Pre-Delivery Manual

8323, 8328, 8332, 8336,
8539, 8544, 8548, 8551, 8556 & 8560
Field Cultivator, Constant Level

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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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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.

Use Adequate Lifting Means

The frame sections and gangs of this machine are extremely heavy. If using multiple lifters, make sure each is rated for at least its share of the load.

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 the “Safety Decals” section of the Operators Manual.
▲ 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.

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.
Shutdown and Storage

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

Tire Safety

Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.
▲ When inflating tires, use a clip-on chuck and extension hose long enough for you to stand to one side—not in front of or over tire assembly. Use a safety cage if available.
▲ When removing and installing wheels, use wheel-handling equipment adequate for weight involved.

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 machine 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.
Introduction

The Field Cultivator has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help the customer get years of satisfactory use from the machine.

Description of Unit

The 8323-8560FCC Field Cultivator, is a three or five-section seedbed preparation tillage tool. Working width ranges from 23 to 60 feet. 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.

Models Covered

8323FCC  23-Foot  3-section
8328FCC  28-Foot  3-section
8332FCC  32-Foot  3-section
8336FCC  36-Foot  3-section
8539FCC  39-Foot  5-section
8544FCC  44-Foot  5-section
8548FCC  48-Foot  5-section
8551FCC  51-Foot  5-section
8556FCC  56-Foot  5-section
8560FCC  60-Foot  5-section

Document Family

560-483Q-ENG Assembly Manual
560-483Q  Pre-Delivery Manual (this document)
560-483M  Operator Manual
560-483P  Parts Manual

Tools Required

• Basic Hand Tools
• Torque Wrench
• Fork Truck, Overhead Hoist or Loader

Pre-assemble Checklist

1. Before assembling, read and understand “Important Safety Information” in front part of this manual.
2. Have at least two people on hand while assembling.
3. Make sure area is level and free of obstructions (preferably an open concrete area).
4. Have all major components
5. Have all fasteners and pins shipped with machine.
Using This Manual

This manual was written to help you assemble and prepare the new machine for the customer. The manual includes instructions for assembly and setup. Read this manual and follow the recommendations for safe, efficient and proper assembly and setup.

An operator’s and parts manual is also provided with the new machine. Read and understand “Important Safety Information” and “Operating Instructions” in the operator’s manual before assembling the machine. Refer to the parts manual for proper part’s identification. As a reference, keep the operator’s and part’s manual on hand while assembling.

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

Definitions

The following terms are used throughout this manual.

NOTICE

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

Useful information related to the preceding topic.

Right-hand and left-hand as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.
Shipping
The Field Cultivator will be shipped pre-assembled as shown.
• The Field Cultivator will be shipped with shipping stands that will not need to be returned to Great Plains.
• Wings will be connected to center frame and unfolded in field position.
• All hydraulics will be connected and purged.
• Shank mount assemblies will be attached to frames in proper locations.
• Shank assemblies will be shipped in a box on a pallet.
• Finishing attachments (if equipped), will be pre-assembled and banded to pallet.

Unloading
Be sure the truck is on level ground, preferably concrete.

Centering components:
The Field Cultivator is very heavy, be sure and use 2, 8000# fork trucks to unload machine. Be sure and center fork truck or chains (overhead hoist) on components so they won’t slide and cause injury.

Unload Smaller Items First
Unloading the Field Cultivator is a potentially dangerous operation.
Reduce risk and complications by first unloading
1. the finishing attachments
2. the misc. boxes
3. the Field Cultivator (described in the next section)

Unload Field Cultivator
4. Place these components well out of the maneuvering area needed for unloading the Field Cultivator.
5. Double-check that all chains and tie-down straps have been released and stowed.
6. Set parking brake on trailer tractor.
7. On some models you will need to hook the machine up to a hydraulic source and fold the machine completely in the transport position before removing from trailer.
8. Slowly lift the Field Cultivator off trailer bed using two fork lifts.
9. Stop lifting about 12” above the bed.
10. Have the truck driver slowly pull the trailer straight out from under the Field Cultivator.
11. Making sure to keep level from front to back and side to side, slowly lower the Field Cultivator.
12. Lower the Field Cultivator down until the shipping stands are about 12” off ground.
13. Remove shipping stands.
14. Slowly lower Field Cultivator until it resting on center transport tires and sweeps.

Unpacking Boxes
Position boxes in area that you can maneuver components up to machine to assembly.
15. Carefully remove banding from boxes.
16. Carefully remove banding from finishing reels.
17. Locate and identify all components before assembling.

Further Assistance
Great Plains Manufacturing, Inc. wants you to be satisfied with your new Turbo Chisel Narrow. If for any reason you do not understand any part of this manual or are otherwise dissatisfies with the product please contact:
Great Plains Service Department
1525 E. North St.
PO Box 5060
Salina, KS 67402-5060
Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.
Install Hitch Assembly
Refer to Figure 3

18. Attach hitch assembly 1 to brace bar with 1 1/4 flat washers 2 (one on outside of hitch, both sides), 1 1/4 Gr. 8 hex bolt 3 and 1 1/4 top lock nut.

19. Attach hitch jack 4 to front jack tube as shown to support front of tongue.

20. Fasten back side of turnbuckle assembly 5 to h-bracket, with 1 x 9 Gr. 8 hex bolt 6 and 1 top lock nut. Fasten front side of turnbuckle assembly to ears of hitch assembly with 1 x 4 1/2 pin 7, 1.5 machine washer and 5/16 x 2 cotter pin.

21. Route 30' light harness 8 and hydraulic hoses 9 (that are rolled up on front of brace bar), along hitch assembly (close to threaded blocks) as shown. Secure with stackable hose clamps 10, 5/16 x 2 hex bolts 11 (for three clamps, 5/16 x 1 1/4 for two clamps or 5/16 x 5/8 for one clamp) and 5/16 lock washers.

Position hoses in clamps to where they have enough slack to go around ears on hitch and won’t get pinch when hitch pivots when machine is raised up and down.

22. Fasten hose wrap 12 around light harness and hoses as shown.

23. Bolts may be tightened to specs, See “Torque Values Chart” on page 11.

Install K-Flex Shanks
Refer to Figure 4

24. If machine is equipped with magnum shanks, See “Install Magnum Shanks” on page 8.

25. The shank mounts will be shipped in correct location from factory. If something got moved during shipping, go to layout section of “Operator’s Manual” for proper placement.

26. Locate shank assemblies from misc. box and remove the 5/8 x 1 3/4 bolt 1 from shank assembly 2.

27. Slide shank assembly 2 through slot in shank mount 3 and align holes as shown below.


29. Bolt 1 may be tightened to specs, See “Torque Values Chart” on page 11.

30. Repeat same procedure for rest of shanks.
Install Magnum Shanks

Refer to Figure 5

31. The shank mounts will be shipped in correct location from factory. If something got moved during shipping, go to the layout section of “Operator’s Manual” for proper placement.

32. The \( 1\frac{1}{2} \times 11\frac{1}{2} \) bolt ₁ will need loosened clear up. The \( \frac{3}{4} \) hex jam nut ₃ should be shipped a little loose so the shank cradle can be pivoted to install the \( \frac{5}{8} \times 2 \) bolt ₂.

33. Locate shank assemblies from misc. box and remove the \( \frac{5}{8} \times 1\frac{3}{4} \) bolt ₃ from shank assembly ₄.

34. Slide shank assembly ₃ through shank cradle in shank mount ₄ and align holes as shown below.

35. Re-attach \( \frac{5}{8} \times 1\frac{3}{4} \) bolt ₃, secure with \( \frac{5}{8} \) lock nut.

36. Bolt ₂ may be tightened to specs, See “Torque Values Chart” on page 11.

   Re-tighten \( 1\frac{1}{2} \times 11\frac{1}{2} \) bolt ₁ until threads bottom out. Be sure and tighten \( \frac{3}{4} \) hex jam nut ₃ until thread bottom out to ensure that hole doesn’t wear excessively.

37. Repeat same procedure for rest of shanks.

Install Gauge Wheel

Refer to Figure 6

Some models will be shipped without the gauge wheels installed.

38. Start by installing the wheel arm mount ₁ to the plates on wing frame with \( \frac{5}{8} \times 2 \) hex bolts ₂, \( \frac{5}{8} \) lock washers and \( \frac{5}{8} \) nuts.

39. Slide screw jack ₃ down through the wheel arm mount plate, secure with \( 1\frac{1}{2} \times 1\frac{1}{4} \) hex bolts ₄ and \( 1\frac{1}{2} \) top lock nuts.

40. Slide the spindle receiver ₅ inside the wheel arm mount, align holes, secure with \( \frac{3}{4} \times 4 \) hex bolt ₆, \( \frac{3}{4} \) lock washer and \( \frac{3}{4} \) nut. Install two \( \frac{5}{8} \times 1\frac{1}{4} \) hex bolts ₇ to welded nuts on wheel arm mount.

41. Slide 6-bolt hub assembly ₈ into spindle receiver, align holes, secure with \( \frac{5}{16} \times 2\frac{13}{16} \) clevis pin ₉ and \( \frac{5}{8} \times 1 \) cotter pin.

42. Attach the 9.5L x 15, 8 ply, wheel/tire assembly ₉ to 6-bolt hub assembly and secure with 9/16 lug nuts ₁₀.

43. Tighten bolts to specs, See “Torque Values Chart” on page 11.
Install Rear Hitch (optional)

Refer to Figure 7

The rear tow hitch will be shipped with big components banded together and bolts will be in a box. Carefully un-band the components.

44. Attach left (2) and right (1) rear hitch arms, rear hitch truss (4), rear truss support (5) to center frame using 5/8 x 1 1/2 bolts (6), 5/8 x 3 1/32 x 5 1/2 u-bolts (7), secure with 5/8 lock washers and nuts.

Do not tighten any bolts until every thing is installed.

45. Now install the rear hitch frame (3) using 5/8 x 1 1/2 bolts (6), 5/8 x 4 1/32 x 4 1/4 u-bolts (8), secure with 5/8 lock washers and nuts.

46. The bolt on sleeve assembly with rigid or flex slide (9), may be fastened using 5/8 x 3 1/32 x 4 1/2 u-bolt (10), secure with 5/8 lock washers and nuts.

47. Tighten all bolts to specs, See “Torque Values Chart” on page 11.

48. Route hoses and light harness along hitch and frame with hose clamps and hose wraps, provided.

Be sure hoses and light harness is fastened securely so they don’t drag or get pinched.
Completing Setup

49. If the Field Cultivator is equipped with an optional finishing attachment, refer to "Parts Manual" for parts breakdown.

50. Once the options are installed, fold the Field Cultivator to check for clearance and interferences. Slowly fold Field Cultivator while watching that hoses and wiring harnesses do not become pinched or kinked while watching for interferences.

Double check that all bolts are tightened to specs, See "Torque Values Chart" on page 11. Consult the operating instructions, “Operator’s Manual”, for the first time field adjustments before going to the field.
## Appendix - Reference Information

### Torque Values Chart

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<td>8.5</td>
<td>6</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
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<td>15</td>
<td>11</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
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<td>17</td>
<td>13</td>
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<td>75</td>
<td>55</td>
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<tr>
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<td>66</td>
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<tr>
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<td>55</td>
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<td>$\frac{9}{16}\text{-}12$</td>
<td>95</td>
<td>70</td>
<td>150</td>
<td>110</td>
</tr>
<tr>
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<td>105</td>
<td>79</td>
<td>165</td>
<td>120</td>
</tr>
<tr>
<td>$\frac{5}{8}\text{-}11$</td>
<td>130</td>
<td>97</td>
<td>205</td>
<td>150</td>
</tr>
<tr>
<td>$\frac{5}{8}\text{-}18$</td>
<td>150</td>
<td>110</td>
<td>230</td>
<td>170</td>
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<tr>
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<td>235</td>
<td>170</td>
<td>360</td>
<td>265</td>
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<td>260</td>
<td>190</td>
<td>405</td>
<td>295</td>
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<td>165</td>
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<td>640</td>
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<td>250</td>
<td>875</td>
<td>645</td>
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<td>1-12</td>
<td>370</td>
<td>275</td>
<td>955</td>
<td>705</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}7$</td>
<td>480</td>
<td>355</td>
<td>1080</td>
<td>795</td>
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<td>540</td>
<td>395</td>
<td>1210</td>
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<td>500</td>
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<td>555</td>
<td>1680</td>
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<td>890</td>
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<td>1990</td>
<td>1470</td>
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<tr>
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<td>1010</td>
<td>745</td>
<td>2270</td>
<td>1670</td>
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<tr>
<td>1</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
<td>1950</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}12$</td>
<td>1330</td>
<td>980</td>
<td>2970</td>
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<tr>
<th>Bolt Size</th>
<th>Bolt Head Identification</th>
<th>Class 5.8</th>
<th>Class 8.8</th>
<th>Class 10.9</th>
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<tr>
<td>mm x pitch</td>
<td>N·m</td>
<td>ft-lb</td>
<td>N·m</td>
<td>ft-lb</td>
</tr>
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<td>M 5 X 2.8</td>
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<td>3</td>
<td>6</td>
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<tr>
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<td>M 6 X 1</td>
<td>7</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>$\frac{5}{16}\text{-}18$</td>
<td>M 8 X 1.25</td>
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<td>12</td>
<td>26</td>
</tr>
<tr>
<td>$\frac{5}{16}\text{-}24$</td>
<td>M 8 X 1</td>
<td>18</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>$\frac{3}{8}\text{-}16$</td>
<td>M10 X 1.5</td>
<td>33</td>
<td>24</td>
<td>52</td>
</tr>
<tr>
<td>$\frac{3}{8}\text{-}24$</td>
<td>M10 X 0.75</td>
<td>39</td>
<td>29</td>
<td>61</td>
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<tr>
<td>$\frac{7}{16}\text{-}14$</td>
<td>M12 X 1.75</td>
<td>58</td>
<td>42</td>
<td>91</td>
</tr>
<tr>
<td>$\frac{7}{16}\text{-}20$</td>
<td>M12 X 1.5</td>
<td>60</td>
<td>44</td>
<td>95</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}13$</td>
<td>M12 X 1</td>
<td>90</td>
<td>66</td>
<td>105</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}20$</td>
<td>M14 X 2</td>
<td>92</td>
<td>68</td>
<td>145</td>
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<tr>
<td>$\frac{9}{16}\text{-}12$</td>
<td>M14 X 1.5</td>
<td>99</td>
<td>73</td>
<td>155</td>
</tr>
<tr>
<td>$\frac{9}{16}\text{-}18$</td>
<td>M16 X 2</td>
<td>145</td>
<td>105</td>
<td>225</td>
</tr>
<tr>
<td>$\frac{5}{8}\text{-}11$</td>
<td>M16 X 1.5</td>
<td>155</td>
<td>115</td>
<td>240</td>
</tr>
<tr>
<td>$\frac{5}{8}\text{-}18$</td>
<td>M18 X 2.5</td>
<td>195</td>
<td>145</td>
<td>310</td>
</tr>
<tr>
<td>$\frac{3}{4}\text{-}10$</td>
<td>M18 X 1.5</td>
<td>220</td>
<td>165</td>
<td>350</td>
</tr>
<tr>
<td>$\frac{3}{4}\text{-}16$</td>
<td>M20 X 2.5</td>
<td>280</td>
<td>205</td>
<td>440</td>
</tr>
<tr>
<td>$\frac{7}{8}\text{-}9$</td>
<td>M20 X 1.5</td>
<td>310</td>
<td>230</td>
<td>650</td>
</tr>
<tr>
<td>$\frac{7}{8}\text{-}14$</td>
<td>M24 X 3</td>
<td>480</td>
<td>355</td>
<td>760</td>
</tr>
<tr>
<td>1</td>
<td>M24 X 2</td>
<td>525</td>
<td>390</td>
<td>830</td>
</tr>
<tr>
<td>1-12</td>
<td>M30 X 3.5</td>
<td>960</td>
<td>705</td>
<td>1510</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}7$</td>
<td>M30 X 2</td>
<td>1060</td>
<td>785</td>
<td>1680</td>
</tr>
<tr>
<td>$\frac{1}{2}\text{-}12$</td>
<td>M36 X 3.5</td>
<td>1730</td>
<td>1270</td>
<td>2650</td>
</tr>
<tr>
<td>1</td>
<td>M36 X 2</td>
<td>1880</td>
<td>1380</td>
<td>2960</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.
Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tire Size</th>
<th>Inflation</th>
</tr>
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<tbody>
<tr>
<td>Gauge Wheel</td>
<td>9.5L x 15&quot; 8-Ply</td>
<td>44 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>303 kPa</td>
</tr>
<tr>
<td>Transport/Center/Wing</td>
<td>9.5L x 15&quot; 8-Ply</td>
<td>44 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>303 kPa</td>
</tr>
<tr>
<td>Transport/Center</td>
<td>11L x 15&quot; 12-Ply</td>
<td>52 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>359 kPa</td>
</tr>
<tr>
<td>Transport/Center</td>
<td>11L x 15&quot; Load F</td>
<td>90 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>621 kPa</td>
</tr>
<tr>
<td>Transport/Center</td>
<td>12.5L x 15&quot; F-Ply</td>
<td>90 psi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(621 kPa)</td>
</tr>
</tbody>
</table>

Tire Warranty Information

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

- **Manufacturer/Web site**
  - Firestone: [www.firestoneag.com](http://www.firestoneag.com)
  - Gleason: [www.gleasonwheel.com](http://www.gleasonwheel.com)
  - Galaxy: [www.atgtire.com](http://www.atgtire.com)
  - Titan: [www.titan-intl.com](http://www.titan-intl.com)
  - BKT: [www.bkt-tire.com](http://www.bkt-tire.com)

Tires Chart

<table>
<thead>
<tr>
<th>Model Numbers</th>
<th>Center Frame</th>
<th>1st Wing</th>
<th>2nd Wing</th>
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<tbody>
<tr>
<td></td>
<td>Tire Size</td>
<td>Qty</td>
<td>Tire Size</td>
</tr>
<tr>
<td>8323 - 8328</td>
<td>9.5L–15 8 ply</td>
<td>4</td>
<td>9.5L–15 8 ply</td>
</tr>
<tr>
<td>8332 - 8336</td>
<td>11L-15 12 ply</td>
<td>4</td>
<td>9.5L–15 8 ply</td>
</tr>
<tr>
<td>8539 - 8548</td>
<td>11L-15 F ply</td>
<td>4</td>
<td>9.5L–15 8 ply</td>
</tr>
<tr>
<td>8551 - 8560</td>
<td>12.5L-15 F ply</td>
<td>4</td>
<td>9.5L–15 8 ply</td>
</tr>
</tbody>
</table>

Models showing 4 tires per section have walking tandems on those sections.
Hydraulic Connectors and Torque

Refer to Figure 8 (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.
  - Apply liquid pipe sealant for hydraulic applications.
  - Do not use tape sealant, which can clog a filter and/or plug an orifice.

- **JIC** - Joint Industry Conference (SAE J514)
  - Note straight threads \( \frac{1}{2} \) and the \( 37^\circ \) cone \( \frac{5}{8} \) on “M” fittings (or \( 37^\circ \) flare on “F” fittings).
  - Use no sealants (tape or liquid) on JIC fittings.

- **ORB** - O-Ring Boss (SAE J514)
  - Note straight threads \( \frac{3}{4} \) and elastomer O-Ring \( \frac{7}{8} \).
  - Prior to installation, to prevent abrasion during tightening, lubricate O-Ring with clean hydraulic fluid.
  - Use no sealants (tape or liquid) on ORB fittings.

- ORB fittings that need orientation, such as the ell depicted, also have a washer \( \frac{8}{8} \) and jam nut \( \frac{9}{9} \) (“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.

---

### Hydraulic Connectors and Torque Values

<table>
<thead>
<tr>
<th>Dash Size</th>
<th>Fitting</th>
<th>N-m</th>
<th>Ft-Lbs</th>
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<tbody>
<tr>
<td>-4</td>
<td>( \frac{1}{4} )-18 NPT</td>
<td>1.5-3.0 turns past finger tight</td>
<td></td>
</tr>
<tr>
<td>-5</td>
<td>( \frac{1}{4} )-20 JIC</td>
<td>19-20</td>
<td>14-15</td>
</tr>
<tr>
<td>-5</td>
<td>( \frac{1}{4} )-20 ORB w/jam nut</td>
<td>12-16</td>
<td>9-12</td>
</tr>
<tr>
<td>-5</td>
<td>( \frac{1}{2} )-20 ORB straight</td>
<td>19-26</td>
<td>14-19</td>
</tr>
<tr>
<td>-6</td>
<td>( \frac{5}{16} )-18 JIC</td>
<td>24-27</td>
<td>18-20</td>
</tr>
<tr>
<td>-6</td>
<td>( \frac{5}{16} )-18 ORB w/jam nut</td>
<td>16-22</td>
<td>12-16</td>
</tr>
<tr>
<td>-6</td>
<td>( \frac{5}{16} )-18 ORB straight</td>
<td>24-33</td>
<td>18-24</td>
</tr>
<tr>
<td>-8</td>
<td>( \frac{3}{4} )-16 JIC</td>
<td>37-53</td>
<td>27-39</td>
</tr>
<tr>
<td>-8</td>
<td>( \frac{3}{4} )-16 ORB w/jam nut</td>
<td>27-41</td>
<td>20-30</td>
</tr>
<tr>
<td>-8</td>
<td>( \frac{3}{4} )-16 ORB straight</td>
<td>37-58</td>
<td>27-43</td>
</tr>
</tbody>
</table>
3-Section Hydraulic Lift Layout
3-Section Hydraulic Fold Layout
5-Section Hydraulic Lift Layout

Black Extend to V1 on Rebound Valve

Black Retract to V2 on Rebound Valve

Clamps

Rebound Valve

Depth Stop Valve

C1 to Depth Stop Valve

Depth Stop Valve to Tee, Base End Center Frame Cylinders

C2 to Tee, Rod End Wing Frame Cylinders

Clamp

Tee, Base End

Tee, Rod End
5-Section Hydraulic Lift Layout
5-Section Hydraulic Fold Layout
5-Section Hydraulic Fold Layout
8323FCC Machine Layout
8328FCC Machine Layout
8332FCC Machine Layout
8336FCC Machine Layout
8539FCC Machine Layout
8539FCC Machine Layout
8544FCC Machine Layout
8544FCC Machine Layout
8548 FCC Machine Layout
8548FCC Machine Layout
8551FCC Machine Layout
8551FCC Machine Layout
8556FCC Machine Layout
8556FCC Machine Layout
8560FCC Machine Layout
8560FCC Machine Layout
8323FCC S4T Spike Drag HR Layout
8328FCC S4T Spike Drag HR Layout
8332FCC S4T Spike Drag HR Layout
8336FCC S4T Spike Drag HR Layout
8539FCC S4T Spike Drag HR Layout
8539FCC S4T Spike Drag HR Layout
8544FCC S4T Spike Drag HR Layout
8548FCC S4T Spike Drag HR Layout
8551FCC S4T Spike Drag HR Layout
8551FCC S4T Spike Drag HR Layout
8556FCC S4T Spike Drag HR Layout
8556FCC S4T Spike Drag HR Layout
8560FCC S4T Spike Drag HR Layout
8560FCC S4T Spike Drag HR Layout
8323FCC S5T Spike Drag Layout
8328FCC S5T Spike Drag Layout
8332 FCC S5T Spike Drag Layout
8336FCC S5T Spike Drag Layout
8539FCC S5T Spike Drag Layout
8539FCC S5T Spike Drag Layout
8544FCC S5T Spike Drag Layout
8544FCC S5T Spike Drag Layout
8548FCC S5T Spike Drag Layout
8548FCC S5T Spike Drag Layout
8551FCC S5T Spike Drag Layout
8551FCC S5T Spike Drag Layout
8556FCC S5T Spike Drag Layout
8560FCC S5T Spike Drag Layout
8560FCC S5T Spike Drag Layout
8328FCC S3T Spike Drag w/Reel Layout
8332FCC S3T Spike Drag w/Reel Layout
8336FCC S3T Spike Drag w/Reel Layout
8539FCC S3T Spike Drag w/Reel Layout
8544FCC S3T Spike Drag w/Reel Layout
8544FCC S3T Spike Drag w/Reel Layout
8548FCC S3T Spike Drag w/Reel Layout
8548FCC S3T Spike Drag w/Reel Layout
8551FCC S3T Spike Drag w/Reel Layout
8551FCC S3T Spike Drag w/Reel Layout
8556FCC S3T Spike Drag w/Reel Layout

Diagram of 8556FCC S3T Spike Drag w/Reel Layout.
8556FCC S3T Spike Drag w/Reel Layout
8560FCC S3T Spike Drag w/Reel Layout
8323FCC CH4B Coil Tine Drag Layout
8328FCC CH4B Coil Tine Drag Layout
8332FCC CH4B Coil Tine Drag Layout
8336FCC CH4B Coil Tine Drag Layout
8539FCC CH4B Coil Tine Drag Layout
8539FCC CH4B Coil Tine Drag Layout
8544FCC CH4B Coil Tine Drag Layout
8544 FCC CH4B Coil Tine Drag Layout
8548FCC CH4B Coil Tine Drag Layout
8548FCC CH4B Coil Tine Drag Layout
8551FCC CH4B Coil Tine Drag Layout
8551FCC CH4B Coil Tine Drag Layout

![Diagram of 8551FCC CH4B Coil Tine Drag Layout](image-url)
8556FCC CH4B Coil Tine Drag Layout
8556FCC CH4B Coil Tine Drag Layout
8560FCC CH4B Coil Tine Drag Layout
8560FCC CH4B Coil Tine Drag Layout
8323FCC CH3A Coil Tine w/ Reel Drag Layout
8328FCC CH3A Coil Tine w/ Reel Drag Layout
8332FCC CH3A Coil Tine w/ Reel Drag Layout
8336FCC CH3A Coil Tine w/ Reel Drag Layout
8539FCC CH3A Coil Tine w/ Reel Drag Layout
8539FCC CH3A Coil Tine w/ Reel Drag Layout
8544FCC CH3A Coil Tine w/ Reel Drag Layout
8548FCC CH3A Coil Tine w/ Reel Drag Layout
8548FCC CH3A Coil Tine w/ Reel Drag Layout
8551FCC CH3A Coil Tine w/ Reel Drag Layout
8551FCC CH3A Coil Tine w/ Reel Drag Layout
8556FCC CH3A Coil Tine w/ Reel Drag Layout
8556FCC CH3A Coil Tine w/ Reel Drag Layout
8560FCC CH3A Coil Tine w/ Reel Drag Layout
8560FCC CH3A Coil Tine w/ Reel Drag Layout