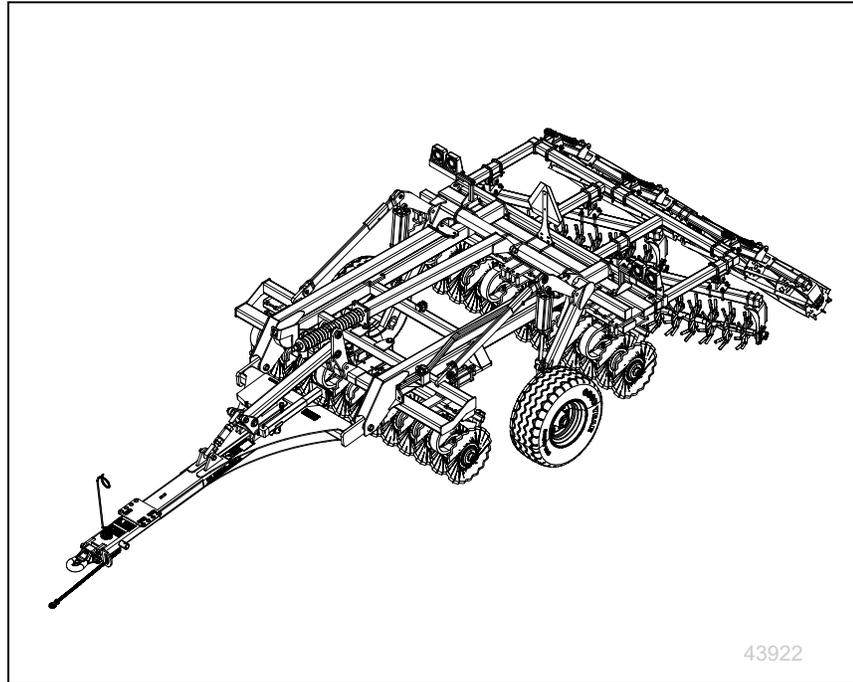


Operator Manual

Turbo Max
850TM & 1000TM



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!



Illustrations may show optional equipment not supplied with standard unit.

ORIGINAL INSTRUCTIONS



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Printed 2025-03-18

586-592M

Machine Identification

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

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

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

Dealer Contact Information

Name: _____
Street: _____
City/State: _____
Telephone: _____
Email: _____
Dealer's Customer No.: _____

California Proposition 65
 WARNING: Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands. For more information see www.P65Warnings.ca.gov/motor-vehicle-parts .



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Brand and Product Names that appear and are owned by others are trademarks of their respective owners.

Printed in the United States of America



Important Safety Information

Look for Safety Symbol

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



Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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



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



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



Prepare for Emergencies

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



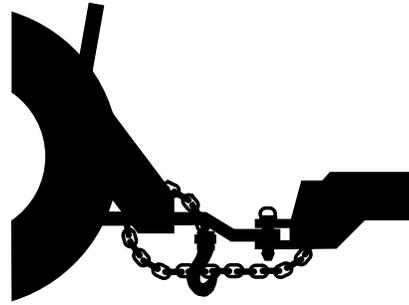
Be Familiar with Safety Decals

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



Use Safety Chains

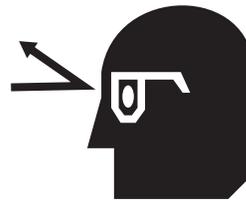
- ▲ *Use safety chains to help control drawn machinery should it separate from tractor draw-bar or trailing nurse tank hitch.*
- ▲ *Use chain with a strength rating equal to or greater than the gross weight of towed machinery.*
- ▲ *Attach implement chain to tractor draw-bar support or specified anchor location. Allow only enough slack in chain for turns.*
- ▲ *Replace chain if any links or end fittings are broken, stretched or damaged.*
- ▲ *Do not use safety chain for towing.*



Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury. This Turbo Max requires a Power-Beyond port, which is always under pressure when the tractor is running.

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



Keep Riders Off Machinery

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

- ▲ *Never allow children to operate equipment.*
- ▲ *Keep all bystanders away from machine during operation.*



Use Safety Lights and Devices

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

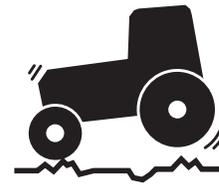
- ▲ *Use flashing warning lights and turn signals whenever driving on public roads.*
- ▲ *Use lights and devices provided with implement.*



Transport Machinery Safely

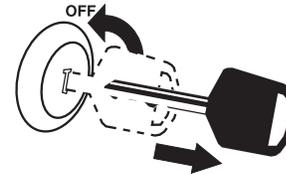
Maximum transport speed for implement is 20 mph (32 kph), 13 mph (22 kph) in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not tow an implement or nurse tank that weighs more than 1.5 times the weight of towing vehicle.*
- ▲ *Carry reflectors or flags to mark Turbo Max in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “**Turbo Max Specifications and Capacities**” on page 27.*
- ▲ *Do not exceed 20 mph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Reduce speed on rough roads.*
- ▲ *Comply with national, regional and local laws.*
- ▲ *Do not fold or unfold the Turbo Max while the tractor is moving.*



Shutdown and Storage

- ▲ *Lower Turbo Max, put tractor in park, turn off engine, and remove the key.*
- ▲ *Secure Turbo Max using parking jack provided.*
- ▲ *Detach and store Turbo Max in an area where children normally do not play.*



Tire Safety

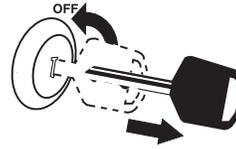
Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

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



Practice Safe Maintenance

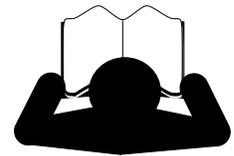
- ▲ *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- ▲ *Work in a clean, dry area.*
- ▲ *Lower implement, put tractor in park, turn off engine, and remove key before performing maintenance.*
- ▲ *Make sure all moving parts have stopped and all system pressure is relieved.*
- ▲ *Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on Turbo Max.*
- ▲ *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.*



Safety At All Times

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

- ▲ *Be familiar with all Turbo Max functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave Turbo Max unattended with tractor engine running.*
- ▲ *Do not stand between tractor and implement, or implement and nurse tank, 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 folding and raising Turbo Max. Make sure all persons are clear of working*



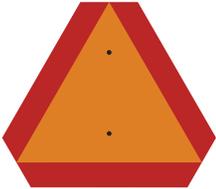
Safety Decals

Safety Reflectors and Decals

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

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

818-055C



Slow Moving Vehicle Reflector

On the back of smv bracket, rear tube of center frame;
1 total

838-615C



Amber Reflectors

Two on front of light brackets. Two on front of the trusses.
Two on rear of finishing attachment (not shown), visible from side while folded for transport;
6 total

838-614C



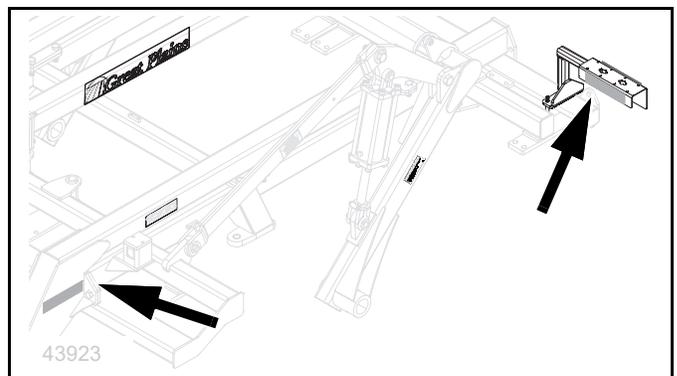
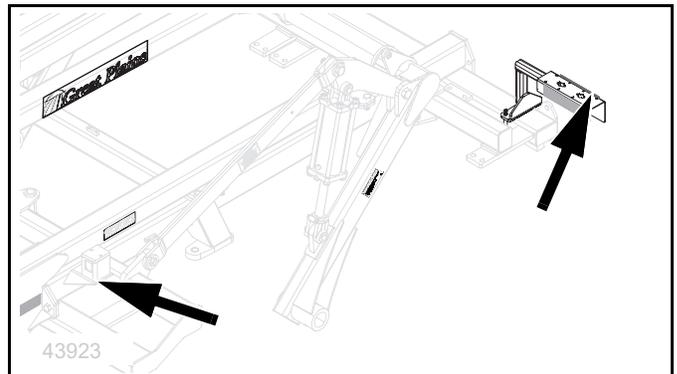
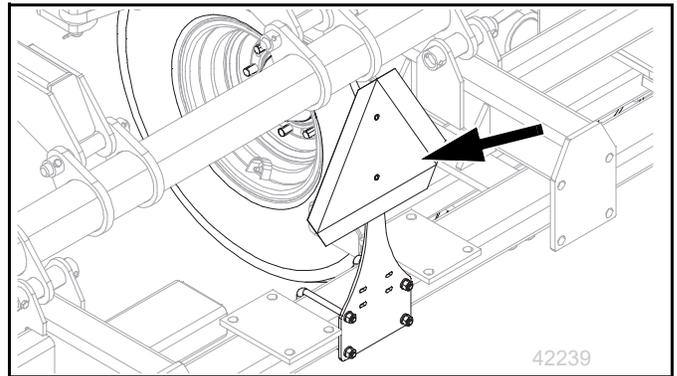
Red Reflectors

On rear of light brackets (top);
2 total

- ▲ *When ordering new parts or components, also request corresponding safety decals.*

To install new decals:

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

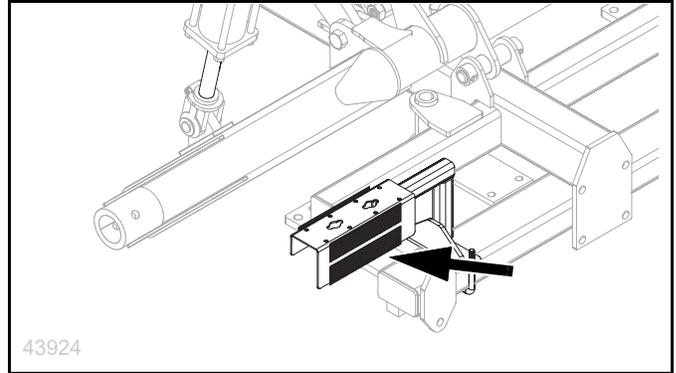


838-603C

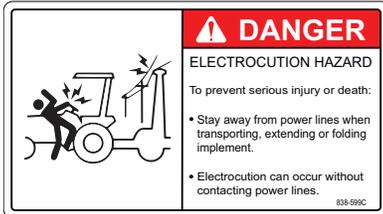


Orange Reflectors

On rear of light brackets (bottom);
2 total

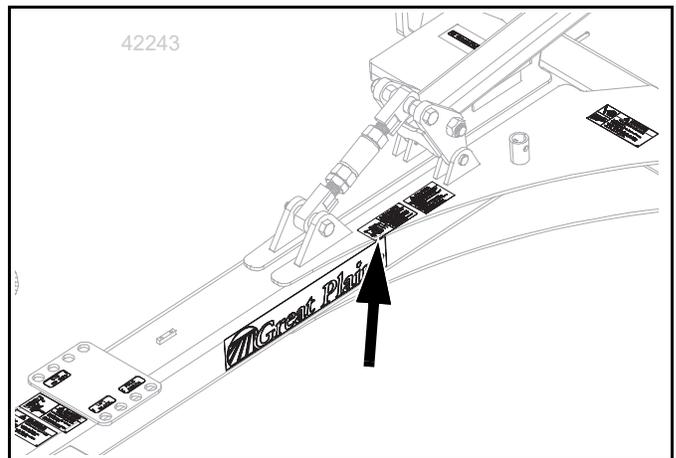


838-599C

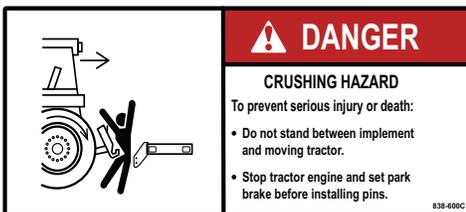


Danger: Electrocution Hazard

On middle of hitch;
1 total

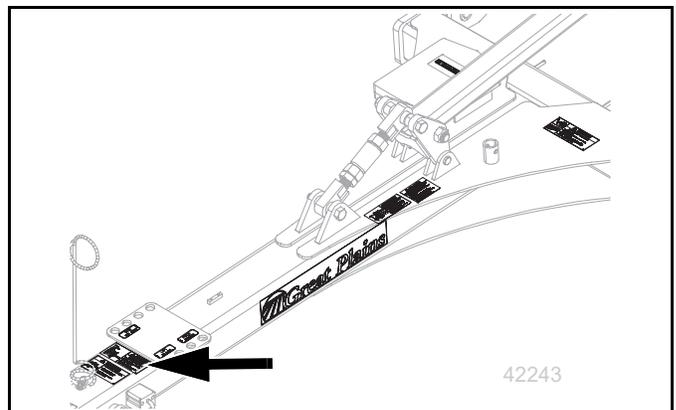


838-600C



Danger: Crushing Hazard

On front of hitch;
1 total

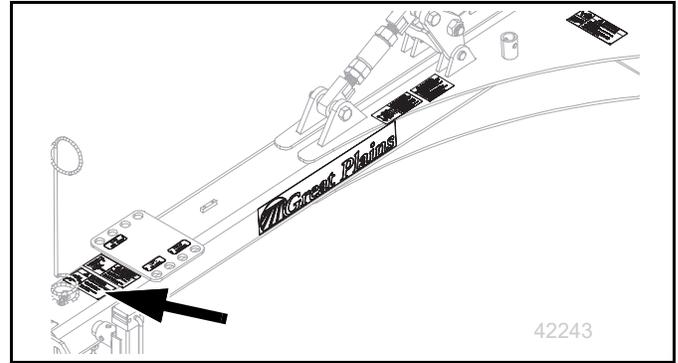


838-606C



Warning: Tongue Rising

On front of hitch;
1 total

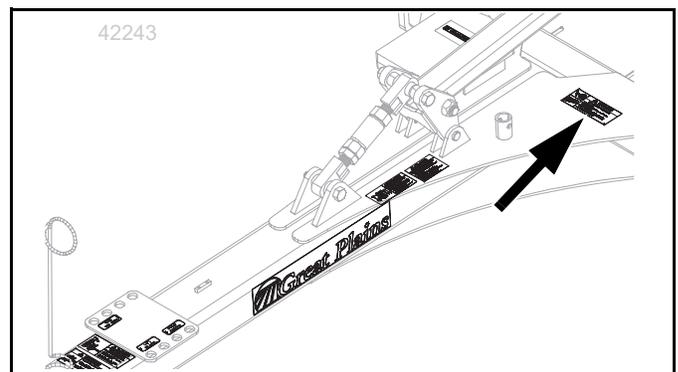


838-094C

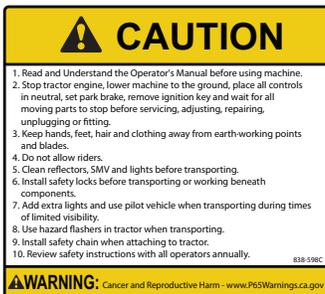


Warning: High Pressure Fluid

On rear of hitch;
1 total

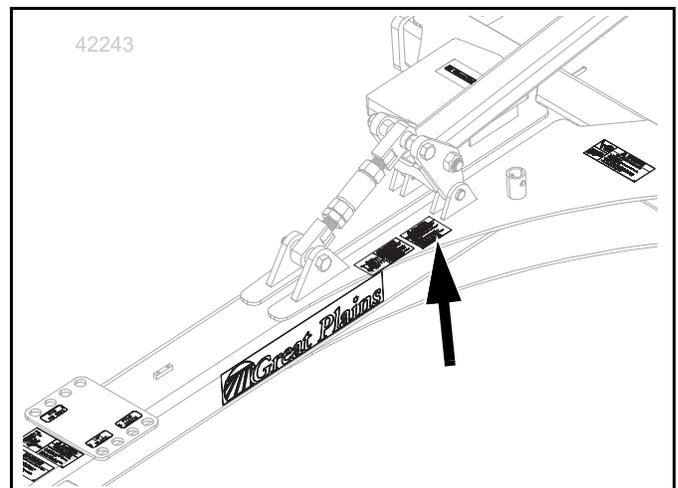


838-598C



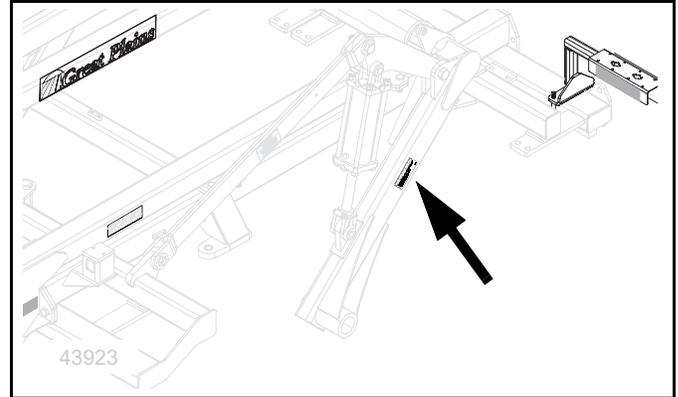
Caution: Read Operator's Manual

On middle of hitch;
1 total

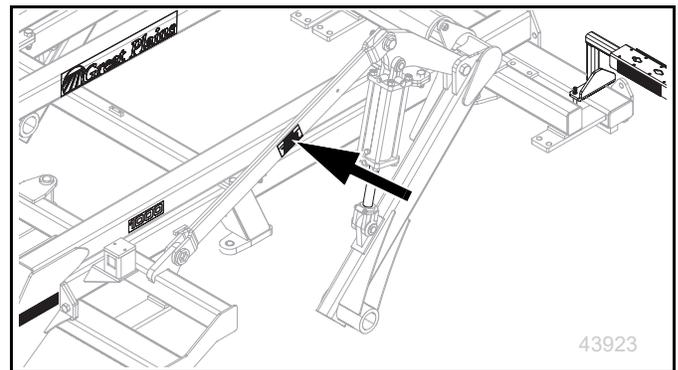


858-997C**Caution: Tire Pressure/Torque**

On middle of hitch;
1 total

**838-613C****Notice: Transport Lock**

Outside of lift straps (both sides);
2 total





Introduction

Great Plains welcomes you to our growing family of new product owners. The Turbo Max 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.

Models Covered

850TM	8' 6" (7.5in) spacing
1000TM	10' (7.5in) spacing

Description of Unit

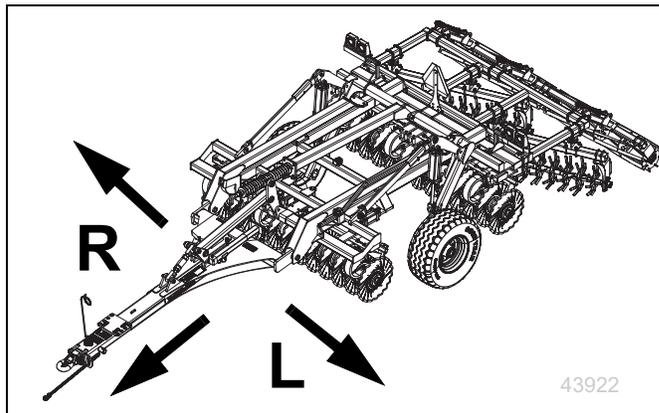
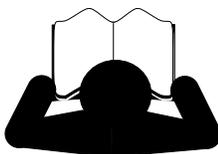
The 850-1000TM Turbo Max is a one section "vertical" tillage tool. Working width ranges from 8¹/₂ to 10 feet. The implement is designed to cut and size residue, till soil for faster seedbed warming, break up soil crust on hard dried fields while eliminating compaction layers. The front and rear gangs may be adjusted from 0-6 degree angle, depending on the aggressiveness desired. Various finishing attachments are also available to further smooth, redistribute residue, kill weeds, and break clods.

Document Family

586-592Q-ENG	Assembly Manual
586-592Q	Pre-Delivery Manual
586-592M	Operator Manual (this document)
586-592P	Parts Manual

Using This Manual

This manual will familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and



follow the recommendations to help ensure safe and efficient operation.

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

Definitions

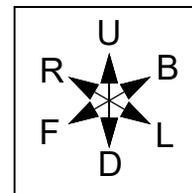
The following terms are used throughout this manual.

NOTICE

A crucial point of information related to the preceding topic. Read and follow the directions to remain safe, avoid serious damage to equipment and ensure desired field results.

 **NOTE:** Useful information related to the preceding topic.

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. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.



Parts Manual QRC

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



Product Manuals QRC

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

Owner Assistance

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

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

Record your Turbo Max model and serial number here for quick reference:

Model Number: _____

Serial Number: _____

Your Great Plains dealer wants you to be satisfied with your new machine. If you do not understand any part of this manual or are not satisfied with the service received, please take the following actions.

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.

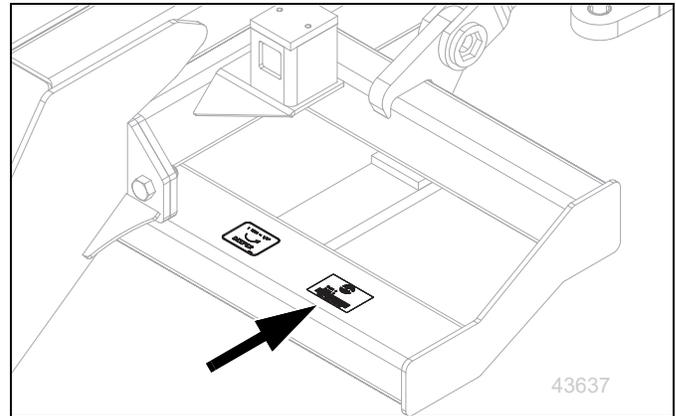
If you are still unsatisfied, seek out the owner or general manager of the dealership.

Further Assistance

Great Plains Manufacturing, Inc. wants you to be satisfied with your new Turbo Max. If for any reason you do not understand any part of this manual or are otherwise dissatisfied with the product please contact:

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

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





Preparation and Setup

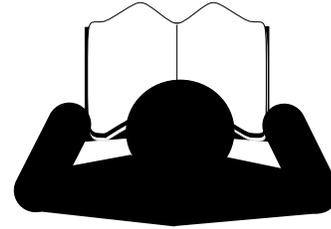
This section helps you prepare your tractor and Turbo Max for use, and covers tasks that need to be done seasonally, or when the tractor/Turbo Max configuration changes.

Before using the Turbo Max in the field, you must hitch it to a suitable tractor, inspect systems and level the Turbo Max. Before using the Turbo Max for the first time, and periodically thereafter, certain adjustments and calibrations are required.

Prior to Going to the Field Checklist

Complete this checklist before routine setup:

- Read and understand “**Important Safety Information**” on page 1.
- Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- Make sure your tractor horsepower matches the implement you are pulling. This is important so the implement can do the best possible job.
- Clean all hydraulic couplings and connect to tractor, see “**Hydraulic Hose Hookup**” on page 13.
- Check again for hydraulic leaks and watch that hoses do not get pinched in hinges, cylinders, etc.
- Raise and lower the Turbo Max several times to purge air from the hydraulic system. Again check for hydraulic leaks and tighten or replace if necessary.
- Check safety chain hookup. Make sure all warning lights are hooked up and functioning correctly.
- Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 26. The hubs will come pre-greased and will not need greased at this time.
- Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 5.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire Inflation Chart**” on page 27.
- Put transport locks in place, and refold the machine slowly. Always use the transport pins when moving from field to field. You are now ready to go to the field.



Hitching Turbo Max to Tractor

Hitch to a tractor for highway transport or field operations. Hitch to a leading implement only for field operations. Do not transport behind another implement.

Before hitching, check the compatibility and capability of the towing tractor or implement:

- The 850-1000TM Turbo Max is a pull-type implement equipped with a standard Category IV single tang hitch. It may be converted to a Category III or clevis hitch using supplied accessory parts, see “**Clevis Hitch**” on page 14.

To prevent soil compaction on rows, set tractor wheels between rows. For hillsides and steep slopes, set tractor wheels as wide as possible for maximum stability.

- Raise tractor three-point arms (if equipped) clear up to clear Turbo Max.
- For TWO-WHEEL DRIVE and MFWD tractors, pin drawbar in fixed center position for field and transport. For FOUR-WHEEL DRIVE and TRAC-DRIVE tractors, leave one hole clearance on each side of drawbar for field position, hitch damage may occur if pinned solid. Pin in center position for transport to maintain maximum steering control.
- Use jack (1) to raise and lower turbo max tongue.
- Back tractor draw bar into alignment with hitch (2).
- Secure with a locking hitch pin.
- Secure safety chain (3) to an anchor on the tractor.

CAUTION

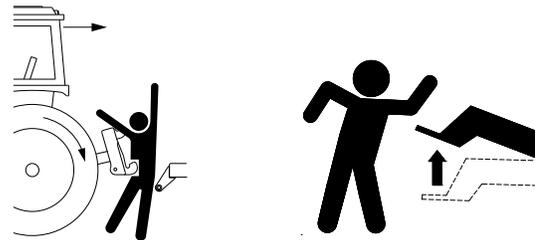
Negative Tongue Weight Hazard:

Make certain that turbo max is securely hitched to the tractor or leading implement before unfolding. An unhitched turbo max can tip over backwards during folding and unfolding if the tongue is not secured.

- Retract jack foot. Re-orient jack to storage position.
- After hitching tractor to turbo max, store jack on storage stub (4) on Turbo Max tongue.

Load Sway Hazard:

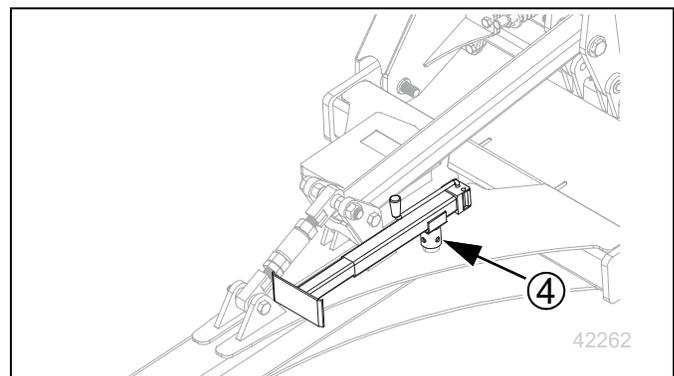
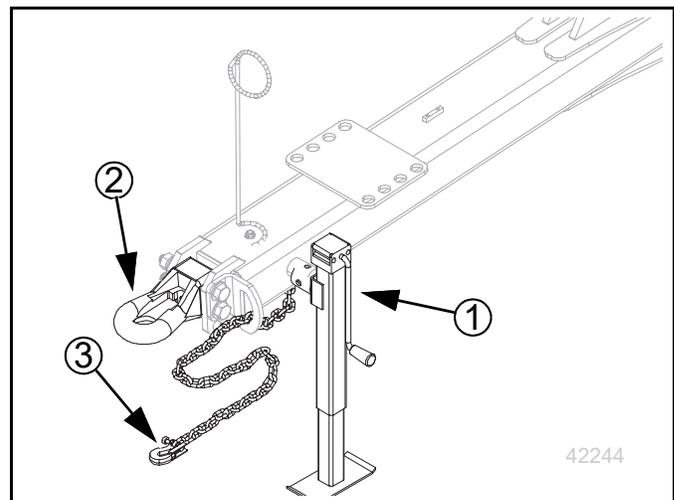
- Lock drawbar swing to center position to minimize any side-to-side sway to assure proper tracking in the field, and safe road travel. See “**Transport**” on page 20, for safe transporting.



⚠ DANGER

Crushing Hazard:

Do not stand or place any body part between turbo max and moving tractor. You may be severely injured or killed by being crushed between the tractor and turbo max. Stop tractor engine and set parking brake before attaching cables and hoses.



Electrical Hookup

Your Turbo Max is equipped with North American Lights. Plug the lighting connector into the tractor outlet. Test the lights and signaling prior to highway movement.



Hydraulic Hose Hookup

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

Color	Hydraulic Function
Black	Lift (2 hoses)
Red	Gang Adjustment (2 hoses) Optional

WARNING

High Pressure Fluid Hazard:

Shut down tractor before making hydraulic connections. Only trained personnel should work with system hydraulics.

Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

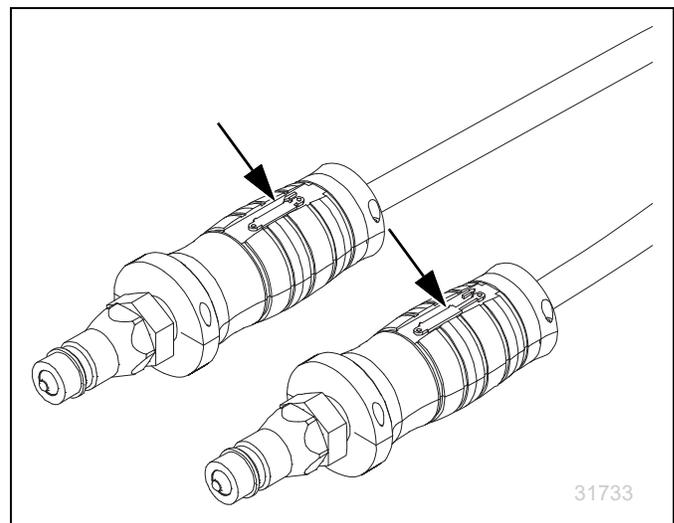
Use paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

To distinguish hoses on the same hydraulic circuit, refer to hose label.

- The hose with an extended-cylinder symbol feeds a cylinder base end.
- The hose with a retracted-cylinder symbol feeds a cylinder rod end.

Secure hoses and cables so that they have sufficient slack for hitch movements, but cannot get caught between moving parts of tractor, turbo max or hitch. Failure to safely route and secure hoses and cables could result in damage requiring component repair/replacement, and lost field time.

Clean all hydraulic couplings and hook hoses to tractor.



Clevis Hitch

The base hitch must be upright (with the recessed notch on the bottom) for this configuration. This places the tongue weight on the base hitch, and not the clevis.

1. Select one each:
(82) 890-798C HITCH CLEVIS
(48) 802-487C HHCS 3/4-10X6 GR8
(62) 803-367C NUT HEX TOP LOCK 3/4-10 PLT
2. With the square-shouldered end of the clevis (82) up, fully seat the clevis in the upright base hitch (83). Insert the Grade 8 bolt (48) from below. Secure with lock nut (62).

CAUTION

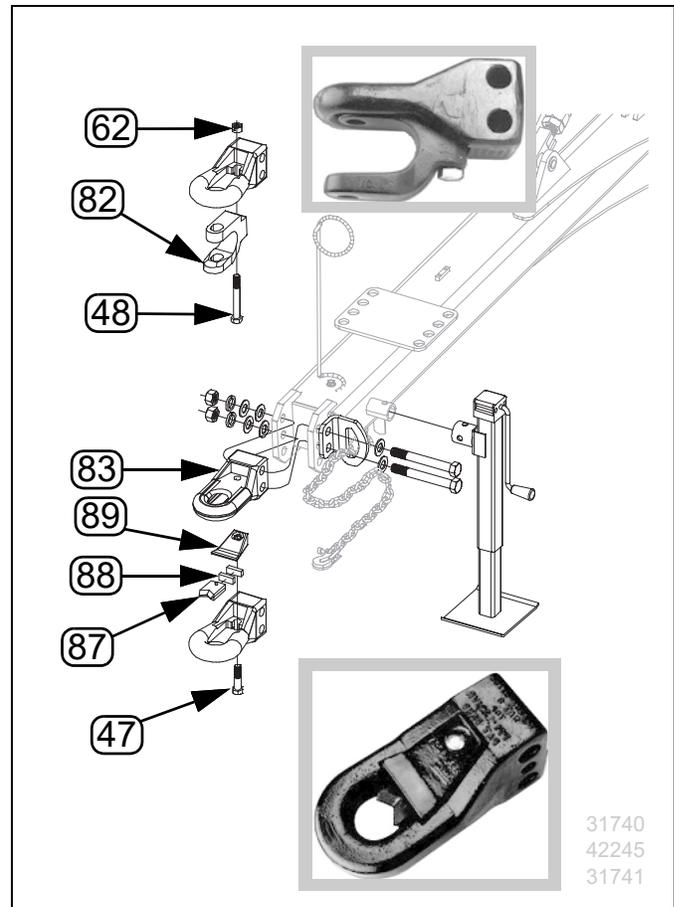
Hitch Failure Hazard:

Install the hitch base and assemble the clevis parts as shown. Incorrect installation or assembly may result in failure of the clevis bolt, leading to hitch failure. This could result in a serious highway accident or severe machine damage.

Category III Hitch

The base hitch must be inverted (with the recessed notch on the top) for this configuration. Set the V-block (87) to allow some vertical articulation of the draw bar pin. Always use at least one cushion (88).

1. Select one each:
(89) PPI-302V TOP PLATE - CAT 3
(87) PPI-203VR V-BLOCK
(47) 802-383C HHCS 3/4-10X3 GR5
and two:
(88) PPI-205H CUSHION
2. Set the cushions (88) inside the hitch recess, just forward of the vertical bolt hole. Position the V-block (87) forward of the cushions and check the size of the resulting pinning hole. Remove a cushion if needed.
3. Add the top plate (89). Secure from below with Grade 5 bolt (47).



31740
42245
31741

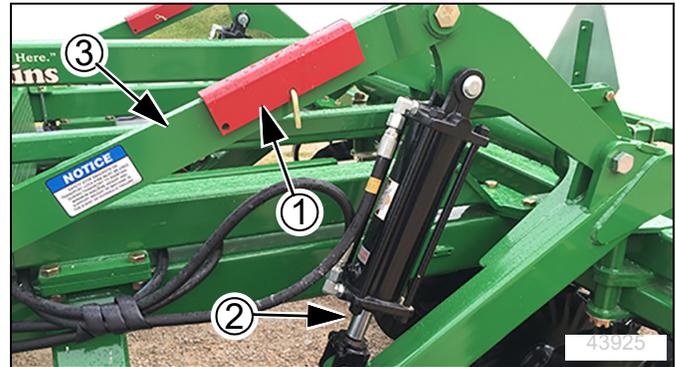
Transport Locks

4. Once the cylinders are connected, raise the unit completely. If the transport locks (1) are in place on cylinders (2), remove them at this time.
5. Store the transport locks (1) in hole of the lift mechanism link (3).

 *Always use transport locks and wing fold pins when transporting.*

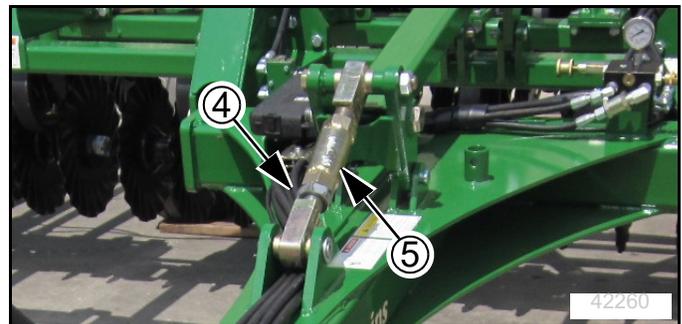
Pre-Leveling of Machine

 *Pre-leveling of machine should be done on a good level surface.*



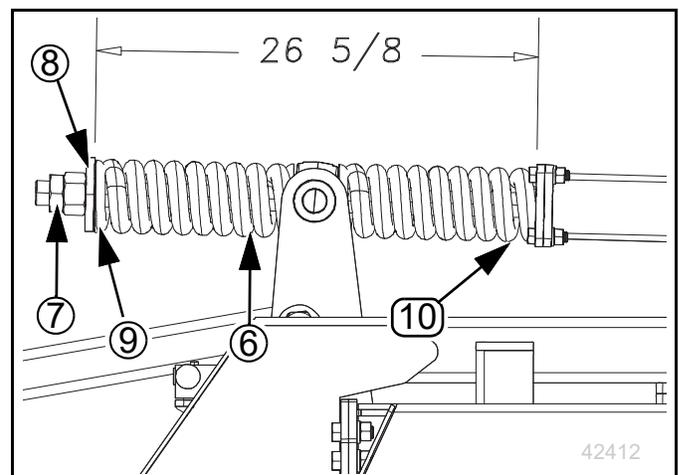
Front to Rear Leveling

6. Lower machine so front coulters are 1-2" off of ground. Loosen jam nut (4) with turnbuckle wrench (stored on rear pegs of hitch). Adjust the turnbuckle (5) at the front of machine to level it front to back. (Shorten to bring front down, extend to bring front up).
7. When the front coulters are the same distance off ground as rear coulters re-tighten jam nut (4).



Level Bar Spring Adjustment

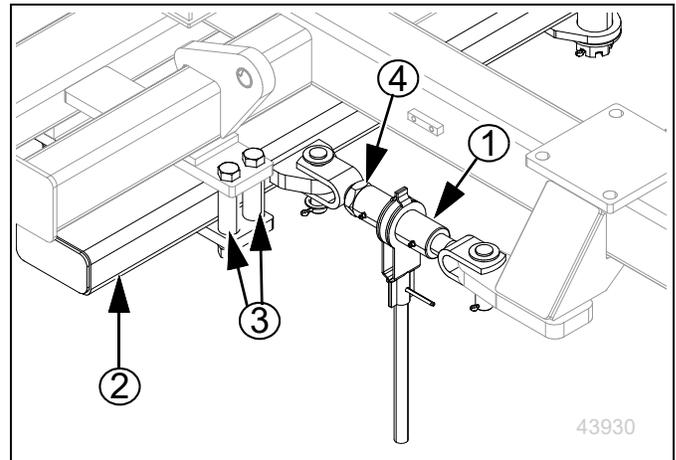
8. To adjust the level bar spring assembly (6) to the preset position of 26 5/8", loosen 1 1/2 jam nut (7) with turnbuckle wrench (stored on rear pegs of hitch).
9. Adjust the 1 1/2 nut (8) until the 26 5/8" dimension is reached between backside of spring guide (9) and front side of level bar spring rod plate (10).
10. Re-tighten the 1 1/2 jam nut (7) to secure.



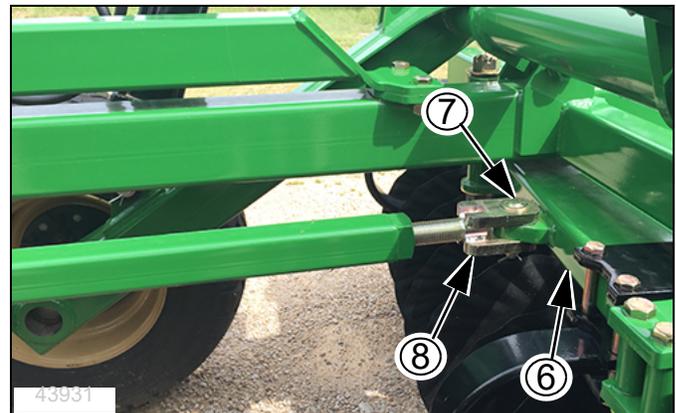
Ratchet Jack Gang Angle Adjustment

 Check gang angle adjustment when machine is new and annually after, as wear may occur

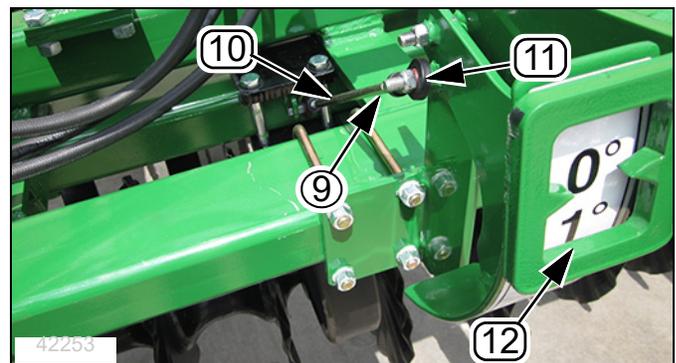
11. With front gang ratchet jack (1) in the full retract position the gang bar (2) should be 1/8" from tubes (3).
12. If gang bar (2) is not 1/8" from tubes (3) loosen jam nut (4) on the clevis end of ratchet jack and shorten the rod (5) by turning the rod to bring gang bar closer and lengthen clevis to get the jack to retract all the way.
13. Re-tighten the jam nut (4) when adjustment is made.



14. When the front gang ratchet jacks (1), have been adjusted and are in the full retract position the rear gang bar (6) should be parallel to back frame tube.
15. If rear gang bar (6) is not parallel to back frame tube, remove pin (7) from turnbuckle end (8) and shorten turnbuckle end by turning clevis to bring gang bar closer and lengthen clevis to lengthen to get gang bar to retract all the way.
16. Re-install pin (7) when adjustment is made.



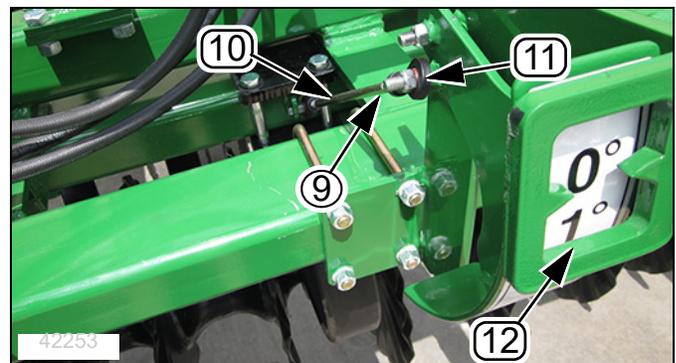
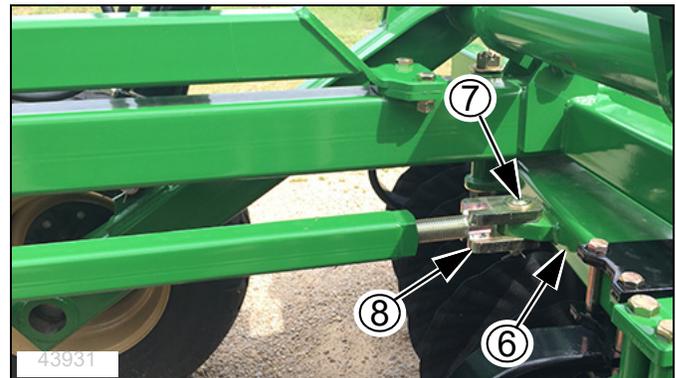
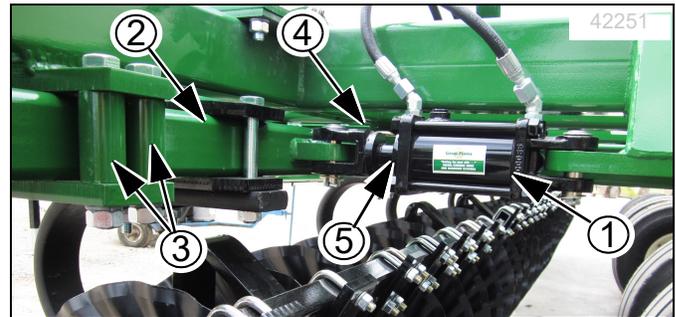
17. When the front and rear gangs are adjusted and gang angle cylinders are fully retracted then the gang angle indicator will need adjusted.
18. Remove bolt (9) from either end of gauge link (10) and turn threaded end (11) until indicator (12) reads 0 degrees.
19. Re-install bolt (9) to secure gauge link.



Hydraulic Gang Angle Adjustment (Optional)

 Check gang angle adjustment when machine is new and annually after, as wear may occur

20. With front gang adjusting cylinders (1) in the full retract position the gang bar (2) should be 1/8" from tubes (3).
21. If gang bar (2) is not 1/8" from tubes (3) loosen hex screw (4) on clevis on rod end of cylinder (there are two flat spots on rod to get wrench on to adjust) and shorten cylinder rod (5) by turning cylinder rod to bring gang bar closer and lengthen clevis to get cylinder to retract all the way.
22. Re-tighten allen screw (4) when adjustment is made.
23. When the front gang adjusting cylinders (1), have been adjusted and are in the full retract position the rear gang bar (6) should be parallel to back frame tube.
24. If rear gang bar (6) is not parallel to back frame tube, remove pin (7) from turnbuckle end (8) and shorten turnbuckle end by turning clevis to bring gang bar closer and lengthen clevis to lengthen to get gang bar to retract all the way.
25. Re-install pin (7) when adjustment is made.
26. When the front and rear gangs are adjusted and gang angle cylinders are fully retracted then the gang angle indicator will need adjusted.
27. Remove bolt (9) from either end of gauge link (10) and turn threaded end (11) until indicator (12) reads 0 degrees.
28. Re-install bolt (9)s to secure gauge link.



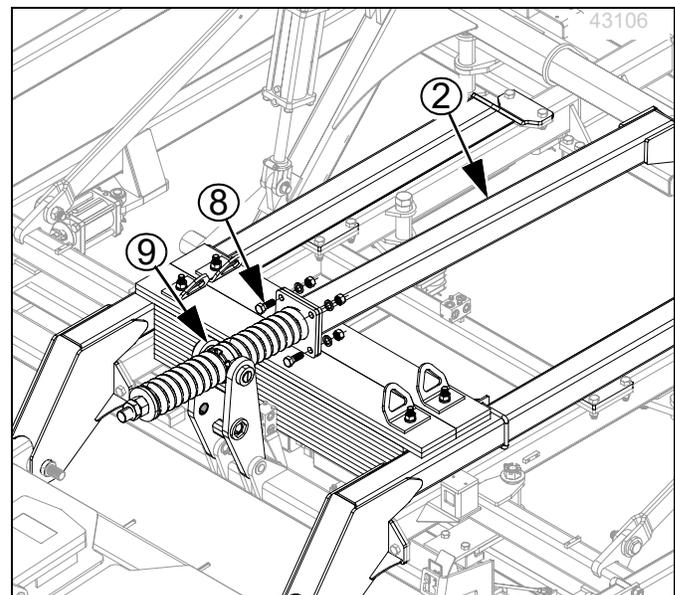
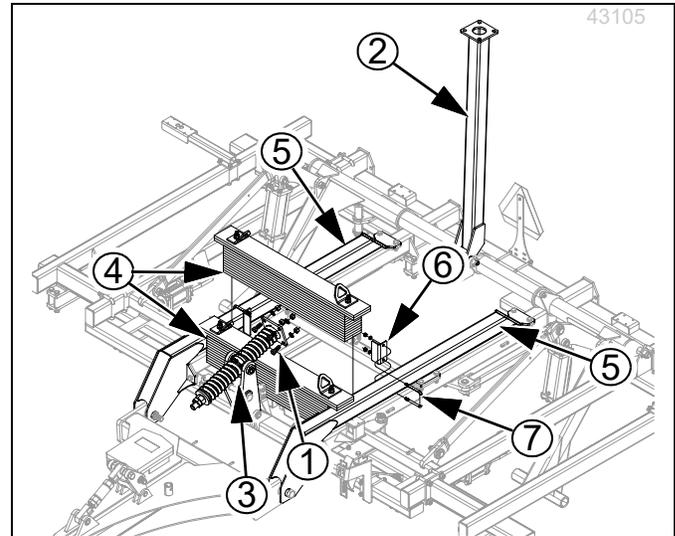
Weight Package Assembly (Optional)

CAUTION

Caution: Lower machine until coulters are on ground and pressure is off leveling system.

 Up to 1 set of weights (2 weights) may be used in positions shown.

29. Start by removing the 3/4 x 2 Gr. 8 bolts (1) from level bar assembly.
30. Pivot level bar (2) up so there will be clearance to set the 750 pound weight assemblies (4) into place.
31. Pivot level bar spring assembly (3) forward.
32. Carefully lower the 750 pound weight assemblies (4) onto center frame trusses (5).
33. Slide rear weights as far forward as possible and install weight box stops (6) on inside of trusses as close to weight as possible (rear weights), secure with 1/2 x 4 1/32 x 5 1/4 u-bolt (7), 1/2 lock washers and 1/2 nuts.
34. Torque u-bolts to 85 ft-lbs.
35. Pivot level bar (2) and the level bar spring assembly (9) until holes in plates are aligned.
36. Re-install 3/4 x 2 Gr. 8 bolts (8), secure with 3/4 lock washers and 3/4 nuts.
37. Torque 3/4 x 2 Gr. 8 bolts (8) to 375 ft lbs to be sure bolts do not work loose and cause damage to machine.





Operating Instructions

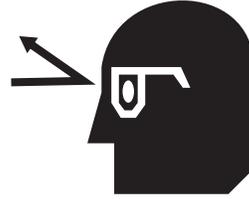
This section covers general operating procedures. Experience, machine familiarity, and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

Perform the following steps before transporting the 1200-1500TM Turbo Max to the field.

- Carefully read “**Important Safety Information**” on page 1.
- Lubricate Turbo Max as indicated under “**Lubrication**” on page 26.
- Check all tires for proper inflation, “**Tire Inflation Chart**” on page 27.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 29.
- Check Turbo Max for worn or damaged parts. Repair or replace parts before going to the field.

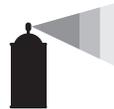
Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.



WARNING

High Pressure Fluid Hazard:

Relieve pressure and shut down tractor before connecting, disconnecting or checking hydraulic lines. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.



Transport

⚠ DANGER

Loss of Control Hazard:

Do not tow the turbo max behind another implement on public roads. Tow the turbo max to the field with a separate vehicle. The leading implement may not provide sufficient lateral control of a trailing implement at highway speeds. The total weight of the train can also exceed the steering and/or braking capability of the tractor. The resulting accident could cause serious injury or death.



⚠ DANGER

Loss of Control Hazard:

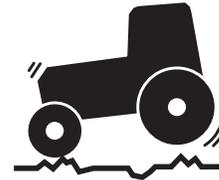
Use an adequate towing vehicle. Never tow an implement that weighs more than 150% of the towing vehicle (transport vehicle must weigh at least 67% of implement). Ensure that the towing vehicle is adequate for the task. Using an inadequate tow vehicle is extremely unsafe, and can result in loss of control, serious injury and death.



⚠ DANGER

Braking and Loss of Control Hazard:

Do not exceed 20 mph (32 kph). Slow down on rough roads.



Transport Steps

Know your implement weight. If tractor capabilities are marginal, check actual weight of implement at a scale.

1. Check that implement is securely hitched to a sufficient tractor (page 12).
2. Always use a locking-style hitch pin sized to match holes in hitch and draw-bar, and rated for the load.
3. Attach safety chain to tractor with enough slack to permit turning (page 12).
4. Verify correct operation of lights.
5. Install transport locks, wing fold pins and close wing lock valve (page 15).
6. Check that tires are properly inflated (page 27).
7. Plan the route. Avoid steep hills.
8. Always have lights on for highway operation.
9. Do not exceed 32 kph (20 mph). Comply with all national, regional and local laws when traveling on public roads.
10. Remember that the implement may be wider than the towing vehicle. Allow safe clearance.

Field Operation

This implement is designed to be pulled in the lowered field position (including wide turns). Lifting for short distances to clear residue clogs is acceptable. Lifting for tight turns or reverse moves is required.

NOTICE

Equipment Damage Risk:

Lift for tight turns and reverse moves. Tight turns can result in a section moving backward. Never back up with harrows on the ground. If the inside tire stops or rolls backward, the turn is tight and requires lift.

Field Set-Up Checklists

Use the following tables to develop a final checklist for your tractor/Turbo Max configuration. Additional or fewer steps may be necessary depending on tractor features, Turbo Max options and accessories.

Final Checklist

Mechanical Checklist	Page
<input type="checkbox"/> Turbo Max hitched	12
<input type="checkbox"/> Hitch pin locked	-
<input type="checkbox"/> Safety chain secured to tractor or leading implement	12
<input type="checkbox"/> Parking jack stowed	12
<input type="checkbox"/> Check all tire pressures	27
<input type="checkbox"/> Transport locks are in the field position	15

Hydraulic System Checklist	Page
<input type="checkbox"/> Check tractor hydraulic reservoir full	-
<input type="checkbox"/> Make hydraulic connections	13
<input type="checkbox"/> Inspect connections for leaks	-

Electrical Checklist	Page
<input type="checkbox"/> Verify electrical hookups solid, or connector securely stowed if not using lights in field.	13

Perform all steps in “**Pre-Start Checklist**” on page 19 and “**Final Checklist**” on page 21.

First Pass Operation Checklist	Page
1. Pull forward, lower Turbo Max, and begin tilling for a short distance.	-
2. Stop. Assess: <ul style="list-style-type: none"> • coulter depth • finishing attachment operation 	-
3. Make necessary adjustments	22

Sharp Field Turns Checklist	Page
1. Raise Turbo Max	-
2. Make turn	-
3. Lower Turbo Max	-
4. Resume tilling.	-

NOTICE

Do not make short radius turns with the implement in the ground.

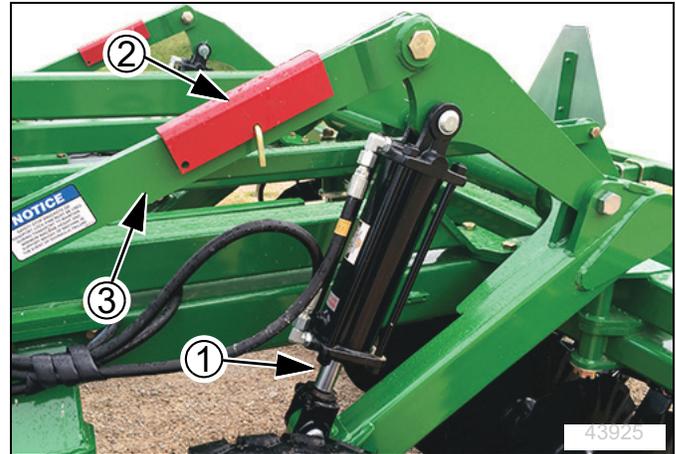
 *If you stop in the middle of a pass, raise the implement and back up 10' before resumption of tilling.*

Ending Tilling Checklist	Page
1. Suspend operations as above	-
2. Lift implement	-
3. Place locking valves in transport position	15
4. Place transport locks in transport position	15
5. Lower implement on to transport locks	-
6. Lights ON for transport	-

General Operation and In-Field Adjustments

Prior to Operating the Turbo Max

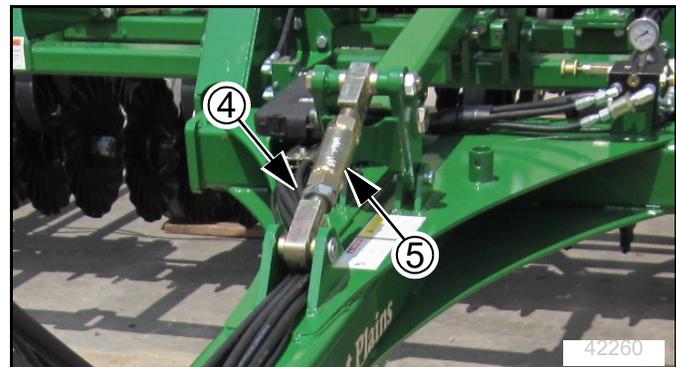
11. Raise the machine fully so the lift cylinders (1) no longer rest on the transport lock channels (2), Remove transport lock channels and store on the lift link (3).



Hitch Turnbuckle

 *If possible have someone observe the machine during the initial operation for levelness - both front to rear and center to wings. Adjust each as needed.*

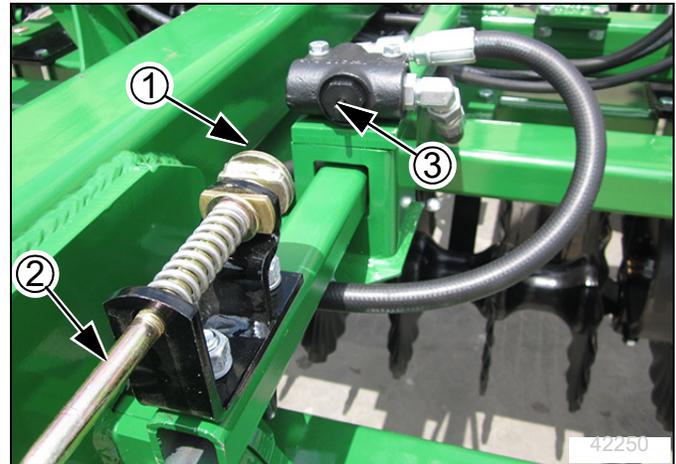
12. For front to rear, either extend or shorten the front turnbuckle (4) on the leveling system by loosening jam nut (5) with turnbuckle wrench (stored on rear pegs of hitch). Adjust turnbuckle (4) until level front to back. Re-tighten jam nut (5) after machine is level. Never run the machine lower (deeper) in the rear than in the front.
13. The Turbo Max may be operated with the gangs running from 0-6 degrees. Changing this angle does affect the operation of the unit in a couple of ways. As indicated above, if the blades are operated at an angle, down pressure is generally unnecessary. Also, operating speeds will need to be less when operating with the blades angled 3-6 degrees. Operating speeds should be from 6-8 mph when operating gangs in the angled position and from 8-10 mph when operating in the straight position.
14. In a first time operation, it is generally best to operate the unit at a slight angle to the rows. If the unit is used as a secondary pass it is recommended to operate the unit at a slight angle to the previous tillage pass. This will improve trash flow and increase the leveling capability.



15. Once the machine is level and set to the desired depth, set the depth stop (1) at the front of the machine to ensure that the unit will operate at a consistent depth every pass. After setting the stop, if a change of depth is desired, 1 full turn of the handle (2) either in or out will change the depth approximately 1/4" up or down respectively.

 *Slight tire to ground pressure should be maintained to prevent cylinder pin and clevis wear. If after setting the depth stop, the detent on the tractor kicks out before the stop contacts the button (3) on the depth stop, slow the hydraulic flow speed down. If this problem exists, contact the factory service representative for other possible adjustments. On tractors with a timed detent setting, set the detent so when you raise the machine, the pump will run for 1/2 to 1 full second after full raise. If it runs longer than this, damage to the seals of the lift cylinders may result.*

16. Varying the angle on the gangs will also change the results of your operation. It is recommended to operate the Turbo Max with the gangs in the straight position when this is your last pass ahead of the planter or grain drill. This will leave the best possible seedbed for planting. It is not recommended to operate the tool at a depth deeper than the intended planting depth.
17. Situations that may require the operator to angle the gangs would be in a field that requires the unit to be more aggressive as far as moving soil such as leveling ditches, filling in sprayer tracks, more aggressive weed control, etc. In these instances, the gangs may be angled as needed to level the ground and remove problem weeds. In the fall, the gangs would be angled to make the unit more aggressive to cover more residue. This will tie the residue to the surface and enhance the breakdown of the residue. Also in very hard ground, the angled gangs will allow the unit to penetrate better.
18. The Turbo Max is a versatile tool that allows the operator to make changes from the cab of the tractor.

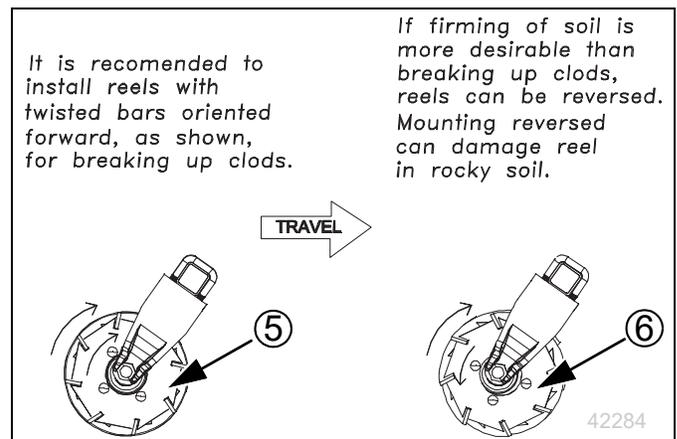
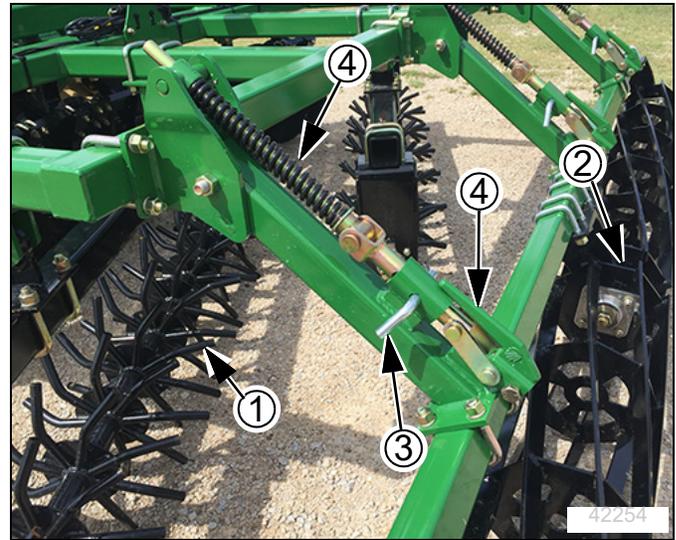


Setting the Rolling Harrow and Reel

19. The rolling harrow (1) and reel attachment (2) is a very versatile leveling attachment and requires very little adjustment. The rolling harrow sections come preset at 22 degrees and should not need to be modified. In some severe conditions at high speeds, some windrowing may occur and the gang angle may need to be reduced slightly. When adjusting this, be careful to maintain adequate clearance between sections in the field position as to not cause damage to the units.
20. The reel down pressure may be adjusted by removing the pin (3) and then either pushing the handle (5) forward to increase the spring pressure or by pulling the handle backwards to decrease the spring pressure (4). When the desired amount of spring pressure is set, re-insert the pin (3). Note: It is recommended to run little or no down pressure in wet or sticky field conditions.
21. The bars on the reels are angled forward (5) and should be installed as such on the machine. In some conditions in which a firming of the soil is more desirable than breaking up clods then these reels can be mounted in reverse (6). This does however increase the chance of causing damage to the bars in rocky soil.

WARNING

Be sure reels are installed with twisted bars oriented forward (5) as shown. Mounting in reverse (6) can damage reel in rocky soil.



Parking

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

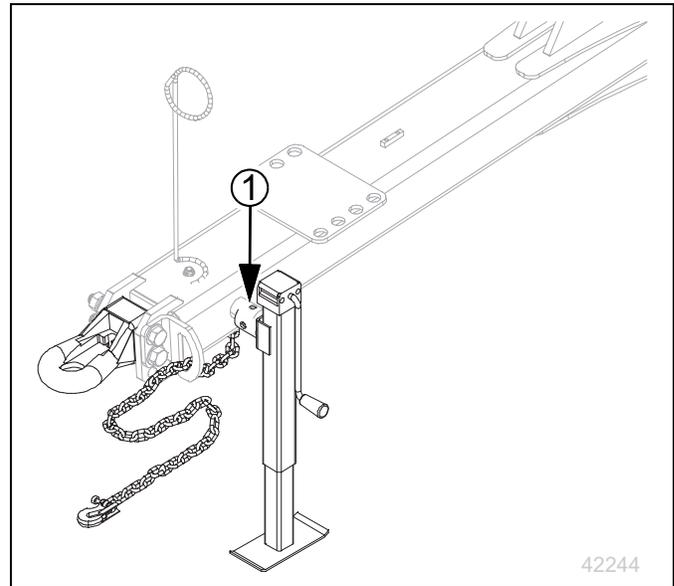
1. Position the implement on firm, level ground.
2. Raise implement.

⚠ DANGER

Negative Tongue Weight Hazard:

If rear tow hitch is installed it is possible that the Turbo Max can tip over backwards during hitching and unhitching resulting in severe injury or death.

3. Remove jack from storage position and pin securely to lifting stub on outside of implement tongue (1). See "**Hitching Turbo Max to Tractor**" on page 12.
4. If ground is soft, place a wide block or plate under the jack to increase contact area.
5. Un-hook electrical lines and protect with any plugs or caps provided.
6. Release pressure on hydraulic system, then disconnect hydraulic lines and pull all lines back onto implement tongue. Store hose ends in keyholes of hose holder bracket.
7. Disconnect the safety chain.
8. Unhitch from tractor or leading implement.



42244

Storage

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

1. Raise implement.
2. Perform Parking checklist above.
3. Lubricate the implement at all points listed under "**Lubrication**" on page 26.
4. Check all bolts, pins, fittings and hoses. Tighten, repair or replace parts as needed.
5. Check all moving parts for wear or damage. Make notes of any parts needing repair or replacement before the next season.
6. Lubricate all points listed in Maintenance to prevent rust.
7. Clean Turbo Max of mud, dirt, excess oil and grease.
8. Grease exposed cylinder rods to prevent rust.
9. Use touch-up paint to cover scratches, chips and worn areas to prevent rust.



Maintenance and Lubrication

Maintenance

1. Always use the transport lock when working on or doing maintenance to the Turbo Max. Read and understand all safety decals on your equipment.
2. During the first season of operation, and periodically after that, check your bolts for tightness.
3. Replace or rotate worn parts as needed -- hinge bolts, clevis pins, bearings, coulters, etc.
4. Check and tighten or replace any hydraulic leaks. Check hoses for any leaks. It is important that there are no leaks on the equipment.

5. Reel bearings are maintenance free and do not require greasing. If your machine cam equipped with ratchet jacks
6. Check drag bolts for looseness or excessive wear. Your drag is an important part of the tillage operation.
7. If machine is stored outdoors over the winter months, it is a good idea to fold the machine then set it down on the ground so all the cylinders are retracted to protect the cylinder rods. This will extend the life of the cylinder seals and reduce internal and external leaks.

By following and maintaining a routine service and lubrication program, your tillage equipment will give you many years of service.

Lubrication

 Multipurpose spray lube	 Multipurpose grease lube	 Multipurpose oil lube	 50	Intervals (service hours) at which lubrication is required
---	--	---	--	--

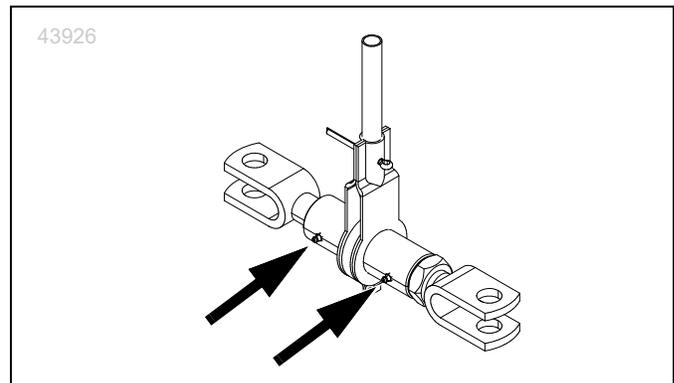
Ratchet Jack

	 50
--	---

2 zerk on each ratchet jack;

Type of Lubrication: Grease

Quantity: Sparingly, Do Not Over Grease, may cause damage to seal.



All Turnbuckles and Threaded Adjustments

	 Seasonally
---	--

Overall Machine Maintenance;

Type of Lubrication: Multipurpose Lubricant

Quantity: Coat thoroughly.



Turbo Max Specifications and Capacities

Model No.	850TM	1000TM
Tillage Width	8ft 6in (259cm)	10ft (305cm)
Center Section	8ft (244cm)	10ft (305cm)
Number of Coulters	27	31
Blade Spacing	7.5in (19cm)	
Gang Angle	Adjustable 0* to 6*	
Weight (with spike & reel)	7,500lbs (3400kg)	8,250lbs (3740kg)
Transport Width	10ft	11ft 6in
Transport Height	5ft 4in	
Length (without attachment)	18ft 5in	
Tire Size	340/60R16.5	
Horsepower (PTO) (min)	85+	100+
Kilowatt	63+	75+

With a continued commitment to constantly improving our products, these specifications are subject to change without notice.

Tire Inflation Chart

Tire Inflation Chart		
Wheel	Tire Size	Inflation
Transport	340/60R16.5	73 psi (503 kPa)

Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found in the brochures included with your Operator's and Parts Manuals or online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer Web site
 Firestone www.firestoneag.com
 Gleason www.gleasonwheel.com
 Titan www.titan-intl.com
 Galaxy www.atgtire.com
 BKT www.bkt-tire.com

Hydraulic Connectors and Torque

(a hypothetical fitting)

Leave any protective caps in place until immediately prior to making a connection.

NPT - National Pipe Thread

Note tapered threads, no cone/flare, and no O-ring.

- (1) Apply liquid pipe sealant for hydraulic applications. Do not use tape sealant, which can clog a filter and/or plug an orifice.

JIC- Joint Industry Conference (SAE J514)

- (2) Note straight threads (4) and the 37° cone (5) on “M” fittings (or 37° flare on “F” fittings). Use no sealants (tape or liquid) on JIC fittings.

ORB - O-Ring Boss (SAE J514)

Note straight threads (5) and elastomer O-Ring (7). Prior to installation, to prevent abrasion during tightening, lubricate O-Ring with clean hydraulic fluid.

- (3) ORB fittings that need orientation, such as the ell depicted, also have a washer (8) and jam nut (9) (“adjustable thread port stud”). Back jam nut away from washer. Thread fitting into receptacle until O-Ring contacts seat. Unscrew fitting to desired orientation. Tighten jam nut to torque specification.

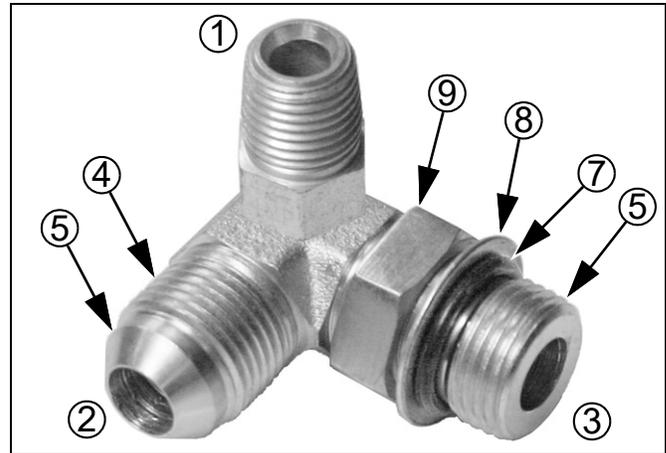


Figure 1
Hydraulic Connector ID 31282

Fittings Torque Values			
Dash Size	Fitting	N-m	Ft-Lbs
-4	1/4-18 NPT	1.5-3.0 turns past finger tight	
-5	1/2-20 JIC	19-20	14-15
-5	1/2-20 ORB w/jam nut	12-16	9-12
-5	1/2-20 ORB straight	19-26	14-19
-6	5/16-18 JIC	24-27	18-20
-6	5/16-18 ORB w/jam nut	16-22	12-16
-6	5/16-18 ORB straight	24-33	18-24
-8	3/4-16 JIC	37-53	27-39
-8	3/4-16 ORB w/jam nut	27-41	20-30
-8	3/4-16 ORB straight	37-58	27-43

Torque Values Chart

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

Bolt Size mm x pitch ^c	Bolt Head Identification					
	 Class 5.8		 Class 8.8		 Class 10.9	
	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M05 X 0.8	4	3	6	5	9	7
M06 X 1	7	5	11	8	15	11
M08 X 1.25	17	12	26	19	36	27
M08 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

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

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

Torque Values Chart	
Gang Bolt Torque 1 3/4"-5	850 Foot-pounds (165 lbs on 5' cheater).
Rolling Harrow Spike Bolt 1 1/2"-6	650-750 Foot-pounds (175 lbs on 4' cheater).
Wheel Bolt Torque Values	5/8"-18 (85-100ft-lbs)



WARRANTY

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

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

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

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

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

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

Effective July 15, 2020

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838-600C, decal	6
838-603C, reflector	6
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838-615C, reflector	5
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