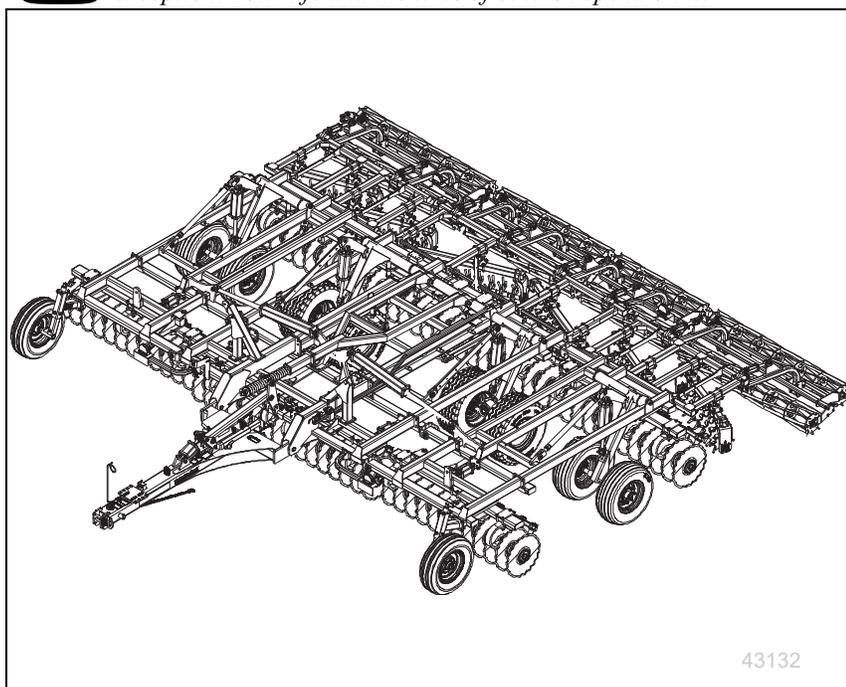


Operator Manual

VT1100 Turbo Max
VT1100-20, VT1100-25 & VT1100-30



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 2025-02-06

588-685M

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.*



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.

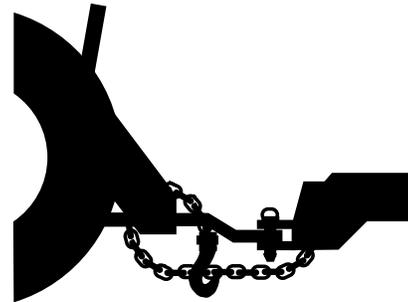
Wear Protective Equipment

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



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 VT1100 requires a Power-Beyond port, which is always under pressure when the tractor is running.

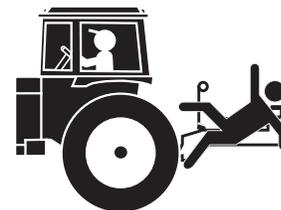
- ▲ *Avoid the hazard by relieving pressure at other remote, and shutting down tractor before connecting, disconnecting or inspecting hydraulic lines.*
- ▲ *Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.*
- ▲ *Wear protective gloves and safety glasses or goggles when 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.

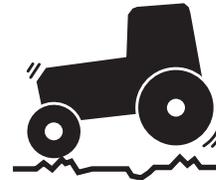
- ▲ Use flashing warning lights and turn signals whenever driving on public roads.
- ▲ Use lights and devices provided with implement.



Transport Machinery Safely

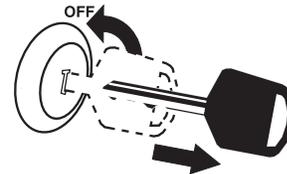
Maximum transport speed for implement is 20 mph (32 kph), 13 mph (22 kph) in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ 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 VT1100 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 37.
- ▲ 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 VT1100 while the tractor is moving.



Shutdown and Storage

- ▲ Lower VT1100, put tractor in park, turn off engine, and remove the key.
- ▲ Secure VT1100 using parking jack provided.
- ▲ Detach and store VT1100 in an area where children normally do not play.



Tire Safety

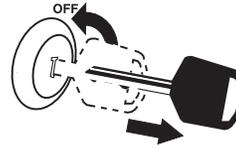
Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

- ▲ 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

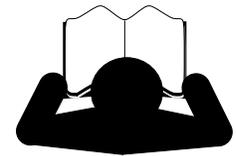
- ▲ *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- ▲ *Work in a clean, dry area.*
- ▲ *Lower implement, put tractor in park, turn off engine, and remove key before performing maintenance.*
- ▲ *Make sure all moving parts have stopped and all system pressure is relieved.*
- ▲ *Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on VT1100.*
- ▲ *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 VT1100 functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave VT1100 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 VT1100. Make sure all persons are clear of working area.*



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*

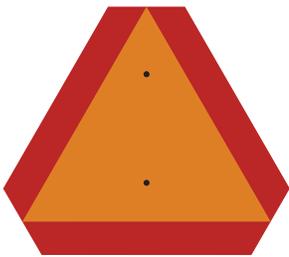
proper decal placement.

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

To install new decals:

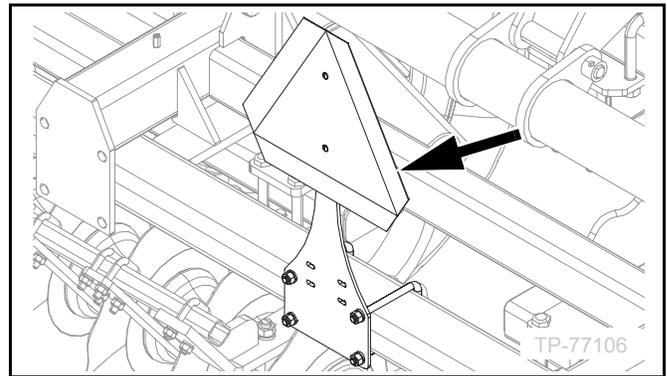
1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

818-055C



Slow Moving Vehicle Reflector

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

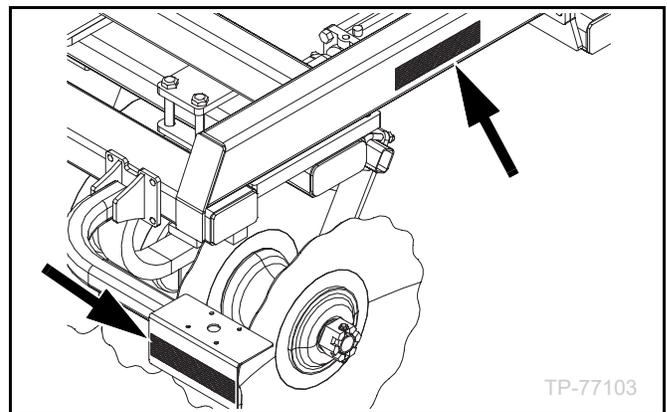


838-615C



Amber Reflector

Two on front of light brackets. Two on outside of center brace bar. Two on side of center frame. two on rear of finishing attachment (not shown), visible from side while folded for transport;
8 total

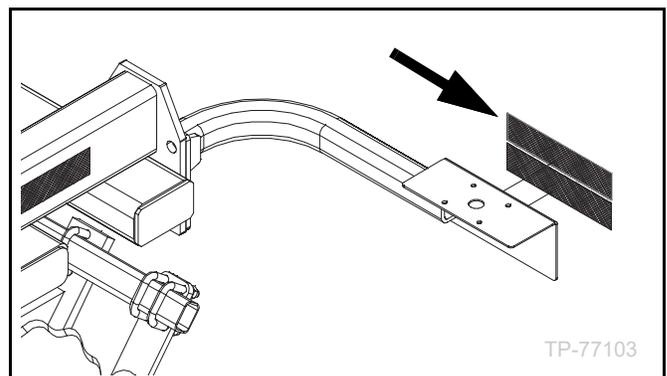


838-614C



Red Reflector

On rear of light brackets (top);
2 total

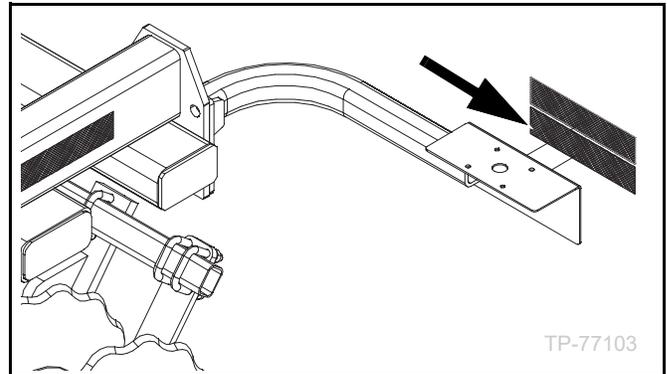


838-603C



Orange Reflector

On rear of light brackets (bottom);
2 total

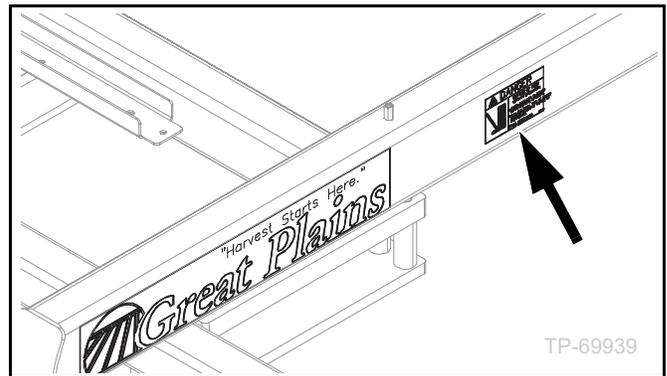


848-271C

! DANGER	
	<p>CUTTING OF FOOT TO PREVENT SERIOUS INJURY</p> <ul style="list-style-type: none"> • Always lower unit to ground before adjusting turnbuckle. • Keep feet away from all ground engaging tools when working on the machine. • Keep others away. <p style="text-align: right; font-size: small;">848-271C</p>

Danger: Cutting of Foot

One on each side of the center frame;
2 total

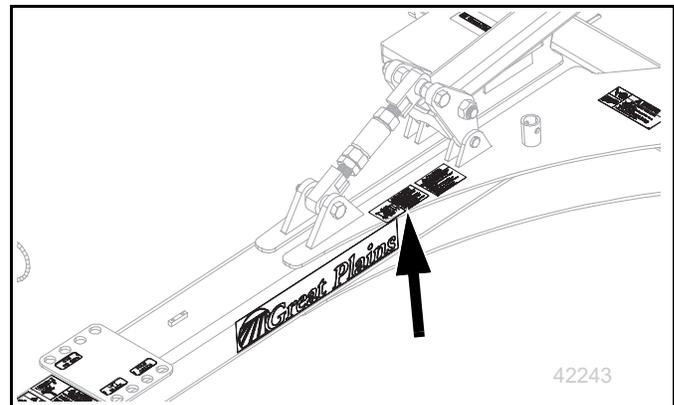


838-599C

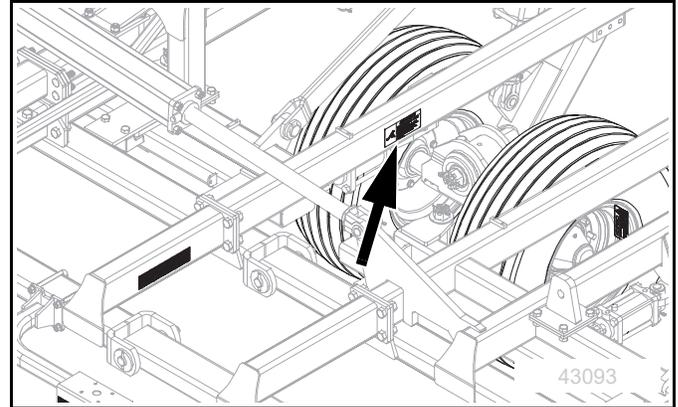
! DANGER	
	<p>ELECTROCUTION HAZARD</p> <p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • Stay away from power lines when transporting, extending or folding implement. • Electrocution can occur without contacting power lines. <p style="text-align: right; font-size: small;">838-599C</p>

Danger: Electrocution Hazard

On middle of hitch;
1 total



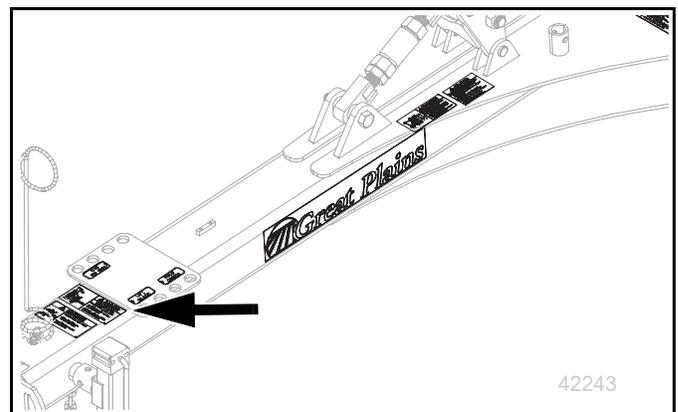
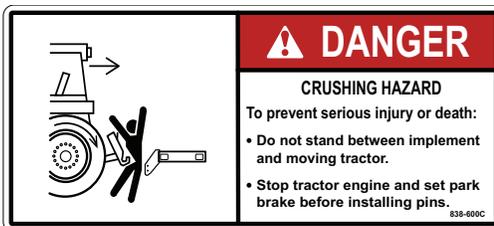
818-046C



Danger: Overhead Crushing Hazard

Outside of center frame both sides;
2 total

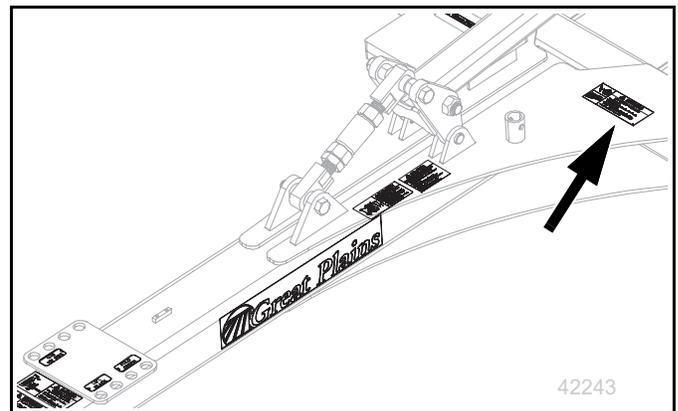
838-600C



Danger: Crushing Hazard

On middle of hitch;
1 total

838-094C



Warning: High Pressure Fluid

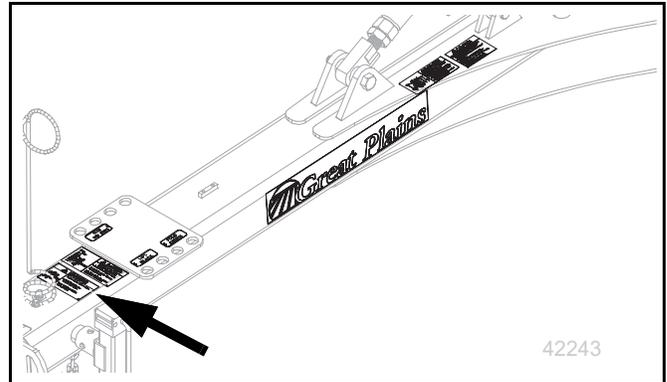
On rear of hitch;
1 total

838-606C



Warning: Tongue Rising

On front of hitch;
1 total

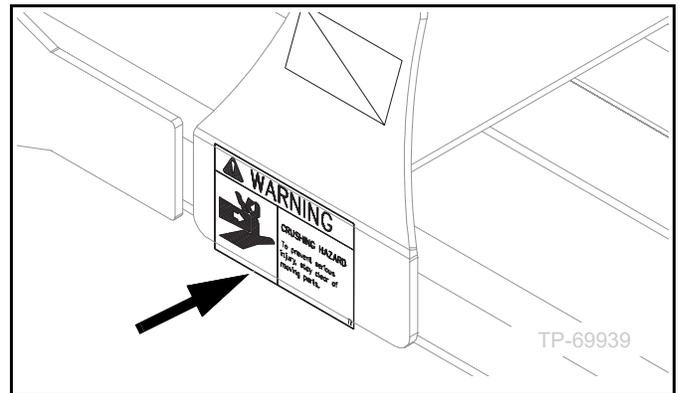


838-611C



Warning: Crushing Hazard

On front tube of each wing;
2 total

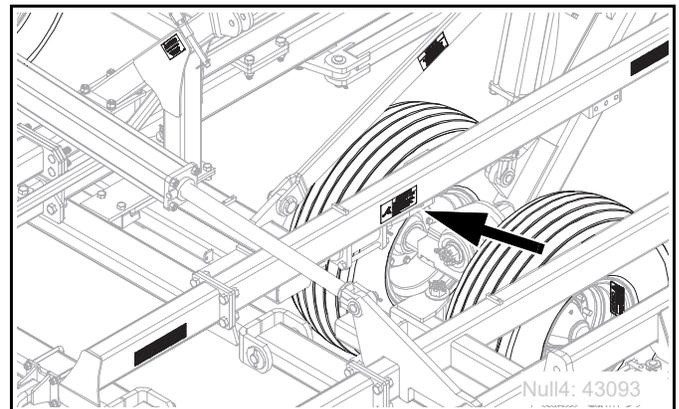


838-612C



Warning: Wings Could Fall

On sides of center frame links;
2 total



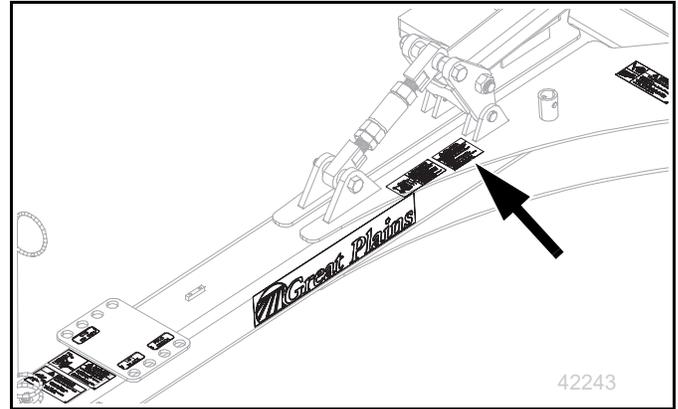
838-598C

CAUTION

1. Read and Understand the Operator's Manual before using machine.
2. Stop tractor engine, lower machine to the ground, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, unplugging or fitting.
3. Keep hands, feet, hair and clothing away from earth-working points and blades.
4. Do not allow riders.
5. Clean reflectors, SMV and lights before transporting.
6. Install safety locks before transporting or working beneath components.
7. Add extra lights and use pilot vehicle when transporting during times of limited visibility.
8. Use hazard flashers in tractor when transporting.
9. Install safety chain when attaching to tractor.
10. Review safety instructions with all operators annually.

838-598C

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



Caution: Read Operator's Manual

On middle of hitch;
1 total

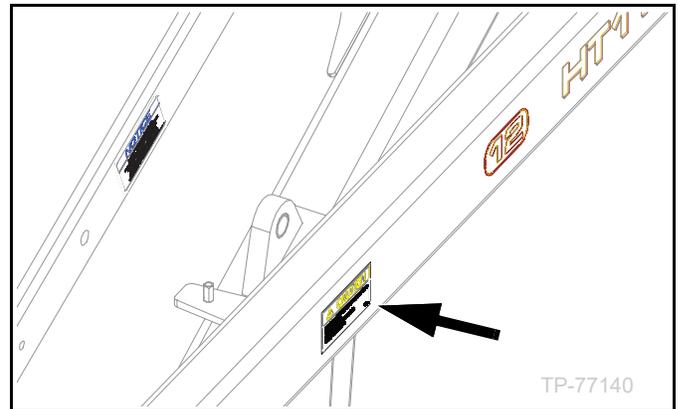
818-752C

CAUTION

To Avoid Injury or Machine Damage from Improper Tire Inflation or Torquing of Wheel Bolts:

- Maximum inflation pressure of tires is 52psi.
- Torque wheel bolts to 90ft-lb.

818-752C



Caution: Tire Pressure/Torque

On frame near tires;
4 total, Models 25 & 30
2 total, Model 20

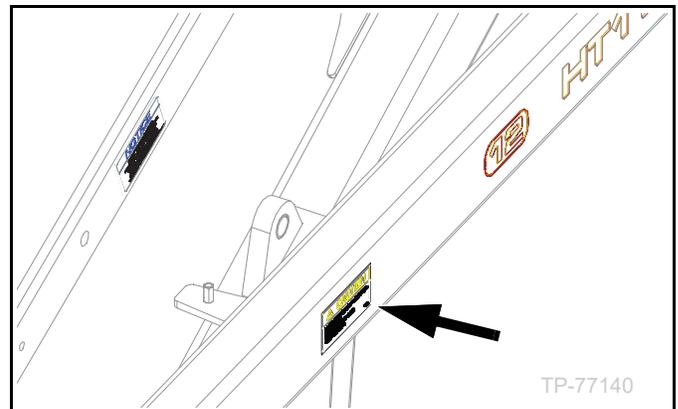
858-997C

CAUTION

To Avoid Injury or Machine Damage from Improper Tire Inflation or Torquing of Wheel Bolts:

- Maximum inflation pressure of tires is 73psi.
- Torque wheel bolts to 85 - 100ft-lb.

858-997C



Caution: Tire Pressure/Torque

On frame near tires;
2 total, Models 20

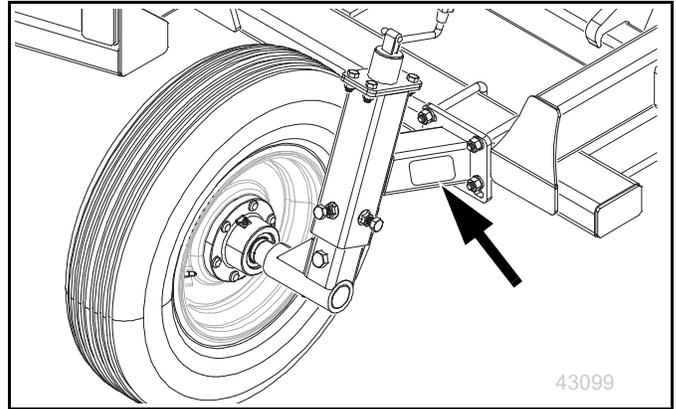
858-996C


CAUTION

To Avoid Injury or Machine Damage from Improper Tire Inflation or Torquing of Wheel Bolts:

- Maximum inflation pressure of tires is 73psi.
- Torque wheel bolts to 85 - 100ft-lb.

858-997C



Caution: Tire Pressure/Torque

On gauge wheel assembly;
2 total, All Models

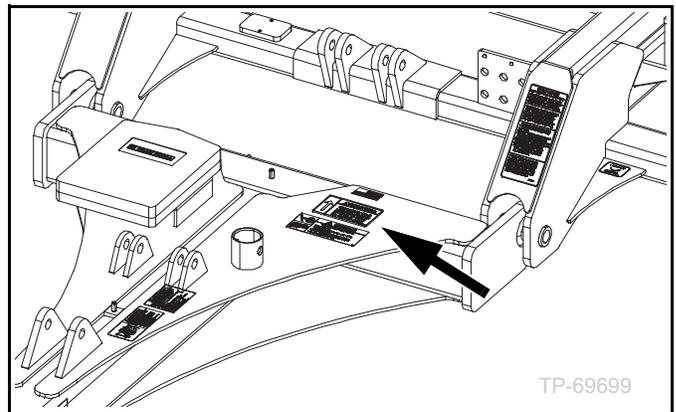
848-844C

ATTENTION:

↑

SECONDARY FOLD
LOCK VALVE MUST
BE OPEN TO FOLD
OR UNFOLD UNIT.

848-844C



Attention: Fold Lock

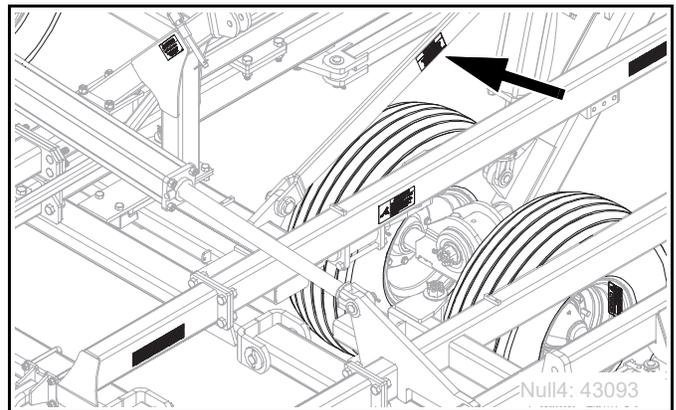
On rear of hitch frame, operator side;
1 total

838-613C

NOTICE

SAFETY STOP BRACKETS OR
TRANSPORT LOCK PINS MUST BE USED
DURING TRANSPORT TO MAINTAIN
MINIMUM MACHINE HEIGHT AND
SUPPORT WEIGHT OF MACHINE IN
THE EVENT OF HYDRAULIC FAILURE.

838-613C



Notice: Transport Locks

On sides of lift links;
2 total



Introduction

Great Plains welcomes you to our growing family of new product owners. The VT1100 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

VT1100-20	20' (7.5in) spacing
VT1100-25	25' (7.5in) spacing
VT1100-30	30' (7.5in) spacing

Description of Unit

The VT1100 Turbo Max is a three section “vertical” tillage tool. Working width ranges from 20 to 30 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

588-685Q-ENG	Assembly Manual
588-685Q	Pre-Delivery Manual
588-685M	Operator Manual (this document)
588-685P	Parts Manual

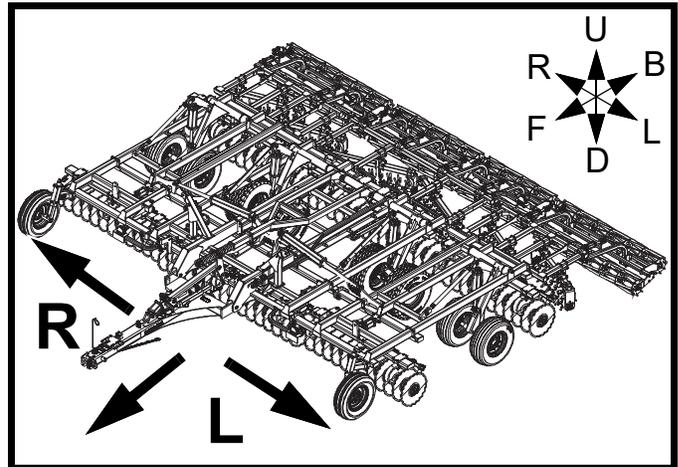
Using This Manual

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.



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.



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

Definitions

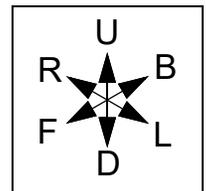
The following terms are used throughout this manual.

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.

 *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.



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.

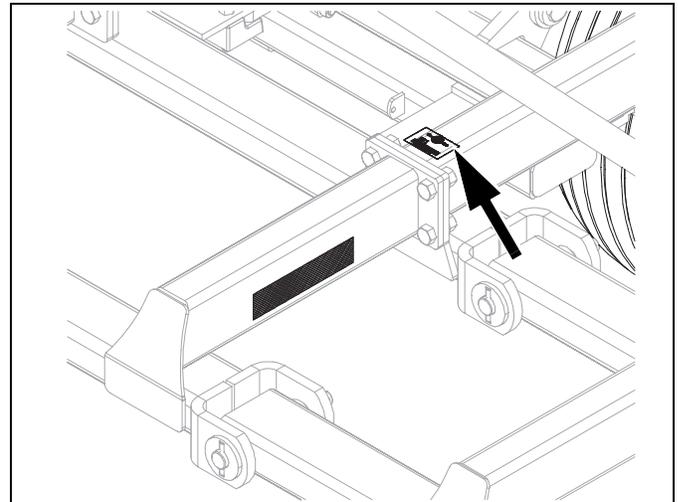
Record your VT1100 model and serial number here for quick reference:

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.
2. 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 VT1100 Turbo Max. If for any reason you so not understand any part of this manual or are otherwise dissatisfied with the product please contact:

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

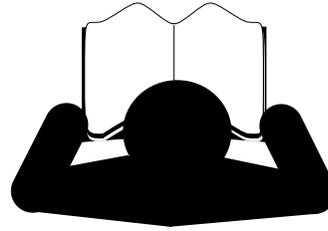
Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.



Preparation and Setup

This section helps you prepare your tractor and VT1100 Turbo Max for use, and covers tasks that need to be done seasonally, or when the tractor/VT1100 configuration changes.

Before using the VT1100 in the field, you must hitch it to a suitable tractor, inspect systems and level the VT1100. Before using the VT1100 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 16.
- If machine is folded, remove the transport pins from wing stops and open wing lock valve. (DO NOT remove pins if the wing is leaning against the pins or putting pressure on the pins. Use the hydraulics to pull the wings in completely before unpinning them.) Once the pins are removed, slowly unfold the unit. Make sure no one is under the wings during the unfolding process.
- Check again for hydraulic leaks and watch that hoses do not get pinched in hinges, wing stops, etc.
- After the machine is completely unfolded, raise and lower the VT1100 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 36. 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 38.
- Put transport locks in place, and refold the machine slowly. Put wing stop pins in place and close wing lock valve. Always use the transport pins when moving from field to field. You are now ready to go to the field.

Hitching VT1100 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 VT1100 is a pull-type implement equipped with a standard Category IV single tang hitch. It may be converted to a Category III, Category V, Articulating Hitch or clevis hitch using supplied accessory parts, see “**Clevis Hitch**” on page 15.

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 VT1100.
- 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

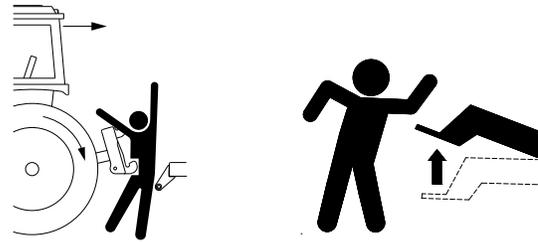
Negative Tongue Weight Hazard:

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 stob (4) on VT1100 tongue.

Load Sway Hazard:

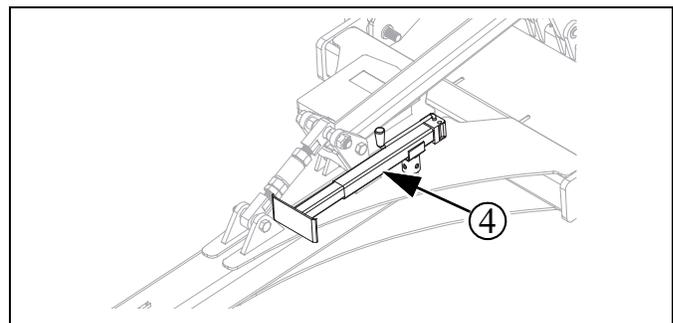
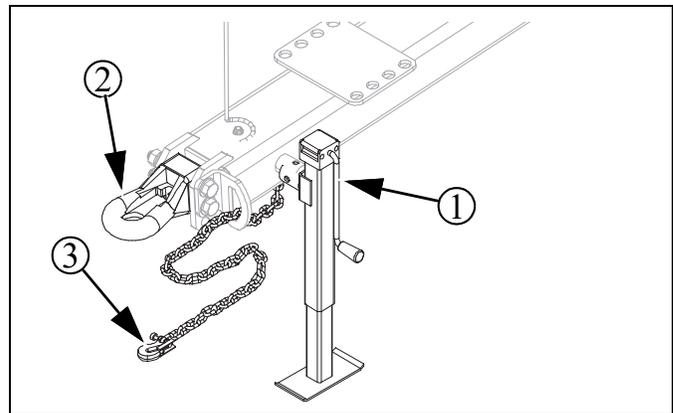
- Lock drawbar swing to center position to minimize any side-to-side sway to assure proper tracking in the field, and safe road travel. See “**Transport**” on page 25, for safe transporting.



⚠ 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.



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

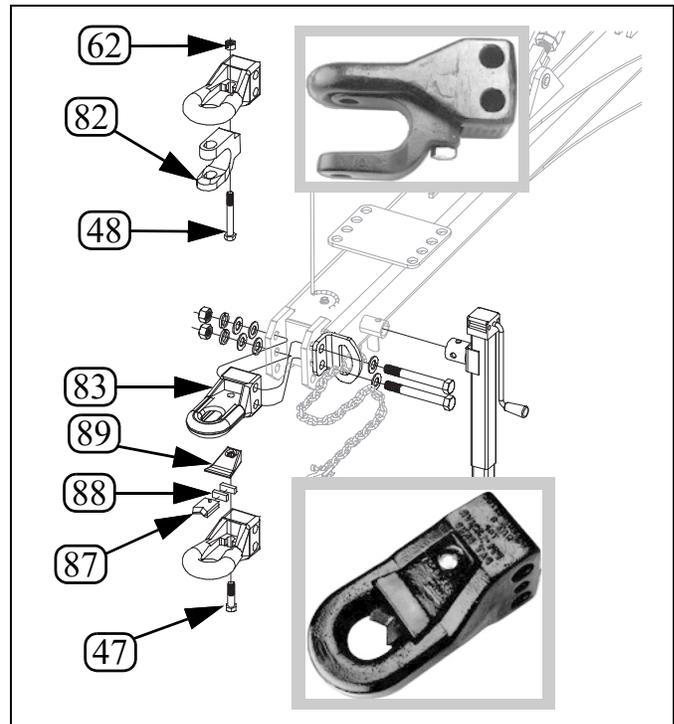
Hitch Failure Hazard:

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).



Electrical Hookup

Your VT1100 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)
Green	Fold (2 hoses)
Red	Gang Adjustment & Fore/Aft (if equipped) (2 hoses)
Yellow	Hydraulic Reel Att. (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.

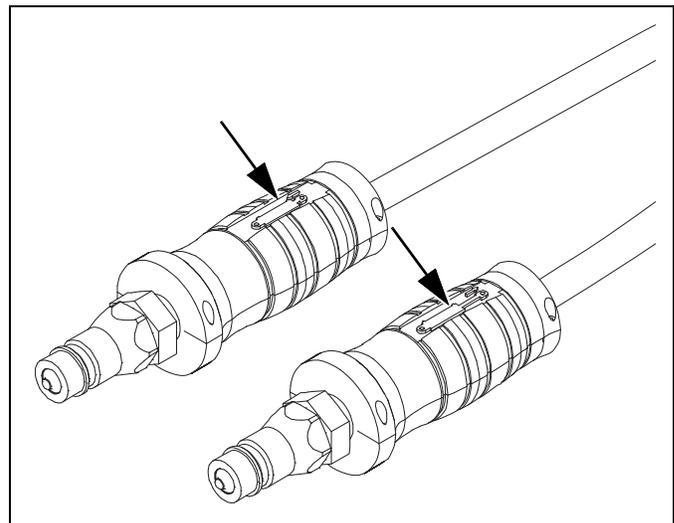
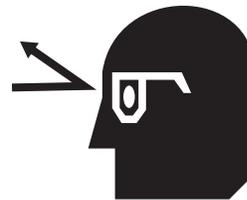
Use paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

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.

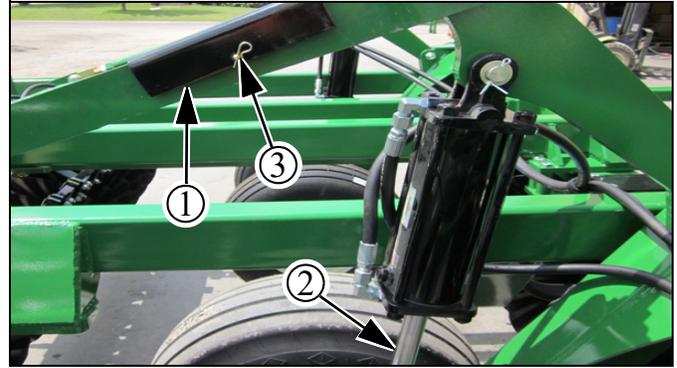
Clean all hydraulic couplings and hook hoses to tractor.



Transport Locks

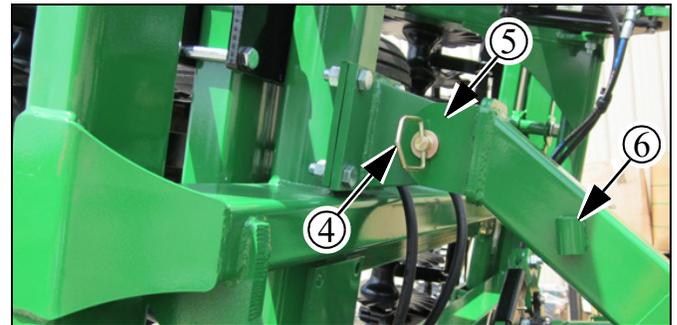
- Once the cylinders are connected, raise the unit completely. If the transport locks (1) are in place on cylinders (2), remove them at this time.
- Store the transport locks (1) in hole of the lift mechanism link (3).

 Always use transport locks and wing fold pins when transporting.



Wing Fold

- If wing stop pins (4) are installed remove pins from wing stop clevis (5).
- Install pin in storage tube (6) on wing stop.

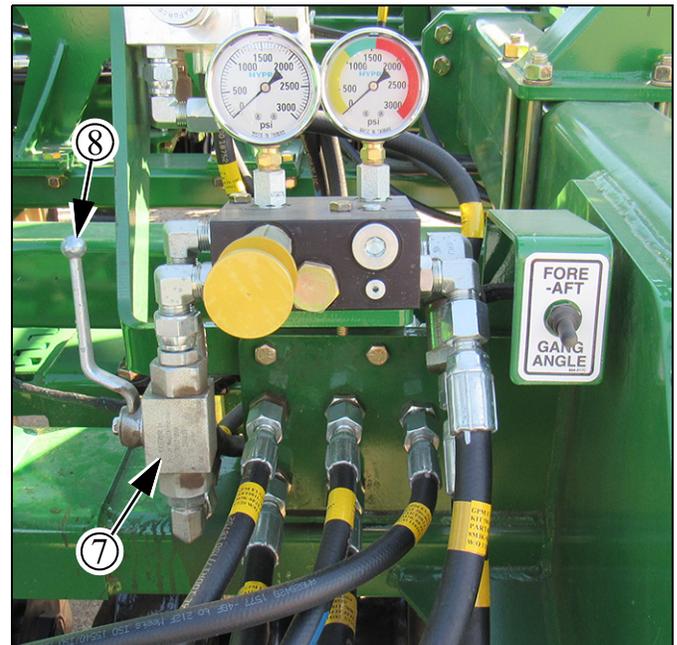


 The wing locking valve (7) is located on the center brace bar close to the by pass valve to prevent wing movement during transport and maintenance. The valve is shown with the handle (8) in the open position. To close the locking valve (7), turn handle (8) 90 degrees, to keep wings from un-folding.

- Once the transport locks, wing stop pins are removed and wing fold valve is in the open position (as shown), unfold the wings (if folding unit).

 Make sure no one is under the wings during the unfolding process. Watch for leaks and make sure hoses do not get pinched during the initial unfolding process.

- Once the machine is unfolded, raise and lower the machine several times to purge air from the lift system. Again, watch for any leaks and tighten if necessary.



Pre-Leveling of Machine

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

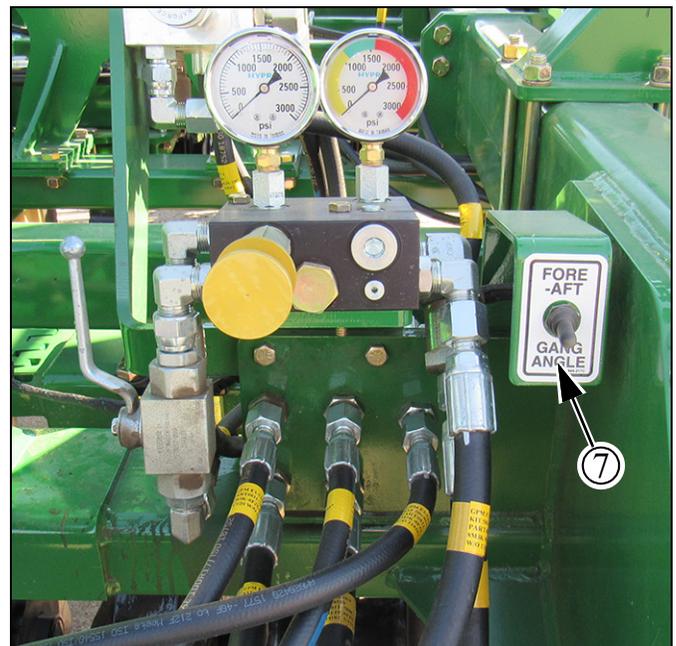
Hydraulic Leveling

Front to Rear Leveling

10. If your machine is equipped with the hydraulic hitch option, lower your machine so the front coultter gangs are 1-2" off the ground, and use the hydraulic controls from the cab of your tractor to level the machine front to back.

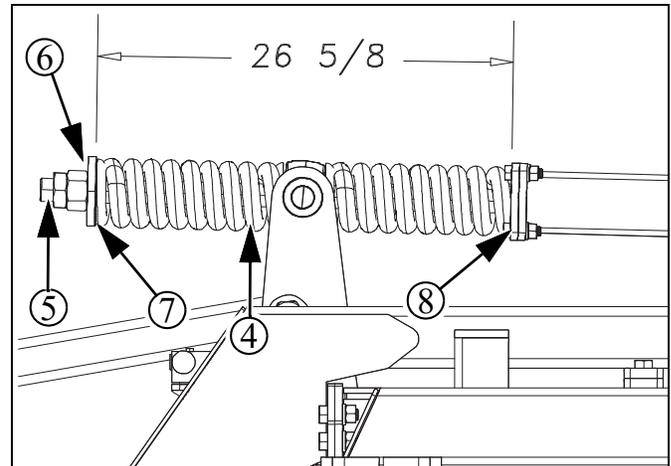


The leveling system and the gang adjustment use the same hydraulic circuit. To change between the two different systems you must select the system using the switch mounted by the by-pass valve (1). The lights must be connected to change the system using the switch.



Level Bar Spring Adjustment

11. To adjust the level bar spring assembly (4) to the preset position of $26\frac{5}{8}$ ", loosen $1\frac{1}{2}$ " jam nut (5) with turnbuckle wrench (stored on rear pegs of hitch).
12. Adjust the $1\frac{1}{2}$ " nut (6) until the $26\frac{5}{8}$ " dimension is reached between backside of spring guide (7) and front side of level bar spring rod plate (8).
13. Re-tighten the $1\frac{1}{2}$ " jam nut (5) to secure.



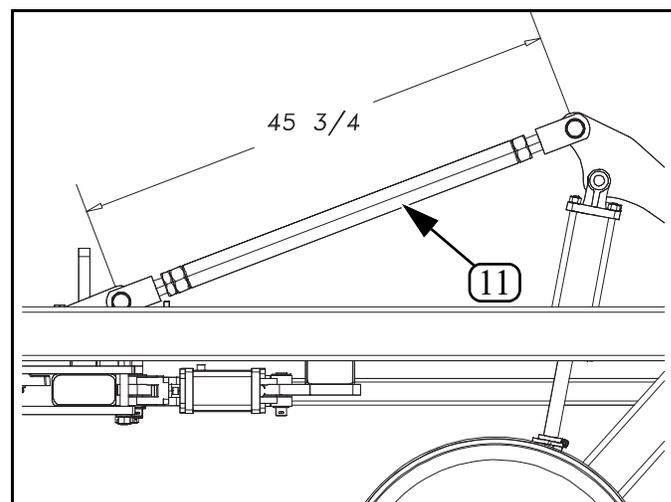
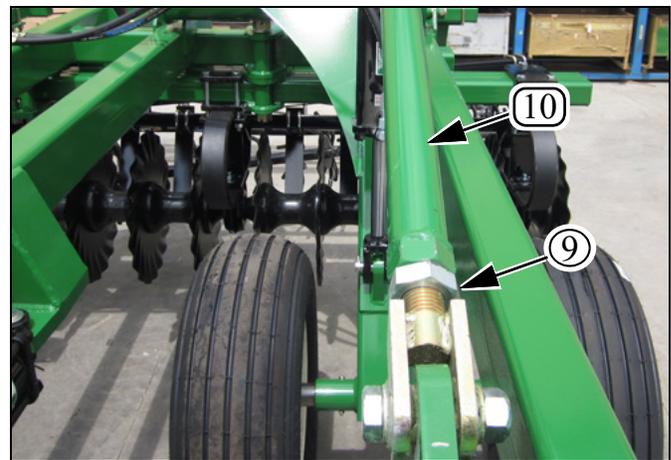
Wing Adjustment

14. Once the machine is level fore to aft, the wings may be leveled. Start by unfolding the wings. Lower the lift cylinders down until coulter gangs are 1-2" off of ground, both center and wings.
15. Set the wings to match the depth of the center. Start by loosening jam nut (9) with turnbuckle wrench (stored on rear pegs of hitch). Turn the turnbuckle (10) to adjust. (Shorten turnbuckle to run shallower, lengthen to run deeper).

Wing Turnbuckle 586-295S

16. The wing turnbuckle (11) should be pre-set at $45\frac{3}{4}$ " as shown.
17. Once machine is leveled side to side, any further adjustment in the field should be done with the hydraulic down pressure.
18. If running gangs at an angle and the wings are going too deep, then you should not run down pressure at all. Switch hydraulic to the float position.

 *If wings are running too high, increase hydraulic down pressure setting, too low, decrease down pressure setting. See "Hydraulic Down Pressure" on page 22.*



Gang Angle Adjustment

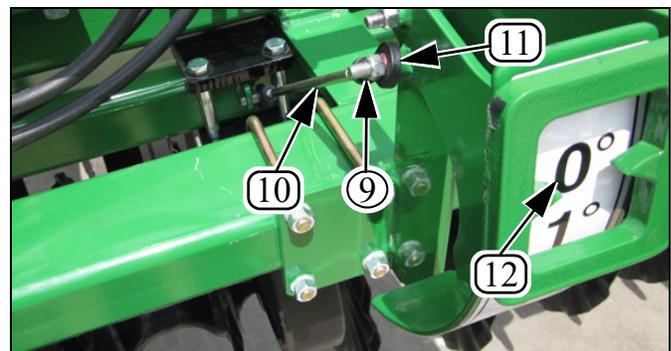
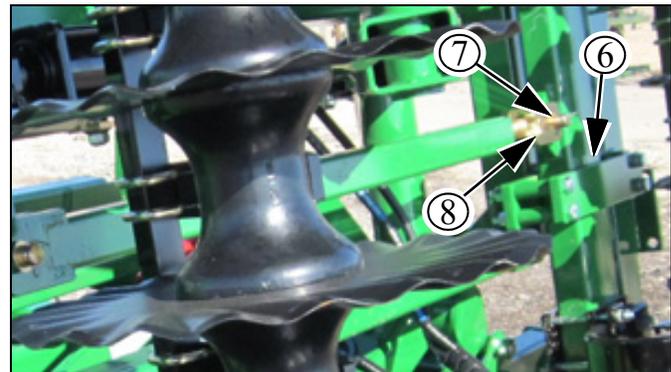
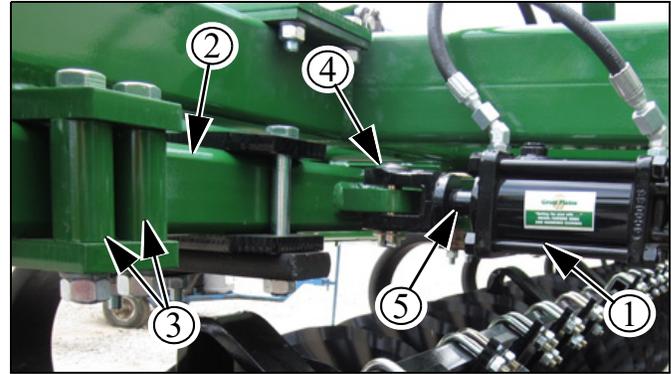
 Check gang angle adjustment when machine is new and annually after, as wear may occur.

19. With front gang adjusting cylinders (1) in the full retract position the gang bar (2) should be $\frac{1}{8}$ " from tubes (3).
20. If gang bar (2) is not $\frac{1}{8}$ " from tubes (3) loosen allen 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.
21. Re-tighten allen screw (4) when adjustment is made.

 Note the two different turnbuckles used. One has a rocker between two turnbuckles and the other has just one turnbuckle between the front and rear gang bars. They both adjust the same way.

22. 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.
23. 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 get gang bar to retract all the way.
24. Re-install pin (7) after adjustment is made.

25. When the front and rear gangs are adjusted and gang angle cylinders are fully retracted then the gang angle indicator will need adjusted.
 26. Remove bolt (9) from either end of gauge link (10) and turn threaded end (11) until indicator (12) reads 0 degrees.
 27. Re-install bolt (9) to secure gauge link.
-  Be sure that the gauge link is installed on the outside face of the outside tab on the gang bar.

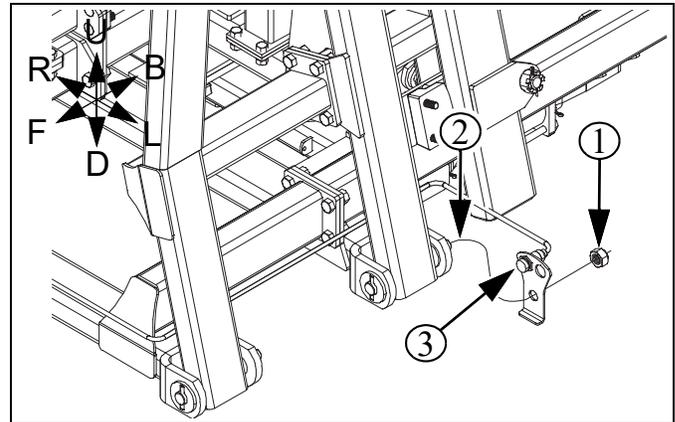


Wing Fold Assist VT1100-25 & VT1100-30

Proximity Sensor

 Wings need to be folded up when installing the proximity sensor assembly (3) to prevent damage to sensor and brackets. Be sure wing safety lock pins are installed.

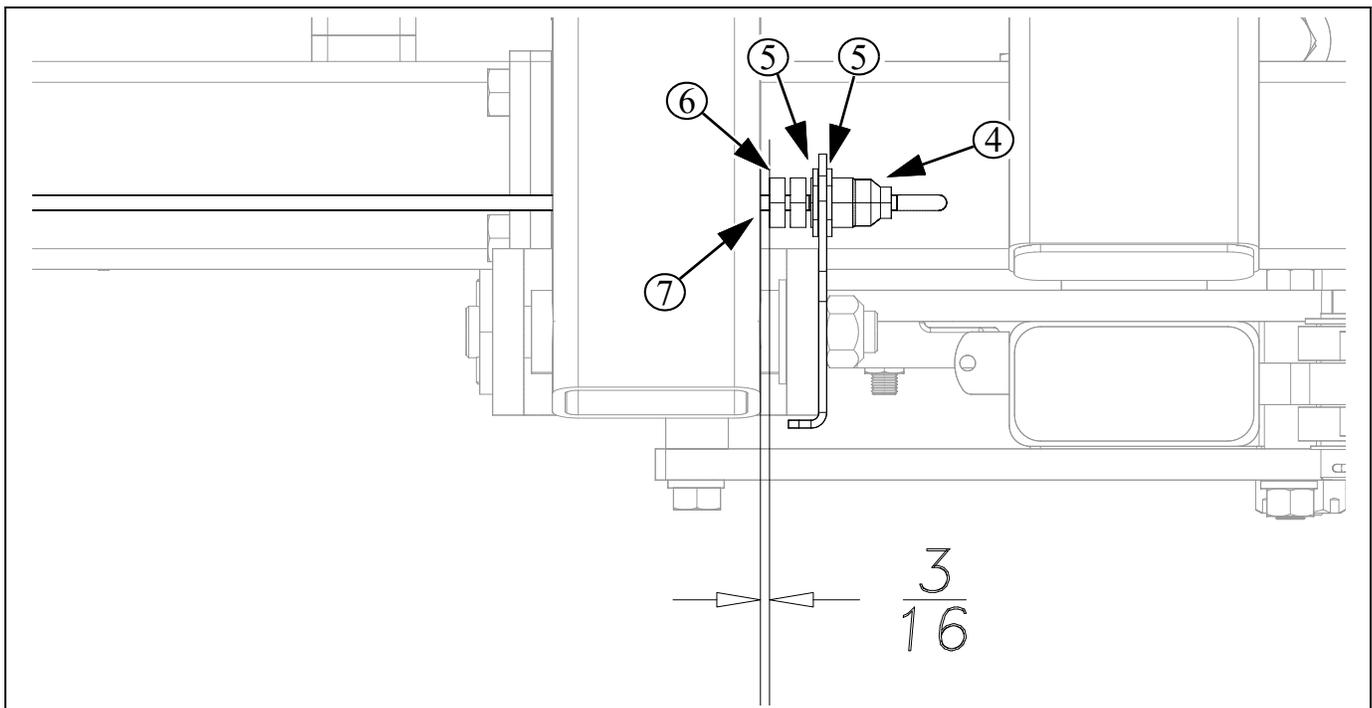
28. Remove 1 lock nut (1) from hinge pin (2) (2nd hinge from front).
29. Slide proximity mount bracket assembly (3) over hinge pin (2) in orientation shown.
30. Re-install the 1 lock nut (1) to secure.
31. Tighten lock nut (1) snug but do not torque.
32. Repeat same procedure for right side.



Proximity Sensor Adjustment

 Wings need to be folded up when adjusting the proximity sensor (4) to prevent damage to sensor and bracket. Be sure and adjust proximity sensors before unfolding. Be sure wing safety lock pins are installed.

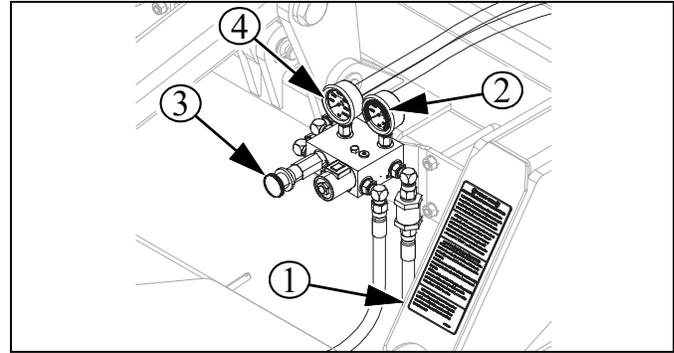
33. Loosen nuts (5) (one on front and one on back side of sensor bracket, adjust the proximity sensor (4) to $\frac{1}{8}$ " to $\frac{1}{4}$ ", from front of proximity sensor (6) to rear of wing tube (7) as shown.
34. Re-tighten nuts (5) to secure proximity sensor (4).



Hydraulic Down Pressure

 This setup procedure is for tractors with closed-center or pressure compensated flow hydraulic systems. Open center hydraulics not supported. Adjust down pressure valve as shown on decal (1) (located on front of left truss.)

35. Engage the hydraulics (continuous flow) down.
36. From the cab, adjust the flow so the needle on the bypass gauge (2) is in the green zone 1000-1500PSI.
37. At the valve, adjust the valve (3) to set your initial down pressure (4) (usually 300-400). Do not exceed 800 PSI.
38. If the wings run high during operation, increase pressure. If the center runs high, decrease pressure. If no pressure is needed, move valve in tractor to "FLOAT" position.



NOTICE

Notice: When operating machine with the blades in angled position it is generally unnecessary to apply wing down pressure. Only in very hard ground will wing down pressure be necessary.

CAUTION

When not operating with live down pressure the fold system must be in "FLOAT" position. Failure to operate in either float or active down pressure will damage the fold system. see your tractor operator's manual to set system to "FLOAT" position if necessary.

CAUTION

This machine is designed for continuous hydraulic flow to the wing fold cylinders during field operations. It is for use on tractors having CLOSED CENTER hydraulics only.

DOWN PRESSURE VALVE INSTRUCTIONS:

NOTICE: When operating machine with blades in angled position it is generally unnecessary to apply wing down pressure. Only in very hard ground will wing down pressure be necessary.

CAUTION: When not operating with live down pressure the fold system must be in "FLOAT" position. Failure to operate in either float or active down pressure will damage the fold system. See your tractor operator's manual to set system to "FLOAT" position if necessary.

SETTING DOWN PRESSURE VALVE

1. Engage the hydraulics (continuous flow) down.
2. From the cab, adjust the flow so the needle on the bypass gauge is in the green zone 1000 - 1500 PSI.
3. At the valve, adjust the valve to set your initial down pressure (usually 300-400). Do not exceed 800 PSI.
4. If the wings run high during operation, increase pressure. If the center runs high, decrease pressure. If no pressure is needed, move valve in tractor to "FLOAT" position.

CAUTION: This machine is designed for continuous hydraulic flow to the wing fold cylinders during field operations. It is for use on tractors having CLOSED CENTER hydraulics only.

848-972C

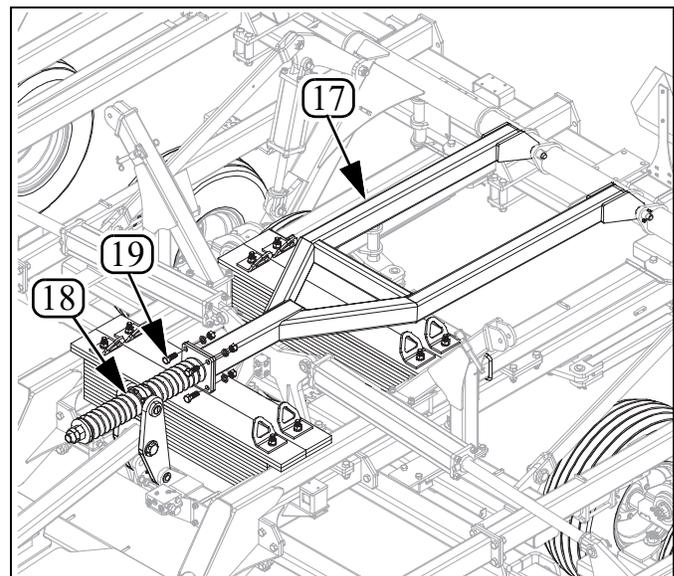
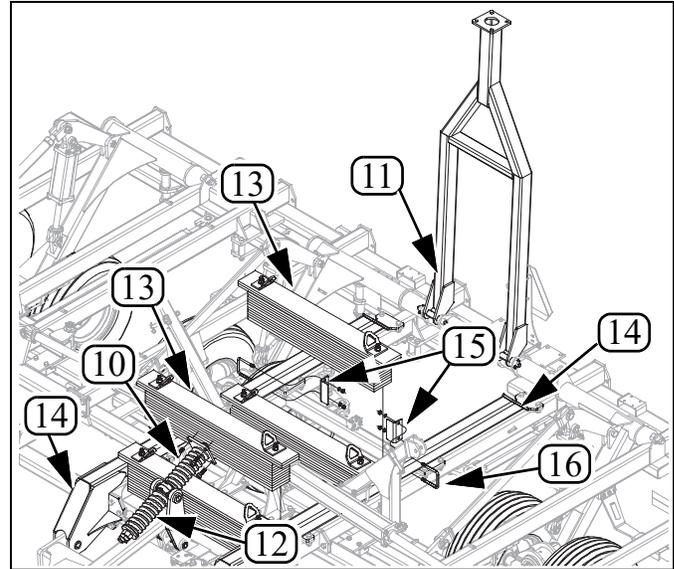
Weight Package Assembly (Optional)

CAUTION

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

 Use up to 2 sets of weights (4 weights) in positions shown.

39. Start by removing the $\frac{3}{4}$ x 2 Gr. 8 bolts (10) from level bar assembly.
40. Pivot level bar (11) up so there will be clearance to set the 750 pound weight assemblies (13) into place.
41. Pivot level bar spring assembly (12) forward.
42. Carefully lower the 750 pound weight assemblies (13) onto center frame trusses (14), two on front side of fold cylinders and two on rear side of fold cylinders.
43. Slide rear weights as far forward as possible and install weight box stops (15) on inside of trusses as close to weight as possible (rear weights), secure with $\frac{1}{2}$ x $4\frac{1}{32}$ x $5\frac{1}{4}$ u-bolt (16), $2\frac{1}{2}$ lock washers and $\frac{1}{2}$ nuts.
44. Torque u-bolts to 85 ft-lbs.
45. Pivot level bar (17) and the level bar spring assembly (18) until holes in plates are aligned.
46. Re-install $\frac{3}{4}$ x 2 Gr. 8 bolts (19), secure with $\frac{3}{4}$ lock washers and $\frac{3}{4}$ nuts.
47. Torque $\frac{3}{4}$ x 2 Gr. 8 bolts (19) to 375 ft lbs to be sure bolts do not work loose and cause damage to machine.





Operating Instructions

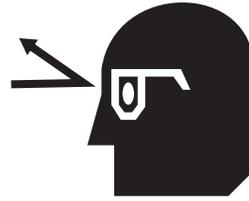
This section covers general operating procedures. Experience, machine familiarity, and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

Perform the following steps before transporting the VT1100 to the field.

- Carefully read “**Important Safety Information**” on page 1.
- Lubricate VT1100 as indicated under “**Lubrication**” on page 36.
- Check all tires for proper inflation, “**Tire Inflation Chart**” on page 38.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 39.
- Check VT1100 for worn or damaged parts. Repair or replace parts before going to the field.

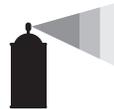
Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.



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:

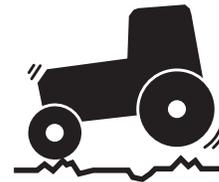
Use an adequate towing vehicle. Never tow an implement that weighs more than 150% of the towing vehicle (transport vehicle must weigh at least 67% of implement). Ensure that the towing vehicle is adequate for the task. Using an inadequate tow vehicle is extremely unsafe, and can result in loss of control, 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 14).
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 14).
4. Verify correct operation of lights.
5. Install transport locks, wing fold pins and close wing lock valve (page 17).
6. Check that tires are properly inflated (page 38).
7. Plan the route. Avoid steep hills.
8. Always have lights on for highway operation.
9. Do not exceed 20 mph (32 kph). 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 field with the machine engaged (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 in the ground. If the inside tire stops or rolls backward, the turn is tight and requires lifting.

Field Set-Up Checklists

Use the following tables to develop a final checklist for your tractor/VT1100 configuration. Additional or fewer steps may be necessary depending on tractor features, VT1100 options and planting accessories.

Mechanical Checklist (Tractor Hitching)

- VT1100 Turbo Max hitched
- Hitch pin locked
- Safety chain secured to tractor or leading implement
- Parking jack stowed
- Check all tire pressures
- Transport locks and locking valves are in the field position

Electrical Checklist

- Verify electrical hookups are solid, or connector securely stowed if not using lights in field.

Hydraulic System Checklist

- Check tractor hydraulic reservoir full
- Make hydraulic connections
- Inspect connections for leaks
- Unfold Implement

Field Start

- Remove wing pins & transport locks and store properly.
- Unfold the turbo max (page 17).
- Check machine for levelness (page 28).

Operations Checklists

First Pass Operation Checklist

- Implement unfolded and aligned for first pass.
- Pull forward, lower VT1100 Turbo Max, and begin tilling for a short distance.
- Stop. Assess:
- Coulter Depth
- Finishing attachment operation
- Make necessary adjustments

Sharp Field Turns

- Raise VT1100 Turbo Max
- Make turn
- Lower to field depth
- Resume tilling

End Field Work

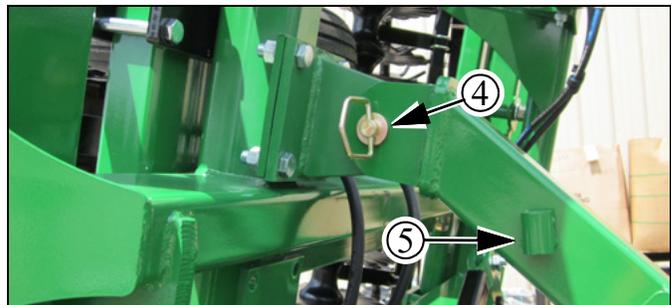
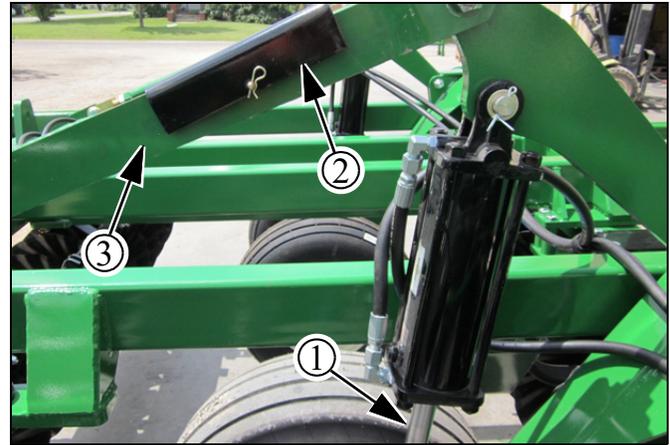
- Suspend operations as above
- Lift VT1100 Turbo Max.
- Fold VT1100 Turbo Max.
- Place locking valves in transport position
- Place transport locks in transport position
- Lower implement on to transport
- Travel with caution (page 25).
- Lights ON for transport

General Operation and In-Field Adjustments

Prior to Operating the Turbo Max

1. 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 bars (3) above.
2. Remove the wing transport pins (4) and store in the spools (5) on the wing rest bar. Open the wing fold valve (6) located on the center brace bar close to the by pass valve (7).
3. Unfold unit being sure that the fold cylinders are fully extended. You may increase flow rates during the folding and unfolding procedure but be sure to slow the flow rates back down once the unit is unfolded.
4. When operating the Turbo Max with the blades running at an angle, it is generally unnecessary to operate with hydraulic down pressure to the wings. Only in very hard ground will down pressure be needed. If down pressure is needed, see “**Hydraulic Down Pressure**” on page 22 for initial setup, If no down pressure is needed, set the fold hydraulic system to the “FLOAT” position at this time.
5. When operating the blades in the straight position, down pressure is necessary, usually between 200 and 400 psi.

 *Never leave tractor valve centered when unfolded with machine in motion. Machine damage may occur when wings flex. The hydraulic down pressure cylinders have no wing flex capability and oil flow is required when the wings flex up or down. You must have the tractor fold hydraulic lever in continuous downward flow or “FLOAT” position before the wings can flex over terrain in the raised or lower lift position.*

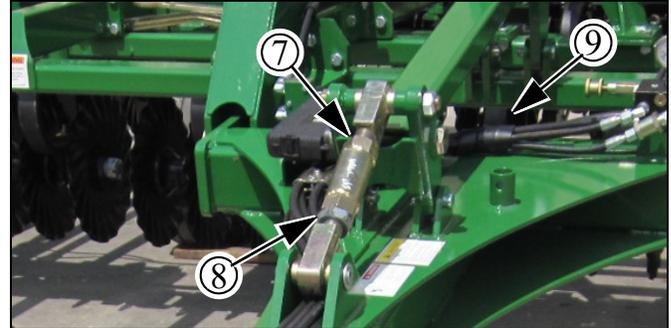


Fore/Aft Leveling

 The VT1100 Turbo Max needs to run level front to rear and from side to side. Though pre-leveling was done, you may still need to change this slightly once you go to the field. Fore and Aft cylinder is on the same circuit as the gang angle. It has to be switched, adjusted and then switched back. Once this is set to the tractor it should not require changing again.

Hitch Turnbuckle

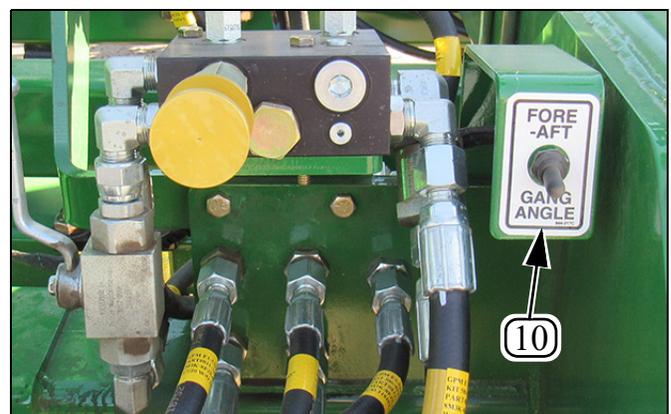
- For front to rear, either extend or shorten the front turnbuckle (7) on the leveling system by loosening jam nut (8) with turnbuckle wrench (9) (stored on rear pegs of hitch). Adjust turnbuckle (7) until level front to back. Re-tighten jam nut (8) after machine is level. Never run the machine lower (deeper) in the rear than in the front.



Hydraulic Fore/Aft

- If your machine is equipped with the hydraulic hitch option, use the hydraulic remotes in the tractor cab to adjust the fore/aft leveling as needed.
- Be sure the switch (10) has Ford/Aft selected and adjust the hydraulic cylinder (Red handles) on the hitch to bring the front up and down until the machine is level front to back. Be sure to switch back to Gang Angle selection when finished. Never run the machine lower (deeper) in the rear than in the front.

 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.



9. As far as leveling the wings to the center section, if the wings were pre-leveled as shown in “**Wing Adjustment**” on page 19, then further adjustment should be done with the down pressure setting. If the wings are running low, back off the down pressure. If wings are running high, increase the down pressure, see “**Hydraulic Down Pressure**” on page 22, for complete down pressure adjustment. If no down pressure is being used, set the wings to match the depth of the center. Start by loosening jam nut (11) with turnbuckle wrench (stored on rear pegs of hitch). Turn the turnbuckle (12) to adjust. (Shorten turnbuckle to run shallower, lengthen to run deeper).
10. 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.
11. 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.

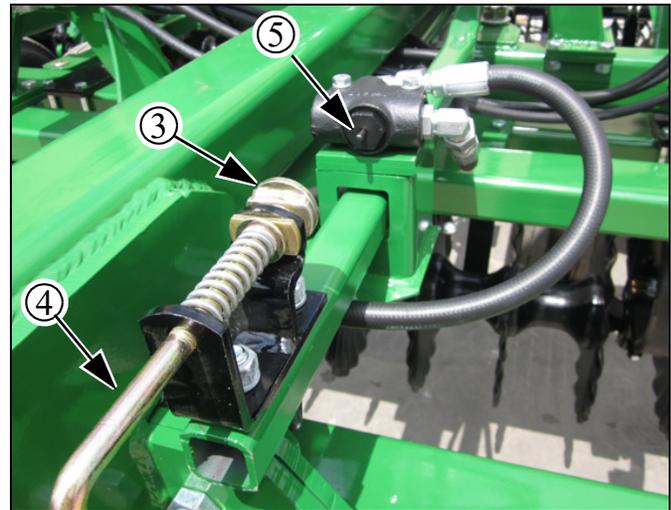


Depth

12. Once the machine is level and set to the desired depth, set the depth stop (3) 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 (4) either in or out will change the depth approximately $\frac{1}{4}$ " 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 (5) 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 $\frac{1}{2}$ to 1 full second after full raise. If it runs longer than this, damage to the seals of the lift cylinders may result.*

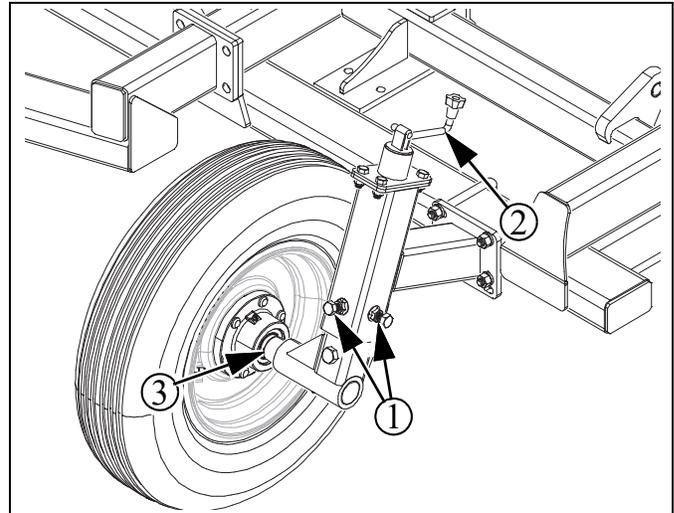
13. Varying the angle on the gangs will also change the results of your operation. It is recommended to operate the Turbo Max with the gangs in the straight position when this is your last pass ahead of the planter or grain drill. This will leave the best possible seedbed for planting. It is not recommended to operate the tool at a depth deeper than the intended planting depth.
14. 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.
15. The Turbo Max is a versatile tool that allows the operator to make changes from the cab of the tractor. It is important to remember the relationships between gang angle, speed and wing down pressure. When operating the gangs at an angle, slow down (6-8 mph) and set wing fold system to "FLOAT". When operating gangs in the straight position, speed up (8-10 mph) and set the wing fold system to active hydraulic down pressure.



Gauge Wheel Adjustment

 *Gauge wheels are not necessary on all machines. Rolling terrain or terraced ground are conditions that may require a gauge wheel. The gauge wheels should never be in constant contact with the ground. They should operate at a position $1\frac{1}{2}$ " to $1\frac{1}{2}$ " above the ground.*

16. Once the machine has been adjusted and set to the desired working depth, you may now adjust the gauge wheels.
17. Start by loosening set screws (1) on each gauge wheel. Turn jack handle (2), to adjust spindle receiver . To lengthen the spindle receiver (3) (turn counter-clockwise), to run wheel closer to ground, to shorten the spindle receiver (turn clock-wise) to run further away from ground.
18. After adjusting gauge wheel to position needed, retighten the set screws (1).
19. If the overall depth of the machine is adjusted, especially if it is set deeper, remember to readjust the gauge wheels.



Optional Settings

Hydraulic Finishing Reel (All Configurations)

 *Down pressure to the finishing reels is a key component in the operation of the VT1100.*

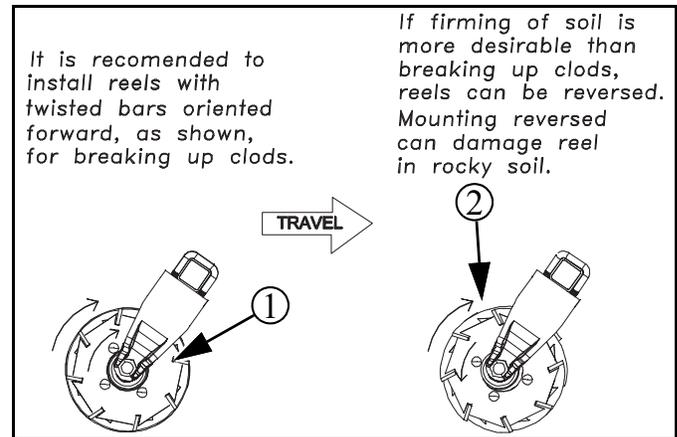
20. Initially it is recommended to start these out in the float so we are not applying pressure which could affect other components of the machine. Once all the previous settings are completed to satisfaction, increased down pressure to the reels can be applied. Initial down pressure should be about 200-300PSI. Increases from there can be done depending on conditions. Never exceed 800 PSI. Do not run down pressure in very wet fields and you may need to raise it completely in some circumstances.
21. If your machine is equipped with the optional hydraulic reels you can adjust the down pressure from the cab of the tractor by raising and lowering the reels using the hydraulics.



22. The bars on attachment reels are angled forward (1) 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 (2). 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 (1) as shown. Mounting in reverse (2) can damage reel in rocky soil.

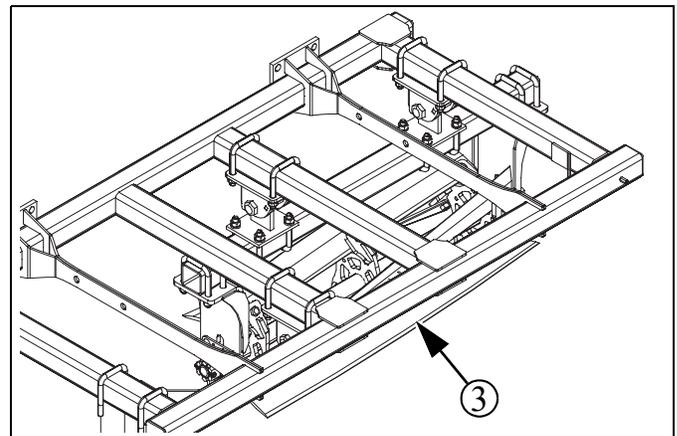


Setting the Choppers

23. The chopper (3) and reel attachment (1) is a very versatile leveling attachment and requires very little adjustment. The choppers are positioned between the turbo blades and the finishing reels (if your machine has the reel option). The chopper reels should be installed with the bars angled forward, there are indicator arrows on the side of the chopper reels to show the direction.

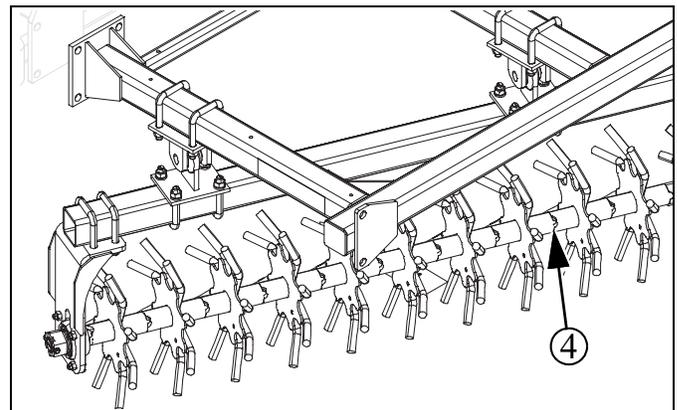
WARNING

Be sure reels are installed with twisted bars oriented forward (1) as shown. Mounting in reverse (2) can damage reel in rocky soil.



Setting the Rolling Harrow

24. The rolling harrow (1) and reel attachment (4) 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.



Operating Speeds

25. Due to the fact that different settings affect this it can really vary. This is a high speed tool with speeds up to 11 MPH possible. Recommended speeds vary with gang angle as well. 0-3 degree gang angle can be run at 8-10 MPH. 4-8 degree gang angle would be run from 7-9 MPH. If depth is increased, speed will need to be slowed down a bit more as well. $6\frac{1}{2}$ MPH is the bottom end of the required speed. If you can't pull this unit at least $6\frac{1}{2}$ MPH it will not be effective.

Summary of First Time Field Settings

- Gang Angle - 0-6°
- Working Depth - 2.5-3°
- Wing Down Pressure - Start in Float position. Increase to 200 PSI if some pressure is needed
- Fore/Aft - Machine must be level front to rear to ensure all blades are working at the same depth
- Finish Reel Down Pressure - Start in Float position, increase to 200-300 PSI if pressure is desired
- Operating Speeds - 6-10 MPH, depending on settings

Parking

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

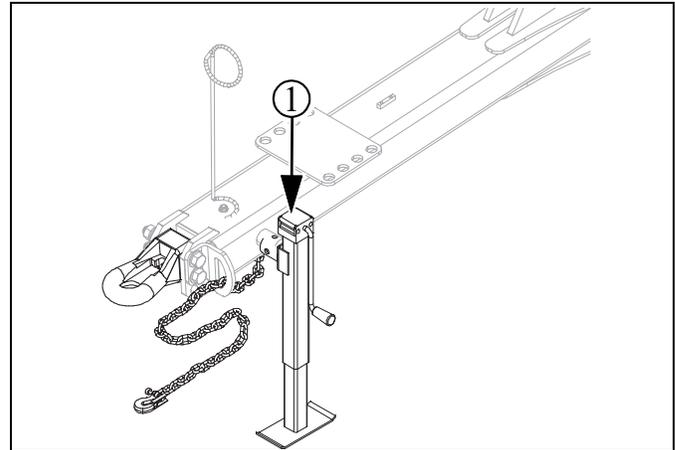
1. Position the implement on firm, level ground.
2. Raise, fold and lock implement (page 17).

⚠ DANGER

Negative Tongue Weight Hazard:

If rear tow hitch is installed it is possible that the VT1100 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 stob on outside of implement tongue (1). See “**Hitching VT1100 to Tractor**” on page 14.
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.



Storage

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

1. Raise, fold and lock implement (page 17) For unfolded storage, see steps at right.
2. Perform Parking checklist above.
3. Lubricate the implement at all points listed under “**Lubrication**” on page 36.
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 VT1100 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.

Unfolded Storage

See page 17 for details on maintenance lock.

- 1a. Raise implement.
- 1b. Verify the transport locks are in the transport position. Be sure hydraulics are de-pressurized. Adjust locking valves to the open position. Unfold wings until wing is resting on shims.
- 1c. Lower implement onto lock channels.
- 1d. Set all hydraulic remotes to Float.



Maintenance and Lubrication

Maintenance

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

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

WARNING

Crushing Hazard:

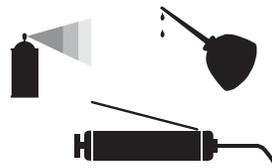
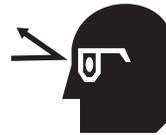
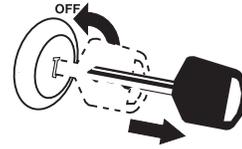
Always have transport locks in place and frame sufficiently blocked up when working on implement. You may be severely injured or killed by being crushed under the falling implement.

WARNING

High Pressure Fluid Hazard:

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

1. After using your turbo max for several hours, check all bolts to be sure they are tight.
2. Clean turbo max on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
3. Lubricate areas listed under “**Lubrication**” on page 36.
4. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.
5. Check and tighten or replace any hydraulic leaks. Check hoses for any leaks. It is important that there are no leaks on the equipment.
6. Check drag bolts for looseness or excessive wear. Your drag is an important part of the tillage operation.
7. If your 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 cylinder 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

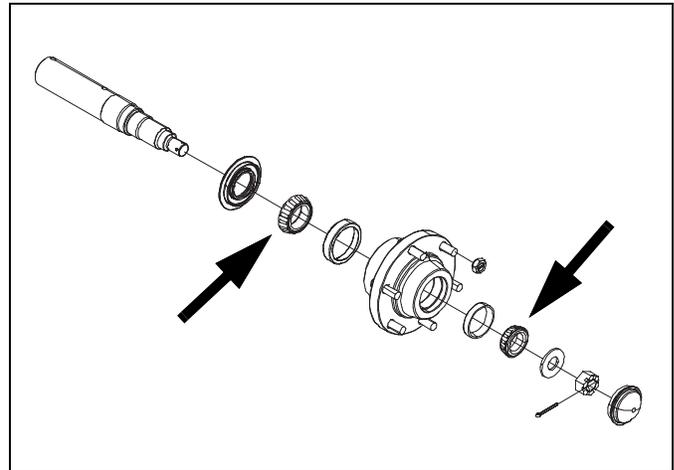
 Multipurpose spray lube	 Multipurpose grease lube	 Multipurpose oil lube	 50	Intervals (service hours) at which lubrication is required
---	--	---	--	--

Wheel Bearing Hubs

	 Seasonally
---	---

Inspect bearings for end play Annually. If excessive endplay exists it is recommended to disassemble, clean and repack the wheel bearings.

For machines stored outdoors or operating in extreme conditions bearings should be checked more often.



All Turnbuckles and Threaded Adjustments

	 Seasonally
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Overall Machine Maintenance;

Type of Lubrication: Multipurpose Lubricant
 Quantity: Coat thoroughly.



Turbo Max Specifications and Capacities

Model No.	VT1100-20	VT100-25	VT1100-30
Tillage Width	20' (610cm)	25' (762cm)	30' (914cm)
Center Section	12' 3" (376cm)	12' 3" (376cm)	12' 3" (376cm)
Wing	5' 3" (160cm)	7' 9" (236cm)	10' 4" (315cm)
Number of Blades	66	80	96
Blade Spacing	3 3/4" (9.5cm) (2 offset gangs at 7 1/2" (19cm) spacing per gang)		
Gang Angle	Hyd Adjustable 0* to 6*	Hyd Adjustable 0* to 6*	Hyd Adjustable 0* to 6*
Weight (w/Double Reel no Weight packs)	17,800lbs. (8074kg)	22,250lbs (10, 093kg)	26375lbs (11,964kg)
Transport Width	15' 7" (475cm)	15' 7" (475cm)	15' 7" (475cm)
Transport Height	9' 4" (285cm)	12' 4" (376cm)	14' 4" (437cm)
Length (Machine Only)	21' 9" (663cm)	21' 9" (663cm)	21' 9" (663cm)
Length (w/Double Reel)	29' 2" (889cm)	29' 2" (889cm)	29' 2" (889cm)
Tire Size (Center)	380/55R16.5 LD F	380/55R16.5 LD F	410/50R16.5
Tire Size (Wing)	12.5Lx15 12 ply	12.5Lx15 12 ply	12.5Lx15 12 ply
Horsepower (PTO)	180-230	230-285	285-340
Kilowatt	135-172	172-213	213-254

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

Tire Inflation Chart

Tire Inflation Chart			Tire Warranty Information
Wheel	Tire Size	Inflation	
Gauge Wheel	9.5L x 15" 8-Ply	44 psi (303 kPa)	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. <u>Manufacturer Web site</u> Firestone www.firestoneag.com Gleason www.gleasonwheel.com Titan www.titan-intl.com Galaxy www.atgtire.com BKT www.bkt-tire.com
VT1100-20 & 25 Transport/Center	Goodyear 380/55R x 16.5 LDF	73 psi (503 kPa)	
VT1100-30 Transport/Center	BKT 410/50R x 16.5	67 psi (462 kPa)	
Transport/Wings	12.5L x 15" 12-Ply	52 psi (359 kPa)	

Hydraulic Connectors and Torque

(This image is 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.

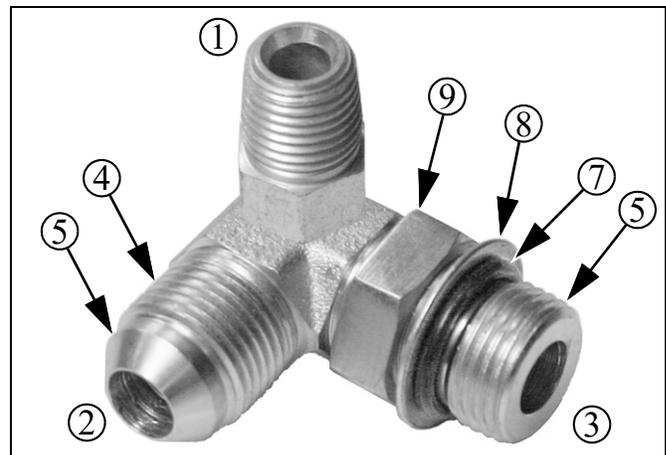
JIC - Joint Industry Conference (SAE J514)

- (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) Use no sealants (tape or liquid) on ORB fittings. 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.



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	9/16-18 JIC	24-27	18-20
-6	9/16-18 ORB w/jam nut	16-22	12-16
-6	9/16-18 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
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

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

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

25199

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 (170ft-lbs) 3/4"-16 (295ft-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

©Great Plains Manufacturing Inc., 2204-GPSV



A			
address, Great Plains	12		
amber reflectors	5, 6		
B			
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