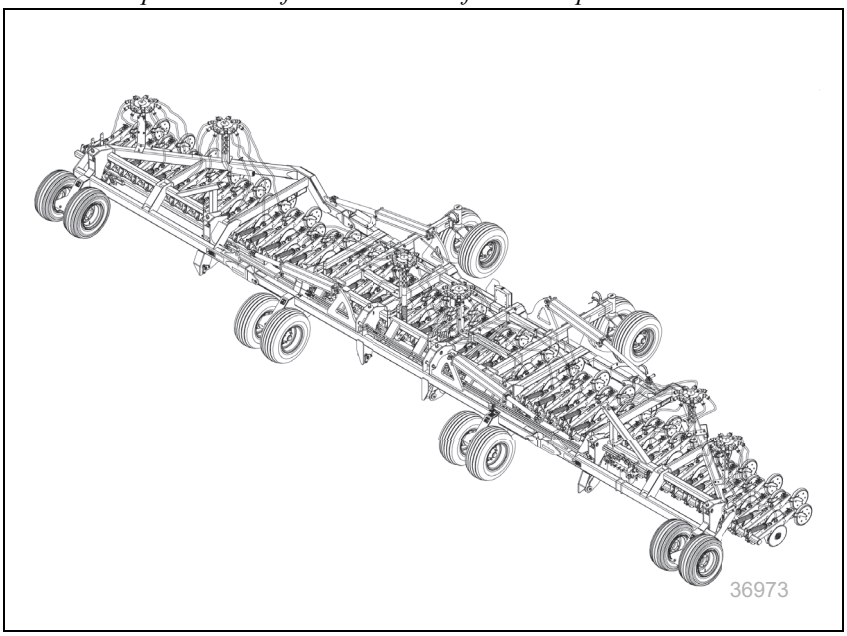
Operator Manual

CTA4500 & CTA4500HD
Air Drill

Great Plains
Manufacturing, Inc.
www.greatplainsmfg.com

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



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

ORIGINAL INSTRUCTIONS

EN

Printed 2025-01-22 160-402M

Machine Identification

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

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

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

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

Dealer's Customer No.: _____

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

Table of Contents

Important Safety Information

Look for Safety Symbol

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

Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

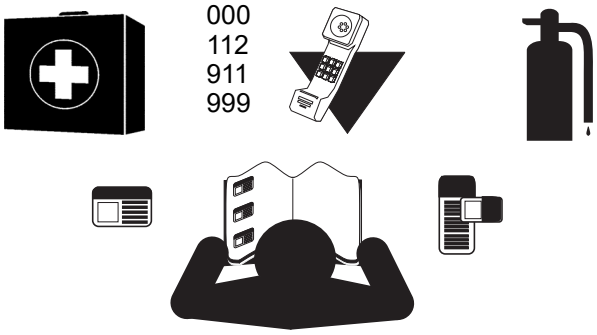
DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

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

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

Prepare for Emergencies

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



Be Familiar with Safety Decals

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

Avoid High Pressure Fluids

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

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

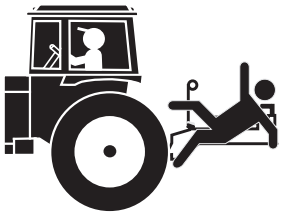
Wear Protective Equipment

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

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.*



Use Safety Lights and Devices

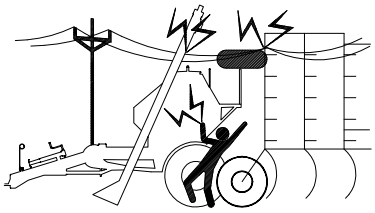
Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

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

Check for Overhead Lines

Seed auger or drill markers contacting overhead electrical lines can introduce lethal voltage levels on drill, cart 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.

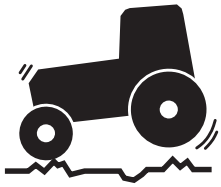
- ▲ *Avoid overhead lines during seed loading/unloading and marker operations.*



Transport Machinery Safely

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

- *Do not exceed 20 mph (32 km/h). Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- *Comply with national, regional and local laws.*
- *Follow your tractor manual recommendations for maximum hitch loads. Insufficient weight on tractor steering wheels will result in loss of control.*
- *Carry reflectors or flags to mark drill and cart 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 58.*



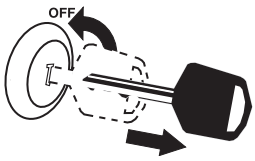
Handle Chemicals Properly

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

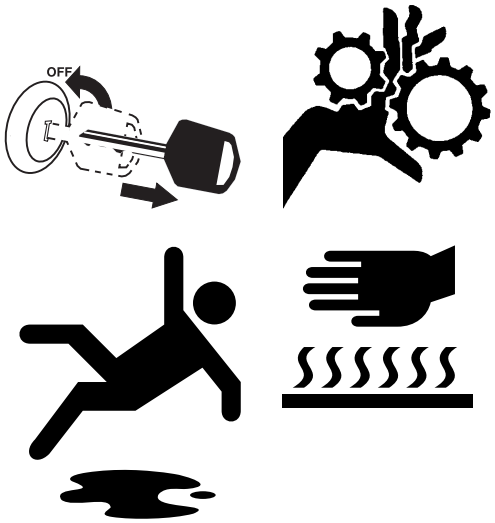
- *Do not use liquid treatments with drill.*
- *Read and follow chemical manufacturer's instructions.*
- *Wear protective clothing.*
- *Handle all chemicals with care.*
- *Avoid inhaling smoke from any type of chemical fire.*
- *Never drain, rinse or wash dispensers within 100 feet (30 m) of a freshwater 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.*

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.*



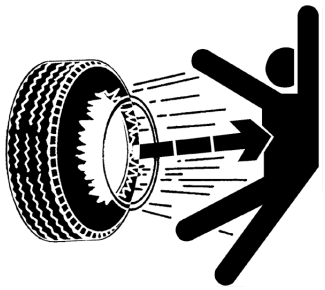
Practice Safe Maintenance



- *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

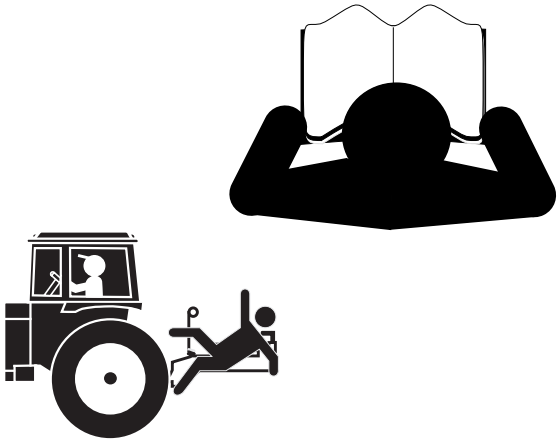
Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.



- *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 cart 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

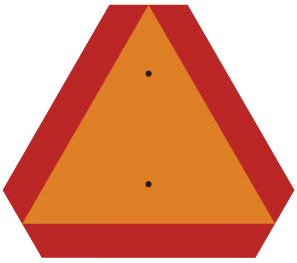
Your drill comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your drill.

- ▲ *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:

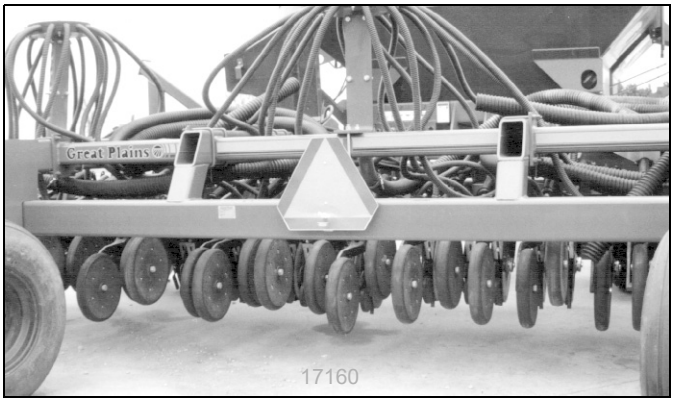
1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

818-055C



Slow Moving Vehicle Reflector

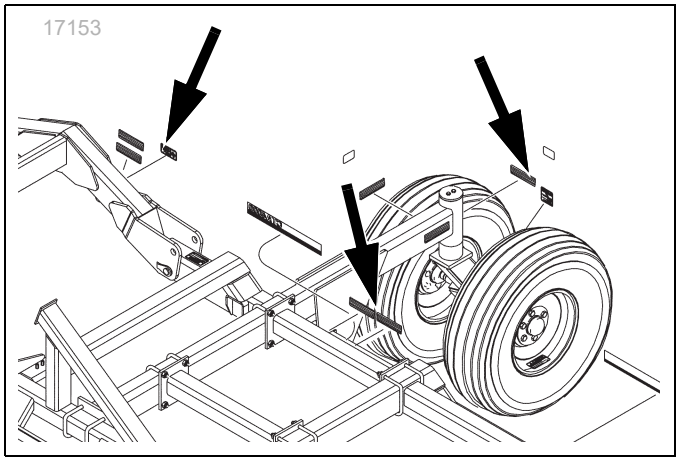
Center of rear frame tube; 1 total



838-266C (S/N C1010Y-)

Red Reflectors

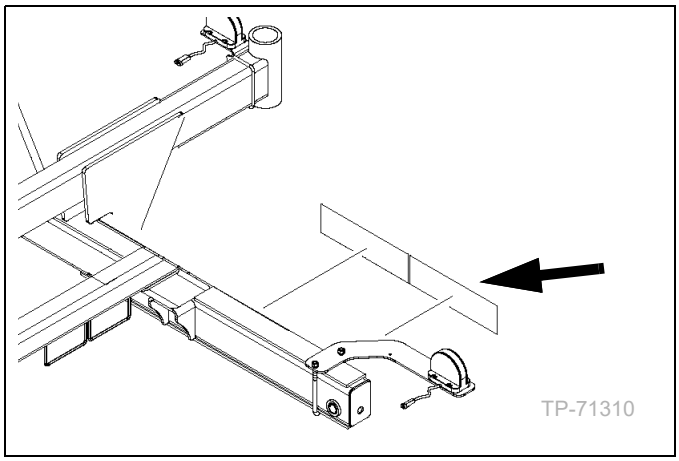
On each of two spindle tubes of the rear casters, on rear face of each wing near pivot, on rear face of rear lift-assist side braces; 6 total



838-266C (S/N C1011Y+)

Red Reflectors

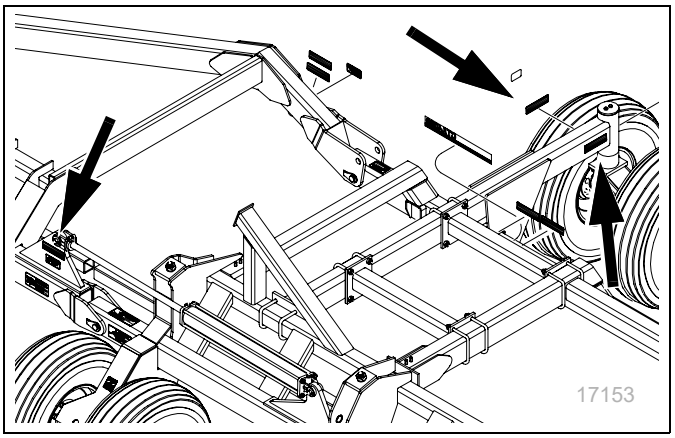
On the front center frame, outside on each end; 2 total



838-265C

Amber Reflectors

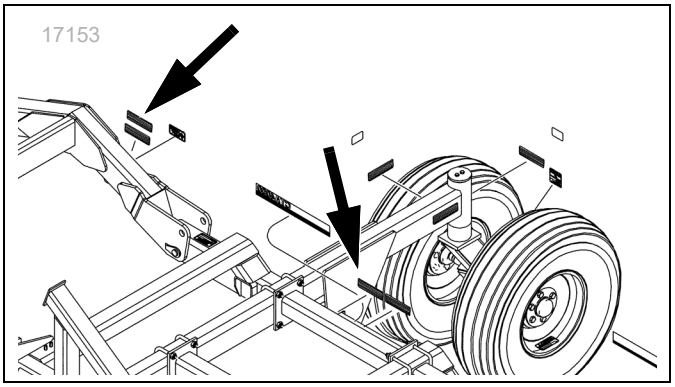
Outside each of two rear lift assist arms, on front of each wing cylinder lug; 6 total.



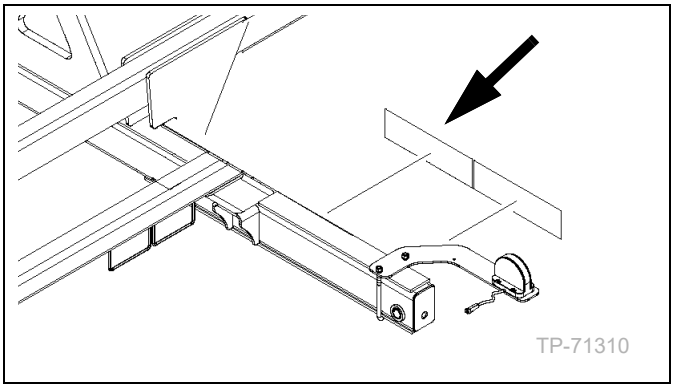
838-267C (S/N C1010Y-)

Daytime Reflectors

On rear face of each wing near pivot, on rear face of rear lift-assist side braces; 4 total



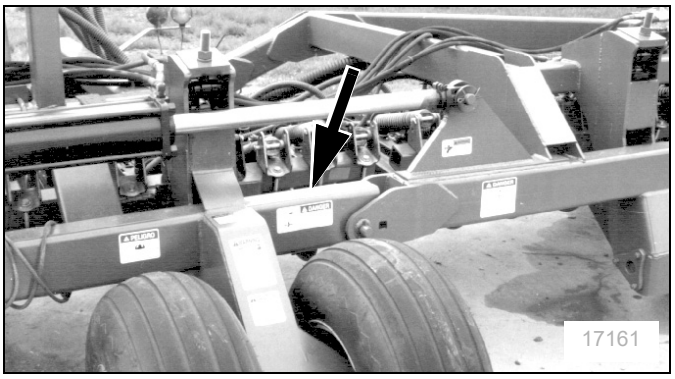
838-267C (S/N C1011Y+)



Daytime Reflectors

On the front center frame, outside on each end next of red reflector; 2 total

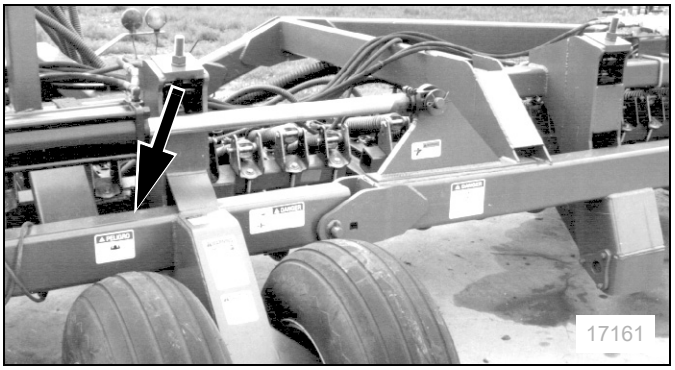
818-046C



Danger: Overhead Crush Hazard

On the front center frame tube, each end; 2 total

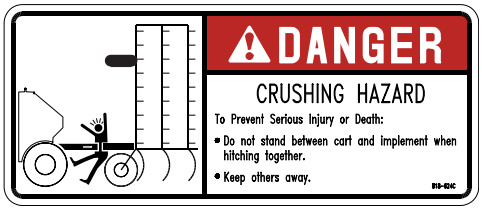
848-512C

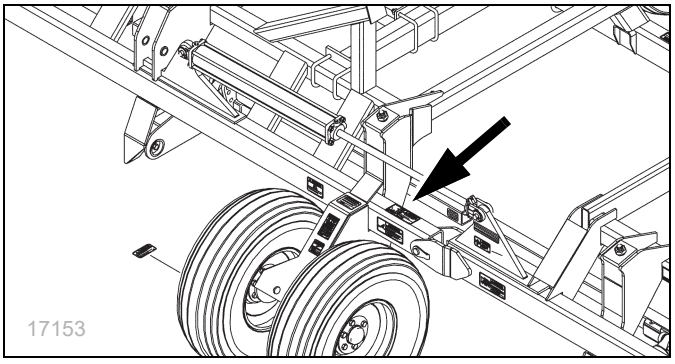


Danger: Cannot Read English

On the front center frame tube, right of hitch; 1 total

818-624C

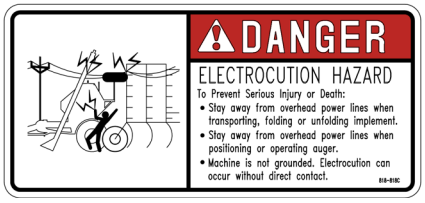




Danger: Hitch Crushing Hazard

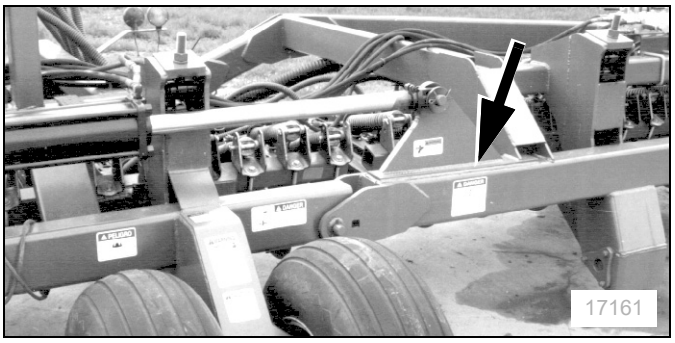
On top each end of front center frame; 2 total

818-818C



Danger: Electrocution Hazard

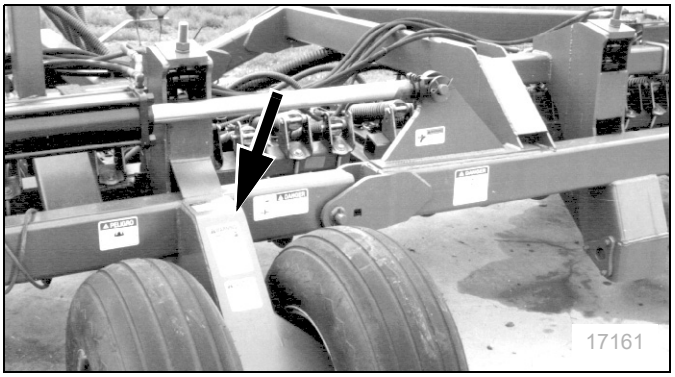
One each wing section near fold; 2 total



818-339C

Warning: High Pressure Fluid

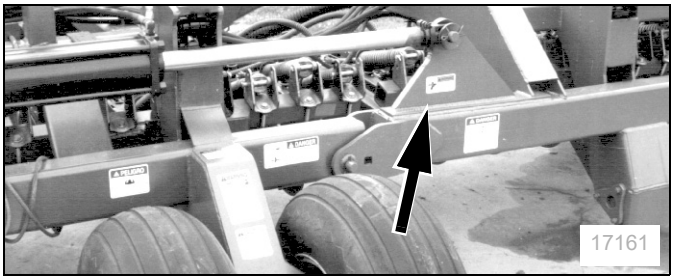
On gauge wheel near hydraulics; 1 total

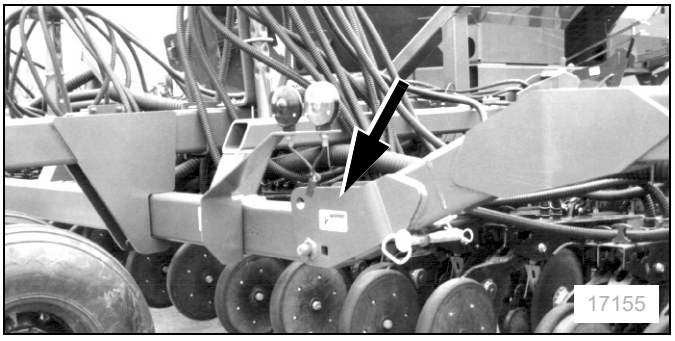


818-798C

Warning: Pinch Point Hazard

Fold cylinder mounts, both sides, front and back; 4 total

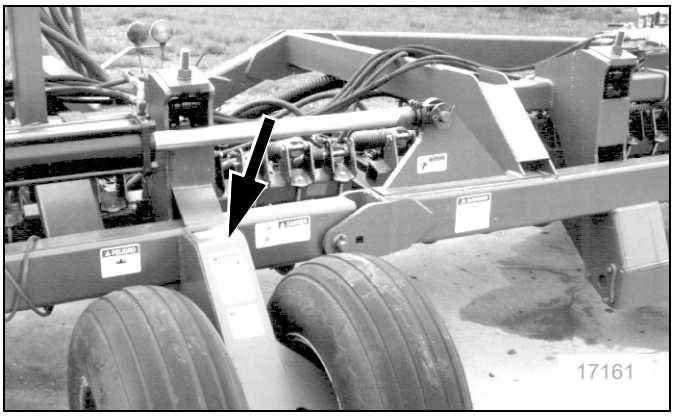




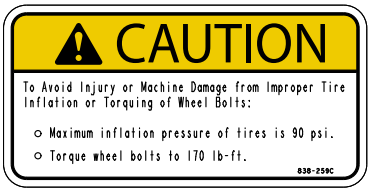
818-398C

Caution: Tires Not A Step

On each gauge wheel; 6 total

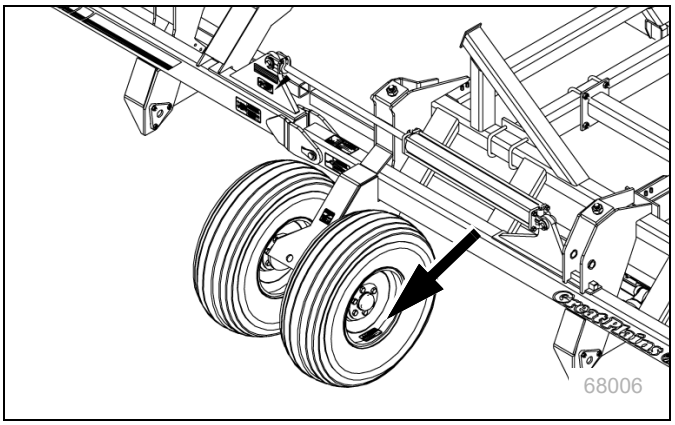


838-259C



Caution: Tire Pressure

One on each rim of center section tire; 8 total



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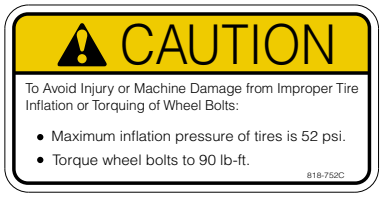
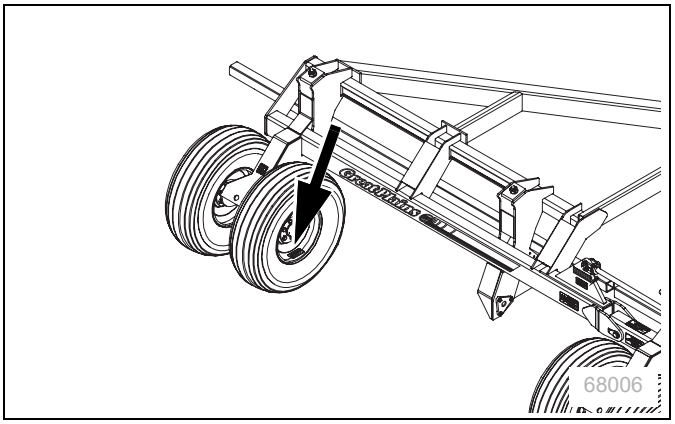


Caution: Tire Pressure

One on each rim of wing wheels; 8 total



Introduction

Great Plains welcomes you to its growing family of new product owners. Your 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 from the machine.

Description of Unit

The CTA4500/HD is a pull-type drill for volumetric seeding. A fan on a companion air cart creates an airflow to supply seed and dry granular treatments to the drill.

The CTA4500/HD Air Drill is compatible with the following Great Plains air carts:

- ADC2350 Air Drill Cart, when cart is ordered with a 168-403A kit (bundle sequence number 13)

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

Intended Usage

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

Covered Models

CTA4500/HD-5410	54-Row, 10-Inch spacing
CTA4500/HD-7275	72-Row, 7 $^{1}/_{2}$-Inch spacing
CTA4500/HD-9006	90-Row, 6-Inch spacing

Document Family

160-402M	Owner's Manual (this document)
160-402P	CTA4500/HD Parts Manual
160-402Q	CTA4500/HD Pre-Delivery Manual
167-085B	ADC2350 Seed Rate Charts
167-085M	ADC2350 Air Cart Operators Manual

Figure 1 38031
Air Cart Leading Drill

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.

Definitions

The following terms are used throughout this manual.

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

NOTICE

Paragraphs in this format present a crucial point of information related to the current topic.

Read and follow the directions to:
- remain safe,
- avoid serious damage to equipment and
- ensure desired field results.

📖 Paragraphs in this format provide useful information related to the current topic.

Parts Manual QRC

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

Product Manuals QRC

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

Owner Assistance

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

Refer to Figure 2

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

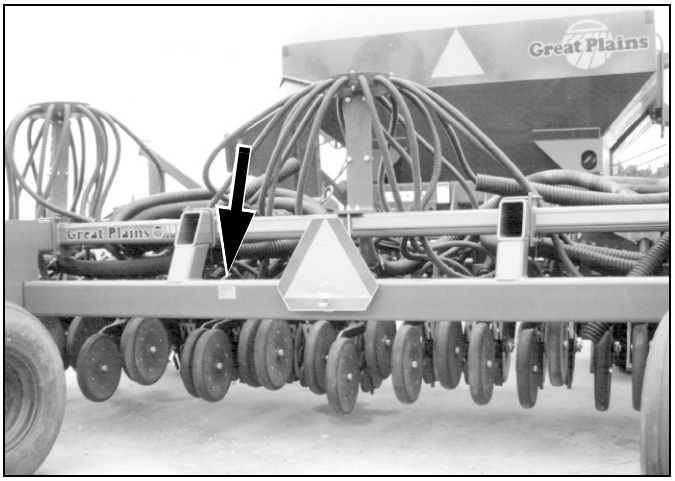
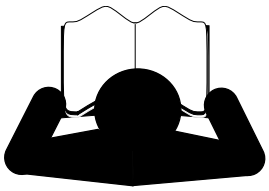


Figure 2 17160
Serial Number Plate

Preparation and Setup

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



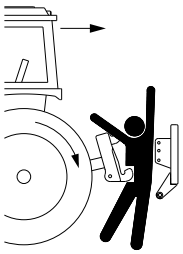
Pre-Setup Checklist

- ❑ Read and understand "**Important Safety Information**" on page 1.
- ❑ Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- ❑ Check that all grease fittings are in place and lubricated. See "**Lubrication**" on page 53.
- ❑ Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See "**Safety Decals**" on page 5.
- ❑ Inflate tires to pressure recommended and tighten wheel bolts as specified. "**Appendix**" on page 58.

Hitching

DANGER

Crushing Hazard:
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.



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, 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 3 26360
Complete Assembly

NOTICE

*If the tractor has a load-sensing or constant-flow hydraulic system, the drill must be equipped with an optional bypass valve to avoid tractor damage. See "**Hydraulic Bypass Valve Kit**" on page 55 for ordering. See "**Load Sensing Setup**" on page 16 for setup.*

Hitching to ADC2350 Cart

Hitch ADC2350 Link Arms

Refer to Figure 4,
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 to the height of the lug holes ⑤ in the implement.
2. Remove the pins ② near the ball swivel links ③ of the arms, allowing the arms to telescope. Do not remove the stop bolts ④.
3. Drive the roll pins ⑥ out of the lug pins ⑦ and remove the lug pins.
4. Have a tractor slowly guide the cart backwards until the link arm ball swivels are within two feet (61 cm) of the lug holes ⑤ in the implement. Set tractor brake.
5. Manually extend each arm's ball swivel ③ into alignment with the implement pivot holes ⑤. Insert and secure the lug pins ⑦ on the implement.
6. Release tractor brakes, and slowly back the tractor up until the arm pins may ② be reinserted. Secure them with clips.
7. Set tractor parking brake and shut off tractor.

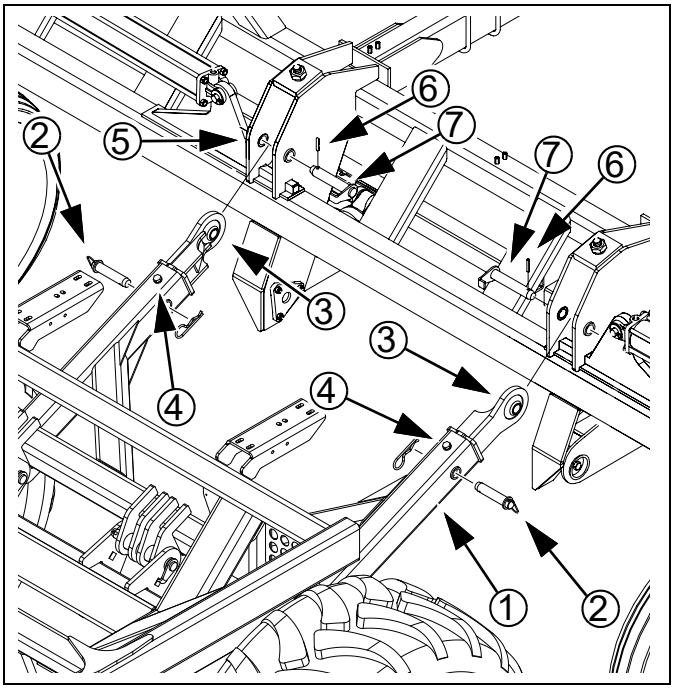


Figure 4 26431
Hitching Cart to Drill

ADC2350 Seed Hose Connections

Refer to Figure 5

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.

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.

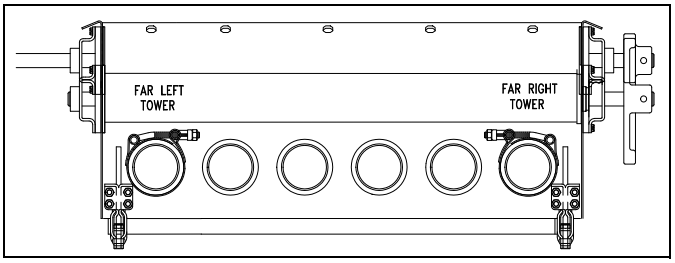


Figure 5 26302
Cart Seed Hose Outlets

ADC2350 Electrical Connections

Refer to Figure 6

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

1. Connect the lighting plug ① to the outlet connector on the cart.
2. Connect the implement lift switch plug ② to the outlet connector on the cart.
3. If present, connect 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.

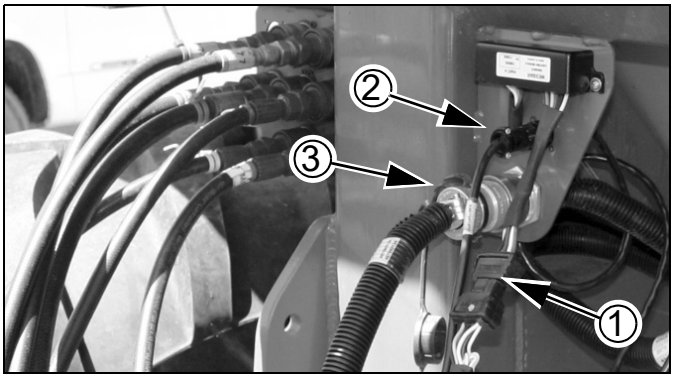


Figure 6 26439
Lift & Monitor

Make ADC2350/E Hydraulic Connections

WARNING

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

Current Style Color Coded Hose Handles

The air cart itself consumes hydraulic power for one or two circuits, and has a low pressure sump return line. When the cart leads the drill, the cart also passes through three circuits necessary for drill operations.

Refer to Figure 7

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

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

For hydraulic fan and drive motors, connect the hose under the retracted cylinder symbol to the pressure side of the motor. Connect the hose under the extended cylinder symbol to the return side of the motor.

The fan motor further requires hookup of a third line, which returns hydraulic fluid from the fan motor case.

Make sure all tractor levers are in neutral or float, or tractor hydraulics are off, before making connections.

Fan Priority

If your tractor has a priority circuit for hydraulic motors, connect the fan (Black) to this circuit.

ADC2350/E Hydraulic Hookup

The cart fan uses only the Extend/Base side of the Black circuit, but both sides (plus sump) are passed through to the trailing drill.

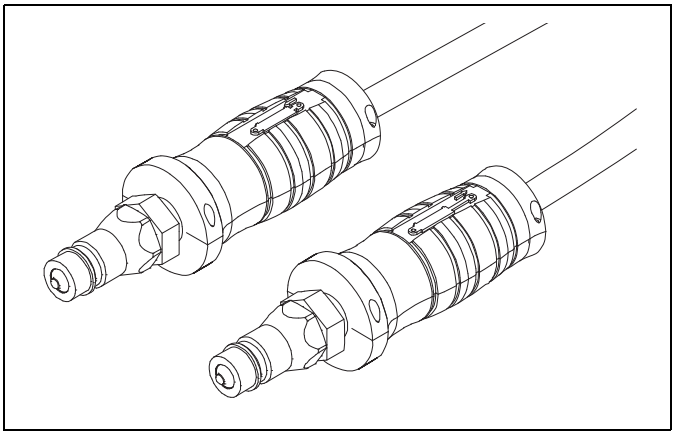


Figure 7 31733
Color Coded Hose Grips

NOTICE

For CTA implements, some tractors require an auxiliary flow kit to prevent damage to the hydraulic pump. Contact a factory trained service technician before hooking to cart and CTA implement.

Color	Hydraulic Function
<none> (decal)	SUMP return: Cart: Hydraulic Fan Drills: Down pressure or weight transfer
Black	Cart: Hydraulic Fan (Extend side only) Drill (NTA only): Fold Cylinders
Blue	Cart: <no function> Drills: Lift Cylinders
Green	Cart: Auger Drills: Marker Cylinders
<none>	Cart: Case Drain Drills: <no function>

ADC2350/E Older Style Hoses with Color Ties

WARNING

Only trained personnel should work on system hydraulics!

Great Plains hydraulic hoses are color coded to help you hookup hoses to your tractor or drill outlets. Hose connections are also passed through to a rear panel when the air cart leads the drill. Hoses that go to the same remote valve are marked with the same color tie.

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.

Make sure all tractor levers are in neutral or float, or tractor hydraulics are off, before making connections.

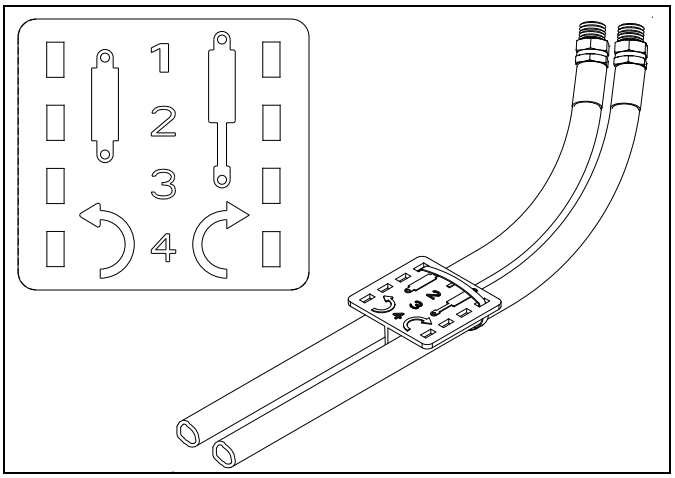


Figure 8
Plastic Hose Label

817-348c
17641

Fan Priority

If your tractor has a priority circuit for hydraulic motors, connect the fan (Yellow) to this circuit.

Sump First and Last

Seals in the hydraulic fan motor can be damaged if the return line is pressurized. Always connect the SUMP hose first and disconnect it last. The sump hose has a larger (1.06 inch) quick-connect coupling.

NOTICE

The hose & large connector labeled sump refers to high volume hydraulic motor return and should always be connected to the port on the tractor capable of handling high volume low pressure return oil. DO NOT connect this line to low volume case drain lines or low volume sump lines on the tractor. See tractor manufacturer's recommendations for high volume hydraulic motor return.

ADC2350/E Hydraulic Hookup

The cart fan uses only the Extend/Base side of the Yellow circuit, but both sides (plus sump) are passed through to the trailing drill.

Color	ADC2350/E Hydraulic Function
<none> (decal)	SUMP return: Cart: Hydraulic Fan Drills: Down pressure or weight transfer
Yellow	Cart: Hydraulic Fan (Extend side only) Drill (NTA only): Fold Cylinders
Blue	Cart: <no function> Drills: Lift Cylinders
Orange	Cart: Auger Drills: Marker Cylinders
<none>	Cart: Case Drain Drills: <no function>

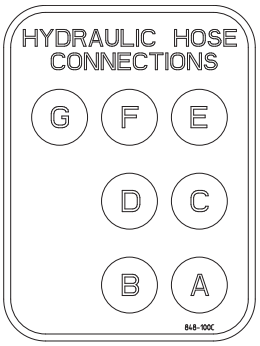
ADC2350 Hydraulic Circuits

The drill has one or two hydraulic circuits (with a low pressure sump return line). The standard circuit powers lift, fold and weight-transfer functions, controlled by a valve block on the left front of the drill. An optional circuit operates the markers.

NOTICE

*If the tractor has a load-sensing or constant-flow hydraulic system, the drill must be equipped with an optional bypass valve to avoid tractor damage. See "**Hydraulic Bypass Valve Kit**" on page 55 for ordering.*

1. Shut down tractor hydraulics.
2. If optional markers are already installed, connect Marker hoses to receptacles Ⓐ and Ⓑ per instructions supplied with the markers.
3. Connect the Retract hose of the (blue) Lift/Fold pair to receptacle Ⓒ. Connect the Extend hose of the (blue) Lower/Unfold pair to receptacle Ⓓ.
4. Skip receptacles Ⓔ and Ⓕ, not used by this drill.
5. Connect the sump hose to receptacle Ⓖ.
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
Orange	Ⓐ, Ⓑ	Markers (also used for auger on cart)
Blue	Ⓒ Ⓓ	Lift, Fold and Weight Transfer Lower, Unfold (not used on cart)
Yellow	Ⓔ, Ⓕ	Not Used by drill (used for fan on cart)
No Color	Ⓖ	Sump return

Load Sensing Setup

To operate the CTA4500/HD, some tractors with load-sensing or constant-flow hydraulics need a bypass valve. See "**Hydraulic Bypass Valve Kit**" on page 55 for ordering information. Contact your Great Plains dealer to order the valve.

NOTICE

Machine Damage Risk: *Failure to install the bypass valve may cause major tractor damage. Contact your tractor dealer to verify if the bypass valve is needed.*

Refer to Figure 9

1. After installing the bypass valve ①, adjust as follows.
2. Loosen lock-ring ② and completely close off bypass cross-flow by turning knob ③ fully clockwise.

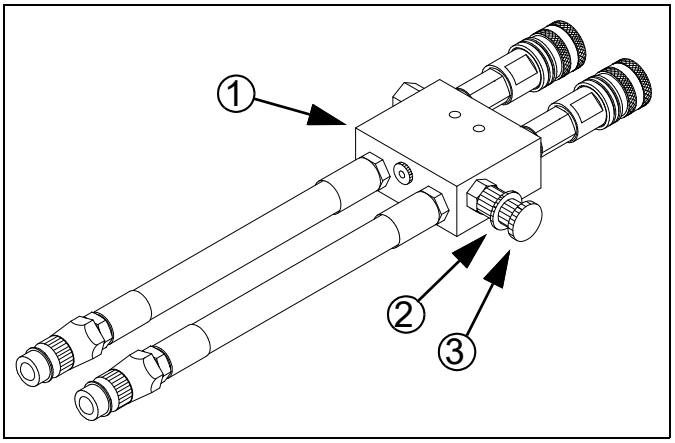


Figure 9 17987
Optional Bypass Valve

Refer to Figure 10

3. Manual Valve: Set valve levers for Field operation.

Electric Valve: Field operation happens automatically through solenoid valves in the valve block.

4. On tractor, adjust circuit flow-control valve so openers raise and lower at a reasonable speed.

🕮 The faster openers raise and lower, the greater potential for oil heating, premature wear or tractor damage.

5. Engage tractor hydraulics for fan and opener-lift-and-fold circuits. Lock hydraulic levers for continuous oil flow. Make sure cart fan is operating at normal speed (about 3600 rpm).

Refer to Figure 11 and Figure 9

6. Adjust wing and center down-pressure-control valves ④, ⑤ on implement so gauges ⑥, ⑦ read 1500 psi.

NOTICE

Do not adjust weight-transfer valve ⑧ at this time. To avoid implement damage, never set weight-transfer valve above 1000 psi ⑨.

7. While watching opener gauges, slowly adjust bypass valve knob ③ just until needles on gauges ⑥, ⑦ move down from 1500 psi. Lock bypass valve ring ② at this setting.

8. Adjust pressure-control valves ④, ⑤ to desired opener down pressure. See "**Sub-Frame Down-Force**" on page 39.

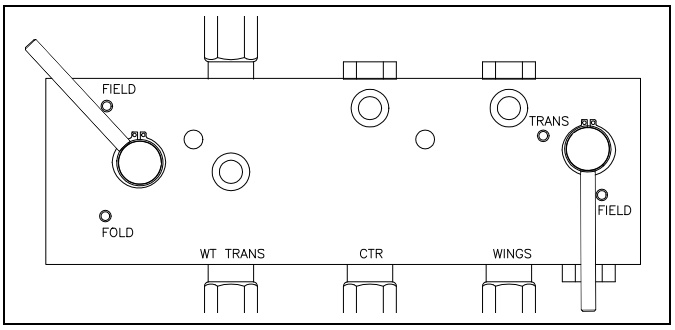


Figure 10 26372
Levers for Bypass Setup

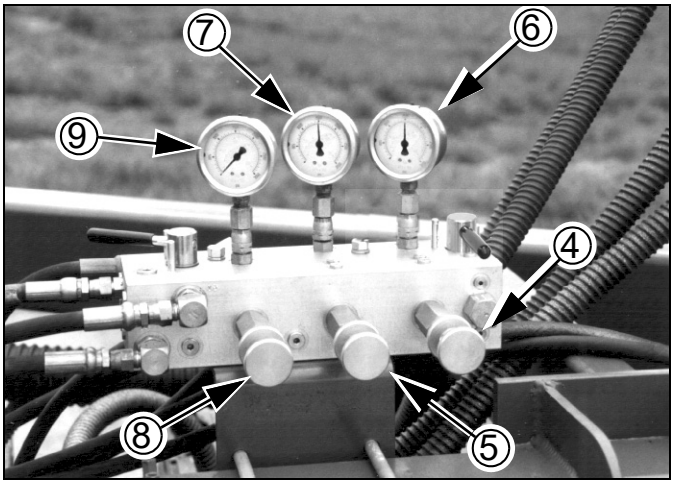


Figure 11 26457
Pre-Adjusting for Bypass

🕮 Manual valve is shown. Electric Valve does not have levers.

Eyebolt Adjustment

Refer to Figure 12

Before using the implement, check that the opener frames are level across the drill. When fully raised, the top of the opener mounts ① should clear the bottom of the top frame tube ② by at least $^{1}/_{2}$ inch (13 mm).

Adjust opener frames so all openers have the same clearance. To raise or lower an opener frame, loosen jam nut ③ on opener-lift cylinder and turn adjustment nut ④. When openers are at correct height, tighten jam nut. Repeat for each opener frame if necessary.

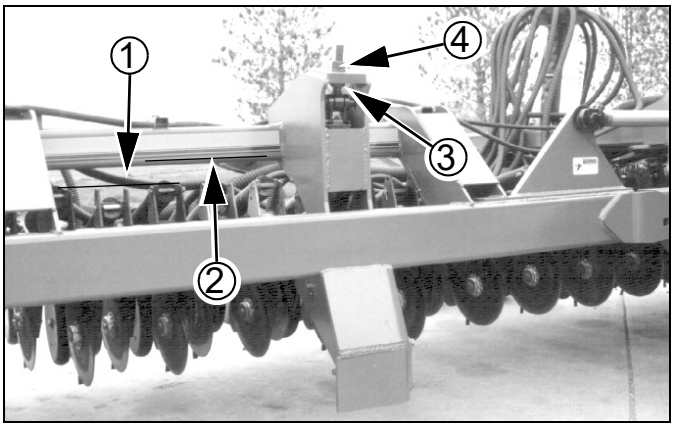


Figure 12 17159
Opener Height Eyebolt

Scraper Installation

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

1. Remove one or both disk blades to gain safe access to the mount. Note the position of bushings and spacers for correct re-assembly. See page 44.

Refer to Figure 13

2. Position the inside scraper mount ① to the rear of the seed firmer mount ② on the opener weldment.

   Secure it with two HHCS $/_8$-16∞1 inch hex head bolts, lock washers and nuts. Insert the bolts from the front.

3. Position the scraper blade ③ below and behind the inside scraper mount ①, with the notch on top to machine right.

   Secure it loosely with one RHSNB $/_8$-16∞1 inch round head square neck bolt, flat washer, lock washer and nut.

4. Re-mount the removed disk blade.

5. Adjust the scraper blade per "**Disk Scraper Adjustments**" on page 45.

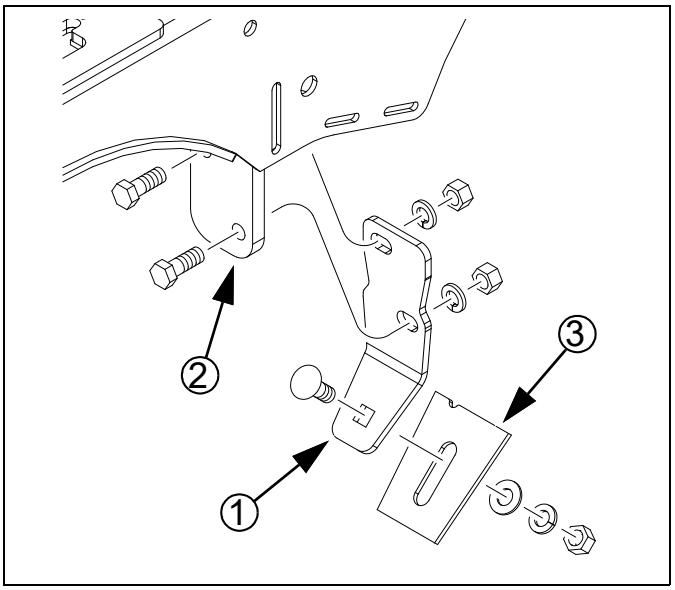


Figure 13 26460
Scraper Installation

Operating Instructions

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

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 (excluding markers) are routed through a valve block mounted on the left wing. Once set up, routine drill operations (switching between folding and lift) require setting valve handles on this block.

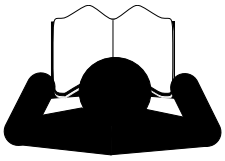
Planting Operation

Via an adjustable implement lift switch on the drill, the CTA4500/HD controls the meter drive clutch on the air cart, turning it on and off as the drill is lowered and raised.

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.

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



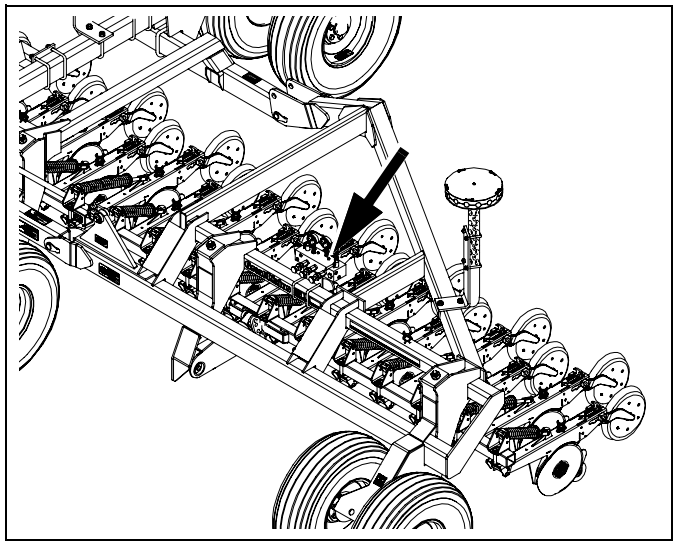
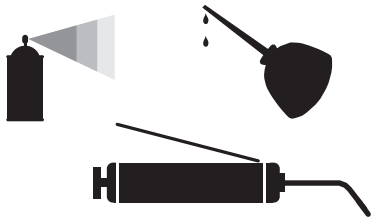


Figure 14 26377
Valve Block Location

Pre-Start Checklist

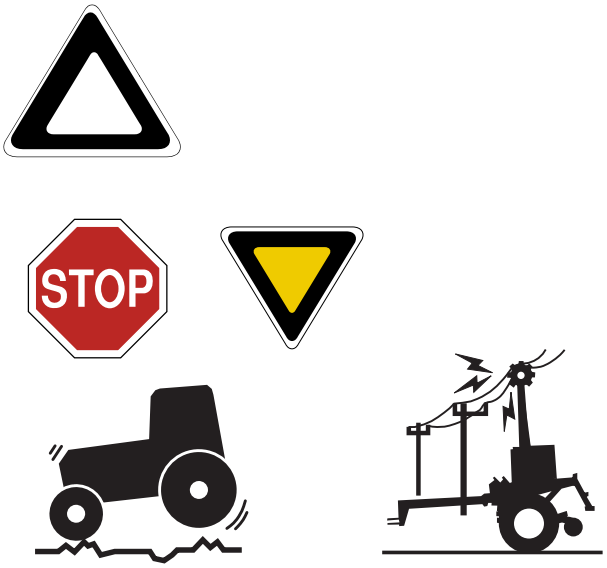


- ❑ Lubricate the drill as indicated under Lubrication, “**Maintenance and Lubrication**” on page 51.
- ❑ Check the tires for proper inflation according to “**Tire Inflation Chart**” on page 58.
- ❑ Check for worn or damaged parts and repair or replace before going to the field.
- ❑ Check all nuts, bolts and screws. Tighten bolts as specified on “**Torque Values Chart**” on page 59.
- ❑ Check implement lift switch on drill.
- ❑ Complete all pre-start checklist items on the air cart.

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 with cart empty. Although designed for highway movement when loaded, the additional weight of seed may cause the implement assembly to exceed the rated ability of the tractor, makes the assembly more difficult to control and stop, and increases wear on cart tires and wheel bearings.

The tractor needs to weigh at least $^{2}/_{3}$ (67%) of the assembled air drill weight in the table below, and it needs to be rated for the towing load.

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 km/h).*
- ▲ *Do not tow an assembled air drill implement that weighs more than 1.5 times the weight of the towing vehicle. (See table below)*

WARNING

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

Weights* for CTA4500/HD Plus Air Cart

CTA4500/HD plus	CTA4500/HD-9006 6 in (15.2 cm) Rows	CTA4500/HD-7275 7.5 in (18.9 cm) Rows	CTA4500/HD-5410 10 in (24.8 cm) Rows
ADC2350 Empty	28653 lbs (12997 kg)	27340 lbs (12401 kg)	26148 lbs (11861 kg)
ADC2350 Full	51053 lbs (23157 kg)	49740 lbs (22562 kg)	48548 lbs (22021 kg)

* Figures do not include markers. If near limit, use Appendix data to calculate actual weight of your cart and drill configuration.

Pre-Transport Checklist

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

- ❑ Make sure the weight of the tractor equals or exceeds the value specified for your air drill assembly.
- ❑ **Air Cart Checklist Complete**
  Including: cart drive chain locked-out, auger latched, hopper lids secured, ladders latched up.
- ❑ Marker Checklist Complete
  Markers must be folded or retracted, and may have transport locks or other transport considerations.
- ❑ Drill **Raised and Locked**
  Wings locked.
  Transport/Field valve handle set to TRANS.
- ❑ **Tires**
  Check that all tires are properly inflated as listed on "**Tire Inflation Chart**" on page 58.
- ❑ **Bystanders**
  Check that no one is in the way before moving. Do not allow any one to ride on the cart or implement.
- ❑ **Warning Lights**
  Always use tractor, cart and drill warning lights when transporting the air drill.
- ❑ **Clearance**
  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 58.
- ❑ **Stopping Distance**
  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**
  Comply with all national, regional and local laws when transporting on public roads.
- ❑ **Watch Traffic**
  The hoppers and drill wings obstruct a portion of your rear view. Be prepared for sudden maneuvers from following vehicles.

Figure 15 26360
Review Transport Checklist

Folding and Unfolding

Fold and unfold implement on level ground. Be aware of clearance required to fold implement. See “**Specifications and Capacities**” on page 58.

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.*

Folding the Drill, Manual Valve

Refer to Figure 16

1. If installed, fold the markers[a].
2. Set tractor circuits to neutral.
3. Set both valve handles to FIELD.
4. Activate the tractor circuit to raise the openers, and then set the circuit control to neutral (not float).

Refer to Figure 17

5. Set the Field/Transport valve handle to TRANS. This procedure hydraulically locks the openers in the raised configuration.

DANGER

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

- *Always use lock pins when implement is folded.*
- *Fold implement only if fold hydraulics operate smoothly and the tractor oil reservoir is full.*
- *Keep away and keep others away when folding or unfolding implement.*

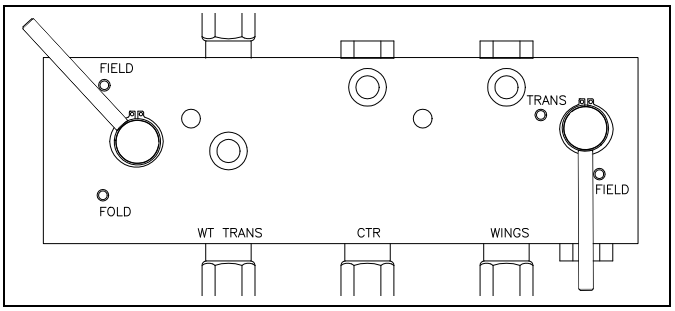


Figure 16 26372
Handles for Pre-Fold Lift

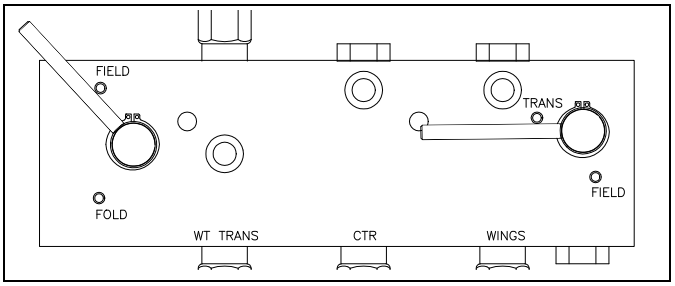


Figure 17 26373
Handles for Pre-Fold Lift-Lock

a. Great Plains does not presently offer markers for the CTA4500/HD. If installed, consult the documentation provided by the marker supplier.

Refer to Figure 18

6. Remove the wing lock pin from its storage location just outboard of the wing hinge point.

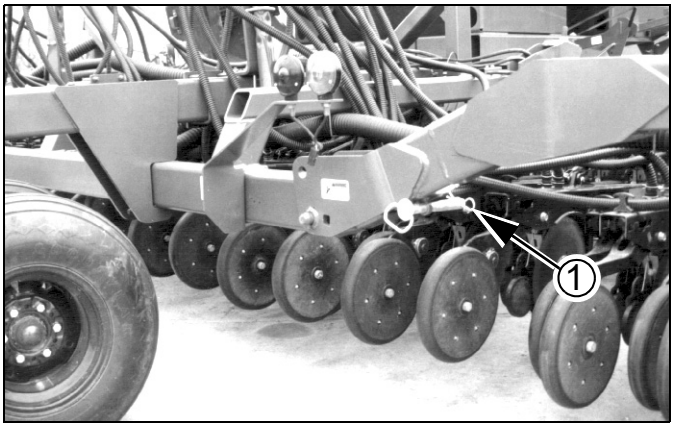


Figure 18 17155
Wing Lock Pin Stored

Refer to Figure 19

7. Turn the Field/Folding valve handle to FOLD.
8. Set tractor at low idle speed.
9. Engage tractor hydraulics and fold drill wings.

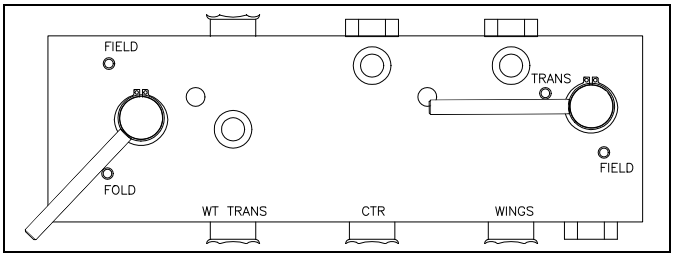


Figure 19 26373
Handles for Fold

Refer to Figure 20

10. Install wing lock pins under hinge points to secure folded wings for transport or parking.

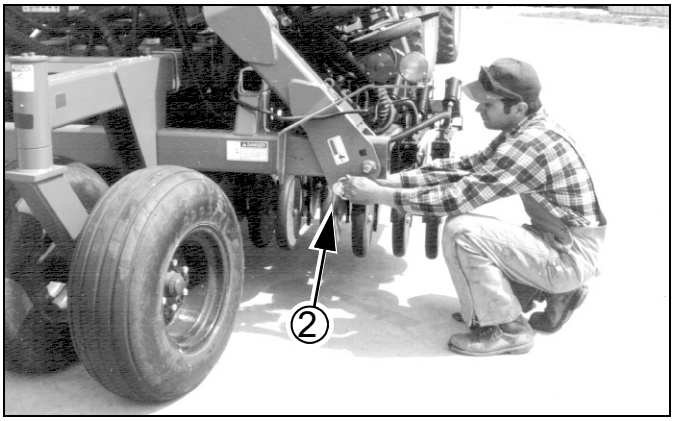


Figure 20 17171
Wing Locked Up With Pin

Folding the Drill, Electric Valve

1. If installed, fold the markers[a].
2. Set tractor remote levers to neutral.
3. Activate the tractor remote lever to raise the openers. Move the tractor remote lever to neutral (not float).
4. Start the tractor.

Refer to Figure 21

Note: The electric valve uses a different order of valve adjustment knobs. The knobs are labeled on top of the valve block. See the adjustments section for more information.

5. Press the frame control softkey to activate the FOLD/UNFOLD button. When the fold/unfold button is highlighted, the tractor remote lever can fold or unfold the machine.
6. Set tractor at low idle speed.
7. Engage tractor remote lever and fold the wings. Move the tractor remote lever to neutral.
8. Press the FOLD/UNFOLD button to remove the FOLD/UNFOLD button from the screen. When the FOLD/UNFOLD button is not shown on the screen, the tractor remote lever cannot fold/unfold the machine.

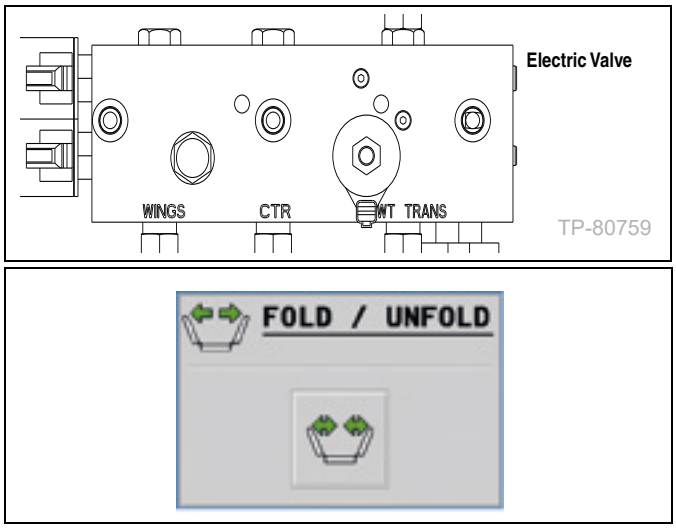


Figure 21 38891
Fold/unfold Button

Folded wings for transport or parking.

Unfolding the Drill, Manual Valve

Refer to Figure 22

1. Check that the Transport/Field handle is still set to TRANS, to keep the opener position locked and prevent unexpected movement during unfold.

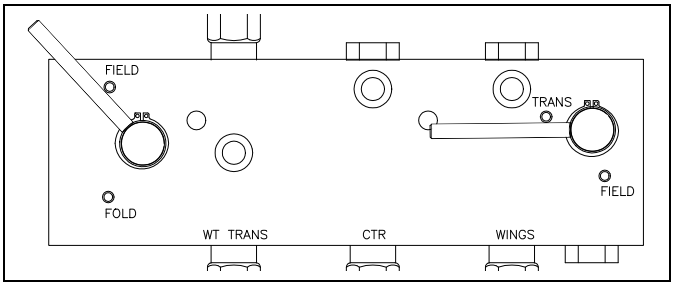


Figure 22 26373
Unfold: Check Lift-Lock

a. Great Plains does not presently offer markers for the CTA4500/HD. If installed, consult the documentation provided by the marker supplier.

Refer to Figure 23

2. Remove wing lock pins from under hinge points.

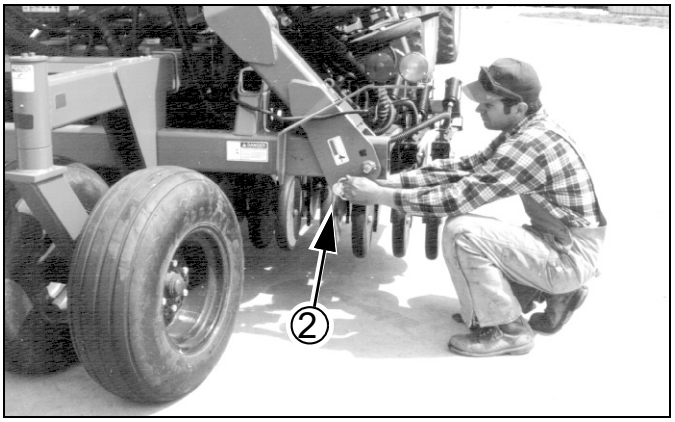


Figure 23 17171
Wing Locked Up With Pin

Refer to Figure 24

3. Set the Field/Fold valve handle to FOLD.
4. Set tractor at low idle speed.
5. Energize tractor hydraulics and slowly unfold implement.
6. Continue to unfold the implement only until each wing gauge wheel rests on ground, then return hydraulic lever to neutral.

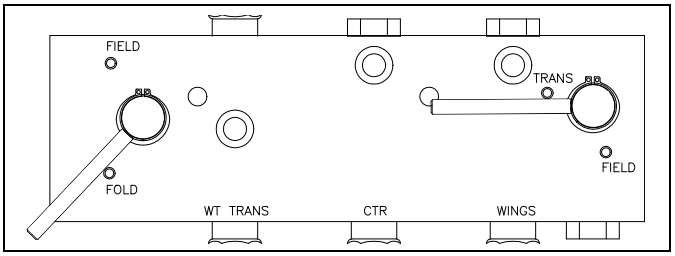


Figure 24 26373
Unfold: Activate Circuit

Refer to Figure 25

7. When sections are unfolded, move Field/Fold valve handle to FIELD, and move Transport/Field handle to FIELD.

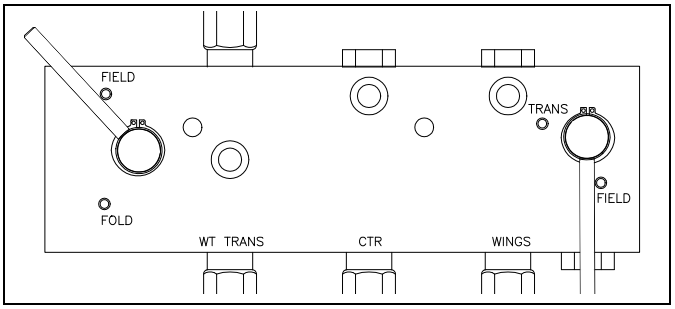


Figure 25 26372
Unfold: Completed

Refer to Figure 26

8. Install the wing lock pin just outboard of the wing hinge point to secure folded wings for transport or parking

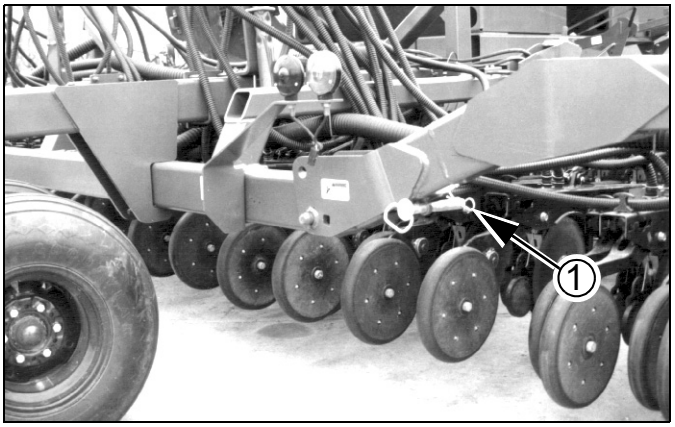


Figure 26 17155
Wing Lock Pin Stored

Unfolding the Drill, Electric Valve

Refer to Figure 27

1. If the FOLD/UNFOLD button is shown on the screen, press the FOLD/UNFOLD button. This will remove the FOLD/UNFOLD button from the screen. When the FOLD/UNFOLD button is not shown on the screen, the tractor remote lever cannot fold or unfold the machine.

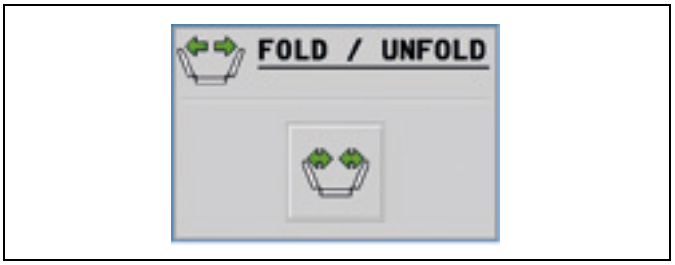


Figure 27 38891
Fold/unfold Button

Refer to Figure 28

2. Press the frame control softkey  to activate the FOLD/UNFOLD button. When the fold/unfold button is highlighted, the tractor remote lever will fold and unfold the machine.
3. Set tractor at low idle speed.
4. Energize tractor hydraulics and slowly unfold implement.
5. Continue to unfold implement only until each wing gauge wheel rests on ground, then return hydraulic lever to neutral.

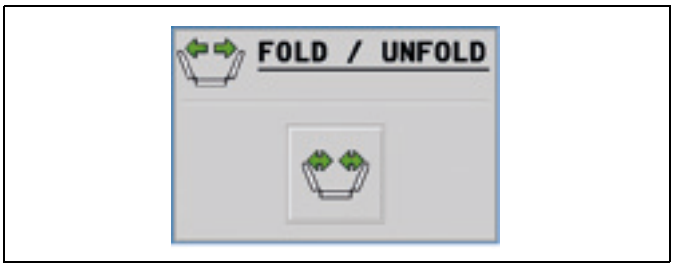


Figure 28 38891
Fold/unfold Button

Refer to Figure 29

6. Press the FOLD/UNFOLD button to remove the FOLD/UNFOLD button from the screen. In this configuration, the tractor remote lever cannot control the fold/unfold function.

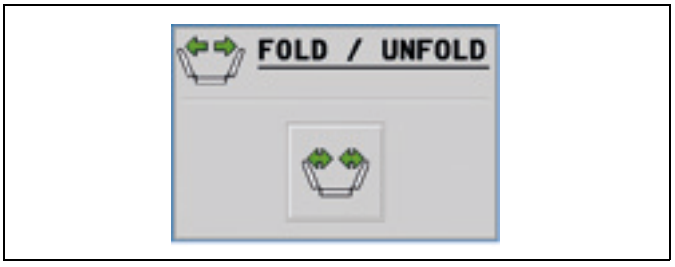


Figure 29 38891
Fold/unfold Button

Opener Operation

The hydraulic system places down pressure on the openers for consistent soil penetration across the drill–even in uneven ground.

Refer to Figure 30

Manual Valve-: Check both selector valve handles. Both selector valve handles must be in FIELD position for the hydraulic down-pressure and weight-transfer to function.

Electric Valve: The selector valves for these machines do not have handles. The hydraulic down-pressure and weight-transfer functions happen automatically through solenoids valves in valve block.

Engage tractor hydraulics for the drill's lift/fold circuit. Lock hydraulic lever forward during field operation for constant hydraulic flow to openers.

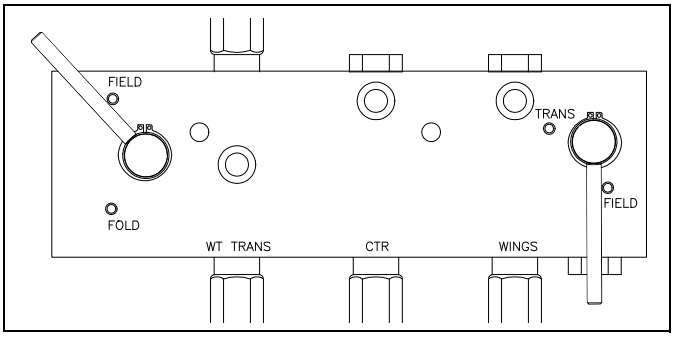


Figure 30 26372
Planting: Valve Handles

📖 Manual valve shown. Electric valve does not have levers.

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.

After first initial operation of the drill, inspect the opener mounting bolt and nut for proper torque. This check should be repeated before each drilling season. See "**Opener Mounting Bolt**" on page 54 for additional information on torque and maintenance.

NOTICE

*If the tractor has a load-sensing or constant-flow hydraulic system, the drill must be equipped with an optional bypass valve to avoid tractor damage. See "**Hydraulic Bypass Valve Kit**" on page 55 for ordering.*

Initial Frame Down-Pressure

Refer to Figure 31

7. Set opener down pressure. There is one pressure-control valve for wing sections ① and one for center section ②.

   Initially set down pressure at 1400 psi, as indicated on the gauges ③, ④. Then adjust as field condition warrant.

   For more information on adjusting opener hydraulic down, refer to See “**Sub-Frame Down-Force**” on page 39.

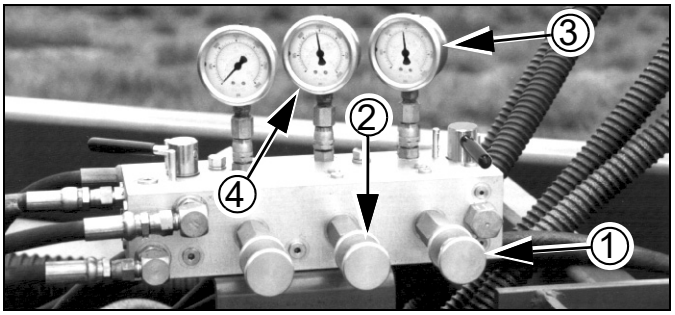


Figure 31 26458
Set Opener Down-Pressure

📖 Manual valve shown. Electric valve does not have levers.

Initial Seeding Depth

Refer to Figure 32

8. Set opener seeding depth by adjusting press-wheel height ①. To adjust, first raise openers slightly, then lift and slide T handles ② on top of openers Adjust all press wheels to the same height. T handles adjust at $^{1}/_{4}$ inch (6.4 mm) seeding depth change per minimum handle step. The range is approximately 0 to $3^{1}/_{2}$ inch (0-8.9 cm) seeding depth.
   - For more shallow seeding, slide T handles forward Ⓕ toward implement.
   - For deeper seeding, slide T handles backward Ⓑ away from implement.
9. 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 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 (S/N C1010Y-)**” on page 35.

For information on opener adjustments, “**Row Unit Adjustments**” on page 42. For information on troubleshooting opener problems, see “**Troubleshooting**” on page 48.

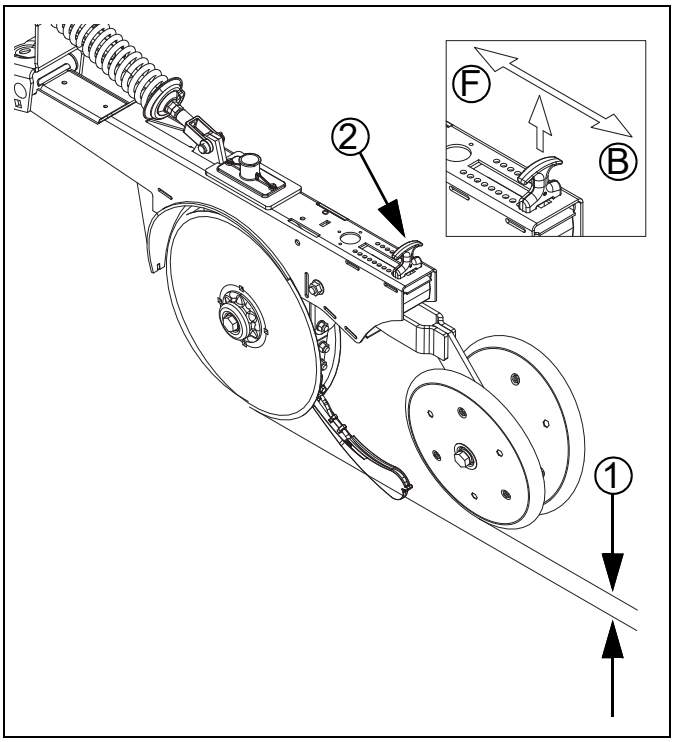


Figure 32 26441
Initial Opener Depth

Fan Speed

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

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.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

Refer to Figure 33

Open fan shutoff valve for fan operations.

NOTICE

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.

NOTICE

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.

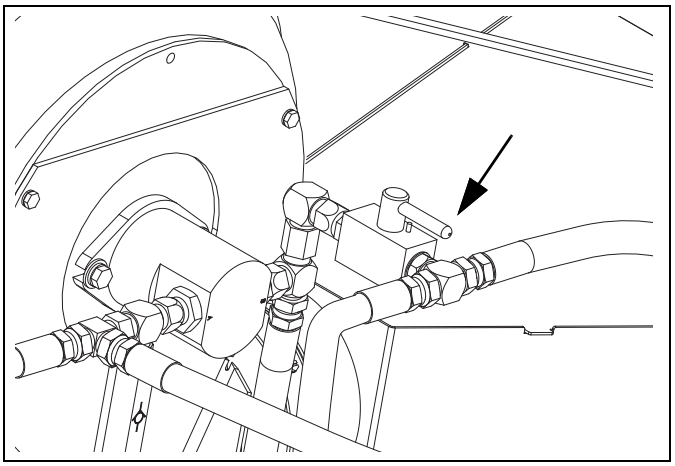


Figure 33 26418
Fan Shutoff Valve Open

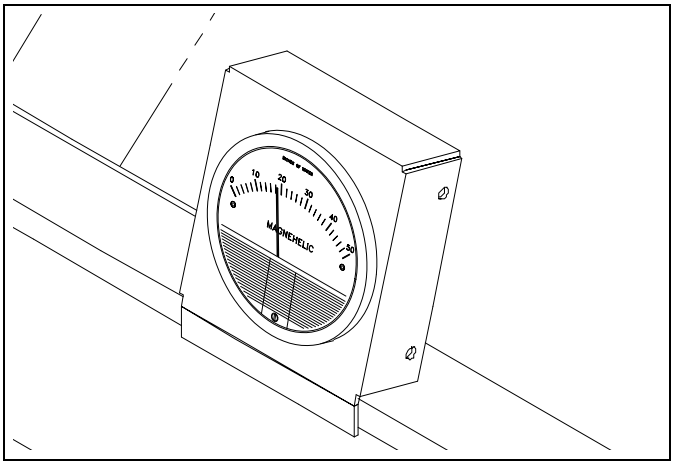


Figure 34 26425
Fan Air Pressure

Weight Transfer

While seeding, weight is hydraulically transferred from the center section to the wings so all frame sections run at the same depth.

Manual Valve: This transfer happens automatically whenever the valve block is set to FIELD operations, and the WT TRANS valve has been set to any pressure above zero.

Electric Valve: This transfer happens automatically through solenoid valves in the valve block.

If insufficient weight is transferred, the wings will run higher than the center section. If excess weight is transferred, the center runs higher. To make adjustments, see "**Adjusting Weight Transfer**" on page 38.

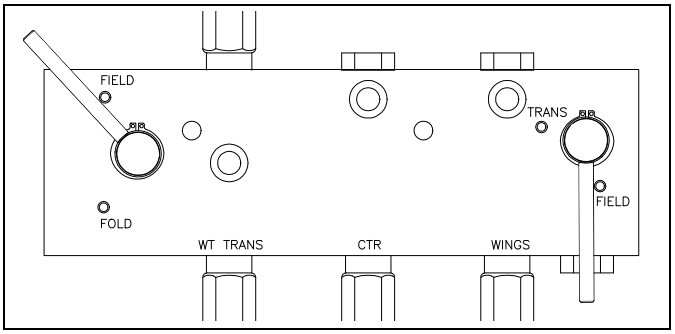


Figure 35 26372
Handles for Weight Transfer - Manual Valve Only

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.

Refer to Figure 36 and Figure 37

Markers use hydraulic receptacles Ⓐ and Ⓑ on the air cart. Any markers are on a separate hydraulic circuit on the drill.

Markers share a circuit with the air cart's auger, controlled by a two-position selector valve located at: ADC2350: front right corner of the front bulk hopper ADC1150/2220: outside of left tongue Handle ① settings: ② Drill marker circuit enabled (auger off); ③ Cart auger circuit enabled (markers off) At the drill, markers are typically controlled by a local automatic sequence valve or solenoid valve (from a cab switch).

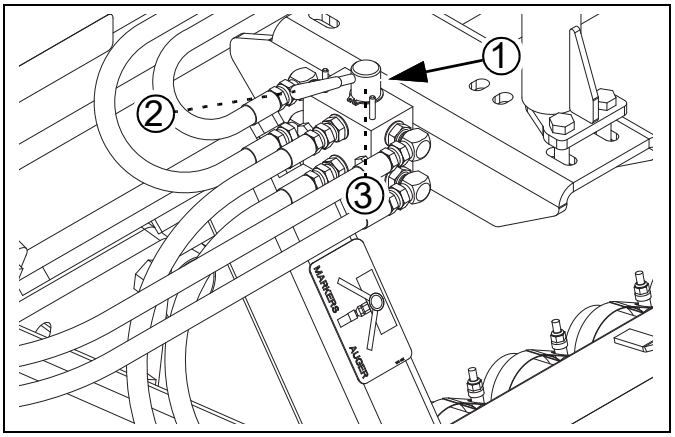


Figure 36 26417
ADC2350 Cart Selector Valve

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.

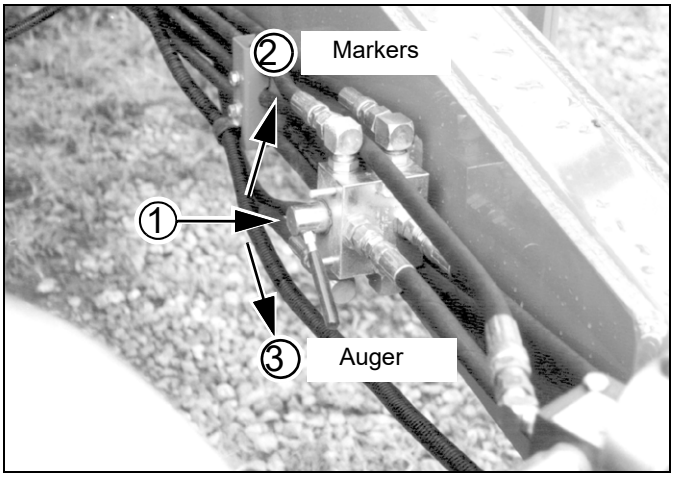


Figure 37 16221
ADC1150/2220 Selector Valve

Final Field Checklist

- ❑ Master switch On
- ❑ Set seed meters per chart or calibration.
- ❑ Check cart fan valve set On for fan.
  Check cart selector valve set to markers.)
- ❑ Set fan to speed suitable for seed. Watch fan at start-up to ensure correct direction of rotation.
- ❑ Run fan for at least 15 minutes before planting.
- ❑ Check fan air pressure gauge for 12 to 25 inches of water pressure.
- ❑ Check all seed hoses secure.
- ❑ Check for air leaks at lids and meter box seals.
- ❑ Drill unfolded.
- ❑ Drill valve handles set to FIELD.

Planting Sequence

1. Lower drill 5 to 10 feet (1.5-3 m) before initial seeding point.
2. Pull forward and begin planting.
3. Raise drill for turns (meters stop automatically).

Planting

Be aware of the 5 to 30 feet (1.5-9 m) of drill-lowered operating distance required for seed in the row units.

If you stop in the middle of a pass, raise the drill and back up 20 feet (6 m) before resumption of seeding to avoid skips.

Seed Monitor

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

On the drill:

- Implement lift switch monitoring
- Seed flow blockage (optional)
- On the Air Cart:
- Fan Speed monitoring
- Hopper material level monitoring
- Hopper air pressure monitoring (ADC2350 only)
- Meter rate monitoring (ADC2350 only)
- 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. Fold as necessary for the parking space available.
3. Set the Transport/Field valve handle to TRANS.
4. Perform the air cart parking checklist.
5. Securely block cart 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 $2^{1}/_{2}$ 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 CTA4500/HD has double-disk openers with depth-controlling press wheels mounted on floating opener frames. 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. Opener bodies are staggered for easy soil flow. All openers pivot on a common axis to maintain consistent depth as the opener frames follow contours. A spring provides the down pressure necessary for opener double disks to open a seed furrow. The spring allows openers to float down into depressions and up over obstructions. Individual openers can be adjusted to account for tire tracks.

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)
- Sub-Frame Down-Force,
- Row Unit Down Pressure (Spring),
- Opener Height,
- Opener-Subframe Adjustment,
- Frame Weight (at higher pressures), and;
- Disk Blade Adjustments (as blades wear).

Adjustment	Page	The Adjustment Affects
Frame Level	35	Section-to-section planting consistency
Implement Lift Switch Adjustment	35	Avoiding wasted and unplanted seed
Sub-Frame Down-Force	39	Consistent seeding depth
Opener-Subframe Adjustment	40	Level row unit running in desired pressure range
Frame Weight	37	Achieving higher down-force settings
Adjusting Weight Transfer	38	Equal seeding depth under wings and center section
Row Unit Adjustments	42	
Opener Height	43	Seeding depth in tire tracks
Row Unit Down Pressure (Spring)	43	Level row units and consistent seeding depth in tire tracks
Disk Blade Adjustments	44	Consistent seeding depth
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

Other than “**Eyebolt Adjustment**” on page 17, there is no specific setup adjustment for leveling the wings to the center section. 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:

- opener sub-frame adjustment: all gauge wheel trunnions in same frame pivot holes - see “**Opener Down Force**” on page 40
- weight transfer setting - see “**Adjusting Weight Transfer**” on page 38
- opener pivot height: all openers pivoting in same hole at their mounts (possibly excepting rows in tire tracks) - see page 43
- opener press wheel height: all row units set the same - see page 46
- opener spring down-force: all row units set the same (possibly excepting rows in tire tracks) - see page 43

Implement Lift Switch Adjustment (S/N C1010Y-)

Refer to Figure 38 (which, for clarity, depicts the switch region without openers or gauge wheel)

An implement lift switch on the implement turns seed metering off when the implement 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. Locate the implement lift switch ① on the front center of the mainframe.
3. Raise openers completely and lock them up by setting Transport/Field valve handle to TRANS.
4. Loosen switch mount bolts ② and slide switch up or down until actuator ③ makes contact with the opener subframe arm ④ and switch is reliably toggled on (up).
5. Tighten bolts.

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

If opener eyebolt adjustment is changed (see page 17), re-check drill height switch.

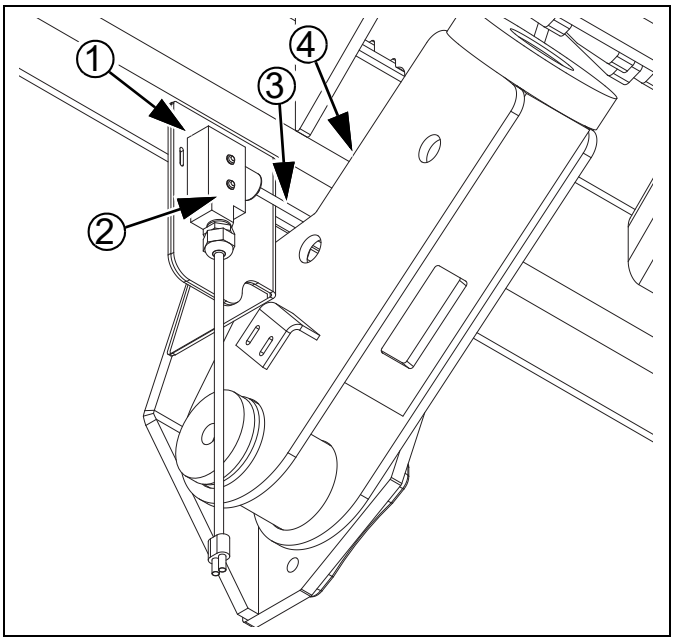


Figure 38 26394
ADC2350 Implement Lift Switch

📖 For reference, the ADC2350 lift switch wiring is:
Black (switch COM) to black (extension)
Red (switch N.C.) to red (extension)
Green (switch N.O.) not connected
Circuit open when drill is raised.

Implement Lift Switch Adjustment (S/N C1011Y+)

Refer to Figure 39

The implement lift switch is a proximity type switch. 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.

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 could 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. Locate the lift switch ①. Check the distance between the face ② of the lift switch and the opener subframe arm ③. The distance must be $^{5}/_{16}$ 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 ④ 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 on to off.
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.

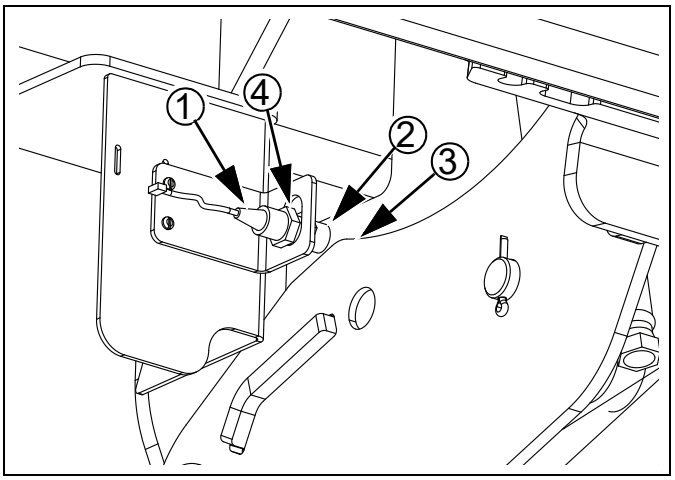


Figure 39 68492
ADC2350 Implement Lift Switch

🕮 NOTE: If eyebolt (opener frame height) adjustment is changed (see page 17), adjust the implement lift switch.

Frame Weight

The standard CTA4500/HD includes four weight kits on the center frame. Each kit consists of one pair of 750 pound (340 kg) weights, for an drill total of 6000 lbs (2720 kg). This is the maximum allowed. Install no additional weights.

This extra weight is necessary for opener down-force settings which, when summed for all rows, are near or above the total weight of the drill.

In unusually soft soil conditions, remove weights to reduce weight on the tires. Remove the weights in pairs, from symmetrical locations about drill centerline.

The weights are held in place by gravity, and are easily removed with a hoist rated for at least 750 pounds (340 kg).

⚠ DANGER

Tipping Hazard: *Never add weights to the wings. The weights will tip over during folding. Even if secured to the frame, machine damage is likely. Wing weights are also unnecessary. The hydraulic weight transfer system is capable of transferring the entire weight of the drill to the wings.*

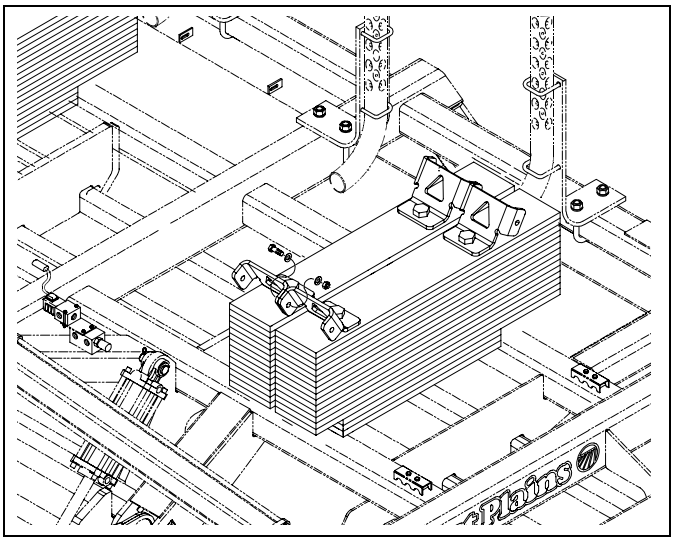


Figure 40 16953
Frame Weights

	Implement Model and Row Spacing		
	CTA4500HD-9006 6 in. (15.2 cm.)	**CTA4500HD-7275 7.5 in. (18.9 cm.)**	**CTA4500-5410 10 in. (24.8 cm.)**
8: Implement with standard weights	25316 lbs. (11483 kg.)	23813 lbs. (10801 kg.)	22310 lbs. (10120 kg.)
8: Maximum Down Force Per Row	281 lbs. (128 kg.)	331 lbs. (150 kg.)	413 lbs. (187 kg.)
6: Implement with 3 weight kits (-1)	23816 lbs. (10803 kg.)	22313 lbs. (10121 kg.)	20810 lbs. (9439 kg.)
6: Maximum Down Force Per Row	265 lbs. (120 kg.)	310 lbs. (141 kg.)	385 lbs. (175 kg.)
4: Implement with 2 weight kits (-2)	22316 lbs. (10122 kg.)	20813 lbs. (9441 kg.)	19310 lbs. (8759 kg.)
4: Maxmum Down Force Per Row	248 lbs. (112 kg.)	289 lbs. (131 kg.)	358 lbs. (162 kg.)
2: Implement with 1 weight kit (-3)	20816 lbs. (9442 kg.)	19313 lbs. (8760 kg.)	17810 lbs. (8078 kg.)
2: Maximum Down Force Per Row	231 lbs. (105 kg.)	268 lbs. (122 kg.)	330 lbs. (150 kg.)
0: Implement with weights removed	19316 lbs. (8762 kg.)	17813 lbs. (8080 kg.)	16310 lbs. (7398 kg.)
0: Maximum Down Force Per Row	215 lbs. (97 kg.)	247 lbs. (112 kg.)	302 lbs. (137 kg.)

Adjusting Weight Transfer

The amount of weight transferred to the wings is set by the “WT TRANS” valve on the drill’s valve block. To make adjustments:

Refer to Figure 41

1. **Manual Valve**: Make sure both selector valve handles are set to FIELD position.
2. **Electric Valve**: The selector valves for these machines do not have handles. Weight transfer operation happens automatically through solenoid valves in the valve block.
3. Lower openers to ground and leave hydraulics active and drill circuit engaged as for planting.
4. Release lock ring ① on WT TRANS control knob.
5. Watch pressure gauge ② while turning pressure-control valve knob ③. When facing the valve, turn knob clockwise to increase weight on wing sections, and counterclockwise to decrease weight on wings sections.

📖 Typical pressures on gauge ② should be 200 to 800 psi.

Do not exceed 800 psi. A relief valve on the valve block transfer circuit begins to bypass at 800 psi. Attempting to operate above 800 psi causes oil heating and may reduce power to the fan.

If operation at 800 psi is necessary, set the pressure above 800 and back off until the gauge needle moves to just below 800. If the needle is not moving during adjustment, the relief valve is probably bypassing.

6. When satisfied with planting depth, wing level and gauge reading, raise openers while watching pressure gauge. Gauge reading should drop as the openers are raised.
7. Secure lock ring ① on WT TRANS control knob.

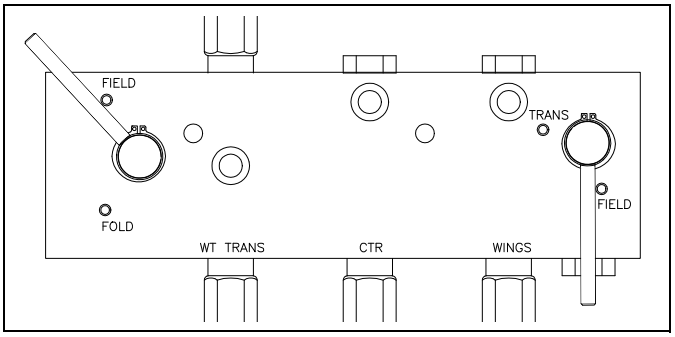


Figure 41 26372
Enable Transfer Adjust

📖 Manual valve is shown. Electric valve does not have levers.

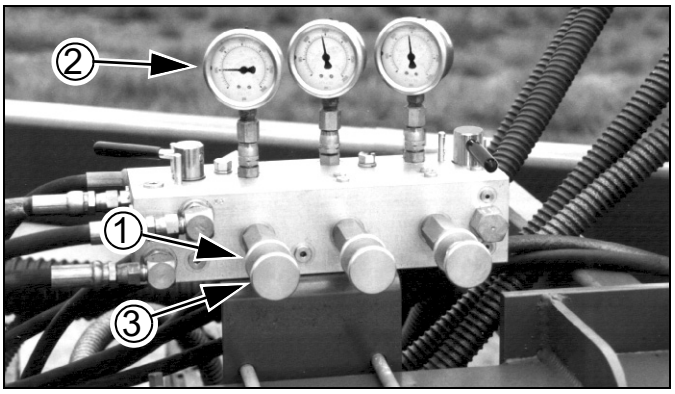


Figure 42 25459
Adjusting Weight Transfer

📖 Manual valve is shown. Electric valve does not have levers. The electric valve adjustment knobs are in a different order left to right. Look at the etched labels on the valve block to confirm what circuit you are adjusting.

Sub-Frame Down-Force

Opener down pressure controls opener penetration and press-wheel soil firming. Use only enough down pressure to cut the furrow and maintain proper soil-firming over seed. Excessive opener down force will lead to premature wear on opener components.

NOTICE

*Some tractors with load-sensing or constant-flow hydraulics need a bypass valve with the CTA4500/HD. See "**Hydraulic Bypass Valve Kit**" on page 55. Before adjusting opener down pressure, set bypass valve per "**Load Sensing Setup**" on page 16.*

Hydraulic Down Pressure

Refer to Figure 43

1. **Manual Valve**: Make sure both selector valve handles are set to FIELD position for down force adjustments.
2. **Electric Valve**: The selector valves for these machines do not have handles. Weight transfer operation happens automatically through solenoid valves in the valve block.

Refer to Figure 44

3. There is one pressure-control valve for wing sections ① and one for center section ②.
4. With hydraulic power to the drill, release the lock-rings, and rotate the knobs to adjust pressure, while watching the readings on the gauges. Rotating the knob clockwise increases pressure.
5. Set opener down pressure to 1400 psi as a general starting point. For most field conditions, adjust the hydraulic down pressure between 1000 and 2200 psi.
6. For pressures at and above 1600 psi, make sure drill has enough weight available per opener. see "**Frame Weight**" on page 37.
7. For pressures above 1600 psi, see "**Opener Down Force**" on page 40.
8. Do not set opener down pressure above 2200 psi.
9. Refer to the chart on the next page for approximate force at the openers for a given control-valve setting.

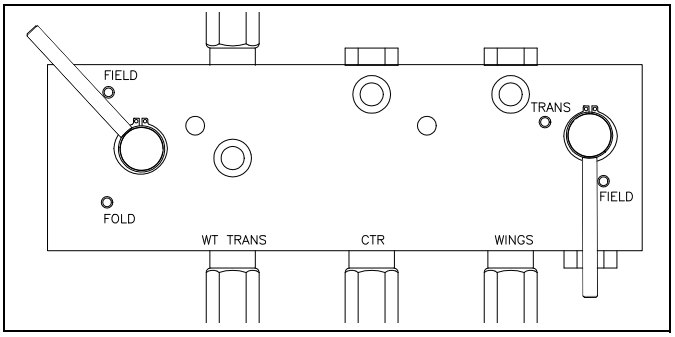


Figure 43 26372
Down Force Valves

📖 Manual valve is shown. Electric valve does not have levers.

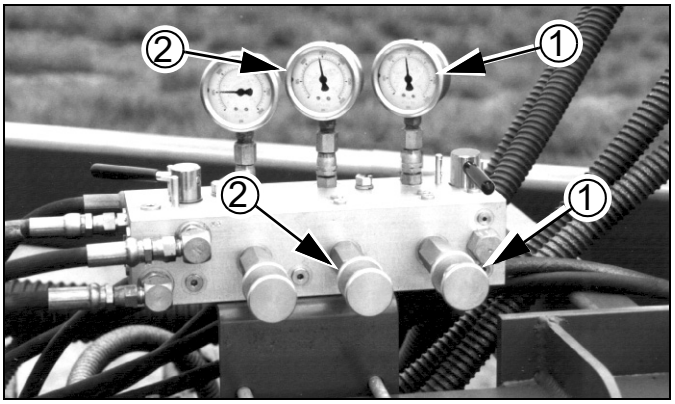


Figure 44 26459
Adjusting Frame Down Force

📖 You can set center section pressure slightly higher than wing pressure, to account for soil compaction from tractor, cart and drill.

📖 Manual valve is shown. Electric valve does not have levers. Electric valve adjustment knobs are in a different order on the hydraulic block. Look at the etched labels on the valve block to confirm what circuit you are adjusting.

Opener Down Force

	CTA4500HD Row Spacing		
Valve	6in (15.2 cm)	7.5in (18.9 cm)	10in (24.8 cm)
200 psi	116 lbs. (52 kg.)	119 lbs. (54 kg.)	133 lbs. (60 kg.)
300 psi	121 lbs. (55 kg.)	127 lbs. (57 kg.)	144 lbs. (65 kg.)
400 psi	127 lbs. (58 kg.)	134 lbs. (61 kg.)	155 lbs. (70 kg.)
500 psi	132 lbs. (60 kg.)	141 lbs. (64 kg.)	166 lbs. (75 kg.)
600 psi	137 lbs. (62 kg.)	147 lbs. (67 kg.)	175 lbs. (80 kg.)
700 psi	140 lbs. (63 kg.)	151 lbs. (69 kg.)	182 lbs. (82 kg.)
800 psi	143 lbs. (65 kg.)	156 lbs. (71 kg.)	190 lbs. (86 kg.)
900 psi	148 lbs. (67 kg.)	162 lbs. (73 kg.)	197 lbs. (90 kg.)
1000 psi	152 lbs. (69 kg.)	167 lbs. (76 kg.)	207 lbs. (94 kg.)
1100 psi	153 lbs. (69 kg.)	170 lbs. (77 kg.)	211 lbs. (95 kg.)
1200 psi	160 lbs. (73 kg.)	178 lbs. (81 kg.)	222 lbs. (101 kg.)
1300 psi	164 lbs. (74 kg.)	183 lbs. (83 kg.)	230 lbs. (104 kg.)
1400 psi	168 lbs. (76 kg.)	189 lbs. (86 kg.)	239 lbs. (108 kg.)
1500 psi	172 lbs. (78 kg.)	193 lbs. (88 kg.)	244 lbs. (111 kg.)
Downforce settings above 1600 PSI require an adjustment to the openersubframe arms. See next page.			
1600 psi	176 lbs. (80 kg.)	199 lbs. (91 kg.)	254 lbs. (115 kg.)
1700 psi	180 lbs. (82 kg.)	204 lbs. (92 kg.)	260 lbs. (118 kg.)
1800 psi	186 lbs. (84 kg.)	211 lbs. (96 kg.)	269 lbs. (122 kg.)
1900 psi	189 lbs. (86 kg.)	217 lbs. (98 kg.)	278 lbs. (126 kg.)
2000 psi	193 lbs. (87 kg.)	222 lbs. (101 kg.)	286 lbs. (130 kg.)
2100 psi	197 lbs. (90 kg.)	228 lbs. (104 kg.)	294 lbs. (133 kg.)
2200 psi	202 lbs. (92 kg.)	234 lbs. (106 kg.)	303 lbs. (137 kg.)
2300 psi	206 lbs. (93 kg.)	240 lbs. (109 kg.)	311 lbs. (141 kg.)

The standard CTA4500HD can generate every down-force setting in this table;
however, if weight kits have been removed, some settings cannot be reached.
One weight kit required (no more than 3 of the standard 4 kits removed)
Two weight kits required (no more than 2 of the standard 4 kits removed)
Three weight kits required (no more than 1 of the standard 4 kits removed)

Opener-Subframe Adjustment

At higher down-pressures (above 1600 psi), the row units can tend to tip forward. An adjust to the mainframe/subframe pivot corrects this.

Refer to Figure 45 and Figure 46

The opener tool bar ① is supported entirely by eight arms ② at the lift cylinders (not shown). The trunnion ③ at the arm end is connected to the tool bar by a lower pivot bolt ④ which is never moved.

The arm-tool bar angle is controlled by an upper adjustment bolt ⑤, which occupies one of two positions.

- For low-to-1600 psi down pressures, the adjustment bolt occupies the middle hole ⑤ of the frame mount and trunnion.
- Above 1600, the adjustment bolt occupies the top hole ⑥ of the frame mount and trunnion.

Set all arms the same.

To change the bolts (to high pressure):

1. Have a jack at hand.
2. Loosen the nuts on all the top bolts ⑤.
3. Lower the opener sub-frames.
4. Leave the valve handles set to FIELD.
5. Put the tractor hydraulic circuit in float.
6. Place jack under an opener tool bar at an arm ①.
7. Lift the tool bar until the bolt is free.
8. Remove the bolt.
9. Repeat step 6 through step 8 the other arm of the subframe.
10. Raise the jack until the top holes are aligned.
11. Insert the bolt in the top hole ⑥ and spin on a nut.
12. Repeat step 6 through step 11 for each sub-frame.
13. Tighten all nuts.

Changing from high to low is similar, except lower the jack at step 7 and reverse the bolt movement.

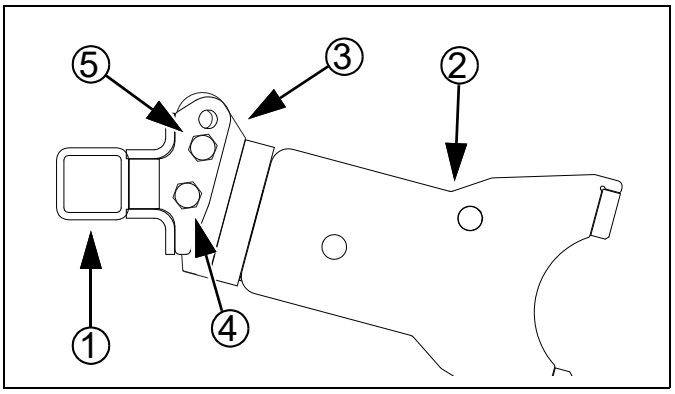


Figure 45
Standard Down Force
(below 1600 psi)

26383

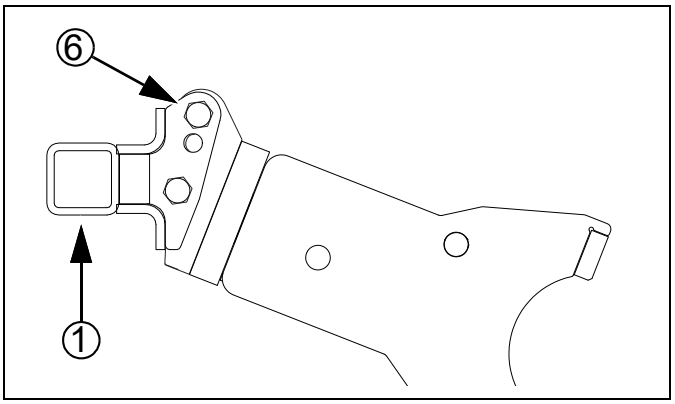


Figure 46
High Down Force
(above 1600 psi)

26384

Row Unit Adjustments

Refer to Figure 47 (which depicts a row unit fully populated with all optional accessories supported for use with the CTA4500/HD drill)

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

1. Opener height adjustment: standard
   If a few rows need to run deeper, such as in tire tracks, the arm's pivot point may be lowered. See "**Opener Height**" on page 43.
2. Single Down Pressure Spring: standard
   Each row unit is mounted on the drill as a pivoting arm which allows the row unit to independently move up and down. The adjustable spring provides the force to get the row unit and attachments into the soil. See "**Row Unit Down Pressure (Spring)**" on page 43.
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 44.
4. Seed delivery tube: standard
   No adjustments are necessary.
5. Disk Scraper: optional
   In sticky soils, a scraper helps keep the opener disks operating freely. See "**Disk Scraper Adjustments**" on page 45.
6. Seed firmer: seed flap (not shown) standard:

   Keeton® seed firmer (shown)
   Improves seed-soil contact, and provides a stable arm for a low-rate liquid fertilizer delivery tube. See See "**Keeton® Seed Firmer Adjustment**" on page 45.

   Seed-Lok® firming wheel (not shown)
   Improves seed-soil contact. See "**Seed-Lok® Seed Firmer Lock-Up**" on page 46.
7. T-handles set opener depth by adjusting press wheel height. See "**Opener Depth (Press Wheel Height)**" on page 46.
8. 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.

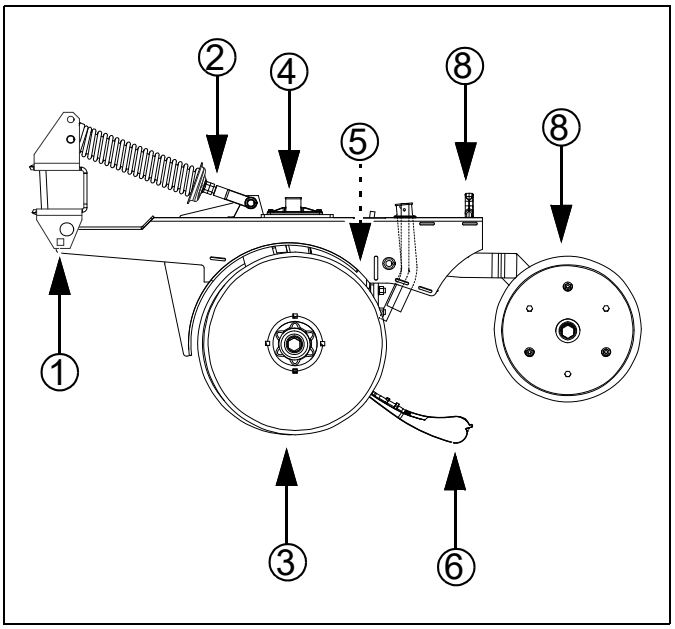


Figure 47 26427
00HD Series Row Unit

NOTICE

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

Opener Height

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

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

Refer to Figure 48

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

🕮 No spring tension or position adjustment is required. The pivot holes are designed for neutral effect on spring tension. The bolt at the top end of the spring uses a hole ③ that depends on spring length, and not opener height.

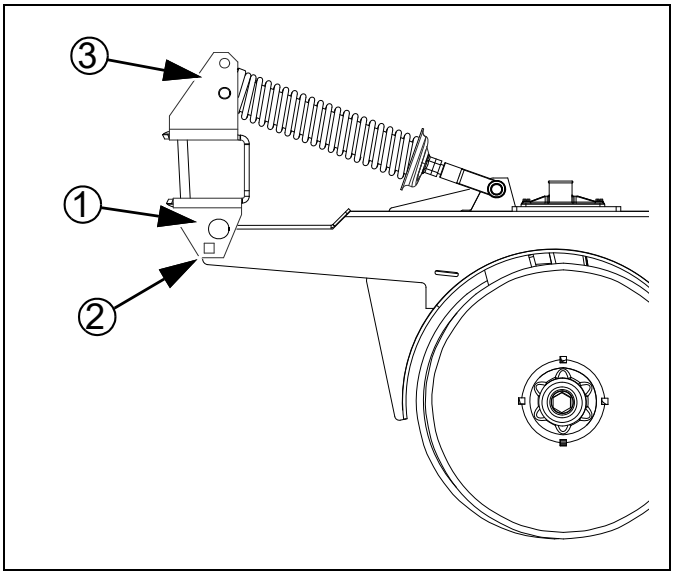


Figure 48 26427
Pivot Point Bolt Holes

Row Unit Down Pressure (Spring)

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

Refer to Figure 49 and Figure 50

To increase spring pressure:

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

🕮 Each $^{1}/_{4}$ inch adjustment adds about 17 pounds of force at opener disk (approximately 12 kg per cm).

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

The length ② of the spring is factory-set to: $12^{9}/_{16}$ inch (31.9 cm). The reference points for this length are the center of the upper/front clevis pin ③ and the top edge of the lower/rear spring stop cup ④.

The factory preset length is recommended for conventional till and min-till conditions. Shorten it for rows in tracks or no-till conditions. The minimum recommended length is: $12^{1}/_{4}$ inch (31.1 cm).

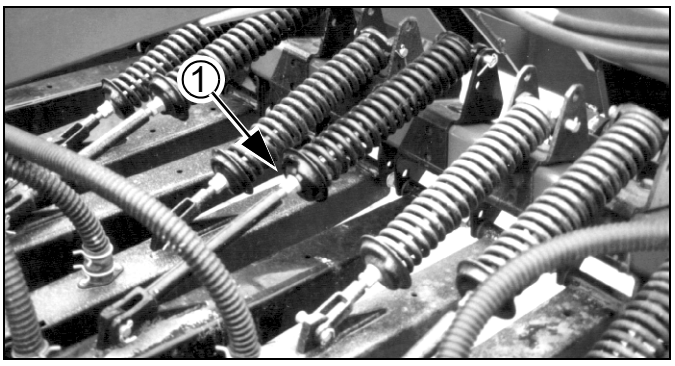


Figure 49 17158
Row Unit Spring Tension

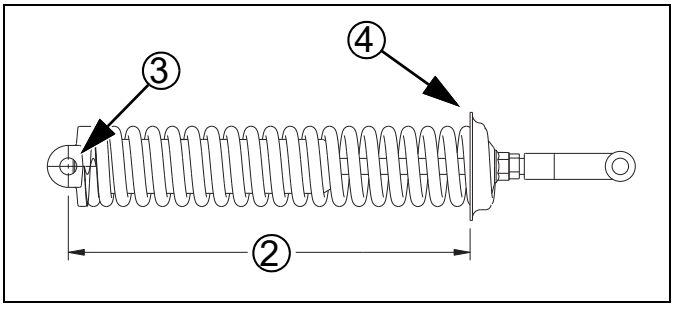


Figure 50 26452
00HD Spring Length

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 51

The ideal spacing causes the blades to be in contact for about one inch. If you insert two pieces of paper between the blades, the gap between them should be 0 to $1^{3}/_{4}$ inch (0-4.4 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.

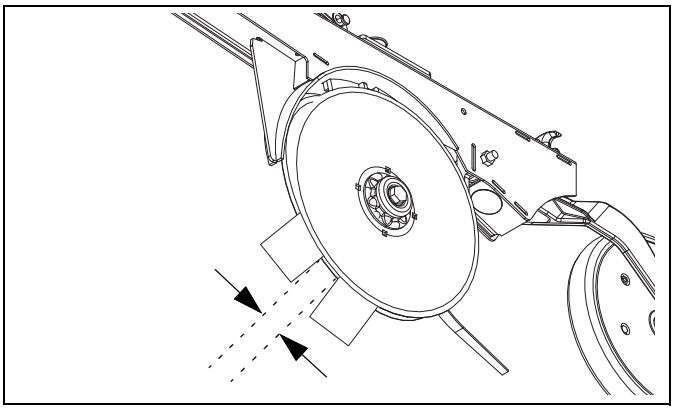


Figure 51 26395
Checking Disk Contact

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 52

1. Raise the drill and lock it up by moving the Transport/Field handle to TRANS.
2. Remove the bolt ① retaining the opener disc on one side. Carefully remove the disc ②, noting how many spacers ③ are outside the flange dust cover ④ and inside the disk. Do not lose the hub components and spacers.
3. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside to the outside of the flange dust cover.
4. Re-assemble and check disc contact.

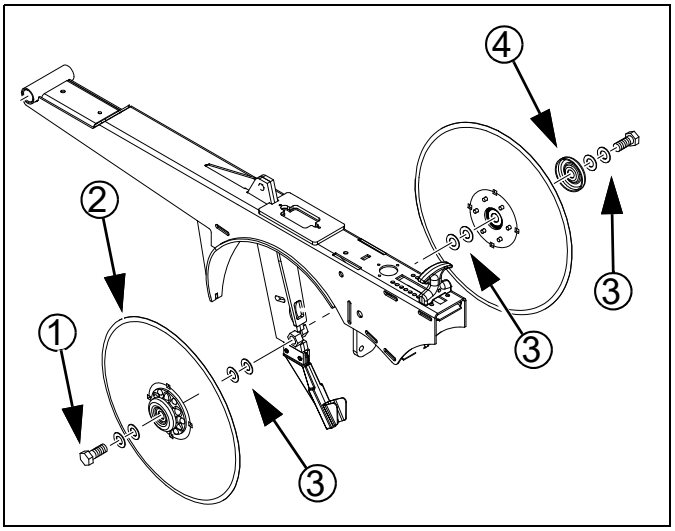


Figure 52 26385
Adjusting Disk Spacers

Disk Scraper Adjustments

Disk scrapers are optional. See page 57 for ordering information. To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as disks rotate.

Refer to Figure 53

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 nut ① and move scraper blade ② as needed.

⚠ CAUTION

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

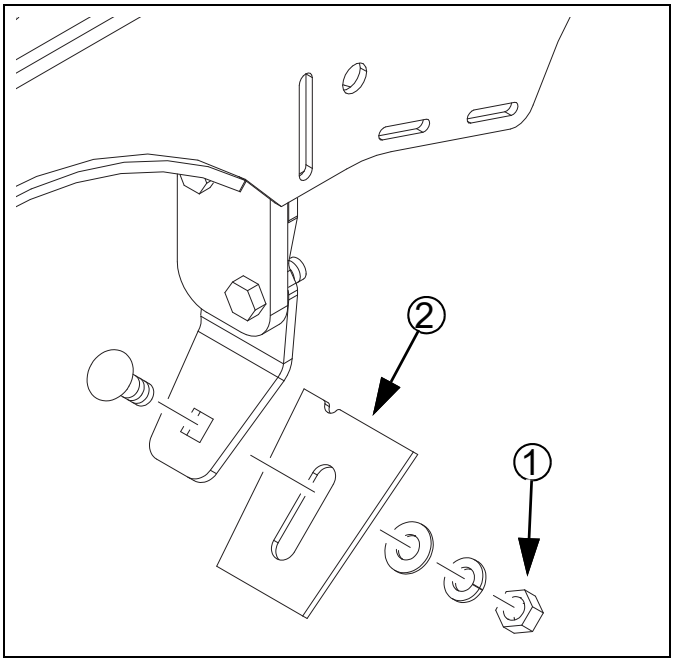


Figure 53 27075
Opener Disk Scraper

Seed Firmer Adjustments

00HD 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 drill until the disks of the row units are resting on the ground.

Keeton® Seed Firmer Adjustment

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

Refer to Figure 54

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

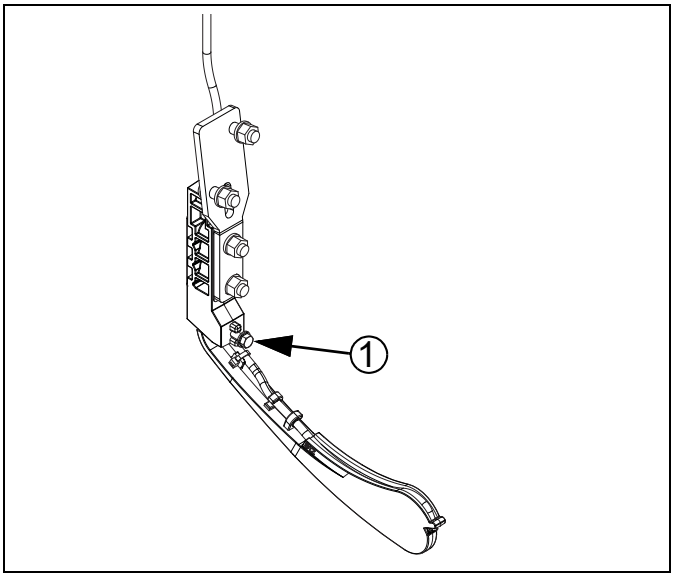


Figure 54 26443
Keeton® Seed Firmer

Seed-Lok® Seed Firmer Lock-Up

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

Refer to Figure 55

To lock up Seed-Lock wheels:

1. Pull up on Seed-Lok® arm ①.
2. Raise lever ②.

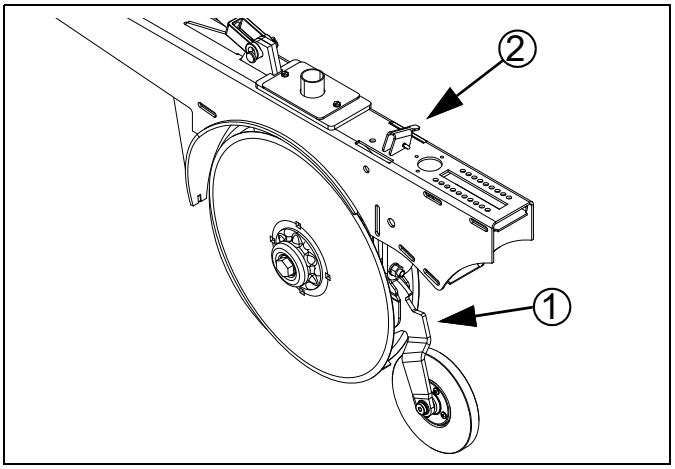


Figure 55 24453
Seed-Lok® Lock-Up

Opener Depth (Press Wheel Height)

Refer to Figure 56

Set opener seeding depth ① by adjusting press-wheel height ②. T handles adjust at $^1/_4$ inch (6.4 mm) seeding depth change per minimum handle step. The range is approximately 0 to $3^1/_2$ inch (0-8.9 cm) seeding depth.

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 Ⓕ toward implement.
- For deeper seeding, slide T handles backward Ⓑ away from implement.

If press wheels are lifting off ground, increase hydraulic down pressure.

If press wheels are digging into ground, reduce hydraulic down pressure.

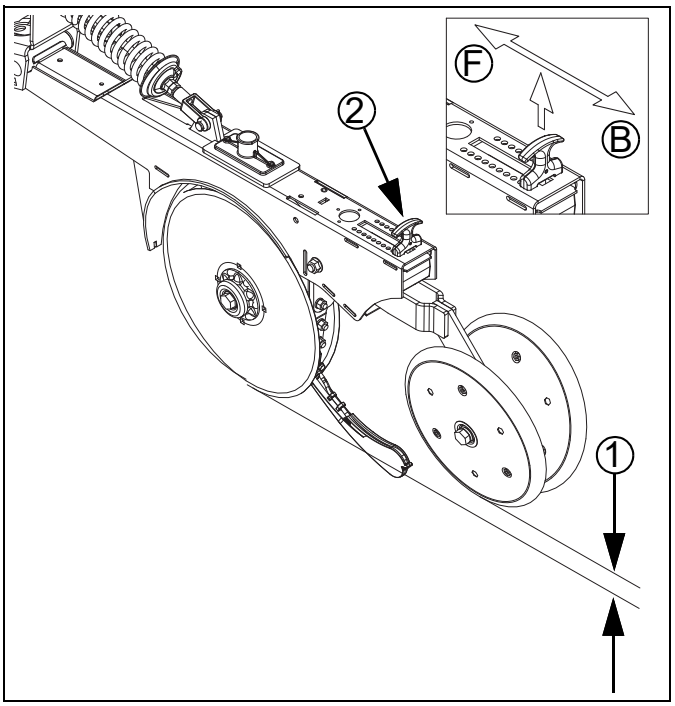


Figure 56 26441
Adjusting 00HD Opener Depth

Wing Fold Stop Adjustment

Refer to Figure 57

1. If the machine has markers, align the lower hole ① on the wing fold stop ② with the hole③ in the transport rest. The wing fold stop is in the extended position.
   If the machine does not have markers, align the upper hole ④ on the wing fold stop with the hole in the transport rest. The wing fold stop is in the retracted position.
2. Install a 1-8x4 Gr 5 bolt ⑤ and lock nut ⑥ to fasten the wing fold stop in the transport rest.
3. Repeat the procedure for the fold stop on the opposite side of the mainframe.

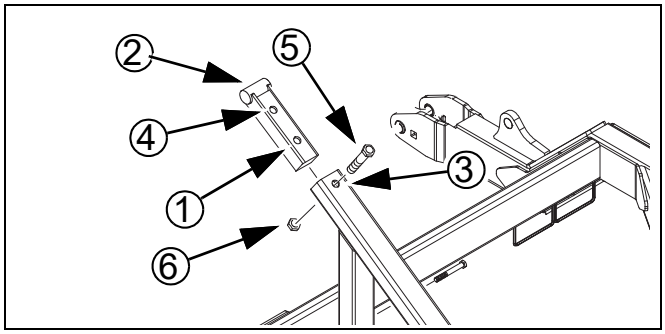


Figure 57 17159
Transport Rest and Wing Fold Stop

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 "**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.Recommended Fan Speeds**" on page 29.
	Implement lift switch engaging too high	See "**Implement Lift Switch Adjustment (S/N C1010Y-)**" 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.
		Check that metering is actually stopping when drill is raised. Adjust or replace implement lift switch.
	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 press wheel depth, then down-forces.
	Down force too low	Check 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.

Problem	Cause	Solution
No Seed Flow	Implement lift switch out of adjustment or failed.	Check, adjust or replace implement lift switch.
	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
	Frame not following terrain	Hydraulic circuit not locked on.
	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	Opener frame adjustment incorrect for down force range. See "**Opener Down Force**" on page 40.
	Drill not level	Check: "**Eyebolt Adjustment**" on page 17 and "**Frame Level**" on page 35.
	Planting conditions too wet	Wait until drier weather.
Uneven depth across drill	Drill not level	See "**Frame Level**" on page 35.
	Weight transfer to wings too high or too low.	See "**Adjusting Weight Transfer**" on page 38.
	Press wheel heights not all the same	Set T-handles the same.
	Opener heights not all the same	See page 43.
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.
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.

Problem	Cause	Solution
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 page 44.
	Scrapers need adjustment	
	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.
Gauges reading zero with drill lowered and circuit locked on	Hydraulic hoses mis-routed	Re-check hose connections from tractor, through cart, to drill.
Gauge readings increase when circuit is set to neutral	Normal	No action required.
Openers raise, but provide no down-pressure	Hose mis-connection	Re-check hose connections from tractor, through cart, to drill.

Maintenance and Lubrication

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

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

WARNING

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

WARNING

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

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

1. Securely block drill before working on it.
2. Lubricate areas listed under “**Lubrication**” on page 53.
3. Clean any fittings that do not take grease.
4. Inflate tires as specified on “**Tire Inflation Chart**” on page 58.
5. Inspect hydraulic hoses for cuts, cracks and aging. Check fittings for evidence of leaks.
6. Inspect cart link pins for wear or loosening.
7. Replace any worn, damaged or illegible safety decals. Order new decals from your Great Plains dealer. “**Safety Decals**” on page 5.

Seed Flap Replacement

Refer to Figure 58

To replace an 816-302C seed flap ④ use a needle nose pliers or similar tool to grasp “T” top of flap. Pull upward to pull flap up out of metal bracket ⑤.

Push new seed flap ④ down through metal bracket ⑤ until flap snaps into place with “T” top resting on top of bracket.

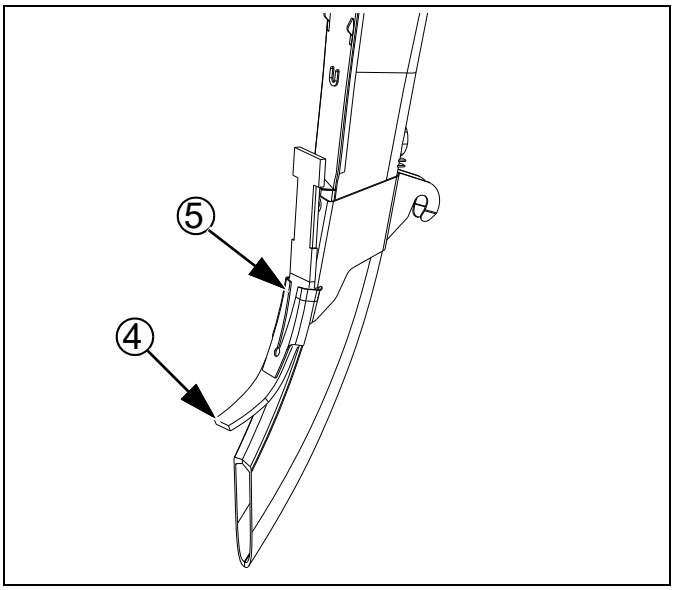


Figure 58 31047
816-302C Seed Tube Flap

Lubrication


Multi-purpose spray lubricant

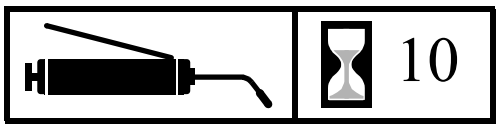

Multi-pupose grease lubricant


Multi-purpose oil lubricant


Inspection

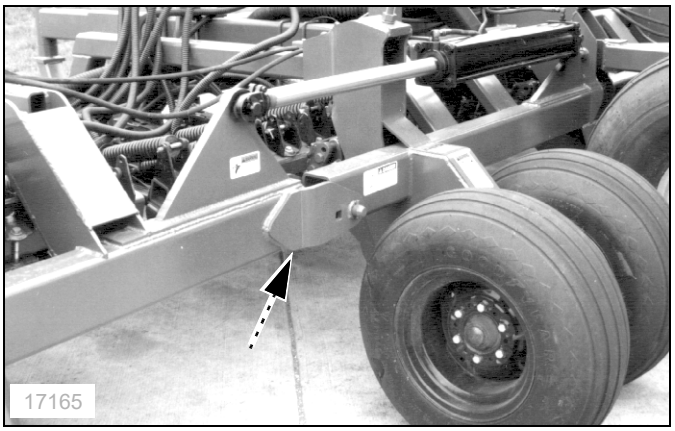
Intervals (operating hours) at which service is required

Fold Pivots

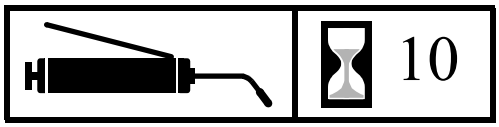


1 grease fitting each of 2 pivots; 2 total

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

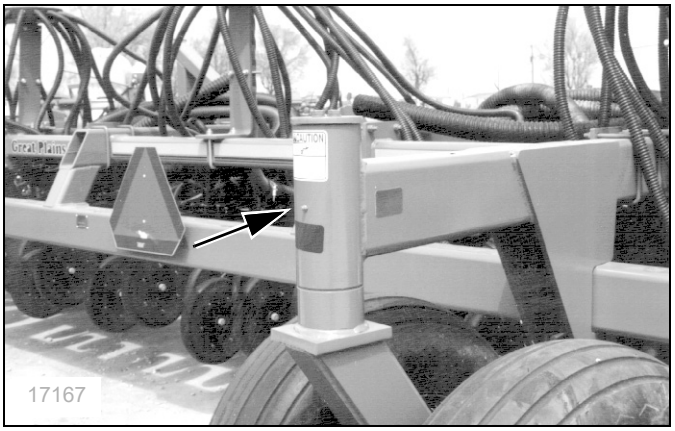


Rear Wheel Casters

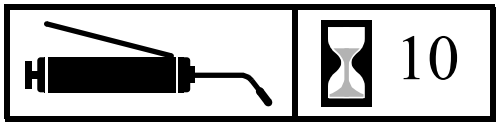


1 grease fitting each of 2 casters; 2 total

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

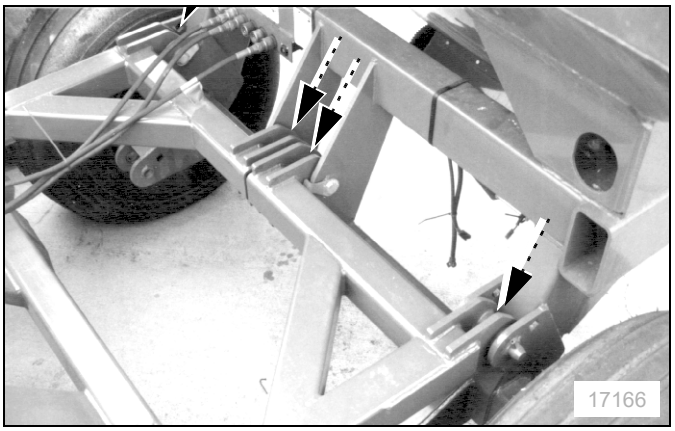


Cart Links



1 grease fitting each outside pin, 2 grease fittings center pin; 4 total

Type of Lubrication: Grease
Quantity: Until grease emerges

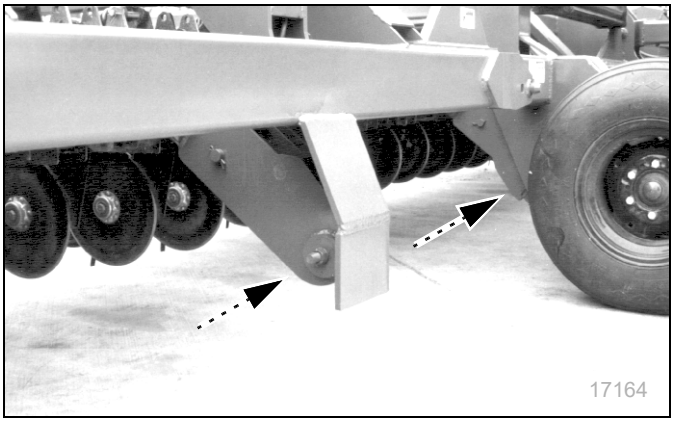


Opener Frame Arm Pivots

	10

1 grease fitting each of 8 pivots;8 total

Type of Lubrication: Grease
Quantity: Until grease emerges

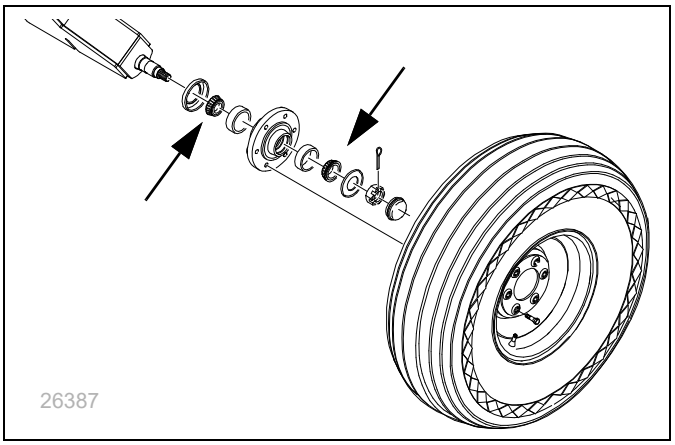


Wheel Bearings

	Seasonally

2 races each of 10 wheels; 20 total

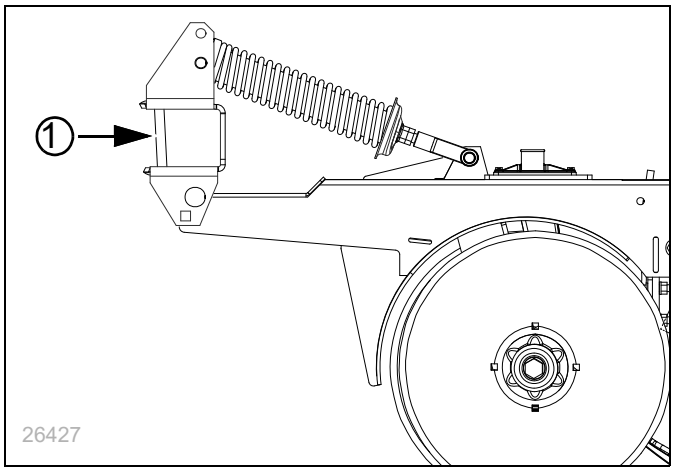
Type of Lubrication: Grease
Quantity: Repack



Opener Mounting Bolt

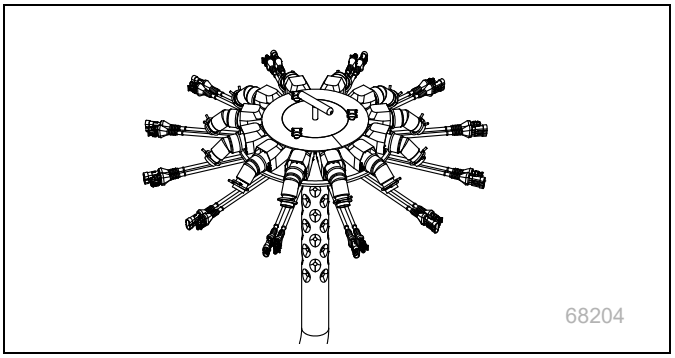
	After 1st use and start of each season

After first initial operation of the drill, inspect the opener mounting bolt and nut (1) for proper torque. This check should be repeated before each drilling season. This nut should be torqued to 85 ft./lbs +5/-0. If replacing this nut, it should be Great Plains part number 803-549c.



Options

Blockage Detector

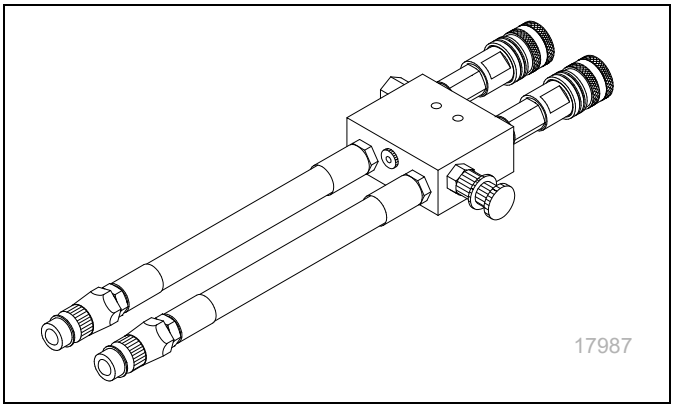


The seed monitor supports sensors that monitor for plugging in the one-inch, secondary hoses. The package includes programmable blockage modules for each tower and flow sensors for each secondary seed hose. The blockage modules signal the monitor when flow stops at a sensor. The monitor then sounds an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

To order blockage sensors, contact your Great Plains dealer.

Implement, Row Spacing	Part Numbers
For use with ADC2350 Cart	
CTA4500/HD-8006, 6 in (15.2 cm)	168-408A
CTA4500/HD-6575, 7.5 in (18.9 cm)	168-409A
CTA4500/HD-5010, 10 in (24.8 cm)	168-410A
For use with ADC2220 or ADC1150 Cart	
CTA4500/HD-8006, 6 in (15.2 cm)	168-356A
CTA4500/HD-6575, 7.5 in (18.9 cm)	168-357A
CTA4500/HD-5010, 10 in (24.8 cm)	168-358A

Hydraulic Bypass Valve Kit



Description	Part Number
Tractor Hydraulic Bypass Kit	810-400C

To operate the CTA4500/HD, some tractors with load-sensing closed-center, or constant-flow hydraulics need a bypass valve.

Consult your tractor dealer for advice about your specific tractor model.

See “**Load Sensing Setup**” on page 16 for operating instructions.

Markers

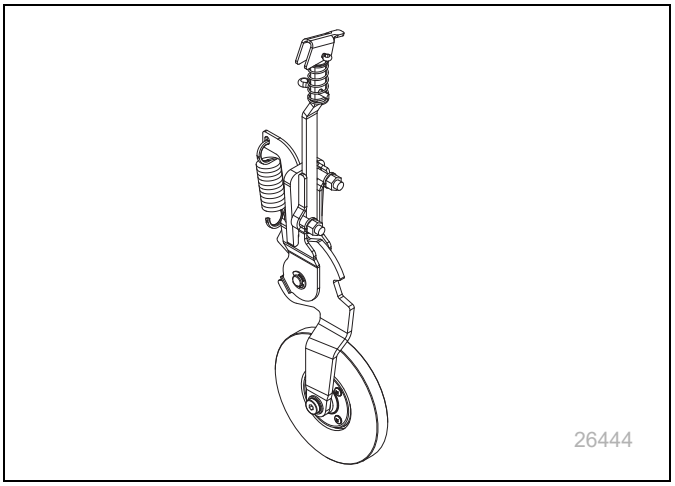
Markers for this drill model are not provided by Great Plains, but are available from at least one third-party supplier. Consult your Great Plains dealer for a current recommendation of brand and model.

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

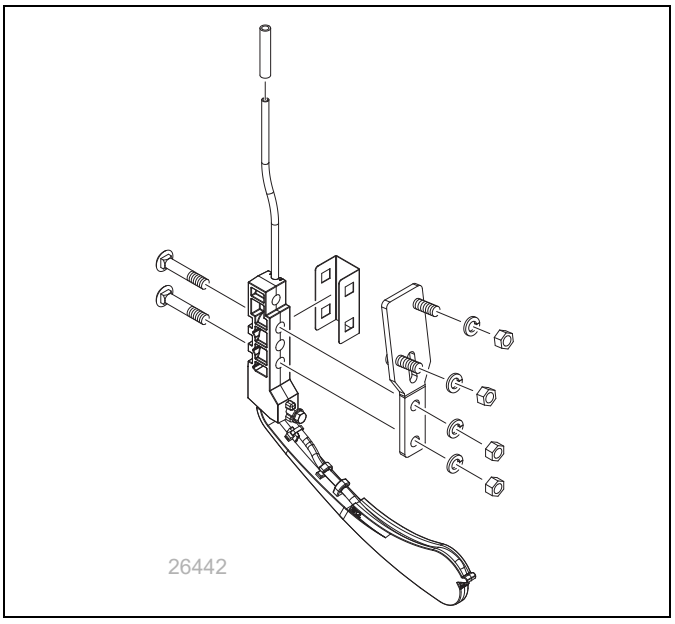
The standard CTA4500/HD drill includes seed flaps. A choice of firmers is an option in the product bundles, or may be field-installed as kits. Only one type of seed firmer may be installed at the same time. The optional firmers are incompatible with the optional scraper.



Seed-Lok® Seed Firmer

Description	Part Number
Seed-Lok® kit (per opener)	122-009K

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



Keeton® Seed Firmer

Description	Part Number
Keeton® seed firmer (per opener)	890-902C

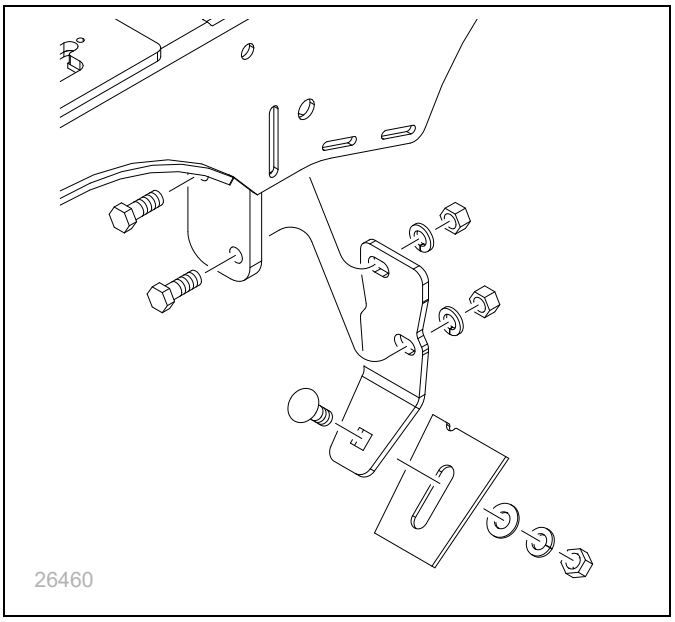
For operations, see “**Seed Firmer Adjustments**” on page 45.

Opener Disk Scraper

Optional disk scrapers help clear any soil and debris not removed by the standard disk spreaders at the seed tube. Scrapers cannot be mounted if optional seed firmers are used. Scrapers are compatible with the standard seed flap.

Description	Part Number
00HD Scraper Assembly (Order one per row)	122-015A

See “**Scraper Installation**” on page 18, and “**Disk Scraper Adjustments**” on page 45.



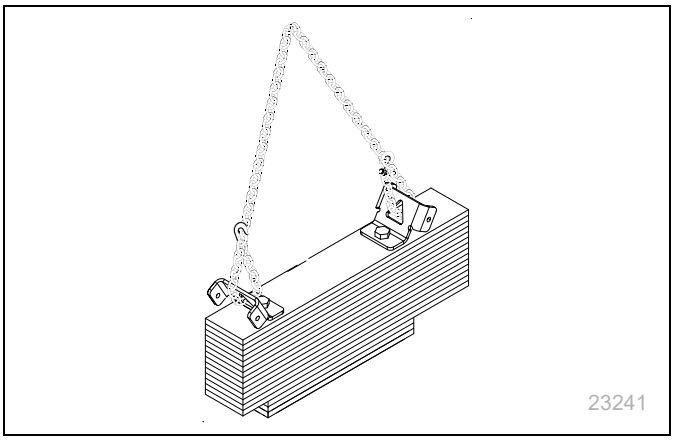
Weight Kits

The standard CTA4500/HD drill includes the recommended maximum of four additional weight kits.

Weight kits include 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 CTA4500/HD supports a maximum of four weight kits (5600 additional pounds), for a total maximum of eight 700 pound weights.

See “**Frame Weight**” on page 37 for a table of total and per-row weight combinations available.



Appendix

Specifications and Capacities

	CTA4500/HD-9006	CTA4500/HD-7275	CTA4500/HD-5410
Tractor Requirements	300 hp		
Weight, w/std. weight kits	20,553 lbs (9323 kg)	19,240 lbs (8727 kg)	18,048 lbs (8186 kg)
Hydraulic Circuits	3 circuits required, load-sensitive or closed-center 15 to 30 gpm at 2000 psi		
Hitch	dedicated dual-link from leading air cart		
Transport Width	20 ft (6.1m)		
Operating Width	45 ft (13.7m)		
Swath	486.5 in (12.357 m)	487.1 in (12.372 m)	487.5 in (12.383 m)
Row Count	90	72	54
Number of Towers	6 (15 ports per tower)	6 (12 ports per tower)	6 (9 ports per tower)
Nominal Row Spacing	6 in (15.2 cm)	7.5 in (18.9 cm)	10 in (24.8 cm)
Averaged Row Spacing	6.08 in (15.45 cm)	7.49 in (19.0 cm)	9.75 in (24.77 cm)
Transport Height	14 ft (4.3m)		
Operating Height	(vertical operating clearance is determined by air cart)		
Length	13 ft 9 in (4.2m)		
Overall Length	with ADC2350, ADC2220 or ADC1150 Cart: 30 ft 6 in (9.3m)		
Tire Sizes	11L-15 8-Ply		

Tire Inflation Chart

Tire Inflation Chart	
Tire Size	Inflation
11L-15 8-Ply	36 psi (248 kPa)

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

Torque Values Chart

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

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

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

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

CTA4500 & CTA4500HD Hydraulic Circuit Assignments

Used With	Orange	Blue	Yellow	Black
on Cart on CTA4500/HD air drill	Auger Ⓐ Marker Ⓑ Marker	Not Used Ⓒ Lift /Fold Ⓓ Lower /Unfold	Fan Ⓔ Not Used Ⓕ Not Used	Fan Sump Return Ⓖ Sump Return

Hydraulic Circuit with Manual Valve

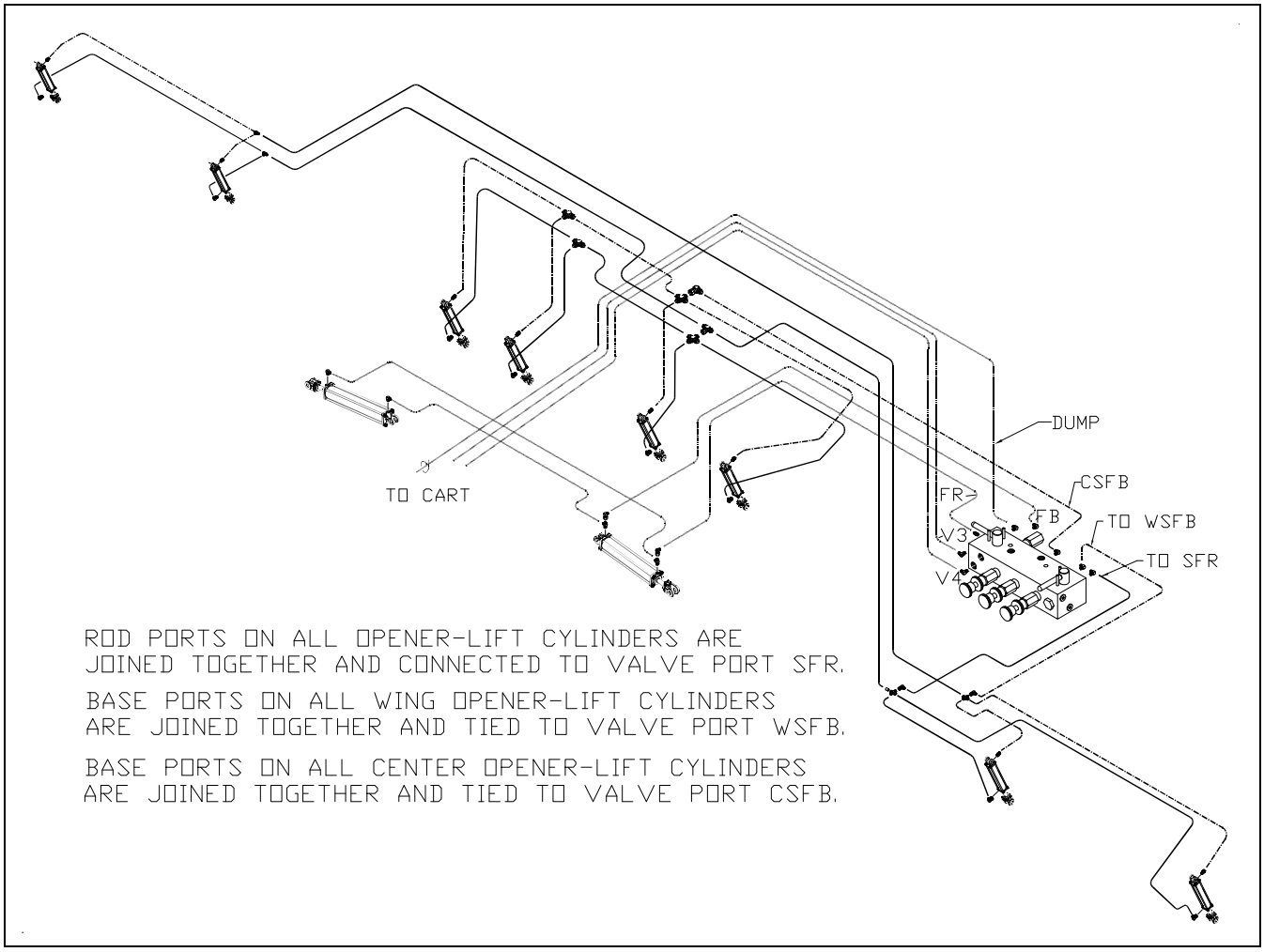


Figure 59
Hose Routing with Manual Valve

38879

Hydraulic Circuit with Electric Valve

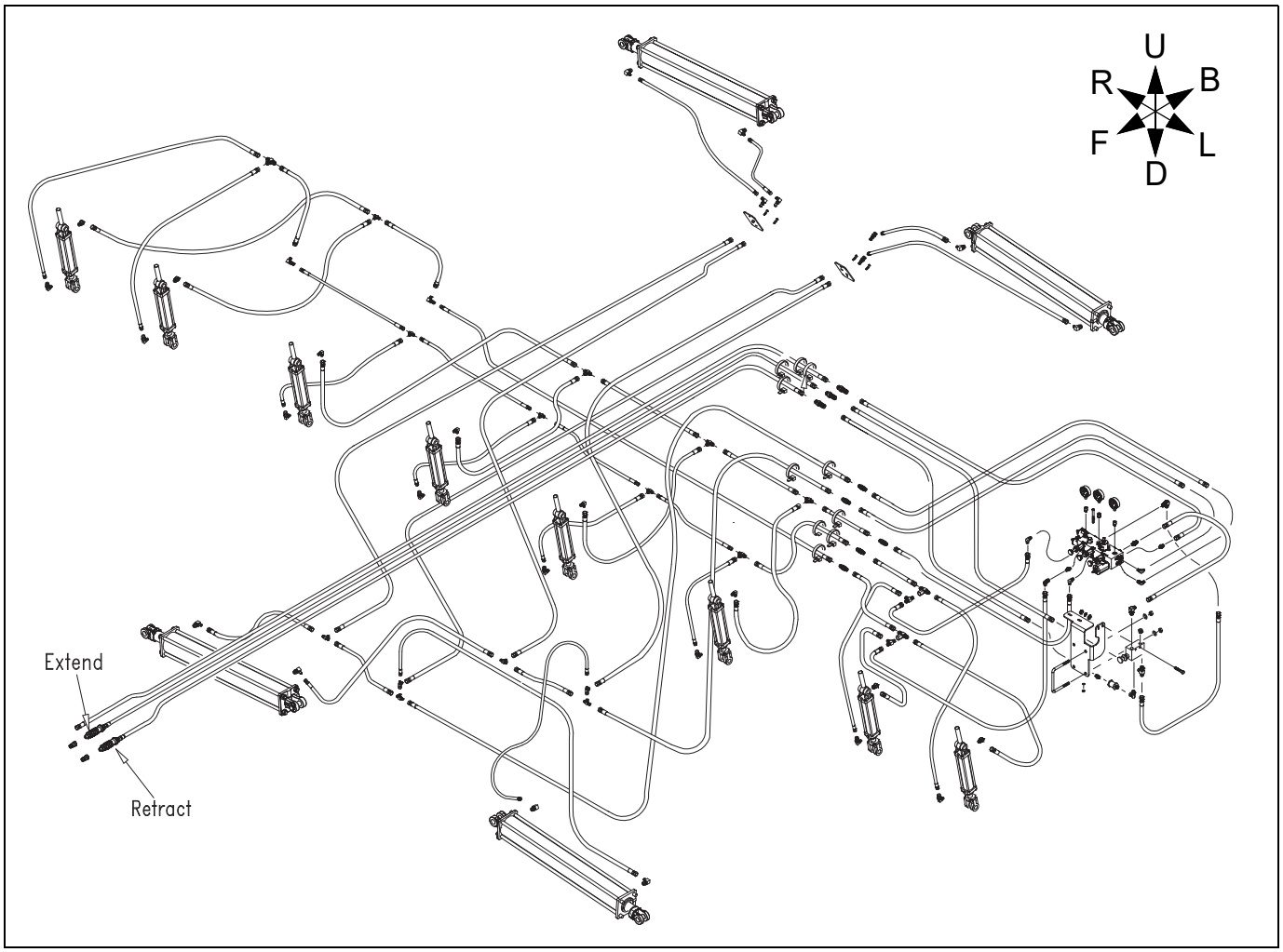


Figure 60
Hose Routing with Electric Valve

38879

"Harvest Starts Here."

WARRANTY

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

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

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

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

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

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

Effective July 15, 2020

Index

Great Plains

"Harvest Starts Here."

MADE IN USA
WITH U.S. & GLOBAL COMPONENTS

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