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.
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Field Cultivator 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.
Wear Protective Equipment

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

Handle Chemicals Properly

Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.
▲ Read and follow chemical manufacturer’s instructions.
▲ Wear protective clothing.
▲ Handle all chemicals with care.
▲ Avoid inhaling smoke from any type of chemical fire.
▲ Store or dispose of unused chemicals as specified by chemical manufacturer.

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), 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 exceed 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 that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.
▲ Carry reflectors or flags to mark Field Cultivator in case of breakdown on the road.
▲ Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under “FC Specifications and Capacities” on page 23.
▲ Do not fold or unfold the Field Cultivator while the tractor is moving.

Shutdown and Storage

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

Tyre Safety

Tyre changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

▲ When inflating tyres, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tyre 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 the machine, put tractor in park, turn off engine, and remove key before performing maintenance.
▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on machine.
▲ 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 machine 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 machine functions.
▲ Operate machinery from the driver’s seat only.
▲ Do not leave Field Cultivator unattended with tractor engine running.
▲ Do not stand between the tractor and machine 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 machine. Make sure all persons are clear of working area.
Safety Decals

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

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

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

818-055C
Slow Moving Vehicle Reflector
On the back of the center wing stop.;
1 total

838-615C
Amber Reflectors
Two on light bracket and two on center brace bar. Two on center frame. Two on rear of finishing attachment (not shown), visible from side while folded for transport;
8 total
**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**

1. Read and understand the Operator's Manual before using machine.
2. Stop tractor engine, lower machine to the ground, place 4x4 blocks in reed seat, set park brake. remove gearshift lever and wait for all moving parts to stop before removing, adjusting, moving, or changing any part of the tractor.
3. Keep hands, feet, and clothing away from all moving parts, and do not smoke while working near moving parts.
4. Do not allow children.
5. Clean the vehicle's exterior before and after use.
6. Check tire pressure before loading or carrying any equipment.
7. Change fluids when transporting during times of limited visibility.
8. Use hazard signals when transporting.
9. Install safety chains when attaching to trailer.
10. Review safety instructions with all operators annually.

**838-598C**
**Caution: Read Operator's Manual**
On front of hitch;
1 total
**Danger: Electrocution Hazard**

Front side of center wing brace (left side); 1 total

---

**Danger: Crushing Hazard**

On front (middle) of hitch; 1 total

---

**Warning: Overhead Wing Hazard**

On outside center of center and wing frames (both sides);
**WARNING**

**HIGH PRESSURE FLUID HAZARD**
- To prevent serious injury or death:
  - Release pressure on system before repairing or adjusting or disassembling.
  - Wear proper hand and eye protection when servicing for leaks. Use wood or cardboard instead of hands.
  - Keep all components in good repair.

**838-094C**
*Warning: High Pressure Fluid*
Front side of center wing brace (middle);
1 total

**P11645**
*Warning: Hand Crushing*
Front side of center wing brace (left & right side);
2 total

**NOTICE**

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

**838-613C**
*Notice: Transport Lock*
On outside center of center frame (both sides);
2 total
**WARNING**

**838-612C**

**Warning: Wings Could Fall Suddenly**

On front of wing stop (both sides); 2 total

**WARNING**

**838-606C**

**Warning: Tongue Rising**

On front of hitch; 1 total
Introduction

Great Plains welcomes you to our growing family of new product owners. The FCF8513M Field Cultivator 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

FCF8513M  13.41 metre  5-section

Description of Unit

The FCF8513M Field Cultivator is a five-section seedbed preparation tillage tool. Working width is 13.41 metres. The implement is designed for secondary field operations to smooth, level, eliminate weeds and incorporate chemicals. Various finishing attachments are available to further smooth, redistribute residue, firm soil and break clods.

Document Family

620-164M-ENG  Operator Manual (this manual)
620-164P  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 FCF8513M Field Cultivator 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.

For further assistance contact:

Product Support
Great Plains UK Ltd. Service Department
Woodbridge Road
Sleaford
Lincolnshire
NG34 7EW, ENGLAND

simba@greatplainsmfg.com
+44 (0)1529 304654
Preparation and Setup

This section helps you prepare your tractor and FCF8513M Field Cultivator for use, and covers tasks that need to be done seasonally, or when the tractor/Field Cultivator configuration changes.

Before using the Field Cultivator in the field, you must hitch it to a suitable tractor, inspect systems and level the Field Cultivator. Before using the Field Cultivator 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 “Field Cultivator 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 13 and 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 Field Cultivator 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 21. 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 tyres to pressure recommended and tighten wheel bolts as specified. See “Tyre Inflation Chart” on page 24.
- 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 Tractor to Field Cultivator

⚠️ DANGER

Crushing Hazard:
Do not stand or place any body part between Field Cultivator and moving tractor. You may be severely injured or killed by being crushed between the tractor and Field Cultivator. 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 Field Cultivator.
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 Field Cultivator 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” on page 17, for safe transporting.

Refer to Figure 3
4. Use jack 1 to raise and lower Field Cultivator tongue.

Refer to Figure 4
5. After hitching tractor to Field Cultivator, store jack on storage tube 2 on side of Field Cultivator tongue.
6. Secure Field Cultivator safety chain to an anchor on the tractor capable of pulling the unit.
Hydraulic Hose Hookup
Great Plains hydraulic hoses are color coded to help you connect hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same color.

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Lift (2 hoses)</td>
</tr>
<tr>
<td>Yellow</td>
<td>Fold (2 hoses)</td>
</tr>
</tbody>
</table>

Refer to Figure 5

Hose Couplings
To distinguish hoses on the same hydraulic circuit, refer to, "Hydraulic Hose Hookup" on page 14. The hydraulic hoses are color coded using caps and cable ties to identify the different circuits. Hoses with 1 tie indicate the cylinder side of the circuit while hoses with 2 ties indicate the rod side. Clean all hydraulic couplings and hook hoses to tractor.

First Time Field Adjustments

Pre-Leveling of Machine

Front to Rear Leveling
Refer to Figure 6
1. Pre-leveling of machine can be done on a concrete slab or level surface. Lower machine so sweeps are 1-2" off of ground on the center frame. Loosen locking nut and adjust turnbuckle at the front of machine 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.
2. Re-tighten locking nut.
Repeat same procedure for other side of center frame and 5-Section machines, adjust inner wing gauge wheels the same.

**WARNING**

**High Pressure Fluid Hazard:**
Relieve pressure before disconnecting hydraulic lines. Use 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. Only trained personnel should work on system hydraulics.
Wing Adjustment (3 or 5-Section Wings)

Refer to Figure 8

3. Set the 3-section wings and 5-section inner wings to match the depth of the center. This is done by adjusting the wing pull bar assembly 1 on each wing. Start by loosening the locking nut 2, then adjust the adjustment rod 3. Lengthen the adjustment rod 3 (turn counter-clockwise), to run shallower, shorten the bolt (turn clock-wise) to run deeper.

4. Tighten locking nut 2, back against clevis.

5. 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 tyres.

Outer Wing Adjustment

Refer to Figure 8

6. Set the wings to match the depth of the center. This is done by adjusting the adjustment bolt assembly 1 on each wing. Start by loosening the locking nut 2, then adjust the adjustment rod 3. Lengthen the adjustment rod 3 (turn counter-clockwise), to run shallower, shorten the bolt (turn clock-wise) to run deeper.

7. Tighten locking nut 2, back against clevis.

Note: 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 tyres.
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 FCF8513M Field Cultivator to the field.

- Carefully read “Field Cultivator Important Safety Information” on page 1.
- Lubricate Field Cultivator as indicated under “Lubrication” on page 21.
- Check all tyres for proper inflation.
- Check all bolts, pins, and fasteners. Torque as shown in “Tyre Inflation Chart” on page 24.
- Check Field Cultivator 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.
Transporting
See “Hitching Tractor to Field Cultivator” on page 13 before transporting the Field Cultivator.

Check Tractor Capacity and Configuration
• Consult your tractor manual for 3-point limitations.
• Add weights to tractor as required.

When determining the weight of your Field Cultivator, be sure to include the weight of any options.

Transport Checklist
❑ Plan the route. Avoid steep hills. Keep Clearances in mind.
❑ Make all electrical and hydraulic connections. See “Hitching Tractor to Field Cultivator” on page 13.
❑ Raise Field Cultivator.
❑ Be sure all transport locks are installed.
❑ Always have lights on for highway operation.
❑ Comply with all federal, state and local safety laws when traveling on public roads.

Travel with caution. Allow safe clearance. Remember that the Field Cultivator is wider than the tractor.

General Operation and In-Field Adjustments
1. 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.
2. 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 self-leveler. Never run the machine with the back lower (deeper) than the front. To adjust the machine from side to side, use the eyebolt on each wing. See “First Time Field Adjustments” on page 14.
3. The ideal working speed for the Field Cultivator is 9-11 km/h (6 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.
4. The Field Cultivator is designed as a secondary tillage tool and is designed to leave a finished seedbed following some form of fall or spring tillage. 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.

WARNING
Loss of Control Hazard:
Use a tractor rated for the load. Add tractor ballast as needed. Do not exceed 32 km/h. Towing the Field Cultivator with a vehicle that is not adequate, or at high speeds, could lead to loss of vehicle control. Loss of vehicle can result in a serious road accident, severe injury or death. Check that your tractor has enough to handle the weight of the Field Cultivator. Refer to your tractor’s operator manual for capacities and ballast requirements.
5. When you have the machine set to the desired working depth, set the depth stop slide on the depth control bar. This is located at the front of the machine on the brace bar. This will maintain a constant depth each time after raising and lowering the machine.

6. If after setting the depth stop, the detent on the tractor kicks out before the stop contacts the button on the depth stop, slow the hydraulic flow speed down. 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.

7. Adjust the drag to leave the desired results while maintaining the trash flow through the drag.

**Gauge Wheel Adjustment**

*Refer to Figure 9*

8. Once the machine has been adjusted and set to the desired working depth, you may now adjust the gauge wheels.

Note: The gauge wheels (if equipped) should be set in field position to be 12mm to 38mm off the ground.

9. Start by loosening set screws ① on each gauge wheel. Turn jack handle ②, to adjust spindle receiver ③. To lengthen the spindle receiver ③ (turn counter-clockwise), to run wheel closer to ground, to shorten the spindle receiver (turn clock-wise) to run further away from ground.

10. After adjusting gauge wheel to position needed, re-tighten the set screws ①.
Rear Attachment Settings

Spike Drag Settings

Refer to Figure 10

11. 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, one of the links in the first row of angles is turned over. 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.

Coil Tine Settings

Refer to Figure 11

12. On coil tine drags start with the top eyebolt (1) centered. Then level drag mainframe (2) by changing position of leveling bolts (3). There are two holes in the arm and four in the mainframe. One of these will get you where you need to be to be level. To lay teeth back, remove the clip pin (4) on each end and move strap adjustment by pushing the handle (5) forward. The strap has 5 holes in the arm that will let you lay the teeth back several degrees. If it is desired to set one row, usually the first, different to the rest as far as the angle is concerned, it can be adjusted individually by loosening the u-bolt and set-screw on each end of the drag bar. Down pressure on the drag is achieved by lengthening the eyebolt (1) on the top bracket. Depending on the amount of down pressure, you may need to re-level the mainframe.
Heavy Reel Adjustment

Refer to Figure 12

13. The reel ① down pressure may be adjusted by loosening the locking nut ② and then either increasing or decreasing the spring pressure ③. When the desired amount of spring pressure is set, re-tighten the locking nut ③. Note: It is recommended to run little or no down pressure in wet or sticky field conditions.

Refer to Figure 13

14. The bars on the reels are angled forward ④ 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 ⑤. 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 ④ as shown. Mounting in reverse ⑤ can damage reel in rocky soil.
Maintenance and Lubrication

Maintenance

1. Always use the transport lock when working on or doing maintenance to the Field Cultivator. 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 sparsely. 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 Field Cultivator, assistance is available.

Contact:

Product Support
Great Plains UK Ltd., Service Department
Woodbridge Road, Sleaford
Lincolnshire, NG34 7EW, UK
+44 (0)1529 304654

Lubrication

Wheel Bearing Hub

Type of Lubrication: Grease
Quantity: Sparingly and check for play
Walking Beam Pivot Bearings

One on each walking beam
Type of Lubrication: Grease (disassemble and re-pack with grease)
Quantity: Sparingly and check for endplay
If there is a lot of end play take apart, check bearings and re-pack.

Heavy Reel

One on each bearing
Type of Lubrication: Grease
Quantity: Grease every 50 hours, 2 to 3 pumps. In heavy conditions grease every 20 hours, 2 to 3 pumps.
## Appendix

### FC Specifications and Capacities

<table>
<thead>
<tr>
<th>Model No.</th>
<th>FCF8513M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweep Width</td>
<td>13.41 m</td>
</tr>
<tr>
<td>Number of Sweeps</td>
<td>75</td>
</tr>
<tr>
<td>Center Section</td>
<td>3.05 m</td>
</tr>
<tr>
<td>1st Wing</td>
<td>3.20 m</td>
</tr>
<tr>
<td>2nd Wing</td>
<td>1.98 m</td>
</tr>
<tr>
<td>Transport Width</td>
<td>4.57 m</td>
</tr>
<tr>
<td>Transport Height</td>
<td>4.27 m</td>
</tr>
<tr>
<td>Tyre Size</td>
<td>10.0/75-15 14 PLY</td>
</tr>
<tr>
<td>Horsepower (PTO)</td>
<td>225-300</td>
</tr>
<tr>
<td>Kilowatt</td>
<td>168-224</td>
</tr>
<tr>
<td>Weight (base machine)</td>
<td>7555 Kg</td>
</tr>
</tbody>
</table>
### Tyre Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tyre Size</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Wheels</td>
<td>10.0/75-15 14-ply</td>
<td>87 psi 6.0 bar</td>
</tr>
</tbody>
</table>

### Tyre Warranty Information

All tyres are warranted by the original manufacturer of the tyre. Tyre 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 Tyre Retailer.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Web site</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKT</td>
<td><a href="http://www.bkt-tire.com">www.bkt-tire.com</a></td>
</tr>
</tbody>
</table>
Hydraulic Connectors and Torque

Refer to Figure 14

All hoses and fitting on the machine are BSPP (British Standard Parallel Pipe). Leave any protective caps in place until immediately prior to making a connection.

<table>
<thead>
<tr>
<th>Pipe Thread</th>
<th>Turns from finger tight</th>
<th>Torque ft-lbs</th>
<th>Torque N-m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8&quot; - 28</td>
<td>2-3</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>1/4&quot; - 19</td>
<td>2-3</td>
<td>37</td>
<td>50</td>
</tr>
<tr>
<td>3/8&quot; - 19</td>
<td>2-3</td>
<td>46</td>
<td>63</td>
</tr>
<tr>
<td>1/2&quot; - 14</td>
<td>2-3</td>
<td>118</td>
<td>160</td>
</tr>
<tr>
<td>3/4&quot; - 14</td>
<td>2-3</td>
<td>148</td>
<td>200</td>
</tr>
<tr>
<td>1&quot; - 11</td>
<td>2-3</td>
<td>250</td>
<td>340</td>
</tr>
<tr>
<td>1 1/4&quot; - 11</td>
<td>1 1/2-2 1/2</td>
<td>332</td>
<td>450</td>
</tr>
<tr>
<td>1 1/2&quot; - 11</td>
<td>1 1/2-2 1/2</td>
<td>413</td>
<td>560</td>
</tr>
</tbody>
</table>
# Torque Values Chart

## Bolt Head Identification

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-tpi(^a)</td>
<td>N-m(^b) ft-lb(^d)</td>
<td>N-m</td>
<td>ft-lb</td>
</tr>
<tr>
<td>1/8-20</td>
<td>7.4</td>
<td>5.6</td>
<td>11</td>
</tr>
<tr>
<td>1/4-28</td>
<td>8.5</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>5/32-18</td>
<td>15</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>5/32-24</td>
<td>17</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>5/32-16</td>
<td>27</td>
<td>20</td>
<td>42</td>
</tr>
<tr>
<td>3/32-24</td>
<td>31</td>
<td>22</td>
<td>47</td>
</tr>
<tr>
<td>7/64-14</td>
<td>43</td>
<td>32</td>
<td>67</td>
</tr>
<tr>
<td>7/64-20</td>
<td>49</td>
<td>36</td>
<td>75</td>
</tr>
<tr>
<td>1/8-13</td>
<td>66</td>
<td>49</td>
<td>105</td>
</tr>
<tr>
<td>7/16-20</td>
<td>75</td>
<td>55</td>
<td>115</td>
</tr>
<tr>
<td>9/32-12</td>
<td>95</td>
<td>70</td>
<td>150</td>
</tr>
<tr>
<td>9/32-18</td>
<td>105</td>
<td>79</td>
<td>165</td>
</tr>
<tr>
<td>7/32-11</td>
<td>130</td>
<td>97</td>
<td>205</td>
</tr>
<tr>
<td>5/32-18</td>
<td>150</td>
<td>110</td>
<td>230</td>
</tr>
<tr>
<td>7/64-10</td>
<td>235</td>
<td>170</td>
<td>360</td>
</tr>
<tr>
<td>5/32-16</td>
<td>260</td>
<td>190</td>
<td>405</td>
</tr>
<tr>
<td>5/32-9</td>
<td>225</td>
<td>165</td>
<td>585</td>
</tr>
<tr>
<td>7/64-14</td>
<td>250</td>
<td>185</td>
<td>640</td>
</tr>
<tr>
<td>1-8</td>
<td>340</td>
<td>250</td>
<td>875</td>
</tr>
<tr>
<td>1-12</td>
<td>370</td>
<td>275</td>
<td>955</td>
</tr>
<tr>
<td>1/4-7</td>
<td>480</td>
<td>355</td>
<td>1080</td>
</tr>
<tr>
<td>1/4-12</td>
<td>540</td>
<td>395</td>
<td>1210</td>
</tr>
<tr>
<td>1/4-7</td>
<td>680</td>
<td>500</td>
<td>1520</td>
</tr>
<tr>
<td>1/4-12</td>
<td>750</td>
<td>555</td>
<td>1680</td>
</tr>
<tr>
<td>1/8-6</td>
<td>890</td>
<td>655</td>
<td>1990</td>
</tr>
<tr>
<td>1/8-12</td>
<td>1010</td>
<td>745</td>
<td>2270</td>
</tr>
<tr>
<td>1/8-6</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
</tr>
<tr>
<td>1/8-12</td>
<td>1330</td>
<td>980</td>
<td>2970</td>
</tr>
</tbody>
</table>

## Bolt Size

<table>
<thead>
<tr>
<th>Grade</th>
<th>Class 5.8</th>
<th>Class 8.8</th>
<th>Class 10.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.8</td>
<td>4</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>8.8</td>
<td>5</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>10.9</td>
<td>6</td>
<td>9</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>N-m</th>
<th>ft-lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5 X 0.8</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>M6 X 1</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>M8 X 1.25</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>M8 X 1</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>M10 X 1.5</td>
<td>33</td>
<td>24</td>
</tr>
<tr>
<td>M10 X 0.75</td>
<td>39</td>
<td>29</td>
</tr>
<tr>
<td>M12 X 1.75</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>M12 X 1.5</td>
<td>60</td>
<td>44</td>
</tr>
<tr>
<td>M12 X 1</td>
<td>90</td>
<td>66</td>
</tr>
<tr>
<td>M14 X 2</td>
<td>92</td>
<td>68</td>
</tr>
<tr>
<td>M14 X 1.5</td>
<td>99</td>
<td>73</td>
</tr>
<tr>
<td>M16 X 2</td>
<td>145</td>
<td>105</td>
</tr>
<tr>
<td>M16 X 1.5</td>
<td>155</td>
<td>115</td>
</tr>
<tr>
<td>M18 X 2.5</td>
<td>195</td>
<td>145</td>
</tr>
<tr>
<td>M18 X 1.5</td>
<td>220</td>
<td>165</td>
</tr>
<tr>
<td>M20 X 2.5</td>
<td>280</td>
<td>205</td>
</tr>
<tr>
<td>M20 X 1.5</td>
<td>310</td>
<td>230</td>
</tr>
<tr>
<td>M24 X 3</td>
<td>480</td>
<td>355</td>
</tr>
<tr>
<td>M24 X 2</td>
<td>525</td>
<td>390</td>
</tr>
<tr>
<td>M30 X 3.5</td>
<td>960</td>
<td>705</td>
</tr>
<tr>
<td>M30 X 2</td>
<td>1060</td>
<td>785</td>
</tr>
<tr>
<td>M36 X 3.5</td>
<td>1730</td>
<td>1270</td>
</tr>
<tr>
<td>M36 X 2</td>
<td>1880</td>
<td>1380</td>
</tr>
</tbody>
</table>

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.

Wheel Bolt Torque Values - 270Nm

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620-164M-ENG  
02/07/2014

25199
Warranty

**WARRANTY**

**TERMS AND CONDITIONS**

In this warranty Great Plains UK Ltd., is referred to as “the Company”.

1. Subject to the provisions of this warranty the Company warrants each new machine sold by it to be sold free from any defect in material or workmanship for a period of 12 months from date of installation with the end-user.

Some specific items have additional warranty over and above the standard 12 months. Details of these can be obtained upon request directly from the distributor or Great Plains UK Ltd.

2. If the machine or part thereof supplied by the Company is not in accordance with the warranty given in clause 1 the Company will at its option:

   (a) make good the machine or part thereof at the Company’s expense, or
   (b) make an allowance to the purchaser against the purchase price of the machine or part thereof, or
   (c) accept the return of the machine and at the buyers option either:
       i) repay or allow the buyer the invoice price of the machine or part thereof, or
       ii) replace the machine or part thereof as is reasonably practical.

3. This warranty shall not oblige the Company to make any payment in respect of loss of profit or other consequential loss or contingent liability of the Purchaser alleged to arise from any defect in the machine or impose any liability on the Company other than that contained in clause 2.

4. Any claim under this warranty must be notified to the Company in writing specifying the matters complained of within 14 days from the date of repair.

5. Any claim under this warranty must be made by the original purchaser of the machine and is not assignable to any third party.

6. If the purchaser hires out the machine to any third party the warranty shall apply only to matters complained of within 14 days from the date of repair as if the period of 90 days were substituted for the period of 12 months.

7. The warranty will cease to apply if:

   (a) any parts not made, supplied or approved in writing by the Company are fitted to the machine or any repair is carried out to the machine other than by or with the express written approval of the Company or
   (b) any alterations not expressly authorized by the Company in writing are made to the machine or
   (c) the machine is damaged by accident or
   (d) the machine is abused or overloaded or used for a purpose or load beyond its design capabilities, or used in conjunction with a tractor whose power output capability exceeds the stated implement power requirement by more than 40%. For the purpose of these terms and conditions, “stated implement power requirement” refers to wheeled tractors unless specifically stated. These power requirements should be reduced by 20% when used in conjunction with tracked tractors.
   (f) the machine is operated as part of a ‘cultivation train’ where more than one implement is being towed, without the express written approval of Great Plains UK Ltd.
   (g) any maintenance is not carried out in accordance with the service schedules in the operator’s manual.
   (h) the Installation and Warranty Registration Certificate is not received by Great Plains UK Ltd., Service Dept., Woodbridge Road, Sleaford, Lincolnshire, England, NG34 7EW, within 7 days of installing a new machine.