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.

Part Number: 30869 R7
Revised: 30/8/2017
This product has been designed and constructed according to general engineering standards\textsuperscript{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>

\textsuperscript{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.}
New in this Manual

The following changes have been made in this revision of the manual:

<table>
<thead>
<tr>
<th>Description</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>16&quot; lift arm design has been modified.</td>
<td>Section 1.1.2. &quot;Grain Hopper&quot; on page 12</td>
</tr>
<tr>
<td></td>
<td>Section 3.13. &quot;Install the Hopper Lift Arm&quot; on page 93</td>
</tr>
<tr>
<td></td>
<td>Section 3.14. &quot;Install the Hydraulic Winch&quot; on page 94</td>
</tr>
<tr>
<td></td>
<td>Section 4.1. &quot;Transport Position&quot; on page 109</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

1. Introduction .......................................................................................................................... 9  
   1.1. Overview ................................................................................................................ 10  
       1.1.1. Grain Transfer Boot and PTO Driveline .................................................... 11  
       1.1.2. Grain Hopper ............................................................................................ 12  
       1.1.3. Auger Tube Hydraulic Lift ......................................................................... 14  

2. Safety .................................................................................................................................. 15  
   2.1. General Safety Information .................................................................................... 15  
   2.2. Assembly Safety ..................................................................................................... 16  
   2.3. Operation Safety .................................................................................................... 17  
   2.4. PTO Safety ............................................................................................................. 19  
   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
# TABLE OF CONTENTS

3. Assembly ......................................................................................................................................................... 39
  3.1. General Assembly ................................................................................................................................. 39
  3.2. Assemble the Auger Tube ....................................................................................................................... 41
    3.2.1. Identify and Arrange Auger Tube Sections ....................................................................................... 41
    3.2.2. Connect Auger Tubes ....................................................................................................................... 44
    3.2.3. Install the Hydraulic Lift Cylinders ............................................................................................... 46
    3.2.4. Install the Track Shoe and Track Stop ............................................................................................ 50
    3.2.5. Install the Boot on the Auger Tube ............................................................................................... 51
    3.2.6. Assemble the PTO Shield Assembly ............................................................................................... 53
    3.2.7. Install the Speed Reducer on the Boot ........................................................................................... 54
    3.2.8. Install the Boot Tow Bar ............................................................................................................... 57
    3.2.9. Install the Discharge Spout ......................................................................................................... 58
    3.2.10. Set the Thrust Adjuster .................................................................................................................. 59
    3.2.11. Apply Logo and Model Decals on the Auger Tubes .................................................................... 60
  3.3. Install Truss Support Towers and Truss Tubes ......................................................................................... 62
  3.4. Install Truss Cables .................................................................................................................................. 70
  3.5. Assemble the Lower Frame ...................................................................................................................... 72
  3.6. Assemble the Wheel Hub and Install Tires ............................................................................................ 74
  3.7. Connect the Auger Tube to the Frame .................................................................................................... 75
  3.8. Install Lift Cylinder Cables to the Lift Assist .......................................................................................... 78
  3.9. Connect Hydraulic Hoses and Ball Valve .............................................................................................. 80
  3.10. Connect the PTO Driveline .................................................................................................................. 86
  3.11. Connect the Intake Hopper to the Swing Tube .................................................................................... 87
  3.12. Connect the Spout Head to the Grain Transfer Boot ........................................................................... 91
  3.13. Install the Hopper Lift Arm .................................................................................................................. 93
  3.15. Electric Power Swing Assembly ........................................................................................................ 97
    3.15.1. Power Swing Components ....................................................................................................... 97
    3.15.2. Install the Landing Gear ............................................................................................................. 98
    3.15.3. Install and Connect the Receiver Box .......................................................................................... 100
  3.16. Install the Hitch Jack ............................................................................................................................ 103
  3.17. Install the Manual Container ............................................................................................................ 105
  3.18. Auger-to-Tractor Hookup .................................................................................................................... 106

4. Transport ......................................................................................................................................................... 109
  4.1. Transport Position .................................................................................................................................. 109

5. Placement ....................................................................................................................................................... 113
  5.1. Placement Procedure ............................................................................................................................ 113
# TABLE OF CONTENTS

6. Operation ........................................................................................................................ 119
   6.1. Operator Controls ........................................................................................................ 119
   6.2. Pre-Operation ............................................................................................................. 121
      6.2.1. Checklist .............................................................................................................. 121
      6.2.2. PTO Drive ........................................................................................................... 122
      6.2.3. Hydraulics ........................................................................................................... 122
      6.2.4. Electric Power Swing Operation ........................................................................... 123
   6.3. Operating Procedures .............................................................................................. 124
      6.3.1. Initial Start-Up ...................................................................................................... 125
      6.3.2. Normal Start ........................................................................................................ 126
      6.3.3. Normal Shutdown ............................................................................................... 127
      6.3.4. Emergency Stop / Full-Tube Restart ................................................................... 128
      6.3.5. Lowering & Completion ...................................................................................... 128
      6.3.6. Operation in Reverse ......................................................................................... 129

7. Maintenance and Storage .............................................................................................. 131
   7.1. Maintenance Intervals ............................................................................................. 131
   7.2. Fluids and Lubricants .............................................................................................. 132
   7.3. Maintenance Procedures ......................................................................................... 132
      7.3.1. Visual Inspection ............................................................................................... 132
      7.3.2. Hydraulic Hose and Coupler Inspection ............................................................. 133
      7.3.3. Machine Greasing ............................................................................................. 133
      7.3.4. Hopper Lift Cable Inspection ............................................................................ 135
      7.3.5. Winch and Pulley Servicing ............................................................................. 136
      7.3.6. Gearbox Coupling Shaft Servicing ..................................................................... 136
      7.3.7. Hopper Chain Drive Servicing ......................................................................... 137
      7.3.8. Upper and Lower Gearbox Oil Levels ............................................................... 138
      7.3.9. Speed Reducer Gearbox Oil Levels .................................................................... 138
      7.3.10. Power Swing Drive Chain Servicing ............................................................... 138
      7.3.11. Machine Cleaning ............................................................................................. 139
      7.3.12. Tire Pressure Check .......................................................................................... 139
      7.3.13. Wheel Bearings Repack ................................................................................. 139
      7.3.14. Wheel Bolt Tightening ..................................................................................... 139
      7.3.15. Truss Cable Adjustment .................................................................................... 139
      7.3.16. Power Swing Remote Transmitter Battery Check ........................................... 140
      7.3.17. Changing Upper and Lower Gearbox Oil ......................................................... 140
      7.3.18. Changing the Speed Reducer Gearbox Oil ....................................................... 141
   7.4. Storage ....................................................................................................................... 141
      7.4.1. Power Swing Storage .......................................................................................... 142

8. Troubleshooting ............................................................................................................. 143
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Appendix</td>
<td>145</td>
</tr>
<tr>
<td>9.1. Specifications</td>
<td>145</td>
</tr>
<tr>
<td>9.2. Bolt Torque Values</td>
<td>146</td>
</tr>
<tr>
<td>9.3. Power Swing Remote Transmitter Instructions</td>
<td>148</td>
</tr>
<tr>
<td>9.3.1. Programming Receivers with Serial Numbers</td>
<td>149</td>
</tr>
<tr>
<td>310000 and Higher</td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td>151</td>
</tr>
</tbody>
</table>
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

MKX160 augers are equipped with the following standard features:

- a high-capacity grain transfer boot
- a PTO driveline for auger power.
- a hydraulically controlled main auger tube lift
- a low-profile grain hopper (left or right side operation)
- a hydraulic winch for lifting the intake hopper
- an electric power swing for intake hopper
- a 1000 RPM PTO Drive (with forward and reverse auger direction capability)

Figure 1.1 MKX160 Series Auger (85’ model shown)
1.1.1. GRAIN TRANSFER BOOT AND PTO DRIVELINE

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.

The power source for the auger is a standard 1000 RPM tractor PTO. The PTO driveline connections (both forward and reverse directions) are located on the speed reducer gearbox above the tractor hitch.

The auger tube lift valve used to allow or shut off hydraulic pressure to the main auger tube lift cylinders, and is located on the side of the boot (see figure below). See section 6.1. 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 1.2 Grain Transfer Boot Features
1.1.2. 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 “Connect the Intake Hopper to the Swing Tube” on page 87).

The grain hopper must be lifted and secured for transport using the hopper lift arm, hydraulic winch, and transport chain and hook (see Figure 1.4). The hopper lift arm can be reconfigured for lifting on either side of the auger.

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 1.3 Grain Hopper

Figure 1.4 Grain Hopper Lifted into Transport Position
1.1.3. AUGER TUBE HYDRAULIC LIFT

The auger tube is raised and lowered using 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 1.5).

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 119).

Figure 1.5 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>
<th>Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![DANGER Symbol]</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>NOTICE</th>
<th>Indicates a potentially hazardous situation that, if not avoided, may result in property damage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>![NOTICE Symbol]</td>
<td></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 clean-out doors open or unlatched.
- Do not stand in the path of the Power Swing when it is moving.
Figure 2.1 Operational Safety, Work Areas

- **BIN**
- **Support discharge end**
- **OVERHEAD WIRES KEEP AWAY**
- **UNDER AUGER AND UNDER CARRIAGE AREA HAZARD KEEP OUT**
- **HAZARD AREA KEEP AWAY**
- **PTO DRIVE AREA HAZARD KEEP OUT**
- **Check wheels**
- **Check wheels**
- **Chock wheels Apply Park Brakes**
- **Gravity Wagon or Truck**

**WORK AREA! AUTHORIZED PERSONNEL ONLY**

Walking Surface - Is it slippery? Are there things to trip you?
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 PTO operating speed of 1000 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.
• Use only genuine Westfield replacement parts or equivalent. Replacement parts such as intake guards, pulley guards, PTO driveline shields, winches, and lift cables must meet ASABE standards or serious injury may result. Use of unauthorized parts will void warranty. If in doubt, contact Westfield or your Westfield dealer.
• Do not modify any auger components without authorization from Westfield. Modification can be dangerous and result in serious injuries.

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.
### Table 2.1. Safety Decal Description, Detail, and Location Information

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Type</th>
<th>Detail</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>17094</td>
<td>Rotating flighting, grain transfer boot</td>
<td>Danger</td>
<td>Figure 2.12</td>
<td>Figure 2.4</td>
</tr>
<tr>
<td>17107</td>
<td>Close lift valve after raising</td>
<td>Caution</td>
<td>Figure 2.24</td>
<td>Figure 2.4</td>
</tr>
<tr>
<td>17113</td>
<td>Caution read</td>
<td>Warning</td>
<td>Figure 2.18</td>
<td>Figure 2.3, 2.5</td>
</tr>
<tr>
<td>17377</td>
<td>To lower auger</td>
<td>Notice</td>
<td>Figure 2.28</td>
<td>Figure 2.5</td>
</tr>
<tr>
<td>17378</td>
<td>Transport restrictions</td>
<td>Notice</td>
<td>Figure 2.27</td>
<td>Figure 2.5</td>
</tr>
<tr>
<td>18859</td>
<td>Disconnect PTO driveline</td>
<td>Notice</td>
<td>Figure 2.26</td>
<td>Figure 2.7</td>
</tr>
<tr>
<td>20803</td>
<td>Reattach missing guards</td>
<td>Warning</td>
<td>Figure 2.22</td>
<td>Figure 2.4</td>
</tr>
<tr>
<td>20804</td>
<td>Transport hazard, hitching and towing</td>
<td>Warning</td>
<td>Figure 2.19</td>
<td>Figure 2.4, 2.2</td>
</tr>
<tr>
<td>20805</td>
<td>High pressure fluid hazard</td>
<td>Warning</td>
<td>Figure 2.20</td>
<td>Figure 2.6</td>
</tr>
<tr>
<td>20806</td>
<td>High pressure fluid hazard</td>
<td>Warning</td>
<td>Figure 2.14</td>
<td>Figure 2.9</td>
</tr>
<tr>
<td>20807</td>
<td>Serious injury or death hazards</td>
<td>Warning</td>
<td>Figure 2.16</td>
<td>Figure 2.3, 2.5</td>
</tr>
<tr>
<td>20809</td>
<td>Rotating cable sheaves hazard</td>
<td>Warning</td>
<td>Figure 2.15</td>
<td>Figure 2.6</td>
</tr>
<tr>
<td>20810</td>
<td>To prevent serious injury</td>
<td>Warning</td>
<td>Figure 2.21</td>
<td>Figure 2.9</td>
</tr>
<tr>
<td>20811</td>
<td>Upending hazard</td>
<td>Warning</td>
<td>Figure 2.17</td>
<td>Figure 2.5</td>
</tr>
<tr>
<td>20812</td>
<td>Rollover/transport hazard</td>
<td>Warning</td>
<td>Figure 2.23</td>
<td>Figure 2.8</td>
</tr>
<tr>
<td>20813</td>
<td>Rotating flighting hazard</td>
<td>Danger</td>
<td>Figure 2.11</td>
<td>Figure 2.4, 2.2</td>
</tr>
<tr>
<td>20816</td>
<td>Electrocution hazard</td>
<td>Danger</td>
<td>Figure 2.10</td>
<td>Figure 2.3, 2.5</td>
</tr>
<tr>
<td>20818</td>
<td>Rotating PTO driveline hazard</td>
<td>Danger</td>
<td>Figure 2.13</td>
<td>Figure 2.4</td>
</tr>
<tr>
<td>21074</td>
<td>Auger-to-tractor hookup</td>
<td>Notice</td>
<td>Figure 2.25</td>
<td>Figure 2.4</td>
</tr>
</tbody>
</table>
Figure 2.2 Transition and Hopper Decals, Location

Figure 2.3 Swing Tube Head Decals, Location
Figure 2.4 Boot, PTO Shield, and Shield Bracket Decals, Location
Figure 2.5 Lower Tube Decals, Location

Figure 2.6 Hydraulic Cylinder Decals, Location
Figure 2.7 Tow Bar Decal, Location

Figure 2.8 Axle Decals, Location
Figure 2.9 Hydraulic Winch Decals, Location
Figure 2.10 Decal 20816

**DANGER**

**ELECTROCUTION HAZARD**

To prevent death or serious injury:

- When operating or moving, keep equipment away from overhead power lines and devices.
- Fully lower equipment and truck box before moving.

This equipment is not insulated. Electrocution can occur without direct contact.

Made in Canada 20816
Figure 2.11 Decal 20813

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.
2. SAFETY

WESTFIELD - GRAIN AUGERS
MKX160-85/105/125

Figure 2.12 Decal 17094

Figure 2.13 Decal 20818

Figure 2.14 Decal 20806
WARNING
To prevent serious injury or death:
• Keep away from rotating cable sheaves and lift cables.
• Inspect lift cable periodically; replace if damaged.
• Inspect cable clamps periodically; tighten if necessary.

Figure 2.15 Decal 20809

WARNING
To prevent serious injury or death:
• Read and understand the manual before assembling, operating, or maintaining the equipment.
• Only trained personnel may assemble, operate, or maintain the equipment.
• Children and untrained personnel must be kept outside of the work area.
• If the manual, guards, or decals are missing or damaged, contact factory or dealer for replacements.
• Lock out power before performing maintenance.
• To prevent equipment collapse, support equipment tube while disassembling certain components.
• When equipped, electric motors must be grounded. Disconnect power before resetting overloads.

Figure 2.16 Decal 20807
Figure 2.17 Decal 20811

Figure 2.18 Decal 17113
**WARNING**

**ENTANGLEMENT HAZARD**

To prevent serious injury or death:

- Keep body, hair, and clothing away from rotating pulleys, belts, chains, and sprockets.
- Do not operate with any guard removed or modified. Keep guards in good working order.
- Shut off and remove key or lock out power source before inspecting or servicing machine.

Made in Canada

(LOCATED ON HOPPER CHAIN GUARD)

Figure 2.19 Decal 20804
**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 disconnecting hydraulic line.
- Wear proper hand and eye protection and use wood or cardboard, not hands, when searching for leaks.

Figure 2.20 Decal 20805

---

**WARNING**

To prevent serious injury or death:

- Keep away from rotating cable drum and winch cable.
- Inspect lift cable periodically; replace if damaged.
- Inspect cable clamps periodically; tighten if necessary.

Figure 2.21 Decal 20810
**WARNING**

MISSING GUARD HAZARD

To prevent serious injury or death, shut off power and reattach guard before operating machine.

Made in Canada

20803

PLACED ON MACHINE BEHIND GUARD

Figure 2.22 Decal 20803

**WARNING**

ROLLOVER / TRANSPORT HAZARD

To prevent serious injury or death:

- Fully extend axles before raising auger tube.
- Retract axles before transporting.

20812

Made in Canada

Figure 2.23 Decal 20812

**CAUTION**

To prevent personal injury or damage to equipment, close valve in lift cylinder hydraulic line after raising equipment into position.

17107

Made in Canada

Figure 2.24 Decal 17107
NOTICE

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 2.25 Decal 21074

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.

Figure 2.26 Decal 18859
NOTICE

This equipment is not intended for transport on public roads. If it must be moved, check local regulations.

To avoid damaging the equipment:

- Be careful when turning corners.
- Watch for low overhead objects.
- Retract axles before transporting unit.

Figure 2.27 Decal 17378

NOTICE

To lower equipment, start tractor, then engage hydraulic lever in down position.

- This pumps oil to upper chamber of the hydraulic cylinders preventing overfill of tractor reservoir.

Made in Canada

Figure 2.28 Decal 17377
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.

**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.

### 3.1. GENERAL ASSEMBLY

- 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.
- If assembling inside a building, be sure the ceiling is at least 17’ (5.18 m) high to provide clearance when installing the undercarriage.
- Make sure you have sufficient lighting for the work area.
- Bring all the tools, blocks, stands, jacks, and hoists to the assembly area before starting.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.

The following tools and equipment are required to assemble the machine:

- 11-14 support stands (tube section supports, three per tube)
- Four saw horses (2000 lb / 907 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 grip)
- Two C-clamps or vise grips
- One forklift with a 6000 lb lifting capacity
- One picker with minimum reach of 12’ (3.66 m) 8000-10000 lb 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)
- 1/2” drive impact wrench (recommended)
- 1/2” extension
- 3/8”, 1/2”, 5/8”, 3/4”, 15/16”, and 1-1/8” sockets for 1/2” drive
- 3/8”, 1/2”, 5/8”, 11/16”, 3/4”, 7/8”, 15/16”, 1”, 1-1/16”, and 1-1/8” flat wrenches

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>41</td>
</tr>
<tr>
<td>Connect Auger Tubes</td>
<td>44</td>
</tr>
<tr>
<td>Install the Hydraulic Lift Cylinders</td>
<td>46</td>
</tr>
<tr>
<td>Install the Track Shoe and Track Stop</td>
<td>50</td>
</tr>
<tr>
<td>Install the Boot on the Auger Tube</td>
<td>51</td>
</tr>
<tr>
<td>Assemble the PTO Shield Assembly</td>
<td>53</td>
</tr>
<tr>
<td>Install the Speed Reducer on the Boot</td>
<td>54</td>
</tr>
<tr>
<td>Install the Boot Tow Bar</td>
<td>57</td>
</tr>
<tr>
<td>Install the Discharge Spout</td>
<td>58</td>
</tr>
<tr>
<td>Set the Thrust Adjuster</td>
<td>59</td>
</tr>
<tr>
<td>Apply Logo and Model Decals on the Auger Tubes</td>
<td>60</td>
</tr>
<tr>
<td>Install Truss Support Towers and Truss Tubes</td>
<td>62</td>
</tr>
<tr>
<td>Install Truss Cables</td>
<td>70</td>
</tr>
<tr>
<td>Assemble the Lower Frame</td>
<td>72</td>
</tr>
<tr>
<td>Assemble the Wheel Hub and Install Tires</td>
<td>74</td>
</tr>
<tr>
<td>Connect the Auger Tube to the Frame</td>
<td>75</td>
</tr>
<tr>
<td>Install Lift Cylinder Cables to the Lift Assist</td>
<td>78</td>
</tr>
<tr>
<td>Connect Hydraulic Hoses and Ball Valve</td>
<td>80</td>
</tr>
<tr>
<td>Connect the PTO Driveline</td>
<td>86</td>
</tr>
<tr>
<td>Connect the Intake Hopper to the Swing Tube</td>
<td>87</td>
</tr>
<tr>
<td>Connect the Spout Head to the Grain Transfer Boot</td>
<td>91</td>
</tr>
<tr>
<td>Install the Hopper Lift Arm</td>
<td>93</td>
</tr>
<tr>
<td>Install the Hydraulic Winch</td>
<td>94</td>
</tr>
<tr>
<td>Electric Power Swing Assembly</td>
<td>97</td>
</tr>
<tr>
<td>Install the Hitch Jack</td>
<td>103</td>
</tr>
<tr>
<td>Install the Manual Container</td>
<td>105</td>
</tr>
<tr>
<td>Auger-to-Tractor Hookup</td>
<td>106</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 MKX160-85 Tube Identification and Order

![Diagram showing tube identification and order]
Figure 3.2 MKX160-105 Tube Identification and Order

- LOWER TUBE 22452
- LOWER MIDDLE TUBE 20734
- MIDDLE TUBE 20717
- UPPER MIDDLE TUBE 20718
- UPPER TUBE 20719
Figure 3.3 MKX160-125 Tube Identification and Order

- LOWER TUBE
  - 22452

- LOWER MIDDLE TUBE
  - 20734

- MIDDLE TUBE
  - 20717

- MIDDLE TUBE
  - 20717

- UPPER MIDDLE TUBE
  - 20718

- UPPER TUBE
  - 20719
3.2.2. 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 5/8” x 4-1/2” bolts and 5/8” locknuts.
   b. As flight shafts are connected, slide tube sections together and secure with eleven 5/8” x 1-1/2” GR8 bolts and 5/8” locknuts. Use three 5/8” x 3” GR8 bolts and locknuts for the flange section where the two sections of tube track meet (see Figure 3.4), or a single 5/8” x 2-1/2” GR8 bolt where tube track meets a flanged section without a tube track (see Figure 3.5).

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Tube Connection (Track-to-Track)</th>
<th>Tube Connection (Track-to-Flange)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5/8” x 4-1/2” bolt</td>
<td>18545</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5/8” x 1-1/2” bolt</td>
<td>19590</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>5/8” x 3” bolt</td>
<td>17745</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>5/8” x 2-1/2” bolt</td>
<td>27589</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>5/8” nut</td>
<td>19600</td>
<td>15</td>
<td>13</td>
</tr>
</tbody>
</table>

Figure 3.4 Track-to-Track Tube Section Connections

USE A STRAIGHT-EDGE TO ALIGN TRACKS TO ENSURE A SMOOTH PATH FOR THE TRACK SHOE
Figure 3.5 Track-to-Flange Tube Section Connection
3.2.3. INSTALL THE HYDRAULIC LIFT CYLINDERS

- See “Install the MKX160-85 Hydraulic Lift Cylinders” below for information on installing hydraulic lift cylinders on MKX160-85 augers.
- See “Install the MKX160-105/125 Hydraulic Lift Cylinders” on page 48 for information on installing hydraulic lift cylinders on MKX160-105/125 augers.

INSTALL THE MKX160-85 HYDRAULIC LIFT CYLINDERS

1. Identify the tube section where the hydraulic lift cylinders install, and note the location of the cylinder mounts.
2. Slide the cylinder rod guide onto the end of the track closest to where the lift cylinders install. Ensure that gussets of ram guide are facing the discharge end.

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

   **Important:** Always use a fork lift to lift hydraulic cylinders during installation.

3. Use a sling around all 3 cylinders, and align cylinders to tube, as shown. Lift up hydraulic cylinders to position, and fasten hydraulic cylinders to cylinder attach brackets and back-arm bracket with eight 3/4” x 2” GR8 bolts and locknuts.

   **Note:** 4. Slide the cylinder rod guide toward the lift cylinders until the rod ends pass through the three holes provided on the cylinder rod guide, and then insert a 5/16” x 2” roll pin into the hole on the end of each cylinder rod to prevent separation of rods and cylinder arm guide.

5. Ensure all bolts are fully tight.

Table 3.3 Install the MKX160-85 Hydraulic Lift Cylinders

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Back-arm bracket</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Cylinder-mount bracket</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Hydraulic cylinder assembly</td>
<td>20733</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Cylinder rod guide</td>
<td>20707</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>3/4” x 2” GR8 bolts</td>
<td>19592</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>3/4” nuts</td>
<td>19601</td>
<td>8</td>
</tr>
<tr>
<td>7</td>
<td>5/16” x 2” roll pin</td>
<td>18079</td>
<td>3</td>
</tr>
</tbody>
</table>
Figure 3.6 Installing the Lift Cylinders (MKX160-85)
### INSTALL THE MKX160-105/125 HYDRAULIC LIFT CYLINDERS

1. Identify the tube section where the hydraulic lift cylinders install, and note the location of the tube cylinder mounts.
2. Ensure that the tube cylinder mounts are facing down.
3. Fasten two rear cylinder attach brackets to the rear cylinder mounts with eight 5/8” x 2” GR8 bolts and locknuts.
4. Loosely fasten the two front cylinder attach brackets and half clamps to the front of the cylinders with eight 1/2” x 1-3/4” bolts and locknuts (see Figure 3.7 below).

#### Figure 3.7 Installing Front Cylinder Attach Brackets

5. Slide the cylinder rod guide onto the end of the track closest to where the lift cylinders install.

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

6. For each hydraulic cylinder:
   a. Use forklift to lift the rear end of the cylinder and position it at a rear cylinder attach bracket. Insert a hydraulic cylinder pin into the hole, and secure with a 7/16” x 3-1/2” bolt and locknut. Tighten securely.
   b. Use the forklift to lift and support the front end of the cylinder in place on a front cylinder mount, and adjust the front cylinder attach bracket and half clamp to align with the bolt holes in the front cylinder mounts.
   c. Fasten the front cylinder attach bracket to the front cylinder mount using four 5/8” x 2” bolts and locknuts.
   d. Tighten the four 1/2” x 1-3/4” bolts and locknuts that fasten the cylinder attach bracket and half clamp together.
6. Slide the cylinder rod guide toward the lift cylinders until the rod ends pass through the two holes provided on the cylinder ram guide, and then secure with a 1/2” X 1-1/2” bolt and a 1/2” locknut to prevent separation of rods and cylinder arm guide.
Table 3.4 Install the MKX160-105/125 Hydraulic Lift Cylinders

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Rear cylinder-mount</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>1B</td>
<td>Front cylinder mount</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Rear cylinder-attach brackets</td>
<td>20749</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Front cylinder-attach brackets</td>
<td>20735</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>MKX160-105 Hydraulic cylinder</td>
<td>20747</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MKX160-125 Hydraulic cylinder</td>
<td>20799</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Cylinder rod guide</td>
<td>20751</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>5/8&quot; x 2&quot; GR8 bolts</td>
<td>19991</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>5/8&quot; locknuts</td>
<td>19600</td>
<td>16</td>
</tr>
<tr>
<td>8</td>
<td>7/16&quot; x 3-1/2&quot; bolt</td>
<td>19547</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>7/16&quot; locknut</td>
<td>19598</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>Cylinder pin</td>
<td>20744</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>1/2 x 1-1/2&quot; bolt</td>
<td>19589</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>1/2 x 1-3/4&quot; bolt</td>
<td>19974</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>1/2&quot; locknut</td>
<td>19599</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>Half clamp</td>
<td>20736</td>
<td>2</td>
</tr>
</tbody>
</table>

Figure 3.8 Installing the Lift Cylinders (MKX160-105/125)
3.2.4. INSTALL THE TRACK SHOE AND TRACK STOP

**Important:** See Figure 3.9 for track stop positions for specific auger models.

**Figure 3.9 Track Stop Positions**

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 six 3/4” x 3” GR8 bolts, two track stop spacer plates, and six 3/4” locknuts.

**Table 3.5 Track Shoe and Track Stop**

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Track shoe</td>
<td>20647</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Track stop</td>
<td>20670</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3/4” x 3” GR8 bolts</td>
<td>19978</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>3/4” nylon locknut</td>
<td>19601</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Track stop spacer plate</td>
<td>21037</td>
<td>2</td>
</tr>
</tbody>
</table>

**Figure 3.10 Track Shoe and Track Stop**
3.2.5. INSTALL THE BOOT ON THE AUGER TUBE

Note: The boot lower gearbox is sent from the factory filled half way with gear oil (1.7 L [1.8 qt]). Before further assembly, check oil level to make certain the gearbox is half full. Add oil if necessary. Do not use grease.

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 flighting comes pre-installed on the end of the lower tube flighting shaft.

1. Remove the 5/8" x 5-1/2" bolt and locknut that secures the boot flighting to the lower shaft flighting. Place the bolt and nut aside for use refastening the flighting later in the procedure.

2. Position the boot plate against the boot with flat edge facing up (See Figure 3.11), and fasten with two 5/8" x 1-1/2" GR8 bolts at the top of the plate inserted from the boot side of the flange and 5/8" locknuts.

3. Slip the boot assembly over the boot flight/lower flighting assembly, angling the boot where required for fit, and rotating the boot flighting during inserting until the boot, boot attach plate, and lower tube flange are aligned and in full contact.

4. Attach the boot to the lower tube flange according to the following bolt usage:
   a. eight 5/8" x 2" GR8 bolts and locknuts (four on each side),
   b. three 5/8" x 1-1/2" GR8 bolts and locknuts (at the top),
   c. three 5/8" x 2-1/2" GR8 bolts and locknuts (at the bottom).

5. Fasten the boot flighting to the lower tube flighting using the 5/8" x 5-1/2" bolt and locknut removed in Step 1.

Table 3.6 Install the Boot on the Auger Tube

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grain transfer boot</td>
<td>20604</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Boot attach plate</td>
<td>20679</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5/8 x 1-1/2&quot;</td>
<td>19590</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>5/8 x 2&quot;</td>
<td>19991</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>5/8 x 2-1/2&quot;</td>
<td>27589</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>5/8&quot; locknut</td>
<td>19600</td>
<td>16</td>
</tr>
</tbody>
</table>
Figure 3.11 Install Boot on Auger Tube
3.2.6. ASSEMBLE THE PTO SHIELD ASSEMBLY

1. As shown in Figure 3.12, align the PTO shield front on the PTO shield rear and secure it with three 5/16” x 3/4” bolts [19538] and 5/16” whiz nuts.
2. Insert the hair pin to lock PTO shield with base.
3. Set the assembled PTO shield assembly aside for use during the installation of the speed reducer.

Table 3.7 Assemble the PTO Shield Assembly

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PTO shield rear</td>
<td>20746</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>PTO shield front</td>
<td>20745</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5/16” x 3/4” bolts</td>
<td>19538</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5/16” whiznuts</td>
<td>19595</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Lock pin</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Hairpin</td>
<td>19463</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 3.12 Assemble the PTO Shield Assembly
3.2.7. INSTALL THE SPEED REDUCER ON THE BOOT

1. Lift the speed reducer and carefully slide it over the gearbox and lower flighting shafts and against the face of the boot.

**Important:** *Use the supplied lifting lug on the speed reducer.*

2. Fasten the speed reducer gearbox, PTO shield, and PTO transport strap to boot using twelve 1/2" x 11-1/2" GR8 bolts and 1/2" locknuts (see Figure 3.13 for details).

3. Install the lower flight stop as follows (Figure 3.14):
   a. Use a wrench to rotate the lower flight bearing case on the speed reducer until the bearing case keyway aligns with the lower flight shaft keyway.
   b. Insert a 3/8” x 3-3/8” square key into the shaft keyway.
   c. Slide the lower flight stop over the lower flight shaft, and secure it in place with a 7/16” x 3-1/2” GR5 bolt and 7/16” locknut.

4. Install the upper gearbox shaft square key as follows (Figure 3.14):
   a. Rotate the upper gearbox shaft bearing case until the bearing case keyway aligns with the upper gearbox shaft keyway.
   b. Insert the 3/8” x 1-3/4” square key into the shaft keyway.
   c. Secure the square key with a keyway lock washer, a 3/8” lock washer, and a 3/8” x 1-1/2” GR5 bolt.

**Table 3.8 Install the Speed Reducer on the Boot**

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speed reducer</td>
<td>20558</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Upper gearbox shaft</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Lower flight gearbox shaft</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>PTO driveline strap</td>
<td>20705</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>PTO shield</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1/2” x 11-1/2” GR8 bolts</td>
<td>20777</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>1/2” locknuts</td>
<td>19599</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Upper gearbox bearing case</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Upper gearbox shaft</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Lower flight bearing case</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Lower flight gearbox shaft</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Lower flight stop</td>
<td>20680</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>3/8” x 3-3/8” square key</td>
<td>18541</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>7/16” x 3-1/2” GR5 bolt</td>
<td>19547</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>7/16” locknut</td>
<td>19598</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>3/8” x 1-3/4” square key</td>
<td>17066</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Keyway lock washer</td>
<td>20764</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>3/8” lock washer</td>
<td>19604</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>3/8” x 1-1/2” GR5 bolt</td>
<td>9900637</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 3.13 Installing the Speed Reducer
Figure 3.14 Install the Shaft Square Keys and Lower Flight Stop
3.2.8. **INSTALL THE BOOT TOW BAR**

1. Insert the tow bar into the boot channel (see Figure 3.15), and secure the back end loosely with a 3/4” x 6-1/2” bolt and 3/4” locknut through the hole in the boot channel.

2. Tightly secure the middle of the tow bar in channel with a 3/4” x 4-1/16” x 5-3/4” U-bolt and two 3/4” locknuts.

3. Fully tighten the 3/4” nut on the 3/4” x 6-1/2” bolt.

### Table 3.9 Install the Boot Tow Bar

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tow bar</td>
<td>20694</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Boot channel</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3/4” x 6-1/2” bolt</td>
<td>19593</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>3/4” locknut</td>
<td>19601</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>3/4” x 4-1/16” x 5-3/4” U-bolt</td>
<td>20684</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>3/4” locknuts</td>
<td>19601</td>
<td>2</td>
</tr>
</tbody>
</table>

**Figure 3.15 Installing the Boot Tow Bar**
3.2.9. INSTALL THE DISCHARGE SPOUT

1. Align the discharge spout over the opening in the upper tube.
2. Attach the discharge spout with two 5/8" x 3" GR8 bolts [17745] and 5/8" locknuts [19600] on each side.

Table 3.10 Install the Boot Tow Bar

<table>
<thead>
<tr>
<th>Diagram #</th>
<th>Description</th>
<th>Part #</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Discharge spout</td>
<td>20631</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Opening in upper tube</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5/8” x 3” GR8 bolts</td>
<td>17745</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5/8” locknuts</td>
<td>19600</td>
<td>4</td>
</tr>
</tbody>
</table>

Figure 3.16 Installing the Discharge Spout
3.2.10. 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 boot flight stop snug against the speed reducer gearbox, then keep turning it until all tube flights are turning with the shaft.
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 3.17 Set the Thrust Adjuster
3.2.11. APPLY LOGO AND MODEL DECALS ON THE AUGER TUBES

Perform the following steps for the logo and model decal placements as shown in Figures 3.18 and 3.19:

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 at the center of the tube on the side of 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 3.18 Logo and Model Decal Locations (85’)

Figure 3.19 Logo and Model Decal Locations (105’, 125’)

WESTFIELD - GRAIN AUGERS
MKX160-85/105/125

3. ASSEMBLY
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 3.20 and Figure 3.23 for the MKX160-85.
- See Figure 3.21 and Figure 3.24 for the MKX160-105.
- See Figure 3.22 and Figure 3.25 for the MKX160-125.

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

1. As shown in the appropriate figures (Figure 3.20, Figure 3.21, Figure 3.22), attach pairs of low and high truss tower brackets to the truss-attach brackets welded to the auger tube.
2. 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 an second 1” hex 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 tube connect plate pairs between truss tower pairs.

**Note:** When installing the seven-bolt connect plates, ensure that the three 1/2” bolt holes should be closest to the boot, and the 3/4” bolt hole should be closest to the discharge spout.

   b. Install truss tubes between tube connect plates.
   c. Install short and long cross-brace tubes.

**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.

   d. Install the remaining truss adjust tube.
6. Tighten all truss, tube, and cross-brace bolts and nuts, but do not tighten the 1” hex nuts on the truss adjust tubes.
7. Install pairs of cross-brace clamps where the cross-brace tubes cross in an “X” pattern using two 7/16” x 1-1/4” bolts and locknuts.
8. Adjust the “outer” 1” hex nuts on the truss adjust tube until the truss tubes are tight and the auger tube is straight (ie. appears flat and well aligned, and does not have any noticeable bow).
9. Rotate the loose “inner” 1” hex nuts on the truss adjust tubes toward the “outer” nut until they are locked tightly against their respective truss anchor brackets.
### Table 3.11. Truss Towers and Tubes Parts Reference

<table>
<thead>
<tr>
<th>Fig Ref</th>
<th>Part Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low truss tower</td>
<td>20659</td>
</tr>
<tr>
<td></td>
<td>High truss tower</td>
<td>20658</td>
</tr>
<tr>
<td>2</td>
<td>1/2&quot; x 1-1/2&quot; bolts</td>
<td>19589</td>
</tr>
<tr>
<td></td>
<td>1/2&quot; locknuts</td>
<td>19599</td>
</tr>
<tr>
<td>3</td>
<td>Truss anchor brackets</td>
<td>n/a</td>
</tr>
<tr>
<td>4</td>
<td>1&quot; hex nut</td>
<td>20080</td>
</tr>
<tr>
<td>5</td>
<td>Long truss adjust tube</td>
<td>20722</td>
</tr>
<tr>
<td>6</td>
<td>Five-bolt tube connect plate</td>
<td>20737</td>
</tr>
<tr>
<td>7</td>
<td>1/2&quot; x 1-3/4&quot; bolts</td>
<td>19974</td>
</tr>
<tr>
<td></td>
<td>1/2&quot; locknuts</td>
<td>19599</td>
</tr>
<tr>
<td>8</td>
<td>Truss tube</td>
<td>20723</td>
</tr>
<tr>
<td>9</td>
<td>Seven-bolt tube connect plate (left)</td>
<td>20720</td>
</tr>
<tr>
<td></td>
<td>Seven-bolt tube connect plate (right)</td>
<td>20721</td>
</tr>
<tr>
<td>10</td>
<td>3/4&quot; x 2-1/2&quot; bolt</td>
<td>20774</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; locknut</td>
<td>19601</td>
</tr>
<tr>
<td>11</td>
<td>Truss cross brace, long</td>
<td>20725</td>
</tr>
<tr>
<td>12</td>
<td>Truss cross brace, short</td>
<td>20778</td>
</tr>
<tr>
<td>13</td>
<td>1/2&quot; x 2-1/2&quot; bolt</td>
<td>20772</td>
</tr>
<tr>
<td></td>
<td>1/2&quot; locknut</td>
<td>19599</td>
</tr>
<tr>
<td>14</td>
<td>Cross-brace clamps</td>
<td>17655</td>
</tr>
<tr>
<td>15</td>
<td>7/16&quot; x 1-1/4&quot; Bolt</td>
<td>18698</td>
</tr>
<tr>
<td></td>
<td>7/16&quot; locknut</td>
<td>19598</td>
</tr>
<tr>
<td>16</td>
<td>3/4&quot; hex nut</td>
<td>19997</td>
</tr>
</tbody>
</table>
Figure 3.20 MKX160-85 Truss Tower Brackets
Figure 3.21 MKX160-105 Truss Tower Brackets
Figure 3.22 MKX160-125 Truss Tower Brackets
Figure 3.23 MKX160-85 Truss Tubes
Figure 3.24 MKX160-105 Truss Tubes
Figure 3.25 MKX160-125 Truss Tubes
3.4. INSTALL TRUSS CABLES

See Figure 3.26 for details (MKX160-85 shown, other models are similar).

1. Attach eyebolts (1) to both ends of a truss cable (3) with two 1/2" 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 1/2" 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 3/4" 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 3/4" 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 pull the truss cables to each truss cable support with a 1/2" cable clamp (9), ensuring that the cable clamps are loose enough that the cables remain 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 three 1/2" 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 securely.

Table 3.12 Truss Cables Parts Reference

<table>
<thead>
<tr>
<th>Fig Ref</th>
<th>Description</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/4&quot; x 11-1/2&quot; eyebolt 3/4&quot; locknut</td>
<td>20715</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19601</td>
</tr>
<tr>
<td>2</td>
<td>1/2&quot; cable clamp</td>
<td>20617</td>
</tr>
<tr>
<td>3</td>
<td>1/2&quot; x 68' x 2 cable 1/2&quot; x 90' x 2 cable 1/2&quot; x 110' x 2 cable</td>
<td>20740</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20742</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20741</td>
</tr>
<tr>
<td>4</td>
<td>Lower tube cable return bracket</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>1/2&quot; cable clamp</td>
<td>20617</td>
</tr>
<tr>
<td>6</td>
<td>Turnbuckle body</td>
<td>20729</td>
</tr>
<tr>
<td>7</td>
<td>Upper tube cable return bracket</td>
<td>n/a</td>
</tr>
<tr>
<td>8</td>
<td>Truss cable support</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Figure 3.26 Truss Cables
3.5. ASSEMBLE THE LOWER FRAME

1. Fasten the lower reach arms to the axle with four 3/4” x 2” bolts and locknuts on each side. **Tighten securely.**
   **Note:** *Insert a punch tool (P) in the middle hole to help align the four bolt holes.*

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

Figure 3.27 Assembling the Lower Frame

3. Install the stabilizer braces on either side of the 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 75.
4. Secure the frame cross braces and the long frame cross brace to the welded lugs on the lower reach arms with two 1/2” x 1-1/2” bolts, two 1/2” x 1-3/4” bolts, 1/2” flat washers, and locknuts. Use a 1/2” x 1-1/2” bolt, 1/2” flat washer, and locknut to fasten the cross-braces together where they cross.

### Table 3.13. Lower Frame Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>85’</th>
<th>105’</th>
<th>125’</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower reach arm, LH</td>
<td>20709</td>
<td>20630</td>
<td>20702</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Lower reach arm, RH</td>
<td>20708</td>
<td>20626</td>
<td>20701</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Axle</td>
<td>20642</td>
<td>20642</td>
<td>20642</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Frame cross braces</td>
<td>20281</td>
<td>20378</td>
<td>20378</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Stabilizer braces</td>
<td>20255</td>
<td>20255</td>
<td>20255</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Short cross member</td>
<td>20646</td>
<td>20646</td>
<td>20646</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Lower tie tube</td>
<td>20359</td>
<td>20640</td>
<td>20726</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>5/8” x 2” bolt</td>
<td>19991</td>
<td>19991</td>
<td>19991</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>5/8” locknut</td>
<td>19600</td>
<td>19600</td>
<td>19600</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>1/2” x 1-1/2” GR8 bolt</td>
<td>19589</td>
<td>19589</td>
<td>19589</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>1/2” x 1-3/4” GR8 bolt</td>
<td>19974</td>
<td>19974</td>
<td>19974</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>1/2” flat washer</td>
<td>17401</td>
<td>17401</td>
<td>17401</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>1/2” locknut</td>
<td>19599</td>
<td>19599</td>
<td>19599</td>
<td>13</td>
</tr>
<tr>
<td>14</td>
<td>3/4” x 2” bolt</td>
<td>19592</td>
<td>19592</td>
<td>19592</td>
<td>8</td>
</tr>
<tr>
<td>15</td>
<td>3/4” locknut</td>
<td>19601</td>
<td>19601</td>
<td>19601</td>
<td>8</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 and washer.
5. Tighten slotted spindle nut until hub drags slightly. Back off the nut about a 1/4 turn until the hub turns freely.
6. Insert the cotter pin through the spindle nut and spindle (some adjustment of the nut may be required), and bend cotter pin ends to secure it in place.
7. Install dust cap.
8. Check that pressure of pre-inflated tires matches pressure indicated on tire sidewall.
9. Mount wheels on hubs and attach with eight 5/8” wheel bolts.

Figure 3.28 Wheel Hub and Tire Assembly
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. Connect the lower lift arms to the auger tube:
   a. Lift and support the lower attach arms on either side of the auger tube back-end brackets.
   b. Position stabilizer brackets between the back-arm brackets and corresponding lower reach arms, and secure the lower reach arms and stabilizer brackets to the back-arm brackets with a tube frame pin, a lower arm attach bushing, a 7/16" x 3" GR5 bolt, and a 7/16" locknut on each side. Tighten securely.
4. Fasten stabilizer braces to first set of holes (closest to the intake) through the stabilizer brackets with one 5/8" x 2" bolt and locknut. Place one 5/8" x 2-1/4" bolt and locknut in the remaining set of holes through the stabilizer braces.
5. Fasten the upper lift arms to the axle: use an axle frame pin, a 1/2" x 1-1/2" GR8 bolt and a 1/2" 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 three 1/2" x 1-1/2" GR8 bolts, two 1/2" x 1-3/4" bolts, five 1/2" flat washers, and locknuts.
7. Attach the lift assist bracket to the track shoe as follows:
   a. Align the lift assist with the track shoe, and insert the track shoe pin through the lift assist and the track shoe (see Figure 3.29 for the correct insertion side).
   b. Add the track shoe bushing and then secure the bushing with a 7/16" x 3-1/2" bolt and locknut. Tighten securely.
8. Attach upper lift arms to the lift assist bracket as follows:
   a. Raise and position the top of the upper lift arms on the pin weldments on either side of the lift assist.
   b. Secure the upper lift arms on the pin weldments using a upper lift arm bushing, a washer, a 7/16" x 3-1/2" bolt, and a 7/16" locknuts on each pin weldment. 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.
10. For MKX160-105/125, attach a short cross-member between the upper lift arms using eight 1/2" x 1-1/2" bolts and 1/2" locknuts. Tighten securely.

Table 3.14 Parts Required to Connect the Auger Tube to the Frame

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Description</th>
<th>85'</th>
<th>105'</th>
<th>125'</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stabilizer bracket</td>
<td>20625</td>
<td>20625</td>
<td>20625</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Tube frame pin</td>
<td>20682</td>
<td>20682</td>
<td>20682</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>7/16&quot; x 3-1/2&quot; GR5 bolt</td>
<td>19547</td>
<td>19547</td>
<td>19547</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>7/16&quot; locknut</td>
<td>19598</td>
<td>19598</td>
<td>19598</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Axle frame pin</td>
<td>20681</td>
<td>20681</td>
<td>20681</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>1/2&quot; x 1-1/2&quot; GR8 bolt</td>
<td>19589</td>
<td>19589</td>
<td>19589</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>1/2&quot;x1-3/4&quot; bolt</td>
<td>19974</td>
<td>19974</td>
<td>19974</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>1/2&quot; flat washer</td>
<td>17401</td>
<td>17401</td>
<td>17401</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>1/2&quot; locknut</td>
<td>19599</td>
<td>19599</td>
<td>19599</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>5/8&quot; x 2&quot; bolts</td>
<td>19991</td>
<td>19991</td>
<td>19991</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>5/8&quot; x 2-1/4&quot; bolts</td>
<td>27484</td>
<td>27484</td>
<td>27484</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>5/8&quot; locknut</td>
<td>19600</td>
<td>19600</td>
<td>19600</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>Upper lift arm</td>
<td>20763</td>
<td>20672 (LH)</td>
<td>20704 (LH)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20673 (RH)</td>
<td>20703 (RH)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Frame cross braces</td>
<td>20281</td>
<td>20378</td>
<td>20378</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Lift assist</td>
<td>20674</td>
<td>20674</td>
<td>20674</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Track shoe pin</td>
<td>20656</td>
<td>20656</td>
<td>20656</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Upper lift arm bushing</td>
<td>20654</td>
<td>20654</td>
<td>20654</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>Lower arm attach bushing</td>
<td>20661</td>
<td>20661</td>
<td>20661</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>2&quot; flat washer</td>
<td>20724</td>
<td>20724</td>
<td>20724</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Upper tie tube</td>
<td>20727</td>
<td>20677</td>
<td>20769</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Short cross member</td>
<td>n/a</td>
<td>20646</td>
<td>20750</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Back arm bracket</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>7/16&quot; x 3&quot; GR5 bolt</td>
<td>19546</td>
<td>19546</td>
<td>19546</td>
<td>2</td>
</tr>
</tbody>
</table>
Figure 3.29 Connecting the Auger Tube to the Frame
3.8. INSTALL LIFT CYLINDER CABLES TO THE LIFT ASSIST

**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.

**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 all cylinders are in full down position, and that track shoe is resting against the lift assist.

2. Thread the lift cables around the circular cable beds on the outside edges of the cable-attach rod on the lift assist (three lift cables for the MKX160-85, and two lift cables for the MKX160-105/125 models).

**WARNING**

Unroll and straighten lift cables carefully during installation. Ensure that there are no kinks, loops, twists, or any visible defect in the cables. Discard and replace cables that have any visible defect.

Do not unroll cables on the ground or otherwise expose cables to dirt or grit. Wipe cables with a clean cloth to ensure that any grit is removed before installation.

3. Pull the cables very tight, then secure with cable clamps on each cable (see Figure 3.30 for an example using the MKX160-85).
Important: The MKX160-85 model requires four 5/16” cable clamps (19333) per cable, and the MKX160-105/125 models requires four 1/2” cable clamps (20606) per cable.

**WARNING**

Ensure that cable clamps are positioned with the U-bolt portion of the clamp on the unloaded side of the lift cables (see Figure 3.30).

Tighten 1/2” cable clamp nuts to 60 ft-lbs, and 5/16” cable clamp nuts to 35 ft-lbs, as measured by a recently and accurately calibrated torque wrench.

Failure to tighten the nuts properly could cause the main auger tube to drop from a raised position quickly and without warning, and could lead to personal injury or death.

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

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

**Figure 3.30 Connecting the Lift Cylinder Cables**
3. ASSEMBLY WESTFIELD - GRAIN AUGERS
MKX160-85/105/125

3.9. CONNECT HYDRAULIC HOSES AND BALL VALVE

Table 3.15 Hydraulic Hoses

<table>
<thead>
<tr>
<th>Part #</th>
<th>Hose Description</th>
<th>Usage</th>
<th>85</th>
<th>105</th>
<th>125</th>
</tr>
</thead>
<tbody>
<tr>
<td>20757</td>
<td>85 HOSE, 1/2&quot; x 228&quot;</td>
<td>Hydraulic Pressure</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20758</td>
<td>85 HOSE, 1/2&quot; x 396&quot;</td>
<td>Hydraulic Return</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20759</td>
<td>105 HOSE, 1/2&quot; x 302&quot;</td>
<td>Hydraulic Pressure</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20760</td>
<td>105 HOSE, 1/2&quot; x 492&quot;</td>
<td>Hydraulic Return</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20761</td>
<td>125 HOSE, 1/2&quot; x 324&quot;</td>
<td>Hydraulic Pressure</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20762</td>
<td>125 HOSE, 1/2&quot; x 504&quot;</td>
<td>Hydraulic Return</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17468</td>
<td>85 HOSE, 3/8&quot; x 32&quot;</td>
<td>Cylinder Connector (rod end)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18739</td>
<td>85 HOSE, 3/8&quot; x 16&quot;</td>
<td>Cylinder Connector (cap end)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20795</td>
<td>105/125 HOSE, 1/2&quot; x 36&quot;</td>
<td>Cylinder Connector (cap end)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>20796</td>
<td>105/125 HOSE, 1/2&quot; x 48&quot;</td>
<td>Cylinder Connector (rod end)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>28654</td>
<td>1/2&quot; Elbow fittings</td>
<td>---</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>28480</td>
<td>1/2&quot; T fitting</td>
<td>---</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>18087</td>
<td>3/8&quot; Elbow fittings (pre-installed)</td>
<td>---</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18736</td>
<td>3/8&quot; T fitting (MFF)</td>
<td>---</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

1. Install Elbow and “T” fittings on the lift cylinders as shown in the appropriate diagrams for your auger model:
   • For MKX160-85, refer to Figure 3.31 and Figure 3.33
   • For MKX160-105/125, refer to Figure 3.32 and Figure 3.34

Note: Before attaching short connector hydraulic hoses (labelled 3 and 3A in Figure 3.33 and Figure 3.34) make sure that lift cables are tightly stretched.

WARNING

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

2. Install the short hydraulic hoses (3 and 3A in Figure 3.33 and Figure 3.34), adjusting Elbow and “T” fittings so that the hoses are as far as possible from the lift cables.

3. Check the short hoses to ensure there is at least a 8-1/2" clearance between the hoses and the lift cables.

4. Connect the hydraulic pressure hose (labelled 4 in Figure 3.33 and Figure 3.34) to the correct lift cylinder lower “T” fitting for your auger model.

5. Attach the hydraulic fluid return hose (labelled 5 in Figure 3.33 and Figure 3.34) to the correct lift cylinder upper “T” fitting for your auger model.

6. Thread both long hoses through the back arm attach bracket, and route the hoses to the hydraulic hose catch on side of the auger tube.

7. Tighten hydraulic hose catch snugly enough to hold hoses in place (see Figure 3.35).
8. Run both hoses straight down the side of the auger to the ball valve location on the boot, fastening the hoses at each available hose catch.

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

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

10. 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 3.36).

**Figure 3.31 Lift Cylinder Hydraulic Hoses and Fittings (MKX160-85)**
Figure 3.32 Lift Cylinder Hydraulic Hoses and Fittings (MKX160-105/125)
**Figure 3.33 Hydraulic Diagram (MKX160-85)**

1. 3/8" ELBOW FITTING [18087]
2. 3/8" TEE FITTING [18736]
3. SHORT HYDRAULIC HOSE, 32" [17468]; 3A SHORT HYDRAULIC HOSE, 16" [18739]
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)
1. 1/2" ELBOW FITTING [28654]
2. 1/2" TEE FITTING [28480]
3. SHORT HYDRAULIC HOSE, 48" [20796]; 3A SHORT HYDRAULIC HOSE, 36" [20795]
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 3.35 Installing Hose Clips**

- 5/16" LOCKNUT (19980)
- 5/16" X1-1/4" BOLT (17748)
- HYDRAULIC HOSE CLIP (20607)

**Figure 3.36 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. Clean dirt off of stub shaft (20605) ends before assembly.
2. Install the stub shaft on the PTO driveline using a 3/8” x 1-3/4” square key (17066) and a 3/8” x 2-1/2” coil roll pin (18546). Tighten the 3/8” x 3/8” set screw on the PTO driveline.

Figure 3.37 Connecting the Stub Shaft to the PTO Driveline

3. Insert the splined end of the PTO stub shaft into the “forward” speed reducer gear box position.
4. Slide the PTO transport saddle (18537) through the support strap on the boot and rest the PTO driveline in it.

Figure 3.38 PTO Parts and Installation
3.11. CONNECT THE INTAKE HOPPER TO THE SWING 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. Lockout the lifting apparatus before working around or under the raised components. Failure to do so may cause serious personal injury.

---

Table 3.16. Parts Required to Connect the Intake Hopper to the Swing Tube

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Part Number</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transition</td>
<td>10-20766</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Swing tube</td>
<td>10-20587</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>5/8&quot; x 1-1/2&quot; bolt</td>
<td>19590</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>5/8&quot; locknuts</td>
<td>19600</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>1-3/4&quot; flat washers</td>
<td>10-20837</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Bushing support</td>
<td>20589</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Swing flight</td>
<td>10-20592</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>3/8&quot; x 1&quot; bolts</td>
<td>18955</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>3/8&quot; flat washers</td>
<td>17392</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>3/8&quot; locknuts</td>
<td>17402</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>Woodruff key</td>
<td>19224</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>U-joint</td>
<td>10-29293</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>3/8&quot; set screw</td>
<td>19225</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>5/16&quot; x 2-3/4&quot; bolt</td>
<td>19965</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>5/16&quot; locknut</td>
<td>19980</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Transition flight</td>
<td>20738</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Intake hopper</td>
<td>10-20568</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>5/8&quot; x 2&quot; bolts</td>
<td>19991</td>
<td>2</td>
</tr>
<tr>
<td>19</td>
<td>5/8&quot; locknuts</td>
<td>19600</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>Intake hopper wheels</td>
<td>10-17522</td>
<td>6</td>
</tr>
<tr>
<td>21</td>
<td>Axle pins</td>
<td>10-20575</td>
<td>2</td>
</tr>
<tr>
<td>22</td>
<td>Hairpins</td>
<td>10-19463</td>
<td>4</td>
</tr>
</tbody>
</table>
1. Secure the transition to the swing tube with twelve 5/8” x 1-1/2” bolts and 5/8” locknuts.

**Figure 3.39 Installing the Transition to the Swing Tube**

2. Thoroughly grease two 1-3/4” flat washers, then place them fully onto the end of the swing flight shaft.

3. Place the bushing support onto the swing flight shaft and secure it in place with two 3/8” x 1” bolts, 3/8” flat washers, and locknuts.

4. Insert a woodruff key into the swing flight shaft, then slide the U-joint onto the swing flight shaft.

5. Secure the U-joint to the swing flight with a 3/8” set screw, a 5/16” x 2-3/4” bolt, and a locknut.

6. Slide the transition flight shaft into the u-joint.
Figure 3.40 Secure Bushing Support and Connect Transition Flight

7. Raise and support the hopper tube spout head on a stand about 50” high.
8. Open the service door on the transition, then bring the intake hopper and transition together guiding the transition flight shaft into the u-joint (Figure 3.41).
9. Attach the transition to the intake hopper with two 5/8” x 2” bolts and 5/8” locknuts. Tighten to a slightly loose fit only as these bolts act as pivot points (Figure 3.41), then close and secure the service door. DO NOT over-tighten.
10. Attach the 6 solid wheels to the 4 hopper corners with the axle pins and hairpins. There are 3 height settings (Figure 3.42) that can be used according to preference.
3.12. CONNECT THE SPOUT HEAD TO THE GRAIN TRANSFER BOOT

Table 3.17. Parts Required to Connect the Spout Head to the Boot

<table>
<thead>
<tr>
<th>Ref #</th>
<th>Description</th>
<th>Part Number</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Service cover spring clasps</td>
<td>n/a</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Gearbox coupler (2A top, 2B bottom)</td>
<td>20561</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3/8&quot; x 1-3/4&quot; square key</td>
<td>17066</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>3/8&quot; x 3-1/4&quot; GR5 bolt</td>
<td>28746</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>3/8&quot; locknut</td>
<td>17402</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Spout head spacers</td>
<td>29152</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Spout head retainers</td>
<td>29166</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>3/8&quot; x 1&quot; bolts</td>
<td>18955</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>Shaft grease zerk</td>
<td>n/a</td>
<td>1</td>
</tr>
</tbody>
</table>

1. Open the spout head service cover spring clasps, and swing the cover fully open, until it lies down securely on the top of the swing tube (see Figure 3.43).

2. Separate the gearbox coupler into two sections by pulling it apart.

3. Install the shaft section of the gear box coupler on the spout head gear box:
   a. Insert a 3/8" x 1-3/4" square key into the gearbox shaft.
   b. Align the gearbox coupler section U-joint with the gearbox shaft and square key, and slide it into place on the gearbox shaft.
   c. Secure the U-joint using a 3/8" x 3-1/4" GR5 bolt and locknut. Tighten securely.

4. Install the remaining gear box coupler section on the boot gear box:
   a. Insert a 3/8" x 1-3/4" square key into the gearbox shaft.
   b. Align the gearbox coupler section U-joint with the gearbox shaft and square key, and slide it into place on the gearbox shaft.
   c. Secure the U-joint using a 3/8" x 3-1/4" GR5 bolt and locknut. Tighten securely.

5. Shift the position of the hopper so that the spout head is supported above the hopper, centered on the shaft of the boot gear box.

Note: The weld between splines on the top gearbox shaft must line up with the gap between splines on the bottom gearbox coupler.

6. Lower the spout head onto the boot while guiding the two gearbox coupler sections together, inserting the top section shaft into the lower section, rotating sections as required to fit. Once positioned, the swivel ring should be resting flat on the boot surface.

7. Install spout head spacers, followed by spout-head retainers, using eight 3/8" x 1" bolts.
8. Grease the universal joints and the shaft and then close and secure the spout head service cover.

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

**Figure 3.43 Connecting the Spout Head to the Boot**
3.13. INSTALL THE HOPPER LIFT ARM

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 five 1/2” x 1-1/2” bolts (19589) and 1/2” locknuts (19599), as shown in Figure 3.44.

*Figure 3.44 Installing the Lift Arm*
3.14. INSTALL THE HYDRAULIC WINCH

1. Position the hydraulic winch on the winch mounting plate, and secure it using three 3/8” washers and three 3/8” locknuts as shown in Figure 3.45.

2. Thread the winch cable through the cylindrical cable weight, then feed the winch cable through the two lift arm pulleys (at the top of the lift arm and at the pulley guide), then under the spool and connect it to the spool (minimum 3 wraps around the spool, feed cable through hole in side of spool, and secure with clamp and clamp hardware) as shown in Figure 3.46.

3. Connect the hydraulic hoses to the winch, as shown in Figure 3.47, and install pioneer couplings on the hose ends as indicated.

4. Thread both hoses through hydraulic hose upper catches on side of auger lower tube and boot. Tighten hydraulic hose upper catches slightly to hold hoses in place.

Figure 3.45 Installing the Hydraulic Winch
Figure 3.47 Installing the Hydraulic Winch Hose

<table>
<thead>
<tr>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>STEEL ELBOW 90.1 / 2FNPSMX3 / 8MNPT (1100625)</td>
</tr>
<tr>
<td>B</td>
<td>1/2&quot; X 226&quot; HYDRAULIC HOSE (29426)</td>
</tr>
<tr>
<td>C</td>
<td>PIONEER COUPLER (9900047)</td>
</tr>
</tbody>
</table>
3.15. ELECTRIC POWER SWING ASSEMBLY

3.15.1. POWER SWING COMPONENTS

Table 3.18. Electric Power Swing Components

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part Number</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10-22553</td>
<td>Manual jack attach bracket</td>
</tr>
<tr>
<td>2</td>
<td>10-22554</td>
<td>Right-side attach bracket</td>
</tr>
<tr>
<td>3</td>
<td>10-22563</td>
<td>Landing gear assembly (electric)</td>
</tr>
<tr>
<td>4</td>
<td>10-20137</td>
<td>Landing gear wheels</td>
</tr>
<tr>
<td>5</td>
<td>10-20893</td>
<td>Receiver top-clamp assembly</td>
</tr>
<tr>
<td>6</td>
<td>10-22745</td>
<td>Hitch ring half clamp</td>
</tr>
<tr>
<td>7</td>
<td>10-22555</td>
<td>Manual jack</td>
</tr>
<tr>
<td>8</td>
<td>10-20134</td>
<td>Transmitter (not shown)</td>
</tr>
<tr>
<td>9</td>
<td>10-20169</td>
<td>Wire harness (battery-to-quick-connect)</td>
</tr>
</tbody>
</table>
3.15.2. **INSTALL THE LANDING GEAR**

1. Fasten the right-side attach bracket to the swing tube using four 7/16" x 1-1/4" bolts and locknuts.
2. Fasten the jack attach bracket to the swing tube using four 7/16" x 1-1/4" bolts and locknuts.
3. Slide the upper manual jack attachment onto the manual jack attach pin, and secure using a lynch pin.
4. Connect the landing gear assembly to the attach brackets:
   a. At the right-side attach bracket, use a landing gear pin and a lynch pin.
   b. At the jack-attach bracket, use a landing gear pin, three 3/4" rim washers per side (as spacers), and a lynch pin.
5. Align the bottom manual jack attachment with the 5/8" hole in the landing gear attachment point, and secure using a 5/8" x 4" bolt and 5/8" locknut.
6. Bolt both wheels to the landing gear power swing assembly using five wheel bolts per wheel. Tighten bolts securely.

**Table 3.19. Attach the Landing Gear to the Tube**

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part Number</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10-22553</td>
<td>Jack attach bracket</td>
</tr>
<tr>
<td>2</td>
<td>10-22554</td>
<td>Right-side attach bracket</td>
</tr>
<tr>
<td>3</td>
<td>10-22555</td>
<td>Manual jack</td>
</tr>
<tr>
<td>4a</td>
<td>10-18698</td>
<td>7/16&quot; x 1-1/4&quot; bolts</td>
</tr>
<tr>
<td>4b</td>
<td>10-17593</td>
<td>7/16&quot; locknuts</td>
</tr>
<tr>
<td>5</td>
<td>10-22168</td>
<td>Landing gear pins</td>
</tr>
<tr>
<td>6a</td>
<td>10-27815</td>
<td>5/8&quot; x 4&quot; bolt</td>
</tr>
<tr>
<td>6b</td>
<td>10-19600</td>
<td>5/8&quot; locknut</td>
</tr>
<tr>
<td>7</td>
<td>10-19979</td>
<td>3/4&quot; rim washers</td>
</tr>
<tr>
<td>8</td>
<td>10-29998</td>
<td>Lynch pins</td>
</tr>
<tr>
<td>9</td>
<td>10-20137</td>
<td>Wheel (tire on rims)</td>
</tr>
<tr>
<td>10</td>
<td>10-20565</td>
<td>Wheel bolts</td>
</tr>
</tbody>
</table>
Figure 3.49 Attach the Landing Gear to the Tube
3.15.3. INSTALL AND CONNECT THE RECEIVER BOX

1. Position the receiver top clamp assembly approximately 24" from the transition attach plate and secure using eight 7/16" x 1-1/4" bolts and locknuts. Tighten both sides securely.

2. Remove cover from the receiver box and top clamp assembly. This means removing the four sheet metal screws located on the sides of the cover.

3. Remove radio antenna and transmitter from the crate (it will be in a separate bag). Screw antenna into the socket on the clamp-base.

4. Replace cover, making sure that the antenna fits through the top hole, as shown in Figure 3.50. Replace sheet metal screws, and tighten securely.

**Figure 3.50 Install the Receiver Box**

**Table 3.20. Installing and Connecting the Receiver Box**

<table>
<thead>
<tr>
<th>Ref</th>
<th>Part Number</th>
<th>Part Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>10-20893</td>
<td>Receiver top clamp assembly</td>
</tr>
<tr>
<td>1b</td>
<td>10-22745</td>
<td>Hitch ring half clamp</td>
</tr>
<tr>
<td>2a</td>
<td>10-18698</td>
<td>7/16&quot; x 1-1/4&quot; bolts</td>
</tr>
<tr>
<td>2b</td>
<td>10-17593</td>
<td>7/16&quot; locknuts</td>
</tr>
<tr>
<td>3</td>
<td>10-19274</td>
<td>Sheet metal screws (#14 x 5/8&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>10-20524</td>
<td>Antenna</td>
</tr>
<tr>
<td>5</td>
<td>10-20268</td>
<td>5/8&quot; x 1/2&quot; insulated clamp</td>
</tr>
<tr>
<td>6a</td>
<td>9900800</td>
<td>1/4&quot; x 3/4&quot; bolt</td>
</tr>
<tr>
<td>6b</td>
<td>10-28449</td>
<td>1/4&quot; locknut</td>
</tr>
</tbody>
</table>
5. The electrical cables are pre-installed to the receiver box. Uncoil the two shorter (4') electrical cables and identify the positive and negative wires. The positive wire has a red boot and printing on it.

6. Attach the wires to the motor terminals on the Power Swing. The positive wire with the red boot connects to the positive (+) terminal on the electric motor. To connect:
   a. Unscrew the nut on the motor terminal.
   b. Place the wire on, and then replace the nut.
   c. Tighten securely.
   d. Repeat the same steps for the negative wire and terminal.

7. Route the long electrical cable up the swing tube and secure it using an insulated clamp, a 1/4" x 3/4" bolt, and a 1/4" locknut.

8. Uncoil the tractor wire harness.

9. Connect the end opposite the quick-connect to the battery and chassis ground using the 5/16" lugged connectors supplied with the kit:
   a. Attach the positive wire directly to the positive terminal on the tractor battery (the positive wire has a circuit breaker on it).
   b. Attach the negative wire to a tractor chassis ground point (assuming that the tractor battery is also grounded to the chassis).

**NOTICE**

If these electrical cables are not hooked up properly the electric controller will be damaged.

10. Attach the receiver cable quick connect to the tractor wire harness quick connect.

**Note:** Ensure that both tires are turning in the same direction. If they are not, reverse the wires on one of the motors.
Figure 3.51 Connecting the Receiver Box

NEGATIVE WIRE CONNECTS TO NEGATIVE MOTOR TERMINAL.

POSITIVE WIRE WITH RED BOOT CONNECTS TO POSITIVE MOTOR TERMINAL.
3.16. 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 must be rotated 90° for transport or operation.*
### WARNING

The jack is designed for raising or lowering auger hitch only.  
Do climb onto auger or place any part of your body under any part of the auger while it is supported by the jack, or while the jack is being operated.
3.17. INSTALL THE MANUAL CONTAINER

Mount the plastic manual holder directly to the boot (as shown below) using three self-tapping screws (19274).

Figure 3.53 Installing the Plastic Manual Container
3.18. AUGER-TO-TRACTOR HOOKUP

**Important:** The MKX160 auger must be correctly connected to the tractor for all operations, including transport, raising, placement, and when augering grain.

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

When attaching the auger to your tractor, the only suitable hitch is a clevis-type hitch that is appropriately sized and rated for towing the auger.

Always use a proper hitch pin that is rated for the load and application, and ensure that the hitch pin is secured with a suitable hairpin.

**Figure 3.54 Hitching the Auger to a Tractor**

![Hitching the Auger to a Tractor](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, as taken with the hitch adjuster in operating positions. Most tractors fall into this range.

- Dimension (B) may range from 10" (25.4 cm) to 14" (35.6 cm) with 12" (30.5 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.
Figure 3.55 Measurements Between Drawbar and PTO Driveline

A..................................14” (35.6 cm)
B..................................10” - 14” (25.4 cm - 35.6 cm)
C..................................46” (116.8 cm)

(MUST BE TAKEN WITH AUGER ON LEVEL GROUND
AND IN FULL DOWN POSITION) RAISE TRACTOR
DRAWBAR IF NECESSARY TO MAINTAIN (B) DIMENSION
OF 10” - 14” (25.4 cm - 35.6 cm)

<table>
<thead>
<tr>
<th>MEASUREMENT</th>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>If (A) is less than</td>
<td>The PTO driveline will bottom out when auger is in raised position.</td>
<td>Pull out or lengthen the tractor drawbar as needed to make (C) 46” (116.8 cm) when the auger is in full down position.</td>
</tr>
<tr>
<td>14” (35.6 cm) (C) will be less than the recommended 46” (116.8 cm)</td>
<td>• This will cause damage to the PTO driveline, the bearing, or the boot housing.</td>
<td></td>
</tr>
<tr>
<td>If (A) is more than</td>
<td>The PTO driveline will separate from the auger in the lowered position.</td>
<td>Shorten distance (C) to the recommended 46” (116.8 cm) by attaching hitch to tractor drawbar at a point closer to the tractor PTO shaft.</td>
</tr>
<tr>
<td>14” (35.6 cm) (C) may be more than the recommended 46” (116.8 cm)</td>
<td>• This will cause damage to equipment and/or injury to personnel.</td>
<td></td>
</tr>
<tr>
<td>If (B) is more than</td>
<td>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.</td>
<td>Raise the tractor drawbar until dimension (B) is within the recommended 10” to 14” (25.4 cm - 35.6 cm).</td>
</tr>
<tr>
<td>14” (35.6 cm) (C) (between tractor PTO shaft and auger input shaft) shortens more quickly when auger is being raised</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. 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.

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

**Note:** When transporting the auger, be sure to use the provided safety chain to lock the swing hopper to the bracket. Since the power swing adds more weight to the swing hopper, extra caution is needed when transporting your auger.

**Important:** The INTAKE FEED side of swing hopper must face main auger when in the transport position.

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol] Hopper must be in transport position when lowering, raising, or moving auger.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Warning Symbol] Do not operate auger with hopper in transport position. This will damage the u-joint.</td>
</tr>
</tbody>
</table>

### 4.1. TRANSPORT POSITION

1. Place auger in full down position.
   - Disconnect PTO driveline from tractor.
   - Seat roller track shoe against the upper track stop 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 4.1 for jack lug and axle pin locations.
3. Connect the auger hitch to a compatible clevis hitch on the transporting vehicle (e.g. tractor) using a suitable hitch pin.

4. Connect the safety chain between the auger hitch and transporting vehicle hitch, and ensure that the connection is secure.

5. Using the jack to support the boot and take pressure off of the hitch adjust, place hitch adjust in transport position by moving the hitch adjust pin to the second adjustment hole from the top (See Figure 4.2).

6. When the hitch adjustment is complete, move the jack into storage position.

7. Place the intake hopper into transport position (see):
   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.*

8. Place swivel jack (on side of hitch) in transport position and lock.

**Figure 4.1 Retract Wheel Axles**

![Figure 4.1 Retract Wheel Axles](image-url)
**Figure 4.2 Hitch Adjust in Transport Position**

![Hitch Adjust in Transport Position](image1)

**Figure 4.3 Grain Hopper Lifted into Transport Position**

![Grain Hopper Lifted into Transport Position](image2)
4. TRANSPORT WESTFIELD - GRAIN AUGERS
MKX160-85/105/125

Important:  *Intake feed side of hopper must face main auger when in transport (*)

9. 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 145 for minimum transport heights.
5. 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**

- Always tow auger in the lowered position.
- Disconnect PTO driveline from tractor for transport and placement.

5.1. 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.
4. 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 5.1). See Figure A for jacking point. Jack must be secured to jack lug using pin (attached to jack).

**Figure 5.1 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 5.2). Reinsert the axle pin and secure with snap pin. Lower the jack.

Figure 5.2 Extend Axle and Insert Axle Pin

![Figure 5.2 Extend Axle and Insert Axle Pin](image)

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

7. Using the jack to support the boot and take pressure off of the hitch adjust, place hitch adjust in operating position by moving the hitch adjust pin to the top adjustment hole (See Figure 5.3).

Figure 5.3 Hitch Adjust in Operating Position

![Figure 5.3 Hitch Adjust in Operating Position](image)

8. When the hitch adjustment is complete, move the jack into storage position.

9. 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).

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not raise the auger unless the axles are in the extended position.</td>
</tr>
<tr>
<td>Do not transport the auger unless the axles are in the retracted position.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid leaks in the hydraulic cylinder or hose will allow auger to lower inadvertently.</td>
</tr>
<tr>
<td>Repair all leaks and breaks immediately.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>If hose valve remains open, a loss of hydraulic pressure within in the tractor system will allow the auger to lower inadvertently, damaging the equipment and causing personal injury.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not disconnect coupler under pressure. Relieve pressure and then disconnect.</td>
</tr>
</tbody>
</table>

10. Move the auger into working position slowly. Do not unhitch and attempt to move auger by hand.
11. 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.
12. See “Operation” on page 119 for correct operating procedures.
Figure 5.4 Auger Placement (Direct PTO Drive)
6. 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.

### 6.1. OPERATOR CONTROLS

The operator controls the following auger actions during operation:

<table>
<thead>
<tr>
<th>Auger Function</th>
<th>Control type</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift or lower main auger tube</td>
<td>Hydraulic supply control valve</td>
<td>Tractor</td>
</tr>
<tr>
<td>Open/shut main auger tube hydraulic flow</td>
<td>Hydraulic shutoff valve</td>
<td>Auger</td>
</tr>
<tr>
<td>Move hopper using power swing</td>
<td>Electric switches (manual) and wireless transmitter (remote)</td>
<td>Auger</td>
</tr>
<tr>
<td>Start/stop augering grain</td>
<td>PTO controls (engage/disengage)</td>
<td>Tractor</td>
</tr>
<tr>
<td>Forward/reverse auger rotation</td>
<td>PTO position on speed reducer</td>
<td>Auger</td>
</tr>
<tr>
<td>Grain augering speed</td>
<td>PTO controls (RPM)</td>
<td>Tractor</td>
</tr>
<tr>
<td>Raise or lower hopper to or from transport position</td>
<td>Hydraulic supply control valve</td>
<td>Tractor</td>
</tr>
</tbody>
</table>

Figure 6.1 shows the hydraulic control valve for the main auger tube hydraulic lift cylinders.

Figure 6.2 and Figure 6.3 (respectively) show the manual and remote controls for moving the hopper using the power swing.

For locations for PTO and hydraulic supply controls, please refer to the operating manual for the attached tractor. For information about extending or retracting the wheel axles, see “Transport” on page 109 and “Placement” on page 113.
Figure 6.1 Main Auger Tube Hydraulic Shut-off Valve

Figure 6.2 Power Swing Manual Controls

Figure 6.3 Power Swing Remote Control

Red "Off" button
Hopper direction controls
6.2. PRE-OPERATION

6.2.1. 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 cables for damage (fraying, kinking, unraveling). Replace as required.
- Ensure that the cable anchor on the winch drum is secure.
- 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.
- Ensure that electrical hoses are in good condition.
- Ensure that electrical connections are in place and secure.
- Ensure that equipment guards are in place and secure.
- Check that truss cables are free from damage (fraying, kinking, unraveling). Cables must be tight and properly adjusted for proper auger tube alignment.
- Ensure that the PTO shaft is properly installed.
- Ensure that the intake area and discharge spout are free of obstructions.
- Ensure that the tractor and auger are in line or as close to being in line as possible.
- Ensure that the tractor park brake is engaged and/or wheels are chocked.
- Ensure that the axles are extended.
6.2.2. 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 25°.
- 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 a shear bolt in the PTO driveline fails, shut down and lock out the tractor to replace the two PTO driveline shear bolts with two 3/8” x 1” GR8 bolts. Ensure that the shear point is through the shank of the bolt, not the threads.*

### 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.

6.2.3. Hydraulics

MKX160 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.
6.2.4. ELECTRIC POWER SWING OPERATION

**Note:** Remotes will be programmed from the factory—to reprogram your remote (or to add additional remotes, please see the Appendix.

**Important:** Registering more than one remote transmitter to a single Power Swing is acceptable but registering one remote transmitter to multiple Power Swings is not recommended.

1. On the high end of the Power Swing remote receiver box, flip the power switch to the ON position (see Figure 6.4).

**Figure 6.4 Power Swing Receiver Box**

2. Use the manual jack on the power swing to raise/lower the hopper as desired.

3. For manual operation of travel direction:
   a. Using the direction switch, move the switch in the desired direction of travel (either F1 or F2 in Figure 6.4).
   b. Once finished moving the hopper, release the switch to stop operation (it should return to the neutral position).

4. For remote operation of travel direction:
   a. Push the green button (no symbol) to turn the remote ON (see Figure 6.5).
   b. Push the yellow directional buttons (marked with arrows) located below the ON/OFF buttons in the direction you want the hopper to move (Figure 6.5).
   c. If this does not work:
      i. Push the red button (with an exclamation mark) to turn the remote OFF.
      ii. Then push the green button (no symbol) to turn the remote back ON.
iii. Operate the remote as outlined above, using the two yellow directional buttons (marked with arrows) located at the bottom of the remote to move the hopper as desired.

Figure 6.5 Remote Transmitter

6.3. OPERATING PROCEDURES

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotating Auger Hazard</td>
</tr>
<tr>
<td>Contact with rotating flighting will result in amputation or severe laceration.</td>
</tr>
<tr>
<td>DO NOT operate with guards removed or modified.</td>
</tr>
<tr>
<td>Keep hands and feet away from rotating auger.</td>
</tr>
<tr>
<td>Tie up long hair and remove jewelry.</td>
</tr>
<tr>
<td>DO NOT wear loose-fitting clothing or items that could become caught.</td>
</tr>
<tr>
<td>Shut off and lock out the power source before unplugging or cleaning.</td>
</tr>
</tbody>
</table>
6.3.1. INITIAL START-UP

**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 6.6) 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.*

**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 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 121.
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 tractor PTO speed up to about 500 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 PTO speed of 1000 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 121.

**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 1000 RPM.
6.3.2. NORMAL START

1. Complete the checklist on page 121.
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 PTO speed of 500–1000 rpm for maximum efficiency and to reduce the chance of plugging.

**NOTICE**

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

**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.
6.3.3. **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.

**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.
6.3.4. **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.

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always engage PTO with tractor engine idling. Engaging PTO at high engine speed will result in equipment damage.</td>
</tr>
</tbody>
</table>

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

6.3.5. **Lowering & Completion**

**Important:** When a lift cylinder valve is opened, the auger tube lowers by gravity. As the auger nears full down position, the rate of descent increases. **Do not** fully open a lift cylinder valve: always feather the control to ensure a slow rate of descent.

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 122 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.
6.3.6. **Operation in Reverse**

The following procedures are a supplement to the instructions that begin in “Operating Procedures” on page 124. 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 PTO speed of 100 RPM. Do not exceed forward operating PTO speed of 1000 RPM.

Figure 6.6 Forward and Reverse PTO Positions
To Operate in the Reverse Mode:

1. Insert the stub spline on the PTO driveline into the Reverse spline coupler (see and Figure 6.6), 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.

---

**DANGER**

- Rotating PTO Driveline Hazard!
- Make certain the driveline shields turn freely on driveline.
- Make certain the driveline is securely attached at both ends.
- Do not exceed operating PTO speed of 1000 rpm.
- Keep u-joint angles small and equal. Do not exceed maximum recommended length.
- Failure to heed will result in serious injury or death.

**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.
# 7. 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.

---

## 7.1. MAINTENANCE INTERVALS

For details of service, refer to Section 7.3.

<table>
<thead>
<tr>
<th>SECTION</th>
<th>DAILY (160,000 BU)</th>
<th>PERIODICALLY (800,000 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>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>INSPECT HYDRAULIC HOSE AND COUPLER</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GREASE MACHINE</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>INSPECT HOPPER LIFT CABLE</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE WINCH AND PULLEYS</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE SWING TUBE COUPLER CHAIN</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE THE BOOT GEARBOX COUPLER SHAFT</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHECK UPPER AND LOWER GEARBOX OIL LEVELS</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHECK SPEED REDUCER GEARBOX OIL LEVEL</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE POWER SWING DRIVE CHAIN</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CLEAN MACHINE</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CHECK TIRE PRESSURE</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>REPACK WHEEL BEARINGS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>TIGHTEN WHEEL BOLTS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>SERVICE TRUSS CABLES</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>CHECK POWER SWING REMOTE TRANSMITTER BATTERY</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>CHANGE UPPER AND LOWER GEARBOX OIL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>CHANGE SPEED REDUCER GEARBOX OIL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
</tbody>
</table>
7.2. 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.

7.3. MAINTENANCE PROCEDURES

7.3.1. 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.
7.3.2. 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.

**WARNING**

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

**NOTICE**

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

7.3.3. MACHINE GREASING

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

The following grease fittings on the machine should be greased regularly:
- one fitting on each frame pin
- seven on the PTO (Figure 7.1)
- six on the intake hopper, u-joints and bearings (Figure 7.2)
- one at the upper flighting bearing (Figure 7.3)
- two on the gearbox coupling shaft (Figure 7.4)
Figure 7.1 PTO Grease Fitting Locations

Figure 7.2 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.

7.3.4. 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.
7.3.5. **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.

7.3.6. **GEARBOX COUPLING SHAFT SERVICING**

1. Remove any accumulated debris with a cloth or a soft wire brush.
2. Inspect the gearbox coupling shaft and U-joints for wear and damage.

*Figure 7.4 Gearbox Coupling Shaft U-Joints*
7.3.7. 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 hopper.
2. Check chain slack 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: loosen the 2 bolts of the flighting bearing on the side that needs adjustment and set the chain slack (see Figure 7.5).

**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.

**Figure 7.5 Hopper Chain Drive**

**NOTICE**

Improper adjustment of chain will result in premature wear.

4. Lightly oil the chain.
7.3.8. Upper and Lower Gearbox Oil Levels

**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.

7.3.9. 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. Check the sight glass located to the right of the lower flight gearbox shaft. Note the level and the condition of the oil.
2. If the condition of the oil is poor, consider replacing the oil ahead of schedule.
3. If the oil level is low (does not appear in the sight glass), remove the oil filler plug from the right-hand side of the speed reducer gearbox, and top up the oil level. **Do not overfill.** Replace and fully tighten the oil filler plug when complete.

7.3.10. Power Swing Drive Chain Servicing

Keep drive chain tension adjusted to about 1/4” deflection by loosening the 4 bolts on the hydraulic or electric motor mount, then re-tighten. Perform this for both motor drive chains.

- Oil chain frequently enough to keep a light film of oil on it.
- Ensure that safety guards are in place and secure before operation.
7.3.11. 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.

7.3.12. TIRE PRESSURE CHECK

Check each tire with a tire pressure gauge:

- Make sure the auger axle tires are 80 psi (552 kPa). Ensure tires are cold prior to checking pressure.
- The power swing tires are recommended to be maintained at a maximum of 24 psi (165 kPa).

7.3.13. WHEEL BEARINGS REPACK

1. Remove the wheel bolts and the wheels.
2. Remove the wheel bearing and pack with grease. Refer to page 132 for recommended grease.

7.3.14. 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 7.6.

Figure 7.6 Crisscross Pattern

7.3.15. TRUSS CABLE ADJUSTMENT

The cables are properly tightened when:

- There is no slack in the cables.
- The discharge end is deflected slightly 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**

1. 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.

**7.3.16. POWER SWING REMOTE TRANSMITTER BATTERY CHECK**

Before initial operation and after storage, ensure that a 9V battery is installed in the back of the remote transmitter. To install, remove the plastic from around the battery then place the battery in place in the back of the remote control.

**7.3.17. CHANGING UPPER AND 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.
7.3.18. 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 on the right-hand side of the gearbox, 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.

7.4. 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.

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>To reduce the risk of injury or death, store in an area away from human activity and do not permit children to play on or around the stored machine.</td>
</tr>
</tbody>
</table>

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 80psi (552 kPa).
12. Chock the wheels.
13. Place the hopper in transport position, ensuring there will be adequate drainage of any moisture.

7.4.1. **POWER SWING STORAGE**

**TO PREPARE THE POWER SWING FOR SEASONAL STORAGE**

1. Raise wheels to full up position.
2. Clean out axle assembly and lubricate chains with a light coating of oil.
3. Inspect unit for damage and note any repairs required. Order replacement parts from your dealer.
4. Check tire pressure and inflate to 24 psi (165 kPa).

**POST-STORAGE PRE-OPERATIONAL CHECKS**

1. Check tire pressure and inflate according to recommendation on side wall if necessary.
2. Keep decals clean. Replace any decal that is damaged or not clearly visible.
8. Troubleshooting

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

Table 8.1

<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>A PTO shear bolt has failed.</td>
<td>Replace both PTO shear bolts.</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>
## 9. Appendix

### 9.1. SPECIFICATIONS

*Important: Specifications may change without notice.*

#### Table 9.1 MKX160 Series Grain Auger Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>MKX160-85</th>
<th>MKX160-105</th>
<th>MKX160-125</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPACITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unloading Rate</td>
<td>23000 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>16&quot; (40.6 cm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>85’</td>
<td>105’</td>
<td>125’</td>
</tr>
<tr>
<td>Width</td>
<td>13’4” / 16’9”</td>
<td>13’4” / 16’9”</td>
<td>13’4” / 16’9”</td>
</tr>
<tr>
<td>Height</td>
<td>14” (4.27 m)</td>
<td>14” (4.27 m)</td>
<td>16’ (4.88 m)</td>
</tr>
<tr>
<td>Discharge Clearance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min.</td>
<td>12’3” (3.73 m)</td>
<td>10’7” (3.2 m)</td>
<td>12’0” (3.66 m)</td>
</tr>
<tr>
<td>Max.</td>
<td>59’2” (18.03 m)</td>
<td>75’6” (23.01 m)</td>
<td>84’ (25.60 m)</td>
</tr>
<tr>
<td>Reach to Wheels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min.</td>
<td>35’7” (10.85 m)</td>
<td>41’11” (12.78 m)</td>
<td>51’3” (15.62 m)</td>
</tr>
<tr>
<td>Max.</td>
<td>45’6” (13.87 m)</td>
<td>52’9” (16.08 m)</td>
<td>68’11” (21.01 m)</td>
</tr>
<tr>
<td><strong>TIRES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>22.5” Agricultural Highway Tractor-Trailer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation Pressure</td>
<td>80 psi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hubs</td>
<td>8 Bolt 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>11150 lb (5058 kg)</td>
<td>15230 lb (6908 kg)</td>
<td>17500 lb (7938 kg)</td>
</tr>
<tr>
<td><strong>PTO DRIVE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Requirements</td>
<td>175 HP</td>
<td>200 HP</td>
<td>225 HP</td>
</tr>
<tr>
<td>PTO Speed</td>
<td>1000 RPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTO Shaft</td>
<td>55E Double CV with 2-Bolt Shear</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>12000 lb Drop Leg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/Lower Gearbox Oil Capacity</td>
<td>1.8 US quarts (1.7 L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed Reducer Gearbox Oil Capacity</td>
<td>8 US quarts (7.6 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>SAE 2</th>
<th>SAE 5</th>
<th>SAE 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N·m)</td>
<td>(ft·lb)</td>
<td>(N·m)</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>8</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>13</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>27</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>41</td>
<td>30</td>
<td>72</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>61</td>
<td>45</td>
<td>110</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>95</td>
<td>60</td>
<td>155</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>128</td>
<td>95</td>
<td>215</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>225</td>
<td>165</td>
<td>390</td>
</tr>
<tr>
<td>7/8&quot;</td>
<td>230</td>
<td>170</td>
<td>570</td>
</tr>
<tr>
<td>1&quot;</td>
<td>345</td>
<td>225</td>
<td>850</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>
9.3. POWER SWING REMOTE TRANSMITTER INSTRUCTIONS

Figure 9.1 shows the controls and indicators for the power swing remote and receiver.

**Figure 9.1 Remote Transmitter and Receiver Controls and Indicators**

Note: The transmitter LED blinks on and off when the transmitter and receiver are active (turned on by the transmitter) and no other button is pressed. The LED turns fully on while a transmitter button is pressed, unless the transmitter battery is low, in which case the LED pulses on and off.

**NOTICE** The transmitter automatically transmits a STOP signal after 30 minutes; this de-activates the receiver and the transmitter keypad.
The remote transmitter that comes with each power swing is normally factory programmed to function with the power swing receiver. Refer to specific instructions for programming additional or replacement remotes according to the serial number of the power swing receiver.

9.3.1. Programming Receivers with Serial Numbers 310000 and Higher

Turn on all the remote transmitters before programming.

Note: To de-register all remote transmitters from the receiver, hold down the OFF button on a remote for at least 60 seconds.

TO REGISTER THE FIRST REMOTE TRANSMITTER:

1. Switch OFF the receiver.

Note: Steps 2 and 3 must be done within 10 seconds of each other. The FAULT LED on the receiver flashes for the duration of the registration window.

2. Switch ON the receiver.

3. On the first remote, press the ON button and the yellow Down-Arrow Motion button at the same time and hold until the red light on the receiver SET LED illuminates solid red. Release buttons. The remote is programmed, and should be set aside.

TO REGISTER A SECOND REMOTE TRANSMITTER:

1. Switch OFF the receiver.

Note: Steps 2 and 3 must be done within 10 seconds of each other. The FAULT LED on the receiver flashes for the duration of the registration window.

2. Switch ON the receiver.

3. On a 2nd remote, press and release the ON button once, then press the ON button and the Down-Arrow Motion button at the same time and hold until the red light on the receiver SET LED illuminates solid red. Release buttons. The remote is programmed, and should be set aside.

TO REGISTER A THIRD REMOTE TRANSMITTER:

1. Switch OFF the receiver.

Note: Steps 2 and 3 must be done within 10 seconds of each other. The FAULT LED on the receiver flashes for the duration of the registration window.

2. Switch ON the receiver.

3. On a 3rd remote, press and release the ON button twice, then press the ON button and the Down-Arrow Motion button at the same time and hold until the red light on the receiver SET LED illuminates solid red. Release buttons. The remote is programmed, and should be set aside.

TO REGISTER A FOURTH REMOTE TRANSMITTER:

1. Switch OFF the receiver.
**Note:** Steps 2 and 3 must be done within 10 seconds of each other. The FAULT LED on the receiver flashes for the duration of the registration window.

2. Switch ON the receiver.
3. On a 4th remote, press and release the ON button three times, then press the ON button and the Down-Arrow Motion button at the same time and hold until the red light on the receiver SET LED illuminates solid red. Release buttons. The remote is programmed, and should be set aside.
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