



EasyFlow2 (100 Series)

Farm Tube Bin Unload System Operator's Manual

This manual applies to:

8" Tube Unload	Bin Diameters: 24', 27', 30', 33', 36',
10" Tube Unload	39', 42', 45', 48', 54', 60'



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: BU-0101705 R4

Revised: February 2022

Original Instructions

This product has been designed and manufactured to meet general engineering standards. Other local regulations may apply and must be followed by the operator. All personnel must be trained in the correct operational and safety procedures for this product. Use the sign-off sheet below to record initial and periodic reviews of this manual with all personnel.

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1. Introduction

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

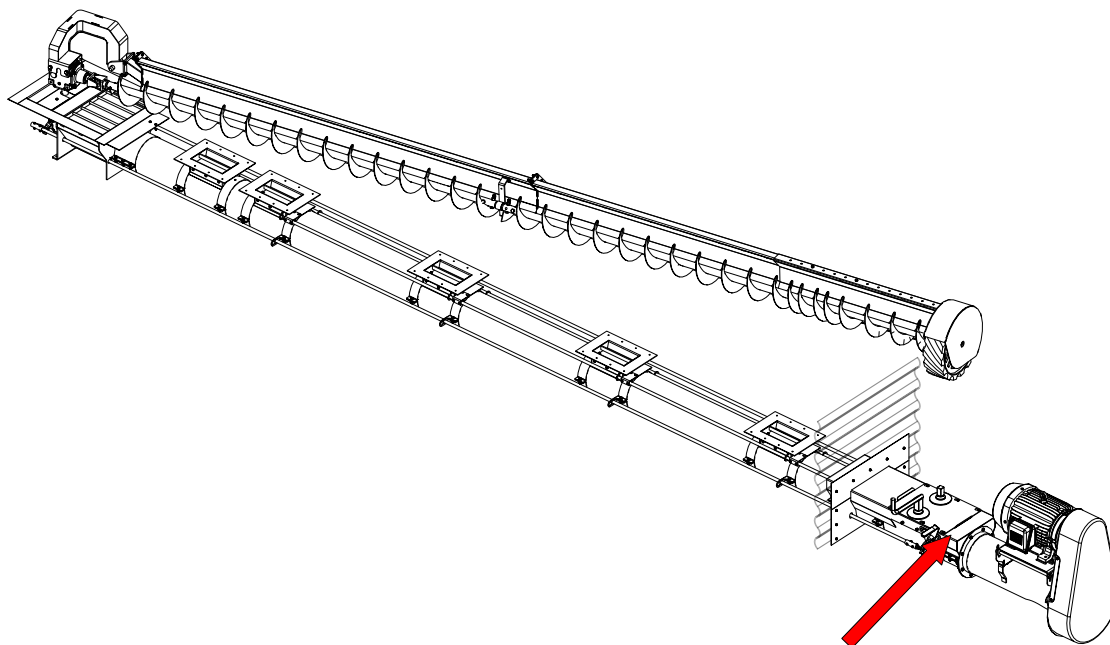
Keep this manual handy for frequent reference and to review with new personnel. A sign-off form is provided on the inside front cover for your convenience. If any information in this manual is not understood or if you need additional information, please contact AGI or your representative for assistance.

This manual should be regarded as part of the equipment.

1.1. Serial Number Location

The serial number location for your bin unload is shown in the figure below. Have the serial number ready when ordering parts or requesting service or other information. Record information in the table below for easy reference.

Model Number	
Serial Number	
Date Received	



1.2. Intended Use

The bin unload is intended for use as listed below and described throughout this manual. Use in any other way is considered contrary to the intended use and is not covered by the warranty.

Intended use for the bin unload:

- Handling grain, pulse crops, treated seeds, or other similar materials.

1.2.1 Misuse

Do not install/use the bin unload for/with:

- transferring material other than dry, free-flowing food-grains.
- commercial or off-farm use.

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.



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



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



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



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 operating or maintaining the equipment.

- Owners must give instructions and review the information initially and annually with all personnel before allowing them in the work area. Untrained users/operators expose themselves and bystanders to possible serious injury or death.
- Use for intended purposes only.
- Do not modify the bin unload in any way without written permission from the manufacturer and is not covered by the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Follow applicable local codes and regulations.



2.3. Rotating Flighting Safety

DANGER

- 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 bin unload 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

WARNING

- 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. Work Area Safety

WARNING

- Have another trained person nearby who can shut down the bin unload in case of accident.
- Do not allow any unauthorized persons in the work area.
- Keep the work area clean and free of debris.

2.6. Guards Safety

WARNING

- Keep guards in place. Do not operate with guard removed.
- Do not walk on, step on, or damage guards.
- Lock out power before removing a guard.
- Ensure all guards are replaced after performing maintenance.

2.7. Unloading Safety

WARNING

- Never enter a when loading or unloading.
- Unload only as described in the operation section of this manual.
- Lock the door (where equipped) and close/lock all other access doors when not in use.

2.8. Entry Safety

The information in this section applies to entry through any access point.

Always try to work and solve problems without entering a .

⚠ WARNING If you must enter the , follow the safety information below to safely enter through the roof, door or any access point:

- Stop the unloading process if the is being unloaded and lockout/tagout power before entering the , refer to Lockout/Tagout Safety.
- Always wear a dust-filtering respirator when entering the . Grain dust and spores when inhaled into the lungs can cause severe reactions leading to hospitalization in some cases. Persistent exposure may cause “farmer’s lung,” which can eventually be fatal.
- Before working inside the , ventilate the area by opening the vent or by other equivalent means to force air into the to prevent oxygen-deficient atmosphere. Inadequate oxygen is very harmful to your health and can cause death. Exposure to carbon dioxide can cause drowsiness, headache and even death due to suffocation. Test the atmosphere. If the carbon dioxide hazard cannot be reduced or eliminated or you cannot test the atmosphere, use correctly fitted and appropriate respirator.
- Never walk on grain to make it flow.

If you ignore the safety precautions above and enter the , you could die from being submerged.

2.8.1 Roof Entry

The information in this section applies to entry through the roof only.

- ⚠ WARNING**
- Never enter a from the roof if you don’t know its unloading history. Bridges of stored material can form above a void space below, causing potential for entrapment.
 - Have body harness tethered to a lifeline controlled by two others outside the . One worker should be able to see inside worker through the inspection hatch. If there is an accident, one worker can focus on the victim while the other goes/calls for help.

2.9. Emergency Entry

In an emergency situation:

- Follow protocols set by your local occupational safety and health agency.
- If you need to rescue somebody inside the , call emergency responders and only attempt to rescue using non-entry rescue procedure/equipment. Do not enter the unless you are trained for rescue, equipped and relieved by another attendant.

2.10. Entrapment

In the event that you are trapped in the as it is unloading, move as quickly as possible toward the wall; keep yourself elevated above the material by walking on the flowing mass while staying as close as possible to the wall.

If you become covered in flowing grain, cup your hands over your mouth and take short breaths. This may keep you alive until help arrives. A person outside can ventilate the bin by turning on the fan (if equipped). Do not run heaters as this will fill the bin with carbon monoxide.

It takes more than 1000 lb (4.5kN) (1000 lb) of force to remove someone buried below the surface.

The following sections cover common ways a person gets submerged or trapped:

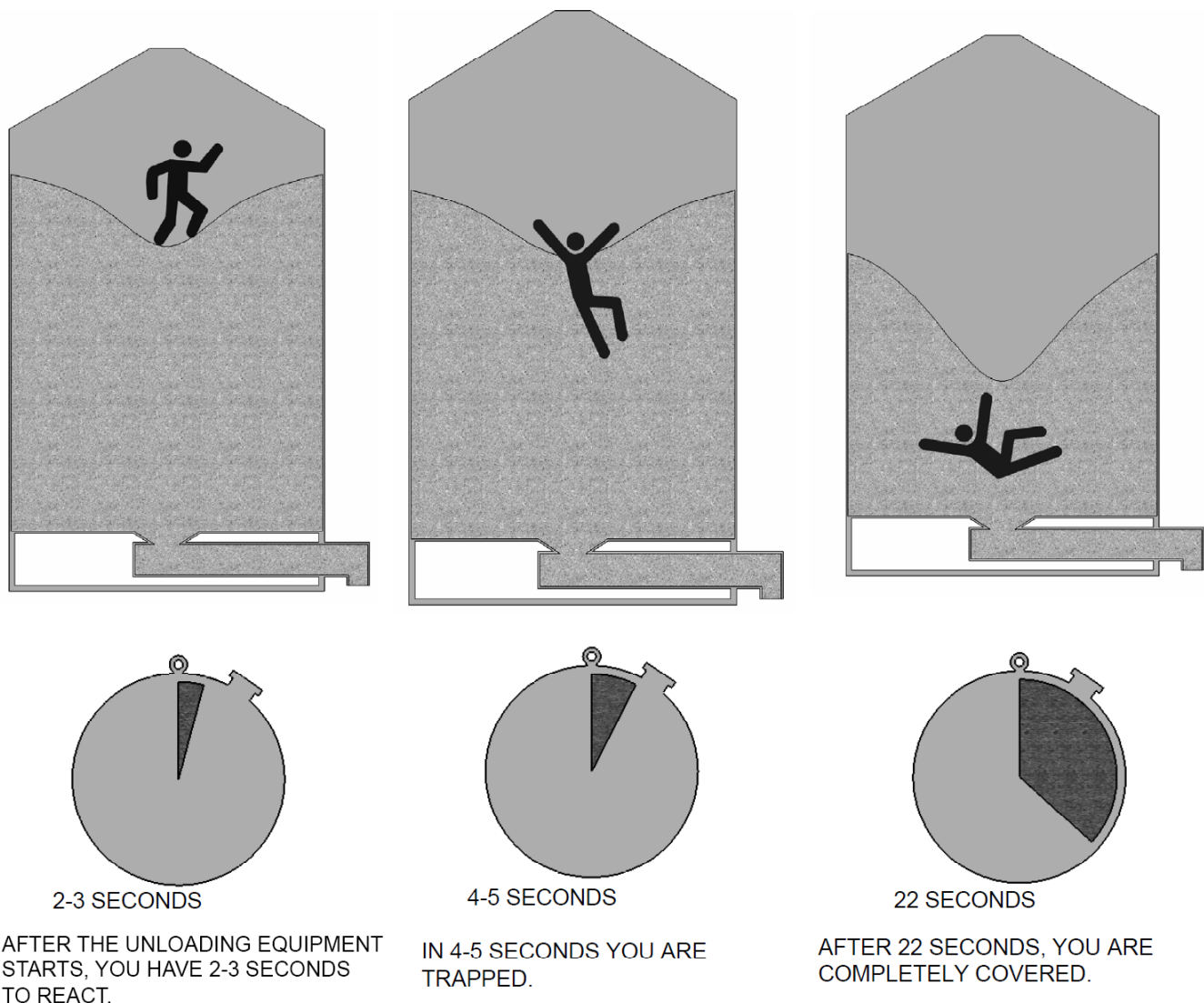
2.10.1 Flowing Grain

This procedure may also apply to fertilizer where the is intended for fertilizer storage.

WARNING

- Grain flows in a funnel-shaped path when unloading. This vortex of grain behaves very much like a water drain. Velocity increases as grain flows from the wall at the top of the grain mass into a small vertical column at the center of the .
- Flowing grain will not support the weight of a person. Submersion happens within seconds.

Figure 1. Suffocation Hazards in Flowing Grain



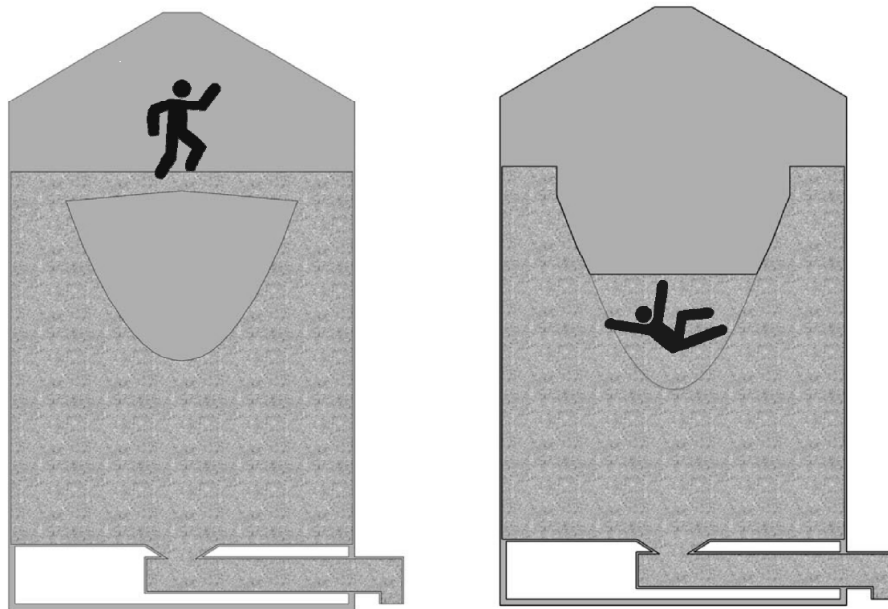
2.10.2 Collapse of Bridged Grain

This procedure may also apply to fertilizer where the is intended for fertilizer storage.

WARNING

- Grain can “bridge” across a , creating an empty air space below. A person can easily break through this bridge and become trapped, risking suffocation.
- To identify bridged grain, look for a funnel shape on the surface of the grain after having removed some of the grain. If surface is undisturbed, the grain has bridged and formed a crust.
- Never walk on the grain crust. The crust rarely becomes strong enough to support the weight of a person.
- To remove bridge, try breaking the bridge from the inspection hatch or peak. Use a pole to hit the surface, securing it with a rope in case it is dropped. Be aware that chunks of crusted grain can move down to the auger and limit flow.

Figure 2. Suffocation Hazards in Bridged Grain

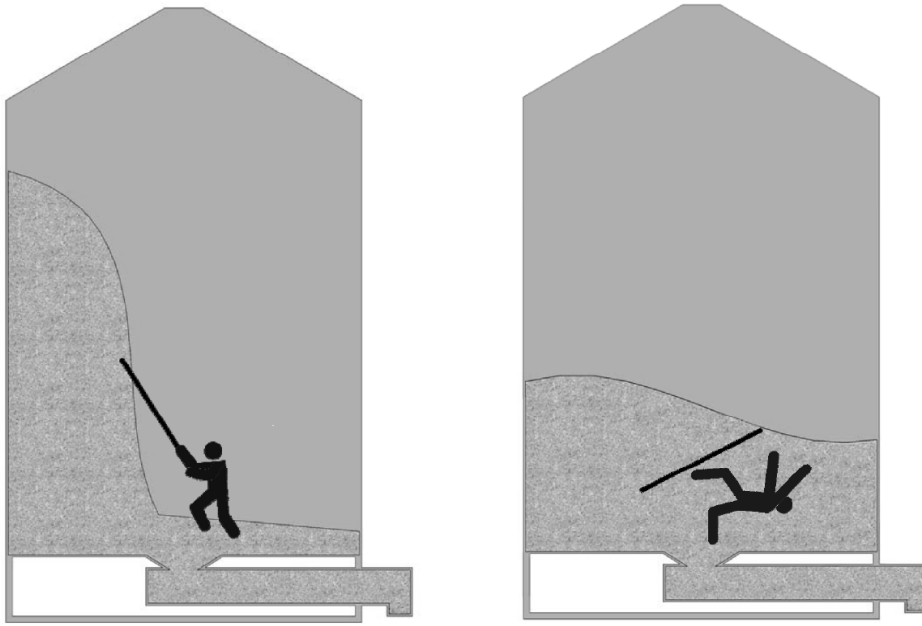


2.10.3 Collapse of a Vertical Wall of Grain

This procedure may also apply to fertilizer where the is intended for fertilizer storage.

WARNING

- Vertical walls of grain are created when the is partially empty. Poking at the wall can make the grain avalanche and submerge a person.
- Do not enter the to break down grain that has set up. Break grain mass from top of the outside.

Figure 3. Suffocation Hazards from a Vertical Grain Wall

2.11. Combustible Dust

WARNING The bin unload has been designed for safe use in areas where hazards due to combustible dust may potentially occur. Minimize the risk of a dust explosion by following the preventive measures below.

Control the dust:

- Clean grain to reduce fines.
- Use equipment to minimize breakage.
- Use a filtering system to capture dust.
- Use an air system to reduce dust.
- Spray edible mineral oil on the grain to reduce air-born dust when handling.
- Paint equipment that is in the interior of a facility with a coating that is slick, not allowing dust to accumulate.
- Clean up dust deposits after equipment operation.
- Enclose all equipment to keep dust from escaping.

Control the ignition source:

- Where applicable, use an electric motor rated for the dust classification area.
- Do not smoke in any potentially hazardous area.
- Use only explosion-proof lights.
- Do not use anything around or inside the equipment that may produce a flame or sparks unless the air and equipment are free of dust. For example: Do not use a match/lighter, grinder, or power saw. Use brush-less electrical tools and explosion proof flash lights.

- Where possible, keep the work area wet such that dust cannot be dispersed in the air and smoldering processes from sparks cannot develop.
- Follow the maintenance schedule to keep equipment operating properly at low temperatures.
- Purchase replacement parts from the manufacturer or authorized dealer/distributor. Original manufacturers parts are designed with explosion proof features where applicable.

2.12. 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 follow lockout and tagout procedures 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 only 1 key exists for each assigned lock, and that you are the only one that holds that key. Ensure that all personnel are clear before turning on power to equipment.



2.12.1 Electric Motor Safety

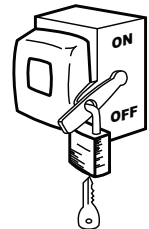
WARNING Power Source

- Electric motors and controls shall be installed and serviced by a qualified electrician and must meet all local codes and standards.
- Use a magnetic starter to protect the electric motor.
- You must have a manual reset button.
- Reset and motor starting controls must be located so that the operator has full view of the entire operation.
- Locate main power disconnect switch within reach from ground level to permit ready access in case of an emergency.
- Motor must be properly grounded.
- Ensure electrical wiring and cords remain in good condition; replace if necessary.

Lockout

- The main power disconnect switch should be in the locked position during shutdown or whenever maintenance is performed.
- If reset is required, disconnect all power before resetting motor.

SERVICE DISCONNECT



2.13. 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.

**Work Gloves**

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

**Steel-Toe Boots**

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

**Coveralls**

- Wear coveralls to protect skin.

**Hard Hat**

- Wear a hard hat to help protect your head.

**Hearing Protection**

- Wear ear protection to prevent hearing damage.



2.14. 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.



2.15. Safety Decals

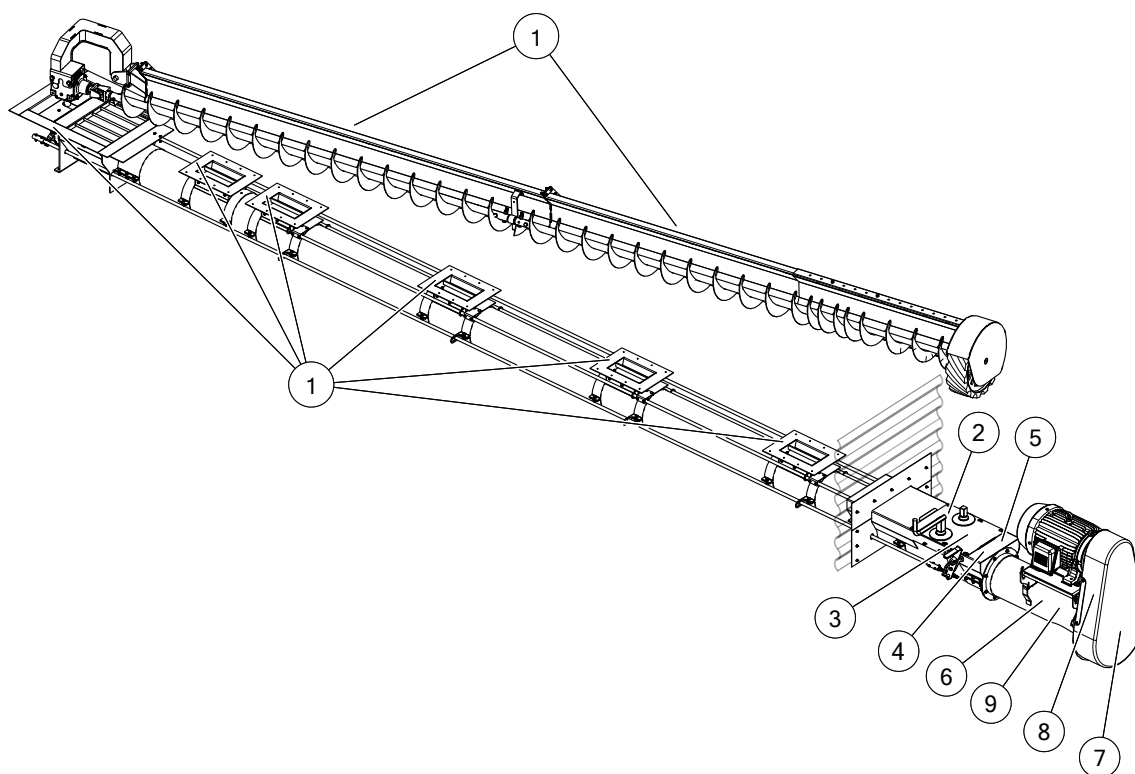
- Keep safety decals clean and legible at all times.
- Replace safety decals that are missing or have become illegible. See decal location figures that follow.
- Replaced parts must display the same decal(s) as the original part.
- Replacement safety decals are available **free of charge** from your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

2.15.1 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.

2.15.2 Safety Decal Locations and Details

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



Note

Decal locations same on incline discharge.

Table 1. Safety Decals

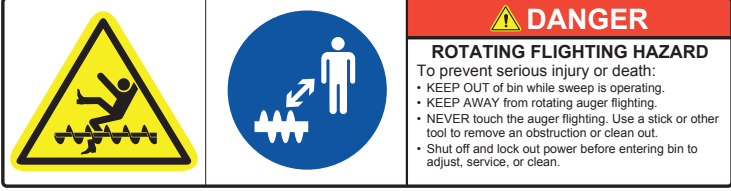
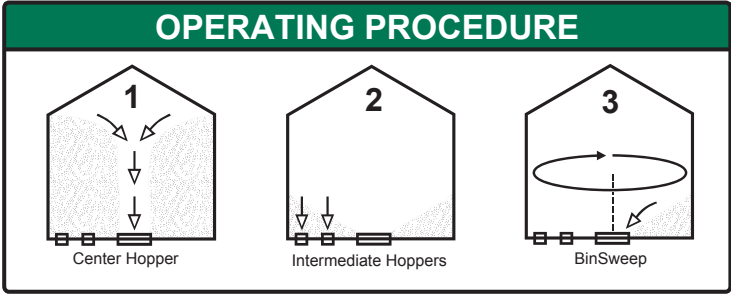
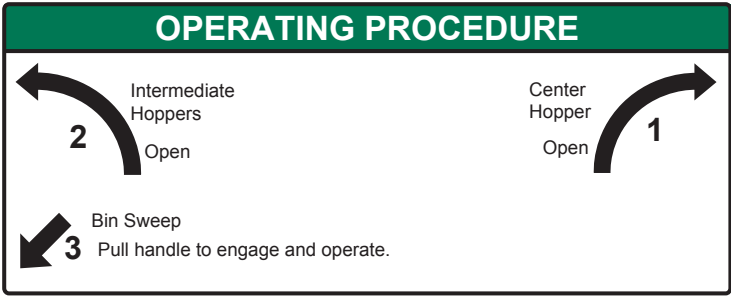
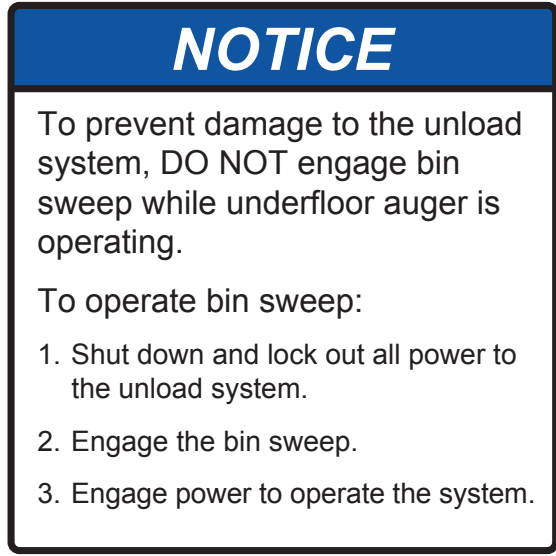
Item	Description	Part Number
1		BU-0100470
2		BU-0101800
3		BU-0100472
4		BU-0100476

Table 1 Safety Decals (continued)




Item	Description	Part Number
5	<div style="border: 2px solid black; padding: 10px;"> <div style="background-color: orange; text-align: center; padding: 5px;">  WARNING </div> <div style="display: flex; justify-content: space-around; align-items: center; padding: 10px;">   </div> <div style="text-align: center; padding: 10px;"> BIN COLLAPSE HAZARD <p>Center hopper must be opened first to empty bin. Failure to follow could result in structural damage, serious injury, or death.</p> </div> </div>	BU-0000002

Table 1 Safety Decals (continued)


Item	Description	Part Number
6	<div data-bbox="313 275 1024 1287">  <p>ROTATING FLIGHTING HAZARD</p> <p>To prevent death or serious injury:</p> <ul style="list-style-type: none"> • KEEP AWAY from rotating auger flighting. • DO NOT remove or modify auger flighting guards, doors, or covers. Keep in good working order. Have replaced if damaged. • DO NOT operate the auger without all guards, doors, and covers in place. • NEVER touch the auger flighting. Use a stick or other tool to remove an obstruction or clean out. • Shut off and lock out power to adjust, service, or clean. </div>	20813

Table 1 Safety Decals (continued)



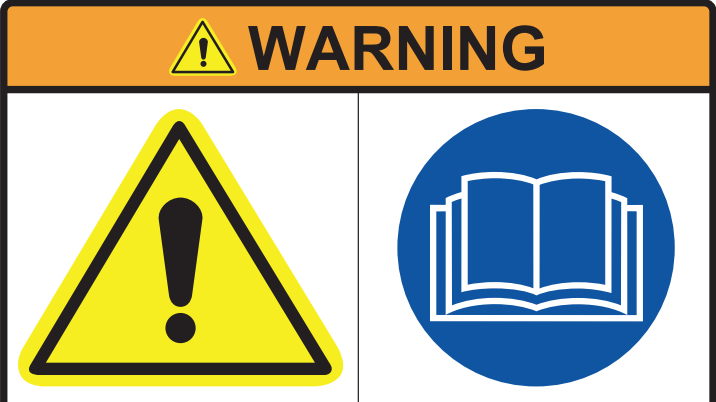
Item	Description	Part Number
7	<div data-bbox="310 275 954 1031">  <p>WARNING</p> <p>ENTANGLEMENT HAZARD</p> <p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • Keep body, hair, and clothing away from rotating pulleys, belts, chains, and sprockets. • Do not operate with any guard removed or modified. Keep guards in good working order. • Shut off and lock out power source before inspecting or servicing machine. </div>	20804
8	<div data-bbox="310 1079 859 1390">  <p>WARNING</p> <p>MISSING GUARD HAZARD</p> <p>To prevent serious injury or death, shut off power and reattach guard before operating machine.</p> </div>	20803

Table 1 Safety Decals (continued)

Item	Description	Part Number
9	<div data-bbox="313 275 1024 1346">  <p data-bbox="342 695 862 737">To prevent serious injury or death:</p> <ul data-bbox="342 751 987 1304" style="list-style-type: none"> • 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. • Lock out power before performing maintenance. • If the manual, guards, or decals are missing or damaged, contact factory or representative for free replacements. </div>	BU-0020807

3. Features

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

Figure 4. Typical Bin Unload System

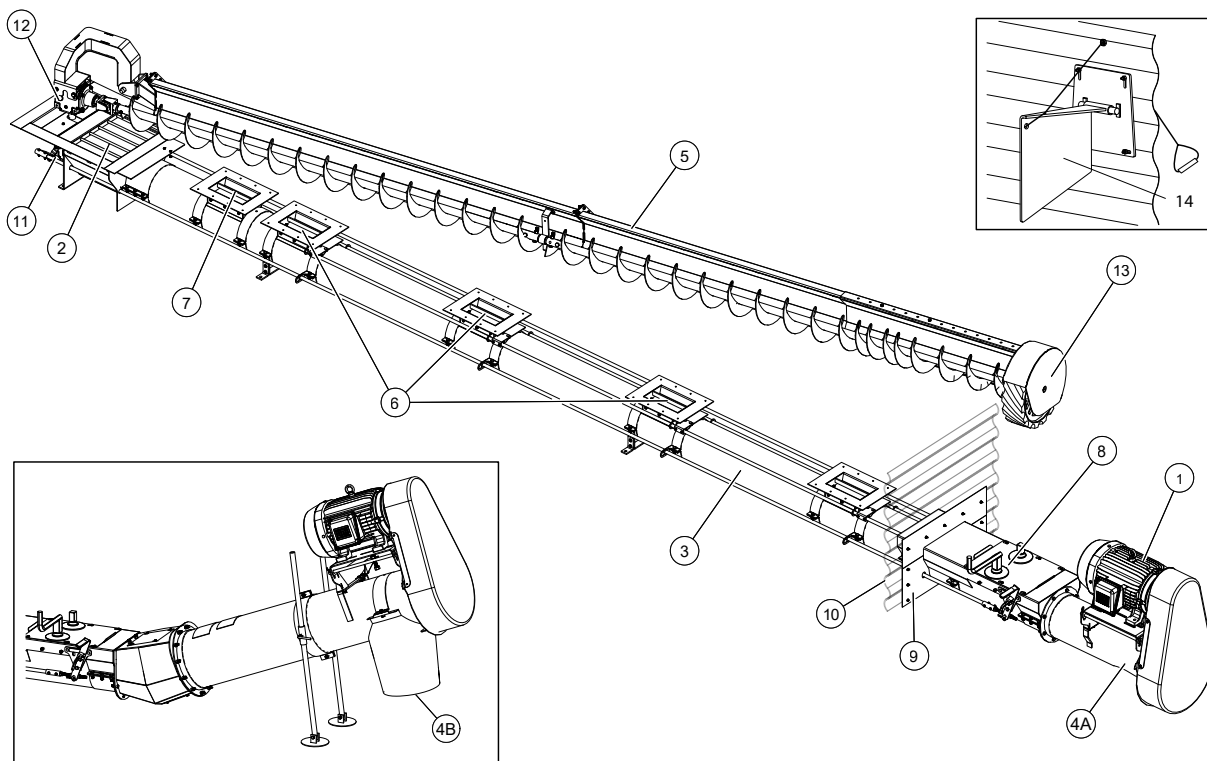


Table 2. Features

Item	Description	Item	Description
1	Electric Powerhead	8	Bin Unload Controls (for sump gates and sweep gearbox engagement)
2	Center Sump (Center Hopper)	9	Bin Adapter
3	Underfloor Auger	10	Bin Wall
4	Discharge Options: Horizontal (A), Incline (B)	11	Lower Gearbox
5	Bin Sweep	12	Upper Gearbox
6	Intermediate Sump (Intermediate Hopper)	13	Sweep Drive (includes gearbox and wheel)
7	Emergency Sump (E-Sump)	14	Sweep Stop

Optional tube unload extensions are available in lengths of 3', 5', 7' and 10'.

4. Operation



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. Operation Safety

WARNING

- Keep away from rotating and moving parts, including the auger/mixer flighting, drive components, shafts, and bearings.
- Do not enter the grain or truck while the bin unload is operating.
- Always operate with guards, covers, and shields in place.
- Have another trained person nearby who can shut down the equipment in case of accident.
- Keep the work area clear of bystanders.
- Keep the work area clean and free of debris.
- Ensure maintenance has been performed and is up to date.



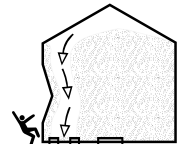
Refer to your operation manual for specific operating and safety information for your .

4.2. Bin Unload Overview

The bin unload system operates by first opening the center sump to remove 70-80% of grain by gravity (see "A" in Figure 5). Next, the intermediate sumps are opened when the center sump runs empty to free the sweep (see "B" in Figure 5). Lastly, the bin sweep is operated to remove the remaining 20-30% of grain (see "C" in Figure 5).

WARNING

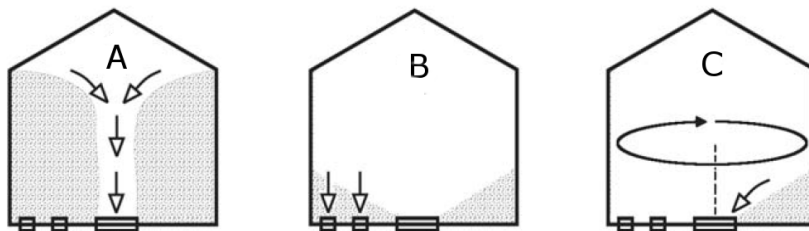
To prevent serious injury or death from bin collapse, the center sump must be open first to empty bin.



NOTICE

Make certain there are adequate vents installed on the bin to prevent a vacuum from forming in the upper portion of the bin during unloading. The pressures on the roof caused by such a vacuum could damage or cause structural failure to the bin roof.

Figure 5. Grain Bin Overall Emptying Procedure



4.3. Before Filling the Bin with Grain

Following this list will prevent problems that may otherwise occur during the unloading process.

1. Check for damage or unusual wear, especially on flighting and bearings.
2. Make sure there are no obstructions in the following locations:
 - sweep path along the bin floor bin sweep and underfloor auger flighting
 - center or intermediate sumps
3. Prior to filling the bin each time, run the bin unload system to check for proper operation.
4. Close the center sump gate and intermediate sump gates.
5. Park the sweep in the “start/park position” slightly behind intermediate sumps prior to filling the bin each time.

NOTICE

Failure to park the sweep in the “start/park position” could result in damage to the sweep, under-floor conveyance system, and/or aeration floor.

4.4. Operating Controls

Figure 6. Bin Unload System Controls

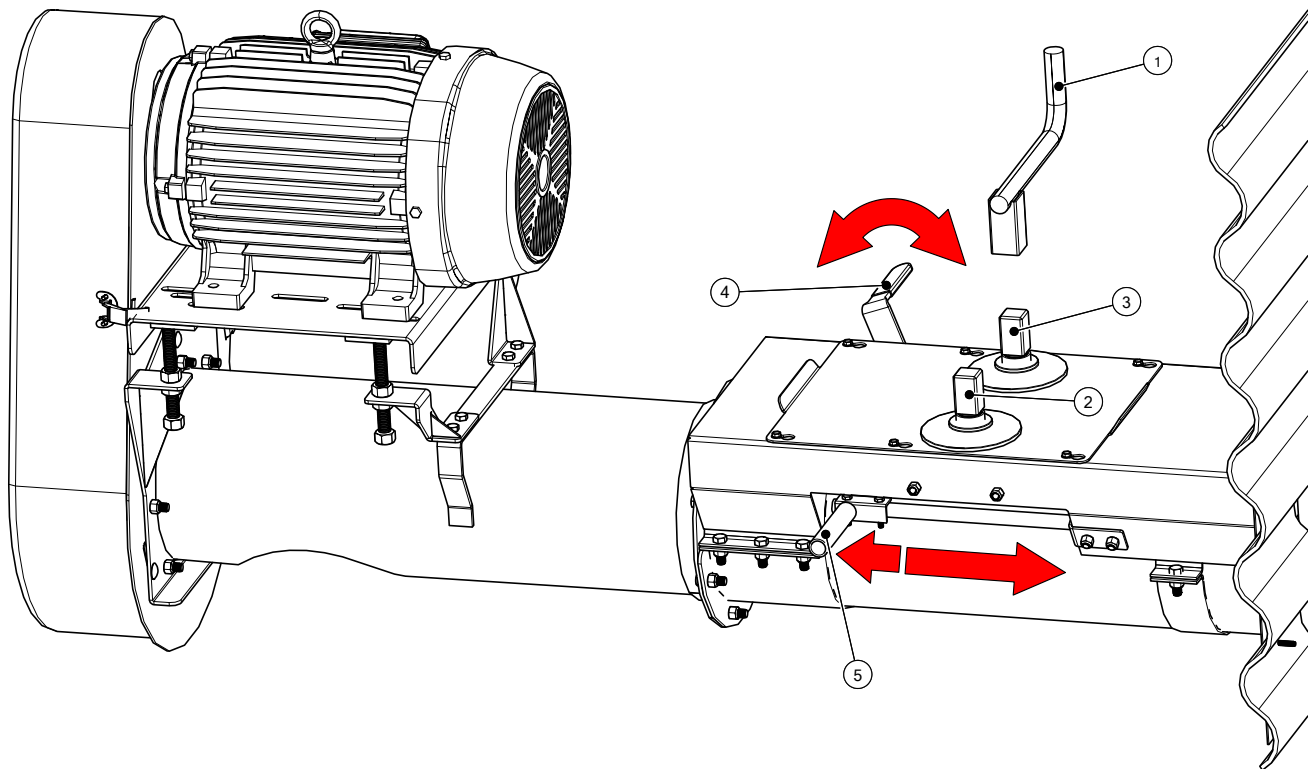


Table 3. Bin Unload System Controls

Item	Description	Operation
1	Gate Control Handle	Place on Center Sump Control or Intermediate Sumps Control
2	Center Sump Control	Turn clockwise to open center sump or counter-clockwise to close center sump.
3	Intermediate Sumps Control	Turn counter-clockwise to open intermediate sumps or clockwise to close intermediate sumps.
4	Bin Sweep Engage Lever	Pull away from bin wall to engage. Push toward bin wall to disengage. Lock into place in both positions.
5	Emergency Sump Control (Optional)	Push toward bin wall to open. Pull away from bin wall to close.

4.5. Operation of the Bin Unload System

Perform the following sections, in order, to fully unload the grain bin.

Unload Grain From the Center Sump

1. Disengage the bin sweep gearbox (push gearbox shift handle towards bin wall to disengage bin sweep).
2. Close all sump gates (center, emergency-sump (if equipped), and intermediate sumps).
3. Start system.

Note

When starting for the first time, the lighting may run rough until the underfloor auger is polished.

4. Open the center sump slightly. Ensure that grain flows out of the discharge end at a constant rate.
5. Continue to open the center sump and watch for constant product flow at discharge. Do this until center sump is fully open.
6. For the first 30 minutes, check that the underfloor auger flighting functions without excessive vibration. Once the grain mass has been fully drawn down, you are now ready to proceed with unloading grain from the intermediate sumps.

Unload Grain From the Intermediate Sumps

1. When grain flow from the center sump stops flowing from the discharge, open intermediate sump(s) halfway.
2. Monitor grain flow for consistency before opening intermediate sump(s) any further.
3. After grain has stopped flowing into intermediate sump(s), shut down and lock out all power to the bin unload system. Close all intermediate sump gates.

You are now ready to proceed with unloading grain with the bin sweep.

Unload Grain with the Bin Sweep

NOTICE

To prevent damage, do not operate the bin sweep until it is fully exposed.

1. Shut down and lockout all power to the bin unload system.

NOTICE

To prevent damage to the unload system, do not engage the binsweep while underfloor auger is operating.

2. Release the locking pin and engage the bin sweep (by shifting the lever away from bin wall). Lock the shift lever into place.
3. Start the bin unload system.
4. Make sure the center sump is fully open, and maintain a constant grain flow.
5. When grain flow stops and the bin is clean, raise the sweep stop for the bin sweep to complete a second pass. Park the bin sweep so that it lines up next to the intermediate sumps.

NOTICE

Failure to park the bin sweep in the “start/park position” could result in damage to the bin sweep, underfloor auger, and/or aeration floor.

4.6. Emergency Shutdown

In an emergency situation:

1. Stop or shut down the power source immediately and lockout power.
2. Ensure the bin unload components come to a stop before inspecting.
3. Correct the emergency situation before resuming work.

4.7. Emergency Sump



The Emergency Sump is an optional component for the Bin Unload System.

If grain flow slows considerably or stops while unloading from the center sump, it may be blocked with clumped grain. Open the emergency sump to allow grain to continue unloading.

Note

The emergency sump cannot be opened while the center sump is open. Close the center sump before using the emergency sump.

4.8. Restarting with a Full Underfloor Auger

When the bin unload system is shut down inadvertently or due to an emergency, the system may still be filled with grain.

1. Lock out power and remove as much of the grain as possible from the bin unload system using a grain vac or other tool.

**WARNING**

Do not use your hands, feet, or other similar bodily means.

2. Once obstruction is clear, disengage sweep (if applicable). Remove locking pin, shift lever towards bin wall, and lock into place.
3. Close all intermediate sump gates, center and e-sump (if applicable) gate.
4. It may be necessary to tighten the drive belts slightly to handle the heavier than normal loads.
5. If guards or covers have been opened or removed, close or replace them before restarting the unit.
6. Once the problem is corrected, restart the machine.

NOTICE

Starting under load may result in damage to the bin unload system if grain is not removed as much as possible.

7. Once the bin unload system has been started, you may resume normal operation.

4.9. Cleanup

1. Clean out any remaining grain with a grain vac, shovels, and/or brooms.
2. Clean up (remove) all settled dust deposits.



WARNING

Buildup of dust inside the grain bin and around the bin sweep and underfloor auger could lead to a dust explosion if not removed regularly.

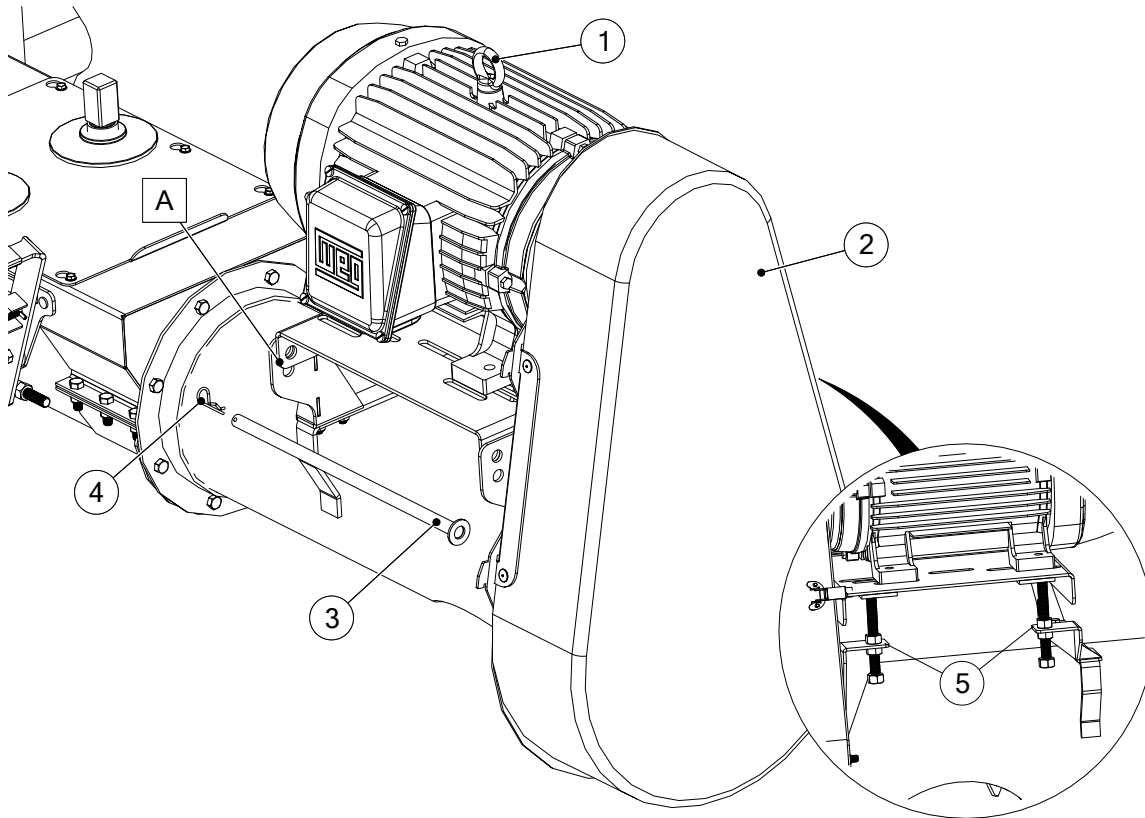
4.10. Relocating the Electric Drive to Another Grain Bin

The bin unload system's electric drive (motor and mount) may be moved between bins using a front end loader. Follow the procedure below to relocate the drive. Do not relocate the electric drive to a bin that requires more power to operate, refer to [Section 7. – Specifications on page 39](#).

1. Shut down and lock out power the bin unload system.
2. Loosen the nuts (5) to disengage the belts, open the pulley guard (2) and remove the belts from the motor pulley.
3. Attach a strap or chain (minimum 500 lb rated) to the electric motor eyebolt (1) and lift slightly with a front end loader. Lift only enough to relieve the weight of the electric drive (motor and mount) from the powerhead.
4. Remove the hairpin (4) and hinge pin (3).
5. Lift the electric drive and move it to another identical bin unload system.
6. Attach the electric drive to the next bin unload system similarly to how it was removed.
7. Set the tension of the belt with the hole positions at (A) and nuts (5), ensuring the mount is level. Refer to Maintenance for belt tensioning instructions.

Table 4. Relocating the Electric Drive

Item	Description
1	Electric Motor Eyebolt
2	Pulley Guard
3	Hinge Pin
4	Hairpin
5	Nuts

Figure 7. Relocating the Electric Drive

4.11. Extended Shutdown / End of Season

After the season's use, the bin unload should be thoroughly inspected. Repair or replace any worn or damaged components and complete maintenance as described in [Section 5. – Maintenance on page 28](#) to prevent any unnecessary downtime at the start of the next season.

5. Maintenance



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.

5.1. Maintenance Safety

WARNING


- Keep components in good condition. Follow the maintenance procedures.
- Ensure the service area is clean, dry, and has sufficient lighting.
- Do not modify any components without written authorization from the manufacturer. Modification can be dangerous and result in serious injuries.
- Shut down and lock out power before maintaining equipment.
- After maintenance is complete, replace all guards, service doors, and/or covers.
- Use only genuine Westeel replacement parts or equivalent. Use of unauthorized parts will void warranty. If in doubt, contact Westeel or your local dealer.

5.2. Maintenance Schedule

Proper maintenance habits mean a longer life, better efficiency, and safer operation. Please follow the Maintenance Schedule below. Keep good records of the hours the bin unload has been operated and the maintenance performed.

Daily:
Section 5.3 – Visually Inspect the Equipment on page 29
Annually:
Section 5.4 – Clean and Wash the Equipment on page 29
Section 5.5 – Check the Gearbox Oil on page 29
As Required:
Section 5.6 – Change the Gearbox Oil on page 30
Section 5.7 – Tension the Drive Belts on page 30
Section 5.8 – Align the Drive Belts on page 31
Section 5.9 – Replace the Drive Belts on page 32
Section 5.10 – Replace the Sweep Drive Wheel on page 32
Section 5.11 – Adjust the Bin Sweep Backboard on page 34
Section 5.12 – Adjust the Bin Sweep Engage Handle on page 35

5.3. Visually Inspect the Equipment

 **WARNING** Lock out power before inspecting.

Check the following during a visual inspection:

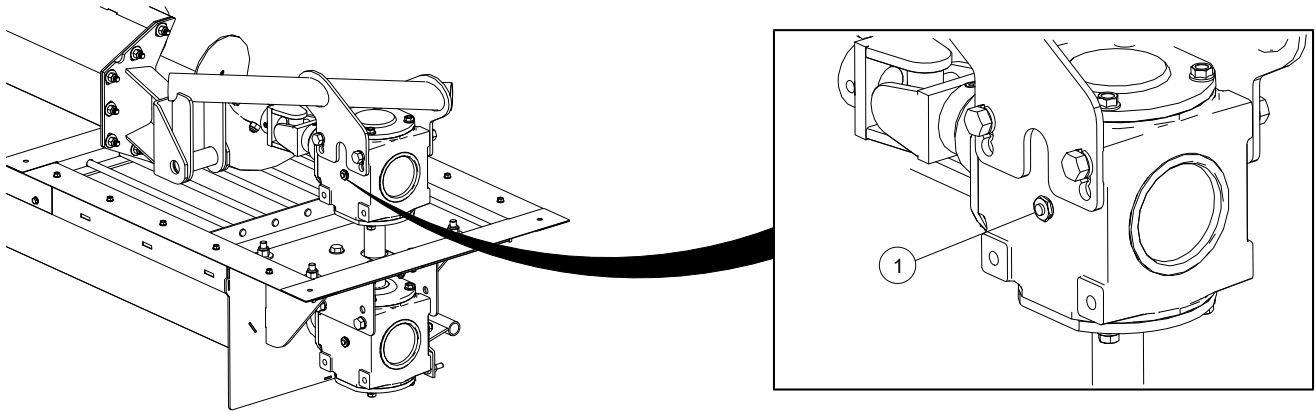
1. Ensure all guards are in place and in good working order.
2. Examine the bin unload for damage or unusual wear.
3. Check tightness of bolts/nuts, fasteners, and hardware (re-torque if necessary).
4. Be sure all safety decals are in place and are legible.
5. Check that the discharge and intake area are free of obstructions.
6. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove any entangled material.
- ➡ 7. **When equipped:** Inspect hydraulic hoses and fittings for leaks and wear. Fix or replace where necessary.

5.4. Clean and Wash the Equipment

1. Clean out excess grain from all areas of the equipment.
2. Wash the unload auger that extends outside of the bin with a water hose or pressure washer until all dirt, mud, debris, or residue is gone.
3. Provide sufficient time for the equipment to dry.

5.5. Check the Gearbox Oil

1. Remove access panels at center to expose lower gearbox, [Figure 8 on page 30](#).
2. Remove vent plug to check gearbox oil level.
3. Maintain oil level at half full (center of cross shaft) with 90W or equivalent gear oil, adding as necessary.
4. Ensure gearbox is level when checking or refilling.
5. Do not overfill when adding oil.
6. Replace vent plug.
7. Replace access panels when complete.

Figure 8. Gearbox Oil Fill Points

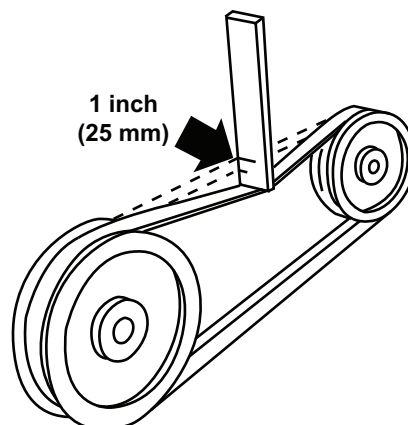
5.6. Change the Gearbox Oil

Use SAE approved 90W or equivalent gear oil.

1. Remove gearbox from the bin unload.
2. Place a pan under the drain plug.
3. Use a wrench and remove the drain plug.
4. Loosen the filler plug so air can enter the gearbox and the oil will drain freely.
5. Allow the oil to drain completely.
6. Replace the drain plug.
7. Add oil until the gearbox is half full (center of cross shaft) and replace filler plug. A flexible funnel may be required. Gearbox should be level when checking or refilling. **Do not overfill.**
8. Reinstall the gearbox and guards.

5.7. Tension the Drive Belts

1. Remove guard and push on the center of the belt span with a force of approximately 5 lb. The belts will deflect approximately 1" (25 mm) when properly tensioned.

Figure 9. Typical Drive Belt Tensioning

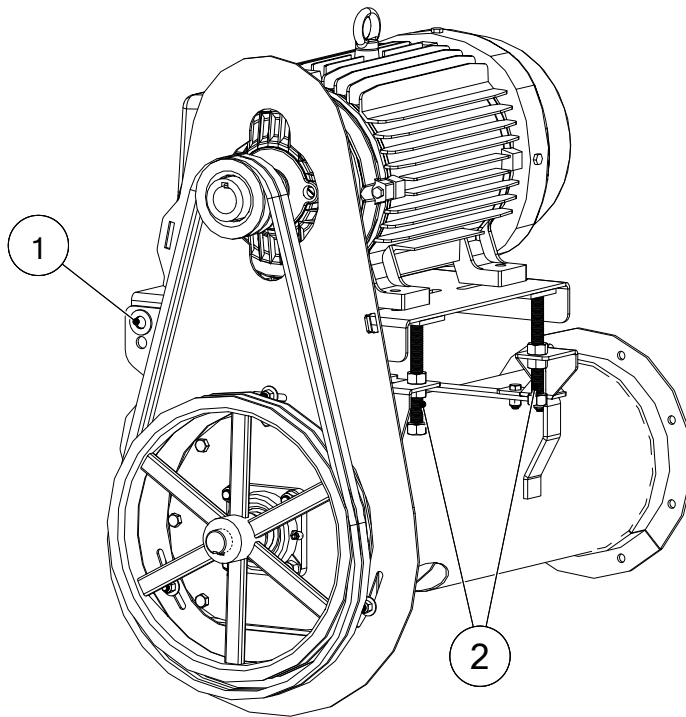
2. Tighten or loosen the drive belts (or idler pulley when equipped) to achieve the proper tension.

Important

The drive belt should be just tight enough to not slip on the drive pulley when operating. If the belt is too loose, it will slip, possibly causing a squeaking sound and slowing the belt down. If the belt is too tight, it will cause excess wear.

3. The belt tension can be adjusted at (1) and (2) in [Figure 10 on page 31](#).

Figure 10. Belt Tension Adjustment Points



4. Reattach and secure guard. Start system to ensure proper operation.

5.8. Align the Drive Belts

➡ When equipped:

1. Lay a straight edge across the pulley faces to check the alignment.
2. Use the pulley hub to move the pulley to the required position for alignment.
3. Tighten the hub bolts to secure pulley on the drive shaft.
4. Check the belt tension.
5. Reattach and secure the guard.

5.9. Replace the Drive Belts

➡ When equipped:

1. Remove the guard.
2. Fully loosen the drive belts.
3. Remove and replace the old belts.
4. Tighten the drive belts as described in Belt Tension.
5. Align the drive belts as described in Belt Alignment.
6. Reattach and secure the guard.

5.10. Replace the Sweep Drive Wheel

1. Remove bolts (3) and lift the shield (4) out to free up the drive wheel.
2. Remove the bolt (5) and flat washer (6) and pull the old drive wheel out.

Note

If the drive wheel does not come out due to bin wall interference, remove the carriage bolts (1) and lock nuts (2) and turn and push the flighting inward to move the drive wheel away from the wall until it can be removed.

Figure 11. Replacing the Sweep Drive Wheel

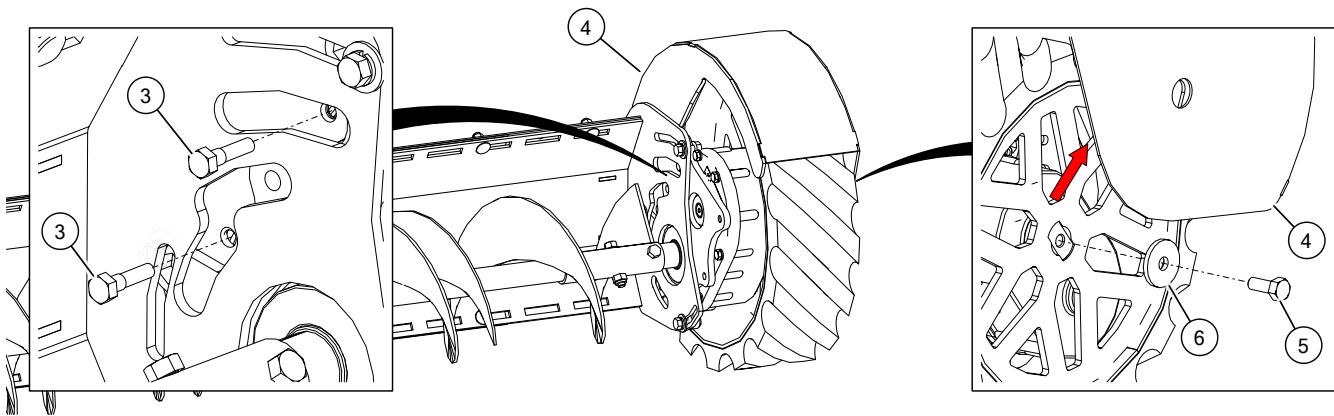
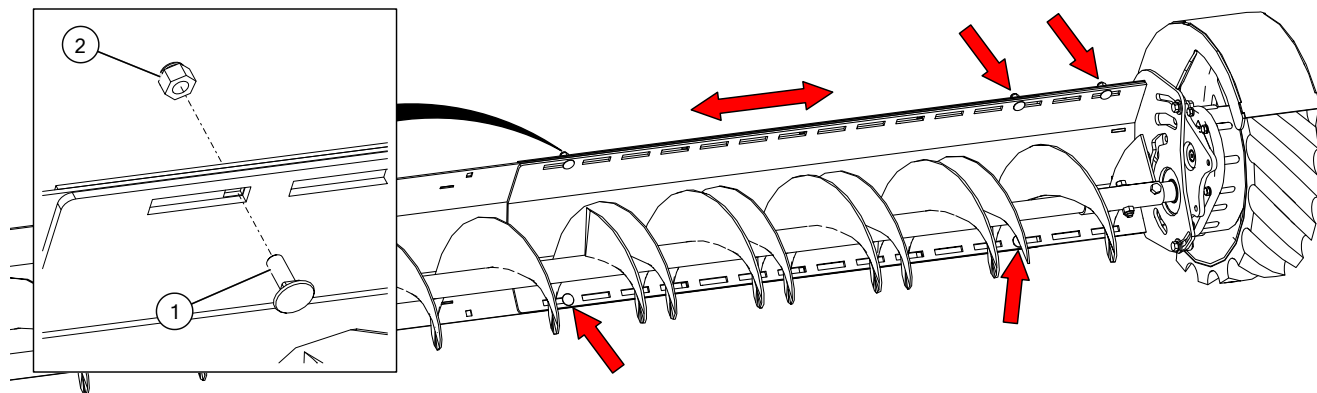
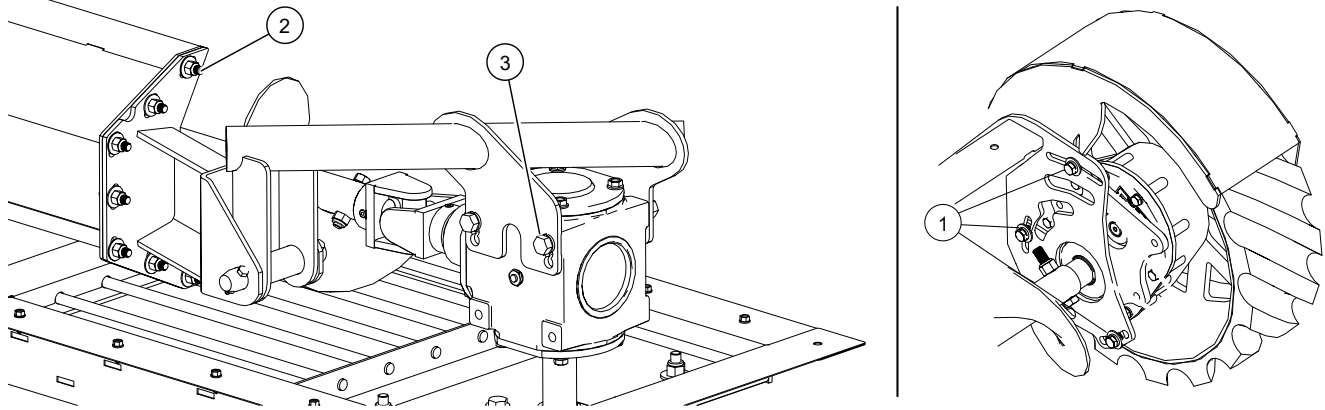


Figure 12. Removing the Carriage Bolts to Push the Flighting Inward

5.11. Adjust the Bin Sweep Backboard

The bin sweep backboard should not normally require adjustment. The backboard can be adjusted in cases where the bin sweep is leaving grain on the bin floor or if the backboard gets stuck on the bin floor. To adjust, loosen the bolts/nuts (1, 2, 3) as shown in the below figures. Tighten bolts/nuts after adjusting.

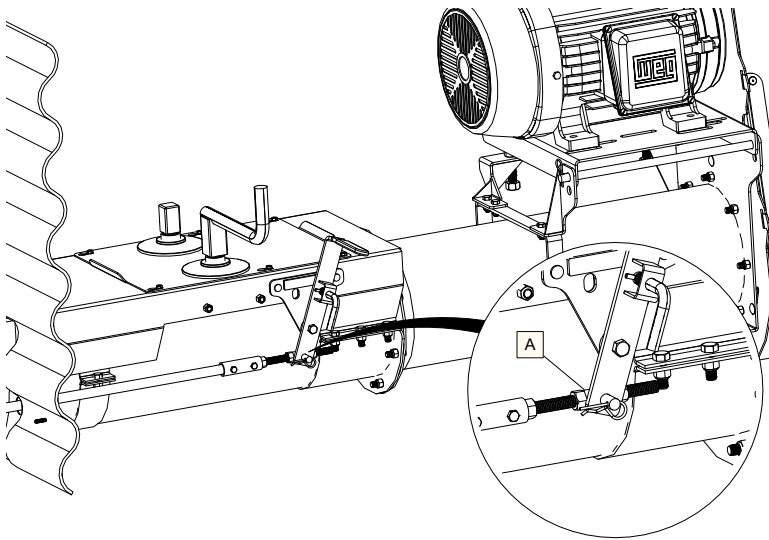
Figure 13. Adjusting the Bin Sweep Backboard



5.12. Adjust the Bin Sweep Engage Handle

The bin sweep engage handle should not require adjustment, however can be adjusted if bin sweep is not engaging or comes out of gear. Loosen the nuts to adjust the position and tighten when bin sweep engages normally. Follow normal operating procedures when testing operation.

Figure 14. Adjusting the Bin Sweep Engage Handle



6. Troubleshooting

⚠ WARNING Shut down and lock out all power sources before diagnosing any of the causes or attempting any of the solutions below.

In the following section, we have listed some causes and solutions to some of the problems you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this section, please contact your local dealer or distributor. Before you contact them, please have this operation manual and the serial number from your machine ready.

Problem	Cause	Solution
Gearbox won't engage.	Gearbox shift adjust bolt is not adjusted correctly.	Adjust bolt. Flighting needs to be turned so that the gears can mesh appropriately.
Gearbox won't stay engaged.	Lock pin not in place.	Secure lock pin into place.
	Gearbox shift adjust bolt is not adjusted correctly.	Adjust bolt.
	Obstruction in sweep.	Remove obstruction.
Hopper slide gates are difficult to open.	Hopper slide plates are damaged.	Replace plastic slide plates.
	Obstruction in hopper.	Remove obstruction.
	Slide gate interference with aeration floor planking.	Level intermediate hoppers to each other.
	Control rods are binding (hoppers not level to each other).	Level intermediate hoppers to each other.
Sweep will not function.	Underfloor auger not engaging lower gearbox stub.	Ensure underfloor auger flighting is fully meshing with quick attach coupler on lower gearbox.
	Shift gearbox is not engaged.	Engage it.
	Obstruction in sweep.	Remove obstruction.
Underfloor auger plugs when initially starting the sweep.	Intermediate hoppers aren't closed.	Close intermediate hoppers.
	Obstruction in underfloor auger.	Remove obstruction.

Problem	Cause	Solution
Sweep drive wheel doesn't function when sweep is activated.	Key or pin sheared or missing in drive wheel housing.	Replace damaged part.
	Chain isn't adjusted correctly inside drive wheel housing.	Adjust chain correctly.
Sweep stops travelling around the bin.	Sweep isn't adjusted correctly and is hitting a high spot in the aeration floor.	Adjust sweep in 2 places: Drive wheel and upper gearbox plate.
	Sweep drive wheel isn't fully functioning correctly (chain slipping, key missing etc...)	Check to ensure chain is functional and that all keys / roll pins are in place.
	Obstruction in sweep.	Remove obstruction.
Sweep drive wheel contacts bin wall.	Center hopper not centered during installation.	Shorten sweep section to allow it to travel all the way around bin.
Poor product flow from sweep.	Sweep flighting is not timed correctly.	Remove bolts, rotate flighting to next set of holes and replace bolts.
	Obstruction in sweep.	Remove obstruction.
	Damaged or bent flighting.	Bend flighting back to original shape. If this doesn't work, replace flighting.
Underfloor auger is not able to move the grain that the sweep is dumping into the center hopper.	Obstruction in center hopper.	Remove obstruction.
	Intermediate hoppers are open, flooding the underfloor auger.	Close intermediate hoppers.
	Flighting not timed correctly on the underfloor auger.	Pull out underfloor flighting, ensure that it is timed correctly (flighting must make a continuous spiral).
Grain is flowing over backboard of sweep.	This is normal, and grain will be swept up on the second pass of the sweep	No solution needed. Part of normal operation.
Underfloor system stops when moving product.	Electric motor belts not tight enough.	Tighten belts.
	Electric motor is not large enough to power entire system.	Replace electric motor with a larger model.
	Obstruction in underfloor auger.	Remove obstruction.

Problem	Cause	Solution
Sweep will not turn or is noisy.	Check flights to ensure they're not catching.	Cut the flights back so that there is a 1/4" (6 mm) clearance from hanger.
Sweep is knocking.	Gearbox adjustment incorrect.	Check to ensure adjustment is correct and is fully engaged.
Belt is moving, motor is running, but sweep and underfloor auger not moving.	Set screws and key ways on pulleys not installed or too loose.	Disengage system and check set screws and key ways to ensure they're installed and tight.
Sweep engaged, underfloor auger and motor running, but sweep flight and/or upper gearbox not turning.	Under floor gearbox shift linkage is out of adjustment.	Adjust shift linkages to fully engage sweep (see Sweep Owner's Manual).
	Sheared bolt and key way in gearbox coupler.	Replace key way and bolts and check coupler for cracks.
	Roll pin and key way in center well sheared on the lower gearbox drive stub shaft.	Replace key way and roll pin.
Sweep is making a loud, distinct "squeak" noise.	Center flighting tube rubbing on nylon carrier bushing.	Loosen all 4 bolts on center gearbox and tap hanger bracket with a hammer to adjust and provide adequate clearance between bushing and center tube.
	Center flighting tube rubbing on nylon carrier bushing.	Loosen all 4 bolts on center gearbox and tap hanger bracket with a hammer to adjust and provide adequate clearance between bushing and center tube.
Sweep engaged and running, but not advancing.	Sweep catching on Tek screws (backboard or gearbox).	Ensure Tek screws are fully screwed down.
	Backboard catching on the floor.	Ensure backboard clearance is 1/4" -1/2" (6 mm - 12 mm). Tighten set screws.
	Rubber on wheel worn down.	Replace with new rubber drive wheels.
	Grain condition wet, hard-packed, moldy.	Sweep will perform poorly if grain is out of condition.
Sweep engaged and running, but not advancing.	End wheel gearbox contacting bin wall and/or bolts in bin wall.	Cut obstructive bolt ends off. Use sweep adjustments.
	End wheel gearbox contacting bin wall and/or bolts in bin wall.	Cut obstructive bolt ends off. Use sweep adjustments.

7. Specifications

7.1. Dimensions

Figure 15. 8” Horizontal Tube Unload

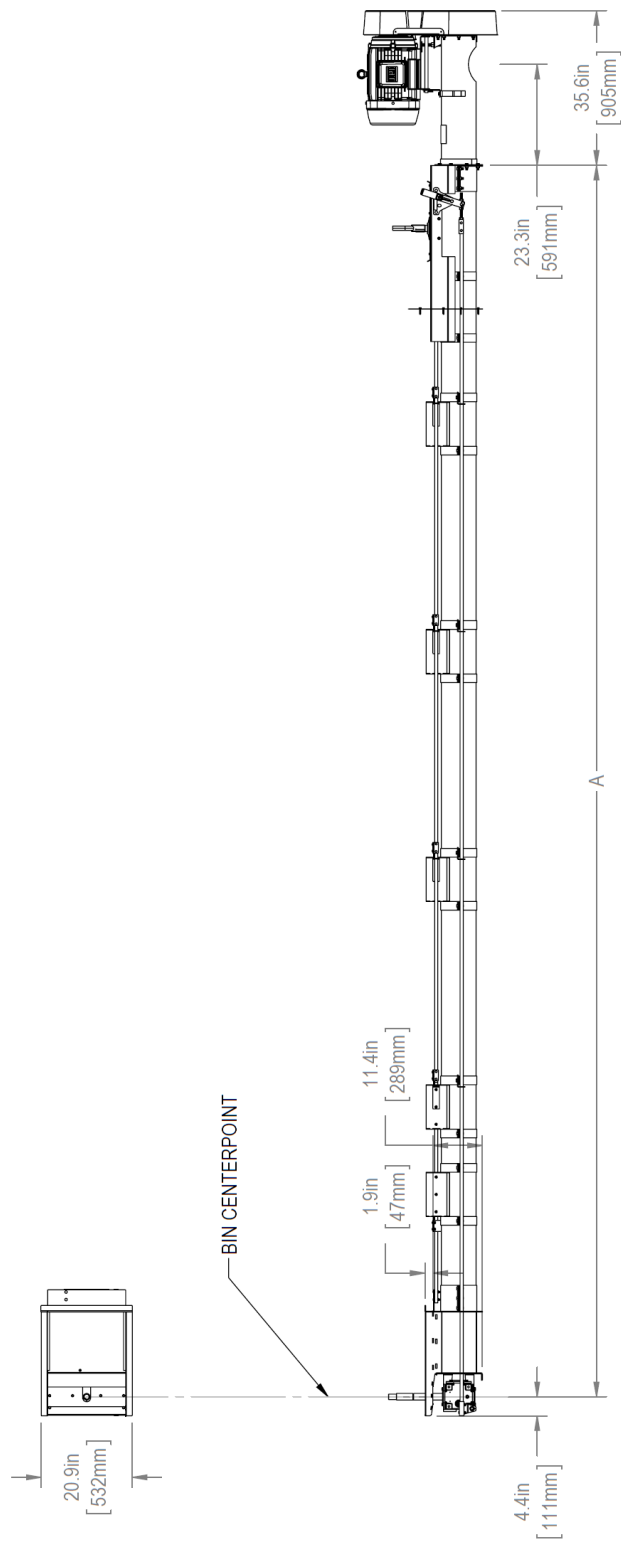


Figure 16. 8” Incline Tube Unload

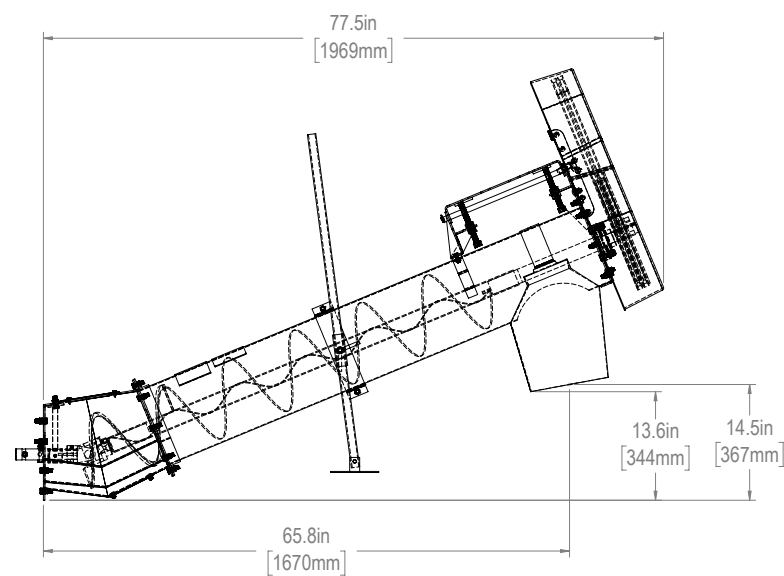


Table 5. 8" Tube Unload

Bin Unload Model (Bin Diameter)	Dimension "A"	
	inches	millimeters
24'	175.3	4453
27'	193.3	4910
30'	211.3	5367
33'	229.3	5824
36'	247.3	6281
39'	265.3	6739
42'	283.3	7196
45'	301.3	7653
48'	319.3	8110
54'	355.3	9025
60'	391.3	9939
Underfloor Flighting Diameter (Actual)	Sweep Flighting Diameter (Actual)	
7" (178 mm)	6" (152 mm)	
Incline Section Tube Diameter	Incline Section Flighting Diameter (Actual)	
10" (254 mm)	9" (229 mm)	

Figure 17. 10” Horizontal Tube Unload

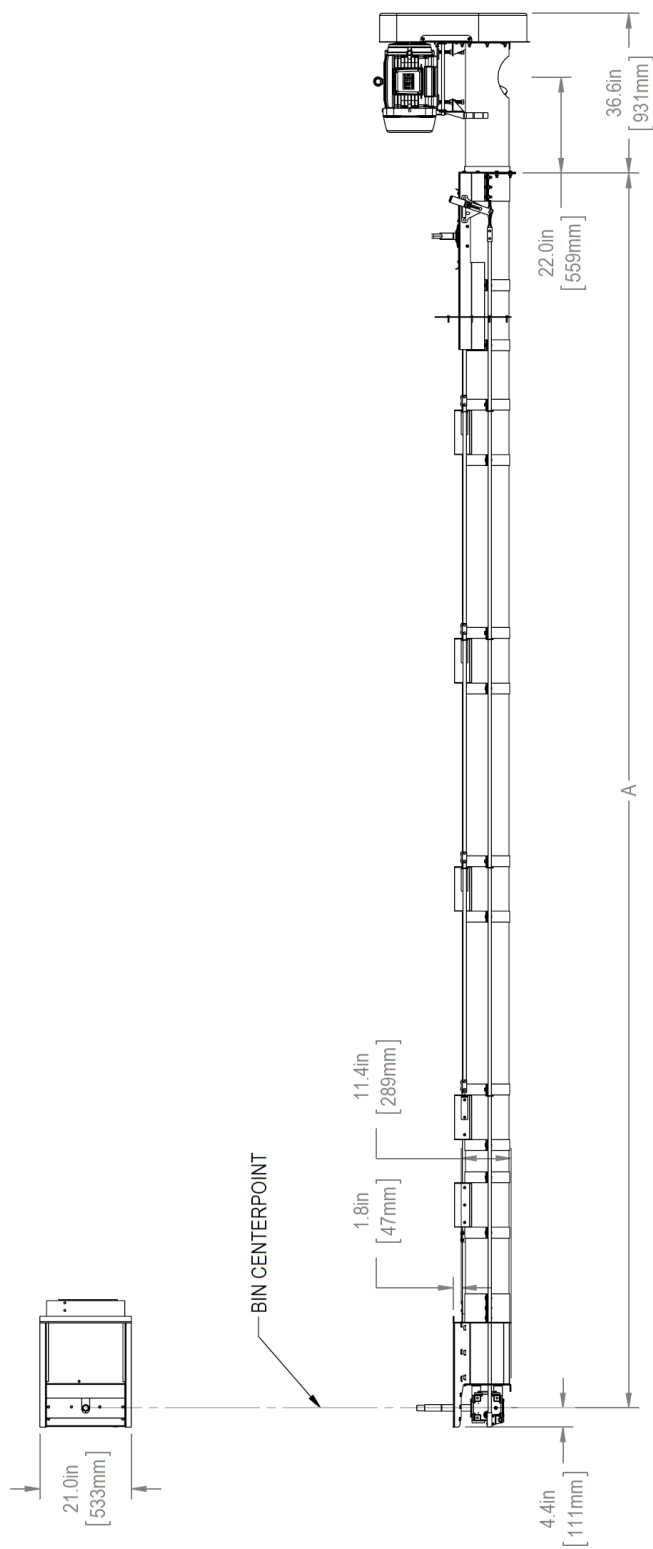


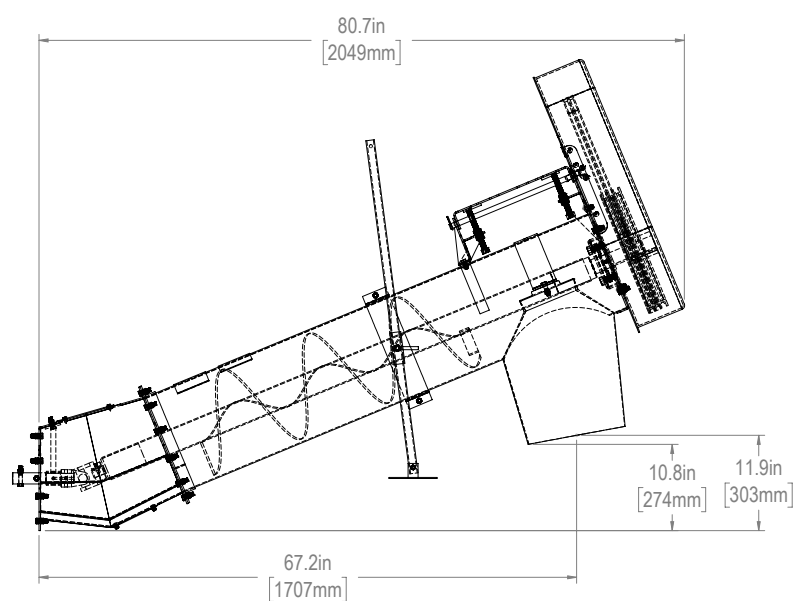
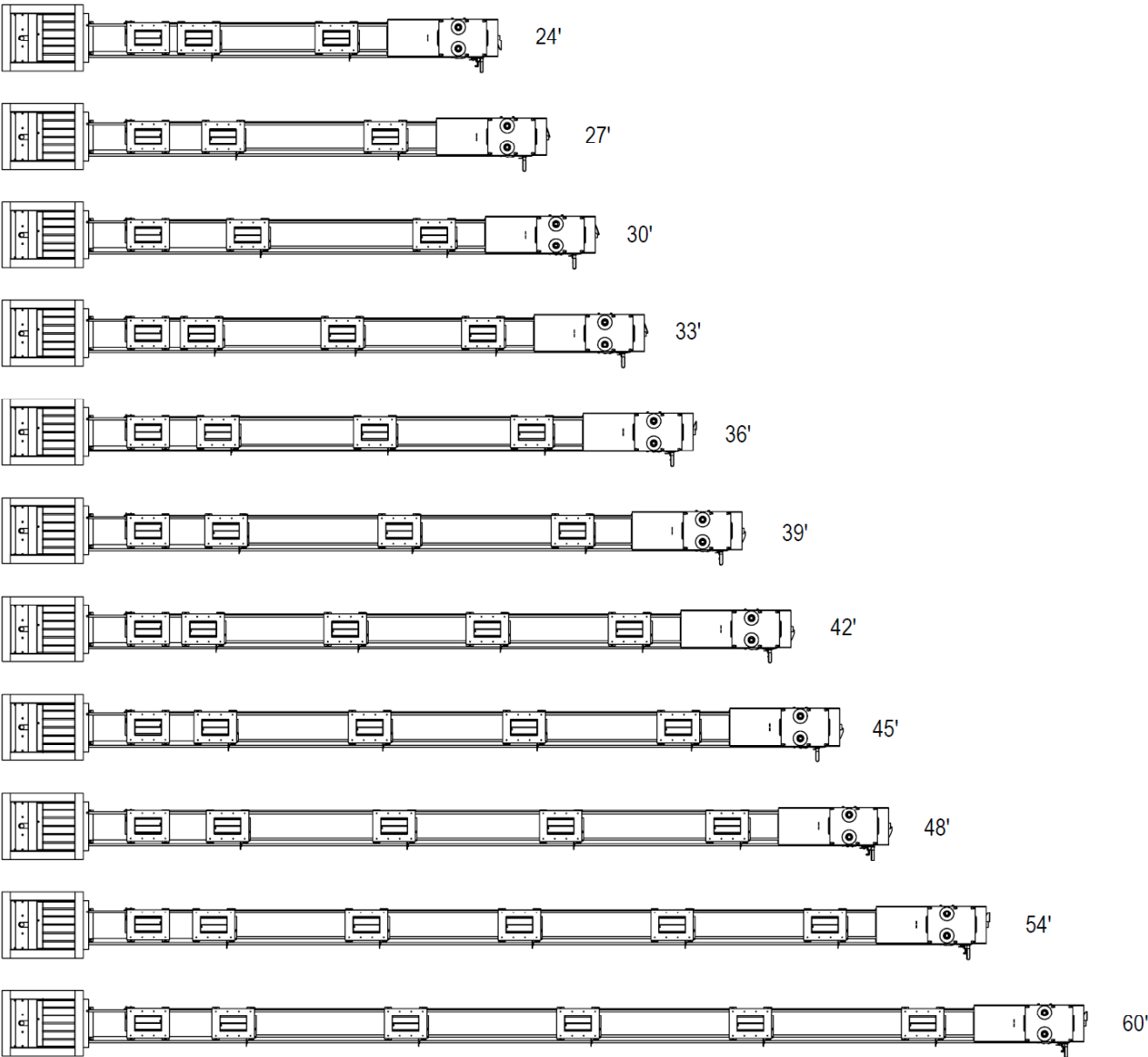
Figure 18. 10" Incline Tube Unload

Table 6. 10" Tube Unload

Bin Unload Model (Bin Diameter)	Dimension "A"	
	inches	millimeters
24'	175.3	4453
27'	193.3	4910
30'	211.3	5367
33'	229.3	5824
36'	247.3	6281
39'	265.3	6739
42'	283.3	7196
45'	301.3	7653
48'	319.3	8110
54'	355.3	9025
60'	391.3	9939
Underfloor Flighting Diameter (Actual)	Sweep Flighting Diameter (Actual)	
9" (229 mm)	7" (178 mm)	
Incline Section Tube Diameter	Incline Section Flighting Diameter (Actual)	
13" (330 mm)	11.75" (298 mm)	

7.2. Models



7.3. Power Requirements

Table 7. Electric Motor Requirements

Bin Diameter	8" Tube Unload (With Sweep)		10" Tube Unload (With Sweep)	
	Horizontal (HP)	Incline (HP)	Horizontal (HP)	Incline (HP)
24'	5	7.5	7.5	10
27'			10	
30'				
33'				
36'	7.5	10	15	
39'				
42'				
45'	10		15	
48'				
54'		15	20	
60'				

Table 8. Recommended Pulley Size Combinations (60 Hz / 1750 RPM Motors)

Discharge Type	Unload Pulley	Motor Pulley	Pulley Type	Belt Size	Flighting Speed (rpm)
8" Horizontal	12.7"	3.375"	Double Groove	B51	465
		3.875"			534
8" Incline	15"	3.375"		B62	394
		3.75"			438
		4.75"			554
10" Horizontal		3.375"			394
		3.75"			438
		4.75"			554
10" Incline		16"	3.375"		Triple Groove
	3.75"		410		
	4.75"		520		

Flighting Speed is calculated using a 1750 rpm electric motor. To determine flighting speed (rpm), divide the motor speed (rpm) by the outside diameter of the large unload pulley, then multiply by the outside diameter of the small motor pulley. Example: $1750 \text{ rpm} / 15" \times 4\text{-}3/4" = 554 \text{ rpm}$. These motors are typically used in North America.

If a slower flighting speed is desired, install a smaller motor pulley.

Table 9. Recommended Pulley Size Combinations (50 Hz / 1500 RPM Motors)

Discharge Type	Unload Pulley	Motor Pulley	Pulley Type	Belt Size	Flighting Speed (rpm)
8" Horizontal	12.7"	4"	Double Groove	B51	472
		4.5"			532
8" Incline	15"	4"		B62	400
		4.5"			450
		5.5"			550
10" Horizontal		4"			400
		4.5"			450
		5.5"			550
10" Incline	16"	4"	Triple Groove	B67	375
		4.5"			422
		5.5"			516

Flighting speed for 50 Hz motor is calculated using a 1500 rpm electric motor. To determine flighting speed (rpm), divide the motor speed (rpm) by the outside diameter of the large unload pulley, then multiply by the outside diameter of the small motor pulley. Example: $1500 \text{ rpm} / 15" \times 5-1/2" = 550 \text{ rpm}$. These motors are typically used in Europe and Australia.

If a slower flighting speed is desired, install a smaller motor pulley.

7.4. Gearbox Oil Specification

If your machine model is equipped with a gearbox, use SAE approved 90W or equivalent gear oil.

8. Bin Unload Limited Warranty

Ag Growth International (“AGI”) warrants all new equipment manufactured by it or one of its divisions, and purchased from an authorized dealer or distributor, to be free from defects in materials or workmanship for a period of two (2) years from the date of original purchase or initial installation (“Warranty Period”).

AGI’s obligation under this warranty is limited to repairing, replacing, or refunding defective part(s) during the Warranty Period. Labor costs associated with the repair of the warranted equipment are not covered by AGI. Any defects must be reported to AGI before the expiry of the Warranty Period and defective parts identified during the Warranty Period must be returned to the factory, or an authorized AGI dealer or distributor, with transportation charges prepaid.

Bin Unload systems are designed for use with free flowing, properly conditioned grains and are not warranted for use with other substances. Any other use is considered misuse. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under this warranty. This warranty shall be void if components of the system are not original equipment supplied by AGI, or if the equipment has not been assembled, installed, operated, and maintained in accordance with instructions published by AGI.

The total liability of AGI on any claim, whether in contract, tort or otherwise, arising out of, connected with, or resulting from the manufacture, sale, delivery, repair, replacement or use of the equipment or any part thereof, shall not exceed the price paid for the equipment. AGI shall not be liable for any consequential or special damage which any purchaser may suffer or claim to suffer as a result of any defect in the equipment. Consequential or special damages as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.

The warranty provisions herein constitute the full extent of the warranties supplied by AGI for the equipment. Without limiting the generality of the foregoing and to the extent permitted by law, AGI EXPRESSLY DISCLAIMS AND EXCLUDES ALL WARRANTIES AND CONDITIONS OF MERCHANTABILITY & FITNESS FOR PURPOSE OR PERFORMANCE, WHETHER EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE.

Notwithstanding anything contained herein to the contrary, the foregoing sets out the purchaser’s sole and exclusive remedies for breach of warranty by AGI in respect of the equipment.

Dealers are not authorized to make any modifications on behalf of AGI, to any of the terms, conditions or limitations of this warranty.

AGI reserves the right to change models and specifications at any time without notice or obligation to improve previous models.






Westeel is an AGI Brand.

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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Please include the part number listed on the cover page in your message.