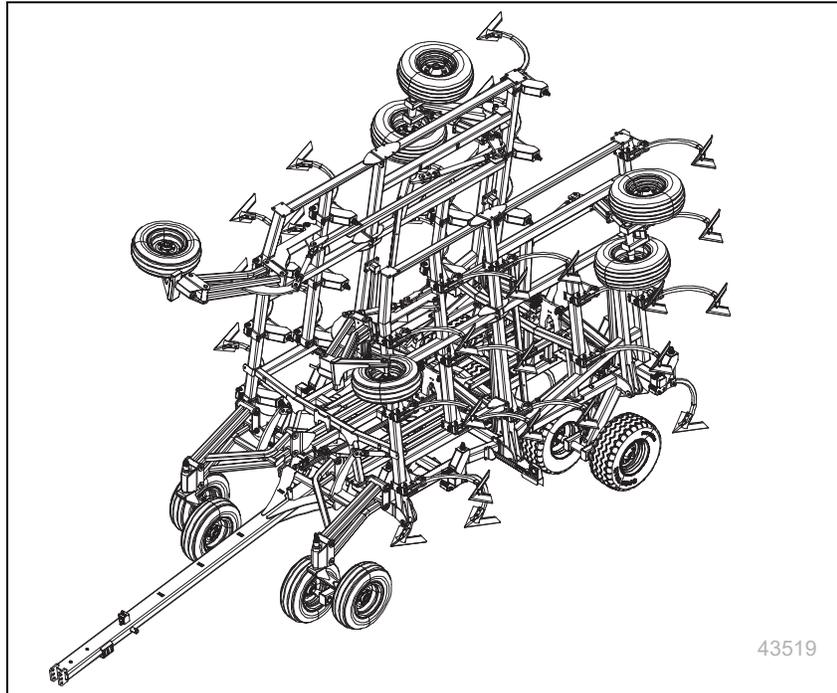


Operator Manual

6321UC, 6324UC, 6327UC, 6329UC,
6330UC, 6333UC
6000 Series Ultra Chisel 3-Section



Read the operator 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 alternate spacings and/or optional equipment not supplied with standard unit.

ORIGINAL INSTRUCTIONS



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Printed 2020-10-08

562-229M

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.

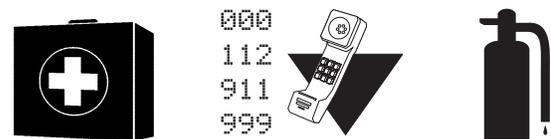


CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



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 4, thoroughly.*
- ▲ *Read all instructions noted on the decals.*
- ▲ *Keep decals clean. Replace damaged, faded and illegible decals.*



Wear Protective Equipment

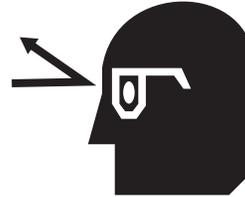
- ▲ *Wear clothing and equipment appropriate for the job.*
- ▲ *Prolonged exposure to loud noise can cause hearing impairment or loss. Wear suitable hearing protection such as earmuffs or earplugs.*
- ▲ *Avoid wearing entertainment headphones while operating machinery. Operating equipment safely requires the full attention of the operator.*



Avoid High Pressure Fluids

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

- ▲ *Avoid the hazard by relieving pressure before disconnecting 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.*



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.

Keep Riders Off Machinery

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

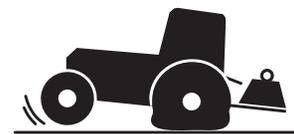
- ▲ *Never allow children to operate equipment.*
- ▲ *Keep all bystanders away from machine during operation.*



Transport Machinery Safely

Maximum transport speed for implement is 20 mph (32 km/h). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 20 mph (32 km/h). 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.*
- ▲ *Comply with state and local laws.*
- ▲ *Do not tow an implement unless the towing vehicle is rated for, and ballasted for, the weight of the implement.*
- ▲ *Carry reflectors or flags to mark implement in case of breakdown on the road.*
- ▲ *Do not fold or unfold the implement while the tractor is moving.*



Check for Overhead Lines

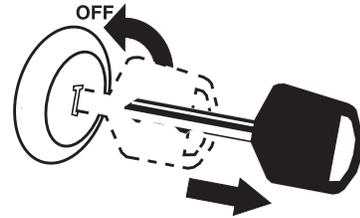
The implement requires at least 15 feet (4.6 m) vertical clearance in transport. Contacting overhead electrical lines can introduce lethal voltage levels on implement and tractor frames. A person touching almost any metal part can complete the circuit to ground, resulting in serious injury or death. At higher voltages, electrocution can occur without direct line or body contact.

- ▲ *Avoid overhead lines during folding, unfolding, transport and parking.*



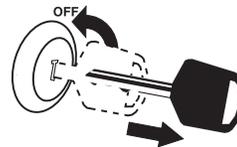
Shutdown and Storage

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



Practice Safe Maintenance

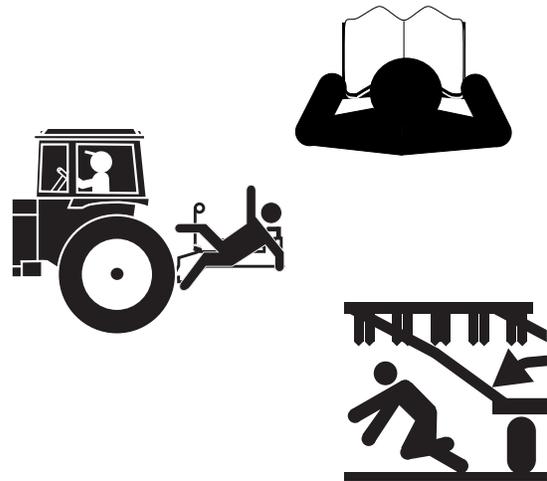
- ▲ *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- ▲ *Work in a clean, dry area.*
- ▲ *Lower the implement, put tractor in park, turn off engine, and remove key before performing maintenance.*
- ▲ *Make sure all system pressure is relieved.*
- ▲ *Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on implement.*
- ▲ *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 implement functions.*
- ▲ *Operate machinery from the driver's seat only.*
- ▲ *Do not leave implement unattended with tractor engine running.*
- ▲ *Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.*
- ▲ *Do not stand between the tractor and implement during hitching.*
- ▲ *Keep hands, feet and clothing away from moving parts.*
- ▲ *Watch out for wires, trees, etc., when folding and raising implement. Make sure all persons are clear of working area.*



Safety Decals

Safety Reflectors and Decals

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

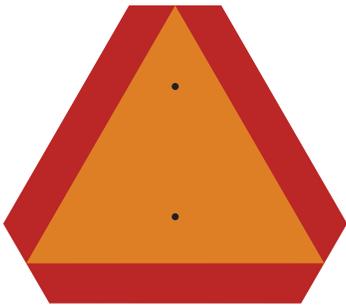
- ▲ *Read and follow decal directions.*
- ▲ *Keep lights in operating condition.*
- ▲ *Keep all safety decals clean and legible.*
- ▲ *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- ▲ *When ordering new parts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

To install new decals:

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

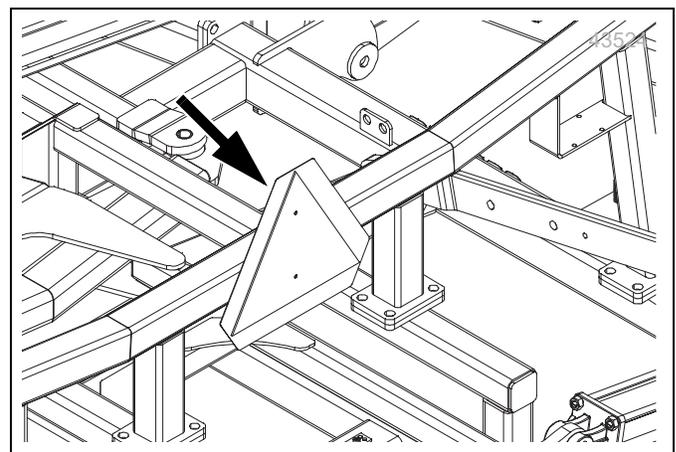
Transport Decals

818-055C



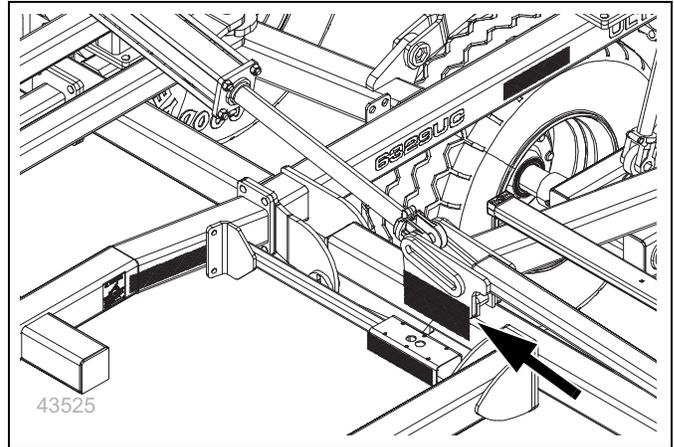
Slow Moving Vehicle Reflector

On center rear face of center frame tie tube;
1 total

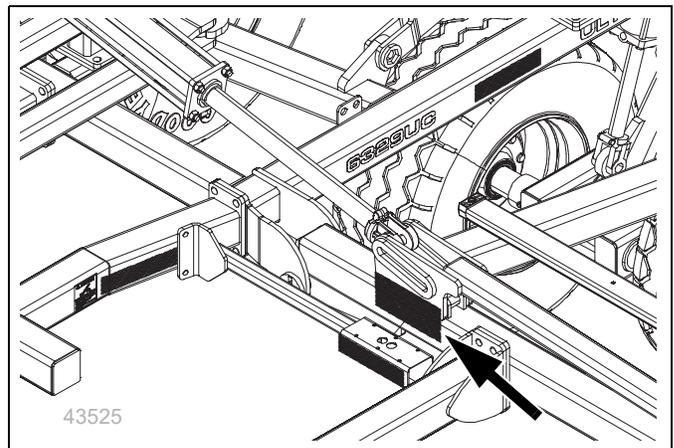


838-614C**Red Reflectors**

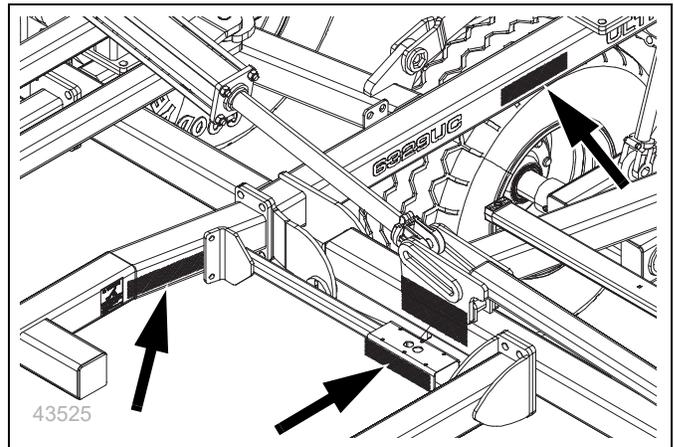
On rear face of light bracket mount tube;
2 total

**838-603C****Daytime Reflectors**

On rear face of light bracket mount tube, inboard of red reflectors;
2 total

**838-615C****Amber Reflectors**

On outboard sides of vertical sections of light bracket mount tubes, on front face of wing tool bars at outboard ends;
6 total

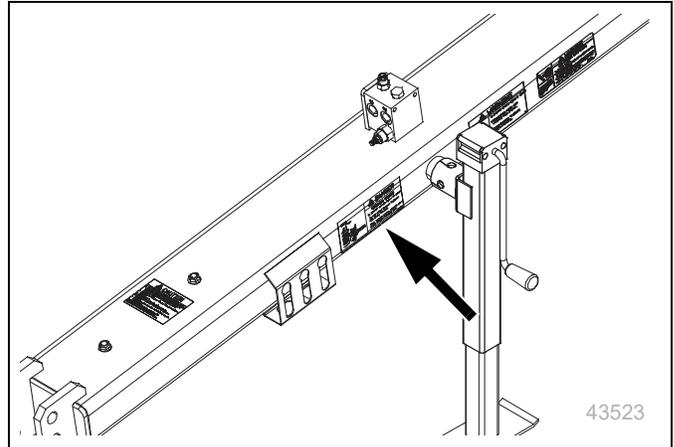


838-600C

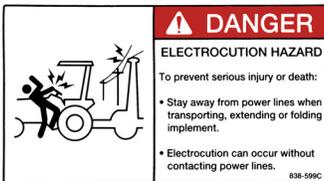


Danger: Hitch Crush

On front face of hitch tube, each end; 1 total

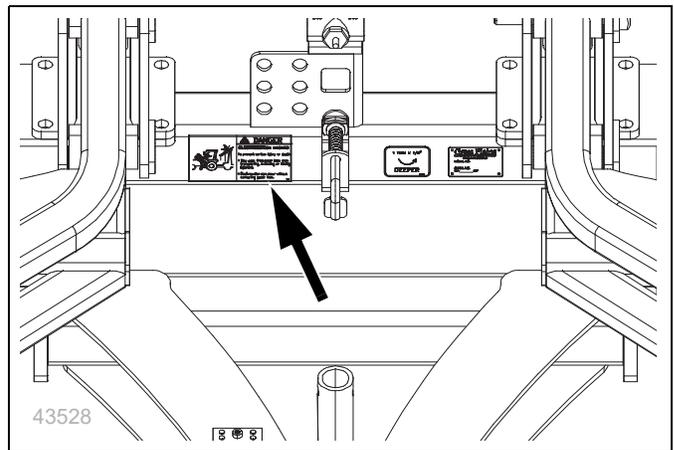


838-599C



Danger: Electrocution

On front face of center frame tie tube, left of center; 1 total



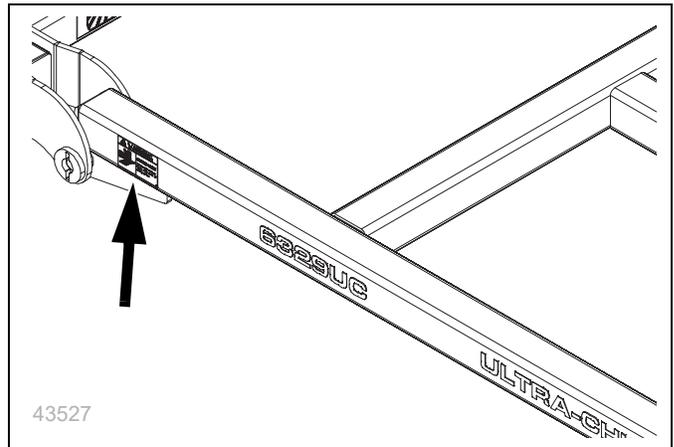
Warning Decals

838-611C



Warning: Hand Crushing

On front and rear of wing frames outer pivot points; 4 total

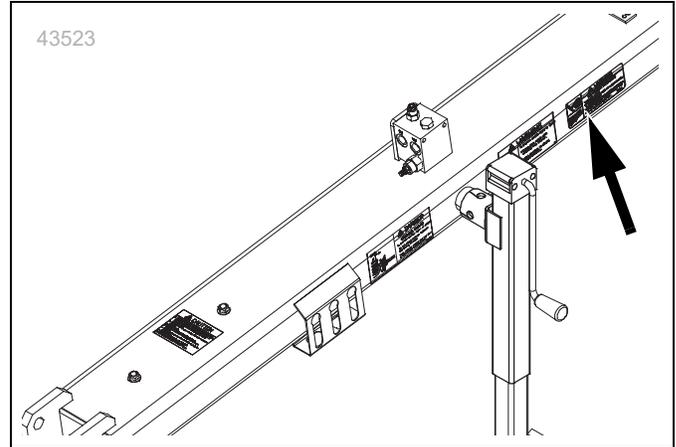


838-094C



Warning: High Pressure Fluid Hazard

On front face of hitch tube, just right of center;
1 total

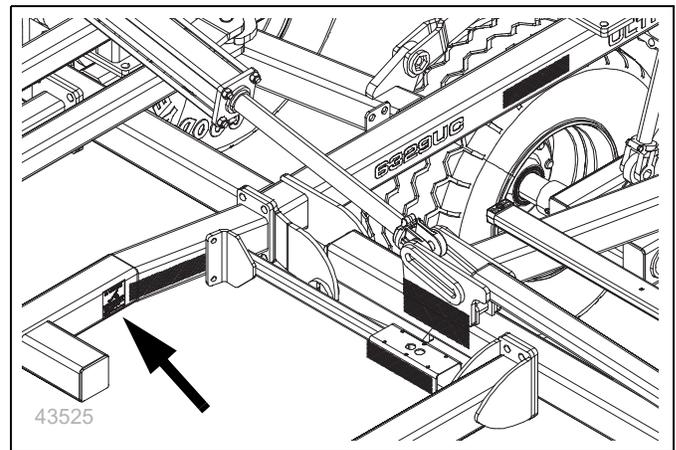


838-602C



Warning: Pinching or Crushing

On front face of outer wing pivot plates;
2 total

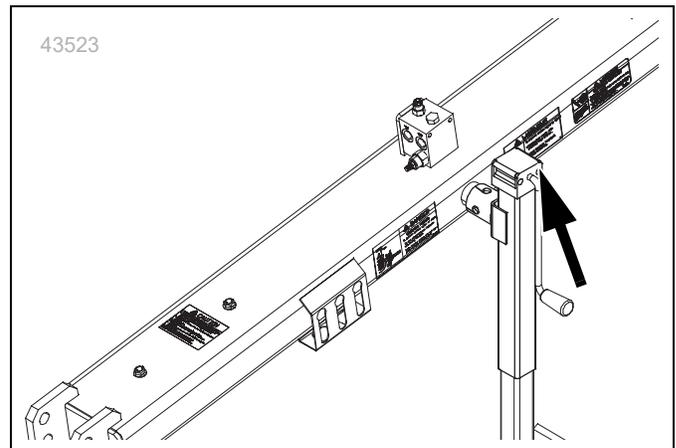


838-606C



Warning: Pinching or Crushing

On front face of outer wing pivot plates;
2 total



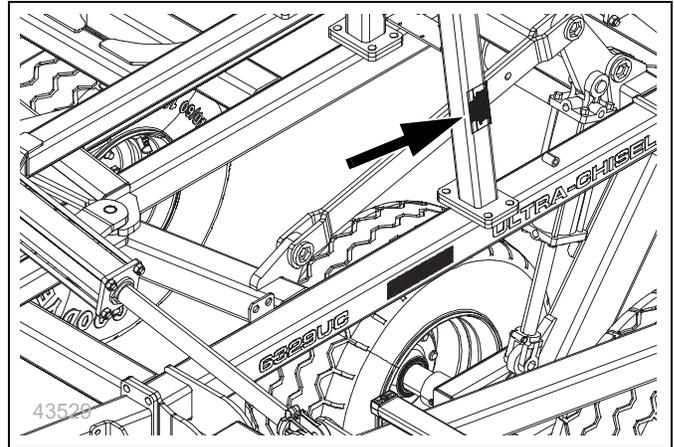
Notice Decals

838-613C



Notice: Transport Locks

On outside face of rear wing rest;
2 total



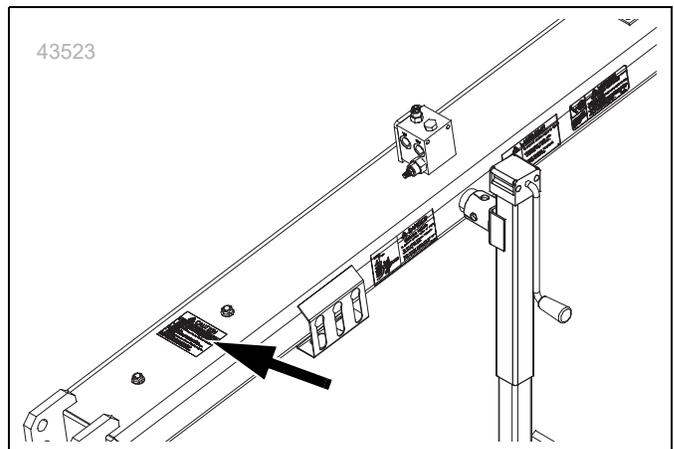
Caution Decals

838-598C



Caution: General Instructions

On front face of hitch tube;
1 total





Introduction

Great Plains welcomes you to its growing family of new product owners. The 6000 Series Ultra Chisel 3-Section 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.

Description of Unit

The Ultra Chisel is a three or five section primary soil preparation implement and can be use in the most adverse conditions. Various attachments can be added for further redistribution of residue, firm soil and break clods.

Intended Usage

Use the 6000 Series Ultra Chisel Ultra Chisel to fracture soil above 8" to remove density layers while leaving the residue mixed at the surface to reduce wind erosion and assist with water filtration.

Models Covered

6321UC	21-Foot	3-section
6324UC	24-Foot	3-section
6327UC	27-Foot	3-section
6329UC	29-Foot	3-section
6330UC	30-Foot	3-section
6333UC	32-Foot	3-section

Document Family

562-229M	Owner's Manual (this document)
562-229P	Parts Manual
562-229Q	Pre-Delivery 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.

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

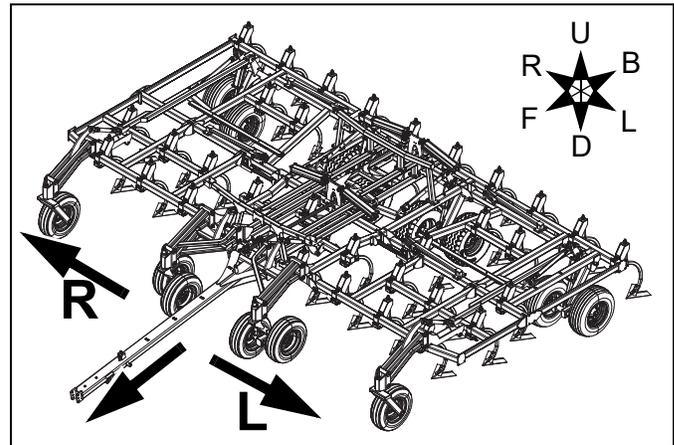
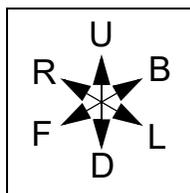


Figure 1
Ultra Chisel

43520

illustrations shows the directions of: Up, Back, Left, Down, Front, Right.

NOTICE

A crucial point of information related to the current 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 left end of the top front tool bar.

Record your Ultra 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.

Further Assistance

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

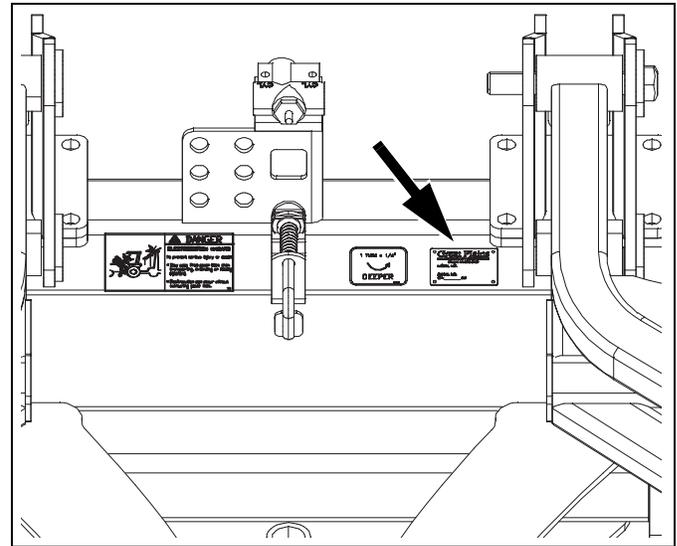


Figure 2
Serial Number Plate

43528



Preparation and Setup

This section helps you prepare your tractor and 6000 Series Ultra Chisel for use and covers tasks that need to be done seasonally, or when the tractor/Ultra Chisel configuration change.

Before using the Ultra Chisel you must level the implement, hook up the implement hydraulics to the tractor, and check that the hydraulics have been bled. Certain adjustments and calibrations must be checked periodically thereafter to insure maximum usage.

Post-Delivery/Seasonal Setup

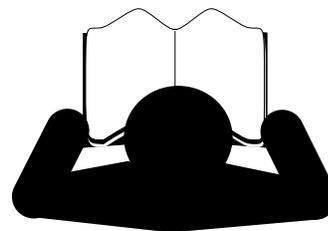
On initial delivery, use with a new tractor, and seasonally, check and as necessary, complete these items before continuing to the routine setup items:

- Bleed hydraulic fold system.
- Wing leveling and alignment (page 16).
- De-grease exposed cylinder rods if so protected at last storage.

Pre-Planting Setup

Complete this checklist before routine setup:

- Read and understand “**Important Safety Information**” starting 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 “**Hitching Tractor to Implement**”
- 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 hydraulics to pull the wings in completely before unpinning them.) Once the pins are removed, slowly unfold the unit. Make sure no one is under the wings during the unfolding process.
- Check again for hydraulic leaks and watch that hoses do not get pinched in hinges, wing stops, etc.
- After the machine is completely unfolded, raise and lower the Ultra 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 safety decals and reflectors are correctly located and legible. Replace if damaged. See “**Safety Decals**” on page 4.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See “**Tire Inflation Chart**” on page 28.
- 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.



Clevis Hitch

Refer to Figure 3

The base hitch must be upright (with the recessed notch on the bottom) for this configuration. This places the tongue weight on the base hitch, and not the clevis. (13).

3. Select one each:
 - (13) 890-798C HITCH CLEVIS
 - (11) 802-487C HHCS 3/4-10X6 GR8
 - (12) 803-367C NUT HEX TOP LOCK 3/4-10PLT
4. With the square-shouldered end of the clevis (13) up, fully seat the clevis in the upright base hitch (18). Insert the Grade 8 bolt (11) from below. Secure with lock nut (12).

CAUTION

Hitch Failure Hazard:

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

Category III Hitch

The base hitch (18) must be inverted (with the recessed notch on the top) for this configuration. Set the V-block (14) to allow some vertical articulation of the draw bar pin. Always use at least one cushion (15).

5. Select one of each
 - (16) PPI-302V TOP PLATE - CAT 3
 - (14) PPI-203VR V-BLOCK
 - (10) 802-383C HHCS 3/4-10X3 GR5
 and two:
 - (15) PPI-205H CUSHION
6. Set the cushions inside the hitch recess, just forward of the vertical bolt hole. Position the V-block (14) forward of the cushions and check the size of the resulting pinning hole. Remove a cushion (15) if needed.
7. Add the top plate (16). Secure from below with Grade 5 bolt (10).

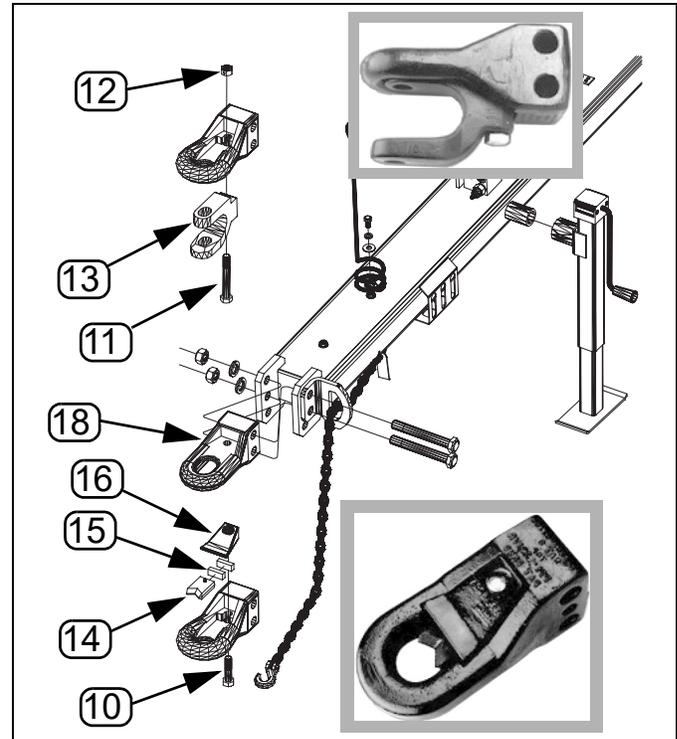
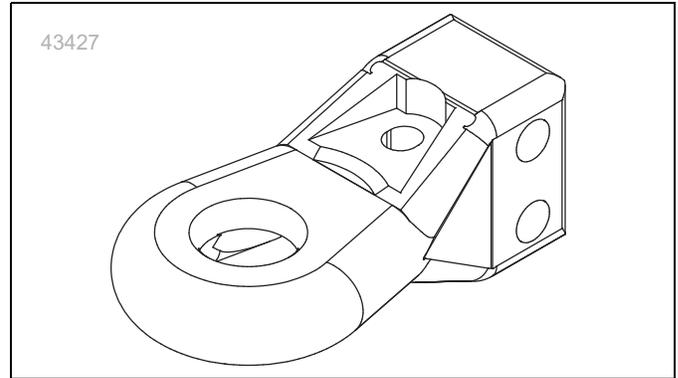


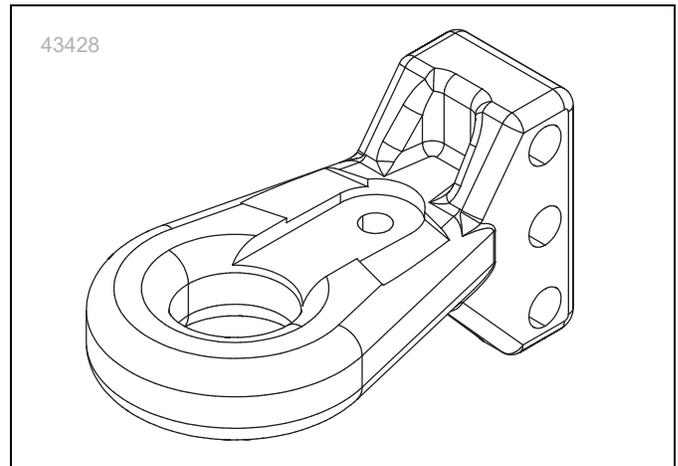
Figure 3
Configure Hitch

31740
43659
31741

Category IV Hitch



Category V Hitch



Hitching Tractor to Implement

⚠ DANGER

Crushing Hazard:

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

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 Ultra 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.
3. Hitch the tractor to the Ultra Chisel using the block or yoke clevis determined by the tractor drawbar. Use the correct size pin for clevis or block.

Load Sway Hazard:

Lock drawbar swing to center position to minimize any side-to-side sway to assure proper tracking in the field, and safe road travel. See “**Transporting the Ultra Chisel**” on page 19, for safe transporting.

Refer to Figure 4

4. Use jack ① to raise and lower Ultra Chisel tongue.

Refer to Figure 5

5. After hitching tractor to Ultra Chisel, store jack on storage tube ② on top rear of Ultra Chisel tongue.
6. Secure Ultra Chisel safety chain to an anchor on the tractor capable of pulling the unit.

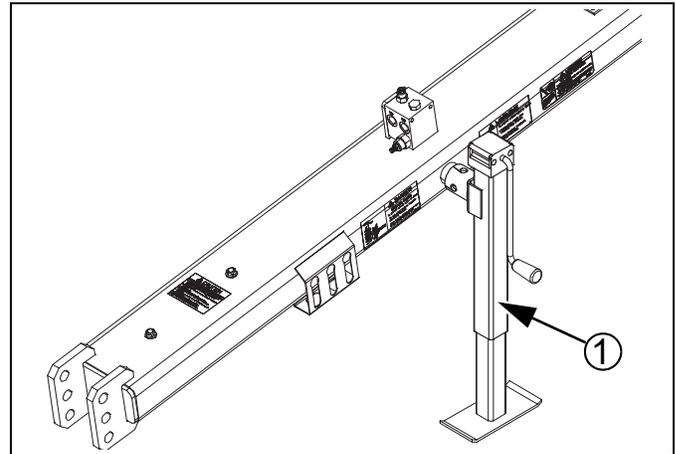


Figure 4
Tongue on Jack

43523

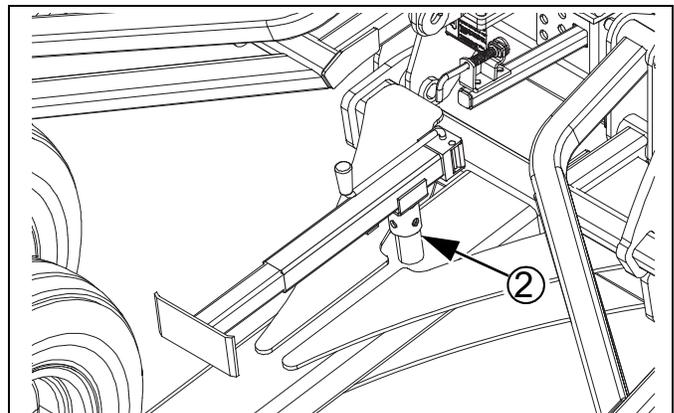


Figure 5
Jack in Storage

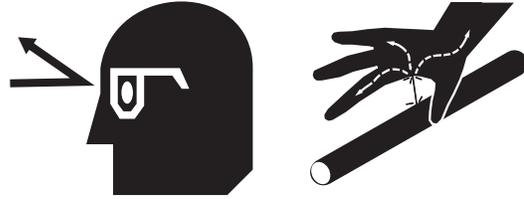
43539

Hydraulic Hose Hookup

⚠ WARNING

High Pressure Fluid Hazard:

Relieve pressure before disconnecting hydraulic lines. Escaping fluid under pressure may have sufficient pressure to penetrate the skin causing serious injury. 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. If an accident occurs, seek immediate medical attention from a physician familiar with this type of injury.



Refer to Figure 6

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

Color Coded Hose Handles

Color	Hydraulic Function
Black	Lift (2 hoses)
Green	Fold (2 hoses)
Yellow	Auxiliary (Optional)

To distinguish between the color coded hoses on the same hydraulic circuit, refer to the symbol molded into the handle grip.

- Hoses with an extended-cylinder symbol feed cylinder base ends.
- Hoses with a retracted-cylinder symbol feed cylinder rod ends.

Secure hoses and cables so that they have sufficient slack for hitch movements, but cannot get caught between moving parts of tractor, disk harrow 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 to tractor. Connect all hoses to suitable tractor remote valves.

Electrical Hookup

Plug implement electrical lead in tractor seven-pin connector. If your tractor is not equipped with a seven-pin connector, contact your dealer for installation.

Plug in any optional connectors or aftermarket connectors, such as an implement-mounted GPS receiver. For future reference, note any optional connectors on this checklist.

- ① Lighting connector (standard)
- _____
- _____

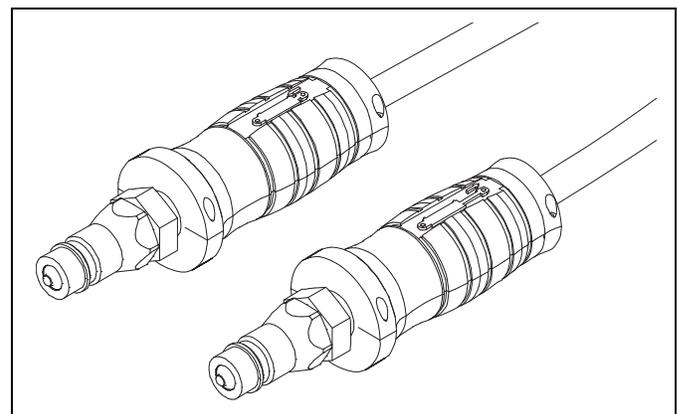


Figure 6
Color Coded Hose Handles

31733



Figure 7
Lighting Connector

36051

First Time Field Adjustments

Center and Wing Leveling

- Pre-leveling of machine can be done on a concrete slab or level surface. Lower machine so sweeps on the center frame are 1 - 2" off the ground.

Center and Wing Gauge Wheel Adjustments

Refer to Figure 8

- Keep Center front gauge wheel turnbuckles at equal length for proper center leveling. Adjust so that the front of the machine is slightly lower ($\frac{1}{2}$ - 1") than the rear of the machine.
- Equalizer should be straight when leveled correctly.
- Loosen the jam nut ① and adjust turnbuckle on the gauge wheels to level it from front to back. (Shorten to bring front down, extend to bring front up). Level machine with the front row shanks just slightly deeper or lower than the back.
- Retighten the jam nut ①.

Repeat same procedure for the other side of the center frame.

Wing Leveling (3 or 5 Section Wings)

Refer to Figure 9

- Set the 3-section and the 5-section inner and outer wings to match the depth of the center. This is done by first adjusting the rear wing turnbuckle ② on each wing. Start by loosening the jam nut ③, then adjust the turnbuckle ②. Lengthen the turnbuckle to run deeper and shorten the turnbuckle to run shallower.
- Tighten the jam nut ③, back against the turnbuckle tube to hold the adjustments in place.
- Adjust the Wing Gauge Wheels, loosen the jam nut ③ and adjust turnbuckle on the gauge wheels to level it from front to back. (Shorten to bring front down, extend to bring front up). Level machine with the front row shanks just slightly deeper or lower than the back.

- In some conditions the wings will need to be set slightly lower than the center, as the center may tend to run deeper behind the tractor tires.

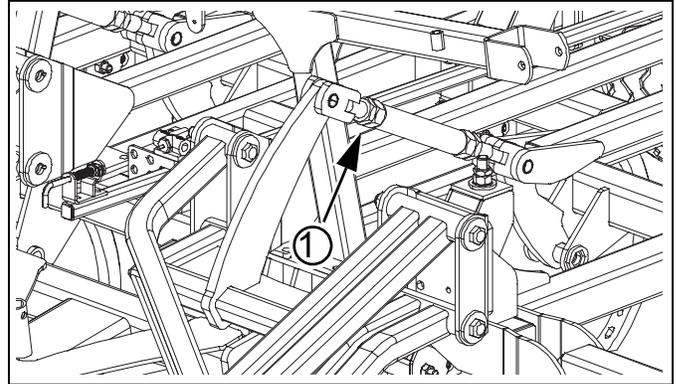


Figure 8
Center Gauge Wheel Level

43541

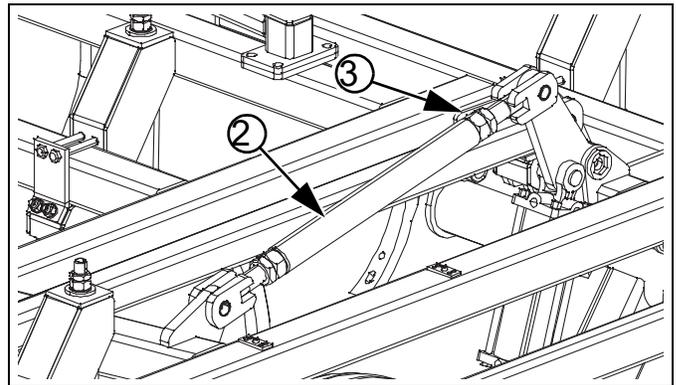


Figure 9
Wing Level

43541



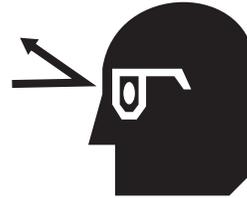
Operating Instructions

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 6000 Series Ultra Chisel Ultra Chisel to the field.

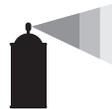
- Carefully read “**Important Safety Information**” on page 1.
- Lubricate implement as indicated under “**Lubrication**” on page 26.
- Check all tires for proper inflation. See “**Specifications and Capacities**” on page 27.
- Check all bolts, pins, and fasteners. Torque as shown in “**Hydraulic Connectors and Torque**” on page 29.
- Check implement 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.
- Perform all beginning-of-season and items under “**Maintenance**” on page 25.



WARNING

High Pressure Fluid Hazard:

Relieve pressure before disconnecting 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.



Unfolding

Unfold the implement for adjustments, field operations, maintenance, parking and storage.

1. Unless the implement was folded, with the currently hitched tractor, only a short time ago, check for evidence of oil leaks. Check the ground at hitch connections, hose fittings and under cylinders.

WARNING

Crushing Hazard:

Bystanders could be crushed under the wings or caught in the wing fold mechanisms. To avoid serious injury or death, keep all persons well away during implement unfold.

2. Be aware of vertical and horizontal clearances needed to unfold the implement.
3. Remove Wing Pins & store on front Wing Stop.
4. Put tractor in Park with parking brake engaged.
5. Clear all persons from or near the implement.
6. Slowly move fold circuit lever to Extend. Observe the unfold operation.
7. Wait for both wings to reach the fully unfolded position. Set tractor remote to Neutral to lock at unfolded.

Folding

Fold the implement for movements on public roads and between fields with narrow clearances.

DANGER

Electrocution Hazard:

Avoid overhead lines when folding and transporting. When folded and lifted, the implement requires clearance of at least 15ft (4.6m) for Models 6324 - 6330, which is high enough to contact low-hanging lines. Touching the implement or tractor completes a circuit to ground, and can result in serious injury or death. At higher voltages, shock can occur without direct contact.

1. Hitch tractor (page 14).
2. Move to level ground. Be aware of vertical clearance needed to fold implement.
3. Put tractor in Park with parking brake engaged.
4. Clear all persons from or near the implement
5. Slowly move fold circuit lever to Retract. Observe the fold operation.
6. Wait for both wings to reach the fully folded position. Set tractor remote to Neutral to hold at folded.
7. Install Wing Pins.

WARNING

Crushing Hazard:

Bystanders could be crushed between the folding implement wings and the implement center frame, or caught in the folding mechanism. To avoid serious injury or death, keep all bystanders well away during implement operation.

Transporting the Ultra Chisel

See “**Hitching Tractor to Implement**” on page 14 before transporting the Ultra Chisel.

⚠ DANGER

Loss of Control Hazard:

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. To reduce the hazard, use only a towing vehicle that is both rated for the implement load, and properly ballasted for the load.

⚠ DANGER

Electrocution Hazard:

Avoid overhead lines transporting. When folded and lifted, the implement requires clearance of 14 to 16ft (4.3 m-5.2m), which is high enough to contact low-hanging lines. Touching the implement or tractor completes a circuit to ground, and can result in serious injury or death. At higher voltages, shock can occur without direct contact.

⚠ CAUTION

Braking and Loss of Control Hazard:

Do not exceed 20 mph (32 km/h) when driving straight.

Do not exceed 13 mph (21 km/h) in turns. The weight of the implement can cause under-steer, and the height of the implement is a tipping hazard.

Check Tractor Capacity and Configuration

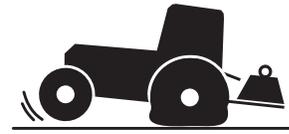
- Consult your tractor manual for limitations.
- Add weights to tractor as required.

When determining the weight of your Ultra Chisel, be sure to include the weight of any options. Please contact your Great Plains dealership.

Transport Checklist

Before transporting the implement check the following items.

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Plan the route. Avoid steep hills. Keep Clearances in mind. <input type="checkbox"/> Transport only with a tractor of proper size and adequate ballast. See “Specifications and Capacities” on page 27. <input type="checkbox"/> Hitch implement securely to tractor. Make all electrical and hydraulic connections. See “Hitching Tractor to Implement” on page 14. <input type="checkbox"/> Fold Implement and install wing pins. <input type="checkbox"/> Raise Ultra Chisel. <input type="checkbox"/> Be sure all transport locks are installed. <input type="checkbox"/> Always have lights on for highway operation. | <ul style="list-style-type: none"> <input type="checkbox"/> Comply with all national, regional and local safety laws when traveling on public roads. <input type="checkbox"/> Travel with caution. Allow safe clearance. Remember that the Ultra Chisel is wider than the tractor. |
|---|--|



General Operation and In-Field Adjustments

8. Remove the transport pins and unfold machine. Make sure the fold cylinders are fully extended to allow the wings to fully flex in the field.
9. If possible have someone observe the machine during first time operation for levelness, front to rear and wings to center frame. Adjust each as needed. For front to rear, either extend or shorten the length of the turnbuckle on the gauge wheels. Never run the machine with the back lower (deeper) than the front. To adjust the machine from side to side, use the turnbuckle on each wing, See "**First Time Field Adjustments**" on page 16.
10. The ideal working speed for the Ultra Chisel is 5 to 7 mph. Working too slow may cause plugging, poor incorporation or mixing of crop residue and reduced weed kill. Running too fast may cause streaks in chemical incorporation and ridging.
11. The Ultra Chisel is designed as a primary tillage tool. For best results, if at all possible, run the machine at a slight angle of the rows. This will improve trash flow and help spread the residue more evenly throughout the field.
12. When you have the machine set to the desired working depth, set the depth stop assembly on the depth control bar. This is located at the front of the machine on the brace bar.
13. Screw the depth stop in to run shallower. Screw the depth stop out to run deeper. 1 turn = $\frac{1}{4}$ " working depth. This will maintain a constant depth each time after raising and lowering the machine.
14. If after setting the depth stop, on a tractor that has a mechanical detent, the detent on the tractor kicks out before the stop contacts the button on the depth stop, slow the hydraulic flow speed down. If your tractor is equipped with a timing detent, set the timer to $\frac{1}{2}$ - 1 second longer than it takes to fully raise the machine from the working depth. If the problem persists, contact the factory service representative for the possible adjustments. Do not adjust the rebound valve without first contacting the factory service rep.
15. If your implement is fitted with a drag attachment then adjust the drag to leave the desired results while maintaining the trash flow through the drag. See "**Rear Attachment Settings**" on page 22.



Figure 10
Depth Stop

43544

Field Operations

NOTICE

Equipment Damage Risk:

Lift for tight turns and reverse moves. Tight turns can result in a section moving backward. Never back up with the Ultra Chisel in the ground.

Field Set-Up Checklists

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

Mechanical Checklist (Tractor Hitching)

- Ultra 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.

Hydraulic System Checklist

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

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 implement (page 18).
- Check machine for levelness (page 16).

Field Turns

- Raise implement completely.
- Make turn.
- Lower to field depth.

End Field Work

- Lift implement.
- Fold implement.
- Install wing pins and transport locks.
- Travel with caution (page 19).

Rear Attachment Settings

Spike Drag Settings

Refer to Figure 11

1. On the spike drag, start with 5 links hanging from the chain in drag arm bottom slot. (This is the starting point for worst conditions). The cleaner the ground, the shorter the pull chain may be pulled up. On the spike drag, the links in the first row of angles are turned over ①. This allows the trash to start flowing through the drag easier by changing the angle of the first row of teeth. Always make sure that the drag is never pulling off of the hang chains. If so, shorten pull chains.

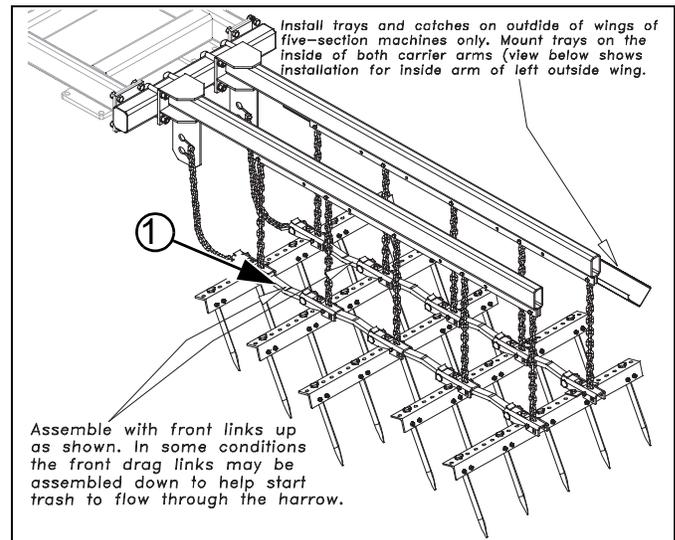


Figure 11
Spike Drag Settings

41235

Heavy Coil Tine Settings

Refer to Figure 12

2. To adjust down pressure loosen the jam nut ②, and screw the spring bolt ③, in to put more down pressure on the drag, or adjust the bolt out to have less down pressure. Retighten the jam nut ②, to secure your adjustments. The spring will be pre-set to 3 - 3 1/2" of bolt left to adjust.
3. To change angle of coil tine, rotate the locking pin ④ and move the adjustment lever ⑤ forward or backwards. Moving the lever forwards towards the front of the machine will allow residue to flow through the drag easier. Moving the lever backwards away from machine makes the drag more aggressive. The adjustment lever has 4 positions and will change the coil tines several degrees.
4. Rotate the locking pin ④, back to its engaged position when the desired angle is set.

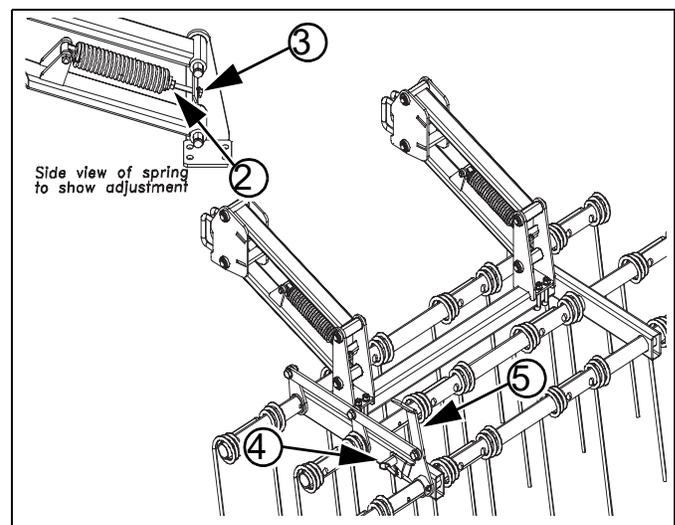


Figure 12
Heavy Coil Tine Adjustment Lever

43422

Reel Settings

Refer to Figure 13

5. If a reel is added, adjust the amount of down pressure by either shortening the spring for less pressure or lengthening for more pressure.
6. Adjust nut ① to where spring ② is just making contact with front plate ③.
7. Turn nut ① another 1" further on spring rod ④ to set pre-load on spring ②.

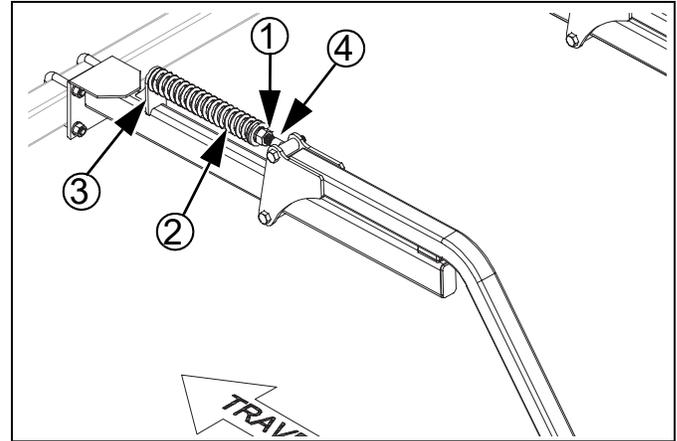


Figure 13
Reel Arm Adjustments

43542

Refer to Figure 14

8. The bars on the reels are angled forward ⑤ and should be installed as such on the machine. In some conditions in which a firming of the soil is more desirable than breaking up clods then these reels can be mounted in reverse ⑥. This does however increase the chance of causing damage to the bars in rocky soil.

WARNING

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

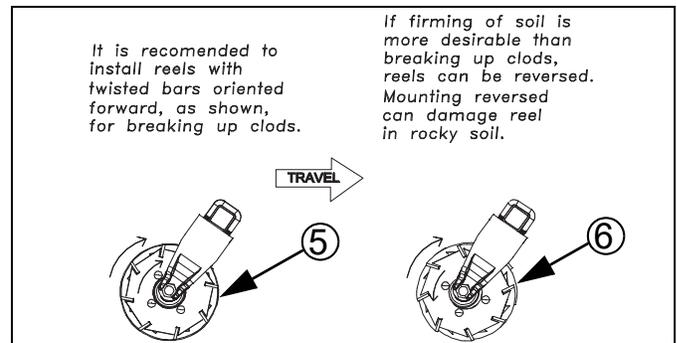


Figure 14
Reel Direction

42284

Parking

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

9. For long-term parking, see also “**End of Season Storage**” below.
10. Choose a parking location that is level, has firm soil and is unlikely to develop soft soil in rain. With the implement still hitched, maneuver it to the parking location.

End of Season Storage

15. Park the implement at the storage location as per “**Parking**” above. Secure tires with blocks.
16. Clean machine as much as possible. Remove all dirt from rust prone parts like hinge points, turnbuckles and bolt threads.
17. Check all bolts for tightness. Tighten as needed.
18. Check over the machine for damaged or worn parts. Replace or rotate worn parts as needed--hinge bolts, clevis pins, bearings, etc. Make repairs and service during the off season.
19. Check and tighten or replace any hydraulic leaks. Check hoses for any leaks.

Beginning of Season

25. Hitch the tractor to the Ultra Chisel and connect the hydraulic hoses.
26. Check fold and lift cylinders for leaks that could have caused air to enter cylinders. If leaks are noticed repair cylinders and fully purge air from cylinders by unpinning cylinder, block up and fully cycle cylinders back and forth several times.

DANGER

Unfolding machine with air in cylinders may cause death or major machine damage. Pin cylinders to wings and slowly unfold machine.

27. If Cylinders were stored with rods retracted, extend cylinders and reinstall clevis bolts.
28. Slowly raise the machine a couple of times to its full height and hold lever for 10 to 15 seconds to purge air from lift cylinders.
29. If machine was not serviced and greased at end of last season, perform steps 16 - 22 from “**End of Season Storage**” section.
30. Make sure all moving parts move freely and do not bind.
31. Take the time to read the operators manual and refresh yourself with the safety information and operating instructions.

11. Lower the implement to just above ground. Shut off the tractor and remove the key.
12. Unplug implement hydraulic hoses and electrical lines from tractor.
13. Unhook the safety chain.
14. Remove the hitch pin.

20. The wheel bearings should be cleaned and repacked annually or every 2500 acres.
21. Use spray paint to cover scratches, chips and worn areas on the implement to protect the metal.
22. Lubricate areas noted under “**Lubrication**” beginning on page 26. If stored outside, place a protective coating of grease or “plow paint” on all earth working parts and cylinder rods to prevent rusting.
23. If you are storing the Ultra Chisel unfolded, remove fold cylinder clevis bolts, block up cylinder and fully retract cylinder rods. This will extend the life of the cylinder seals and reduce internal leaks.
24. Cover with a tarp if stored outside.
32. It is the owner’s responsibility to see that all operators of the Ultra Chisel know the safety and operating information found in this manual.



Maintenance and Lubrication

Maintenance

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

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

WARNING

Crushing Hazard:

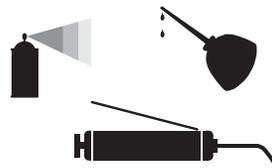
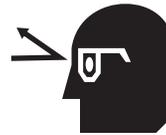
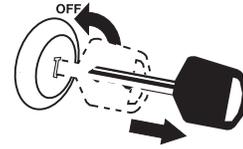
Always have transport locks in place and frame sufficiently blocked up when working on implement. You may be severely injured or killed by being crushed under the falling implement.

WARNING

High Pressure Fluid Hazard:

Check all hydraulic lines and fittings before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

1. After using your implement for several hours, check all bolts to be sure they are tight.
2. Clean implement on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
3. Lubricate areas listed under “**Lubrication**” on page 26.
4. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.



Lubrication

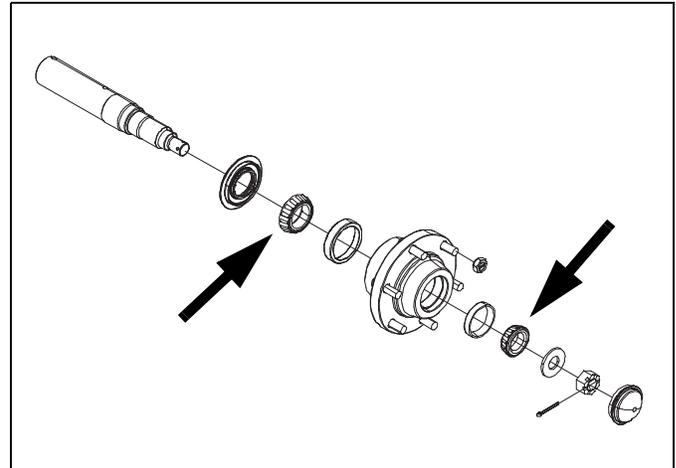
 Multi-purpose spray lubricant	 Multi-purpose grease lubricant	 Multi-purpose oil lubricant	 Inspection	 50 Intervals (operating hours) at which service is required
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Wheel Bearing Hubs

	 Seasonally
---	---

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

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



All Turnbuckles and Threaded Adjustments

	 Seasonally
--	--

Overall Machine Maintenance;

Type of Lubrication: Multipurpose Lubricant

Quantity: Coat thoroughly.



Appendix A - Reference Information

Specifications and Capacities

Model No.	6321UC	6324UC	6327UC
Tillage Width (9" Spacing)	21' 9" (6.63m)	24' 9" (7.54m)	27' 9" (8.46m)
Tillage Width (12" Spacing)	21' 9" (6.63m)	23' 9" (7.24m)	27' 9" (8.46m)
Number of Shanks 9" Spacing	29	33	37
Number of Shanks 12" Spacing	22	24	28
Under Frame Clearance	30"	30"	30"
Maximum Working Depth	8"	8"	8"
Transport Width	13' 8"	13' 8"	13' 8"
Transport Height (9" Spacing)	10' 10"	12' 4"	13' 10"
Transport Height (12" Spacing)	10' 10"	11' 10"	13' 10"
Tire - Transport	340/60R16.5	340/60R16.5	340/60R16.5
Tire - Wing	12.5L x 15	12.5L x 15	12.5L x 15
Tire - Gauge Wheel	9.5L x 15	9.5L x 15	11L x 15
Horsepower (PTO Req/Min)	190-220	200-250	240-290
Kilowatt	142-165	149-187	179-216

Model No.	6329UC	6330UC	6333UC
Tillage Width (9" Spacing)	29' 3" (8.91m)	30' 9" (9.37m)	33' 9" (10.29m)
Tillage Width (7 1/2" Spacing)	29' 9" (9.07m)	30' 9" (9.37m)	32' 9" (9.98m)
Number of Shanks 9" Spacing	39	41	45
Number of Blades 12" Spacing	30	32	34
Under Frame Clearance	30"	30"	30"
Maximum Working Depth	8"	8"	8"
Transport Width	13' 8"	16' 8"	16' 8"
Transport Height (9" Spacing)	14' 7"	13' 10"	15' 4"
Transport Height (12" Spacing)	14' 10"	13' 10"	14' 10"
Tire - Transport	340/60R15.5	380/55R16.5	380/55R16.5
Tire - Wing	12.5L x 15	12.5L x 15	12.5L x 15
Tire - Gauge Wheel	11L x 15	11L x 15	11L x 15
Horsepower (PTO Req/Min)	250-325	250-350	325-450
Kilowatt	188-243	187-241	242-336

Tire Inflation Chart

Tire Inflation Chart		
Wheel	Tire Size	Inflation
Wing	12.5L x 15 12-Ply RI	52 psi (358 kPa)
Transport	340/60 R 16.5	73 psi (503 kPa)
Transport	380/55 R 16.5	73 psi (503 kPa)
Gauge Wheel	11L x 15 12-Ply RI	52 psi (358 kPa)

Tire Warranty Information	
<p>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.</p>	
<u>Manufacturer</u>	<u>Web site</u>
Firestone	www.firestoneag.com
Gleason	www.gleasonwheel.com
Titan	www.titan-intl.com
www.atgtire.com	Galaxy
BKT	www.bkt-tire.com

Hydraulic Connectors and Torque

Refer to Figure 15 (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.

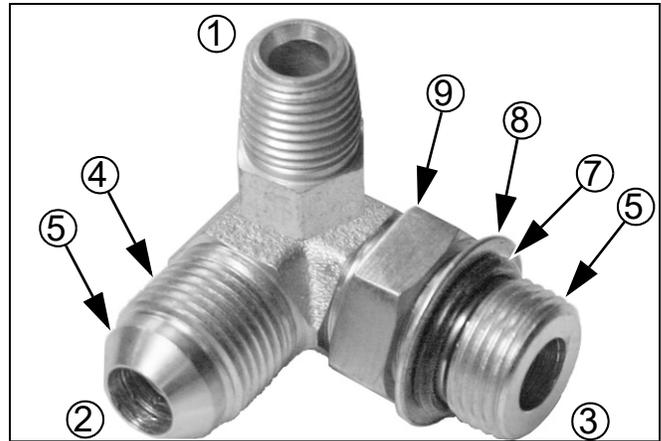


Figure 15
Hydraulic Connector ID

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

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.

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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)



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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