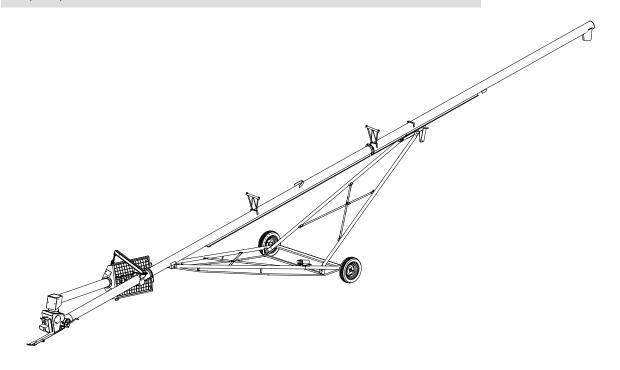


# MK8 & HX8 Series

# Swing-Away Grain Auger Assembly Manual

# This manual applies to:

Westfield MK8, Hutchinson HX8, Mayrath HX8 51', 61', 71'





Part Number: 30258 R3 Revised: November 2021

Original Instructions

# **New in this Manual**

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

Description	Section
Modified lift arm.	Section 4.14 – Hopper Lift Arm and Winch on page 41
Updated brand and model decal placement instructions.	Apply the Logo and Model Decals on the Auger Tubes on page 22

# **CONTENTS**

1. Introduction		4
2. Safety		5
2.1 Safety Alert Symbol and Signal W	ords	5
2.2 General Safety Information		5
2.3 Rotating Flighting Safety		6
2.4 Rotating Parts Safety		6
2.5 Drives and Lockout Safety		6
2.5.1 PTO Driveline Safety		7
2.5.2 Hydraulic Power Safety.		8
2.7 Personal Protective Equipment		9
2.8 Safety Equipment		10
2.9 Safety Decals		10
2.9.1 Decal Installation/Replace	ement	10
2.9.2 Safety Decal Locations a	nd Details	11
3. Features		19
4. Assembly		20
•		
, ,		
•		
•	Decals	
•		
<u> </u>		
· • • • • • • • • • • • • • • • • • • •		
4.14 Hopper Lift Arm and Winch		41
· ·		
5 Specifications		48

# 1. Introduction

Thank you for your purchase. Follow the instructions in this manual for safe use of this auger. Following proper operation and maintenance will help to keep the auger running in optimal condition.

Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is provided on the inside front cover for your convenience. If any information in this manual is not understood or if you need additional information, please contact AGI or your representative for assistance.

This manual should be regarded as part of the equipment.

# 2. Safety

# 2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

**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.

**A** DANGER

Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.

**⚠ WARNING** 

Indicates a hazardous situation that, if not avoided, could result in serious injury or death.

**⚠ CAUTION** 

Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

NOTICE

Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

# 2.2. General Safety Information

Read and understand all safety instructions, safety decals, and manuals and follow them when assembling the equipment.

 Only experienced personnel who are familiar with this type of assembly and installation should perform this work. Untrained assemblers/installers expose themselves and bystanders to possible serious injury or death.



- Do not modify the auger in any way or deviate from the instructions in this manual without written
  permission from the manufacturer. Unauthorized modification or methods may impair the function and/or
  safety. Any unauthorized modification will void the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Contact your local representative or AGI if you need assistance or additional information.
- Always follow applicable local codes and regulations.

# 2.3. Rotating Flighting Safety



- KEEP AWAY from rotating flighting.
- DO NOT remove or modify 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 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.



# 2.4. Rotating Parts Safety



- 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 lock out power source before inspecting or servicing machine.



# 2.5. Drives and Lockout Safety

Inspect the power source(s) before using and know how to shut down in an emergency. Whenever you service or adjust your equipment, make sure you shut down the power source and unplug or remove the key (as applicable) to prevent inadvertent start-up and hazardous energy release. Know the procedure(s) that applies to your equipment from the following power source(s). Ensure that all personnel are clear before turning on power to equipment.



# 2.5.1 PTO Driveline Safety

# **⚠ WARNING** Drive

- · Keep body, hair, and clothing away from rotating PTO
- · Make certain the driveline shields telescope and rotate freely on driveline before attaching.
- Make certain the driveline is securely attached at both ends.
- Do not operate auger unless all driveline, tractor, and equipment shields are in place and in good working order.
- Do not exceed the specified operating speed.
- Keep universal joint angles small and equal. Do not exceed maximum recommended length for PTO driveline.
- Engage tractor park brake and/or chock wheels.

### Lockout

- Position all controls in neutral, shut off tractor's engine, and remove key from tractor.
- If removing key is impossible, remove PTO driveline from tractor.



30258 R3

# 2.5.2 Hydraulic Power Safety

# **⚠ WARNING** Power Source

- Refer to the rules and regulations applicable to the power source operating your hydraulic drive.
- Do not connect or disconnect hydraulic lines while system is under pressure.
- Keep all hydraulic lines away from moving parts and pinch points.
- Escaping hydraulic fluid under pressure will cause serious injury if it penetrates the skin surface (serious infection or toxic reaction can develop). See a doctor immediately if injured.
- Use metal or wood as a backstop when searching for hydraulic leaks and wear proper hand and eye protection.
- Check all hydraulic components are tight and in good condition. Replace any worn, cut, abraded, flattened, or crimped hoses.
- Clean the connections before connecting to equipment.
- Do not attempt any makeshift repairs to the hydraulic fittings or hoses with tape, clamps, or adhesive. The hydraulic system operates under extremely high pressure; such repairs will fail suddenly and create a hazardous and unsafe condition.

## Lockout

 Always place all hydraulic controls in neutral and relieve system pressure before disconnecting or working on hydraulic system.



8 30258 R3

# 2.6. Tire Safety



Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion that may result in serious injury or death.



- DO NOT attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Have a qualified tire dealer or repair service perform required tire maintenance.
- When replacing worn tires, make sure they meet the original tire specifications. Never undersize the replacement tire.
- DO NOT weld to the tire rim with the tire mounted on the rim. This action may cause an explosion which could result in serious injury or death.
- Inflate tires to the manufacturer's recommended pressure.
- Tires should not be operated at speeds higher than their rated speed.
- Keep wheel lug nuts tightened to manufacturer's recommendations.
- Never reinflate a tire that has been run flat or seriously under-inflated without removing the tire from the wheel.
   Have the tire and wheel closely inspected for damage before remounting.





# 2.7. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when operating or maintaining the equipment.

### Safety Glasses

Wear safety glasses at all times to protect eyes from debris.



### **Coveralls**

Wear coveralls to protect skin.



## **Hard Hat**

Wear a hard hat to help protect your head.



### **Steel-Toe Boots**

Wear steel-toe boots to protect feet from falling debris.



### **Work Gloves**

Wear work gloves to protect your hands from sharp and rough edges.



### **Dust Mask**

Wear a dust mask to prevent breathing potentially harmful dust.



# 2.8. Safety Equipment

The following safety equipment should be kept on site.

### Fire Extinguisher

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



### First-Aid Kit

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



# 2.9. 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 as applicable.

# 2.9.1 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 decal backing paper.

# 2.9.2 Safety Decal Locations and Details

Replicas of the safety decals that are attached to the auger and their messages are shown in the figure(s) that follow. Safe operation and use of the auger 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.

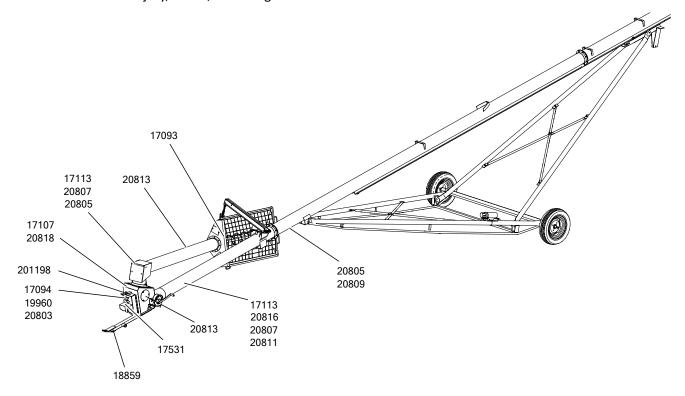


Table 1. Safety Decals

Part Number	Description		
20813	DANGER		
	ROTATING FLIGHTING HAZARD		
	To prevent death or serious injury:		
	KEEP AWAY from rotating auger flighting.		
	<ul> <li>DO NOT remove or modify auger flighting guards, doors, or covers. Keep in good working order. Have replaced if damaged.</li> </ul>		
	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.		
20818			
	ROTATING PTO DRIVELINE  To prevent serious injury or death:  · Keep body, hair, and clothing away from rotating PTO driveline.  · Do not operate equipment unless all driveline, tractor, and equipment shields are in place and in good working order.  · Make certain the driveline shields turn freely on driveline.  · Make certain the driveline is securely attached at both ends.  · Do not exceed specified operating speed (see operator's manual).  · Keep u-joint angles small and equal. Do not exceed maximum recommended length for PTO driveline.		

Table 1 Safety Decals (continued)

Part Number	Description		
17094	CONTACTING FLIGHTING INSIDE  To prevent serious injury or death, do not operate auger unless swinghopper is securely attached to boot.		
20816	<u> </u>		
	ELECTROCUTION HAZARD		
	To prevent death or serious injury:		
	<ul> <li>When operating or moving, keep equipment away from overhead power lines and devices.</li> </ul>		
	Fully lower equipment before moving.		
	This equipment is not insulated.		
	Electrocution can occur without direct contact.		
17113			
	TRANSPORT HAZARD  To prevent serious injury or equipment damage, before towing:  Lift up wheel frame completely and secure with safety chain.  Pull handle to disengage drive wheel motors.		

Table 1 Safety Decals (continued)

Part Number	Description			
201198	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 lock out power source before inspecting or servicing machine.			
20811	WARNING			
	UPENDING HAZARD			
	To prevent death or serious injury:			
	Anchor intake end and/or support discharge end to prevent upending.			
	Intake end must always have downward weight.  Do not release until attached to tow bar or resting on ground.			
	Do not raise intake end above tow bar height.			
	Empty tube and fully lower before moving.			

Table 1 Safety Decals (continued)

Part Number	Description		
20807	<b>⚠ WARNING</b>		
	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.		
	Do not modify the equipment. Keep in good working order.		
	If the manual, guards, or decals are missing or damaged, contact factory or representative for free replacements.		
	Lock out power before performing maintenance.		
	To prevent equipment collapse or upending, support equipment tube while disassembling certain components.		
	Follow grain storage structure manufacturer's warnings when loading and unloading.		
	Electric motors must be grounded. Disconnect power before resetting overloads.		
	Electric motors must be grounded. Disconnect		

Table 1 Safety Decals (continued)

Part Number	Description
17531	To prevent damage during auger-to-tractor hookup:  • Follow dimensions above for correct auger-to-tractor hookup.  • Auger must be on level ground and in full down position when measuring.  • Adjust drawbar as needed. See operation manual for complete details.
20803	WARNING  MISSING GUARD HAZARD  To prevent serious injury or death, shut off power and reattach guard before operating machine.
20809	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.

Table 1 Safety Decals (continued)

Part Number	Description		
20805	WARNING		
	HIGH PRESSURE FLUID HAZARD		
	<ul> <li>Hydraulic fluid can cause serious injury if it penetrates the skin. If it does, see a doctor immediately.</li> <li>Relieve system pressure before repairing, adjusting or disconnecting.</li> <li>Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.</li> </ul>		
18859	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.		

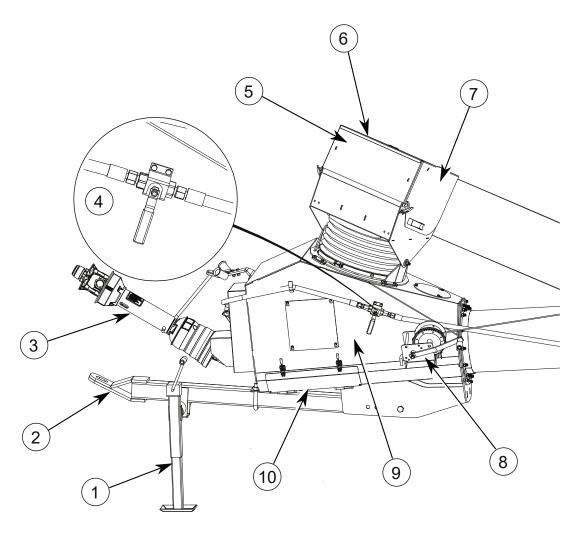
Table 1 Safety Decals (continued)

Part Number	Description		
17107	To prevent personal injury or damage to equipment, close valve in lift cylinder hydraulic line after raising equipment into position.		
19960	NOTICE  To prevent damage, wheels must be free to move when raising or lowering equipment.  When equipment is positioned, chock all wheels.		
17093	NOTICE  Lubricate angle drive after each 8 hours of use with high-temperature grease.		

# 3. Features

Read this section to familiarize yourself with the basic component names and functions of the auger.

Figure 1. Grain Transfer Boot Features



**Table 2. Grain Transfer Boot Features** 

Item	Description	Item	Description
1	Hitch Jack	6	Swing Arm Spout Head
2	Hitch	7	Spout Head Service Cover
3	PTO Driveline	8	Manual Winch (Hopper)
4	Ball Valve	9	Grain Transfer Boot
5	Overflow Panel	10	Clean-Out Hatch

# 4. Assembly



Before continuing, ensure you have completely read and understood this manual's Safety section, in addition to the safety information in the section(s) below.

# 4.1. Assembly Safety

- MARNING Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
  - Carry out assembly in a large open area with a level surface.
  - Always have two or more people assembling the auger.
  - Make sure you have sufficient lighting for the work area.
  - 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.

# 4.2. Check Shipment

Unload the auger parts at the assembly site and compare the packing slip to the shipment. Ensure that all items have arrived and that none are damaged. Take pictures of shipments prior to or just after unloading if there are any damaged parts.

Report missing or damaged parts immediately to ensure that proper credit is received from AGI or your representative, and to ensure that any missing parts can be shipped quickly to avoid holding up the assembly process.

### **Important**

Do not assemble or install damaged components.

20 30258 R3

# 4.3. Before You Begin

Before you assemble the auger:

- Familiarize yourself with all the sub-assemblies, components, and hardware that make up the equipment.
- Have all parts and components on hand, and arrange them for easy access.
- Separate the hardware (bolts, nuts, etc.) and lay them out into groups for easier identification during assembly.
- If assembling inside, confirm the ceiling and door width/height provide enough clearance when installing the undercarriage and to remove the auger from the building.
- Ensure there is adequate space to remove the assembled auger from the assembly area.

# 4.4. Arrange Tubes and Apply Model Decals

### **Identify and Arrange the Auger Tube Sections**

- 1. Align tube sections on a series of support stands, placing a support stand at the end of each tube (see the figures below for correct tube identification and positioning).
- 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.

### Note

When assembling more than two sections, start from spout end and work toward the hopper.

### **Important**

Strap tubes to the support stands to prevent the tubes from rolling off the stands.

Figure 2. 51' Auger Tube Sections

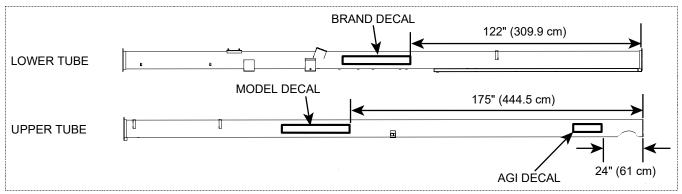


Figure 3. 61' Auger Tube Sections

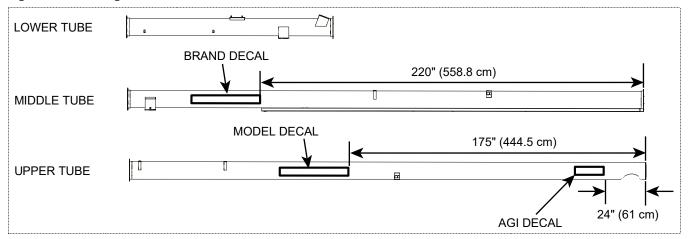
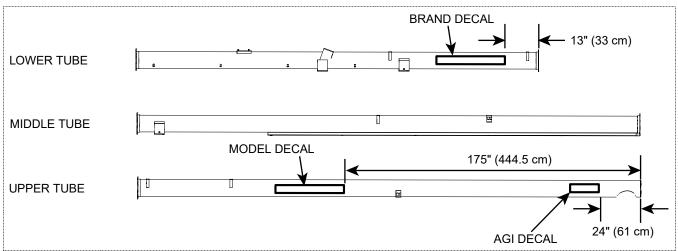


Figure 4. 71' Auger Tube Sections



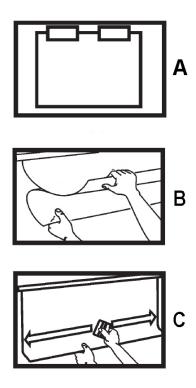
### Apply the Logo and Model Decals on the Auger Tubes

### **Important**

Do not cover any existing safety or instruction decals with the model decals.

- 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. Apply decals to both sides of the auger tube. Center decals vertically on the tube and apply masking tape along the top, creating a gate hinge. Figure A demonstrates.
- 3. Remove backing paper from decal 6" (15.2 cm) 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" (15.2 cm) 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.

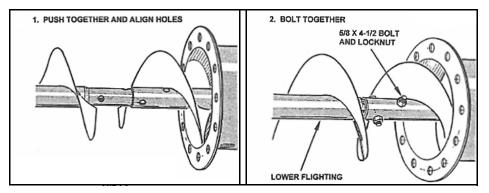
7. As a final process, squeegee the corners and edges of the decal to ensure proper adhesion and to prevent premature peeling.



# 4.5. Tubes and Flighting

- 1. Screw or slide the lower flight shaft onto upper flight shaft until flight ends butt together and flighting spiral matches up.
- 2. Secure the sections together with two 7/16" x 1" grade 8 bolts and lock nuts.
- 3. Repeat, if necessary, for any remaining flight shafts.

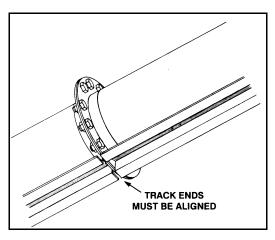
Figure 5. Assembling Tubes and Flighting



- 4. Slide the tube sections together and align the holes in the flanges.
- 5. Insert the twelve 7/16" x 2-1/4" bolts and lock nuts into the tube flanges.
- 6. Align the upper and lower track ends, then tighten the bolts.

7. Make sure the track ends align to allow the track shoe to smoothly slide over the track joint. Misalignment may cause jamming.

Figure 6. Aligning the Track Ends



### **Important**

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

# 4.6. Track Shoe and Trackstop

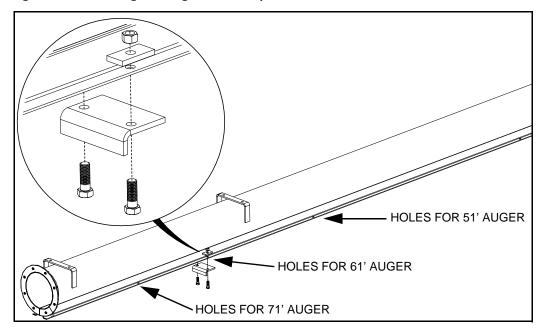
- 1. Slide the double roller track shoe onto the track.
- 2. Determine the correct position of the trackstop for your auger length. (See Table 3 and Figure 7.)

Table 3. Trackstop Position vs. Auger Length

Auger Length	Trackstop Position
51'	Second set of holes from the top
61'	Third set of holes from the top
71'	Fourth set of holes from the top

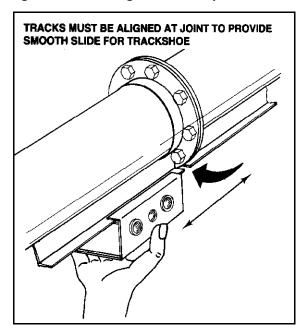
- 3. Attach the angle track stop to the track.
  - a. Use two 7/16" x 1-1/4" bolts, lock nuts, and flat iron washers.
  - b. Make certain the flat iron washers are on top of the track and the trackstop is centered on the track.

Figure 7. Attaching the Angle Track Stop



4. Slide the track shoe along the full length of the track to make certain there is no binding and that track ends are properly aligned. The upper and lower tracks must align to allow track shoe to roll smoothly over this joint.

Figure 8. Installing the Trackstop

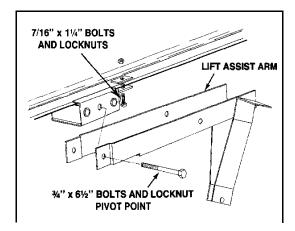


- 5. Attach the lift-assist arm to the center hole on the track shoe.
- 6. Secure using one 3/4" x 6-1/2" bolt and lock nut.

## **Important**

Do not overtighten; tighten snug only. This bolt acts as a pivot point.

Figure 9. Installing the Trackstop



# 4.7. 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**

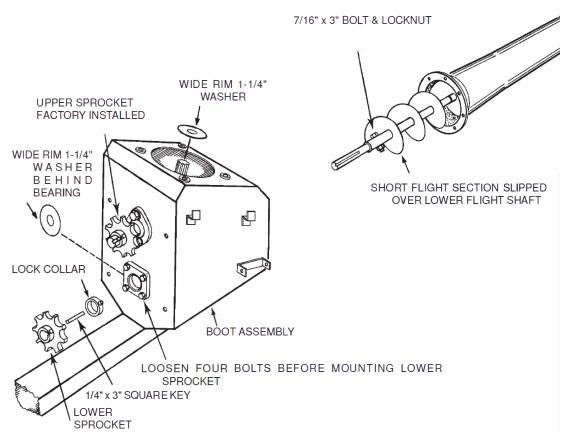
Complete assembly in the order listed to prevent premature failure of the lower bearing.

- 1. Slide the short flight section onto the lower flight shaft and secure. (See Figure 10.) Make sure the flight ends butt together and the spiral matches up.
- 2. At the upper end of the auger tube, loosen the set screw and remove the lock collar from the upper bearing.
- 3. Slip the boot over the lower flight shaft and attach to the flange on the lower tube. Tighten securely.
- 4. Slide the wide rim flat washer onto the lower flight shaft.
- 5. Install the lower bearing. The grease zerk must be positioned on the left (when standing behind the boot, facing the auger discharge).
- 6. Seat the flight shaft shoulder against the washer and lower bearing.
- 7. Secure the lock collar and tighten the set screw on the lower bearing, then on the upper bearing.

### Note

Augers with hydraulic drive hoppers are shipped without the mechanical drive components (gearboxes, universal joint, and lower chain drive). On these augers, disregard the steps for mechanical drive units.

Figure 10. Connecting the Short Flight Section

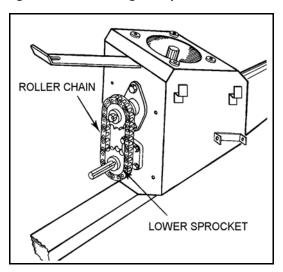


- 8. For mechanical drive units only: (See Figure 11.)
  - a. Install a 1/4" x 3" square key in the keyway.
  - b. Slide the sprocket onto the flight shaft.
  - c. Align the lower sprocket with the upper sprocket using a straight edge.
  - d. Tighten the set screws.
  - e. Loosen the four bolts on the lower bearing.
  - f. Install the roller chain on the sprockets.
  - g. Adjust the tension to approximately 1/4" deflection.
  - h. Tighten the four bolts on the lower bearing.
  - i. Oil the chain lightly.

## Note

Attach the sprocket guard after installing the PTO driveline.

Figure 11. Installing the Sprocket and Chain on Mechanical Drive Units



9. For all augers: Secure lock collar and tighten set screw on bearing at the upper end of the auger tube.

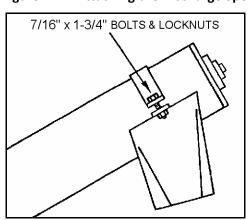
Table 4. Hardware for Boot Assembly

Part	Hardware	Qty
To attach flighting	7/16" x 3" bolt and lock nut	1
To attach boot to flange	7/16" x 1" bolts and lock nuts	8
Wide rim flat washer	1-1/4"	1
Square key	1/4" x 3"	1

# 4.8. Discharge Spout

1. Using two 7/16" x 1-3/4" bolts and lock nuts, attach the discharge spout as shown in the following illustration.

Figure 12. Attaching the Discharge Spout



# **4.9. Truss**

- 1. Fasten the lower truss anchor to the bracket.
  - The bracket is welded to the lower tube.
  - Use two 7/16" x 1" bolts and lock nuts.
- 2. Fasten two truss support brackets to the correct position on the auger tubes with two 7/16" x 1" bolts and lock nuts.

For the 71' auger: Install a high truss support center bracket between the two standard support brackets and fasten with two  $7/16" \times 1"$  bolts and lock nuts.

- 3. Thread the truss cable through the eyebolt and double-back 7-3/4" (20 cm) of cable. Secure the cable in place by installing and tightening two 5/16" cable clamps.
  - a. Apply the first clip one base width from the dead end of the rope with the u-bolt over the dead end. The live end rests in the clip saddle. Turn nuts firmly, but do not tighten.
  - b. Apply the second clip as close to the loop as possible with the u-bolt over the dead end. The live end rests in the clip saddle. Apply tension and turn nuts firmly but do not tighten.
- 4. Insert the eyebolt into the lower truss anchor and thread on the nut a short way.
- 5. Pull the truss cable over the truss support brackets, around the upper truss anchor and back over the truss support brackets to the lower truss anchor, holding it loosely in place with one 5/16" cable clamp at the upper truss anchor, and two 5/16" cable clamps at each truss support bracket.

### **Important**

Do not tighten the cable clamps at this time.

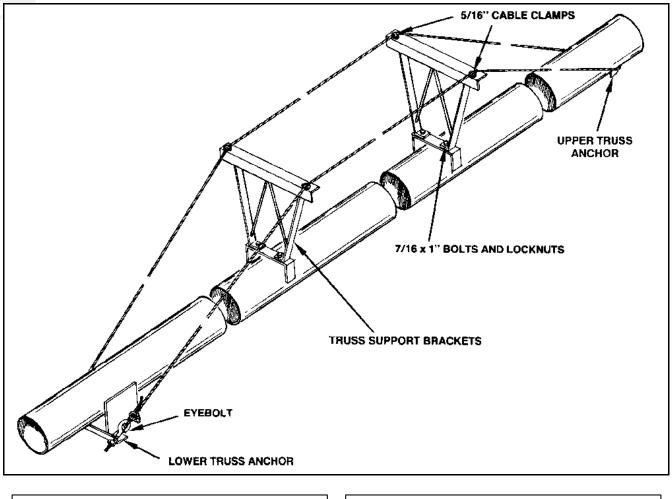
- 6. The upper end of the augers equipped with truss cables should have an upward bow before being placed on the transport undercarriage (the auger tube will straighten when fully assembled). Place supports under the discharge end until the upward bow is correct.
  - The upward bow should be approximately 2" (51 mm) on the 51' auger, 3" (76 mm) on the 61' auger, and 5" (127 mm) on the 71' auger.
- 7. Place the other eyebolt onto the lower truss anchor and thread on the nut a short way.
- 8. Thread the truss cable through the eyebolt and pull out all slack. Ensure a minimum turn back length of 7-3/4" (20 cm) of cable. Secure the cable in place by installing and tightening two 5/16" cable clamps.
  - a. Apply the first clip one base width from the minimum turn back length of cable with the u-bolt over the dead end. The live end rests in the clip saddle. Turn nuts firmly, but do not tighten.
  - b. Apply the second clip as close to the loop as possible with the u-bolt over the dead end. The live end rests in the clip saddle. Apply tension and turn nuts firmly, but do not tighten.
- 9. Tighten the eyebolts to take the remaining slack out of the truss cable and to maintain the appropriate upward bow.

### Note

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

10. After tension is adjusted, tighten all cable clamps to the recommended torque of 20 ft·lb. Check for proper side alignment.

Figure 13. Installing Trusses and Support Brackets



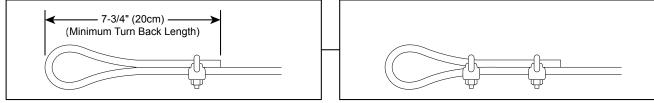
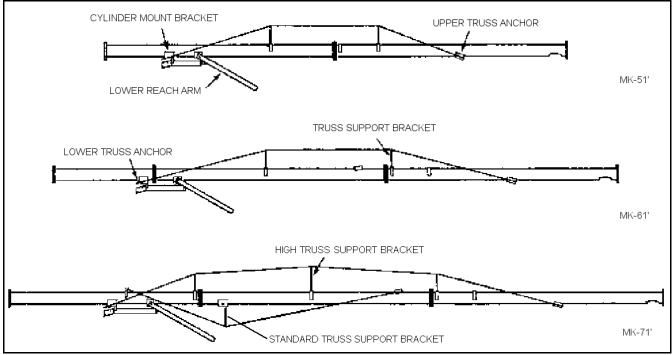


Figure 14. Truss Arrangements for Various Auger Sizes

CYLINDER MOUNT BRACKET





### 11. For the 71' auger only:

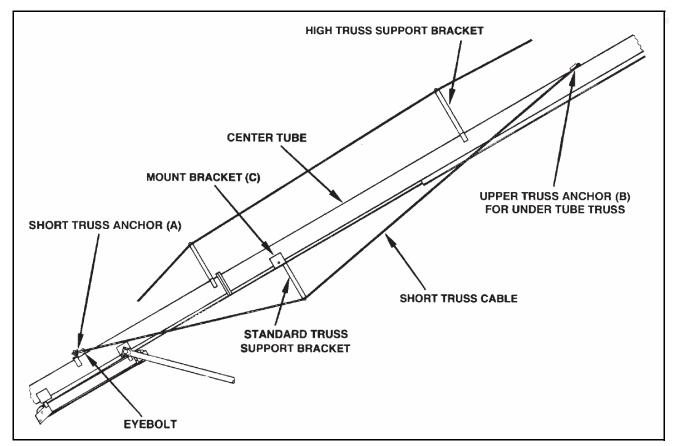
- a. Fasten the short truss anchor (A) to the lower auger tube with 7/16" x 1" bolts and lock nuts.
- b. Fasten the standard truss support bracket to the mount (C) on the bottom of the center tube with 7/16" x 1" bolts and lock nuts.
- c. Thread the truss cable through the eyebolt and double-back 7-3/4" (20 cm) of the cable. Secure the cable in place by installing and tightening two 5/16" cable clamps.
  - Apply the first clip one base width from the dead end of the rope with the u-bolt over the dead end. The live end rests in the clip saddle. Turn nuts firmly, but do not tighten.
  - Apply the second clip as close to the loop as possible with the u-bolt over the dead end. The live end rests in the clip saddle. Apply tension and turn nuts firmly, but do not tighten.
- d. Insert the eyebolt into the lower truss anchor and thread on the nut a short way.
- e. Pull the truss cable over the truss support bracket, around the upper truss anchor (B) and back over the truss support bracket to the short truss anchor, holding it loosely in place with one cable clamp at the upper truss anchor and 2 cable clamps at the truss support bracket.
- f. Place the other eyebolt into the short truss anchor and thread the nut on a short way.
- g. Thread the truss cable through the eyebolt and pull out all slack. Ensure a minimum turn back length of 7-3/4" (20 cm) of cable. Secure the cable in place by installing and tightening two 5/16" cable clamps.
  - Apply the first clip one base width from the minimum turn back length of the cable with the u-bolt over the dead end. The live end rests in the clip saddle. Turn the nuts firmly, but do not tighten.
  - Apply the second clip as close to the loop as possible with the u-bolt over the dead end. The live end rests in the clip saddle. Apply tension and turn nuts firmly, but do not tighten.
- h. Tighten the eyebolt to take the remaining slack out of the truss cable and adjust tension to keep the auger tube straight.

i. After tension is adjusted, tighten all the cable clamps to the recommended torque of 20 ft·lb. Check for proper side alignment.

### Note

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

Figure 15. Truss Arrangement for 71' Auger Only



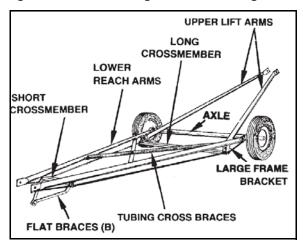
# 4.10. Transport Undercarriage

- 1. Referring to Figure 16, assemble the undercarriage as follows:
  - a. Using three 1/2" x 1-1/4" bolts and lock nuts on each side, fasten the lower reach arms to the axle.
  - b. Using two 1/2" x 1-1/4" bolts and lock nuts, attach the long cross-member to the bottom of the large frame brackets.

### Note

The 51' auger requires 7/16" x 1" bolts and lock nuts.

Figure 16. Assembling the Undercarriage



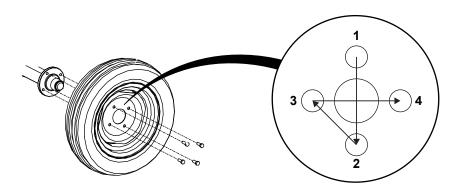
2. Loosely attach the short cross-member to the small frame brackets using two 1/2" x 1-1/2" bolts and lock nuts. Sandwich the flat braces (B) between the short cross-member and the small frame brackets on each side. Leave loose until later in this procedure.

### Note

The 51' auger does not have a cross-brace (short crossmember).

- 3. Install the tubing cross-braces to the welded lugs on the lower reach arms using four 1/2" x 1-1/4" bolts and lock nuts, and a fifth one where the braces cross. Tighten securely
- 4. Check that the pressure of pre-inflated tires matches the pressure indicated on the tire sidewall.
- 5. Mount the wheels on the hubs and attach with four 1/2" x 1" wheel bolts.

Figure 17. Assembling the Wheels (51'/61'/71')



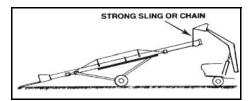
6. Fasten upper lift arms to lower reach arms with 3/4" x 2" bolts and lock nuts. Do not over-tighten. Tighten snug only; these bolts act as pivot points.

### **Important**

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

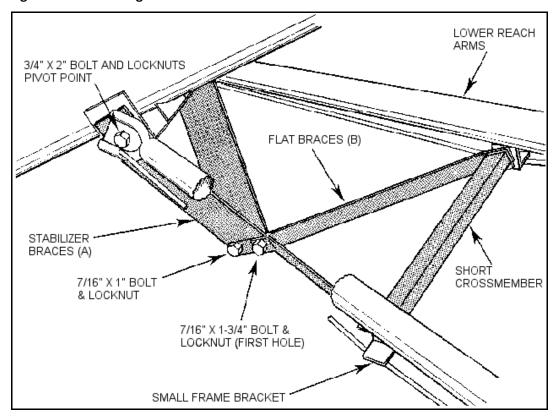
7. Raise the discharge end of auger with a front end loader and a strong sling/chain or block and tackle. The height should be sufficient to clear undercarriage assembly.

Figure 18. Raising the Discharge End



- 8. Position transport undercarriage beneath tube assembly.
- 9. Tighten the two bolts that attach the short cross-member to the small frame brackets.
- 10. Position stabilizer braces (A) and attach lower reach arms to the bracket welded on the lower end of the auger tube.
  - a. Use 3/4" x 2" bolts and lock nuts.
  - b. "Sandwich" the stabilizer brackets between the lower reach arms.
  - c. Do not over-tighten.
  - d. Tighten snug only. These bolts act as pivot points.

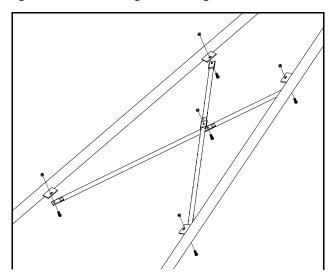
Figure 19. Attaching the Lower Reach Arms





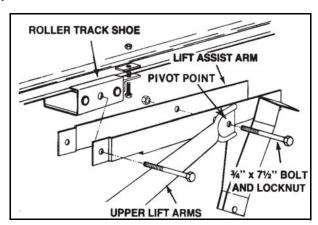
- 11. For 71' augers: Attach lower reach arms to the proper bracket on the auger tube. (See Figure 14 on page 31.)
- 12. Fasten flat braces (B) to first set of holes (furthest from intake) on stabilizer braces with a 7/16" x 1-3/4" bolt and lock nut.
- 13. Place a 7/16" x 1" bolt and lock nut in other hole of stabilizer brace.
- 14. Attach the tubing cross braces to the upper lift arms using five 1/2" x 1-1/4" bolts and lock nuts.

Figure 20. Attaching the Tubing Cross-Braces



- 15. Attach the upper lift arms to the center hole on the lift assist arms.
  - a. Use one 3/4" x 7-1/2" bolt and lock nut.
  - b. Do not over-tighten.
  - c. Tighten snug only. This bolt acts as a pivot point.

Figure 21. Attaching the Upper Lift Arms



16. Lower the upper end of the auger slowly until the roller tack shoe rests against the track stop and the lift-assist arm rests against the track.

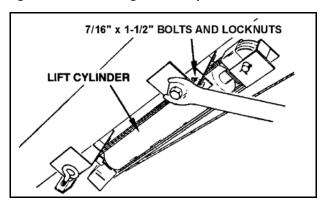
# 4.11. Lift Cylinder / Cable

1. Position cylinder and attach to welded brackets on the lower end of the tubing with 7/16" x 1-1/4" bolts and lock nuts. Tighten securely.

### Note

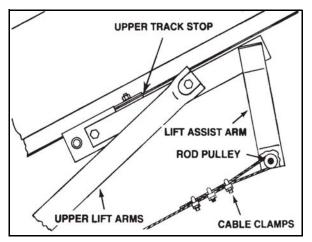
Although the lift cable is factory installed on the cylinder, make certain that the cable clamps on the cylinder are secure and the cable is properly seated in the cable sheaves before attaching the cable to the lift-assist arm.

Figure 22. Installing the Lift Cylinder



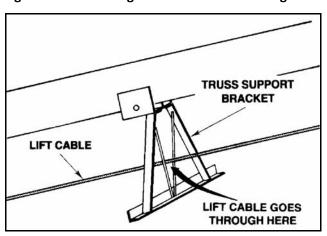
2. With the lift-assist arm seated against the track, and the lift cylinder in the full down position, thread the cable over the rod pulley on the lift-assist arm and pull the cable very tight. Ensure a minimum turn back length of 7-3/4" (20 cm) of cable.

Figure 23. Installing the Lift Cable



71' auger: Thread the lift cable through the truss support bracket on the bottom of the auger tube.

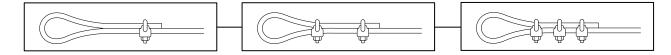
Figure 24. Installing the Lift Cable on 71' Auger



#### **Important**

The lift cable will stretch with initial use. Check frequently and adjust.

- 3. Secure the cable in place by installing and tightening three 5/16" cable clamps.
  - a. Apply the first clip one base width from the minimum turn back length of the cable with the u-bolt over the dead end. The live end rests in the clip saddle. Tighten nuts evenly to the recommended torque of 20 ft·lb.
  - b. Apply the second clip as close to the loop as possible with the u-bolt over the dead end. The live end rests in the clip saddle. Turn nuts firmly, but do not tighten.
  - c. Apply the third clip evenly between the first two with the u-bolt over the dead end. The live end rests in the clip saddle.
  - d. Apply tension and tighten all the nuts evenly to the recommended torque of 20 ft·lb.

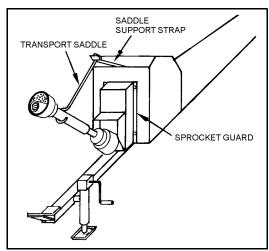


- 4. Securely attach the hose to the lift cylinder using the pipe thread sealant, and place the hose into the brackets welded to the side of the auger tube. Bend the bracket tops over to hold the hose in place.
- 5. Recheck the bolts for proper tightness on the undercarriage, lift cylinder, and the cable clamps. If secure, remove the tube support.

## 4.12. PTO (CV) Driveline

1. Clean the PTO driveline and flighting shaft ends of any paint or dirt.

Figure 25. Installing the PTO Driveline onto the Flighting Shaft



- 2. Slide the plain end of the PTO driveline onto the flighting shaft.
- 3. Make sure the holes for the 5/16" roll pin are lined up and the square key is in place (where necessary).
- 4. On models with hydraulic drive hoppers, install a 1/4" x 3" square key on the flighting shaft.
- 5. Making sure eyes are protected, carefully tap in roll pin. Tighten set screw.
- 6. Install the sprocket guard on the boot using four 5/16" x 3/4" bolts.

- 7. Slide the PTO transport saddle through the support strap on the boot.
- 8. Rest the PTO driveline in the support strap until connected to the tractor

## 4.13. Standard Intake Hopper

#### Note

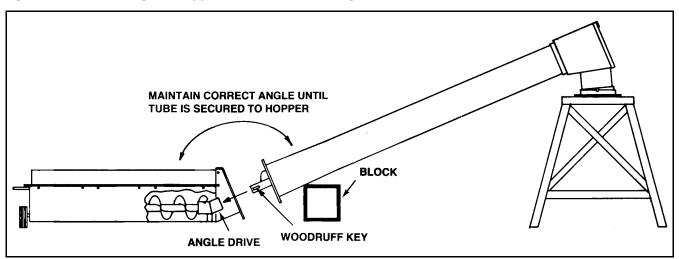
The gearbox has been filled at the factory (half full) with EP90 gear oil. Before further assembly, check oil level to make certain the gearbox is half full as required. Add oil if necessary. Do not use grease. **This does not apply to hydraulic drive hoppers.** 

- 1. Remove access covers.
- 2. Clean any paint and dirt from the flight shaft end.
- 3. Insert the Woodruff key into flight shaft end.
- 4. Raise the hopper tube to the correct angle (22.5°).
- 5. Bring the hopper and tube section together, carefully sliding the flight shaft end with the Woodruff key into the angle drive.

#### Note

Correct angle is achieved when the flight shaft end is inserted in the angle drive and its weight is fully supported by the block and stand.

Figure 26. Connecting the Hopper and Tube Section Together

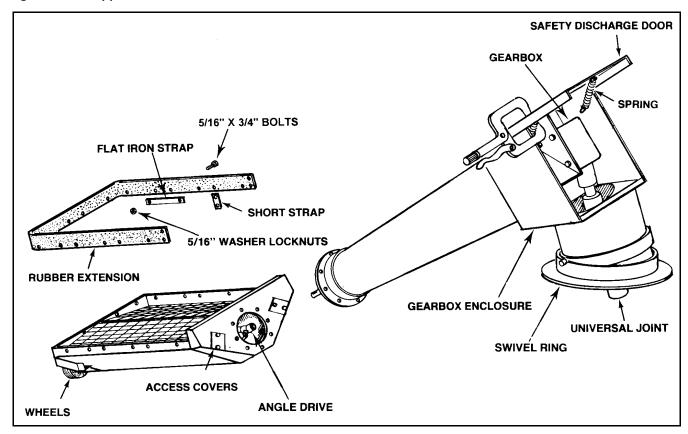


- 6. Connect the hopper and tube section.
- 7. Use eight 7/16" x 1" bolts and lock nuts.

#### Note

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

Figure 27. Hopper and Tube Section Detail



8. Thoroughly lubricate the angle drive, then replace the access doors.

#### Note

Keep the angle drive well lubricated. Lubricate after every eight hours of operation with high-temperature grease.

#### **Important**

Check the angle drive alignment. You should be able to rotate the hopper flight by hand. If there is an alignment issue, see the Maintenance manual for adjustment instructions.

#### Note

The angle drive requires a break-in period of at least two to three loads.

- 9. Clean any dirt or paint from the wheel axles on the hopper bottom.
- 10. Install the two wheels to the hopper bottom with a washer and cotter pin each.
- 11. Install the rubber extension on the inside hopper lip.
- 12. Secure with twenty 5/16" x 3/4" bolts and washer lock nuts, and eight long and two short flat iron straps.



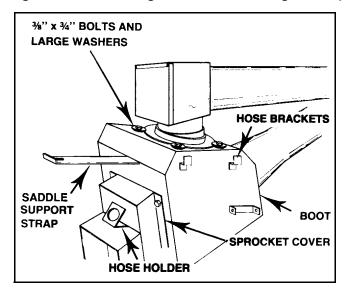
13. For mechanical drive hoppers only: Open the safety discharge door to connect the intake hopper to the auger boot.

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 the universal joint spline and lower gearbox spline, then apply a light film of grease on the splined shaft.

- b. Slide the wide rim 1-1/4" flat washer over the splined shaft on the lower gearbox. (See Figure 10 on page 27.)
- c. Guide the splined universal joint onto the 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
- d. Install four large washers with 3/8" x 3/4" bolts to keep the intake hopper in place on the boot. (See Figure 28 on page 40.)
- e. Lubricate the universal joint and close the safety discharge door.

Figure 28. Connecting the Intake to the Auger Boot (Mechanical Drive Hoppers)

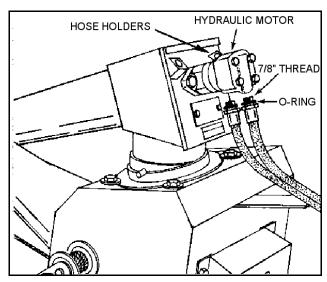




- 14. **For hydraulic drive hoppers only**: These units are shipped without the mechanical drive components (gearboxes, universal joint, and lower chain drive).
  - a. Lower intake hopper onto boot with swivel ring resting flat on the boot surface and inside the 4 spacer nuts.
  - b. Install 4 large washers with 3/8" x 3/4" bolts to keep intake hopper in place on the boot.
  - c. Securely attach the two hydraulic hoses to the hydraulic motor. (See Figure 29 on page 41.) The correct end of the hose has the 7/8" thread and O-ring.
  - d. Attach the tractor coupler to the tapered pipe thread on the other end of the hose.

These couplers are not supplied. When not in use, store hoses in the handy hose holder on the powerhead.

Figure 29. Connecting the Intake to the Auger Boot (Hydraulic Drive Hoppers)



## 4.14. Hopper Lift Arm and Winch

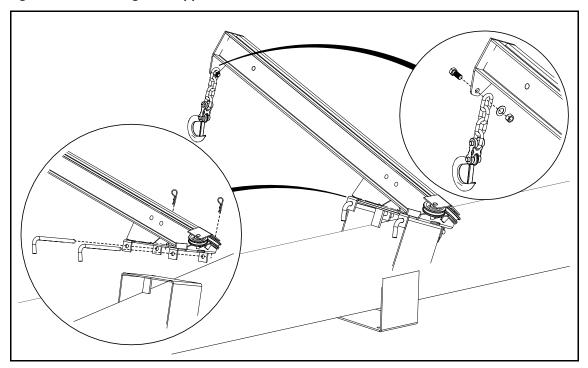
1. Considering your specific use of the auger, determine which side of the auger is best for the hopper to be operating on.

#### Note

The feed side of the hopper must face the main auger when in transport.

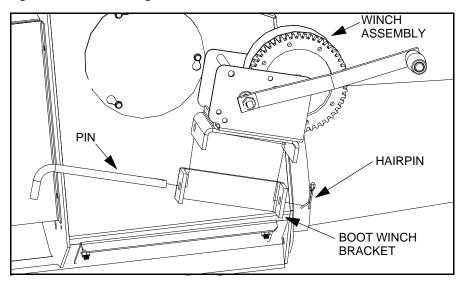
- 2. Position the hopper lift arm on the mount bracket on top of the lower auger tube with the arm overhanging the side of the auger for which you have chosen the hopper to be located.
- 3. Fasten the hopper lift arm assembly to the mount bracket on top of the lower auger tube with two mount pins and hairpins.

Figure 30. Installing the Hopper Lift Arm



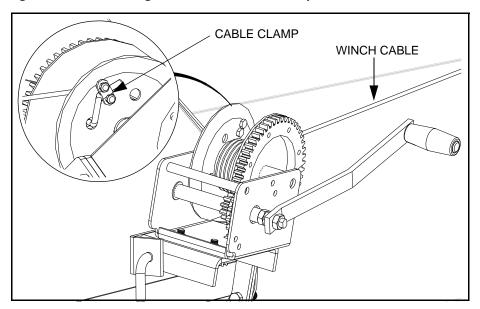
4. Install the winch and winch bracket assembly to the auger boot (opposite to side of hopper operation) with one mount pin and a hairpin.

Figure 31. Connecting the Manual Winch to the Boot



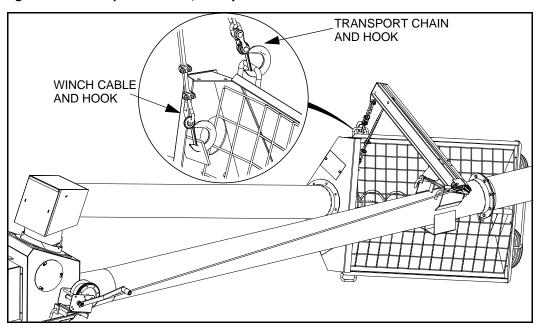
- 5. Install the transport hook assembly to the lift arm using a 7/16" x 1-1/4" bolt, 7/16" washer, and 7/16" lock nut.
- 6. Thread the cable through the hopper lift arm and pull the cable to the winch.
- 7. Wrap the cable over and around the winch spool at least three times, then insert the cable end through the hole provided in the side of the spool and secure the end with the provided cable clamp.

Figure 32. Connecting the Winch Cable to the Spool



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

Figure 33. Transport Position, Safety Chain and Winch Hook





- 9. If you want to change the side of intake feed hopper operation:
  - a. Raise the auger hitch jack and disconnect from the tractor.
  - b. Swing the intake feed hopper to the opposite side of auger.
  - c. Reverse the position of the hopper lift arm assembly.
  - d. Position the winch upside down on the other side of the boot.
  - e. Reconnect to the tractor.

**BOOT WINCH** PIN **BRACKET** HAIŔPIN WINCH **ASSEMBLY** 

Figure 34. Positioning the Winch on the Other Side of the Boot

## 4.15. Hitch Jack

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

- 1. Elevate the auger boot (intake end) approximately 2' (5.08 cm) with a front-end loader and sling.
- 2. Install the jack in a vertical position.
- 3. Secure with the supplied pin.
- 4. Place a board beneath the jack before setting it on the ground
- 5. Lower the auger until the jack is seated
- 6. Remove the front-end loader from the auger.

#### Note

The jack can be rotated 90° for transport or operation.



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

## 4.16. Auger-to-Tractor Hookup

#### **Important**

The auger must be correctly connected to the tractor for all operations, including during transport, raising, placement, and augering grain.

The final stage of the assembly is attaching the auger to the tractor. To secure the auger hitch to the tractor,

- a suitable bolt with two nuts locked against each other as a pin, or
- a hitch pin, a washer, and a hairpin.

44 30258 R3 A space between 3/4" (1.91 cm) and 1" (2.54 cm) must be provided between the bottom of the tractor drawbar and the top of the securing device on the pin.

The bolt/hitch pin must be 3/4" x 5" minimum.

Figure 35. Auger to Tractor Hookup

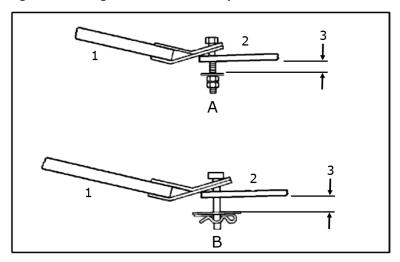


Table 5. Auger to Tractor Hookup

Item	Description	
А	Securing Device: 2 nuts locked against each other	
В	Securing Device: hairpin and washer	
1	Auger Hitch	
2	Tractor Drawbar	
3	3/4" to 1" (1.91 cm to 2.54 cm)	

#### Measurements between the Drawbar and Driveline

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

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

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

Figure 36. Measurements between the Drawbar and PTO Driveline

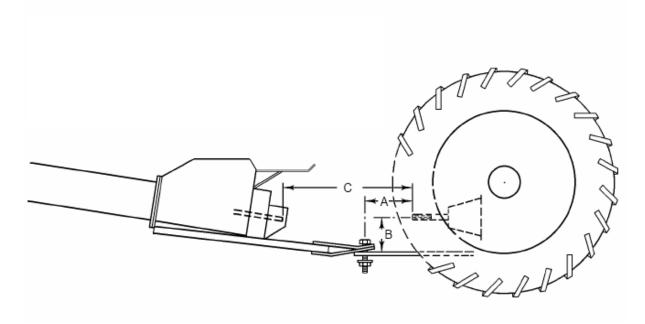


Table 6. Measurements between the Drawbar and PTO Driveline

Item	Measurement	
А	14" (35.6 cm)	
В	6" to 10" (15.2 cm to 25.4 cm)	
С	34–1/2" to 36–1/2" (87.6 cm to 92.7 cm)	

#### Note

Measurements must be taken with the auger on level ground and in the fully down position. Raise the tractor drawbar if necessary to maintain dimension B between 6" and 10" (15.2 cm to 25.4 cm)

Table 7. Measurement Problems and Solutions

Measurement	Problem	Solution
If (A) is less than 14"(35.6 cm) (C) will be less than the recommended 34-1/2" to 36-1/2"(87.6 cm to 92.7 cm)	The PTO driveline will bottom out when auger is in raised position. This will cause damage to the PTO driveline, the bearing, or the boot housing.	Pull out or lengthen the tractor drawbar as needed to make (C) 34-1/2" to 36-1/2" (87.6 cm to 92.7 cm) when the auger is in full down position.
If (A) is more than 14"(35.6 cm) (C) may be more than the recom- mended 34-1/2" to 36-1/2"(87.6 cm to 92.7 cm)	The PTO driveline will separate from the auger in the lowered position. This will cause damage to equipment and/or injury to personnel.	Shorten distance (C) to the recommended 34-1/2" to 36- 1/2" (87.6 cm to 92.7 cm) by attaching hitch to tractor drawbar at a point closer to the tractor PTO shaft.
If (B) is more than 10" (25.4 cm) (C) (between tractor PTO shaft and auger input shaft) short- ens more quickly when auger is being raised	The U-joint angle on the PTO driveline will be too severe in the raised position. The PTO driveline will bottom out before auger is fully raised. This will cause damage to the PTO driveline, flight shaft, bearing, and boot.	Raise the tractor drawbar until dimension (B) is within the recommended 6" to 10" (15.2 cm - 25.4 cm).

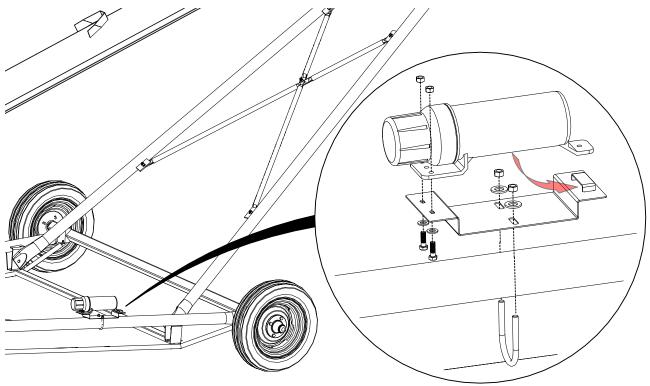
#### **Hydraulic Hose Couplers**

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.

### 4.17. Plastic Manual Container

1. Attach the manual container bracket to the top of the axle, centered between the two wheels, using a 3/8" x 2-1/2" U-bolt, two 3/8" washers, and two 3/8" lock nuts.

Figure 37. Attaching the Plastic Manual Container



- 2. Slide the tab on the bottom of the manual container into the raised slot in the bracket.
- 3. Bolt the manual container to the bracket using two 1/4" x 3/4" bolts, two washers, and two 1/4" lock nuts.

# 5. Specifications

Specification	8–51	8-61	8-71		
Tube Size		8" (20.32 cm)			
CAPACITIES					
Unloading Rate	3300 – 3900 Bu/Hr				
TRANSPORT DIMENSIONS	<del>'</del>				
Length	51'	61'	71'		
Width	106"	112"	118"		
Height	12'10" (3.92 m)	13'6" (4.12 m)	14'6" (4.42 m)		
DISCHARGE CLEARANCE DIMENSIONS					
Min	10'10" (3.3 m)	11'5" (3.48 m)	12'6" (3.81 m)		
Max	34'8" (10.57 m)	40'6" (12.34 m)	46'6" (14.17 m)		
REACH TO WHEELS	•	•			
Min	19'6" (5.94 m)	23'3" (7.09 m)	27'2" (8.28 m)		
Max	23'9" (7.24 m)	28'10" (8.79 m)	33'7" (10.24 m)		
TIRES	I	I			
Туре	15" Automotive Tires				
Inflation Pressure	See Manufacturer Recommended Pressure on Tire Sidewall				
Hubs	4 Bolt Automotive Type				
TOTAL WEIGHT					
With Gear Drive	1870 lb (848 kg)	2110 lb (957 kg)	2330 lb (1057 kg)		
With Hydraulic Drive	1835 lb (832 kg)	2075 lb (941 kg)	2295 lb (1041 kg)		
POWER RECOMMENDATIONS	1	-			
PTO Drive	40 HP	45 HP	40 HP		
PTO Speed	540 RPM				
PTO Shaft	14 Series				
PTO Shear Bolt	5/16" x 1" GR8 Bolt				
PART SPECIFICATIONS					
Lubricating Grease	SAE multi-purpose high-temperature grease with extreme pressure (EP) performance. (SAE multi-purpose lithium-based grease is also acceptable)				
Gearbox Oil	SAE approved 90W or equivalent gear oil				
Gearbox Oil Capacity	0.38 US quarts (1.7 L)				
Pressure Required to Raise Auger	850 psi	950 psi	1200 psi		
Minimum Operating Angle		25°			
Hydraulic Hoses	Minimum 2500 psi (17200 kPa) working pressure				
Hitch Jack	2000 lb Sidewinder				
Hitch Pin (Minimum)	7/8" x 4"				

AGI is a leading provider of equipment solutions for agriculture bulk commodities including seed, fertilizer, grain, and feed systems with a growing platform in providing equipment and solutions for food processing facilities. AGI has manufacturing facilities in Canada, the United States, the United Kingdom, Brazil, South Africa, India and Italy and distributes its products globally.



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