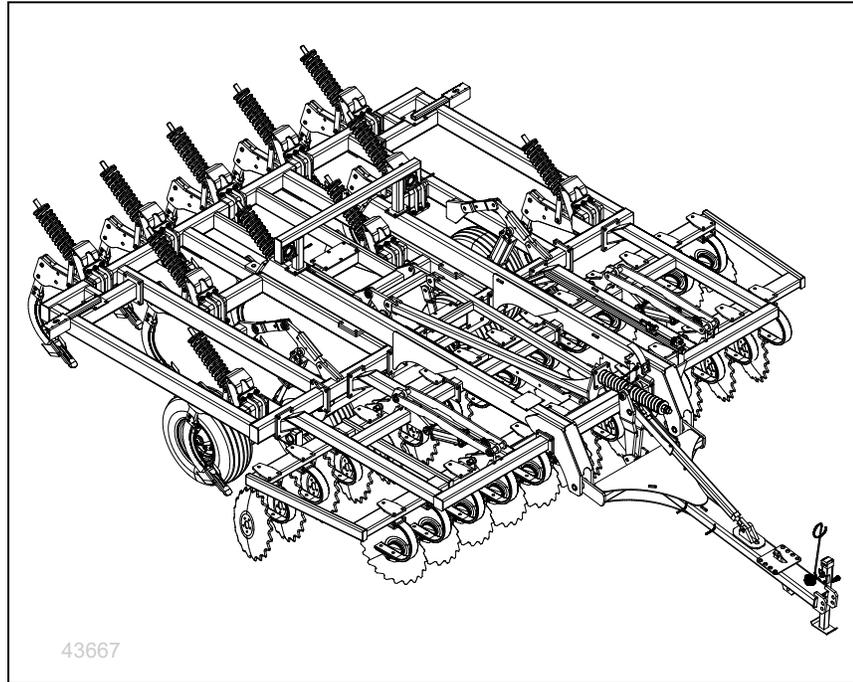


Operator Manual

MC5109, 5111, 5113, 5115, 5313 & 5315
Max Chisel



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 2020-10-15

566-242M

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.: _____

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



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Printed in the United States of America



Important Safety Information

Look for Safety Symbol

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



Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

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



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



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



Prepare for Emergencies

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



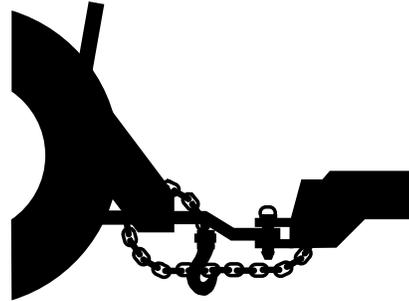
Be Familiar with Safety Decals

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



Use Safety Chains

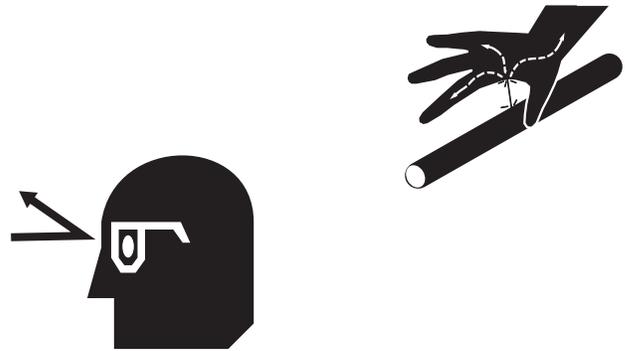
- ▲ *Use safety chains to help control drawn machinery should it separate from tractor draw-bar or trailing nurse tank hitch.*
- ▲ *Use chain with a strength rating equal to or greater than the gross weight of towed machinery.*
- ▲ *Attach implement chain to tractor draw-bar support or specified anchor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



Avoid High Pressure Fluids

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

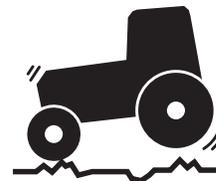
- ▲ *Use flashing warning lights and turn signals whenever driving on public roads.*
- ▲ *Use lights and devices provided with implement.*



Transport Machinery Safely

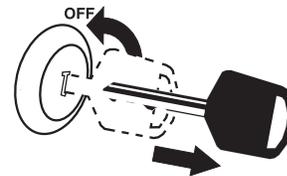
Maximum transport speed for implement is 20 mph (32 kph), 13 mph (22 kph) in turns. Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *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 Max Chisel in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “MC Specifications and Capacities” on page 27.*
- ▲ *Do not exceed 20 mph. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Reduce speed on rough roads.*
- ▲ *Comply with national, regional and local laws.*
- ▲ *Do not fold or unfold the Max Chisel while the tractor is moving.*



Shutdown and Storage

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



Tire Safety

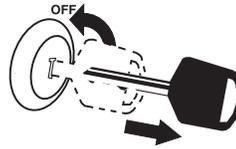
Tire changing can be dangerous. Employ trained personnel using correct tools and equipment.

- ▲ *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

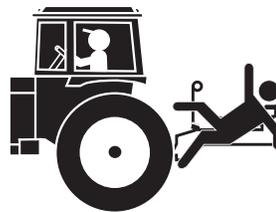
- ▲ *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- ▲ *Work in a clean, dry area.*
- ▲ *Lower implement, put tractor in park, turn off engine, and remove key before performing maintenance.*
- ▲ *Make sure all moving parts have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

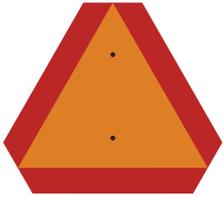


Safety Decals

Safety Reflectors and Decals

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

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



818-055C Slow Moving Vehicle Reflector

On the back of smv post on wing stop;
1 total



838-615C Amber Reflectors

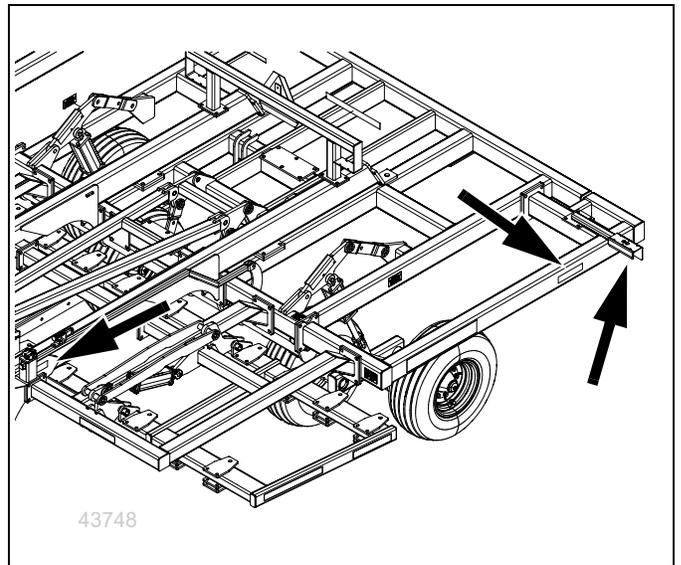
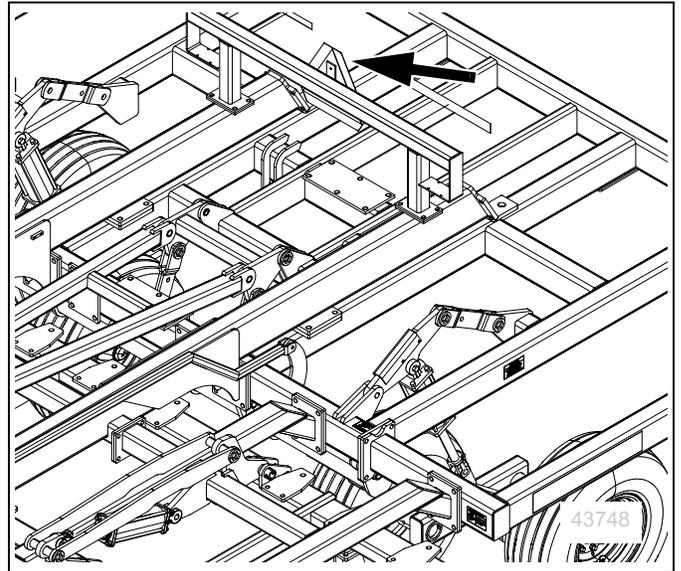
Two on front of light brackets. Two on front, outside of trusses. Two on rear of finishing attachment (not shown), visible from side while folded for transport; 6 total

proper decal placement.

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

To install new decals:

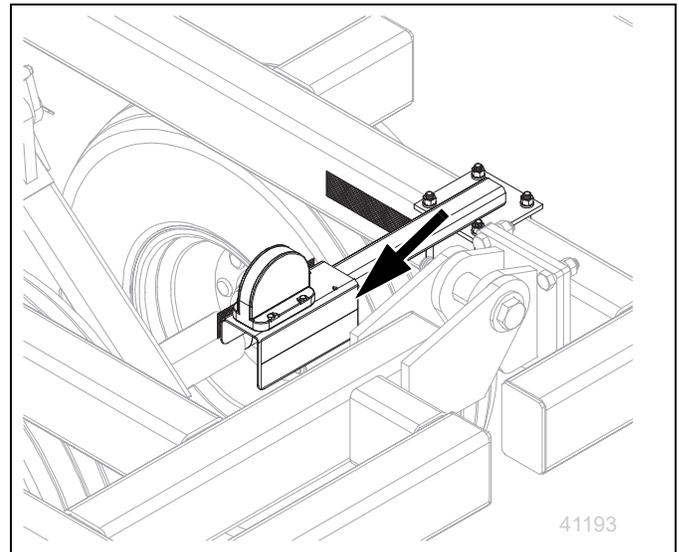
1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.





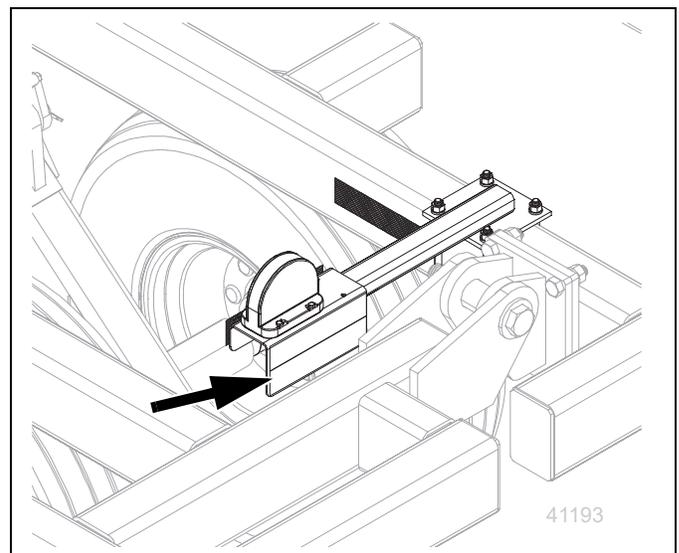
838-614C
Red Reflectors

On rear of light brackets (top);
2 total



838-603C
Orange Reflectors

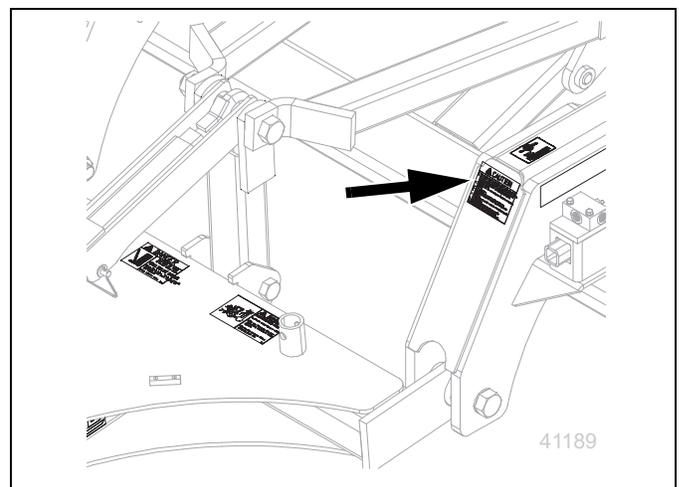
On rear of light brackets (bottom);
2 total

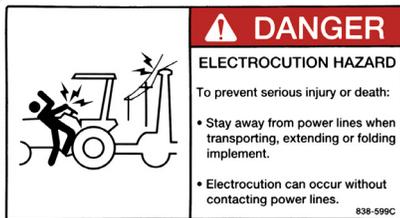


	CAUTION
<ol style="list-style-type: none"> 1. Read and Understand the Operator's Manual before using machine. 2. Stop tractor engine, lower machine to the ground, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, 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. 	
<small>838-598C</small>	
<small>⚠️WARNING: Cancer and Reproductive Harm - www.P65Warnings.gov</small>	

838-598C
Caution: Read Operator's Manual

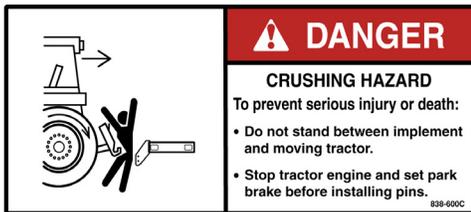
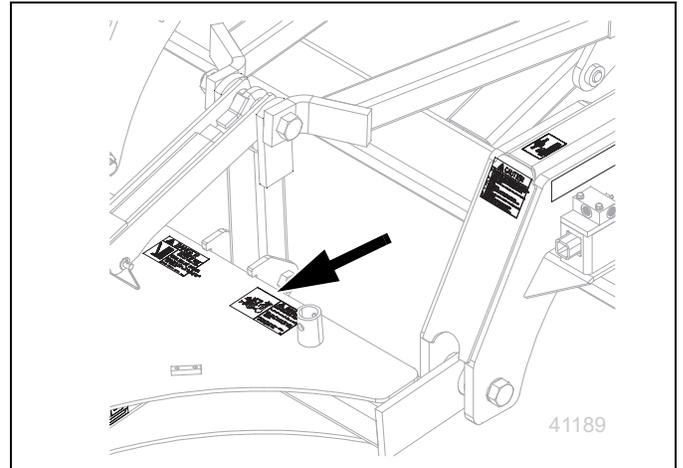
On front of left truss;
1 total





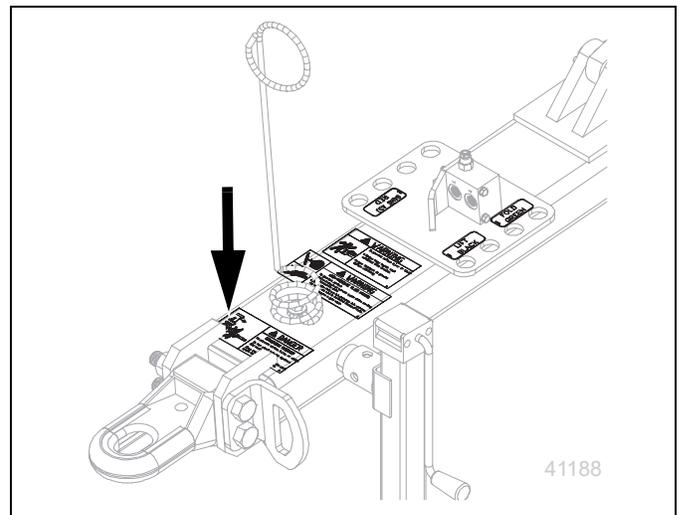
838-599C
Danger: Electrocution Hazard

Top side of gusset on rear of hitch (left side), Models 5313-5323;
 1 total



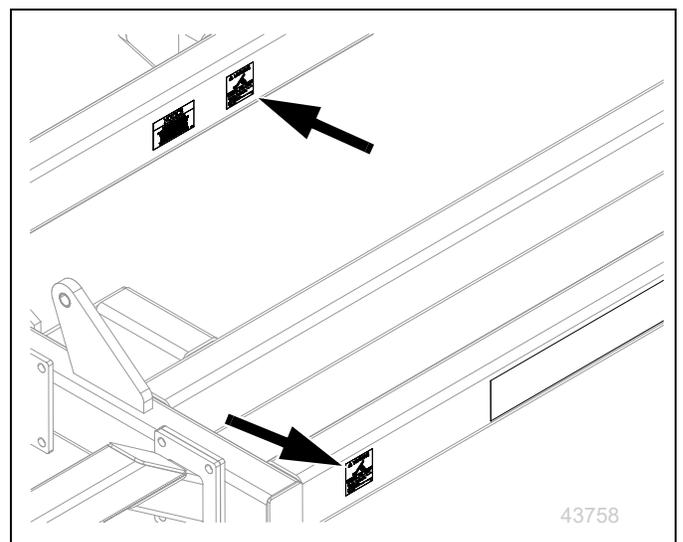
838-600C
Danger: Crushing Hazard

Front of hitch;
 1 total



838-602C
Warning: Overhead Wing Hazard

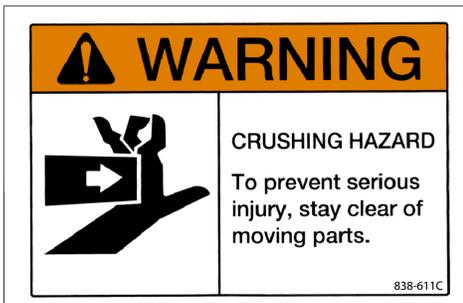
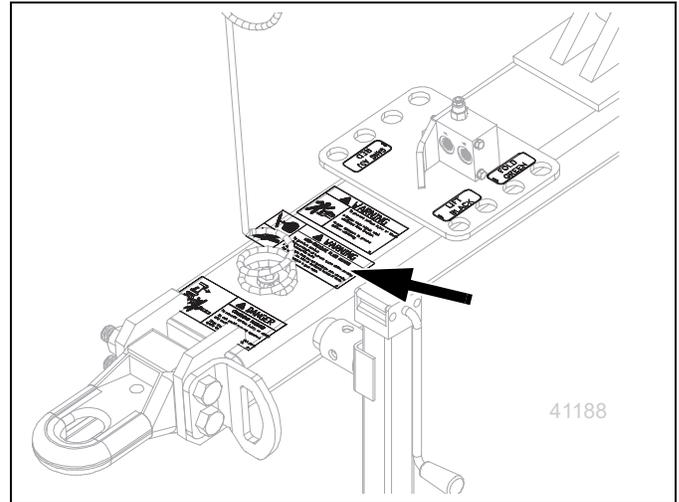
Outside, center of center frame and front, left of wing frames (both sides), Models 5313-5323;
 4 total





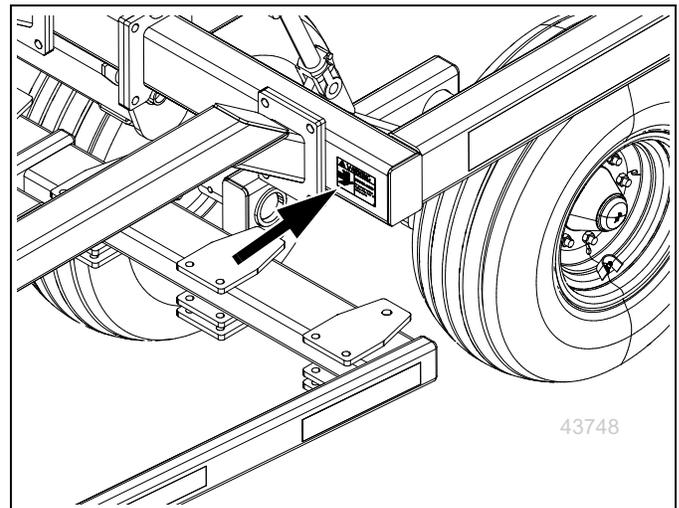
838-094C
Warning: High Pressure Fluid

Front of hitch (middle);
 1 total



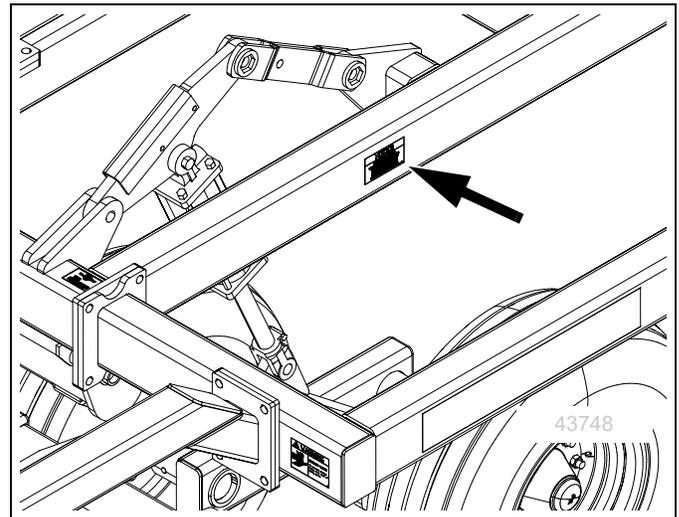
838-611C
Warning: Hand Crushing

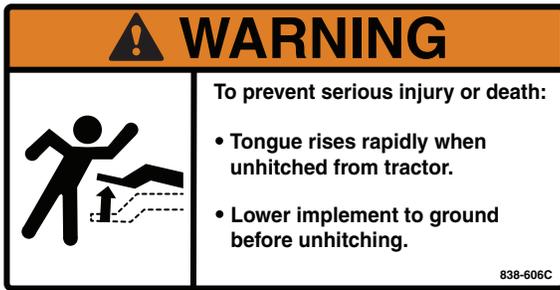
Front side of center frame (left & right side);
 2 total



838-613C
Notice: Transport Lock

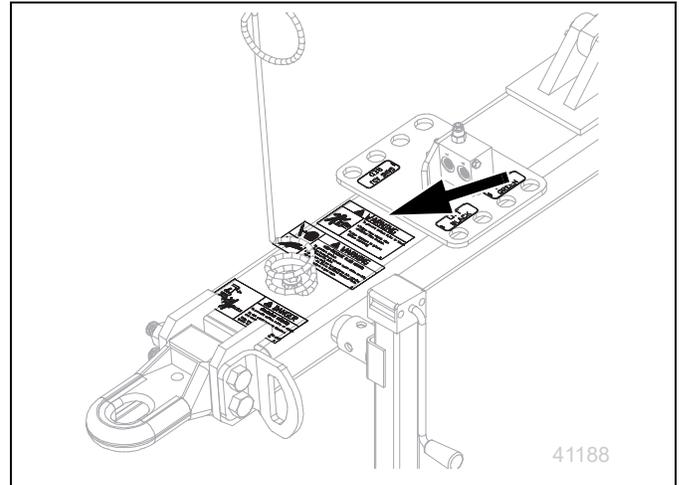
Outside of Center Frame (both sides);
 2 total





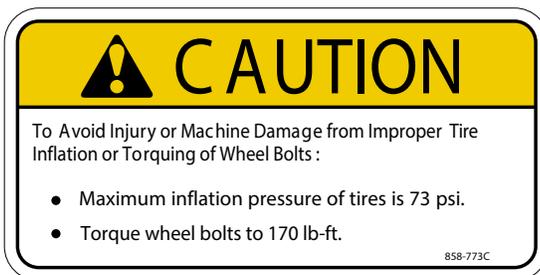
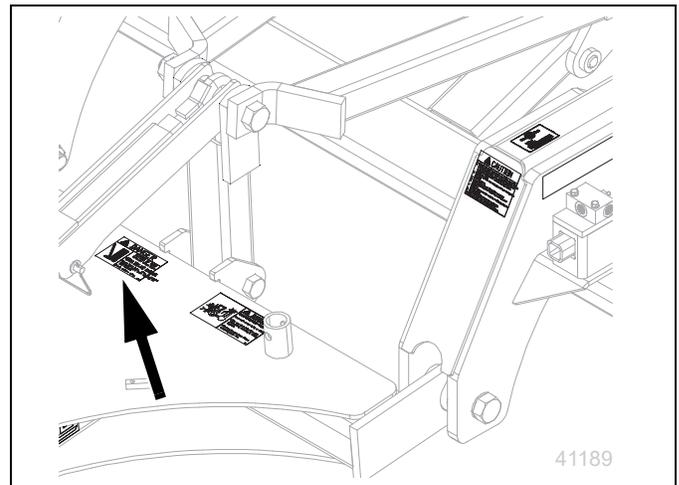
838-606C
Warning: Tongue Rising

Front of hitch (rear);
1 total



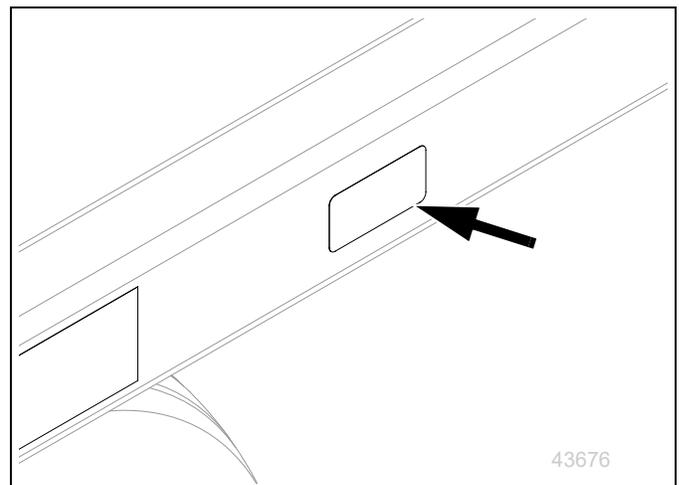
848-271C
Danger: Cutting Of Foot

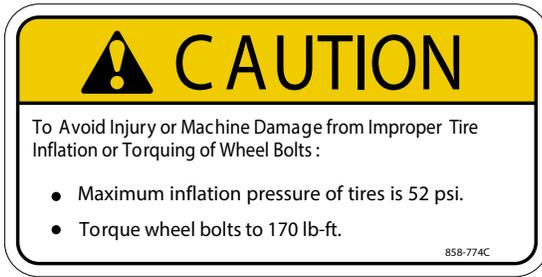
Top side of gusset on rear of hitch (middle);
1 total



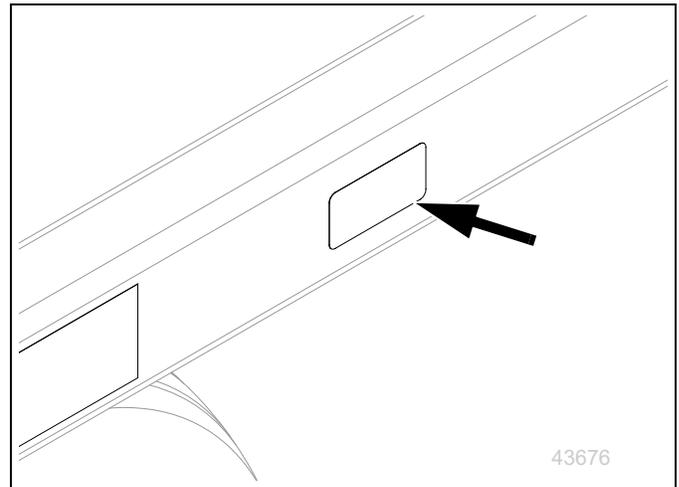
858-773C
Caution: Tire Pressure

Outside Center Frame (Above Tire);
2 total



**858-774C****Caution: Tire Pressure**

Outside Center Frame (Above Tire);
2 total



Introduction

Great Plains welcomes you to our growing family of new product owners. The MC5109 - 5315 have 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

MC5109	11-Foot	1-section
MC5111	14-Foot	1-section
MC5113	16-Foot	1-section
MC5115	19-Foot	1-section
MC5313	16-Foot	3-section
MC5315	19-Foot	3-section

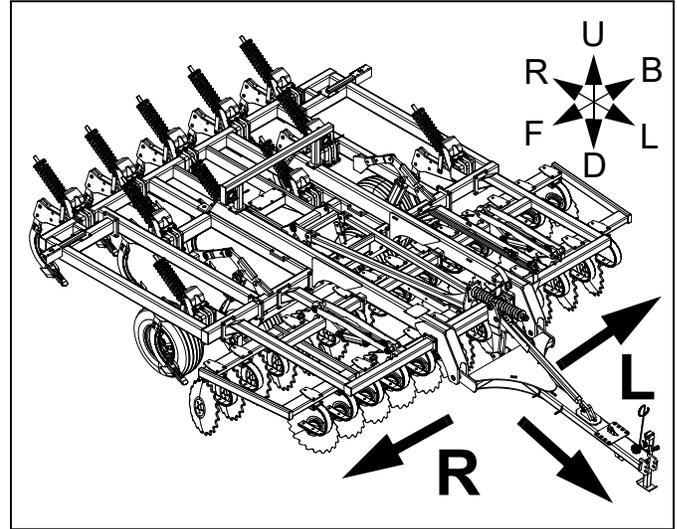


Figure 1
Max Chisel

43667

Description of Unit

The MC5109 - 5315 is a one or three-section “vertical” tillage tool. Working width ranges from 11 to 19 feet. The implement is designed to cut, size and bury residue. It can work up to 11” deep, will dislodge rootballs and leave the field smooth enough for “one pass” finishing in Spring. For optimum leveling of your machine, it should be equipped with either a Chopper Reel or Buster Bar attachment.

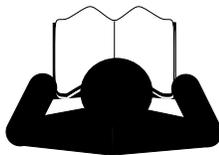
Document Family

566-242Q	Pre-Delivery Manual
566-242M	Operator Manual (this document)
566-242P	Parts Manual

Using This Manual

This manual will familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

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



Definitions

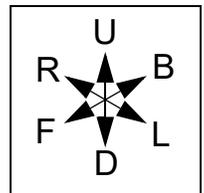
The following terms are used throughout this manual.

NOTICE

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

Note: Useful information related to the preceding topic.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.



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 left end of the top front tool bar.

Record your Max Chisel 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.

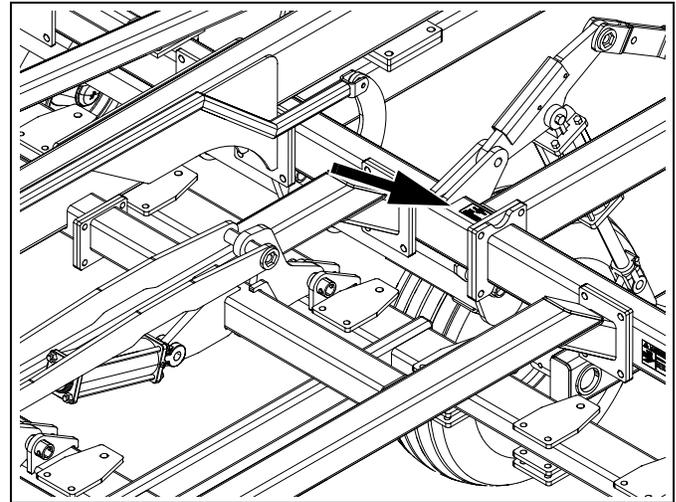


Figure 2
Serial Number Plate

43748

Further Assistance

Great Plains Manufacturing, Inc. wants you to be satisfied with your new Max Chisel. 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.
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

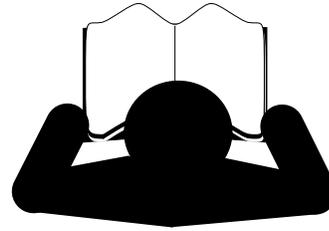
This section helps you prepare your tractor and Max Chisel for use, and covers tasks that need to be done seasonally, or when the tractor/Max Chisel configuration changes.

Before using the Max Chisel in the field, you must hitch it to a suitable tractor, inspect systems and level the Max Chisel. Before using the Max Chisel 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 as shown on page 14.
- If machine is folded, remove the transport pins from wing stops. (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 untold 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 Max Chisel several times to purge air from the hydraulic system. Again check for hydraulic leaks and tighten or replace if necessary.
- Check safety chain hookup. Make sure all warning lights are hooked up and functioning correctly.
- Check that all grease fittings are in place and lubricated. See “**Lubrication**” on page 26. The hubs will come pre-greased and will not need greased at this time.
- Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 5.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Torque Values Chart**” on page 29.
- Put transport locks in place and refold the machine slowly. Put wing stop pins in place. Always use the transport pins when moving from field to field. You are now ready to go to the field.



Hitching Max Chisel 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 MC5109 - 5315 Max Chisel is a pull-type implement equipped with a standard Category IV single tang hitch. It may be converted to a Category III or clevis hitch using supplied accessory parts.

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.

1. Raise tractor three-point arms (if equipped) clear up to clear Max Chisel.
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 Max Chisel tongue.
4. Back tractor draw bar into alignment with hitch (2).
5. Secure with a locking hitch pin.

CAUTION

Negative Tongue Weight Hazard:

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

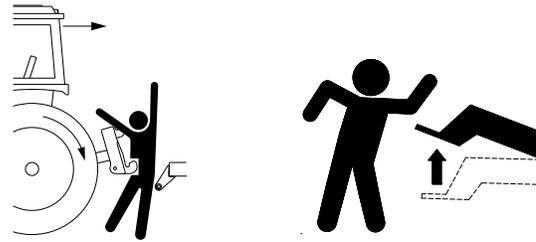
6. Secure safety chain to an anchor on the tractor.

Refer to Figure 4

7. Retract jack foot. Re-orient jack to storage position.
8. After hitching tractor to Max Chisel, store jack on storage stub (3) on Max Chisel 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 22, for safe transporting.



DANGER

Crushing Hazard:

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

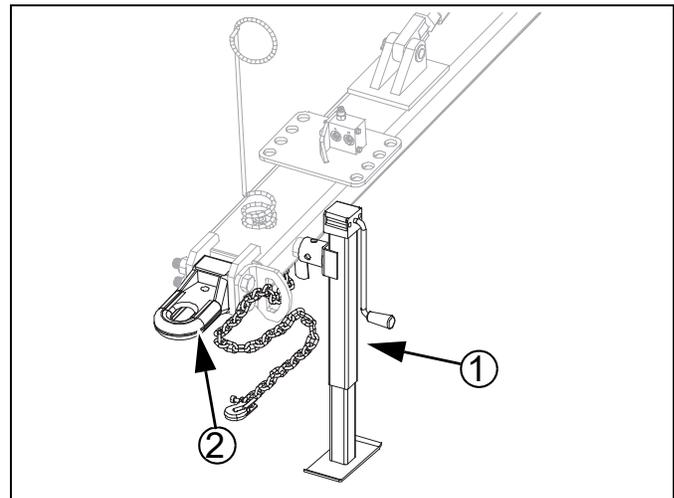


Figure 3
Jack & Hitch Clevis

41993

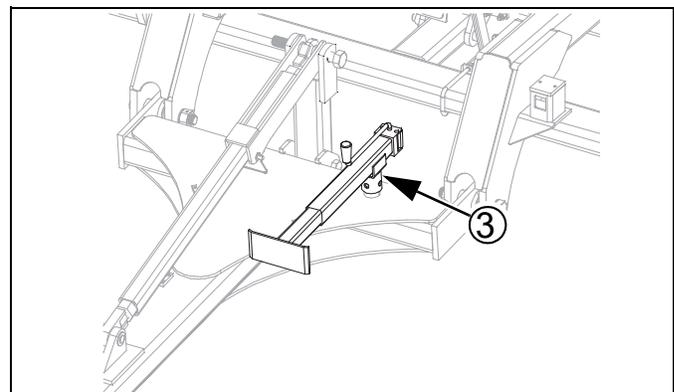


Figure 4
Jack in Storage

41994

Electrical Hookup

Refer to Figure 5

Your Max Chisel 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 (2 hoses)



Figure 5
North American Connector

36051

Hydraulic Hose Hookup



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, Max Chisel or hitch. Failure to safely route and secure hoses and cables could result in damage requiring component repair/replacement, and lost field time.

To distinguish hoses on the same hydraulic circuit, refer to, “**Hydraulic Hose Hookup**” on page 15. Clean all hydraulic couplings and hook hoses to tractor.

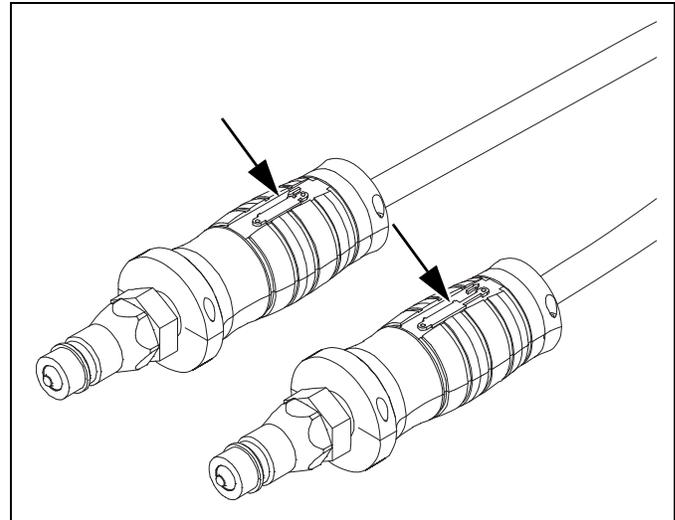


Figure 6
Hose Handles

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, remove them at this time.

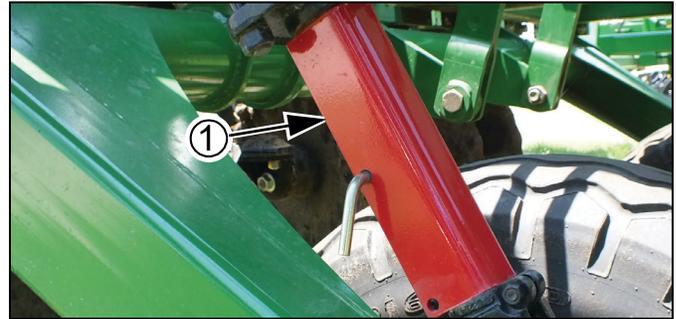


Figure 7
Transport Locks

43747

Refer to Figure 8

11. Store the transport locks (2) on the lift mechanism link as shown.
12. Once the locks are removed, unfold the wings (if folding unit).

Note: 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.

13. 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.
14. Check the tire pressure for proper inflation and check the tightness of lug bolts.

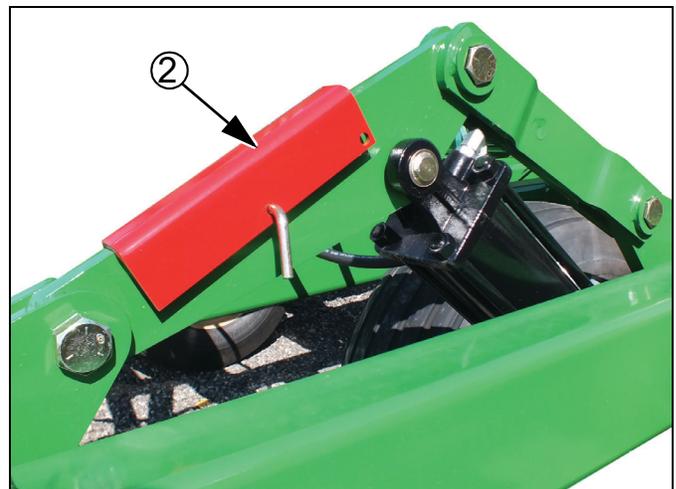


Figure 8
Transport Locks Storage

43751

First Time Field Adjustments

Pre-Leveling of Machine

Note: Pre-leveling of machine should be done on a good level surface, preferably concrete.

Front to Rear Leveling

Refer to Figure 9

Lower the machine until the shanks are about 1" off the ground. This will allow you to see if the machine needs the front or back lowered or raised.

If machine needs leveled from front to rear, remove the snap wire pin (1) from the turnbuckle lock (2), swing lock off turnbuckle and adjust the hitch turnbuckle (3) by lengthening or shorting the turnbuckle.

Shortening the turnbuckle will lower the front of the machine. Lengthening the turnbuckle will raise the front of the machine.

When done adjusting, be sure and swing turnbuckle lock back up and secure with snap wire pin.

Note: If you have a 3 section machine please "Wing Adjustment" on page 18 for steps to level the wings.

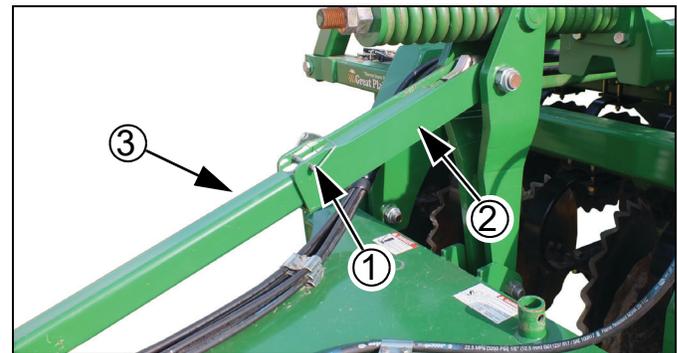
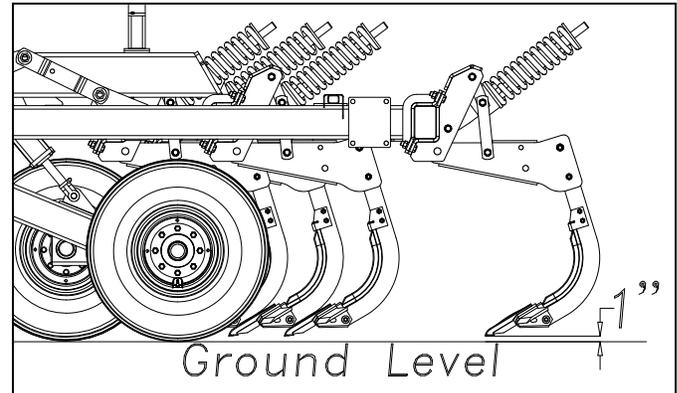


Figure 9
Leveling Machine

43783
43752

Set Initial Working Depth at 9"

Refer to Figure 10

Screw the handle (4) of the depth stop out all the way (so no threads show in front of the bracket.) Then turn the handle 24 times (5). This should set the working depth at approximately 9".

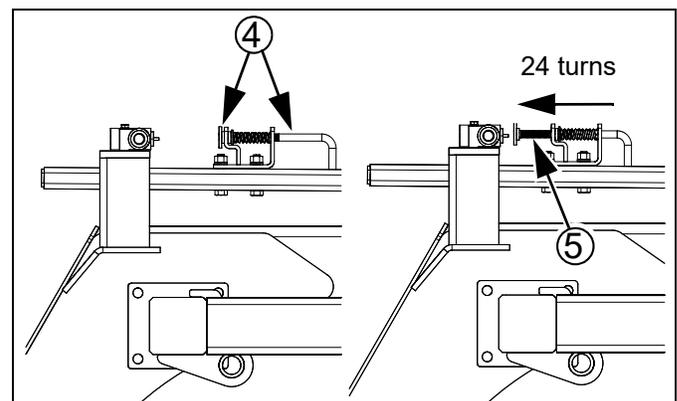


Figure 10
Working Depth

43785

Set Initial Blade Working Depth at 4”

Refer to Figure 11

Set Disk Blade Depth Gauge to “C”.

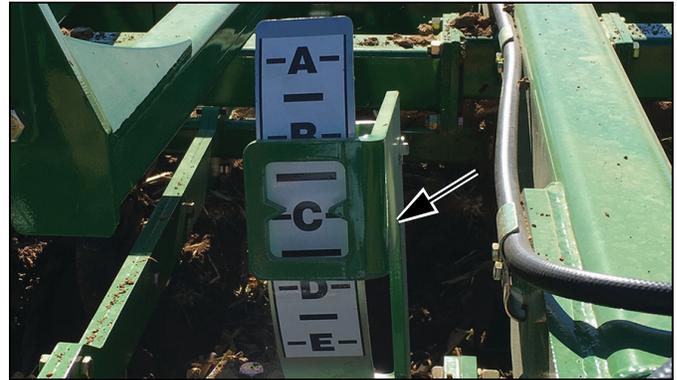


Figure 11
Blade Working Depth

43786

Wing Adjustment (5313-5315)

Refer to Figure 12

15. Once the machine is level fore to aft, the wings may be leveled (Models 5313-5315). Start by unfolding the wings to a rigid position.
16. Completely extend the wing fold cylinders and check the wings for levelness. If machine is not level, fold wings back up and install shims as needed to level.

Note: Extra shims (1) are stored in manual pak. The extra shims may be needed in the future if the hinge holes or bolts begin to wear. There are two different thickness of shims, you may use multiple shims to level wings.

17. Remove the two $\frac{3}{4}$ x $2\frac{1}{4}$ bolts (2) and either add more shims (1) to raise wings or take shims out to lower wings.
18. Re-install bolts and tighten to specs, “**Torque Values Chart**” on page 29.

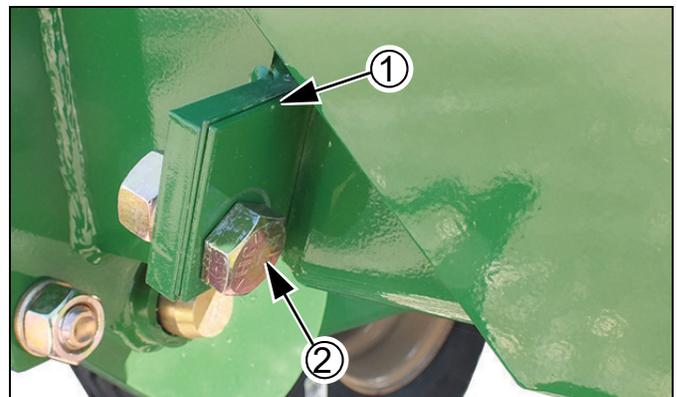


Figure 12
Wing Adjustment

43763

Refer to Figure 13

19. When you have machine level and set to the desired working depth, set the depth stop (3) on the depth stop tube (4). This is located at the front of the machine. This will maintain a constant depth each time after raising and lowering machine. One full turn of the handle (5) will change the depth approximately $\frac{1}{4}$ ”.

Note: If after setting the depth stop, the detent on the tractor kicks out before the stop contacts the button ④ 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.

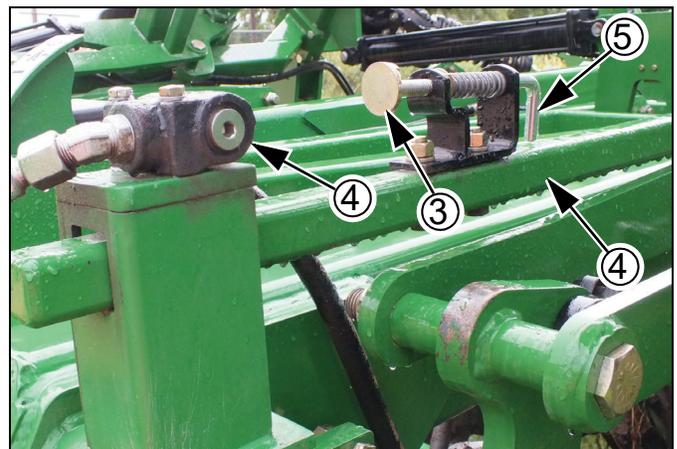


Figure 13
Depth Stop Adjustment

43753

Rear Chopper Attachment

Note: The chopper reel attachment is designed to help size the soil and residue coming out of the back of the machine and level the soil surface. The reels should be run as far forward as possible without causing plugging of the reel assemblies or the machine. In wetter conditions, they may need to be moved back some to allow the soil to “settle” before coming in contact with the reels. Also in wet conditions, it is not advisable to apply down pressure on the reels as this will cause them to plug with mud.

Refer to Figure 14

At 9” working depth, the pin should be in the middle of the slot (1).

Arm (3) should be slid back until the back hole aligns with the rear hole of arm (2). Insert bolt (4). This adjustment should be constant for any depth.

Adjustments

After running at the initial settings, if more or less depth is desired, adjust as follows:

Each turn of the depth stop is about $\frac{1}{4}$ ” of field depth. Turn in (shorten) to go deeper. Turn out (lengthen) to go shallower.

The blade depth needs to be re-adjusted if overall depth of the machine changes. See chart of reference.

Example: If set at 9” initial depth and operator adjusts depth stop 4 turns deeper (approximately 1”) the gangs would need to be adjusted to slightly less than “D” on the gauge.

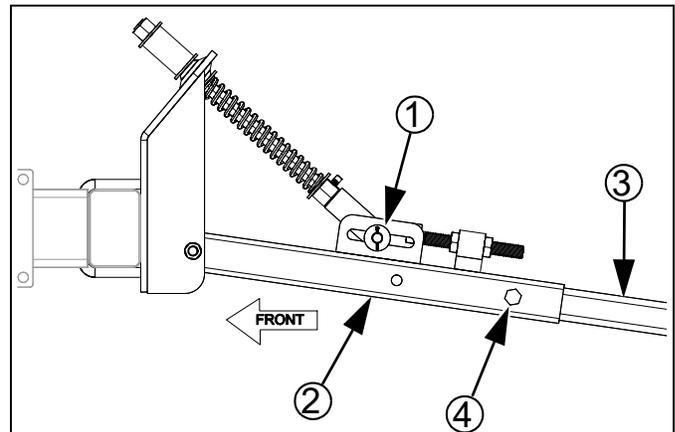


Figure 14
Chopper Arms

43780

Settings for 4” Disk Blade Depth	
Shank Depth Inches	Gauge Setting
6	A
7 $\frac{1}{2}$	B
9	C
10 $\frac{1}{2}$	D
12	E

Adjust chopper eyebolt

Refer to Figure 15

If you have adjusted the machine from the initial settings the chopper attachment may also need adjusting.

If the machine is set to run deeper than initial settings move pin (1) back by adjusting eyebolt (5).

If machine is set to run shallower than initial setting move pin (1) forward by adjusting eyebolt (5).

Adjust the rear attachments according to your desired working conditions.

20.

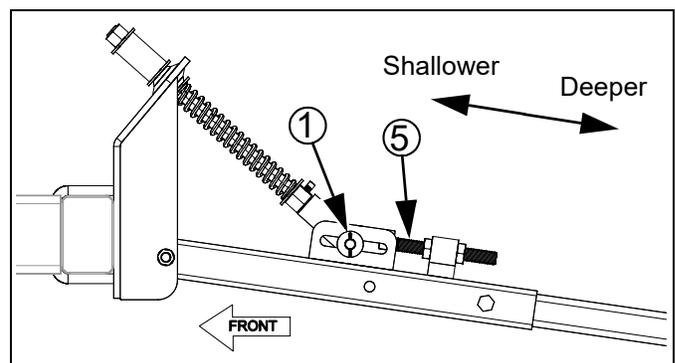


Figure 15
Chopper Eyebolt Adjustment

43780

Refer to Figure 16

21. Once machine is pre-leveled, raise and lower the gangs completely to cycle and purge air from these cylinders (1).

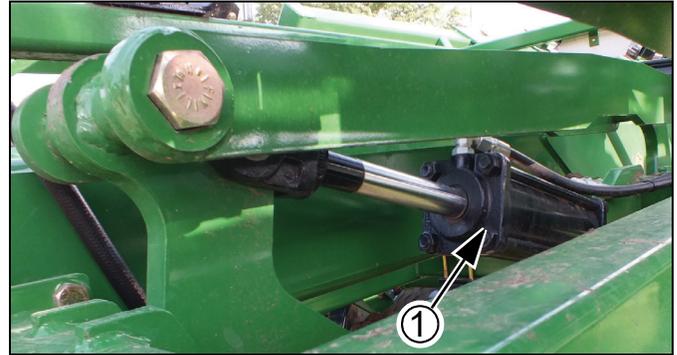


Figure 16
Gang Cylinder Purging

43750

Chopper/ ML Roller**Chopper****Refer to Figure 17**

The Choppers for this attachment are adjustable for more or less severe down pressure for chopping residue and pulling dirt back into the shank voids, leveling the soil while maintaining the vertically-tilled profile left by the shanks.

For less down pressure set the spring eye bolt (2) into the front hole of the bracket, for more down pressure set the spring into the rear hole.

Recommended settings for running depth, if you are running your shanks 7-9" deep set in hole #1, 8-10" deep set in hole #2, 9-11" deep set in hole #3, & 10-12" deep set in hole #4.

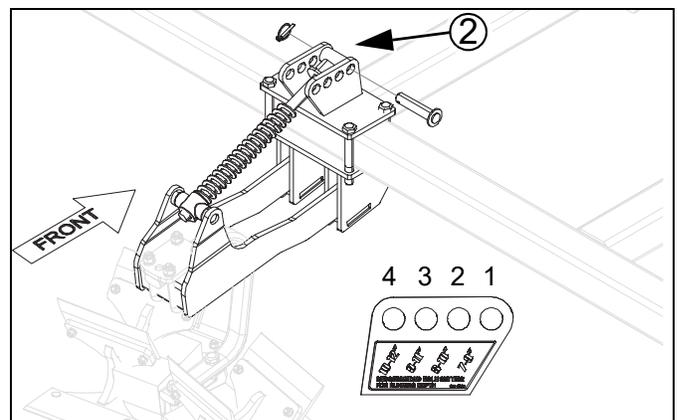


Figure 17
Chopper/ML Roller Chopper Settings

TP-69131

Roller**Refer to Figure 18**

The roller is controlled by active hydraulic down pressure (3), for which the setting is adjusted via the valve located on the hitch of the machine. It is recommended this be set between 300-500 psi to firm the soil to the desired degree. Depending on soil conditions, the roller can also be ran effectively in float. Be sure when setting pressure that the machine itself continues to run level.

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

As conditions warrant, the roller can be temporarily lifted up off the ground with the roller arms if necessary. It is not recommended to run this way for an extended period of time, however, doing so may damage the cylinders.

Note: Down Pressure Valve is equipped with an internal relief that limits down pressure to 800 psi.

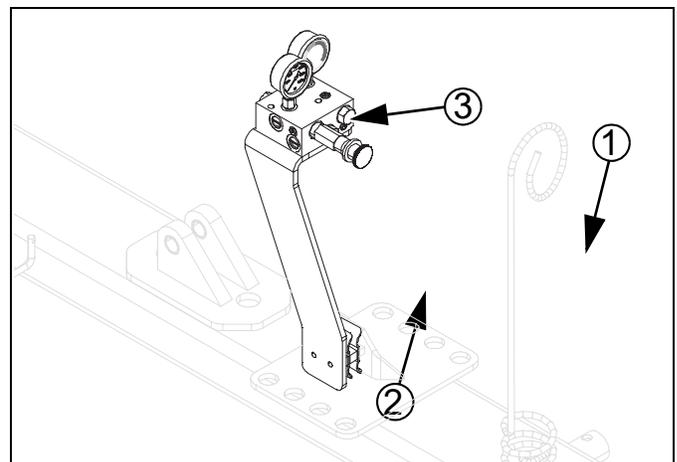


Figure 18
Chopper/ML Roller Hydraulics

TP-69132



Operating Instructions

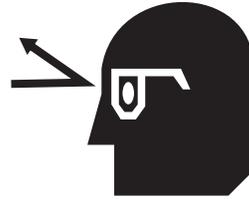
This section covers general operating procedures. Experience, machine familiarity, and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

Perform the following steps before transporting the Max Chisel to the field.

- Carefully read “**Important Safety Information**” on page 1.
- Lubricate Max Chisel as indicated under “**Lubrication**” on page 26.
- Check all tires for proper inflation, “**Tire Inflation Chart**” on page 28.
- Check all bolts, pins, and fasteners. Torque as shown in “**Torque Values Chart**” on page 29.
- Check Max Chisel for worn or damaged parts. Repair or replace parts before going to the field.

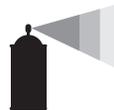
Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.



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 Max Chisel behind another implement on public roads. Tow the Max Chisel 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:

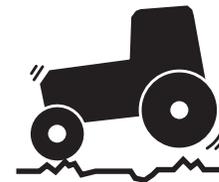
Use an adequate towing vehicle. Never tow an implement that weighs more than 150% of the towing vehicle (transport vehicle must weigh at least 67% of implement). Ensure that the towing vehicle is adequate for the task. Using an inadequate tow vehicle is extremely unsafe, and can result in loss of control,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

See tables below for harrow transport weights.

⚠ 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.

22. Check that implement is securely hitched to a sufficient tractor (page 14).
23. Always use a locking-style hitch pin sized to match holes in hitch and draw-bar, and rated for the load.
24. Attach safety chain to tractor with enough slack to permit turning (page 14).
25. Verify correct operation of lights.
26. Install transport locks (page 16).
27. Check that tires are properly inflated (page 28).
28. Plan the route. Avoid steep hills.
29. Always have lights on for highway operation.
30. Do not exceed 20 mph (32 kph). Comply with all national, regional and local laws when traveling on public roads.
31. 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/Max Chisel configuration. Additional or fewer steps may be necessary depending on tractor features, Max Chisel options and planting accessories.

Mechanical Checklist (Tractor Hitching)

- Max Chisel hitched
- Hitch pin locked.
- Safety chain secured to tractor or leading implement.
- Parking jack stowed

Electrical Checklist

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

Operations Checklists

Hitching

- Match hitch Category to tractor (page 14).
- Hookup hydraulic hoses (page 15).
- Hookup electrical connections (page 15).

Field Start

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

Field Turns

- Raise Max Chisel completely.
- Make turn.
- Lower to field depth.

Hydraulic System Checklist

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

End Field Work

- Lift Max Chisel.
- Fold Max Chisel.
- Install transport locks.
- Travel with caution (page 22).

General Operation and In-Field Adjustments

1. Remove the transport pins, see “**Transport Locks**” on page 16 and unfold machine. Make sure the fold cylinders are fully extended to allow the wings to fully flex in the field.

If possible have someone observe the machine during first time operation for levelness, front to rear and wings to center frame.

Gang Frame Adjustment

Refer to Figure 19

2. Once the machine is set, running level both fore and aft, and from side to side you are ready to run. The first part of the machine that makes contact with the soil is the Samurai Edge Disc Blades. These can be adjusted hydraulically from the seat of the tractor. These blades are designed to cut, size, and bury residue as the aggressive samurai blades will pick up and roll the soil.

Note: These blades should not be run at a depth deeper than 5”, but 3”-4” is the optimum operating depth. Also, in very hard ground, be careful to try not to force the blades too deep as it may try to raise the front of the machine out of the ground as this will affect the overall performance of the machine.

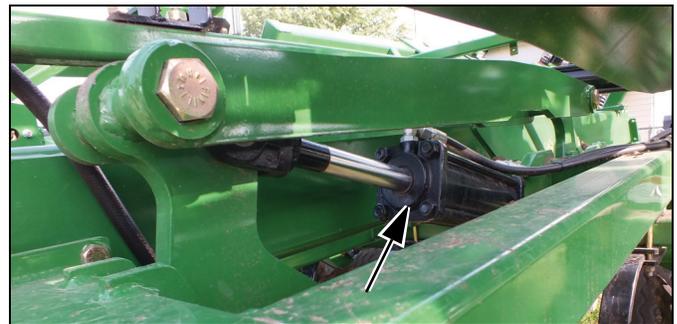


Figure 19
Samurai Blade Gang Adjustment

43750

3. The machine can be equipped with different shank options. It is important to understand these options and how they affect the soil. See a and b for description.
 - a. Toggle Trip Shanks with 7” winged point. These can run up to 12” deep and with winged points, they do an excellent job of fracturing the soil.
 - b. Spring Reset Mounts are equipped with a Standard Chisel Shank which supports many point options. Points can vary from 2” Straight, 4” twisted or 2” winged (7”) points. The points can run up to 10” deep and do an excellent job of fracturing the soil. See chart below for a detailed analysis of the varying shank and point options.

Front Row	Fracture	Bury Residue	Smoothness	Trash Clearance
Auto Reset w/ 2” Winged Points	Very Good	Very Good	Good	Good
Auto Reset/Chisel w/ 2” Straight Point	Good	Average	Good	Good
Auto Reset/Chisel w/ 4” Twisted Point	Average	Very Good	Poor	Average
Toggle Trip Shanks w/ 7” points	Very Good	Very Good	Good	Good

Note: For best results, if at all possible, run machine at a slight angle to the rows. This will improve trash flow and allow for better dislodging of rootballs and will help spread the residue more evenly across the field.

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 and fold implement.

⚠ DANGER

Negative Tongue Weight Hazard:

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

Refer to Figure 20

3. Remove jack from storage position and pin securely to lifting stub on outside of implement tongue ①. See “**Hitching Max Chisel to Tractor**” on page 14.
4. Install rear jack stand.
5. If ground is soft, place a wide block or plate under the jack to increase contact area.
6. Un-hook electrical lines and protect with any plugs or caps provided.
7. Release pressure on hydraulic system, then disconnect hydraulic lines. Store hose ends in keyholes of hose holder bracket.
8. Disconnect the safety chain & unhitch from tractor or leading implement.

Storage

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

1. Raise and fold the implement.
2. Perform Parking checklist above.
3. Lubricate the implement at all points listed under “**Lubrication**” on page 26.
4. Check all bolts, pins, fittings and hoses. Tighten, repair or replace parts as needed.
5. Check all moving parts for wear or damage. Make notes of any parts needing repair or replacement before the next season.
6. Lubricate all points listed in Maintenance to prevent rust.
7. Clean Max Chisel 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.

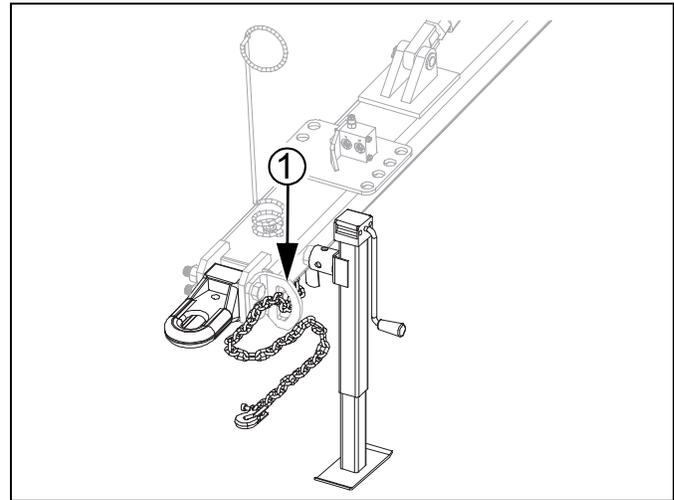


Figure 20
Front Jack (Parking)

42244



Figure 20
Rear Jack Stand

43672

Unfolded Storage

- 1a. Raise implement.
- 1b. Verify the transport locks are in the transport position. Be sure hydraulics are depressurized. 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

1. Always use the transport lock when working on or doing maintenance to the Max Chisel. If folded, be sure your wing stop pins are in place. 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. Check shank pivot bolts for tightness. Check shank pivot bolts on the spring-loaded shank, these must remain tight to prevent excessive wear on the shank assembly.
3. Replace or rotate worn parts as needed -- hinge bolts, clevis pins, bearings, sweeps, shanks, 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. Grease wheel bearings and walking beams sparingly. Over greasing may cause damage to seals and reduce the life of the bearing. Grease hinge points periodically.
6. Check drag bolts for looseness or excessive wear. Replace broken or bent teeth. Your drag is an important part of the tillage operation.

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

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

For the most current manual information, visit Great Plains website listed below. For more information on operating, adjusting or maintaining your Great Plains Max Chisel, assistance is available. Please contact:

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

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

Lubrication

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

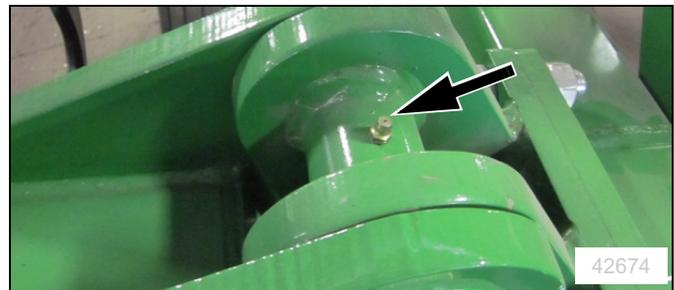
Wing Hinge

	
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One on each wing hinge (3-Section)

Type of Lubrication: Grease

Quantity: Sparingly or 2 pumps



Walking Beam Pivot Bearings

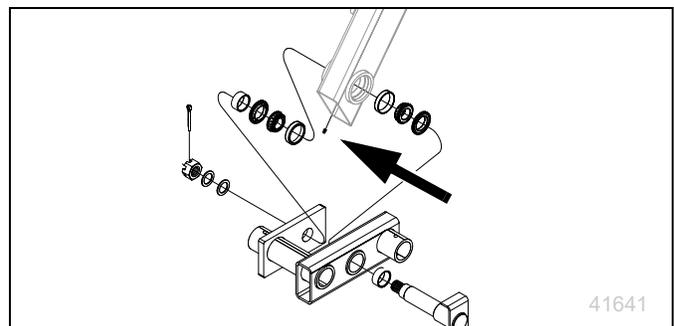
	
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One on each walking beam

Type of Lubrication: Grease

Quantity: Sparingly and check for endplay

If there is a lot of play take apart, check bearings and re-pack





MC Specifications and Capacities

Model No.	MC5109	MC5111	MC5113	MC5115
Tillage Width	11' 6" (3.5 m)	14' (4.26 m)	16' 3" (4.95 m)	18' 9" (5.72 m)
Center Section	10' (3.05 m)	10' (3.05 m)	10' (3.05 m)	10' (3.05 m)
Wing	N/A	2' 6" (.076 m)	3' 6" (1.07)	4' 9" (1.45)
Number of Shanks	9	11	13	15
Shank Spacing	15" (.38 m)	15" (.38 m)	15" (.38 m)	15" (.38 m)
Number of Blades	22	26	30	34
Blade Spacing (2 Offset Rows on Center)	7.5" (.2 m)	7.5" (.3 m)	7.5" (.2 m)	7.5" (.2 m)
Weight (base machine)	10,170 lbs. (4,613 kg)	12,430 lbs. (5,638 kg)	13,920 lbs. (6,314 kg)	16,160 lbs. (7330 kg)
Transport Width	14' 10" (4.50 m)	17' 4" (5.3 m)	16' 6" (5 m)	19' (5.80 m)
Transport Height	N/A	N/A	N/A	N/A
Length (w/o attachment)	22' 10" (6.95 m)	22' 10" (6.95 m)	22' 10" (6.95 m)	22' 10" (6.95 m)
Tire Size Center	12.5L x 15" 12-ply	12.5L x 15" 12-ply	12.5L x 15" F-ply	12.5L x 15" F-ply
Horsepower (PTO) Chisel Shanks*	250+	300+	350+	400+
Kilowatt Chisel Shanks	186+	223+	260+	298+
Horsepower (PTO) Parabolic Shanks**	250+	300+	350+	400+
Kilowatt Parabolic Shanks	186+	223+	260+	298+

Model No.	MC5313	MC5315
Tillage Width	16' 6" (5.03 m)	19' (5.79 m)
Center Section	10' (3.05 m)	10' (3.05 m)
Wing	3' 6" (1.07)	4' 9" (1.45)
Number of Shanks	13	15
Shank Spacing	15" (.38 m)	15" (.38 m)
Number of Blades	30	34
Blade Spacing (2 offsetRows on Center)	7.5" (.2 m)	7.5" (.2 m)
Weight (base machine)	14,580 lbs. (6,613 kg)	16820 lbs. (7,629 kg)
Transport Width	14' 6" (4.42 m)	14' 6" (4.42 m)
Transport Height	10' 6" (3.20 m)	11' 3" (3.43 m)
Length (w/o attachment)	22' 10" (6.95 m)	22' 10" (6.95 m)
Tire Size Center	340/60R 16.5	340/60R 16.5
Horsepower (PTO) Chisel Shanks*	350+	400+
Kilowatt Chisel Shanks	260+	298+
Horsepower (PTO) Parabolic Shanks**	350+	400+
Kilowatt Parabolic Shanks	260+	298+

* Available with 2" straight or 4" twisted points on chisel shanks

** Equipped with 7" winged points on parabolic shanks

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	12.5L x 15 12-Ply	52 psi (358 kPa)
Transport	340/60R16.5	73 psi (503 kPa)

Tire Warranty Information

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

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

Hydraulic Connectors and Torque

Refer to Figure 21 (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.

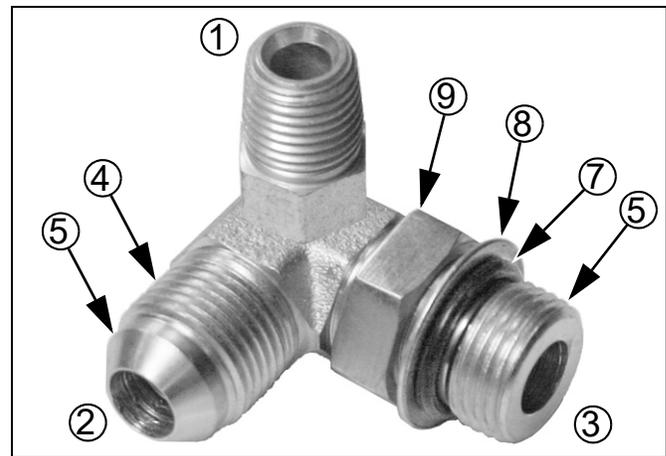


Figure 21
Hydraulic Connector ID

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	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	
Wheel Bolt Torque Values	1/2" - 20 (75-85ft-lbs)
Wheel Bolt Torque Values	9/16" - 18 (80-90ft-lbs)
Wheel Bolt Torque Values	5/8" - 18 (85-100ft-lbs)
Chopper Hub Spindle Values	7/8" - 14 350 ft-lbs



WARRANTY

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

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

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

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

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

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

Effective July 15, 2020

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