Predelivery Instructions
NTA 1000 and NTA 1300

Cover illustration may show optional equipment not supplied with standard unit.

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148-528Q
# Table of Contents

**Important Safety Information** ............................................. 0

**Introduction** ............................................................ 1
   - Description of Unit .................................................. 1
   - Intended Usage ..................................................... 1
   - Using This Manual .................................................. 1
   - Definitions ........................................................... 1
   - Assembly and Setup Assistance .................................. 1
   - Tools Required .................................................... 2
   - Pre-Assembly Checklist ............................................. 2

**Assembly** ................................................................. 3
   - Tongue ................................................................. 3
   - Pivot Lock ............................................................ 4
   - Cylinder Stabilizer ................................................ 4
   - Spring Leaf ........................................................... 4
   - Telescoping Tube .................................................. 5
   - Transport Wheels .................................................. 5
   - CPH to “H” Frame .................................................. 6
   - Sub-Frame to Box ................................................... 7
   - Lights ................................................................. 9
   - Handrails and Steps ............................................... 10
   - Fan ................................................................. 11
   - Contact Wheel ..................................................... 12
   - Toolbar ............................................................... 17
   - Toolbar Extension ................................................. 18
   - Opener Extension .................................................. 19
   - Seed Tube ............................................................ 20

**Setup** ................................................................. 21
   - Hitching Tractor to CPH ......................................... 21
   - Hydraulic Hose Hookup ........................................... 22
   - Bleeding the Hydraulics ........................................... 23
      - Bleeding Transport Lift Cylinder ............................ 23
      - Bleeding Tongue Cylinders ................................... 24
      - Bleeding Fold Cylinders ....................................... 24
      - Bleeding Markers (Options) ................................... 25

**Hydraulics** .............................................................. 26
   - Lift and Tongue Hydraulics ....................................... 26
   - Fan Hydraulics ...................................................... 27
   - Fan Hydraulics NTA 1300 ......................................... 28
   - Folding Hydraulics NTA 1300 ..................................... 29

**Appendix** .............................................................. 31
   - Hydraulic Hose and Fitting ....................................... 31
   - Tire Inflation Chart ................................................ 31
   - Torque Values Chart for Common Bolt Sizes .................. 32
   - Warranty ............................................................ 33

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NTA 1000 and NTA 1300 148-528Q 7/29/2004
For your safety, thoroughly read “Important Safety Information” and “Operating Instructions” in the operator’s manual before proceeding.

Safety Notations

The SAFETY ALERT SYMBOL indicates that there is a potential hazard to personal safety involved and extra safety precautions 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.

Watch for the following safety notations throughout this manual.

⚠️ 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.

⚠️ WARNING!
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ 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.

Safety Rules

Most accidents are the result of negligence, carelessness or failure to follow safety precautions. Though your implement is designed with many built-in safety features, safety precautions are mandatory to prevent accidents.
Introduction

IMPORTANT: A crucial point of information about the preceding topic. For safe and correct operation, read and follow the directions provided before continuing.

Great Plains Manufacturing wants you to be satisfied with any new machine delivered by the Great Plains Trucking network. To ease the assembly task and produce a properly working machine, read this entire manual before assembling or setting up new equipment.

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 contract-drive tire on the drill powers seeding off a hitch tire. The tongue cylinder controls coulter depth and transport cylinders raise the drill for turns and transport.

Intended Usage
Use the NTA 1000 and NTA 1300 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 or minimum tillage.

Using This Manual
This manual was written to help you assemble and prepare the new machine for the customer. The manual includes instructions for assembly and setup. Read this manual and follow the recommendations for safe, efficient and proper assembly and setup.

An operator’s manual is also provided with the new machine. Read and understand “Important Safety Information” and “Operating Instructions” in the operator’s manual before assembling the machine. As a reference, keep the operator’s manual on hand while assembling.

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

NOTE: Useful information about the preceding topic.

Assembly and Setup Assistance
To order additional copies of predelivery instructions or operator’s and parts manuals, write to the following address. Include model numbers in all correspondence.

If you do not understand any part of this manual or have other assembly or setup questions, assistance is available. Contact

Product Support
Great Plains Mfg. Inc., Service Department
P.O. Box 5060
Salina, KS 67402-5060
The following headings are step-by-step instructions for assembling the NTA 1000 and NTA 1300. Begin with **Tools Required and Pre-Assembly Checklist** to make sure you have all necessary parts and equipment. Then proceed with **Assembling NTA 1000 and NTA 1300**. Follow each step to make the job as quick and safe as possible and produce a properly working machine.

The NTA 1000 and NTA 1300 are shipped via flat bed truck. It is the dealer’s responsibility to unload the new machine. Unload all equipment before beginning assembly. Do not attempt any assembly work while the implement is on the truck.

**Tools Required**
- Forklift or overhead hoist
- General hand tools

**Pre-Assembly Checklist**
1. Read and understand “Important Safety Information” on page 1 before assembling.
2. Have at least two people on hand while assembling.
3. Make sure the assembly area is level and free of obstructions (preferably an open concrete area).
4. Have all major components.
5. Have all fasteners and pins shipped with the hitch.

**IMPORTANT:** If a pre-assembled part or fastener is temporarily removed, remember where it goes. Keep the parts separated.

6. Have a copy of the parts manual on hand. If unsure of proper placement or use of any part or fastener, refer to the parts manual.
7. Check that all working parts are moving freely, bolts are tight and cotter pins are spread.
8. Check for proper tension and alignment on all drive chains.
9. Check that all safety decals and reflectors are correctly located and legible. Replace if improperly located or damaged. Refer to Safety Decals, “Important Safety Information” in the operator’s manual.
10. Inflate tires to recommended pressure as listed on the Tire Inflation Chart on the “Appendix” on page 32. Tighten wheel bolts as specified on Torque Values Chart on the “Appendix” on page 32.
Assembly of Tongue

Be sure the frames are being supported and lifted properly. Use safety measures at all times.

Refer to Figure 1
1. Assemble tongue (1) to CPH frame (2) by aligning the holes in the frames and using the tongue rear cross pin (3) with the 3” OD flat washer and 1” nylock hex nut. Place 5/8 x 2 3/4 bolt through hole in side bushing and cross pin. Tighten the 1” nylock nut.
2. Assemble cylinder (5) base end to tongue frame using 1 x 2 3/4 pin clevis and hair pin cotter. Attach other end of cylinder to CPH frame with the stroke gauge pointer (6), pin cotter and flat washer 1 SAE.
3. Attached the depth indicator plate (7) to the cylinder securing it in place with 5/8 lock nuts.
4. Place spring hose loop (8) into frame using 1/2 bolt, flat washers and lock spring washer to secure.

Refer to Figure 2
5. The cylinder lock channel, bent pin and pin hair cotter are used to lock cylinder in place while drill is in transport mode. While not in use, store at location indicated below.

Refer to Figure 3
Decal placement on tongue.
6. Decal-pic-Read Manual
7. Decal pic- High Pressure Fluids
8. Decal pic-Wear Eye Protection
9. Decal pic-Do Not Ride
10. Decal-Stroke Gauge
Pivot Lock and Cylinder Stabilizer

Refer to Figure 4
1. Assemble the pivot lock (1) by sliding it completely on the CPH frame as shown. Screw bolt (2) and jam nut (3) into lock. Place the spring rod (4) through the hole using set screw (5) to lock in place. Hook spring (6) from pivot lock to spring rod. For adjustments refer to the operator's manual.

2. Install the cylinder stabilizers (7) by attaching the boot end to the CPH frame using 5/8 x 3 bolts, flat washers, 5/8 jam nuts (8) and lock nuts (9). Cylinder are assembled to the “H” frame in the same manner.

Spring Leaf

Refer to Figure 5
3. Assemble roller stop pin, roller stops and roll pins (2) to the ends of the Spring leaf (1). Assemble the Spring leaf (1) to underside, against the plate of the CPH frame with 1/2-13 x 1 13/16 x 3 3/4 u-bolt, 5/8 hex nut (3) for spacer and 1/2” lock washer and hex nut.

4. Pull spring leaf ends back with 3/8-6 x 1 7/8 x 8 and 3/8 lock nut (4). Tension on the ends will be loosened when CPH frame is assembled to the “H” frame.

Decal placement on CPH

Refer to Figure 6
5. Decal Reflector Amber
6. Decal 3 Color Strip
7. Decal Logo GP
8. ID Plate NTA 1000/NTA 1300
Telescoping Tube and Transport Wheels

Refer to Figure 7
1. Assemble the upper rollers (1) and roller shafts (2) to the telescoping tube (3) using the 3/8 screw set sq head and jam nut. Slide the tube into the “H” frame (4).

The transport lift cylinders are equipped with cylinder support braces to prevent cylinder buckling during transport when the cylinders are fully extended. These support braces must be properly assembled to support the transport cylinders without binding or placing undue side loads on the cylinders.

If the cylinders are removed or the inner axle slide blocks become worn, assemble or adjust the cylinder support braces as follows.

Refer to Figure 8
2. Assemble the slide block (1) to the frame using the 3/4 x 7” bolt, lock washer and hex nut. Attach the front side block (2) and front side block back plate (3) to the frame onto the welded studs (4) using the 5/8 slotted hex nut and cotter pins.

3. Assemble the contact wheel spring mount (12) to the right-hand leg of the “H” frame tube using the 5/8-11 x 5 1/32 x 6 u-bolt and the 5/8 lock washers and hex nuts. This can be left loose at this time.

NOTE: Keep front slide blocks on transport axles adjusted to within 0.381 to 0.635 mm (0.015 to 0.025 inch) of inner-axle tubes).

4. Assemble the support brace (6) to the non-port side, rod end to the cylinder by removing the end nuts from the tie rods (5), slide brace onto rods and retighten with same nuts.

5. Screw on three 1/2-inch jam nuts and one 1/2-inch washer as shown (7). Tighten the first jam nut against the cylinder support (2) and run the other two jam nuts on nearly all the way.

6. Install the cylinder with the support bolts extending through the bracket on the outer slide tube and pin both the base end and rod end.

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

8. Install spring (8) and 1/2-inch nylock nut (9). Tighten nut to compress spring to a 1 1/4 inches.

9. Use this procedure for each of the two support bolts on the transport cylinders.

10. Slide hubs (10) into telescoping tube and secure with 5/8 bolt, flat washers and lock nuts. Assemble tires to outer hubs using fasteners with hub kit (11). Tighten bolts down in star-like pattern until all are tight.

NOTE: Keep front slide blocks on transport axles adjusted to within 0.381 to 0.635 mm (0.015 to 0.025 inch) of inner-axle tubes).
CPH Frame to “H” Frame

Be sure the frames are being supported and lifted properly. Use safety measures at all times.

Refer to Figure 9

1. Bronze pivot bearings (1) may already be installed into center tube of frame. If not, install by pounding them straight into the tube, aligning holes in bearings to zerk holes in center tube. One bearing on top and one on bottom of tube. Be sure edges of the bearings and tube are flush with each other.

2. Place a pivot thrust washer (4) on top of the bearing and tube and one on the lower portion of the CPH frame (2). Bring CPH frame to “H” frame (3) aligning pivot holes. Lift the pivot shaft (5) into the tube from the top. The pivot shaft (5) can be lowered or lifted from the bottom for aligning bolt holes.

NOTE: More thrust washers may be used to shim as needed.

3. Place 7/8-9 x 5 1/2 bolt (6) through holes securing with lock washer and hex nut.

4. Assembly slotted nut (7) on end of pivot shaft. Tighten leaving enough movement for pivot. Place cotter pin (8) through slotted nut and hole in pivot shaft.

5. The roller section (9) of the leaf spring should rest slightly up against the “H” frame. Loosening of the end u-bolts on the leaf spring will assist in this placement of rollers.

6. Assembly the weight bracket adjustment leg (10) to the “H” frame (3) using the center three holes along with the 5/8-11 x 2” bolts, flat washers, lock washer and hex nuts.

7. Install the rod end of the cylinder stabilizer to the “H” frame using 5/8 x 3 bolts, flat washers, 5/8 jam nuts and lock nuts (11).

Assembly of the drill is the same for both the right-hand and left-hand sides.

Refer to Figure 10

Decal Placement on “H” Frame

8. Decal Pic- not a Step

9. Decal Pic-Turning Fan
“H” Frame, Sub-Frame and Box

Refer to Figure 11
1. Center and assemble sub-frame (1) to the “H” frame (2) using 3/4 x 6 1/32 x 5 u-bolts, lock washers and hex nuts.
2. Place box (3) on frame (1) using clamp plates (4) and fasteners. (20mm x 15cm, HHCS bolt, flat washer, lock washer and nuts). Fasten box to frame using 12mm x 30mm hex bolts, flat washers, lock washers and nuts (5).
3. Up to three spacers can be used in each place to space between the support angle and the “H” frame support tube (6). They are held in place using a 1/4 flat washer and a 1 1/4 x 1 self-tapping screw.

Refer to Figure 12
NOTE: Center the frames when assembling together. See figure 12 for measurements between frames.

Figure 11
“H” Frame to Sub-frame to Box

Figure 12
Centering Frames
Great Plains Mfg., Inc.

Assembly

Refer to Figure 13
Decal Placement to Box
1. Decal Logo & GP Stripe
2. Decal Logo GP
3. Decal NTA 1000 or 1300

Refer to Figure 14
Decal Placement Sub-Frame
4. Decal Amber Reflector
5. Decal Pic-Do Not Ride
6. Decal 25KM Per Hour (Top Step)
7. Decal Red Reflector
Lights to Sub-Frame

Refer to Figure 15

1. Slide light tube through the end of the walkboard (1). (Amber reflector's will be facing the rear of the drill). Assemble to the walkboard using two 3/8 x 2 bolts, lock washers and hex nuts (2).

2. When placing lights on drill, the red light will be facing the rear with the two amber lights on the outside edge.

3. Assembly the lights (3) to the tube using 1/4-12 x 2 1/4 bolts, lock washers and flat washers (4). Bring fasteners up from the bottom of the tube and into the bottom of the lights. There is a LH and a RH light. The wire extensions will be toward the inside of the drill when properly installed.

4. Route the wire harness (5) from under the walkboard following the tube to the lights. The lead wires with the green goes to the right light and the lead with the yellow wire goes to the left light. Wire tie the harness in place.
Hand Rails and Step

Refer to Figure 16

1. Assembly walkboard extension (1) to the front left side of the walkboard (2) using 3/8-16 x 1” bolts, flat washers, lock washers and hex nuts (3). Install bolt and flat washer down through slotted holes in extension and lock washer and hex nut up from underneath the walkboard.

2. Attach step weldment (4) to walkboard (2) using step pivot tube (5), 1/2-13 x 1 3/4 bolts, flat washers, lock washers and hex nuts (6). The bolts and flat washers will go in from the inside of the step with other fasteners (lock washers and nuts) on the outside.

3. Install the platform hand rail (7) to the walkboard (2) sides using the 3/8-16 x 2 1/4” bolts, lock washers and hex nuts.

4. Install the step hand rail (9) to the walkboard (2) sides using the 3/8-16 x 2” bolts, lock washers and hex nuts (8).

5. Assembly the hand rail braces (10) to the platform hand rails (7) with 3/8-16 x 2 1/2” RHSN* bolts, lock washers and hex nuts (11).

6. Assembly the hand rail brace clamp (12) to the hand rails (7) and braces (10) using 3/8-16 x 1 3/4” RHSN bolts, lock washers and hex nuts (13).

NOTE: Measure down from the top of the hand rail 130mm (5”) for placement of the top brace and from the top brace down 380mm (15”) for the bottom brace. Refer to illustration.

*RHSN: Round Head Square Neck bolt.
Assembly

Fan Assembly

Refer to Figure 17

1. Assemble the hydraulic motor mount plate (1) to the fan housing LH side (2) using slotted hex head screws (3). Tighten carefully by hand so as not to strip threads on screws or fan housing.

2. Assemble the hydraulic motor (4) to the mount plate (1) with 3/8-16 x 1 1/4" bolts (5) and 3/8 flat washers, lock washers and hex nuts (6). When looking at the motor the letters should be right-side up, reading B - A.

3. Slide fan impeller (7) onto shaft of hydraulic motor. Place 1/8 Key (8) onto shaft and slide bushing (9) on lining up the key and grooves. Slightly tap bushing onto shaft until close enough to insert screws. Place magnetic washer (10) which is supplied by Roger against bushing lining up holes. Attach the magnet to the bushing, using the screws supplied, to the fan bushing. Slowly tighten down to a torque of 5 inch pounds per screw, alternating on the screws with each turn. Slightly tap 1/8 key (8) into grooves until flush. The assembled bushing must be flush with the end of the motor shaft. See figure 18.

4. Assemble fan housing RH side (11) to fan housing LH side with HFSS 1/4-20 x 1(12) and flange hex nut (13).

5. Assemble screen fan cover (14) to house with fasteners that are supplied, leaving the two lower ones out for the Roger sensor and bracket (15).

6. Install the Roger sensor and bracket to the fan housing from the inside of the screen fan cover using the two screws that were left out. The distance between the sensor and the magnetic washer needs to be set to distance specified in Roger manual.

NOTE: Caulking may be used around seams to ensure minimal air leakage.

Fan Assembly to Fan Mount

Refer to Figure 19

1. Assembly fan mount (1) to “H” frame (2) using two 3/8 x 1 1/4 bolts, flat washer, lock washers and hex nuts.

2. Attach fan (3) to fan mount by replacing the bottom five screws with 1/4 x 1 1/4 bolts. Do not over tighten.

3. Install two 3/8-16 x 3/4 bolts, lock washers and hex nuts, in replace of the plastic plugs in the holes on each side of the fan housing (4).
Contact Wheel

Refer to Figure 20

1. If bearings, 0.880 hex bore 205DD (1) and plastic sleeves (2) are not already installed, do so as shown. Be sure to keep bushing and sleeves level so as not to go in at a slant. Bearing should be installed on the flanged side* of the arm with the groove side of the bearing towards the outside.

Refer to Figure 21

2. Place the open end of the contact wheel arm (1) inside the mounts of the sub-frame (2) by aligning the holes together and sliding them over each other. The open end of the contact wheel arm may have to be pushed inward to slide in between the mounts.

3. Attach tie-rod (3) to the arm (1) using 3/8 x 1 bolts and lock washers (4).

4. Slide the tramline switch mount (5) into the 2 1/2 hose clamp (6) and tighten over the extended tube from the sub-frame. Final assembly and exact orientation will be done later when the Roger switch is installed.

5. Assemble the brace (7) to the contact wheel arm (1) with two 1/2-13 x 1 hex flange screws (8).
Contact Wheel cont.

Refer to Figure 22

6. Assemble the drive shield (8) and the arm (9) to the contact arm (1) with 1/2-13 x 1 hex flange screws (10).

NOTE: If idler spool (11) is not assembled, assemble by sliding on the spacer tube, 1/2 flat washer and fastening with cotter pin.

7. Install the idler spool assembly (11) to the drive shield (8) placing an idler bolt plate (12) in front of the idler spool assembly and on the outside of the drive shield. Use 3/8-16 x 1 1/4 bolts and flange lock nuts (13).

8. Use a 3/8-16 x 1 1/2 flange head bolt (14) and lock washer to install the nut hex coupler (15).

Refer to figure 23

9. Slide jack shaft (16) through bearings until the shaft comes out the pivot bushing (17). Put the offset drive wheel collar (18) onto the shaft. Slide collar onto shaft until the roll pin hole is visible. Slide lock collar (20) onto shaft first then the 7/8 hex bore sprocket (21).

10. Install one of the flangette’s (22) on the shaft followed by the 7/8 hex bearing (23) and then the other flangette.

11. Attach the flangette’s and the bearing to the frame with 5/16-18 x 1 1/4 RHSNB bolts, lock washers and hex nuts (24). Drive roll pin (19) through shaft on the outside of the collar (18).

12. Install a 5/8-11 x 3 bolt (25), 42 16 T idler sprocket (26), flat washer, hex nut and another flat washer through the holes in the mount and tightened down using a 5/8 flat washer, lock washer and hex nut (27). There will be a total of two bolts with sprockets on them.

13. Assemble the offset drive wheel collar (28) onto the shaft along with the 42C25 7/8 sprocket (30), three machined washers and roll pin (31).
**Contact Wheel cont.**

*Refer to Figure 24*

14. Drive the roll pin into the single holed end of the axle shaft (32). Be sure there are even lengths of the roll pin (39) on each side of the shaft.

15. Assembly the axle shaft (32) by sliding two of the machine washers (33) onto the shaft, double hole side first, then through the first wheel (34) and the contact wheel arm.

16. Assembly the other wheel and eight machined washers onto shaft as it is pushed through. Continue to slide shaft through to the drive shield.

17. Install the offset drive wheel collar (35), lining up the inside hole on the shaft with the hole in the collar and securing together with a roll pin (36). Place two machined washers on axle shaft with the 42C17 sprocket (37) following with three more machines washers after that. Fasten together in place with the roll pin (38) in the last hole.
Contact Wheel cont.

Refer to Figure 25

18. Install the HFSS 3/8-16 x 1 1/2 bolt and lock washer (1) through the mount from the outside. Place the hex nut (2) on bolt and the nut hex coupler (3).

19. Place the shield knob (6) though the hole in the chain cover (5), put the nylock jam nut on and screw into the coupler.

20. Directional routing of the chain is shown. Keep the chain connector clasp to the outside with the open end opposite the flow of the chain. Lettering means are: A & B = Idler Bolt Sprockets, C=Shaft Sprocket and D=Hopper Sprocket.

NOTE: To tighten chain on the jack shaft, loosen bolt for idler sprocket and slide down until desired tension then retighten. To loosen chain, slide bolt upward.

Refer to Figure 26

22. Install the HFSS 3/8-16 x 1 1/2 bolt and lock washer (9) through the arm from the inside. Place the nut hex coupler (10) onto the bolt.

23. Place the shield knob (11) though the slot in the chain cover (12), put the nylock jam nut (13) on and screw into the coupler.

24. Directional routing of the chain is shown. Keep the chain connector clasp to the outside with the open end opposite the flow of the chain. Lettering means are: A=Axle Shaft Sprocket, B=Double Idler and C=Jack Shaft Sprocket.

NOTE: To set the chain tension for the axle and jack shafts, the spool assembly, B, can be loosened, rotated into position then retightened.
Contact Wheel cont.

Refer to Figure 27

26. Assemble the opener spring rod, if not already assembled, by slipping the 1/2-13 x 10 threaded bolt (2) into the trunnion casting (3). Side bolt and trunnion into the spring (4) and retain with spring can (5) and flange hex nut (6). Tighten the spring down to the length of 10".

27. Tighten the jam nut (7) against the flange nut to lock it in place. Apply thread locker to the last few threads and install the yoke (8). Install the casting plug (1).

28. Attach the spring rod (9) to the contact wheel spring mount with a 1/2 x 4 pin clevis and a 1/8 x 1 1/4 cotter pin (11). Attach the yoke end of the spring rod to the contact arm using a 1/2 x 1 3/4 clevis pin and cotter pin (10).
Assembly

Toolbar to CPH Frame

Refer to Figure 28
1. Loosen and remove fasteners (1) from the coulter clamp bars (2). Place toolbar (3) under CPH frame. Reuse fasteners to hold toolbar in place. Do not tighten down.

Refer to Figure 29
2. Center the toolbar assembly with the center of the CPH frame. See figure 29 for measurements.
3. Assemble the blades (4) to the coulter hubs (5) with the 3/4” carriage bolts, lock washers and hex nuts (6). NOTE: Coulter blades are set 6.35mm (1/4”) to the left of the center of the spring bars. Account for this when locating individual coulters. If turbo blades are used on drill, be sure they are assembled for correct rotation.

⚠️ Coulter hubs and blade may spin when tightening.

Figure 28
Toolbar to CPH Frame

Figure 29
Center Toolbar
Toolbar Coulter Extension

Refer to Figure 30

1. Assemble the coulter wing mount (2) to the main frame (1) by aligning holes on back plate and using 3/4-13 x 2" bolts, lock washers and hex nuts (3). Use 1/2-13 x 6" bolts (4) and lock washers and hex nuts (3) on the sides of the coulter wing.

2. Slide inside coulter hinge arm (5) into coulter wing mount (2). Align holes and place arm pin (6) through holes with a flat washer on either side. Use two cotter pins (1/4 x 2") in arm pin in (6) to secure.

3. Slide outside coulter hinge arm (7) into coulter wing frame (8). Align holes and place arm pin (9) through hole with a flat washer on either side. Use two cotter pins (1/4 x 2") in arm pin out (9) to secure.

4. Assemble the coulter wing mount (2) to the coulter wing frame (8) by aligning bottom hole and using the lock pin (10) and pin lynch (11).

5. Carefully lift coulter wing frame (8) to coulter wing mount (2) aligning top holes. Slide cylinder (12), with ports to the rear of the drill, rod end down in between coulter wings. Place hinge pin 1 1/4 x 9 (13) through parts. Align the holes in the hinge pin to the holes in the pivot tube. Place 1 1/4 SAE flat washer on either side and secure with a 5/16 x 2 1/2 bolt and lock nut.

6. Place fold tower (14) over cylinder (12) base end aligning holes and using pin and clip to secure in place. Bring the coulter hinge arm (5) up to the tower (14) aligning holes and using tower pin (15) with flat washers and cotter pin (1/4 x 2") on either side. Do the same for the outside coulter hinge arm (7).
Opener Extension

Refer to Figure 31

1. Place opener hinge weldment (1) against end of sub-frame (2) using a 1/2-13 x 6 1/32 x 5 1/4 u-bolt (3) on the front tube and a 1/2-13 x 3 1/32 x 4 u-bolt (4) and hex lock nuts (5). Insert 1/2-13 x 2" bolts (6) through center holes with lock washer (7) and hex lock nuts (5).

2. Bring opener fold frame (8) up to opener hinge weldment (1) aligning bottom holes. Place lock pin (9) through holes and raise wing frame till hinge holes align. Insert the hinge pin and secure with a 5/16 x 2 1/2 bolt and lock nut.

3. Assemble the floating lug (11), short side of the tube to the rear of the drill, to the opener fold frame (8) with a 1-8 x 12 1/4" bolt (12) and nylock hex nut (13).

4. Insert cylinder (14) through the cylinder retainer, with port holes to the rear, connecting the base end of the cylinder to the cylinder lug on the sub-frame (2) with pin and keeper pin. Connect the rod end of the cylinder to the floating lug (11) in the same manner.

Press Wheels

Refer to Figure 32

1. Assemble press wheel (1) to pw arm (2) with a 5/8-11 x 2 1/2 bolt and lock washer (3).

2. Install the trunnion (4) to the opener (5) by turning handle, place through slot from underneath, and repositioning the handle to match up with the depth control holes in the opener.

3. Assemble bushings (6) and pivot tube (7) into pw arm. Slide pw arm up into the opener aligning the holes and securing in place with a 1/2-13 x 3 3/4 bolt (8) and flange lock nut (9).
Seed Tube and Hose

Refer to Figure 33

1. Attach the seed tube (2) to the opener (1) by sliding the tube into the opener, with the end flap facing the back of the opener. Secure using two 10-16 x 3/8 hex screws (3).

2. Screw a 2" (50mm) long section of the 1" black seed hose into the white seed hose leading from the drill. (A soap and water solution will aid in this assembly.)

3. Screw the narrow end of the hose boot onto the section of black seed hose from the drill. Fit the large end of the hose boot over the seed tube on the opener.
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 34

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 35

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

Figure 34
Tractor Hitch

Figure 35
Jack in Transport
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 36
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.
Set-Up

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.

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.
Set-Up

Bleeding Tongue Cylinder
1. 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).
2. Raise and safely support hitch, transport frame and front tongue.
3. 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.
4. Cycle cylinder completely in and out at least three times to purge air from cylinder and hoses.
5. Fully extend cylinder and repin rod end.
6. 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.
Set-Up

Bleeding Marker Hydraulics
To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motions, 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 over tightening, 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.
Great Plains Mfg., Inc.

**Hydraulics**

**Lift and Tongue Hydraulics**

**Refer to Figure 37**

1. Remove the plugs from the lift and tongue cylinders replacing them with 3/4 MJIC 3/4 MORB elbow fittings (1).
2. Route one hydraulic hose (2), (1/2R2 096 1/2MNPT 3/4FJIC), from the tractor to the base end of the tongue cylinder and one from the tractor to the rod end of the tongue cylinder.
3. Route the two hydraulic hoses (3),(1/2R2 250 1/2MNPT 3/4 FJIC), from the tractor through the tongue tube and along the "H" frame to the lift cylinders. One hose will connect to the base end of the master cylinder (5) and the other hose will connect to the rod end of the slave cylinder (6).
4. Connect to two lift cylinders with the hydraulic hose (4) (1/2R2 094 3/4FJIC).

---

![Figure 37](19491)

Hydraulic Schematics-Lift & Tongue
Fan Hydraulics NTA 1000

Refer to Figure 38

1. Install 7/8MORB 3/4 FJIC adapter fittings (1) to the ports on the fan motor. Attach 3/4MORB 3/4MJIC 3/4MJIC tee fitting (2) to the fitting on the “B” port side of the fan motor and the 3/4MJIC 3/4MJIC 3/4FJIC tee fitting (3) to the fitting on the “A” port side of the fan motor.

2. Install one valve line check (4) to tee fitting (2) on the bottom “B” port side of the fan motor. Check valve (4) should be assembled with marking facing so that orientation is correct with fluid flow.

3. Assemble the 20” hydraulic hose (5) to the tee fitting on the “A” port side and to the check valve (4) on the “B” port side.

4. Assemble the 3/4FJIC 3/4MJIC elbow fitting (6) to the top of the tee fitting (3) on the “A” port side. Install the 187” hose (7) to the elbow fitting. Add the 1 1/16MORB 1/2FNPT adapter fitting (8) and the 1 1/16FORB QD coupling (9) to the hose.

5. Route the 60” hydraulic hose (10) from the adapter fitting connecting the other end to the 120” hydraulic hose (12) using a 3/4MJIC 3/4MJIC adapter fitting (11). Route the hoses to the tractor by way of the hose bracket on top of the tongue.
Fan Hydraulics (NTA 1300)

Refer to Figure 39 on page 30

1. Install the double selector valve (1) to the selector valve mount located on the front end of the tongue tube using two 3/8 x 2 3/4 bolts, flat washers, lock washer and hex nuts.

2. Pull plugs in the coulter wing and opener wing fold cylinders and replace with orifice plates. Install the ORPL 1/32 9/16MORB orifice (2) in the coulter wing cylinders and the 1/16 3/4 orifice plate (3) in the opener wing cylinders.

3. Assemble two 45 3/4MORB 3/4MJIC elbow fittings (4) into the front port of the valve. Connect the two hydraulic hoses 1/2R2 120 1/2MNPT 3/4FJIC to the elbow fittings (5) and route forward to the tractor.

4. On the left-hand side of the selector valve, install two 3/4MJIC 3/4MORB elbow fittings (6). From the top elbow connect the hydraulic hose 1/2R2 066 3/4FJIC (7) and the hydraulic hose 1/2R2 060 3/4FJIC (8) to the bottom, routing through the hose bracket and back to the fan.

5. Attach the 3/4MORB 3/4MJIC adapter fitting (9) to the hose and the valve line check (10) to the fitting. Next connect the 3/4MJIC 3/4MORB elbow fitting (11) to the valve line check.


7. Install one valve line check (15) to the tee fittings on the bottom “B” port side of the fan motor. Assemble the hydraulic hose (16) 1/2R1 020 3/4FJIC 3/4MORB to the TE fitting on the “A” port side and to the valve line check on the “B” port side.

8. Assemble the two fittings together on the “A” port side of the fan.
Fold Hydraulics (NTA 1300)

Refer to Figure 39 on page 30

1. On the right side of the valve, install two 9/16MJIC 3/4MORB 9/16MJIC tee fittings (17). Be sure fittings are in a horizontal position.

2. On the back side of the tee fittings connect two hydraulic hoses 1/4R1 025 9/16FJIC (18). From these hoses install a 9/16MJIC tee fitting (19).

3. At the tee fitting of the top hose, assemble a hydraulic hose 1/4R1 066 9/16FJIC (20) to each end. Route the hoses to the base end of the cylinders connecting them with a 3/4MORB 9/16MJIC elbow fitting (21).

4. At the tee fitting of the bottom hose connect a hydraulic hose 1/4R1 057 9/16FJIC (22) to each side and route to the rod end of the coulter wing cylinder. Use a 3/4MORB 9/16MJIC elbow fitting (23) and a 9/16MJIC 3/4MORB adapter fitting (24) to connect to the rod end of the coulter wing cylinders.

5. Assemble the hydraulic hoses 1/4R1 145 9/16FJIC (25), to the front facing end of the tee fitting from the selector valve. Route these hoses through the tongue tube back to the “H” frame where the openers are located.

6. Assemble the 9/16MJIC tee fittings (26) to the end of the hoses. On the top hose and fitting, assemble the hydraulic hoses 1/4R1 032 9/16FJIC (27) to each side and adding a 9/16MJIC 9/16MORB elbow fitting (28) to each end and connected that to the base end of the opener wing cylinders.

7. Assemble the hydraulic hose 1/4R1 047 9/16FJIC (29) to the tee fitting on each side adding the 9/16MJIC 9/16MORB elbow fitting (30) to each end and connected that to the rod end of the opener wing cylinders.
Hydraulic Schematics

- Fan and Fold (NTA 1300)

Figure 39
Hydraulic Schematics-NTA 1300
## Hydraulic Hose and Fitting Nomenclature

Listing below is for an example

<table>
<thead>
<tr>
<th>Hose size &amp; Rating</th>
<th>Length in inches</th>
<th>Fittings on end of hose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic Hose</td>
<td>1/2R1</td>
<td>250</td>
</tr>
<tr>
<td>1st (Side inlet of TEE)</td>
<td>2nd</td>
<td>3rd</td>
</tr>
<tr>
<td>*TEE fittings</td>
<td>3/4MORB</td>
<td>3/4MJIC</td>
</tr>
</tbody>
</table>

* See Figure below.

![Diagram of TEE fitting](image)

### Tire Inflation Chart

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Inflation PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.50 x 20” 4-Ply Drill Rib</td>
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</tr>
<tr>
<td>9.0 x 22.5 10-Ply Highway Service 70</td>
<td>70</td>
</tr>
<tr>
<td>9.0 x 24” 8-Ply Rib Implement</td>
<td>40</td>
</tr>
<tr>
<td>9.5L x 15” 6-Ply Rib Implement</td>
<td>32</td>
</tr>
<tr>
<td>9.5L x 15” 8-Ply Rib Implement</td>
<td>44</td>
</tr>
<tr>
<td>9.5L x 15” 12-Ply Rib Implement</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Inflation PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>11L x 15” 6-Ply Rib Implement</td>
<td>28</td>
</tr>
<tr>
<td>11L x 15” 12-Ply Rib Implement</td>
<td>52</td>
</tr>
<tr>
<td>12.5L x 15” 8-Ply Rib Implement</td>
<td>36</td>
</tr>
<tr>
<td>12.5L x 15” 10-Ply Rib Implement</td>
<td>44</td>
</tr>
<tr>
<td>16.5L x 16.1” 10-Ply Rib Implement</td>
<td>36</td>
</tr>
<tr>
<td>21.5 x 16.1” SC 10-Ply Rib Implement</td>
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</tbody>
</table>
## Torque Values Chart for Common Bolt Sizes

<table>
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<th>Bolt Size (Inches)</th>
<th>Bolt Head Identification</th>
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<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
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</thead>
<tbody>
<tr>
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<td>5.6</td>
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<td>6</td>
<td>13</td>
<td>10</td>
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<td>5/16&quot; - 18</td>
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<td>15</td>
<td>11</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>5/16&quot; - 24</td>
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<td>13</td>
<td>26</td>
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<td>47</td>
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<td>7/16&quot; - 14</td>
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<td>355</td>
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<table>
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<th>Grade 8.8</th>
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1 in-tpi = nominal thread dia.in inches-threads per inch
2 N·m = newton-meters
3 ft-lb= foot pounds
4 mm x pitch = nominal thread dia. in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.
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 be 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 with 10 days from the date of original purchase.
Great Plains Mfg., Inc.

Great Plains Manufacturing, Inc.
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Salina, Kansas 67402-5060 USA