Read the operator’s manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!
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*Printed in the United States of America.*
Important Safety Information

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

Be Aware of Signal Words
Signal words designate a degree or level of hazard seriousness. The signal words are:

⚠️ 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.

For Your Protection
▲ Thoroughly read and understand Safety Decals, page 4. Read all instructions noted on decals.

Shutdown and Storage
▲ Lower machine to ground, put tractor in park, turn off engine, and remove key.
▲ Detach and store implement in an area where children normally do not play. Secure implement with blocks and supports.

Keep Riders Off Machinery
Riders obstruct the operator’s view. Riders could be struck by foreign objects or thrown from machine.
▲ Never allow riders on implement.
▲ Never allow children to operate equipment.

Handle Chemicals Properly
Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.
▲ Wear protective clothing.
▲ Handle all chemicals with care.
▲ Follow instructions on container label.
▲ Avoid inhaling smoke from any type of chemical fire.
▲ Store or dispose of unused chemicals as specified by chemical manufacturer.
Use Safety Lights and Devices
Slow-moving tractors, self-propelled equipment and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
▲ Use flashing warning lights and turn signals whenever driving on public roads.
▲ Use lights and devices provided with implement.

Transport Machinery Safely
Maximum transport speed for implement is 32 kph (15 mph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.
▲ Do not exceed 25 kph (15 mph). Never travel at a speed that does not allow adequate control of steering and stopping.
▲ Comply with state and local laws.
▲ Reduce speed if towed load is not equipped with brakes.
▲ Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.

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

Practice Safe Maintenance
▲ Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.
▲ Work in a clean, dry area.
▲ Lower implement to ground, put tractor in park, turn off engine, and remove key before performing maintenance.
▲ Allow implement to cool completely.
▲ 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 implement before operation.
Prepare for Emergencies

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

Wear Protective Equipment

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

Avoid High Pressure Fluids Hazard

Escaping fluid under pressure can penetrate skin, causing serious injury.
▲ Avoid the hazard by relieving pressure before disconnecting hydraulic lines.
▲ Use a piece of paper or cardboard, not body parts, to check for suspected leaks.
▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
▲ If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Safety at All Times

Thoroughly read and understand this manual before operation. Refer to Safety Decals, page 4. Read all instructions noted on decals.
▲ Be familiar with all implement functions.
▲ Operate implement from driver’s seat only.
▲ Do not leave tractor or implement unattended with engine running.
▲ Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.
▲ Do not stand between tractor and implement during hitching.
▲ Keep hands, feet and clothing away from power-driven parts.
▲ Wear snug-fitting clothing to avoid entanglement with moving parts.
▲ Watch out for wires, trees, etc., when raising implement. Make sure all persons are clear of working area.
▲ Do not turn tractor too tight, causing implement to ride up on wheels. This could result in injury or equipment damage.

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 to allow you to stand to one side—NOT in front of or over the tire assembly. Use a safety cage if available.
▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.
Safety Decals
Your implement comes equipped with all safety decals in place. They were designed to help you safely operate your implement.

1. Read and follow decal directions.
2. Keep all safety decals clean and legible.
3. Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.

4. When ordering new parts or components, also request corresponding safety decals.
5. To install new decals:
   a. Clean the area on which the decal is to be placed.
   b. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

---

838-369C
Decal 25 KPH Transport
One on rear center of the sub-frame.

838-362C
Decal Pic-Is not a step
One on each side of H frame.
Two decals total.

838-368C
Decal Pic-Pinch Point
Two on each side of the opener hinge.
Two on each side of the coulter hinge.
Eight decals total.
**838-366C**
Decal Pic-Overhead Crushing
Two on each side of the opener hinge.
Two on each side of the coulter hinge.
Eight decals total.

**838-367C**
Decal Pic-Overhead Marker Crushing
One on each Marker brace plate.
Four decals total.

**838-364C**
Decal Pic-Turning Fan
On on H frame above fan mount.
One decal total.

**838-365C**
Decal Pic-Marker Pinch Point
One on each Marker brace plate.
Four decal total.
838-358C
Decal Pic: Read Manual
One on tongue.
One decal total.

838-359C
Decal Pic: High Pressure Fluids
One on tongue.
One decal total.

838-360C
Decal Pic: Wear Eye Protection
One on tongue.
One decal total.

838-361C
Decal Pic: Do Not Ride
One on tongue and two on the back of the sub-frame.
Five decals total.
Great Plains Mfg., Inc. Important Safety Information

838-363C
Decal Pic-Moving Chain
One on each chain guard.
Two decals total.

838-266C
Red Reflectors
Two reflectors on outside ends of sign mounting tube.
Two reflectors total.

838-265C
Amber Reflectors
Two reflectors on both ends of drill.
Two reflectors on the front of drill.
Four reflectors total.
Great Plains welcomes you to its growing family of new product owners. This implement 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 NTA 1000 and NTA 1300 is a pull-type seeding implement. The implement is mounted on a center-pivot hitch. The hitch and drill are integrally connected. No-till coulters are mounted on the hitch to zone-till strips for seed furrows. Straight-arm openers on the drill prepare seedbeds and place the seed. The pivoting action of the hitch helps drill openers track the coulters. A contact-drive tire on the drill powers seeding from a hitch tire. The tongue cylinder and transport tires control the coulter depth and transport cylinders raise the drill for turns and transport.

**Intended Usage**
Use this implement for seeding production-agriculture crops only. Do not modify implement for use with attachments other than those specified by Great Plains. Use implement in no till or minimum tillage.

**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**
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.

---

**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.

Your machine’s parts were specially designed and should only be replaced with Great Plains parts. Always use serial and model numbers when ordering parts from your Great Plains dealer. The serial-number plate is located on the implement as shown in Figure A.

**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**
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.

---

**Product Support**
Great Plains Mfg. Inc., Service Department
PO Box 5060
Salina, KS 67402-5060
USA
Preparation and Set-Up

This section will help you prepare your tractor and implement for use.

Prestart Checklist
1. Read and understand “Important Safety Information,” page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all grease fittings are in place and lubricated. Refer to Lubrication, “Maintenance and Lubrication,” page 29.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “Appendix,” page 36.

Wiring Drill
NOTE: If tractor does not comply with ASAE connector, use the European adapter.

Refer to Figure 1
1. Remove screw from outer casing of ASAE connector.
2. Loosen screw holding wires in place from outer casing of ASAE connector. Pull outer casing apart. Disconnect wires from connector by removing screws.
3. Completely remove outer casing from wires.

Refer to Figure 2
4. Remove black rubber end piece from European adapter. Thread wires through black rubber end piece starting with the smaller end.

Refer to Figure 3
5. Remove the two screws holding the outer casing of the European adapter together. Keep for reuse.
6. Remove connector from outer casing. Thread wires under metal bar in bottom of outer casing.

Refer to Figure 4
7. Attach wires to connector using the terminal number indicators on the back of the connector and the table below.

<table>
<thead>
<tr>
<th>Conductor Identification</th>
<th>Wire Color</th>
<th>Terminal Number</th>
<th>Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wht  White</td>
<td>3</td>
<td>Ground</td>
<td></td>
</tr>
<tr>
<td>Yel  Yellow</td>
<td>1</td>
<td>Left Blinker</td>
<td></td>
</tr>
<tr>
<td>Grn  Green</td>
<td>4</td>
<td>Right Blinker</td>
<td></td>
</tr>
<tr>
<td>Brn  Brown</td>
<td>6</td>
<td>Tail Lamps</td>
<td></td>
</tr>
</tbody>
</table>

8. Align connector in bottom of outer casing.

NOTE: BE SURE CONNECTOR AND CASING ARE PROPERLY ALIGNED, OR CASING WILL NOT FIT CORRECTLY.
Hitching Tractor to Implement

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

Refer to Figure 5

1. Place hitch weldment (1) over ball swivel on hitch tongue (2). Hold hitch weldment in place by inserting spacer tube (3) through hitch clevis and ball swivel.

2. Back tractor up to hitch and bolt hitch weldment to tractor drawbar using 1-by-10-inch bolt (4), large flat washer (5), lock washer (6), and nut (7).

3. Use 3/4-by-9-inch bolt (8) to bolt hitch weldment through its slotted hole and onto secondary hole of tractor drawbar. Install a 3/4-inch flat washer (9) next to top slotted hole and fasten with a lock washer (10) and nut (11). Tighten both bolts.

4. Securely attach safety chain to tractor-drawbar frame.

Refer to Figure 6

5. Remove jack from stob on side of hitch tongue and place in transport position on implement.
Hydraulic Hook-up

⚠️ WARNING!
Escaping fluid under pressure can have sufficient force to penetrate the skin. Check all hydraulic lines and hoses before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this kind of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.

Great Plains hydraulic hoses are colour coded to help you hook-up hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same colour.

<table>
<thead>
<tr>
<th>Colour</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Transport Lift Cylinders</td>
</tr>
<tr>
<td>Blue</td>
<td>Tongue Cylinder</td>
</tr>
<tr>
<td>Yellow</td>
<td>Fan</td>
</tr>
<tr>
<td>Orange</td>
<td>Marker</td>
</tr>
</tbody>
</table>

Refer to Figure 7
To distinguish hoses on the same hydraulic circuit, refer to plastic hose holder. Connect hose under extended cylinder to outlet you choose for cylinder extension. Connect hose under retracted symbol to outlet for cylinder retraction.

Connect hydraulic hoses from tongue cylinder to one tractor remote valve. Connect hoses from transport-lift cylinders to another tractor remote valve.
Bleeding Hydraulic Systems

**WARNING!**
Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.

Note: For safe and smooth operation, the hydraulic systems must be free of air. The hydraulic systems should be bled during initial implement set-up. If they were not bled, or if you replace a hydraulic component during the life of the drill, bleed the hydraulics.

**Bleeding Lift Hydraulics**
The lift system is equipped with rephasing hydraulic cylinders that require a special procedure for bleeding air from the system. Read and follow the procedure carefully.

1. Check hydraulic fluid level in tractor reservoir and fill to proper level. Add fluid to system as needed while cycling new cylinders. Lift hydraulic capacity is 23 liters (6.1 gallons).
2. Lower drill to ground.
3. Unpin rod ends of wheel cylinders. Pivot cylinders up and wire or otherwise safely support rod ends higher than base ends. You may need to remove the transport wheel cylinders from the mainframe so you can orient them with rod ends higher than base ends.
4. With the tractor engine at idle speed, energize the lift hydraulics. When the cylinders have extended completely, hold the remote lever on for one minute. Check all hydraulic hoses, cylinders and fittings for leaks.
5. Retract the cylinder rods. Extend the rods again and hold the remote lever on for one more minute. Repeat this step two more times.
6. Again, check all hydraulic hoses, cylinders and fittings for leaks. Recheck the tractor hydraulic reservoir. Fill to the proper level.
7. Repin all cylinders.

**Bleeding Tongue Cylinder**
8. Check hydraulic fluid in tractor reservoir and fill to proper level. Add fluid to system as needed. Tongue cylinder capacity is 1.89 litres (one-half gallon).
9. Raise and safely support hitch, transport frame and front tongue.
10. Unpin rod end of tongue cylinder. Block, wire or otherwise safely support cylinder so when rod end is fully extended it does not contact anything.
11. Cycle cylinder completely in and out at least three times to purge air from cylinder and hoses.
12. Fully extend cylinder and repin rod end.
13. Recheck tractor reservoir and fill to proper level.

**Bleeding Fold Hydraulics**
Check hydraulic fluid level in tractor reservoir and fill to proper level. Add fluid to system as needed while cycling new cylinders. Fold hydraulic capacity is 5.6 liters (1.5 gallons). If drill fold cylinders have not been extended:

1. Crack fittings at base end of cylinders. Extend cylinders to purge air from system.
2. Crack fittings at rod end of cylinders. Retract cylinders to purge remaining air from system.
3. Tighten all fittings. Extend cylinders and pin to drill lugs.

If drill cylinders have been extended:

1. Unfold drill so that fold cylinders are completely extended. Lower drill to ground. Unpin rod ends of fold cylinders.
2. Crack fittings on rod end of cylinders. Purge air from cylinders by retracting cylinder rods.
3. Crack fittings at base end of cylinders. Extend cylinders to purge remaining air from system.
4. Tighten all fittings. Repin cylinders to drill.

**CAUTION!**
You may be injured or killed by a folding or unfolding opener or coulter frame.
Bleeding Marker Hydraulics
To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motion, follow these steps.

⚠️ CAUTION!
You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail. Never allow anyone near the drill when folding or unfolding the markers.

Check that tractor hydraulic reservoir is full. Marker hydraulic capacity is 1.2 liters (.32 gallons).

1. With both markers lowered into field position, loosen hydraulic-hose fittings at rod and base ends of marker cylinders. If applicable, loosen fittings on back side of sequence valve.

   IMPORTANT: Never bleed an O-ring fitting. Instead, bleed a nearby pipe or JIC fitting.

2. With tractor idling, activate tractor hydraulic valve until oil seeps out around a loosened fitting. Tighten that fitting.

   IMPORTANT: JIC fittings do not require high torque. JIC and O-ring fittings do not require sealant. Always use liquid pipe sealant when adding or replacing pipe-thread fittings. To avoid cracking hydraulic fittings from overtightening, do not use plastic sealant tape.

3. Reactivate tractor hydraulic valve until oil seeps out around another loosened fitting. Tighten that fitting. Repeat process until all loosened fittings have been bled and tightened.
Operating Instructions

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

Prestart Checklist
3. Check all tires for proper inflation as indicated on Tire Inflation Chart, “Appendix,” page 36.
4. Check all bolts, pins and fasteners. Torque as specified on Torque Values Chart, “Appendix,” page 36.
5. Check implement for worn or damaged parts. Repair or replace before going to the field.
6. Check hydraulic hoses, fittings and cylinders for leaks. Repair or replace before going to the field.

Field Operation
2. For proper coulter-to-opener tracking, unlock pivot-lock tubes. Refer to Pivot Lock Tubes, page 14.
3. Hydraulically adjust coulters to desired depth. Note reference measurement on tongue-cylinder gauge to help you achieve the same coulter depth with each field pass. Refer to Coulter Depth, “Adjustments,” page 21, for further adjustment instructions.
4. Set seeding rate. Refer to Roger Manual for Setting the Seeding Rate.
5. Load box with clean seed.
6. Pull forward, lower coulters to desired depth, lower drill, and begin seeding.
7. Always lift drill out of ground when turning at row ends and for other short turns. Seeding will stop automatically as drill is raised and contact drive wheels lose contact with drive tires.
Opener Operation
Never back up with openers in ground. If you do, check all openers to be sure none are clogged or damaged.

For information on seeding depth and opener adjustments, refer to Seeding Depth, “Adjustments,” page 20. For more information on troubleshooting opener problems, see “Troubleshooting,” page 27.

Pivot Lock Tubes
Refer to Figure 8
The pivot-lock tubes are behind the stabilizer cylinders on each side of implement.

Refer to Figure 9
During normal field operation, operate hitch with pivot-lock tubes unsecured so hitch can pivot and drill openers can properly track coulters.

Refer to Figure 10
When drilling on steep slopes or while transporting, secure pivot-lock tubes. To lock tubes, turn tubes so they are horizontal with hitch frame.

You can adjust spring tension on pivot-lock tubes. Refer to Pivot Lock Tube Adjustment, “Adjustments,” page 26.

Marker Operation
Optional markers are on their own hydraulic circuit. They operate through a sequence valve which alternates lower and lift cycles between the right hand and left hand marker.

Fan Operation
Refer to Figure 11
The selector valve diverts the fan circuit to the fold cylinders. This pertains to the NTA 1300 only.

Transport Lift Cylinders
The transport-lift cylinders are rephasing hydraulic cylinders. After a period of normal use, the cylinders may get out of sequence. If this happens, the hitch will lift unevenly or one set of tires will not retract from the soil.

To rephase cylinders, raise drill completely and hold hydraulic lever on for a few seconds to allow cylinders time to rephase.
Transporting

**WARNING!**

Towing the implement 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 25kph (15 mph).
- Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.

1. Check that implement is securely hitched to a sufficient tractor. Refer to Hitching Tractor to Implement, “Preparation and Setup,” Page 9. Make sure safety chain is secured to tractor.

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

3. Check that tires are properly inflated. Refer to Tire Inflation Chart, “Appendix,” page 36.

4. Know implement dimensions in transport position. Choose a route that provides adequate clearance from all obstructions. Refer to “Specifications and Capacities,” page 35, for dimensions.

5. Hydraulically lift drill with transport-lift cylinders.

Refer to Figure 12

6. Install transport lock pins in vertical axle tubes.

Refer to Figure 13

7. Secure pivot-lock tubes for transport. Position tubes so they are horizontal against hitch frame.

Refer to Figure 14

8. Install lock channel over extended tongue-cylinder rod.


- Comply with all laws when travelling on public roads.
Folding the Drill

⚠️ WARNING! ⚠️
Pinch Point and Crushing Hazard. To prevent serious injury or death:

- Always lift drill when folding.
- Fold only if hydraulics are bled free of air and fully charged with hydraulic oil.
- Stay away from frame sections when they are being raised or lowered.
- Keep away and keep others away when folding or unfolding drill.

Note: For the NTA 1000 drill, no options, there is no folding required. Be sure to raise the drill and install the lock channel to cylinder on tongue frame and install transport pins in guage wheel legs when transporting. Refer to figure 12 on the bottom of this page.

Note: For the NTA 1300, no options, there is folding required when transporting.

Note: Raise and fold the drill on level ground with the tractor in neutral.

Refer to Figure 15
1. Turn handle on valve to folding position.

Refer to Figure 16
2. Place channel lock and guage wheels pins in position to lock drill for transporting.
Folding the Drill

⚠️ WARNING!
Pinch Point and Crushing Hazard. To prevent serious injury or death:

Refer to Figure 17

1. Pull pins (1) and put them in their storage places. Activate hydraulics slowly folding drill until cylinders are fully stroked. (Coulter cylinders extend to fold and opener cylinders retract to fold).

2. If markers are an option on the drill be sure they are in the upright position.

Refer to Figure 18

3. If Harrows are an option on the drill, they will need to be folded by hand. With drill lowered remove pin (1) and lift extensions over to rest on main harrow frame. Replace pin in same holes.

4. The chain can also be used to lift the harrows further up if need be. Grab chain, lift and slide chain link into slot (2) located to the side of the steps.
Unfolding the Drill

WARNING!
Pinch Point and Crushing Hazard. To prevent serious injury or death. Be certain the drill is hitched securely to your tractor drawbar and the hitch safety chain is securely attached to the tractor before raising or unfolding the drill.

- Unfold the wings with the drill raised.
- Stay away from frame sections when they are being raised or lowered.
- Keep away and keep others away when folding or unfolding drill.

Refer to Figure 19
1. Unfold the drill on level ground with the tractor transmission in neutral. Remove the lock channel from the tongue cylinder and the transport pins from the gauge wheel legs.
2. Slowly lower drill. Place pin in lock position on extensions.

Refer to Figure 20
3. Turn selector valve handle to fan position.

Parking
Perform the following steps when parking implement. Refer to Storage, “Maintenance and Lubrication,” page 29, for information on long-term storage preparation.

4. Park implement on a firm, level area. Lower coulters and drill to ground.
5. Block tires securely to prevent rolling.
6. Release pressure on hydraulic system, then disconnect hydraulic lines. Check that hose ends do not rest on ground.
7. Move jack from transport position and place it on stob on side of hitch tongue.
8. Extend jack until all weight is off tractor drawbar. Remove 1-by-10-inch bolt, washer and nut.
9. Disconnect implement light harness, monitor and power cord.
Adjustments

Seeding Depth
To set drill seeding depth, you must:

- Set coulter depth with tongue cylinder and guage wheels.
- Set opener depth with T-handles on press wheel.
- If field conditions make it necessary, increase coulter down pressure by adding tractor weights to frame.
- If necessary, adjust individual coulters or openers to seed in tire tracks.

The following is an introduction to how the coulters and double-disk openers are designed to control seeding depth.

Coulters
A no-till coulter is mounted on the hitch directly ahead of each opener on the drill. The coulters cut through heavy trash and make a tilled path in the soil for the openers.

Coulter cutting depth is controlled by the tongue cylinder and the guage wheels. You also can change the depth of individual coulters by changing coulter-mounting height. Refer to Coulter Depth, page 21, for information on these adjustments.

The amount of coulter down pressure needed to cut a soil groove varies with soil conditions. Adding weight or shortening the coulter spring increases coulter down pressure and cutting force. Refer to Coulter Down Pressure, page 21, for more information on these adjustments.

Openers
Opener double disks travel in the coulter path to make a seed bed. Mounted on the rear of each opener is a press wheel. The press wheels control opener seeding depth and firms the seed into the soil.

To maintain a consistent seeding depth, upward press wheel movement is restricted by an independently adjustable stop on each opener. Moving this stop changes the depth at which seed is placed. The mounting height of openers that run in tire tracks also can be changed. Refer to Opener Depth, page 22, for information on these adjustments.

The amount of opener down pressure needed to cut and widen the coulter groove and to firm the seed into the soil varies with soil conditions. Opener down pressure can be adjusted for all openers or individual openers. Refer to Opener Down Pressure, page 23, for information on how to make these adjustments.
Coulter Depth
Adjust coulters to run 13 to 25 mm (1/2 to 1 inches) below the drill openers. Coulter depth can be adjusted hydraulically for all coulters or manually for individual coulters.

Hydraulic Control
Make the following adjustment when drilling in level ground with the seed box half full.

1. Retract tongue cylinder to transfer the tractor weight to the coulter toolbar.

Refer to Figure 21

2. Set tongue cylinder so coulters are at desired depth.
   Note setting on cylinder gauge so you can return to the same depth.

NOTE: Use cylinder gauge only as a reference. Gauge does not measure actual coulter depth.

Refer to Figure 22

3. With coulters and drill lowered to desired seeding depth, check that hitch frame runs parallel with ground.

Refer to Figure 23

4. If the hitch frame is not level, remove or replace spacers from transport-lift-cylinder rods until hitch is level.
Coulter Mounting Height
You can change the depth of individual coulters by adjusting coulter-mounting height. If you adjust coulter height, be sure to re-bolt coulters vertically straight and correctly spaced. To raise or lower individual coulters:

1. Loosen mounting clamps and adjust coulter to desired height. Do not lower coulter spring bar below top u-bolts on coulter clamp.

Refer to Figure 24

2. To re-tighten clamps. Snug hex-head clamp bolts (1) just until u-bolts are tight on each side of spring bar.

3. Tighten nuts (2) on u-bolts.

4. Finish tightening hex-head clamp bolts (1).

NOTE: Even when coulter is held securely, there may be a gap between clamp halves.

Coulter Down Pressure

Added Weight

Refer to Figure 25

In hard soil conditions where coulter penetration is limited, you can add suitcase weights to brackets on the hitch frame. Adding weight on the hitch frame provides the best weight distribution for no-till drilling. You can add up to 450kg (1000 lbs, on a 3 meter drill) or 590kg (1300 lbs, on a 4 meter drill) of additional weight. Place an equal amount of weight on each weight bracket.

Coulter Springs

Refer to Figure 26

Coulter-spring length is preset at the factory to 254 mm (10 inches), giving coulters an initial operating force of 181 kg (400 pounds). This setting is adequate for many difficult no-till conditions. For lighter no-till conditions where rocks or other obstructions are a problem, you can reduce coulter down pressure to give coulters better impact protection. Refer to the following chart for adjusting coulter down pressure.

<table>
<thead>
<tr>
<th>Spring Length</th>
<th>Coulter Down Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>267 mm (10 1/2 in)</td>
<td>79 kg (175 lbs)</td>
</tr>
<tr>
<td>260 mm (10 1/4 in)</td>
<td>136 kg (300 lbs)</td>
</tr>
<tr>
<td>254 mm (10 in)</td>
<td>181 kg (400 lbs)</td>
</tr>
<tr>
<td>248 mm (9 3/4 in)</td>
<td>238 kg (525 lbs)</td>
</tr>
</tbody>
</table>

NOTE: Do not reset coulter-spring length shorter than 248 mm (9 3/4 inches). Shortening springs more than 248 mm (9 3/4 inches) may contribute to premature failure of parts and warranty will be voided.
Opener Depth
When making opener adjustments, keep in mind that openers will not run any deeper than coulters till the soil.

Press Wheel Adjustment
Refer to Figure 27
Changing the height of the press wheels automatically changes seeding depth. To adjust, lift T-handle and slide forward or back.

• For shallower seeding, slide handle ahead toward implement.
• For deeper seeding, slide handle back away from implement.

Opener Mounting Height
Refer to Figure 28
You also can lower individual opener bodies that run in tire tracks. To lower an opener, move opener-pivot bolt to lower hole in opener mount.
Opener Down Pressure
Refer to Figure 29
To adjust down pressure on individual openers that run in tire tracks, change opener-spring length. To increase down pressure, loosen the jam nut at lower end of opener spring, then turn flange nut. Each additional 6 mm (1/4-inch) of spring compression adds about 6 kg (13 pounds) of pressure. After adjusting flange nut, tighten jam nut.

IMPORTANT: Do not compress spring more than 25 mm (one inch). Compressing spring more than 25 mm (one inch) could cause opener damage.

Disk Scraper Adjustment
Refer to Figure 30
To keep opener disks turning freely, dirt scrapers are mounted between disks to clean as the disks rotate. As field conditions vary, you may need to adjust the scrapers.

To adjust, loosen 3/8-inch bolt and raise or lower scraper as needed.
Harrow Adjustment

Refer to Figure 31

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

Refer to Figure 31

1. To adjust the frame, loosen the eight hex nuts (1) on the u-bolts and rotate the frame tube (2) as necessary.

Refer to Figure 32

2. To adjust the tines, loosen the 1/2-inch hex nuts (3) on the 1/2-inch u-bolts that attach the tine tubes to the harrow frames. Rotate tine tubes (4) so the tines are against the stop bushings and are angled back as necessary. Re-tighten hex nuts on u-bolts.

Leaf Spring Adjustment

Refer to Figure 33

A leaf spring is located just ahead of the vertical pivot. The spring is designed to provide just enough force to keep the hitch square and stable for turning at field ends and to add stability for drilling in rough field conditions. Proper leaf-spring adjustment is important for smooth implement operation.

To adjust properly, square tongue with transport frame and adjust 3/8-inch u-bolts (1) on each side until leaf-spring rollers (2) just make contact with roller pads (3) on transport frame. Make sure both right and left sides are adjusted equally.
Marker Adjustments

Folding Speed
Refer to Figure 34

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

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

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

Disk Adjustments
Refer to Figure 35

If mark left by marker disk is not easy to see, change disk angle to make a wider mark. Loosen two 1/2-inch carriage bolts (1) holding disk mount. Rotate disk mount as desired.

If the marker disk is not square with the ground when the marker is lowered in the field, or if marker arm tends to fold up while lowered in the field, change disk angle relative to ground. Loosen 1/2-inch bolts (2) and rotate marker mount until marker disk is square with ground.

To adjust where the disk marks, loosen u-bolt (3) and slide marker-mount tube in or out as necessary. Re-tighten u-bolt.
**Pivot Lock Tube Adjustment**

*Refer to Figure 36*

To adjust tension on pivot-lock tubes, loosen jam nut (1) and screw bolt (2) in or out to desired setting and re-tightening jam nut. When pivot frame is 90 degrees to tongue, bolt head should be about 2 mm (1/16 inch) away from stop on pivot frame (3).

**Seed-Lok Lock Up**

*Refer to Figure 37*

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

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

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill not tracking behind coulters</td>
<td>Check if coulters are aligned with openers. Check that pivot-lock tubes are in drilling position, page 14. Check if leaf spring is out of alignment. Refer to <em>Leaf Spring Adjustment, “Adjustments,” page 24.</em></td>
</tr>
<tr>
<td>Openers plugging in no-till conditions</td>
<td>Drill across standing residue.</td>
</tr>
<tr>
<td>Drill Seeding too deep</td>
<td>Change the press-wheel setting. Refer to <em>Opener Depth, “Adjustments,” page 22.</em> Remove weight from hitch.</td>
</tr>
<tr>
<td>Uneven seed spacing or uneven stand</td>
<td>Check for plugging in seed cups. Check if seed tubes are plugged. Reduce ground speed. Check that opener disks turn freely. Increase opener down pressure so opener disks penetrate. Refer to <em>Opener Down Pressure, “Adjustments,” page 23.</em> Check for trash or mud build-up on optional Seed-Lok® wheels.</td>
</tr>
<tr>
<td>Actual seeding rate is different than desired</td>
<td>Check see-rate setting. Refer to “Roger” manual.</td>
</tr>
<tr>
<td>Problem</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Excessive seed cracking</td>
<td>Use a faster drive type and a lower seed-rate-handle setting.</td>
</tr>
<tr>
<td></td>
<td>Position seed-cup handles to a lower notch.</td>
</tr>
<tr>
<td>Uneven seeding depth</td>
<td>Check that openers have sufficient down pressure. Refer to Opener Down Pressure, “Adjustments,” page 24.</td>
</tr>
<tr>
<td>Press wheels or openers plugging</td>
<td>Consider field conditions. Drilling in damp or wet conditions may increase this problem.</td>
</tr>
<tr>
<td></td>
<td>Do not back up or stop and allow drill to roll back with openers in ground.</td>
</tr>
<tr>
<td></td>
<td>Check optional Seed-Lok® wheels.</td>
</tr>
</tbody>
</table>
Maintenance and Lubrication

Proper servicing and adjustment are key to long life of any farm implement. With careful and systematic inspection you can avoid costly maintenance, time and repair.

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

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

⚠️ WARNING!
Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If injured, seek medical assistance from a doctor that is familiar with this type of injury. Foreign fluids in the tissue must be surgically removed within a few hours or gangrene will result.

1. After using implement for several hours, check all bolts to be sure they are tight.
2. Inflate tires as specified on Tire Inflation Chart, “Appendix,” page 37.
4. Check drill drive chains for wear. Replace if necessary. Adjust idlers to remove excess slack from chains.

Refer to Figures 38 and 39
Keep front slide blocks (1) on transport axles adjusted to within 0.381 to 0.635 mm (0.015 to 0.025 inch) of inner-axle tubes (2).
Refer to Figure 40

If cylinders are removed or inner-axle-slide blocks become worn, assemble or adjust support braces as follows. Use this procedure for both support bolts on the transport-lift cylinders.

1. Assemble 1/2-by-5 1/2-inch, full-thread bolt (1) to cylinder support brace (2), bolted to rod end cylinder casting.

2. Screw on three 1/2-inch jam nuts (3) and one 1/2-inch washer (4) as shown. Tighten first jam nut against cylinder support (2) and run other two jam nuts on nearly all the way.

3. Install cylinder with support bolts (1) extending through bracket (5) on outer slide tube and pin both base end and rod end.

4. Screw outer 1/2-inch jam nut out until 1/2-inch washer (4) just touches bracket on outer slide tube. Do not put pressure on the cylinder by tightening the 1/2-inch jam nut. Once washer touches bracket, lock outer 1/2-inch jam nut in place with centre 1/2-inch jam nut.

5. Install spring (6) and 1/2-inch nylock nut (7). Tighten nut to compress spring to 32 mm (1 1/4 inches).

Storage
Store implement where children do not play. If possible, store inside for longer implement life.

1. Clean implement as necessary. Be sure seed boxes are cleaned completely before storing.

2. Lubricate all fittings as indicated under Lubrication, page 31.

When in storage, lower openers on a board or hard surface. Apply a light coat of oil to exposed cylinder rods.
Lubrication

Vertical Pivot Bushings, Top and Bottom
Two zerks on back of vertical-pivot tube on transport frame
Lubricant = Grease
Quantity = Until grease begins to emerge

Coulter Swing Arm Pivot
Located on top of each coulter casting
Lubricant = Grease
Quantity = Until grease begins to emerge

Coulter Hub Bearings
Located on each coulter hub
Lubricant = Grease
Quantity = Force grease into tapered roller bearings, but do not pressurize cavity enough to blow out seal or hub cap
Tongue to Main Frame Pivot
Located at rear of tongue
Lubricant = Grease
Quantity = Until grease begins to emerge

Drive Chains
Lubricant = Chain Lube
Quantity = Spray Thoroughly
Transport Wheel Bearings

Lubricant = Grease
Quantity = Repack bearings and check seals

Optional Folding Markers

Lubricant = Grease
Quantity = Until grease begins to emerge

Optional Folding Markers

Lubricant = Grease
Quantity = Repack bearings
Harrow Attachment
The coil-tine harrow finishes no-till surfaces by levelling and distributing residue for enhanced seed emergence.

For information on how to adjust the harrow, refer to Harrow Adjustment, "Adjustments," page 24.

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrow Attachment 1000</td>
<td>148-547A</td>
</tr>
<tr>
<td>Harrow Attachment 1300</td>
<td>148-548A</td>
</tr>
</tbody>
</table>

Markers
Hydraulic markers are available. The units have a notched blade to leave a mark for you to follow on the next field pass. Markers are sold as dual units and are equipped with a sequence valve for easy operation.

For information on how to operate the markers, refer to Field Operation and Transporting, "Operating Instructions," page 14. For information on how to adjust the markers, refer to Marker Adjustments, "Adjustment," page 24. For information on lubricating the markers, refer to Lubrication, "Maintenance and Lubrication," page 32.

To order markers, contact your Great Plains dealer.

<table>
<thead>
<tr>
<th>Option</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual Markers</td>
<td>148-541A</td>
</tr>
</tbody>
</table>

Seed-Lok Firming Wheels
Seed-Lok firming wheels press seed directly into the bottom of the seed trench. By firming all seeds into the moist soil at a uniform depth, Seed-Lok promotes more even plant emergence and higher yields.

For information on adjusting Seed-Lok firming wheels, refer to Seed-Lok Lock Up, "Adjustments," page 26.

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removable 5-in. Seed-Lok, 00</td>
<td>122-193K</td>
</tr>
</tbody>
</table>
Agtron Blockage Kit
A sensor installed in the seed delivery hoses to indicate hose blockage.

To order the Agtron Blockage Kit, contact your Great Plains dealer.

<table>
<thead>
<tr>
<th>Option</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTA1000 Agtron Blockage Kit</td>
<td>148-648A</td>
</tr>
<tr>
<td>NTA1300 Agtron Blockage Kit</td>
<td>148-649A</td>
</tr>
</tbody>
</table>

Specifications and Capacities

<table>
<thead>
<tr>
<th></th>
<th>NTA 1000</th>
<th>NTA 1300</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Spacing</strong></td>
<td>16.66 cm (6 9/16in.)</td>
<td>16.66 cm (6 9/16in.)</td>
</tr>
<tr>
<td><strong>Rows Per Drill</strong></td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>4080 kg (9000lbs)</td>
<td>4850 kg (10700lbs)</td>
</tr>
<tr>
<td><strong>Working Width</strong></td>
<td>3 m (9 ft. 10 1/8 in.)</td>
<td>4 m (13 ft)</td>
</tr>
<tr>
<td><strong>Transport Width</strong></td>
<td>3 m (9 ft. 10 in.)</td>
<td>3 m (9 ft. 10 in.)</td>
</tr>
<tr>
<td><strong>Transport Height</strong></td>
<td>312 cm (10'-3&quot;)</td>
<td>312 cm (10'-3&quot;)</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>647 cm (21'-3&quot;)</td>
<td>647 cm (21'-3&quot;)</td>
</tr>
<tr>
<td><strong>Seedbox Capacity</strong></td>
<td>1500 L (43 bu)</td>
<td>2000 L (57 bu)</td>
</tr>
<tr>
<td><strong>Tires</strong></td>
<td>13.0/55-16 12 PR</td>
<td></td>
</tr>
<tr>
<td><strong>Tractor Requirements</strong></td>
<td>92 kw</td>
<td>120 kw</td>
</tr>
<tr>
<td><strong>Hydraulics</strong></td>
<td>Three pair of hydraulic remotes: 1-Pair for the fan/fold circuit 1-Pair for the lift 1-Pair for the tongue cylinder</td>
<td></td>
</tr>
</tbody>
</table>

*Listed weight includes markers, fertilizer and small-seeds options.
** An additional pair of outlets will be needed for the optimal markers.
Tire Inflation Chart

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Inflation PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Wheel</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2.75 bar</td>
</tr>
<tr>
<td>13.05/55-16 12PR</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>4.48 bar</td>
</tr>
</tbody>
</table>

NOTE: All tires are warranted by the original manufacturer of the tire. Tire warranty information can be found in the brochures included with your Operator’s and Parts Manuals or online at the manufacturer’s websites. For service assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer
Titan
Goodyear
Firestone

Website
www.titan-intl.com
www.goodyearag.com
www.firestoneag.com

5/26/2006
Warranty

Great Plains Manufacturing, Incorporated warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains’ judgement shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must by made through such dealer. Great Plains reserves the right to make changes in materials or design of the product at any time without notice.

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

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

This Warranty is not valid unless registered with Great Plains Manufacturing, Incorporated within 10 days from the date of original purchase.