the operator's seat.
5. Turn lockout valve and wing lock levers to locked position to prevent the wings from lowering.
6. Detach the tractor. Secure the implement using blocks.

■ Proper Waste Disposal

1. Dispose of waste properly to avoid threatening the environment and ecology. Potential harmful waste includes oil, fuel, filters, and batteries.
2. Use a leak-proof container for draining fluids. Do not use a food or beverage container that may be mistaken for a consumable product.
3. Do not drain or pour waste onto the ground, down a drain, or into any water source.
4. Contact your local environmental or recycling center for the proper way to recycle or dispose of waste.

Safety Decals

Your implement comes equipped with safety reflectors and decals in place.

Read and follow decal directions. Keep all safety decals clean and legible. Replace all damaged, faded, or missing decals.

Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.

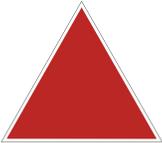
When ordering new parts or components, also request corresponding safety decals.

To install new decals:

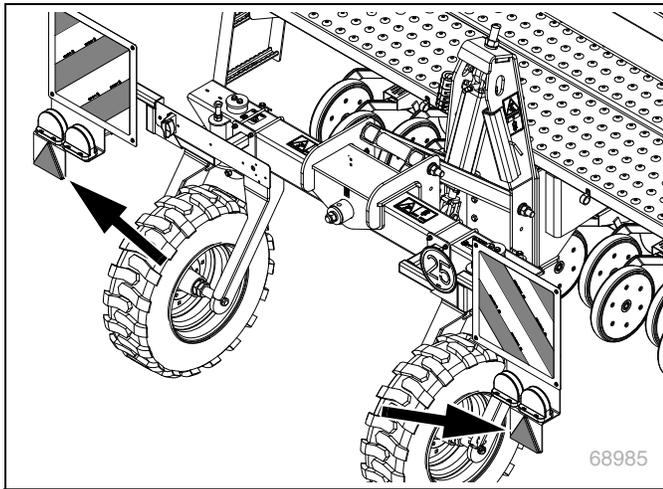
- Clean the area on which the decal is to be placed.
- Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

Reflectors - Red Triangle

833-399C



Two red triangles at rear of drill.

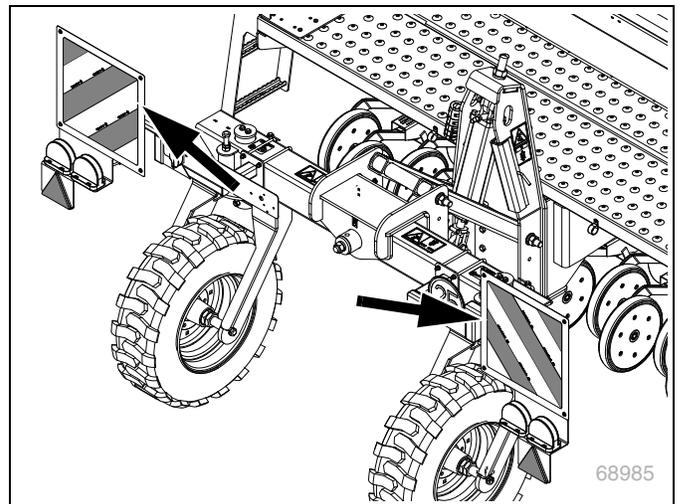
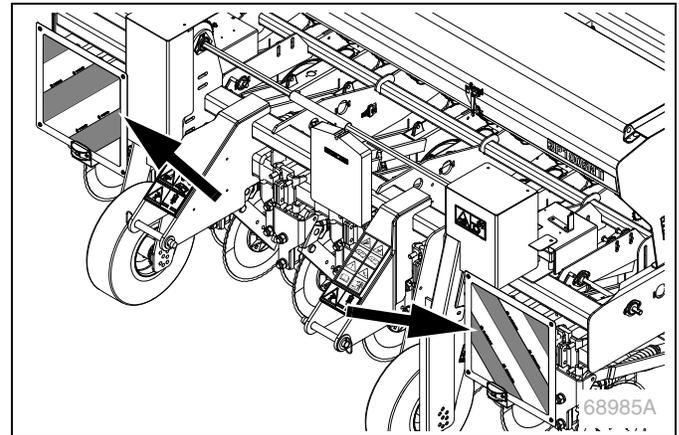


Reflectors - Fluorescent Panels

843-183C



Two panels at front and two panels at rear of drill.



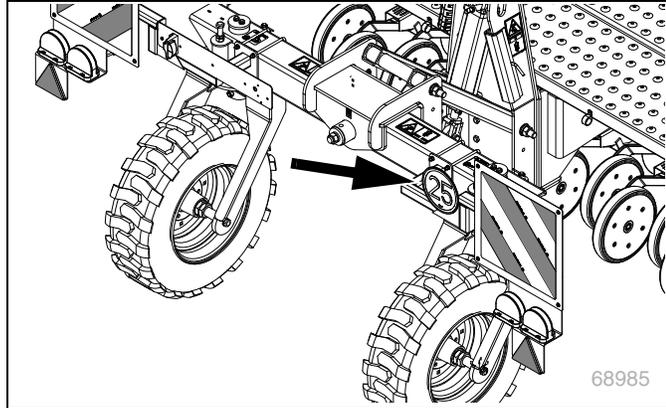
Speed Limit

838-369C

Maximum speed limit of machine.



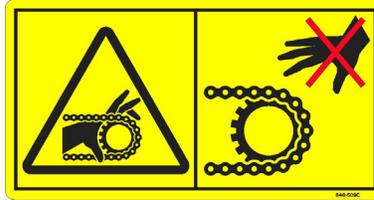
One decal at right-hand rear of drill.



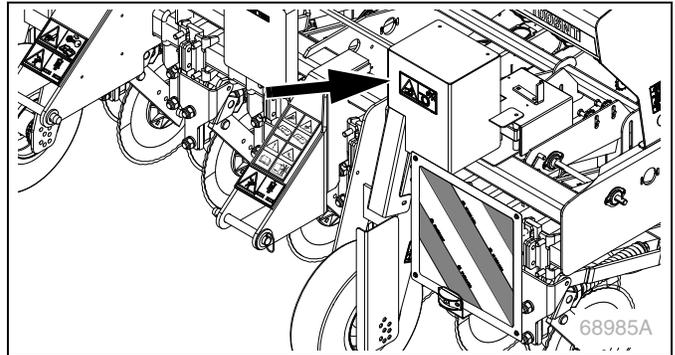
Entanglement Hazard

848-509C

Keep hands away from moving parts when machine is in use.



Two decals at front of drill near gearboxes.



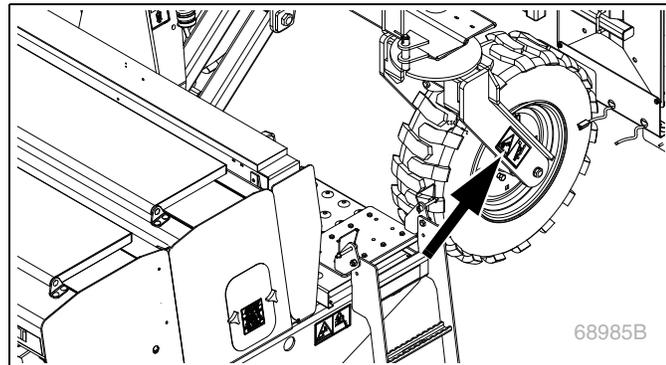
Falling Hazard

848-507C

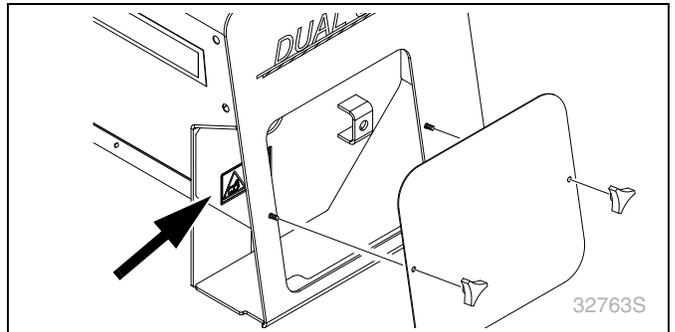
Do not stand on or use tires as a step. Always use ladder provided.



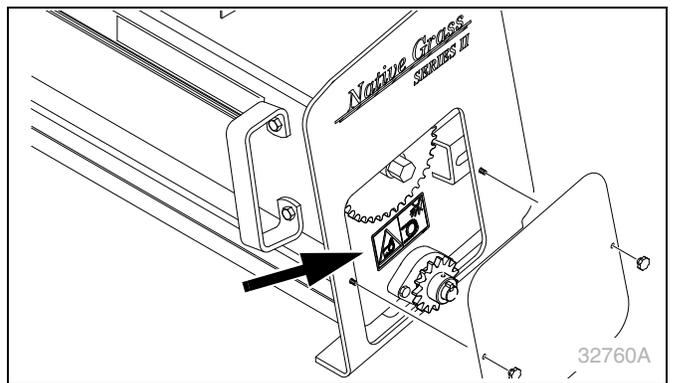
Four decals - one on each side of caster wheels.



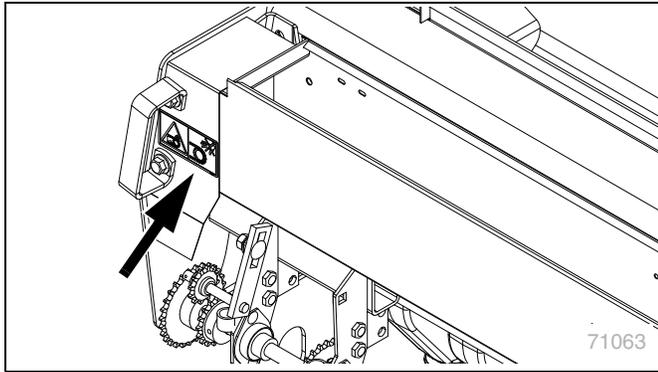
Two decals, one under the cover plates on each end of dual seed box.



Two decals, one under the cover plates on each end of native grass box.



One decal on small seeds box chain guard.



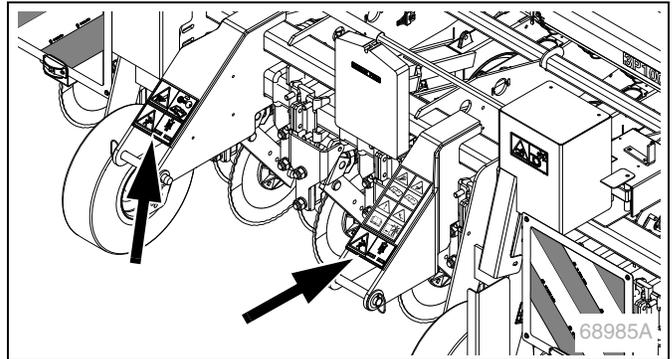
Crushing Hazard

848-513C

Stay clear of moving parts to avoid injury. Do not stand between tractor and drill while tractor is moving.



Two decals on 3-point hitch lower arms.



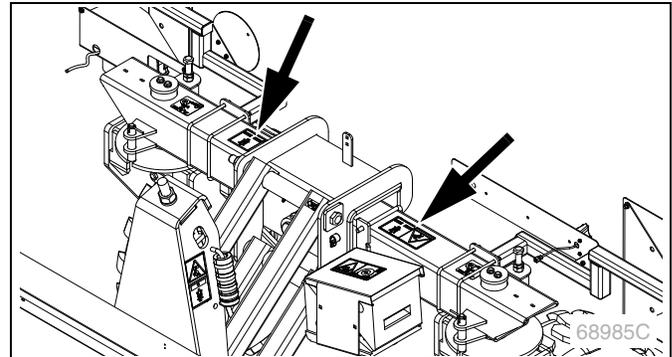
General Warning Hazard

858-636C

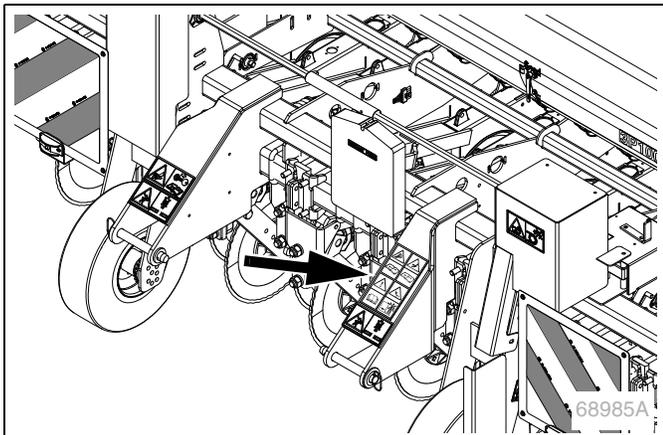
Do not perform any procedure that loosens hardware unless described in this manual. Take appropriate precautions outlined in this manual when working with hydraulic system. Carefully read all instructions for machine use. Do not ride on the hitch when tractor is moving to avoid risk of falling.



Two decals on lift-assist axle frame.

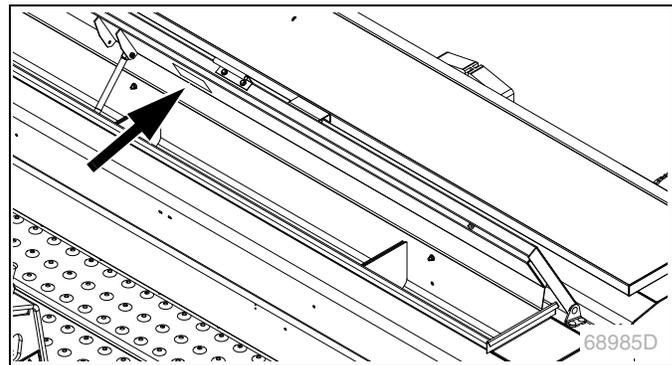


One decal on 3-point hitch lower arms.



Dual seed option - one decal under lid

Native grass option - two decals under lid.



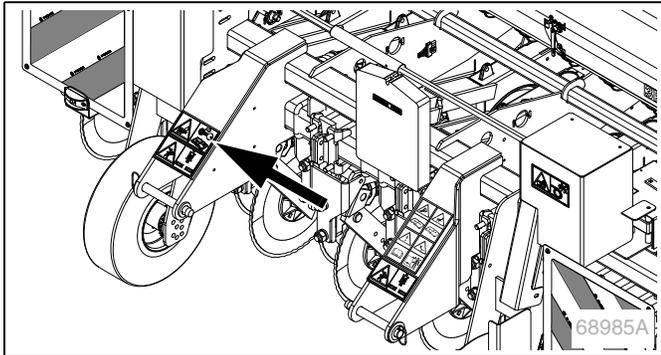
High Pressure Fluid Hazard

848-517C

Relieve pressure in system, shut off engine and remove key before repairing, adjusting, or disconnecting. Consult manual for service procedures.



One decal on right 3-point hitch lower arm.



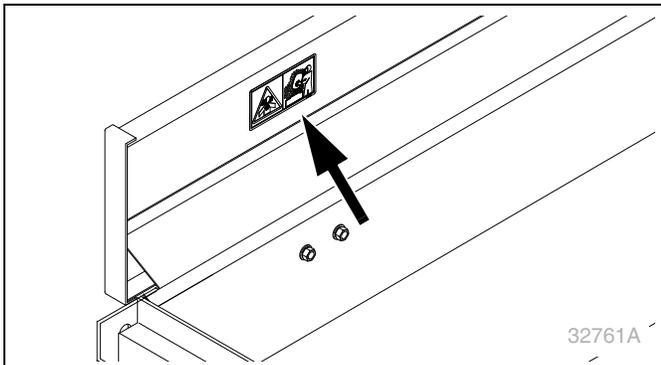
Chemical Hazard

848-520C

Chemicals can cause serious burns, lung damage, and even death. Do not use the small seeds option to meter chemicals. Use only seed in this option.



One decal under lid of small seeds box.



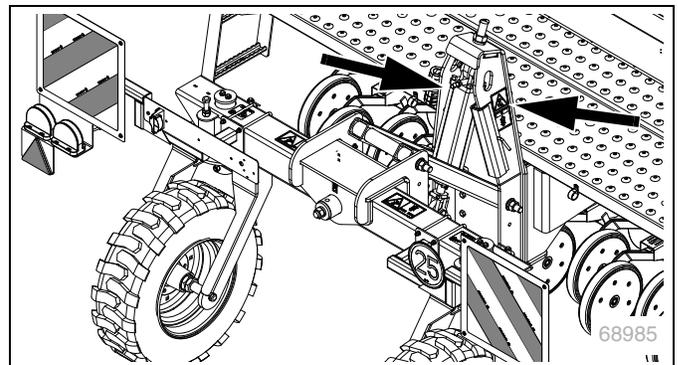
Crushing Hazard

848-524C

Install transport locks before performing maintenance, adjusting the drill, or transporting.



Two decals - one on each side of lift-assist mount.



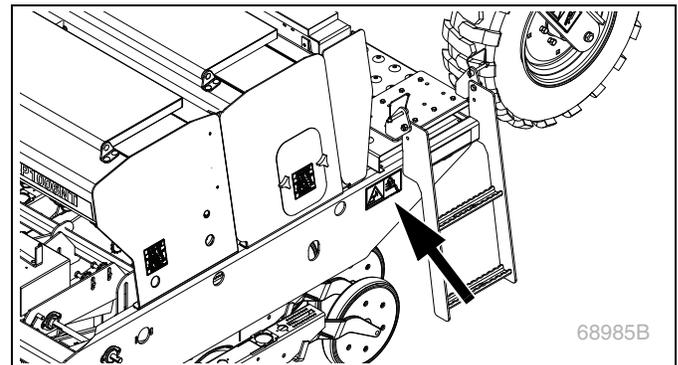
Falling Hazard

848-527C

Always use handrail when climbing ladder or walking on walkboard to avoid risk of falling.



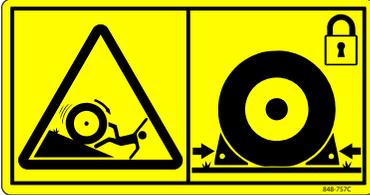
Two decals - one on each side of drill next to ladder.



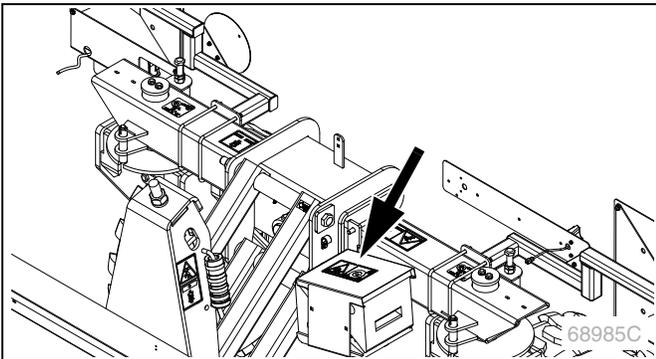
Rolling Machine Hazard

848-757C

To avoid serious injury from free rolling machine, use wheel chock blocks to chock tires in direction of grade when machine is parked. Chock both sides of tires if grade is undetermined.



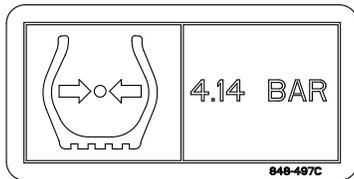
One decal on wheel chock mount.



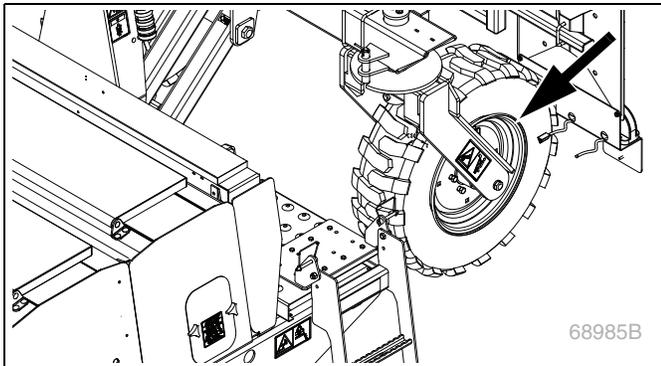
Tire Pressure

848-497C

Inflate tires no more than maximum pressure.



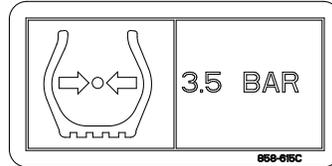
Two decals - one on each lift-assist tire rim.



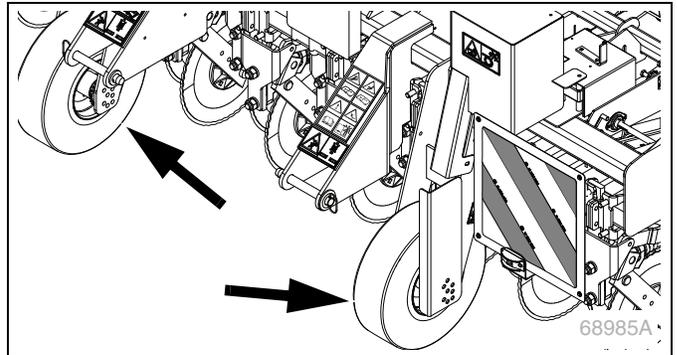
Tire Pressure

858-668C

Inflate tires no more than maximum pressure.



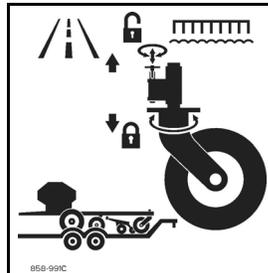
Two decals - one on each drive wheel.



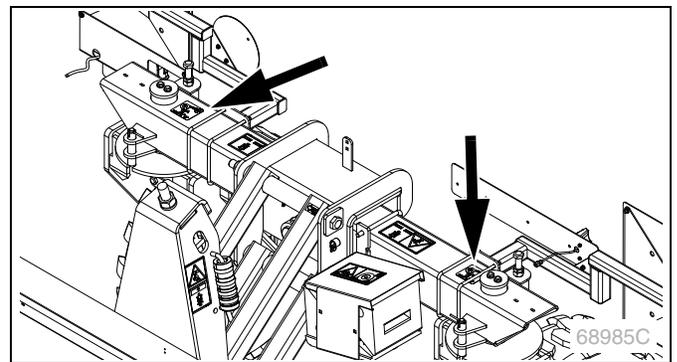
Caster Locks

848-339C

Use caster locks only when loading and unloading on trailer. Unlock caster locks for field use.



Two decals on axle frame near caster locks.



Preparation and Setup

This section helps you prepare your tractor and drill for use.

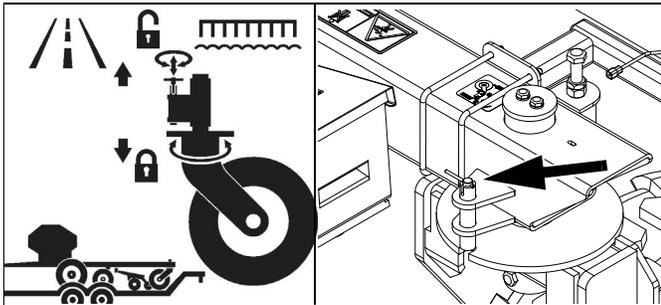
■ Preparation Checklist

- ☑ Read and understand “**Safety Information**” starting on page 3.
- ☑ Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- ☑ Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 31.
- ☑ Connect any seed or fertilizer hoses disconnected for storage.
- ☑ Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” starting on page 6.
- ☑ Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire and Wheel Information**” on page 53.



Serious Machine Damage Risk

Make sure that caster locks are not engaged when operating machine in the field. Serious damage can be done to the machine if attempting to steer side-to-side with caster locks engaged.



■ Hitching Drill to Tractor



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 hitch pins.

This drill is a semi-mounted 3-point category II hitch implement.

Hitch Extension



Falling Object Hazard

There is no top link on the drill to prevent the extension hitch from tipping forward with risk of serious injury, or backward causing machine damage.

Never mount an extension hitch by itself on the drill.

If no hitch extension is required, skip to step 1.

On tractors with oversize tires, or unusual wheel bases, the rear tractor tires may be too close to, or touch drill components when directly hitched. A hitch extension kit is available (page 56).

The extension hitch is compatible with most standard quick hitches.



Equipment Damage Risk

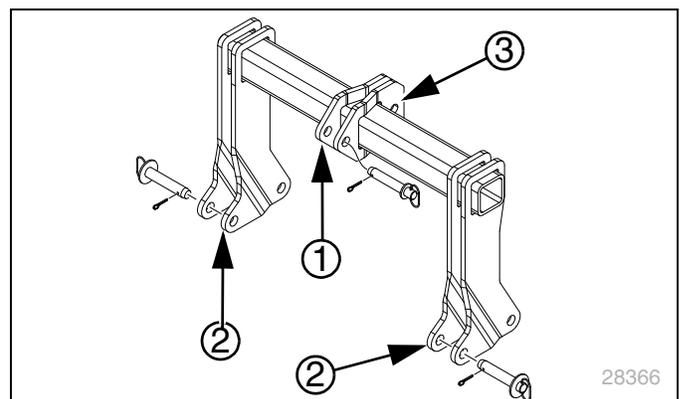
Great Plains CPH, PFH or SSH accessory hitches are not compatible with the 3P1006NT.

Mount the extension hitch on the tractor before hitching to the drill.

1. Use a lift or hoist to bring the extension hitch upright and lift it high enough to engage with the lower arms of the tractor 3-point.
2. Align the top link (1) with the tractor top link arm, and secure with a pin provided with the extension hitch. The lift or hoist may be removed.
3. Adjust the tractor top link as needed, and swing the extension until the lower links (2) are aligned with the tractor's lower arms. Secure with pins provided with the extension hitch.



The rear top link (3) is unused. It provides a lifting point. Use a lower hitch pin from the drill as needed.



Semi-Mounted Hitching

If a hitch extension is required, mount it on the tractor before hitching the drill.

1. Raise or lower tractor 3-point arms, or hitch extension, as needed and pin lower arms to drill. Upper arm is unused.
2. Set your tractor 3-point draft control to float position.



Equipment Damage Risk

Do not raise 3-point until after hydraulic and electrical connections have been made.

Hydraulic Hose Hookup



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. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek immediate medical attention from a physician familiar with this type of injury.

Connect hydraulic system to tractor before lifting the drill.

The hydraulic system of the drill has one dual-acting lift-assist cylinder. The cylinder raises the rear of the drill during lift (tractor 3-point lift arms raise the front). There is a counterbalance valve in the system to prevent sudden drops due to leaks or hose rupture.

1. Determine which tractor remote to use for lift assist, and set the lever for that circuit to float (to relieve any pressure).
2. Connect the lift hose to the extend port of the tractor remote. Connect the return hose to the retract port.

If lift is uneven, when the hydraulic system is first charged, and if air is allowed in the system, bleed the system. See **“Bleed Hydraulics”** starting on page 30.

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

Color	Hydraulic Function
Black	Lift

Electrical Connection

1. Make sure tractor is shut down with accessory power off before making connections.
2. Connect lighting connector and any options or after-market electronics to tractor outlets.
3. Tie up excess cable, allowing enough slack for the drill to tilt back.



Make Electrical Connections

Make connections prior to machine movement.



- (1) #1 Yellow - LH Flashing Lights
- (2) #6 Red - Brake Lights
- (3) #5 Empty
- (4) #4 Green - RH Flashing Lights
- (5) #3 White - Ground
- (6) #2 Blue - Aux Power
- (7) #7 Brown - Tail Lights

Leveling the Drill



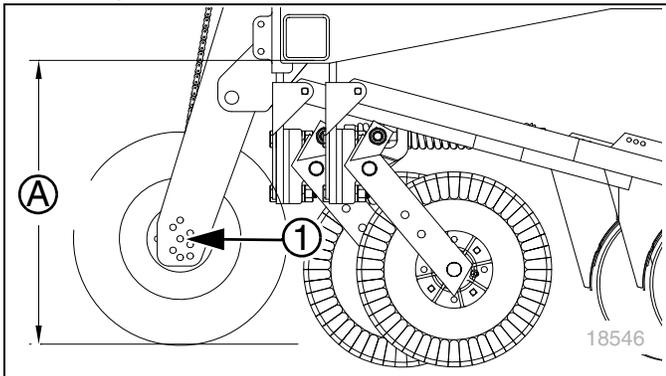
Crushing Hazard

To avoid serious injury, do not raise drill higher than necessary to adjust wheels.

Level the drill in field conditions. If done on hard ground or pavement, coulters and openers may prevent correct drill level.

1. Make sure the caster locks are not engaged. See **“Caster Locks”** on page 17.
2. Extend the lift-assist cylinders. See **“Drill Raise and Lower”** on page 16.
3. Initially adjust the tractor 3-point lift arms so the opener tube runs at the recommended initial height of 62.9 cm (A) above the ground when the drill is lowered in the field.

- The drive wheel should be in the fourth mounting hole (1) from the top. This is the factory configuration.



The drive wheel axle height may need to be adjusted due to ground conditions.

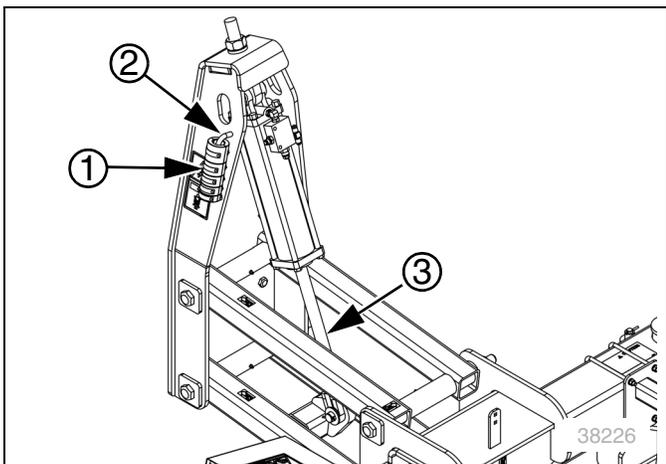
- Check the level of the frame front-to-rear. If not level, adjust the rear height with the stroke control spacers.

Stroke Control Spacers

The height of the drill at the rear, when lowered, is adjusted with a set of stroke control spacers (1). Five snap-around spacers are stored on the storage rod for a combined length of 165 mm.

If planting in rolling terrain, it may be necessary to adjust the lift assist cylinder manually with the tractor hydraulics to allow the machine to float backwards.

- Remove the desired combination of stroke control spacers from the storage rod (2) and install on the cylinder rod (3). There is no factory recommendation for this, as it depends on the tractor used.



- Lower the drill until the cylinders rest on the stroke control spacers.

- Pull the drill forward to put coulters and openers in the ground. Make sure that lift-assist casters are in trailing position. Set the tractor brakes.
- When the correct level has been achieved, set a stop, lock, or reference indicator on the tractor's hitch control to prevent lowering below drill level.
- Check the level of the frame front-to-rear. If not level, adjust the rear height with the stroke control spacers. If changed, re-check the front tool bar height, and re-adjust the tractor 3-point lift arms. Repeat until level.

Stack Length (mm)	Spacer Sizes			
	25 mm	32 mm	38 mm	44 mm
25	1	--	--	--
32	--	1	--	--
38	--	--	1	--
44	--	--	--	1
51	2	--	--	--
57	1	1	--	--
64	1	--	1	--
70	--	1	1	--
70	1	--	--	1
76	--	1	--	1
83	2	1	--	--
83	--	--	1	1
89	2	--	1	--
95	2	--	--	1
95	1	1	1	--
102	1	1	--	1
108	1	--	1	1
114	--	1	1	1
121	2	1	1	--
127	2	1	--	1
133	2	--	1	1
140	1	1	1	1
165	2	1	1	1

■ Distance from Center of Gravity

Observe the total weight, axle loads, tire load-bearing capacity and minimum ballast specifications.

The front or rear attachment of machines must not cause the tractor's permissible total weight, its permissible axle load, or its tire load-bearing capacity to be exceeded. In order for steering capability to be maintained, the front axle must bear at least 20% of the tractor's unladen weight.

By investing some effort in making the calculations, you can determine the:

- total weight
- axle load
- tire load-bearing capacity
- minimum ballast

For this calculation, the following data is required:

Data from the tractor's operator manual:

- (A) Unladen weight in kg.
- (B) Front axle load in kg.
- (C) Rear axle load in kg.

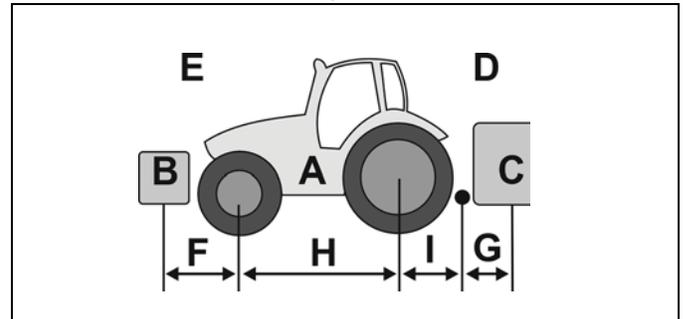
Take into consideration any further weights, such as water in the tires, additional equipment, etc.

Data from this operator manual:

- (D) Total weight of the machine in the rear attachment. For hitched machines, the supporting load in kg.
- (E) Total weight of the machine in the front attachment in kg.
- (F) Distance between the machine's center of gravity in the front attachment and front axle midpoint in m.
- (G) Distance between the lower link ball midpoint and the machine's center of gravity in the rear attachment in m. With hitched machine:
Maximum empty (main seed box, dual seed or native grass, and small seeds) - G=1.48 m.
Minimum empty (main seed box only) - G=1.47 m.

Data to be measured:

- (H) Tractor's wheel base in m.
- (I) Distance between the rear axle midpoint and the lower link ball midpoint in m.



Calculations

The values (A) to (I) can be inserted in the formulas.

Ballast with front weights

Calculation of the ballast with front weights for rear-mounted machines.

Front ballast in kg:

$$\frac{D \cdot (I + G) - (B \cdot H) + (0.2 \cdot A \cdot H)}{F + H}$$

Ballast with rear weights

Calculation of the ballast with rear weights for front-mounted machines.

Rear ballast in kg:

$$\frac{(E \cdot F) - (C \cdot H) - (0.45 \cdot A \cdot H)}{H + I + G}$$

Front axle load

Calculating the actual front axle load (J)

Front axle load in kg:

$$\frac{E \cdot (F + H) + (B \cdot H) - (D \cdot (I + G))}{H}$$

Total weight

Calculating the actual total weight (K).

Total weight in kg:

$$K = E + A + D$$

Rear axle load

Calculating the actual rear axle load (L).

Rear axle load in kg:

$$L = K - J$$

Tire load-bearing capacity

Information about the tire load-bearing capacity of the front and rear wheels can be found in the tire manufacturer's details.

The front tire load-bearing capacity for two wheels is equal to twice the permissible tire load-bearing capacity of a single front wheel. The rear tire load-bearing capacity for two wheels is equal to twice the permissible tire load-bearing capacity of a single rear wheel.

Summary

The actual values for the rear axle load must be less than the permissible values given in the tractor's operator manual. The tire load-bearing capacity must be greater than the values for the rear axle load given in the operator manual.

The actual total weight must be less than the permissible total weight given in the tractor's operator manual. If not, the machine must not be coupled to the tractor.

Operation

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

Even if drilling conditions rarely change, some items need periodic adjustment due to normal wear.

■ Pre-Start Checklist



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. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek immediate medical attention from a physician familiar with this type of injury.

- ☑ Carefully review “**Safety Information**” starting on page 3.
- ☑ Lubricate drill as indicated under “**Lubrication**” on page 31.
- ☑ Check all tires for proper inflation. See “**Tire and Wheel Information**” on page 53.
- ☑ Check all bolts, pins and fasteners. Torque as shown in “**Torque Chart**” on page 54.
- ☑ Check drill for worn or damaged parts. Repair or replace parts before going to the field.
- ☑ Check hydraulic hoses, fittings and cylinders for leaks. Repair or replace before going to the field.
- ☑ Rotate each ground drive wheel to see that the drives and meters are working properly and free from foreign material.
- ☑ Make sure drive coupler is in place before operating the drill.
- ☑ Check that the caster pivots are unlocked.

■ Drill Raise and Lower

Raising and lowering the drill depends on the tractor 3-point lift arms in front, and hydraulic lift-assist at the rear. When setup for field use, the hitch and lift circuits may be operated in any order, or at the same time. Both must be lowered for planting, and the lowered hitch height must be as established. See “**Leveling the Drill**” on page 12.

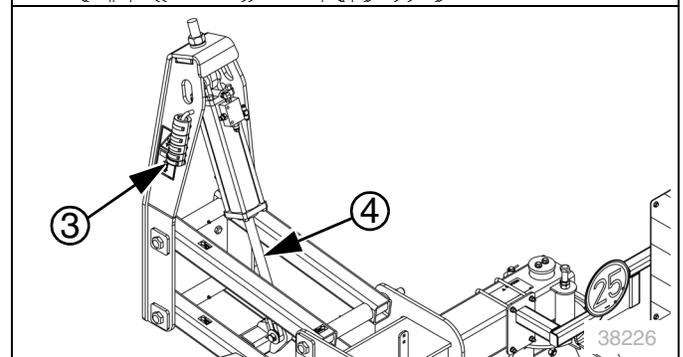
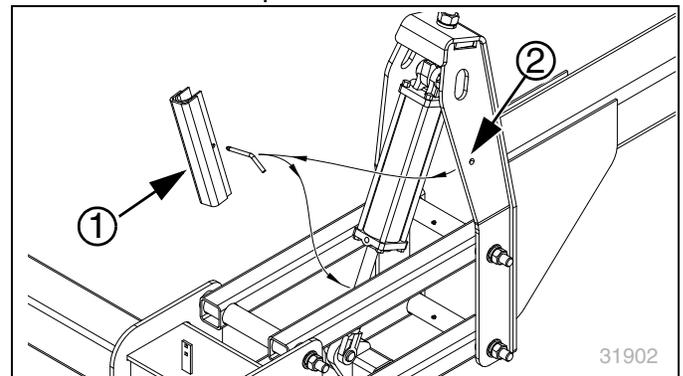
Raise Drill



Crushing Hazard

Depend on circuit neutral to hold the raised drill only for field turns. Use parking stands for all other raised operations, transport, parking, maintenance, and storage.

1. Raise the tractor 3-point lift arms fully.
2. Activate the lift circuit lever to extend the lift-assist cylinder fully. Set the circuit to neutral.
3. If raising for planting after transport, parking, or storage, remove the lock channel (1) from the lift-assist cylinder. Store in the pin hole (2) at the right side of the lift-assist. Install the necessary stroke control spacers (3) around the cylinder rod (4).
4. If raising for transport or storage, set lift circuit to neutral to hold at raised. Set tractor parking brake and shut off tractor.
5. Remove stroke control spacers (3) from lift-assist cylinder rod (4). Store spacers on storage rod.
6. Install the lock channel (1) on the cylinder rod. Secure with the pin.



7. Start the tractor.
8. Slowly move the lift circuit lever to retract, allowing the cylinder to settle on the lock (and relieving pressure from the hydraulic system).

Lower Drill

If lowering from transport, parking, or storage, it is first necessary to raise the drill, remove the lock channel, and install the stroke control spacers.

1. Slowly move the lift circuit lever to retract, until the lift-assist cylinder fully settles.
2. Lower the tractor 3-point lift arms to the stop, block, or reference indicator established on page 12.
3. Move the lift-assist circuit lever to float.
4. If about to begin planting, set the tractor 3-point hitch to float (not draft or depth control mode).

■ Caster Locks

To prevent side movement of the drill when transported by trailer, lock the lift-assist casters in their full-reversing position. The lift-assist only locks in reverse.



■ Serious Machine Damage Risk

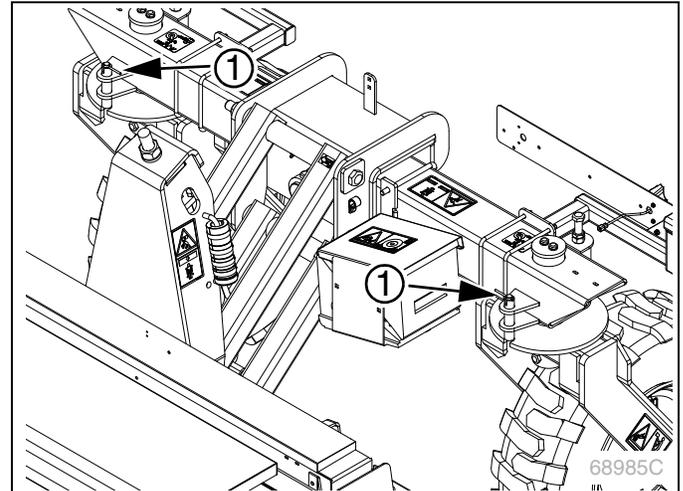
Caster locks are to be used only for loading and unloading on a trailer. Make sure that caster locks are not engaged when operating machine in the field. Serious damage can be done to the machine if attempting to steer side-to-side with caster locks engaged.

Locking the Casters

1. With the drill hitched, raise both tractor 3-point lift arms and lift assist.
2. Pull or back the drill onto the trailer bed.
On extremely narrow trailer beds, it may be necessary to lock the casters before moving the drill onto the trailer. Make sure the drill is aligned before moving, as maneuverability is greatly reduced with lock pins in place.
3. On both casters lift and turn caster lock pin handle (1) 90 degrees. Move in reverse, lock pins snap into place in the caster plate cutouts when aligned under each lock tube.
4. Lower the drill.

Unlocking the Casters

1. Hitch drill before unlocking.
2. Leave the lock pins (1) in place until the drill is removed from the trailer, unless the trailer bed has enough width to allow casters to make a full turn.
3. Lift lock pins out of lock plate holes and turn 90 degrees to hold in the unlock position.



■ Electronic Acremeter

A battery-operated electronic acremeter is supplied with the drill. The acremeter is normally located on the front of the main toolbar near the left gauge wheel and close to the sensor.

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

The acremeter counts rotations of the main ground drive shaft before the clutch and all movements of the drill, whether planting or not.

The counter operates in sleep mode or entry mode.

If your drill was equipped with this acremeter from production, it will already be programmed.



■ Loading Material



Falling Hazard

Do not climb ladder with full seed or fertilizer bags. Place bags on walkboard before climbing ladder.



Chemical Hazard

If using treated seed, take all material safety precautions to prevent serious injury.

Fully loaded with dense seed and fertilizer, the drill weighs an additional 894 kg. Include this weight when checking tractor capability.

The drill must be hitched for seed loading.

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

■ Loading Main and Dual Seed Boxes

1. Check that all meter doors are positioned for the seed size, and not set for clean-out. See the Material Rate Manual.
If loading before transport, set the meter doors to position 1.
2. Install or remove optional seed plugs as desired for the row spacing planned.
3. If loading before transport, and calibration has not yet been done, set seed rate handle to 0. At 0, and with the doors at 1, no seed can leak during transport.
4. Pivot the box lid handle up to release the lid.
5. Load seed evenly into compartments.
6. Reduce wear on unused boxes that may also be present:
 - Remove final drive chain for small seed box.
 - Remove native grass ground drive chain (right wheel).

■ Loading Native Grass Box

1. Pivot the box lid handle up to release the lid.
2. Load seed evenly into compartments.

■ Loading Small Seeds Box

1. If loading before transport, and calibration has not yet been done, set seed rate handle to 0. At 0, no seed can leak during transport.
2. Pull up the two external rubber latches to release the lid.
3. Load seed evenly into compartments.
4. To reduce wear, remove shaft drive chains for main seed boxes.

■ Loading Fertilizer

Fully loaded with dense fertilizer, the drill can weigh an additional 318 kg or more. Include this weight when checking tractor capability.

Load fertilizer after transport if possible. If not possible, set the meters to 0 and disengage the drive system to avoid fertilizer spillage during transport.

1. Check that fertilizer clean-out door is closed and all latches are secure.
2. If loading before transport, and calibration has not yet been done, set rate adjuster to 0. At 0, no fertilizer can leak during transport.
3. Lift the handle to release the lid.
4. Load fertilizer evenly into fertilizer compartment.
5. To reduce wear, remove drive chains for seed boxes not used.

■ Material Rates Overview

Rate setting controls are different for each box, but independent for each box. Some boxes have more than one control.

Seed is applied by fluted feed meters driven by the ground wheels. Independent mechanisms drive main seed, fertilizer, native grass, and small seeds application.

Main box seed rate is controlled by:

- Left-hand drive-type gearbox lever
- Seed rate handle at box (drill front)
- Feed cup door (one each seed tube)

Dual box seed rate is controlled by:

- Right-hand drive-type gearbox lever
- Seed rate handle at box (drill rear)
- Feed cup door (one each seed tube)

Native grass rate is controlled by:

- Rate reduction sprockets
- Right-hand drive-type gearbox lever (drill front)
- Driven sprocket at native grass seed box

Small seeds rate is controlled by a rate handle at the box (drill rear).

Fertilizer rate is controlled by a rate adjuster at the box (drill rear).

All chart rates, for all boxes, are approximate. It is strongly recommended to calibrate each box to the material to be applied.

See the seed rate manual for rate setting details.

■ Field Operation



Crushing Hazard

You may be severely injured or killed by being crushed between 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.



Equipment Damage Risk

Semi-mounted implements with rear lift-assist wheels maneuver differently in field and highway transport compared to pull-type implements. Observe caution when turning and transporting.



Opener Damage or Plugging Risk

Never back up with openers in the ground. To do so can cause damage or plug openers.

1. Hitch the drill to a suitable tractor.
 2. Make sure caster locks are disengaged.
 3. Fully raise the drill.
 4. Rotate the gauge wheels. Check that feed cups, seed tubes and drives are working properly and free from foreign material.
 5. Install the necessary stroke control spacers.
 6. Load material.
 7. Set initial seed population from the Material Rate Manual.
 8. Rotate gauge wheels to fill cups. Check for flow at opener tubes.
 9. Calibrate material rates (see Material Rate Manual).
-  After calibration for the dual seed or native grass option, make sure to move coupler to the operating position before seeding.
10. Record initial acremeter reading.
 11. Pull forward, lower drill, set both hitch and lift-assist circuit to float, and begin seeding.
 12. When turning at row ends and for other short-radius turns, always raise drill (tractor 3-point lift arms and drill lift-assist). Seeding automatically stops when ground drive wheels lose contact.

■ Transport



Excessive Speed Hazard

Towing the drill at high speeds or with a vehicle that is too light can lead to loss of vehicle control and a serious road accident. To avoid serious injury or death, do not exceed the maximum speed limit of 25 kph.



Machine Damage Risk

Always disengage caster locks before towing the drill with a tractor. Tractor towing with caster wheels locked is likely to result in equipment damage.



Irregular Seed Rate Risk

Do not transport with seed loaded in native grass box. Heavier mix components settle to the bottom, which can prevent the drive system from operating, resulting in irregular seed rate and population distribution.

Semi-Mounted 3-Point Transport



Loss of Control Hazard

Tow the drill on its own tires only with a 3-point tractor. Towing with any other hitch type is likely to result in loss of control and a serious accident, with risk of injury or death and almost certain major equipment damage.



Machine Damage Risk

Semi-mounted implements with rear lift-assist wheels maneuver differently in field and highway transport compared to pull-type implements. Observe caution when turning and transporting.

Before transporting with a tractor, check these items:

- Check that tractor is sufficient for towing the drill.
 - The tractor must have at least 75 kw.
 - Use a tractor with adequate lift capacity, and that is weighted to maintain steering control. Tractor must have sufficient front-end weights. See “**Transport Weights**” on page 53.
- Unload drill boxes before transporting, if possible. The drill can be transported with full boxes of material (other than native grass), but the added weight increases stopping distance and decreases maneuverability.
- Raise drill completely.
- Check that caster locks are not engaged (page 17).

Trailer Transport



Unstable Load Hazard

Do not transport drill on a trailer of insufficient width or length. Unless both caster wheels are on the trailer bed, too few openers are supporting the entire drill. The load may spill, with risk of serious injury or death to anyone nearby, and certain major equipment damage.



Machine Damage Risk

The drill must be hitched to a 3-point tractor for any movement. Coulter or opener damage is likely if unhitched movement is attempted. Observe all hitching precautions.

Loading

1. Hitch a suitable 3-point tractor with available hydraulic remote.
2. Raise the drill.
3. Carefully line-up the tractor, drill, and trailer so that no turns are needed for the final movement, and the casters are fully reversed.
4. Install the caster lock pins.
5. Carefully back the drill onto the trailer bed.
6. Lower the drill.
7. Secure the load with cargo straps or chains.



Machine Damage Risk

Great Plains recommends locking caster wheels before loading for trailer transport and leaving them locked for transport and unloading. This reduces the risk of accidents which could result in significant machine damage.

Unloading

1. Check that the caster wheels are still locked.
2. Release the cargo straps or chains.
3. Hitch a suitable 3-point tractor with available hydraulic remote.
4. Raise the drill.
5. Carefully tow the drill from the trailer.
6. Disengage caster locks.
7. Unless arriving at planting ground, install lift-assist cylinder channel locks.

■ Parking

Perform the following steps when parking the drill for 36 hours or less. Refer to “Storage” to prepare for longer-term storage.

1. Position the drill on a level, solid area.

2. Lower the tractor 3-point lift arms and retract the lift-assist cylinder until drill is on the ground.
3. Set the lift-assist circuit to float, to relieve all pressure.
4. Remove the pins from the lower 3-point links on the drill (not on the hitch extension).
5. Disconnect the lighting harness and any other electrical connections.
6. Disconnect the lift-assist hydraulic line.

Wheel Chocks



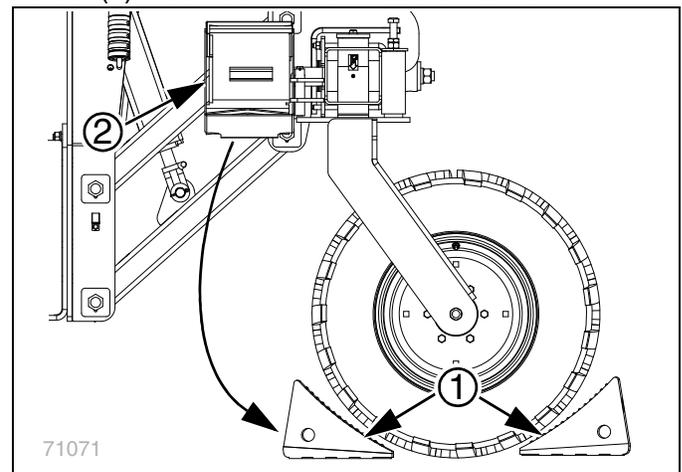
Rolling Machine Hazard

To avoid serious injury from a rolling machine, use wheel chocks to chock tires in direction of grade when machine is parked. Chock both sides of tires if grade is undetermined.

A set of wheel chocks is provided to secure the drill when parked.

Install ahead and behind the lift-assist tires. Wedge the chocks (1) tightly under the tires.

When not in use, the wheel chocks are stored in a holder (2) mounted on the lift-assist frame.



■ Storage

Store the drill where children do not play.

1. Unload seed and fertilizer boxes.
2. Thoroughly clean seed, seed treatment residue, and fertilizer residue from boxes and feeder cups.
3. Position the drill on a level, solid area. If possible, store the drill inside or under a tarp for longer life.
4. Place a tarp, pallets, or sheets of wood under coulters and opener disks to prevent ground contact.
5. Lower the tractor 3-point lift arms and retract the lift-assist cylinder until the drill is on the ground.

6. Set the lift-assist circuit to float, to relieve all pressure.
7. Remove the pins from the lower 3-point links on the drill (not on the hitch extension).
8. Disconnect the lighting harness and any other electrical connections.
9. Disconnect the lift-assist hydraulic line.
10. Remove any dirt and debris that can hold moisture and cause corrosion.
11. Disconnect seed and fertilizer hoses at the openers. Allow to hang freely.
12. Cap or plug seed tubes to prevent pest entry.
13. Lubricate and adjust all roller chains.
14. Oil feed cup drive sprocket in the square bore.
15. Lubricate areas noted under “**Lubrication**” on page 31.
16. Inspect drill for worn or damaged parts. Make repairs and service during the off season.
17. Use spray paint to cover scratches, chips, and worn areas on the drill to protect the metal.
18. Cover with a tarp if stored outside.

■ Coulters Adjustments

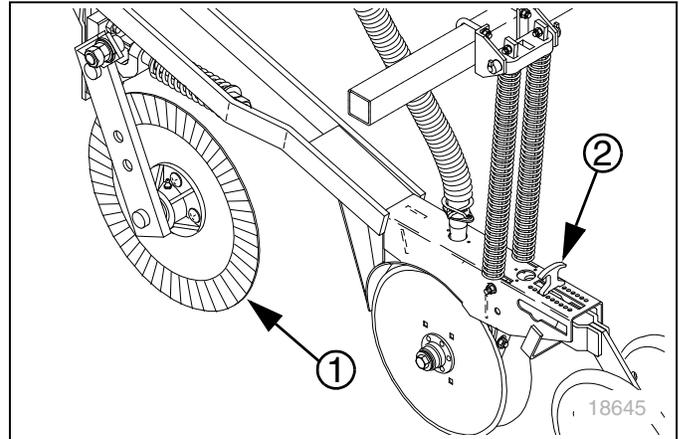
A no-till coulters (1), is mounted directly ahead of each opener on the drill. The coulters cut through heavy trash and make a groove in the soil for the openers. The coulters are mounted on the drill frame so coulters cutting depth changes as the drill is raised and lowered.

The coulters prepare soil ahead of the openers, and are typically set slightly deeper than the openers. The openers only need to open the tilled shaft into a V-shaped furrow. The openers cannot generally run deeper than the coulters. Running the openers too close to coulters depth may result in uneven seed depth.

To set the drill seeding depth:

1. Set the coulters depth by raising or lowering the front drive wheel.
2. Check the front-to-back drill level and adjust the lift-assist stroke control spacers as needed.
3. Set the opener depth with T-handles (2) on the press wheels.
4. If soil conditions make it necessary, increase coulters down pressure by adding weights.

Coulters normally operate fully down against their stops. The coulters springs compress when the blades encounter obstructions.



If necessary, adjust individual coulters or openers to run deeper for tire tracks, refer to “**Coulters Depth - Individual Rows**” on page 22.

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.

Coulters Depth - All Rows



Crushing Hazard

To avoid serious injury, do not raise drill higher than necessary to adjust wheels.

To achieve proper coulters depth, raise or lower drive wheels by relocating the axles.

- Raising wheels sets coulters deeper.
- Lowering wheels sets coulters shallower.

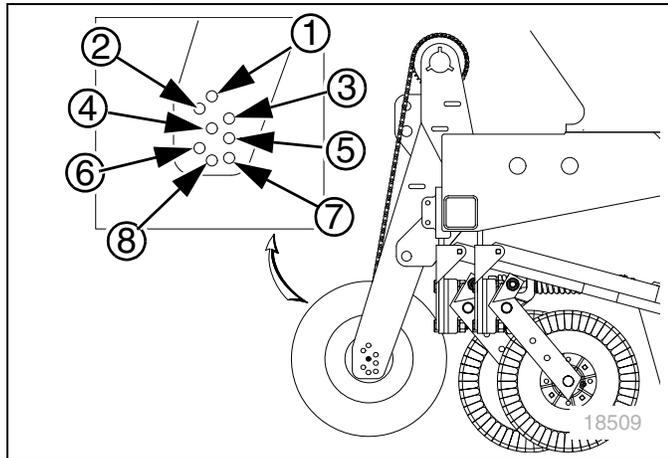
Set coulters depth approximately 25 mm deeper than the desired seed depth.

Set both left and right ground drive axles the same.

Do not lower coulters to penetrate hard soil. Instead, increase coulters down pressure by adding weight to the drill. See “**Coulters Down Pressure**” on page 22.

To adjust all coulters height:

1. Determine the desired coulters depth. With new coulters blades, the axle holes provide the following depths:



Hole	Coulters Depth (mm)
1	89
2	73
3	60
4	48
5	35
6	22
7	10
8	6

2. Raise the drill until the spindle can be adjusted any distance.
3. Loosen the chain idlers.
4. Remove the wheel bolts and move the spindle to the desired hole. Reinstall the wheel bolts.
5. Engage the chain idlers and check the overall depth.

Coulters Depth - Individual Rows

Adjusting the height of a small number of coulters may be useful for rows in tire tracks.

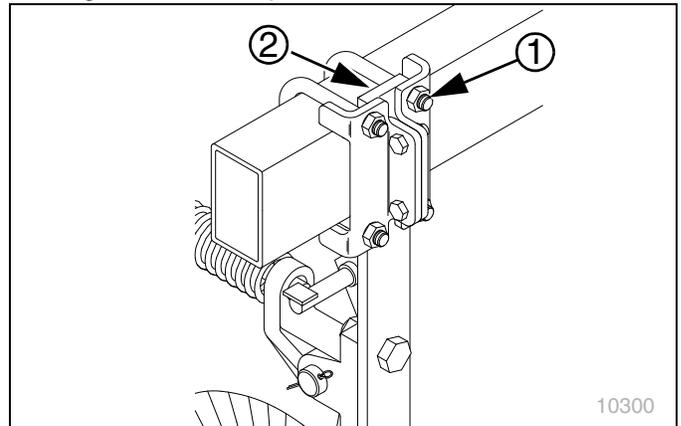


Do not adjust the bar height of all coulters. Use the tractor 3-point lift arms and front gauge wheel to set group coulters height.

Adjust individual coulters as follows:

1. Determine the new desired coulters depth, and/or the difference between that and the current depth.
2. On level ground, raise the drill until coulters just touch the ground. The press wheels are supporting some weight at this point.

3. Measure the current spring bar length from the bottom of the tool bar to the bottom of the spring bar. For reference, the factory setting is approximately 31.8 mm.
4. Determine the new bar length required and loosen the clamp bolts (1).
5. Using a rubber mallet, tap the spring bar (3) up or down to reach the desired level.
6. Tighten the clamp bolts.



7. Lower the drill and pull forward 10 m (30 feet).
8. Check the coulters blade to opener blade (furrow centerline) alignment.

Coulters Down Pressure

The maximum down force at the coulters depends on:

- empty drill weight,
- extra weights added,
- down-force consumed by the opener disks ranging from 22 kg to 68 kg, and
- the current material loading (which declines to zero during planting).

The drill configurations typically are too light to reach the factory down-force of 181 kg at all rows. The table below shows typical forces available. Do not increase coulters spring forces drill-wide unless weight is available.

Drill Configuration	Empty Drill	Drill with Full Weight Kit
Standard Drill	79 kg	114 kg
Drill w/Fertilizer	89 kg	124 kg
Drill w/Native Grass	87 kg	123 kg
Drill w/Small Seed	81 kg	116 kg
Fertilizer and Small Seed	91 kg	126 kg
NG and Small Seed	97 kg	132 kg

Coulter Down-Force Adjustment



Crushing Hazard

To avoid injury from working under the machine, this adjustment should only be done by qualified personnel.

Coulter springs are preset at 25.4 cm, giving coulters an initial operating force of 181 kg before the spring compresses. This setting is adequate for many difficult no-till conditions.

In normal operation at target running depth, springs are at full extension or only slightly compressed. They compress briefly at obstructions and in denser soil.

In heavy no-till conditions, you may observe the springs in compression most of the time. This means that the blades are not reaching the desired coulter depth. If adequate drill weight is available, you can increase the spring down-force to compensate.

In light but rocky conditions, the factory setting may be higher than needed. Extend blade life by reducing the force at which the blades ride up over obstructions.

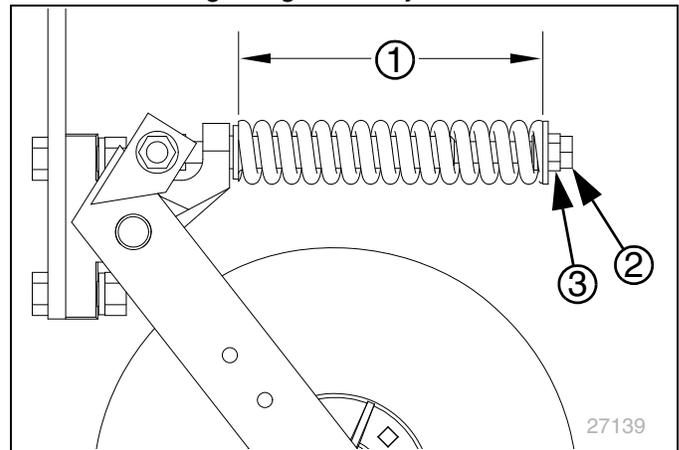


If all springs are continuously in compression, the coulters can lift the drill off the ground at the ground drive wheels, resulting in low seeding rates and uneven seed depth. If high forces are required, frame weights are probably required.

To adjust the coulter spring:

1. Raise the drill and install transport locks.
2. Determine the new spring length (1) desired. See the table below.
3. Measure the current length of the spring(s) to be changed. If already shorter than 24.7 cm, or longer than 26 cm, do not further adjust them.
4. Loosen the jam nut (2).

5. Rotate the adjuster nut (3) until the spring is at the new length. Tighten the jam nut.



Spring Length	Force at Blade
26.7 cm	79 kg
26.0 cm	136 kg
25.4 cm	181 kg
24.8 cm	238 kg

06 Series Row Unit

Disk blades (1) 2 per row unit - Double disk blades open a furrow creating the seed bed. Spacers adjust the blades for a clean furrow. See “**Disk Blade Adjustments**” on page 24.

Down pressure springs (2) - Adjustable springs provide the force to get the row unit and attachments into the soil prepared by the coulter. See “**Opener Down Pressure**” on page 25.

Main seed delivery tube (3) - No adjustments are necessary.

Seed firmer (4) - Improves seed-soil contact. No adjustments required. Seed flap is standard, Seed-Lok[®] firming wheel is optional. The seed flap may need to be shortened if Seed-Lok[®] is field-installed.

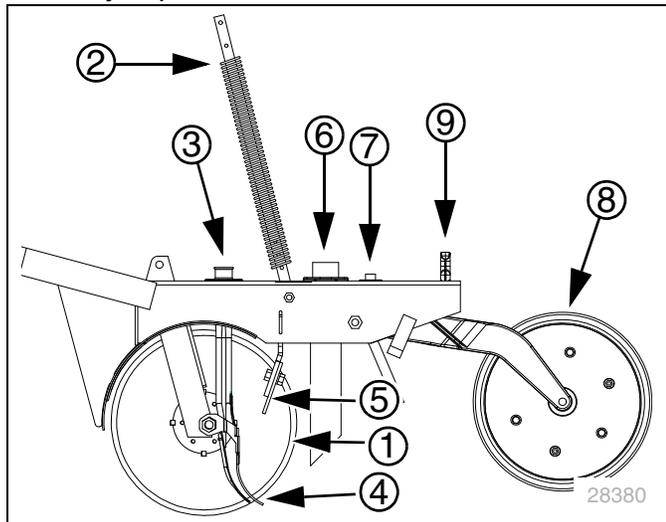
Disk scraper (5) - In sticky soils a scraper helps keep the opener disks operating freely. A slotted scraper is standard, spring-loaded carbide scraper is optional.

Native grass seed delivery tube (6) - optional. No adjustments are necessary.

Fertilizer delivery tube - optional. No adjustments are necessary.

Small seed delivery tube (7) - optional. No adjustments are necessary. If fertilizer is also installed, small seeds are delivered by a side tube.

Press wheels (8) - The press wheels close the seed trench. The T-handle (9) controls press wheel height and opener depth. See “Opener Depth” on page 25. A variety of press wheels are available.



■ Disk Blade Adjustments



Sharp Object Hazard

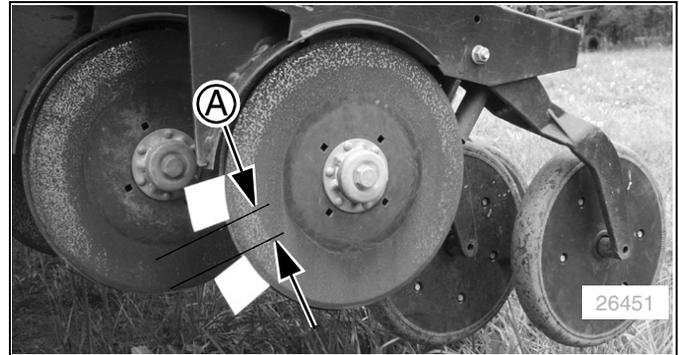
Coulter and disk blades are sharp. To avoid serious injury, wear gloves when working in this area.

As disk blades wear, the diameter of the disks and the contact gap changes. Opener disk angle and stagger is not adjustable, but disk-to-disk spacing is adjustable. Seeding depth will also change or become irregular unless adjustments are made to blade spacing and the T-handle setting. Generally, the blades need to be replaced completely before coulter height adjustments would be needed.



If blades are replaced, spacers must be reset.

The ideal spacing causes the blades to be in contact for about 2.5 cm. If you insert two pieces of paper between the blades, the gap between them should be 1.3 mm to 44 mm (A).

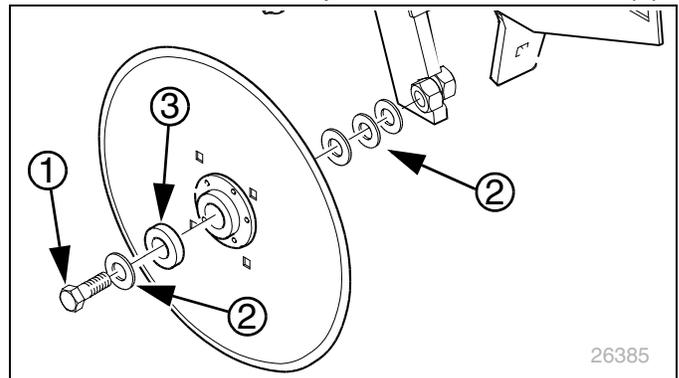


If the contact area is significantly larger or smaller (or there is no contact at all), adjust by moving one or more spacer washers.

If the contact region varies with blade rotation, one or both blades is likely bent and needs replacing.

Adjusting Disk Contact

1. Raise the drill and lock the lift-assist cylinder.
2. Remove the bolt (1) keeping the opener disk on one side.
3. Carefully remove the disk. Note how many spacers (2) are outside and inside the disk. Do not lose the hub components and dust cover (3).



4. To reduce the spacing between the disks, move one spacer from the inside to the outside of the disk.
5. Assemble and check the disk contact.

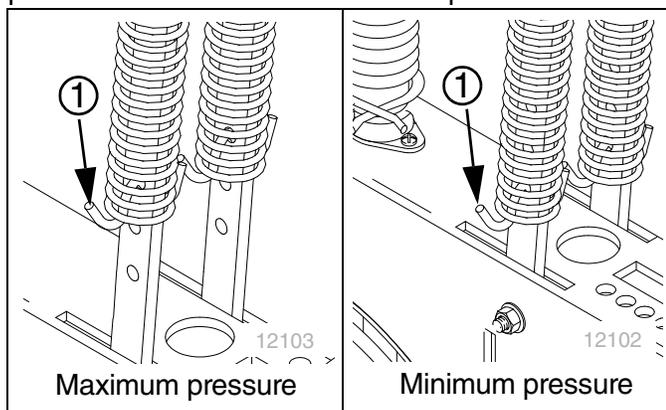
■ Opener Down Pressure

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.

In most soil conditions, the factory spring setting is sufficient to make a consistent furrow. In extremely heavy soil conditions, with the coulters running at the desired depth, the openers may be making a furrow of inconsistent depth. Rather than increase the coulters depth, you can increase opener down force at the row unit springs.

The W-clip (1) should be in the lowest hole, which is the correct location for all conditions. The W-clip can be raised on openers behind wheel tracks only if penetration is not adequate.

To adjust the pressure, remove W-clip. Place the W-clip in a higher hole in the spring rod for more pressure or in a lower hole for less pressure.



W-Clip Hole	Row Down Force Added
Highest	+27 kg
Middle	+14 kg
Lowest	Factory Setting



Machine Damage Risk

Use this adjustment only for a few rows, typically in tire tracks. Do not set row force higher on all rows. Instead, use coulter adjustments and frame weight adjustments.

Check the drill level after adjusting the row force.

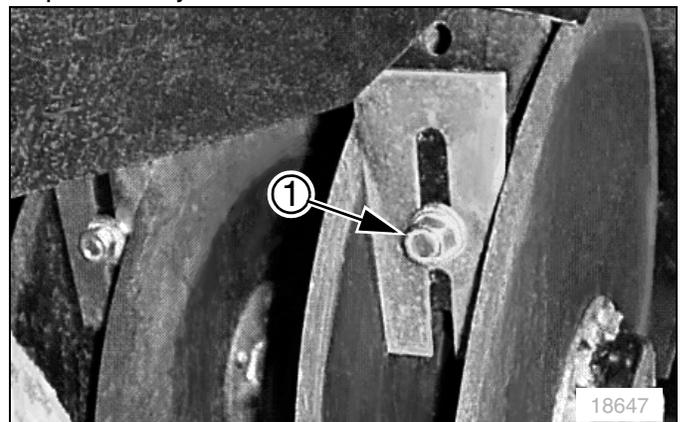
■ Disk Scraper Adjustment

To keep opener disks turning freely, scrapers are mounted between the 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 a scraper, loosen the 3/8 inch bolt (1) and move the scraper as needed.

The standard scraper is shown below. Optional spring-loaded carbide scrapers are available. They require no adjustment.



■ Opener 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 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.

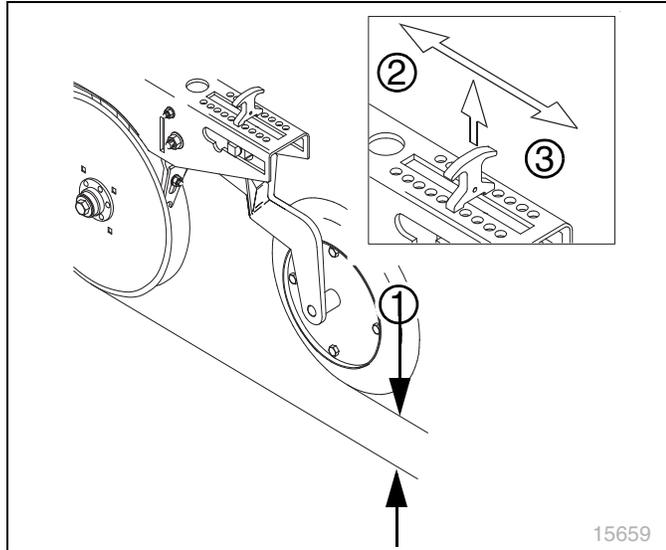
Set opener seeding depth by adjusting the press-wheel height (1). To adjust, first raise the drill slightly, then lift and slide T-handles on top of openers.

In no-till conditions, use the T-handle to set opener depth near, and at any level above coulter depth.

In soft or conventionally tilled soil, the opener disk depth is more independent of the coulters.

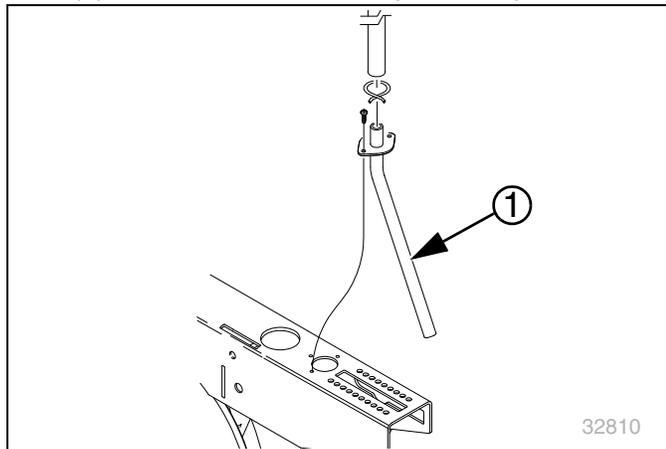
For shallower seeding, slide the T-handle toward the drill (2).

For deeper seeding, slide the T-handle away from the drill (3).



■ **Small Seeds Tube Adjustment**

On a drill with a small seeds box, rotate the seed tube (1) to face forward for deeper seed placement.



i This position can be used only if the seed firmer is a seed flap. If a Seed-Lok® firming wheel is installed, seed falls on the firmer and may be scattered rather than placed deeper.

■ **Seed-Lok® Lock Up**

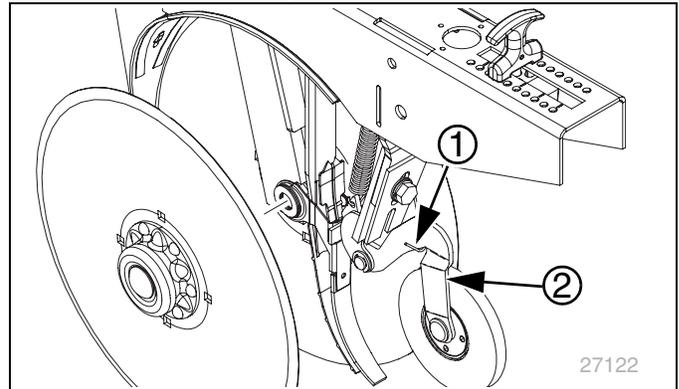
The optional Seed-Lok® firming wheels provide additional seed-to-soil contact. The wheels are spring loaded and do not require adjusting. In some wet and sticky conditions the wheels may accumulate soil. To avoid these problems, you can lock up the wheels.

To lock up:

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



The illustration shows the opener disks remove for clarity. This task can be done with disks mounted. It is not necessary to remove the opener disks.

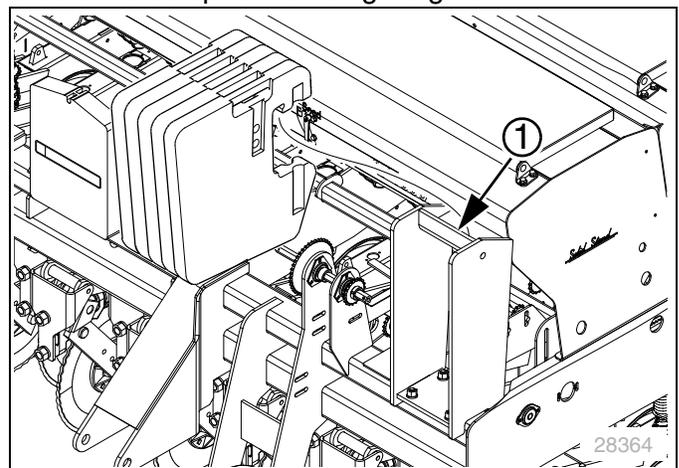


■ **Drill Weight Adjustment**

In heavy no-till conditions, or if it is otherwise necessary to increase coulters spring force, extra frame weight may be required. Higher forces will lift the drill off the ground, resulting in unreliable ground drive operation.

Adding weight requires the optional weight kit and standard suitcase tractor weights (kit does not include weights).

The weight kit includes two brackets (1). Each bracket holds up to five 45 kg weights.



The following table shows the additional force per row that the weight kit can provide.

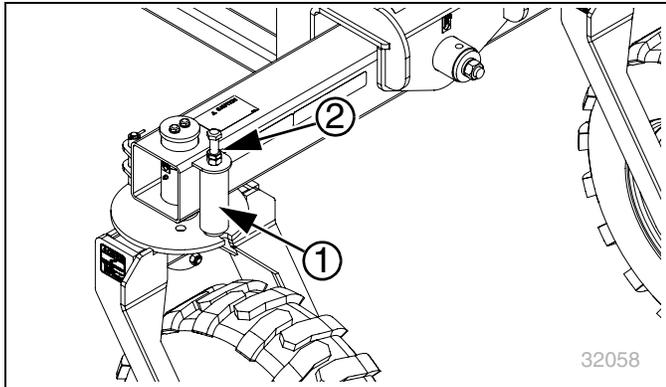
Weights Added	Additional Force per Row (kg)
2	6
4	12
6	18
8	24
10	30

■ Caster Brake Adjustment

The rear lift-assist wheels each have independent adjusters for the caster pivot. The adjustments will vary depending on different field conditions as well as road transport conditions.

The caster tube (1) acts as a pivot brake, and helps prevent caster oscillation during transport.

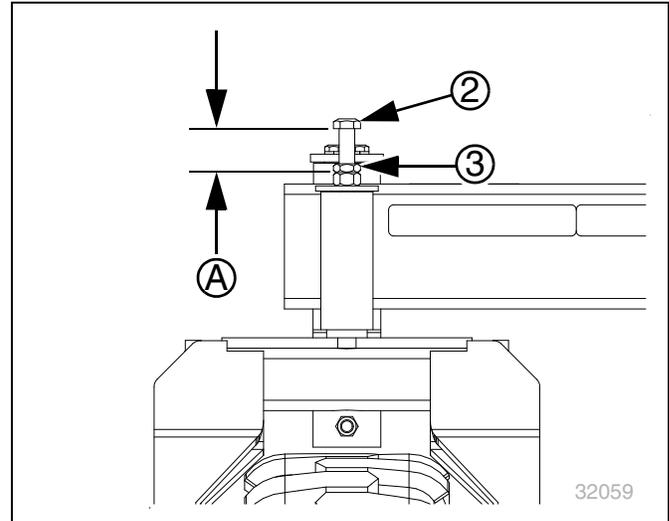
If the caster is oscillating during transport turns or in field use, adjust the pressure plate bolt (2).



The factory setting is 4.4 cm (A) from the face of the bolt head to the top of the weldment. This measurement is a starting point and will need to be fine tuned from field to field as conditions vary. Depending on conditions, adjustment may be needed to go from field to road transport. If caster brake components are ever replaced, return the bolts to the factory setting.

Pressure Plate Adjustment

1. Loosen the jam nut (3).
2. Turn the bolt (2) clockwise until the spring is fully compressed.
3. Back the bolt out 6 mm.
4. Tighten the jam nut.



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



Crushing Hazard

A falling implement can cause severe injury or death by crushing. Always have drill frame sufficiently blocked up when working on and under implement.



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. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek immediate medical attention from a physician familiar with this type of injury.

■ Maintenance Checklist

- ☑ After using the drill for several hours, check all bolts to be sure they are tight.
- ☑ Remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
- ☑ Lubricate areas listed in “**Lubrication**” starting on page 31.
- ☑ Maintain proper air pressure in the tires.
- ☑ Inspect hydraulic hoses for cuts, cracks and aging. Check fittings for evidence of leaks.
- ☑ Clean the drill on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
- ☑ Replace any worn, damaged or illegible safety decals. See “**Safety Decals**” starting on page 6.

■ Materials Clean-Out

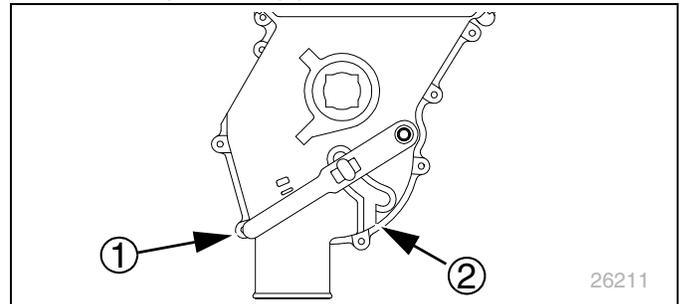


Possible Dust and Chemical Fume Hazard

Clean-out can create dust and fumes from seed residue and seed treatment. Wear a respirator and any other protective equipment specified by the seed and/or seed treatment supplier.

Main Box and Dual Box

1. Set the seed rate handle to zero. This moves the feed cup sprockets out of the seed path.
2. Position a tarp or bucket under each row or set of rows to be cleaned out.
3. Pull the feed cup door handle (1) out, and swing down to position (2).



4. Open the main seed box and use a small brush to sweep the seed toward the feed cups. If seed does not flow freely, inspect the feed cup, hose and seed tube for obstructions.
5. If a vacuum cleaner is available, remove any residual material.

It is not necessary to operate the meter drive shaft for clean-out. With the seed rate handle set to zero, nothing moves inside the seed cups.

Inspect the flutes for excess wear and damage by rotating the shaft.

Set the seed rate handle to 100 and disengage the lock-out hub. With openers lowered to engage the clutch, slowly turn the seed meter jackshaft with the calibration crank, while another person inspects the flutes from the open seed boxes.

Small Seeds Box

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

Native Grass Box

1. Raise and lock up the drill. Place a tarp under the native grass seed tubes.
2. Set the native grass drive type (right gearbox) to 4. Optionally install the smallest final driven sprocket.
3. Install the calibration crank, and turn the drive system until no seed flows from the native grass tubes.
4. If a vacuum cleaner is available, remove any residual seed.



Equipment Damage Risk

Washing out with water is not recommended for the native grass box, particularly if seed lubricants have been used. Water may cause buildup of solid residue. Fill material used in native grass mixes can also cause problems.

Fertilizer Box



Chemical Hazard:

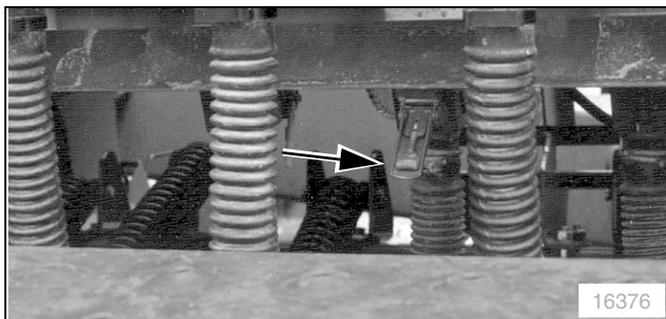
Wear protective equipment specified for the most recent type of fertilizer used in the drill.

After applying fertilizer, clean the box as soon as possible. Fertilizers often contain corrosive chemicals.

With a small scoop or can, remove as much fertilizer as possible from the box.

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

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



Wash inside of the fertilizer box with high pressure water.

Let the box dry before closing clean-out doors.

■ Disk Maintenance



Sharp Object Hazard

Coulter and disk blades are sharp. To avoid serious injury, wear gloves when working in this area.

Coulter and opener disk blades wear in normal service, becoming smaller in diameter. Periodically check blade diameter, and replace when below the recommended limits. Disks can also be dented or bent by field hazards. Replace damaged disk blades immediately.

Opener Disk Blade Replacement

Replace 38.1 cm opener disk blades when re-positioning spacers no longer brings both blades into contact as recommended at “**Disk Blade Adjustments**” on page 24.

Coulter Disk Blade Replacement

Replace 43.2 cm coulter blades when adjusting the drill level becomes difficult. Two signs that disk blade replacement is indicated are:

1. Coulter height adjustments drill-wide are using the lowest axle hole (page 21).
2. Coulter blade diameter is close to, or below, 38.1 cm.

■ Chain Maintenance

Chain Lubrication

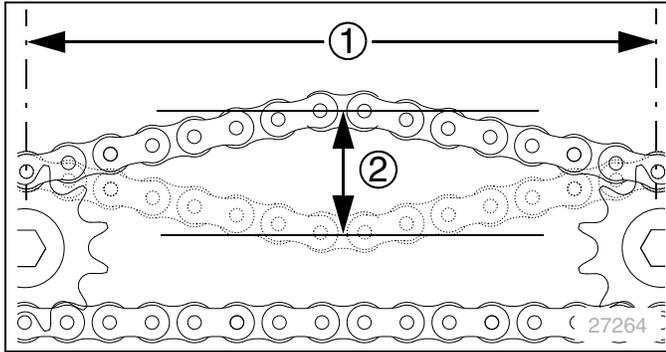
Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season. Use a multi-purpose spray lubricant.

Chain Slack

Initially check the drive chains after the first 10 hours of drill use. The new chain slack tends to increase during the first few hours of operation due to seating. After the first 10 hours, check the chains every 100 hours.

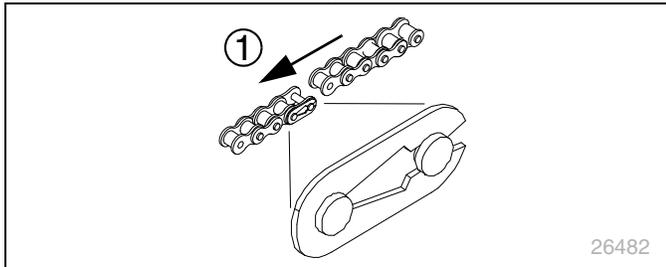
To check chain slack:

1. Measure the span (1) for allowable slack. Locate the longest span of each chain.
2. Measure the current slack (2). At the center of the span, deflect the chain at a right angle in both directions. The slack is the distance of the movement.



3. Determine the ideal slack:
 - Long chains (over 91cm) - 21 mm/m
 - Vertical short chains - 21 mm/m
 - Horizontal short chains - 42 mm/m
4. Adjust the idlers for ideal slack.

Whenever mounting a chain, make sure the clip at the removable link is positioned to minimize snags. Install the clip with the open end facing away from the direction of chain travel (1).



■ Lift-Assist Adjustment

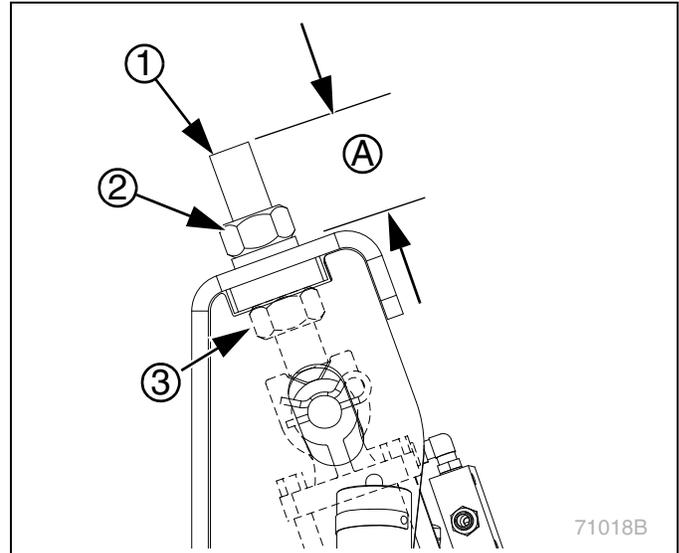
It may be necessary to make adjustments to the eyebolts (1) at the top of the lift-assist, for example, if the lowered position is too high even with no spacers on the cylinder rod.

The factory setting is 88.9 mm (A).

To make adjustments:

1. Determine what change in drill height is required.
2. Hitch the drill to the tractor's 3-point lift arms. Raise the drill, and support the rear tool bar on jack stands.
3. Loosen the jam nut (2).

4. Rotate the adjuster nut (3) by the height change required.
 - Moving the eyebolt lower increases height.
 - Moving the eyebolt higher decreases height.
5. Tighten the jam nut.
6. Lower the drill and check the setting.



■ Bleed Hydraulics



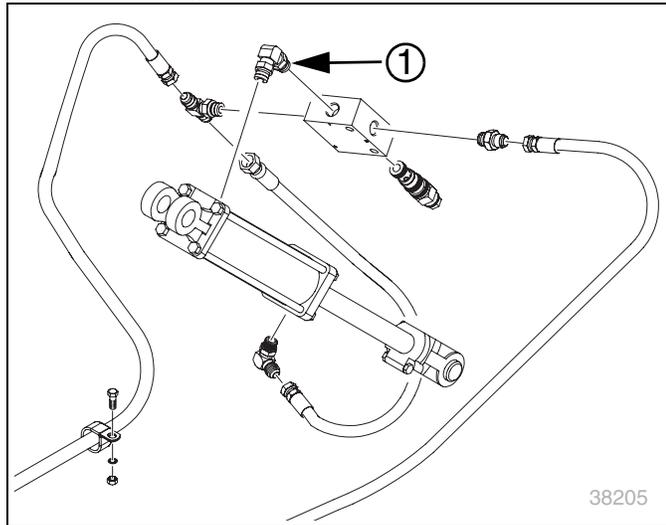
High Pressure Fluid Hazard

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

Bleed pressurized lines only at JIC or NPT fittings. Avoid bleeding at ORB. Never bleed pressurized lines at QD fittings.

1. Check hydraulic fluid in the tractor reservoir and fill the reservoir to the proper level. A low reservoir level may introduce air into the system, causing jerky or uneven cylinder movements.
2. Hitch the drill to the tractor.
3. Raise the drill and remove lift-assist lock channel or stroke control spacers if installed.
4. Fully lower the drill.
5. Set the tractor lift circuit to float and shut off the tractor.

- Slightly loosen the JIC connection (1) at the elbow fitting.



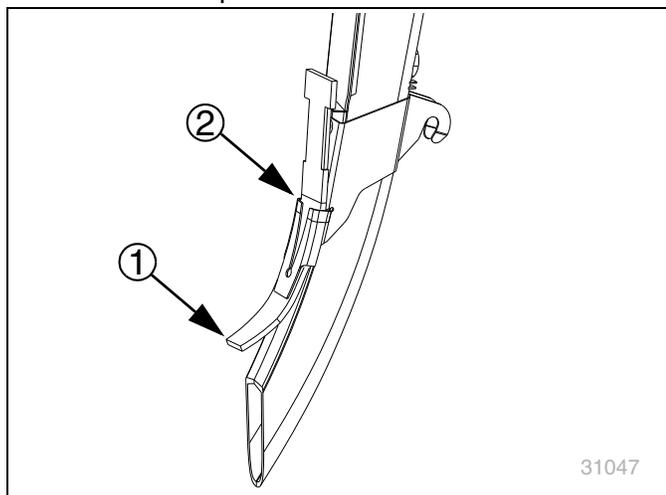
- Start the tractor. Slowly extend the lift-assist circuit until oil seeps at the cracked fitting.
- Set the circuit to neutral and shut off the tractor.
- Tighten the JIC fitting to 24-27 Nm.
- With the cylinder bled and tightened, raise the drill and install the lock channel or stroke control spacers.

■ Seed Flap Replacement

To replace a seed flap (1), use needle nose pliers or similar tool to grasp the T at the of the flap. Pull up to remove the flap from the metal bracket (2).

Push the new seed flap down through the metal bracket until the flap snaps into place with the T resting on top of the bracket.

If a seed firmer is also installed, it may be necessary to shorten the flap.



■ Gearbox Maintenance

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 the shaft bearings using at least 7 ounces of gear lube, part number 788067B.

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

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



■ Gearbox Damage Risk

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

■ Lubrication

If any movable parts such as levers, pivots, and clamps are not moving smoothly due to rust or hindering material, do not attempt to force parts into motion. Instead, remove the rust or unwanted material and apply oil or grease on the relevant spot. Otherwise, machine may become damaged through impaired usage.



■ Machine Damage Risk

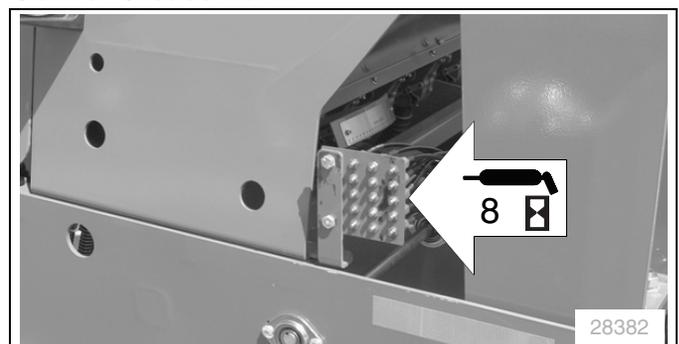
Do not use petroleum based products on feeder cup or small grass cup components.

Apply a small amount of grease to the following areas at the hourly intervals indicated. If you operate the machine in extremely wet and/or muddy conditions, lubricate grease fittings more frequently.

Grease Fittings

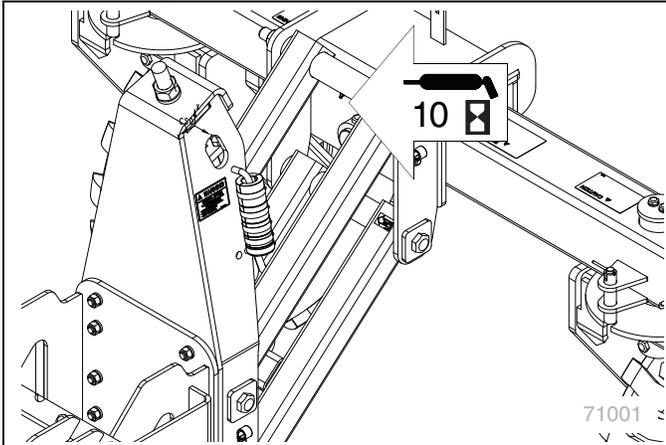
Lubricate with grease at the hourly interval indicated in the arrow.

Coulter Grease Bank



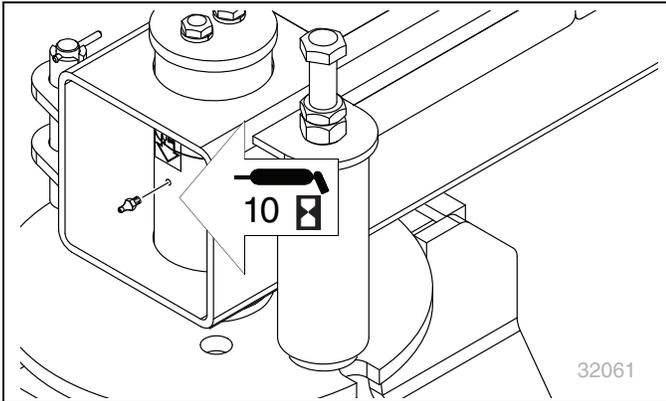
Lift-Assist Arm Pivots

Grease four grease fittings.



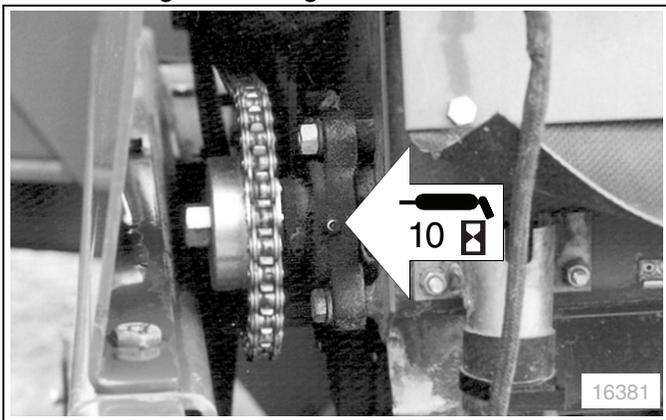
Caster Pivots

Grease two grease fittings.



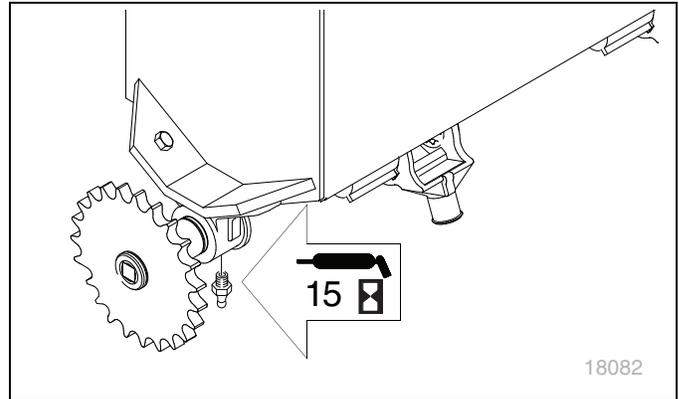
Fertilizer Shaft Bearings

Grease two grease fittings.



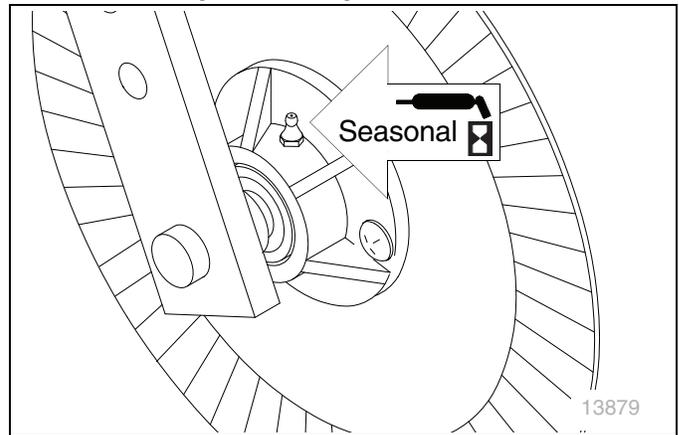
If small seeds is also installed, access the fertilizer grease fittings from below.

Small Seeds Shaft Bearings



Coultter Hub Bearings

Grease fifteen grease fittings.

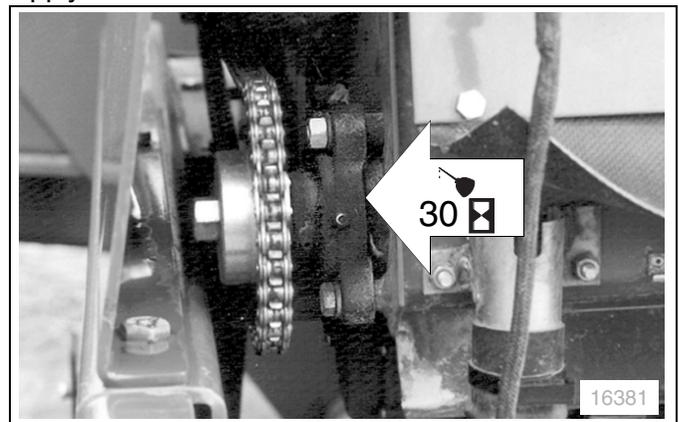


Oil Lubrication

Lubricate thoroughly with oil at the hourly intervals indicated in the arrow.

Fertilizer Felt Seals

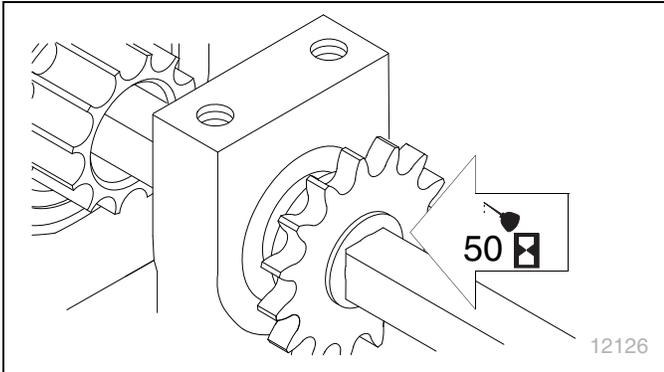
Apply oil to two seals.



If small seeds is also installed, access the fertilizer seals from below.

Feed Cup Drive Shaft Sprocket

With the seed box empty, move the seed rate adjustment handle back and forth to get oil into the square bore.

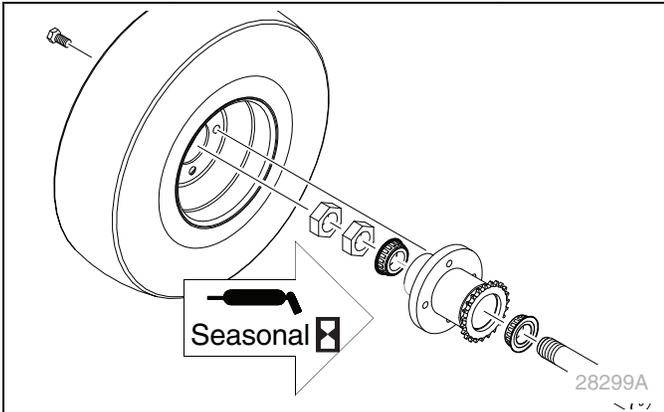


Grease Bearings

Repack the bearings at the intervals indicated in the arrow.

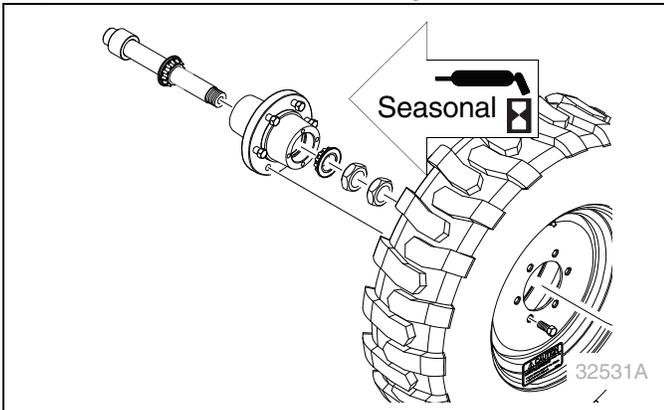
Ground Drive Wheel Bearings

Repack four ground drive wheel bearings.



Caster Wheel Bearings

Repack two caster wheel bearings.



■ Chain Routings

→ show chain direction.

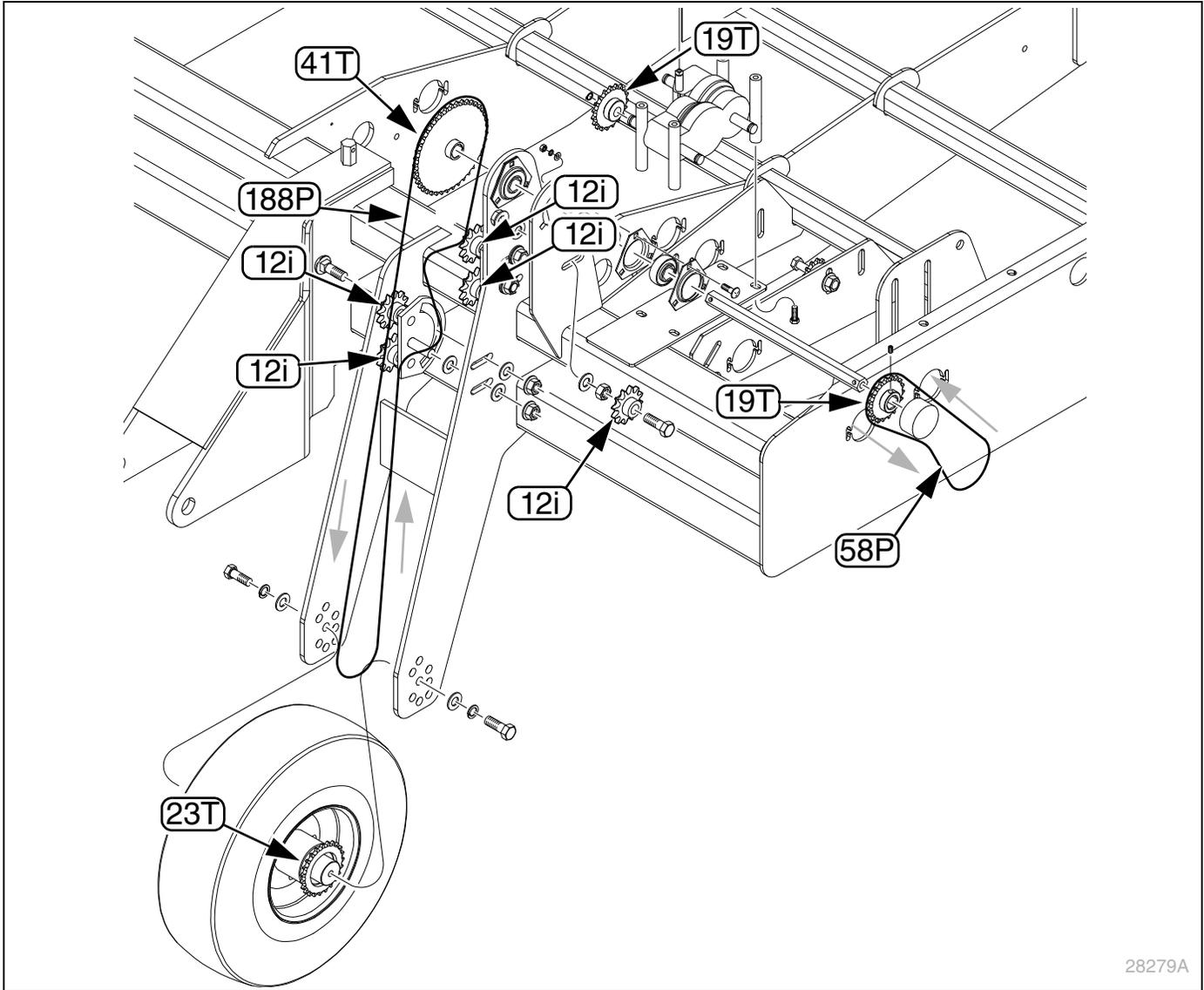
T callouts show sprocket and idler tooth counts.

P callouts show chain pitch count.

i callouts show idlers

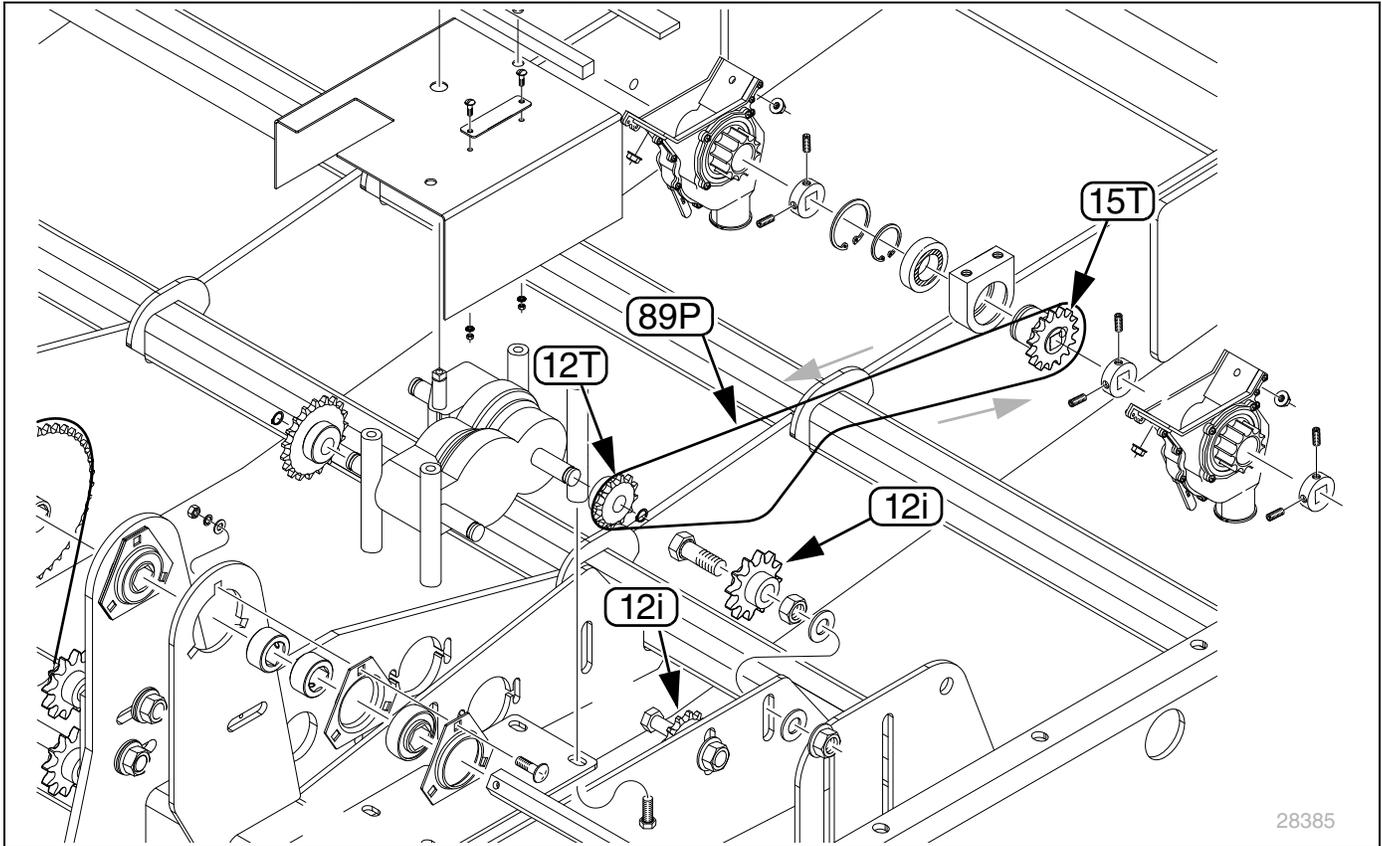
Standard Ground Drive to Gearbox

This drives the main seed box through the left-hand gearbox and, if installed, the optional main box agitator, fertilizer, and/or small seeds.



Main Seed Box Meter Drive

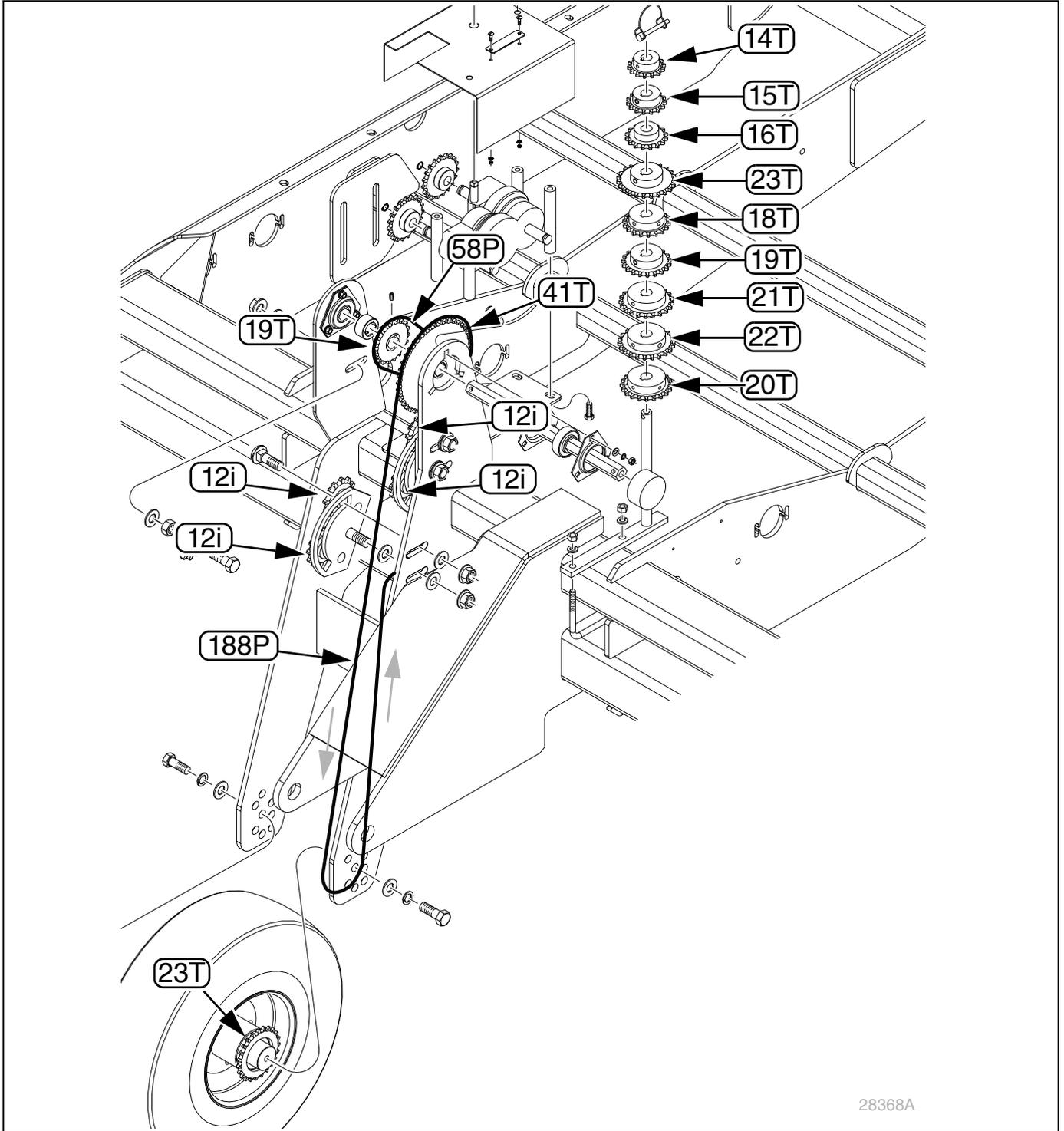
Main box meters are the only meters driven by the left-hand gearbox.



Native Grass Ground Drive

Native grass is driven from the right-hand ground drive.

One sprocket from the storage tower is mounted at the native grass meter shaft.



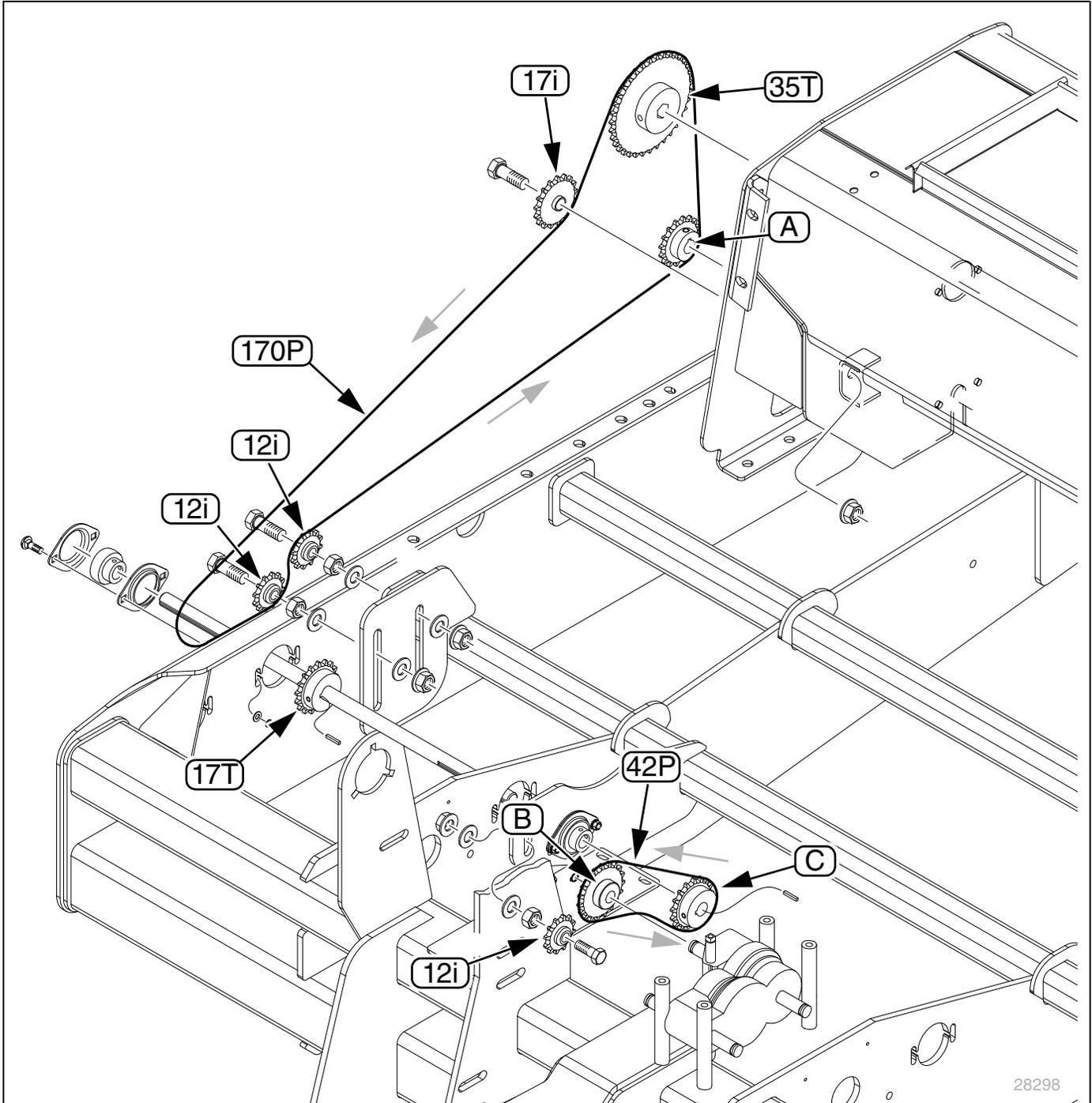
Native Grass Meter Drive

Native grass meters are driven by the right-hand gearbox.

(A) Native grass driven sprocket - 14T through 23T from storage tower (ships with 17T)

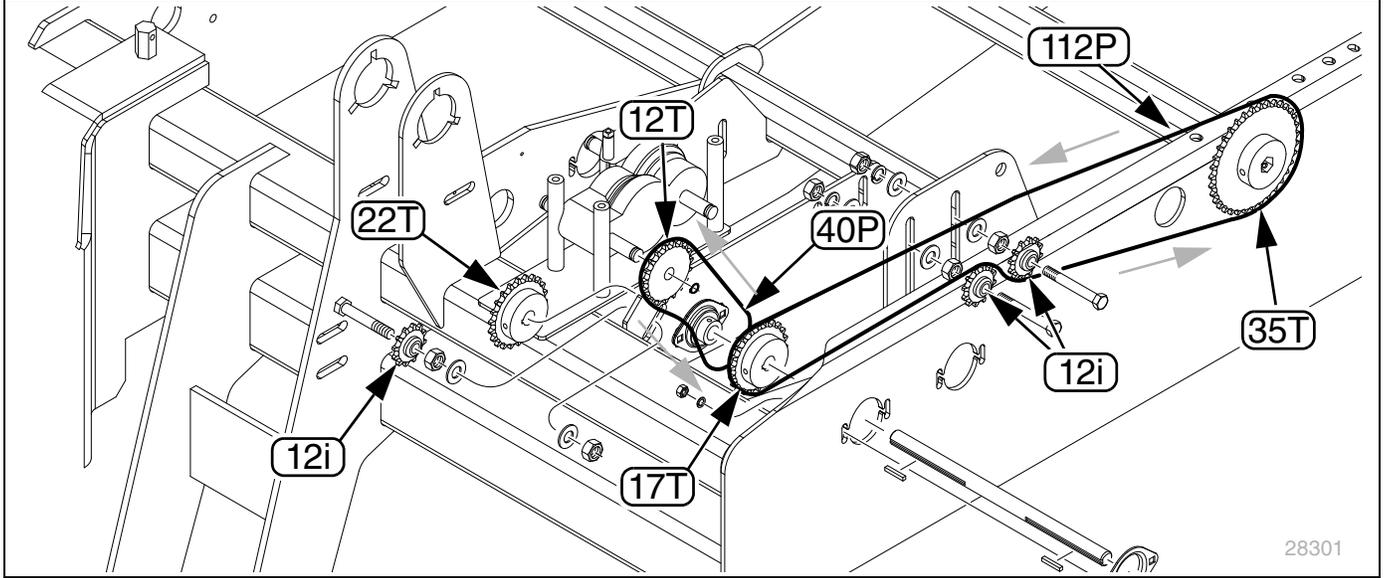
(B) Native grass gearbox output sprocket - standard drill, 19T; with rate reduction kit, 12T

(C) Native grass jackshaft input sprocket - standard drill, 17T; with rate reduction kit, 22T



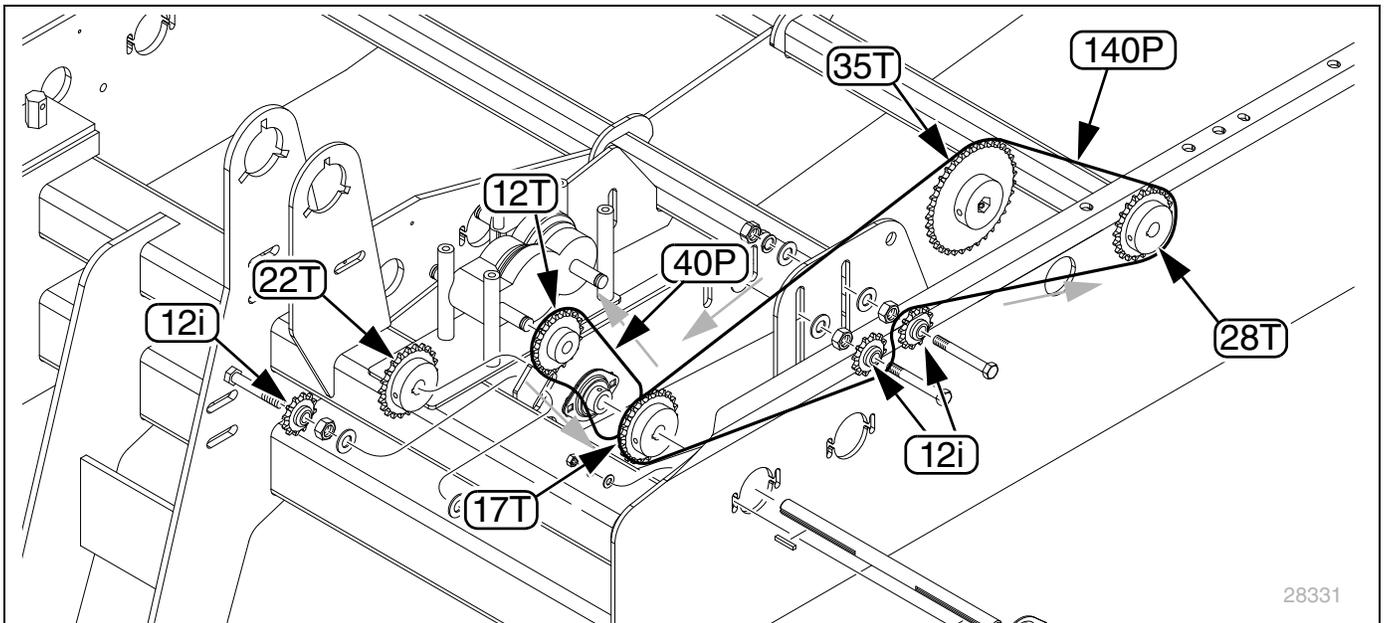
Main Seed Box Agitator (Option)

No fertilizer or small seeds is installed.



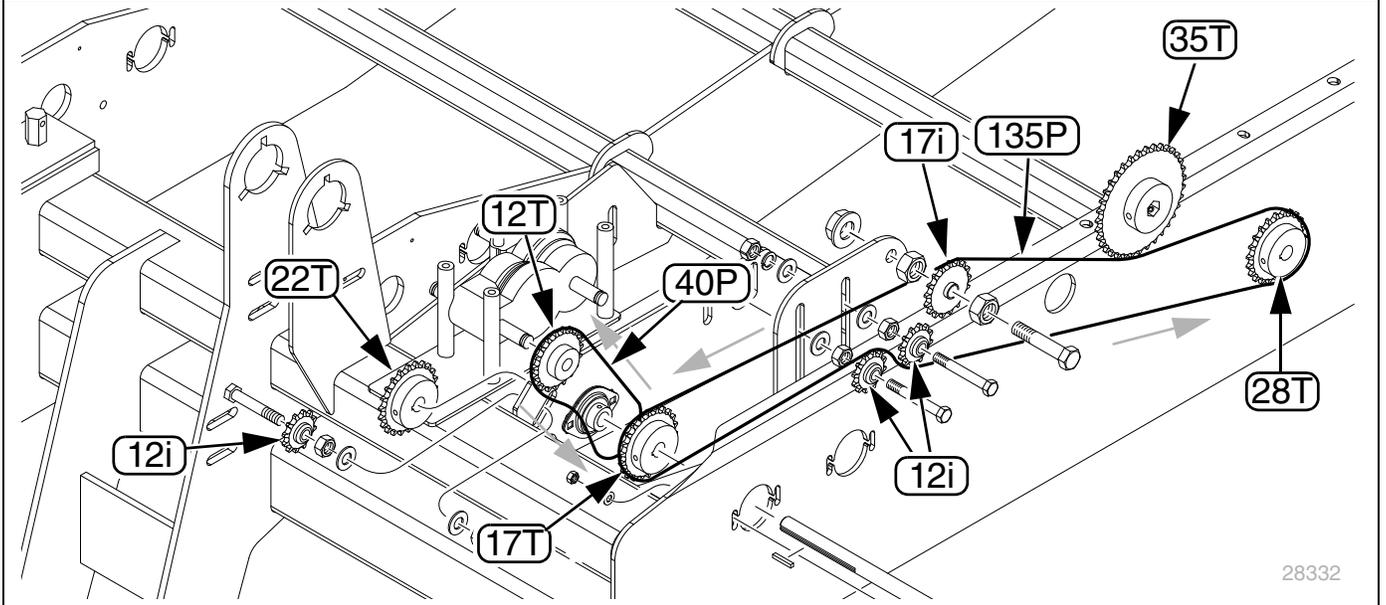
Agitator and Fertilizer Drive

No small seeds is installed.

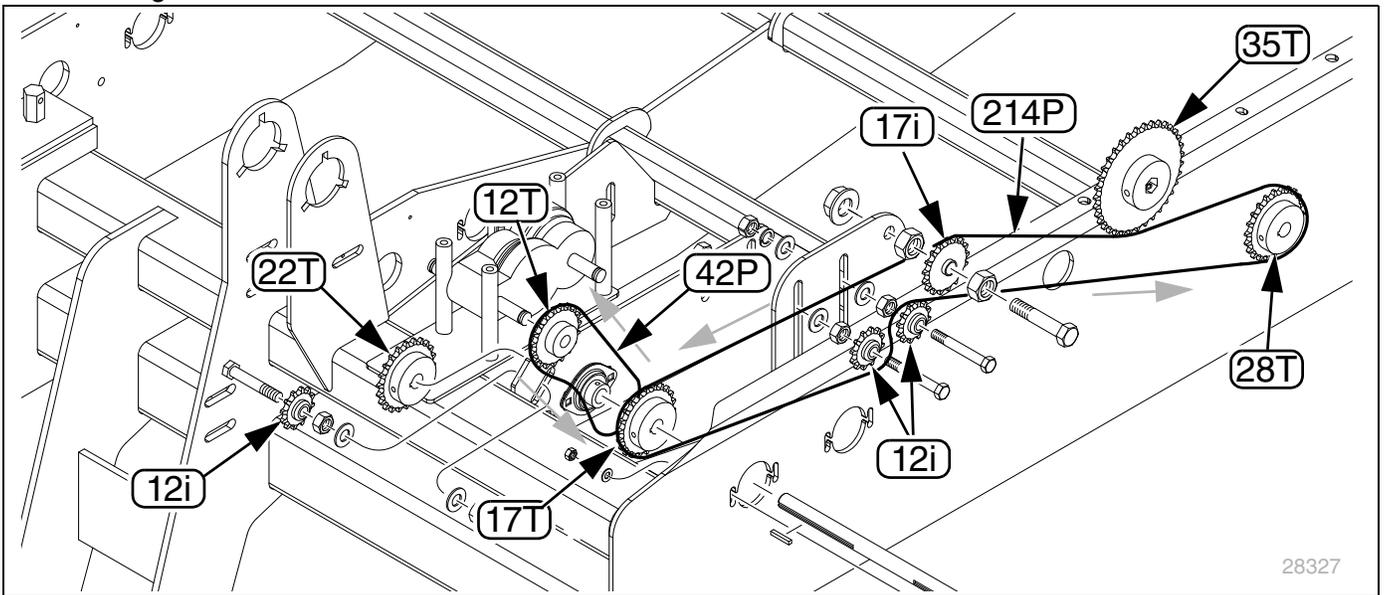


Agitator and Small Seeds Drive

No fertilizer or native grass is installed.

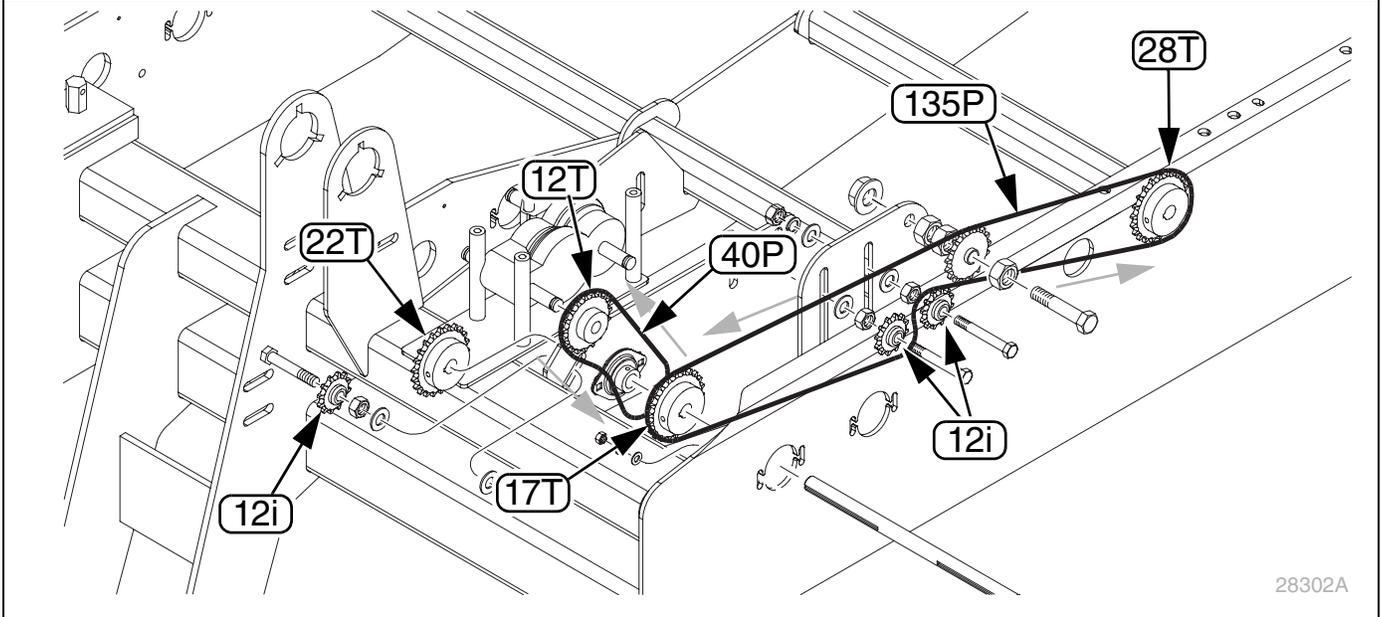


With native grass installed. No fertilizer is installed.

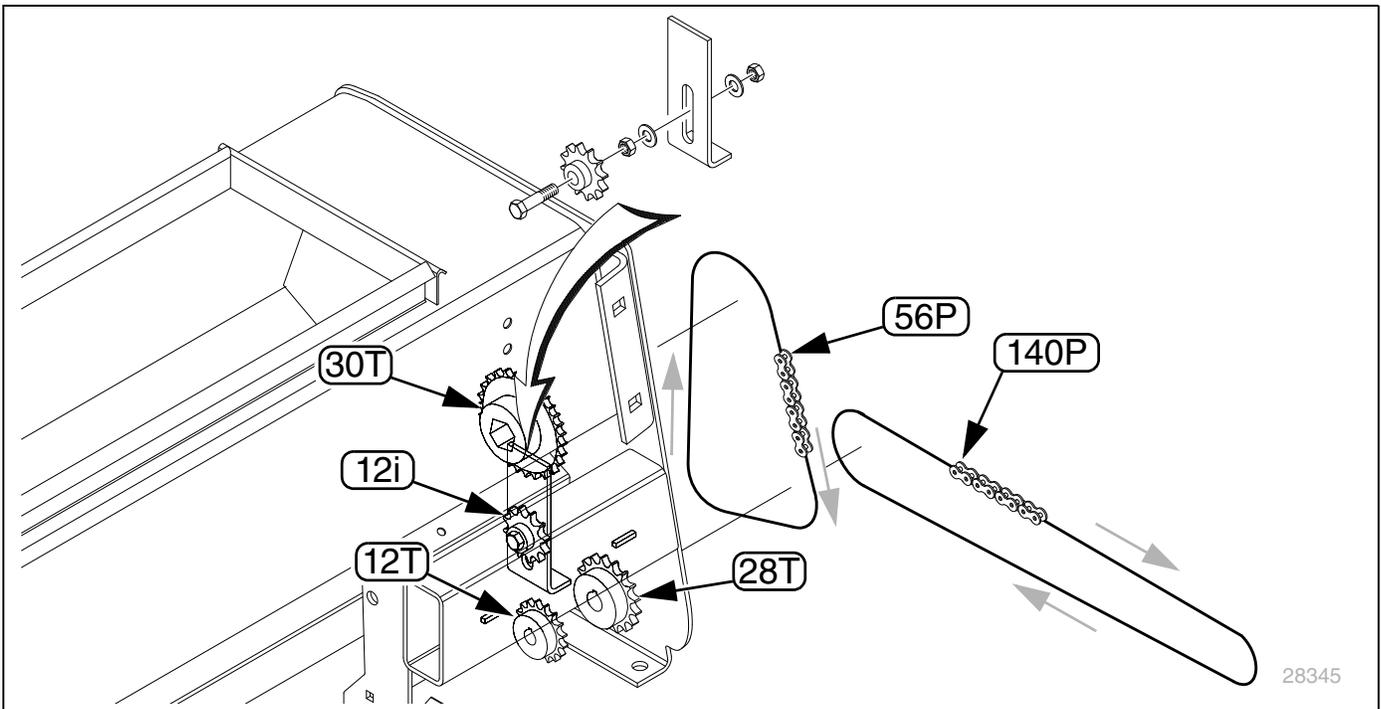


Fertilizer Drive

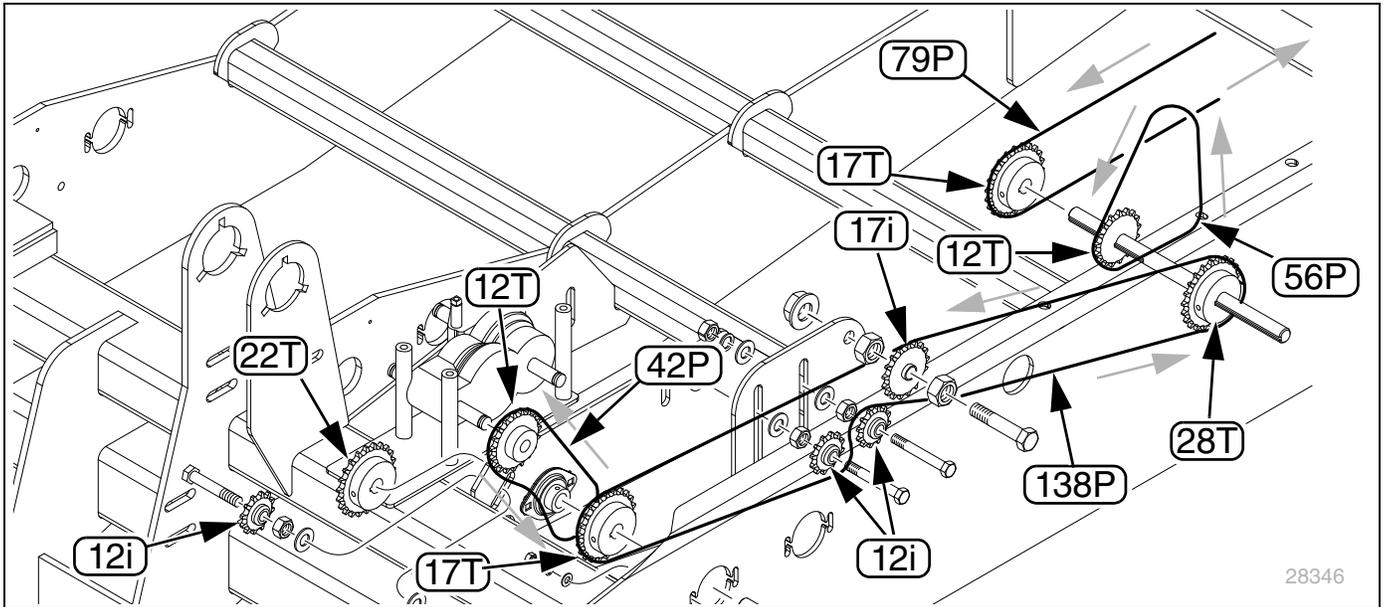
No main seed box agitator is installed.



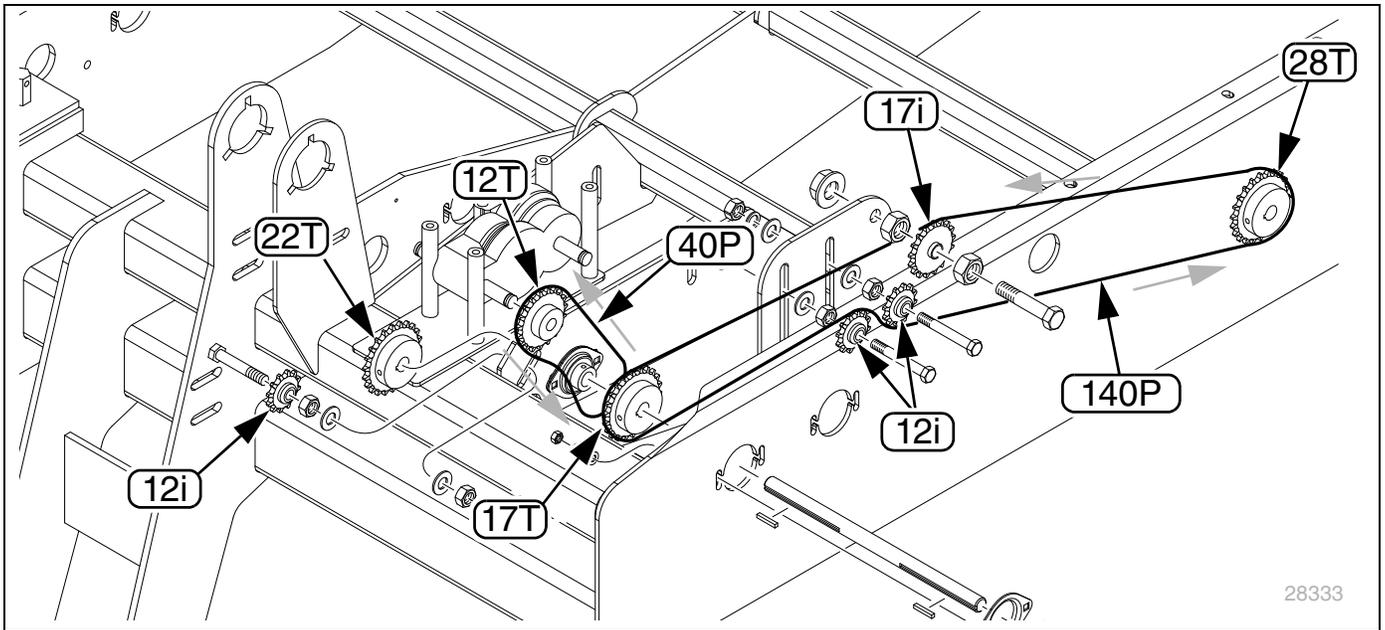
Fertilizer Box Drive



Fertilizer Box Drive w/Small Seeds

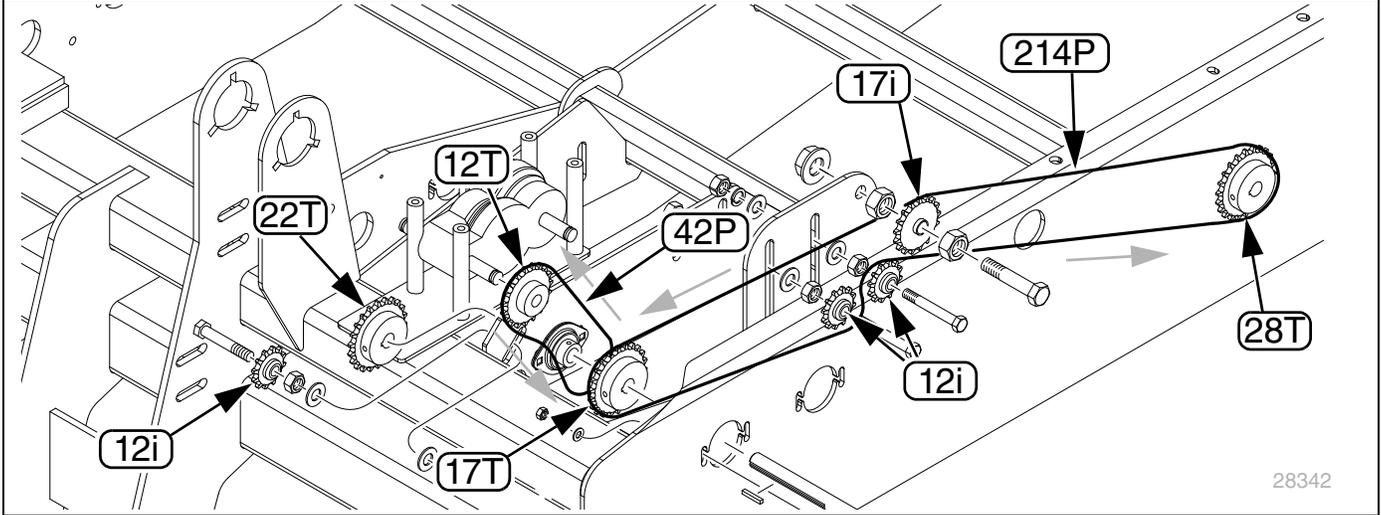


Small Seeds Drive



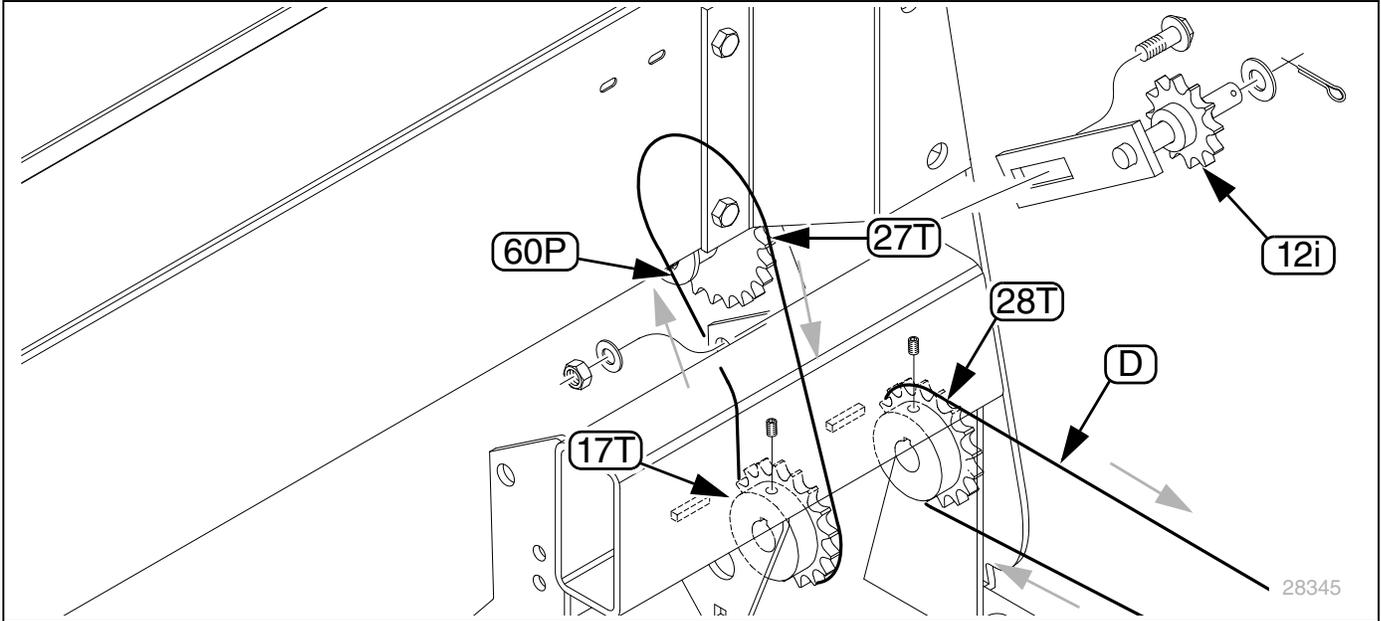
Small Seeds Drive w/Native Grass

No fertilizer is installed.



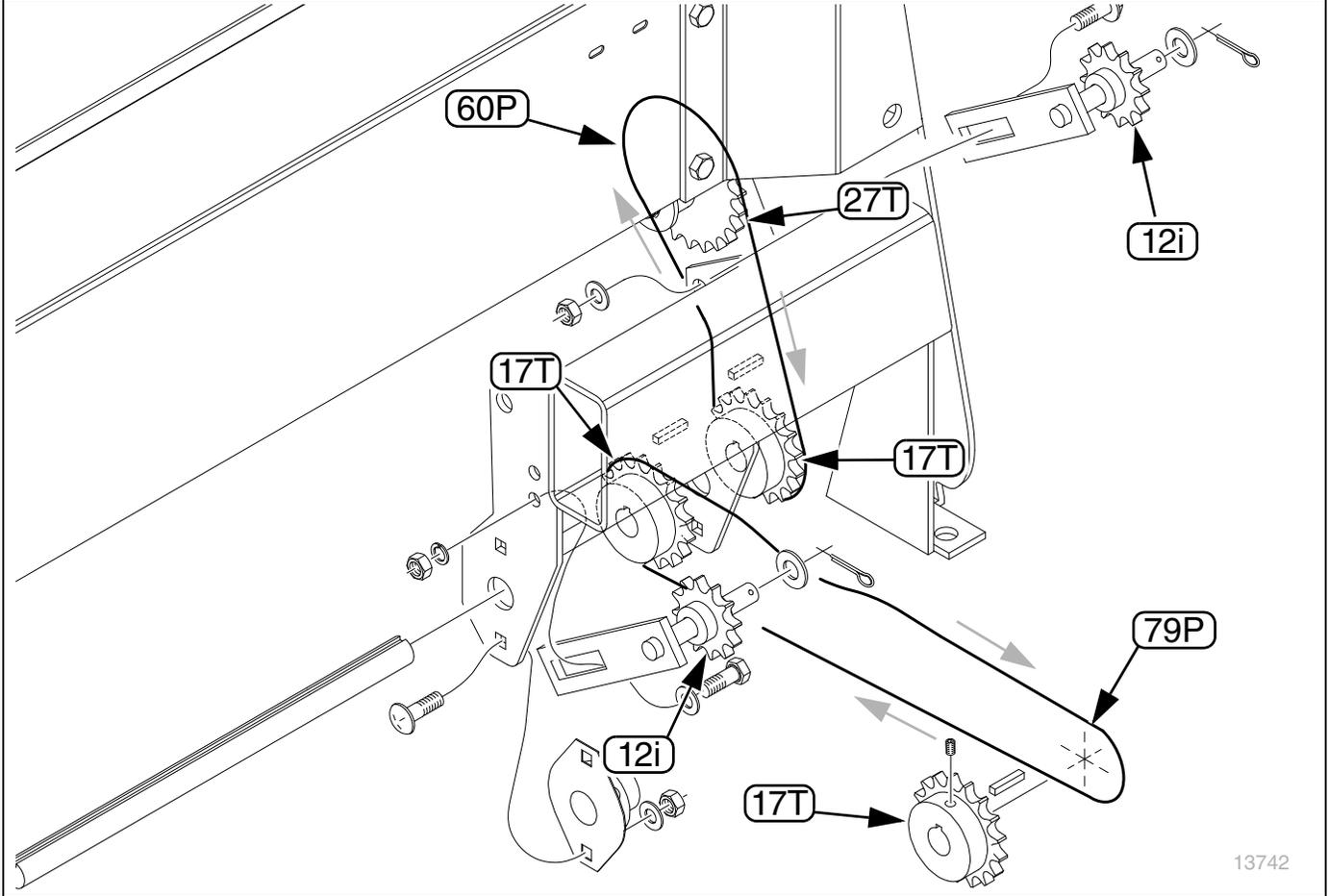
Small Seeds Box Drive

(D) 140P if small seeds only is installed; 214P if native grass and small seeds are installed.



Small Seeds Box Drive w/Fertilizer

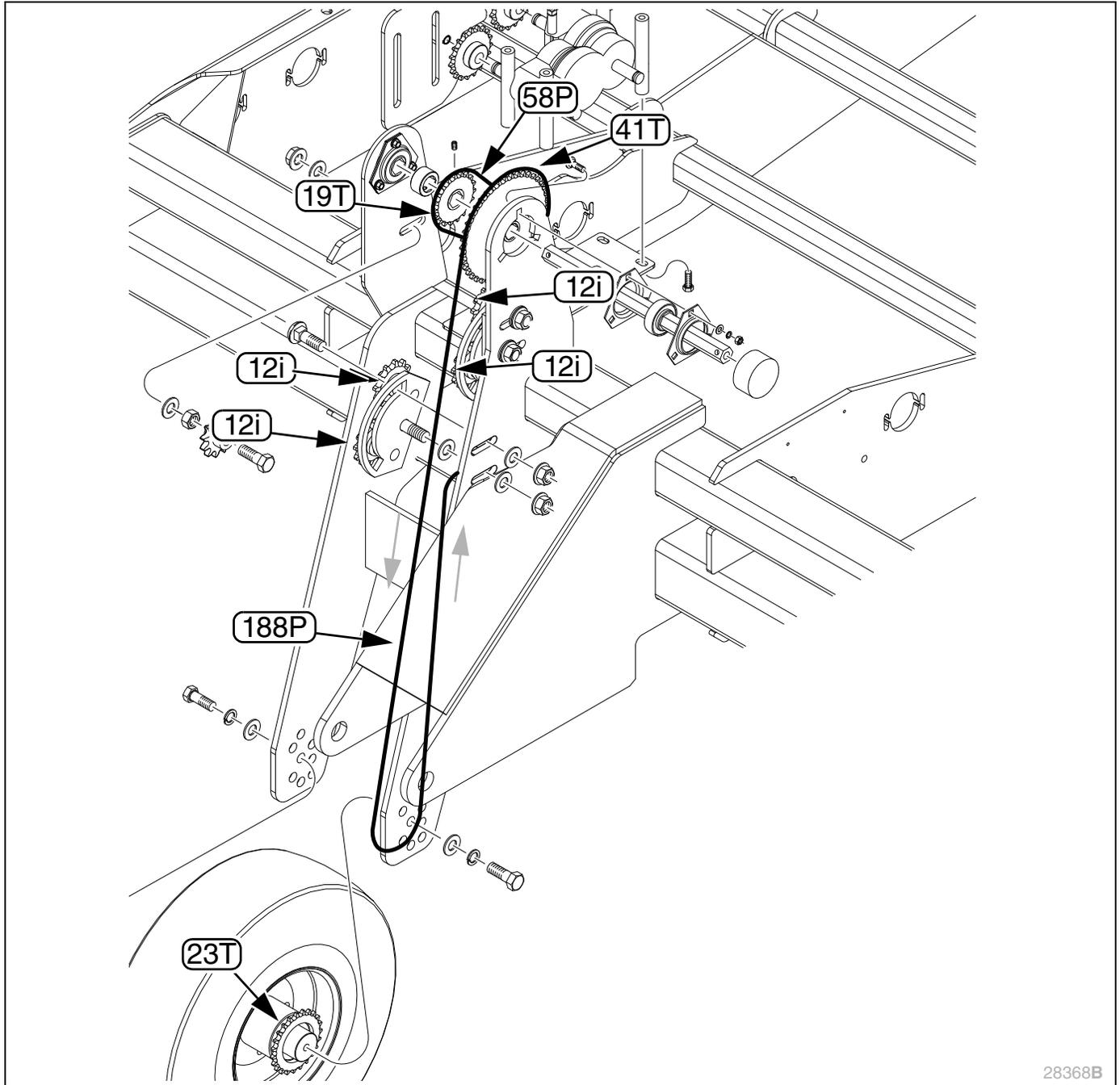
When fertilizer is also installed, small seeds jackshaft is driven from fertilizer jackshaft.



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Dual Seed Ground Drive

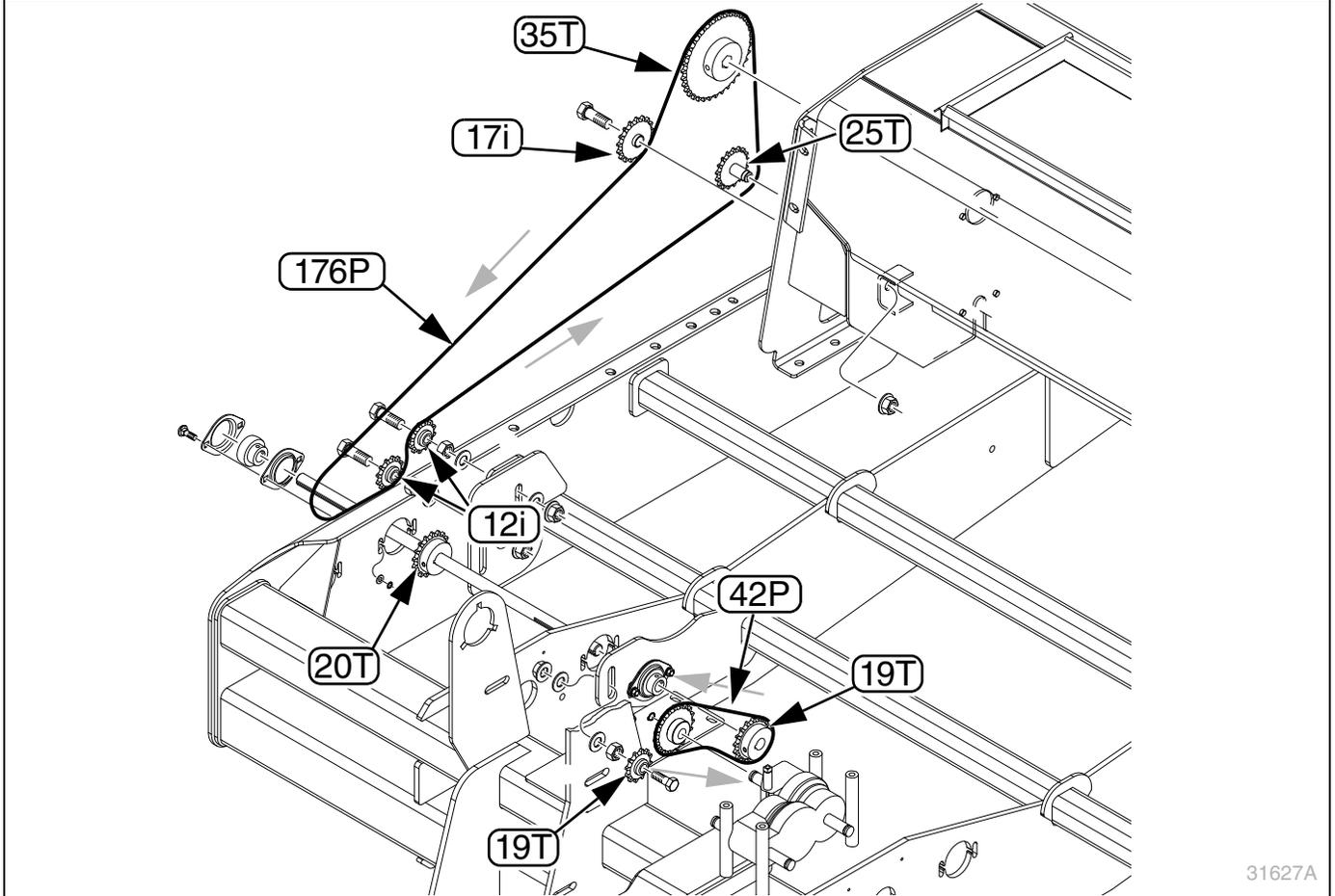
Dual seed is driven from the right-hand ground drive.



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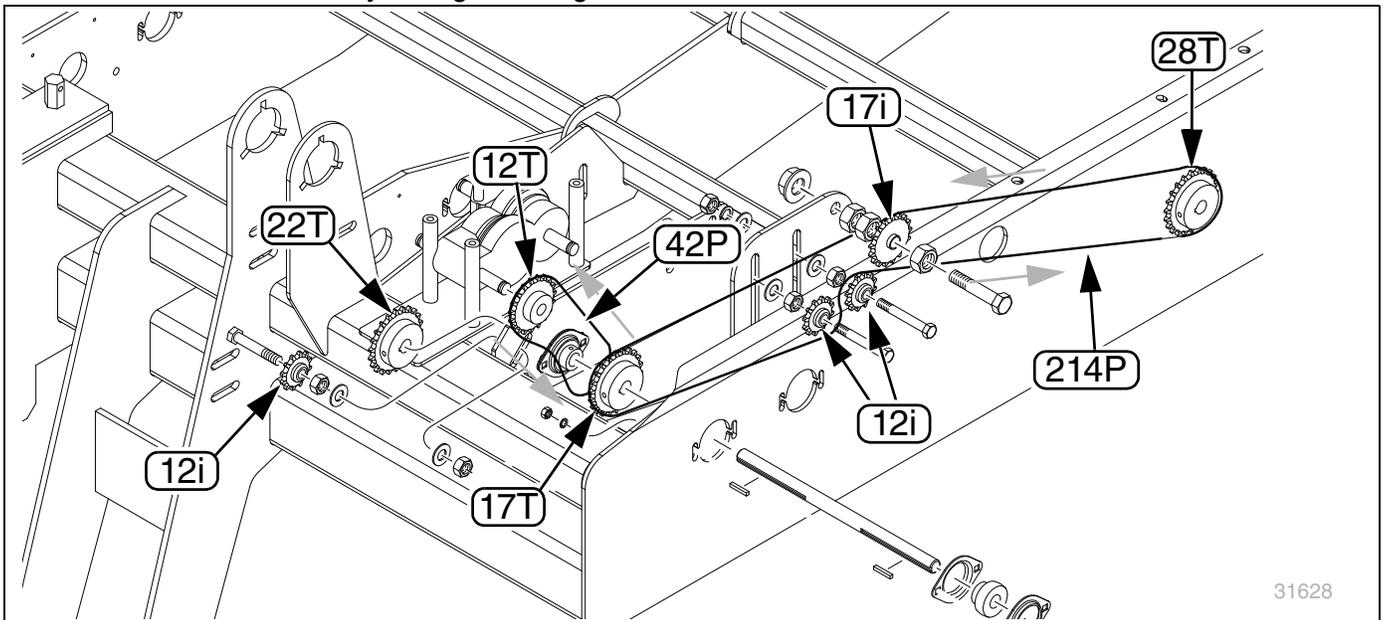
Dual Seed Meter Drive

Dual box meters are driven by the right-hand gearbox.

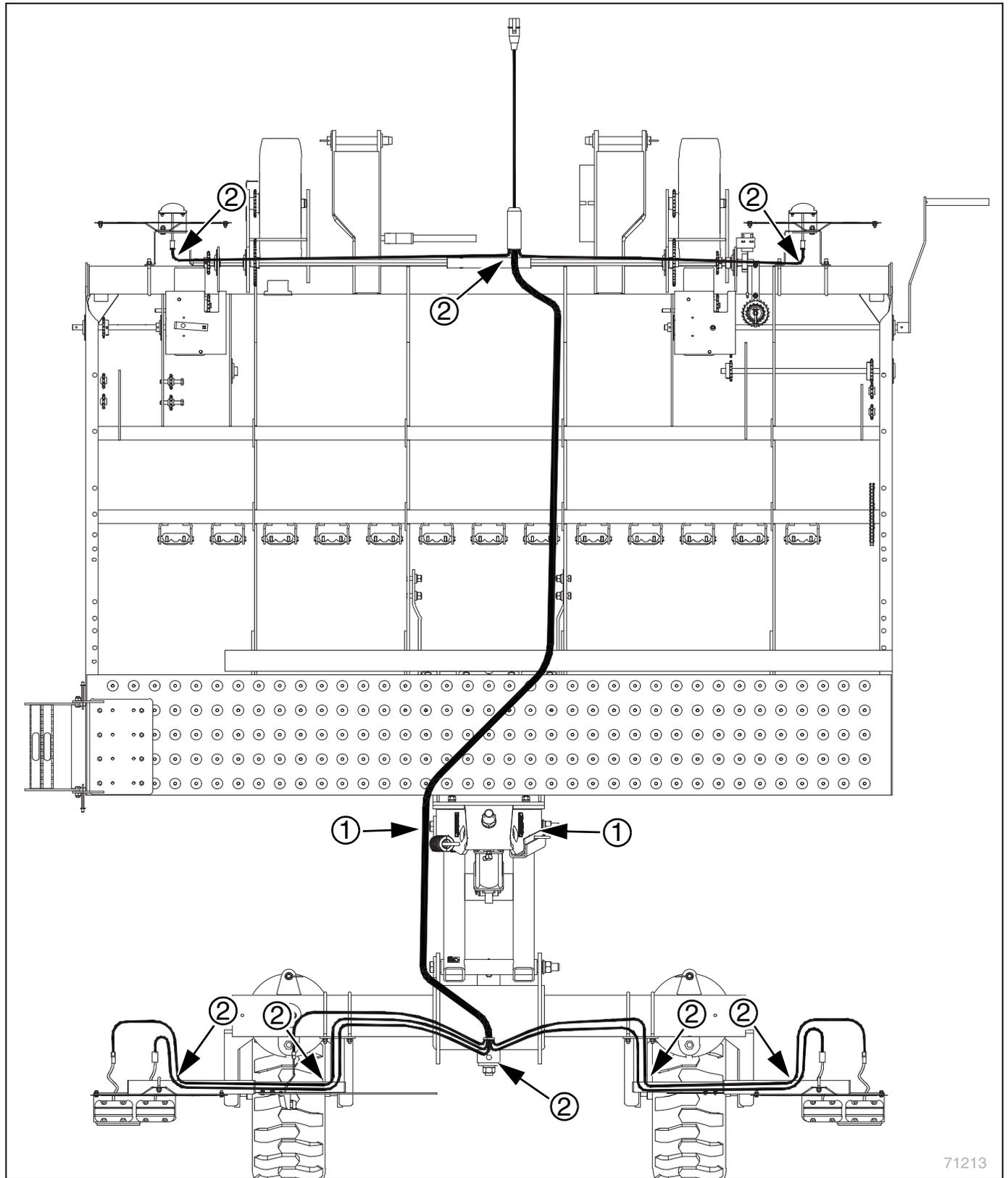


Dual Seed and Small Seeds Drive

Dual box meters are driven by the right-hand gearbox.



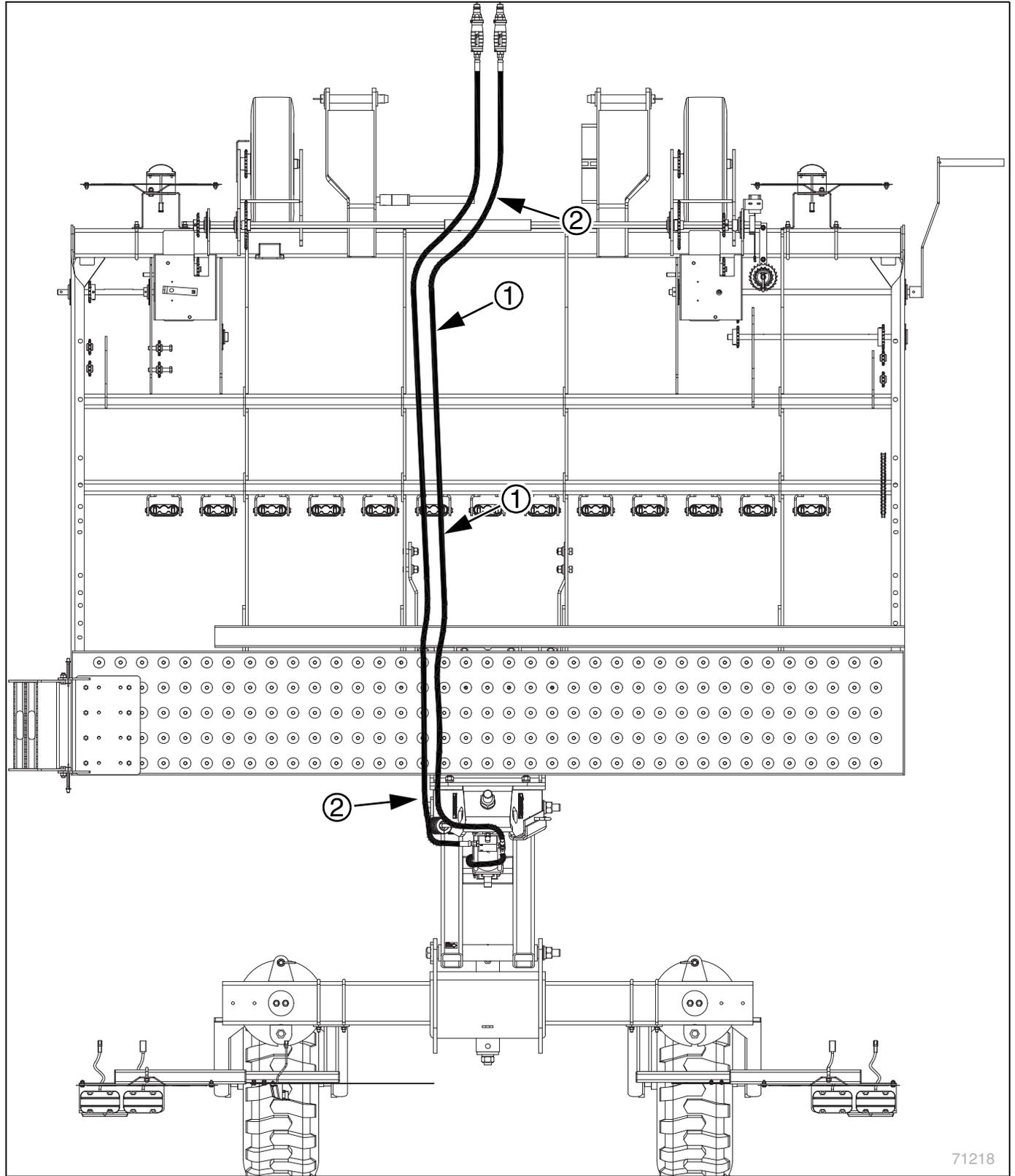
■ Electrical Diagram



(1) P-clip

(2) Wire tie

■ Hydraulic Diagram

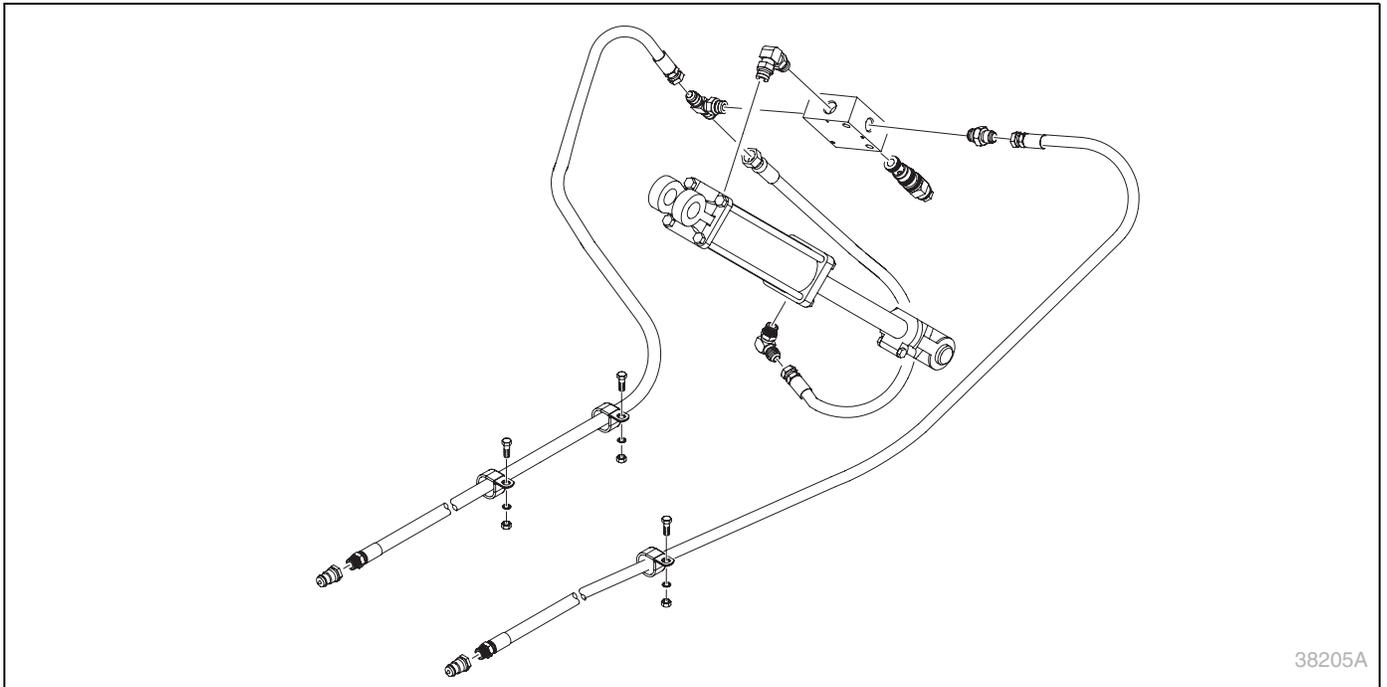


71218

(1) P-clip

(2) Wire tie

Lift-Assist Hydraulic Connections



Troubleshooting

Problem	Cause	Solution
Uneven seed spacing or uneven stand	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.	See “Opener disks not turning freely” below.
	Ground drive wheel slippage	Check tire pressure and frame height. If correct, wait for drier conditions.
	Seed cups too wide	Use faster drive-type speed and close feed cup flutes to a more narrow position.
	Chain skipping.	Check chain slack and wear.
	Mud build-up on Seed-Lok [®] firming wheel	Lock up Seed-Lok [®] firming wheel or wait for drier conditions.
Uneven seed depth	Excessive field speed.	Reduce field speed.
	Planting conditions too wet.	Wait until drier weather.
	Drill not level	Level the drill (page 12).
	Casters lifting drill	Set lift-assist circuit to float.
Opener disks not turning freely	Trash or mud build-up on disk scraper.	Adjust disk scraper (page 25).
	Disk scraper adjusted too tight, restricting movement.	Adjust disk scraper (page 25).
	Failed disk bearings.	Replace disk bearings.
	Bent or twisted opener frame.	Replace opener frame.
	Planting conditions too wet.	Wait until drier weather.
	Too much opener down pressure.	If opener disks turn freely by hand but not in the field, reduce down pressure (page 25).
	Incorrect press wheel adjustment.	Adjust the press wheel (page 25).
Actual material rate different than desired	Incorrect frame height, axle setting, tire size, or tire inflation.	Check ground drive tires (page 53), frame height (page 12) and axle setting (page 21).
	Improper tire size or air pressure.	Check tire size and air pressure (page 53).
	Build up of seed treatment in feed cup.	Clean out seed treatment from feed cups.
	Incorrect rate adjustment.	Check gearbox, sprocket, seed rate handle, and seed door settings. Perform calibration if not already done.
Excessive seed cracking	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.

Problem	Cause	Solution
Press wheels not compacting soil as desired	Too wet or cloddy.	Wait until drier weather or rework ground.
	Press wheel depth does not match coulter depth.	Adjust press wheel depth (page 25).
	Not enough down pressure on disk openers.	Increase down pressure on openers (page 25).
Boxes not emptying evenly	Some boxes do not have the same number of feed cups between each divider of bulkhead.	Load more material than required. Redistribute when reloading.
	Main box feed cup door setting	Set all doors the same, per seed size.
	Seed plug(s) installed	Remove seed plug(s).
	Meter or tube blocked.	Clear blockage.
Press wheel or openers plugging	Planting conditions too wet.	Wait until drier weather.
	Too much down pressure on openers.	Reduce down pressure on openers (page 25).
	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.
Feed cup sprockets locked up or twisted feed cup drive shaft	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.
Coulters not going deep enough	Not enough down pressure.	Adjust coulters when a few rows are involved (page 22). Add weight when all rows are affected (page 21).
	Row down pressure set too high reducing weight available to coulters	Reduce row down pressure to standard (page 25). Set coulters to prepare furrow more aggressively (page 21).
Coulters and drill going too deep	Coulters set too deep or spring force too high	Correct coulter adjustment (page 21).
	Incorrect press wheel adjustment.	Set press wheels to a shallower depth.
Coulters and openers plugging in no-till conditions		Drill at a slight angle to rows.
Small seeds box not emptying evenly	Adjustable divider not set evenly.	Move adjustable divider to create more volume in areas that run out first.
Chain	Debris in retainer clip	Be sure retainer clip is facing opposite way of chain travel (page 29).

Problem	Cause	Solution
Acremeter inaccurate	Excess wheel slippage	Check frame height, wheel axle position, tire size and pressure. If correct, wait for drier conditions.
	Passes misaligned.	Check that planting passes are not leaving gaps or causing overlap.
	Wheel slippage.	If consistent, develop a correction factor for your conditions.
	Check that acremeter is for your drill.	Activate display. Lower left corner must be 1405.3 revs/ha. Contact dealer if otherwise.
	Acremeter battery failing	Replace acremeter. Unit is sealed and battery is not replaceable.

Specifications

Model Information	3P1006NT-1575
Row Spacing	19.1 cm
Rows per drill	15
Swath	286 cm
Tractor Requirements	Minimum 75 kw, semi-mounted 3-point category II hitch, 1 hydraulic circuit
Weight	2187-2898 kg
Agitators	Optional in main seed box. Standard in dual seed or native grass box.
Lift-Assist Wheels	265/70B 16.5 NHS Skid Steer, 6-bolt rim
Ground Drive Wheels	5.70-8 8-Ply, 4-bolt rim
Dimensions	
Height	2.4 m
Transport Height	Varies by Tractor
Transport Width	3 m
Transport Length	3.8 m w/lift-assist
Transport Clearance	40.6 cm ^a , and depends on tractor hitch
Lower Linkage Height	59 cm
Capacities	
Main Seed Box	595 liters
Dual Seed Box	352 liters
Native Grass Box	352 liters
Small Seeds Box	85 liters
Fertilizer Box	261 liters
Openers	
Opener Series	06
Opener Travel	16.51 cm
Opener Depth Range	0-8.89 cm
Opener Down Pressure	40.82-81.64 kg
Coulter	5/8 inch Turbo or 5/16 inch Fluted
Coulter Pre-Load	203 kg

a. With rear lift lock channels installed, and semi-mounted hitch elevated to drill-level.

■ Transport Weights

Drill Information	Standard Drill	Drill with Fertilizer	Drill with Native Grass (NG)	Drill with Small Seeds (SGS)	Drill with Fertilizer and SGS	Drill with NG and SGS
All Boxes Empty	2187 kg	2334 kg	2317 kg	2214 kg	2368 kg	2454 kg
Main Box Full and Fertilizer Full (if installed)	2767 kg	3227 kg	2898 kg	2794 kg	3261 kg	3035 kg
All Boxes Empty with Weights	2717 kg	2863 kg	2847 kg	2744 kg	2898 kg	2984 kg
Main Box Full, Weights, Fertilizer Full (if installed)	3297 kg	3757 kg	3428 kg	3324 kg	3791 kg	3565 kg

■ Tire and Wheel Information

Tire Size	Tire Pressure	Wheel Bolt Torque
265/70B 16.5 NHS Skid Steer	414 kPa	115 Nm
5.70-8 8-Ply	345 kPa	115 Nm

Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found online at the manufacturer’s websites listed below. For assistance or information, contact your nearest authorized farm tire retailer.

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

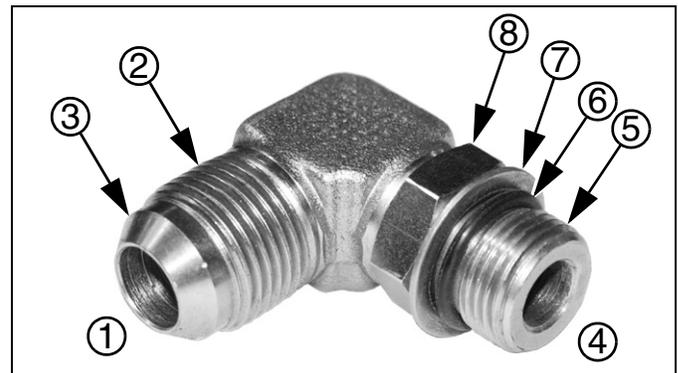
■ Measurement of Airborne Sound Emissions

The airborne noise emissions from the machine are - according to Machinery Directive 2006/42/EC - below the required levels.

- A-weighted sound level in the workplace: <70 dB(A)
- Currently C-weighted sound level: <63 Pa (130 dB based on 20 µPa)
- A-weighted sound level on the machine: <80 dB(A).

■ Connector Identification

- (1) JIC - Joint Industry Conference (SAE J514)
- (2) straight threads
- (3) 37° cone on “M” fittings (or 37° flare on “F”)
- (4) ORB - O-Ring Boss (SAE J514)
- (5) straight threads
- (6) elastomer O-Ring



Fittings needing orientation, such as the ell above, also have a washer (7) and jam nut (8) (adjustable thread port stud)

Fittings Torque Values		
Fitting	lb ft	N-m
9/16 JIC	18-20	24-27
9/16 ORB w/jam nut	12-16	16-22
9/16 ORB straight	18-24	24-32
3/4 JIC	27-39	37-53
3/4 ORB w/jam nut	20-30	27-41
3/4 ORB straight	27-43	37-58

■ Torque Chart

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

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

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

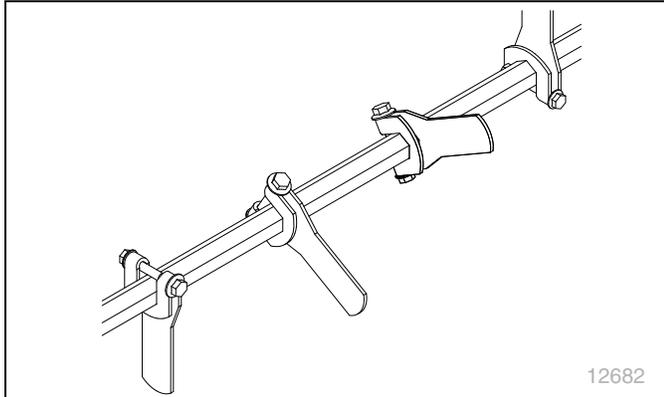
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

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Options

■ Agitator for Main Seed Box

An optional agitator can be added to the main seed box. It stirs the seed directly above the metering cups, separating soybeans that are sticky, and helps prevent bridging of light, fluffy seeds (this is not a substitute for the optional native grass seed box).



If the drill has only a main seed box, or has dual seed or native grass as the only optional box, order the “W/DRIVE” kit to get the necessary accessory drive components.

If the drill has fertilizer or small seeds, or any combination of, order the “W/O DRIVE” kit.

Description	Part Number
3P1006NT AGITATOR KIT W/DRIVE	118-970A
3P1006NT AGITATOR KIT W/O DRIVE	118-971A

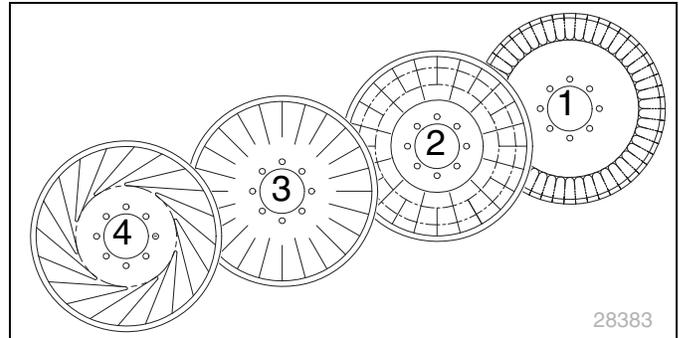
■ Press Wheel Selection

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

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

■ Coulter Blades

The standard coulter blades on the 3P1006NT drill are 43.2 cm 820-156C turbo or 820-018C fluted.



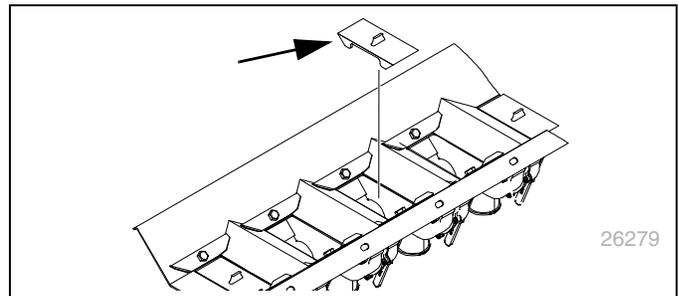
Available replacement and alternate blades include:

	Description	Part Number
1	COULTER BLADE FLUTED	820-018C
2	17 COULTER BLADE 3/4 WAVY	820-082C
3	17 COULTER BLADE 5/8 WAVY	820-116C
4	5/8 WAVY TURBO BLADE	820-156C

■ Feed Cup Plug

The feed cup plug stops seed flow from the main box or dual seed box above the meter. Order one per row.

See the Material Rate Manual for instructions.



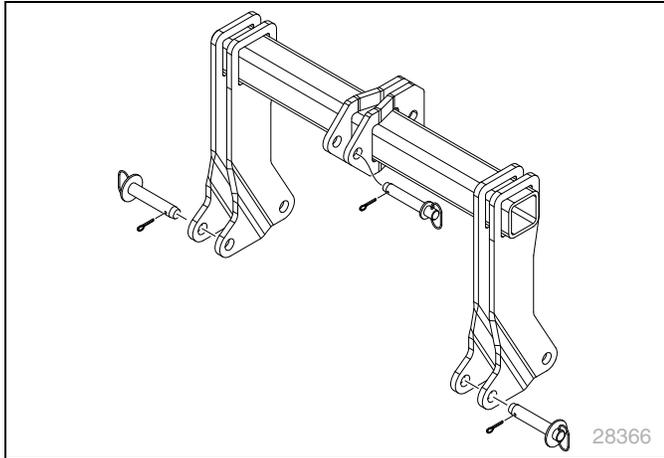
Description	Part Number
1 3/4 WIDE FEEDER CUP PLUG	817-087C

■ Hitch Extension Kit

The hitch extension extends the tractor’s 3-point hitch to eliminate interference on tractors with unusual wheel bases or oversize tires. The extension is available as an option with the original drill order, or as a separate kit.

The kit includes pins for the front holes.

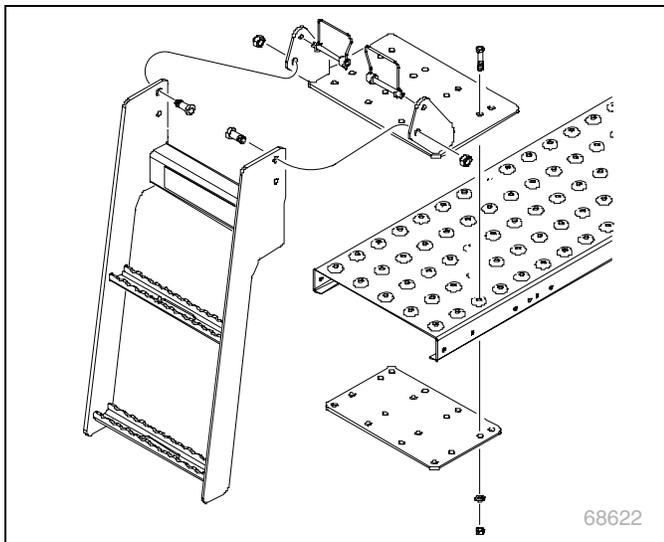
This hitch extension is compatible with most standard quick hitches.



Description	Part Number
COMPACT EXTENSION HITCH	118-966A

■ Second Ladder

The second ladder can be installed on the opposite end of the walkboard from the standard ladder.

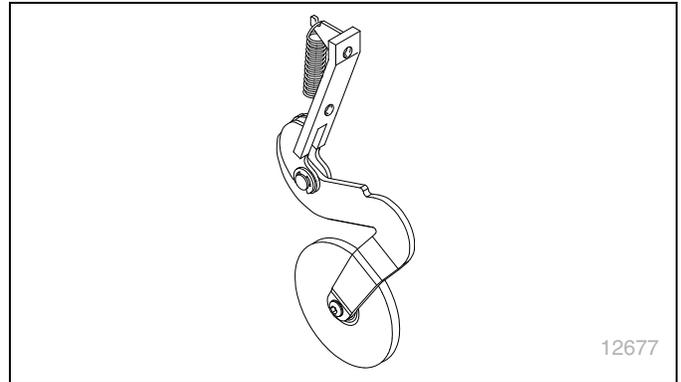


Description	Part Number
SECOND LADDER OPTION	119-020A

■ Seed Firmers

The standard 3P1006NT drill includes seed flaps.

An optional Seed-Lok® firming wheel is available. Only one type of optional seed firmer may be installed at the same time. Order one kit per opener.



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

■ Seed Lubricants

Use seed lubricants only in native grass planting.

Description	Part Number
Graphite - 1 lb / 0.45 kg bottle	821-042C
Graphite - 5 pound / 2.3 kg jug	821-060C

■ Carbide Disk Scraper

Carbide disk scrapers are spring-loaded and require no adjustment. Disk scrapers are compatible with the standard seed flap and Seed-Lok®. Order one per row.

Description	Part Number
SPRING SCRAPER ASSEMBLY	121-781A

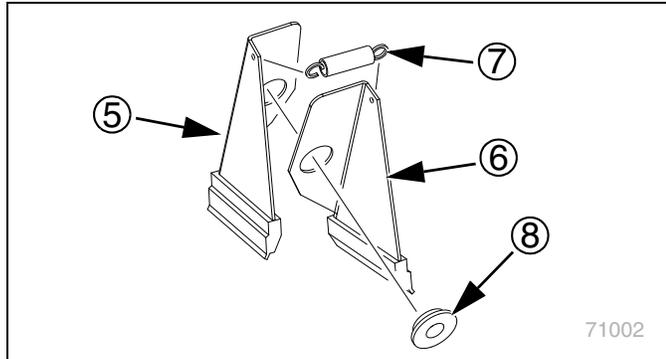
Scraper Installation

Start with row 1 (left-most row unit).

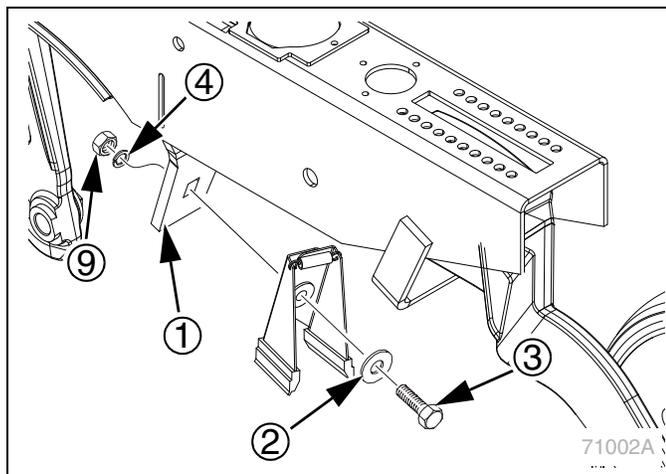
1. Remove one or both disk blades for access to the mount (1). Note the position of bushings and spacers for correct re-assembly.
2. Remove the existing slotted scraper.
3. Place a 3/8 inch flat washer (2) on the 3/8 x 1-1/4 inch bolt (3).

If a Seed-Lok® is present, place a 3/8 inch lock washer (4), then the 3/8 inch flat washer (2) on the 3/8 x 1-1/4 inch bolt (3).

- If the scraper blades are not pre-assembled, position a left-hand side scraper (5) behind a right-hand side scraper (6). Connect the spring (7) between the scraper blades using the small top holes. Insert the spacer (8) into the large blade holes as shown.



- Insert the bolt through the scraper blades and spacer.
- Secure the scraper assembly to the scraper mount (1) using the lock washer (4) and hex nut (9).
If a Seed-Lok® is present, secure the scraper assembly to the Seed-Lok® using the threaded hole in the Seed-Lok®. The hex nut (9) is not used.
- Re-install the disk blades.



■ Weight Kit

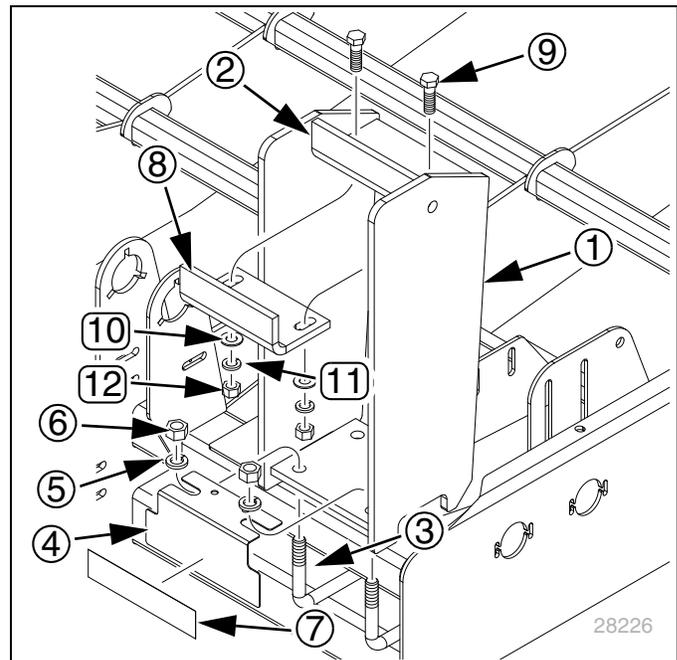
The weight kit is available to add weight for additional penetration in no-till conditions. A kit includes two brackets. Each bracket accepts up to five standard 45 kg suitcase style tractor weights. The weight brackets are available as a separate kit.

Kits do not include weights.

Description	Part Number
WEIGHT BRACKET ASSEMBLY	151-135A

Weight Bracket Installation

- Position one of the weight brackets (1) at the left end of the top front frame. Position the beveled edges and weight mount (2) to the back.
- Install the u-bolts (3).
- Install the decal mount (4) on the u-bolts.
- Secure the weight bracket to the frame with lock washers (5) and nuts (6).
- Install the amber reflector (7) on the decal mount.
- Examine the weights to be used, and determine how to install the weight bracket adjustment leg. The position shown is not for all weights.
- Secure the adjustment leg (8) to the weight mount with 5/8 x 2 inch bolts (9), washers (10), lock washers (11) and nuts (12). Depending on how your weights lock, it may be necessary to leave the bolts loose until after the weights are mounted.



- Repeat the steps for the right side of the drill.

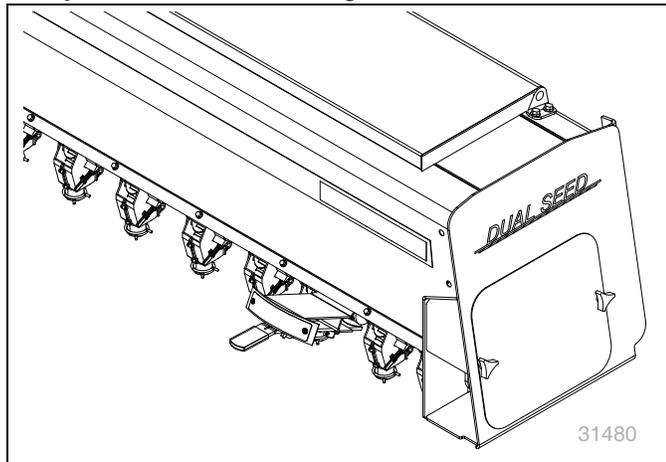
■ Dual Seed

The dual seed box is an optional second seed box installed behind the main seed box. It is used for planting the same or additional crops as the main seed box. The dual seed box can plant at the same or different rate than the main seed box. Box capacity is 352 liters. An agitator is standard.

Dual seed may be factory or field installed.

Dual seed box is not compatible with native grass or fertilizer option (or kits).

Ask your dealer for ordering information.

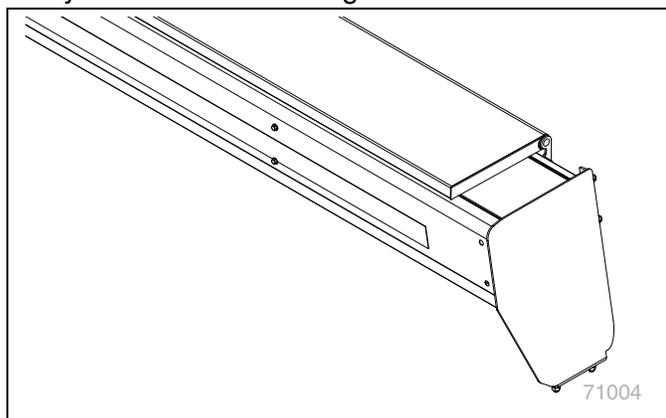


■ Fertilizer

The fertilizer attachment is designed to meter dry fertilizer and apply it in row. It is driven independently of other boxes on the drill. The standard fertilizer attachment includes a drive system, 260 liter box, stainless steel meters, and delivery tubes.

The fertilizer attachment is compatible with a small seeds option. The fertilizer attachment is not compatible with the native grass.

Ask your dealer for ordering information.

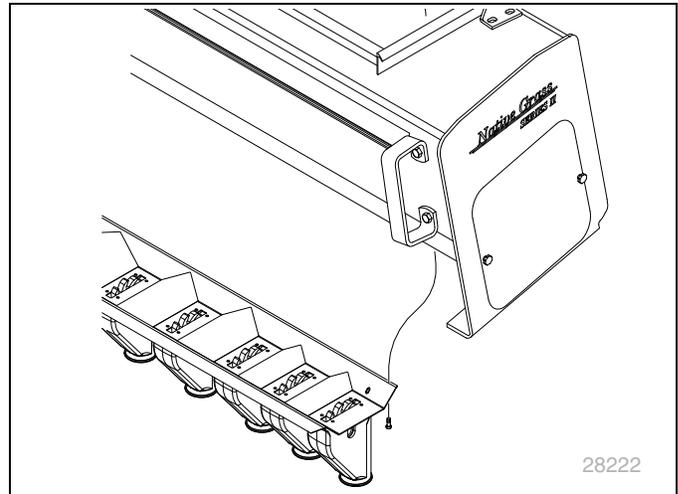


■ Series II Native Grass

The native grass option is designed to seed fluffy, hard-to-plant grasses. Standard equipment includes dedicated ground drive and gearbox system, acremeter, 352 liter box with Series II meters, Series II agitator, and seed tubes.

Native grass is compatible with a small seeds option. Native grass is not compatible with the fertilizer option.

Ask your dealer for ordering information.

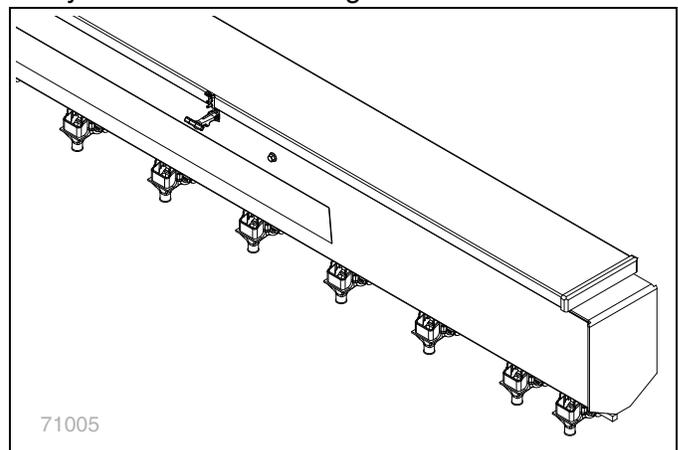


■ Small Seeds

The small seeds attachment is designed to meter various small seeds in row. It is driven independently of other boxes on the drill. The standard attachment includes a drive system, 85 liter box, meters, and seed tubes.

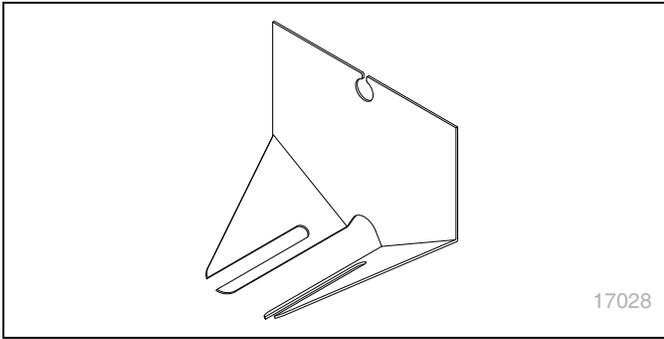
The small seeds attachment is compatible with dual seed, fertilizer or native grass options.

Ask your dealer for ordering information.



Small Seeds Partition

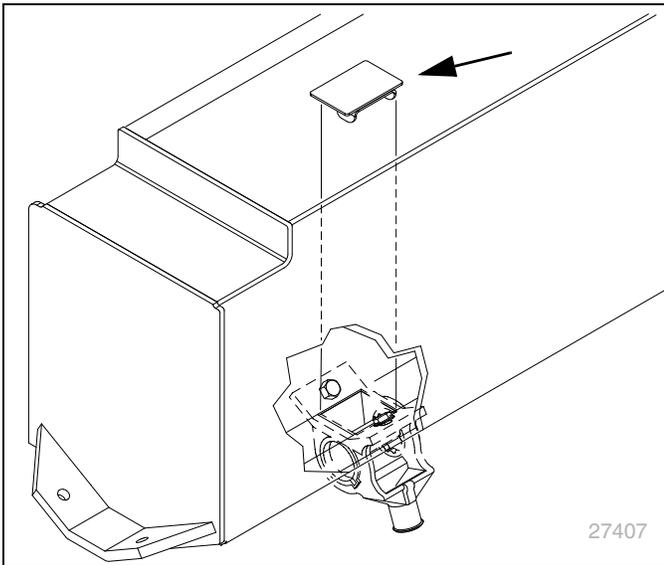
A removable partition in the small seeds box reduces side-to-side seed flow. This can prevent seed pile-up when drilling across slopes and in other situations where the seed is particularly fluid. Partitions sold individually. Order the quantity desired.



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

Small Seeds Seed Tube Plug

The small seeds cup plug stops seed flow from the small seeds box above the meter. Order one per row.



Description	Part Number
SML SDS CUP PLUG	133-315H

Assembly

The drill components are delivered in one or more standard ISO intermodal shipping containers.

Once the contents have been removed, the containers are returned to commerce. Before releasing the container(s), verify that the drill is the correct model and has all specified options.

Inside the containers, the drill components are on unpainted steel racks. Major sub-assemblies are secured to rack tubing. Smaller sub-assemblies, cartons, bags, and loose components may be on the rack floors.

After the drill is assembled, the racks, and any fasteners used to secure components to the racks, are not returned to Great Plains. They may be salvaged or scrapped.

■ Pre-Assembly Checklist

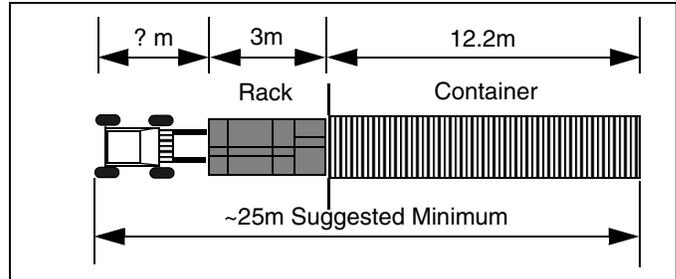
- ☑ Before assembling, read and understand “**Safety Information**” starting on page 3.
- ☑ Have at least two people on hand while assembling.
- ☑ Make sure assembly area is solid, level, and free of obstructions (preferably an open concrete area).
- ☑ Make sure that after unloading there is room enough to connect a tractor to the drill.
- ☑ Have all major components, fasteners, and pins that were shipped with the drill.
- ☑ Have a copy of the parts manual on hand. If unsure of proper placement or use of any part or fastener, refer to the parts manual.

Tools required

- a properly rated forklift, or two forklifts with the properly rated combined capacity for the drill
- hoist with 277 kg (500 lb) capacity
- basic hand tools

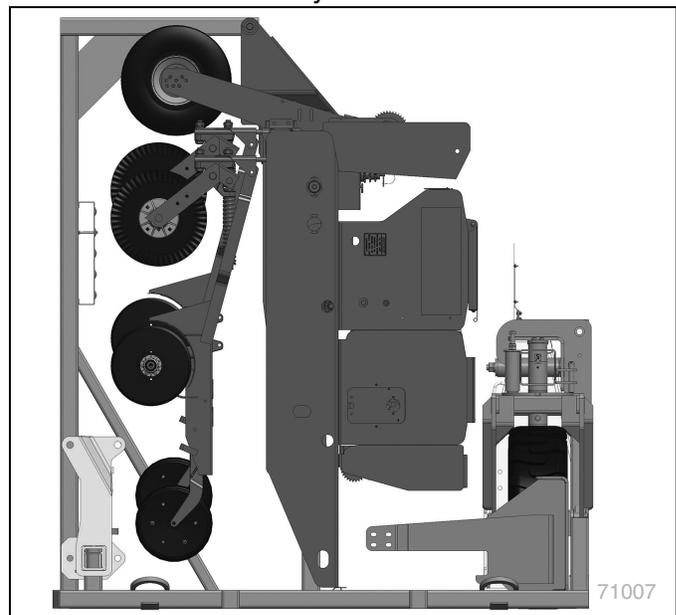
■ Unloading

The drill needs to be unloaded on a flat, level, and dry surface,



Allow for forklift access from any direction, and final tractor hitching. Also allow for forklift and tractor turns.

1. Remove a rack from the container and position it clear of the assembly area.



Configuration of the drill and components on the rack may be different from the one shown above, but the instructions for assembly will be the same.

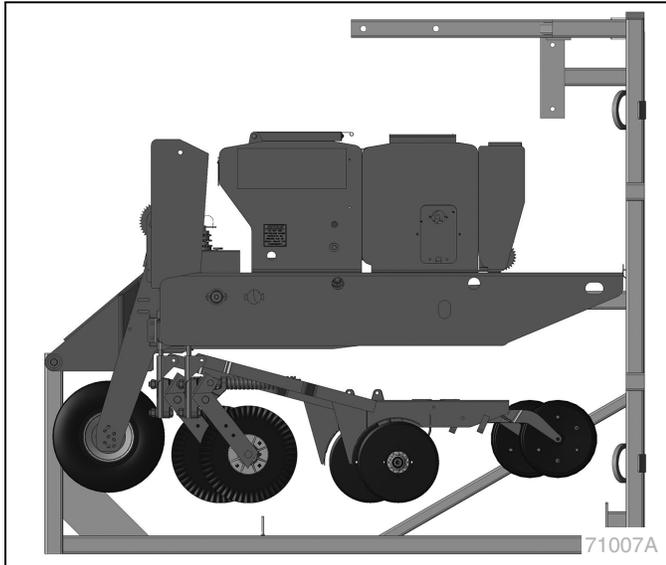


Crushing Hazard

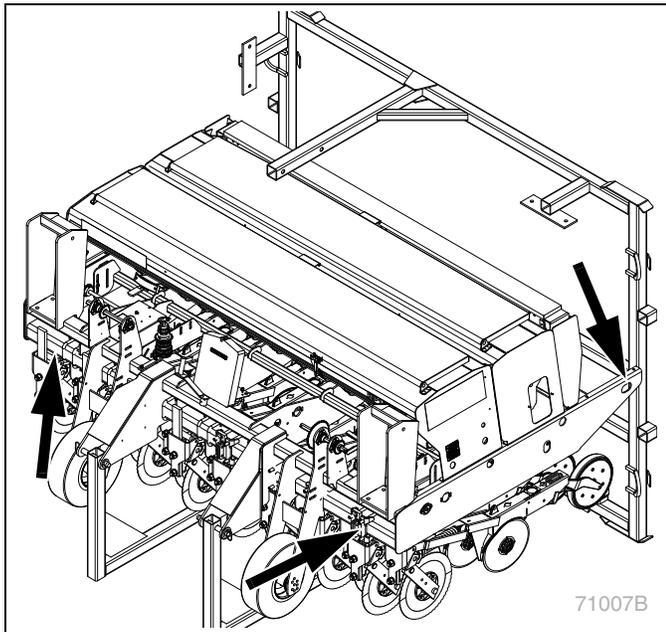
Do not remove fasteners holding the drill to the rack at this time. Only remove drill fasteners when drill is fully supported.

2. Remove lift-assist, walkboard, and smaller components from the rack. Place them well out of the area needed for unloading the drill.

- If the drill is positioned upright (as shown above), use a hoist or forklift to reposition the rack so the drill is horizontal.



- Wrap a chain around the front frame tube at each end of the drill. Wrap two more chains through the two holes in the end plates at the rear of the frame.



- Position the forklift at the front of the drill. Hook the forks through the chain loops. Lift the forks up to tighten the chains and support the drill.



Crushing Hazard

Make sure the drill is fully supported by the chains before removing fasteners holding the drill to the rack.

- Remove the fasteners holding the drill to the shipping rack.
- Carefully move the drill from the rack and place it in the assembly area.



Machine Damage Risk

Lift the drill by the chains only. Do not wrap chains around the seed cups or seed cup channels.

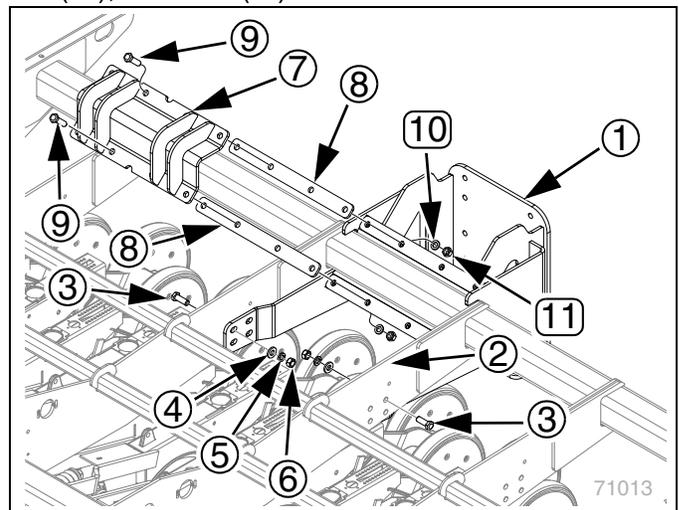
Make sure the front chains are positioned at each end of the front frame tube, and rear chains through holes in the end plates.

- Making sure to keep the drill level front-to-back and side-to-side, slowly lower the drill to the ground.
- Lower the forks, remove the chains and withdraw the forklift.

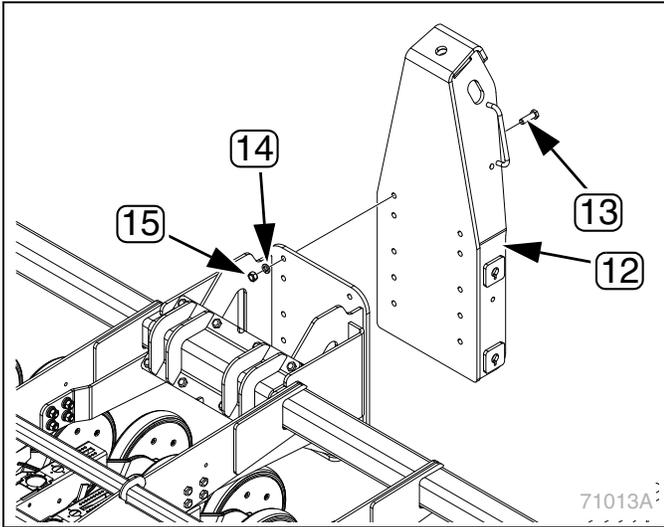
Install Lift-Assist

Install Mounts

- Install the lift-assist frame mount (1) to the drill frame. Use the holes provided in the two middle frame brace plates (2).
- Secure the frame mount to the brace plates with eight 5/8 x 3/4 inch bolts (3), flat washers (4), lock washers (5), and nuts (6).
- Secure the frame mount to the drill rear frame tube with the mount clamp (7) and two spacers (8). Fasten the clamp and spacers to the mount with eight 5/8 x 2-1/4 inch bolts (9), lock washers (10), and nuts (11).

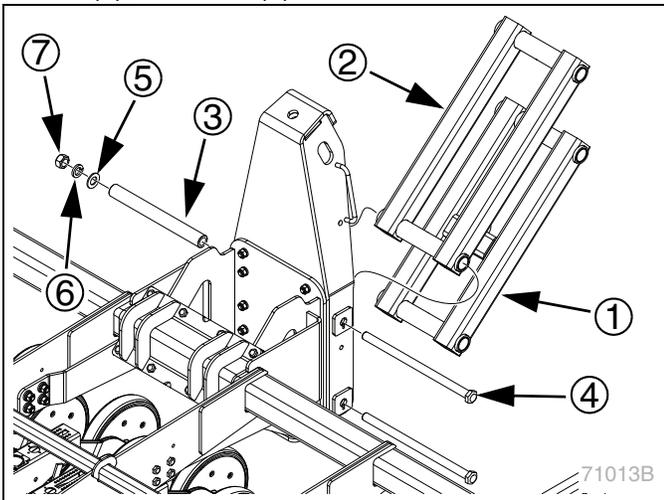


4. Install the bolt-on mount (12) to the frame mount. Secure with ten 5/8 x 2 inch bolts (13), lock washers (14), and nuts (15).



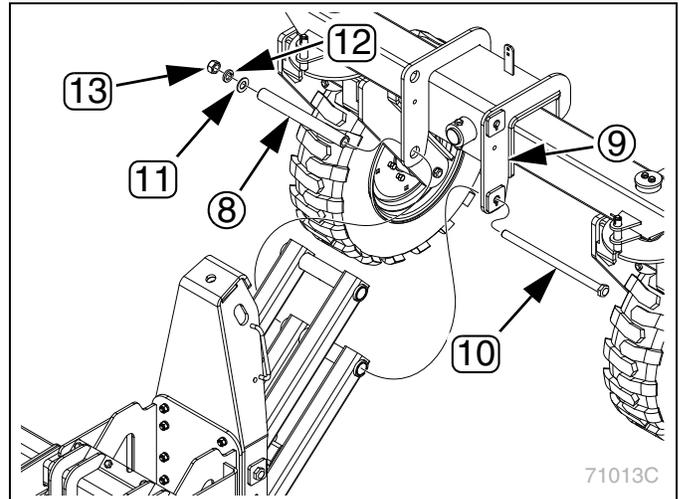
Install Parallel Arms

1. Install the lower (1) and upper (2) parallel arms. Make sure the cylinder lug on the lower arm is facing up and towards the rear of the drill.
 - a. From the left-hand side, slide the pivot tubes (3) into the bolt-on mount and through the outer pivot tube on the arms. Make sure the pivot tubes are pushed in as far as possible.
 - b. Insert the 1 x 18 inch bolts (4) from the right-hand side of the bolt-on mount. Secure the bolts with flat washers (5), lock washers (6), and nuts (7).



2. Use a hoist and move the caster assembly to align with the parallel arms.

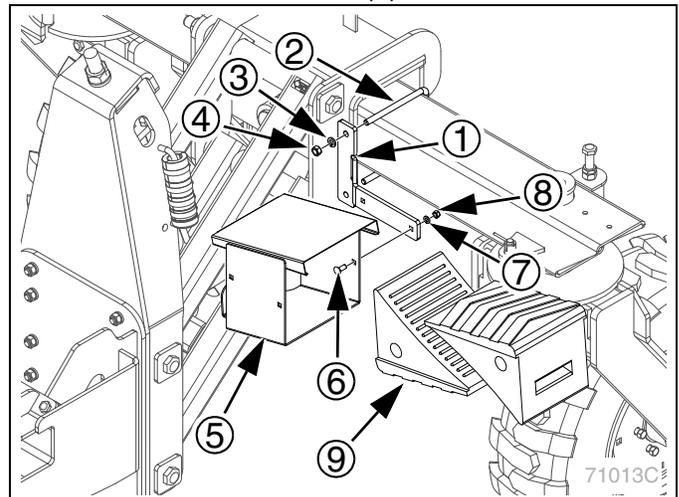
3. From the left-hand side, slide the pivot tubes (8) into the pivot mount (9) and through the outer pivot tube at the rear of the arms. Make sure the pivot tubes are pushed in as far as possible.
4. Insert the 1 x 18 inch bolts (10) from the right-hand side of the pivot mount. Secure the bolts with flat washers (11), lock washers (12), and nuts (13).



5. If necessary, install four grease fittings in each outer pivot tube on the parallel arms.

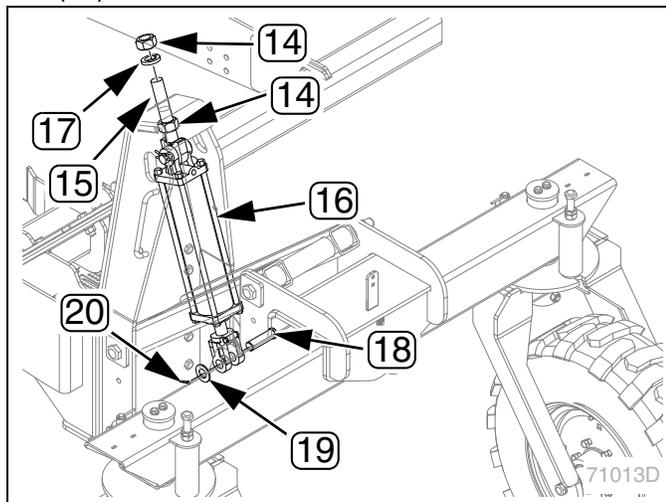
Install Wheel Chock Holder

1. Install the wheel chock mounting bracket (1) to the left-hand side of the lift-assist pivot mount. Secure with a 1/2 inch u-bolt (2), lock washers (3), and nuts (4)
2. Install the wheel chock mount (5) to the bracket with two 3/8 inch round head bolts (6), lock washers (7), and nuts (8).
3. Place the wheel chocks (9) into the mount.



Install Hydraulic Cylinder

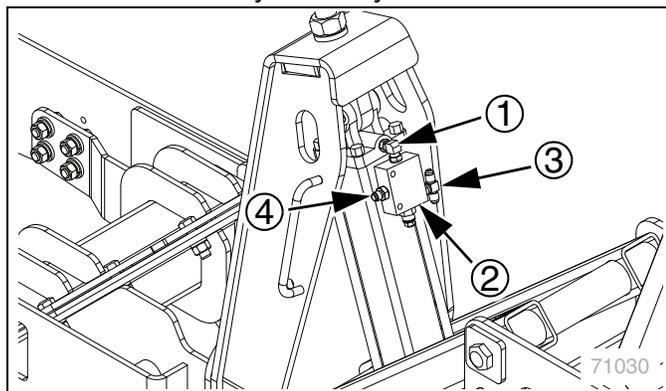
1. If necessary, install a 1-1/4 inch nut (14) onto the eyebolt (15).
2. Install the eyebolt attached to the base end of the hydraulic cylinder (16) through the hole at the top of the bolt-on mount. Secure with a 1-1/4 inch flat washer (17) and another 1-1/4 inch nut.
3. Attach the rod end of the cylinder to the cylinder lug on the lower parallel arm. Secure with a clevis pin (18), 1 inch flat washer (19), and cotter pin (20).



Hydraulic Setup

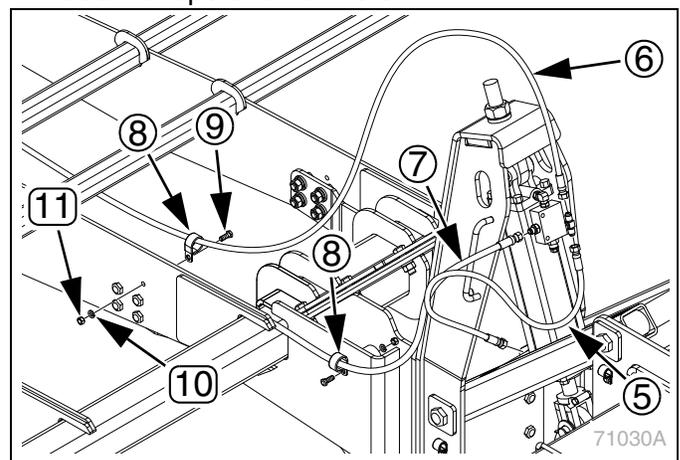
See **“Connector Identification”** on page 53 for torque values for hydraulic fittings.

1. Install the 9/16 MORB elbow (1) to port 1 of the counterbalance valve (2).
2. Install the tee (3) to port 3 of the valve.
3. Install the elbow and valve to the base port of the hydraulic cylinder.
4. Install the adapter (4) to port 2 of the valve.
5. Install the 9/16 MJIC-9/16 MORB elbow to the rod end of the hydraulic cylinder.

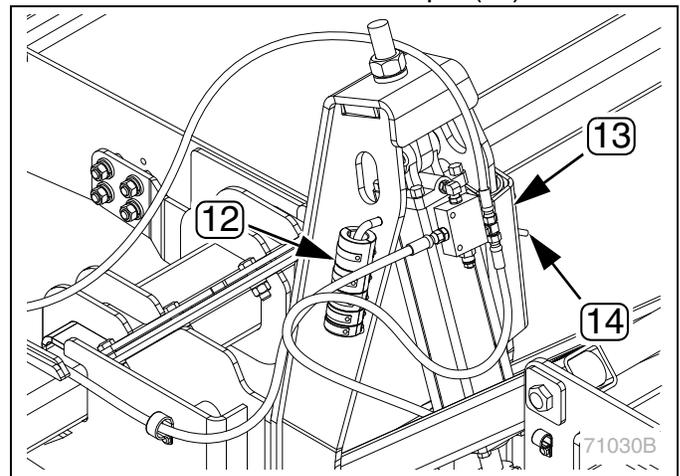


6. Secure the short hydraulic hose (5) to the bottom of the tee and the elbow at the rod end of the cylinder.
7. Secure one of the long hydraulic hoses (6) to the top of the tee.
8. Install the other long hydraulic hose (7) to the adapter.
9. Route the long hoses to the front of the drill.
10. Place a hose clip (8) around each hydraulic hose. Install the clips to the drill and lift-assist frame. Secure each clip with a 3/8 inch bolt (9), lock washer (10), and nut (11).

Make sure the hydraulic hoses have enough slack for operation of the drill.



11. See **“Bleed Hydraulics”** on page 30 to bleed the hydraulic system.
12. Install the stroke control spacers (12) onto the storage rod.
13. Secure the cylinder lock channel (13) to the lift-assist frame mount with a pin (14).



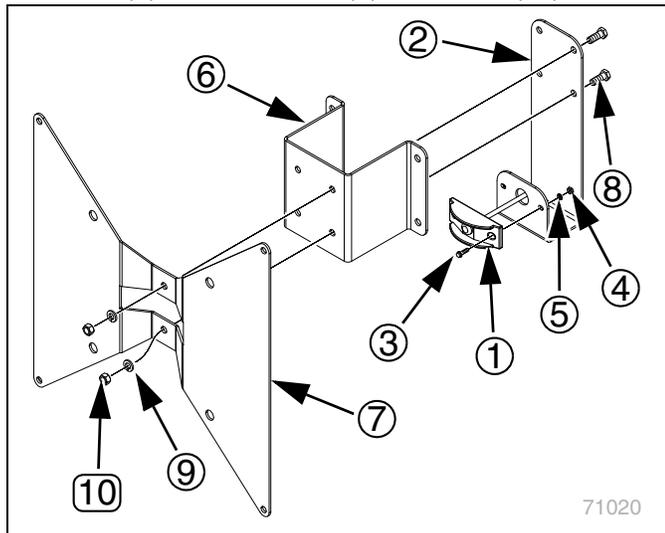
14. See **“Lift-Assist Adjustment”** on page 30 and make adjustments as necessary.

■ Install Fluorescent Panels and Lighting

The drill may be shipped with lighting and fluorescent panels not installed to prevent damage during shipment.

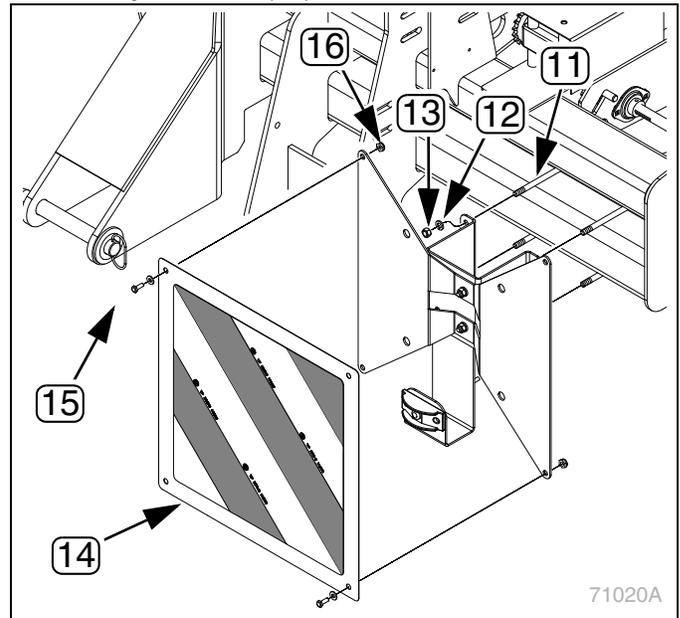
Install Front Panels and LED Lights

1. Attach the clear LED light (1) to the front light bracket (2) with two #10 bolts (3), star washers (4), and nuts (5).
2. Install the front light bracket to the sign mount (6) and to the mount bracket (7) with two 3/8 x 1 inch bolts (8), lock washers (9), and nuts (10).

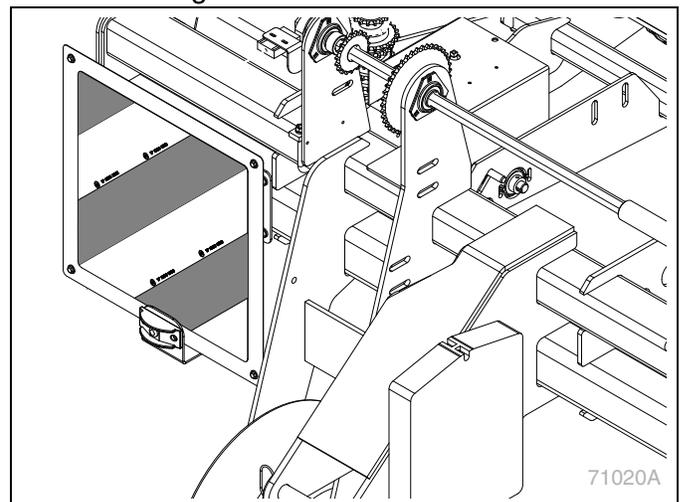


3. Install the sign mount assembly onto the bottom front frame tube on the end of the frame. Secure with two u-bolts (11), lock washers (12), and nuts (13).

4. Attach the fluorescent panel (14) to the sign mount assembly with four 3/8 x 3/4 inch bolts (15) and nylock nuts (16).



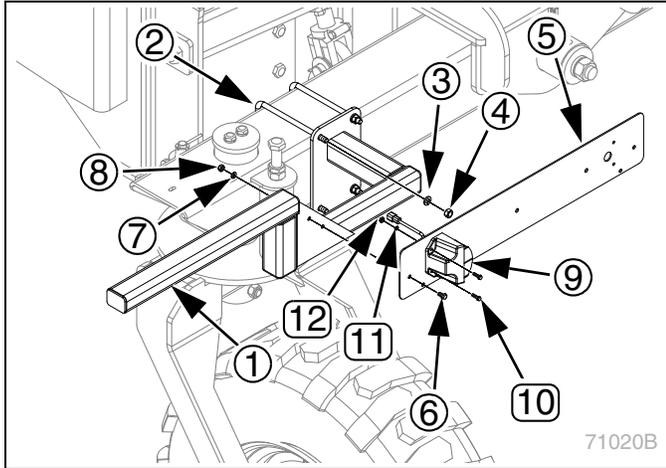
5. Repeat the above steps for the other front panel and LED light.



Install Rear Left-Hand Panel and Lights

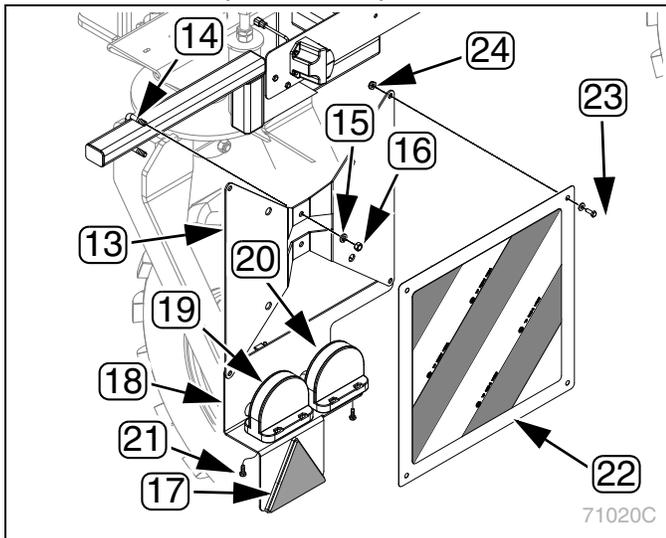
1. Mount the left-hand rear sign mount (1) to the lift-assist arm near the left caster wheel. Secure with two u-bolts (2), lock washers (3), and nuts (4).
2. Install the registration plate mount (5) to the rear mount with two 1/4 x 1/2 inch bolts (6), lock washers (7), and nuts (8).
3. Install the license plate light (9) to the plate with two #10 screws (10), star washers (11), and nuts (12).

Feed the license plate light connector through the hole in the mount before securing the light.



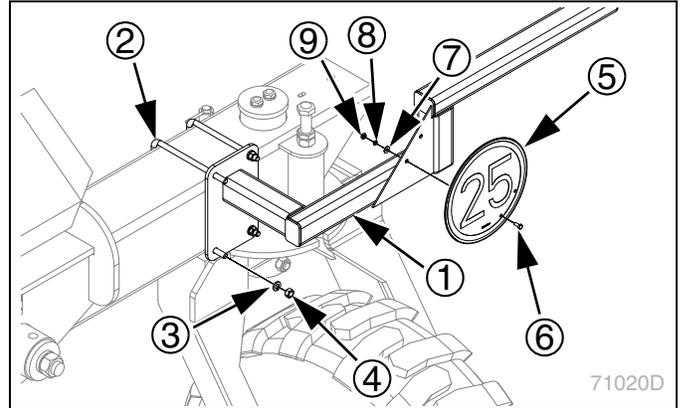
4. Install the sign mount bracket (13) onto the left-hand mount approximately 12 cm from the end. Secure with a u-bolt (14), lock washers (15), and nuts (16).
 5. Install the red triangle (17) to the left-hand rear light bracket (18) and secure with nuts.
 6. Mount the amber light (19) and red light (20) to the light bracket. Feed the light connectors through the holes in the bracket. Secure each light with two 1/4 x 3/4 inch self-tapping screws (21).
- Make sure the amber light is on the outside of the bracket, just above the red triangle.
7. Install the fluorescent panel (22) onto the sign bracket with four 3/8 x 3/4 inch bolts (23) and nylock nuts (24).

Make sure to position the panel as shown below.

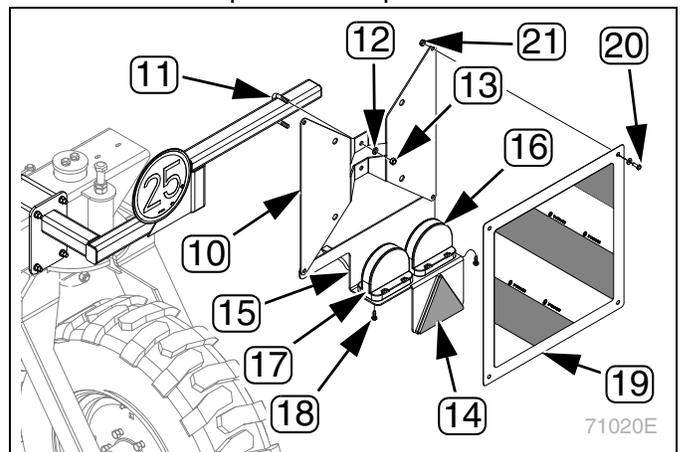


Install Rear Right-Hand Panel and Lights

1. Mount the right-hand rear sign mount (1) to the lift-assist arm near the right caster wheel. Secure with two u-bolts (2), lock washers (3), and nuts (4).
2. Install the speed limit sign (5) to the rear mount with two #10 bolts (6), flat washers (7), lock washers (8), and nuts (9).

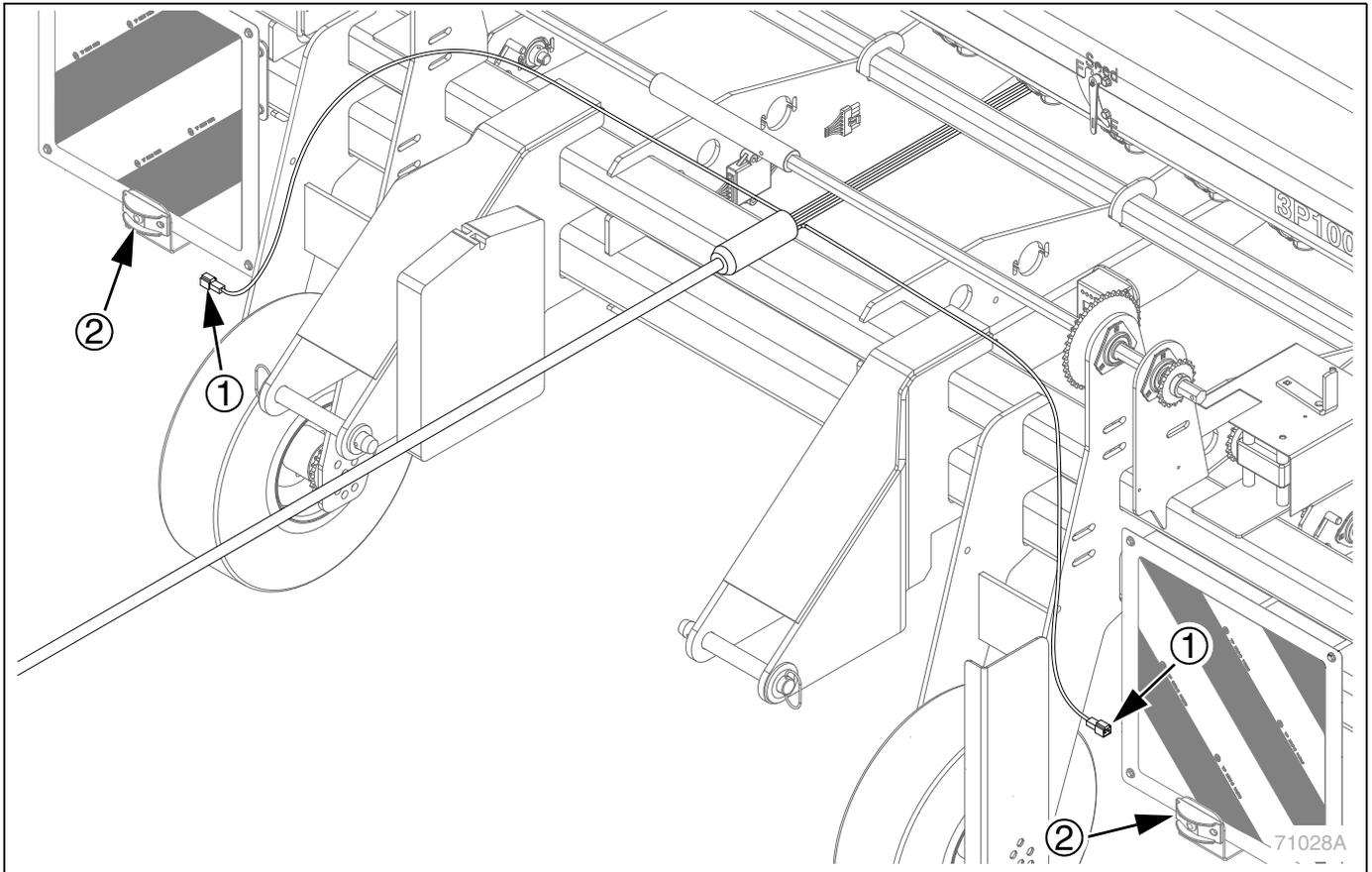


3. Install the sign mount bracket (10) onto the right-hand mount approximately 12 cm from the end. Secure with a u-bolt (11), lock washers (12), and nuts (13).
 4. Install the red triangle (14) to the right-hand rear light bracket (15) and secure with nuts.
 5. Mount the amber light (16) and red light (17) to the light bracket. Feed the light connectors through the holes in the bracket. Secure each light with two 1/4 x 3/4 inch self-tapping screws (18).
- Make sure the amber light is on the outside of the bracket, just above the red triangle.
6. Install the fluorescent panel (19) onto the sign bracket with four 3/8 x 3/4 inch bolts (20) and nylock nuts (21).
- Make sure to position the panel as shown below.



Install Wiring Harness

1. Install the wiring harness. Route the wires with the two female two-pin connectors (1) to the front LED lights (2).
2. Route the remaining wires with male connectors to the rear of the drill.

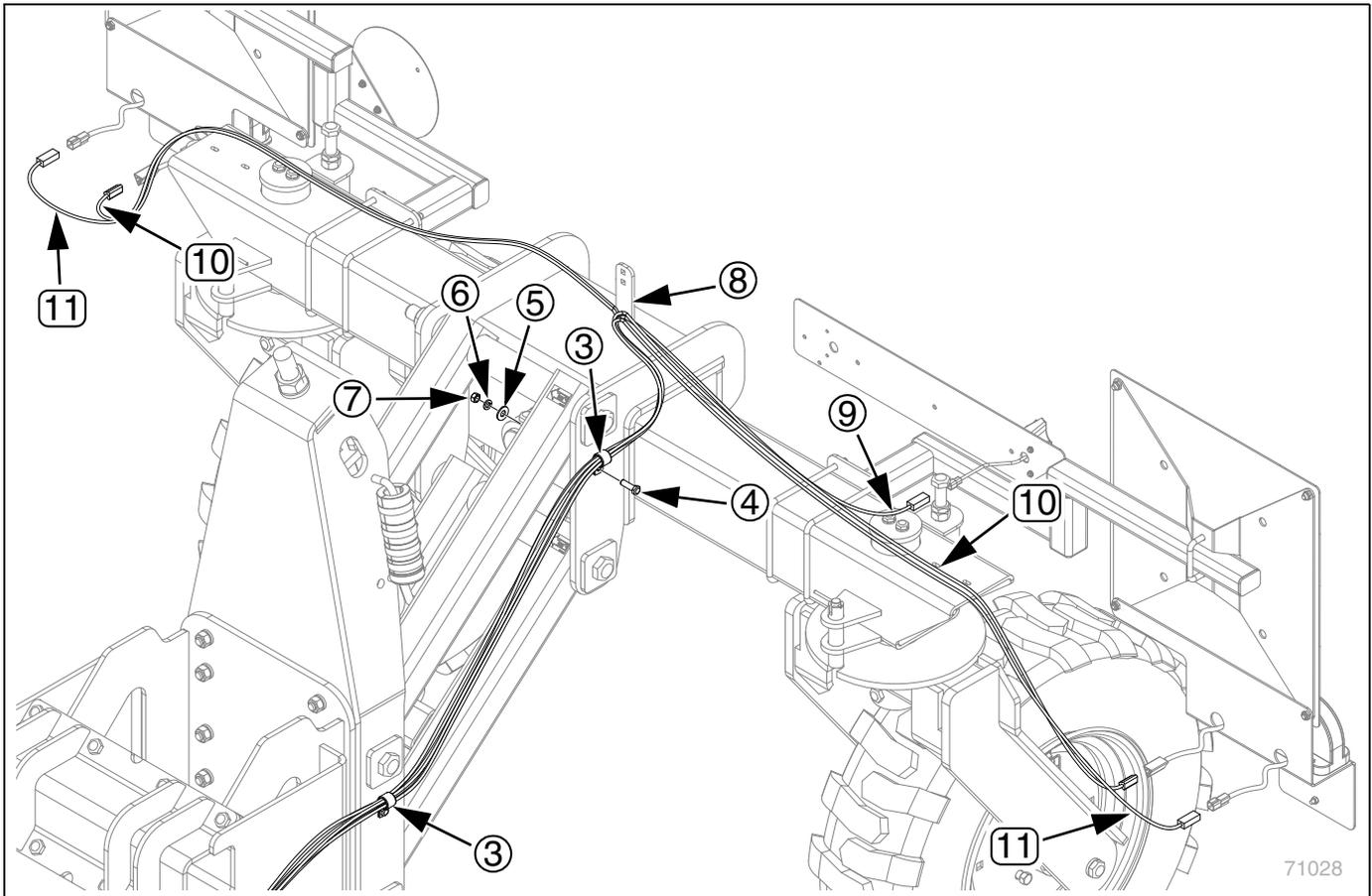


3. Route the harness along the frame mount to the bolt-on frame mount.
4. Place two 3/4 inch hose clips (3) around the harness. Install one hose clip to the bolt-on frame mount with a 3/8 x 1-1/4 inch bolt (4), flat washer (5), and lock washer (6). Route the harness along the parallel arms and install the other hose clip to the pivot mount.
5. Use a wire tie to connect the wiring harness to the mounting post (8) for the SMV.
6. On the left-hand side, route the short wire with two pin connector (9) to the license plate light.
7. On both sides, route the wires with the three pin connectors (10) to the red lights. Route the wires with the two pin connectors (11) to the amber lights.
8. Secure the wiring harness with cable ties.



Wire Damage Risk

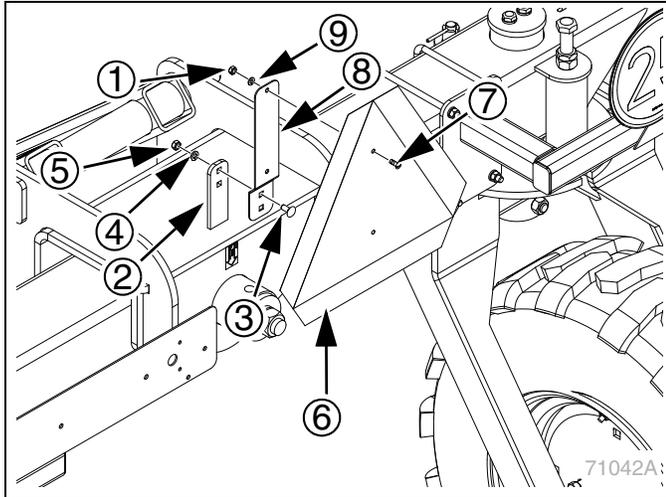
Make sure all harnesses are secured to machine. To prevent damage to harnesses, do not stretch wires and do not let wires drag on the ground. Allow enough harness length for operation and watch for any pinch points.



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■ Install Slow Moving Vehicle Sign

1. At the middle of the lift-assist frame, install the SMV blade (1) onto the mounting tab (2). Secure to the tab with two 5/16 x 3/4 inch bolts (3), lock washers (4), and nuts (5).
2. Mount the SMV sign (6) onto the blade and secure with two 1/4 x 5/8 inch screws (7), lock washers (8), and nuts (9). Make sure the red/orange reflective side of the SMV sign is facing to the rear of the drill.



■ Attach Meter Hoses at Rows

The opener frames have openings for up to three material hoses:

- The front hole is always used for the seed delivery tube for the main seed box.
- The center hole is used for dual seed, fertilizer, or native grass, if installed.
- The rear hole is used for small seeds, if installed.

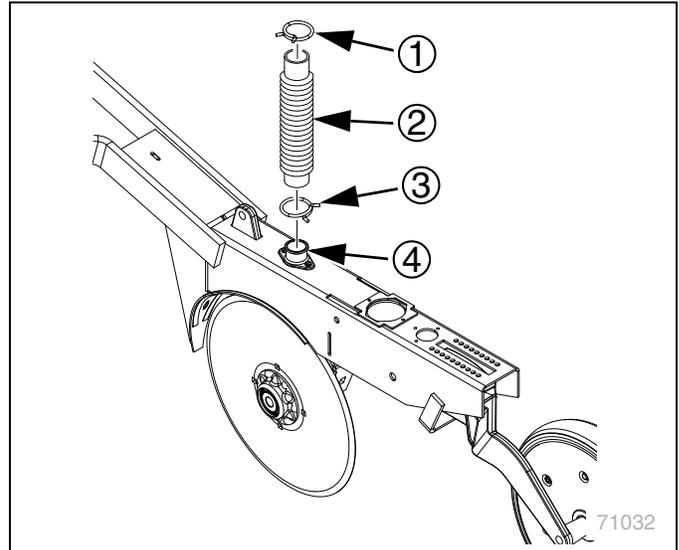


Some components in the following instructions may already be installed. Use the illustrations and instructions as a reference.

Begin on the left hand side of the drill and repeat the steps for each row.

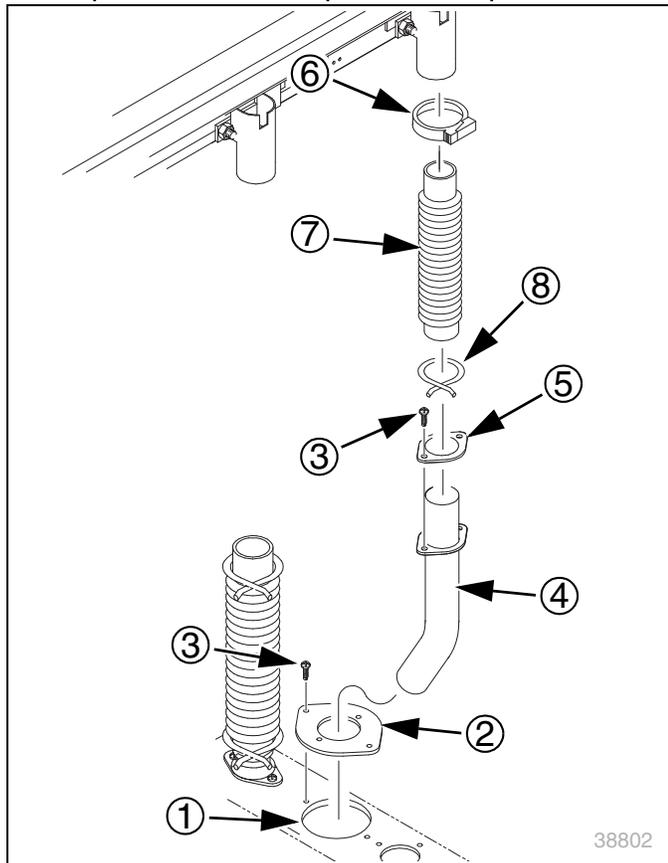
Main Seed Hose

1. Place the 1-5/8 inch hose clamp (1) onto the inlet end of the seed hose (2), up against the ribs. Slide the seed hose end onto the end of the feeder cup. Move the clamp to just above the raised lip of the feeder cup outlet.
2. Place the 1-1/2 inch hose clamp (3) onto the outlet end of the seed hose. Slide the outlet end of the hose fully onto the seed tube inlet (4) at the front row unit opening. Move the clamp to just below the raised lip of the seed tube inlet.
3. Repeat the above steps for each opener.



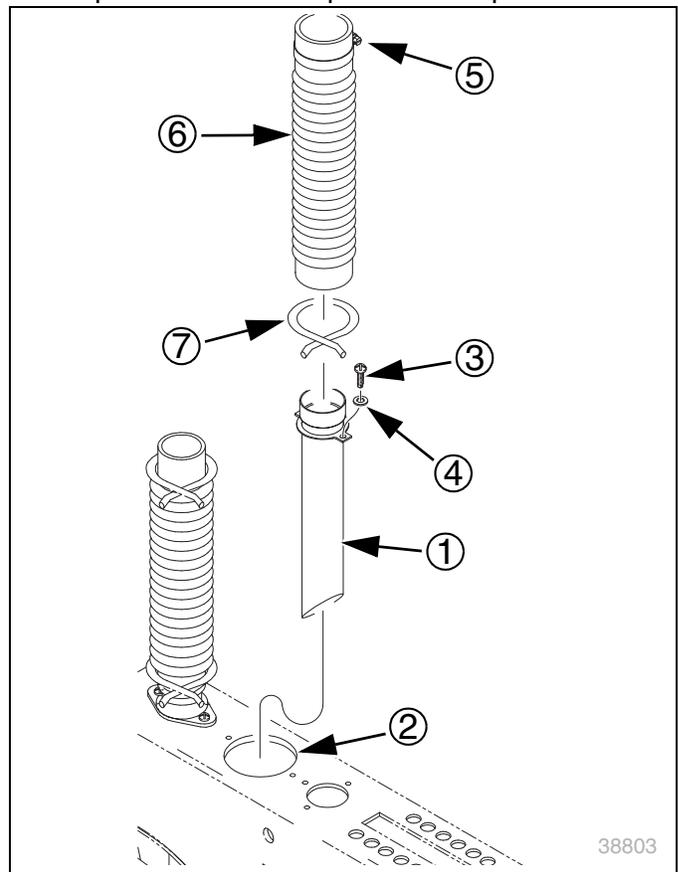
Dual Seed or Fertilizer Hose

1. In the middle hole (1) of the opener, install an opener adapter (2). Secure with two #10 self-tapping screws (3).
2. Insert a fertilizer tube (4) in the opener adapter. Add a reinforcement ring (5) and secure with two #10 self-tapping screws (3).
3. Open the band clamp (6) and place it onto the inlet end of the hose (7), up against the ribs. Slide the inlet end onto the fertilizer drop tube or feeder cup. Move the clamp to about one inch below the end of the hose. Tighten the clamp.
4. Place a 1-1/2 inch hose clamp (8) on the outlet end of the hose, up against the ribs. Slide the outlet end of the hose fully onto the fertilizer tube inlet. Move the clamp until it is about 1/2 inch from the reinforcement ring.
5. Repeat the above steps for each opener.



Native Grass Hose

1. Insert the native grass tube (1) into the middle hole (2) in the opener frame. Secure with two #10 x 3/4 inch screws (3) and flat washers (4).
2. Place a band clamp (5) onto the inlet end of the native grass hose (6). Slide the end of the hose onto the native grass feeder cup. Tighten the clamp.
3. Place the 2-5/8 inch hose clamp (7) onto the outlet end of the hose, up against the ribs. Slide the outlet end of the hose fully onto the native grass tube inlet. Move the clamp to halfway onto the hose neck.
4. Repeat the above steps for each opener.



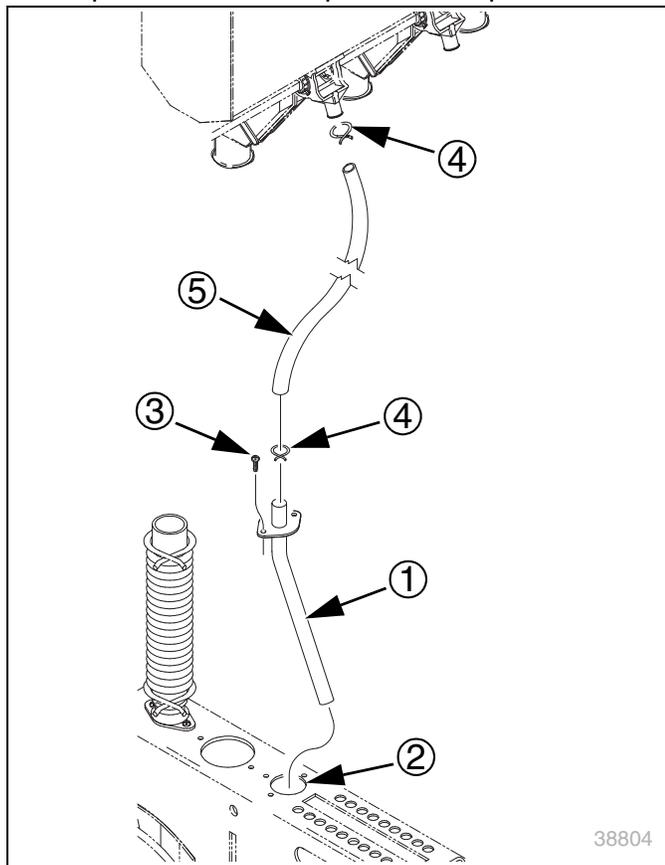
Small Seeds Hose

1. Insert a small seeds tube (1) into the rear hole (2) of the opener frame. Secure with two #10 x 1/2 inch screws (3).



The small seeds tube may be pointed to the front or rear.

2. Slide a 3/4 inch hose clamp (4) onto each end of a small seeds hose (5).
3. Insert one end of the small seeds hose onto the seed cup outlet. Slide the hose clamp to about 1/4 inch from the end of the hose.
4. Insert the other end of the small seeds hose onto the small seeds tube. Slide the hose clamp to about 1/2 inch from the end of the hose.
5. Repeat the above steps for each opener.



■ Pre-Delivery Checklist

After assembling the drill and before delivery:

- ☑ Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- ☑ Check for proper tension and alignment on all drive chains.
- ☑ Check that all safety decals and reflectors are located correctly and legible. Replace if not properly located or damaged. See **“Safety Decals”** on page 6.
- ☑ Inflate tires to recommended pressure, see **“Tire and Wheel Information”** on page 53.
- ☑ Tighten wheel bolts as specified in **“Tire and Wheel Information”** on page 53.

ORIGINAL EC DECLARATION OF CONFORMITY

Corresponding to the directive 2006/42/EC

We, the manufacturer, Great Plains Manufacturing
 1525 E. North Street
 Salina, KS 67401
 United States

and

Authorized representative in Arable Systems Division
European Community c/o Kverneland Group Gottmadingen N.V.
and Industriepark 312
authorized for D-78244 Gottmadingen
compile the technical file, Germany
established in EC

Declare under our sole responsibility that the product,

Designation of machine: Seed drill
Machine type: Box Drill 3P1006NT
Valid from serial no. GP-A 1302W

corresponds to the above mentioned directive.

The following harmonized standards are applied.

EN ISO 4254-1:2015

Salina, Ks, 01-05-2018

Gottmadingen, 01-05-2018



Rye GeGarmo
Vice President of Engineering

Michael Enders*
Product Safety &
Homologation Harvesting Division

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