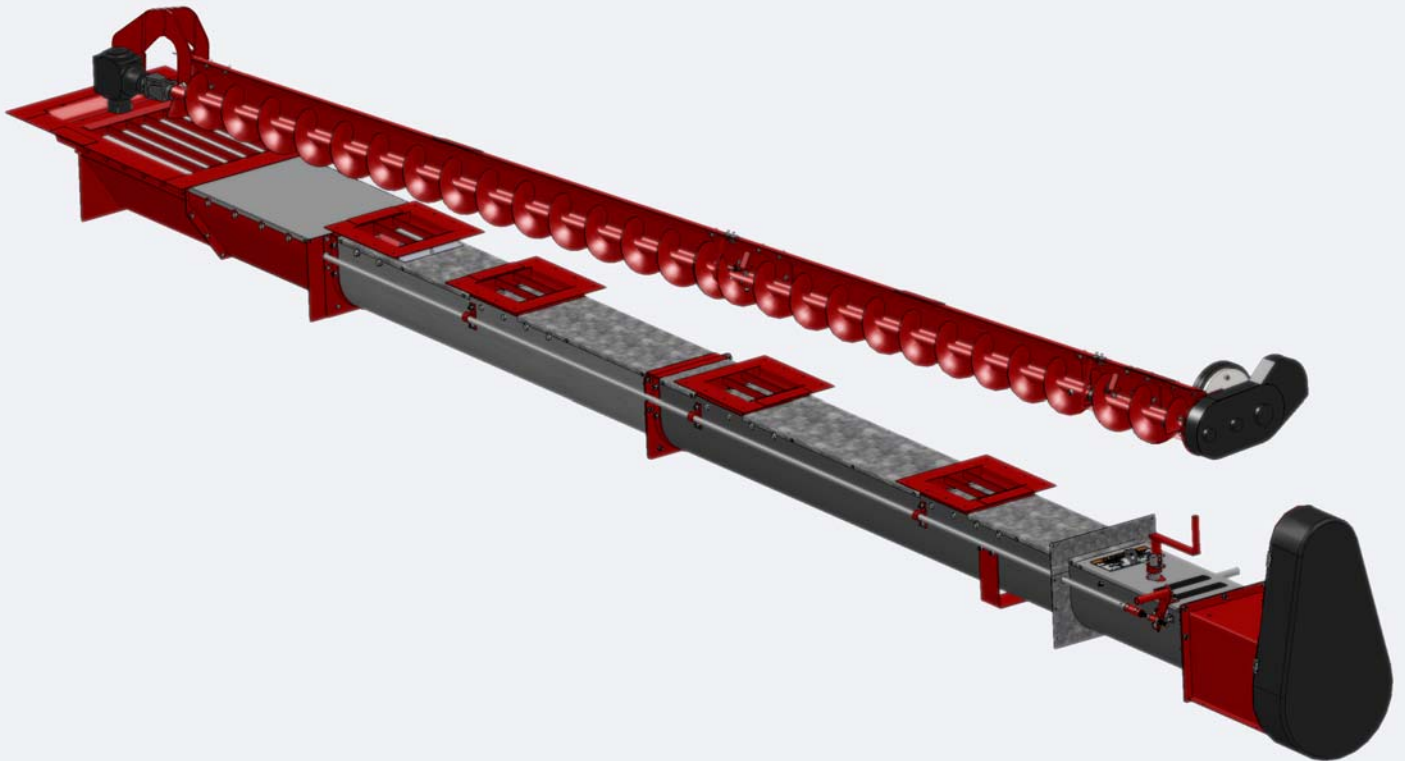




U-TROUGH BIN UNLOAD SYSTEM

FARM-DUTY (100 SERIES), 24'-60' MODELS
ASSEMBLY & OPERATION MANUAL



ORIGINAL INSTRUCTIONS



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-0010766 R5

Revised: 29/7/15

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1. Introduction

Thank you for purchasing a AGI U-Trough Bin Unload System. This equipment will allow safe and efficient operation when you read and follow all of the instructions contained in this manual. With proper care, your U-Trough Bin Unload System will provide you with many years of trouble-free operation.

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 your local distributor or dealer for assistance.

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

1.1. EQUIPMENT PURPOSE

1.1.1. GENERAL DESCRIPTION

The bin unload system is designed to unload dry, free-flowing grains from a flat bottom bin and transfer that grain into another system which moves the grain to another location. Grain is intended to be unloaded first from the center hopper, then intermediate hoppers, and finally by operating the bin sweep. The unload system is designed to be operated with all covers, guards, inspection doors, etc. installed at all times of normal operations and can be operated in any non-extreme weather.

1.1.2. INTENDED USE

This equipment is designed solely for use in customary agricultural or similar operations. Use in any other way is considered as contrary to the intended use. Compliance with and strict adherence to the conditions of operation and maintenance as specified by the manufacturer, also constitute essential elements of the intended use.

This equipment should be operated, maintained, serviced, and repaired only by persons who are familiar with its particular characteristics and who are acquainted with the relevant safety procedures.

Accident prevention regulations and all other generally recognized regulations on safety and occupational medicine must be observed at all times.

Any modifications carried out to this equipment may relieve the manufacturer of liability for any resulting damage or injury.

1.1.3. MISUSE

When operating or maintaining the bin unload system, **NEVER**:

- auger material other than dry, free-flowing grains.
- enter the bin while the unload system is operating.
- unload grain through the center hopper and intermediate hoppers at the same time or unload from the intermediate hoppers before fully unloading from the center hopper.
- empty a bin or operate a bin unload system alone (only one operator).
- fill bin with bin sweep placed in the wrong position; refer to Operation chapter.
- overfeed or overload the bin unload.
- operate the bin unload empty for extended periods of time.
- change the size of the electric motor or pulleys to alter the augering speed.
- operate the sweep with any guards or covers removed.
- modify the equipment in any way.

2. Components Overview

Throughout this manual, names are referred to of various components which together make up the U-Trough Bin Unload System and are identified in Table 2.1 and Figure 2.1. Only one model is shown in this Table and Figure as a representative; actual lengths/configurations of models vary.

Table 2.1 Major Components of U-Trough Bin Unload System

Item #	Description
1	Electric Powerhead
2	Center Hopper
3	Underfloor U-Trough Auger
4	Horizontal Discharge
5	Bin Sweep
6	Intermediate Hopper
7	Bin Plate Adapter and Controls (for hopper gates and sweep gearbox engagement)
8	Bin Wall
9	Lower Gearbox
10	Upper Gearbox
11	Sweep Drive

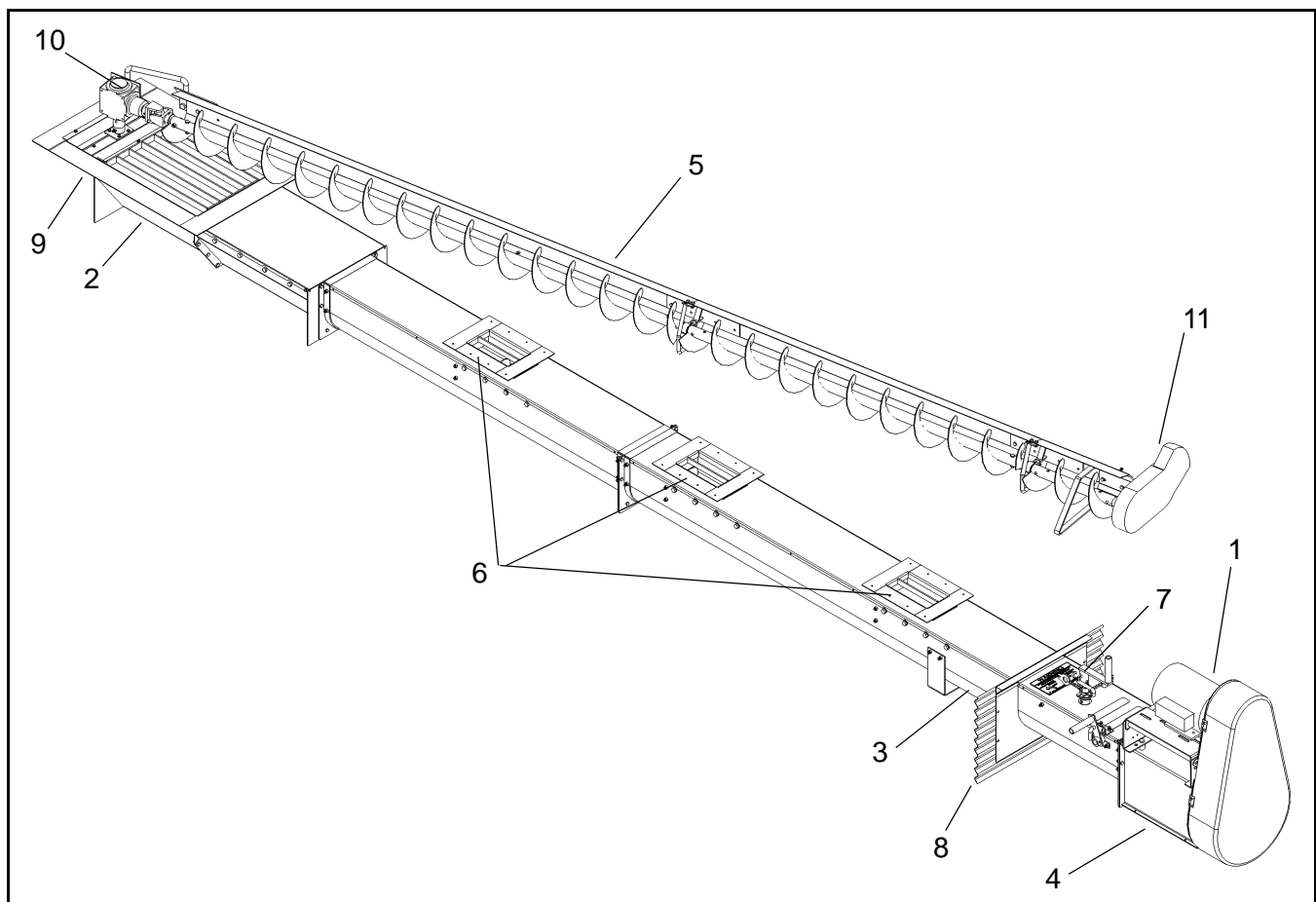


Figure 2.1 Overview of Major Components of the U-Trough Bin Unload System

Table 2.2 U-Trough Bin Unload System – Flighting Specifications

Underfloor U-Trough Width	Underfloor Flighting Diameter (Actual)	Sweep Flighting Diameter (Actual)
11"	9"	7"

The U-Trough Bin Unload System is available for bin diameters 24' – 60'.

3. Safety

3.1. GENERAL SAFETY INFORMATION



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

Why is SAFETY important?

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

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

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.

YOU are responsible for the **SAFE** use and maintenance of your equipment. **YOU** must ensure that you and anyone else who is going to work around the equipment understands all procedures and related **SAFETY** information contained in this manual.

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

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



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

3.2. OPERATIONAL & MAINTENANCE SAFETY

Operational safety means using common sense and knowing and observing the proper precautions.

- Have another person nearby who can shut down equipment in case of accident. It is good practice to always work with a second person.
- Do not operate equipment with any guard removed.
- Keep body, hair, and clothing away from all moving parts.
- Do not modify equipment in any way. Unauthorized modification may impair function and/or safety, and could affect the life of the equipment.
- Perform maintenance during normal daylight hours or in adequate ambient lighting.

When performing maintenance, understand and observe the following precautions:

- Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied. Consult your dealer for proper replacements.
- After maintenance is completed, replace and secure all safety guards, safety devices, service doors, and cleanout covers.
- Do not climb ladder if damaged, wet, icy, greasy, or slippery.

- Maintain good balance by having at least two feet and one hand or two hands and one foot on ladder at all times.
- Use required safety harnesses and climbing equipment. Consult local safety authorities.

3.3. ELECTRIC MOTOR SAFETY

- To prevent serious injury or death, only qualified personnel should service electrical components.
- Keep electrical components in good repair.
- Ground electric motor before using.
- Inspect drive belts before using. Replace if frayed or damaged.

3.4. 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.

3.4.1. DECAL INSTALLATION/REPLACEMENT

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

3.4.2. SAFETY DECAL LOCATIONS AND DETAILS

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

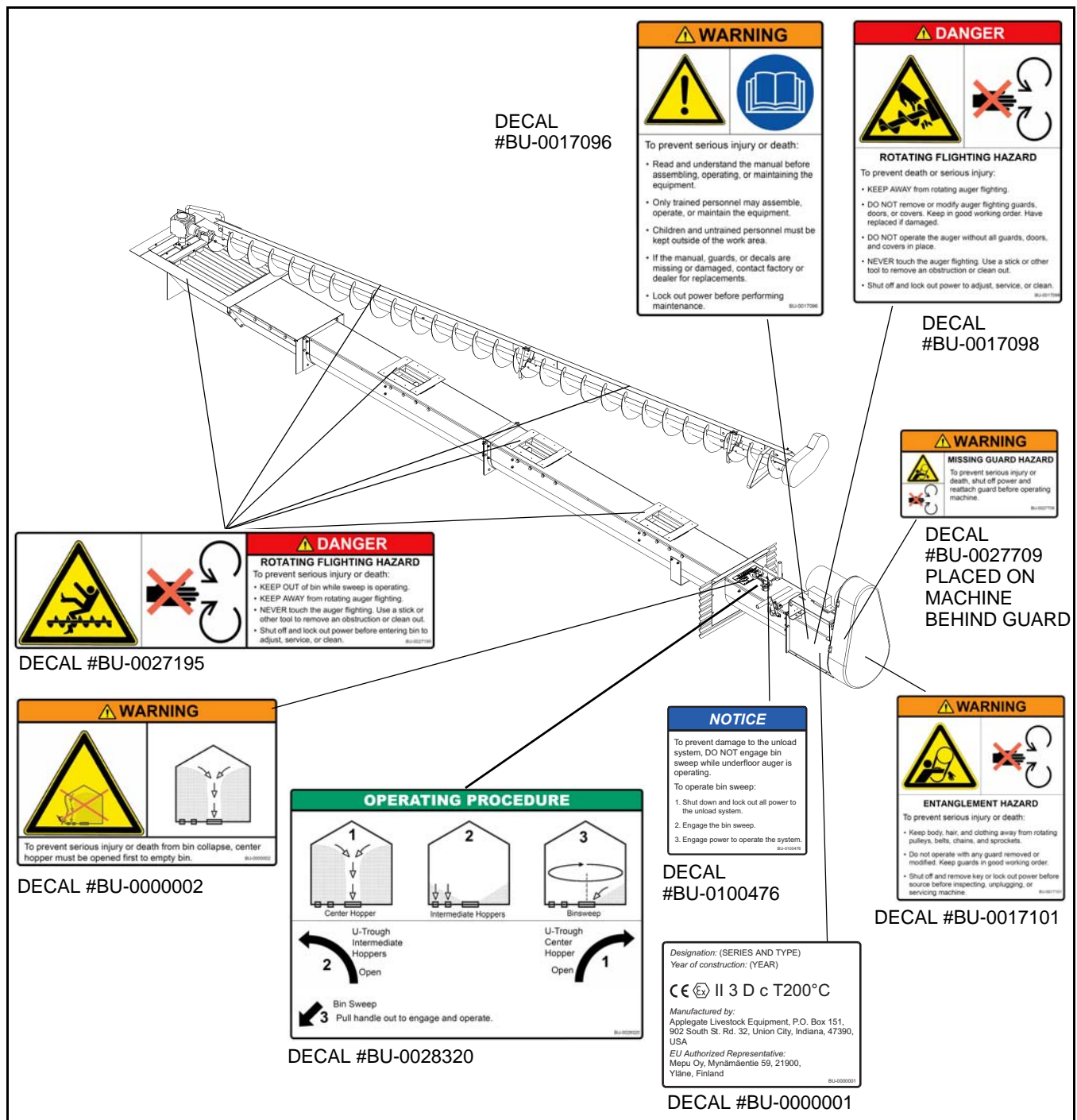


Figure 3.1

WARNING	
<p>To prevent serious injury or death:</p> <ul 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. • If the manual, guards, or decals are missing or damaged, contact factory or dealer for replacements. • Lock out power before performing maintenance. 	
<small>BU-0017096</small>	

DECAL #BU-0017096

WARNING	
<p>To prevent serious injury or death from bin collapse, center hopper must be opened first to empty bin.</p>	
<small>BU-0000002</small>	

DECAL #BU-0000002

WARNING	
ENTANGLEMENT HAZARD	
<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 remove key or lock out power before source before inspecting, unplugging, or servicing machine. 	
<small>BU-0017101</small>	

DECAL #BU-0017101

WARNING	
	MISSING GUARD HAZARD
	<p>To prevent serious injury or death, shut off power and reattach guard before operating machine.</p>
<small>BU-0027709</small>	

DECAL #BU-0027709

		 DANGER
		ROTATING FLIGHTING HAZARD
<p>To prevent serious injury or death:</p> <ul style="list-style-type: none"> • KEEP OUT of bin while sweep is operating. • KEEP AWAY from rotating auger flighting. • NEVER touch the auger flighting. Use a stick or other tool to remove an obstruction or clean out. • Shut off and lock out power before entering bin to adjust, service, or clean. 		
<small>BU-0027195</small>		

DECAL #BU-0027195

⚠ DANGER




ROTATING FLIGHTING HAZARD

To prevent death or serious injury:

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

BU-0017098

DECAL #BU-0017098

NOTICE

To prevent damage to the unload system, DO NOT engage bin sweep while underfloor auger is operating.

To operate bin sweep:

1. Shut down and lock out all power to the unload system.
2. Engage the bin sweep.
3. Engage power to operate the system.

BU-0100476

DECAL #BU-0100476

Designation: (SERIES AND TYPE)
Year of construction: (YEAR)

CE ⓧ II 3 D c T200°C

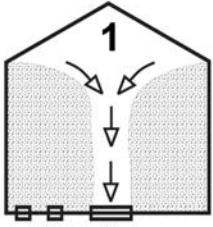
Manufactured by:
Applegate Livestock Equipment, P.O. Box 151,
902 South St. Rd. 32, Union City, Indiana, 47390,
USA

EU Authorized Representative:
Mepu Oy, Mynämäentie 59, 21900,
Yläne, Finland

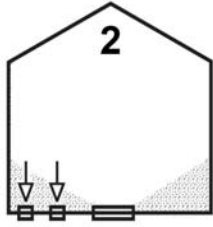
BU-000001

DECAL #BU-000001

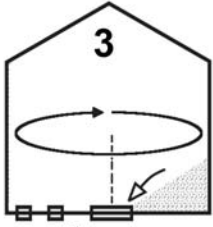
OPERATING PROCEDURE



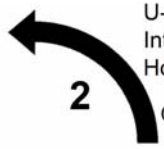
Center Hopper



Intermediate Hoppers

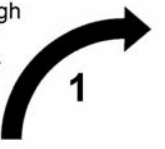


Binsweep




2

U-Trough
Intermediate
Hoppers
Open



1

U-Trough
Center
Hopper
Open



3 Bin Sweep
Pull handle out to engage and operate.

BU-0028320

DECAL #BU-0028320

4. Assembly

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

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

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

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

4.1. CENTER HOPPER LAYOUT

Note: Before starting, ensure that lower gearbox (installed on center hopper) is half full of EP90 lube oil. See page 45 for more details.

1. Find the exact center of the bin by measuring horizontal lines across the bin (Figure 4.1). Place the center of gearbox shaft at the intersection of these two lines.

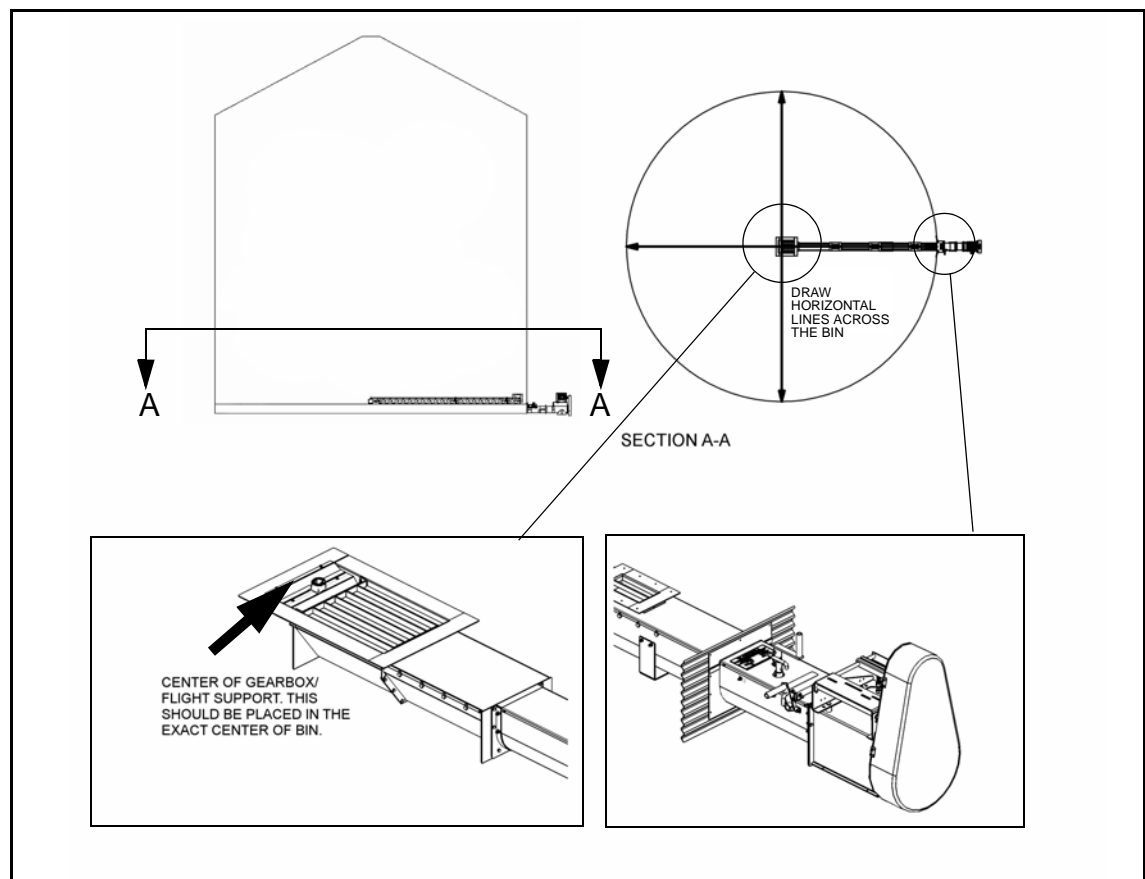


Figure 4.1

2. Insert tabs in extension hopper into notches in center hopper (**Figure 4.2**).
3. Bolt center hopper extension (1) onto center hopper (2) with six $3/8"$ x $1"$ bolts (3) and $3/8"$ locknuts (4); do not tighten.

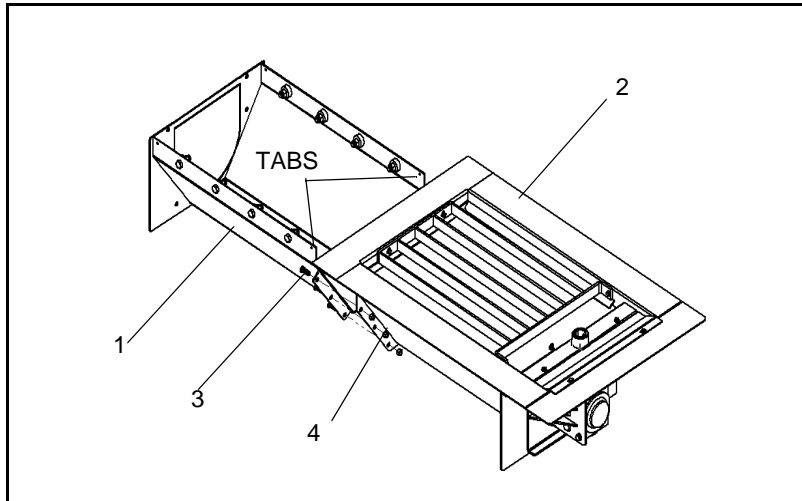
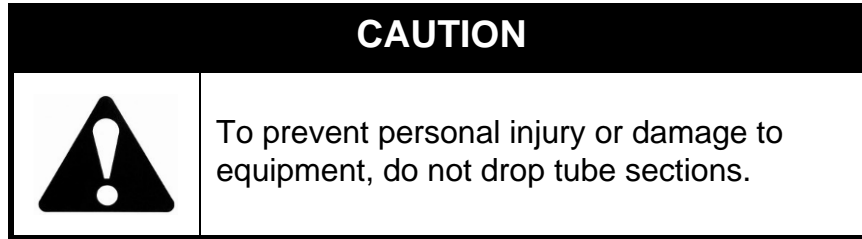


Figure 4.2

4.2. FLIGHT SUPPORT (OPTIONAL)

See **Figure 4.3**.

1. Remove access cover from center hopper.
2. Place support tube inside of flight support base. Secure with a $5/16"$ x $1-3/4"$ bolt and locknut. Tighten securely.
3. Reinstall access cover on center hopper and secure with 2 self-tapping screws (removed previously in step 1.).

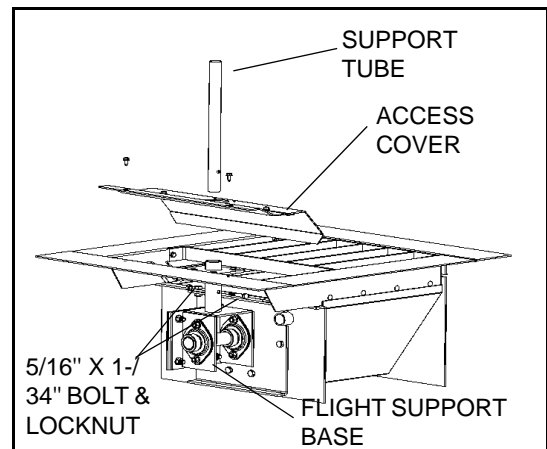


Figure 4.3

4.3. UNLOAD TROUGH

Note: Remove flighting before installing u-trough section. This ensures better handling and ease of assembly.

1. Install u-trough section as seen in Section 6.2.9. Match the trough configurations to the figure corresponding to your bin diameter.
2. Cut hole in bin wall at location designated for discharge spout.
 - The hole should measure approximately 12" wide x 12" high (**Figure 4.4**). When measuring the hole, measure 12" down from the bottom of the aeration floor. Try not to cut the bottom bin angle.
3. Place u-trough section inside the bin and make sure that the control handles are outside of the bin wall and that the 2' lid clears the bin wall by at least 1/4". Connect the opposite u-trough end to the extension hopper with six 3/8" x 1" bolts and locknuts. Tighten securely and tighten the bolts installed in step 3. of section 4.1.
4. U-trough sections should be leveled and if necessary use shims (not supplied) every 10' of the u-trough assembly to ensure level variation is not more than 1/4" per 10' span or not more than 1/2" for whole u-trough assembly.

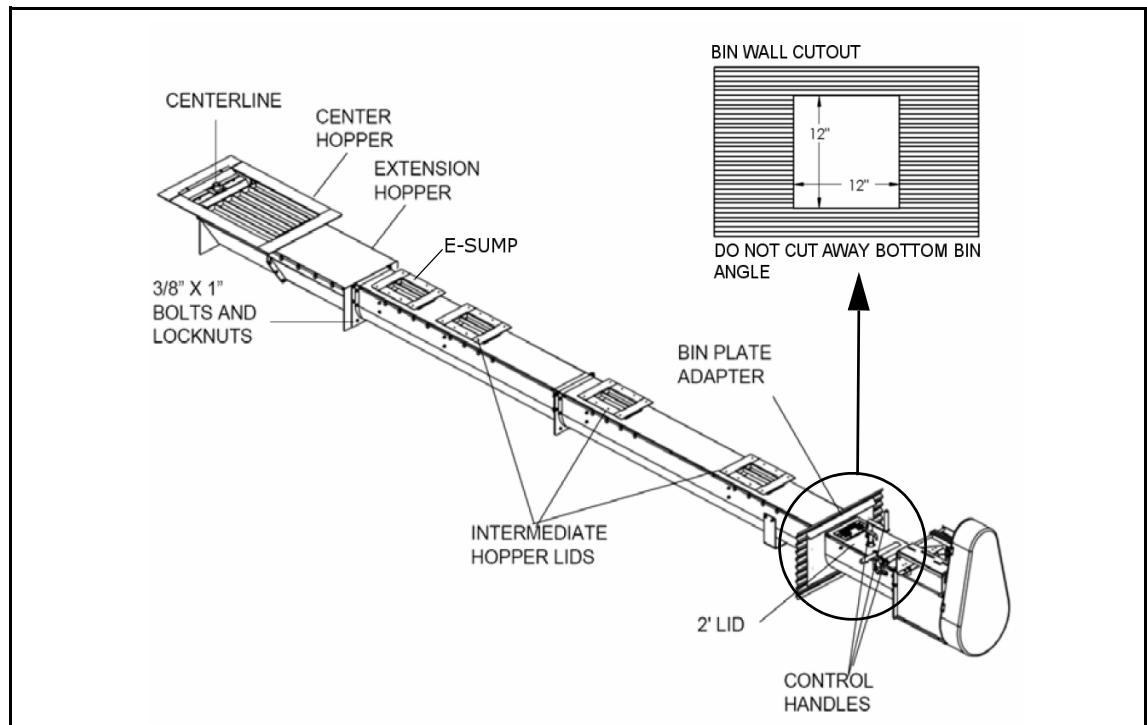


Figure 4.4

4.4. BIN PLATE ADAPTER

1. Two corrugated sponge pieces (not supplied) can be arranged as seen in **Figure 4.5**. Drill two 3/8" holes through the upper bin plate adapter and bottom lip of the bin sheet.
2. To allow the lower bin wall adapter to slide up with the bin wall, remove the gearbox and E-Sump handles. Adjust the adapter until it levels up with the bin wall.
3. Using six 3/8" x 1" bolts and locknuts provided, secure the bin plate adapter to the outside of the bin/concrete form. Tighten securely.
4. Ensure that the 2' lid does not interfere with the bin plate adapter. If it does, you may need to adjust the u-trough position until the lid clears the bin.
5. Reinstall the handles to the control rods.

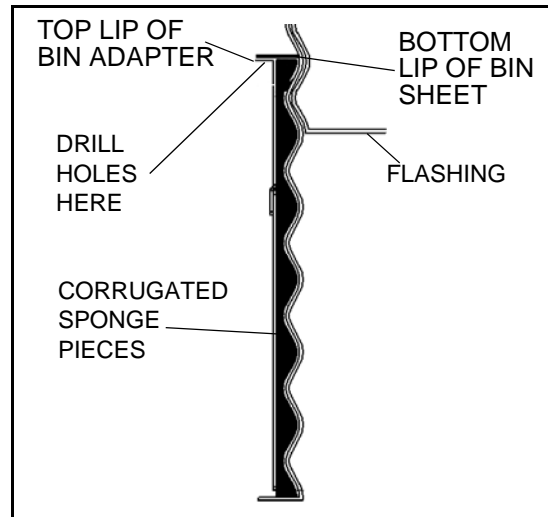


Figure 4.5

Important: *Ensure that center hopper, intermediate hoppers, and bin plate adapter are all level with each other during installation.*

4.5. CONTROL ROD

Important: *The bin unload system has 3 different sizes of control rods already installed. It is your responsibility to connect them into the proper places.*

1. Insert the center hopper control rod into the gate coupler and secure with two 1/4" x 1-1/2" bolts and nylock nuts (**Figure 4.6**).
2. The shorter length of control rod is for the lower gearbox (on center hopper). Couple the short control rod to the long control rod with a control rod coupler and two 1/4" x 1-1/2" bolts and nylock nuts (See **Figure 4.6**).

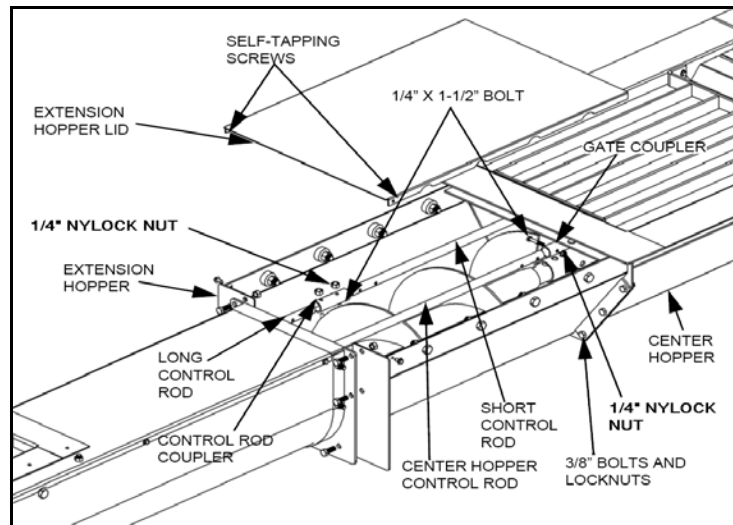


Figure 4.6

Note: *Even if flight support option has been purchased, please install the gearbox control rod; it may be needed at a later date.*

3. Move gearbox detent to its forward position – this is the "engaged" position where the bottom gearbox shaft is engaged into the top gearbox shaft.
4. With gearbox shift lever locked in "engaged" position (lever handle is pulled back away from bin wall), tighten the shift adjust tube into place using two 1/2" hex nuts on either side.

Important: *During assembly, the shift adjust tube must be properly adjusted so that during operation, the lower gearbox detent remains firmly in position. To do this, adjust the shift adjust tube so that **slight** force (exerted by operator pulling on the handle) is required to lock the gearbox shift lever into the "engaged" position with the locking pin. Pinning the control rod under this compressive force helps prevent the gearbox detent from disengaging during operation.*

5. Then remove the lock pin and try shifting the gearbox between "disengaged" and "engaged", ensuring smooth operation.

NOTICE

Lock gearbox shift lever into engaged or disengaged position at all times during operation. Failure to do so will result in damage to gearbox.

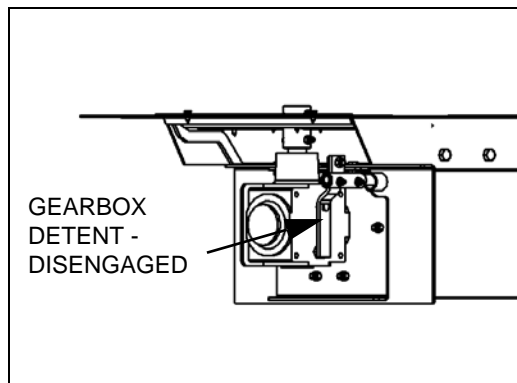


Figure 4.7

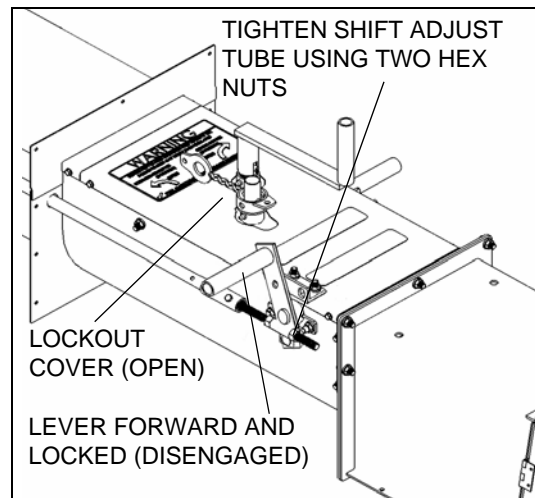


Figure 4.8

➔ *Only continue with the following steps if there is E-Sump to assemble. If not, continue to step 9.*

6. Slide the E-Sump control rod through the 7/8" hole in the top bin plate adapter, through the control rod bracket and next to extension hopper until the pre-drilled holes in the E-Sump control rod line up with the holes in the E-Sump gate coupler (Figure 4.9 and 4.10). Secure using two 1/4" x 1-1/2" bolts and locknuts.

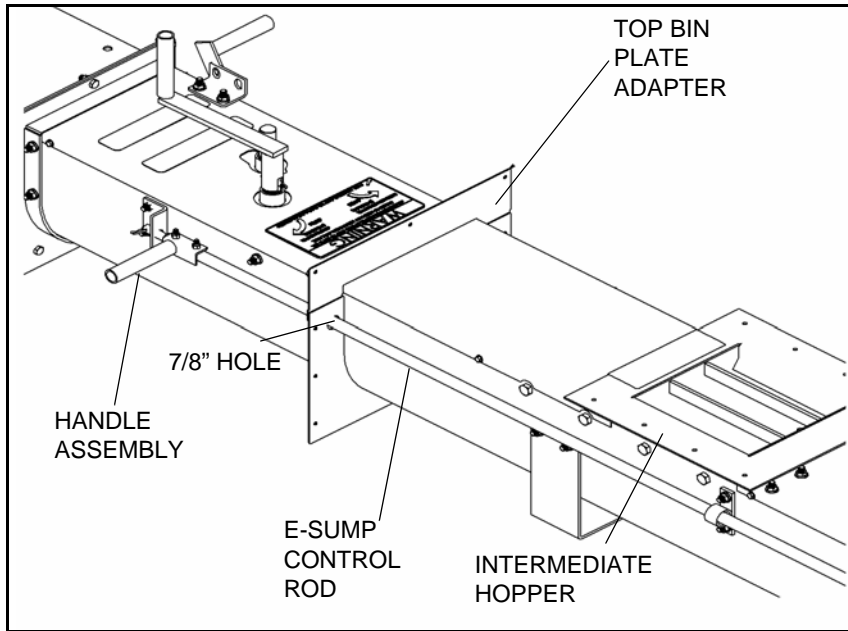


Figure 4.9

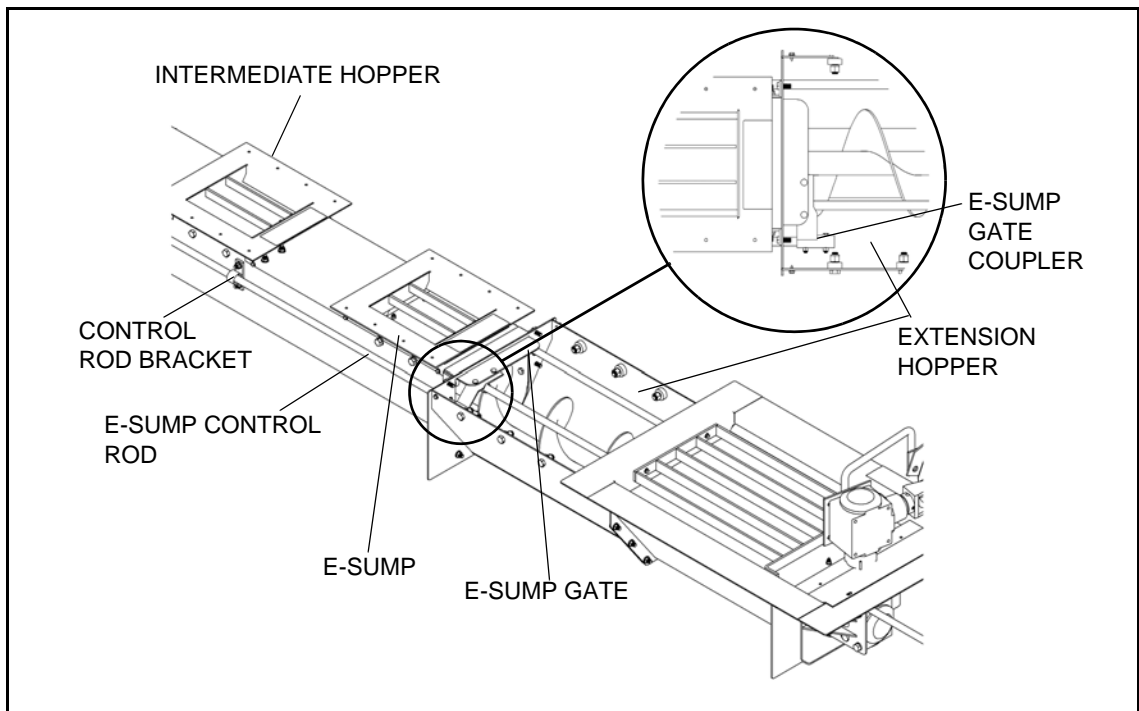


Figure 4.10

7. Slide the handle assembly through the handle support rod and secure with hitch pin clip. Couple the handle support rod to E-Sump control rod using two 1/4" x 1-1/2" bolts and locknuts provided (Figure 4.11).
8. Check the E-Sump performance by removing the hitch pin clip and sliding the E-Sump handle assembly in and out. Check for interferences and make sure the E-Sump opens and closes completely.

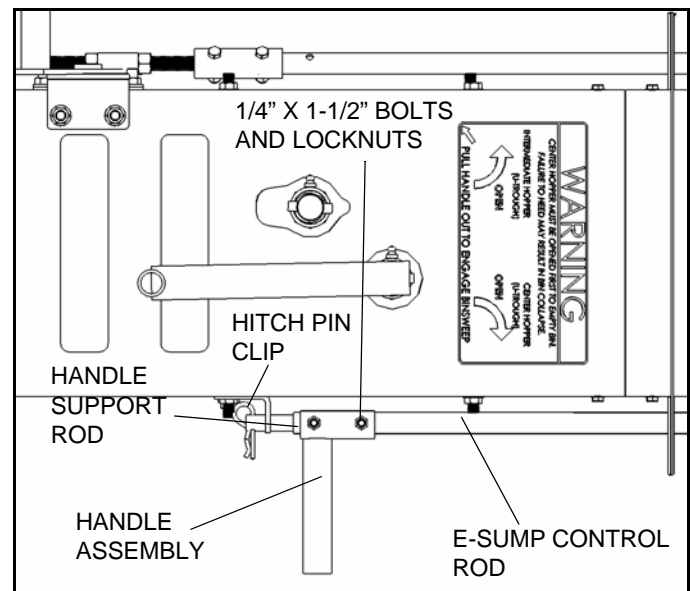


Figure 4.11

Note: *The E-Sump is designed to work as a back-up or alternate unloading system for 36' and up models. It cannot be opened when the center hopper gate is open. This should be confirmed during installation.*

9. Install the extension hopper lid with 2 self-tapping screws.
10. Now you can finish installing the aeration floor (**Figure 4.4**).
 - Floor planks should run perpendicular to the trough and auger.

Note: *Tighten all bolts and nuts before the aeration floor planks are completely laid in. Check the function of the center hopper gate and intermediate hopper gates as well as lower gearbox engagement periodically during floor installation to ensure no control mechanisms interfere with the floor supports.*

11. Once aeration floor installation is finished, screw the top plates of each intermediate hopper and E-Sump (if installed) to the bin floor using the self-tapping screws provided.

4.6. INTERMEDIATE HOPPER LOCKOUT PROCEDURES

1. Once the underfloor u-trough installation is finished, close all the intermediate hopper lids completely. Flip the lockout cover over the shaft and lock out the cover to the bin plate adapter with a padlock (supplied by customer) (**Figure 4.8** and **4.12**).
2. Keep the key to the padlock in a safe place. You will need to unlock the padlock for operation of the bin unload system (“**Break-In and Normal Unload Operating Procedure When Emptying Bin**” on page 40).

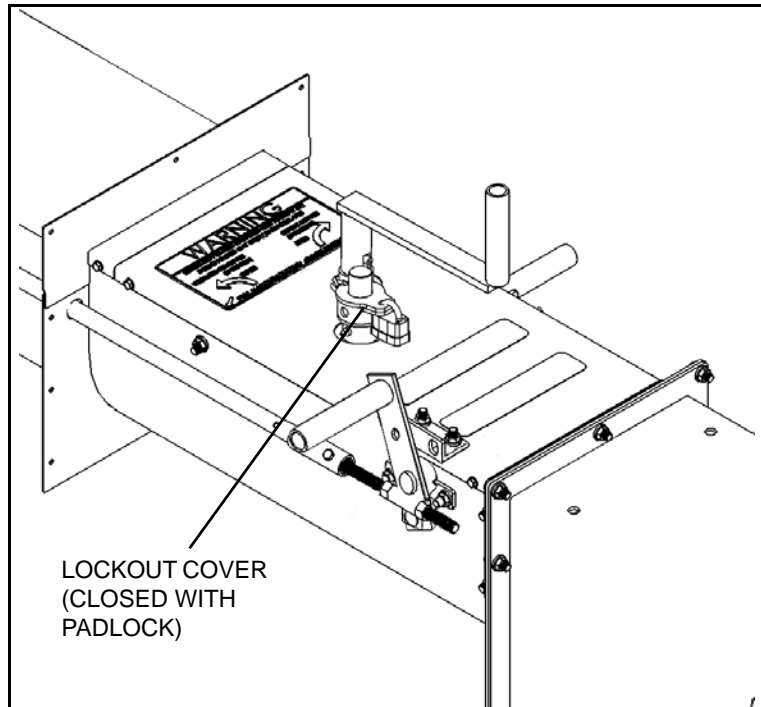


Figure 4.12

4.7. U-TROUGH EXTENSIONS (OPTIONAL)

Note: U-trough extension, when required, should be ordered with the unload unit from the factory. For more information on extensions (especially extension flightings) and for details on field installation, contact your AGI dealer or AGI directly.

4.8. UNDERFLOOR FLIGHTING

1. Attach the short center hopper flighting piece to the appropriate end of underfloor flighting. Slide the connector stub into the short flighting piece (**Figure 4.13**).

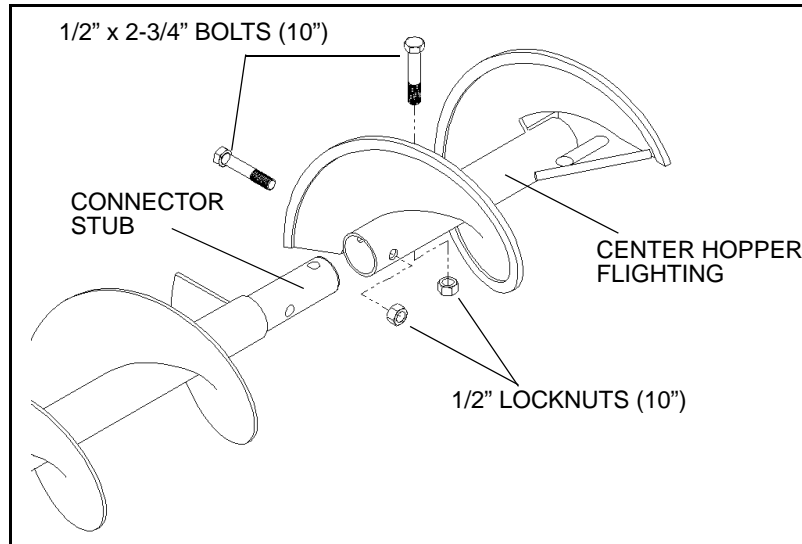
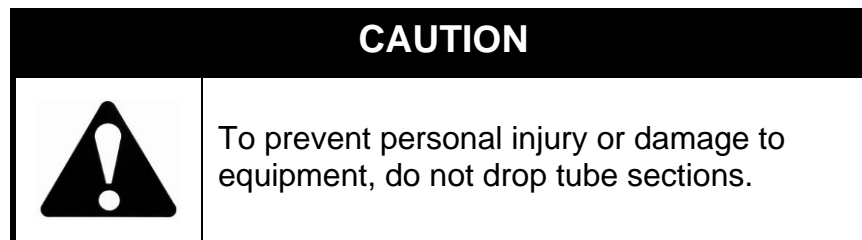


Figure 4.13

2. Make sure the flight ends butt together to ensure spiral form and continuous flow is maintained.
3. Fasten these pieces together using two 1/2" x 2-3/4" bolts and locknuts. Tighten securely.



Important: *Flight sections must be aligned properly to maintain spiral form and ensure proper grain flow.*

4. Rotate and level hanger bearing cross bar on the top side of core pipe. Use duct tape to secure hanger bearing cross bar in this position. This will help with the alignment when installing the flight (Figure 4.14).
5. With 2 or 3 people supporting flight, carefully install flight in u-trough. Slide flighting sections into open end of u-trough with center hopper flighting first.

Note: *If hanger bearing catches on bolt heads inside u-trough, pull flight back out approximately 1", rotate hanger bearing slightly, and resume inserting flight.*

6. Slide flighting almost all the way into center of bin, leaving only a short section sticking past the end of the trough in preparation for the installation of the powerhead.
7. Turn the flight over by hand to make sure it clears hanger bearing cross bar by approximately 1/4" (Figure 4.15).

Important: *Ensure flight is installed straight, and that it does not sag, shake, or bounce, as this can cause the hanger bearing cross bar to break free. Check if the hanger bearing cross bar is located in the guide tracks on both hanger bearing plates and close to the center. If it is off slightly, this will not affect the function. Refer to Figure 4.14 and 4.15.*

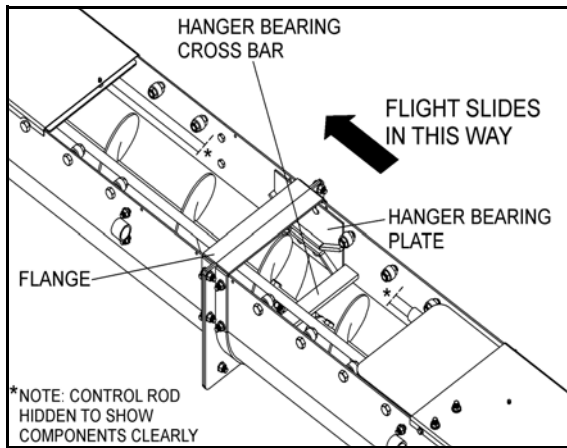


Figure 4.14

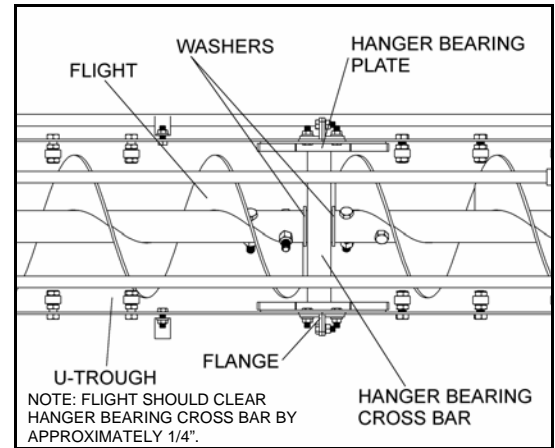


Figure 4.15

4.9. POWERHEAD & ELECTRIC MOTOR

Note: Refer to **Figure 4.16**, **4.17**, and **4.18** for assembly of the powerhead and discharge units.

1. Mount 1-1/4" bearing with 4 bolt flanges (1) to powerhead (2) using four 1/2" x 1-1/2" bolts (3) and 1/2" locknuts (4) (**Figure 4.16**).
2. Mount powerhead (2) onto u-trough assembly (5) with 3/8" x 1" bolts (6) and 3/8" locknuts (7).
3. Place bearing collar onto fighting shaft. Tighten securely to shaft using set screws.
4. Place mount spacers (8) on powerhead (2) (**Figure 4.17**).
5. Place mount plate (9) on mount spacers (8) and attach loosely to powerhead (2) with 1/2" x 2-1/2" bolts (15) and 1/2" locknuts (16).
6. Place mount plate (10) on powerhead (2) and attach securely with 1/2" x 1-1/4" bolts (11) and 1/2" locknuts (12).
7. Place motor mount (13) between the two mount plates (9,10), and insert hinge rod (**Figure 4.17**). Secure with a 1/8" x 1-1/2" cotter pin (19).
8. Adjust mount plates (9,10) if necessary for the mount (13) to fit properly and tighten the 1/2" locknuts (12,16).
9. Thread a 5/8" nut (18) on each adjust bolt (17) and place 5/8" adjust bolts through available hole in front mount plates (9,10). Secure in place using two 5/8" hex nuts (18). Leave adjust bolt loose to allow for later adjustment.

Note: The 5/8" nuts and adjust bolt are used to adjust belt tension as described later in this section.

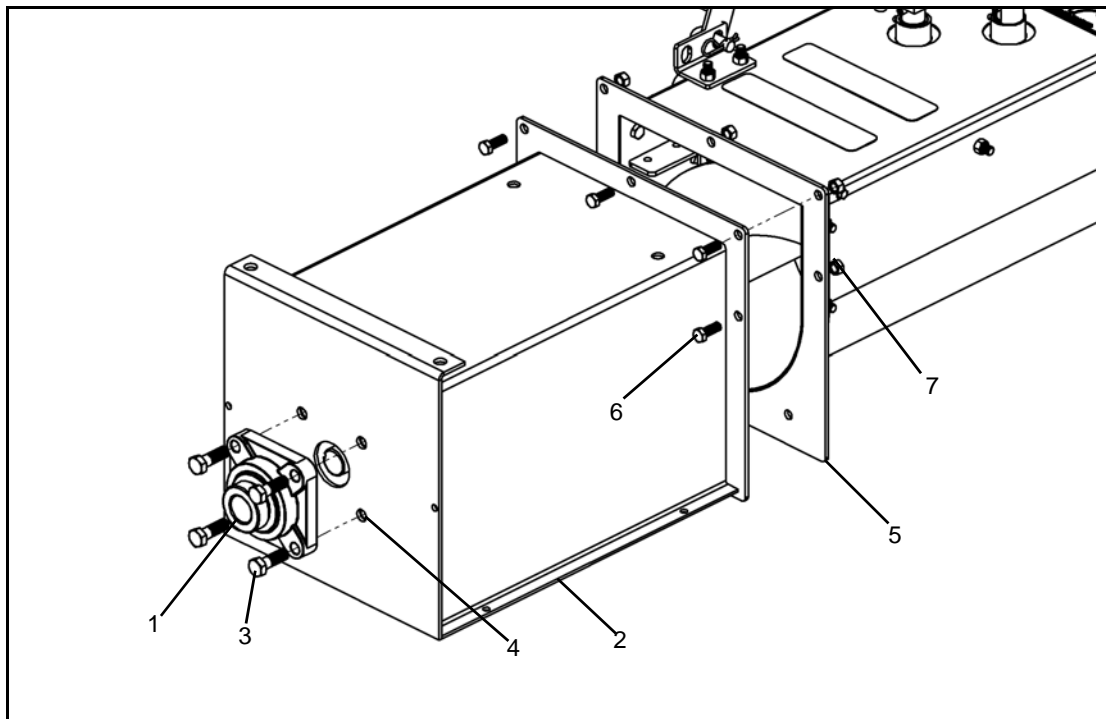


Figure 4.16

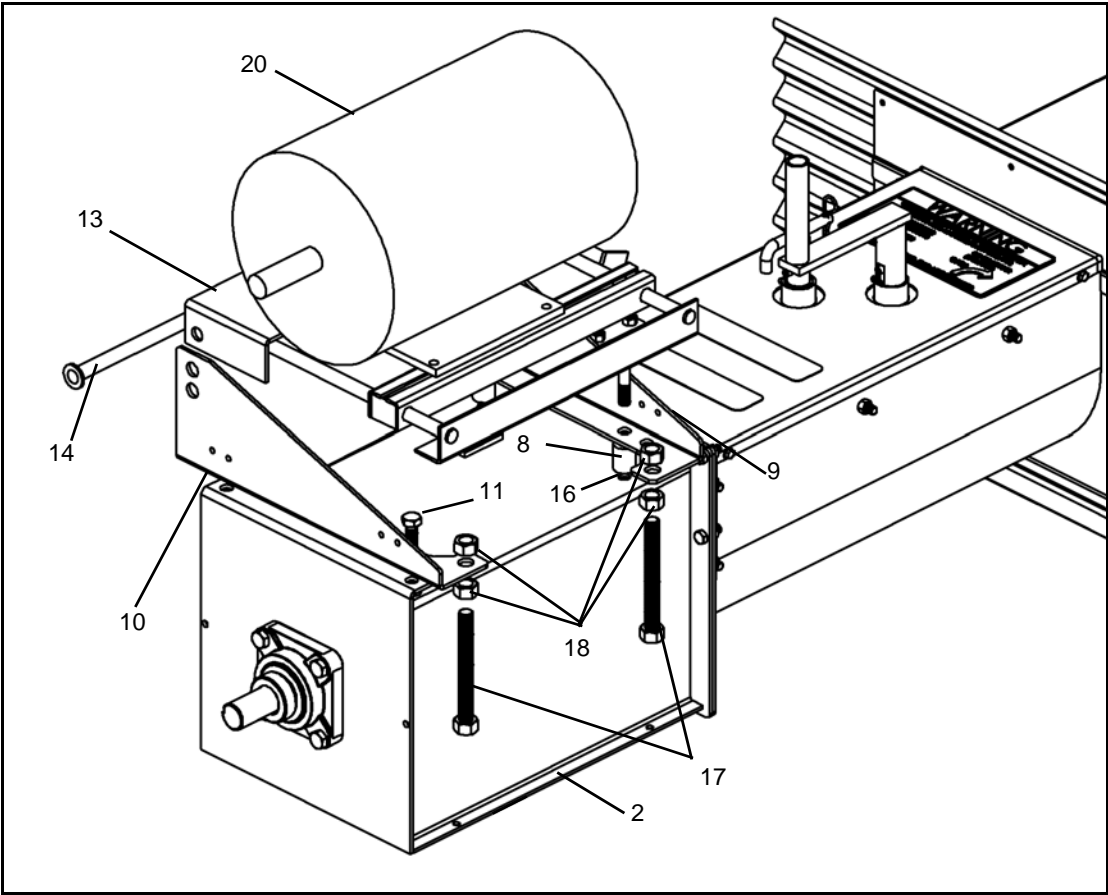


Figure 4.17

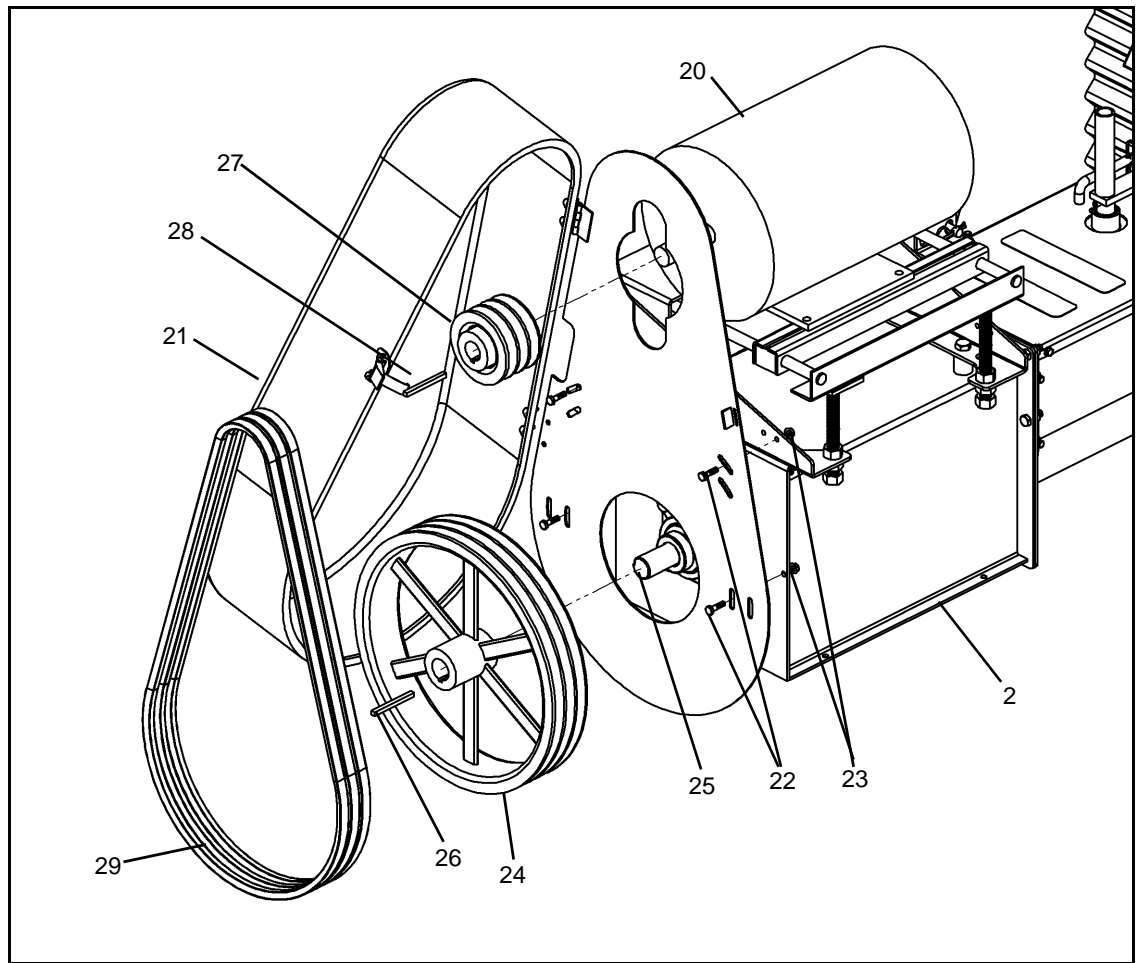


Figure 4.18

4.9.1. ELECTRIC MOTOR INSTALLATION / ALIGNMENT

Note: See **Table 4.1** for electrical motor requirements and **Figure 4.17** for the electric motor installation.

1. Place electric motor (20) (supplied by customer) onto motor mount (13) and secure. Ensure that motor shaft is parallel to and centered on discharge end. Do not tighten adjust bolts (17). Align end of motor shaft and flight shaft with a straight edge.

Table 4.1 Electric HP Requirements

Bin Diameter (FT)	Recommended Horsepower (HP)	
	w/ Sweep	w/o Sweep
24	10	7.5
25	10	7.5
27	10	7.5
30	10	10
32	10	10
33	10	10
36	15	10
38	15	10
42	15	10
44	15	10
48	20	15
54	20	15
60	20	20

When using an electric motor:

- The motor and controls should be installed by a qualified electrician in accordance with all local and national codes.
- Incorporate a magnetic starter to protect the motor.
- The motor must have a manual reset button.
- Locate reset and starter controls 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.
- A main power disconnect switch capable of being locked (in the off position only) must be provided.

2. Attach the pulley guard backplate (21) to the face of the powerhead (2) using four 1/4" x 1/2" bolts (22) and whiznuts (23). The backplate should sit flush with the head plate. Do not tighten bolts/nuts at this time; the pulley backplate will need to be aligned later on.

➔ 3. **Two piece drive pulleys:** Slide the hub with the bolt heads facing the motor and mount the pulley to it, see Figure 4.19. Insert the appropriate square key and align the drive pulley face flush with the motor shaft and tighten. (See **Table 4.2** for sizes.)

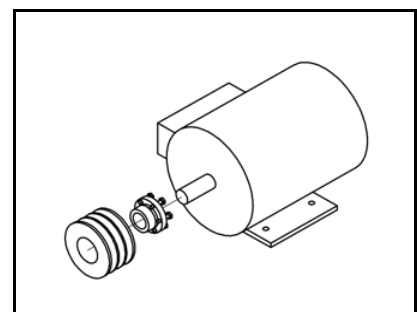


Figure 4.19

➔ 4. **Finished bore drive pulleys:** Slide drive pulley (27) onto motor shaft with face of pulley flush with the end of the motor shaft. (See **Table 4.2** for sizes.) Insert the appropriate square key (28). Do not tighten set screw until belts are aligned.

5. Install large belt pulley (24) onto flighting shaft (25) using a 1/4" x 3" square key (26). DO NOT tighten set screws. See **Table 4.2** for suggested size.

Note: We recommend using the 3 belt and triple groove pulley on all u-trough augers.

Table 4.2 Pulley Size / Combinations^a

Recommended Sizes		
Auger Pulley	Motor Pulley	Flight Speed (rpm) ^b
15	4.7	540
15	5.2	598

- a. If a slower flight speed is desired, install a smaller motor pulley.
- b. Speed is calculated using a 1725 rpm electric motor. To determine flight speed (rpm), divide the speed (rpm) of the motor by the outside diameter of the large auger pulley, then multiply by the outside diameter of the small motor pulley.
Example: $1725 \text{ (rpm)} / 15'' \times 4.7'' = 540 \text{ rpm}$.

6. Place belts (29) on pulleys (24,27). Adjust the 5/8" adjust bolts (17) on front mount plate until the belts have the proper tension, with about a 1/4"-1/2" deflection when a 5 lb-force is applied at the belt center.

Note: The correct operating tension is the lowest tension at which the belts will not slip under peak load conditions.

7. Align the two pulleys using a straight edge, ensuring that the large belt pulley is flush against the bearing collar. Once belts are aligned and under tension, lock the 5/8" hex nuts (18) and tighten pulley set screws.

Note: Once all bolts and set screws are tightened, re-check alignment. Proper alignment will prolong belt life.

8. Once belt alignment is complete, move the pulley backplate (21) to a desired position where the motor shaft will cause the least interference. Tighten the 1/4" mount bolts (22) and whiznuts (23) securely. Close and lock the plastic guard using the quickclip.

4.10. SWEEP ASSEMBLY

For the optimum performance of the sweep assembly, it is recommended to satisfy the bin dimension requirements summarized in Table 4.3.

Table 4.3 Recommended Maximum Bin Heights for Sweep Use:

Diameter	Max. Height
60'	67'
54'	77'
48'	88'
44'	88'
42' (and under)	no restriction

4.10.1. TOP GEARBOX

1. Remove the lower and upper panel sections (4 screws) from the center hopper assembly.
 2. Before installing the coupler, check that the snap ring is not blocking the coupler keyway (Figure 4.20). If necessary, rotate the snap ring to free the coupler from obstruction.
 3. Slip the coupler over the lower gearbox shaft and align the coupler keyway with the shaft keyway. Once aligned, insert a key to secure the attachment (see a, Figure 4.21).
 4. Insert two spring pins halfway into the holes of the lower panel and install the panel into the center hopper (see b, Figure 4.21).
 5. Slip the seal in between the upper part of the coupler and two spring pins. Using the square key as guide, slide top gearbox shaft into the driveshaft coupler (see c, Figure 4.21). Make sure to **fully** engage both gearboxes into the coupler.
 6. Secure the coupler by tightening the 2 inner and 2 outer bolts to 170 in-lb. Tighten the 2 keyway set screws on the coupler (Figure 4.20). Tighten the 2 extended point set screws into the cross-holes of the gearbox shafts. These bolts and screws can be accessed by forcing the rubber seal up and down.
- Important:** *As each bolt is tightened, the previous bolts will loosen. Recheck the torque on all four bolts several times to fully clamp.*
7. Insert the remaining two spring pins halfway into the upper panel and reinstall the panel to the center hopper.
 8. Adjust the rubber hose seal so that it fits snugly inside the spring pins and is firmly held down by the upper gearbox.

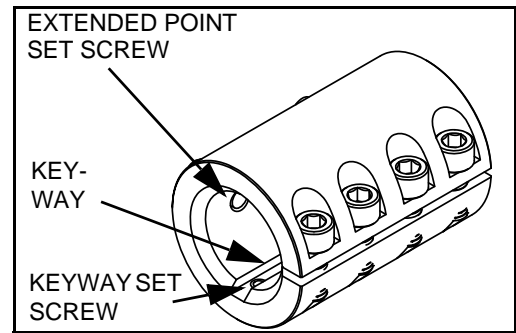


Figure 4.20

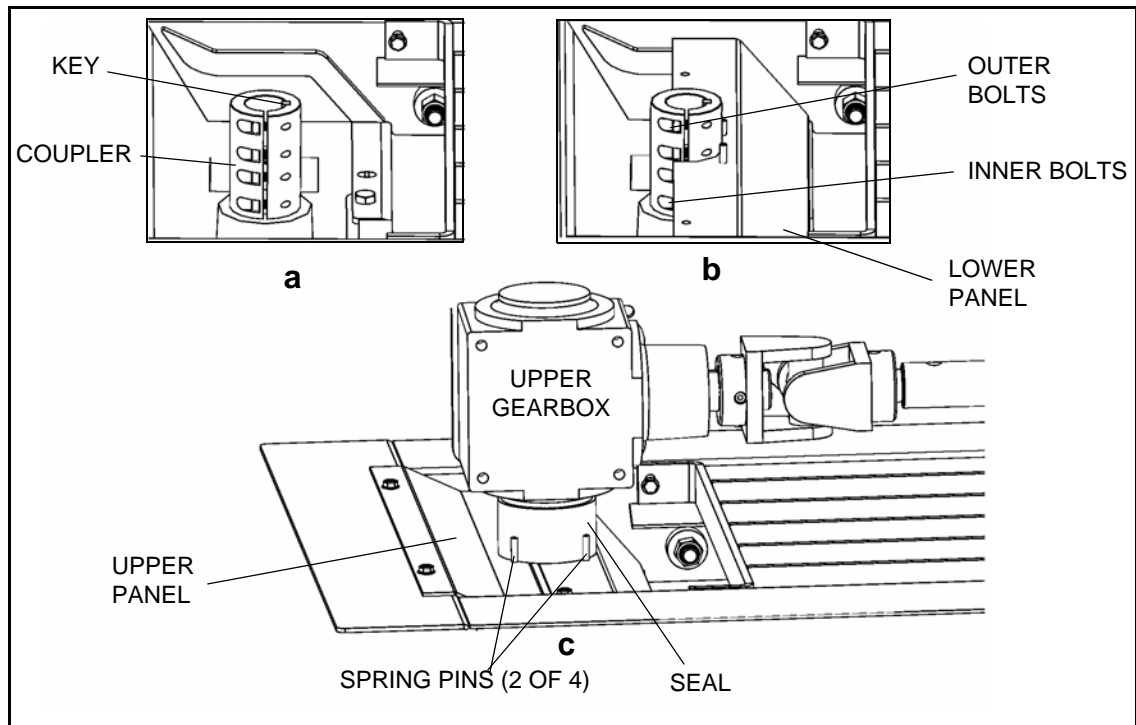


Figure 4.21

4.10.2. SWEEP FLIGHTING & BACKBOARD

1. Before beginning with sweep assembly, refer to Figure 4.27 . Always begin with longest sweep section at the center of the bin and work your way out.
2. Bolt the pivot arch to upper gearbox using four 3/8" x 1" bolts with lock washers. Hand tighten only at this time. The bracket holes are slotted for adjustment at the end of installation (Figure 4.22).
3. Connect sweep flighting to gearbox assembly by placing stub shaft inside flighting tube. Secure tube to shaft using two 7/16" x 2-1/4" bolts and locknuts. Tighten securely.



Only continue with the following steps if there are additional (more than one) sweep sections to assemble. If not, continue to next section.

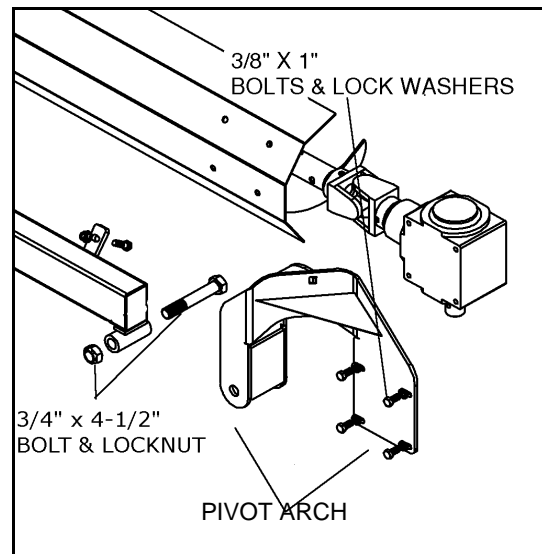


Figure 4.22

4. Install 1-1/2" plastic bushing loosely onto sweep bushing mount (**Figure 4.23**).
5. Place 2 sweep backboards together. Couple the sweep bushing mount and sweep backboards together using eight 3/8" x 1" bolts and whiznuts. Tighten securely.

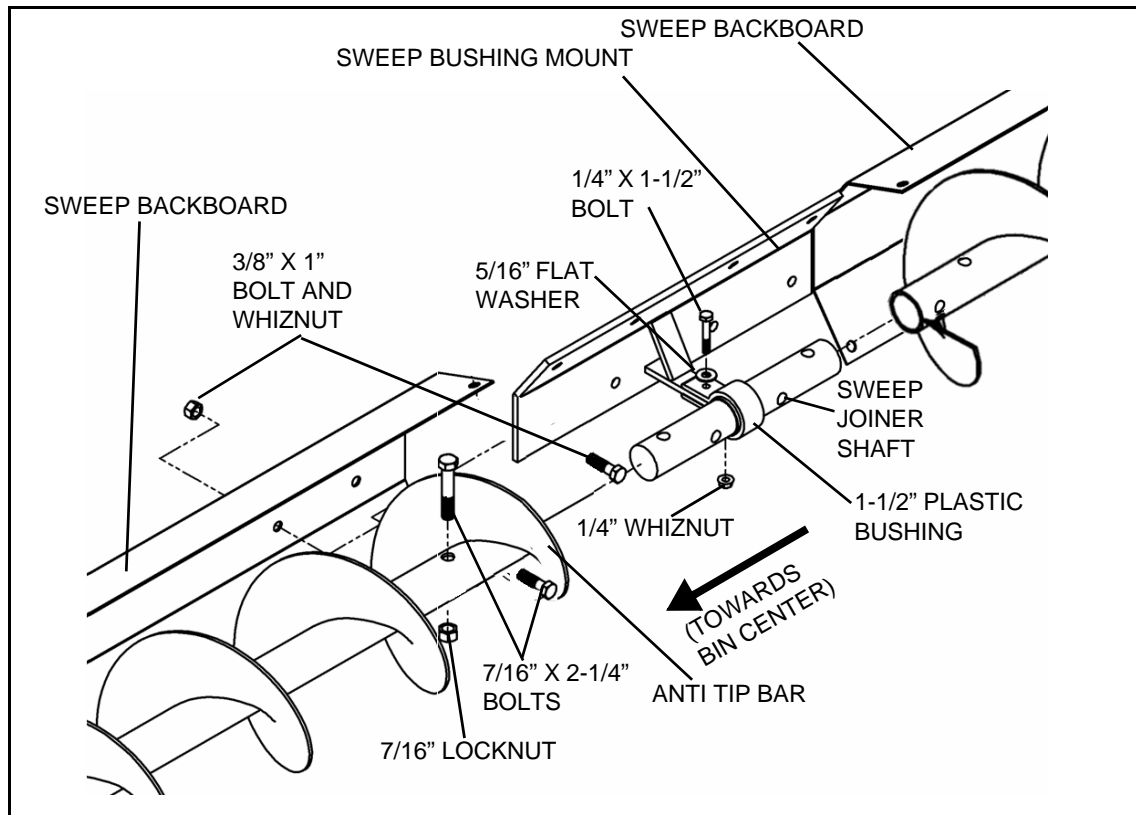


Figure 4.23

Important: *Check flighting and ensure that flight does not extend pass the core pipe. If it does it must be trimmed back so it doesn't catch on the hanger bushing.*

6. Insert sweep joiner shaft through plastic bushing and into sweep flighting section. Secure tightly using two 7/16" x 2-1/4" bolts and locknuts.
7. Insert other piece of sweep flighting into opposite end of sweep joiner shaft and secure tightly with two 7/16" x 2-1/4" bolts and locknuts.
8. Attach the sweep carrier bracket to backboard using 3/8" x 1" bolts as shown in Figure 4.24.
9. Support plastic bushing properly with sweep carrier bracket. Insert a 1/4" x 1-1/2" bolt complete with the 5/16" flat washer and 1/4" nylock nut. Tighten securely.

Note: *sweep carrier bracket is installed inside sweep backboard, directly in line with the plastic bushing.*

10. Repeat steps 4.-7. for any additional sweep sections.

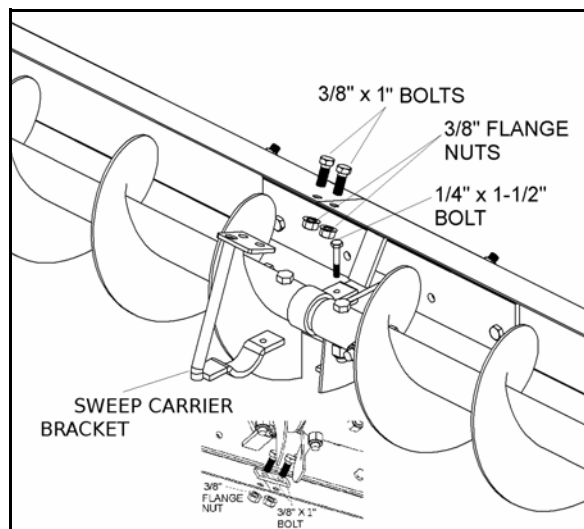


Figure 4.24

11. Hand turn the sweep to ensure the flight turns freely and does not hit the sweep roll bar or bracket.



➔ Refer to Figure 4.25 for complete assembly of backboard stiffener.

12. Place the first section of backboard stiffener behind backboard and secure to pivot arch with 3/4" x 4-1/2" bolt and locknut. Use 1-1/8" wrench or socket to tighten. **Do not overtighten** (see Figure 4.22) so that backboard stiffener can move up or down.
13. Insert two 3/8" x 1-1/4" bolts and flange nuts to join backboard to other end of backboard stiffener. Go back and tighten all bolts (Figure 4.26).
14. Attach the backboard stiffener extension to the end of the backboard stiffener base section using connector plate, four 3/8" x 1-1/4" bolts and nylock nuts. Adjust side-to-side alignment of pivot arch so that all plastic hanger bushing arms are centered on the jointer shafts. To facilitate the alignment:
 - remove the two bolts at the end of the sweep that hold the sweep flight to the sweep gearbox. This allows backboard and stiffener to move separately from the flight.
 - center the plastic carrier bushings and then, tighten all bolts on the pivot arch.

Note: *Drilling through the core tube of the flight maybe required to align the holes with the input shaft of the sweep drive gearbox.*

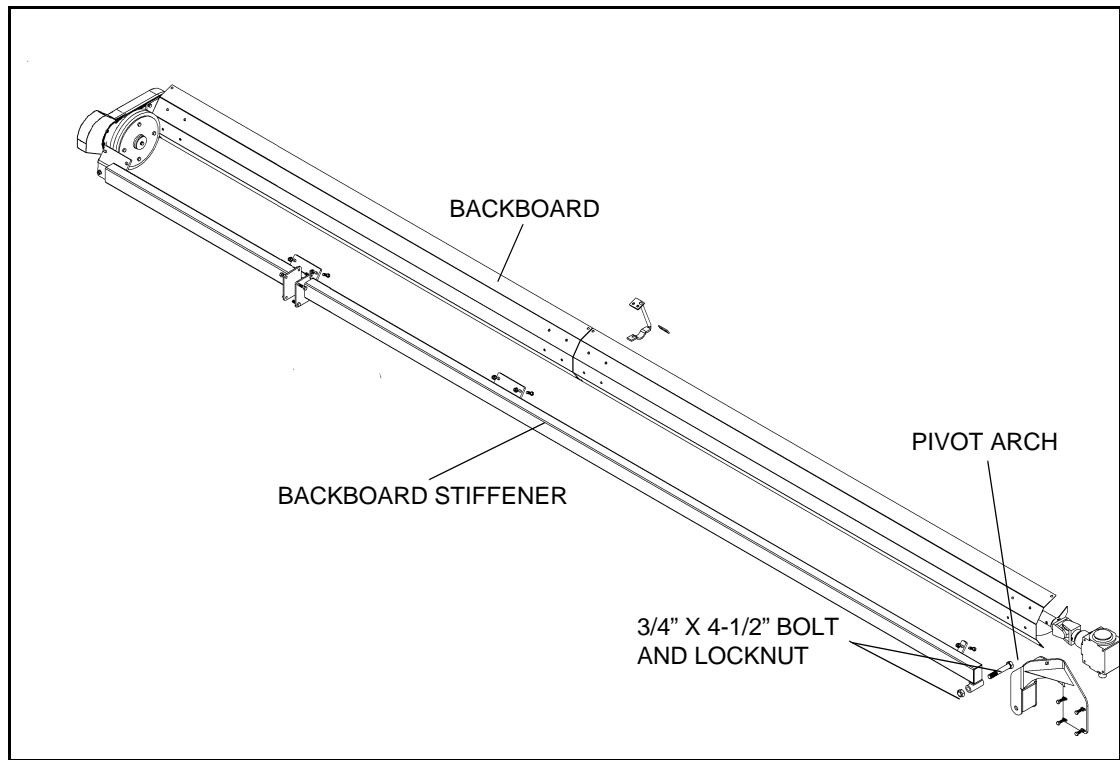


Figure 4.25

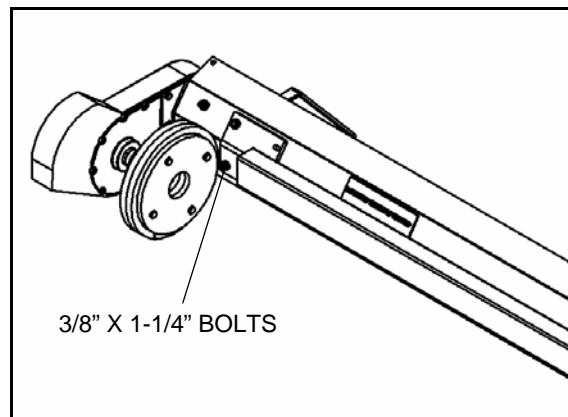


Figure 4.26

Important: *Manually turn the u-joint to ensure that the sweep auger flighting clears hanger brackets and obstructions.*

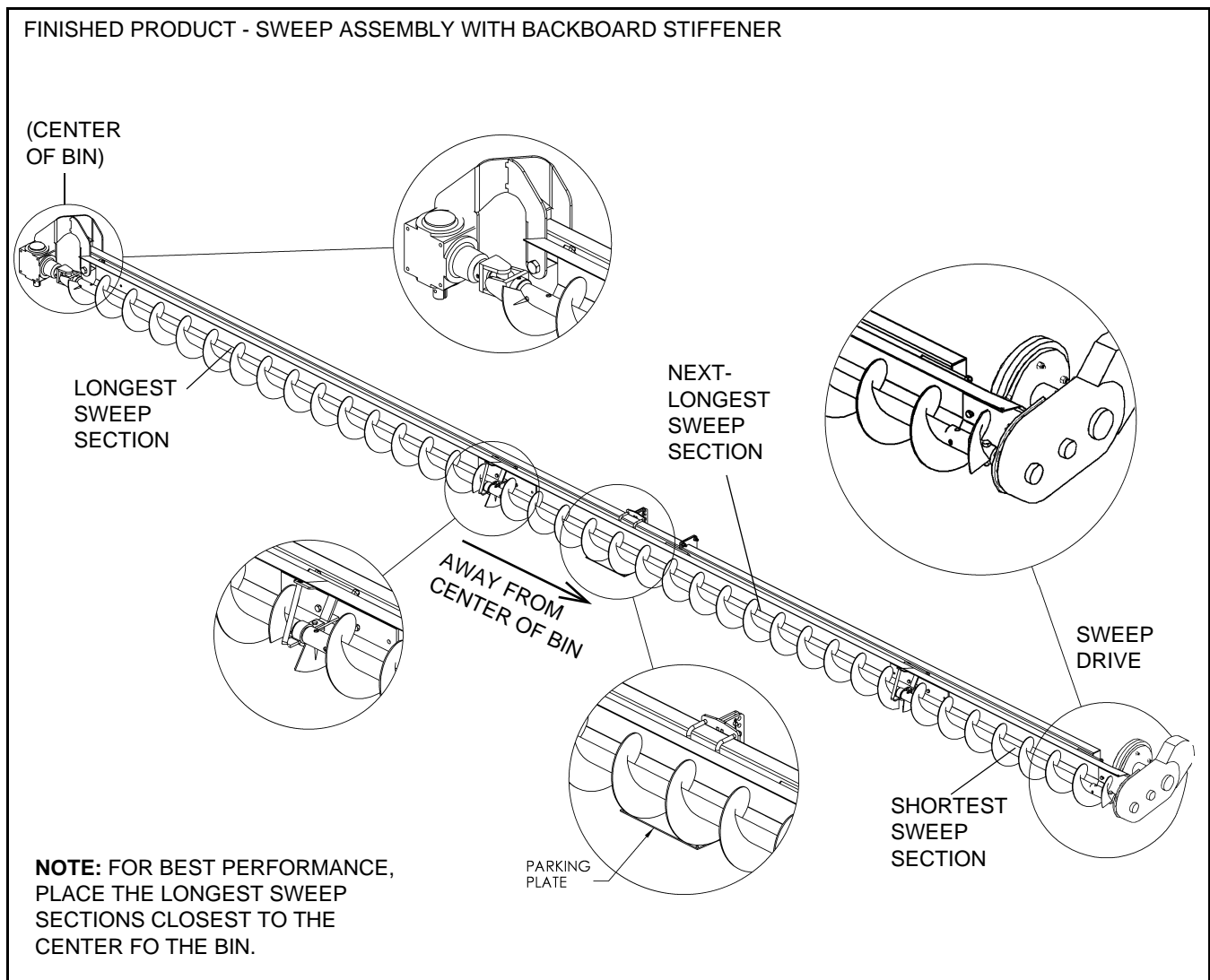


Figure 4.27

4.10.3. SWEEP DRIVE

Note: Ensure sweep backboard does not catch on high spots on the aeration floor. If needed, consult bin or aeration floor assembly manual to level.

1. See **Figure 4.28** to install sweep drive onto the end of sweep sections. The sweep backboard attaches onto the back of the sweep gearbox mount plate using four 3/8" x 1" bolts and whiznuts. Adjust for best fit and tighten securely.
2. At the same time, the shaft protruding from the sweep drive is inserted into the sweep flighting section. Secure this with two 7/16" x 2-1/4" bolts and locknuts. Tighten securely.

Note: Inspect the sweep section as a whole, and ensure that the plastic bushings (between sweep sections) are not interfering with the sweep flighting. Use the adjustable slots on the pivot arch and on the upper gearbox (Figure 4.27) to ideally position the backboard and plastic bushing mounts.

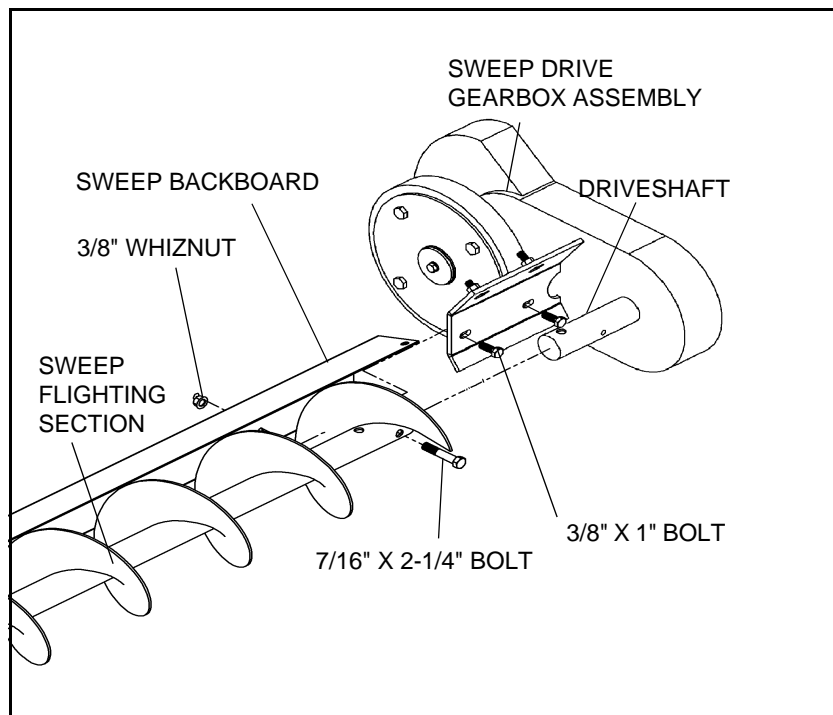


Figure 4.28

4.11. FUNCTIONAL TESTING OF LOWER GEARBOX DISENGAGEMENT

1. Ensure whole bin unload system is shut down and locked out.
2. Engage gearbox by pulling the gearbox shift lever away from the bin wall and locking in position.
3. Unlock whole bin unload system.
4. Turn on electric powerhead to bin unload system so that underfloor auger flighting is rotating and sweep flighting is rotating.
5. Disengage the gearbox shift lever (push handle to position closest to bin wall) and ensure the lower gearbox comes fully out of gear with no grinding.
6. If grinding occurs, then shut down and lock out whole bin unload system. Adjust gearbox shift adjust tube as noted in the "Control Rod" assembly section.

5. Operation

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

5.1. CHECKLIST FOR UNLOAD'S PROPER USE BEFORE FILLING BIN AND AFTER EMPTYING BIN

Prior to filling the bin each time, and after emptying the bin each time, the operator must confirm the following:

- All fasteners are secure as per assembly instructions.
- Drive belt(s) are not frayed or damaged.
- Drive belt(s) are properly adjusted and aligned.
- Intake area and discharge spout are free of obstructions.
- Inspect tube supports (where applicable) frequently.
- Proper maintenance has been performed.
- All safety guards are in place and secure.
- Make sure to clean up (remove) all settled dust deposits.

Important: Prior to filling the bin each time, run the sweep and underfloor auger to make sure these systems are functionally operating properly. Refer to the relevant aspects of Section 5.3. Break-In and Normal Unload Operating Procedure When Emptying Bin. Once proper functional operation of these systems has been verified, ensure the center hopper gate and intermediate hopper gates are closed, and shut down and lock out all power sources.

Important: Always park the sweep over the intermediate hoppers prior to filling the bin each time.

NOTICE

Failure to place the sweep over the intermediate hoppers and underfloor auger could result in damage to the unload system next time the sweep is operated.

5.2. BIN UNLOAD DRIVE & LOCKOUT PROCEDURE

Drive Type	Before Operation	Lockout
Electric Motor	Before starting motor, ensure <ul style="list-style-type: none">• motor is properly grounded• pulley guards are in place and secure	The electric motor should be equipped with a main power disconnect switch capable of being locked in the off-position only. The switch should be in the locked position during shutdown or whenever maintenance is performed on the auger. If reset is required, disconnect all power before resetting motor.

5.3. BREAK-IN AND NORMAL UNLOAD OPERATING PROCEDURE WHEN EMPTYING BIN

WARNING Refer to your bin operation manual for operating instructions and safety information related to that specific system.

1. Complete the checklist at the beginning of this chapter.
2. Disengage sweep gearbox (push gearbox shift handle towards bin wall to disengage sweep). Refer to Figure 5.1.

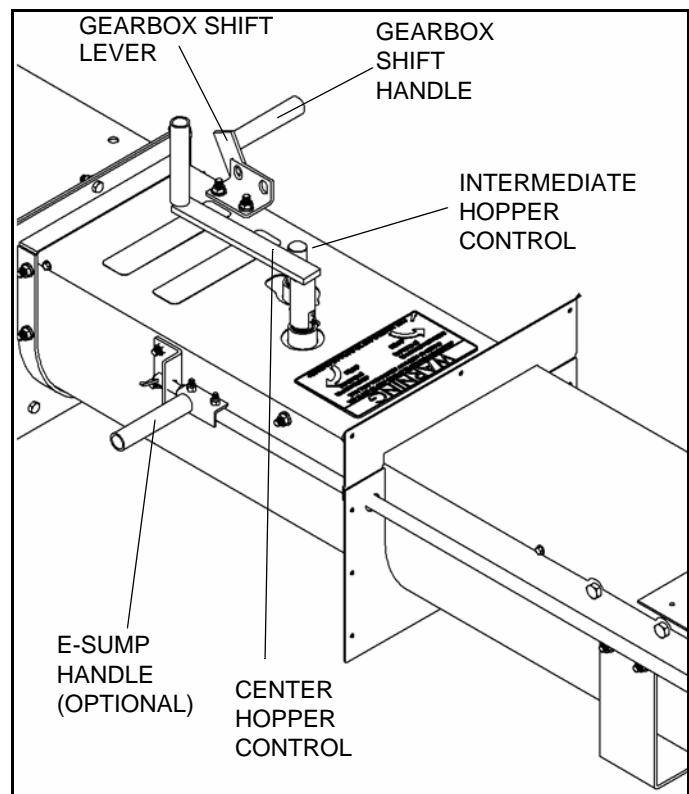



Figure 5.1

WARNING	
	<p>To avoid the risk of bin collapse and potential damage to the sweep, grain must first be emptied from the center hopper and intermediate hoppers before the bin sweep is operated (see Figure 5.2).</p>

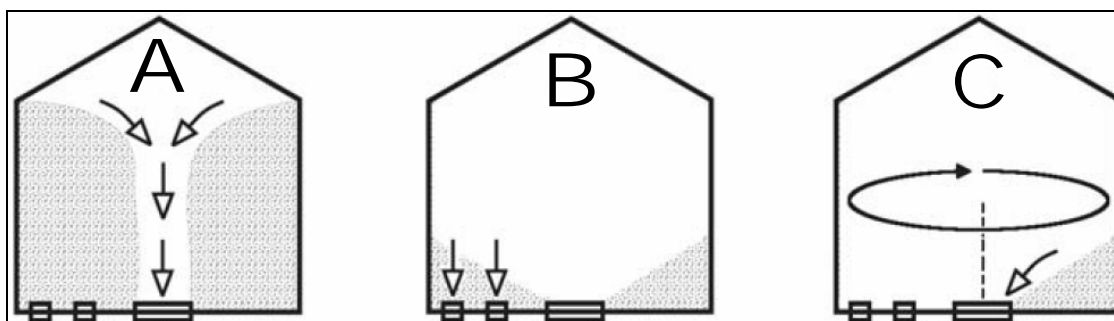



Figure 5.2 Grain Bin Overall Emptying Procedure

WARNING	
	<p>To avoid bin collapse, DO NOT open the intermediate hoppers to allow grain to flow if the center hoppers becomes blocked with clumped grain.</p>

Note: *Clumped grain is often caused by improper storage or wet grain. Consult your aeration fan manual on how to condition stored grain.*

3. Start system.

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

Important: *Keep operation of empty underfloor auger to a minimum, as this results in excessive wear.*

4. Open center hopper slightly. Ensure grain flows out of discharge end at a constant rate. **For the first 30 minutes**, check that underfloor auger functions without excessive vibration.
5. Continue to open center hopper; keep in mind to look for constant grain flow at discharge end. Do this until center hopper is fully open.
- ➔ 6. **Bin Unloads with E-Sumps:** If grain flow slows considerably or stops while unloading, the center hopper may be blocked with clumped grain. Open the E-Sump to allow grain to continue unloading.
7. When grain flow (from discharge end) stops, unlock the padlock to open the intermediate hopper lockout cover. Open intermediate hopper(s) halfway. Monitor grain flow for consistency before opening intermediate hopper(s) any further.

8. After grain has stopped flowing into intermediate hopper(s), shut down and lock out all power to the underfloor system. Close all intermediate hopper gates.
- ➔ 9. **Sweep:**
 - a. Perform a visual inspection of the sweep to ensure that operation will not cause any damage. Check that no foreign objects are in the flighting.
 - b. Release locking pin and engage sweep (by shifting the lever handle away from bin wall). Lock shift lever into place.

NOTICE

Lock gearbox shift lever into engaged or disengaged position at all times during operation. Failure to do so will result in damage to gearbox.

Note: *If the gearbox does not easily engage when shifting the handle away from the bin wall, it may be necessary to “bump” the electric motor (press start button intermittently and then turn off immediately to slightly rotate the underfloor flighting), and then retry engaging the gearbox with the handle.*

- c. Start unload system.

WARNING



To avoid serious injury or death, do not enter bin while equipment is running.

- d. **Make sure center hopper is fully open**, and maintain a constant grain flow.

Note: *While ensuring the center hopper is fully open, if the sweep is still overloading the underfloor auger (grain pile increasing at center hopper), contact your AGI dealer for gearbox options to slow down the sweep to match the underfloor auger capacity.*

- e. When grain flow stops and bin is clean: allow sweep to travel around bin so that it lines up over top of the intermediate hoppers and underfloor auger.

NOTICE

Failure to place the sweep over the intermediate hoppers and underfloor auger could result in damage to the unload system next time the sweep is operated.


10. Upon completion of initial run, shut down bin unload system. Refer to “Shutdown” on page 44 for more information.
11. Lock out motor and conduct a complete inspection of bin unload system following the checklist at the beginning of this chapter.

After the initial start up and inspection, the bin unload system should be shut down and inspected at least three times during the first 10 hours of operation.

Once bin unload system is broken in, the checklist should be a part of the daily routine before operating the system.

5.3.1. OPERATING WITH A FULL LOAD

1. When operating the bin unload, always work with a second person in a position to monitor the operation and initiate a shutdown in case of emergency.
2. Monitor the bin unload during operation for abnormal noises or vibrations.
3. Shut off all power before making adjustments, servicing, or clearing the machine.

DANGER	
	<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.

5.4. SHUTDOWN

NORMAL SHUTDOWN:

1. Once auger is clear, stop motor and lock out power.
2. Clean entire work area.
3. Manually clean out grain from bin unload with a piece of wood, vacuum cleaner, or other tool. Do not use hands.

EMERGENCY SHUTDOWN / FULL-TUBE RESTART:

1. If the bin unload is shut down for an emergency or during the unloading procedure, lock out motor before correcting the problem.
 - If the problem is plugging, clear as much of the grain as possible using a piece of wood, vacuum, or other tool before restarting auger. **Do not reach in and use your hands.** (See “Bin Unload Drive & Lockout Procedure” on page 40.)

NOTICE

Starting the auger under load may result in damage to unit.
Be sure there is no blockage.

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 hopper gates, center and E-Sump (if applicable) hopper gate.
4. Restart bin unload system and follow steps to feed grain to finish unloading your bin.

6. Maintenance

Proper maintenance habits on the bin unload mean a longer life, better efficiency, and safer operation. Please follow the guidelines below.

6.1. GENERAL MAINTENANCE PROCEDURES

Area		Maintenance	Frequency
General		While auger is in use, observe the checklist in Section	Daily
General		Check all operating, lifting, and transport components. Replace damaged or worn parts before using auger. For replacement instructions, see Assembly Section.	Regularly
Rack and Pinion System		Ensure opening and closing of gate system.	Regularly
		Inspect bushing, chain, and sprocket. Lubricate.	Every 8 hours of operation
E-Sump, Center and Intermediate Hoppers		Ensure safety mesh is installed.	Regularly
		Ensure slide gates open and close properly without interference (replace gate rollers if necessary).	Regularly
Binsweep Option	Gear-boxes	Check lower gearbox shift handle for proper engagement / disengagement.	Regularly
		Maintain oil level at half full (center of cross shaft). Gearbox should be level when checking or refilling. Use EP90 Lube Oil when filling gearboxes.	Regularly
	Universal Joint	Lubricate grease fitting in the u-joint. Check set screws and retighten if necessary.	Every 8 hours of operation
Drive Belt	Belt Tension	Push on center of belt span with a force of approximately 5 lb. The belts will deflect 1/4"–1/2" when properly tensioned. Move the motor base to set drive belt tension.	Regularly
	Belt Alignment	Lay a straight edge across the pulley faces to check alignment. Use pulley hub to move pulley to required position for alignment. Tighten the hub set screws to secure pulley to shaft. Check belt tension.	Regularly
	Belt Replacement	Move motor base to its loosest position. Remove old belt and replace with new one. Check pulley alignment and adjust if required.	Regularly

Note: Use only genuine AGI replacement parts or equivalent. Replacement parts such as intake guards and pulley guards must meet ASAE standards or serious injury may result. Use of unauthorized parts will void warranty. If in doubt, contact AGI or your AGI dealer. Do not modify any bin unload system components.

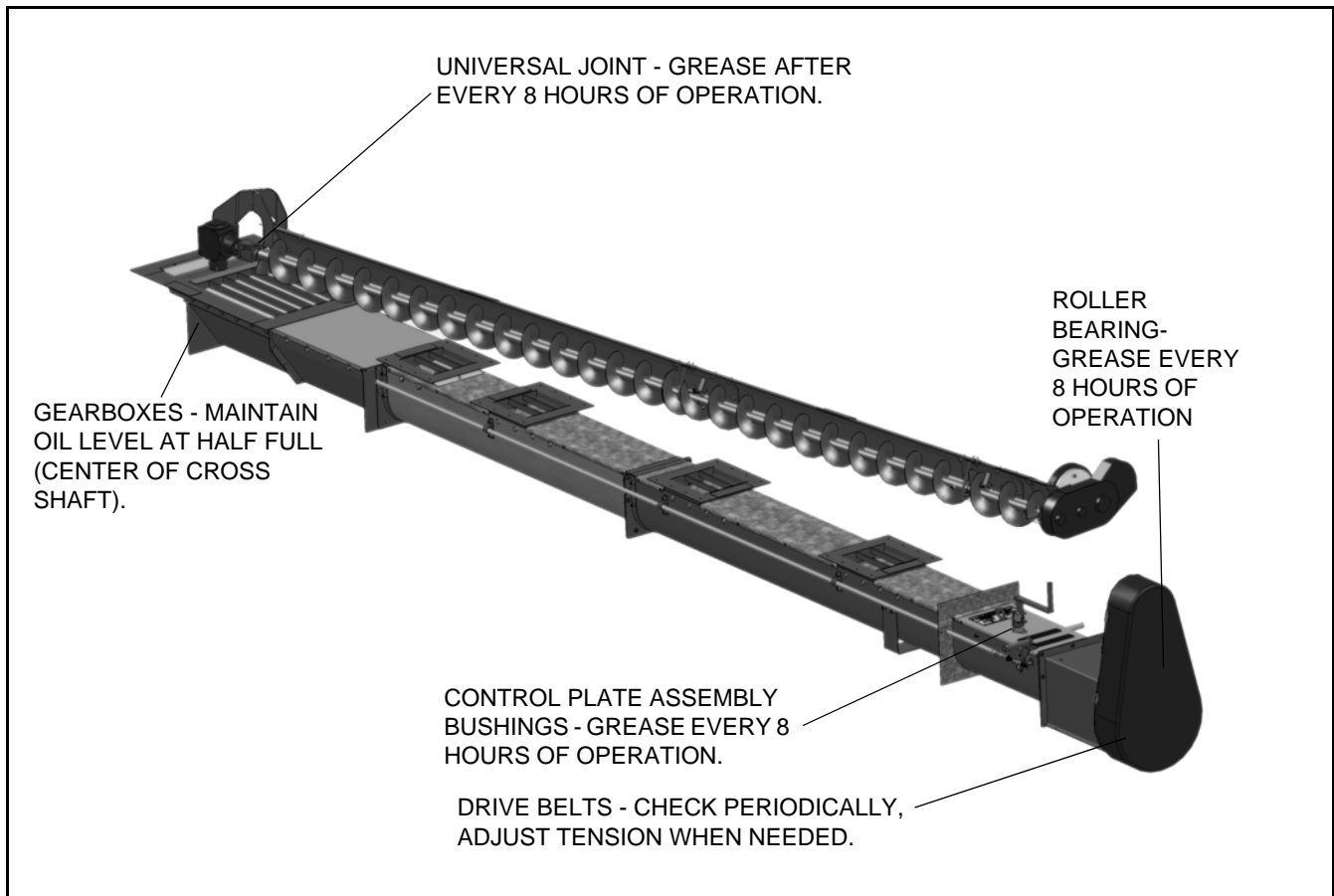



Figure 6.1 Maintenance of Bin Unload System

7. Troubleshooting

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

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

If you encounter a problem that is difficult to solve, even after having read through this troubleshooting 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.

WARNING	
	<p>Fully disengage and lock out sweep before attempting any modifications or repairs.</p>

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. Gearbox shift adjust bolt is not adjusted correctly. Obstruction in sweep.	Secure lock pin into place. Adjust bolt. Remove obstruction.
Hopper slide gates are difficult to open	Hopper rollers are damaged. Obstruction in hopper. Slide gate interference with aeration floor planking. Control rods are binding (hoppers not level to each other).	Repair rollers. Remove obstruction. Level intermediate hoppers to each other. Level intermediate hoppers to each other.
Sweep will not function	Underfloor auger not engaging lower gearbox stub. Shift gearbox is not engaged. Obstruction in sweep.	Ensure underfloor auger flighting is fully meshing with quick attach couple on lower gearbox. Engage it. Remove obstruction.

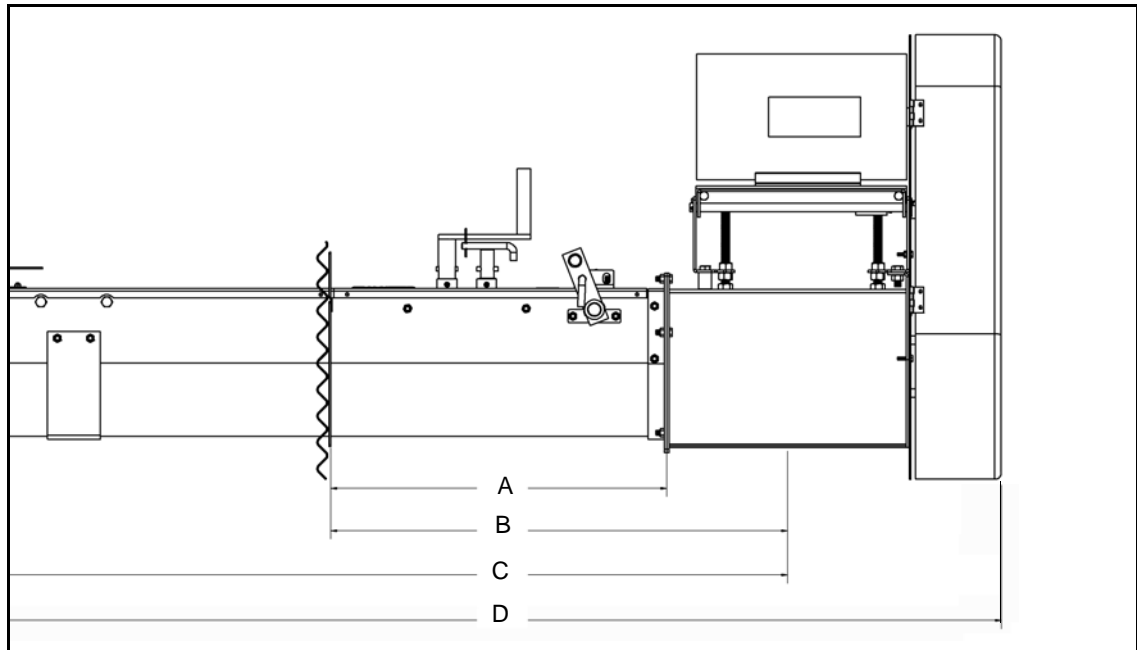
Problem	Cause	Solution
Underfloor auger plugs when initially starting the sweep	Intermediate hoppers aren't closed. Obstruction in underfloor auger.	Close intermediate hoppers. Remove obstruction.
Sweep drive wheel doesn't function when sweep is activated	Key or pin sheared or missing in drive wheel housing. Chain isn't adjusted correctly inside drive wheel housing.	Replace damaged part. Adjust chain correctly.
Sweep stops travelling around the bin	Sweep isn't adjusted correctly and is hitting a high spot in the aeration floor. Sweep drive wheel isn't fully functioning correctly (chain slipping, key missing etc...) Obstruction in sweep.	Adjust sweep in 2 places: Drive wheel and upper gearbox plate. Check to ensure chain is functional and that all keys / roll pins are in place 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. Obstruction in sweep. Damaged or bent flighting.	Remove bolts, rotate flighting to next set of holes and replace bolts. Remove obstruction. 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. Intermediate hoppers are open, flooding the underfloor auger. Flighting not timed correctly on the underfloor auger.	Remove obstruction. Close intermediate hoppers. 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. Electric motor is not large enough to power entire system. Obstruction in underfloor auger.	Tighten belts. Replace electric motor with a larger model. Remove obstruction.
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.

Problem	Cause	Solution
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, under-floor auger and motor running, but sweep flight and/or upper gearbox not turning	Under floor gearbox shift linkage is out of adjustment. Sheared bolt and key way in gearbox coupler. Roll pin and key way in center well sheared on the lower gearbox drive stub shaft. Sheared roll pin in gearbox shaft where it is attached to u-joint at the beginning of the sweep flight (key way may be missing).	Adjust shift linkages to fully engage sweep (see Sweep Owner's Manual). Replace key way and bolts and check coupler for cracks. Replace key way and roll pin. Replace key way and roll pin and install set screw tighten.
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.
Sweep engaged and running, but not advancing	Sweep catching on Tek screws (backboard or gearbox). Backboard catching on the floor. Rubber on wheel worn down. Grain condition wet, hard-packed, moldy. End wheel gearbox contacting bin wall and/or bolts in bin wall.	Ensure Tek screws are fully screwed down. Ensure backboard clearance is 1/4" -1/2" (6 mm - 12 mm). Tighten set screws. Replace with new rubber drive wheels. Sweep will perform poorly if grain is out of condition. Cut obstructive bolt ends off. Use sweep adjustments.

8. Appendix

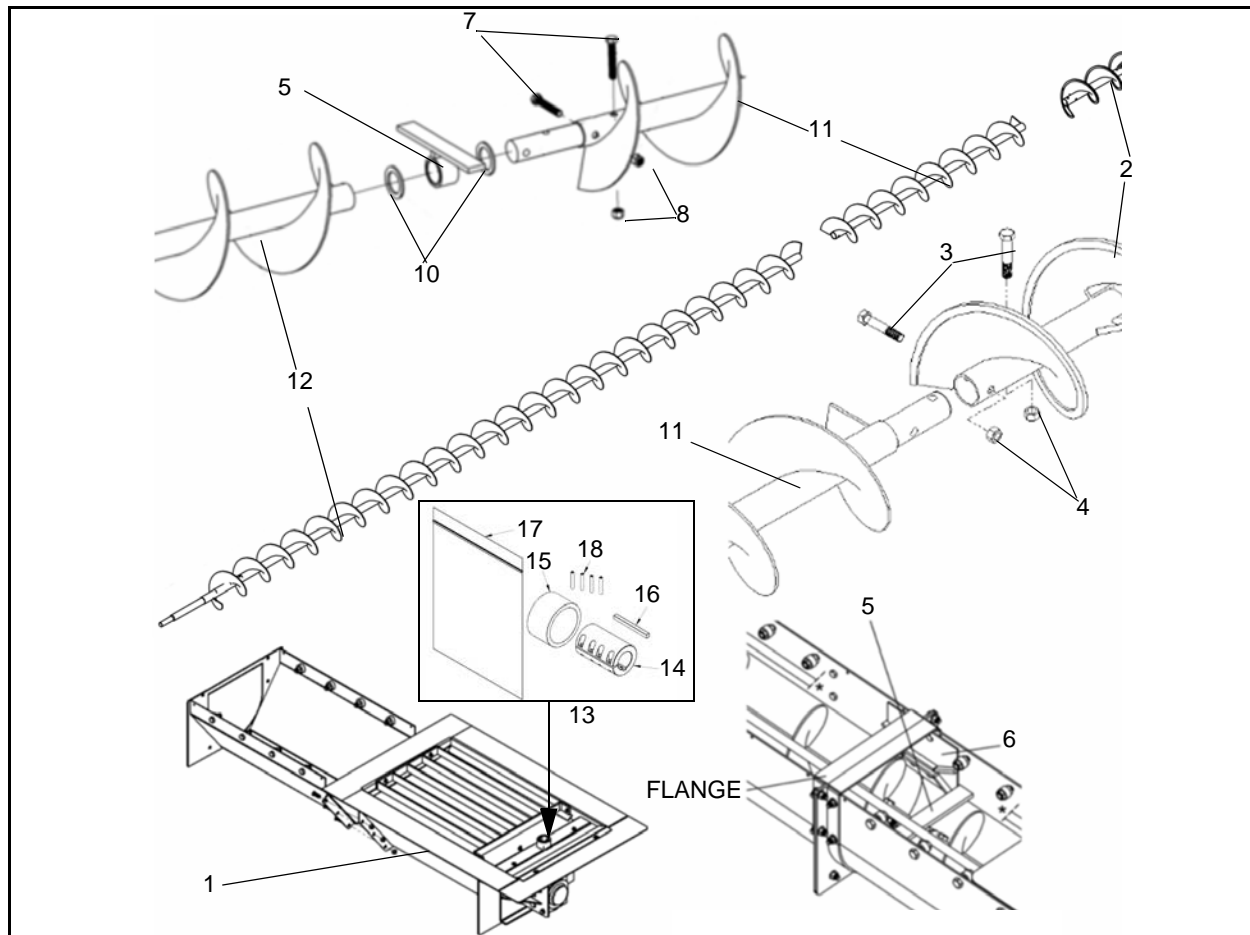
8.1. DISCHARGE DISTANCES

For all Bin Unload Configurations:



BIN DIAMETER (FT)	TROUGH DISTANCE (IN) "A"	HORIZONTAL DISTANCE (IN) "B"	HORIZONTAL DISTANCE TO CENTER OF BIN (IN) "C"	OVERALL LENGTH TO BIN CENTER (IN) "D"	OVERALL UNLOAD LENGTH
24	25.5	34.5	184	200	208
24-EXTENDED	25.5	46.5	196	212	220
25	42.8	51.8	202	218	226
27	25.5	34.5	202	218	226
27-EXTENDED	25.5	46.5	214	230	238
30	25.5	34.5	220	236	244
30-EXTENDED	25.5	46.5	232	248	256
32	36.8	45.8	238	254	262
33	25.5	34.5	238	254	262
33-EXTENDED	25.5	46.5	250	266	274
36	25.5	34.5	256	272	280
36-EXTENDED	25.5	46.5	268	284	292
38	36.8	45.8	274	290	298
42	25.5	34.5	292	308	316
42-EXTENDED	25.5	46.5	304	320	328
44	36.8	45.8	309	325	333
48	25.5	34.5	328	344	352
48-EXTENDED	25.5	46.5	340	356	364
54	25.5	34.5	364	380	388
60	25.5	34.5	400	416	424

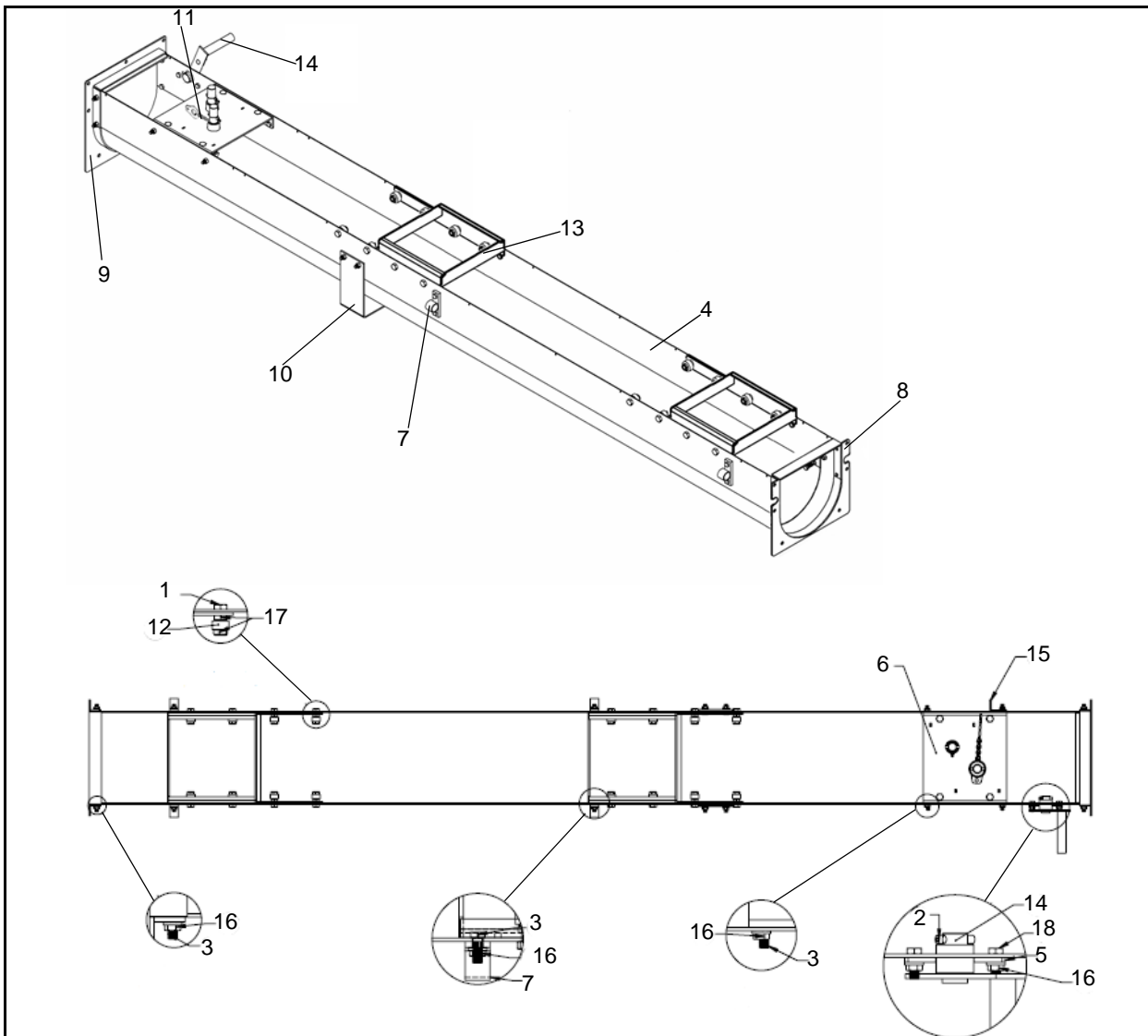
8.2. CENTER HOPPER AND UF FLIGHT ASSEMBLY



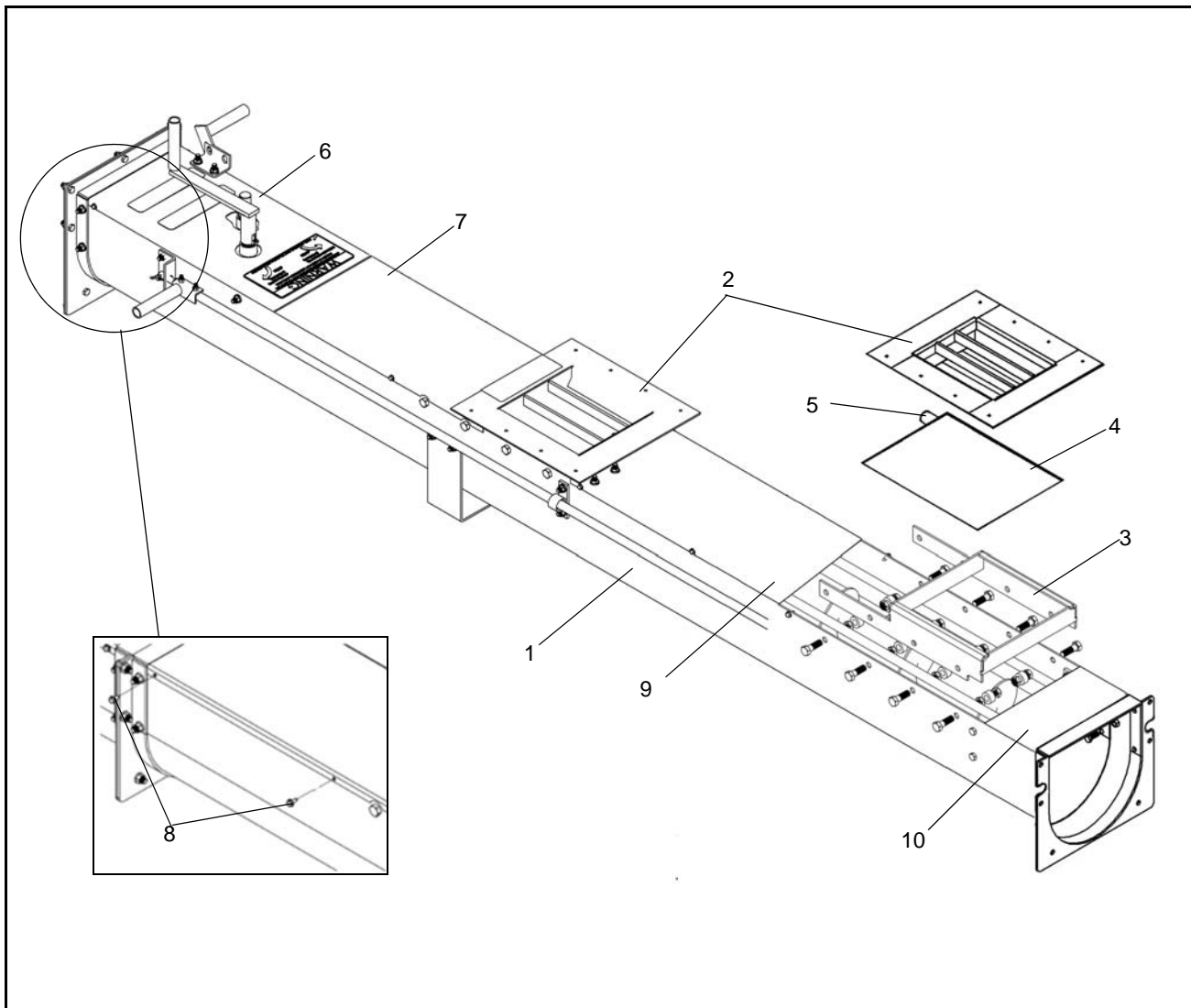
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	28610	CENTER HOPPER ASSEMBLY WITH GEARBOX	1
2	28359	CENTER HOPPER FLIGHT WELDMENT	1
3	HWP0202	BOLT 1/2" X 2-3/4" GR8 PLATED	2
4	HWP0223	NUT NYLOCK 1/2"	2
5	100195	HANGER BEARING BUSHING ASSEMBLY	1
6	100190	HANGER BEARING TRACK WELDMENT	2
7	HWP0202	HEX BOLT, 1/2"-13 x 2-3/4" ZP	4
8	HWP0223	LOCKNUT, NYLON	4
9	100199	HANGER BEARING SHAFT	1
10	100218	HANGER BEARING WASHER	2

ITEM NO.	PART NO.	PARTS DESCRIPTION	WEIGHT (LB)	QTY										
				24'	25' / 27'	30'	32' / 33'	36'	38'	42'	44'	48'	54'	60'
11	BU-0100455	UF FLIGHT, UT10" X 162"	94	1	-	-	-	-	-	-	-	-	-	-
11	BU-0100319	UF FLIGHT, UT10" X 48-1/4" INNER	30	-	1	-	-	-	-	-	-	-	-	-
11	BU-0100318	UF FLIGHT, UT10" X 66-1/4" INNER	40	-	-	1	-	-	-	-	-	-	-	-
11	BU-0100317	UF FLIGHT, UT10" X 84-1/4" INNER	50	-	-	-	1	-	-	-	-	-	-	-
11	BU-0100315	UF FLIGHT, UT10" X 102-1/4" INNER	60	-	-	-	-	1	-	-	-	-	-	-
11	BU-0100329	UF FLIGHT, UT10" X 120-1/4" INNER	69	-	-	-	-	-	1	-	-	-	-	-
11	BU-0100328	UF FLIGHT, UT10" X 156-1/4" INNER	89	-	-	-	-	-	-	-	1	-	-	-
11	BU-0100311	UF FLIGHT, UT10" X 138-1/4" INNER	79	-	-	-	-	-	-	1	-	-	1	-
11	BU-0100313	UF FLIGHT, UT10" X 174-1/4" INNER	99	-	-	-	-	-	-	-	-	1	-	1
12	BU-0100454	UF FLIGHT, UT10" X 154-1/2" OUTER	86	-	1	1	1	1	1	1	1	1	-	-
12	BU-0100456	UF FLIGHT, UT10" X 226-1/2" OUTER	125	-	-	-	-	-	-	-	-	-	-	1
13	BU-GCK	GEARBOX COUPLER KIT								1				
14	100316	GB CLAMP COUPLER WITH SNAP RING								1				
15	100334	COUPLER RUBBER SEAL								1				
16	HWP0240	KEY 1/4" X3"								1				
17	HWP0283	BAG, 8" X10" X6 MIL POLY								1				
18	100335	SPRING PIN, 3/16" X 1-1/4" ZP								4				

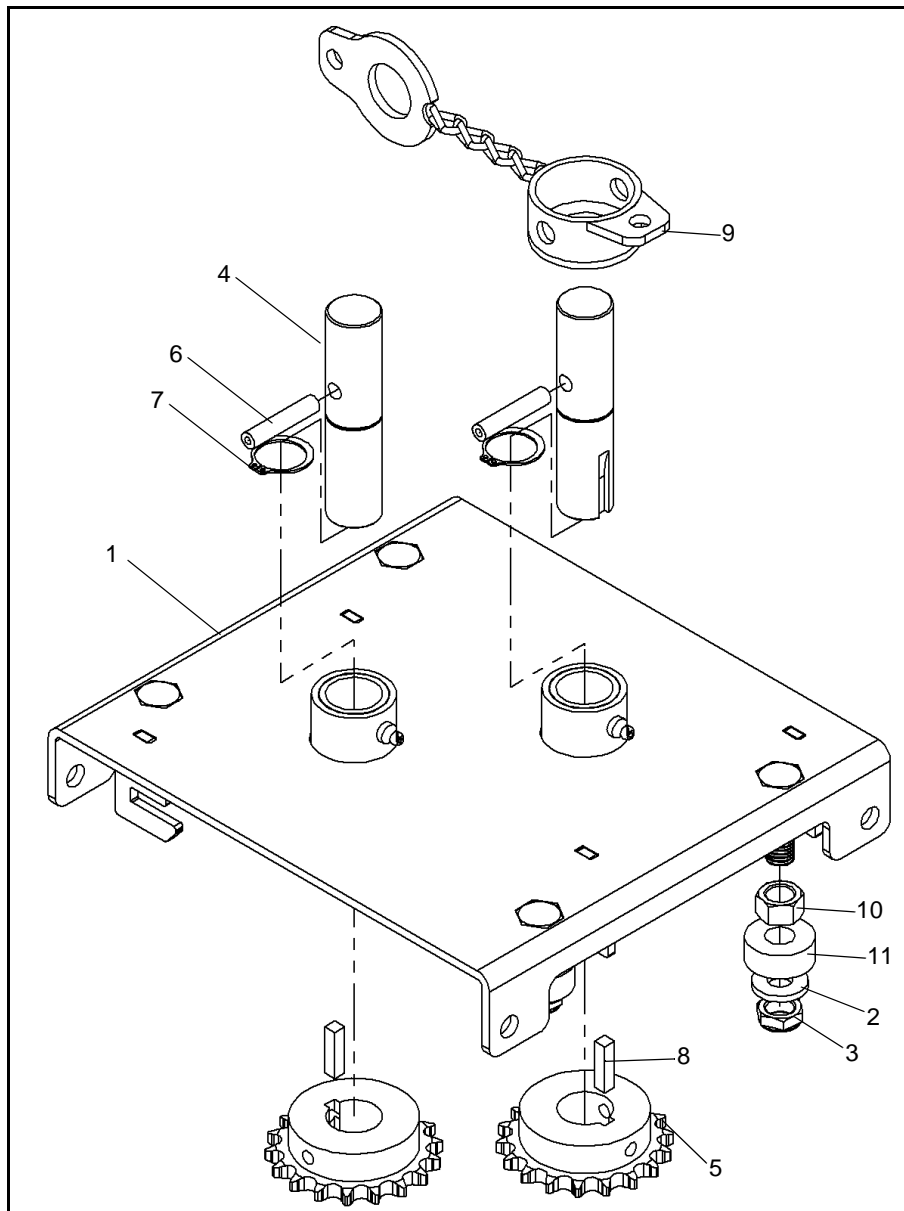
8.3. U-TROUGH DISCHARGE SECTION



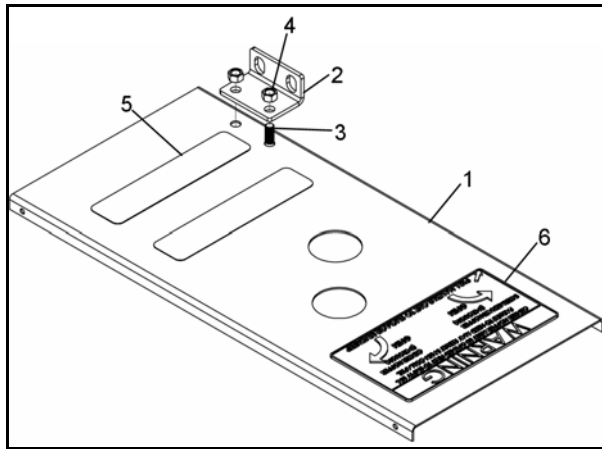
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	HWP0352	BOLT HEX, 1/2"-13 x 1-1/2" ZP	16
2	HWP0218	SPRING PIN, 5/16" x 1-1/2" ZP	2
3	HWP0204	BOLT HEX, 3/8"-16 x 1" GR5 ZP	22
4	28534	10' TROUGH SECTION	1
5	28441	GB LEVER SUPPORT WELDMENT	1
6	28367	UT CONTROL PLATE ASSEMBLY	1
7	28364	CONTROL ROD SUPPORT WELDMENT	4
8	28363	U-TROUGH FLANGE WELDMENT	1
9	28362	POWERHEAD FLANGE WELDMENT	1
10	28361	TROUGH SUPPORT	1
11	16277	UT LOCKOUT WELDMENT	1
12	100282	GUIDE ROLLER UT 1" OD	16
13	100269	UT IH BOTTOM WELDMENT	2
14	100253	GEARBOX SHIFT LEVER WELDMENT	1
15	100290	E-SUMP LOCKOUT BRACKET	1
16	HWP0232	NUT, SERR FLANGE 3/8"-16 ZP	27
17	HWP0234	NUT, JAM NYLON 1/2"-13 ZP	32
18	HWP0205	HEX BOLT, 3/8"-16 x 3/4" GR5 ZP	2



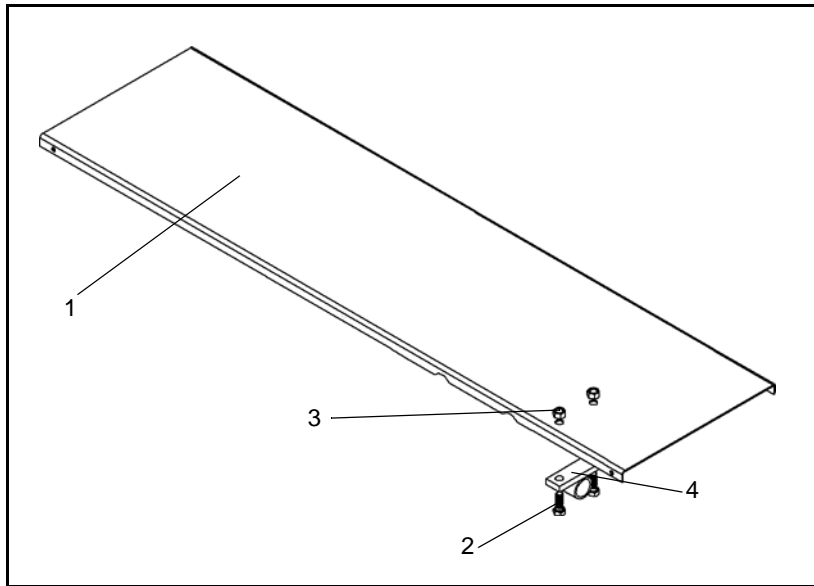
ITEM NO.	PART NO.	DESCRIPTION	QTY
1	28555	10' TROUGH ASSEMBLY	1
2	100261	INTERMEDIATE HOPPER TOP	2
3	100269	INTERMEDIATE HOPPER BOTOM	2
4	100277	INTERMEDIATE HOPPER GATE	2
5	27111	GATE COUPLER WELDMENT	2
6	28371	2' LID ASSEMBLY	1
7	100295	10' LID OUTER SECTION	1
8	HWP0279	SCREW TAP #14 x 1/2"-13 ZP	18
9	100294	10' LID MID SECTION	1
10	100293	10' LID INNER SECTION	1



ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	16241	CONTROL PLATE WELDMENT	1
2	12770	GATE GUIDE ROLLER	4
3	HWP0234	NYLOCK JAM, 1/2-UNC PLATED	8
4	50697	DRIVESHAFT, CONTROL PLATE	2
5	HWP27121	SPROCKET, 40B18 w/ 1" I.D.	2
6	HWP0218	5/16" x 1-1/2" ROLL PIN	2
7	HWP0254	1" EXTERNAL SNAP RING	2
8	HWP0222	1/4" x 1" SQUARE KEY (# 27287)	2
9	16277	U-TROUGH LOCKOUT	1
10	HWP0223	NYLON LOCKNUT 1/2" PLATED	4
11	HWP0219	WASHER, 1/2" PLATED	8

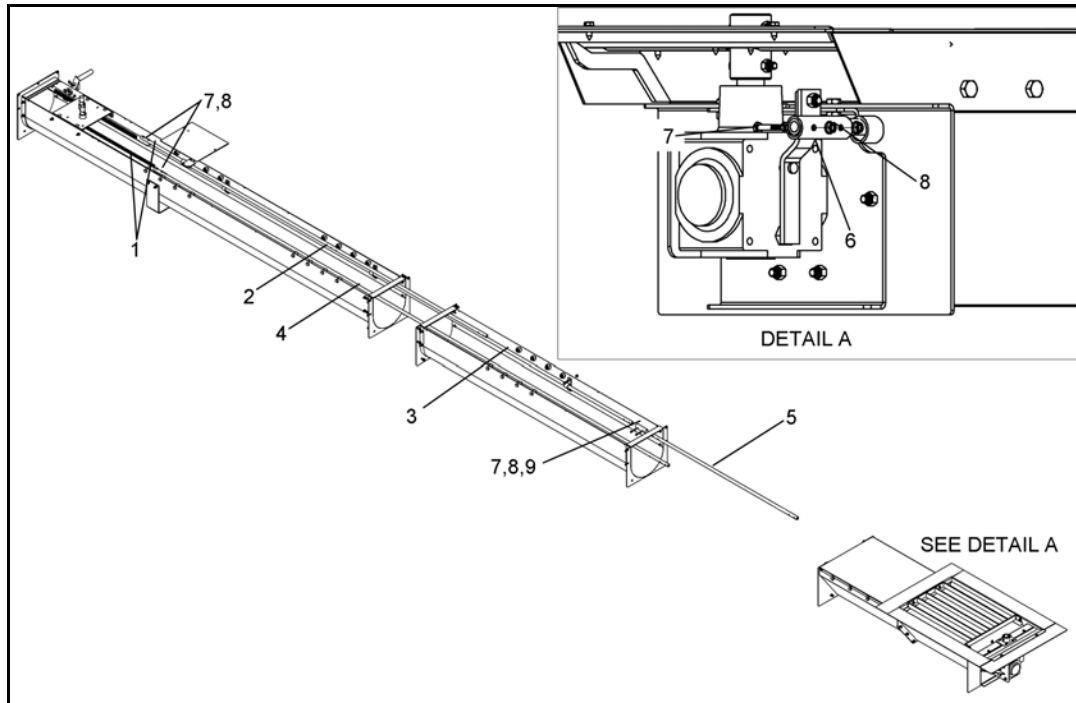


ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	28379	2' U-TROUGH LID	1
2	28380	POSITION PLATE	1
3	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	2
4	HWP0232	WHIZNUT, 3/8" PLATED	2
5	28381	GRIP TAPE 1-3/4" X 8"	2
6	28320	U-TROUGH OPERATIONAL DECAL	1



ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	100297	UT LID 3' INNER ASSEMBLY	1
1	100298	UT LID 6' INNER ASSEMBLY	1
1	100303	UT LID 6' ASSEMBLY W/ E-SUMP	1
1	100299	UT LID 10' INNER ASSEMBLY	1
1	100300	UT LID 10' MID SECTION ASSEMBLY	1
2	HWP0204	BOLT-HEX, 3/8"-16 x 1" GR5 PLTD	2
3	HWP0232	NUT, 3/8"-16 SERR FLANGE ZP	2
4	28364	CONTROL ROD SUPPORT WELDMENT	1

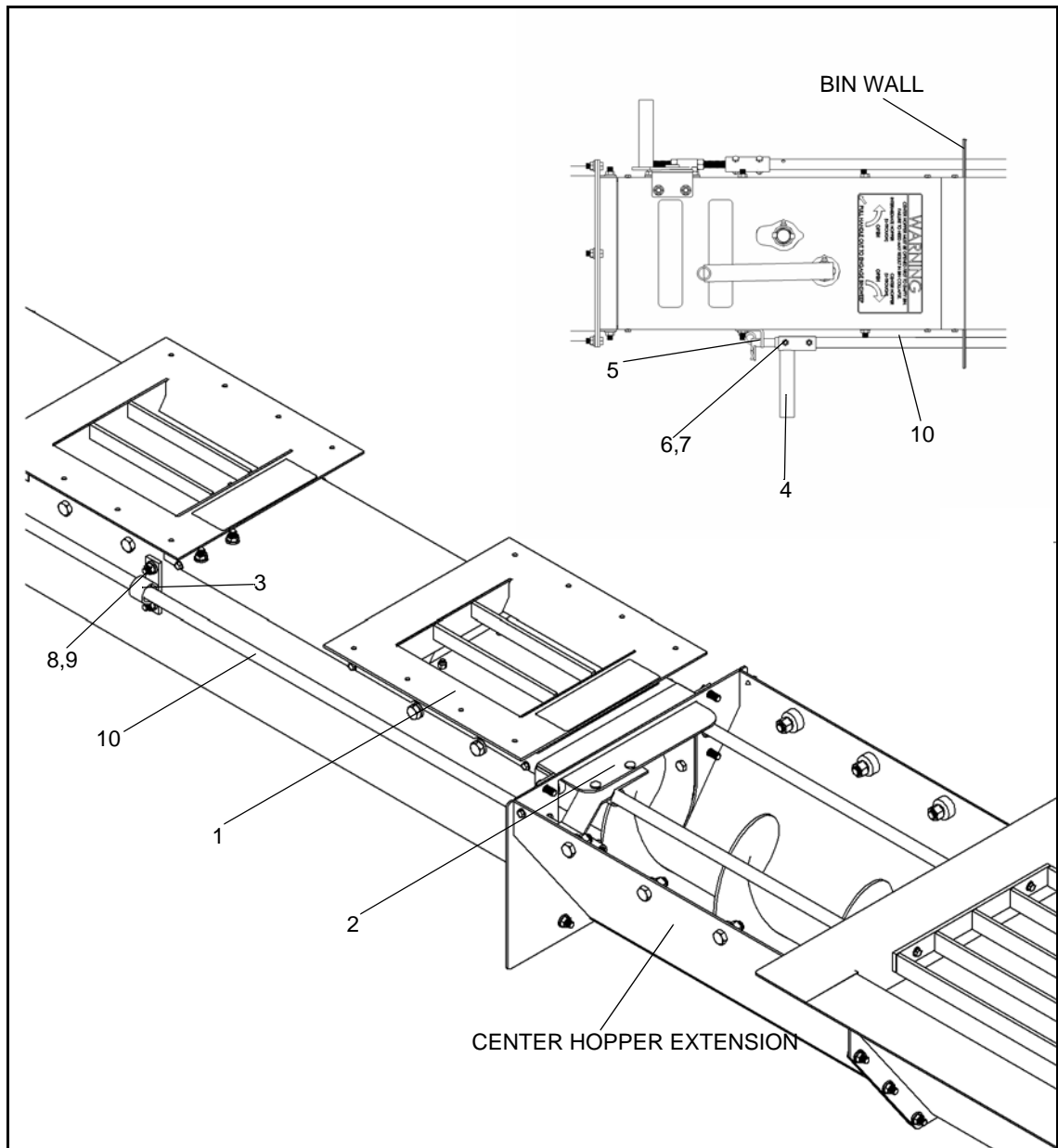
8.4. CONTROL ROD



ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY												
			24'	25'	27'	30'	32'	33'	36'	38'	42'	44'	48'	54'	60'
1	28382	RACK WELDMENT	2	2	2	2	2	2	2	2	2	2	2	2	2
2	28538	CONTROL ROD 67-11/16" IH	2	1	1	-	-	-	-	-	-	-	-	-	-
2	28541	CONTROL ROD 100" IH	-	-	-	1	-	-	-	-	-	-	-	-	-
2	28388	CONTROL ROD 118" IH	-	-	-	-	1	1	1	-	-	-	-	-	-
2	28570	CONTROL ROD 136" IH	-	-	-	-	-	-	-	1	-	-	-	-	-
2	28389	CONTROL ROD 172" IH	-	-	-	-	-	-	-	-	1	1	-	-	-
2	28390	CONTROL ROD 190" IH	-	-	-	-	-	-	-	-	-	-	1	-	-
2	28391	CONTROL ROD 244" IH	-	-	-	-	-	-	-	-	-	-	-	1	-
2	28392	CONTROL ROD 262" IH	-	-	-	-	-	-	-	-	-	-	-	-	1
3	28543	CONTROL ROD 118" GB	1	-	-	-	-	-	-	-	-	-	-	-	-
3	28544	CONTROL ROD 136" GB	-	1	1	-	-	-	-	-	-	-	-	-	-
3	28545	CONTROL ROD 154" GB	-	-	-	1	-	-	-	-	-	-	-	-	-
3	28546	CONTROL ROD 172" GB	-	-	-	-	1	1	-	-	-	-	-	-	-
3	28547	CONTROL ROD 190" GB	-	-	-	-	-	-	1	-	-	-	-	-	-
3	28571	CONTROL ROD 208" GB	-	-	-	-	-	-	-	1	-	-	-	-	-
3	28548	CONTROL ROD 226" GB	-	-	-	-	-	-	-	-	1	-	-	-	-

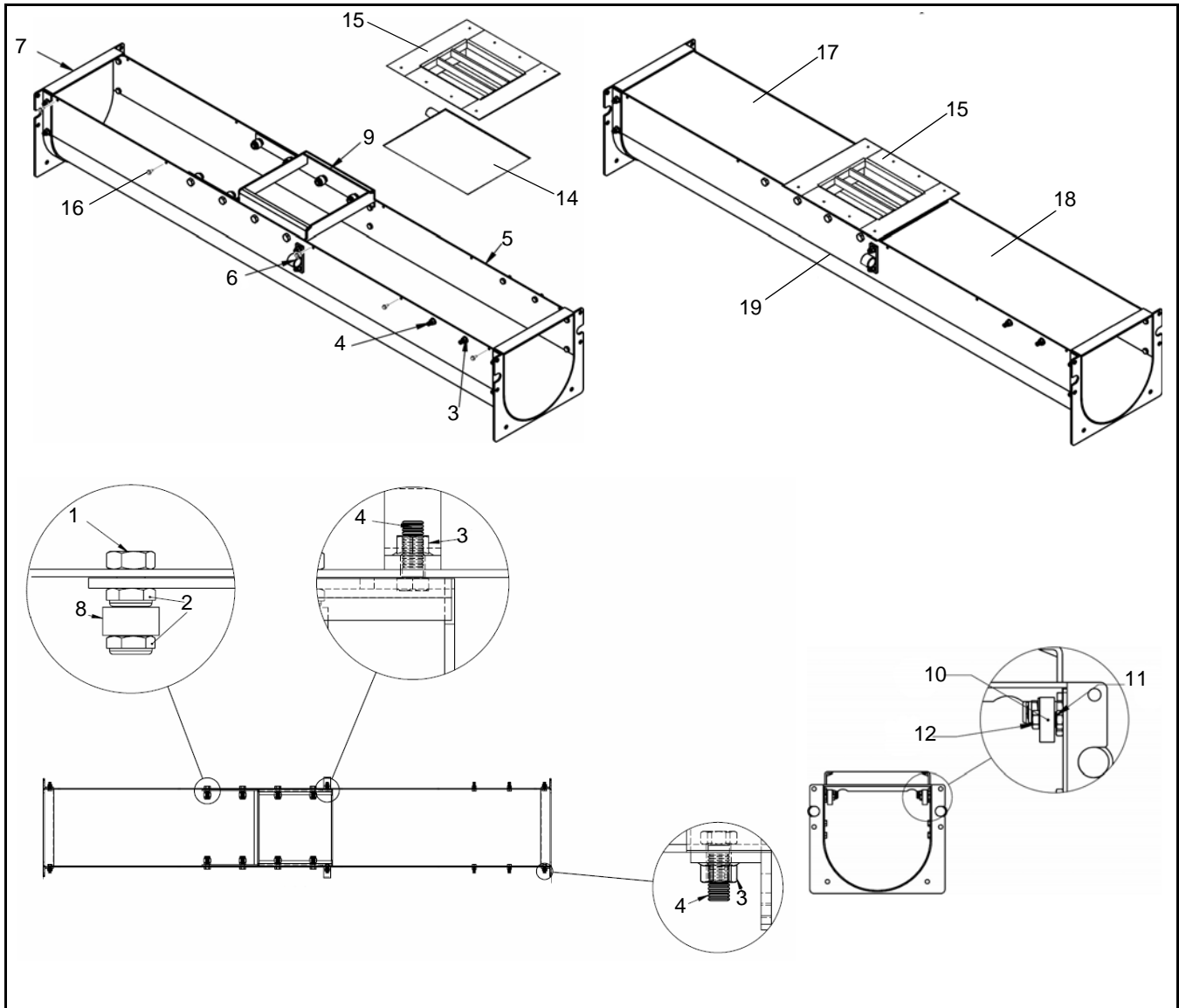
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY												
			24'	25'	27'	30'	32'	33'	36'	38'	42'	44'	48'	54'	60'
3	28572	CONTROL ROD 244" GB	-	-	-	-	-	-	-	-	-	1	-	-	-
3	28549	CONTROL ROD 262" GB	-	-	-	-	-	-	-	-	-	-	1	-	-
3	28550	CONTROL ROD 298" GB	-	-	-	-	-	-	-	-	-	-	-	1	-
3	28551	CONTROL ROD 334" GB	-	-	-	-	-	-	-	-	-	-	-	-	1
4	28539	CONTROL ROD 103-1/2" CH	1	-	-	-	-	-	-	-	-	-	-	-	-
4	28537	CONTROL ROD 121-1/2" CH	-	1	1	-	-	-	-	-	-	-	-	-	-
4	28540	CONTROL ROD 139-1/2" CH	-	-	-	1	-	-	-	-	-	-	-	-	-
4	28535	CONTROL ROD 157-1/2" CH	-	-	-	-	1	1	-	-	-	-	-	-	-
4	28393	CONTROL ROD 175-1/2" CH	-	-	-	-	-	-	1	-	-	-	-	-	-
4	28569	CONTROL ROD 193-1/2" CH	-	-	-	-	-	-	-	1	-	-	-	-	-
4	28394	CONTROL ROD 211-1/2" CH	-	-	-	-	-	-	-	-	1	-	-	-	-
4	28573	CONTROL ROD 229-1/2" CH	-	-	-	-	-	-	-	-	-	1	-	-	-
4	28395	CONTROL ROD 247-1/2" CH	-	-	-	-	-	-	-	-	-	-	1	-	-
4	28396	CONTROL ROD 283-1/2" CH	-	-	-	-	-	-	-	-	-	-	-	1	-
4	28397	CONTROL ROD 319-1/2" CH	-	-	-	-	-	-	-	-	-	-	-	-	1
5	28542	CONTROL ROD 49-3/4" GB	1	1	1	1	1	1	1	1	1	1	1	1	1
6	100247	GEARBOX SHIFT LEVER	1	1	1	1	1	1	1	1	1	1	1	1	1
7	HWP0203	1/4" X 1-1/2" BOLT	10	10	10	10	10	10	10	10	10	10	10	10	10
8	HWP0088	1/4" NYLON LOCKNUT	10	10	10	10	10	10	10	10	10	10	10	10	10
9	27110	CONTROL ROD COUPLER	2	2	2	2	2	2	2	2	2	2	2	2	2

8.5. E-SUMP



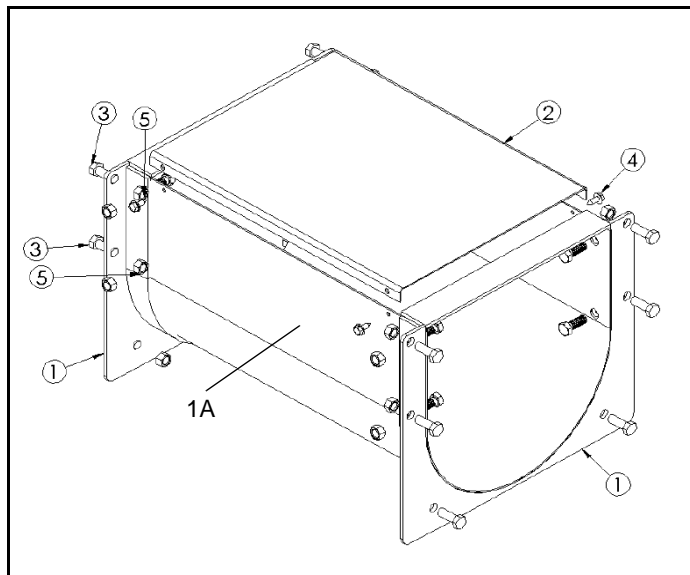
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	100261	E-SUMP IH TOP ASSEMBLY	1
2	100306	E-SUMP GATE ASSEMBLY	1
3	100206	E-SUMP CONTROL ROD BRACKET	1
4	100202	E-SUMP PUSH/PULL HANDLE ASSEMBLY	1
5	100204	E-SUMP PUSH/PULL HANDLE SUPPORT ROD	1
6	HWP0203	HEX BOLT 1/4"-20 x 1-1/2" GR2 ZP	4
7	HWP0088	NUT LOCK NYLON 1/4-20 ZP	4
8	HWP0271	HEX BOLT 7/16"-14 x 1-1/4" GR5 ZP	2
9	HWP0233	SERR FLANGE NUT 7/16"-14 ZP	2
10	100327	CONTROL ROD, E-SUMP, 38	1
10	100330	CONTROL ROD, E-SUMP, 44'	1

8.6. U-TROUGH SECTION



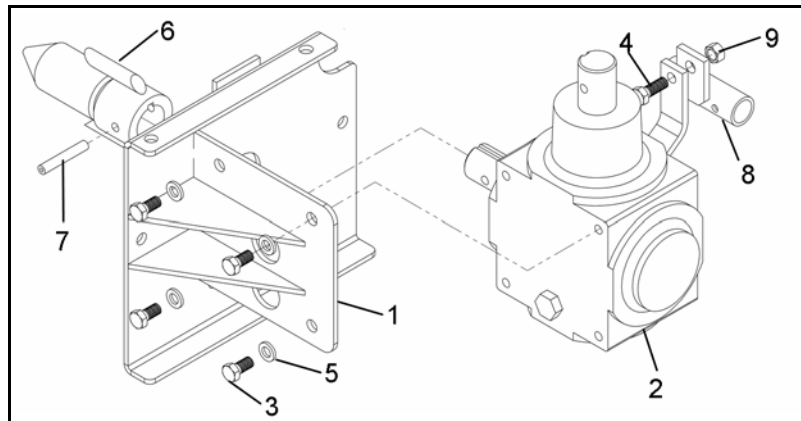
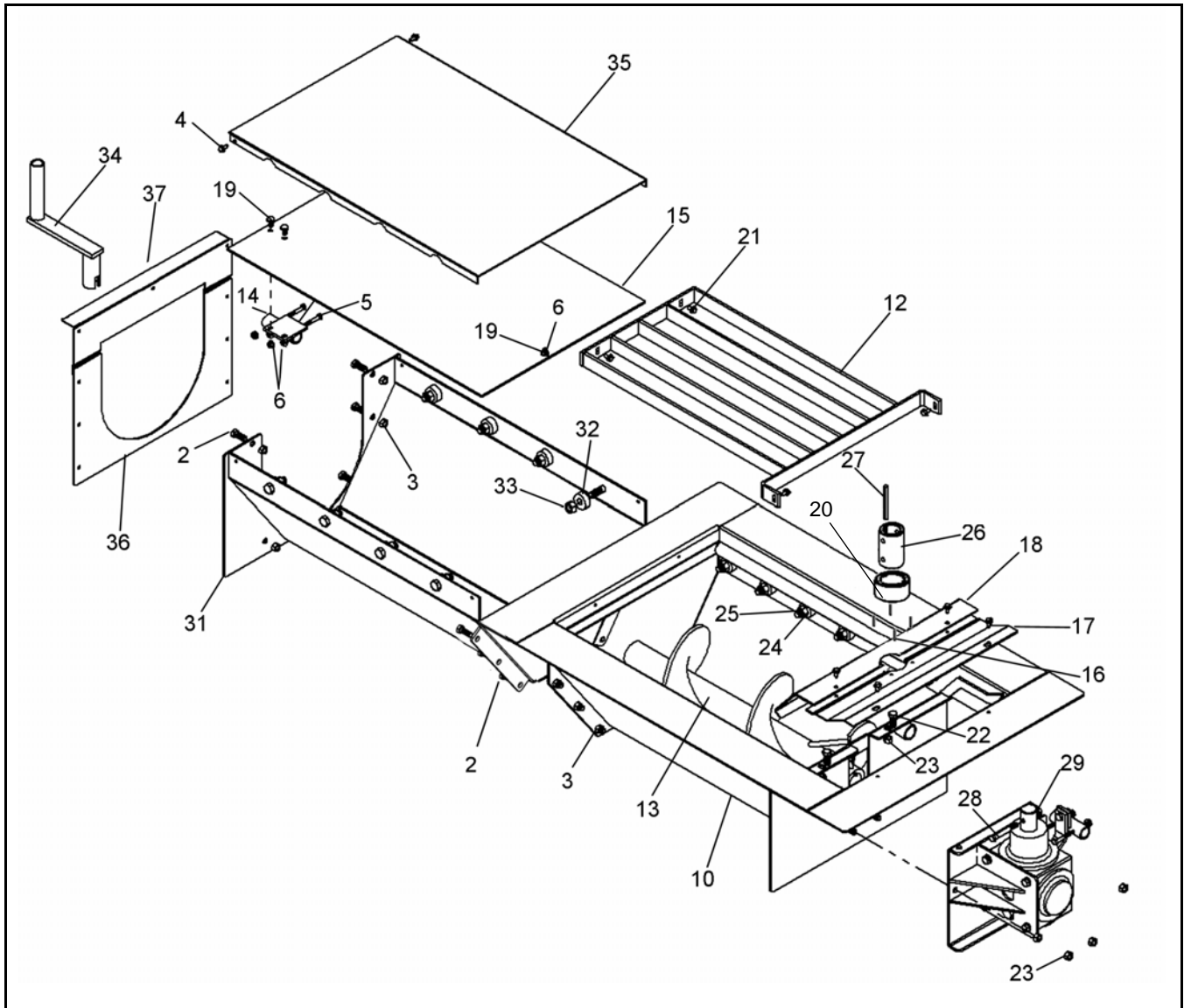
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY		
			U-TROUGH ASSEMBLY (19)		
			3' (PN 28408)	6' (PN 28409)	6' w/ E-SUMP (PN 100302)
1	HWP0352	BOLT HEX, 1/2"-13 x 1-1/2" ZP	8	8	12
2	HWP0234	NUT JAM NYLON, 1/2"-13 ZP	16	16	24
3	HWP0232	SERR FLANGE NUT, 3/8"-16 ZP	12	16	12
4	HWP0204	BOLT HEX, 3/8"-16 x 1" GR5 ZP	12	16	10
5	28405	TROUGH SECTION, 3'	1	-	-
5	28404	TROUGH SECTION, 6'	-	1	1
6	28364	CONTROL ROD SUPPORT WELDMNT	2	2	2
7	28363	U-TROUGH FLANGE WELDMNT	2	2	2
8	100282	GUIDE ROLLER UT 1" OD	8	8	12
9	100269	UT IH BOTTOM WELDMNT	1	1	1
10	100283	GUIDE ROLLER E-SUMP UT 1-9/16" OD	-	-	2
11	HWP0238	NUT JAM NYLON, 3/8"-16 ZP	-	-	2
12	HWP0015	HEX BOLT, 3/8"-16 x 2" ZP	-	-	2
13	HWP0351	WASHER LOCK 1/2" ZP	-	-	4
14	100277	UT IH GATE	1	1	1
15	100261	UT IH TOP	1	1	1
16	HWP0279	SCREW TAP #14 x 1/2"-13 ZP	6	10	10
17	100292	UT 3' LID OUTER	1	-	-
18	100291	UT 3' LID INNER	1	-	-
17	100287	UT LID 6' OUTER	-	1	1
18	100286	UT LID 6' INNER	-	1	1
18	100254	UT LID, 6' INNER W/ E-SUMP	-	1	1

8.7. 1.5' U-TROUGH SECTION



ITEM NO.	PART NO.	DESCRIPTION	QTY
1	28552	1.5' TROUGH ASSEMBLY	1
1A	28531	1.5" TROUGH SECTION	1
2	28558	1.5' U-TROUGH LID	1
3	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	6
4	HWP0279	SCREW TAP #14 x 1/2" ZP	4
5	HWP0232	WHIZNUT, 3/8" PLATED	6

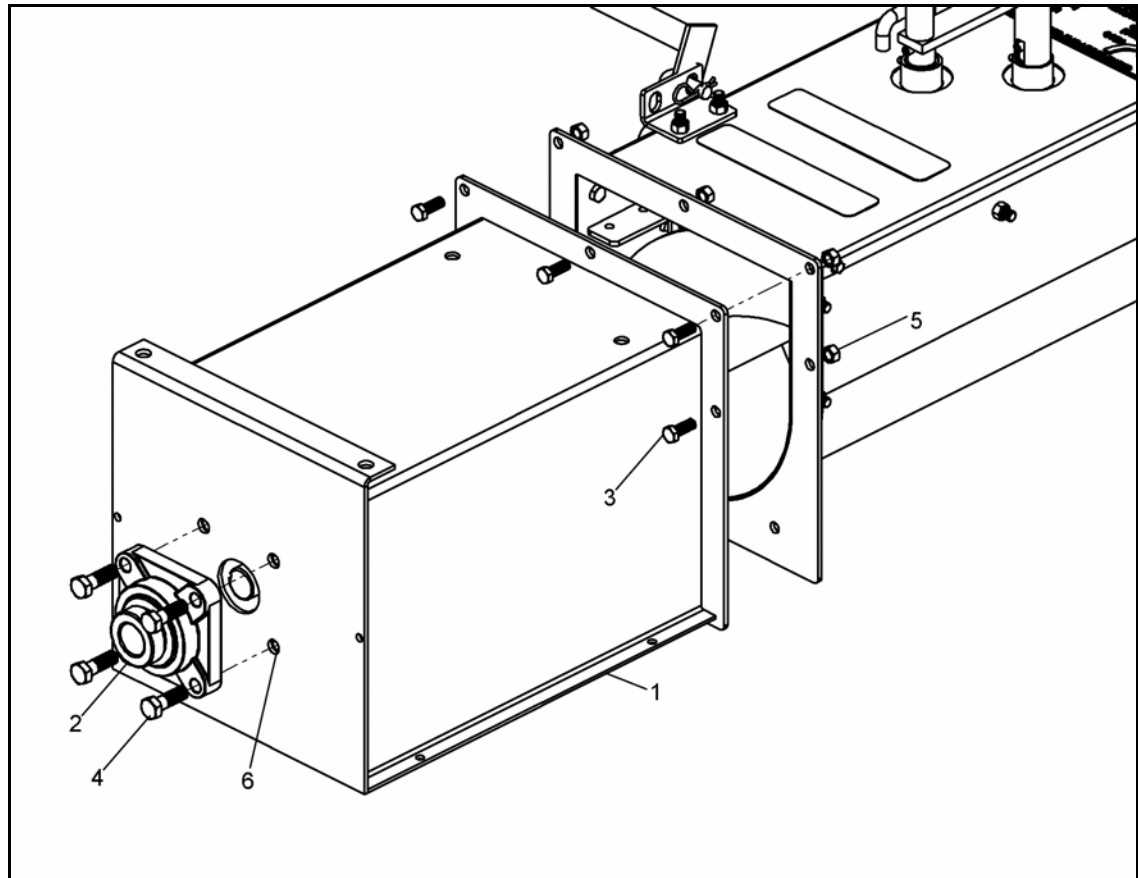
8.8. U-TROUGH INTAKE



ITEM NO.	PART NO.	DESCRIPTION	QTY
1	16245	UT 200/300 BOLT BAG	1
2	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	12
3	HWP0232	WHIZNUT, 3/8" PLATED	12
4	HWP0279	SCREW TAP #14 x 1/2" ZP	2
5	HWP0203	BOLT, 1/4" x 1-1/2" GR2 PLATED	2
6	HWP0088	NYLON LOCKNUT, 1/4" PLATED	5
9	28610	CH W/ GBOX	1
10	28378	U-TROUGH CH WELDMENT	1
12	28403	U-TROUGH CH GUARD WELDMENT	1
13	28359	CENTER HOPPER FLIGHT WELDMENT	1
14	27111	GATE COUPLER WELDMENT	1
15	28406	CENTER HOPPER GATE	1
16	100335	SPRING PIN	4
17	27570	CH ACCESS PANEL - TOP	1
18	28407	UT CH ACCESS PANEL - BOTTOM	1
19	HWP0212	CARRIAGE BOLT, 1/4" x 3/4" GR2 PLATED	3
20	100334	RUBBER COUPLER SEAL	1
21	HWP0235	SMS, #14 x 5/8" w/ WASHERHEAD	12
22	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	6
23	HWP0232	WHIZNUT, 3/8" PLATED	6
24	27107	GATE GUIDE ROLLER	8
25	HWP0223	LOCKNUT, 1/2" PLATED	8
26	100316	CLAMP-TYPE COUPLER	1
27	HWP0240	1/4" x 3" SQUARE KEY (# HWP0240)	1
28	HWP0208	BOLT, 5/16" x 2-1/2" GR2 PLATED	1
29	HWP0225	NYLON LOCKNUT, 5/16" PLATED	1
30	28611	U-TROUGH EH	1
31	28410	U-TROUGH EH WELDMENT	1
32	27107	GATE GUIDE ROLLER	8
33	HWP0223	LOCKNUT, 1/2" PLATED	8
34	100305	CRANK HANDLE WELDMENT	1
35	28413	EXTENSION HOPPER LID	1
36	BU-0010747	BIN WALL ADAPTER,LOWER	1
37	BU-0010748	BIN WALL ADAPTER,UPPER	1

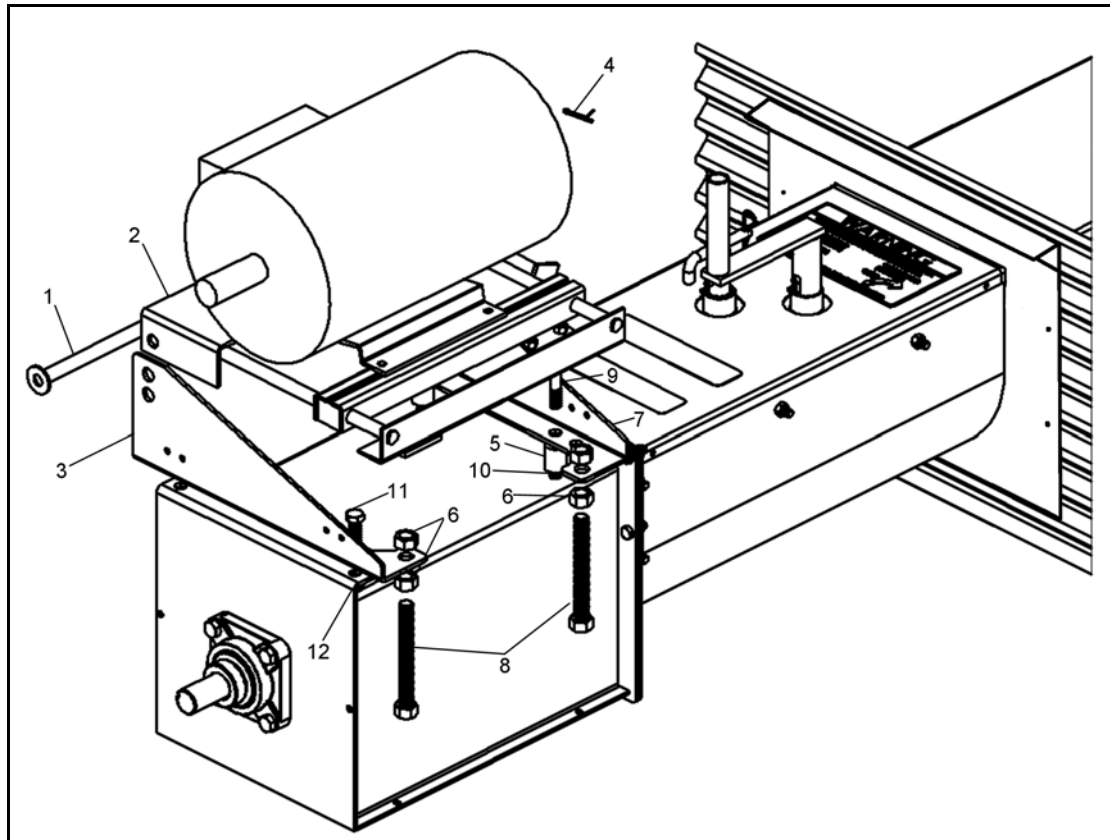
ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	28416	GEARBOX PLATE WELDMENT	1
2	27100	BOTTOM GEARBOX	1
3	HWP0205	BOLT, 3/8" x 3/4" GR5 PLATED	4
4	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	1
5	HWP0242	LOCKWASHER, 3/8"	4
6	27112	10" QUICK ATTACH STUB WELDMENT	1
7	HWP0237	ROLL PIN, 5/16" x 2"	1
8	100247	GEARBOX SHIFT LEVER	1
9	HWP0224	NYLON LOCKNUT, 3/8" PLATED	1

8.9. U-TROUGH POWERHEAD

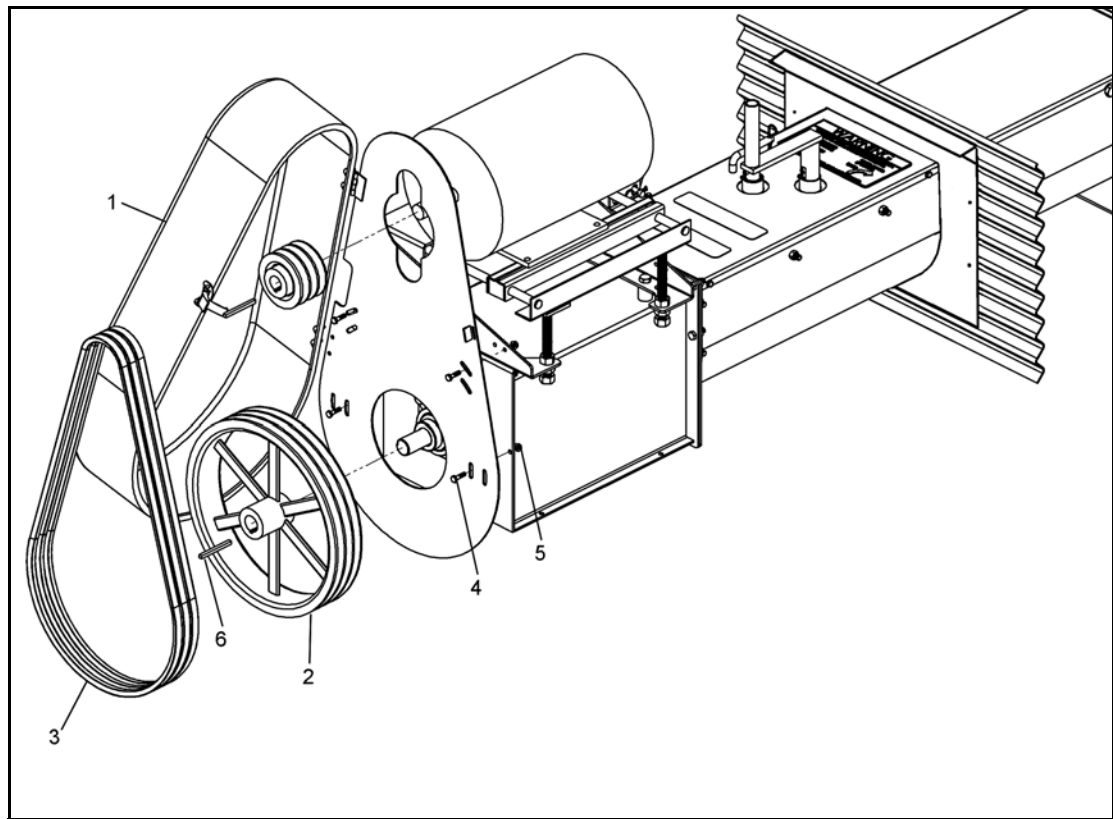


ITEM NO.	PART NO.	PARTS DESCRIPTION	QTY
1	UT-311	POWERHEAD WELDMENT (18-3/8")	1
1	UT-314	POWERHEAD WELDMENT (30-3/8")	1
2	19567	1-1/4" BEARING, W/4 BOLT FLANGE	1
3	HWP0204	BOLT, 3/8" x 1" GR5 PLATED	7
4	19589	BOLT, 1/2" x 1- 1/2" GR5 PLATED	4
5	HWP0232	WHIZNUT, 3/8" PLATED	7
6	HWP0256	NUT, 1/2" PLATED	4

8.10. U-TROUGH DRIVE UNIT

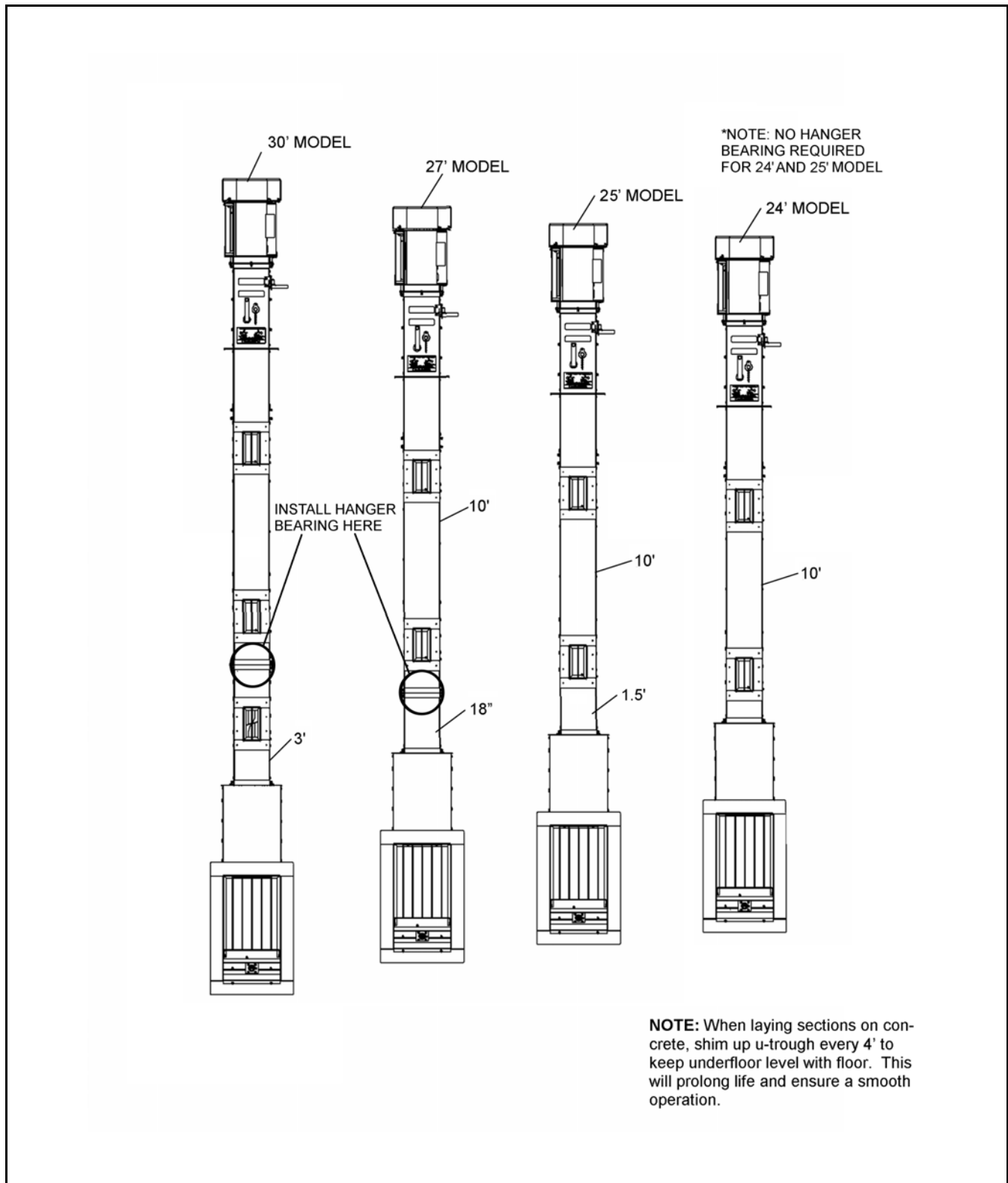


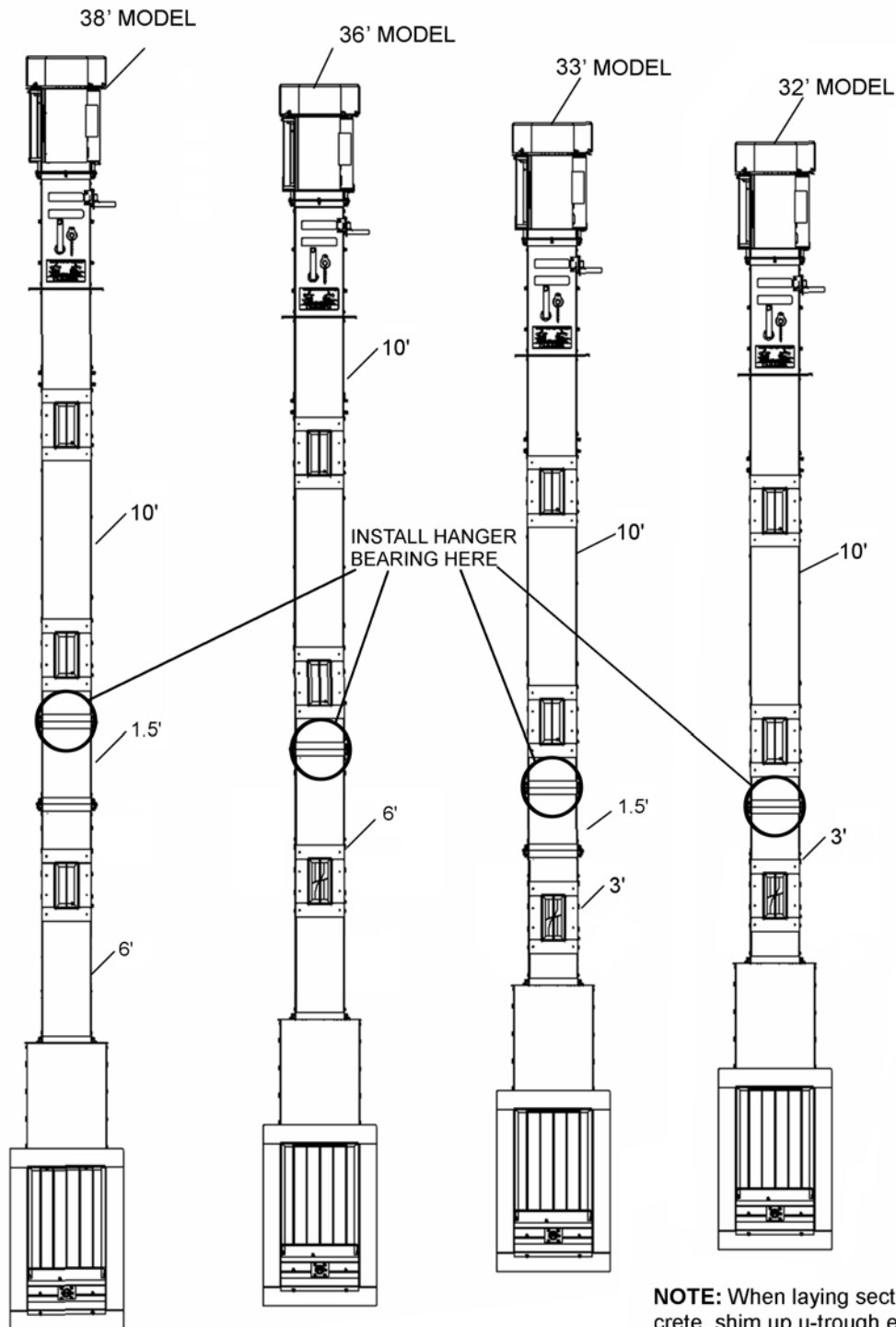
REF. NO.	PART NO.	PARTS DESCRIPTION	QTY
1	27468	10/13 HINGE ROD WELDMENT	1
2	27467	10/13 MOTOR MOUNT WELDMENT	1
3	28336	FRONT MOUNT PLATE	1
4	HWP0216	1/8" x 1-1/2" COTTER PIN	1
5	28353	M MOUNT SPACER	2
6	HWP0036	5/8" HEX NUT	4
7	28335	BACK MOUNT PLATE	1
8	27249	ADJUST BOLT	2
9	HWP0257	1/2" x 2-1/2" BOLT	2
10	HWP0256	1/2" WHIZNUT PLATED	4
11	HWP0220	1/2" x 1-1/4 BOLT	2



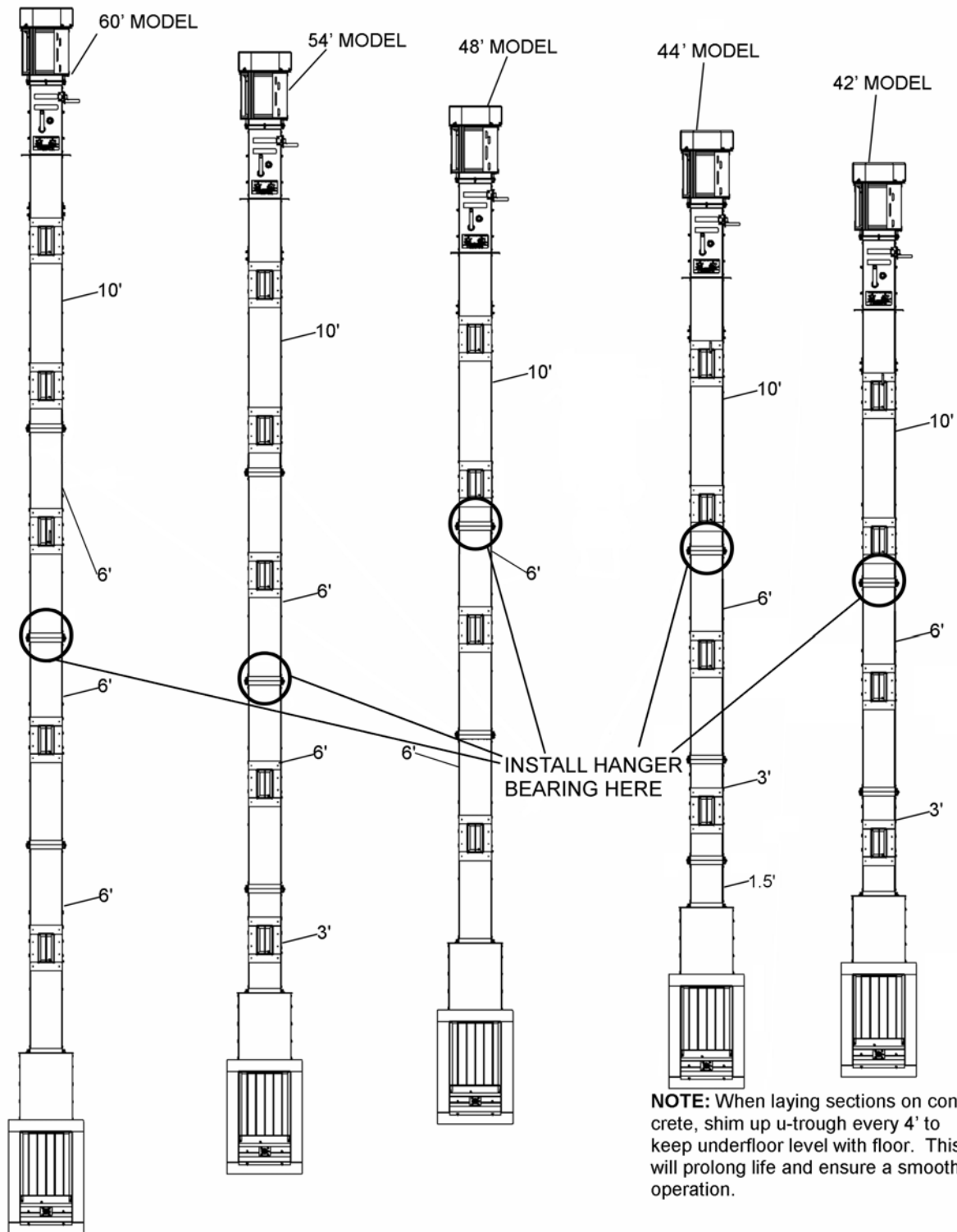
REF. NO.	PART NO.	PARTS DESCRIPTION	QTY
1	28052	UT10/13 PULLEY GUARD ASSEMBLY	1
2	19933	15" x 1-1/4" TRIPLE B GROOVE PULLEY	1
3	19935	B67 BELT	3
4	HWP0258	1/4" x 1" BOLT	4
5	HWP0231	1/4" FLANGE NUT	4
6	HWP0240	1/4" x 3" KEY	1

8.11. U-TROUGH ASSEMBLY

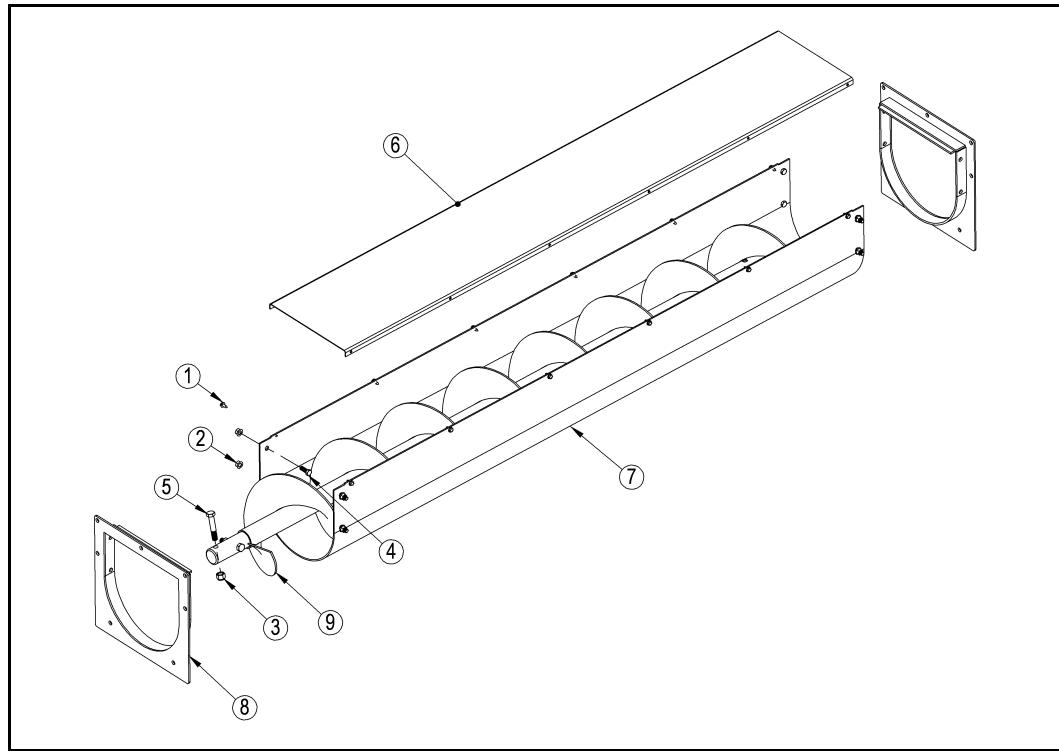




NOTE: When laying sections on concrete, shim up u-trough every 4' to keep underfloor level with floor. This will prolong life and ensure a smooth operation.

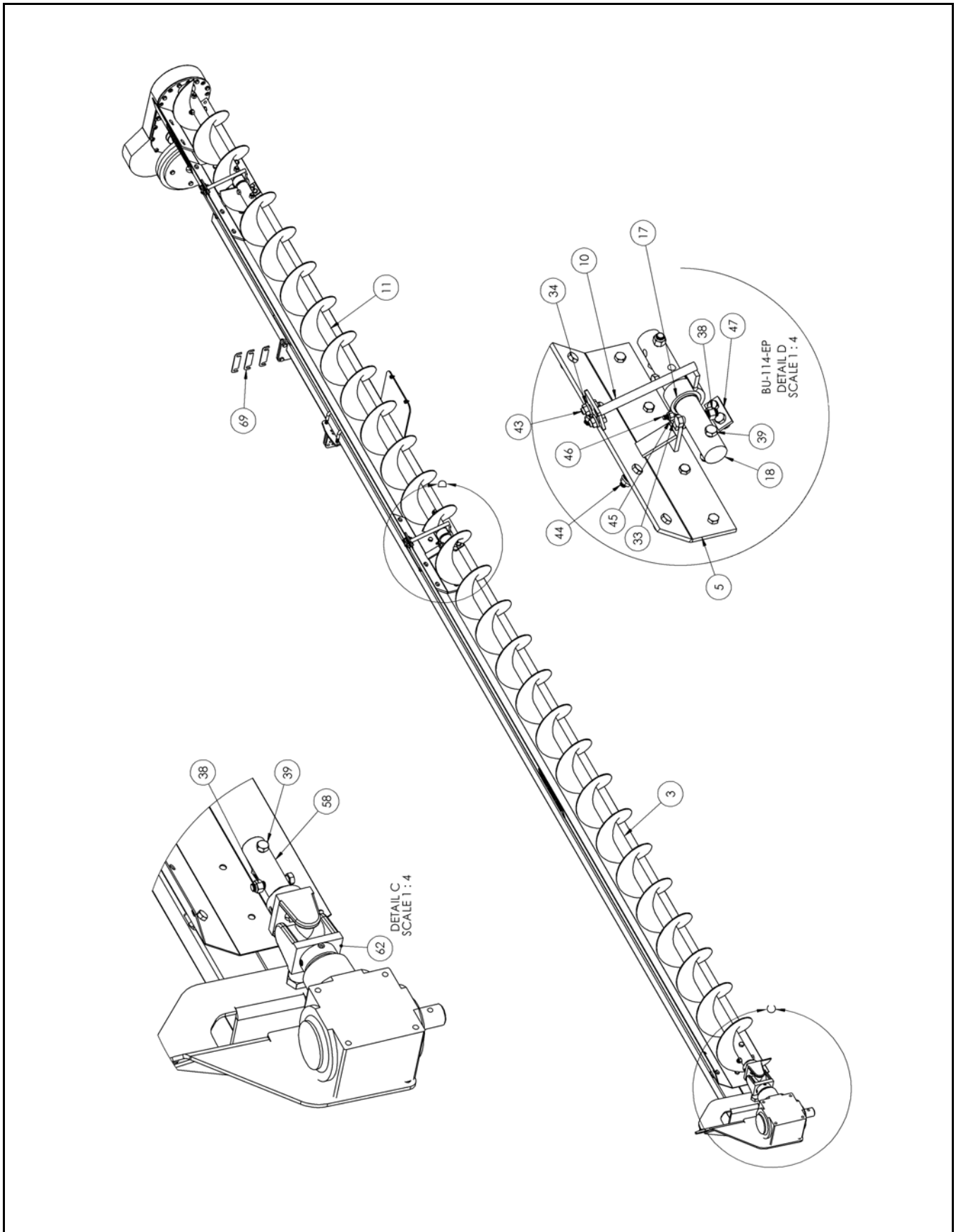


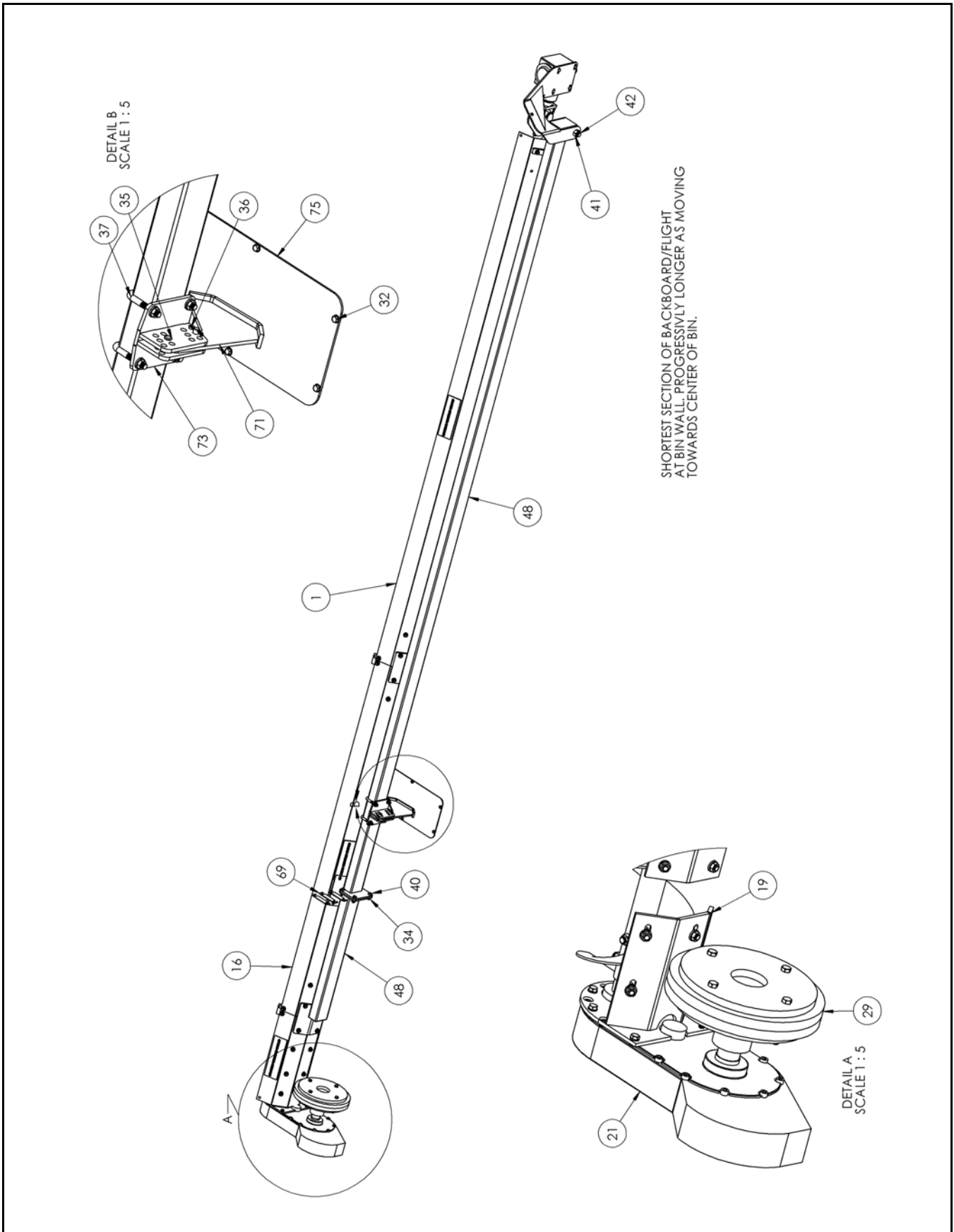
8.12. U-TROUGH EXTENSION



UT 303			
Item No.	Part No.	Description	Qty
1	HWP0279	SCREW TAP #14 x 1/2" ZP	6
2	HWP0232	NUT SERR FLANGE 3/8"-16 ZP	8
3	HWP0223	NUT LOCK NYLON 1/2"-13 Gr 2 ZP	2
4	HWP0204	BOLT HEX 3/8"-16 x 1" Gr 5 ZP	8
5	HWP0202	BOLT HEX 1/2"-13 x 2-3/4" Gr 8 ZP	2
6	BU-0050750	UT LID, 3' EXTENSION	1
7	BU-0050713	TROUGH SECTION, 3' EXTENSION	1
8	BU-0028362	POWERHEAD FLANGE WELDMENT (16238)	2
9	BU-0028580	UF FLIGHT, UT10" x 3' EXTENSION	1
UT 306			
1	HWP0279	SCREW TAP #14 x 1/2" ZP	12
2	HWP0232	NUT SERR FLANGE 3/8"-16 ZP	8
3	HWP0223	NUT LOCK NYLON 1/2"-13 Gr2 ZP	2
4	HWP0204	BOLT HEX 3/8"-16 x 1" Gr5 ZP	8
5	HWP0202	BOLT HEX 1/2"-13 x 2-3/4" Gr8 ZP	2
6	BU-0050751	UT LID, 6' EXTENSION	1
7	BU-0050709	TROUGH SECTION, 6' EXTENSION	1
8	BU-0028362	POWERHEAD FLANGE WELDMENT (16238)	2
9	BU-0028333	UF FLIGHT, UT10" x 6' EXTENSION (16263)	1
UT 310			
1	HWP0279	SCREW TAP #14 x 1/2" ZP	18
2	HWP0232	NUT SERR FLANGE 3/8"-16 ZP	8
3	HWP0223	NUT LOCK NYLON 1/2"-13 Gr2 ZP	2
4	HWP0204	BOLT HEX 3/8"-16 x 1" Gr 5 ZP	8
5	HWP0202	BOLT HEX 1/2"-13 x 2-3/4" Gr8 ZP	2
6	BU-0050752	UT LID EXTENSION, 10'	1
7	BU-0050714	TROUGH SECTION, 10GA x 10' EXTENSION	1
8	BU-0028362	POWERHEAD FLANGE WELDMENT (16238)	2
9	BU-0028581	UF FLIGHT, UT10" x 10' EXTENSION.	1

8.13. SWEEP



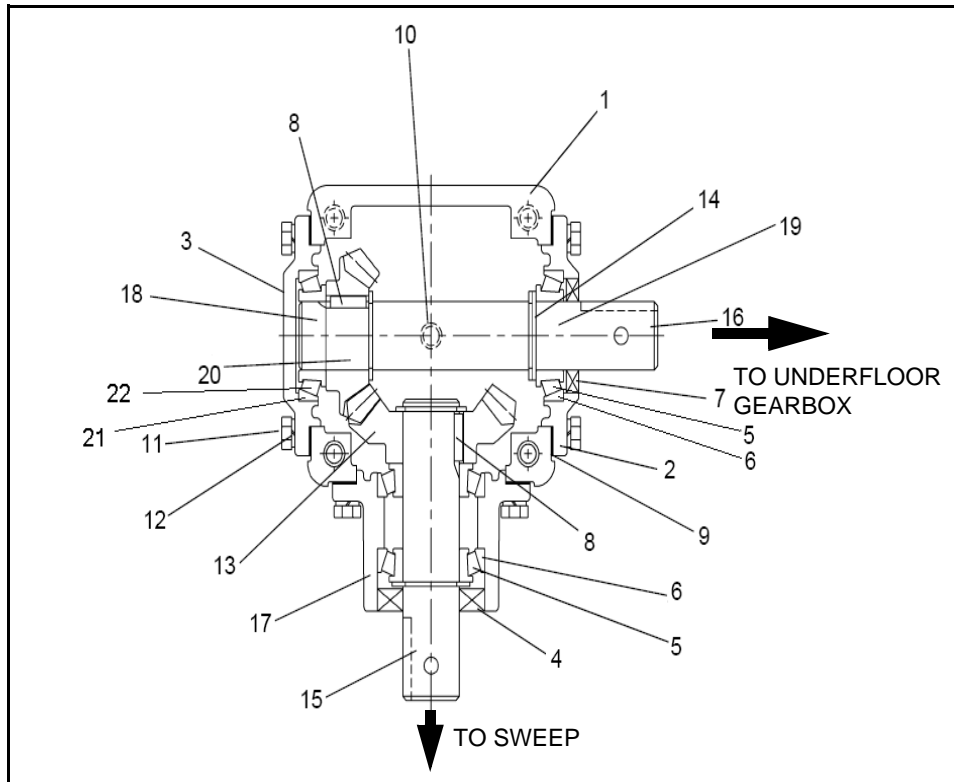


ITEM NO.	PART NO.	DESCRIPTION	QTY														
			24	25	27	30	32	33	36	38	42	44	48	54	60		
48	100113	BACKBOARD STIFFENER, BASE (158 9/16")	-	-	-	1	-	-	-	1	1	-	-	-	-	-	-
	100464	BACKBOARD STIF 14'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100414	BACKBOARD STIF 15' (68 5/16")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100441	BACKBOARD STIF 18' (86 5/16")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100408	BACKBOARD STIF 21' (104 5/16")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100382	BACBOARD STIF, 22' (105 5/16")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100160	BACKBOARD STIFFENER, 24' (122 9/16")	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	100285	BACKBOARD STIF, 25' (125 1/2")	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	100162	BACKBOARD STIFFENER, 27' (131 9/16")	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
	100350	BACKBOARD STIF, 32' EXT (13 5/8")	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
	100131	BACKBOARD STIFF, 33' EXT (20 3/4")	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
	100133	BACKBOARD STIFF, 36' EXT (29 3/4")	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
	100342	BACBOARD STIF BASE 38' (118 11/16")	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
	100120	BACKBOARD STIFF, 42' EXT (65 3/4")	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
	100215	BACKBOARD STIFF, 44' EXT (80 1/2")	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
	100136	BACKBOARD STIF, 48' EXT (110 7/8")	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
	100139	BACKBOARD STIFF, 54' EXT (136 7/8")	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
100142	BACKBOARD STIFFENER, 60' EXT (182")	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
71	100124	BACKBOARD STIFFENER, SKID	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
73	100127	BACKBOARD SKID MOUNT WELDMENT	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1
43, 40	HWP0204	BOLT HEX 3/8-16 X 1"	8	8	16	8	8	16	16	16	16	16	16	16	20	20	20
34	HWP0232	NUT SERR FLANGE 3/8-16	14	14	22	14	14	22	22	22	22	22	22	26	38	38	38
42	HWP0267	BOLT HEX 3/4-10 X 4-1/2"	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
44	HWP0268	BOLT HEX 3/8-16 X 1-1/4"	10	10	14	10	10	14	14	14	14	14	14	18	22	22	22
41	HWP0269	NUT LOCK STOVER 3/4-10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37	HWP0276	BOLT-U SQ 3/8-16 X 3 X 2-3/4	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2
35	HWP0277	PIN CLEVIS 3/8 X 15/16	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2
36	HWP0278	PIN COTTER 3/32" X 1"	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2
69	100116	SHIM 14 GA	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3
	100117	SHIM 16 GA	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3
	100118	SHIM 20 GA	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3
34	HWP0224	NUT LOCK, NYLON 3/8-16	-	-	4	-	-	4	4	4	4	4	4	8	8	8	8
75	100156	PLATE, SWEEP PARKING	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1
32	HWP0279	SCREW TAP #14 X 1/2"	-	-	-	-	-	-	-	-	-	-	-	6	6	6	6
DETAIL D	BU-114-EP	SWEEP JOINTER KIT EP	1	1	2	1	1	1	1	2	2	2	2	2	3	3	3

ITEM NO.	PART NO.	DESCRIPTION	QTY													
			24	25	27	30	32	33	36	38	42	44	48	54	60	
1,16	27161	BINSWEEP BACKBOARD, 1.5' (18")	-	-	1	-	-	-	-	-	-	1	-	-	1	-
	27162	BINSWEEP BACKBOARD, 4.5' (54")	1	-	1	-	-	-	-	-	-	-	-	1	-	1
	28578	BINSWEEP BACKBOARD, 5.5' (64")	-	2	-	-	1	-	-	-	-	1	-	-	-	-
	27163	BINSWEEP BACKBOARD, 6' (71")	1	-	1	-	-	-	-	1	1	2	-	-	1	1
3,11 600 Series	27164	BINSWEEP BACKBOARD, 9' (107")	-	-	-	1	1	1	1	1	-	-	2	1	2	2
	27811	BINSWEEP FLIGHT, 6" X 1.5' (16.75")	-	-	1	-	-	-	-	-	1	-	-	-	1	-
	27812	BINSWEEP FLIGHT, 6" X 4.5' (52.75")	1	-	1	-	-	-	-	-	-	-	-	1	-	1
	100392	BINSWEEP FLIGHT, 6" X 5.5' (62.75")	-	2	-	-	1	-	-	-	-	1	-	-	-	-
3,11 700 Series	27813	BINSWEEP FLIGHT, 6" X 6' (69.75")	1	-	1	-	-	-	1	1	2	-	-	1	1	1
	27814	BINSWEEP FLIGHT, 6" X 9' (105.75")	-	-	-	1	1	1	1	1	-	-	2	1	2	2
	27165	BINSWEEP FLIGHT, 7" X 1.5' (16.75")	-	-	1	-	-	-	-	-	1	-	-	-	1	-
	27166	BINSWEEP FLIGHT, 7" X 4.5' (52.75")	1	-	1	-	-	-	-	-	-	-	-	1	-	1
28579 27167 27168	BINSWEEP FLIGHT, 7" X 5.5' (62.75")	-	2	-	-	1	-	-	-	-	-	1	-	-	-	-
	BINSWEEP FLIGHT, 7" X 6' (69.75")	1	-	1	-	-	-	-	1	1	2	-	-	1	1	1
	BINSWEEP FLIGHT, 7" X 9' (105.75")	-	-	-	1	1	1	1	1	1	-	-	2	1	2	2

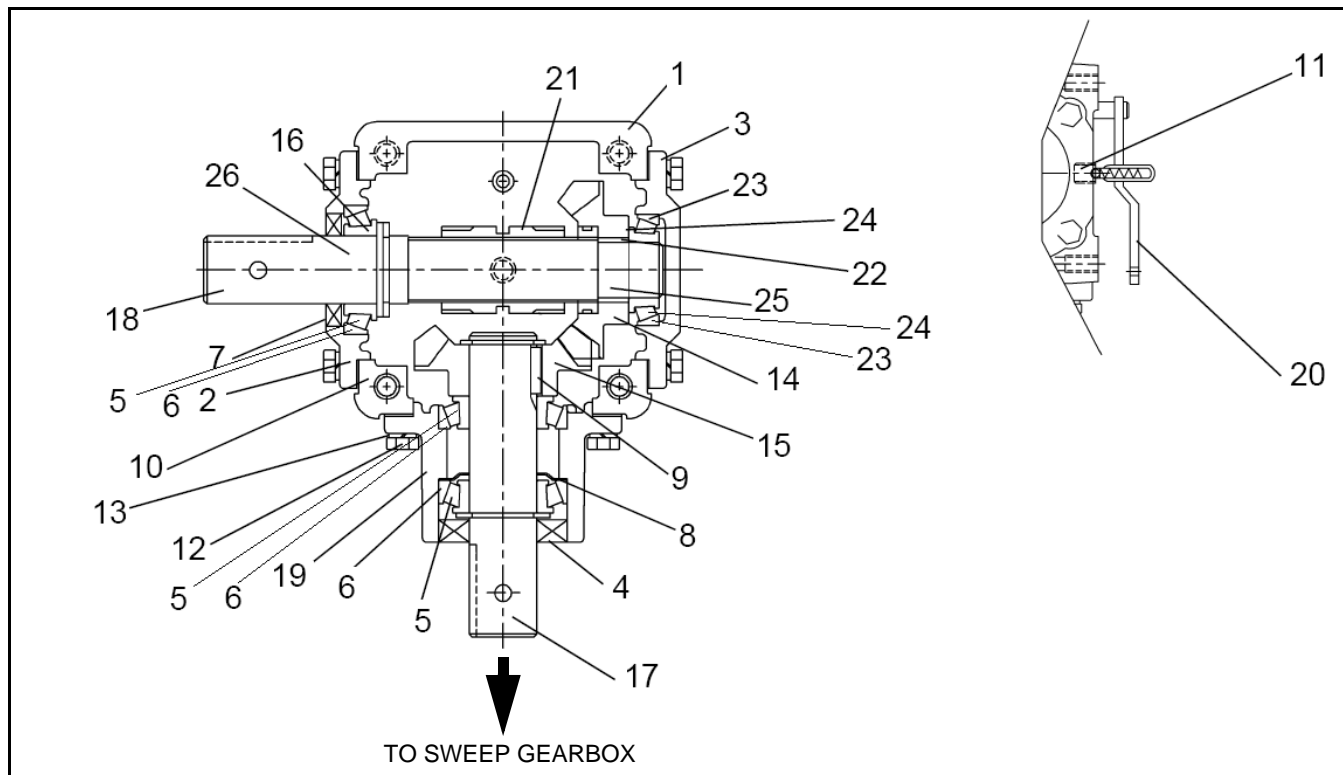
DETAIL D	DESCRIPTION	QTY
BU-114-EP	SWEEP JOINTER KIT (EP)	
10	100173 EP ROLL BAR	1
47	100174 LOWER BACKBOARD CONNECTOR	1
18	27173 JOINTER SHAFT	1
5	27169 BUSHING MOUNT	1
17	27149 BUSHING NYLON	1
	BU-0014619 BU-114 BOLT BAG	
46	HWP0203 BOLT HEX 1/4-20 X 1-1/2" GR2 ZP	1
42	HWP0204 BOLT HEX 3/8-16 X 1" GR5 ZP	8
43	HWP0205 BOLT HEX 3/8-16 X 3/4" GR5 ZP	4
39	HWP0211 BOLT HEX 7/16-14 X 2-1/4" GR8 ZP	4
38	HWP0227 NUT LOCK NYLON 7/16-14 ZP	4
45	HWP0088 NUT LOCK, NYLON 1/4-20 ZP	1
32,34	HWP0232 NUT SERR FLANGE 3/8-16 ZP	12
33	HWP0244 WASHER FLAT 5/16 ZP	1
DETAIL C	DESCRIPTION	QTY
62	28334 UNIVERSAL JOINT, 6R SERIES	1
58	27172 BINSWEEP GEARBOX SHAFT	1
	DETAIL A	QTY
19	100381 SWEEP GRBX MOUNT WELDMNT	1
21	27782 SWEEP GEARBOX 10:1	1
29	100166 REPLACEMENT RUBBER ONLY	2

8.14. UPPER GEARBOX—U-TROUGH UNDERFLOOR SYSTEM



ITEM NO.	10" SYSTEM (NO REDUCTION)	8" SYSTEM (1.35 REDUCTION)	DESCRIPTION	ITEM NO.	10" SYSTEM (NO REDUCTION)	8" SYSTEM (1.35 REDUCTION)	DESCRIPTION
1	27790	27790	HOUSING	13	27797	27794	GEAR, DP6, (19 TEETH 10") (23 TEETH 8")
2	27791	27791	END CAP	14	18962	18962	SNAP RING
3	27792	27792	END CAP	15	27798	100212	OUTPUT SHAFT
4	18427	18427	SEAL, NAT #471808, CR#12614	16	27799	27805	INPUT SHAFT
5	19265	19265	BEARING CONE, TIMKEN #LM 67048	17	27800	27800	QUILL
6	19266	19266	BEARING CUP, TIMKEN #LM 67010	18	18411	18411	0.007 SHIM (1.25" I.D.)
7	18403	18403	SEAL, NAT #470553, CR#12458	19	18426	18426	SPACER
8	18380	18380	KEY 1/4" SQ X 3/4" LG.	20	27797	27801	10" - 19 TEETH, 8" - 17 TEETH
9	18390	18390	SHIM KIT, .05, .0075, .20		19266	-	CUP, BEARING TIMKEN #LM 67010
10	28296	28296	PIPE PLUG 1/4" NPT (1/4" HEX)	21	-	18382	CUP, BEARING TIMKEN #LM 44610
11	19538	19538	CAP SCREW, 5/16" UNC X 3/4"	22	19265	-	CONE, BEARING TIMKEN #LM 67048
12	19603	19603	LOCKWASHER, 5/16"		-	18383	CONE, BEARING TIMKEN #LM 44643

8.15. LOWER GEARBOX W/ SHIFTER—U-TROUGH UNDERFLOOR SYSTEM



ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	27808	HOUSING	14	27807	GEAR NO KEYWAY, 19 TEETH
2	27791	END CAP	15	27797	GEAR WITH KEYWAY, 19 TEETH
3	27792	END CAP	16	18962	SNAP RING
4	18427	SEAL, NAT #47 1808, CR#12614	17	27796	OUTPUT SHAFT
5	19265	BEARING CONE, TIMKEN #LM67048	18	27806	INPUT SHAFT
6	19266	BEARING CUP, TIMKEN #LM67010	19	27800	QUILL
7	18403	SEAL, NAT#470553, CD #12458	20	27802	COMPLETE LEVER
8	18965	GREASE WASHERS	21	27803	DOG
9	18380	KEY, 1/4" SQ X 3/4" LG.	22	27804	BRONZE BUSHING
10	18390	SHIM, 0.05"	23	18383	BEARING CONE, TIMKEN #L44643
11	28296	PIPE PLUG, 1/4" NPT (1/4" HEX)	24	18382	BEARING CUP, TIMKEN #L44610
12	19538	CAP SCREW, 5/16" UNC X 3/4"	25	18411	0.007 SHIM (1.25" I.D.)
13	19603	LOCKWASHER, 5/16"	26	18426	SPACER

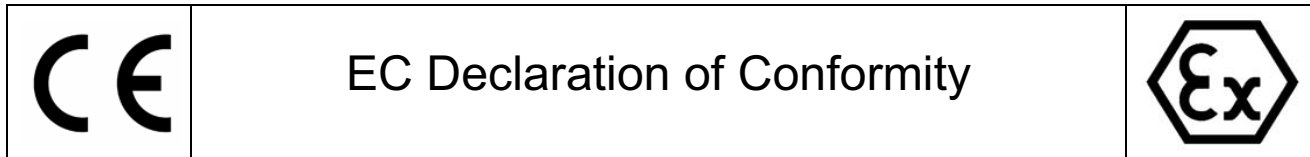
Table 8.1 11” U-Trough Unload with Sweep

BIN SIZE (DIAMETER)	UNLOAD P/N	TROUGH P/N	SWEEP P/N	CRATE P/N	POWERHEAD OPTION (HORIZONTAL)
24'	UT-24S-11-R	UT-1124-R	BU-724-R	UT-1100-R	UT-H-11-R
25'	UT-25S-11-R	UT-1127-R	BU-725-R		
27'	UT-27S-11-R	UT-1127-R	BU-727-R		
30'	UT-30S-11-R	UT-1130-R	BU-730-R		
32'	UT-32S-11-R	UT-1133-R	BU-732-R		
33'	UT-33S-11-R	UT-1133-R	BU-733-R		
36'	UT-36S-11-R	UT-1136-R	BU-736-R		
38'	UT-38S-11-R	UT-1138-R	BU-738-R		
42'	UT-42S-11-R	UT-1142-R	BU-742-R		
44'	UT-44S-11-R	UT-1144-R	BU-744-R		
48'	UT-48S-11-R	UT-1148-R	BU-748-R		
54'	UT-54S-11-R	UT-1154-R	BU-754-R		
60'	UT-60S-11-R	UT-1160-R	BU-760-R		

Table 8.2 11” U-Trough Unload without Sweep

BIN SIZE (DIAMETER)	UNLOAD P/N	TROUGH P/N	CRATE P/N	POWERHEAD OPTION (HORIZONTAL)
24'	UT-24-11-R	UT-1124-R	UT-1101-R	UT-H-11-R
25'	UT-25-11-R	UT-1127-R		
27'	UT-27-11-R	UT-1127-R		
30'	UT-30-11-R	UT-1130-R		
32'	UT-32-11-R	UT-1133-R		
33'	UT-33-11-R	UT-1133-R		
36'	UT-32-11-R	UT-1133-R		
38'	UT-38-11-R	UT-1138-R		
42'	UT-42-11-R	UT-1142-R		
44'	UT-44-11-R	UT-1144-R		
48'	UT-48-11-R	UT-1148-R		
54'	UT-54-11-R	UT-1154-R		
60'	UT-60-11-R	UT-1160-R		

8.16. CERTIFICATIONS



MANUFACTURER: Applegate Livestock Equipment, a division of AGI - Grain Guard and Twister Brands
PO Box 151, 902 South St. Road 32, Union City, Indiana, 47390, USA

CONTACT IN EU FOR TECHNICAL CONSTRUCTION FILE: R&D Manager, Mepu Oy, Mynämäentie 59,
21900, Yläne, Finland


PRODUCT DESCRIPTION:

Description	For Bin Model	For Bin Diameter (FT)	For Bin Diameter (m)
U-Trough and BinSweep Models for 3" Corrugated Bins	25, 32, 38, 44	25'6", 31'10", 38'2", 44'7"	7.77, 9.7, 11.63, 13.59
Bin Unload and Sweep Models for 3" Corrugated Bins	14, 19, 22, 25, 32, 38, 44	13'9", 19', 22'3", 25'6", 31'10", 38'2", 44'7"	4.19, 5.79, 6.78, 7.77, 9.7, 11.63, 13.59
U-Trough and BinSweep Models for 4" Corrugated Bins	24, 27, 30, 33, 36, 42, 48, 60	23'10", 26'10", 29'10", 32'10", 35'10", 41'9", 47'9", 59'8"	7.28, 8.19, 9.10, 10.01, 10.91, 12.73, 14.55, 18.19
Bin Unload and Sweep Models for 4" Corrugated Bins	24, 27, 30, 33, 36, 42, 48, 60	23'10", 26'10", 29'10", 32'10", 35'10", 41'9", 47'9", 59'8"	7.28, 8.19, 9.10, 10.01, 10.91, 12.73, 14.55, 18.19

APPLICABLE EUROPEAN DIRECTIVES AND STANDARDS:

Applicable Directives	Applicable Standards	Certification Method
Machinery Directive 2006/42/EC	EN 12100, EN 618, EN 953, EN ISO 13857, ISO 3600, ISO 11684	Self Certified, per Article 12 of the Directive
ATEX Directive 94/9/EC	EN 1127-1, EN 13463-1, EN 13463-5	Self Certified, per Article 8 of the Directive

NOTIFIED BODY - Not Applicable

ATEX product marking:  II 3 D c T200°C

The product described in this Declaration of Conformity complies with the Applicable European Directives and relevant sections of the applicable international standards. A Technical Construction File is available for inspection by designated bodies.

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 one (1) year 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.



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