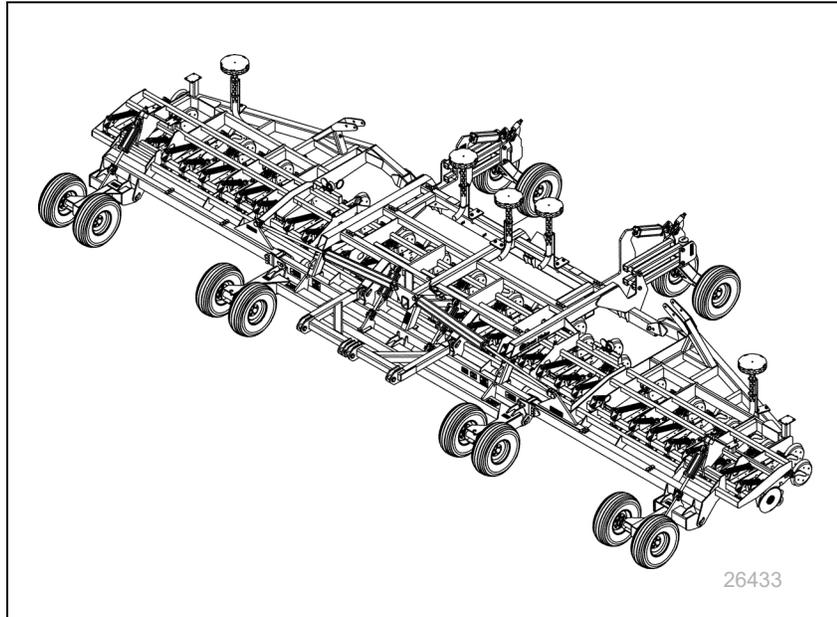


Operator Manual

NTA3010 and NTA3510
No-Till Air Drills
(S/N Z1371+)



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



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

ORIGINAL INSTRUCTIONS



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.: _____

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



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Printed in the United States of America



Important Safety Information

Look for Safety Symbol

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



Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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



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

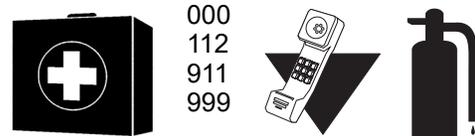


CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



Prepare for Emergencies

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



Be Familiar with Safety Decals

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



Avoid High Pressure Fluids

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

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



Wear Protective Equipment

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



Handle Chemicals Properly

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

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



Keep Riders Off Machinery

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

- ▲ *Never allow children to operate equipment.*
- ▲ *Keep all bystanders away from machine when folding/unfolding, raising/lowering markers, raising/lowering openers, and transporting.*



Shutdown and Storage

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

Use Safety Lights and Devices

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

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

Transport Machinery Safely

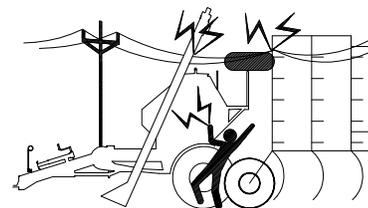
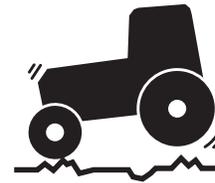
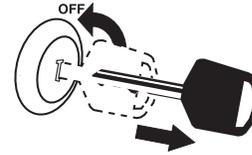
Maximum transport speed for drill is 20 mph (32 kph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ Do not exceed 20 mph (32 kph). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
- ▲ Comply with national, regional and local laws.
- ▲ Follow your tractor manual recommendations for maximum hitch loads. Insufficient weight on tractor steering wheels will result in loss of control.
- ▲ Carry reflectors or flags to mark drill and drill in case of breakdown on the road.
- ▲ Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “*Specifications and Capacities*” on page 60.

Check for Overhead Lines

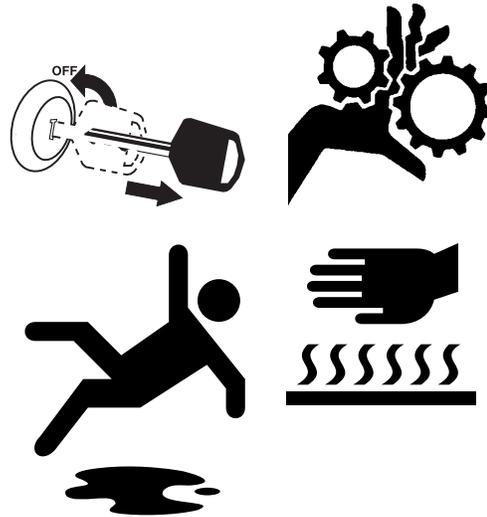
Seed auger or drill markers contacting overhead electrical lines can introduce lethal voltage levels on drill, drill and tractor frames. A person touching almost any metal part can complete the circuit to ground, resulting in serious injury or death. At higher voltages, electrocution can occur without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

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



Practice Safe Maintenance

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



Tire Safety

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

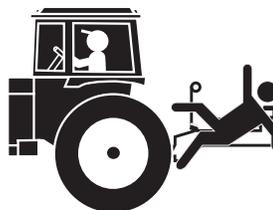
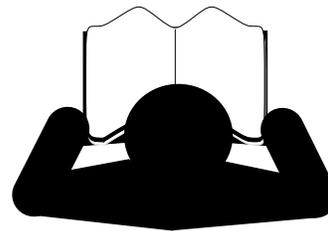
- ▲ *When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.*
- ▲ *When removing and installing wheels, use wheel-handling equipment adequate for weight involved.*



Safety At All Times

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

- ▲ *Be familiar with all drill and drill functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave drill unattended with tractor engine running.*
- ▲ *Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.*
- ▲ *Do not stand between the tractor and drill during hitching.*
- ▲ *Keep hands, feet and clothing away from power-driven parts.*
- ▲ *Wear snug-fitting clothing to avoid entanglement with moving parts.*



Safety Decals

Safety Reflectors and Decals

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

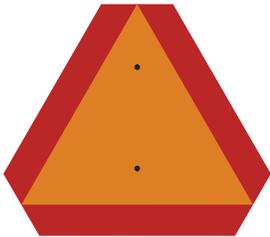
- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts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

To install new decals:

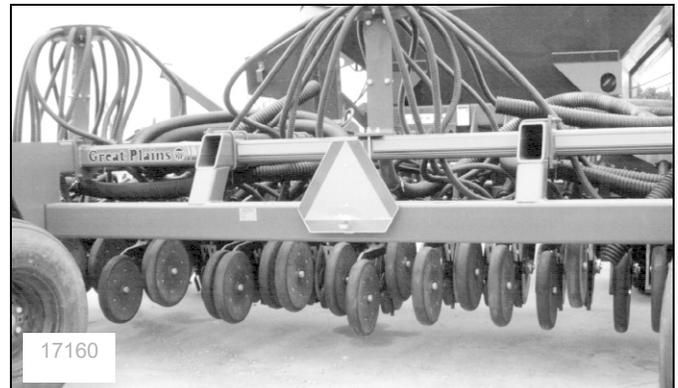
1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

Slow Moving Vehicle Reflector

818-055C



Center of rear frame tube;
1 total

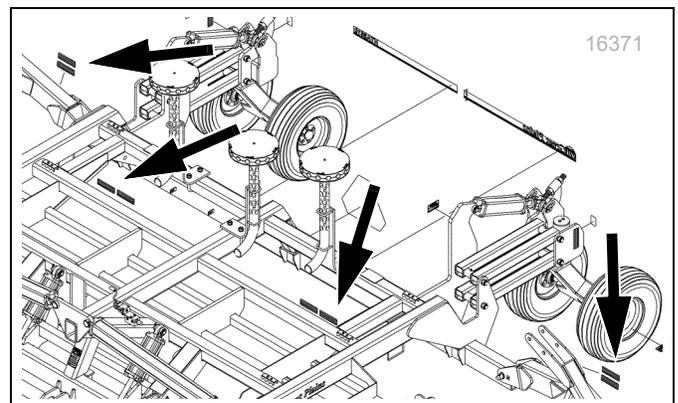


Red Reflectors

838-266C; (S/N Z1805-)



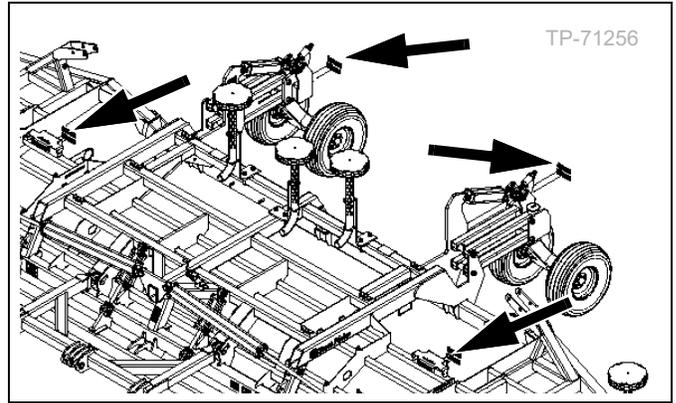
On rear face of rear fold arms near pivot,
on each side, rear face of top rear weight frame;
4 total



838-266C; (S/N Z1806+)



Rear face of rear casters, reflector bracket on center section of walkboard; 4 total

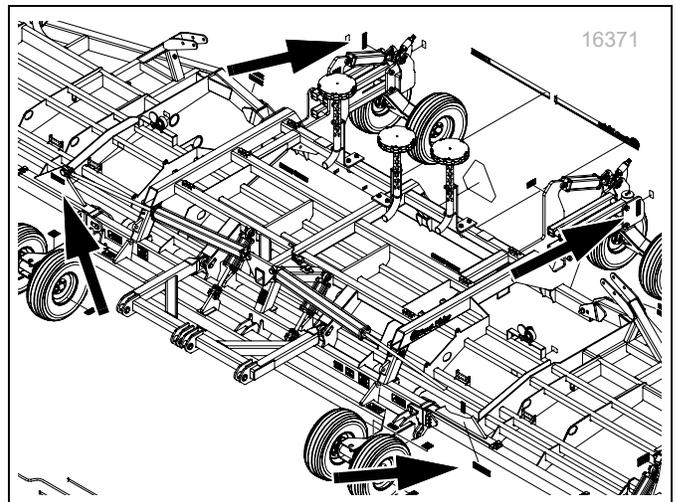


Amber Reflectors

838-265C (S/N Z1805-)



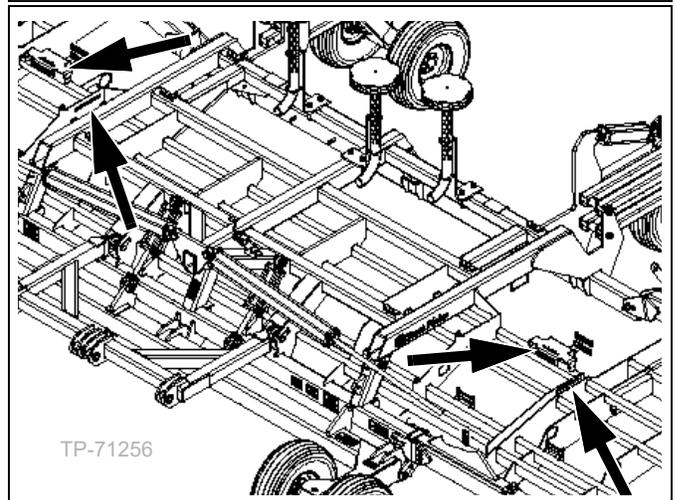
Outside each rear gauge wheel weldment, Front face, fold rod end attach brace; 4 total



838-265C (S/N Z1806+)



Outside of center section, reflector bracket on center section on the opposite face containing red reflectors and daytime reflectors; 4 total

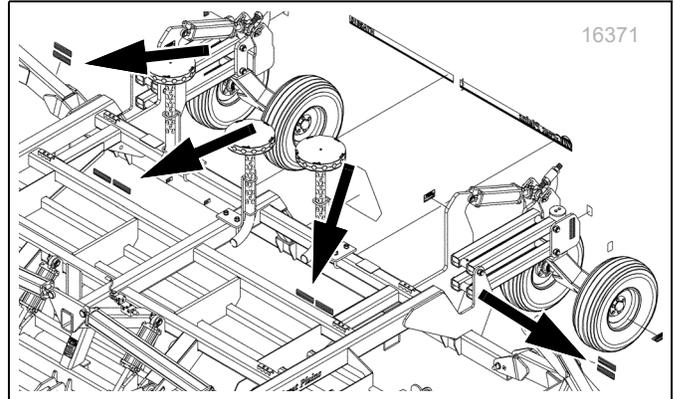


Daytime Reflectors

838-267C (S/N Z1805-)



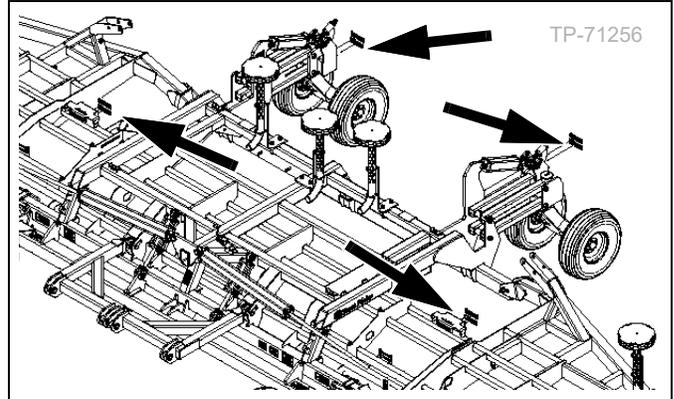
On rear face of rear fold arms near pivot, on each side, rear face of top rear weight frame, inside or below red reflectors; 4 total



838-267C (S/N Z1806+)



Rear face of rear casters, reflector bracket on center section of walkboard; 4 total

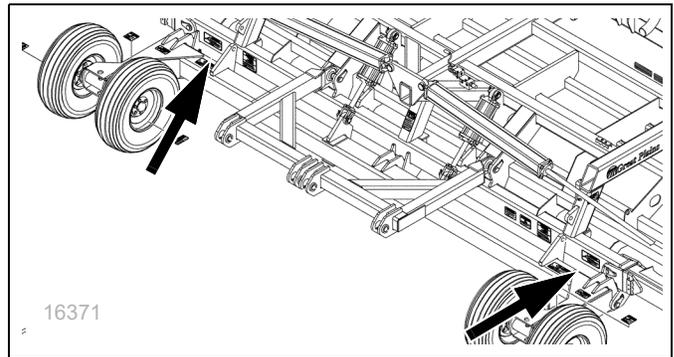


Danger: Overhead Crush Hazard

818-046C



On the front center frame tube, above gauge wheels, (2 more called out for wing structures); 4 total

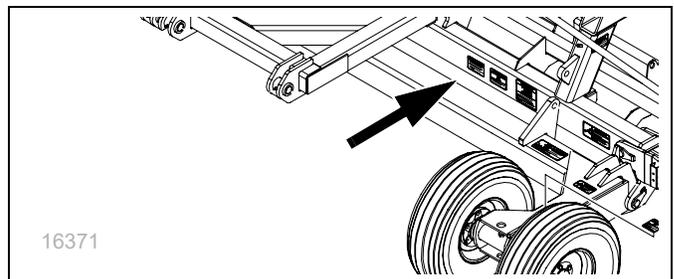


Danger: Read Manual

848-512C

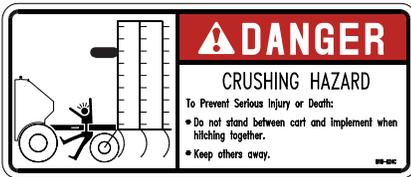


On the front center frame tube, left of right gauge wheel; 1 total

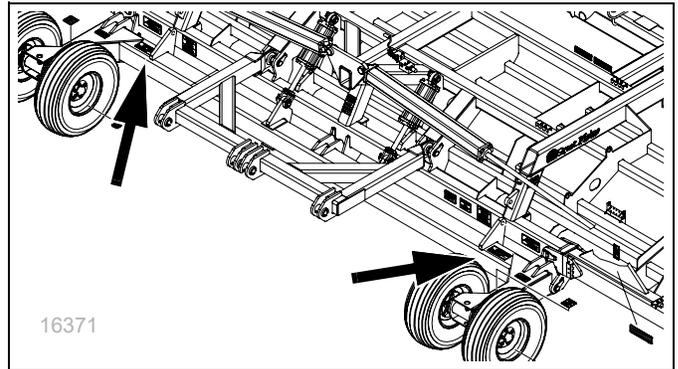


Danger: Hitch Crushing Hazard

818-624C

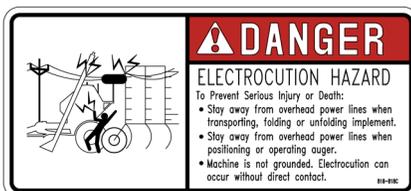


On each top end of rock shaft;
2 total

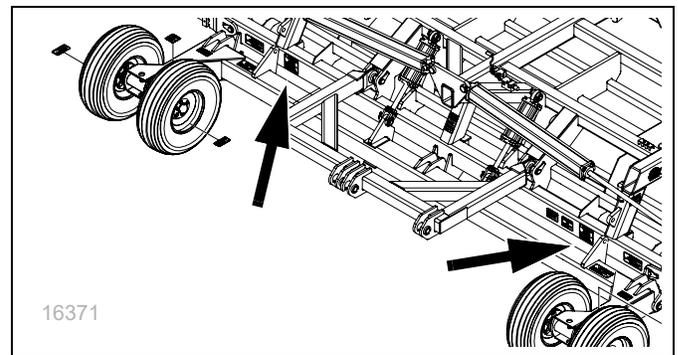


Danger: Electrocutation Hazard

818-818C



Each end of front face of front frame;
2 total

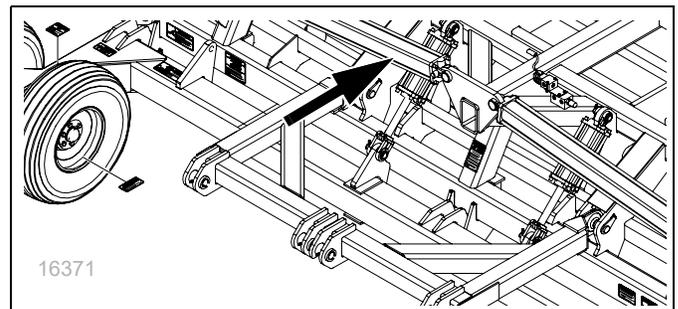


Warning: High Pressure Fluid Hazard

818-339C

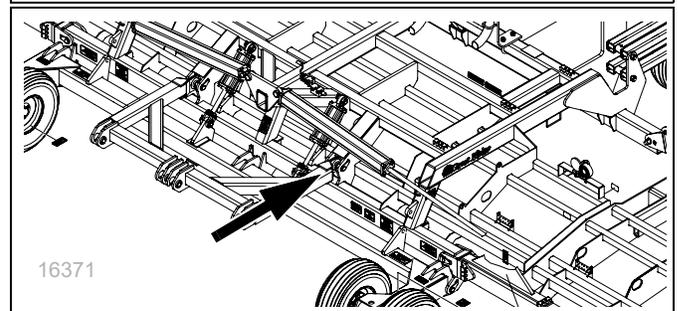


On front center section behind hitch arms;
1 total



Caution: Operational Machine

818-587C

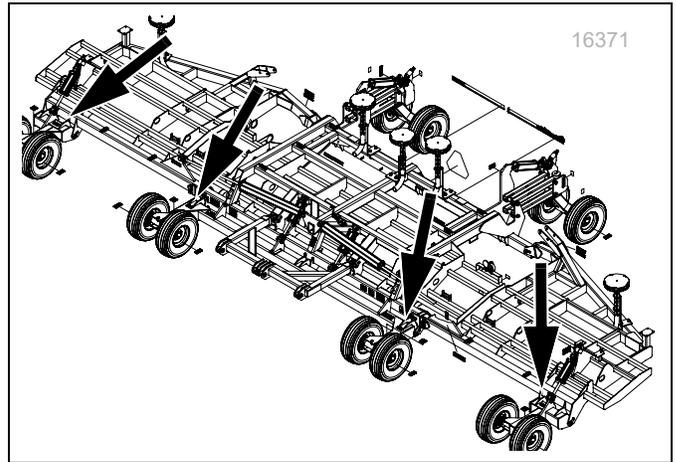


Warning: Pinch Point Hazard

818-798C



Top of front gauge wheel arms;
4 total

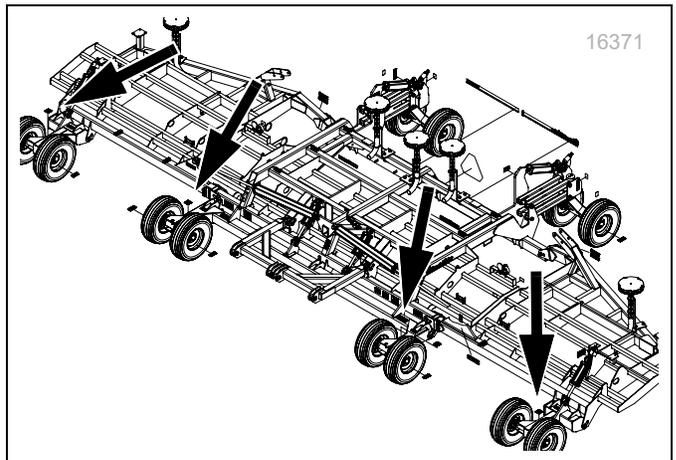


Caution: Tires Not A Step

818-398C



On each front gauge wheel arm;
4 total

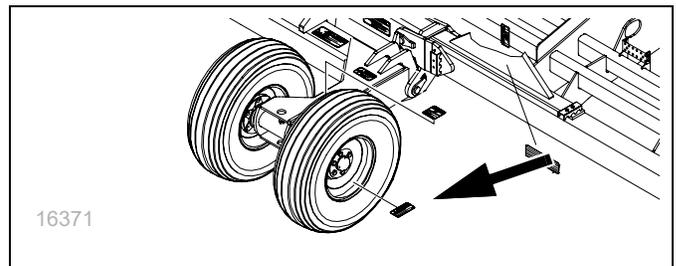


Caution: Tire Pressure

818-855C



On outside rim of each wheel pair;
6 total





Introduction

Great Plains welcomes you to its growing family of new product owners. Your No-Till Air Drill has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use.

Document Family

160-219M-A	Owner's Manual	(this document)
167-085B	Seed Rate Charts	
160-219P	Parts Manual	
167-085M	Air Cart Operators Manual	

Description of Unit

The NTA3010 and NTA3510 are pull-type drills for volumetric seeding. A hydraulic fan on a companion leading air cart creates an airflow to supply seed and dry granular treatments to the drill.

The drill is designed for no-till conditions. Working width is 30 or 35 feet. The drill has two or three separate hydraulic circuits. A lift circuit for transport and turns, and a fold circuit for transport and weight transfer are standard. The Fold circuit is shared with the cart's auger. If markers are installed, they are on a third circuit (which may be shared with an air cart function).

NTA3010 and NTA3510 No-Till Air Drills, serial numbers Z1371 and higher ("Z1371+"), are usable with the 2352 Great Plains air cart as well as older 2350 models.

Carts introduced after the release of this manual may also be compatible. Consult your Great Plains dealer.

Intended Usage

Use the drill and drill to seed production-agriculture crops only. Do not modify the drill for use with attachments other than Great Plains options and accessories specified or recommended for use with the drill.



Parts Manual QRC

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

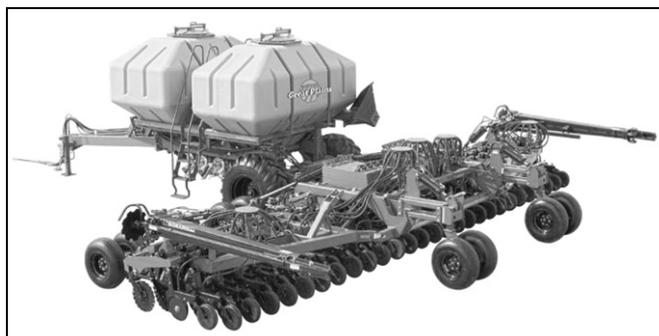


Figure 1
Air Cart Leading Drill

28211

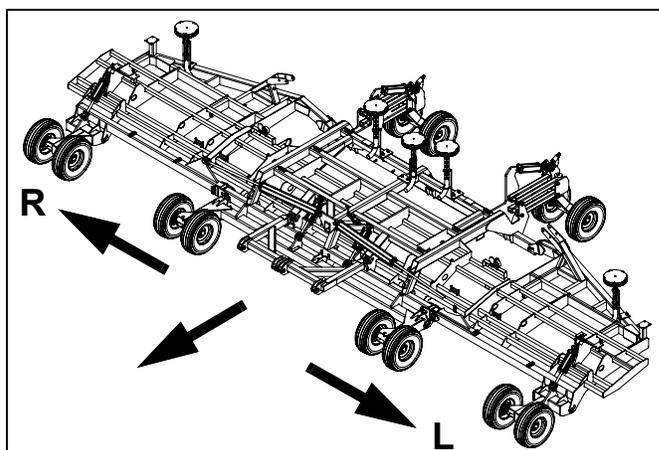


Figure 2
Left/Right Notation

26420

Models Covered by this Manual

NTA3010-3610	30 Foot (9.1 m)	10 inch (25.4 cm)
NTA3010-4875	30 Foot (9.1 m)	7 ¹ / ₂ inch (25.4 cm)
NTA3510-4010	35 Foot (10.2 m)	10 inch (25.4 cm)
NTA3510-5575	35 Foot (10.5 m)	7 ¹ / ₂ inch (25.4 cm)

For use of NTA3010 and NTA3510 drills serial numbers Z1370 and lower ("Z1370-") with ADC1150 or ADC2220 air carts, refer to manual: 160-269M Owner's Manual (SN Z1370-).



Product Manuals QRC

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

Using This Manual

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

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

Owner Assistance

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

Refer to Figure 3

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

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

Model Number: _____

Serial Number: _____

Further Assistance

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

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

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

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

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

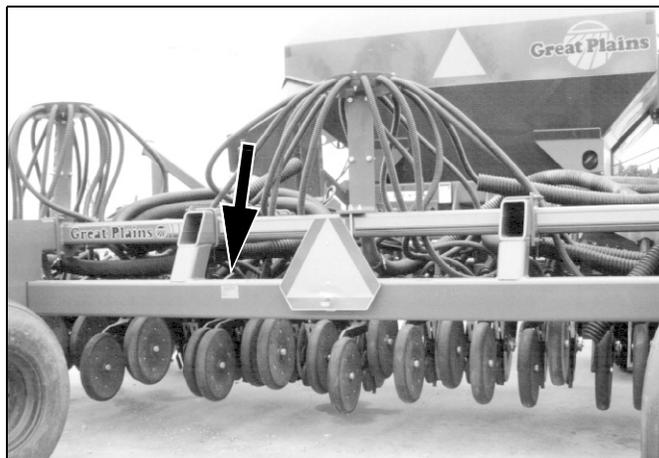


Figure 3
Serial Number Plate

17160



Preparation and Setup

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

Pre-Setup Checklist

1. Read and understand “**Important Safety Information**” on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 53.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. “**Appendix**” on page 60.

Hitching

⚠ DANGER

Crushing

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

Hazard:

When ready for planting, the drill is part of an assembly that includes the tractor, the cart, and the drill.

When hitching for the first time, hitch the leading cart to the tractor first.

Once the cart is hitched to the drill, it is usually left connected to the drill, unless parking or storage considerations require separation.

This manual includes full details only for the drill’s hitch. Consult the cart manual for cart-to-tractor hitching.

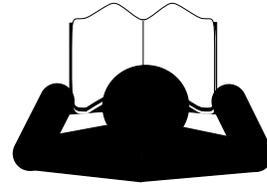


Figure 4
Complete Assembly

26360

Hitch Link

Refer to Figure 5, which, for clarity, depicts the air cart without the rear hopper

1. Use a line (not shown), from the cart walkboard, to tie the cart links ① up so that the ball swivels ② are at about the same height as the lug holes ③.
2. Drive the roll pins out of the lug pins ④ and remove the lug pins.
3. Have a tractor slowly guide the cart backwards until the link arm ball swivels ② are within two feet (60cm) of the lug holes ③, and aligned with them side-to-side.
4. Set the tractor parking brake. Remove the pins ⑤ restraining the telescoping arms. Do not remove the stop bolts ⑥.
5. Pin and secure the lug pins ④.
6. Release the tractor brakes and back up the cart until the telescoping arm pins ⑤ can be re-inserted and secured.

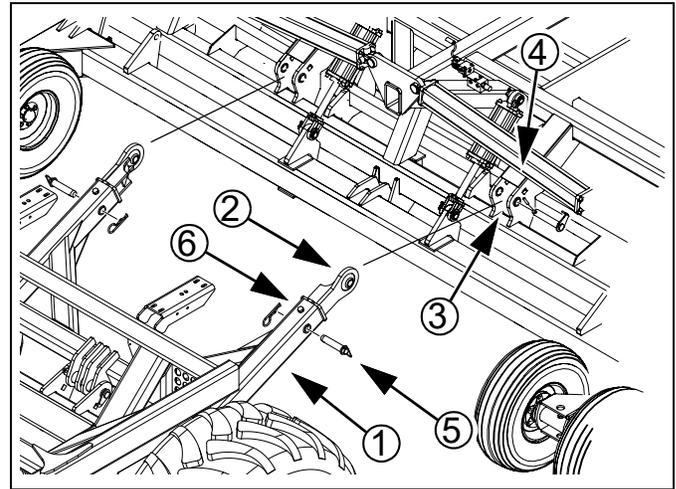


Figure 5
Hitching Cart to Drill

26448

Make Seed Hose Connections

Refer to Figure 6

Connect primary seed hoses (tower feed hoses) from the drill to their respective outlets on the rear cart meter box, in left to right order, skipping any capped outlets. On Model NTA3010, two center outlets are unused. On NTA3510, one center outlet is unused.

Leave enough slack so that drill can be fully raised, lowered, folded and unfolded.

Secure hoses to meter box using screw clamps provided. Orient outer clamps so that they do not interfere with the door latches on the meter.

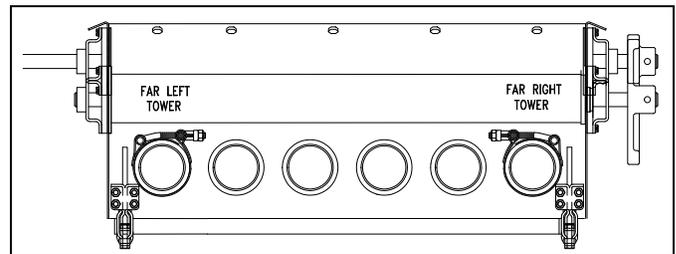


Figure 6
Cart Seed Hose Outlets

26302

Make Electrical Connections

Refer to Figure 7

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

1. Mate the lighting plug ① to the outlet connector on the cart.
2. Mate the implement lift switch cable ② to the socket on the cart.
3. If present, mate the seed monitor plug ③ to the outlet connector on the cart.
4. Secure cables so they are clear of moving parts at the hitch.

After-market markers may require additional electrical connections not listed here.

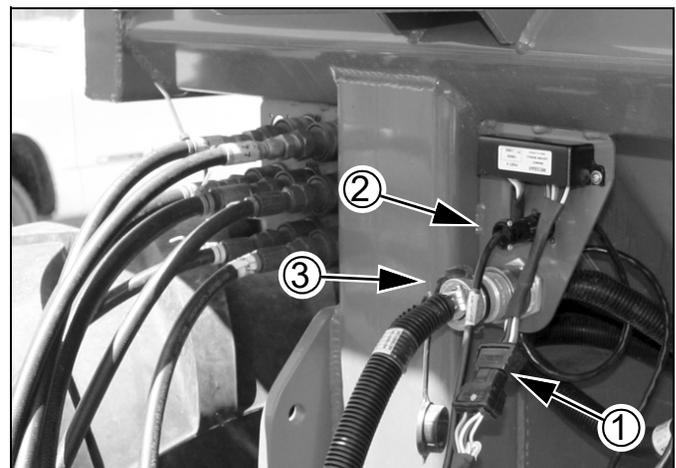


Figure 7
Lighting & Monitor

26439

Make Hydraulic Connections

WARNING

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

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

Refer to Figure 8

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

NOTICE

DO NOT connect return line to a power-beyond-port.

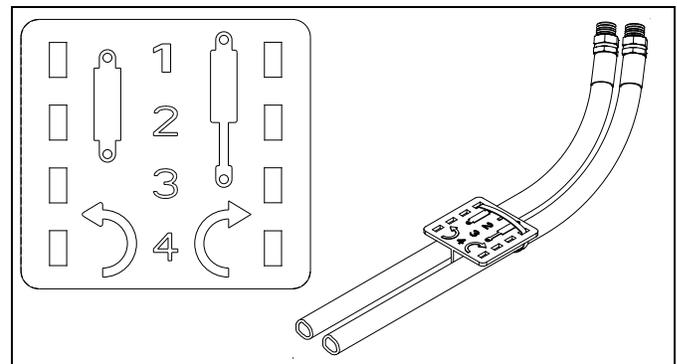


Figure 8
Plastic Hose Label

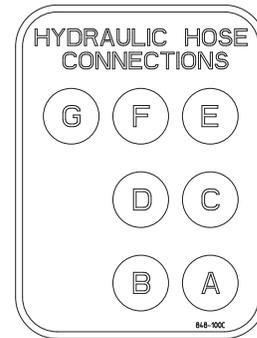
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17641

Hydraulic Circuit Connections

The drill has two or three hydraulic circuits (with a low pressure sump return line). The standard circuits power lift, fold and weight-transfer functions. An optional circuit operates the markers.

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

1. Shut down tractor hydraulics.
2. Connect either (orange) Marker hose to receptacles (A) and (B) in any order.
3. Connect the Retract/rod-end hose of the (blue) Lower pair to receptacle (C). Connect the Extend/base-end hose of the (blue) Lift pair to receptacle (D)
4. Connect the Retract/rod-end hose of the (yellow) Fold pair to receptacle (E). Connect the Extend/base-end hose of the (yellow) Unfold pair to receptacle (F).
5. Connect the sump hose to receptacle (G).
6. Check hose routing to ensure adequate slack for link arm movement, and clearance from pinching or abrading cart/drill components.



Color	Cart Ports	Hydraulic Function
Green	(A), (B)	Markers (also used for Auger on cart)
Blue	(C) (D)	Lower Lift
Black	(E) (F)	Fold Unfold and Weight Transfer (also used for Fan on cart)
No Color	(G)	Sump return

Hydraulic Control Overview

Lift/lower is on a dedicated circuit and is affected only by tractor controls.

The other two circuits on the drill are affected by one valve on the drill and one or two on the air cart, in addition to the lever handles in the tractor.

Refer to Figure 9

1. Fold/unfold has a two-position valve (1) on the drill that switches between:
 - (2) Transport (fold/unfold), handle horizontal and
 - (3) Field (weight transfer), handle down modes.

A knob (4) at the valve adjusts weight transfer when in Field mode. The gauge (5) displays weight-transfer system PSI.

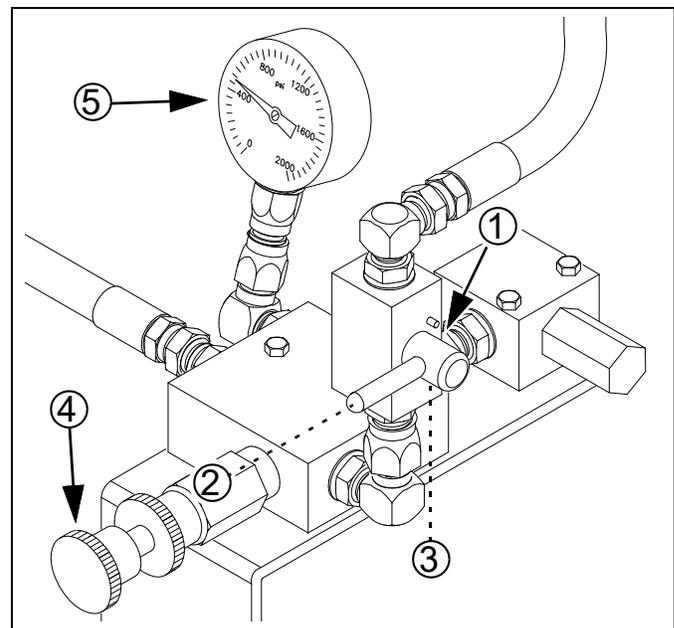


Figure 9
Fold/Weight Control Valve

26413

Refer to Figure 10

2. The drill's fold/unfold circuit is only active and fully powered if the air cart's hydraulic fan is disabled by a two-position valve ① handle at the fan:
- ② Closed (handle forward): Fan off;
 - ③ Open (handle Left): Fan on.

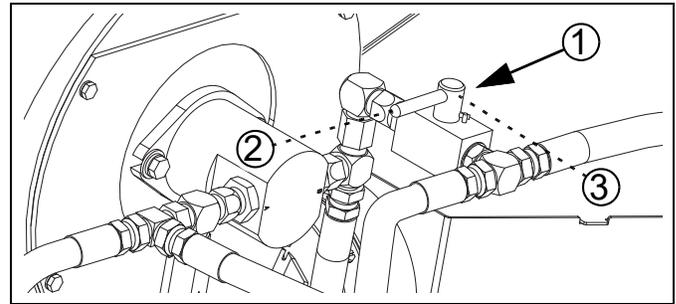


Figure 10
Cart Fan Shutoff Valve

26419

Refer to Figure 11

3. Markers (optional, third-party) share a circuit with the air cart's auger, controlled by a two-position selector valve ① on the cart. Handle settings:
- ② Back: drill marker circuit enabled;
 - ③ Forward: cart auger circuit enabled

At the drill, markers are typically controlled by a local automatic sequence valve or solenoid valve (from a cab switch).

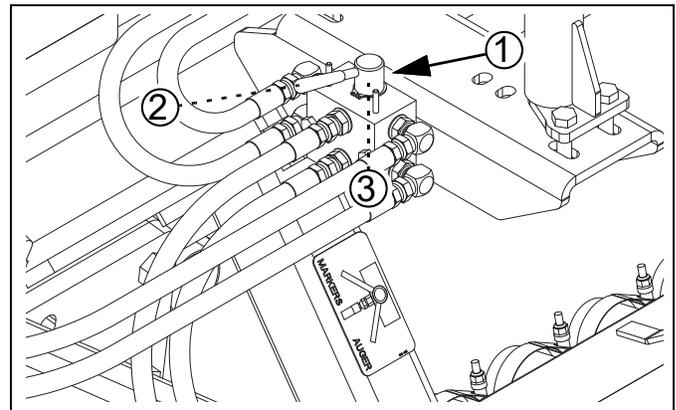


Figure 11
Cart Selector Valve

26417

Level Frame Side-to-Side

All frame sections must be level to maintain even seeding depth. Before using the implement in the field, follow these steps to check or adjust level side-to-side.

Periodic frame-leveling adjustments should not be necessary, but if you are having problems with uneven depth, check drill levelness, and correct as necessary.

1. Ensure the hydraulics have smooth movements before use.
2. Unfold and lower the implement. See “**Implement Unfold**” on page 24. Make sure the lift cylinders are fully retracted, then block up or otherwise support the frame.

Refer to Figure 12

3. Take a reference measurement by laying a straight edge across the top of the two coulter mount tubes ① on the center section. Measure from the bottom of the straight edge to the center of one rockshaft-wheel axle. Because rockshaft gauge wheels are not adjustable, all adjustments will be made relative to this measurement.

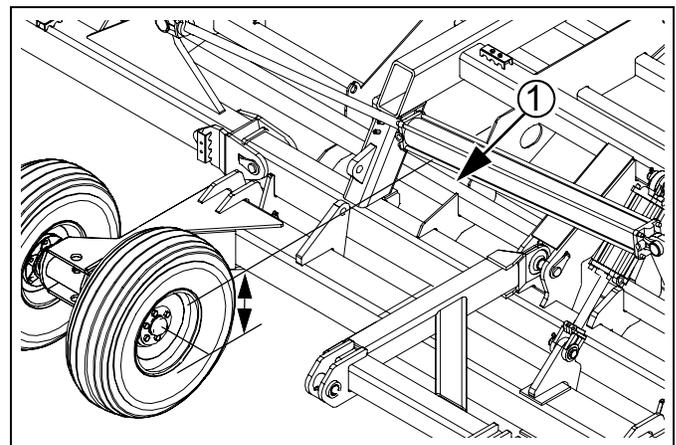


Figure 12
Leveling Reference

26415

Refer to Figure 12

4. Move the straight edge to one of the wings. Measure the distance from the bottom of the straight edge to the center of wing-gauge-wheel axle.

If the wing measurement is the same as the reference measurement, skip step 5 through step 9.

If the wing measurement differs from the reference measurement:

5. Remove the pin from the rod end of the wing-gauge-wheel cylinder.
6. Block or support the wing gauge wheels so the distance from the bottom of the straight edge to the center of the wing-gauge-wheel axle is the same as the reference measurement taken in step 3.

Refer to Figure 12

7. Loosen the nuts on the cylinder eye bolt.
8. Move the eye bolt in or out until the rod end of the cylinder can be pinned to its lug.
9. Secure the eye bolt by tightening the nuts.

Repeat step 3 through step 9 as needed for the other wing.

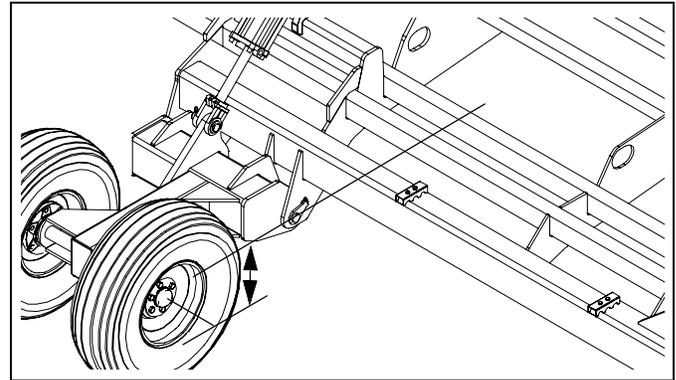


Figure 13
Checking Wing Level

26415

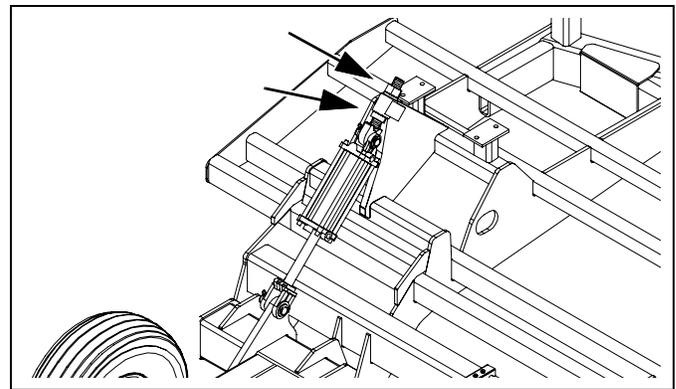


Figure 14
Adjusting Wing Level

26415

Level Frame Front-to-Rear

The front-to-rear levelness of your drill affects seeding depth. If the lift-assist wheels raise the rear of the implement higher relative to the front, the openers may operate at the wrong angle. The opener bodies should run parallel to the ground. If they do not, level the angle which the implement runs by following these instructions.

1. Ensure the lift hydraulics have smooth movements before use.

Refer to Figure 15

2. Turn the lift-assist cylinder eyebolt nuts.
 - To raise rear of implement, move eye bolt in toward drill.
 - To lower rear of implement, move eye bolt out.
3. Repeat for other lift-assist wheel.

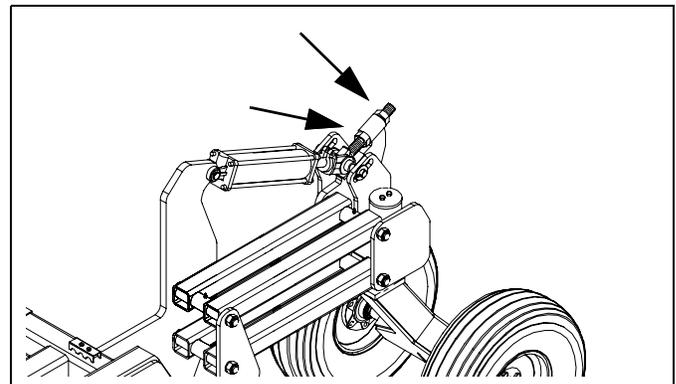


Figure 15
Adjusting Front/Back Level

26415



Operating Instructions

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

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

General Description

Drill hydraulic functions are on two or three separate circuits, two of which may be shared with cart functions. See “**Hydraulic Control Overview**” on page 16. Once set up, routine drill operations require setting valve handles on the air cart and one on the drill.

Planting Operation

Via an adjustable implement lift switch on the drill, the NTA3010 and NTA3510 control the meter drive clutch on the air cart, turning it on and off as the drill is lowered and raised.

Weight transfer is hydraulically equalized between center section and wings. The system is switched on and off by a cab-controlled solenoid valve.

Seed is delivered to the row units by air, powered by the fan on the air cart. Seed rate is determined by air cart setup, and the cart meter rate self-adjusts for changes in ground speed. Seeding stops when motion stops or the drill is raised.

The metered seed is carried by air through the hoses to the distribution towers on the implement. These towers then divide the air and seed into individual rows.

There are drill adjustments for wing weight transfer, row unit setup, seeding depth and furrow coverage.

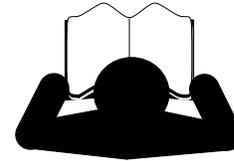
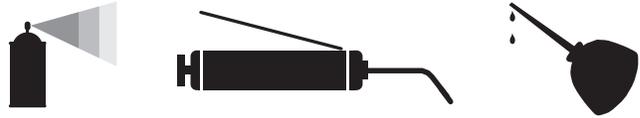


Figure 16
Valve Locations

26360

Pre-Start Checklist

- q Lubricate the drill as indicated under Lubrication, “**Maintenance and Lubrication**” on page 52.
- q Check the tires for proper inflation according to “**Tire Inflation Chart**” on page 60.
- q Check for worn or damaged parts and repair or replace before going to the field.
- q Check all nuts, bolts and screws. Tighten bolts as specified on “**Torque Values Chart**” on page 61.
- q Check implement lift switch on drill. See “**Implement Lift Switch Adjustment**” on page 35
- q Complete all pre-start checklist items on the air cart.



Implement Lift

The drill has six rephasing lift cylinders that raise and lower the opener frame. Lift is on a dedicated circuit not shared with any other air cart or drill functions.

Four (4) transport locks are provided, one each for the rockshaft (center forward) and lift-assist (rear) cylinders. These assure that the drill stays raised during folding/unfolding, transport, storage, lubrication, maintenance and some setup/adjustment tasks.

Lift

Over a period of normal use the cylinders may get out of phase. This causes some implement sections to run higher than others when lowered. To minimize this, or rephase the cylinders, make the following steps your normal raise sequence:

1. Raise the implement completely and hold the hydraulic remote lever on for several seconds until all cylinders are fully extended. Do this every time you raise the implement out of the ground.
2. When all cylinders are fully extended, momentarily reverse the hydraulic remote lever to retract the system $\frac{1}{2}$ inch to maintain levelness.

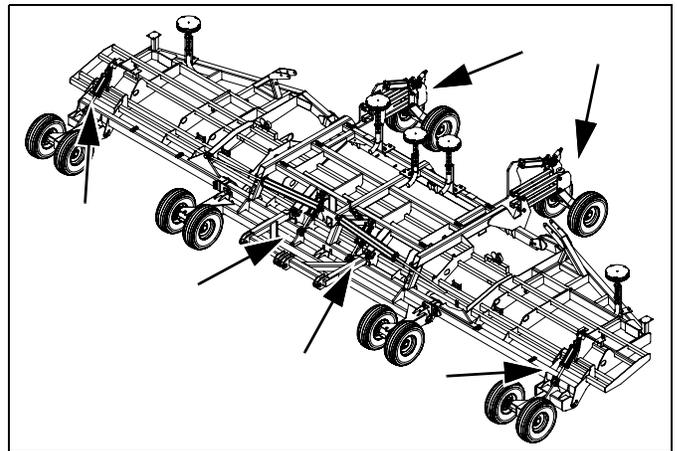


Figure 17
Lift Cylinders

26420

Lift System Transport Locks

The lift system has transport locks for the rockshaft and lift-assist cylinders. Use these locks every time you raise the drill for maintenance, lubrication, folding, transport or raised parking/storage.

To install the locks:

Refer to Figure 18

1. Remove the lift-assist locks ① from the under-edge of the plate forward of the parallel arms.

Refer to Figure 19

2. Remove the rockshaft locks from the storage plate ② on the implement frame.
3. Raise the drill.
4. Pin the rockshaft locks in place on the lugs of the rockshaft and main frame ③, just inside each center gauge wheel.

Refer to Figure 20

5. Pin lift-assist locks ④ over the rods of the lift-assist cylinders.
6. Lower drill onto locks and set circuit to neutral (or float, if unhitching or servicing hydraulics).

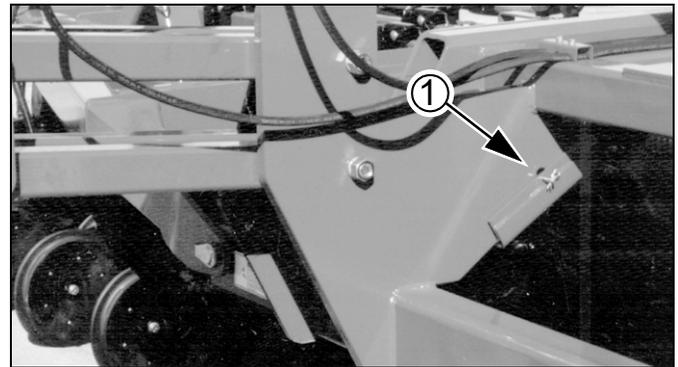


Figure 18
Lift-Assist Lock Stored

16248

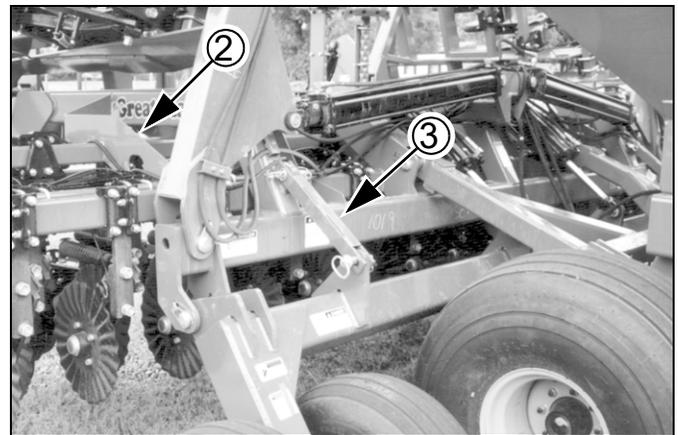


Figure 19
Rockshaft Locked

16165

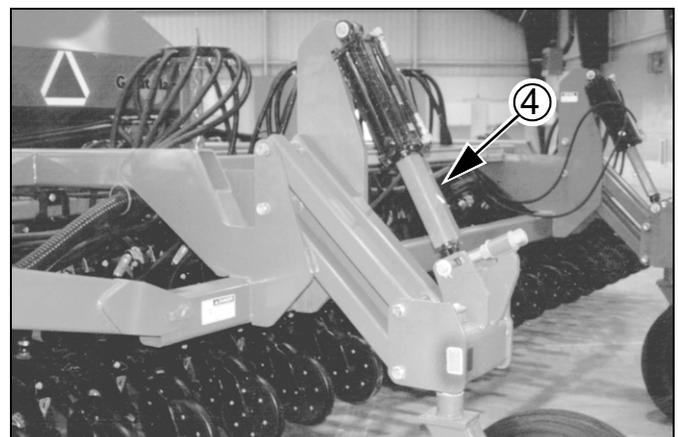


Figure 20
Lift-Assist Locked

16167

Transport

⚠ DANGER

Electrocution Hazard: To prevent serious injury or death from electric shock, keep clear of overhead power lines when transporting, folding, unfolding or operating all air drill components. Machine is not grounded. At higher voltages, electrocution can occur without direct contact.

Great Plains recommends transporting the assembly without seed loaded in the cart. Although designed for highway movement with full hoppers, the additional weight of seed may cause the implement assembly to exceed the rated towing and stopping ability of the tractor, makes the assembly more difficult to control and stop, and increases wear on cart tires and wheel bearings.

Make sure the tractor weighs at least $\frac{2}{3}$ (67%) of the assembled drill, including any material load. Check the table at the bottom of this page for weights of various configurations.



⚠ WARNING

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

- ▲ Do not exceed 20 mph (32 kph).
- ▲ Do not tow a assembly that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.

⚠ WARNING

Unstable Load Hazard: The implement is designed to hitch to a Great Plains air-drill cart only. Hitching the implement to any vehicle other than a Great Plains air-drill cart will create an unstable towing load and can lead to road accidents, injury and death. To avoid the hazard, transport the implement only when hitched to a Great Plains air-drill cart.

Transport Weights for NTA3010 Plus ADC2350 Air Cart

NTA-3010	No Extra Weights		One Weight Kit		2 Weight Kits		3 Weight Kits		4 Weight Kits	
	7.5in	10in								
ADC2350 Empty	25750 lbs 11680 kg	23800 lbs 10795 kg	27150 lbs 12315 kg	25200 lbs 11431 kg	28550 lbs 12950 kg	26600 lbs 12066 kg	29950 lbs 13585 kg	28000 lbs 12701 kg	31350 lbs 14220 kg	29400 lbs 13336 kg
ADC2350 Full	48150 lbs 21840 kg	46200 lbs 20956 kg	49550 lbs 22476 kg	47600 lbs 21591 kg	50950 lbs 23111 kg	49000 lbs 22226 kg	52350 lbs 23746 kg	50400 lbs 22861 kg	53750 lbs 24381 kg	51800 lbs 23496 kg

Transport Weights for NTA3510 Plus ADC2350 Air Cart

NTA-3510	No Extra Weights		One Weight Kit		2 Weight Kits		3 Weight Kits		4 Weight Kits	
	7.5in	10in								
ADC2350 Empty	26900 lbs 12202 kg	24600 lbs 11158 kg	28300 lbs 12837 kg	26000 lbs 11793 kg	29700 lbs 13472 kg	27400 lbs 12428 kg	31100 lbs 14107 kg	28800 lbs 13063 kg	32500 lbs 14742 kg	30200 lbs 13698 kg
ADC2350 Full	49300 lbs 22362 kg	47000 lbs 21319 kg	50700 lbs 22997 kg	48400 lbs 21954 kg	52100 lbs 23632 kg	49800 lbs 22589 kg	53500 lbs 24267 kg	51200 lbs 23224 kg	54900 lbs 24902 kg	52600 lbs 23859 kg

Pre-Transport Checklist

Before transporting the cart, check and observe the following items.

- q Make sure the weight of the tractor equals or exceeds the value specified for your air drill assembly.
- Air Cart Checklist Complete**
- q Including: cart drive chain locked-out, auger latched, hopper lids secured, ladders latched up.
- Marker Checklist Complete
- q Markers must be folded or retracted, and may have transport locks or other transport considerations.
- Master Switch Off**
- q Check that the seed monitor master switch is off while transporting.
- Drill Raised and Locked**
- Lift transport locks installed.
- q Wings locked.
- Fold/Field valve handle set to Fold, with circuit lever in neutral.
- Tires**
- q Check that all tires are properly inflated as listed on “**Tire Inflation Chart**” on page 60.
- Bystanders**
- q Check that no one is in the way before moving. Do not allow any one to ride on the cart or implement.
- Warning Lights**
- q Always use tractor, cart and drill warning lights when transporting the air drill.
- Clearance**
- q Know the maximum dimensions of the cart and implement in transport position and follow a route that provides adequate clearance from all obstructions, including overhead lines.
- See “**Specifications and Capacities**” on page 60.
- Stopping Distance**
- q Allow sufficient stopping distance and reduce speed prior to any turns or maneuvers. If the cart is transported full, allow extra stopping distance.
- Road Rules**
- q Comply with all national, regional and local laws when transporting on public roads.
- Watch Traffic**
- q The hoppers and drill wings obstruct a portion of your rear view. Be prepared for sudden maneuvers from following vehicles.



Figure 21
Review Transport Checklist

26360

Implement Unfold

The fold/unfold (and weight transfer) functions are on a hydraulic circuit that is shared with the hydraulic fan on the air cart. The fan must be disabled during fold and unfold, but is not disabled for weight transfer.

 The NTA3010 and NTA3510 drills are factory-equipped with marker-stop features needed to support optional markers. If markers will not be used, these features may be removed.

DANGER

Overhead **Crushing** **Hazard:**
To prevent serious injury or death:

- ▲ Always use transport locks when implement is folded.
- ▲ Fold implement only if fold hydraulics have smooth movements. .
- ▲ Stay away from frame sections when they are being raised or lowered or are in the raised position.
- ▲ Keep away and keep others away when folding or unfolding implement.

DANGER

Electrocution Hazard: To prevent serious injury or death from electric shock, keep clear of overhead power lines when transporting, folding, unfolding or operating all air drill components. Machine is not grounded. At higher voltages, electrocution can occur without direct contact.

1. Park drill on level ground. Be aware of clearances required to unfold implement.
2. Lift drill (“Lift” on page 20).
3. Install transport locks (“Lift System Transport Locks” on page 21).
4. Leave Lift circuit in neutral (not float).
5. Set hydraulic circuit for Fold/Unfold to neutral.
6. On seed monitor terminal, set Fold/Unfold function to Off using soft key.

Refer to Figure 22 or Figure 23

7. Remove wing fold pin ① under tool bar on each side. Do not, at this time, remove any Marker Stop ② present (on top of tool bar).

Pin ① may be stored in welded ring ③ until folding.

Refer to Figure 24

8. Set air cart’s hydraulic fan valve to Off.

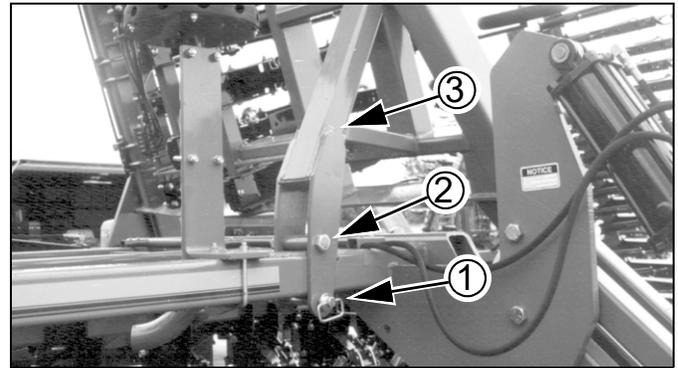


Figure 22
Wing Lock with Marker Stop

16217

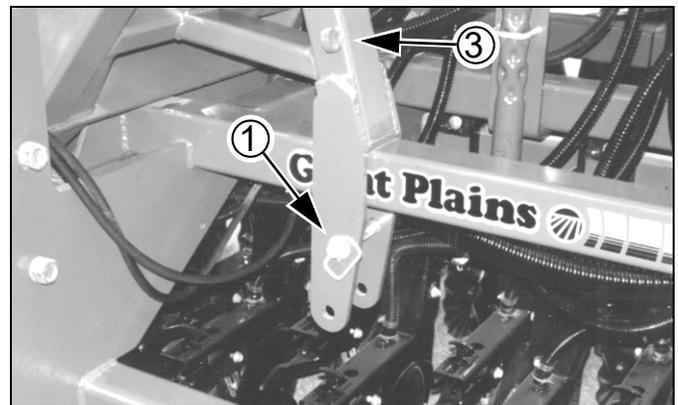


Figure 23
Wing Lock w/o Marker Stop

16168

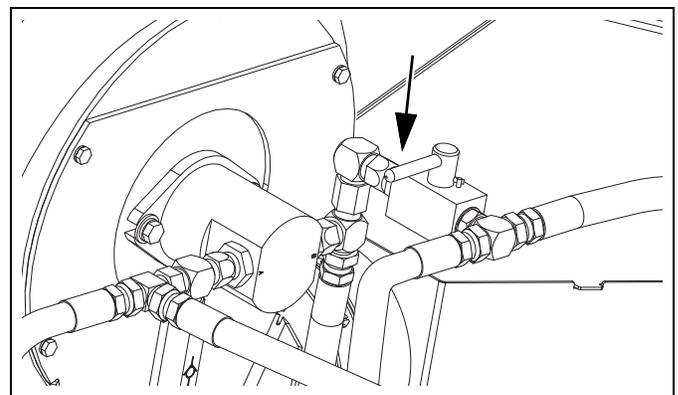


Figure 24
Cart Fan Off for Unfold

26419

Refer to Figure 25

9. Check that hydraulic selector valve is in fold/unfold position.
10. Set tractor at low idle speed.
11. On seed monitor terminal, set Fold/Unfold function to Unfold using soft key.
12. Energize tractor hydraulics for fold system and slowly unfold implement (usually Extend).
13. Continue to unfold implement only until each wing gauge wheel rests on ground. Return circuit lever to neutral.

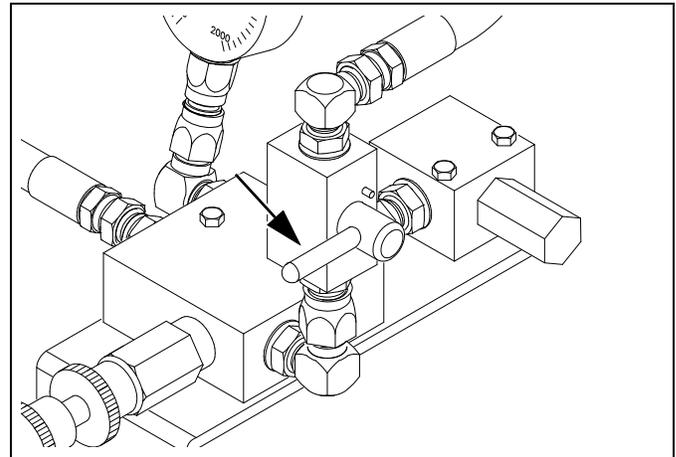


Figure 25
Drill Valve Set for Unfold

26413

Refer to Figure 26

14. Turn drill selector valve to Field position.

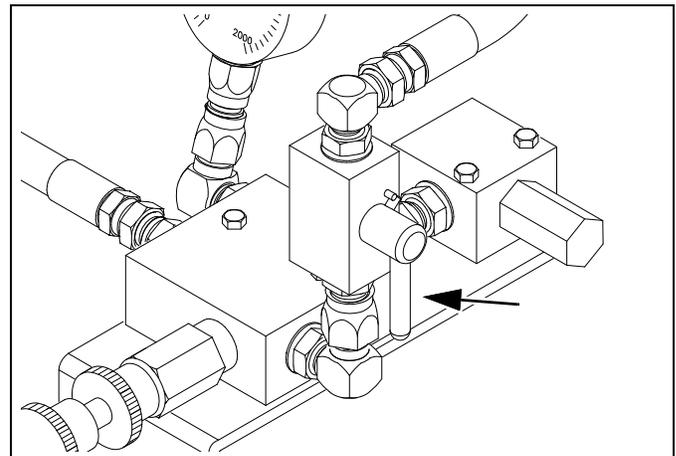


Figure 26
Drill Valve Set for Field

26412

No-Marker Height Adjustment

If your drill is not equipped with markers, you can reduce the vertical clearance required by removing two pairs of marker stop fittings.

Refer to Figure 22 on page 24 and Figure 27

- Remove the Marker Stop bolts and spacers from the wing stop lugs.
 - Remove the stop collars from the fold cylinders.
-  When folding for the first time after removing marker stop fittings, operate slowly near fully folded, and check for air tower clearances and hose/cable pinching or kinking.

Save the removed fittings for possible future use. If markers are later added, review the change in vertical clearance required.

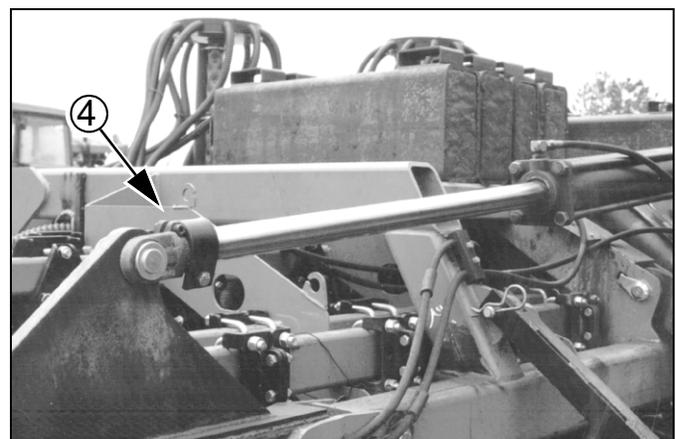


Figure 27
Fold Cylinder Stop Collars

16168

Implement Fold

The fold/unfold (and weight transfer) functions are on a hydraulic circuit that is shared with the hydraulic fan on the air cart. The fan must be disabled during fold and unfold, but is not disabled for weight transfer.

⚠ DANGER

Overhead **Crushing** **Hazard:**
To prevent serious injury or death:

- ▲ Always use transport locks when implement is folded.
- ▲ Fold implement only if fold hydraulics have smooth movements..
- ▲ Stay away from frame sections when they are being raised or lowered or are in the raised position.
- ▲ Keep away and keep others away when folding or unfolding implement.

⚠ DANGER

Electrocution **Hazard:**
To prevent serious injury or death from electric shock, keep clear of overhead power lines when transporting, folding, unfolding or operating all air drill components. Machine is not grounded. At higher voltages, electrocution can occur without direct contact.

1. Fold implement on level ground. Be aware of clearance required to fold implement. See “**Specifications and Capacities**” on page 60.
2. Set tractor hydraulic circuit for fold/unfold to neutral.
3. On seed monitor terminal, use soft key to command Fold to Off.

Refer to Figure 28

4. Set air cart’s hydraulic fan valve to off (handle left).

Refer to Figure 29

5. Turn drill’s hydraulic selector valve to fold/unfold (handle down).
6. Raise drill until all lift cylinders are completely extended.
7. Install transport locks as described under “**Lift System Transport Locks**” on page 21.

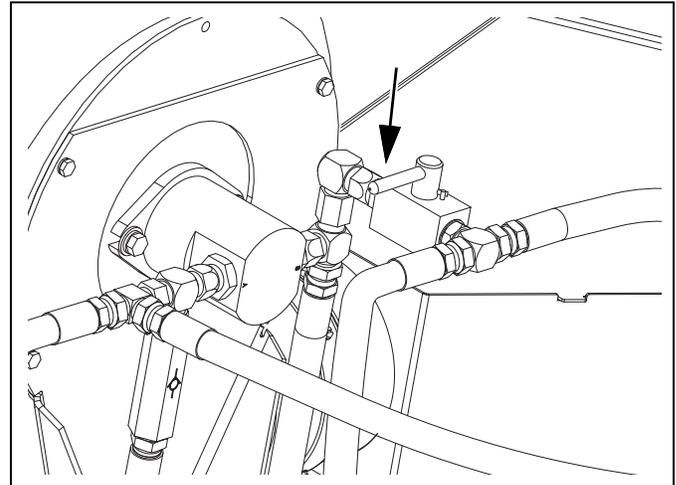


Figure 28
Cart Fan Off for Fold

26419

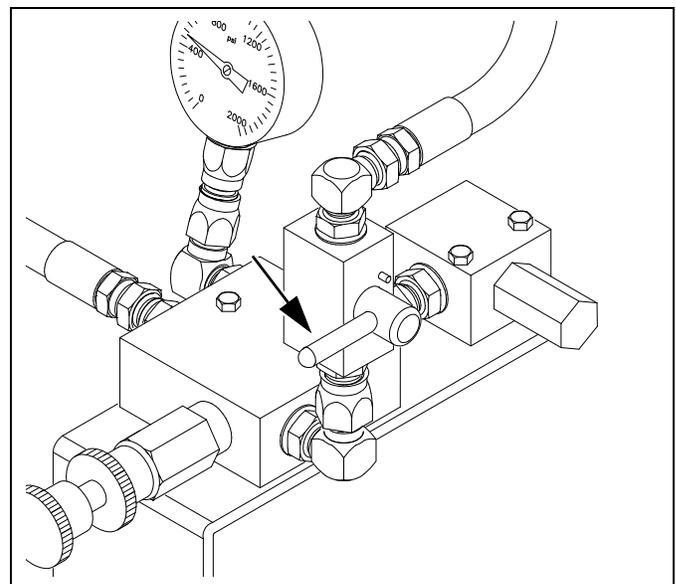


Figure 29
Drill Valve Set For Fold

26413

Refer to Figure 30 through Figure 32

- 📖 First-time fold: If the drill has markers, make sure that the Marker Stop Bolt ② is installed as shown. Do not fold with markers if this bolt is not present. The markers will strike drill components and damage will result.
8. If the wing lock-up pin was stored in the end ① or second lock hole ②, remove it. If it is stored in the weldment ring ③, it may be left in place during fold.
 9. On the seed monitor terminal in the cab, press the soft key to enable Fold.
- 📖 If the monitor has not been installed, refer to the air drill cart operator's manual for instructions.
10. Engage the tractor lever for the Fold/Unfold circuit, normally Retract, and slowly fold drill. When folded, set tractor circuit lever to neutral.
 11. If folding for the first time without the marker stop fittings, watch carefully for clearances, and kinking or pinching of hoses and cables.
 12. Insert wing fold lock-up pins to secure folded wings. Insert them in the highest available hole pair under the tool bar.

NOTICE

Do not remove transport locks from a folded drill.

13. On seed monitor terminal, set Fold/Unfold to Off with soft key.

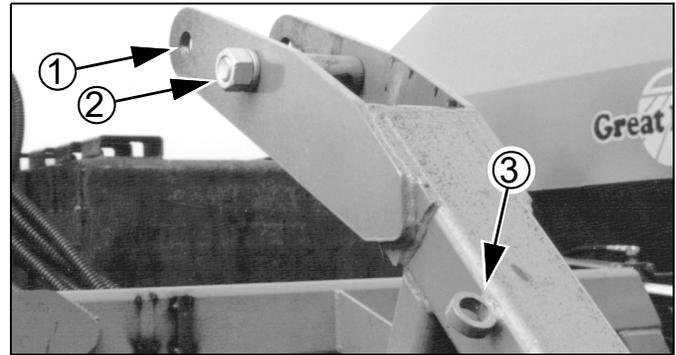


Figure 30
Wing Lock Lugs
with Marker Stop Bolt

16217

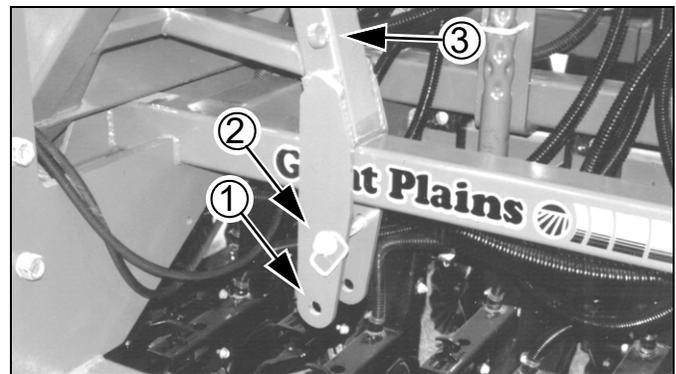


Figure 31
Wing Lock, no Markers

16168

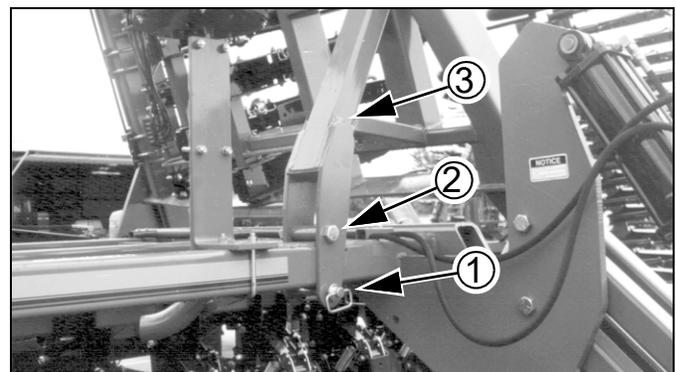


Figure 32
Wing Lock, with Markers

16217

Opener Operation

The “lowered” position of the opener frame is regulated by adjustable valves, factory set for 2in coulters depth. See “**Coulters Frame Height**” on page 37 for adjustment.

The hydraulic system distributes and regulates weight transfer to the wings, ensuring consistent soil penetration by the openers across the drill—even on uneven ground.

Refer to Figure 33

1. Check drill valve handle, which needs to be in FIELD position for the hydraulic weight-transfer to function.
2. On the seed monitor terminal, set the Fold/Unfold function to On using a soft key. This enables the solenoid valve for the circuit.
3. Engage tractor hydraulics for the drill’s fold circuit. Lock hydraulic lever forward during field operation for constant hydraulic flow to openers.

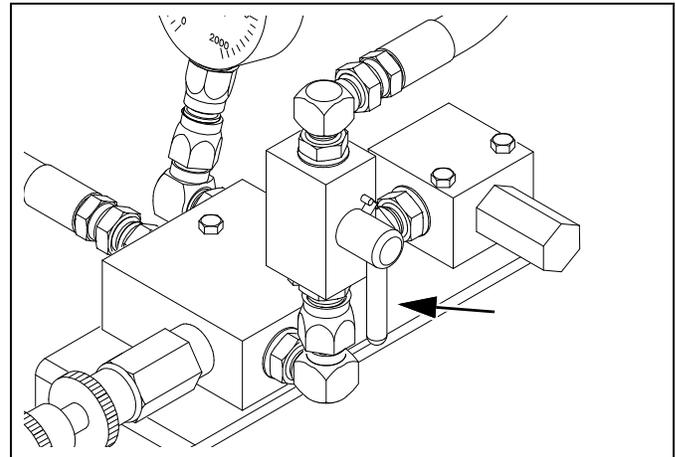


Figure 33
Drill Valve Set for Field

26412

Tractor-Specific Circuit Operation

John Deere tractors with Sound-Gard™ Body

Use lever lock clip, John Deere part number R52667, to lock lever forward. See your tractor dealer for clip purchase and installation.

John Deere 7000 Series tractors

Rotate valve detent selector to motor position to lock lever in forward position.

John Deere 8000 Series tractors

Set timer to continuous. Push lever forward until detent clicks.

Case-IH Magnum™ tractors

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

Other Tractors

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

Seeding Depth

Seeding depth is controlled by coulter depth in front, and press-wheel height in back. Seed cannot be placed any deeper than coulter depth. Before adjusting row units, make sure coulters are performing as desired.

See “**Level Frame Side-to-Side**” on page 17.

See “**Level Frame Front-to-Rear**” on page 18.

See “**Coulter Frame Height**” on page 37.

See “**Opener Depth (Press Wheel Height)**” on page 46.

Consistent seeding depth relies on appropriate down-pressure for conditions, and an even distribution of available force across the drill (weight transfer).

See “**Frame Weight**” on page 39.

See “**Weight Transfer**” on page 40.

See “**Row Unit Down Pressure**” on page 42.

While seeding, remember:

- Raise openers before turning. Never back up or turn sharply with openers in the ground. Doing so will plug openers and may damage equipment.
- Be aware of the 5 to 10 foot (1.5 to 3 m) delay needed for seed to reach openers. If you stop in middle of field, lift drill and back up 10 feet (3 m) before proceeding.
- Check periodically for plugged openers and hoses. With fan running and drill raised, hand crank metering system. Look below each opener for seed or fertilizer.

You can adjust the opener height at which seed metering beings. See “**Implement Lift Switch Adjustment**” on page 35.

For information on opener adjustments, see “**10 Series Row Unit Adjustments**” on page 41. For information on troubleshooting opener problems, see “**Troubleshooting**” on page 48.

Fan Speed

This information is repeated from the air cart Operator’s manual, which has additional guidance.

NOTICE

Equipment **Damage** **Risk:**
Always engage the fan with the tractor at a low engine speed. Engaging the fan when the tractor is at high speed may cause fan damage.

Do not reverse hydraulic flow with the fan running.

Recommended Fan Speeds

Seeds	Fan RPM
Sunflowers	2,250 - 3,000
Wheat	3,250 - 4,000
Soybeans	2,750 - 3,500
Milo	3,250 - 4,000

Fan speed is monitored and reported by the seed monitor, but is manually controlled. The optimum rate depends on the seed type and treatments. See **“Fan Speed Adjustment”** in the cart Operator’s Manual for further information.

NOTICE

Material **Rate** **Risk:**
The proper reading for the magnehelic air pressure gauge is 12 to 25 inches of water. A sudden drop in pressure is a sign of a possible leak which can adversely affect seeding.

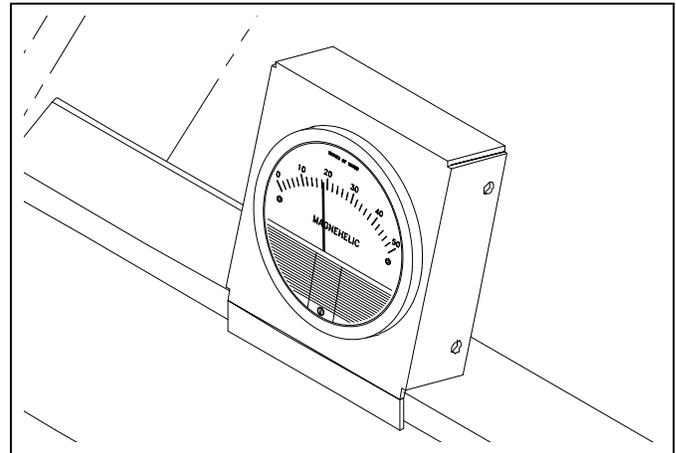


Figure 34
Fan Air Pressure

26425

Marker Operation

Great Plains does not manufacture markers for this model drill. If you purchased markers, the marker manufacturer has supplied operating instructions. Carefully read marker manufacturer’s instructions for safe installation, operation and adjustment. You may also need the following additional information.

Any markers are on a separate hydraulic circuit on the drill. The leading air cart has provisions for this circuit, but also shares the circuit for a cart function.

Refer to Figure 35

Markers use hydraulic receptacles (A) and (B) on the air cart.

This cart circuit is shared with the cart seed auger. On a cart with a hydraulic fan, a manual diverter valve (1) switches the circuit between markers (2) and seed auger (3).

This valve is located at the front right corner of the front bulk hopper. The valve handle must be set to the back (2) for the markers to function.

If markers are installed, the wing fold Marker Stop fittings must be [re]installed. See **“No-Marker Height Adjustment”** on page 25.

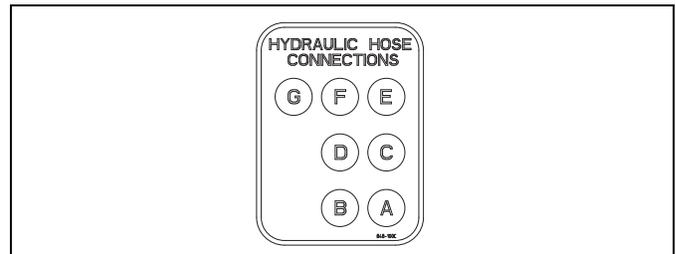


Figure 35
Cart Hydraulic Receptacles

26332

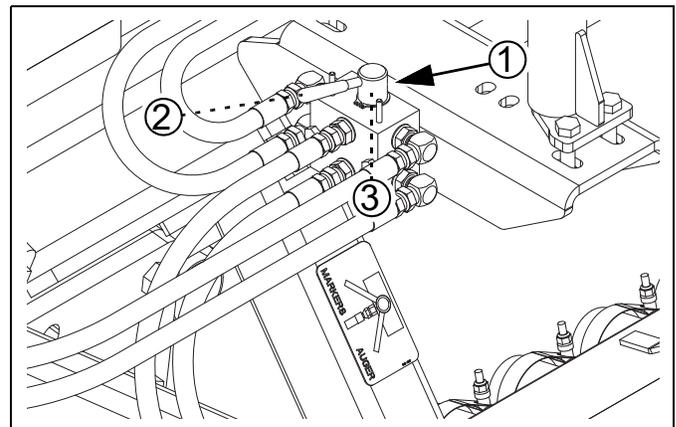


Figure 36
Cart Selector for Markers

26417

Field Operations

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

Final Field Checklist

- q Set seed meters per chart or calibration.
Check cart fan valve set On.
- q Check cart selector valve set to Markers (if markers are installed).
- q Set fan to speed suitable for seed. Watch fan at start-up to ensure correct direction of rotation.
- q Run fan for at least 15 minutes before planting.
- q Check fan air pressure gauge for 12-25 inches of water pressure.
- q Check all seed hoses secure.
- q Check for air leaks at lids and meter box seals.
- q Drill unfolded.
- q Drill valve handle set to FIELD.
- q Seed monitor Fold function set On at terminal.

Planting Sequence

1. Set seed monitor Master Switch to On.
2. Lower drill 5 to 10 feet (1.5 to 3 m) before initial seeding point.
3. Pull forward and begin planting.
4. Raise drill for turns (meters stop automatically).

Planting

Be aware of the 5 to 10 feet (1.5 to 3 m) of drill-lowered operating distance required for seed to reach the row units.

If you stop in the middle of a pass, raise the drill and back up 10 feet (3 m) before resumption of seeding.

When finished seeding, set the monitor master switch Off.

Seed Monitor

The seed monitor, included with the air cart, performs the following functions:

On the drill:

- Implement lift switch monitoring
- Fold/Weight-Transfer circuit control
- Seed flow blockage (optional)

On the Air Cart:

- Fan Speed monitoring
- Hopper material level monitoring
- Hopper air pressure monitoring
- Meter rate monitoring
- Ground speed monitoring

Consult the DICKEY-john manual for how to configure reporting and alerts.

Parking

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

1. Spot the drill on firm, level ground.
2. Raise the drill. Install transport locks.
3. Fold as necessary for the parking space available. Lock-up if folded.
4. Set the Fold/Field valve handle to Field.
5. Perform the air cart parking checklist.
6. Securely block cart and drill tires to prevent rolling.

Storage

If possible, leave the cart and drill connected for extended storage.

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

1. Perform the cart Storage checklist.
2. Perform the drill Parking checklist.
3. Lubricate the drill at all points listed under **"Lubrication"** on page 53.
4. Check all bolts, pins, fittings and hoses. Tighten, repair or replace parts as needed.
5. Check all moving parts for wear or damage. Make notes of any parts needing repair before the next season.
6. Plug or cap seed delivery tubes to prevent pest entry.
7. If the cart is disconnected from the drill for storage, plug all 2¹/₂ inch (64 mm) openings to prevent pests from entering and nesting.
8. Use touch-up paint to cover scratches, chips and worn areas to prevent rust.



Adjustments

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

The NTA3010 and NTA3510 have frame-mounted coulters, and double-disk parallel-arm openers with depth-controlling press wheels. This system provides accurate depth control and seed placement over uneven terrain. The following is an introduction to the basic seeding components and how they work.

Each opener is mounted on a floating opener frame, held parallel to the ground. Opener bodies are staggered for easy soil flow. A spring provides the down pressure necessary for opener double disks to open a seed furrow. The spring allows openers to float down into depressions and up over obstructions. Individual openers can be adjusted to account for tire tracks.

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

Planting Depth

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

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

Adjustment	Page	The Adjustment Affects
Level Frame Side-to-Side	17	Center-vs-wing planting consistency
Level Frame Front-to-Rear	18	Correct seeding depth and furrow coverage
Implement Lift Switch Adjustment	35	Avoiding wasted and unplanted seed
Coulters Frame Height	37	Seeding depth
Individual Coulters Height	38	Compensating for tire tracks
Coulters Spring Force	38	Compensating for unusually light or heavy conditions
Frame Weight	39	Achieving higher down-force settings
Weight Transfer	40	Equal seeding depth under wings and center section
10 Series Row Unit Adjustments	41	
Row Unit Down Pressure	42	Consistent seeding depth in tire tracks
Disk Blade Adjustments	43	Consistent seeding depth
Disk Scraper Adjustments	44	Consistent furrow
Seed Firmer Adjustments	45	Consistent seed placement and coverage
Opener Depth (Press Wheel Height)	46	Seeding depth
Fan Speed	29 ^a	Consistent seed population and minimum seed damage

a. See air cart operator's manual for complete fan information.

Frame Level

When beginning planting, check frame level with row units in level ground.

If one or both wings are angled up or down, check and adjust the following items:

- “**Level Frame Side-to-Side**” on page 17
- weight transfer setting - see “**Weight Transfer**” on page 40
- coulters depth setting - see “**Coulter Frame Height**” on page 37
- coulters mount adjustment - see “**Individual Coulter Height**” on page 38
- coulters down-force spring setting - see “**Coulter Spring Force**” on page 38
- row unit down-force spring setting - see “**Row Unit Down Pressure**” on page 42
- press-wheel height setting - see “**Opener Depth (Press Wheel Height)**” on page 46

Implement Lift Switch Adjustment

(S/N Z1809-)

Refer to Figure 37

An implement lift switch on the drill turns seed metering off when the drill is raised. To adjust the height at which seed metering is turned off, follow these steps.

1. Do not place any part of body under implement while making adjustments.
2. Lower drill completely and set drill valve to Field position.
3. Stop the tractor engine. Turn the key to ON position.
4. Locate the lift switch ① at the right rear lift arms ①.
5. Loosen the lift switch bracket bolts and slide lift switch assembly up or down until the actuator makes contact with the lift arm and the lift switch is reliably toggled on (up).
6. Tighten the bolts without moving the lift switch.
7. Turn the tractor key to OFF and remove the key.

📖 NOTE: If adjustments are made to hydraulic coulters depth, re-check lift switch engagement.

📖 NOTE: For reference, the ADC2350 lift switch wiring is:

Black	(switch COM)	to	black	(extension)
Red	(switch N.C.)	not	connected	
Green	(switch N.O.)	to	red	

Circuit open when drill is raised.



Figure 37
Implement Lift Switch

26366

(S/N Z1810+)**Refer to Figure 38**

The implement lift switch ① is a proximity type switch, mounted on the right-hand rear wheel assembly. The lift switch turns seed metering on and off as the implement is lowered and raised. The lift switch is actuated by the upper lift arm ②.

To adjust the height at which the seed metering is turned on, do the following.

⚠ DANGER

Do not place any part of body under implement while making adjustments.

1. Park the tractor, implement, and, if equipped, the seed cart on a solid, level surface.
2. Unfold the drill.
3. Lower the implement to the height where seeding should start (usually just above ground). Raise the openers an additional 1/2 in (12 mm). Set the lift circuit to neutral.

 Do not set the lift switch to come on too low. The openers can ride up and down over irregular ground and an early switch can result in patches of no seeding.

4. Stop the tractor engine and apply the tractor parking brake. Turn the key to the ON position to provide power to the lift switch.

⚠ DANGER

Have another person set in the tractor seat during the adjustment procedure. Have the person make sure the hydraulics are not engaged and the tractor is not started during the adjustment procedure.

5. Check the distance between the face of the lift switch and the upper lift arm. The distance must be $\frac{5}{16}$ in (8 mm) or less. If the distance is not correct, adjust the nuts on the lift switch as necessary.
6. Loosen the outer nut ③ on the lift switch just enough so the lift switch can move in the adjustment slot.
7. Slide the lift switch up or down in the slot until the yellow lamp in lift switch goes from off to on.
8. Tighten the outer nut on the lift switch without moving the lift switch.
9. Start the tractor engine and lower the implement all the way.
10. Stop the tractor engine. Remove the key and take the key with you.

 **NOTE:** If adjustments are made to hydraulic coulters depth, check lift switch adjustment.

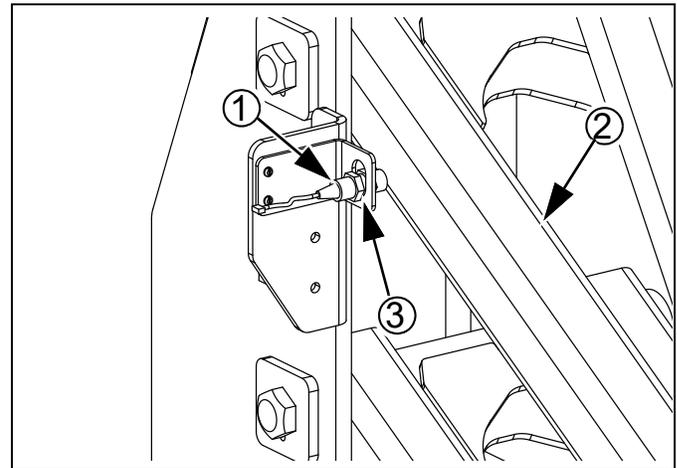


Figure 38
Implement Lift Switch

68493A

Coulter Adjustments

The frame-mounted coulters are factory-configured to provide satisfactory results in most conditions. Three adjustments are available for extremely light, extremely heavy and/or in-track conditions.

Coulter Frame Height

Refer to Figure 39

When lowered, the gauge wheel lift cylinders are usually not fully retracted. They have an adjustable stop set to provide 2 inches (5.1 cm) coulters depth. The stop cuts off flow to the rod end of the cylinder, stopping downward movement and holding the cylinder at that position.

Each full rotation of the adjustment knob changes the coulters depth by about $\frac{3}{16}$ inch (0.5 cm). Note your starting position and final number of turns. Make the same adjustment on all four lift cylinders (unless correcting an imbalance traced to one lift cylinder).

- Turn the knob clockwise to lower coulters (increase depth).
- Turn the knob counter-clockwise to raise coulters (decrease depth).

Make depth adjustments with the drill slightly raised. After adjusting the valve, raise and lower the implement several times and recheck coulters depth.

 Do not lower coulters to achieve a desired depth unless the cylinders are already operating at their stops in the field. If there is insufficient down-force for your conditions, lowering the coulters will not increase their depth.

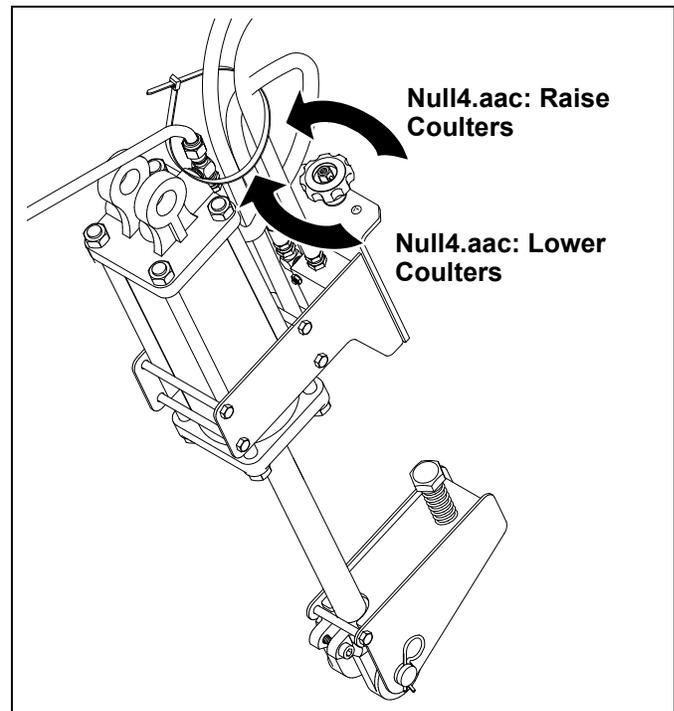


Figure 39
Wing Gauge Wheel Cylinder Depth
Stop Control

16271

Individual Coulters Height

Individual coulters that run in tire tracks can be lowered if desired. To raise or lower individual coulters:

1. Loosen all six the mounting clamp nuts ①, ② and adjust the coulters spring bar ③ to the desired height.
2. Snug the hex-head clamp bolts ① just until the U-bolts are tight on each side of the spring bar.
3. Check alignment of coulters blade with row unit opener blade centerline.
4. Tighten nuts ② on U-bolts.
5. Finish tightening hex-head clamp bolts ①.

 Ground clearance on lowered coulters will be reduced when the drill is raised.

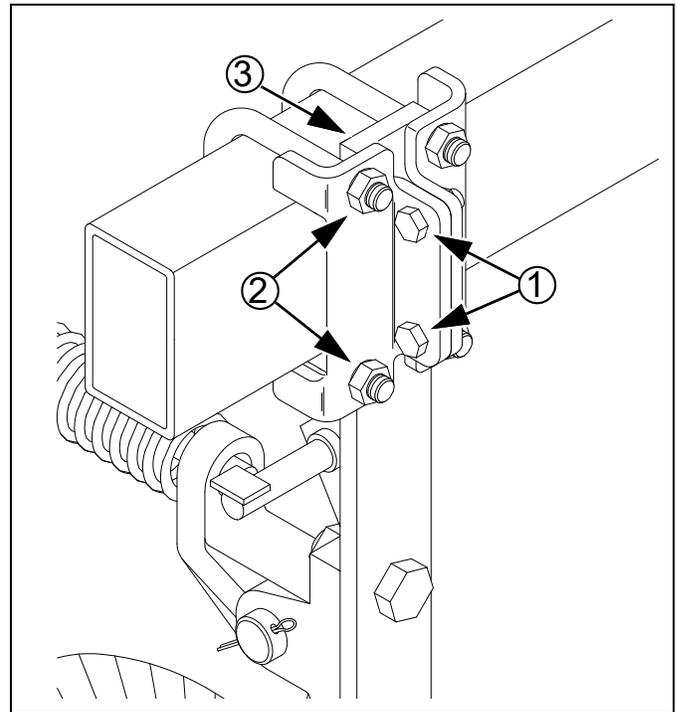


Figure 40
Coulters Mounting Height

10300

Coulters Spring Force

Coulters springs are preset at 10 inches (26 cm), giving the coulters an initial operating force of 400 pounds. This setting is adequate for many difficult no-till conditions.

For lighter no-till conditions where rocks or other obstructions are a problem, you can lengthen the springs to protect the coulters from impact.

Spring Length	Force
10.25 inches (26.04 cm)	300 lbs (136 kg)
10 inches (25.4 cm)	400 lbs (181 kg)
9.75 inches (24.77 cm)	525 lbs (238 kg)

 Setting the coulters spring length shorter than 9.75 inches may contribute to premature failure of parts and voids the warranty. If additional force is needed, add weights to the implement.



Figure 41
Coulters Spring Force

26422

Frame Weight

The standard NTA3010 and NTA3510 include no additional weights. Depending on regional soils, weather and specific field conditions, additional weights may be necessary to achieve consistent seeding depth.

Pairs of 700 pound (318 kg) weights (1400 lbs or 635 kg per pair) may be added to the center frame. The maximum is 4 pairs (8@ 700 pound weights, 5600 lbs/2540 kg total).

Extra weights are necessary for coulter plus row unit down-force settings which, when summed for all rows, are near or above the total weight of the drill. See “**Row Options**” on page 59 for ordering information.

The weights are held in place by gravity, and are easily placed and removed with a hoist rated for at least 700 pounds (318 kg).

⚠ DANGER

Tipping and Machine Damage Hazard:
Never add weights to the wings. The weights will tip over during folding. Even if secured to the wing frames, machine damage is almost certain. Wing weights are also unnecessary. The hydraulic weight transfer system is capable of transferring the entire weight of the drill to the wings.

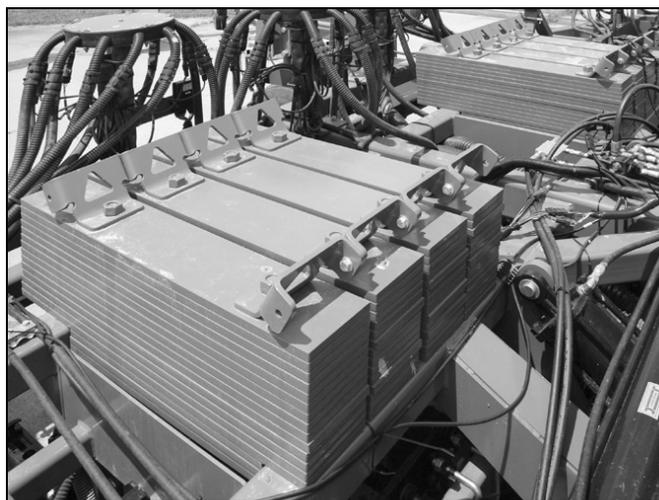


Figure 42
 Frame Weights (4 pairs)

26423

	Drill Model and Row Spacing			
	NTA3010-4875 7.5 inch	NTA3010-3610 10 inch	NTA3510-5575 7.5 inch	NTA3510-4010 10 inch
0: No Weights Total Machine Weight	17,650 lbs (8006kg)	15,700 lbs 7121(kg)	18,800 lbs (8528kg)	16,500 lbs (7484kg)
Maximum Down Force Per Row	368 lbs (167kg)	436 lbs (198kg)	342 lbs (155kg)	413 lbs (187kg)
2: Drill with 1 kit (1 pair, 2 weights) Total Machine Weight	19,050 lbs (8641kg)	17,100 lbs (7756kg)	20,200 lbs (9163kg)	17,900 lbs (8119kg)
Maximum Down Force Per Row	397 lbs (180kg)	475 lbs (215kg)	367 lbs (166kg)	448 lbs (203kg)
4: Drill with 2 kits (2 pair, 4 weights) Total Machine Weight	20,450 lbs (9276kg)	18,500 lbs (8391kg)	21,600 lbs (9798kg)	19,300 lbs (8754kg)
Maximum Down Force Per Row	426 lbs (193kg)	514 lbs (233kg)	393 lbs (178kg)	483 lbs (219kg)
6: Drill with 3 kits (3 pair, 6 weights) Total Machine Weight	21,850 lbs (9911kg)	19,900 lbs (9026kg)	23,000 lbs (10433kg)	20,700 lbs (9389kg)
Maximum Down Force Per Row	455 lbs (206kg)	553 ^a lbs (251kg)	418 lbs (190kg)	518 lbs (235kg)
8: Drill with 4 kits (4 pair, 8 weights) Total Machine Weight	23,250 lbs (10546kg)	21,300 lbs (9662kg)	24,400 lbs (11068kg)	22,100 lbs (10024kg)
Maximum Down Force Per Row	484 lbs (220kg)	592 ^a lbs (269kg)	444 lbs (201kg)	553 ^a lbs (251kg)

- a. The maximum force setting at the row unit is 525 pounds (238 kg), but the available force is shared with the coulters. In heavy no-till conditions, not all of the per-row force may be available to the row unit.

Weight Transfer

During field operations, the fold cylinders distribute center section weight to the wings. The center section weighs more than each wing (substantially more with optional weights). The drill's hydraulic Fold/Field valve needs an initial setting and possible later adjustment.

If insufficient weight is transferred, the wings will run higher than the center section. If excess weight is transferred, the center runs higher.

Refer to Figure 43

1. Lower drill.
2. Set valve selector handle ① to Field (down) position.
3. On seed monitor terminal, set Fold function On via soft key.
4. Engage Fan/Fold circuit on tractor (normally Extend).
5. Release lock ring ② on drill valve.
6. Adjust knob ③ while observing gauge ④.
 - Increase weight transfer to wings by turning knob clockwise.
 - Reduce weight transfer to wings by turning knob counter-clockwise.
7. Set initial pressure as follows:

Weights Installed	PSI
None	200
2 (1 additional weight kit)	300
4 (2 additional weight kits)	400
6 (3 additional weight kits)	500
8 (4 additional weight kits)	600

NOTICE

To avoid equipment damage, do not exceed 800 psi.

8. When satisfied with pressure reading, raise implement while watching pressure gauge. Gauge reading should drop as you raise implement.
9. Tighten lock ring ②.

 If wings run lower than center section when at minimum pressure setting, add weight to center section. see **"Frame Weight"** on page 39.

During field operations, monitor opening depth of wings and center section. Adjust weight transfer as required for consistent depth across drill.

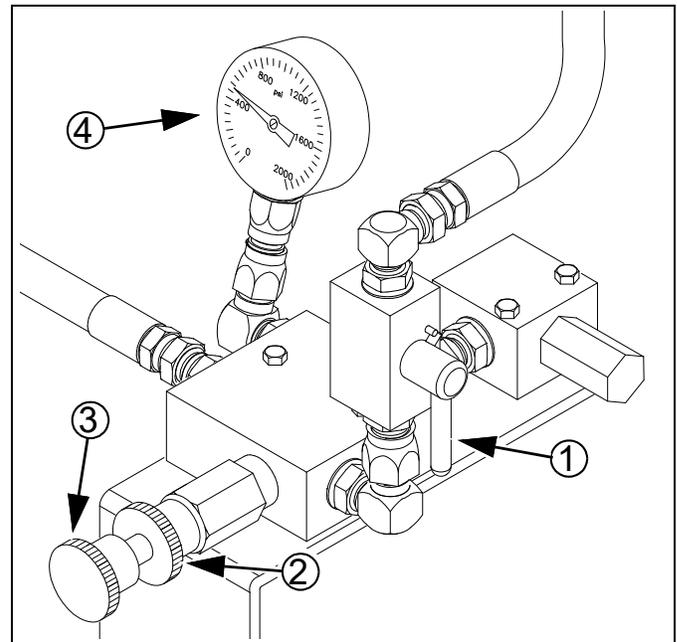


Figure 43
Drill Valve Set for Field

26412

10 Series Row Unit Adjustments

Refer to Figure 44
(which depicts a row unit fully populated with all optional accessories supported for use with the NTA3010 and NTA3510 drill)

From front to back, a Great Plains 10 Series row unit can include the following capabilities (some optional):

1. **Dual Down Pressure Springs:** standard
Each row unit is mounted on the planter via parallel arms which allow the row unit to independently move up and down while remaining parallel to the ground. The adjustable spring provides the force to get the row unit and attachments into the soil.
2. **Row Unit Spring Cam:** standard
This adjustment sets the down-force used by the row unit. See “**Row Unit Down Pressure**” on page 42.
3. **Disc Blades:** standard, 2 per row unit
Double disc blades open a furrow, creating the seed bed. Spacers adjust the blades for a clean furrow. See “**Disk Blade Adjustments**” on page 43.
4. **Seed delivery tube:** standard
No adjustments are necessary.
5. **Disk Scraper:** standard
In sticky soils, a scraper helps keep the opener disks operating freely. See “**Disk Scraper Adjustments**” on page 44. An optional carbide scraper is available.
6. **Seed firmer:** seed flap (not shown) standard:
Keeton seed firmer (not shown)
Improves seed-soil contact, and provides a stable arm for a low-rate liquid fertilizer delivery tube. See “**Keeton® Seed Firmer Adjustment**” on page 45.

Seed-Lok™ firming wheel (shown)
Improves seed-soil contact. See “**Seed-Lok® Seed Firmer Lock-Up**” on page 45.
7. **Press wheels:** standard (choice of types)
These close the seed trench. The wheels also support the free end of the row unit, and provide the primary control over seeding depth. See “**Opener Depth (Press Wheel Height)**” on page 46.

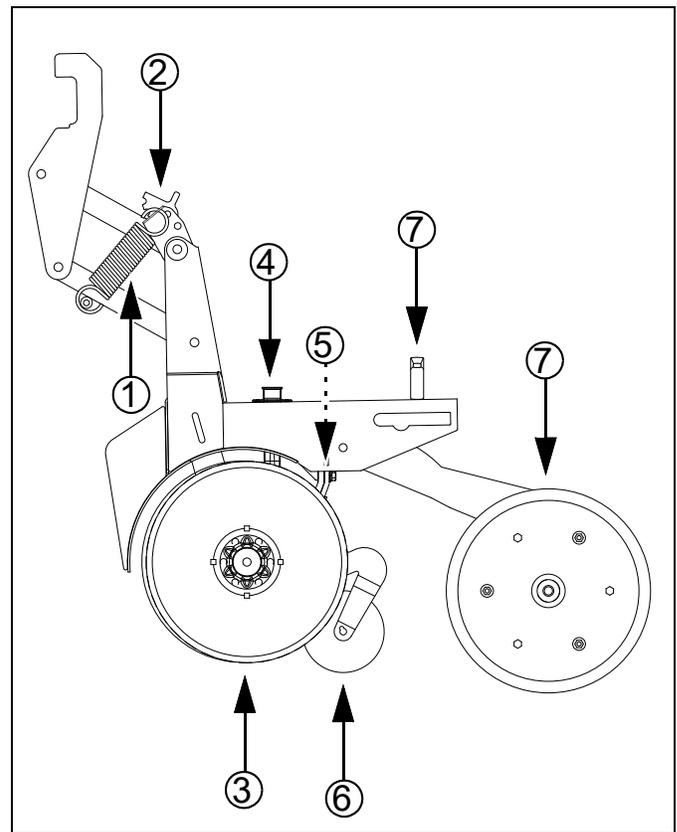


Figure 44
10 Series Row Unit

26414

NOTICE

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

Row Unit Down Pressure

Refer to Figure 45

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

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

At several row units, inspect the furrow created by the opener discs and closed by the press wheels.

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

Refer to Figure 46

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

Adjusting Row Unit Down Force

The springs allow the row units to float down into depressions and up over obstructions.

On 10 Series row units, the seed trench is primarily opened by the coulters. Row unit springs provide only additional assistance needed to make a furrow "V" shaped and ensure furrow closure by the press wheels.

Often, the rows may be run at the minimum spring setting, other than in tire tracks, which commonly need some adjustment.

If trench depth is not being achieved across all rows, adjust the force and/or depth of the coulters before making row unit spring adjustments.

If you cannot achieve enough down force, adding a weight kit may help. See "**Row Options**" on page 59 and "**Weight Transfer**" on page 40.

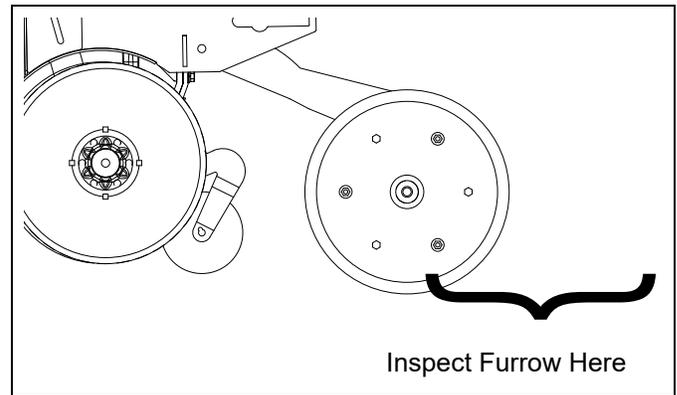


Figure 45
Checking Furrow

26414

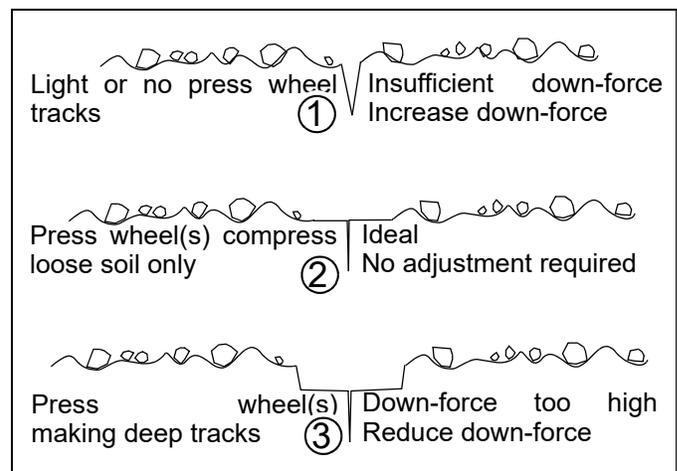


Figure 46
Assessing Down-force

Adjusting 10-Series Down-Force

Refer to Figure 47

An adjuster cam sets row unit spring down pressure individually for each row unit. This is useful for penetrating hard soil and planting in tire tracks.

Cam Notch	Pounds
zero (out of notch)	Maintenance Only
one	100 lbs (445 N)
two	116 lbs (516 N)
three	140 lbs (623 N)
tip	Do Not Use

Refer to Figure 48

To adjust down pressure, use the spring adjustment tool (part 198-126H) stored behind the tool bar at the Slow-Moving-Vehicle placard.

1. Raise the drill. Although this adjustment can be made with the drill lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.
2. Put tractor in Park and shut it off.
3. Position tool in the holes.
4. Pull upper spring link back.
5. Move the adjustment cam to the new setting on the spring adjust bar.

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

Disk Blade Adjustments

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

Refer to Figure 49

The ideal spacing causes the blades to be in contact for about one inch. If you insert two pieces of paper between the blades, the gap between them should be 0 to 1³/₄ inches (0 to 4.4 cm).

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

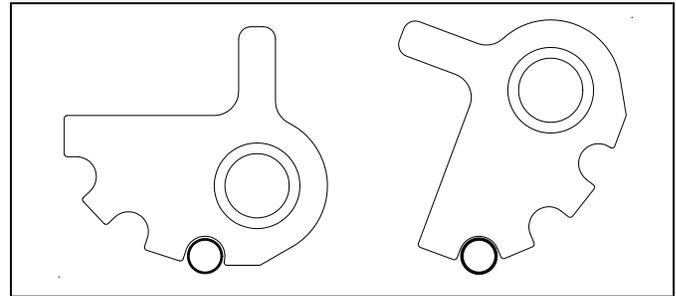


Figure 47
Row Unit Minimum & Maximum

12104

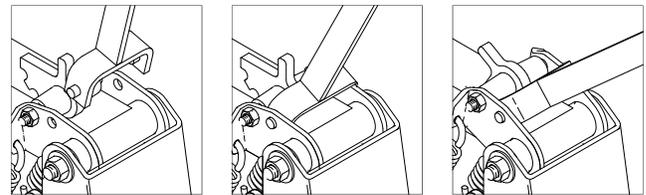


Figure 48
Adjusting 10 Series Springs

12105

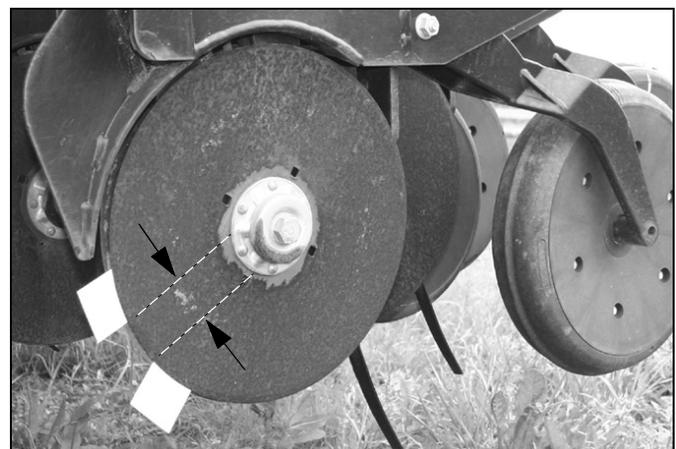


Figure 49
Checking Disk Contact

26447

Adjusting Disc Contact

CAUTION

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

Refer to Figure 50

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

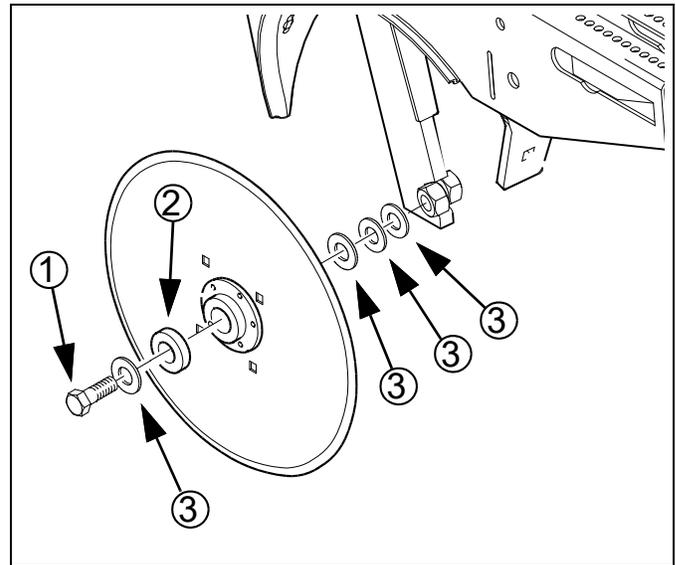


Figure 50
Adjusting Disk Spacers

26385

Disk Scraper Adjustments

To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as disks rotate. Standard 10 Series row units include a double-disk slotted scraper. A carbide scraper is available (see “Seed Firmers” on page 58).

Refer to Figure 51

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

CAUTION

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

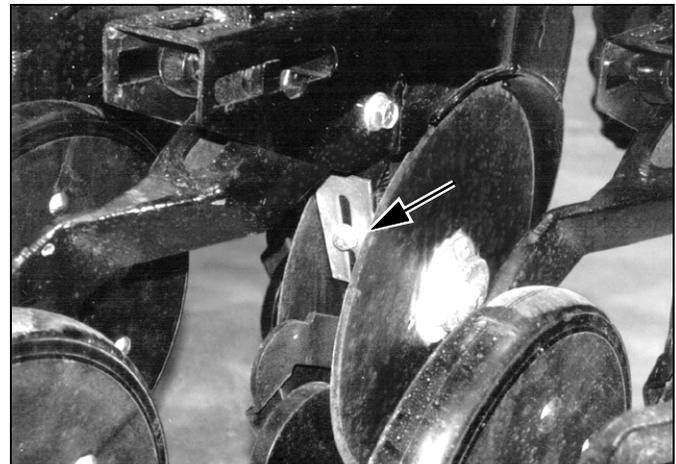


Figure 51
Standard Disc Scraper

16163

Seed Firmer Adjustments

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

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

CAUTION

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

Keeton® Seed Firmer Adjustment

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

Refer to Figure 52

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

Seed-Lok® Seed Firmer Lock-Up

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

Refer to Figure 53 (which depicts a row unit with the opener blades removed for clarity)

To lock up Seed-Lok wheels:

1. Hook one end of chain in opener-body hole just above wheel arm ①.
2. Pull firming-wheel arm ② up as high as possible and wrap chain around arm ③.
3. Hook other end of chain in a link. Leave no slack in chain; secure wheel arm in its highest position.

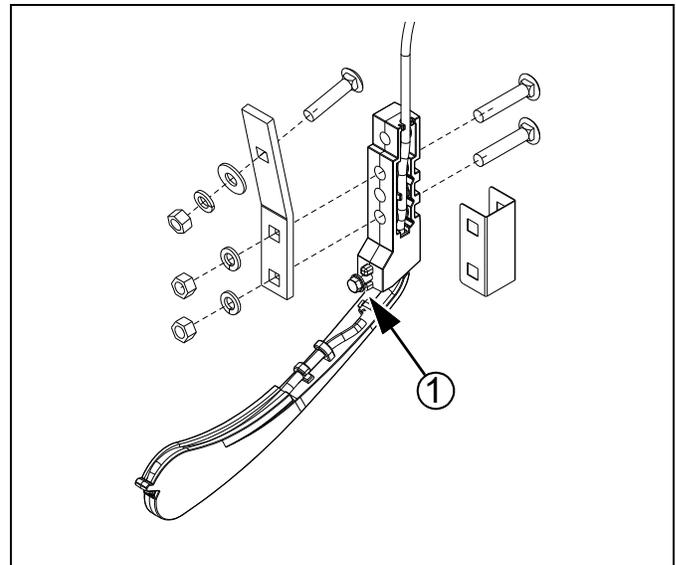


Figure 52
Keeton® Seed Firmer

26390

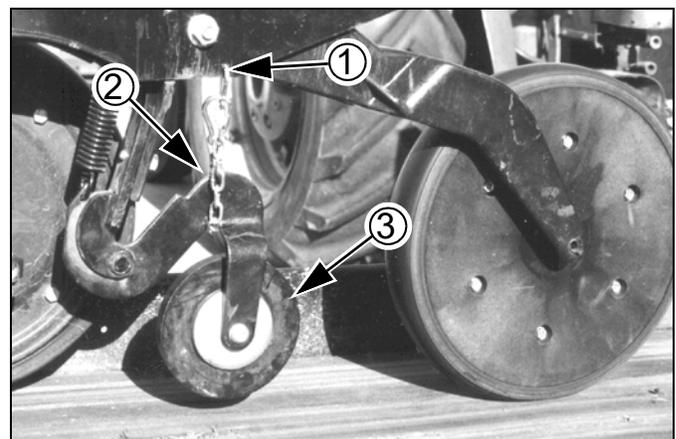


Figure 53
Seed-Lok® Lock-Up

16856

Opener Depth (Press Wheel Height)

Seeding depth on NTA3010 and NTA3510 is set by coulter depth and row unit depth. Set coulter depth before making row unit depth adjustments.

10 Series press wheel height is a stop adjustment and not a spring adjustment. It establishes a fixed relationship between opener depth and closed-furrow surface at the press wheel

Refer to Figure 54

Set opener seeding depth by adjusting press-wheel height ①. To adjust, first raise openers slightly, then lift and slide T handles ② on top of openers. Adjust all press wheels to the same height.

- For more shallow seeding, slide T handles forward ⑥ toward implement.
- For deeper seeding, slide T handles backward ⑦ away from implement.

If press wheels are lifting off ground, check front-to-back level, and increase row unit spring down force.

If press wheels are digging into ground, reduce spring down force at the row units.

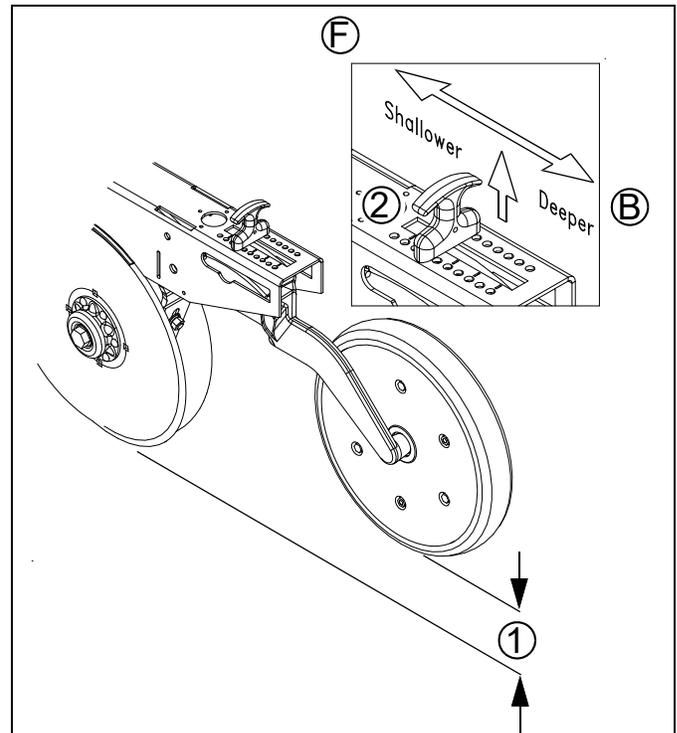


Figure 54
Initial Opener Depth

12100

Harrow Adjustment

Figure 55 shows a successful harrow position for no-till conditions. Because of different soil moisture, trash levels and trash types, you may need to reposition the tube frame or tines. Initially position the frame and tines as shown, then re-adjust as necessary.

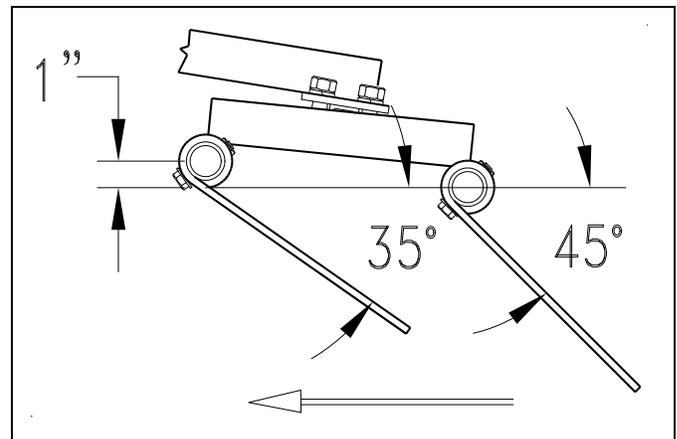


Figure 55
No-Till Tine Angle

12667

Refer to Figure 56

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

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

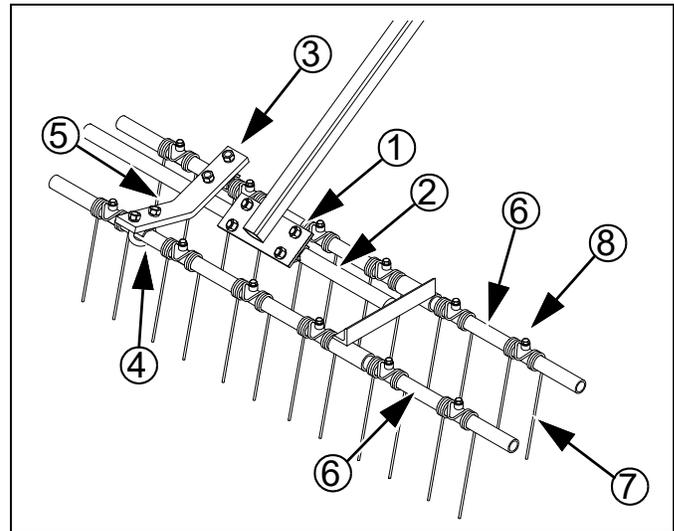


Figure 56
Harrow Adjustment

16297



Troubleshooting

This chart primarily covers problems arising from drill issues, although it does include a few cart items. Also consult the Troubleshooting chart for the cart.

Problem	Cause	Solution	
Planting too little	Air leaks	Check hopper lids, meter seals, manifold caps and seed hose connections. Adjust latch and/or replace seals as needed.	
	Fan speed too low	See " Recommended Fan Speeds " on page 29.	
	Implement lift switch engaging too high	See " Implement Lift Switch Adjustment " on page 35.	
	Excessive field speed	Reduce speed	
	Excessive gaps between drill passes	Adjust markers.	
	Actual field size is different	Verify field size.	
	Plugged seed hose		Clean out seed tube hose.
			Remove excess slack in hoses.
			Re-route hoses to avoid sharp bends.
	Plugged opener seed tube	Lift up drill, expose bottom of seed tube and clean out.	
Obstruction in meter or seed tubes (foreign material or uncleaned seed)	Clean meter and seed tube.		
Planting too much	Meter setting too high	Re-check against chart & calibration.	
	Actual field size is different	Verify field size.	
	Excessive overlap or irregular shaped field	Adjust marker.	
Seed visible on ground behind drill	Seed depth too shallow	Check and reset coulter depth, press wheel depth, and down-forces.	
	Coulters not aligned with openers	Check and re-align coulter at frame mount.	
	Down force too low	Check coulter and row unit settings, and hydraulics.	
	Fan speed too high	Check rpm on seed monitor.	
	Ground speed too high	Reduce ground speed.	
	Openers plugging	Check disk spacing and scrapers.	
	Seed hose disconnected or leaking seed.	Reconnect or make repairs.	
Meter door open on air cart	Clean seals and close door. Check latches for proper operation.		
Seed flow doesn't stop during turns	Implement lift switch out of adjustment or failed	Check implement lift switch engagement. See " Implement Lift Switch Adjustment " on page 35	

Problem	Cause	Solution
No Seed Flow	Implement lift switch out of adjustment or failed.	Check, adjust or replace implement lift switch. See "Implement Lift Switch Adjustment" on page 35
	Cart clutch failed	Replace clutch. On an emergency basis, use the clutch lock-up procedure in the cart Operator's Manual.
	Cart clutch circuit failed	Replace failed component or cable. On an emergency basis, use the clutch lock-up procedure in the cart Operator's Manual.
	Seed rate set to zero	Check seed rate indicator at cart meter(s).
Uneven seed spacing or uneven stand	Excessive field speed	Reduce speed.
	Opener disks slowing	Check that disks turn freely. Check scrapers.
	Insufficient down force for low spots	Increase down force
	Row units following terrain	Check row unit down-force.
	Air leaks	Check hopper lids, meter seals, manifold caps and seed hose connections. Adjust latch and/or replace seals as needed.
	Erratic meter clutch	Check for damaged cables and loose connections.
	Tower blockage	Check towers for obstructions and plugging. Blockages sometimes move from port to port in towers.
	Seed hose plugged	Stop and raise drill with fan running. Hand-crank meter and check for rows not delivering seed.
	Unclean seed	Use clean seed.
	Seed sticking to firmer	Lock-up firmer or wait for drier conditions.
Uneven seed depth	Excessive field speed	Slow down. Check Seeding Rate Chart for correct maximum field speed.
	Insufficient down force for low spots	Increase down force
	Openers "diving" during no-till operations	See "Level Frame Front-to-Rear" on page 18.
	Planting conditions too wet	Wait until drier weather.
Uneven depth across drill	Drill not level	See "Level Frame Side-to-Side" on page 17.
	Weight transfer inoperative	Check valve handle, monitor soft key and gauge reading
	Tire pressures not equal	Check and inflate
	Weight transfer to wings too high or too low.	See "Weight Transfer" on page 40.
	Weight circuit flow reversal	Check lever position and hookup. Recheck fan rotation on any changes.
	Press wheel heights not all the same	Set T-handles the same.
Drill height changing or creeping	Worn lift components.	If a cylinder is leaking oil past a seal, consult the Parts Manual and replace the seal.
	Tractor hydraulic malfunction	Confirm by using a different circuit for lift.

Problem	Cause	Solution
Seeding pattern skipping rows	Plugged openers	Check that disks turn freely. Check scrapers.
	Seed hose plugged	Stop and raise drill with fan running. Hand-crank meter and check for rows not delivering seed.
	Hose disconnected or leaking	Check hose path from front cart meter to row unit. Check for leaks in hoses.
	Seed tube plugged	Check for debris and pest nests in tube.
Primary seed hoses are plugging	Fan speed too low	Increase hydraulic flow to circuit.
	Erratic fan speed	Observe rpm reported by monitor, then check for oil flow surging by tractor.
	Flow not stopping when raised	Have observer verify that meter gear rotation ceases when drill is moving while raised.
	Damaged hoses	Inspect and repair as needed.
	Sharp bends or too much slack in hoses	Re-route hoses for minimum necessary slack and no sharp bends.
Secondary seed hoses plugging	Fan speed too low	Increase hydraulic flow to circuit.
	Damaged hoses	Inspect and repair as needed.
	Debris in seed or hoses	Disconnect, inspect and clear.
	Sharp bends or too much slack in hoses	Re-route hoses for minimum necessary slack and no sharp bends.
Openers plugging	Disks need adjustment	See “ Disk Blade Adjustments ” on page 43.
	Scrapers need adjustment	See “ Disk Scraper Adjustments ” on page 44.
	Conditions too damp	Wait for drier weather.
Opener disks not turning freely	Trash or caked mud at hub	Inspect and clear. Adjust scraper as needed.
	Down force too high or too low	Adjust down force and re-check.
	Depth too shallow	Adjust T-handles after checking down-force.
	Failed bearing	Replace bearing.
Furrow not fully or consistently closed	Down force too low or too high for depth setting	Adjust down-force and re-try.
	Depth too shallow	Adjust T-handles on several rows and re-try.
	Press wheels not turning freely	See that topic above.
	Mud building and releasing from press wheels	Adjust scrapers. Conditions may be too wet for planting.
Press wheels pressing too deep	Down force too high	Adjust down-force and re-try.
	Press wheels not turning	Check for trash. Check for dried mud at hub. Check for failed bearing.
Excessive seed cracking	Excessive field speed	Slow down. Check Seeding Rate Chart for correct maximum field speed.
	Fan speed too high	Check fan speed against recommendations on page 29.
	Dividers missing or damaged in towers	Check and replace as needed,
	Unclean seed	Use clean seed.
	Damaged, old or dry seed	Use clean, new seed.
Gauge reading zero with drill lowered and circuit on	Hydraulic hose(s) mis-routed	Re-check hose connections from tractor, through cart, to drill.

Problem	Cause	Solution
Gauge reading changes when circuit is set to neutral	Normal	No action required.
Openers raise, but provide no weight transfer	Hose mis-connection	Re-check hose connections from tractor, through cart, to drill.
Coulters not reaching desired depth	Coulter height too shallow	See " Coulter Frame Height " on page 37.
	Frame not level front-to-back	See " Level Frame Front-to-Rear " on page 18
	Row unit down force too high	Reduce row unit down force.
	Insufficient down force	Add weights. See " Frame Weight " on page 39.
Coulters going too deep	Coulter height too deep	See " Coulter Frame Height " on page 37.
	Frame not level front-to-back	See " Level Frame Front-to-Rear " on page 18
	Too much weight	Remove weights. See " Frame Weight " on page 39.
	Press wheels set too shallow	Raise press wheels



Maintenance and Lubrication

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

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

WARNING

Crushing

Hazard:

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

WARNING

High

Pressure

Fluid

Hazard:

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

CAUTION

Sharp

Object

Hazard:

Disk edges and harrow tine teeth are very sharp. You may injure yourself. Use caution when working in this area.

1. After initially running the implement for several hours, check all bolts to be sure they are tightened as specified on the "**Torque Values Chart**" on page 61. Do not over tighten the bolts holding the distribution tower assembly together.
2. Lubricate areas listed under "**Lubrication**" on page 53.
3. Inflate tires as specified on "**Tire Inflation Chart**" on page 60.
4. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. "**Safety Decals**" on page 6.
5. Clean or replace any fittings that will not take grease.
6. Periodically check and secure all bolts, pins, and fasteners. Tighten as specified on the "**Torque Values Chart**" on page 61.
7. Occasionally inspect hydraulic hoses for cuts, cracks and aging. Check fittings and cylinders for evidence of leaks.
8. Inspect cart link pins often for wear or loosening.



Lubrication

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

Coulter Pivots

	 8
---	---

multiple zerks on 4 grease banks; 36-55 total

Type of Lubrication:
Quantity: About 5 pumps per zerk

Grease



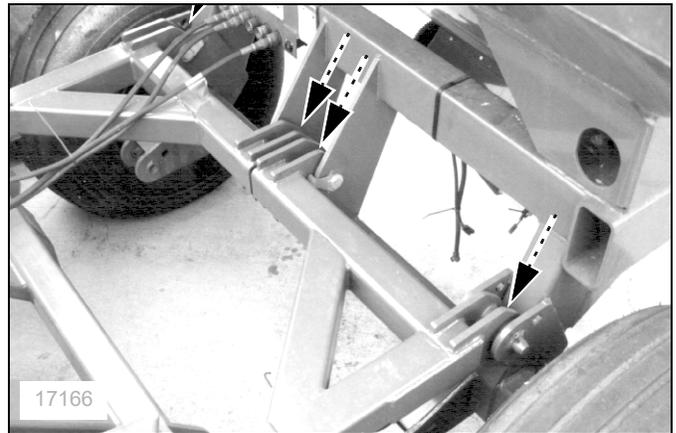
Cart Links

	 10
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1 zerk each outside pin,
2 zerks each center pin;
4 total

Type of Lubrication:
Quantity: Until grease emerges

Grease



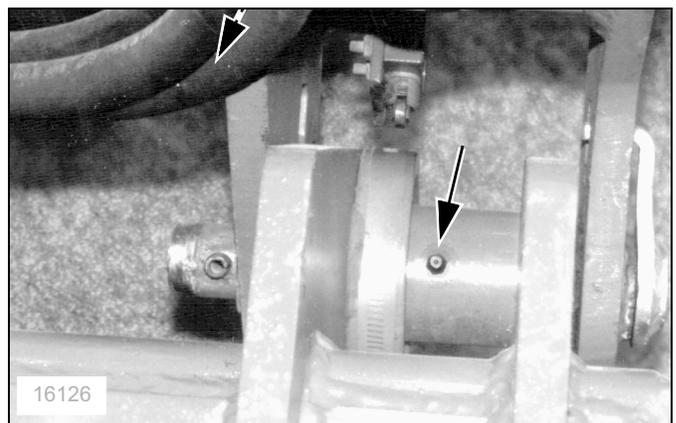
Rockshaft Pivots

	 10
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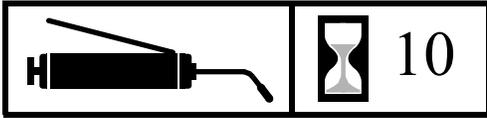
1 zerk each of 2 pivots; 2 total

Type of Lubrication:
Quantity: Until grease emerges

Grease



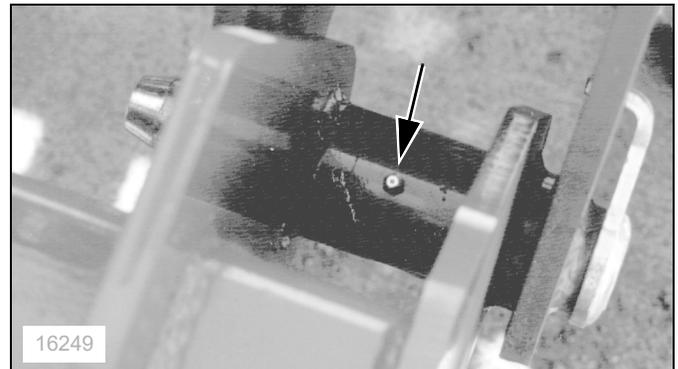
Wing Gauge Wheel Pivots



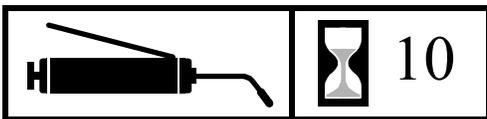
1 zerk each of 2 pivots; 2 total

Type of Lubrication:
Quantity: Until grease emerges

Grease



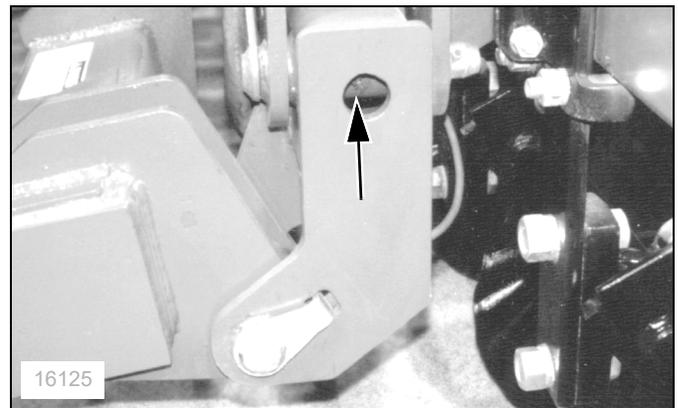
Fold Pivots



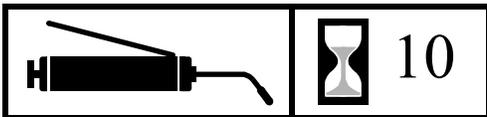
1 zerk each of 2 pivots; 2 total

Type of Lubrication:
Quantity: Until grease emerges at pivot ends

Grease

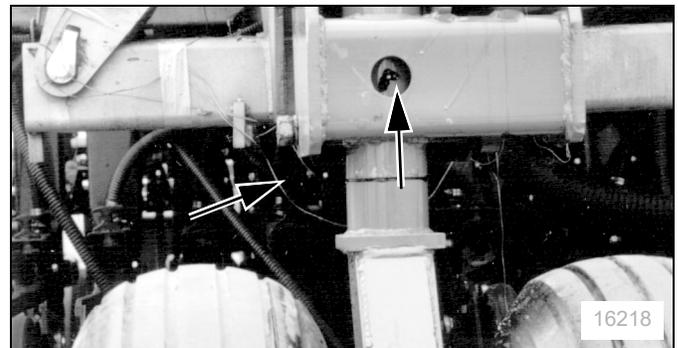


Rear Wheel Caster Spindles

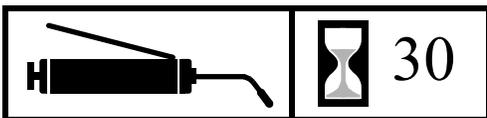


1 zerk each of 2 casters; 2 total

Type of Lubrication: Grease
Quantity: Until grease emerges at top and bottom

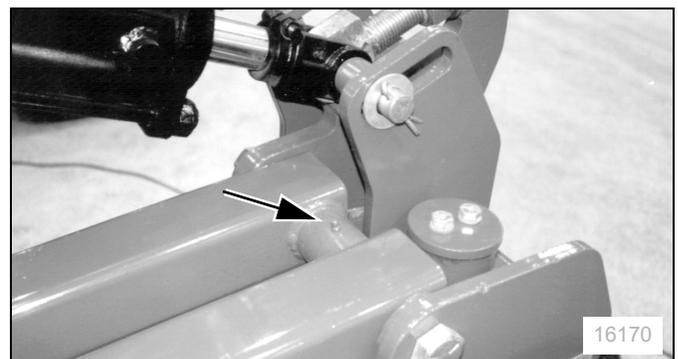


Parallel Arm Pivots

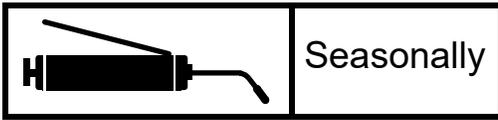


1 zerk each end of each arm, two arms per caster; 8 zerks total

Type of Lubrication: Grease
Quantity: Until grease emerges



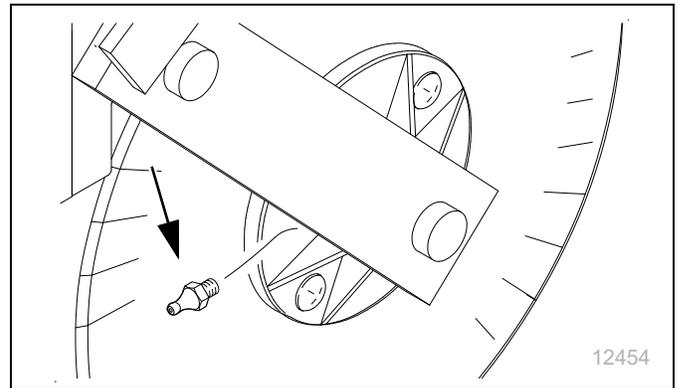
Coulter Hub Bearings



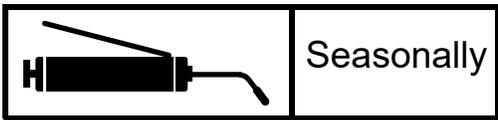
1 zerk each hub; 36-55 total

Type of Lubrication:
Quantity: Until resistance is felt

Grease



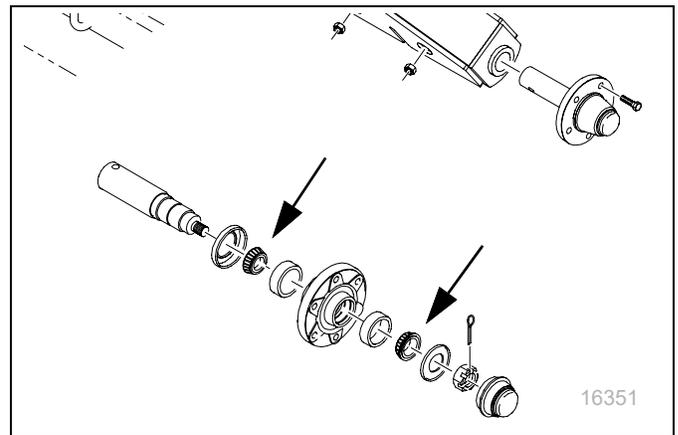
Caster Wheel Bearings



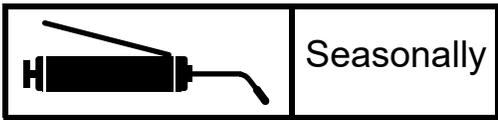
2 races each of 2 wheels each side; 8 total

Type of Lubrication:
Quantity: Repack

Grease

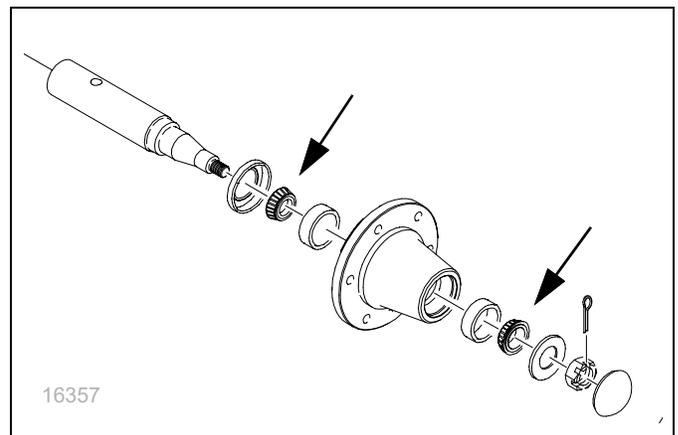


Gauge Wheel Bearings



2 races each of 2 wheels each side of center, and one each section; 16 total

Type of Lubrication: Grease
Quantity: Repack



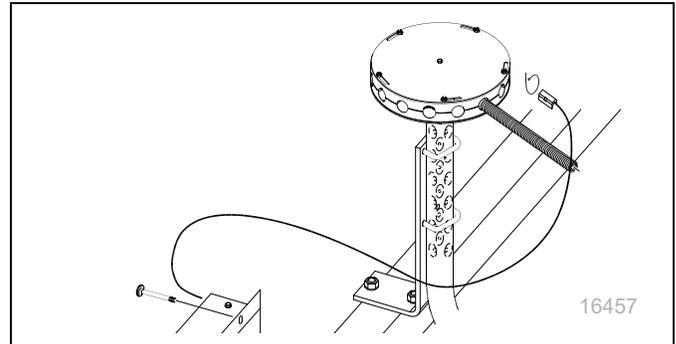


Blockage Detector

The seed monitor supports sensors that monitor for plugging in the one-inch, secondary hoses. The package includes programmable blockage modules for each tower and flow sensors for each secondary seed hose. The blockage modules signal the monitor when flow stops at a sensor. The monitor then sounds an alarm and identifies the problem hose.

To order blockage sensors, contact your Great Plains dealer.

Implement, Row Spacing	Part Numbers
NTA3010-3610, 10-Inch	168-405A
NTA3010-4875, 7.5-Inch	168-404A
NTA3510-4010, 10-Inch	168-407A
NTA3510-5575, 7.5-Inch	168-406A



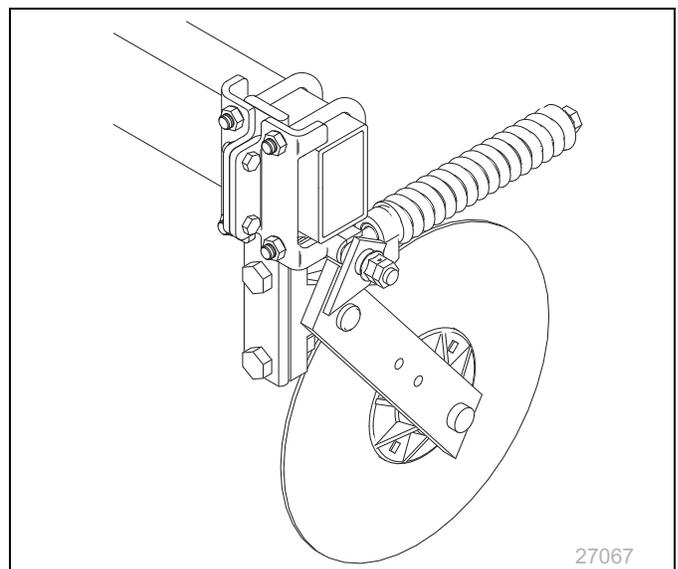
Frame-Mounted Coulters

Frame-mounted coulters are recommended for heavier no-till conditions and rocky soil. They are independent of row-unit down-force and may be set to different (usually higher) force levels.

Coulters include tubing and remote zerks for integration with the standard grease bank plates on the drill.

When ordered with a new drill, frame-mounted coulters are factory-installed. They may also be ordered for field installation. Each kit equips an entire drill.

Coulter Kit	3010-3610	3010-4875	3510-4010	3510-5575
18x ³ / ₄ in Wavy Blade	149-935A	149-931A	149-923A	149-919A
18 in Turbo Blade	149-936A	149-932A	149-922A	149-918A



18 in Coulter Blades

Part ordering number includes one blade.

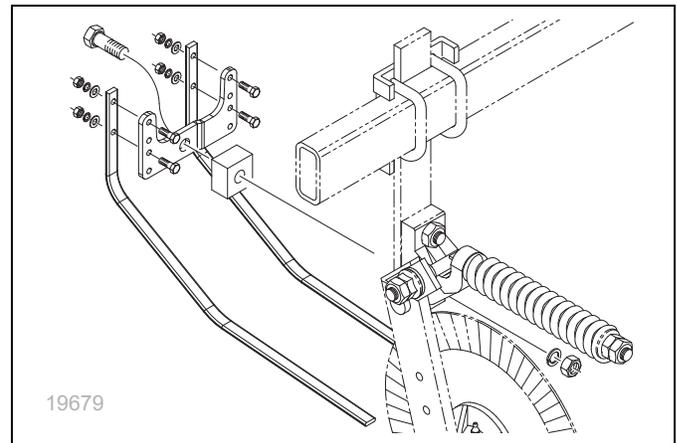
Blade	Part Number
18x ³ / ₄ in Wavy Blade	820-220C
18 in Turbo Blade	820-215C

Coulter Tines

The coulters on your implement can be equipped with optional trash tines. The tines help guide the residue under the coulters and openers to prevent plugging.

Order one kit per row.

Row Spacing	Part Numbers
7.5-Inch Rows, Coulter Tine Update Kit	149-925A
10-Inch Rows, Coulter Tine Update Kit	149-926A



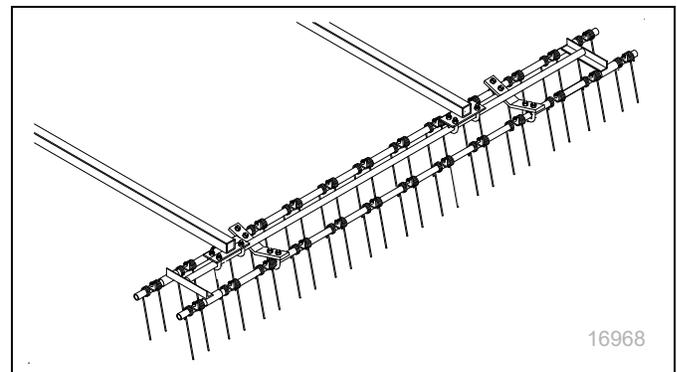
Harrow

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

To adjust the harrow for your soil conditions, refer to “**Harrow Adjustment**” on page 46.

To order one harrow kit per drill.

Drill Model	Part Numbers
NTA3510 Harrow	116-171A
NTA3010 Harrow	116-172A



Markers

Markers for this drill model are not provided by Great Plains, but are available from at least one third-party supplier. Consult your Great Plains dealer for a current recommendation of brand and model.

Press Wheels

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

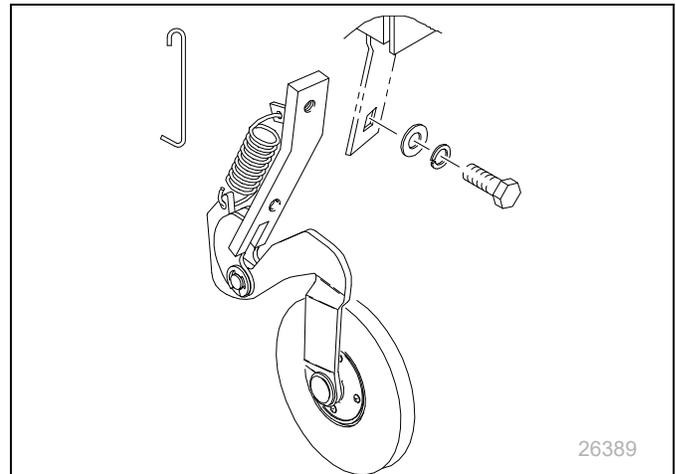
Seed Firmers

The standard NTA3010 and NTA3510 drill includes seed flaps. A choice of firmers is an option in the product bundles, or may be field-installed as kits. Only one type of seed firmer may be installed at the same time.

Seed-Lok® Seed Firmer

Description	Part Number
10 Series Seed-Lok® kit (per opener)	122-193K

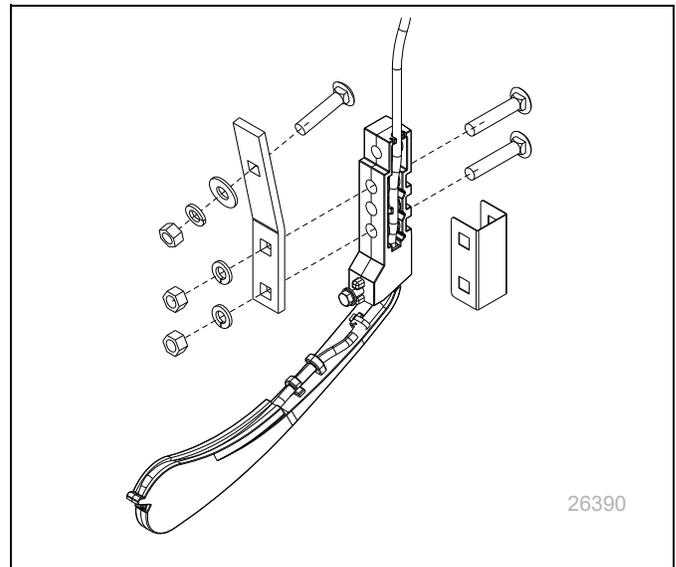
For operations, see “**Seed Firmer Adjustments**” on page 45.



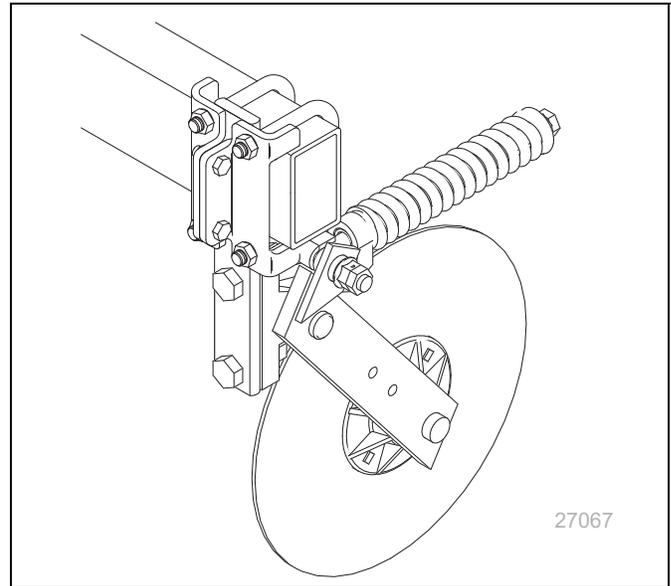
Keeton® Seed Firmer

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

For operations, see “**Seed Firmer Adjustments**” on page 45.



Row Options



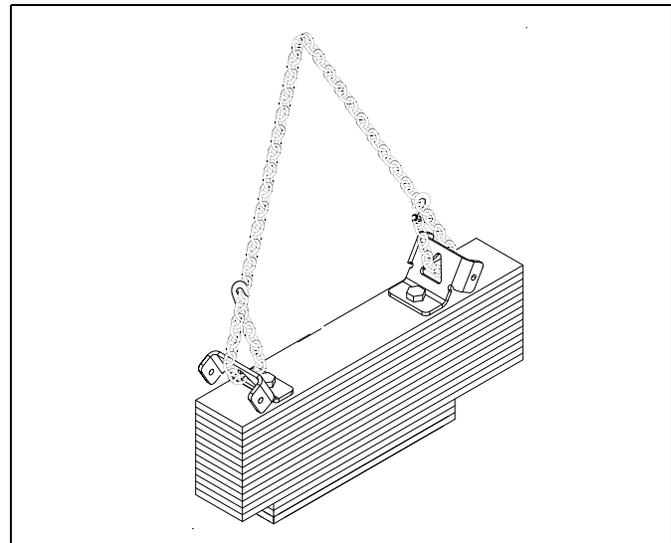
Weight Kit

The standard NTA3010 and NTA3510 drills do not include additional weights.

A weight kits is available, each kit containing one pair of 700 pound weights (1400 pounds per kit). These are set on the center frame. The weight transfer hydraulics distribute this weight to the wings.

The NTA3010 and NTA3510 support a maximum of four additional weight kits (5600 additional pounds), for a total maximum of eight 700 pound weights.

Description	Part Number
Weight Kit	160-233A





Appendix

Specifications and Capacities

	NTA3010		NTA3510	
	-3610	-4875	-4010	-5575
Operating Width	30 feet (9.1 m)		36 feet (11 m)	
Swath	360 inches (914.4 cm)	364 inches (924.6 cm)	400 inches (1016.0 cm)	416.5 inches (1057.9 cm)
Number of Rows	36	48	40	55
Nominal Row Spacing	10 inch (25.4 cm)	7.5 inch (19.1 cm)	10 inch (25.4 cm)	7.5 inch (19.1 cm)
Swath Averaged Row Spacing	10.1 inches (25.7 cm)	7.58 inches (19.3 cm)	10.0 inches (25.4 cm)	7.57 inches (19.2 cm)
Tractor Requirements	275 hp (205 Kw) - power requirements will vary with tractor size, soil type, terrain and tillage practices			
Drill Weight ^a	15,700 lbs (7121 kg)	17,650 lbs (8006 kg)	16,500 lbs (7484 kg)	18,800 lbs (8528 kg)
Max. Additional	6000 lbs (2722kg)			
Hydraulic Circuits	3 circuits required: load-sensitive or closed-center 15 to 30 gpm at 2000 psi (38 to 76 liter/min at 138 bar)			
Hitch	dedicated dual-link from leading ADC3250 air cart			
Transport Width	16 feet 10 inches (5.13 m)			
Transport Height	12 ft.6 in. (3.8 m) without markers 12 ft. 6 in. (3.8 m) with typ. markers		13 ft. 10 in. (4.22 m) without markers 14 ft. 4 in. (4.37 m) with typ. markers	
Operating Height	(operating height clearance is determined by air cart)			
Length	16 feet (4.88 m)			
Overall Length w/ADC2350 Cart	32 feet (9.75 m)			
Wing Flexibility	15 degrees down, 20 degrees up			
Tire Sizes	11L-15SL 12-Ply			

a. Does not include air cart. See “**Frame Weight**” on page 39 for weights per row with and without optional weights.

Tire Inflation Chart		
Tire Size	Inflation	Torque
11L-15SL 12-Ply	52 psi (359 kPa)	90 lb ft (122 Nm)

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

Torque Values Chart

Bolt Size in-tpi ^a	Bolt Head Identification						Bolt Size mm x pitch ^c	Bolt Head Identification					
													
	Grade 2		Grade 5		Grade 8			Class 5.8		Class 8.8		Class 10.9	
	N-m ^b	ft-lb ^d	N-m	ft-lb	N-m	ft-lb		N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
1/4-20	7.4	5.6	11	8	16	12	M 5 X 0.8	4	3	6	5	9	7
1/4-28	8.5	6	13	10	18	14	M 6 X 1	7	5	11	8	15	11
5/16-18	15	11	24	17	33	25	M 8 X 1.25	17	12	26	19	36	27
5/16-24	17	13	26	19	37	27	M 8 X 1	18	13	28	21	39	29
3/8-16	27	20	42	31	59	44	M10 X 1.5	33	24	52	39	72	53
3/8-24	31	22	47	35	67	49	M10 X 0.75	39	29	61	45	85	62
7/16-14	43	32	67	49	95	70	M12 X 1.75	58	42	91	67	125	93
7/16-20	49	36	75	55	105	78	M12 X 1.5	60	44	95	70	130	97
1/2-13	66	49	105	76	145	105	M12 X 1	90	66	105	77	145	105
1/2-20	75	55	115	85	165	120	M14 X 2	92	68	145	105	200	150
9/16-12	95	70	150	110	210	155	M14 X 1.5	99	73	155	115	215	160
9/16-18	105	79	165	120	235	170	M16 X 2	145	105	225	165	315	230
5/8-11	130	97	205	150	285	210	M16 X 1.5	155	115	240	180	335	245
5/8-18	150	110	230	170	325	240	M18 X 2.5	195	145	310	230	405	300
3/4-10	235	170	360	265	510	375	M18 X 1.5	220	165	350	260	485	355
3/4-16	260	190	405	295	570	420	M20 X 2.5	280	205	440	325	610	450
7/8-9	225	165	585	430	820	605	M20 X 1.5	310	230	650	480	900	665
7/8-14	250	185	640	475	905	670	M24 X 3	480	355	760	560	1050	780
1-8	340	250	875	645	1230	910	M24 X 2	525	390	830	610	1150	845
1-12	370	275	955	705	1350	995	M30 X 3.5	960	705	1510	1120	2100	1550
1 1/8-7	480	355	1080	795	1750	1290	M30 X 2	1060	785	1680	1240	2320	1710
1 1/8-12	540	395	1210	890	1960	1440	M36 X 3.5	1730	1270	2650	1950	3660	2700
1 1/4-7	680	500	1520	1120	2460	1820	M36 X 2	1880	1380	2960	2190	4100	3220
1 1/4-12	750	555	1680	1240	2730	2010							
1 3/8-6	890	655	1990	1470	3230	2380							
1 3/8-12	1010	745	2270	1670	3680	2710							
1 1/2-6	1180	870	2640	1950	4290	3160							
1 1/2-12	1330	980	2970	2190	4820	3560							

a. in-tpi = nominal thread diameter in inches-threads per inch

b. N·m = newton-meters

c. mm x pitch = nominal thread diameter in mm x thread pitch

d. ft-lb = foot pounds

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

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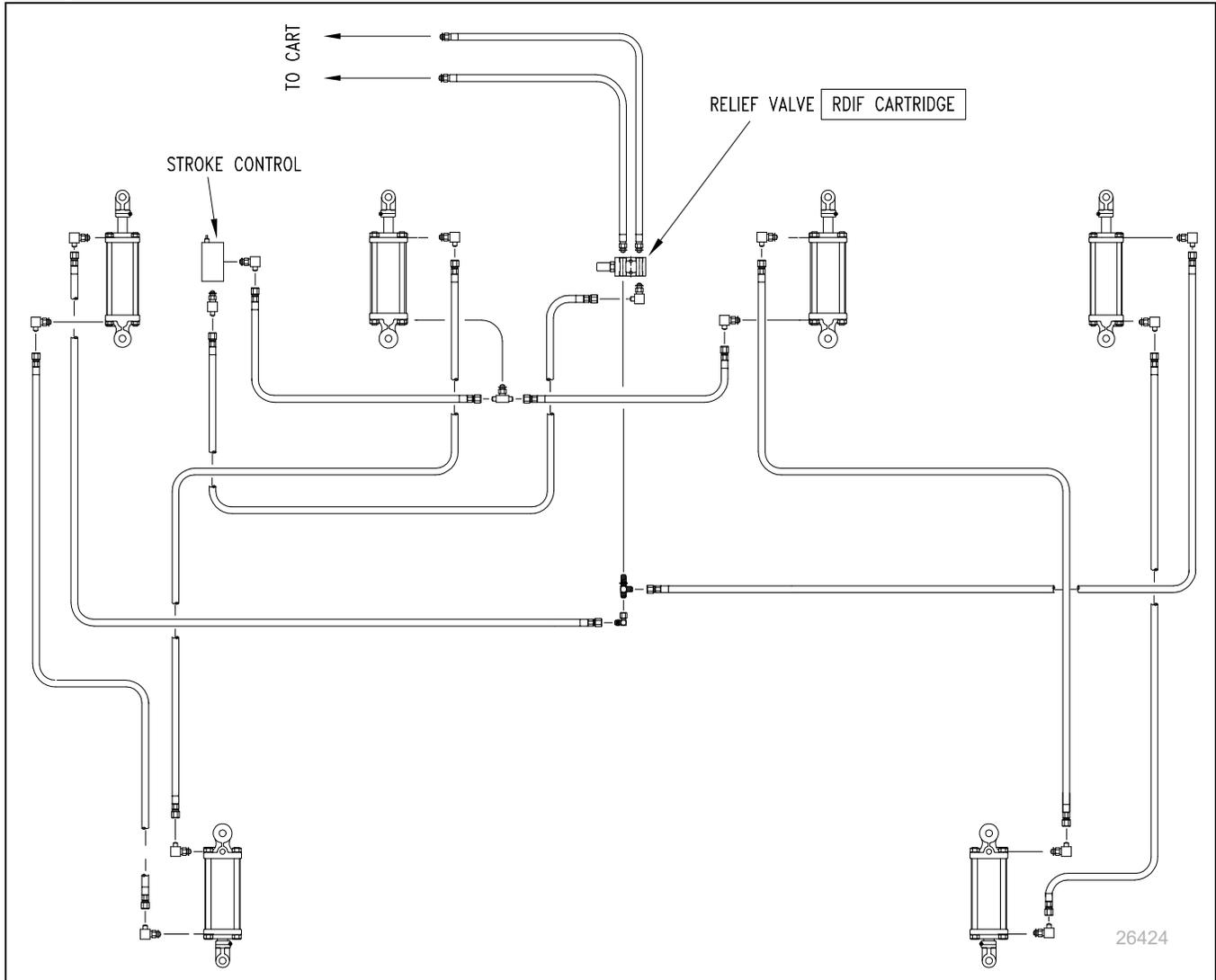
Hydraulic Diagrams

No diagram included for Marker circuits.

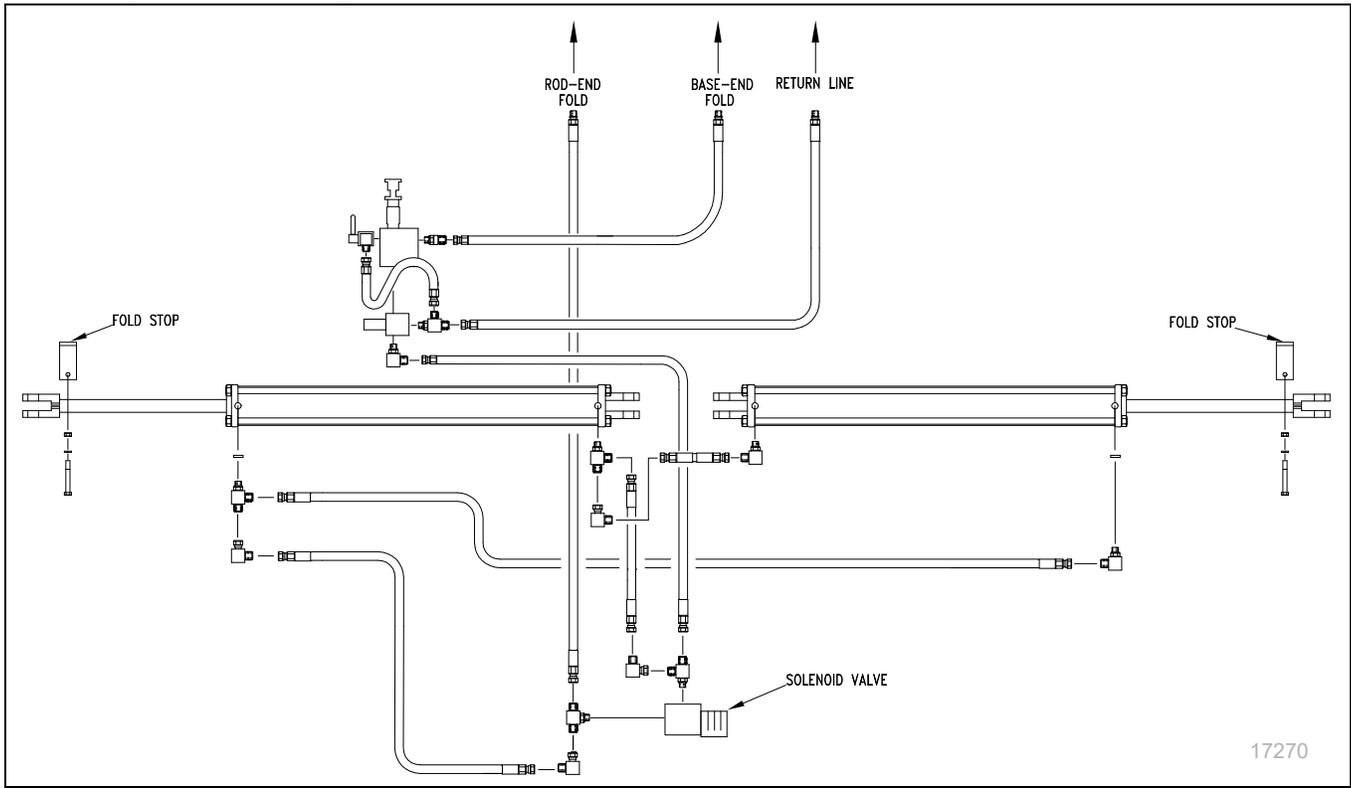
Hydraulic Circuit Assignments

Used With	Blue	Orange	Yellow	Black
ADC 2350 Cart NTA3010 and NTA3510 Drills	<u>Not Used</u> Ⓒ Lift Ⓓ Lower	<u>Auger</u> Ⓐ Marker Ⓑ Marker	<u>Fan</u> Ⓔ Fold Ⓕ Unfold/Weight Transfer	<u>Fan Sump Return</u> Ⓖ Sump Return

Lift Hydraulics



Fold/Weight Transfer Hydraulics





WARRANTY

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

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

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

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

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

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

Effective July 15, 2020



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