

Predelivery Instructions

CP1000

Three-Meter Drill and Hitch

Great Plains

Manufacturing, Inc.

P.O. Box 5060 • Salina, Kansas 67402-5060



Read this 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!

Great Plains



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

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Important Safety Information

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

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 CP1000 is a pull-type seeding implement. The implement consists of a three-point drill mounted on a centre-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 coulters 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 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.

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

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

Section 1 Assembly

The following headings are step-by-step instructions for assembling the CP1000. Begin *Pre-Assembly Checklist* to make sure you have all necessary parts and equipment. Then proceed with assembly as shown on the attached handouts.

Pre-Assembly Checklist

1. Read and understand “**Important Safety Information**” on page 0 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 drill.

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 labels and reflectors are correctly located and legible. Replace if improperly located or damaged. Refer to *Safety Labels*, “**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 7. Tighten wheel bolts as specified on *Torque Values Chart* on the “**Appendix**” on page 7.

Section 2 *Setup*

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

Prestart Checklist

1. Read and understand “**Important Safety Information**,” page 0.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See *Safety Decals*, “**Important Safety Information**,” in the operator’s manual.
4. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Appendix**,” page 7.

Hitching Tractor to Implement

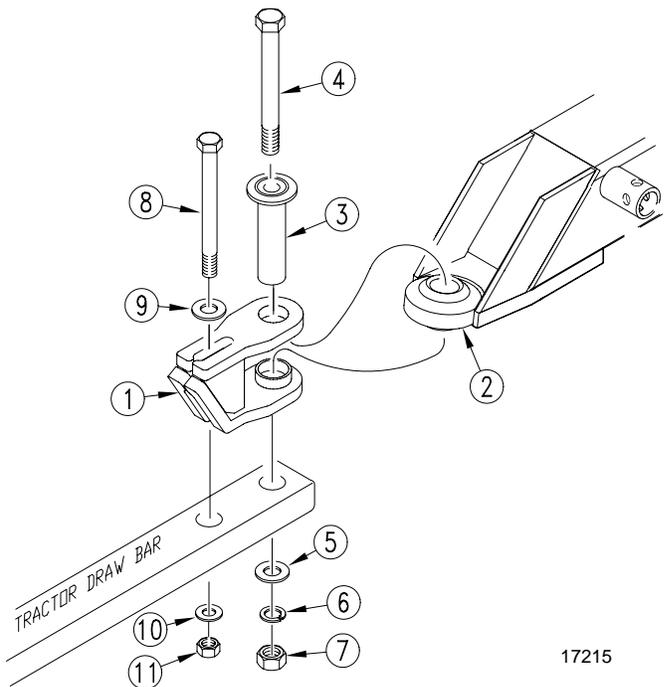


DANGER!

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 2-1.

Refer to Figure 2-1.

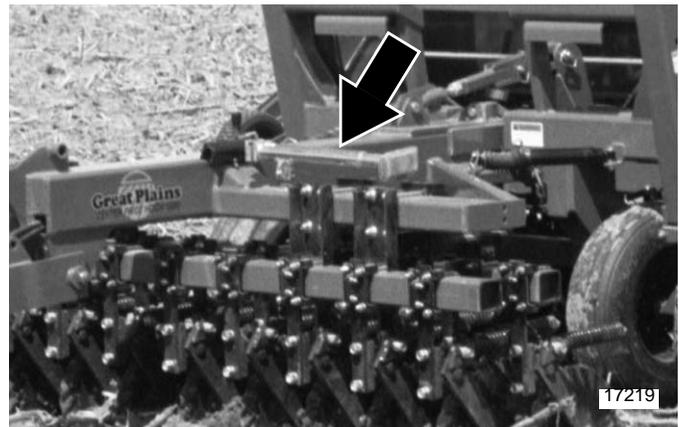
1. Place hitch weldment (1) over ball swivel on hitch tongue (2). Hold hitch weldment in place by inserting spacer tube (3) through hitch clevis and ball swivel.
2. Back tractor up to hitch and bolt hitch weldment to tractor drawbar using 1-by-10-inch bolt (4), large flat washer (5), lock washer (6), 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.



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Figure 2-1
Drawbar Assembly Illustration

4. Securely attach safety chain to tractor-drawbar frame.
5. Remove jack from stob on side of hitch tongue and place in transport position on implement. See Figure 2-2.



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Figure 2-2
Jack in Transport Position

6. With center-pivot hitch properly secured to tractor drawbar, remove transport lock pins located in vertical tubes above tires and place in storage hole next to stabilizer cylinder on hitch as shown in Figure 2-3.

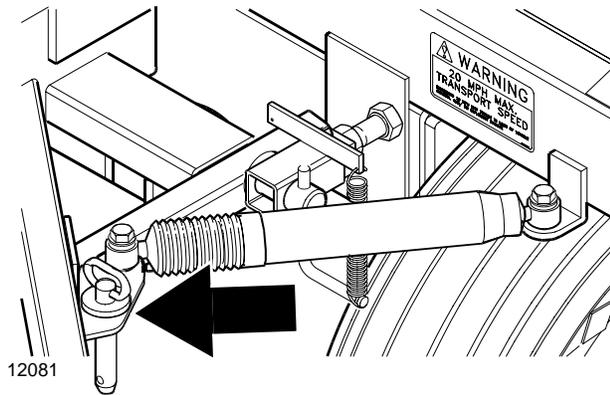


Figure 2-3
Transport Pins in Storage

7. Position the center pivot hitch in front of drill so quick-hitch links on hitch are in line with lower hitch pins on drill. Hydraulically retract transport-lift cylinders to position quick-hitch links slightly lower than drill hitch pins.
8. Position quick-hitch handle to locking position as shown in Figure 2-4. This will allow drill hitch pins to snap into quick-hitch links and secure drill to hitch.

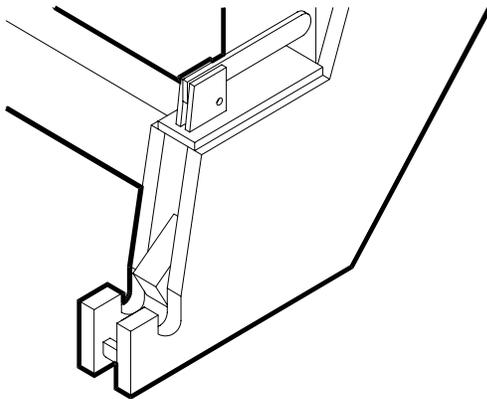


Figure 2-4
Quick Hitch Handles in Locking Position

9. Back center-pivot hitch up to drill until hitch pins contact quick hitch. Hydraulically raise hitch just until hitch pins are securely attached inside quick-hitch links. Do not raise drill any higher than necessary.
10. Attach slotted link from center pivot hitch (1) to top hitch on drill. Using hitch pin (2) and bushing (3), secure with clip pin (4) as shown in Figure 2-5.

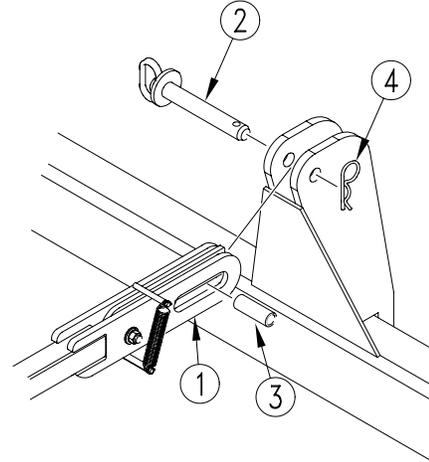


Figure 2-5
Top Hitch Pin and Bushing

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.

	Hydraulic Function
Red	Transport Lift Cylinders
Blue	Tongue Cylinder

To distinguish hoses on the same hydraulic circuit, refer to plastic hose holder. See Figure 2-6. Connect hose under extended cylinder to outlet you choose for cylinder extension. Connect hose under retracted symbol to outlet for cylinder retraction.

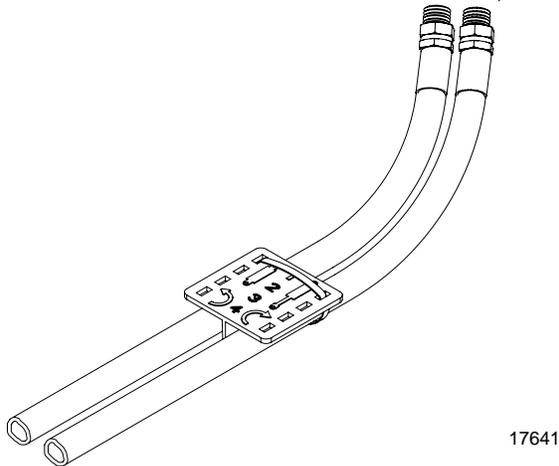


Figure 2-6
Hydraulic Hose Color Ties

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

For safe and smooth operation, the hydraulic systems must be free of air. Bled the hydraulic systems during initial implement 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. Re-check tractor reservoir and fill to proper level.

Bleeding Transport Lift Cylinders

The transport-lift cylinders are rephasing cylinders and require a special procedure for bleeding air from the circuit. Read and follow procedure carefully. Cylinders will not function properly with air in the hydraulic circuit.

1. Check hydraulic fluid in tractor reservoir and fill to proper level. Add fluid to system as needed. Transport-lift-cylinder capacity is about 7.57 litres (2 gallons).
2. Jack up and support hitch frame.
3. Remove 1/2-inch nylock nuts (1) on spring side of cylinder-support brace. Unpin cylinders. Do not alter position of jam nuts (2) on centre of support-brace bolts.

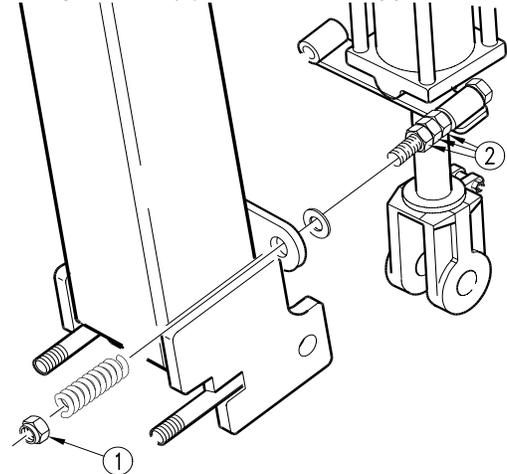


Figure 2-7
Unpin Cylinders

4. Turn cylinders to a position where rod ends are higher than base ends. Support cylinders in a safe location.
5. Start tractor and run engine at idle speed. With rod ends higher than base ends, hydraulically extend cylinders. After cylinder rods are fully extended, continue to hold control lever for one minute before hydraulically retracting cylinders.
6. Repeat step 5 three times to completely bleed system. If air is still trapped in either cylinder, it will operate in jerky, erratic motions. Repeat steps until cylinder movement is smooth and even.
7. Repin cylinders to hitch frame. Reinstall short compression springs on cylinder-support-brace bolts and re-tighten 1/2-inch nylock nuts until springs are compressed to 32 mm (1 1/4 inches). If for any reason the 1/2-inch jam nuts in centre of support-brace bolts were changed, refer to *Transport Cylinder Support Brace* in the operator's manual for proper adjustment.
8. Refill tractor hydraulic-fluid reservoir to proper level.

Bleeding Marker Hydraulics



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.

1. Check that tractor hydraulic reservoir is full.
2. With both markers lowered into field position, loosen hydraulic-hose fittings at rod and base ends of marker cylinders. Loosen fittings on back side of sequence valve.

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

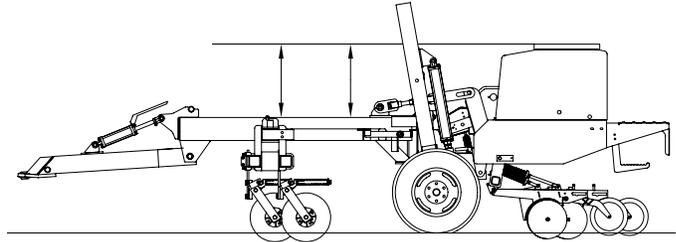
3. With tractor idling, activate tractor hydraulic valve until oil seeps out around a loosened fitting. Tighten that fitting.

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.

4. 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.

Level Drill with Hitch

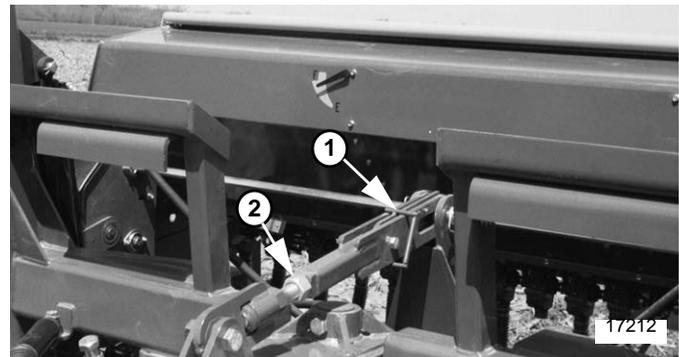
To check if the drill is level with the hitch, place a straight edge on top of the seed-box lid and extend the straight edge over the hitch frame. Take two measurements from the straight edge to the hitch frame. See Figure 2-8. If the measurements are not equal, level the drill.



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Figure 2-8
Straight-Edge Measurement

To level drill, use threaded adjustment at front of link. Refer to Figure 2-9. Raise implement, flip up lock plate (1) and unpin link from hitch. Loosen jam nut (2) and turn eye bolt to shorten or lengthen the link as necessary. Repin link and re-check if drill is level. When drill is level, tighten jam nut.

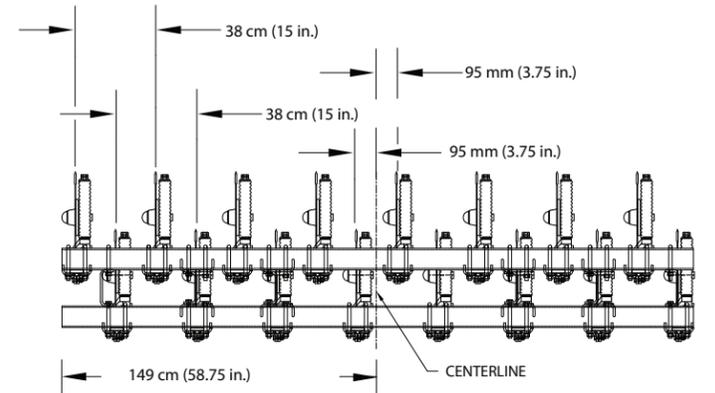
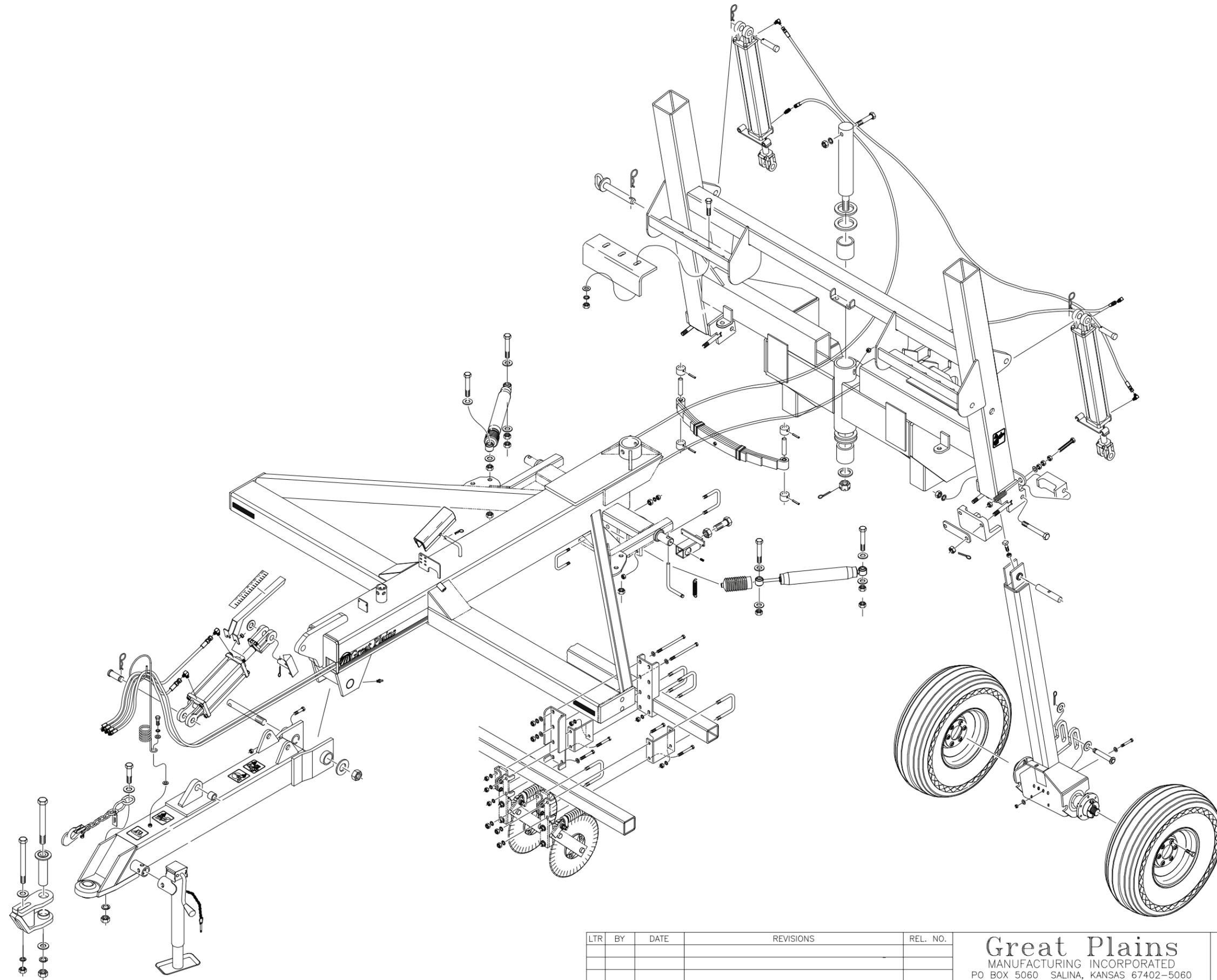


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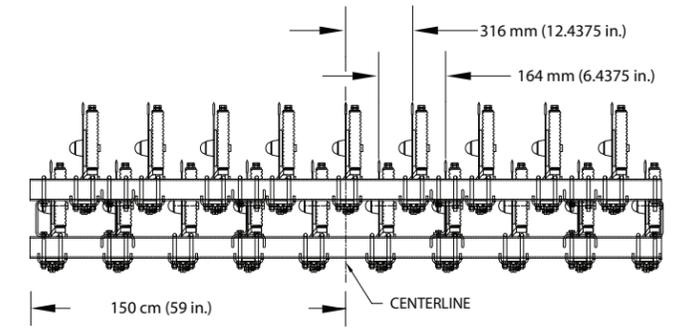
Figure 2-9
Levelling Adjustment

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7 1/2" SPACING
(190.5mm SPACING)



6.2" SPACING
(157.9mm SPACING)

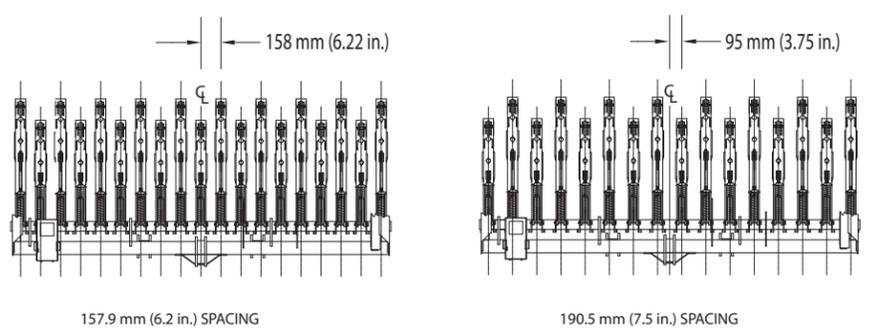
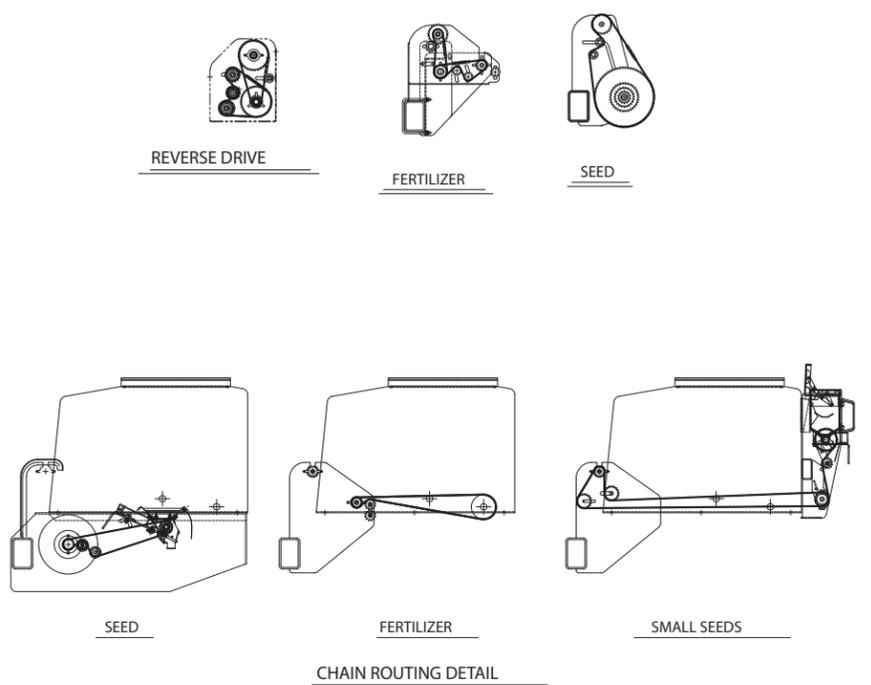
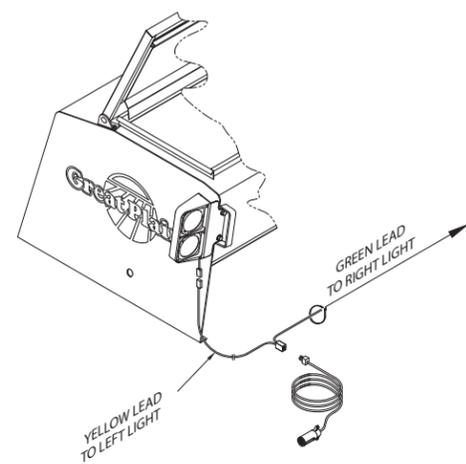
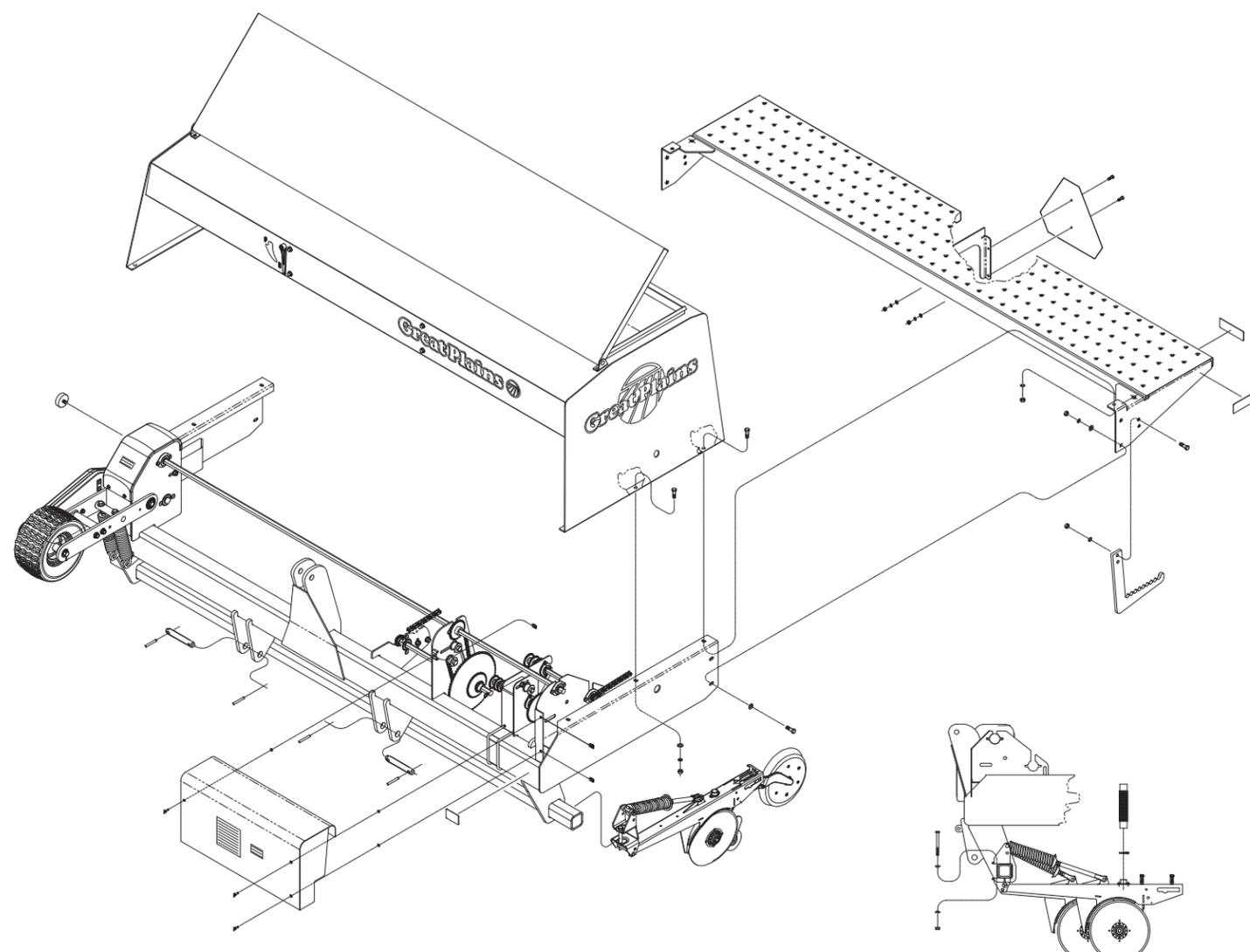
LTR	BY	DATE	REVISIONS	REL. NO.

Great Plains
 MANUFACTURING INCORPORATED
 PO BOX 5060 SALINA, KANSAS 67402-5060

FINISH RM NUMBER
 HEAT TREAT RM DESCRIPTION

TOLERANCES UNLESS NOTED
 ±INCH [METRIC]
 X.X ±.1 [2.5]
 X.XX ±.03 [.75]
 X.XXX ±.005 [.125]
 FRAC ±.03 [.75] ANG ±2'

TITLE CP1000 HITCH ASSEMBLY			
DRAWN	DATE	CHECKED	
SCALE	EXP NO		
REL. NO.	PART NO	148-358Q	REV



OPENER SPACING

LTR	BY	DATE	REVISIONS	REL. NO.	Great Plains MANUFACTURING INCORPORATED PO BOX 5060 SALINA, KANSAS 67402-5060		TOLERANCES UNLESS NOTED ±INCH [METRIC] X.X ±.1 [2.5] X.XX ±.03 [.75] X.XXX±.005 [.125] FRAC ±.03 [.75] ANG ±2°	TITLE CP1000 ASSEMBLY			
					FINISH	RM NUMBER		DRAWN	DATE	CHECKED	
					HEAT TREAT	RM DESCRIPTION		SCALE	EXP NO		
								REL. NO.	PART NO	148-358Q	REV