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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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.

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 Product using blocks and supports provided.
▲ Detach and store Product 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 product 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 product is a five-section seedbed preparation and planting tool all in one. Working width is 45 feet. The implement is designed for secondary field operations to smooth, level, eliminate weeds incorporate chemicals, apply fertilizer and drill seed.

Models Covered

FCA4500-5410  45-Foot 5-section 10" spacing
FCA4500-7275  45-Foot 5-section 7.5" spacing

Document Family

560-594Q-ENG  Assembly Manual
560-594Q  Pre-Delivery Manual (this document)
560-594M  Operator Manual
560-594P  Parts Manual

Tools Required

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

Pre-assembly 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 product.
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.

A parts manual is also provided with the new 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 product will be shipped pre-assembled as shown.
- The product 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 product is very heavy, be sure and use 2, 10,000# 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 product is a potentially dangerous operation.
Reduce risk and complications by first unloading
6. the finishing attachments
7. the misc. boxes
8. the product (described in the next section)

Unload product
9. Place these components well out of the maneuvering area needed for unloading the product.
10. Double-check that all chains and tie-down straps have been released and stowed.
11. Set parking brake on trailer tractor.
12. 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.
13. Slowly lift the product off trailer bed using two fork lifts.
14. Stop lifting about 12” above the bed.
15. Have the truck driver slowly pull the trailer straight out from under the product.
16. Making sure to keep level from front to back and side to side, slowly lower the product.
17. Lower the product down until the shipping stands are about 12” off ground.
18. Remove shipping stands.
19. Slowly lower product until it resting on the center transport tires and sweeps.

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

Further Assistance
Great Plains Manufacturing, Inc. wants you to be satisfied with your new product. If for any reason you do not understand any part of this manual or are otherwise dissatisfied with the product please contact:

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

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

Refer to Figure 3

23. 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.

24. Attach hitch jack ② to front jack tube as shown to support front of tongue.

25. Route light harness ⑤ and hydraulic hoses ⑥ (that are rolled up on front of brace bar), along hitch assembly (close to threaded blocks) as shown. Secure with stackable hose clamps ⑦, 5/16 x 2 hex bolts ⑧ (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. This hitch will attach to the back of the seed cart.

26. Fasten hose wrap ⑨ around light harness and hoses as shown.

27. Bolts may be tightened to specs, See “Torque Values Chart” on page 19.

Install Hitch Manifold

Refer to Figure 4

28. Use 1/2 x 6 Gr. 5 ⑩ and 1/2 flat washer, 1/2 lock washer and 1/2 hex nuts to secure the rear of the manifold ⑪ to the hitch ⑬.

29. The 1/2 x 10 Gr. 5 bolts ⑫, 2 flat washers, lock washers and hex nuts go underneath the front part of the hitch, thru the manifold bracket ⑬ to keep the front of the manifold in place.

30. If your machine has the fertilizer option you will need to install a second manifold ⑭. Use 5/8 x 1 1/2 Gr. 5 ⑮ lock washers and hex nuts to secure it to the bottom manifold ⑪.
Install K-Flex

- See layout section in “Appendix” for proper shank placement.

Refer to Figure 5

31. Slide k-flex shank mount 1 through slot in k-flex clamp 2. Slide these two parts over frame tube in proper location.
32. Align top hole in k-flex clip 3 with top hole in k-flex clamp 2, secure with 1/2 x 1 1/2 hex bolt 4, 1/2 lock washer and nut. Install 1/2 x 5 hex bolts 5, 1/2 lock washers and nuts.
33. Slide shank 6 through slotted hole in k-flex shank mount (1), secure with 5/8 x 2 hex bolt 7 and 5/8 top lock nut. Attach sweep 8 with 7/16 x 1 3/4 plow bolts 9, one, 7/16 flat washer 10 (top slotted hole) and 7/16 nylock nuts.
34. Tighten all bolts to specs, See “Torque Values Chart” on page 19.

Install Magnum Shank

- See layout section in “Appendix” for proper shank placement.

Refer to Figure 6

35. Loosen 1/2 x 1 1/2 hex bolt 11 clear up to get 5/8 x 2 hex bolt 11 installed.
37. Be sure the 3/4 nylock jam nut 13 is loose enough for shank cradle to pivot.
38. Slide shank 14 into shank cradle until holes are aligned, secure with 5/8 x 2 hex bolt 14 and 5/8 top lock nut.
39. Align sweep 15 with holes on shank 14, secure with 7/16 x 1 3/4 plow bolts 9, one, 7/16 flat washer 10 (top slotted hole) and 7/16 nylock nuts.
40. Re-tighten 1/2 x 1 1/2 hex bolt 11 until threads bottom out.

Notice

IMPORTANT(!) Be sure and tighten 3/4 nylock jam nut 13 until threads bottom out to insure that hole doesn’t wear excessively.
41. Tighten rest of bolts to specs, See “Torque Values Chart” on page 19.
Install Fertilizer Shank Option

Refer to Figure 7

42. If your machine has the fertilizer option then the shanks will have a fertilizer boot installed. The shank uprights will be installed as outlined on the previous page.

43. 7\(\frac{1}{16}\) x 2\(\frac{1}{4}\) Gr. 5 plow bolts 1 will be used to secure the boot 2 and the sweep 3 to the shank.

44. Bolts may be tightened to specs, See “Torque Values Chart” on page 19.

45. Repeat same procedure for rest of shanks.
Install Caster Style Gauge Wheel  

Refer to Figure 8

Machines will be shipped without the gauge wheels installed. Be sure and install the 1 x 5½ pin as shown with roll pin in slot on outside of pivot mount. See “Tire Inflation Chart” on page 20, for proper tire sizes for tire/wheel assembly.

46. Start by installing the LH or RH caster wheel arm and top caster wheel arm to the brackets on frames with 1 x 5½ gauge wheel pin, ⅞ flat washers and ⅞ lock nuts.

47. Fasten back side of turnbuckle assembly to LH or RH wing pull bar (level bar on center section), front side to lever to caster wheel arm with 1 x 3½/16 clevis pins and 3/16 x 2 cotter pins.

48. Attach the pivot mount assembly to caster wheel arms, secure with 1 x 5½ gauge wheel pins, ⅞ x 2 roll pins, ⅞ flat washers and ⅞ lock nuts.

49. Slide 6-bolt hub assembly into pivot mount assembly, align holes, secure with 5/16 x 3 hex bolt and 5/16 lock nut.

50. Attach the wheel/tire assembly to 6-bolt hub assembly and secure with 9/16 lug nuts.

51. Tighten bolts to specs, See “Torque Values Chart” on page 19.
See “Operator’s Manual” for proper adjustment of gauge wheel assembly.

Figure 8
Gauge Wheel (Caster Style)
Install Openers

Refer to Figure 9

1. The openers will be shipped assembled and attached to their respective attachment bars and will need to be installed with mounts on to the rear of the frame sections. See parts manual for the correct opener arm brackets.

52. Install the opener tubes to the cultivator frame sections using opener arm brackets. To mount opener arm bracket use 5/8 x 4 1/32 x 4 1/4 u-bolt, 5/8 lock washers and 5/8 hex nuts, and either opener arm mount or these mounts do not have a hydraulic cylinder.

53. Use opener arm brackets with 3/4 x 2 1/4 Gr5 hex bolt, 3/4 lock washers and 3/4 hex nuts, and opener arm mount, this mount does have a hydraulic cylinder and it should already be in place.

54. For outside wing openers use opener arm mount for the right side and opener arm mount for the left side. Use the corresponding opener arm bracket for mounting to the wings. Refer to the Parts Manual for parts drawing and list breakdown.

55. Use 3/4 x 3 1/32 x 4 1/2 u-bolt, 3/4 lock washer and 3/4 hex nuts, to mount all the opener tubes to opener mount arms. Use 1 x 7 Gr. 8 special thread hex bolt to attach all the mounting arms to the mounting brackets.

56. The hose holder bars will need to be installed. Use 1/2 x 3 1/32 x 4 u-bolt, 1/2 lock washer and nut to secure to the attachment bars. The fertilizer hose retainers simply snap on to the hose holder bar to keep the seed tubes in place. You may place these anywhere along the bar to keep the hoses from getting tangled.

Refer to the Operator Manual that came with your seed cart for seed rate information, and for instructions on how to set up the cart.

Blockage monitor has been connected in numerical order from left to right, starting on the outside left wing and moving to the right across the machine. For location “Appendix”.

Blockage monitor has been connected in numerical order from left to right, starting on the outside left wing and moving to the right across the machine.
Openers Seed Tube Set Up

Refer to Figure 10

#### If the seed tubes have not already been sized and attached to the towers you will need to route and cut the seed tubes that attached to the openers. See “Seed Tube Routing Layout FCA4500-4510” on page 40.

57. Park the Field Cultivator with the openers ① hanging off the side of a road or terrace.

58. Extend the openers ② all the way down, and make sure the towers ③ have been raise all the way up. This allows the hose length to be cut as long as needed to ensure that while the implement is in use it will have full range of motion. Towers will raise themselves when the machine is unfolded.

59. Attach the seed tube ④ to one of the ports on the tower ⑤.

60. Route the tube to the appropriate opener ⑥, be sure to run through the hose guide ⑦, cut the tube and attach to the opener seed tube ⑧. Tubes must be long enough for full range of motion (flexing down). If the tubes are too long they will plug or get pinched during folding. See “Seed Tube Routing Layout FCA4500-4510” on page 40 for tube routes.

61. After tubes are connected to the openers travel 20ft or more with the down pressure on the openers engaged, increase or decrease the pressure to get all the openers to run level across the whole machine.

**CAUTION**

*If seed towers on the wings do not retract during folding crack a hydraulic hose behind the check valve to release pressure on the towers. If this warning is ignored damage to the implement is certain.*

![Figure 10
Opener Seed Tubes](image)
Opener Hydraulics

Refer to Figure 11

The opener valve bracket, valves and hoses will be assembled and installed on the front of the machine. The bracket will need to be mounted on the front of the center frame section and the hoses routed along the machine.

62. Mount the valve bracket 1 using 1 x 4\(1\frac{1}{2}\) plate 2, and \(3\frac{3}{8}\) x 5\(1\frac{1}{2}\) hex bolts 3, \(3\frac{3}{8}\) flat washers, \(3\frac{3}{8}\) lock washers and \(3\frac{3}{8}\) hex nuts.

63. Route single hose that is connected to the counter balance valve 4 to the rear of the machine and connect to the bottom port on the bottom Double Tee Block 5 (see drawing insert). This hose connects to the rod end of the opener cylinders. This hose will have T-fittings for each cylinder.

64. Hoses A, B & C attach to the base end of the opener cylinders. Match the lettered hoses to the ports on the rear tee blocks. Ports A connect to the center cylinders. Ports B connect to the inside wing cylinders. Ports C connect to the outside wing cylinders.

65. Tighten bolts to specs, See “Torque Values Chart” on page 19 and bend cotter pin.

66. See “FCA4500-5410 Opener Layout” on page 26 for proper routing.
Attach Hose Clamps and Hose wraps

Refer to Figure 12

67. When all the hoses are hooked up and tightened properly, put hose clamps on hoses as shown.
68. Install hose wraps on hoses as needed.

Be sure and get hoses and light wiring harness fastened properly so they do not drag. Check to be sure there is enough slack in hinge area when folding machine the first time.

Hydraulic Handle Hook Up

The towers on the Field Cultivator will not retract during folding if the tractor does not have a live power pin in the 7 pin harness.

CAUTION

If towers on wings do not retract during folding, crack any hydraulic hose fitting behind the check valve to relieve pressure on the towers. If this warning is ignored damage to the implement is certain.

Figure 12
Hose Clamp Assembly

This photo shows how the cart will be hooked to the Tractor (See Cart Operator Manual for clarification.)

Figure 13
Cultivator to Cart Hydraulic Hook Up
Hydraulic Hose Hookup

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

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

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.

Hose Handles
Refer to Figure 14

70. To distinguish hoses on the same hydraulic circuit, refer to hose handles. The hose under an extended-cylinder symbol feeds a cylinder base end. The hose under a retracted-cylinder symbol feeds a cylinder rod end.

71. Once all hoses are tightened, hook hoses to tractor...
**Light Assembly**

*Refer to Figure 15*

72. Route light harness lead with valve led plug (1) from front of hitch (tractor plug to front), along same route as hydraulic hoses (fasten in same clamps and hose wraps as hoses). Plug one end of enhance light module (2) to small end of light harness lead (1). Plug bigger end of wishbone light harness (3) into other end of enhance light module (2). Route other ends over towards (marked left and right) the light mounting brackets as shown. The led plug on the harness lead plugs into the fold assist harness (7).

73. Mount red lamp lights (4) to top of light mounting brackets, with $\frac{1}{4} \times 1$ hex bolts (6) and $\frac{1}{4}$ lock nuts.

74. Mount amber lamp lights (5) to top of light brackets with the same $\frac{1}{4} \times 1$ hex bolts (6) and $\frac{1}{4}$ lock nuts.

75. Tighten all bolts to specs. Be sure and get all wiring harnesses fastened up securely with hose wraps or clamps (if routed close to hydraulic hoses) or use cable ties.

Refer to the Operator Manual that came with your seed cart for seed rate information, and for instructions on how to set up the cart.
Completing Setup

76. If the decals are not already in place they can now be installed.

77. See appropriate pages for decals in the “Parts Manual” for decal placement.

78. To install new decals:
   a. Clean the area on which the decal is to be placed.
   b. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.
   c. Slowly peel away top protective covering being careful not to pull decal from implement.

79. If machine has an optional finishing attachment, refer to the “Parts Manual” for parts break down and attachment layout drawings of this manual.

80. Be sure to consult the operating instructions, “Operator’s Manual”, for the first time field adjustments before going to the field.
### Torque Values Chart

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Bolt Head Identification</th>
<th>Torque Values Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade 2</td>
<td>Wheel Bolt Torque Values</td>
</tr>
<tr>
<td>20</td>
<td>7.4 5.6</td>
<td>$\frac{1}{2}^\circ$-20 (75-85ft-lbs)</td>
</tr>
<tr>
<td>28</td>
<td>8.5 6</td>
<td>$\frac{9}{16}^\circ$-18 (80-90ft-lbs)</td>
</tr>
<tr>
<td>18</td>
<td>15 11</td>
<td>$\frac{5}{8}^\circ$-18 (85-100ft-lbs)</td>
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<td>17 13</td>
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<td>16</td>
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### Bolt Size

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<th>N-m</th>
<th>ft-lb</th>
<th>Grade 8</th>
<th>N-m</th>
<th>ft-lb</th>
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Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tire Size</th>
<th>Inflation</th>
</tr>
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<tbody>
<tr>
<td>Center Transport</td>
<td>340/60R16.5</td>
<td>73 psi (503 kPa)</td>
</tr>
<tr>
<td>Wing Transport</td>
<td>9.5L x 15 8Ply</td>
<td>44 psi (303 kPa)</td>
</tr>
<tr>
<td>Gauge Wheels</td>
<td>11L x 15SL 12Ply</td>
<td>52 psi (359 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.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Web Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firestone</td>
<td><a href="http://www.firestoneag.com">www.firestoneag.com</a></td>
</tr>
<tr>
<td>Gleason</td>
<td><a href="http://www.gleasonwheel.com">www.gleasonwheel.com</a></td>
</tr>
<tr>
<td>Titan</td>
<td><a href="http://www.titan-intl.com">www.titan-intl.com</a></td>
</tr>
<tr>
<td>Galaxy</td>
<td><a href="http://www.atgtire.com">www.atgtire.com</a></td>
</tr>
<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 16 (a hypothetical fitting)

Leave any protective caps in place until immediately prior to making a connection.

- **NPT** - National Pipe Thread
  Note tapered threads, no cone/flare, and no O-ring.

- **JIC** - Joint Industry Conference (SAE J514)
  Note straight threads ④ and the 37-° cone ⑤ on “M” fittings (or 37° flare on “F” fittings).

- **ORB** - O-Ring Boss (SAE J514)
  Note straight threads ⑥ and elastomer O-Ring ⑦.

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 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.

<table>
<thead>
<tr>
<th>Dash Size</th>
<th>Fittings</th>
<th>Torque Values</th>
</tr>
</thead>
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<tr>
<td></td>
<td></td>
<td>N-m</td>
</tr>
<tr>
<td>4</td>
<td>1/4-18 NPT</td>
<td>1.5-3.0 turns past finger tight</td>
</tr>
<tr>
<td>5</td>
<td>1/2-20 JIC</td>
<td>19-20</td>
</tr>
<tr>
<td>5</td>
<td>1/2-20 ORB w/jam nut</td>
<td>12-16</td>
</tr>
<tr>
<td>5</td>
<td>1/2-20 ORB straight</td>
<td>19-26</td>
</tr>
<tr>
<td>6</td>
<td>9/16-18 JIC</td>
<td>24-27</td>
</tr>
<tr>
<td>6</td>
<td>9/16-18 ORB w/jam nut</td>
<td>16-22</td>
</tr>
<tr>
<td>6</td>
<td>9/16-18 ORB straight</td>
<td>24-33</td>
</tr>
<tr>
<td>8</td>
<td>3/4-16 JIC</td>
<td>37-53</td>
</tr>
<tr>
<td>8</td>
<td>3/4-16 ORB w/jam nut</td>
<td>27-41</td>
</tr>
<tr>
<td>8</td>
<td>3/4-16 ORB straight</td>
<td>37-58</td>
</tr>
</tbody>
</table>
Hydraulic Lift Layout
Hydraulic Lift Layout
Hydraulic Fold Layout
Tower Hydraulic & Bracket Layout
Tower Hydraulic & Bracket Layout
FCA4500 Opener Hydraulic Layout
FCA4500 Opener Hydraulic Layout
FCA4500-5410 Opener Layout
FCA4500-7275 Opener Layout
FCA4500-7275 Opener Layout
FCA4500-5410 & 7275 Machine Layout
FCA4500-5410 & 7275 Machine Layout
Fertilizer Tower Layout

Mount Fertilizer Tower tubes 3" lower for clearance
Fertilizer Tower Layout

Mount Fertilizer Tower tubes
3” lower for clearance

TP-69431
Fertilizer Tube Routing Layout

TP-69412
Fertilizer Tube Routing Layout
Seed Tube Routing Layout FCA4500-4510
Seed Tube Routing Layout FCA4500-4510

Reels Removed from Drawing just for clarification.
Match number on Tower to number on opener for hose length.
Seed tubes must go thru the tube guides before attaching to the Openers.
See Pg 12 for procedure to find hose lengths.
Seed Tube Routing Layout FCA4500-7275
Reels Removed from Drawing Just for clarification.
Match number on Tower to number on opener for hose length.
Seed tubes must go thru the tube guides before attaching to the Openers.
See pg 12 for procedure to find hose lengths.
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Great Plains | 560-594Q | 3/21/19
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