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: 30258
Revised: 21/7/09
This product has been designed and constructed according to general engineering standards\(^a\). Other local regulations may apply and must be followed by the operator. We strongly recommend that all personnel associated with this equipment be trained in the correct operational and safety procedures required for this product. Periodic reviews of this manual with all employees should be standard practice. For your convenience, we include this sign-off sheet so you can record your periodic reviews.

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

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

Congratulations. As the new owner of a grain auger, you will be working with equipment designed to complement and improve your farming operation. Before using this auger, please read this manual and all safety labels and familiarize yourself with the various features of the machine and the necessary precautions for efficient and safe operation.

In addition, anyone using this auger is required to comply with all safety precautions in this manual and in safety labels attached to the auger. A sign-off form is supplied on the inside front cover to record your safety reviews.

Thank you.

Serial Number: 

*Serial number is located on the lower tube.
1. INTRODUCTION

GRAIN AUGERS - GRAIN AUGERS
MK 80/100 X 51' - 81'
# 2. Safety First

The Safety Alert symbol to the left 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 to you?

Three big reasons:

- 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.

The Safety Alert symbol means ATTENTION, BE ALERT!, YOUR SAFETY IS INVOLVED.

<table>
<thead>
<tr>
<th>SIGNAL WORD</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Indicates a hazardous situation that, if not avoided, could result in serious injury or death.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>Indicates a potentially hazardous situation that, if not avoided, may result in property damage.</td>
</tr>
</tbody>
</table>
2.1. GENERAL SAFETY

Important: The general safety section includes instructions that apply to all safety practices. Any instructions specific to a certain safety practice (e.g., assembly 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.

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 be familiar with 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.

• The most important safety device on this equipment is a SAFE user or operator. It is the user/operator’s responsibility to read and understand ALL safety instructions, safety decals, and manuals and follow them before assembly, operating, or maintaining the equipment. All accidents can be avoided.

• A person who has not read and understood all safety instructions is not qualified to operate or use the equipment. Untrained users/operators expose themselves and bystanders to possible serious injury or death.

• Equipment owners must give instructions to employees before allowing them to operate or use the product.

• Review safety information initially and annually with all personnel who will be using the product.

• Use this equipment for its intended purposes only.

• Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety, and could affect the life of the equipment. Any modification to the equipment voids the warranty.

• Do not allow children, spectators, or bystanders within the work area.

• Have a first-aid kit available for use should the need arise, and know how to use it.

• Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.

• Wear appropriate protective gear. This list includes, but is not limited to:
  • a hard hat
  • gloves
  • protective shoes with slip-resistant soles
  • protective goggles
  • hearing protection
2. SAFETY FIRST

2.2. ASSEMBLY SAFETY

- Before servicing, adjusting, or repairing powered equipment, unplug, place all controls in neutral or off position, stop the engine or motor, remove ignition key or lock out power source, and wait for all moving parts to stop.
- Follow good shop practices:
  - keep service area clean and dry
  - be sure electrical outlets and tools are properly grounded
  - use adequate light for the job at hand
- Think SAFETY! Work SAFELY!

2.3. OPERATIONAL SAFETY

- Have another trained person nearby who can shut down the auger in case of an 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 the cable sheaves and that 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).
• Do not operate auger with the service or cleanout doors open or unlatched.
• 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 intake hopper in transport position. This will cause damage to the u-joint.

Figure 2.1
2.4. PTO SAFETY

- Never use a PTO driveline without a rotating guard in good working order.
- Ensure PTO driveline is securely attached at both ends.
- 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 driveline shields turn freely on driveline.
- Do not exceed operating speed of 540 rpm.
- Keep u-joint angles small and equal. Do not exceed recommended operating length for PTO driveline.

2.5. HYDRAULIC SAFETY

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

- Shut down and lock out all power before attempting maintenance of any kind. If applicable, disconnect PTO driveline from tractor or hydraulic hoses on units with hydraulic drive hoppers.
- 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 DECAL LOCATIONS

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

2.8.1. DECAL INSTALLATION

1. Decal area must be clean and dry, with a temperature above 10°C (50°F).
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.
Replicas of the safety decals that are attached to the equipment are shown below. Good safety 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.

*Westfield Industries reserves the right to update safety decals without notice. Safety decals may not be exactly as shown.*
2. SAFETY FIRST

2.8. SAFETY DECAL LOCATIONS

Figure 2.3

- DECAL #17099
- DECAL #17107
- DECAL #17094
- DECAL #18859
- DECAL #17101
- DECAL #19960
- DECAL #27709
- DECAL #17531
- DECAL #17098

PLACED ON MACHINE BEHIND GUARD
2. SAFETY FIRST
2.8. SAFETY DECAL LOCATIONS

WARNING
HIGH PRESSURE FLOW HAZARD
- High pressure fluid can cause serious injury if it penetrates the skin. If it does, see a doctor immediately.
- Relieve pressure before attaching hydraulic line.
- Wear proper hand protection and use weld or cardboard-cutting gloves, when working on links.

DECAL #17698

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

DECAL #28615

Figure 2.4
Figure 2.5

NOTE: THIS WARNING DECAL IS ONLY INCLUDED ON AUGERS 81’ AND LONGER.
2. SAFETY FIRST
2.8. SAFETY DECAL LOCATIONS
3. Assembly

**WARNING**

Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in serious injury, death, or property damage.

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

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

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

### 3.1. TUBES & FLIGHTING

1. Position tube sections. Align tube sections on a flat surface or on a series of benches.

   **WARNING**

   Do not drop. Damage to equipment or serious personal injury will result.

   **Note:** When assembling more than 2 sections, start from spout end and work towards hopper.

2. Screw or slide lower flight shaft onto upper flight shaft until flight ends butt together and flighting spiral matches up. Secure with hardware listed in table below. Repeat, if necessary, for any remaining flight shafts.
3. Slide tube sections together and secure. Make sure to align upper and lower track ends and then tighten bolts. Secure with hardware in table below.

**Important:** Track ends must align to allow track shoe to smoothly slide over track joint. Misalignment may cause jamming.

<table>
<thead>
<tr>
<th>Hardware:</th>
<th>Auger</th>
<th>For Flighting</th>
<th>Amt.</th>
<th>For Tubes</th>
<th>Amt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8”</td>
<td>• 7/16” x 2-1/4” GR 8 bolts and locknuts</td>
<td>2</td>
<td>• 7/16” x 1” bolts and locknuts</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>10”</td>
<td>• 1/2” x 2-3/4” GR 8 bolts and locknuts</td>
<td>2</td>
<td>• 7/16” x 1” bolts and locknuts</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>
3.2. TRACK SHOE, TRACKSTOP, & LIFT-ASSIST ARM

1. Slide the double roller track shoe onto track.

2. Attach the angle trackstop to correct position on track (Figure 3.3) using two 7/16" x 1-1/4" bolts, locknuts, and flat iron washers. The flat iron washers must be on top of track (Figure 3.4) and the trackstop must be centered on the track.

<table>
<thead>
<tr>
<th>Auger</th>
<th>Track Stop</th>
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</thead>
<tbody>
<tr>
<td>51'</td>
<td>2nd set of holes from top</td>
</tr>
<tr>
<td>61'</td>
<td>3rd set of holes from top</td>
</tr>
<tr>
<td>71'</td>
<td>4th set of holes from top</td>
</tr>
<tr>
<td>81'</td>
<td>69-11/16&quot; from top of tube</td>
</tr>
</tbody>
</table>

3. Slide track shoe along full length of track to make certain there is no binding and that track ends are properly aligned. The upper and lower tracks must be aligned to allow track shoe to roll smoothly over this joint (Figure 3.5).

4. Attach the lift-assist arm to center hole on track shoe (Figure 3.6) with one 3/4" x 6-1/2" bolt and locknut. Do not over-tighten. Tighten snug only; this bolt acts as a pivot point.
3. ASSEMBLY

3.3. ANGLE RING SUPPORT BRACKET

For MK100 81’ Model Only

Once the tubes are bolted together, install the angle ring support brackets at each connecting location between the tubes.

1. At the connection location between each of the tubes, install an angle ring support bracket by inserting one end at a time through the existing holes in the tabs located in the track (Figure 3.7).

2. Secure these brackets in place with two 1/2” locknuts. Tighten nuts.
3.4. BOOT

**Note:** The gearbox is sent from the factory filled halfway with EP90 oil. Before further assembly, check oil level to make certain the gearbox is half full. Add oil if necessary. Do not use grease.

**Important:** Complete assembly in the order listed to prevent premature failure of the lower bearing.

1. Remove lower bearing from boot assembly.
2. Refer to Figure 3.8.
3. Slide short flight section onto lower flight shaft and secure. Make sure flight ends butt together and spiral matches up.
4. At upper end, loosen set screw and remove lock collar from upper bearing.
5. Slip boot over lower flight shaft and attach to flange on lower tube. Tighten securely.
6. Slide the wide rim flat washer onto lower flight shaft.
7. Clean paint from inside lower bearing and reinstall, seating flight shaft shoulder against washer and lower bearing. Secure lock collar and tighten set screw on lower bearing first and then on the upper bearing.

**Note:** MK augers with hydraulic drive hoppers are shipped without the mechanical drive components (gearboxes, u-joint, and lower chain drive). On these augers, disregard steps for mechanical drive units.

8. For mechanical drive units only:
   a. Install square key and slide sprocket onto flight shaft.
   b. Align lower sprocket with upper sprocket using straight edge, then tighten set screws.
   c. Install drive chain on sprockets and adjust tension to about 1/4” deflection. Tighten the 4 bolts on lower bearing. Oil chain lightly.

**Note:** Attach sprocket guard after installing the PTO driveline.
3. ASSEMBLY GRAIN AUGERS

3.4. BOOT MK 80/100 X 51'- 81'

### Figure 3.8

**To attach flighting**
- 8"–7/16" x 3" bolt and locknut
- 10"–7/16" x 3-1/2" bolt and locknut

**To attach boot to flange**
- 7/16" x 1" bolts and locknuts

**Wide rim flat washer**
- 1-1/4"

**Square key**
- 1/4" x 3"

### Table

<table>
<thead>
<tr>
<th>Part</th>
<th>Hardware</th>
<th>Amt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To attach flighting</td>
<td>• 8&quot;–7/16&quot; x 3&quot; bolt and locknut</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• 10&quot;–7/16&quot; x 3-1/2&quot; bolt and locknut</td>
<td>1</td>
</tr>
<tr>
<td>To attach boot to flange</td>
<td>• 7/16&quot; x 1&quot; bolts and locknuts</td>
<td>8</td>
</tr>
<tr>
<td>Wide rim flat washer</td>
<td>• 1-1/4&quot;</td>
<td>1</td>
</tr>
<tr>
<td>Square key</td>
<td>• 1/4&quot; x 3&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>
3.5. DISCHARGE SPOUT

Attach discharge spout with two 7/16" x 1-3/4" bolts and locknuts.

3.6. TRUSS

See Figure 3.11, 3.12, and 3.13.

1. Fasten lower truss anchor to bracket.
   - bracket is welded to lower tube
   - use two 7/16" x 1" bolts and locknuts
2. Fasten 2 truss support brackets to the correct position on the auger tubes with two 7/16" x 1" bolts and locknuts (Figure 3.12, 3.13).

   The 71' and 81' augers require a high truss support center bracket located between the 2 standard support brackets. Fasten with two 7/16" x 1" bolts and locknuts (Figure 3.12).

3. Attach eyebolt to one end of truss cable with a cable clamp. Insert eyebolt into lower truss anchor and thread on nut a short way.
4. Pull truss cable over truss support brackets, around upper truss anchor and back over truss support brackets to lower truss anchor, holding it loosely in place with one 5/16" cable clamp at upper truss anchor, and two 5/16" cable clamps at each truss support bracket.

   Important: Do not tighten cable clamps at this time.

5. The upper end of augers equipped with truss cables should have an upward bow before being placed on the transport undercarriage (auger tube will straighten when fully assembled). Place supports under the discharge end until upward bow is correct.
   - The upward bow should be about 2" on the 51' auger, 3" on the 61' auger, 5" on the 71' auger, and 7" on the 81' auger.
6. Place other eyebolt onto lower truss anchor and thread on nut a short way.
7. Insert other end of truss cable through this eyebolt. Pull out all slack and secure with a cable clamp.

8. Tighten eyebolts to take remaining slack out of truss cable and to maintain the appropriate upward bow. After tension is adjusted, tighten cable clamps on truss support brackets and upper truss anchor. Check for proper side alignment.

**Important:** Once auger is fully assembled, adjust truss cables on all units (because of initial stretching). Cables may also require adjustment for side alignment.

**Figure 3.11**
Figure 3.12

Figure 3.13
9. **MK130 Plus 71’/81’** (Figure 3.13): The only difference for the 81’ auger is that a high truss support bracket is mounted on the underside of the tube instead of a standard truss support.

   a. Fasten short truss anchor (A) to lower auger tube with 7/16” x 1” bolts and locknuts.
   
   b. Fasten high truss support bracket to mount (C) on bottom of center tube with 7/16” x 1” bolts and locknuts.
   
   c. Attach eyebolt to one end of truss cable with a cable clamp, then insert eyebolt into short truss anchor and thread on nut a short way.
   
   d. Pull truss cable over truss support bracket, around upper truss anchor (B) and back over truss support bracket to short truss anchor, holding it loosely in place with one cable clamp at upper truss anchor and 2 cable clamps at truss support bracket.
   
   e. Place other eyebolt into short truss anchor and thread nut on a short way.
   
   f. Insert other end of truss cable through this eyebolt. **Pull out all slack** and secure with cable clamp.
   
   g. Tighten eyebolt to take remaining slack out of truss cable and adjust tension to keep auger tube straight. Tighten cable clamps on truss support bracket and upper truss anchor.

**Important:** Once auger is fully assembled, adjust truss cables on all units (because of initial stretching). Cables may also require adjustment for side alignment.

### 3.7. TRANSPORT UNDERCARRIAGE

**Bushings are installed at 3 locations on the undercarriage assembly of the MK100 81’ auger. These bushings are not required on the other augers. The location of these bushings can be seen in Figure 3.14.**

1. Fasten the lower reach arms to the axle with three 1/2” x 1-1/4” bolts and locknuts on each side.

2. Attach long crossmember to bottom of large frame brackets with two 1/2” x 1-1/4” bolts and locknuts.

**The 51’ auger requires 7/16” x 1” bolts and locknuts.**

**The long crossmember seen in Figure 3.14 is not used on the MK100 81’ auger. Two corner braces are installed between the lower frame assembly and the axle instead using four 1/2” x 1-1/4” bolts and locknuts (Figure 3.14).**
3. Attach short crossmember to small frame brackets loosely with two 1/2” x 1-1/2” bolts and locknuts, sandwiching the flatbraces (B) between short crossmember and small frame brackets on each side. Leave this way until step 9.

4. Install the tubing crossbraces to the welded lugs on the lower reach arms with four 1/2” x 1-1/4” bolts and locknuts, and a fifth one where the braces cross. Tighten securely.
5. Wheel hub assembly:
   a. Remove any dirt or paint from spindle and hub.
   b. Thoroughly pack wheel bearings and cups with a good grade of bearing grease.
   c. Place large bearing into hub and carefully tap in seal.
   d. Slip hub onto spindle and insert small bearing.
   e. Tighten slotted spindle nut until hub drags slightly. Back off nut about 1/4 turn until hub turns freely.
   f. Install cotter pin and dust cap.

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

   g. Install tires and tubes on the rims provided. Inflate according to recommendation on tire side-wall. Wheels may be mounted on hubs at this time with four 1/2 x 1-1/4” wheel bolts.

6. Fasten upper liftarms to lower reach arms with two 3/4” x 2” bolts and locknuts. **Do not overtighten**; tighten snug only as these bolts act as pivot points.

   - **MK 81’:** 3/4” x 2-1/4” bolts are used along with a 3/4” flat washer and a 5/8” bushing. These bolts can be tightened securely because the bushings are used as pivot points.
7. Raise the discharge end of auger with a front end loader and a strong sling/chain or block and tackle. The height should be sufficient to clear undercarriage assembly.

8. Place undercarriage beneath tube assembly and tighten 2 bolts that attach the short crossmember to the small frame brackets.

9. Position stabilizer braces (A) and attach lower reach arms to bracket welded on lower end of auger tube with two 3/4" x 2" bolts and locknuts (Figure 3.19). Do not over-tighten. Tighten snug only; these bolts act as pivot points.

   - MK 81’: 3/4" x 2-1/4" bolts are used along with a 3/4" flat washer and a 7/8" bushing. These bolts can be tightened securely because the bushings are used as pivot points.

   - On the 71’ auger, attach lower reach arms to the proper bracket on the auger tube (Figure 3.12).

10. Fasten flat braces (B) to first set of holes (furthest from intake) on stabilizer braces (A) with a 7/16" x 1-3/4" bolt and locknut. Place a 7/16" x 1" bolt and locknut in other hole of stabilizer brace.

11. MK 61'/71’: Attach the tubing crossbraces to the upper lift arms. The correct assembly method is to slip the tube clamps over the flat pressed ends of the lift arms (where they are attached to the frame) and loosely attach the tubing crossbraces using five 1/2 x 1-1/4" bolts and locknuts. Use a c-clamp vise to squeeze and hold the tube clamps in position for attachment of the tubing crossbraces. Once in position, tighten these bolts.

   - MK 81’: Attach the tubing crossbraces to the upper lift arms. There are no tube clamps on the 81’ auger. The crossbraces are attached to the frame directly at the welded brackets.

**WARNING**

Do not remove tube support until assembly has been completed.
12. Attach upper lift arms to center hole on the lift assist arms (Figure 3.20), with one 3/4” x 7 1/2” bolt and locknut (use 3/4” x 8 1/2” bolt and locknut for MK100 81’). **Do not over-tighten.** Tighten snug only; this bolt acts as a pivot point.

- **MK 81’**: These bolts can be tightened because bushings are used.

13. Lower upper end of auger slowly until track shoe rests against trackstop and the lift-assist arm rests against track.
3.8. LIFT CYLINDER / RAM GUIDE / CABLE

1. Position cylinder and attach to welded brackets on the lower end of the tubing with 7/16” x 1-1/4” bolts and locknuts (Figure 3.21). Tighten securely.

2. Slide the lift ram guide onto the track and insert the ram end into the bracket on the guide (Figure 3.22). Secure with a roll pin.

   The ram guide is used with the model **MK100 81’ only**.

3. With lift-assist arm seated against the track and the lift cylinder in full down position, thread cable over the rod pulley on the lift-assist arm, pull tight, and secure with 3 cable clamps. Position cable clamps as shown and tighten securely (Figure 3.23).

- **MK 71’/81’**: Thread lift cable through truss support bracket on bottom of auger tube as shown in Figure 3.24 and 3.25.

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

Lift-assist arm must rest against track when adjusting cable.

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

4. Securely attach hose to lift cylinder using pipe thread sealant, and place hose into brackets welded to side of auger tube. Bend bracket tops over to hold hose in place.

5. Recheck bolts for proper tightness on undercarriage, lift cylinder, and cable clamps. If secure, remove tube support.

The **MK100 81'** has 2 hydraulic hoses. One is a **pressure** line and one is a **return** line. Attach the shorter of the 2 hoses to the port on the cylinder closest to the boot end of the auger. This is the **pressure** line. Attach the longer of the hoses to the port on the cylinder closest to the discharge end of the auger. This is the **return** line.

### 3.9. PTO (CV) DRIVELINE

1. Clean PTO driveline and flighting shaft ends of any paint or dirt.
2. Slide plain end of PTO driveline onto flighting shaft. Make sure the holes for the roll pin are lined up and square key is in place (where necessary).
   - On models with hydraulic drive hoppers, install a 1/4” x 3” square key on the flighting shaft.
   - Use a 5/16” roll pin.
3. Making sure eyes are protected, carefully tap in roll pin. Tighten set screw.
4. Install sprocket guard on boot with four 5/16” x 3/4” bolts.
5. Slide PTO transport saddle through support strap on boot and rest PTO driveline in it until connected to tractor.

![Figure 3.26](image)

3.10. STANDARD INTAKE HOPPER

See Figure 3.27 and 3.28.

1. Remove access covers, then clean paint and dirt from flight shaft end. Insert Woodruff key into flight shaft end.

2. Raise hopper tube to correct angle\(^1\) (22.5°) and then bring hopper and tube section together, carefully sliding the flight shaft end with Woodruff key into the angle drive.

3. Connect the hopper and tube section.
   • use eight 7/16” x 1” bolts and locknuts

**NOTICE**

To prevent damage, you must maintain the correct angle when inserting flight shaft end into angle drive until tube is secured to the hopper section. Allowing tube or hopper to drop will bend the flight shaft end causing it to bind in the angle drive.

---

1. Correct angle is achieved when the flight shaft end is inserted in the angle drive and its weight is fully supported by the black and stand.
4. Thoroughly lubricate the angle drive, then replace access doors. Keep angle drive well lubricated (after every 8 hours of operation) with high-temperature grease.

**Important:** Check alignment! You should be able to rotate the hopper flight by hand.

**Note:** The angle drive requires a break-in period of at least 2 to 3 loads.

5. Clean any dirt or paint from the wheel axles on the hopper bottom.

6. Install the 2 wheels to the hopper bottom with a washer and cotter pin each.
   - Install rubber extension on inside hopper lip with twenty 5/16” x 3/4” bolts and washer locknuts, and 8 long and 2 short flat iron straps.

---

**Figure 3.27**

**Figure 3.28**
7. Open safety discharge door to connect intake hopper to auger boot.
   • This door is held in place internally with two springs. To open, pull the
door down and then up and over the gearbox enclosure. Hold open with
a C-clamp vise grip.
a. Clean u-joint spline and lower gearbox spline, then apply a light film of
grease on splined shaft.

8. Slide wide rim 1-1/4” flat washer over splined shaft on lower gearbox.
a. Guide splined universal joint onto splined shaft as the intake hopper is
lowered onto the boot. Once positioned, the swivel ring rests flat on the
boot surface and inside the four spacer nuts.

9. Install four large washers with 3/8” x 3/4” bolts to keep the intake hopper in
   place on the boot.

10. Lubricate the universal joint and close the safety discharge door.

11. **MK augers with hydraulic drive hoppers** are shipped without the
    mechanical drive components (gearboxes, u-joint, and lower chain drive).
a. Lower intake hopper onto boot with swivel ring resting flat on the boot
   surface and inside the 4 spacer nuts.

   b. Install 4 large washers with 3/8” x 3/4” bolts to keep intake hopper in
      place on the boot.

   c. Securely attach the 2 hydraulic hoses to the hydraulic motor. The correct
      end of hose has the 7/8” thread and o-ring.

   d. Attach tractor coupler to tapered pipe thread on the other end of hose.
      These couplers are not supplied. When not in use, store hoses in handy
      hose holder on powerhead.
3.10. STANDARD INTAKE HOPPER MK 80/100 X 51’- 81’

HOPPER LIFT EXTENSION

MK100 81’ only:

12. Place the hopper lift extension onto the bracket on the lower tube as shown.

13. Secure by using the 2 lift extension brackets and four 7/16” x 1-1/4” bolts and locknuts.

![Figure 3.31](image)

3.10.1. HOPPER LIFT ARM / WINCH

1. Choose either the right or left side; secure hopper lift arm assembly to the mount bracket on top of the lower auger tube with 2 mount pins and hairpin.

![Figure 3.32](image)
The MK100 has 2 of these mount brackets:

- For the standard hopper, use bracket nearest the intake end.
- For the low profile hopper, use bracket nearest the discharge end.

2. Thread cable through hopper lift arm assembly and attach to winch.

Note: Intake feed side of hopper must face main auger when in transport.

3. Install winch and winch bracket assembly to auger boot (opposite to side of hopper operation) with a saddle pin and a hairpin.

**TO PLACE HOPPER INTO TRANSPORT POSITION:**

1. Attach cable hook to the loops inside the hopper.
2. Fully raise hopper with intake side facing towards the main auger as shown.
3. Secure hopper to lift arm with the hopper lock, saddle pins, and hairpins provided.

If you want to change side of intake feed hopper operation:

1. Raise auger hitch with jack and disconnect from tractor.
2. Swing intake feed hopper to opposite side of auger.
3. Reverse the position of the hopper lift arm assembly and move the winch to the other side of the boot.
4. Reconnect to tractor.
3.11. OPTIONAL LOW PROFILE HOPPER

See Figure 3.35–3.37.

1. Attach the pivot-connector to the appropriate holes in hopper with two 5/8” x 1-1/2” bolts and locknuts. **Do not over-tighten.** Tighten snug only; these bolts act as pivot points.

2. Loosely secure the service door with the 2 square latch-washers and 3/8” locknuts.

**Note:** *These must be tightened securely after hopper assembly is completed.*

3. Clean dirt from inside u-joint and flight shaft end, then insert Woodruff key.

4. Raise and support hopper tube at about 50” under spout.

5. Open service door on hopper, then bring tube and hopper together guiding flight shaft into u-joint.

6. Secure tube to pivot-connector on hopper.
   - use 7/16” x 1” bolts and locknuts

---

**Figure 3.35**

**Figure 3.36**
7. Tighten set screws on u-joints, then close and secure the service door.

8. Remove the two 5/16” washer locknuts that secure the chain drive guard. Attach the 2-piece rubber extension to inside of hopper lip with 5/16” x 3/4” bolts and washer locknuts and the flat iron straps provided, plus the 2-piece extension connector plates.

9. Attach the 4 pneumatic wheels to the 4 hopper corners with the axle pins and hairpins. The offset portion of the wheel must rest against the hopper.
   • You have a choice of 3 height settings.

10. **Mechanical Drive Units Only**: Open the safety discharge door to connect the intake hopper to the auger boot.
    • This door is held in place internally with 2 springs. To open, pull the door down, and then up and over the gearbox enclosure. Hold open with C-clamp vise grip.

11. Place wide rim 1-1/4” washer guard over splined shaft on lower gearbox.
    a. Clean u-joint spline and splined shaft on lower gearbox, then apply a light film of grease on this splined shaft.
    b. Guide the splined universal joint onto splined shaft while intake hopper is lowered onto the boot. Once positioned, the swivel ring rests flat on the boot surface and inside the four spacer nuts.

12. Install 4 large washers with 3/8” x 3/4” bolts to keep the intake hopper in place on the boot.

13. Lubricate the universal joint and then close the safety discharge door.
3.12. 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' with a front-end loader and sling, and install the jack in a vertical position. Secure it with the supplied pin.

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

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

---

**WARNING**

Jack is designed for raising or lowering auger hitch only.  
Do not get on or beneath auger while supported by or while jack is being operated.

3.13. AUGER / TRACTOR HOOKUP

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

3.13.1. PTO DRIVELINE / DRAWBAR

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

**HITCH PIN**

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

- The securing device could be 2 nuts locked against each other or a washer and sturdy hairpin.
- The space should be about 3/4” to 1” as shown below.
MEASUREMENTS BETWEEN DRAWBAR AND DRIVELINE

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

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

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

A...........14''
B...........6'' to 10''
C..........34-1/2'' to 36-1/2''
(MUST BE TAKEN WITH AUGER ON LEVEL GROUND AND IN FULL DOWN POSITION)

Figure 3.39
3.13. AUGER / TRACTOR HOOKUP

3.13.2. HYDRAULIC HOSE COUPLERS

Check in your tractor manual or with your dealer regarding the correct type of coupler to use on your auger. Make sure hose ends are free of dirt before securing to coupler.

Table 3.1

<table>
<thead>
<tr>
<th>MEASUREMENT</th>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>If (A) is less than 14”</td>
<td>• (C) will be less than the recommended 34-1/2” to 36-1/2”</td>
<td>• The PTO driveline will bottom out when auger is in raised position.</td>
</tr>
<tr>
<td>• (C) will be less than the recommended 34-1/2” to 36-1/2”</td>
<td>• This will cause damage to the PTO driveline, the bearing, or the boot housing.</td>
<td>• Pull out or lengthen the tractor drawbar as needed to make (C) 34-1/2” to 36-1/2” when the auger is in full down position.</td>
</tr>
<tr>
<td>If (A) is more than 14”</td>
<td>• (C) may be more than the recommended 34-1/2” to 36-1/2”</td>
<td>• The PTO driveline will separate from the auger in the lowered position.</td>
</tr>
<tr>
<td>• (C) may be more than the recommended 34-1/2” to 36-1/2”</td>
<td>• This will cause damage to equipment and/or injury to personnel.</td>
<td>• Shorten distance (C) to the recommended 34-1/2” to 36-1/2” by attaching hitch to tractor drawbar at a point closer to the tractor PTO shaft.</td>
</tr>
<tr>
<td>If (B) is more than 10”</td>
<td>• (C) (between tractor PTO shaft and auger input shaft) shortens more quickly when auger is being raised</td>
<td>• The u-joint angle on the PTO driveline will be too severe in the raised position.</td>
</tr>
<tr>
<td>• (C) (between tractor PTO shaft and auger input shaft) shortens more quickly when auger is being raised</td>
<td>• The PTO driveline will bottom out before auger is fully raised.</td>
<td>• Shorten distance (C) to the recommended 34-1/2” to 36-1/2” by attaching hitch to tractor drawbar at a point closer to the tractor PTO shaft.</td>
</tr>
<tr>
<td>• (C) (between tractor PTO shaft and auger input shaft) shortens more quickly when auger is being raised</td>
<td>• 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 6” to 10”.</td>
</tr>
</tbody>
</table>

3.14. PLASTIC MANUAL HOLDER

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

1. Attach holder to the lower frame arms. Manual holder must be accessible at all times, whether frame is up or down.

2. The manual holder’s cap must face up (towards the intake end). Attach manual holder with supplied zip ties. Tighten the zip ties, securing the holder in place.

Note: Where possible, attach the zip ties around a frame brace tab to prevent the manual holder from slipping down the lower frame arms.
<table>
<thead>
<tr>
<th>3. ASSEMBLY</th>
<th>GRAIN AUGERS - GRAIN AUGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.14. PLASTIC MANUAL HOLDER</td>
<td>MK 80/100 X 51' - 81'</td>
</tr>
</tbody>
</table>
4. Transport & Placement

WARNING
Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in serious injury, death, or property damage.

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

4.1. TRANSPORT PROCEDURE

1. Place auger in full down position.
   • disconnect PTO driveline from tractor
   • seat lift-assist arm against the track and the track shoe against the trackstop with slight tension on the lift cable (Figure 3.22)

2. Position and secure hitch pin and safety chain. Place safety chain through clevis welded to auger hitch tube and bolt together before attaching to tractor.

3. Raise intake feed hopper into transport position and secure with saddle pin and hairpin.

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

4. Place swivel jack (on side of hitch) in transport position and lock.
4. TRANSPORT & PLACEMENT

4.1. TRANSPORT PROCEDURE

Figure 4.2

**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.

**Important:** Intake feed side of hopper must face main auger when in transport (Figure 4.2).

5. Clear all untrained personnel from transport zone.

**WARNING**

Beware of overhead obstructions and electrical wires and devices. The MK80/100 augers have minimum clearances of 12'-14' (3.66 m–4.30 m), with auger hitch at 20".
6. To place hopper in transport position:
   a. Lock in transport position with the handles on the side of the hopper.
   b. Attach cable hook to the loops inside the hopper.
   c. Fully raise hopper with intake side facing away from the main auger as shown.
   d. Secure hopper to lift arm with the hopper lock, saddle pins, and hairpins provided.

### 4.2. PLACEMENT PROCEDURE

<table>
<thead>
<tr>
<th>WARNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
</tr>
<tr>
<td>Auger must be hooked up to tractor for all operations, including transport, raising, placement, and augering grain.</td>
</tr>
</tbody>
</table>

1. Disconnect PTO driveline from tractor and secure in transport saddle.
2. Position and secure towing hitch.

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

**Important:** Because of the many different kinds of tractor hydraulic systems, the quick-connect coupler must be supplied by the owner. Please consult your tractor manual or dealer for the proper coupler.

- Before connecting hose, wipe off quick-connect coupler on auger and tractor.

<table>
<thead>
<tr>
<th>NOTICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dirt in the hydraulic system can damage the cylinder o-rings, causing leakage and the possible failure of the system and personal injury.</td>
</tr>
</tbody>
</table>

3. Connect hydraulic hoses, ensure connections are tight. Check for leaks, binding, flattening, kinks, or wear.
4. If the auger must be raised for positioning:
   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).
The MK130 Plus 81’ auger features a new hydraulic lift system that only needs a small amount of hydraulic oil to raise the auger. This is done by pumping oil into and out of the upper chamber of the cylinder as the auger is raised and lowered. For this system to work, **the tractor must be running** and the down lever must be fully engaged as auger is lowered.

**Important:** *The hydraulic cylinders are shipped without oil and must be charged with oil before auger is operated. See the Appendix for charging instructions.*

**WARNING**

Fluid leaks in the hydraulic cylinder or hose will allow auger to lower inadvertently. Repair all leaks and breaks immediately.

**CAUTION**

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

**For MK augers with hydraulic drive intake hoppers:** *If your tractor is equipped with a single hydraulic system, relieve pressure and disconnect lift hose to connect hydraulic motor hoses.*

**WARNING**

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

5. Move the auger into working position slowly, making sure that there is no one in the hazard zone. Do not unhitch and attempt to move auger by hand.

**WARNING**

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

6. 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.
7. When operating auger in the raised position, rest the discharge end lightly on the bin roof, or tie to bin to prevent wind from toppling auger.

8. Fully lower hopper to the ground and remove lift cable from the hopper.
   • See Section 5.3.4. on page 58 for correct lowering procedure.

**AXLE EXTENSION PROCEDURE FOR MK100 81’ AUGER ONLY:**

Place auger on level ground before attempting to extend or retract the axle extensions. **Auger must be attached to tractor at all times.**

Once the auger is located, you may begin the axle extension process.

1. Using the jack supplied, insert it into one of the jack lugs located on one end of axle (Figure 4.3).
   • Jack must be secured to jack lug using pin (attached to jack).

2. 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.

3. Remove the axle pin from the axle and slide the axle outwards 16” until the second set of holes line up (Figure 4.3). Reinsert the pin and secure with snap pin. Lower the jack.

---

**WARNING**

Never attempt to increase height of auger by positioning wheels on lumber, blocks, or by any other means. To do so will result in damage to equipment and/or serious injury.
4. Repeat the process on the other side of the axle to extend the other side.

**WARNING**

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

**Note:** Use the same procedure, in reverse, to retract the axle.

![AXLE PIN](image1)
![JACK LUG](image2)

**Figure 4.3**
5. Operation

**WARNING**

Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in serious injury, death, or property damage.

Operators must observe safety procedures at all times and follow the pre-operational checklist before each start-up.

Pre-Operational Checklist

Before operating auger each time, the operator must confirm the following:

- All fasteners are secure as per assembly instructions.
- Cable clamps are secure.
- Hydraulic hoses are in good condition.
- Hydraulic connections are in place and secure.
- PTO driveline is connected and secure.
- PTO driveline shield rotates freely.
- Tube alignment is reasonably straight.
- Intake area and discharge spout are free of obstructions.
- Auger wheels are chocked, and if necessary, tractor wheels are chocked or the parking brake has been engaged.
- Proper maintenance has been performed.
- Tractor and auger are in line or as close to being in line as possible.

**MK100 Plus 81**: ensure that the axles are extended during operation (Section 4.2.).

- Know how to safely shut down the auger in an emergency.
5.1. AUGER DRIVE & LOCKOUT

Note: If shearbolt in the PTO driveline fails, shut down and lock out tractor to replace bolt. The MK80 uses a 5/16” x 1” grade 8 bolt through the tread shear. The MK100 uses a 5/16” x 1” grade 8 bolt through the shank shear.

<table>
<thead>
<tr>
<th>Drive Type</th>
<th>Before Operation</th>
<th>Lockout</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTO Driveline</td>
<td>Before starting, ensure</td>
<td>Shut off tractor’s engine and remove key or coil wire from tractor.</td>
</tr>
<tr>
<td></td>
<td>• PTO driveline is securely attached to the tractor and jackshaft</td>
<td>• If removing key is impossible, remove PTO driveline from tractor.</td>
</tr>
<tr>
<td></td>
<td>• tractor park brake in engaged and/or wheels are chocked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• you are not exceeding the maximum operating length of 40-5/8” the PTO driveline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PTO drive on the tractor is in the off position</td>
<td></td>
</tr>
</tbody>
</table>

5.2. HYDRAULICS

1. Ensure that the hydraulic line is properly connected and secure.
2. Keep hydraulic line away from moving parts.
3. Do not disconnect the hydraulic coupling when under pressure. For the correct procedure, consult this manual or your tractor manual.

**WARNING**

Escaping hydraulic fluid under pressure can cause serious injury if it penetrates the skin. Wear protective clothing when working around hydraulic equipment.
5.3. OPERATING PROCEDURE

5.3.1. INITIAL START-UP

BREAK IN

**CAUTION**

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

**Note:** *The angle drive on the standard intake hopper requires a break-in period of at least 2 or 3 loads of grain.*

1. Ensure auger is properly placed and complete the pre-operational checklist. If everything is satisfactory, prepare for one hour of operation at half speed.
2. Correctly position intake hopper.
3. Ensure that the PTO drive on the tractor is in the OFF position.

**Important:** *When starting auger for the first time, be prepared for an emergency shutdown in case of excessive vibration or noise. Auger may run rough until tube is polished.*

4. Start tractor and idle at low rpm. Slowly engage PTO drive and hydraulics (where applicable).
5. Gradually begin feeding grain into hopper, bringing auger speed up to about 300 rpm.
   • Do not overfeed the hopper on initial loads; keep feed of grain at about half capacity.
6. After auger tube is polished and runs fairly smoothly, proceed to unload at full speed of 540 rpm.
7. After initial run, slow auger down until empty of grain and then stop.
8. Lock out tractor and conduct a complete inspection of auger following the checklist.

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

**NOTICE**

Running auger empty at high speeds results in excessive wear. Do not exceed 540 rpm.
After Break-in: Maintain auger speed of 300 to 540 rpm under normal use for maximum efficiency and to reduce chance of plugging.

5.3.2. OPERATING WITH A FULL LOAD

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotating Flighting Hazard!</td>
</tr>
<tr>
<td>To prevent death or serious injury:</td>
</tr>
<tr>
<td>• Keep away from rotating auger flighting.</td>
</tr>
<tr>
<td>• Do not remove or modify auger flighting guards, doors, or covers. Keep in good working order. Have replaced if damaged.</td>
</tr>
<tr>
<td>• Do not operate the auger without all guards, doors, and covers in place.</td>
</tr>
<tr>
<td>• Never touch the auger flighting. Use a stick or other tool to remove an obstruction or clean out.</td>
</tr>
<tr>
<td>• Shut off and lock out power to adjust, service, or clean.</td>
</tr>
</tbody>
</table>

• 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.
5.3.3. Shutdown

Normal Shutdown:

1. Near the end of a load, decrease auger speed until all grain is clear of machine.
2. When auger is clear of grain, disengage PTO drive.
3. Shut down and lock out tractor.

Emergency / Full-Tube Restart:

1. If cleanout covers or safety doors have been opened or removed, close or replace them before restarting the unit.
2. If the auger is shut down for an emergency, lock out tractor before correcting the problem.
   - If the problem is plugging, clear as much of the grain as possible using a piece of wood, wet/dry vac, or other tool before restarting auger. Do not reach in and use your hands even if the tractor has been locked out.

Notice

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...

- Get a larger spreader, if available.
- Remove the spreader.
- Make sure spreader is turned on.
- Center auger spout on 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.
- Some farmers suspend a curved disc about 14'' - 16'' from bin ceiling. They report this does a good job of spreading the grain.

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.
3. If auger tube is full of grain, do not restart at full speed. Engage PTO at low rpm, gradually increasing power until normal operating speed is reached.

**NOTICE**

Starting the auger when there is grain blockage will result in damage.

### 5.3.4. LOWERING & COMPLETION

After operation,

1. Clean entire work area.
2. Remove all supports and chocks.
3. Move auger out of working position and lower fully (see shaded box that follows for lowering procedure).
4. Move auger to the next work area or to a storage area and then clean out.

**LOWERING**

1. Raise the intake feed hopper. Do not attempt to lift by hand.
2. Reconnect hose coupler to tractor, if disconnected.
3. Disconnect PTO driveline from tractor before lowering.
4. Clear area beneath auger.
5. Open hose valve.
6. Open tractor valve, feathering to prevent too rapid a descent.
   - For the MK100 81’ auger, the tractor must be running while the auger is being lowered.
   - Once valves are open, auger lowers by gravity. As the auger nears the full down position, the rate of descent increases. Do not operate with tractor valve fully open.
7. After auger is fully lowered, raise the intake feed hopper into full transport position.
   - Never operate auger with intake feed hopper in transport position. This will damage the universal joint.
5. Clean out auger.
   a. Shut off tractor engine and lock out power.
   b. If necessary, open cleanout cover on the boot and manually clean out grain with a piece of wood, vacuum cleaner, or other tool. Do not use hands.
   c. Replace cleanout cover.
   d. Winch intake feed hopper into transport position and clean out remaining grain using a piece of wood or other tool.

6. Prepare for transport and placement or storage (see appropriate chapters for more information).
<table>
<thead>
<tr>
<th>OPERATION</th>
<th>GRAIN AUGERS - GRAIN AUGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3. OPERATING PROCEDURE</td>
<td>MK 80/100 X 51'- 81'</td>
</tr>
</tbody>
</table>

60 30258
6. Maintenance & Storage

**WARNING**
Before continuing, please reread the safety information relevant to this section at the beginning of this manual. Failure to follow the safety instructions can result in serious injury, death, or property damage.

### 6.1. GENERAL MAINTENANCE PROCEDURES

Please follow the guidelines below.

<table>
<thead>
<tr>
<th>Area</th>
<th>Maintenance Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>While auger is in use, observe the checklist in the operating section.</td>
<td>Daily</td>
</tr>
<tr>
<td>General</td>
<td>Check all operating, lifting, and transport components.</td>
<td>Regularly</td>
</tr>
<tr>
<td></td>
<td>Replace damaged or worn parts before using auger.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• For replacement instructions: See “Assembly” on page 19.</td>
<td></td>
</tr>
<tr>
<td>Intake Hopper Angle Drive</td>
<td>Lubricate the angle drive with high-temperature grease.</td>
<td>After every 8 hours of use</td>
</tr>
<tr>
<td></td>
<td>• If the angle drive in hopper runs hot AFTER the recommended break-in period, this may mean the angle drive is not properly aligned. <strong>To align</strong>, lock out power, loosen the bolts securing the angle drive, and then adjust or shim up until the flight can be easily rotated by hand.</td>
<td></td>
</tr>
<tr>
<td>Hydraulic Hose</td>
<td>Using cardboard as a backdrop, check hose and hose coupler for leaks, wear, and damage. Replace if necessary. See “Hydraulic Safety” on page 11.</td>
<td>Frequently</td>
</tr>
<tr>
<td></td>
<td>• Replacement hose and hose ends must have a minimum strength of 2750 psi (18,961 kPa) working pressure.</td>
<td></td>
</tr>
<tr>
<td>Lift Cable</td>
<td>Check and replace if frayed or damaged. Make sure cable clamps are secure.</td>
<td>Periodically</td>
</tr>
<tr>
<td>Cable Sheaves</td>
<td>Oil sheave pins on lift cylinder.</td>
<td>Twice/year</td>
</tr>
<tr>
<td>Truss Cables</td>
<td>Adjust to keep auger tube reasonably straight.</td>
<td>As necessary</td>
</tr>
<tr>
<td>Wheel Hubs</td>
<td>Repack with lithium-based grease.</td>
<td>Every 2–3 years</td>
</tr>
<tr>
<td>Tire Pressure</td>
<td>Check with a pressure gauge. Pressure should be maintained according to sidewall recommendations.</td>
<td>Monthly, or if it seems low</td>
</tr>
<tr>
<td>Hopper Lift Cable</td>
<td>Check and replace if frayed or damaged.</td>
<td>Periodically</td>
</tr>
</tbody>
</table>
### 6. MAINTENANCE & STORAGE GRAIN AUGERS - GRAIN AUGERS

#### 6.1. GENERAL MAINTENANCE PROCEDURES MK 80/100 X 51'-81'

<table>
<thead>
<tr>
<th>Area</th>
<th>Maintenance Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopper Lift Cable Pulleys</td>
<td>Oil lightly for easier raising of hopper.</td>
<td>Several times a year</td>
</tr>
<tr>
<td>Winch</td>
<td>Keep a film of grease on gears.</td>
<td>Regularly</td>
</tr>
<tr>
<td></td>
<td>Oil the bushings, drum shaft, and ratchet.</td>
<td>Occasionally</td>
</tr>
<tr>
<td></td>
<td>• Take care not to get oil or grease on brake discs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service winch with auger in fully lowered position and cable slack.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Replace brake discs if less than 1/16” thick.</td>
<td>As required</td>
</tr>
<tr>
<td></td>
<td>Service winch with auger in fully lowered position and cable slack.</td>
<td>Regularly</td>
</tr>
<tr>
<td>PTO Driveline</td>
<td>Lubricate all 5 grease fittings (Figure 6.1) with good quality Lithium Soap Base E.P. Grease meeting NLGI #2 specifications and containing no more than 1% molybdenum disulfide (example: Shell Super Duty).</td>
<td>After the first 16–24 hours and then regularly afterward</td>
</tr>
<tr>
<td></td>
<td>• Grease fittings No. 2 and 3 can be reached through hole in implement end portion of the driveline guard.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Grease fitting No. 4 can be reached through hole in center portion of the driveline guard.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The first lube interval should be 16-24 hours of operation after initial start-up, then follow the schedule.</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>Ensure that the set screws and shear-bolt are tight.</td>
<td>Regularly</td>
</tr>
<tr>
<td>Optional Lower Profile Hopper</td>
<td>Loosen the 2 nuts securing the service door. Open door, then grease the 4 bushings and the 2 u-joints. Close door, then securely tighten the two 3/8” nuts.</td>
<td>Frequently</td>
</tr>
<tr>
<td></td>
<td>Check and adjust the hopper drive chain and lubricate the hopper drive chain.</td>
<td>Occasionally</td>
</tr>
<tr>
<td></td>
<td>• To adjust chain, loosen the bearing bolts and adjust chain tension to about 1/4” deflection. Replace guard.</td>
<td></td>
</tr>
</tbody>
</table>

### LUBE RECOMMENDATIONS<sup>a</sup>

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>LOCATION</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 HRS.**</td>
<td>CROSS &amp; BEARING</td>
<td>1 PUMP</td>
</tr>
<tr>
<td>8 HRS.</td>
<td>TELESCOPING MEMBERS</td>
<td>4-8 PUMPS</td>
</tr>
<tr>
<td>8 HRS.**</td>
<td>CV BALL &amp; SOCKET</td>
<td>1-2 PUMPS</td>
</tr>
</tbody>
</table>

<sup>a</sup> **Constant angle applications must have lube interval of 4 hours.**
**NOTICE**

Replacement parts are not lubricated. Replacement parts must be lubricated at time of assembly. Use amount listed above per location, then follow lube recommendations outlined above for lubing intervals.

---

**MECHANICAL DRIVE SYSTEM:**

<table>
<thead>
<tr>
<th>Area</th>
<th>Maintenance Procedures</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom Chain Drive</td>
<td>Keep drive chain tension adjusted to about 1/4” deflection by loosening the four bolts</td>
<td>Regularly</td>
</tr>
<tr>
<td></td>
<td>on lower bearing, then re-tighten.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oil chain often enough to keep film of oil on it (this can be done through the hole</td>
<td>Frequently</td>
</tr>
<tr>
<td></td>
<td>in the side of the sprocket guard).</td>
<td></td>
</tr>
<tr>
<td>Universal Joint</td>
<td>Flip up safety discharge door and lubricate grease fitting in the u-joint. Check</td>
<td>After every 8 hours</td>
</tr>
<tr>
<td></td>
<td>set screws and re-tighten if necessary.</td>
<td>of operation</td>
</tr>
<tr>
<td></td>
<td>Check set screws and re-tighten if necessary.</td>
<td>Regularly</td>
</tr>
</tbody>
</table>
### Gearboxes

**Upper Gearbox:** flip up safety discharge door or open round service door and service gearbox.

**Lower Gearbox:** open round service door and service gearbox.

For more extensive servicing or repairs, remove hopper from boot assembly by removing the 3/8” x 3/4” bolts and large washers. Lift hopper with front-end loader or other secure method.

Check and re-tighten set screws and connecting bolts. Clean and lightly grease the splined shaft. Reattach hopper to boot assembly as per instructions in Section 3.11.

### Bearing

Lubricate grease fitting on lower flight bearing.

- Replace sprocket guard after maintenance!

### WARNING

Do not operate auger without intake hopper in place.

Replace and secure service doors before operating auger.

---

**Figure 6.2**
6.2. STORAGE

TO PROTECT AUGER IN STORAGE DURING THE OFF-SEASON:

1. Lower the auger to full down position with slight tension on the cable.
2. Lubricate all grease fittings according to the maintenance procedure.
3. Inspect auger for damage and note any repairs required. Order replacement parts from your dealer.
4. Check tire pressure if necessary. See tire sidewall for recommendations.
5. Clean and re-lubricate spline on PTO driveline. Cover PTO driveline with plastic bag to protect it from the weather and place in the transport saddle.
6. Tow auger to storage area. Park and chock wheels.

CAUTION

Support discharge end of auger before removing or replacing any parts on the undercarriage.

TO PREPARE AUGER FOR USE AFTER STORAGE:

1. Check tire pressure if necessary. See tire sidewall for recommendations.
2. Tow auger to work site.
3. Remove cover from spline of PTO driveline and re-lubricate.
4. Check oil level in gearbox and refill if necessary (half full only).
5. Replace any damaged parts and decals.
6. Check and perform general maintenance before using auger.
7. Before raising auger after storage, make certain cable is in good condition, replacing it if frayed or damaged. Also make sure cable is properly seated in roller track and that cable clamps are secure.
6. MAINTENANCE & STORAGE

6.2. STORAGE

GRAIN AUGERS - GRAIN AUGERS
MK 80/100 X 51’- 81’
## 7. Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive noise or vibration.</td>
<td>Determine if noise originates in main or swing away section of auger. Disconnecting the chain from the sprocket drive can assist in narrowing down the source of the problem. If noise disappears when chain is disconnected, problem is likely in the swing away auger.</td>
<td>Check for flight operation by rotating by hand with sprocket chain disconnected and tractor shut off. Grease or replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>Hopper flight support bearings are dry or have failed.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Angle drive is misaligned or has failed (standard hopper).</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Universal joint not greased or is faulty (low pro hopper).</td>
<td>Grease or replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>Faulty upper gearbox.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Obstruction in tube.</td>
<td>Visually inspect for cloth or trash wrapped around flighting, or a buildup from oily crops.</td>
</tr>
<tr>
<td></td>
<td>Bent flight stub on swing flighting.</td>
<td>Remove flighting and roll against flat surface to determine if stub is true. If noise continues when chain is disconnected, check auger or PTO.</td>
</tr>
<tr>
<td></td>
<td>CV PTO failure.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Incorrectly adjusted truss cables.</td>
<td>Support end of auger and adjust cables so auger is flat or slightly curved upwards.</td>
</tr>
<tr>
<td></td>
<td>Flighting has peeled back due to plugging.</td>
<td>Inspect spout end of auger for flight condition. Remove and replace flight sections as necessary.</td>
</tr>
<tr>
<td></td>
<td>Faulty lower gearbox.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Lower bearing dry or has failed.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Bent flighting section.</td>
<td>Support auger and remove all flight sections. Check for straightness of flight stubs by rolling across flat section of concrete floor. Straighten stub or replace as necessary. Take care not to bend flighting when reinstalling.</td>
</tr>
<tr>
<td></td>
<td>Obstruction in tube.</td>
<td>Visually inspect for cloth or trash wrapped around flighting, or a buildup of gum from oily crops such as flax or canola.</td>
</tr>
<tr>
<td></td>
<td>High spot at flighting joints.</td>
<td>Check with straight edge. If necessary, grind down until even.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Remedy</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CV PTO failure.</td>
<td>Try to determine the operation and maintenance habits of the owner in order to avoid multiple repairs and unnecessary frustration.</td>
<td></td>
</tr>
<tr>
<td>Broken CV ball.</td>
<td>Most frequently occurs when PTO driveline is not disconnected during transport or setup of the auger. Remind all operators to disconnect PTO driveline except when at the bin, in operation.</td>
<td></td>
</tr>
<tr>
<td>Excessive PTO angle.</td>
<td>Check manual for correct dimensions (auger input and tractor PTO output). It may be necessary to raise tractor drawbar to maintain correct dimensions. Extreme side-to-side angles that are necessary because of the bin and tractor placement may be corrected with a right angle drive kit.</td>
<td></td>
</tr>
<tr>
<td>Early series cross-link or non-Westfield part used.</td>
<td>Ensure new “E” series cross links and genuine Westfield replacement parts are used.</td>
<td></td>
</tr>
<tr>
<td>Telescoping part of PTO shaft bottoming out.</td>
<td>Pull out or lengthen tractor drawbar to maintain minimum clearance.</td>
<td></td>
</tr>
<tr>
<td>Bearings not receiving adequate grease.</td>
<td>Check manual—CV PTO drivelines should be greased as part of daily maintenance procedures.</td>
<td></td>
</tr>
<tr>
<td>Premature gearbox failure.</td>
<td>While all MK gearboxes come from the factory filled with oil, it should be part of the setup procedure to double check that a half full level is maintained.</td>
<td></td>
</tr>
<tr>
<td>Failed seal.</td>
<td>Check gearbox levels on a regular basis and only fill with EP90 oil.</td>
<td></td>
</tr>
<tr>
<td>1000 rpm tractor input being used.</td>
<td>Use 540 rpm tractor or install speed reducer.</td>
<td></td>
</tr>
<tr>
<td>Angle drive fails or runs hot.</td>
<td>Angle drives require 2–3 loads to break in properly. It is normal for the angle drive to run warm to the touch during operation.</td>
<td></td>
</tr>
<tr>
<td>Bearings not receiving adequate grease.</td>
<td>Grease frequently, especially during break-in period.</td>
<td></td>
</tr>
<tr>
<td>Misaligned angle drive.</td>
<td>Adjust by shimming angle drive until flighting turns freely by hand. See manual for details.</td>
<td></td>
</tr>
<tr>
<td>Swing tube flight stub bent.</td>
<td>Check for straightness of flight stubs by rolling across flat concrete section. Straighten stub or replace as necessary. Maintain correct angle when re-connecting hopper and swing tube.</td>
<td></td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Cause</td>
<td>Remedy</td>
</tr>
<tr>
<td>---------</td>
<td>---------------</td>
<td>--------</td>
</tr>
<tr>
<td>Shear bolts fail repeatedly.</td>
<td>Incorrect shear bolt type.</td>
<td>Replace with correct part number. Westfield shear bolts are specifically designed to provide correct driveline protection.</td>
</tr>
<tr>
<td></td>
<td>Shear bolt hole worn out-of-round.</td>
<td>Frequent use of an incorrect shear bolt size can wear the mounting hole creating a “scissor effect,” which will require replacement of the affected parts.</td>
</tr>
<tr>
<td></td>
<td>Corn spreaders in bin unable to keep up with auger output.</td>
<td>Slow down auger or remove corn spreaders.</td>
</tr>
<tr>
<td></td>
<td>Flighting “peeled back” as a result of plugging.</td>
<td>Occurs when bin has overfilled or corn spreaders restrict end of discharge. Inspect flighting at discharge end. If necessary, replace flighting.</td>
</tr>
<tr>
<td></td>
<td>Driveline failures (bearing, gearbox, etc.).</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Bearing load not evenly distributed between upper and lower bearings.</td>
<td>Use correct sequence of tightening lock collars when setting up or replacing bearings. On MK130 Plus models, adjust bearing load using threaded upper flight stub.</td>
</tr>
<tr>
<td></td>
<td>Insufficient CV PTO shaft clearance.</td>
<td>Maintain correct tractor hitch dimensions as per manual.</td>
</tr>
<tr>
<td></td>
<td>Failure of bearing seals.</td>
<td>Wet grain or fertilizer will damage seals if left in boot over time. Clean out boot before storing auger.</td>
</tr>
<tr>
<td></td>
<td>Bent lower flight stub.</td>
<td>Check for straightness of flight stub by rolling across flat concrete section. Straighten stub or replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>Auger being at low capacity or empty for extended periods of time.</td>
<td>Frequently occurs on farms using grain wagons. Auger should not be left unattended when filling bins. Depending on application, a belt conveyor may be more appropriate.</td>
</tr>
<tr>
<td></td>
<td>Bent flighting.</td>
<td>Refer to appropriate troubleshooting section.</td>
</tr>
<tr>
<td></td>
<td>Flighting allowed to wear beyond normal point of replacement.</td>
<td>When flighting becomes razor-thin at intake, replacement is critical. Since flight material is double thickness at welded lap joints, high spots on flight occur and can accelerate spot tube wear.</td>
</tr>
</tbody>
</table>
## Troubleshooting Grain Augers

**Grain Augers - Grain Augers**

**MK 80/100 X 51'-81’**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic lift settles out over time.</td>
<td>Shut off ball valve is open.</td>
<td>Oil is leaking through tractor calve. Auger ball valve should be closed whenever set up at a bin.</td>
</tr>
<tr>
<td></td>
<td>Shut off ball valve is leaking.</td>
<td>Disconnect hose from tractor and check for leakage.</td>
</tr>
<tr>
<td></td>
<td>Lift cylinder cup seal leaking or cylinder barrel scored or pitted.</td>
<td>See if oil leaks from cylinder breather hole (single action cylinders). Remove and replace cup seal and hone cylinder or replace as needed.</td>
</tr>
</tbody>
</table>
8. Appendix

8.1. LIFT CYLINDER HYDRAULICS

This auger is elevated with a 4” bore (the MK100 81’ has a 4-1/2” bore), and single acting hydraulic cylinder and cable. The following table lists the psi required to raise specific auger sizes (as determined by Westfield testing).

These tests used a hydraulic pressure gauge (4000 psi maximum rating) and are solely intended to be used as a guide. The psi requirements for specific augers may vary slightly. Should your auger require a significantly higher psi to raise, contact either your dealer or Westfield Industries.

<table>
<thead>
<tr>
<th>AUGER</th>
<th>SIZE</th>
<th>PSI</th>
<th>kPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK80 51’</td>
<td>8” x 51’</td>
<td>850</td>
<td>5865</td>
</tr>
<tr>
<td>MK80 61’</td>
<td>8” x 61’</td>
<td>950</td>
<td>6555</td>
</tr>
<tr>
<td>MK80 71’</td>
<td>8” x 71’</td>
<td>1200</td>
<td>8280</td>
</tr>
<tr>
<td>MK100 51’</td>
<td>10” x 51’</td>
<td>1000</td>
<td>6895</td>
</tr>
<tr>
<td>MK100 61’</td>
<td>10” x 61’</td>
<td>1200</td>
<td>8280</td>
</tr>
<tr>
<td>MK100 71’</td>
<td>10” x 71’</td>
<td>1500</td>
<td>10342</td>
</tr>
<tr>
<td>MK100 81’</td>
<td>10” x 81’</td>
<td>1800</td>
<td>12480</td>
</tr>
</tbody>
</table>

The approximate quantity of hydraulic fluid required to raise auger:

- MK 51’ 6.2 L
- MK 61’ 7.5 L
- MK 71’ 9.0 L
- MK 81’ 4.0 L

8.2. HOW TO CHARGE THE LIFT SYSTEM

**MK100 Plus 81’ Only**

The cylinder will require about 9 L (2.5 US gallons). Check your tractor’s operation manual for correct oil type and specifications.

Before charging cylinders, ensure that:

- Tractor is correctly hooked up.
- Hydraulic hoses are connected.
- Shut-off valve is open.
- Auger is parked on level ground.

**Note:** *Do not raise auger in high winds.*

1. Start with the tractor’s hydraulic oil level in a normal operating range.
2. Add about 4 L (1 US gallon) to the tractor’s hydraulic oil reservoir.
3. Start tractor, then raise auger until the lift assist is fully extended and track shoe has moved about one foot from track stop.
4. **With tractor still running**, lower auger to full down position.
5. Repeat steps 2., 3., and 4. until about 9 L (2.5 US gallons) have been added and tractor hydraulic oil level in the reservoir remains within the operating range.

### 8.3. INTAKE FEED HOPPER HYDRAULICS

This Section Only Applies to MK Augers with Hydraulic Drive Intake Hoppers!

Intake feed hopper speed is regulated by the volume and pressure generated by the hydraulic system of the tractor. When tractor engine rpm is increased, the speed of the flighting in the hopper is increased.

The speed of the main auger will also increase, effectively preventing the overloading of the main auger under normal conditions. If the intake feed hopper is overloading the main auger, decrease the amount of grain flow from your truck or trailer.

For proper intake feed hopper function, the hydraulic motor must receive adequate gallons per minute (gpm) at the proper pressure (psi). The minimum volumes and pressures are:

- The 8" intake feed hopper must receive a minimum of 8 gpm (36.3 lpm) at 1500 psi (10,342 kPa).
- The 10" intake feed hopper must receive a minimum of 10 gpm (45.5 lpm) at 1500 psi (10,342 kPa).

**Note:** The minimum requirements listed are essential for efficient auger operation. Additional gallons per minute will increase the speed of the hydraulic motor (flighting rpm) while a higher pressure will create additional torque to maintain motor speed under load.

### 8.3.1. HYDRAULIC MOTOR NOTES

Do not exceed a constant back pressure of 300 psi (2068 kPa) in the hydraulic motor.

- The hydraulic system on some tractors is designed so that the return flow of hydraulic fluid from the hydraulic motor to the tractor is restricted. This creates excessive back pressure inside the hydraulic motor and deprives it of an adequate flow of hydraulic fluid. The result will be seal failure, overheating, rough running, and loss of power.
To date, these problems occur primarily with certain John Deere tractors. Kits to correct the problem are available from your John Deere dealer (Figure 8.1).

**Important:** John Deere Series 50 tractors with a single hydraulic lever will require this kit. Series 50 tractors with double hydraulic levers have the kit pre-installed.

**Note:** The problem discussed in this section may exist on tractors other than the John Deere. Should you experience this situation, contact your tractor dealer or Westfield Industries.

A remote cylinder control valve oil return kit, which returns oil to the oil filter cover, is available for more efficient use of tractor hydraulics. Order AR71945 Remote Cylinder Control Valve Oil Return kit and AT30197 Ported Cover for transmission filter. (See Figure No. 38)

**IMPORTANT**
A steel-encased filter element must be used with the AT30197 Ported Filter Cover.

W8058

INFORMATION COURTESY JOHN DEERE MANUAL "PREPARING THE TRACTOR."

Figure 8.1
8. APPENDIX
8.3. INTAKE FEED HOPPER HYDRAULICS

GRAIN AUGERS - GRAIN AUGERS
MK 80/100 X 51'- 81'
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.

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