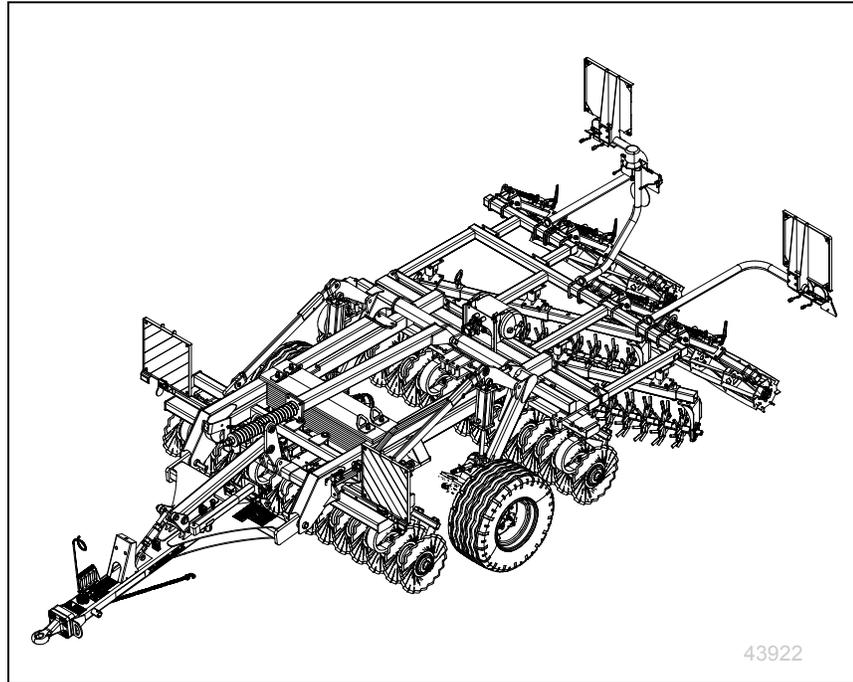


# Operator Manual

Turbo Max  
3.0M TM



*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 2018-10-18

588-154M

## 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.

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

## Dealer Contact Information

**Name:** \_\_\_\_\_

**Street:** \_\_\_\_\_

**City/State:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Dealer's Customer No.:** \_\_\_\_\_

 **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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*Printed in the United States of America*





## Safety Information

### Look for Informational Symbols



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.



Indicates useful, but not crucial, information for machine operation, assembly, or adjustment. It may also direct you towards additional information.

### Be Aware of Signal Words

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



**DANGER** indicates an imminent hazard 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 potential hazard 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 potential hazard which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



**NOTICE** indicates a potential hazard which, if not avoided, may result in moderate to severe damage to your machine, machine parts, or nearby property.

### Be Familiar with Safety Decals



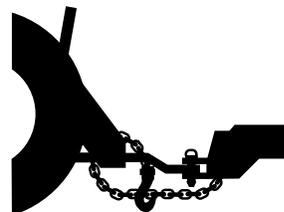
1. Thoroughly read and understand “Safety Decals” section of the Operator Manual.
2. Read all instructions noted on the decals.
3. Keep decals clean. Replace damaged, faded and illegible decals.

### Wear Protective Equipment



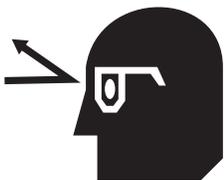
1. Wear protective clothing and equipment appropriate for the job, such as safety glasses, hard hat, and ear plugs.
2. Clothing must fit snug without fringes and pull strings to avoid entanglement with moving parts.
3. Avoid using distracting multimedia devices, such as audio that requires headphones, tablet, or smart phone, while operating machinery.

### Use A Safety Chain



1. A safety chain will help control drawn machinery if the machinery separates from tractor draw-bar.
2. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.
3. Attach chain to tractor draw-bar support or other specified anchor location. Allow only enough slack in chain to permit turning.
4. Replace chain if any links or end fittings are broken, stretched or damaged.
5. Do not use safety chain for towing.

## Avoid High Pressure Fluids



### NOTE

Escaping fluid under pressure can penetrate the skin, causing serious injury.

1. Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.
2. Avoid the hazard by relieving pressure before disconnecting hydraulic lines or performing any work on the system.
3. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
4. Escaping fluid under pressure can penetrate the skin causing serious injury.
5. Use a piece of paper or cardboard, **NOT BODY PARTS**, to check for suspected leaks.
6. **DO NOT DELAY.** If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury. Any fluid injected into the skin or eyes must be treated within a few hours or gangrene can result.

## Tire Safety

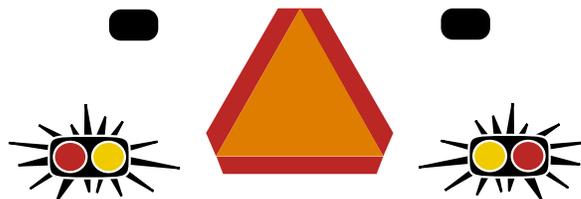


### NOTE

Tire changing can be dangerous and must be performed by trained personnel using correct tools and equipment.

1. 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.
2. When removing and installing wheels, use wheel-handling equipment adequate for weight involved.

## Use Safety Lights and Devices



### NOTE

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

1. If equipped, use flashing warning lights and turn signals whenever driving on public roads.
2. Use safety devices provided with implement.
3. Keep safety lights and signs clean and visible from rear of the machine.

## Keep Riders Off Machinery



### NOTE

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

1. Never carry riders or use machinery as a personal lift.
2. Riders obstruct the operators view.
3. Riders can be struck by foreign objects or thrown from the machine.
4. Never allow children to operate equipment.
5. Keep all bystanders away from machine during operation.

## Transport Machinery Safely



### NOTE

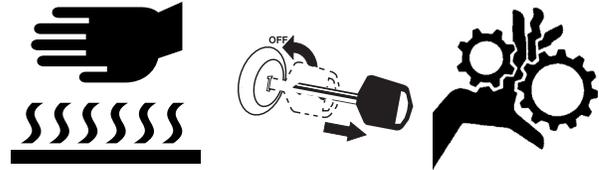
Maximum Transport speed for implement is 30 kph (20 mph). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

1. Comply with state and local laws.
2. Carry reflectors or flags to mark machinery in case of breakdown on the road.
3. Keep clear of overhead power lines and other obstructions when transporting.
4. Do not fold or unfold the implement while the tractor is moving.
5. Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.
6. Turning tractor too tight can cause implement to tip over.
7. When towing on a trailer, secure implement with tie downs and chains.
8. When towing on a trailer, sudden braking can cause a trailer to swerve and upset. Reduce speed if trailer is not equipped with brakes.

## Shutdown and Storage

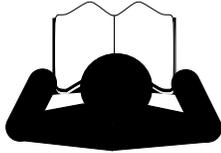
1. Park the tractor and implement on a solid, level surface where children normally do not play.
2. Raise the wings, put tractor in park or set park brake. Turn off engine and remove switch key to prevent unauthorized starting.
3. Wait for all components to come to a complete stop before leaving the operator's seat.
4. Turn lockout valve and wing lock levers to locked position to prevent the wings from lowering.
5. Install transport locks to relieve pressure on hydraulic hoses.
6. Detach the tractor. Secure the implement using blocks and supports.

## Practice Safe Maintenance



1. Understand procedure before doing work. Use proper tools and equipment. Refer to this manual.
2. Work in a clean, dry area.
3. Lower the implement. Put tractor in Park, turn off engine. To prevent unauthorized starting, remove key before performing maintenance or service work.
4. If work must be performed with wings raised, turn lockout valve and wing lock levers to the locked position.
5. Make sure all moving parts have stopped and all system pressure is relieved.
6. Disconnect lighting harness from the tractor before servicing or adjusting electrical systems.
7. Welding: Disconnect lighting harness from the tractor. Protect hydraulic lines. Avoid fumes from heated paint.
8. Inspect all parts. Make sure parts are in good condition and installed properly.
9. Do not alter this machine in a way which will adversely affect its performance.
10. Remove buildup of grease, oil or debris.
11. Remove all tools and unused parts from implement before operation.

## Safety At All Times



**NOTE: Read Operator Manual**

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



**NOTE: Do Not Use Untrained Operators**

Do not allow anyone to operate this equipment who has not fully read and comprehended this manual and who has not been properly trained in the safe operation of the equipment.

1. The operator must not use drugs or alcohol as they can change the alertness or coordination of that person while operating equipment. If over-the-counter drugs are used, seek medical advice on whether you can safely operate equipment.
2. Operator must be familiar with all functions of the tractor and attachments, and be able to handle emergencies quickly.
3. Make sure all guards and shields are in place and secured before operating the implement.
4. Keep all bystanders away from equipment and work area.
5. Operator must start tractor and operate controls from the driver's seat only, never from the ground.
6. Dismounting from a moving tractor can cause serious injury or death.
7. Be familiar with all functions of the implement.
8. Do not leave implement unattended with tractor engine running.
9. Do not stand between the tractor and the implement during hitching.
10. Watch out for wires, trees, etc., when folding and raising the implement.
11. Turning tractor too tight can cause hitched implement to ride up on wheels. This can result in injury or equipment damage.

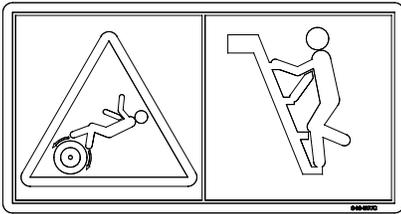
## Safety Decals

### 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*

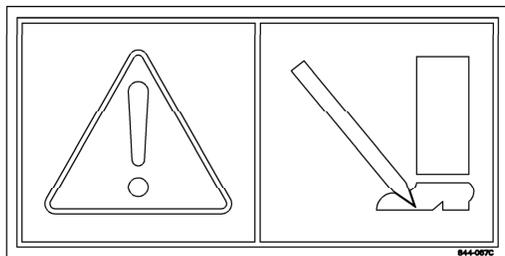
#### 848-507C



#### Tires Not a Step

Front side of the rear tube of center frame, facing the front of the machine;  
2 total

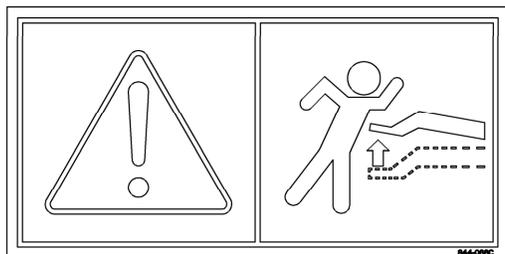
#### 844-067C



#### Cutting of Foot

One on each side of the center frame;  
2 total

#### 844-066C



#### Tongue Rising

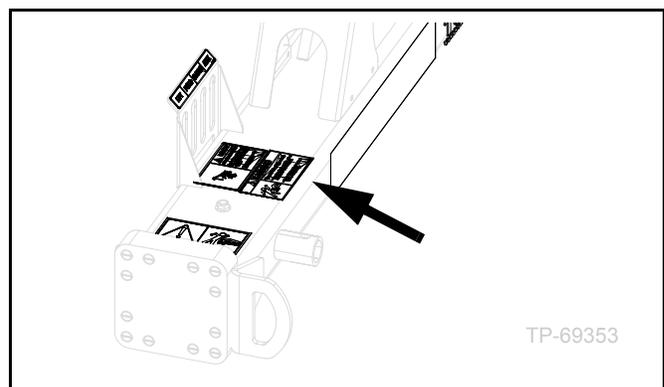
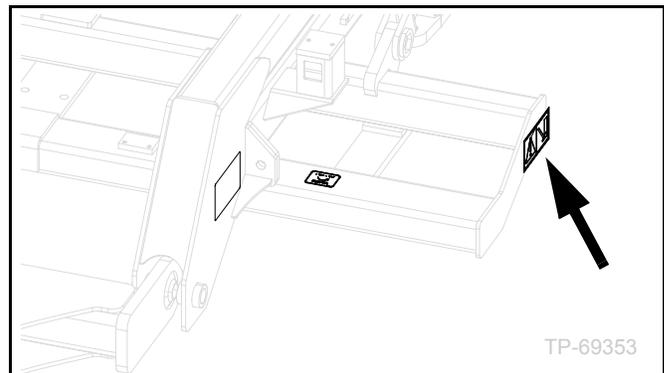
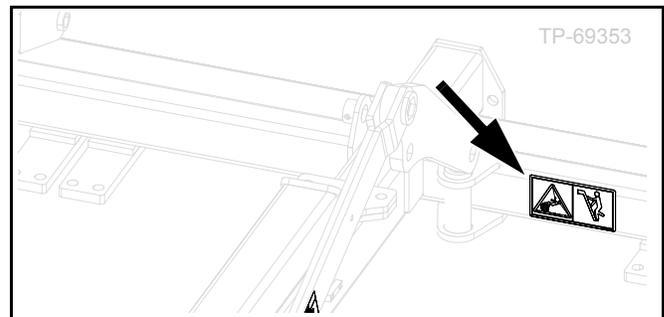
On front of hitch;  
1 total

*proper decal placement.*

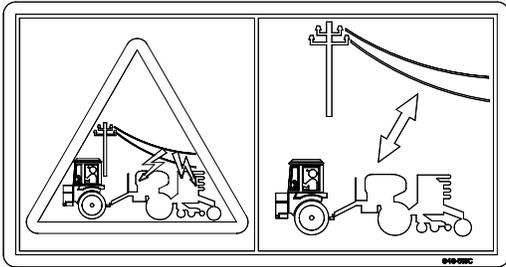
- ▲ *When ordering new parts or components, also request corresponding safety decals.*

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.

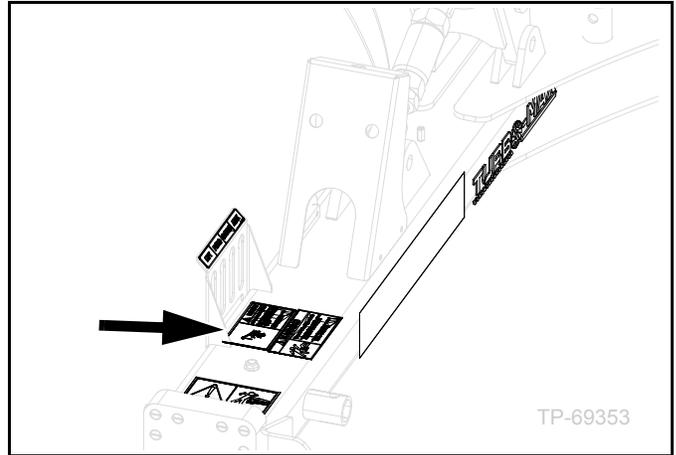


### 848-516C

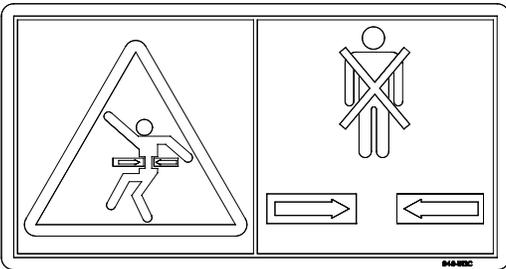


#### Danger: Electrocution Hazard

On middle of hitch;  
1 total

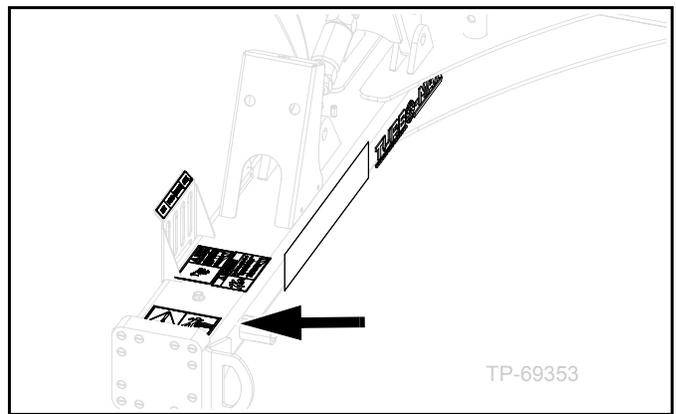


### 848-513C



#### Danger: Crushing Hazard

On front of hitch;  
1 total

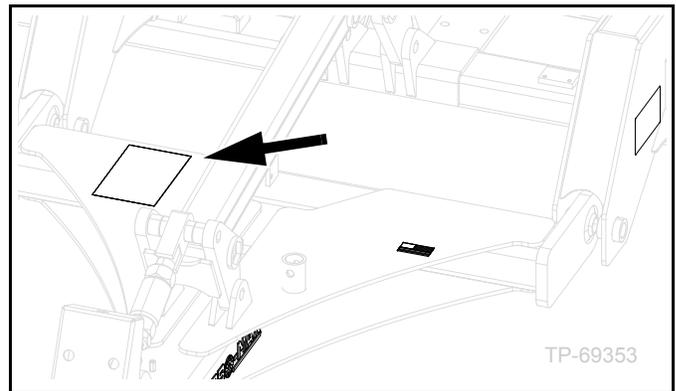


### 858-636C



#### Hazard Group

On rear of hitch;  
1 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

3.0M TM      3M (19cm) spacing

### Description of Unit

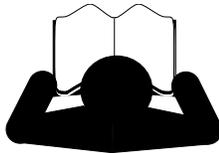
The 3.0M Turbo Max is a one section “vertical” tillage tool. Working width ranges from 3 meters. The implement is designed to cut and size residue, till soil for faster seedbed warming, break up soil crust on hard dried fields while eliminating compaction layers. The front and rear gangs may be adjusted 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

588-154Q-ENG    Pre-Delivery Manual  
 588-154M        Operator Manual (this document)  
 588-154P        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.

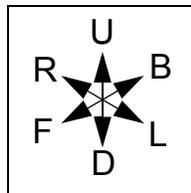


The information in this manual is current at printing. Some parts may change to assure top performance.



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.



# TURBO-MAX

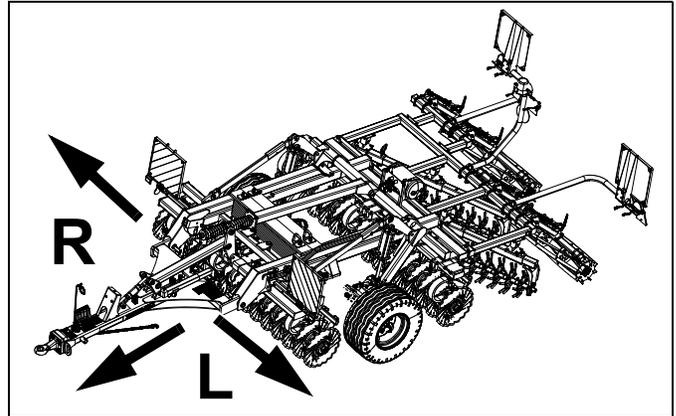


Figure 1  
3.0M Turbo Max

TP-69358

### Definitions

The following terms are used throughout this manual.



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.

## 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.

### Refer to Figure 2

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 hand side.



Record your Turbo Max model and serial number on the back of the cover page for quick reference.

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.

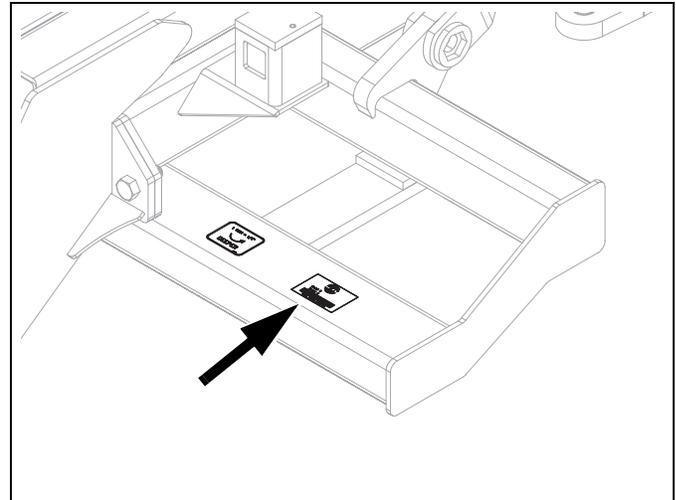


Figure 2  
Serial Number Plate

43937

## 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](http://www.greatplainsag.com) and follow the contact information at the bottom of your screen for our service department.

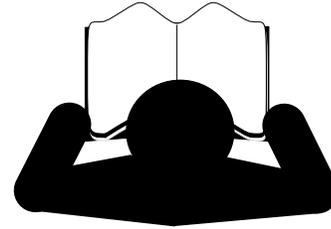


## Preparation and Setup

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 11.
- 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.
- 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 24.
- 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 and field operations. Before hitching, check the compatibility and capability of the towing tractor:

For hillsides and steep slopes, set tractor wheels as wide as possible for maximum stability.

1. Raise tractor three-point arms (if equipped) all the way up to clear Turbo Max.

2. 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.

**Refer to Figure 3**

3. Use jack (1) to raise and lower turbo max tongue.

4. Back tractor draw bar into alignment with hitch (2).

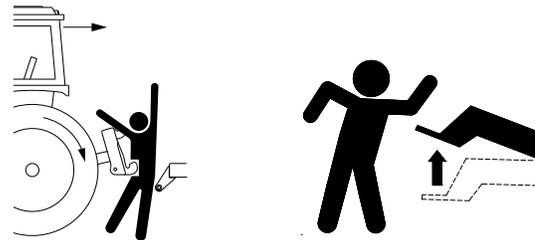
5. Secure with a locking hitch pin.

6. Secure safety chain to an anchor on the tractor.



### Negative Tongue Weight Hazard:

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



### 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.

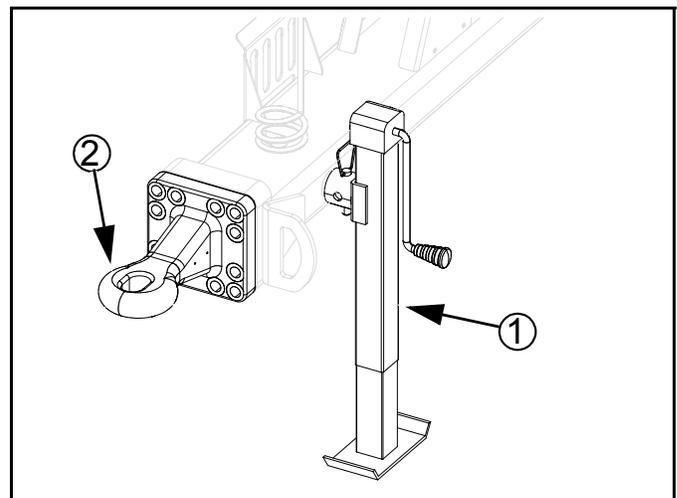


Figure 3  
Jack & Hitch Clevis

42244

**Refer to Figure 4**

7. Retract jack foot. Re-orient jack to storage position.

8. After hitching tractor to turbo max, store jack on storage stub (4) on the tongue.

**Load Sway Hazard:**

9. 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 16, for safe transporting.

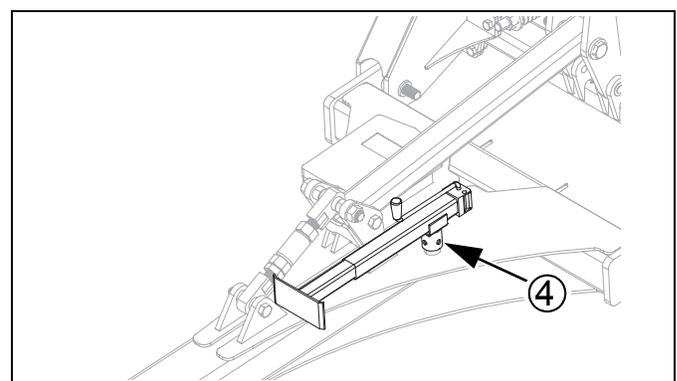


Figure 4  
Jack in Storage

42262

## Electrical Hookup

### Refer to Figure 5

Make sure tractor is shut down with accessory power off before making connections.

Connect lighting connector and any options or after market electronics to tractor outlets.

Test the lights and signaling prior to machine movement.

See “**Lighting Layout**” on page 27 if you need to route the wiring harness.



Figure 5  
European Connector

68099

## 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 |



### 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.

### Refer to Figure 6

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.

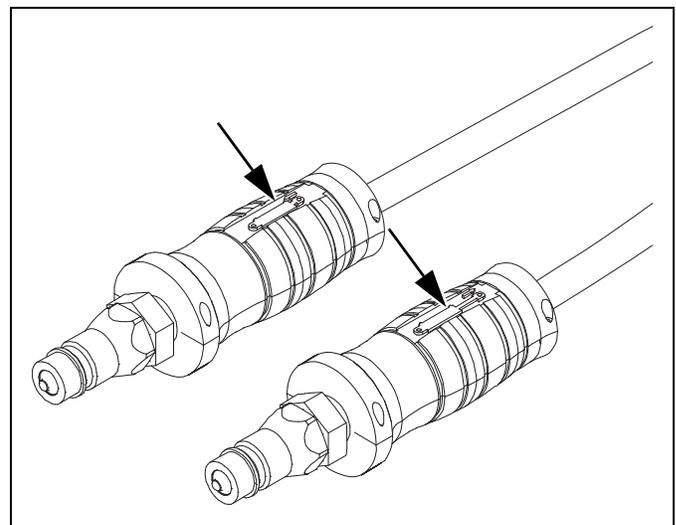


Figure 6  
Hose Handles

31733

## Transport Locks

### Refer to Figure 7

10. 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.
11. Store the transport locks (1) in hole of the lift mechanism link (3).

*Always use transport locks when transporting.*

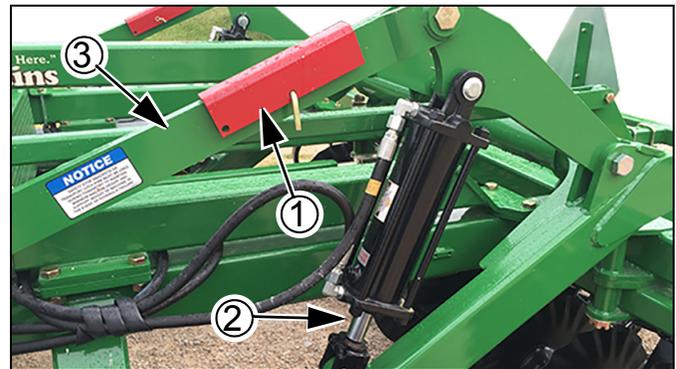


Figure 7  
Transport Locks

43925

## Pre-Leveling of Machine

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

### Front to Rear Leveling

#### Refer to Figure 8

12. If your machine is equipped with the turnbuckle option use the following steps to level your machine. Lower machine so front coulters are 2.5 - 5cm off of ground. Loosen jam nut (4) with turnbuckle wrench (5) (stored on rear pegs of hitch). Adjust the turnbuckle (3) at the front of machine to level it front to back. (Shorten to bring front down, extend to bring front up).
13. When the front coulters are the same distance off the ground as the rear coulters re-tighten jam nut (1).

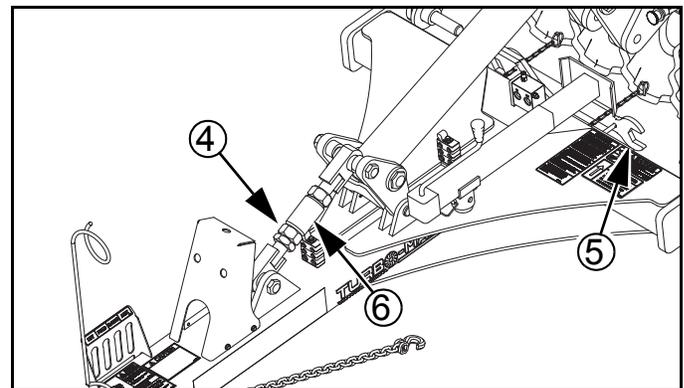


Figure 8  
Hitch Turnbuckle Adjustment

68161B

## Level Bar Spring Adjustment

### Refer to Figure 9

14. To adjust the level bar spring assembly (11) to the preset position of 67.6cm (26<sup>5</sup>/<sub>8</sub>in), loosen jam nut (7) with turnbuckle wrench (5) (stored on rear pegs of hitch).
15. Adjust the 1<sup>1</sup>/<sub>2</sub> nut (8) until the 67.6cm dimension is reached between backside of spring guide (9) and front side of level bar spring rod plate (10).
16. Re-tighten the 1<sup>1</sup>/<sub>2</sub> jam nut (7) to secure.

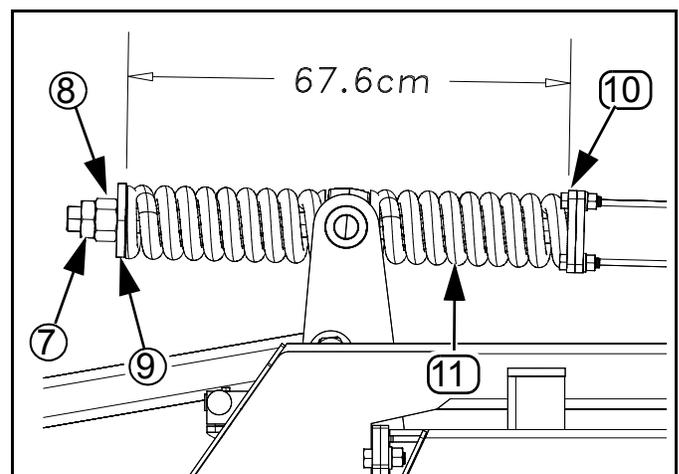


Figure 9  
Level Bar Spring

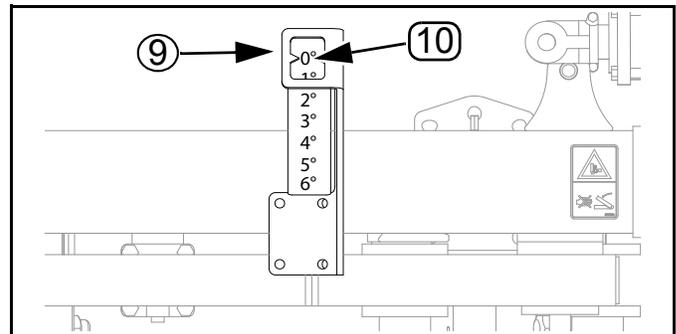
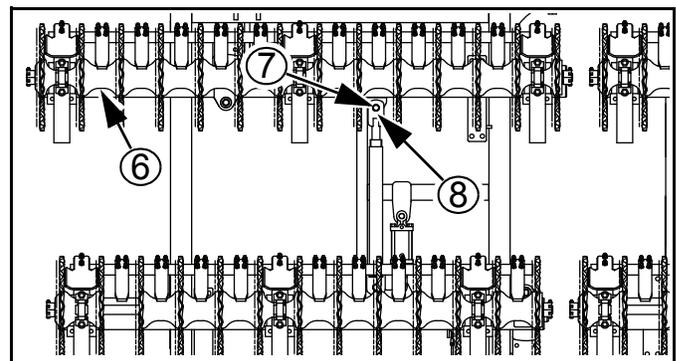
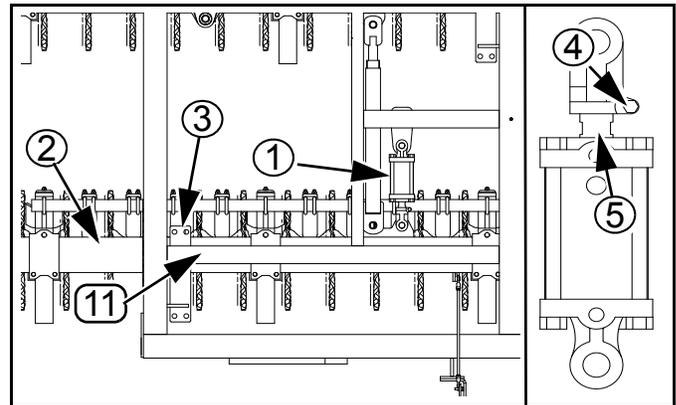
42412

## Hydraulic Gang Angle Adjustment

### Check Gang Angle

Check gang angle adjustment annually. Always adjust the front gangs first and then the rear.

1. With front gang cylinders (1) in the full retract position, the gang bar (2) should be 7.5cm from front spacer tubes (3). If gang bar is not parallel to the frame tube (11), loosen allen screw (4) on clevis on rod end of cylinder and shorten cylinder rod (5) by turning cylinder rod. Re-tighten allen screw.
2. When the front gang adjusting cylinders - see "**Tillage Gang Controls**" on page 18 - have been adjusted and are in the full retract position the rear gang bar (6) should be parallel to back frame tube.
3. If rear gang bar (6) is not parallel to back frame tube, remove pin (7) from turnbuckle end (8). Turn clevis to adjust gang bar length.
4. Re-install pin (7) when adjustment is made.
5. Unlock jam nuts from both ends of the gauge link (9). Turn rod until indicator (10) - located on front of the machine - reads 0°.
6. Re-tighten jam nuts.



## Brake Connections (Optional)



### Braking Hazards

To avoid damaging the machine, make sure the operator understands when brakes are engaged and when they are released.

An air controlled braking (trailer braking) system is installed on this machine. Your tractor's trailer brake system operates the air brakes. See your tractor's operator manual for more information.

## Air Brake Connections

1. Locate the button for the shunt valve on the tongue of the machine. Make sure the button is pulled all the way out.

### Braking Hazards

Do not use the machine with a "single-line" air brake system. Transport speeds require an air brake system to be dual-line.

2. Inspect yellow and red gladhands before connecting. Clean elastomer seal surfaces and inlet ports.
3. Connect the yellow gladhand.
4. Once yellow coded brake line is attached, connect the red gladhand.

Pull the ring on the bottom of the air reservoir to open drain valve. Drain any water from air reservoir. Release the ring to close the drain valve.

## Weight Package Assembly (Optional)

Refer to Figure 10



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.

5. Start by removing the  $\frac{3}{4}$  x 2 Gr. 8 bolts (1) from level bar assembly.
6. Pivot level bar (2) up so there will be clearance to set the 750 pound weight assemblies (4) into place.
7. Pivot level bar spring assembly (3) forward.
8. Carefully lower the 750 pound weight assemblies (4) onto center frame trusses (5).
9. 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  $\frac{1}{2}$  x  $4\frac{1}{32}$  x  $5\frac{1}{4}$  u-bolt (7),  $\frac{1}{2}$  lock washers and nuts.
10. Torque u-bolts to 85 ft-lbs.

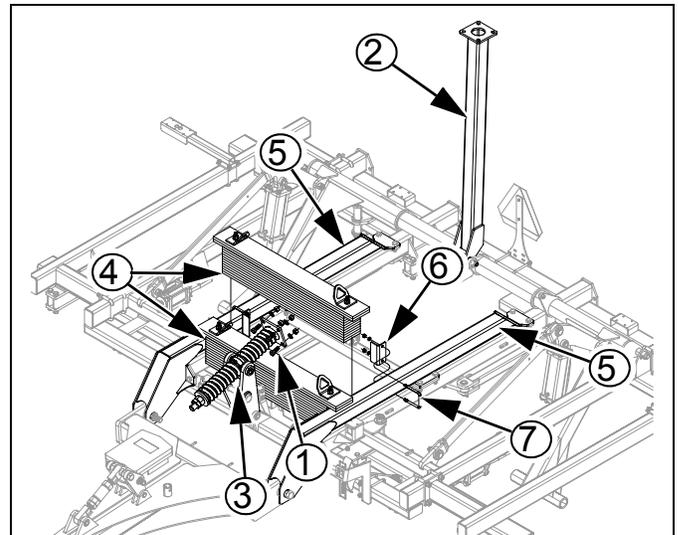
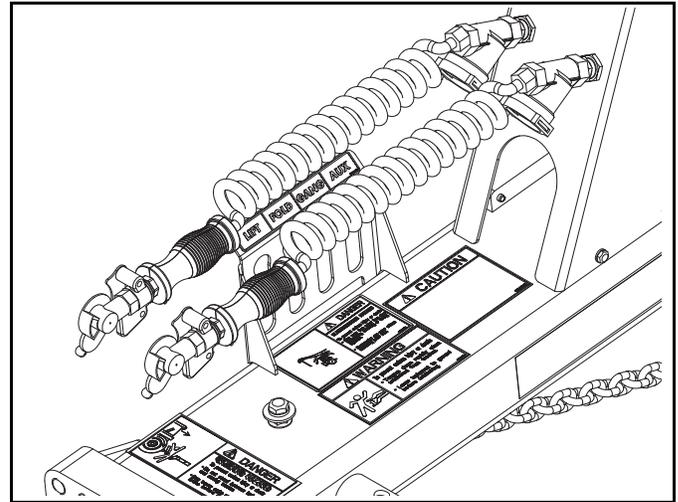


Figure 10  
Weight Package

43105

**Refer to Figure 11**

11. Pivot level bar (2) and the level bar spring assembly (9) until holes in plates are aligned.
12. Re-install  $\frac{3}{4}$  x 2 Gr. 8 bolts (8), secure with  $\frac{3}{4}$  lock washers and nuts.
13. Torque  $\frac{3}{4}$  x 2 Gr. 8 bolts (8) to 375 ft lbs to be sure bolts do not work loose and cause damage to machine.

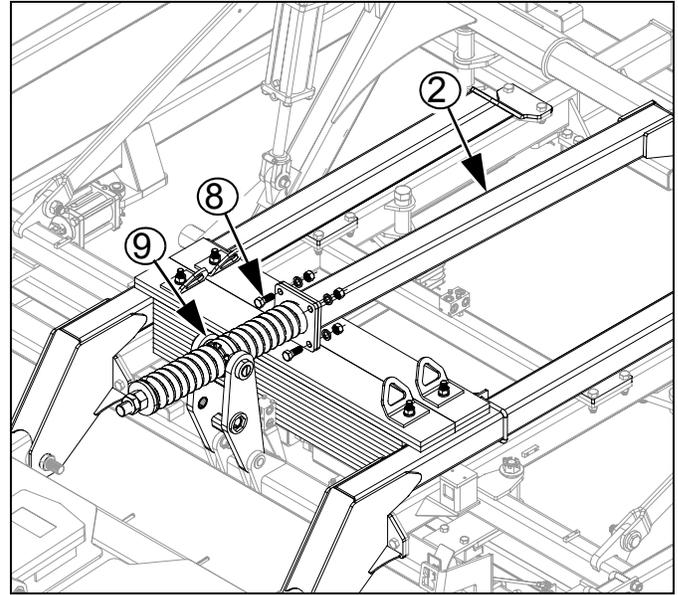


Figure 11  
Level Bar

43106



# 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 3.0M Turbo Max to the field.

- Carefully read “**Important Safety Information**” on page 1.
- Lubricate Turbo Max as indicated under “**Lubrication**” on page 22.
- Check all tires for proper inflation, “**Tire Inflation Chart**” on page 24.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 25.
- 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.



### **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.*

**Perform the following steps before transporting the Turbo-Max to the field.**

- Carefully read “**Important Safety Information**” on page 1.
- Check all tires for proper inflation, “**Tire Inflation Chart**” on page 24.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 25.
- Check Turbo-Max for worn or damaged parts. Repair or replace parts before going to the field.



## Transport

### **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.*



### **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.*



### **Braking and Loss of Control Hazard:**

*Do not exceed 30 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 10).
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.
4. Verify correct operation of lights. Always have lights on for highway operation.
5. Install transport locks (page 16).
6. Check that tires are properly inflated (page 24).
7. Do not exceed 30 kph (20 mph). Comply with all national, regional and local laws when traveling on public roads.
8. 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.

The Turbo-Max is a high speed tillage tool. Operating speeds should be 12.7 kph to 16kph. Operating depth may vary depending on conditions and desired results. For tillage prior to planting, shallow, fast operation, at or less than the desired planting depth is best. In some conditions deeper tillage is necessary to level fields properly. For tillage done prior to winter or months ahead of planting, deeper tillage may be desired for maximum sizing and burying of residue.

### 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   | 10   |
| <input type="checkbox"/> Hitch pin locked  | -    |
| <input type="checkbox"/> Implement jack stowed   | 10   |
| <input type="checkbox"/> Check all tire pressures  | 24   |
| <input type="checkbox"/> Transport locks are removed and lock valve is in the field position (open)                    | 12   |
| <input type="checkbox"/> Verify electrical hookups are solid or connector securely stowed if not using lights in field | 11   |

| Hydraulic System Checklist                                      | Page |
|---|------|
| <input type="checkbox"/> Check tractor hydraulic reservoir full | -    |
| <input type="checkbox"/> Make hydraulic connections             | 11   |
| <input type="checkbox"/> Inspect connections for leaks          | -    |

| First Pass Operation Checklist   | Page |
|--|------|
| 1. Implement aligned for first pass.   | -    |
| 2. Pull forward, lower Turbo-Max, and begin tilling for a short distance.  | -    |
| 3. Stop. Assess: <ul style="list-style-type: none"> <li>• coulter depth</li> <li>• finishing attachment operation</li> </ul> | -    |
| 4. Make necessary adjustments  | 18   |

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

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.

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.

| Ending Tilling Checklist                        | Page |
|---|------|
| 1. Suspend operations as above                  | -    |
| 2. Lift implement                               | -    |
| 3. Place transport locks in transport positions | 12   |
| 4. Lower implement on to transport locks        | -    |
| 5. Lights ON for transport                      | -    |

## Tillage Gang Controls

Your Turbo-Max's gang angles are hydraulically adjustable from within a tractor cab. Simply determine the desired angle and apply hydraulics until satisfied with the result. Angling your machine's tillage gangs can help breakup and level difficult-to-work soil and root systems. For softer soil and final passes when planting, set gangs to a vertical (non-angled) position.



### **Setting Gang Angles**

*Setting the gang angles to a more severe angle allows disks to breakdown and circulate more crop residue to the soil surface with fewer passes.*

When gangs are angled, operating speed should be lowered to between 9-12 kph to reduce machine stress and chance of disk breakage. After returning the gangs to the straight position, you can resume normal operating speeds.



## Depth Stop Adjustment

### Refer to Figure 12

9. 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  $\frac{1}{4}$ " 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 (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  $\frac{1}{2}$  to 1 full second after full raise. If it runs longer than this, damage to the seals of the lift cylinders may result.*

10. 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.

11. 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.

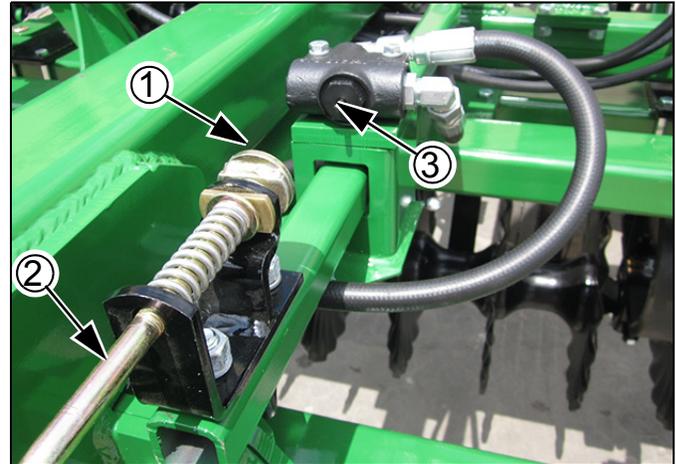


Figure 12  
Depth Stop Adjustment

42250

## Setting the Rolling Harrow and Reel

### Refer to Figure 13

12. 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.
13. 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).

*It is recommended to run little or no down pressure in wet or sticky field conditions.*

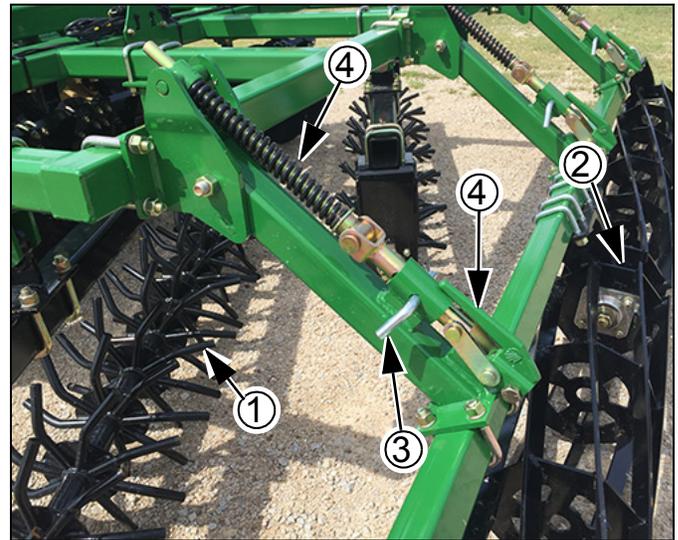


Figure 13  
Reel Adjustment

42254

### Refer to Figure 14

14. 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.



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

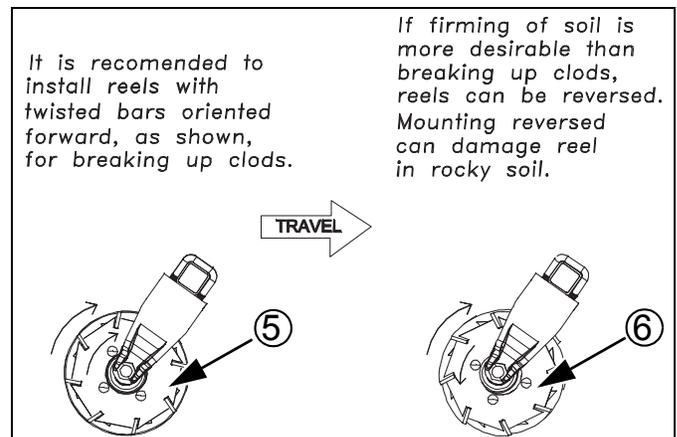


Figure 14  
Reel Direction

42284

## 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.



**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.*

Refer to **Figure 15**

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 10.

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.

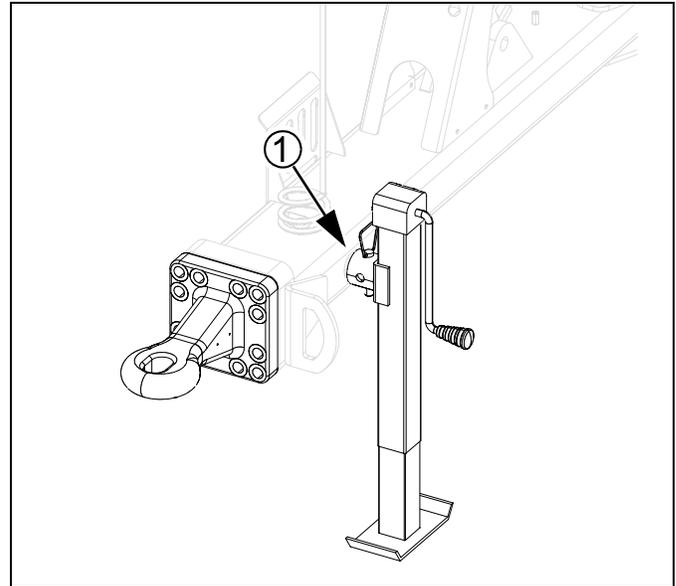


Figure 15  
Front Jack (Parking)

TP-69346

## Storage

If you intend to store your machine for an extended period of time, follow the procedures outlined below. These procedures will ensure that the machine is ready to operate with minimum preparation when it is removed from storage.

### Placing Machine Into Storage

#### **Keep Stored Away From Children**

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

1. Raise implement, and install transport locks (page 12).
2. Clean Turbo-Max of mud, dirt, excess oil and grease.
3. Perform "**Parking**" checklist page 21.
4. Check all bolts, pins, fittings and hoses for wear or damage. Tighten, repair or replace parts as needed.
5. Use touch-up paint to cover scratches, chips and worn areas to prevent rust.

### Removing Machine From Storage

6. Check tire pressure and inflate tires as necessary. See "**Tire Inflation Chart**" on page 24 for recommended PSI levels.
7. Perform any necessary repairs to the machine before performing any adjustments or operation.

#### **Winter Storage Removal**

*If machine is stored outside over the winter months, it is a good idea to fold machine then set it down on the ground so all the cylinders are retraced to protect the cylinder rods. This will extend the life of the cylinder seals and reduce internal external leaks.*



## Maintenance and Lubrication

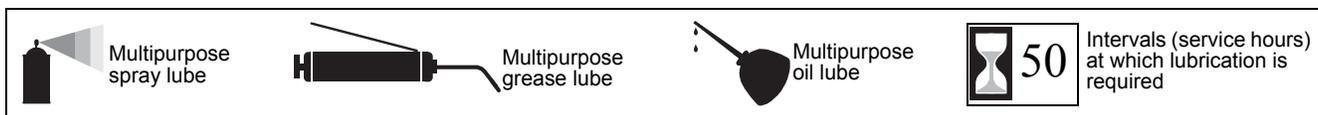
### Maintenance

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.

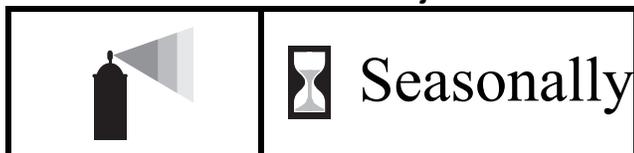
5. Check drag for loose bolts or excessive wear. Your drag is an important part of the tillage operation.
6. If machine is stored outdoors over the winter months, it is a good idea to fold the machine then set it down on the ground so all the cylinders are retracted to protect the cylinder rods. This 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



#### All Turnbuckles and Threaded Adjustments



Overall Machine Maintenance;

Type of Lubrication: Multipurpose Lubricant

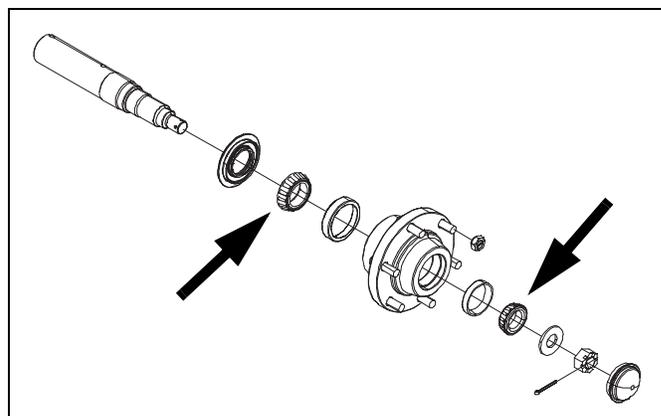
Quantity: Coat thoroughly.

#### Wheel Bearing Hubs



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.





## Turbo Max Specifications and Capacities

| Model No.                   | 3.0M TM             |
|-----------------------------|---------------------|
| Tillage Width               | 3 meters            |
| Number of Coulters          | 31                  |
| Blade Spacing               | 19cm                |
| Gang Angle                  | Adjustable 0* to 6* |
| Weight (with spike & reel)  | 3740kg              |
| Transport Width             | 3 meters            |
| Transport Height            | 1.6 meters          |
| Length (without attachment) | 5.6 meters          |
| Tire Size                   | 340/60R16.5         |
| Horsepower (PTO) (min)      | 100+                |
| Kilowatt                    | 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<br>(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. |  |
| <u>Manufacturer Web site</u>   |  |
| Firestone  | <a href="http://www.firestoneag.com">www.firestoneag.com</a>   |
| Gleason  | <a href="http://www.gleasonwheel.com">www.gleasonwheel.com</a> |
| Titan  | <a href="http://www.titan-intl.com">www.titan-intl.com</a>     |
| Galaxy   | <a href="http://www.atgtire.com">www.atgtire.com</a>           |
| BKT  | <a href="http://www.bkt-tire.com">www.bkt-tire.com</a>         |

## Hydraulic Connectors and Torque

### Refer to Figure 16 (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)  
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.

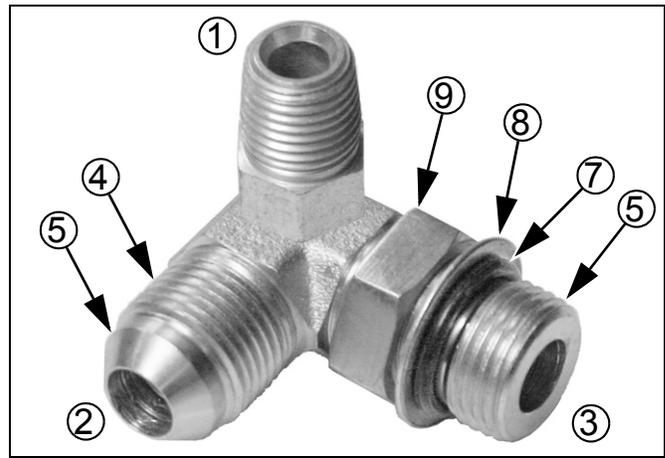


Figure 16  
Hydraulic Connector ID

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<br><br>in-tpi <sup>a</sup> | Bolt Head Identification   |                    |  |       |  |       |
|--------------------------------------|--|--------------------|--|-------|--|-------|
|                                      | <br>Grade 2 |                    | <br>Grade 5 |       | <br>Grade 8 |       |
|                                      | N-m <sup>b</sup>   | ft-lb <sup>d</sup> | 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<br><br>mm x pitch <sup>c</sup> | Bolt Head Identification   |       |  |       |   |       |
|--|--|-------|--|-------|---|-------|
|  | <br>Class 5.8 |       | <br>Class 8.8 |       | <br>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) 3/4"-16 (295ft-lbs)   |

## ORIGINAL EC DECLARATION OF CONFORMITY

Corresponding to the directive 2006/42/EC

|   |   |
|---|---|
| We, the manufacturer,   | Great Plains Manufacturing<br>1525 E. North Street<br>Salina, KS 67401<br>United States                                   |
| and   |   |
| Authorized representative in<br>European Community                        | Arable Systems Division<br>c/o Kverneland Group Gottmadingen N.V.<br>Industriepark 312<br>D-78244 Gottmadingen<br>Germany |
| and<br>authorized for<br>compile the technical file,<br>established in EC |   |

Declare under our sole responsibility that the product,

|                         |  |
|-------------------------|--|
| Designation of machine: | Tillage Tool                                       |
| Machine type:           | Turbo Max 6.0M<br>Turbo Max 8.0M<br>Turbo Max 3.0M |

|                       |            |
|-----------------------|------------|
| Valid from serial no. | GP-D 1001Q |
|-----------------------|------------|

Corresponds to the above mentioned directive.

The following harmonized standards are applied.

EN ISO 4254-1:2015

Salina, Ks, 25 - 05 -2018

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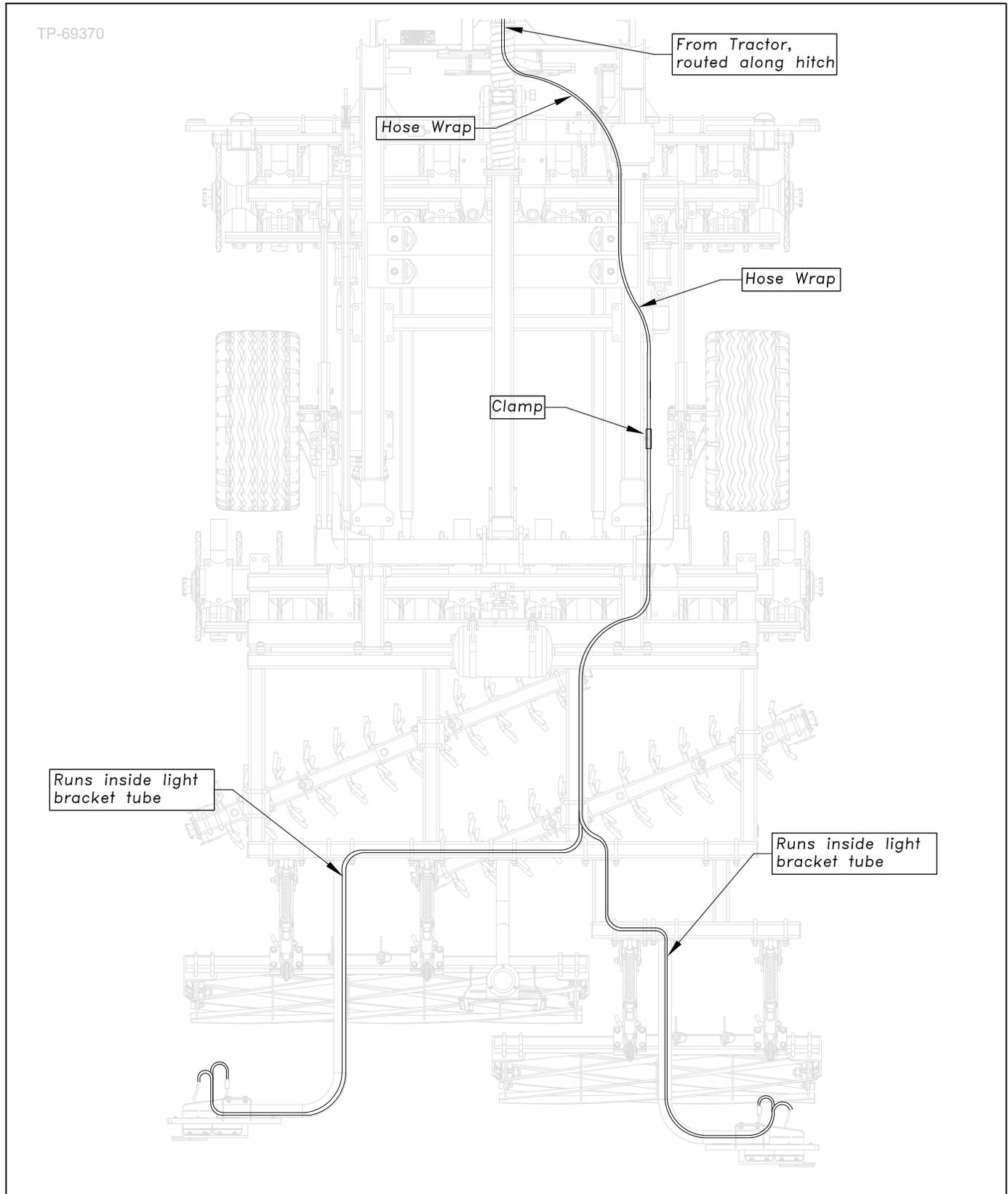
Rye DeGarmo  
Vice President of Engineering

Gottmadingen, 25- 05 -2018

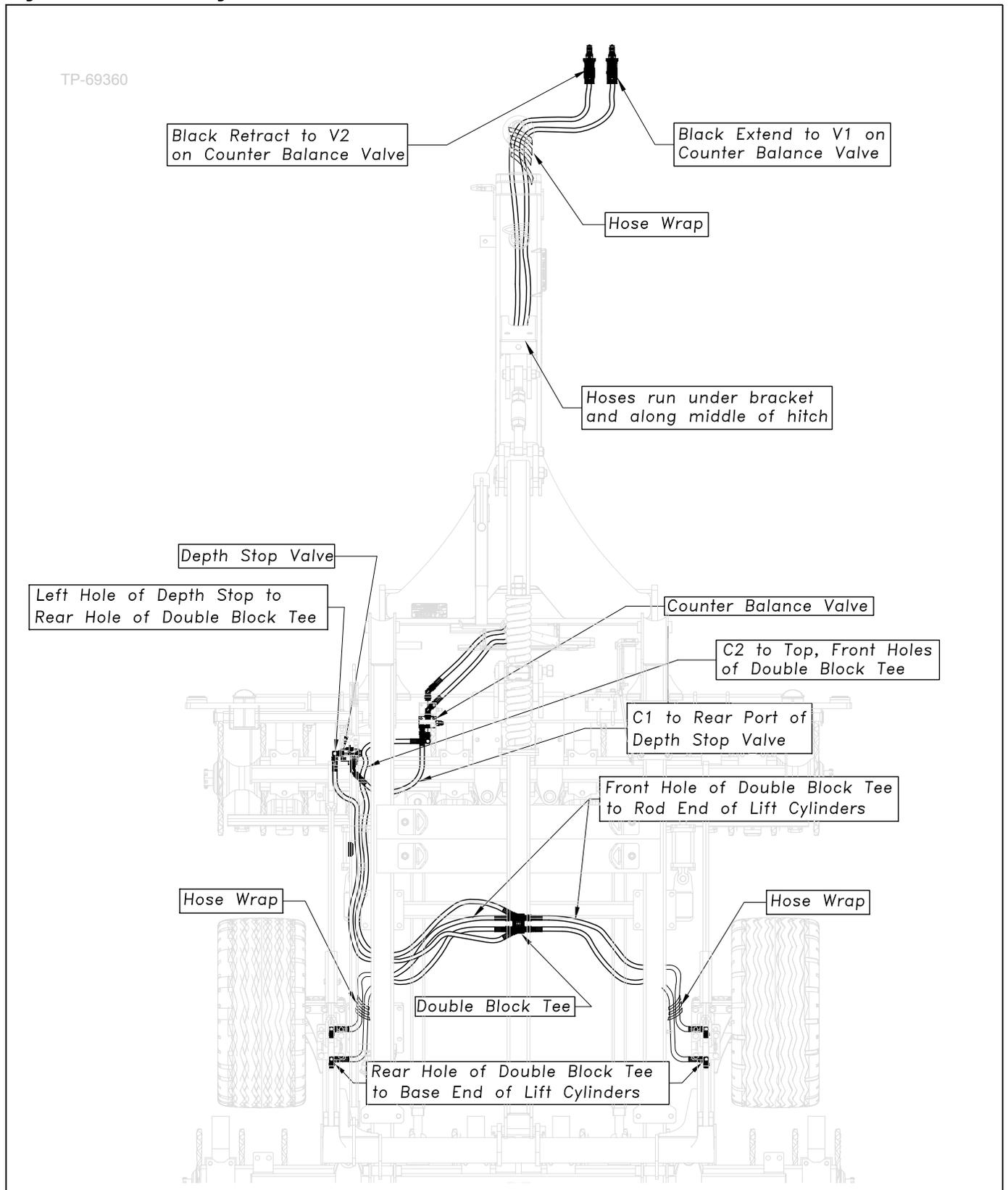
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Michael Enders\*  
Product Safety &  
Homologation Harvesting Division

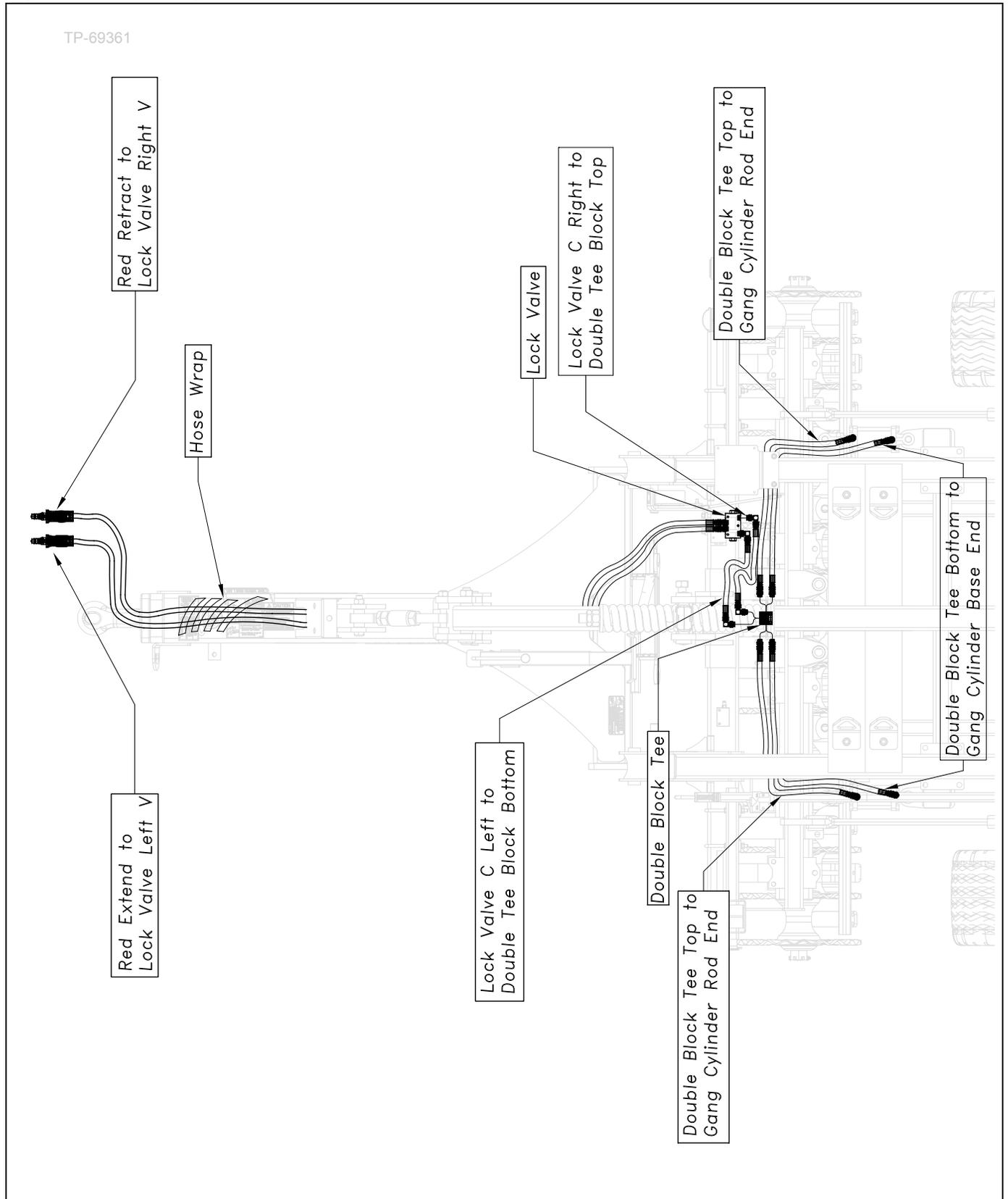
# Lighting Layout



# Hydraulic Lift Layout



# Hydraulic Gang Angle Layout







|                             |       |                                   |           |   |        |
|-----------------------------|-------|-----------------------------------|-----------|---|--------|
| <b>A</b>                    |       | <b>H</b>                          |           | <b>R</b>                                |        |
| address, Great Plains ..... | 8     | handles, hose .....               | 11        | reel .....                              | 20     |
| amber reflectors .....      | 5     | headphones .....                  | 1         | reflector                               |        |
| <b>B</b>                    |       | high pressure fluid .....         | 11        | panel .....                             | 5      |
| bolts .....                 | 22    | high pressure fluids .....        | 2         | reflectors, safety .....                | 5      |
| <b>C</b>                    |       | hitch pin .....                   | 16        | repair parts .....                      | 8      |
| CAUTION, defined .....      | 1     | hitch turnbuckle adjustment ..... | 12        | reservoir .....                         | 14     |
| chain .....                 | 10    | hitching .....                    | 10        | riders .....                            | 2      |
| checklist                   |       | hose handles .....                | 11        | right-hand, defined .....               | 7      |
| parking .....               | 21    | hoses, hydraulic .....            | 11        | rose, orientation .....                 | 7      |
| checklists                  |       | hydraulic connectors .....        | 24        | <b>S</b>                                |        |
| ending tilling .....        | 17    | Hydraulic Gang Adjustment .....   | 14        | SAE J514 .....                          | 24     |
| field .....                 | 17    | hydraulic hoses .....             | 11        | safety chain .....                      | 1, 10  |
| field turns .....           | 17    | hydraulic safety .....            | 2         | safety decal .....                      | 5      |
| first pass .....            | 17    | <b>I</b>                          |           | safety symbol .....                     | 1      |
| hydraulic system .....      | 17    | inflation .....                   | 24        | scale .....                             | 16     |
| mechanical .....            | 17    | <b>J</b>                          |           | serial number .....                     | 8      |
| pre-setup .....             | 9     | jack .....                        | 10        | setup .....                             | 9      |
| children .....              | 2, 21 | JIC .....                         | 24        | shutdown .....                          | 3      |
| clothing .....              | 1     | Joint Industry Conference .....   | 24        | Spanish .....                           | 6      |
| color code, hose .....      | 11    | J514 .....                        | 24        | Specifications and Capacities .....     | 23     |
| contact Great Plains .....  | 8     | <b>L</b>                          |           | speed limit                             |        |
| covered models .....        | 7     | layout                            |           | forward .....                           | 16     |
| customer service .....      | 8     | hydraulic gang angle .....        | 29        | transport .....                         | 16     |
| Cutting of Foot .....       | 5     | hydraulic lift layout .....       | 28        | storage .....                           | 3      |
| cylinder symbols .....      | 11    | hydraulic Lighting layout .....   | 27        | storing machine .....                   | 22     |
| <b>D</b>                    |       | leaks .....                       | 2, 22     | symbol, safety .....                    | 1      |
| Danger                      |       | left-hand, defined .....          | 7         | <b>T</b>                                |        |
| Crushing Hazard .....       | 6     | lights .....                      | 2         | tables                                  |        |
| DANGER, defined .....       | 1     | lubrication .....                 | 22        | document family .....                   | 7      |
| decal                       |       | <b>M</b>                          |           | fittings torque .....                   | 24     |
| crushing hazard .....       | 6     | Maintenance .....                 | 22        | hose color code .....                   | 11     |
| cutting of foot .....       | 5     | maintenance safety .....          | 3         | models covered .....                    | 7      |
| Tires Not a Step .....      | 5     | medical assistance .....          | 2, 11, 16 | torque values .....                     | 25     |
| decal replacement .....     | 5     | model number .....                | 8         | tilling, ending .....                   | 17     |
| decals                      |       | <b>N</b>                          |           | tire inflation .....                    | 24     |
| danger                      |       | National Pipe Thread .....        | 24        | tires .....                             | 2      |
| crushing .....              | 6     | negative tongue weight .....      | 10        | Tires Not a Step .....                  | 5      |
| electrocution .....         | 6     | Note, defined .....               | 7         | torque values chart (wheel bolts) ..... | 25     |
| speed                       |       | Notice, defined .....             | 7         | towing .....                            | 16     |
| 30km per hr .....           | 7     | NPT .....                         | 24        | towing vehicle capability .....         | 16     |
| tounge rising .....         | 5     | <b>O</b>                          |           | transport .....                         | 16     |
| warning                     |       | ORB .....                         | 24        | transport lock .....                    | 22     |
| tongue rising .....         | 6     | orientation rose .....            | 7         | transport locks .....                   | 12     |
| decal, safety .....         | 5     | O-Ring Boss .....                 | 24        | transport speed .....                   | 3      |
| definitions .....           | 7     | owner assistance .....            | 1, 8      | transporting .....                      | 16     |
| depth stop .....            | 19    | <b>P</b>                          |           | turns .....                             | 17     |
| directions .....            | 7     | parking .....                     | 21        | <b>U</b>                                |        |
| drag bolts .....            | 22    | parts .....                       | 22        | unhitch .....                           | 21     |
| <b>F</b>                    |       | phone number, GP .....            | 9         | URLs, tires .....                       | 24     |
| fumes .....                 | 3     | pin, hitch .....                  | 16        | <b>W</b>                                |        |
| <b>G</b>                    |       | protective equipment .....        | 1         | WARNING, defined .....                  | 1      |
| gang angle .....            | 19    |                                   |           | warranty .....                          | 24, 25 |
|                             |       |                                   |           | weight .....                            | 16     |

weight package ..... 14  
weight, implement ..... 16  
welding ..... 3  
www ..... 24

Numerics

20 mph ..... 3, 16  
30 kph ..... 3  
340/60R16.5 ..... 24  
36 hours ..... 21  
588-154M, manual ..... 7  
588-154P, manual ..... 7  
588-154Q, manual ..... 7  
818-055C, reflector ..... 5  
838-600C, decal ..... 6  
838-606C, decal ..... 6  
848-271C, cutting of foot ..... 5  
848-516C, decal ..... 6  
850TM ..... 7





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