Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.
This product has been designed and constructed according to general engineering standards\(^a\). Other local regulations may apply and must be followed by the operator. We strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this product. Periodic reviews of this manual with all employees should be standard practice. For your convenience, we include this sign-off sheet so you can record your periodic reviews.

<table>
<thead>
<tr>
<th>Date</th>
<th>Employee Signature</th>
<th>Employer Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Standards include organizations such as the American Society of Agricultural and Biological Engineers, American National Standards Institute, Canadian Standards Association, International Organization for Standardization, EN Standards, and/or others.
# TABLE OF CONTENTS

1. Introduction .......................................................................................................................... 7  
   1.1. Overview .................................................................................................................. 8  
   1.1.1. Auger Power Source .................................................................................. 9  
   1.1.2. Grain Transfer Boot .................................................................................. 10  
   1.1.3. Grain Hopper ............................................................................................ 11  
   1.1.4. Auger Tube Hydraulic Lift ......................................................................... 13  

2. Safety .................................................................................................................................. 15  
   2.1. General Safety Information .................................................................................... 15  
   2.2. Assembly Safety ..................................................................................................... 16  
   2.3. Operation Safety .................................................................................................... 16  
   2.4. PTO Safety ............................................................................................................. 18  
   2.5. Hydraulic Safety ..................................................................................................... 19  
   2.6. Transport & Placement Safety ............................................................................... 20  
   2.7. Maintenance Safety ................................................................................................ 20  
   2.8. Safety Decals ......................................................................................................... 21  
   2.8.1. Decal Installation/Replacement ................................................................ 21  
   2.8.2. Safety Decal Locations and Details.......................................................... 21  

3. Assembly ............................................................................................................................ 27  
   3.1. General Assembly .................................................................................................. 27  
   3.2. Assemble the Auger Tube ...................................................................................... 29  
   3.2.1. Identify and Arrange Auger Tube Sections............................................... 29  
   3.2.2. Install Hydraulic Lift Cylinders .................................................................. 32  
   3.2.3. Connect Auger Tubes ............................................................................. 33  
   3.2.4. Install the Track Shoe and Track Stop ..................................................... 34  
   3.2.5. Install the Boot on the Auger tube ............................................................ 35  
   3.2.6. Install the Boot Tow Bar ........................................................................ 38  
   3.2.7. Install the Discharge Spout ....................................................................... 39  
   3.2.8. Set the Thrust Adjuster............................................................................. 39  
   3.2.9. Apply Logo and Model Decals on the Auger Tubes ................................. 40  
   3.3. Install Truss Support Towers and Truss Tubes...................................................... 41  
   3.4. Install Truss Cables .............................................................................................. 48  
   3.5. Assemble the Frame .............................................................................................. 50  
   3.6. Assemble the Wheel Hub and Install Tires ............................................................ 52  
   3.7. Connect the Auger Tube to the Frame ............................................................... 53  
   3.8. Install the Lift Cylinders and Cables ..................................................................... 55  
   3.9. Connect Hydraulic Hoses and Ball Valve ............................................................. 56  
   3.10. Connect the PTO Driveline .............................................................................. 59  
   3.11. Install the Low Profile Intake Hopper ............................................................... 60  
   3.12. Install the Hopper Lift Arm and Winch ............................................................. 63  
   3.13. Install the Hitch Jack ........................................................................................... 66  
   3.15. Auger-to-Tractor Hookup ................................................................................... 68
TABLE OF CONTENTS

4. Placement ........................................................................................................................... 71
   4.1. Placement Procedure ............................................................................................. 71
   4.2. Positioning Tractor for Right-angle Drive Operation ................................................ 75
   4.3. Lowering the auger .............................................................................................. 76

5. Operation ............................................................................................................................ 77
   5.1. Operator Controls ................................................................................................... 77
   5.2. Pre-Operation ......................................................................................................... 79
       5.2.1. Checklist ................................................................................................... 79
       5.2.2. PTO Drive ................................................................................................. 80
       5.2.3. Hydraulics ................................................................................................. 80
   5.3. Operating Procedures ............................................................................................ 81
       5.3.1. Initial Start-Up ........................................................................................... 81
       5.3.2. Normal Start.............................................................................................. 82
       5.3.3. Normal Shutdown ..................................................................................... 83
       5.3.4. Emergency Stop / Full-Tube Restart ........................................................ 84
       5.3.5. Lowering & Completion............................................................................. 84
       5.3.6. Reverser Operation .................................................................................. 85

6. Maintenance and Storage.................................................................................................. 89
   6.1. Maintenance Intervals ............................................................................................ 89
   6.2. Fluids and Lubricants ............................................................................................. 90
   6.3. Maintenance Procedures........................................................................................ 90
       6.3.1. Visual Inspection....................................................................................... 90
       6.3.2. Hydraulic Hose and Coupler Inspection ................................................... 91
       6.3.3. Machine Greasing..................................................................................... 91
       6.3.4. Hopper Lift Cable Inspection .................................................................... 94
       6.3.5. Winch and Pulley Servicing ...................................................................... 94
       6.3.6. Swing Tube Coupler Chain Servicing ..................................................... 95
       6.3.7. Boot and Hopper Chain Drive Servicing ................................................... 95
       6.3.8. Upper/Lower Gearbox Oil Level ............................................................... 97
       6.3.9. Speed Reducer Gearbox Oil Levels .......................................................... 97
       6.3.10. Machine Cleaning ................................................................................... 98
       6.3.11. Tire Pressure Check ............................................................................... 98
       6.3.12. Wheel Bearings Repack ......................................................................... 98
       6.3.13. Wheel Bolt Tightening .......................................................................... 98
       6.3.14. Truss Cable Adjustment .......................................................................... 98
       6.3.15. Changing Upper/Lower Gearbox Oil......................................................... 99
       6.3.16. Changing the Speed Reducer Gearbox Oil ............................................. 99
   6.4. Storage ................................................................................................................. 100

7. Troubleshooting ............................................................................................................... 101
8. Transport ................................................................................................................................. 103
   8.1. Transport Procedure ...................................................................................................... 103
9. Appendix ............................................................................................................................... 107
   9.1. Specifications .............................................................................................................. 107
   9.2. Bolt Torque Values ...................................................................................................... 108
Warranty .................................................................................................................................. 111
1. Introduction

Thank you for purchasing a Westfield grain auger. Before using, please read this manual and understand the various features of the equipment and precautions for efficient and safe operation.

Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is supplied on the inside front cover to record your safety reviews. Call your local distributor or dealer if you need assistance or additional information.

This manual should be regarded as part of the equipment. Suppliers of both new and second-hand equipment are advised to retain documentary evidence that this manual was provided with the machine.

<table>
<thead>
<tr>
<th>Serial Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

*Serial number is located on the lower tube.
1.1. OVERVIEW

MKX130 augers are equipped with standard features that include a hydraulically controlled main auger tube lift, a low-profile grain hopper (left or right side operation), service access doors, and a PTO shaft for auger power.

Available option kits include:

- Hydraulic Winch
- Hydraulic Power Swing for Hopper
- Electric Power Swing for Hopper
- Right Angle Drive
- 540 RPM PTO Reverser
- 1000 RPM PTO Drive and Reverser

Figure 1.1 MKX130 Series Auger (84’ model shown)
1.1.1. **Auger Power Source**

The power source for the auger is a standard 540 RPM tractor PTO (see Figure 1.2). An optional Right-Angle PTO Drive kit allows the auger to be powered by a tractor positioned at a 90 degree angle to the auger (Figure 1.3).

An optional 1000 RPM PTO Drive kit provides a speed reducer that allows use with 1000 RPM PTO tractors, as well as reverser capability that is used to rotate the auger flightings in the reverse direction (transferring grain in the auger tube back to the hopper).

An optional 540 RPM Reverser kit provides a similar reverser capability for 540 RPM PTO connections.

![Figure 1.2 Standard PTO](image1.png)

**Figure 1.2 Standard PTO**

![Figure 1.3 Right Angle PTO Drive Kit](image2.png)

**Figure 1.3 Right Angle PTO Drive Kit**
1.1.2. GRAIN TRANSFER BOOT

The grain transfer boot is located at the bottom of the main auger tube, and contains gearing for power transfer as well as flights for transferring grain.

PTO driveline connection (including connection to the optional 540 RPM PTO Reverser and 1000 RPM PTO Drive) is provided on the back of the boot, above the tractor hitch (and hitch jack).

The ball valve used to raise or lower the main auger tube is located on the side of the boot (see figure below), as is the manual winch used to raise and lower the grain hopper (see section 5.1. for further information on auger controls).

Several access hatches are provided for maintenance and repair, as well as an overflow panel on the swing-arm spout head and a clean-out hatch at the bottom of the boot.

Figure 1.4 Grain Transfer Boot
1.1.3. GRAIN HOPPER

The low-profile grain hopper is designed to be rolled into position to receive grain for transfer through the boot to the auger discharge spout. Ground clearance can be adjusted by raising or lowering the position of the hopper wheel axles (see “Install the Low Profile Intake Hopper” on page 60).

The grain hopper must be lifted and secured for transport using the hopper lift arm, winch (hydraulic or manual operation, according to the installed option), and transport chain and hook (see Figure 1.6).

The grain hopper provides service to the side of the auger that it is installed on, but the hopper, lift arm, and winch can be quickly reconfigured to install the hopper on the other side if required.

Do not approach, open or close the maintenance hatch located on the transition between the swing are tube and the hopper unless all power to the auger is locked out.

---

**DANGER**

**Rotating Auger Hazard**
Contact with rotating flighting will result in amputation or severe laceration.
DO NOT operate with guards removed or modified.
Keep hands and feet away from rotating auger.
Tie up long hair and remove jewellery.
DO NOT wear loose-fitting clothing or items that could become caught.
Shut off and lock out the power source before unplugging or cleaning.
Figure 1.5 Grain Hopper

Figure 1.6 Grain Hopper Lifted into Transport Position
1.1.4. Auger Tube Hydraulic Lift

The auger tube is raised and lowered using two single-acting hydraulic cylinders powered by the hydraulic supply of the connected tractor. The main auger tube is raised by extending the cylinders, and lowered by allowing the cylinders to retract. (see Figure 1.7).

A hydraulic ball valve mounted on the side of the grain pick-up boot controls flow of hydraulic fluid to the lift cylinders, and with appropriate use of the hydraulic controls on the connected tractor, allows the main auger tube to be raised, lowered, or locked at a specific height during operation (see “Operator Controls” on page 77).

Figure 1.7 Auger Tube Hydraulic Lift Cylinders
2. Safety

2.1. GENERAL SAFETY INFORMATION

The Safety Alert symbol identifies important safety messages on the product and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety messages.

Why is SAFETY important?

• Accidents disable and kill.
• Accidents cost.
• Accidents can be avoided.

SIGNAL WORDS: Note the use of the signal words DANGER, WARNING, CAUTION, and NOTICE with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates a hazardous situation that, if not avoided, could result in serious injury or death.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicates a potentially hazardous situation that, if not avoided, may result in property damage.</td>
</tr>
</tbody>
</table>
YOU are responsible for the SAFE use and maintenance of your equipment. YOU must ensure that you and anyone else who is going to work around the equipment understands all procedures and related SAFETY information contained in this manual.

Remember, YOU are the key to safety. Good safety practices not only protect you, but also the people around you. Make these practices a working part of your safety program.

Important: Below are general instructions that apply to all safety practices. Any instructions specific to a certain safety practice (e.g., Operational Safety), can be found in the appropriate section. Always read the complete instructional sections and not just these safety summaries before doing anything with the equipment.

- It is the equipment owner, operator, and maintenance personnel's responsibility to read and understand ALL safety instructions, safety decals, and manuals and follow them when assembling, operating, or maintaining the equipment. All accidents can be avoided.
- Equipment owners must give instructions and review the information initially and annually with all personnel before allowing them to operate this product. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use this equipment for its intended purposes only.
- Do not modify the equipment in any way without written permission from the manufacturer. Unauthorized modification may impair the function and/or safety, and could affect the life of the equipment. Any unauthorized modification of the equipment voids the warranty.
- Do not allow any unauthorized person in the work area.

2.2. ASSEMBLY SAFETY

- Read and understand the assembly instructions to get to know the sub-assemblies and hardware that make up the equipment before proceeding to assemble the product.
- Do not take chances with safety. The components are large, heavy, and can be hard to handle. Always use the proper tools, stands, jacks, and hoists for the job.
- Always have two or more people assembling the equipment. Because of the weight, do not attempt assembly alone.

2.3. OPERATION SAFETY

- Have another trained person nearby who can shut down the auger in case of accident. Always work with a second trained person around augers.
- Do not operate with any of the safety guards removed.
- Keep body, hair, and clothing away from moving parts. Stay away from intake during operation.
- Inspect lift cable before using auger. Replace if frayed or damaged. Make sure it is seated properly in cable sheaves and cable clamps are secure.
• Operate auger on level ground free of debris. If ground is uneven, anchor the auger to prevent tipping or upending.
• Augers are not insulated. Keep away from electrical lines. Electrocution can occur without direct contact.
• Support the discharge end and/or anchor the intake end before operating to prevent upending.
• Do not use auger as a hoist.
• Empty auger before raising or lowering.
• Lower auger at completion of operation or when not in use. Auger could drop rapidly in case of cable break or hydraulic failure (where applicable).
• Keep the work area clean and tidy.
• Do not get on or beneath auger when raising or lowering intake hitch jack, or when auger is supported by hitch jack.
• Do not operate auger with the service or cleanout doors open or unlatched.
2.4. PTO SAFETY

- Never use a PTO driveline without a rotating shield in good working order.
- Ensure PTO driveline is securely attached at both ends before operating.
- Before starting tractor, turn power to PTO to the off position (where applicable).
- Keep body, hair, and clothing away from rotating PTO driveline.
- Ensure the PTO driveline shields turn freely on the PTO driveline.
• Do not exceed operating speed of 540 rpm.
• Keep u-joint angles small and equal. Do not exceed recommended operating length for PTO driveline.

2.5. HYDRAULIC SAFETY

• Wear proper hand and face protection when searching for hydraulic leaks. Escaping fluid under pressure can penetrate the skin, causing serious injury like gangrene. In case of accident, see a doctor immediately.
• Fluid leaks in the hydraulic lift cylinders or hoses will allow the auger to lower inadvertently. Repair all leaks and breaks immediately. Rupture could cause damage and/or personal injury.
• A hydraulic lift is faster than a conventional hand crank—always clear area of personnel before raising or lowering.
• Do not disconnect hydraulic couplers when hydraulic system is pressurized. For the correct procedure, consult this manual or your tractor manual.
• Relieve pressure before unhooking hydraulic lines.
• Inspect hydraulic fittings and hoses for damage on a daily basis. Repair if damaged.
• Ensure that the hydraulic line(s) is (are) properly connected and secure.
• Keep hydraulic line(s) away from moving parts.
• Clean connections before connecting to equipment.
2.6. TRANSPORT & PLACEMENT SAFETY

- Transport auger in full down position with slight tension on cable.
- Properly place hitch pin and securely attach safety chain. Use a type of hitch pin that will not allow auger to separate from towing vehicle.
- Always attach an SMV (slow moving vehicle) sign before transporting auger. Equip the auger with the necessary lights for transportation where required by law. Always use hazard warning flashers on the tractor/towing vehicle when transporting unless prohibited by law.
- Always travel at a safe speed, never exceeding 15 mph (24 km/hr). Reduce speed on rough surfaces and be cautious when turning corners or meeting traffic.
- Before raising/lowering/moving the auger, make sure the area around the auger is clear of obstructions and/or untrained personnel. Never allow anyone to stand on or beneath auger while transporting or placing auger.
- Do not transport auger on slopes greater than 20°.
- Wheels must be free to move when raising or lowering auger.
- Never attempt to move auger manually. To do so will result in serious injury.
- Before moving auger, check and double check for overhead obstructions and/or electrical wires. Electrocution can occur without direct contact.
- Disconnect PTO driveline from tractor before moving auger or tractor and secure in transport saddle (where applicable).
- Raise intake feed hopper into transport position and lock hopper lift winch before transporting or moving auger. Intake feed side of hopper must face main auger when in transport position.
- Do not operate auger with intake hopper in transport position. This will cause damage to the u-joint.

2.7. MAINTENANCE SAFETY

- Shut down and lock out all power before attempting maintenance of any kind. Turn off the tractor and disconnect the PTO driveline and hydraulic hoses from the tractor.
- After maintenance is complete, replace and secure all safety guards and safety devices, and if applicable, service doors and cleanout covers.
- Support auger tube before attempting maintenance on the undercarriage assembly. Auger should be in full down position for maintenance.
2.8. SAFETY DECALS

- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available free of charge from your distributor, dealer, or factory.

2.8.1. DECAL INSTALLATION/REPLACEMENT

1. Decal area must be clean and dry, with a temperature above 50°F (10°C).
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using the sign backing paper.

2.8.2. SAFETY DECAL LOCATIONS AND DETAILS

Replicas of the safety decals that are attached to the equipment and their messages are shown in the figure(s) that follow. Safe operation of the equipment requires that you familiarize yourself with the various safety decals and the areas or particular functions that the decals apply to, as well as the safety precautions that must be taken to avoid serious injury, death, or damage.

Please review the decals shown. If your auger does not have these decals, they are available upon request. Please specify which decals you need.

* Westfield reserves the right to update safety decals without notice. Safety decals may not be exactly as shown.
**WARNING**

HIGH PRESSURE FLUID HAZARD

Hydraulic fluid can cause serious injury if it penetrates the skin. If it does, see a doctor immediately.

- Relieve pressure before unhooking hydraulic line.
- Wear proper hand and eye protection, and use wood or cardboard, not hands, when searching for leaks.

**WARNING**

To prevent serious injury or death:
- Keep away from rotating cable sheaves and lift cables.
- Inspect lift cables periodically; replace if damaged.
- Inspect cable clamps periodically; tighten if necessary.

---

Figure 2.2
Figure 2.3 PTO and Towbar Safety Decals

**NOTICE**

- Disconnect PTO driveline from tractor before moving equipment. If attached, driveline will bottom out, severely damaging the CV u-joint and lower flight shaft. See manual for maintenance.

**DECAL #17531**

To prevent damage during auger-to-tractor hookup:
- Follow dimensions above for correct auger-to-tractor hookup.
- Auger must be on level ground and in full down position when measuring.
- Adjust drawbar as needed.
- See operation manual for complete details.
Figure 2.4 Auger Tube and Hopper Safety Decals
Figure 2.5 Boot Safety Decals
3. Assembly

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

Before beginning assembly, familiarize yourself with all the sub-assemblies and hardware making up the auger. Have all parts on hand and arrange them for easy access. Carry out assembly in a large open area with a level surface.

**Important:** Always have 2 or more people assembling the equipment. Because of the weight, do not attempt assembly alone.

Augers are available in various combinations. In most cases, the following instructions will apply to all augers. Where the assembly information varies, additional instructions will be included and will be indicated with an arrow.

**Note:** Non-driveline options such as the hydraulic winch and hydraulic/electric power swing are compatible with all other options that can be installed on the auger. Driveline options (1000 RPM PTO Drive and Reverser, Right angle Drive, 540 RPM PTO Reverser) are not compatible with other driveline options, but are compatible with non-driveline options such as the hydraulic winch and hydraulic/electric power swing.

### 3.1. GENERAL ASSEMBLY

1. Select an assembly area that is level, has a firm or hard surface and is free of debris. Be sure it is large enough to allow access from all sides when the components are being assembled.
2. If assembling inside a building, be sure the ceiling is at least 14’ (4.27 m) high to provide clearance when installing the undercarriage
3. Bring all the tools, blocks, stands, jacks, and hoists to the assembly area before starting.
4. The following tools and equipment are required to assemble the machine:
   - 11-14 Support stands (tube section supports, three per tube)
   - Four Saw horses (1200 lb / 544.3 kg bearing capacity)
   - One Standard socket set and wrench set
   - One Torque wrench
   - One Standard 25’ (7.62 m) tape measure
   - One 2’ level
   - One 8” level magnetic
   - Two C-clamps or vise grips
   - One Picker with minimum reach of 12’ (3.66 m) 4000-6000 lb (1814 - 2722 kg) lifting capacity
   - One 100’ (30 m) measuring tape
   - One Tire gauge
   - One Tire chuck
• 6-10 Wood blocks (2x4’s cut at 4’ lengths)
• High-quality SAE approved extreme pressure rated bearing grease
• Impact wrench and sockets
• 2+ Steel Punches (for aligning bolt holes)

See Table 3.1. for a list of assembly procedures.

Table 3.1. Assembly Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and Arrange Auger Tube Sections</td>
<td>page 29</td>
</tr>
<tr>
<td>Install Hydraulic Lift Cylinders</td>
<td>page 32</td>
</tr>
<tr>
<td>Connect Auger Tubes</td>
<td>page 33</td>
</tr>
<tr>
<td>Install the Track Shoe and Track Stop</td>
<td>page 34</td>
</tr>
<tr>
<td>Install the Boot on the Auger tube</td>
<td>page 35</td>
</tr>
<tr>
<td>Install the Boot Tow Bar</td>
<td>page 38</td>
</tr>
<tr>
<td>Install the Discharge Spout</td>
<td>page 39</td>
</tr>
<tr>
<td>Set the Thrust Adjuster</td>
<td>page 39</td>
</tr>
<tr>
<td>Apply Logo and Model Decals on the Auger Tubes</td>
<td>page 40</td>
</tr>
<tr>
<td>Install Truss Support Towers and Truss Tubes</td>
<td>page 41</td>
</tr>
<tr>
<td>Install Truss Cables</td>
<td>page 48</td>
</tr>
<tr>
<td>Assemble the Frame</td>
<td>page 50</td>
</tr>
<tr>
<td>Assemble the Wheel Hub and Install Tires</td>
<td>page 52</td>
</tr>
<tr>
<td>Connect the Auger Tube to the Frame</td>
<td>page 53</td>
</tr>
<tr>
<td>Install the Lift Cylinders and Cables</td>
<td>page 55</td>
</tr>
<tr>
<td>Connect Hydraulic Hoses and Ball Valve</td>
<td>page 56</td>
</tr>
<tr>
<td>Connect the PTO Driveline</td>
<td>page 59</td>
</tr>
<tr>
<td>Install the Low Profile Intake Hopper</td>
<td>page 60</td>
</tr>
<tr>
<td>Install the Hopper Lift Arm and Winch</td>
<td>page 63</td>
</tr>
<tr>
<td>Install the Hitch Jack</td>
<td>page 66</td>
</tr>
<tr>
<td>Install the Plastic Manual Container</td>
<td>page 67</td>
</tr>
<tr>
<td>Auger-to-Tractor Hookup</td>
<td>page 68</td>
</tr>
</tbody>
</table>
3.2. ASSEMBLE THE AUGER TUBE

3.2.1. IDENTIFY AND ARRANGE AUGER TUBE SECTIONS

1. Align tube sections on a series of support stands, placing a support stand at the end of each tube (see Figure 3.1 through Figure 3.3 for correct tube positioning, according to auger model).
2. As tubes sections are added, make sure that support stands are at equal heights across all tubes to ensure that tubes are level with each other. Otherwise, use some form of shim to keep the tubes level across all of the support stands.

Important: 3. Strap tubes to the support stands to prevent the tubes from rolling off the stands.

![Figure 3.1 MKX130-84 Tube Identification and Order](image)
Figure 3.2 MKX130-94 Tube Identification and Order
Figure 3.3 MKX130-114 Tube Identification and Order
3.2.2. INSTALL HYDRAULIC LIFT CYLINDERS

1. Identify the tube section where the hydraulic lift cylinders install, and rotate the section so that the cylinder mount brackets are facing up.

2. Slide the cylinder rod guide (27562) onto the end of the track closest to where the lift cylinders install. Ensure that triangular gussets of ram guide are facing the discharge end.

3. Position one lift cylinder on the right side of welded brackets on the lower end of auger tube (see Figure 3.4 for correct position). Attach with four 7/16” x 1-1/4” bolts and locknuts. **Tighten securely.**

   **Note:** The hydraulic lift cylinders must be positioned with the rod end towards the discharge end of auger.

4. Position the second lift cylinder on the remaining position beside the first cylinder on the welded bracket, and secure it with four 7/16” x 1-1/4” bolts and locknuts. **Tighten securely.**

5. Slide the cylinder rod guide (27562) toward the lift cylinders until the rod ends pass through the two holes provided on the cylinder rod guide, and then insert a 5/16” x 2” roll pin (18079) into the hole on the end of each cylinder rod to prevent separation of rods and cylinder arm guide.

6. Rotate the auger tube section so that the lift cylinders are facing down, and ensure that the tube is secure on its supports.

7. Strap the tube in place and proceed with connecting auger tube sections together.

---

**Figure 3.4 Installing the Lift Cylinders**
3.2.3. CONNECT AUGER TUBES

Important: Always strap tubes to the support stands to prevent the tubes from rolling off the stands.

Note: Assemble the auger tube starting with the discharge section and working toward the intake section.

1. Bolt tube sections together (see Figure 3.5 for details), working from the spout end (upper tube) toward the discharge end (lower tube):
   a. Align flightings to ensure a continual spiral of auger surface, and connect flight shafts with 1/2” x 4” bolts [18947] and 1/2” locknuts [17750].
   b. As flight shafts are connected, slide tube sections together and secure with 7/16” X 1-1/4” GR8 bolts [18698] and 7/16” locknuts [17593]. Use a single 5/8” x 2-3/4 bolt and locknut for the flange section where the two sections of tube track meet.

![Figure 3.5 Connecting Auger Tubes Sections and Flights](image-url)
3.2.4. INSTALL THE TRACK SHOE AND TRACK STOP

**Important:** For the MKX130-84/94, install the track stop at the set of bolt holes closest to the spout. For the MKX130-114, install the track stop at the set of bolt holes farthest from the spout.

1. Slide the track shoe onto the track.
2. Slide track shoe along full length of track to make sure there is no binding, and that track ends are properly aligned where tube sections meet.
3. Attach the track stop using eight 7/16" x 1-1/4" bolts [18698] and 7/16" locknuts [17593].

---

**Figure 3.6 Track Shoe and Track Stop**
3.2.5. INSTALL THE BOOT ON THE AUGER TUBE

**WARNING**

Components are heavy and create a crushing hazard if improperly handled. Be sure to use proper hoisting equipment and procedures, and ensure lifting apparatus is secure. Lock out the lifting apparatus before working around or under the raised components; failure to do so may cause serious personal injury.

**Note:** The boot gearbox is sent from the factory filled half way with 2.5 L (0.66 gal) EP90 gear oil. Before further assembly, check oil level to make certain the gearbox is half full. Add oil if necessary. Do not use grease.

1. The boot flighting comes pre-installed on the end of the lower tube flighting shaft (See Figure 3.7). Ensure that the flighting is fastened with a 5/8" X 5-1/2" bolt and 1/2" locknuts before proceeding.

![Figure 3.7 Check Boot Flight Bolt and Nut](image)

2. Slip the Boot Attach Plate over the boot flighting. Position the plate with flat edge facing up (See Figure 3.8), and fasten with five 7/16" x 1-1/4" GR8 bolts [18698] inserted from the boot side of the flange and 7/16" locknuts [17593], two bolts at the top of the plate, and three bolts at the bottom of the plate.

3. Slip the boot assembly over the lower flighting shaft and attach it to the flange on the lower tube with 14 7/16" x 1-1/4" GR8 bolts [18698] and 7/16" locknuts [17593] (see Figure 3.8).
3. ASSEMBLY WESTFIELD - GRAIN AUGERS

MKX130-84/94/114

Figure 3.8 Install Boot on Auger Tube

4. Install the Lower Sprocket as follows:
   a. Slide the 2" wide rim flat washer [20084] onto lower flight shaft.
   b. Slide the lower bearing over the flighting shaft, and bolt it loosely in place
      with four 5/8" X 2" bolts [19991] and 5/8" locknuts [19600].
   c. Ensure that the flight shaft shoulder is seated against washer and lower
      bearing.
   d. Position the lock collar tightly against the bearing, then tighten the collar set
      screw against the flighting shaft.
   e. Install the 3/8" x 3-3/8" square key [18541] on the flighting shaft, then slide
      the lower sprocket [18525] onto the flighting shaft. Align lower sprocket
      face with upper sprocket face using a straight edge, then tighten set
      screws.

NOTE: ALL BOLTS ARE
7/16" X 1-1/14" GR8 BOLTS
[18698], AND ALL NUTS ARE
7/16" LOCKNUTS [17593]
Figure 3.9 Installing Boot Bearing, Sprocket, and Chain

**Note:** It is recommended you use a thread locking compound that meets or exceeds Loctite Blue® on all set screws.

**Important:** To prevent premature failure of the lower bearing, ensure it has been assembled in the correct sequence.

5. Loop the drive chain around upper and lower sprockets. Push the flighting shaft down until the chain is tensioned to within about 1/4” deflection, then tighten the 4 bolts on the bottom bearing. Oil the chain lightly.
3.2.6. INSTALL THE BOOT TOW BAR

1. Insert the tow bar into the boot channel (see Figure 3.10), and secure the back end loosely with a 3/4" x 5-1/2" bolt [29997] and 3/4" locknut [19601] through the back hole in the boot channel (under the boot).

2. Tightly secure the middle of the tow bar in the channel with a 3/4" x 3-1/2" x 5" U-bolt [28487] and two 3/4" locknuts [19601].

3. Fully tighten the 3/4" nut on the 3/4" x 5-1/2" bolt.

Figure 3.10 Installing the Boot Tow Bar
3.2.7. INSTALL THE DISCHARGE SPOUT

**Discharge Spout**

1. Align the discharge spout over the opening in the upper tube.
2. Attach the discharge spout with two 7/16” x 1-3/4” bolts [19981] and 7/16” locknuts [17593].

![Figure 3.11 Installing the Discharge Spout](image)

3.2.8. SET THE THRUST ADJUSTER

1. Remove the upper bearing lock collar (if necessary).
2. Slide the lock collar and bushing onto the shaft and attach the 1-1/2” nut.
3. Turn the nut until it is snug against the bushing, then turn it so that the shaft moves an additional 1/4” away from the top plate.
4. Secure the lock collar and tighten the set screw.
5. Install the cover over the two longer 5/8” bolts. Secure with two 5/8” whiz-nuts.

![Figure 3.12 Thrust Adjuster](image)
3.2.9. Apply Logo and Model Decals on the Auger Tubes

1. Prepare surface by cleaning thoroughly with soap and water. Surface must be clean and free of dirt, grime, rust and oil. To clean oily surface, wipe with clean cloth and solvent cleaner or isopropyl alcohol.

2. Position the decal on the tube and apply masking tape along the top, creating a gate hinge. Figure A demonstrates.

3. Remove backing paper from decal 6" from the top and use the squeegee to adhere decal to the tube, as seen in Figure B. Start at the top center of the decal and work your way outward both left and right using overlapping strokes.

4. As you work your way down the decal, peel back the backing paper 6" at a time. Repeat Step 3 until the entire decal has been applied to the tube. See Figure C as an example.

5. Once the entire decal has been properly adhered to the tube, remove tape hinge from front of decal. Remove the front application tape at a sharp 180° angle.

6. Inspect the entire decal for air pockets; if found, remove them by punching a tiny hole with a pin and then squeegee the surface flat.

7. As a final process, squeegee the corners and edges of the decal to ensure proper adhesion and to prevent premature peeling.

Figure 3.13 Logo and Model Decal Locations
3.3. INSTALL TRUSS SUPPORT TOWERS AND TRUSS TUBES

**Note:** *Due to rigidity of the tubular trussing, do not put an upward bow in the auger. Assemble trussing with main auger tube straight/level and well supported over its length. When assembling the truss system, DO NOT tighten any bolts until all components are in place.*

- See Figure 3.14 and Figure 3.17 for the MKX130-84.
- See Figure 3.15 and Figure 3.18 for the MKX130-94.
- See Figure 3.16 and Figure 3.19 for the MKX130-114.

When assembling the truss system, **do not tighten** any bolts until all components are in place.

1. As shown in the appropriate figures (Figure 3.14, Figure 3.15, Figure 3.16), attach pairs of low and high truss tower brackets to the truss-attach brackets welded to the auger tube, using four 7/16” x 1-1/4” bolts and locknuts per truss tower pair.

2. As shown in detail of Figure 3.17/Figure 3.18/Figure 3.19, thread a 1” Hex nut as far as possible onto the threaded rod end of a truss adjust tube.

3. Insert the threaded rod end of the truss adjust tube into the truss anchor bracket, and bolt the opposite end to a tube connect plate that has been first bolted to the adjacent truss pair.

4. Thread a second 1” nut a short distance onto the threaded rod end of the truss adjuster tube.

5. According to the diagram for your specific model, work from one end of the tube toward the opposite end:
   a. Install truss tubes and tube connect plates between truss tower pairs.
   b. Install cross-brace tubes between tube connect plates and tabs between truss tower pairs.

**Note:** *Single cross-brace tubes are used between the two truss towers closest the ends of the main auger tube, and two cross-brace tubes are required between all other truss tower sets.*

**Note:** *Attach cross brace tubes to same side of the tab as they are attached to at the truss tower.*

6. Tighten all truss, tube, and cross-brace bolts and nuts, but do not tighten the 1” nuts on the long and short adjuster tubes.

7. Install pairs of cross-brace clamps where the cross-brace tubes cross in an “X” pattern.

8. Adjust the nuts on the threaded adjuster tubes (long and short) until both ends of the auger tubes have a slight (barely noticeable) upward bow.

9. Rotate the loose 1” nut on both adjusters tubes toward the other nut until they are locked tightly against opposite sides of the tube adjuster plate or truss anchor brackets that they are installed on.
### Table 3.2. Truss Towers and Tubes Parts Reference

<table>
<thead>
<tr>
<th>Fig Ref</th>
<th>Part #</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17459</td>
<td>Low truss tower bracket</td>
</tr>
<tr>
<td>2</td>
<td>17460</td>
<td>High truss tower bracket</td>
</tr>
<tr>
<td>3</td>
<td>18698</td>
<td>7/16&quot; x 1-1/4&quot; bolts</td>
</tr>
<tr>
<td></td>
<td>17593</td>
<td>7/16&quot; locknuts</td>
</tr>
<tr>
<td>4</td>
<td>----------</td>
<td>Truss anchor brackets</td>
</tr>
<tr>
<td>5</td>
<td>20080</td>
<td>1&quot; nut</td>
</tr>
<tr>
<td>6</td>
<td>21301</td>
<td>MKX130-84/94 Truss adjust tube</td>
</tr>
<tr>
<td></td>
<td>21300</td>
<td>MKX130-114 Truss adjust tube</td>
</tr>
<tr>
<td>7</td>
<td>21306</td>
<td>Five-bolt tube connect plate</td>
</tr>
<tr>
<td>8</td>
<td>21304</td>
<td>Seven-bolt tube connect plate</td>
</tr>
<tr>
<td>9</td>
<td>21305</td>
<td>Seven-bolt tube connect plate</td>
</tr>
<tr>
<td>10</td>
<td>19545</td>
<td>7/16&quot; x 2-1/4&quot; GR8 bolts</td>
</tr>
<tr>
<td></td>
<td>17593</td>
<td>7/16&quot; locknuts</td>
</tr>
<tr>
<td>11</td>
<td>21310</td>
<td>MKX130-84/94 truss tube</td>
</tr>
<tr>
<td></td>
<td>21303</td>
<td>MKX130-114 truss tube</td>
</tr>
<tr>
<td>12</td>
<td>27484</td>
<td>5/8&quot; X 2-1/4&quot; GR8 bolt</td>
</tr>
<tr>
<td></td>
<td>19600</td>
<td>5/8&quot; locknut</td>
</tr>
<tr>
<td>13</td>
<td>20078</td>
<td>MKX130-84/94 cross brace tube</td>
</tr>
<tr>
<td></td>
<td>20254</td>
<td>MKX130-114 cross brace tube</td>
</tr>
<tr>
<td>14</td>
<td>19589</td>
<td>1/2&quot; X 1-1/2&quot; bolt</td>
</tr>
<tr>
<td></td>
<td>17750</td>
<td>1/2&quot; locknut</td>
</tr>
<tr>
<td>15</td>
<td>17405</td>
<td>MKX130-84/94 cross-brace clamps</td>
</tr>
<tr>
<td></td>
<td>17655</td>
<td>MKX130-114 cross-brace clamps</td>
</tr>
<tr>
<td>16</td>
<td>19542</td>
<td>7/16&quot; x 1&quot; bolts</td>
</tr>
<tr>
<td></td>
<td>17593</td>
<td>7/16&quot; locknuts</td>
</tr>
<tr>
<td>17</td>
<td>19974</td>
<td>1/2&quot; x 1-3/4&quot; GR8 Bolt</td>
</tr>
<tr>
<td></td>
<td>17750</td>
<td>1/2&quot; locknut</td>
</tr>
</tbody>
</table>
Figure 3.14 MKX130-84 Truss Tower Brackets

Figure 3.15 MKX130-94 Truss Tower Brackets
Figure 3.16 MKX130-114 Truss Tower Brackets
Figure 3.17 MKX130-84 Truss Tubes
Figure 3.18 MKX130-94 Truss Tubes
Figure 3.19 MKX130-114 Truss Tubes
3.4. INSTALL TRUSS CABLES

See Figure 3.20 for details (MKX13-84 shown, other models are similar).

1. Attach eyebolts (1) to both ends of a truss cable (3) with two 3/8" cable clamps (2), using about 10" (25.4 cm) to 12" (30.5 cm) of cable. Tighten securely.

2. Thread the cable through the cable return bracket (4) on the underside of the lower tube, and pull the cable through until there is an equal length of cable on each side of the tube. Secure the cable to the cable return bracket with a 5/16" cable clamp (5), ensuring that the cable clamp is loose enough that the cable remains free to move.

3. Insert the cable eyebolts into separate turnbuckle bodies (6) and secure with 1/2" locknuts threaded fully onto the eyebolt shaft, but not further than 1/4".

4. Attach eyebolts (1) to the unconnected ends of both turnbuckle bodies, and secure with 1/2" locknuts threaded fully onto the eyebolt shaft, but not further than 1/4".

5. Thread the second truss cable (3) through the cable return bracket (7) on the underside of the upper tube, and pull the cable through until there is an equal length of cable on each side of the tube.

6. Pull the ends of both cables over the truss cable supports (8), and secure the truss cables to each truss cable support with a 5/16" cable clamps (9), ensuring that the cable clamps are loose enough that the cables remains free to move.

7. Thread the unconnected ends of the second cable through the unconnected eyebolts (1) on the turnbuckle bodies, pull tight, and then secure with two 3/8" cable clamps (2). Tighten securely.

8. Tighten the cables by adjusting the eyebolt locknuts. These cables must be very tight.

9. If the tube has a curve to one side, tighten the turnbuckle on the opposite side, while loosening the other turnbuckle slightly if required.

10. Tighten all cable clamps.

Table 3.3. Cable Truss Parts Reference

<table>
<thead>
<tr>
<th>Fig Ref</th>
<th>Part #</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19331</td>
<td>Eyebolt</td>
</tr>
<tr>
<td></td>
<td>17750</td>
<td>1/2&quot; locknut</td>
</tr>
<tr>
<td>2</td>
<td>18990</td>
<td>3/8&quot; cable clamp</td>
</tr>
<tr>
<td>3</td>
<td>20085</td>
<td>MKX130-84 3/8&quot; x 70’ cable</td>
</tr>
<tr>
<td></td>
<td>17576</td>
<td>MKX130-94 3/8&quot; x 80’ cable</td>
</tr>
<tr>
<td></td>
<td>17032</td>
<td>MKX130-114 3/8&quot; x100’ cable</td>
</tr>
<tr>
<td>4</td>
<td>---</td>
<td>Lower tube cable return bracket</td>
</tr>
<tr>
<td>5</td>
<td>19333</td>
<td>5/16&quot; cable clamp</td>
</tr>
<tr>
<td>6</td>
<td>17464</td>
<td>Turnbuckle body</td>
</tr>
<tr>
<td>7</td>
<td>---</td>
<td>Upper tube cable return bracket</td>
</tr>
<tr>
<td>8</td>
<td>---</td>
<td>Truss cable supports</td>
</tr>
</tbody>
</table>
Figure 3.20 Truss Cables
3.5. ASSEMBLE THE FRAME

1. Fasten the lower reach arms to the three-piece axle with four 3/4” x 2” bolts and locknuts on each side. **Tighten securely.**

2. Attach the stabilizer cross member between the lower reach arms with four 1/2” x 1-1/2” bolts and locknuts. **Tighten securely.**

![Figure 3.21 Lower Frame](image)

3. Install the stabilizer braces on either side of the stabilizer short cross member with a single 5/8” x 2” bolt and locknut per side. Leave loose until the other ends of the stabilizer braces are connected in “Connect the Auger Tube to the Frame” on page 53.
4. Secure the frame cross braces and the long frame cross brace to the welded lugs on the lower reach arms with four 1/2” x 1-1/2” bolts and locknuts. Use a fifth 1/2” x 1-1/2” bolt and locknut to fasten the cross-braces together where in the centre, where they cross.

Table 3.4. Lower Frame Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>MKX130-84</th>
<th>MKX130-94</th>
<th>MKX130-114</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower Reach Arm, LH</td>
<td>20230</td>
<td>20225</td>
<td>20216</td>
</tr>
<tr>
<td>2</td>
<td>Lower Reach Arm, RH</td>
<td>20231</td>
<td>20226</td>
<td>20217</td>
</tr>
<tr>
<td>3</td>
<td>Three-Piece Axle</td>
<td>20288</td>
<td>20288</td>
<td>20288</td>
</tr>
<tr>
<td>4</td>
<td>Frame Cross Braces</td>
<td>20281</td>
<td>20281</td>
<td>20378</td>
</tr>
<tr>
<td>5</td>
<td>Stabilizer Braces</td>
<td>20255</td>
<td>20255</td>
<td>20255</td>
</tr>
<tr>
<td>6</td>
<td>Stabilizer Cross Member</td>
<td>20229</td>
<td>20215</td>
<td>20215</td>
</tr>
<tr>
<td>7</td>
<td>Long Frame Cross Brace</td>
<td>20359</td>
<td>20282</td>
<td>20379</td>
</tr>
<tr>
<td>8</td>
<td>5/8” x 2” Bolt</td>
<td>19991</td>
<td>19991</td>
<td>19991</td>
</tr>
<tr>
<td>9</td>
<td>5/8” Locknut</td>
<td>19600</td>
<td>19600</td>
<td>19600</td>
</tr>
<tr>
<td>10</td>
<td>1/2” x 1-1/2” Bolt</td>
<td>19589</td>
<td>19589</td>
<td>19589</td>
</tr>
<tr>
<td>11</td>
<td>1/2” Locknut</td>
<td>17750</td>
<td>17750</td>
<td>17750</td>
</tr>
<tr>
<td>12</td>
<td>3/4” x 2” Bolt</td>
<td>19592</td>
<td>19592</td>
<td>19592</td>
</tr>
<tr>
<td>13</td>
<td>3/4” Locknut</td>
<td>19601</td>
<td>19601</td>
<td>19601</td>
</tr>
</tbody>
</table>
3.6. ASSEMBLE THE WHEEL HUB AND INSTALL TIRES

1. Remove any dirt or paint from spindle and hub.
2. Thoroughly pack wheel bearings and cups with a high-quality SAE approved extreme pressure rated bearing grease.
3. Place large bearing into hub and carefully tap in seal.
4. Slip hub onto spindle and insert small bearing.
5. Tighten slotted spindle nut until hub drags slightly. Back off the nut about 1/4 turn until the hub turns freely.
6. Install cotter pin and dust cap.

**Note:** Installing tires may not leave you with enough clearance to position and attach undercarriage once auger tube is raised. If so, install wheels after assembly is complete.

7. Check that pressure of pre-inflated tires matches pressure indicated on tire sidewall. Mount wheels on hubs and attach with six 1/2” x 1-3/4” wheel bolts.

![Figure 3.22 Wheel Hub Assembly](image-url)
3.7. CONNECT THE AUGER TUBE TO THE FRAME

1. Raise the discharge end of auger (e.g. with a front end loader and a strong sling or with a chain or block and tackle). The height should be sufficient to clear the undercarriage assembly.

   **WARNING**

   Do not remove tube support until the assembly in this section has been completed.

2. Place undercarriage beneath tube assembly.

3. Position stabilizer brackets (see Figure 3.23) and attach lower reach arms to the tube back-arm bracket: use a long spacer bushing, a flat washer, and a 1\" x 4-1/2\" bolt and locknut on each side. **Tighten securely.**

4. Fasten stabilizer braces to the first set of holes (furthest from intake) on stabilizer brackets with one 5/8\" x 2-1/4\" bolt and locknut. Place one 5/8\" x 1-1/2\" bolt and locknut in other hole of the stabilizer bracket.

5. Fasten the upper lift arms to the lower reach arms: use a medium spacer bushing, a 1\" flat washer, and a 1\" x 3-1/2\" bolt and locknut on each side. **Tighten securely.**

6. Attach the tubing cross braces between the upper lift arms by loosely attaching the tubing cross braces using five 1/2\" x 1-1/4\" bolts and locknuts.

7. Attach the lift assist bracket to the track shoe. Use a short spacer bushing and flat washer on both sides of the lift assist bracket, and fasten with a 1\" x 10\" bolt and locknut. **Tighten securely.**

8. Attach upper lift arms to the lift assist bracket. Use two 1\" flat washers, a 1\" x 12\" bolt, and a 1\" nut as shown in the diagram. **Tighten securely.**

9. Lower upper end of auger slowly until track shoe rests against upper track stop and the lift assist stops rest against track.
### Figure 3.23 Connecting the Auger Tube to Frame

#### Table 3.5 Parts Required to Connect the Auger Tube to the Frame

<table>
<thead>
<tr>
<th>Description</th>
<th>MKX130-84</th>
<th>MKX130-94</th>
<th>MKX130-114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilizer Bracket, LH</td>
<td>21865</td>
<td>21865</td>
<td>21865</td>
</tr>
<tr>
<td>Stabilizer Bracket, RH</td>
<td>21866</td>
<td>21866</td>
<td>21866</td>
</tr>
<tr>
<td>1&quot; x 3.5&quot; Bolt</td>
<td>17016</td>
<td>17016</td>
<td>17016</td>
</tr>
<tr>
<td>1&quot; Flat Washer</td>
<td>17020</td>
<td>17020</td>
<td>17020</td>
</tr>
<tr>
<td>Short Spacer Bushing</td>
<td>20297</td>
<td>20297</td>
<td>20297</td>
</tr>
<tr>
<td>Medium Spacer Bushing</td>
<td>20360</td>
<td>20360</td>
<td>20360</td>
</tr>
<tr>
<td>Long Spacer Bushing</td>
<td>20298</td>
<td>20298</td>
<td>20298</td>
</tr>
<tr>
<td>1&quot; Locknut</td>
<td>17019</td>
<td>17019</td>
<td>17019</td>
</tr>
<tr>
<td>1&quot; x 10&quot; Bolt</td>
<td>17015</td>
<td>17015</td>
<td>17015</td>
</tr>
<tr>
<td>5/8&quot; x 2-1/4&quot; Bolts</td>
<td>27484</td>
<td>27484</td>
<td>27484</td>
</tr>
<tr>
<td>5/8&quot; Locknut</td>
<td>19600</td>
<td>19600</td>
<td>19600</td>
</tr>
<tr>
<td>Upper Lift Arm</td>
<td>20232</td>
<td>20227</td>
<td>20213</td>
</tr>
<tr>
<td>Crossbracing, Tubing</td>
<td>20281</td>
<td>20281</td>
<td>20281</td>
</tr>
<tr>
<td>1/2&quot; x 1-1/2&quot; Bolt</td>
<td>19589</td>
<td>19589</td>
<td>19589</td>
</tr>
<tr>
<td>1/2&quot; Locknut</td>
<td>17750</td>
<td>17750</td>
<td>17750</td>
</tr>
<tr>
<td>Lift Assist</td>
<td>20214</td>
<td>20214</td>
<td>20214</td>
</tr>
<tr>
<td>1&quot; x 12&quot; Bolt</td>
<td>20303</td>
<td>20303</td>
<td>20303</td>
</tr>
<tr>
<td>5/8&quot; x 1-1/2&quot; Bolt</td>
<td>19590</td>
<td>19590</td>
<td>19590</td>
</tr>
<tr>
<td>1&quot; x 4-1/2&quot; Bolt</td>
<td>21524</td>
<td>21524</td>
<td>21524</td>
</tr>
</tbody>
</table>
3.8. INSTALL THE LIFT CYLINDERS AND CABLES

**Note:** Although the lift cable is factory installed on the cylinder, make sure that the cable clamps on the cylinder are secure and the cables are properly seated in the cable sheaves before attaching the cable to the track shoe.

1. Ensure that both cylinders are in full down position, and that track shoe is resting against the track stop.
2. Thread both cables around the circular cable beds on the outside edges of the cable-attach rod on the track shoe. Pull the cable very tight, then secure with cable clamps on each cable, positioned as shown (Figure 3.24).

**Important:** The MKX130-84/94 models require three 5/16" Cable Clamps (19333) per cable, and the MKX130-114 model requires four 3/8" Cable Clamps (18990) per cable. **Tighten cable clamps securely.**

3. Tie up excess ends of lift cable with tape or cable ties.

**Important:** Lift cables will stretch with initial use. Check and adjust frequently.

**CAUTION**

Track shoe must rest against track stop when adjusting cable.

If this isn’t done, the auger can raise higher than designed to lift, resulting in damage to auger and possible injury to personnel.

---

**Figure 3.24 Connecting the Lift Cylinder Cables**
3.9. CONNECT HYDRAULIC HOSES AND BALL VALVE

Determine right or left side of auger by standing at intake end facing top discharge end.

- **Lower** fittings refer to those closer to boot end of auger.
- **Upper** fittings refer to those closer to discharge end of auger.

**Note:** Elbow fittings are factory installed. Use thread sealant on fitting and hose threads (not supplied.)

### Table 3.6 Hydraulic Hoses

<table>
<thead>
<tr>
<th>Part #</th>
<th>Hose Description</th>
<th>Usage</th>
<th>84</th>
<th>94</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>20322</td>
<td>MKX13-84 HOSE, 3/8&quot; x 327&quot;</td>
<td>Hydraulic Return</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20323</td>
<td>MKX13-84 HOSE, 3/8&quot; x 176&quot;</td>
<td>Hydraulic Pressure</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20325</td>
<td>MKX13-94 HOSE, 3/8&quot; x 408&quot;</td>
<td>Hydraulic Return</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>20326</td>
<td>MKX13-94 HOSE, 3/8&quot; x 270&quot;</td>
<td>Hydraulic Pressure</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>20327</td>
<td>MKX13-114 HOSE, 3/8&quot; x 480&quot;</td>
<td>Hydraulic Return</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>20328</td>
<td>MKX13-114 HOSE, 3/8&quot; x 309&quot;</td>
<td>Hydraulic Pressure</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>17468</td>
<td>MKX13 HOSE, 3/8&quot; x 32&quot;</td>
<td>Cylinder Connector (rod end)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>18739</td>
<td>MKX13 HOSE, 3/8&quot; x 16&quot;</td>
<td>Cylinder Connector (cap end)</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Note:** Use thread sealant (not supplied) on all hydraulic connections.

1. Position both elbow fittings on **right lift cylinder**. The **lower** one should face forward and downward at approximately 45°. The **upper** one should face rearward and downward at approximately 45° (Figure 3.25). Make certain they are tight.

2. Secure the solid connector end of the short (17" / 43.1 cm) cylinder-connector hydraulic hose to the lower elbow fitting.

3. Secure the solid connector end of the long (32" / 81.3 cm) cylinder-connector hydraulic hose to the upper elbow fitting.

**Note:** Before attaching short connector hydraulic hose to left side lift cylinder, make certain lift cables are tightly stretched and that this hose is positioned beneath lift cable on left side lift cylinder (Figure 3.25). If lift cable is not installed above this hose, it could result in the hoses wearing through during operation, causing a hazardous condition.

### WARNING

Wear on hose can cause auger to drop suddenly, causing serious injury or death and damage to the equipment.

4. Position the elbow fittings on the **left lift cylinder**. The **lower** one should face forward and downward at approximately 45°. The **upper** one should face rearward and upward at approximately 10°.

5. Secure the tee fittings to the left cylinder elbow fittings and position them as shown in Figure 3.25. Make certain they are securely tightened.
6. Secure the swivel ends of the upper (32" / 81.3 cm) and lower (17" / 43.1 cm) cylinder-connector hoses to the tees.

7. Check upper 32" (81.3 cm) cylinder-connector hose position to ensure there is 8-1/2" clearance to lift cables as shown in Figure 3.25.

8. Attach the hydraulic pressure hose with shutoff valve to the lower tee fitting (nearest the auger intake).

9. Attach the hydraulic fluid return hose to the upper tee fitting (nearest auger discharge end).

10. Thread hoses through back arm attach bracket as shown in Figure 3.25.

**Figure 3.25 Lift Cylinder Hydraulic Hoses and Fittings**

4. Place both hoses into retaining brackets welded to side of auger tube and boot. Bend tops of brackets over slightly to hold hoses in place.

**Important:** *Protect hose ends from dirt.*

5. Recheck that bolts on undercarriage, lift cylinders, and cable clamps are tight, then remove auger tube support.

6. At the boot, install the ball valve on the hose, and secure the valve to the boot using the ball valve bracket and two 1/4" x 3/4" bolts and locknuts (see Figure 3.27).
**Figure 3.26 Hydraulic Diagram**

1. 3/8” ELBOW FITTING [18087] (PORT FACING DOWN)
2. 3/8” TEE FITTING [18736]
4. LONG HYDRAULIC LIFT HOSE, PRESSURE (WITH BALL VALVE AND 3/8” PIONEER COUPLER)
5. LONG HYDRAULIC LIFT HOSE, FLUID RETURN (WITH 3/8” PIONEER COUPLER)

**Figure 3.27 Installing the Ball Valve on the Boot**

1/4” X 3/4” BOLTS [9900800] AND 1/4” LOCKNUTS [28449]
3.10. CONNECT THE PTO DRIVELINE

1. Install the PTO transport strap using two 1/2” x 1-1/2” bolts (19589) and two 1/2” nuts (17750).
2. Clean paint or dirt off of PTO driveline (3) and flighting shaft ends before assembly.
3. Ensure that the 3/8” x 3-3/8” square key is in place on the flighting shaft.
4. Slide plain end of PTO driveline onto flighting shaft. Make sure that the 3/8” holes are lined up.
5. Carefully tap in a 3/8” roll pin. Tighten the set screw on the PTO shaft.
6. Install the sprocket shield (8) on the boot using four 5/16” x 3/4” bolts (9).
7. Loosely install the sprocket shield on the boot using four 5/16” x 3/4” bolts.
8. Slide the PTO transport saddle (10) through the support strap (11) on the boot and rest the PTO driveline in it.
9. Install the sprocket shield using four 5/16” x 3/4” bolts and locknuts.

Figure 3.28 PTO Parts and Installation
3.11. INSTALL THE LOW PROFILE INTAKE HOPPER

**WARNING**

Components are heavy and create a crushing hazard if improperly handled. Be sure to use proper hoisting equipment and procedures, and ensure lifting apparatus is secure. Lockout the lifting apparatus before working around or under the raised components. Failure to do so may cause serious personal injury.

1. Attach the Transition to the intake hopper with two 5/8" x 1-1/2" bolts (19590) and 5/8" locknuts (19600). **DO NOT** over-tighten; tighten to a slightly loose fit only as these bolts act as pivot points (Figure 3.30).

![Figure 3.29 Installing the Transition](image)

2. Clean dirt and paint from inside the u-joint and flighting shaft end, grease the shaft end, then insert a Woodruff key (Figure 3.30).

3. Raise and support the hopper tube spout head on a stand about 50" high.

4. Open the service door on the Transition, then bring the tube and Transition together guiding the flight shaft into the u-joint (Figure 3.30).

5. Secure the tube to the pivot-connector on the hopper with twelve 7/16" x 1-1/4" bolts (18698) and 7/16" locknuts (17593).

6. Tighten set screws on u-joints, then close and secure the service door.
7. Attach the 4 solid wheels to the 4 hopper corners with the axle pins and hairpins. There are 3 height settings (Figure 3.31) that can be used according to preference.

8. To connect the intake hopper to the auger boot, the swing head spout door must first be opened. To do so, open the spring clasps and rotate the spout door open, so that it lies down on the top of the swing tube.

9. Check that the u-joint spline and splined shaft on the lower gear box are clean, then apply a light film of grease on this splined shaft.

10. Shift the position of the hopper so that the spout head is supported above the hopper, centred on the shaft of the gear box.

11. Lower the spout head onto the boot while guiding the splined universal joint onto the splined gearbox shaft. Once positioned, the swivel ring should be resting flat on the boot surface.

12. Install spout head spacers (29152), followed by spout-head retainers (29166), using eight 5/16" x 3/4" bolts (19538) (Figure 3.32).

13. Lubricate the universal joint and then close and secure the spout head service cover.

**Important:** Always keep the spout head service cover closed and secured during operation.

---

**Figure 3.30 Connection the Flighting and Tube**
3. ASSEMBLY

Figure 3.31 Connecting the Wheels, Inspection Hatch Bar, and Hopper Cable Attach Bracket

Figure 3.32 Connecting the Spout Head to the Boot
3.12. INSTALL THE HOPPER LIFT ARM AND WINCH

1. Determine which side of the auger the hopper will be operating on.

   **Note:** *Feed side of hopper must face the main auger when in transport.*

2. Position the hopper lift arm assembly on the mount bracket on top of the lower auger tube with the arm overhanging the side of the auger that the hopper will be operating on.

3. Fasten hopper lift arm assembly to the mount bracket with four 7/16” x 1-1/4” bolts (18698) and 7/16” locknuts (17593) (Figure 3.33).

4. Install winch and winch bracket assembly to auger boot (opposite to side of hopper operation) with one mount pin and a hairpin (Figure 3.34).

5. Thread the cable through the hopper lift arm and pull the cable to the winch.

6. Wrap the over and around the winch spool at least three times, then insert the cable end through the hole provided in the side of the spool and secure the end with the provided cable clamp (Figure 3.35).

7. To place hopper into transport position, attach cable hook to hook on the hopper transition, then fully raise hopper with intake side facing main auger. Secure hopper to lift arm by connecting the safety chain (Figure 3.36) to the hopper cable attach bracket.

![Figure 3.33 Installing the Lift Arm](image-url)
Figure 3.34 Connecting Manual Winch to the Boot

Figure 3.35 Connecting Winch Cable to Spool
If you want to change the side of intake feed hopper operation:

a. Raise auger hitch jack and disconnect from tractor.
b. Swing intake feed hopper to opposite side of auger.
c. Reverse the position of the hopper lift arm assembly.
d. Position the winch upside down on the other side of the boot (see Figure 3.37).
e. Reconnect to tractor.
3.13. INSTALL THE HITCH JACK

The jack is attached to the auger with a pin at the pivot point. To install:

1. Elevate the auger boot (intake end) approximately 2’ (5.08 cm) with a front-end loader and sling, and install the jack in a vertical position. Secure with supplied pin.

2. Place a board beneath the jack before setting it on the ground, then lower the auger until the jack is seated. Remove front-end loader from auger.

Note: Jack can be rotated 90° for transport or operation.

WARNING

Jack is designed for raising or lowering auger hitch only.

Do not get on or beneath auger while supported by or while jack is being operated.
3.14. INSTALL THE PLASTIC MANUAL CONTAINER

Before beginning installation, ensure that all winch / auger lift controls are locked in place and shut down and/or lock out auger.

1. Attach the manual holder bracket to the axle using a 3/8” x 3-1/16” u-bolt [28833] and two 3/8” nuts [17402].
2. Slide the tab on the bottom of the manual into the raised slot in the manual holder bracket.
3. Bolt the manual holder to the bracket using two 1/4” bolts [9900800], and two 1/4” flange nuts [19594].

Figure 3.38 Installing the Plastic Manual Container
3.15. AUGER-TO-TRACTOR HOOKUP

**Important:** Auger must be correctly connected to the tractor for all operations, including transport, raising, placement, and augering grain.

The final stage of the assembly is attaching the auger to the tractor.

When attaching the auger to your tractor, you must leave the correct spacing between the bottom of the tractor drawbar and the top of the securing device on the hitch pin.

- To secure, use 2 nuts locked against each other.
- The space should be about 3/4” (1.91 cm) to 1” (2.54 cm) as shown below.
- The bolt/hitch pin must be 1” x 5” minimum.

![Figure 3.39](image)

**MEASUREMENTS BETWEEN DRAWBAR AND DRIVELINE**

Since the auger and tractor become an integral unit during transport, placement, and operation, the configuration and measurements between the tractor drawbar and the tractor PTO driveline are very important.

The figure below illustrates the ideal measurements. Most tractors fall into this range.

- Dimension (B) may range from 6” (15.2 cm) to 10” (25.4 cm) with 8” (20.3 cm) being ideal.
- If dimensions (A) and (B) on your tractor are as shown, then dimension (C), which is critical, will be correct.
- If (A) and (B) vary on your tractor from the recommended dimensions, consult the table below for potential problems and their solutions.
A ..........14” (35.6 cm)
B .................6” TO 10” (15.2 cm - 25.4 cm)
C ..41” (104.1 cm)

(MUST BE TAKEN WITH AUGER ON LEVEL GROUND AND IN FULL DOWN POSITION) RAISE TRACTOR DRAWBAR IF NECESSARY TO MAINTAIN (B) DIMENSION OF 6” TO 10”.
(15.2 cm - 25.4 cm)

### Figure 3.40 Measurements Between Drawbar and PTO Driveline

<table>
<thead>
<tr>
<th>MEASUREMENT</th>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
</table>
| If (A) is less than 14” (35.6 cm) (C) will be less than the recommended 41” (104.1 cm) | • The PTO driveline will bottom out when auger is in raised position.  
  • This will cause damage to the PTO driveline, the bearing, or the boot housing. | • Pull out or lengthen the tractor drawbar as needed to make (C) 41” (104.1 cm) when the auger is in full down position. |
| If (A) is more than 14” (35.6 cm) (C) may be more than the recommended 41” (104.1 cm) | • The PTO driveline will separate from the auger in the lowered position.  
  • This will cause damage to equipment and/or injury to personnel. | • Shorten distance (C) to the recommended 41” (104.1 cm) by attaching hitch to tractor drawbar at a point closer to the tractor PTO shaft. |
| If (B) is more than 10” (25.4 cm) (C) (between tractor PTO shaft and auger input shaft) shortens more quickly when auger is being raised | • The u-joint angle on the PTO driveline will be too severe in the raised position.  
  • The PTO driveline will bottom out before auger is fully raised.  
  • This will cause damage to the PTO driveline, flight shaft, bearing, and boot. | • Raise the tractor drawbar until dimension (B) is within the recommended 6” to 10” (15.2 cm - 25.4 cm). |
4. Placement

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

This auger is designed to be transported and operated without unhitching unit from tractor.

### CAUTION

<table>
<thead>
<tr>
<th>![Warning Symbol]</th>
<th>Always tow auger in the lowered position.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol]</td>
<td>Disconnect PTO driveline from tractor for transport and placement.</td>
</tr>
</tbody>
</table>

#### 4.1. PLACEMENT PROCEDURE

**WARNING**

Auger must be hooked up to tractor for all operations, including transport, raising, placement, and augering grain.

1. Disconnect PTO driveline from tractor and secure in transport saddle.

**NOTICE**

When positioning the auger, the PTO driveline must be disconnected from the tractor and placed in the transport saddle to prevent damage to auger and PTO driveline.

2. Ensure that tractor and auger are securely hitched together.

**Important:** *Use a type of hitch pin (see Auger / Tractor Hookup section) that will not allow auger to separate from towing vehicle.*

3. Disconnect the safety chain from the intake hopper.

**Important:** 4. Because of the many different kinds of tractor hydraulic systems, the quick-connect coupler must be supplied by the owner. Please consult your tractor manual or dealer for the proper coupler.
• Before connecting hose, ensure that the quick-connect coupler on auger and tractor is clean and free of dirt by wiping with a cloth.

**CAUTION**

Dirt in the hydraulic system can damage the cylinder o-rings, causing leakage and the possible failure of the system and personal injury.

5. Connect hydraulic hoses, ensure connections are tight. Check for leaks, binding, flattening, kinks, or wear.

**NOTICE**

Replacement hose and hose ends must have a minimum strength of 2500 psi (17200 kPa) working pressure.

6. Extend the wheel axles:
   a. Ensure that the auger is on level ground before attempting to extend or retract the axle extensions. **Auger must be attached to tractor at all times.**
   b. Using the jack supplied, insert it into one of the jack lugs located on one end of the axle (Figure 4.1). See Figure A for jacking point. Jack must be secured to jack lug using pin (attached to jack).

   ![Jack Lug, Axle, and Axle Pin (Axle Retracted)](image)

   **Figure 4.1 Jack Lug, Axle, and Axle Pin (Axle Retracted)**

   c. Raise one side at a time. Ensure that the jack is vertical. Turn the crank to start raising the jack. Raise one side of the axle until the tire clears the ground.
d. Remove the axle pin from the axle and slide the axle outwards until the second set of holes line up (Figure 4.2). Reinsert the axle pin and secure with snap pin. Lower the jack.

![Figure 4.2 Extend Axle and Insert Axle Pin](image)

**Figure 4.2 Extend Axle and Insert Axle Pin**

e. Repeat the process on the other side of the axle to extend the other side.

7. Raise the main auger tube, if required:
   a. Check that valve on hose to lift cylinder is open.
   b. Raise auger to the desired height.
   c. Close hose valve (after auger is positioned).

**WARNING**

Do not raise the auger unless the axles are in the extended position.

Do not transport the auger unless the axles are in the retracted position.

**NOTICE**

The hydraulic cylinders are shipped without oil and must be charged with oil before auger is put into operation. See the appendix for charging instructions.

**WARNING**

Fluid leaks in the hydraulic cylinder or hose will allow auger to lower inadvertently.

Repair all leaks and breaks immediately.
8. Move the auger into working position slowly. Do not unhitch and attempt to move auger by hand.

9. Once auger is in position, chock wheels on both sides and apply the park brake on the tractor (or chock its wheels as well) to prevent movement during operation.

10. Fully lower hopper to the ground and remove lift cable from the hopper.
   - See “Lowering & Completion” on page 84 for the correct lowering procedure.

---

**CAUTION**

If hose valve remains open, a loss of hydraulic pressure within the tractor system will allow the auger to lower inadvertently, damaging the equipment and causing personal injury.

**WARNING**

Do not disconnect coupler under pressure. Relieve pressure and then disconnect.

---

Figure 4.3 Auger Placement (Direct PTO Drive)
4.2. POSITIONING TRACTOR FOR RIGHT-ANGLE DRIVE OPERATION

1. Use the tractor to position the auger at the bin, as described in “Placement Procedure” on page 71, ensuring that the auger wheels are securely chocked, and that the scissor lift valve is closed.

2. Position hitch jack with board underneath, then raise auger hitch slightly.

3. Relieve pressure in hydraulic hose, then disconnect from tractor and place in the auger’s hose rack.

4. Remove safety chain and hitch pin, then move tractor.

5. Attach the support leg as shown in Figure 4.4, and secure with pin and hairclip.

6. Place board under support leg if needed, then lower hitch jack until auger intake weight is supported with the support leg. Place hitch jack into transport position.

Figure 4.4 Right Angle Drive Support Leg Working (left) and Storage Positions (right)

7. Tractor Hookup to Right Angle Drive
   i. Position tractor at right angle to auger intake; chock tractor wheels and apply brakes.
   ii. Securely connect the non-separable PTO driveline to tractor (maximum rpm is 540). Make sure all guards and master guards are in place.
   iii. Do not exceed the maximum PTO operating length of 80” (2.03 m) or a maximum angularity of 15° from the ideal 90° drive angle.
4.3. LOWERING THE AUGER

To lower the auger:

1. Reconnect hose coupler to tractor, if disconnected.
2. Disconnect PTO driveline from tractor before lowering.
3. Ensure that area beneath auger is clear.
4. Open hose valve.
5. Open tractor valve, feathering to prevent too rapid a descent.

**Important:** Once valves are opened, auger lowers by gravity. As the auger nears the full down position, the rate of descent will increase. Do not operate with tractor valve fully open. See “Lowering & Completion” on page 80 for more details.
5. Operation

WARNING Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

5.1. OPERATOR CONTROLS

Figure 5.1 shows the hydraulic shut-off valve for the main auger tube hydraulic lift cylinders.

Figure 5.2 and Figure 5.3 (respectively) show hydraulic winch and manual winch controls for lifting and lowering the hopper to and from transport position.

For locations for PTO and hydraulic supply controls, please refer to the operating manual for the attached tractor.

Figure 5.1 Main Auger Tube Lift Shut-off Valve

Figure 5.2 Hydraulic Hopper Winch Control (Optional)
Figure 5.3 Manual Hopper Winch
5.2. PRE-OPERATION

5.2.1. CHECKLIST

- Tighten all fasteners.
- Adjust and/or lubricate boot chain and hopper chain.
- Ensure auger rotates freely.
- Check that tire pressure is within the manufacturer's specification.
- Ensure wheel bolt torque is within specification.
- Check hopper winch and lift cable for damage (fraying, kinking, unraveling). Replace as required.
- Ensure cable anchor on the winch drum is tight.
- Check gearbox oil levels.
- Grease and clean machine if needed.
- Ensure hydraulic system is functioning, is free of leaks, and the hoses are not pinched or kinked.
- Check that truss cables are free from damage (fraying, kinking, unraveling). Cables must be tight and properly adjusted for proper auger tube alignment.
- Ensure PTO shaft is properly installed.
- Ensure intake area and discharge spout are free of obstructions.
- Ensure tractor and auger are in line or as close to being in line as possible.
- Ensure tractor park brake is engaged and/or wheels are chocked.
- Ensure that axles are extended during auger operation.
5.2.2. PTO Drive

Correct operation of the auger requires pre-inspection of the drive system, operator knowledge on how to shut down the system, and a general monitoring of the system during operation.

**NOTICE**

When positioning the auger, the PTO driveline must be disconnected from the tractor and placed in the transport saddle to prevent damage to auger and PTO driveline.

**General Information**

Before starting the auger, ensure that:

- The PTO driveline is securely attached to the auger shaft and to the tractor.
- The PTO driveline rotating shield is in place and in good working order.
- The PTO does not exceed the maximum operating angle of 15°.
- All safety shields are in place and secure on both the tractor and the auger.
- The PTO drive on the tractor is in the off position before starting the tractor.
- The auger-to-tractor PTO hookup distances are set as specified in the decal on the PTO shield of the auger.
- Everyone is clear of the PTO hazard area.

**Note:** If shear bolt in the PTO driveline fails, shut down and lock out the tractor to replace the bolt. Use a 3/8” x 1” GR 8 bolt.

**Lockout**

1. Shut down the tractor and remove the ignition key.
2. If step 1 is not possible, remove the PTO driveline from the tractor.

5.2.3. Hydraulics

MKX130 series grain augers are equipped with a standard 3/8” Pioneer Coupler used to connect the auger hydraulic system(s) to the tractor.

Before using the hydraulics, ensure that:

- The quick connect couplers on both the auger and the tractor are clean and free of dirt. Wipe the couplers with a clean, dry cloth.
- The hydraulic hoses are properly connected and secured; are free of leaks, wear, and binding; and are routed away from moving parts.
- Hydraulic pressure has been relieved prior to disconnecting.
5.3. OPERATING PROCEDURES

DANGER

Rotating Auger Hazard
Contact with rotating flighting will result in amputation or severe laceration.
DO NOT operate with guards removed or modified.
Keep hands and feet away from rotating auger.
Tie up long hair and remove jewelry.
DO NOT wear loose-fitting clothing or items that could become caught.
Shut off and lock out the power source before unplugging or cleaning.

5.3.1. INITIAL START-UP

BREAK IN

Your auger does not require an elaborate break-in. However, following a few simple tips during the initial operation can add to the reliability and life of your machine.

If any unusual noises or vibrations are encountered, determine the source, shut the auger off, lock out the power source, and adjust. If unsure of the problem or procedure, contact your local Westfield dealer.

Important: When starting the auger for the first time, be prepared for an emergency shutdown in case of excessive vibration or noise.

1. Ensure that you have completed the checklist on page 79.
2. If everything is satisfactory, prepare for a 60 minute operation at half speed.
3. Ensure that the intake hopper is correctly positioned.
4. Ensure that the PTO drive on the tractor is in the OFF position.
5. Start the tractor and idle at low rpm. Slowly engage the PTO drive.

Note: The auger may run rough until the tube is polished.

6. Gradually begin feeding grain into the hopper, bringing the auger speed up to about 300 rpm. Do not overfeed the hopper on initial loads; keep the feed of grain at about half capacity.
7. After the auger tube is polished and runs fairly smoothly, proceed to unload at full speed of 540 rpm.
8. Upon completion of the initial run, slow the auger down. Stop the auger when it is empty of grain.
9. Lock out the tractor and conduct a complete inspection of the auger following the checklist on page 79.

**Important:** *After the initial start-up and inspection, the auger should be shut down and inspected at least 3 more times during the first 10 hours of operation.*

---

**NOTICE**

Do not run an empty auger at high speed; this results in excessive wear. Do not exceed 540 RPM.

---

**5.3.2. NORMAL START**

---

**NOTICE**

Foreign objects can damage the auger. Remove any obstructions from the intake and discharge areas before operating the unit.

---

1. Complete the checklist on page 79.
2. Place the intake hopper in its working position.
3. Make sure the PTO drive is in the off position when starting the tractor.
4. Engage the PTO with the tractor idling to prevent unneeded stress on the drive components and shear bolts.
5. If everything is operating normally, start running grain through the auger and bring the auger up to speed. Maintain a speed of 300–540 rpm for maximum efficiency and to reduce the chance of plugging.

---

**DANGER**

Rotating Flighting Hazard!

To prevent death or serious injury:

- Keep away from rotating auger flighting.
- Do not remove or modify auger flighting guards, doors, or covers. Keep in good working order. Have replaced if damaged.
- Do not operate the auger without all guards, doors, and covers in place.
- Never touch the auger flighting. Use a stick or other tool to remove an obstruction or clean out.
- Shut off and lock out power to adjust, service, or clean.

- Monitor the auger during operation for abnormal noises or vibrations.
• **If grain overflows** through safety discharge door, then the auger is loaded beyond its capacity; reduce volume of feed going into intake hopper. Remember, auger capacity will decrease as the auger's angle increases.

**USE OF GRAIN SPREADERS:** Many grain spreaders cannot handle the large capacity of some augers. Some augers plug, causing damage to the flighting and other drive components. This type of damage is not covered by warranty. Hints on how to avoid this...

- Make sure spreader is turned on.
- Center auger spout on spreader.
- Get a larger spreader, if available.
- Remove the spreader.
- Do not lower auger spout into spreader.
- Suspend the spreader from bin ceiling leaving extra room for excess grain to flow over the spreader.

**BIN LEVEL INDICATORS:** These augers are fast and bins fill up quickly. A full bin will cause auger to plug, which can damage the flighting and other drive components. Installing quality grain-level indicators on your bins will allow you to monitor bin filling and help prevent damage to your auger.

5.3.3. **NORMAL SHUTDOWN**

**NOTICE**

Prolonged operation of an empty auger will cause unnecessary wear.

1. Near the end of the load, reduce the feed of grain and decrease the auger speed where possible.
2. Run the auger until the tube is empty.
3. When the auger is clear of grain, turn off power to the PTO.
4. Shut down and lock out the power source.
5.3.4. EMERGENCY STOP / FULL-TUBE RESTART

Although it is recommended that the machine be emptied before stopping, in an emergency situation:

1. Stop or shut down the power source immediately.
2. Stop the flow of material (if applicable).
3. Correct the emergency before resuming work.

The tube may be filled with material if the machine is shut down inadvertently or for an emergency. It is recommended that you restart with the following procedure:

4. With the power source locked out, remove as much of the grain as possible from the tube and intake using a piece of wood, vacuum cleaner, or other tool. Do not use your hands.
5. If cleanout covers or safety doors have been opened or removed, close or replace them before restarting the unit.
6. Start the tractor and engage the PTO with the tractor idling.

**NOTICE**

Always engage PTO with tractor engine idling. Engaging PTO at high engine speed will result in equipment damage.

7. Bring slowly up to speed.
8. Once the auger has been started, you may resume normal operation.

5.3.5. LOWERING & COMPLETION

1. Run the unit to clean out the majority of the grain from the main auger tube, boot, and hopper.
2. Turn off the tractor, and lock out the tractor power source (Refer to page 80 for procedure).
3. Disconnect the PTO driveline, and raise the intake hopper off the ground.
4. Remove all supports and chocks.
5. Move auger away from the bin, and ensure that there is nothing under the auger that would make contact when the auger tube is lowered.
6. Open the main auger tube lift valve on the boot.
7. Open the tractor supply valve for the auger, and feather between on and off to make sure that the auger tube lowers slowly.
8. If necessary, open the clean-out door on the boot and manually clean out grain using a piece of wood, vacuum cleaner, or other tool. Do not use your hands. Replace the clean-out cover.
9. Lift the intake feed hopper into transport position, and secure it with the safety chain.
5.3.6. REVERSER OPERATION

The following procedures are a supplement to the instructions that begin in “Operating Procedures” on page 81. Read and understand all instructions before operating auger.

CAUTION

Shut down and lock out all power before emptying boot and power before changing to forward or reverse modes.

Ensure that PTO driveline is securely attached before operating. Keep body, hair, and clothing away from all moving parts including PTO driveline.

Do not exceed reverse operating speed of 100 RPM. Do not exceed forward operating speed of 540 RPM.

Figure 5.4 Forward and Reverse PTO Positions
(540 RPM PTO Reverser)
Before Operating in the Normal Forward Mode:

1. The stub spline on the PTO driveline must be inserted into the Forward spline coupler (see Figure 5.4 and Figure 5.5) and securely locked into place.

2. Make certain the clean out cover is secured into place on the boot before operating.

3. The PTO drive control on the tractor must be in the off position before starting tractor and the PTO hazard area is clear of all bystanders.

Note: All safety shields must be in place before operating.
To Operate in the Reverse Mode:

1. Insert the stub spline on the PTO driveline into the Reverse spline coupler (see Figure 5.4 and Figure 5.5), making certain it is securely locked into place.

2. Remove clean out cover before operating in reverse mode.

3. Operate auger slowly in reverse for a short period of time. **Do not exceed 100 RPM.**

4. When boot is nearly full, shut off and lock out power, then clean out grain from boot using a stick. Do not use hands. Repeat above procedure as needed.

**Important:** *Reversing is intended to assist in clean out of auger. It is not designed to unplug auger.* When operating in the reverse mode, auger must be monitored to prevent boot from overfilling. Excessive back pressure will cause extensive damage to the auger which is not covered by warranty.

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotating PTO Driveline Hazard!</td>
</tr>
<tr>
<td>Make certain the driveline shields turn freely on driveline.</td>
</tr>
<tr>
<td>Make certain the driveline is securely attached at both ends.</td>
</tr>
<tr>
<td>Do not exceed operating speed of 540 rpm.</td>
</tr>
<tr>
<td>Keep u-joint angles small and equal. Do not exceed maximum recommended length.</td>
</tr>
<tr>
<td>Failure to heed will result in serious injury or death.</td>
</tr>
</tbody>
</table>

**Note:** *For transport or placement of auger, hook up auger to tractor with appropriate hitch pin and safety chain, and connect hydraulic lift hose as per manual instructions.*
6. Maintenance and Storage

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

**NOTICE**

Do not modify equipment.

Unauthorized modification may impair the function or safety of the equipment, could affect the life of the equipment, and will void your warranty.

### 6.1. MAINTENANCE INTERVALS

For details of service, refer to Section 6.3.

<table>
<thead>
<tr>
<th>SECTION</th>
<th>DAILY (8000 BU)</th>
<th>PERIODICALLY (40,000 BU)</th>
<th>BEFORE STORAGE</th>
<th>AFTER STORAGE</th>
<th>3-5 YEARS (DEPENDING ON USE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VISUALLY INSPECT THE UNIT</td>
<td>6.3.1.</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>INSPECT HYDRAULIC HOSE AND COUPLER</td>
<td>6.3.2.</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GREASE MACHINE</td>
<td>6.3.3.</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>INSPECT HOPPER LIFT CABLE</td>
<td>6.3.4.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE WINCH AND PULLEYS</td>
<td>6.3.5.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE SWING TUBE COUPLER CHAIN</td>
<td>6.3.6.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE BOOT AND HOPPER CHAIN DRIVE</td>
<td>6.3.7.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHECK UPPER/LOWER GEARBOX OIL LEVEL</td>
<td>6.3.8.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHECK SPEED REDUCER GEARBOX OIL LEVEL</td>
<td>6.3.9.</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CLEAN MACHINE</td>
<td>6.3.10.</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>CHECK TIRE PRESSURE</td>
<td>6.3.11.</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>REPACK WHEEL BEARINGS</td>
<td>6.3.12.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TIGHTEN WHEEL BOLTS</td>
<td>6.3.13.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>SERVICE TRUSS CABLES</td>
<td>6.3.14.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>CHANGE UPPER/LOWER GEARBOX OIL</td>
<td>6.3.15.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHANGE SPEED REDUCER GEARBOX OIL</td>
<td>6.3.16.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
6.2. FLUIDS AND LUBRICANTS

**GEAR OIL**

Use SAE approved 90W or equivalent gear oil.

**GREASE**

Use SAE multi-purpose high-temperature grease with extreme pressure (EP) performance or SAE multi-purpose lithium-based grease.

6.3. MAINTENANCE PROCEDURES

6.3.1. VISUAL INSPECTION

Before beginning visual inspection, check auger wheels and ensure that all operators are aware of safety procedures.

When inspecting, look for possible defects and for the following:

- Be sure all guards are in place, functioning, and not damaged.
- Make sure access, service, and cleanout covers are in place and secure.
- Check that all hardware is in place and secure.
- Inspect hydraulic hoses and fittings for leaks and wear. Fix or replace where necessary.
- Inspect around the machine for evidence of hydraulic leaks.
- Examine flighting for damage or unusual wear.
- Inspect the truss cables for proper tension and possible damage such as fraying, kinking, or unwinding.
- Inspect hopper winch cable for fraying, kinking, unwinding, or other possible damage.
- Examine tires for gashes, uneven wear, or loss of air pressure.
- Be sure all safety decals are in place and legible.
- Check the PTO shield & replace if damaged.
6.3.2. HYDRAULIC HOSE AND COUPLER INSPECTION

Using a piece of cardboard or wood, run it along the length of the hose and around all fittings. Replace the hose or tighten/replace the fitting if a leak is found.

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-pressure hydraulic fluid!</td>
</tr>
<tr>
<td>Escaping oil under pressure can penetrate the skin and cause serious injury.</td>
</tr>
<tr>
<td>• Relieve pressure on system before repairing, adjusting, or disconnecting.</td>
</tr>
<tr>
<td>• Keep connections tight and components in good repair.</td>
</tr>
<tr>
<td>• Use a piece of wood or cardboard when searching for leaks. DO NOT use your hand.</td>
</tr>
<tr>
<td>• Seek medical attention immediately if ANY hydraulic fluid penetrates your skin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement hose and hose ends must have a minimum strength of 2500 psi (17200 kPa) working pressure.</td>
</tr>
</tbody>
</table>

6.3.3. MACHINE GREASING

Important: Most original equipment bearings used are sealed units that do not accept grease.

There are 13 grease fittings on the machine (shown in Figure 6.2 and Figure 6.1):

• 5 on the PTO (Figure 6.1)
• 6 on the intake hopper, u-joints and bearings (Figure 6.2)
• 1 at the upper flighting bearing (Figure 6.3)
• 1 at the u-joint between gearboxes (Figure 6.4)
• 1 at the lower flighting bearing (Figure 6.4)
Figure 6.1 PTO Grease Fitting Locations

Figure 6.2 Hopper Grease Points
To grease:

1. Use SAE multi-purpose high-temperature grease with extreme pressure (EP) performance or SAE multi-purpose lithium-based grease.
2. Use a hand-held grease gun only.
3. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
4. If a fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.
5. Replace and repair broken fittings immediately.

### 6.3.4. HOPPER LIFT CABLE INSPECTION

Check the cable for damage such as fraying, kinking, or unwinding. Replace if damaged.

**To replace:**

1. Unwind the winch drum and remove the cable clamps.
2. Free the cable from the winch and pulleys.
3. Remove the cable clamps that secure the hook in place.
4. Reverse the above steps to install the new cable.

### 6.3.5. WINCH AND PULLEY SERVICING

- Ensure the cable is slack before servicing the winch.
- Check to make sure cable clamps are secure.
- Keep a film of grease on the gears. Occasionally oil the bushings, drum shaft, and ratchet.
- Oil cable pulleys as needed (Figure 6.5)

![Cable Pulleys](image)
6.3.6. **Swing Tube Coupler Chain Servicing**

1. Remove any accumulated debris with a cloth or a soft wire brush.
2. Inspect the power transfer chain for wear.
3. Lightly oil the chain.

![Figure 6.6 Swing Tube Coupler Chain](image)

6.3.7. **Boot and Hopper Chain Drive Servicing**

**DANGER**

Rotating parts hazard:
- Fingers, hands, feet, hair, clothing, and accessories can become caught or drawn into the pinch point.
- Shut off and disable power source before adjusting or servicing.
- DO NOT operate with guards removed or modified.
- Keep away from rotating parts.
- Tie up long hair and remove jewelry.
- DO NOT wear loose-fitting clothing or items that could become caught.

1. Remove chain cover plate from the boot or hopper.
2. Check chain slack.
   - Chain slack is checked at the midpoint of the longest span. It should be no more than 1/4” (6 mm).
**Note:** The Hopper has 2 chains, 1 for each flighting.

3. Adjust the chain slack.
   a. For the Boot: loosen the 4 bolts of the lower bearing and adjust the chain slack (Figure 6.7).

![Figure 6.7 Boot Chain Drive](image)

**Note:** If the chain can't be tightened enough, remove a link from the chain. If the chain will not fit with one link removed, add a half link to the chain and replace.

b. For the Hopper: loosen the 2 bolts of the flighting bearing on the side that needs adjustment and set the chain slack (Figure 6.8).

![Figure 6.8 Hopper Chain Drive](image)

**Note:** If the chain can't be tightened enough, remove a link from the chain. If the chain will not fit with one link removed, add a half link to the chain and replace.
4. Lightly oil the chain.

**NOTICE**

Improper adjustment of chain will result in premature wear.

### 6.3.8. Upper/Lower Gearbox Oil Level

**Accessing Gearbox**
- Upper Gearbox: Unfasten latches, open spout-head lid, and service gearbox as required.
- Lower Gearbox: Open square service door and service gearbox as required.

**Checking Oil Level**

Gearbox should be level when checking or refilling oil.

1. Remove the oil filler plug located on the side of the gearbox.
2. Insert an improvised dipstick (rolled paper or plastic tie) into the oil filler hole to determine the oil level. Note the level and the condition of the oil.
   - a. If the condition of the oil is poor, consider replacing the oil ahead of schedule.
   - b. If the oil level is not within 1/4" [5 mm] of the oil filler plug, top up the oil level. **Do not overfill.**
3. Replace the oil filler plug, ensuring that it is tightened firmly.

### 6.3.9. Speed Reducer Gearbox Oil Levels

**Accessing Gearbox**

Remove the hairpin securing the gearbox safety cover, fold up the safety cover, and service gearbox as required. Replace and secure the gearbox safety cover after service is complete.

**Checking Oil Level**

The speed reducer gearbox should be level when checking or refilling oil.

1. Remove the oil filler plug located to the right of the lower flight gearbox shaft.
2. Insert an improvised dipstick (rolled paper or plastic tie) into the oil filler hole to determine the oil level. Note the level and the condition of the oil.
   - a. If the condition of the oil is poor, consider replacing the oil ahead of schedule.
   - b. If the oil level is not within 1/4" [5 mm] of the oil filler plug, top up the oil level. **Do not overfill.**
3. Replace the oil filler plug, ensuring that it is tightened firmly.
6.3.10. **MACHINE CLEANING**

1. Clean out excess grain from auger tube, boot, and hopper.
2. Make sure water can drain from the auger tube and hopper and then wash the tube with a water hose or pressure washer until all dirt, mud, debris, or residue is gone.
3. Provide sufficient time for the water to drain from the auger.

6.3.11. **TIRE PRESSURE CHECK**

With a tire pressure gauge, check each tire to make sure it is between 18–24 psi (124 - 165 kPa). Ensure tires are cold prior to checking pressure.

6.3.12. **WHEEL BEARINGS REPACK**

1. Remove the wheel bolts and the wheels.
2. Remove the wheel bearing and pack with grease. Refer to page 90 for recommended grease.

6.3.13. **WHEEL BOLT TIGHTENING**

1. Clean wheel and hub mounting surfaces to ensure there is no rust or debris.
2. Install the wheel and finger-tighten the wheel bolts. Inspect to make sure the wheel is sitting flush with the hub.
3. Tighten the wheel bolts with a torque wrench to 80 ft-lb (±10 ft-lb) of torque.

   **Note:** Tighten the wheel bolts in a diagonal pattern as shown in Figure 6.9.

6.3.14. **TRUSS CABLE ADJUSTMENT**

The cables are properly tightened when:

- There is no slack in the cables.
- The discharge end is deflected sightly upwards.
- The tube is straight side-to-side.

**TIGHTENING CABLES**

The location of the cable adjustment points are shown in the accompanying figure.
1. Lift the discharge end of the auger with a front end loader so that the tube has a slight upward deflection at the discharge to give the cable some slack.

2. Tighten the left-side and right-side eyebolts equally to increase the tension in the cable (use eyebolt nuts to tighten eyebolts).

3. If the proper cable tension can’t be obtained before the eyebolts run out of adjustment, then do the following:
   a. Loosen the eyebolts.
   b. At the eyebolts, loosen the cable clamps, shorten the cables until there is tension on the cable, then tighten the cable clamps fully.
   c. Return to step 2.

**STRAIGHTENING THE TUBE**

If the tube is sagging at the discharge:

- Lift the discharge end of the auger with a front end loader or rest on a bin so that the tube has a slight upward deflection at the discharge to give the cable some slack.
- Tighten the eyebolts evenly on both sides so the tube stays straight.
- Tighten the cables so there is a slight upwards angle on the discharge end.
- Check the short cable for slack and tighten as necessary.

### 6.3.15. Changing Upper/Lower Gearbox Oil

1. Remove the gearbox and place it on a stable and level work bench.
2. Place a pan under the drain plug.
3. Use a wrench and remove the drain plug.
4. Remove the filler plug on the side of the gear box so air can enter the gearbox and the oil will drain freely.
5. Allow the oil to drain completely.
6. Replace the drain plug, ensuring that it is tightened firmly.
7. Add oil until the gearbox is full up to the filler plug. A flexible funnel may be required. **Do not overfill.**
8. Re-install the gearbox, ensuring that it is tightened firmly.

### 6.3.16. Changing the Speed Reducer Gearbox Oil

1. The speed reducer gearbox should be level when changing oil.
2. Place a pan under the drain plug located on the bottom of the speed reducer gearbox.
3. Remove the drain plug.
4. Remove the filler plug located to the right of the lower flight gearbox shaft, so air can enter the gearbox and allow the oil to drain freely.
5. When the oil has drained completely, replace the drain plug, ensuring that it is tightened firmly.
6. Add oil to the gearbox until the oil level is up to the middle of the sight glass located to the right of the lower flight gearbox shaft. A flexible funnel may be required. **Do not overfill.**
7. Re-install the filler plug, ensuring that it is tightened firmly.

### 6.4. STORAGE

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

To ensure a long, trouble-free life, the following procedure should be followed when preparing the unit for storage after the season’s use:

1. Fully lower the auger.
2. Remove all residual material from the auger.
3. Remove entangled material from all moving or rotating parts.
4. Wash the entire machine thoroughly using a water hose or pressure washer to remove all dirt, mud, debris, and residue.
5. Repair or replace any worn or damaged components to prevent any unnecessary downtime at the start of the next season.
6. Touch up all paint nicks and scratches to prevent rusting.
7. Position the auger in an area that is dry, level, free of debris, and away from human activity.
8. Support the hitch on blocks to eliminate prolonged contact with the ground.
9. Lubricate all grease fittings.
10. Clean and lightly lubricate the spline on the PTO driveline. Cover the PTO driveline with a plastic bag to protect it from the weather and place it in the transport saddle.
11. Check tire pressure and inflate to 24 psi (165 kPa).
12. Chock the wheels.
13. Place the hopper in transport position, ensuring there will be adequate drainage of any moisture.
7. Troubleshooting

The following table lists the causes and solutions to some potential problems you may encounter in operating your swing-away auger.

Table 7.1

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSED BY</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The auger does not turn.</td>
<td>Auger is plugged or obstructed.</td>
<td>Identify and remove obstruction.</td>
</tr>
<tr>
<td></td>
<td>A bearing has seized.</td>
<td>Identify the bearing and replace.</td>
</tr>
<tr>
<td></td>
<td>A chain is broken.</td>
<td>Identify the chain and repair or replace.</td>
</tr>
<tr>
<td></td>
<td>The gearbox has seized.</td>
<td>Fix or replace the gearbox.</td>
</tr>
<tr>
<td></td>
<td>Gearbox coupler bolt is broken or missing.</td>
<td>Replace the bolt.</td>
</tr>
<tr>
<td></td>
<td>PTO shear bolt has failed.</td>
<td>Replace the bolt.</td>
</tr>
<tr>
<td>The upper auger sections will not turn.</td>
<td>The coupler bolt below the non-rotating section is broken or missing.</td>
<td>Replace the bolt.</td>
</tr>
<tr>
<td>Auger is noisy.</td>
<td>Obstruction in the auger.</td>
<td>Identify and remove obstruction.</td>
</tr>
<tr>
<td></td>
<td>Flighting shaft bolts are loose or damaged.</td>
<td>Tighten or replace bolts.</td>
</tr>
<tr>
<td></td>
<td>Auger shaft is bent.</td>
<td>Repair or replace shaft.</td>
</tr>
<tr>
<td></td>
<td>Flighting is damaged.</td>
<td>Repair or replace flighting.</td>
</tr>
<tr>
<td></td>
<td>Worn bearing.</td>
<td>Repair or replace bearing.</td>
</tr>
<tr>
<td></td>
<td>Low gear oil level.</td>
<td>Inspect the gearbox and repair or replace if damaged. If no damage is found, add oil to gearbox.</td>
</tr>
<tr>
<td></td>
<td>Tube is misaligned.</td>
<td>Adjust truss cables.</td>
</tr>
<tr>
<td>The auger will not raise or lower.</td>
<td>Closed hydraulic valve.</td>
<td>Open hydraulic valve.</td>
</tr>
<tr>
<td></td>
<td>Inadequate hydraulic pressure.</td>
<td>Adjust the pressure if possible, or use an alternate hydraulic supply.</td>
</tr>
<tr>
<td></td>
<td>Damaged cylinder.</td>
<td>Fix or replace the cylinder.</td>
</tr>
<tr>
<td></td>
<td>Missing or broken cylinder pin.</td>
<td>Replace cylinder pin.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic system leak.</td>
<td>Identify and repair leak.</td>
</tr>
<tr>
<td></td>
<td>Auger movement is obstructed.</td>
<td>Identify and clear the obstruction.</td>
</tr>
<tr>
<td>Low material augering rate.</td>
<td>Tractor PTO speed is too slow.</td>
<td>Increase engine rpm.</td>
</tr>
<tr>
<td></td>
<td>Inadequate material flow from truck or hopper.</td>
<td>Increase flow of material.</td>
</tr>
<tr>
<td></td>
<td>Flow into the auger hopper is restricted.</td>
<td>Clear grating of obstructions.</td>
</tr>
<tr>
<td></td>
<td>Material is too wet or heavy.</td>
<td>Unloading rates are for dry grain.</td>
</tr>
<tr>
<td></td>
<td>Flighting is worn.</td>
<td>Repair or replace as required.</td>
</tr>
<tr>
<td>Auger will not stay in elevated position.</td>
<td>Leak in auger hydraulic cylinder or fittings.</td>
<td>Identify and repair leak.</td>
</tr>
<tr>
<td></td>
<td>Leak in tractor hydraulics.</td>
<td>Close hydraulic valve to isolate cylinder from tractor hydraulics.</td>
</tr>
<tr>
<td>Tube is misaligned.</td>
<td>Loose truss cables.</td>
<td>Tighten cables as required.</td>
</tr>
</tbody>
</table>
8. Transport

**WARNING** Before continuing, ensure you have read and understand the relevant information in the safety section. Safety information is provided to help prevent serious injury, death, or property damage.

This auger is designed to be transported and operated without unhitching unit from tractor.

**CAUTION**

Always tow auger in the lowered position.

Disconnect PTO driveline from tractor for transport and placement.

### 8.1. TRANSPORT PROCEDURE

1. Place auger in full down position.
   - Disconnect PTO driveline from tractor.
   - Seat roller track shoe against the upper trackstop with slight tension on the lift cable.
2. Fully retract wheel axles. Jack up each wheel in turn, and secure axles with axle pin and snap pin. See Figure 8.1 for jack lug and axle pin locations.

**Figure 8.1 Retract Wheel Axles**

3. Position and secure hitch pin and safety chain (See Figure 8.2). Place safety chain through clevis welded to auger hitch tube and bolt together before attaching to tractor.
4. Place the intake hopper into transport position (see Figure 8.3):
   a. Attach the winch cable hook to the appropriate hopper lifting point.
   b. Fully raise the hopper with intake side facing towards the main auger tube.
   c. Secure the hopper with the transport chain and hook.

   **Note:** Do not operate auger with intake hopper in transport position. This will damage the u-joint.

5. Place swivel jack (on side of hitch) in transport position and lock.
Important: *Intake feed side of hopper must face main auger when in transport (Figure 8.3)*

6. Clear all untrained personnel from transport zone.

CAUTION

If auger wheels are partially or fully buried in snow or grain, failure to clear the area around the wheels before moving may cause damage to the auger or result in serious injury.

WARNING

Beware of overhead obstructions and electrical wires and devices. See “Specifications” on page 107 for minimum transport heights.
9. Appendix

9.1. SPECIFICATIONS

Important: Westfield Industries reserves the right to change specifications without notice.

Table 9.1

<table>
<thead>
<tr>
<th>Specification</th>
<th>MKX130-84</th>
<th>MKX130-94</th>
<th>MKX130-114</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPACITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unloading Rate</td>
<td>8 700 - 9 600 Bu/Hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIMENSIONS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tube Size</td>
<td>13”</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(33.0 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>84’</td>
<td>94’</td>
<td>114’</td>
</tr>
<tr>
<td></td>
<td>(2.5 m)</td>
<td>(2.84 m)</td>
<td>(3.47 m)</td>
</tr>
<tr>
<td>Width</td>
<td>12’ 2” / 15’ 2”</td>
<td>12’ 2” / 15’ 2”</td>
<td>12’ 2” / 15’ 2”</td>
</tr>
<tr>
<td></td>
<td>(3.71 m / 4.62 m)</td>
<td>(3.71 m / 4.62 m)</td>
<td>(3.71 m / 4.62 m)</td>
</tr>
<tr>
<td>Height</td>
<td>13’ 1”</td>
<td>13’ 4”</td>
<td>14’ 6”</td>
</tr>
<tr>
<td></td>
<td>(4.0 m)</td>
<td>(4.06 m)</td>
<td>(4.12 m)</td>
</tr>
<tr>
<td>Discharge Clearnace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min.</td>
<td>10’ 2”</td>
<td>10’ 4”</td>
<td>12’ 2”</td>
</tr>
<tr>
<td></td>
<td>(3.05 m)</td>
<td>(3.14 m)</td>
<td>(3.65 m)</td>
</tr>
<tr>
<td>Max.</td>
<td>58’</td>
<td>59’</td>
<td>67’ 9”</td>
</tr>
<tr>
<td></td>
<td>(17.67 m)</td>
<td>(17.98 m)</td>
<td>(20.65 m)</td>
</tr>
<tr>
<td>Reach to Wheels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min.</td>
<td>32’ 2”</td>
<td>33’ 5”</td>
<td>45’</td>
</tr>
<tr>
<td></td>
<td>(9.80 m)</td>
<td>(10.21 m)</td>
<td>(13.72 m)</td>
</tr>
<tr>
<td>Max.</td>
<td>42’ 9”</td>
<td>43’ 8”</td>
<td>55’</td>
</tr>
<tr>
<td></td>
<td>(13.30 m)</td>
<td>(13.0 m)</td>
<td>(16.76 m)</td>
</tr>
<tr>
<td><strong>TIRES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>16” Bias Ply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>18 – 24 psi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hubs</td>
<td>6 Bolt</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automotive Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>WEIGHT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Weight</td>
<td>6 544 lb</td>
<td>7 642 lb</td>
<td>9 109 lb</td>
</tr>
<tr>
<td></td>
<td>2 968 kg</td>
<td>3 466 kg</td>
<td>4 131 kg</td>
</tr>
<tr>
<td><strong>PTO DRIVE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Requirements</td>
<td>1135-155 HP</td>
<td>145-165 HP</td>
<td>165-185 HP</td>
</tr>
<tr>
<td>PTO Speed</td>
<td>550 RPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTO Shaft</td>
<td>55R</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch Jack</td>
<td>2000 lb Side Winder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/Lower Gearbox Oil Capacity</td>
<td>0.9 US quarts (0.85 L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Reducer Gearbox Oil Capacity</td>
<td>2.65 US quarts (2.5 L)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
9.2. BOLT TORQUE VALUES

Tables 9.2 and 9.3 give correct torque values for various bolts and capscrews. The bolt diameter is measured to the outside of the threads. When tightening all bolts, tighten the nut on the bolt to the torque specified in the tables, unless otherwise specified. Do not replace or substitute bolts, nuts, or other hardware that is of lesser strength than the hardware supplied by the manufacturer.

Torque values indicated below are valid for non-greased or non-oiled threads and head, unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

Table 9.2 SAE Bolt Torque

<table>
<thead>
<tr>
<th>Bolt Diameter</th>
<th>(N·m)</th>
<th>(ft·lb)</th>
<th>(N·m)</th>
<th>(ft·lb)</th>
<th>(N·m)</th>
<th>(ft·lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>9</td>
<td>17</td>
<td>12</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>13</td>
<td>10</td>
<td>25</td>
<td>19</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>27</td>
<td>20</td>
<td>45</td>
<td>33</td>
<td>63</td>
<td>45</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>41</td>
<td>30</td>
<td>72</td>
<td>53</td>
<td>100</td>
<td>75</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>61</td>
<td>45</td>
<td>110</td>
<td>80</td>
<td>155</td>
<td>115</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>95</td>
<td>60</td>
<td>155</td>
<td>115</td>
<td>220</td>
<td>165</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>128</td>
<td>95</td>
<td>215</td>
<td>160</td>
<td>305</td>
<td>220</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>225</td>
<td>165</td>
<td>390</td>
<td>290</td>
<td>540</td>
<td>400</td>
</tr>
<tr>
<td>7/8&quot;</td>
<td>230</td>
<td>170</td>
<td>570</td>
<td>420</td>
<td>880</td>
<td>650</td>
</tr>
<tr>
<td>1&quot;</td>
<td>345</td>
<td>225</td>
<td>850</td>
<td>630</td>
<td>1320</td>
<td>970</td>
</tr>
</tbody>
</table>
### Table 9.3 Metric Bolt Torque

<table>
<thead>
<tr>
<th>Bolt Diameter</th>
<th>(N·m)</th>
<th>(ft·lb)</th>
<th>(N·m)</th>
<th>(ft·lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3</td>
<td>0.5</td>
<td>0.4</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>M4</td>
<td>3</td>
<td>2.2</td>
<td>4.5</td>
<td>3.3</td>
</tr>
<tr>
<td>M5</td>
<td>6</td>
<td>4</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>M6</td>
<td>10</td>
<td>7</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>M8</td>
<td>25</td>
<td>18</td>
<td>35</td>
<td>26</td>
</tr>
<tr>
<td>M10</td>
<td>50</td>
<td>37</td>
<td>70</td>
<td>52</td>
</tr>
<tr>
<td>M12</td>
<td>90</td>
<td>66</td>
<td>125</td>
<td>92</td>
</tr>
<tr>
<td>M14</td>
<td>140</td>
<td>103</td>
<td>200</td>
<td>148</td>
</tr>
<tr>
<td>M16</td>
<td>225</td>
<td>166</td>
<td>310</td>
<td>229</td>
</tr>
<tr>
<td>M20</td>
<td>435</td>
<td>321</td>
<td>610</td>
<td>450</td>
</tr>
<tr>
<td>M24</td>
<td>750</td>
<td>553</td>
<td>1050</td>
<td>774</td>
</tr>
<tr>
<td>M30</td>
<td>1495</td>
<td>1103</td>
<td>2100</td>
<td>1550</td>
</tr>
<tr>
<td>M36</td>
<td>2600</td>
<td>1917</td>
<td>3675</td>
<td>2710</td>
</tr>
</tbody>
</table>
WARRANTY

Westfield Industries Ltd. warrants products of its manufacture against defects in materials or workmanship under normal and reasonable use for a period of one year after date of delivery to the original purchaser.

Our obligation under this warranty is limited to repairing, replacing, or refunding defective part or parts which shall be returned to a distributor or a dealer of our Company, or to our factory, with transportation charges prepaid. This warranty does not obligate Westfield Industries Ltd. to bear the cost of labor in replacing defective parts. Any defects must be reported to the Company before the end of the one year period.

This warranty shall not apply to equipment which has been altered, improperly assembled, improperly maintained, or improperly repaired so as to adversely affect its performance. Westfield Industries Ltd. makes no express warranty of any character with respect to parts not of its manufacture.

The foregoing is in lieu of all other warranties, expressed or implied, including any warranties that extend beyond the description of the product, and the IMPLIED WARRANTY of MERCHANTABILITY is expressly excluded.

WESTFIELD INDUSTRIES LTD.
ROSENORT, MANITOBA
CANADA
R0G 1W0