

# Farm Tube and Well Unloading Systems

## Installation Manual

PNEG-498

Version: 2.1

Date: **12-21-20**



PNEG-498

**All information, illustrations, photos and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.**

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### General Information

1. We reserve the right to improve our product whenever possible and practical to do so. We reserve the right to change, improve and modify products at any time without obligation to make changes, improvements and modifications on equipment sold previously.
2. The Farm Tube and Well Unloading Systems have been designed and manufactured to provide years of dependable service. The care and maintenance of this machine will affect the satisfaction and service obtained. By observing the instructions and suggestions recommended in this manual, the owner should receive excellent service for many years. If additional information or assistance is required, please contact the factory or the local dealer.

### Receiving Merchandise and Filing Claims

When receiving merchandise, it is important to check both the quantity of parts and their descriptions with the packing list enclosed in each package. All claims for freight damage or shortage must be made by the consignee within ten (10) days of the date of the occurrence of freight damage. The consignee should accept the shipment after noting the damage or loss on the Bill of Lading.

### Safety Equipment

Safety shields and guards provide critical protection for personnel in the area of augers during operation. Make sure that all safety shields and guards are installed and maintained. If any shields or guards are found to be damaged or missing, contact the nearest GSI Group dealer to obtain the correct equipment.

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## **Safety Guidelines**

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Save these safety guidelines for future reference.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in **SERIOUS INJURY or DEATH**.

This equipment must be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction must be consulted before installations are made.

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

**ST-0001-2**

### Cautionary Symbols Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.



This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **may result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **may result in minor or moderate injury.**



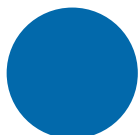
This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005

## Safety Cautions

### Use Personal Protective Equipment

- Use appropriate personal protective equipment:

**Eye Protection**



**Respiratory Protection**



**Foot Protection**



**Hearing Protection**



**Head Protection**



**Fall Protection**



**Hand Protection**



- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

### Follow Safety Instructions

- Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.
- Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.
- If you do not understand any part of this manual or need assistance, contact your dealer.



ST-0002-1

## 2. Safety

### Maintain Equipment and Work Area

- Understand service procedures before doing work. Keep area clean and dry.
- Never service equipment while it is operating. Keep hands, feet, and clothing away from moving parts
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.



ST-0003-1

### Operate Motor Properly

- All electrical connections should be made in accordance with the National Electric Code (US) or Canadian Electrical Code (CEC). Be sure equipment and bins are properly grounded.
- Lock-out power before resetting motor overloads.
- Do not repetitively stop and start the drive in order to free a plugged condition. Jogging the drive in this manner can damage the equipment and drive components.



ST-0009-1

### Rotating Auger Hazard

- Keep clear of rotating augers and moving parts.
- Do not remove or modify guards. Failure to follow these precautions will result in serious injury or death.



ST-0037-1

### Stay Clear of Hoisted Equipment

- Always use proper lifting or hoisting equipment when assembling or disassembling equipment.
- Do not walk or stand under hoisted equipment.
- Always use sturdy and stable supports when needed for installation. Not following these safety precautions creates the risk of falling equipment, which could crush personnel and cause serious injury or death.



ST-0047-1

### Stay Clear of Rotating Parts

- Do not enter the bin while the equipment is in operation.
- Entanglement in rotating augers will cause serious injury or death.
- Keep all shields and covers in place at all times.
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.



ST-0008-1

### Use Unload Equipment Properly

- Do not operate this equipment alone. Make sure someone nearby is aware of the proper shut down sequence in the event of an emergency.
- Do not allow any person intoxicated or under the influence of drugs to operate this equipment. All operators must be adequately rested and prepared to perform all functions of operating the equipment.
- Do not start equipment until all persons are clear of the work area. Do not allow anyone inside a bin truck or wagon which is being unloaded by an auger. Flowing grain can trap and suffocate in seconds.
- Use ample overhead lighting after sunset to light the work area.
- Always use caution to not hit the auger when positioning load.
- Do not leave equipment running while unattended.
- Be aware of pinch points which can trap or catch objects and cause injury.
- Be sure all equipment is locked in position before operating. Always lock out all power sources to the equipment when finished unloading.



ST-0051-1

## 2. Safety



## Safety Sign-Off Sheet


Below is a sign-off sheet that can be used to verify that all personnel have read and understood the safety instructions. This sign-off sheet is provided for your convenience and personal record keeping.

[illegible]

**ST-0007**

Check components as specified *below* to ensure that safety decals are present and in good condition. If a decal cannot be easily read for any reason or has been painted over, immediately contact a GSI Group dealer or distributor for a free replacement.

 <p><small>GSI Group Inc. 217-226-4421</small></p>	<p><b>! DANGER</b></p> <p><b>SHEAR POINT</b></p> <p>Keep hands clear of moving parts. Do not operate with guard removed. Disconnect and lockout power before servicing.</p>	 <p><small>GSI Group Inc. 217-226-4421</small></p>	<p><b>! WARNING</b></p> <p><b>SHEAR POINT</b></p> <p>Keep hands clear of moving parts. Do not operate with guard removed. Disconnect and lockout power before servicing.</p> <p><small>DC-995</small></p>
<p><b>Located on inside of back belt guard cover.</b> <b>Size: 2-1/4" x 5"</b></p>		<p><b>Located on outside of front belt guard cover.</b> <b>Size: 2-1/4" x 5"</b></p>	

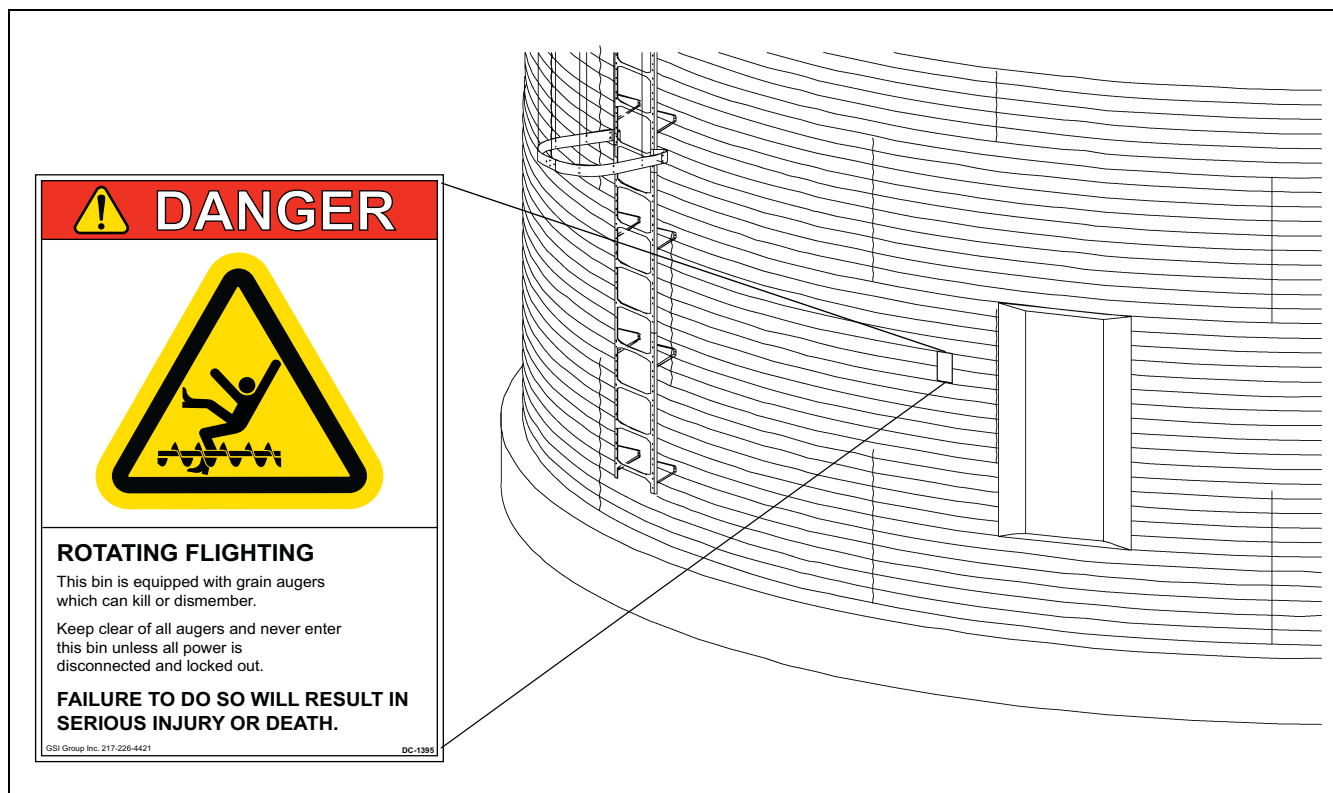
 <p><small>GSI Group 217-226-4421</small></p>	<p><b>! DANGER</b></p> <ol style="list-style-type: none"> <li>1. Keep all safety shields and devices in place.</li> <li>2. Keep hands, feet, hair, loose clothing, and other objects away from moving parts.</li> <li>3. Do not operate the machine unless visitors, children, and all other untrained personnel are well clear of the machine and work area.</li> <li>4. Stop the machine and lock out power to clean, lubricate, service, or adjust.</li> <li>5. Read operation and assembly manual completely before using equipment.</li> </ol>
<p><b>Rotating flighting can kill or dismember.</b></p>	<p><b>Failure to heed these warnings will result in serious injury or death.</b></p> <p><small>DC-834</small></p>

**Located on unloading tube near head plate.**  
**Size: 4" x 9"**

### 3. Safety Decals

- A. DANGER Sign No. DC-1395 was supplied with your bin unloading equipment. This safety sign should be applied to the side of the bin near the bin opening, so it will be viewed by people entering into the bin storage building. Do not cover any safety signs or any other signs that are already there.
- B. If the safety sign location suggested is not in full view because of equipment modifications, other equipment in the area or any reason, then locate the safety sign in a more suitable location.
- C. Be certain the surface is clean, dry and free of dirt and oil. Peel paper backing from decals and stick into place. The adhesive backing will bond on contact.

**NOTE:** Please remember, safety signs provide important safety information for people working near bin unloading equipment that is in operation.



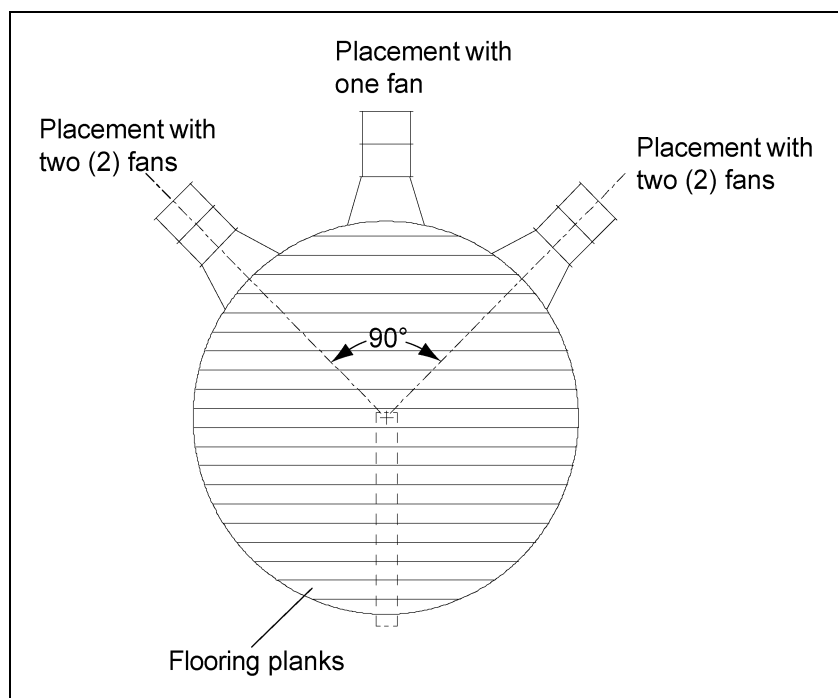
**NOTE:** If the Safety Sign cannot be easily read for any reason or has been painted over, replace it immediately. Additional Safety Signs may be obtained free of charge from your dealer, distributor or ordered from the factory.

Order SAFETY SIGN NO. DC-1395

**NOTE:** The minimum distance from the concrete to the top of the floor is 12-1/2" for 6" and 8" unloading systems.

The following instructions are to be followed during the installation of the floor.

1. Before beginning to install the floor, locate the center of the bin where the sweep pivot pipe will be located. Next, locate where the unload tube will pass through the bin wall. Refer to the floor installation manual for the floor support locations, but allow the unload tube to have an unobstructed path to the sidewall exit. Also, refer to [Figure 4A](#) for recommended fan locations with respect to the unload system.



**Figure 4A**

2. Also before beginning, review the sumps, hardware and unload tube to make sure all parts are present. Measure the length of the unload tube and compare to the values in [the below Table](#).

Bin Diameter	Tube Length
15'-18'	10' 0"
21'-24'	12' 6"
27'-30'	15' 6"
33'-36'	18' 6"
42'	22' 0"
48'	25' 0"

Use 1-3/8" O.D. pipe for the intermediate control pipe.

1.000" O.D. pipe for center sump control pipe.

**NOTE:** Control pipes are not included with center and intermediate wells but may be purchased separately.

All instructions are recommendations only.

## 4. Installation

3. The center sump and the unload tube should be installed when the floor reaches the center of the bin. Field cutting of the planks in the center of the bin will be required to allow the center sump to slip into place. The sump is designed to fit within two (2) plank widths. Refer to the sump dimensions in [Figure 4B](#) and cut the opening accordingly.

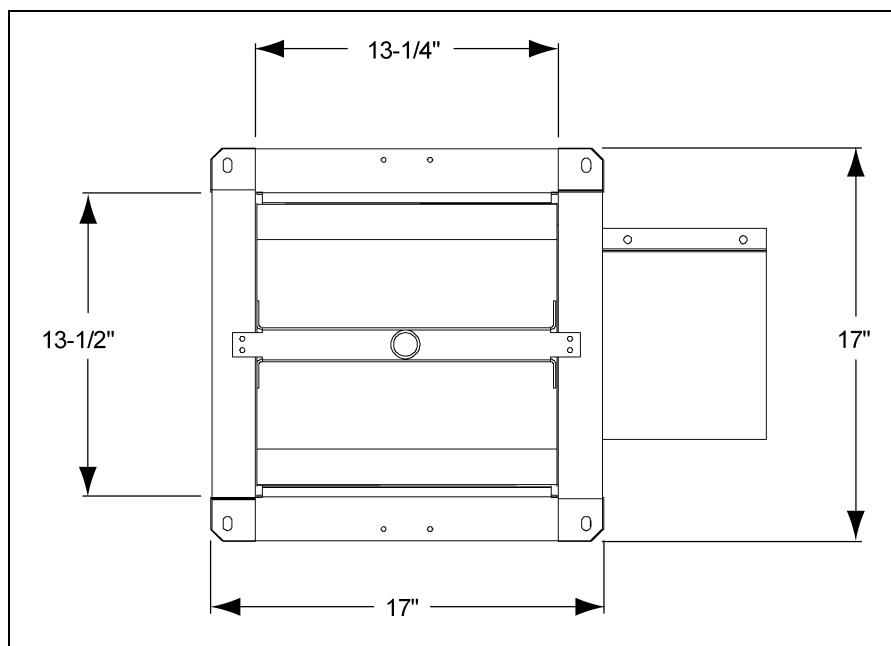


Figure 4B

Support the floor planks as recommended in the floor installation manual. Support the bottom of the sump with a concrete block or steel support to remain even with the floor level.

4. Measure the height to the bottom of the sump tube opening and mark this height on the bin wall where the tube will exit the bin. Mark the rest of the holes using the flange collar as a template. Cut the hole in the sidewall.
5. Insert the unload tube through the wall to the center of the bin. Secure the tube in the clamp of the center well using the 5/16" x 1-1/4" bolts and nuts. **NOTE:** For proper mounting of the powerheads, one set of holes in the flange ring must be aligned vertically. (See [Figure 4C.](#))

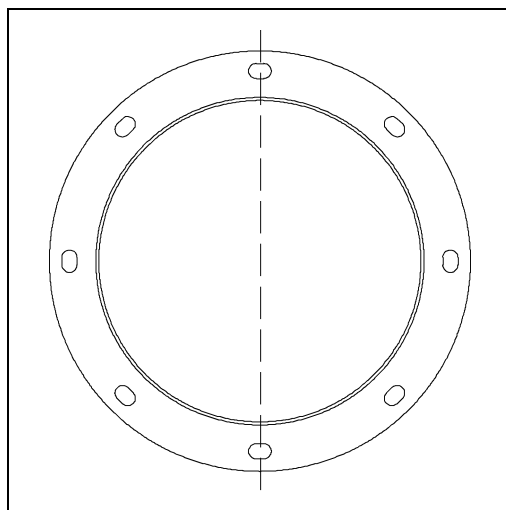


Figure 4C

6. Loosely attach the intermediate sump body to the unload tube so the control pipes can be put in place. **NOTE:** *Make sure the intermediate is positioned to pull the sump open.* (See Figure 4D.) The slide gate must be in place before the control pipes are inserted. Slide the large control pipe through the wall into the intermediate sump. Slide the smaller pipe through to the center sump. Secure the pipe to the center gate with the clamp and 5/16" x 1-3/4" roll pin provided. A 5/16" hole is drilled through the pipe 1/2" from the end of the pipe. Place the roll pin in the hole and bolt the clamp and pipe into place with 5/16" x 3/4" bolts. Make sure the 5/16" bolt is in the opposite end of the gate so the gate will remain in the well. The center well should be secured to the flooring with the self-drilling screws and 5/16" bolts provided. (See Figure 4E.)

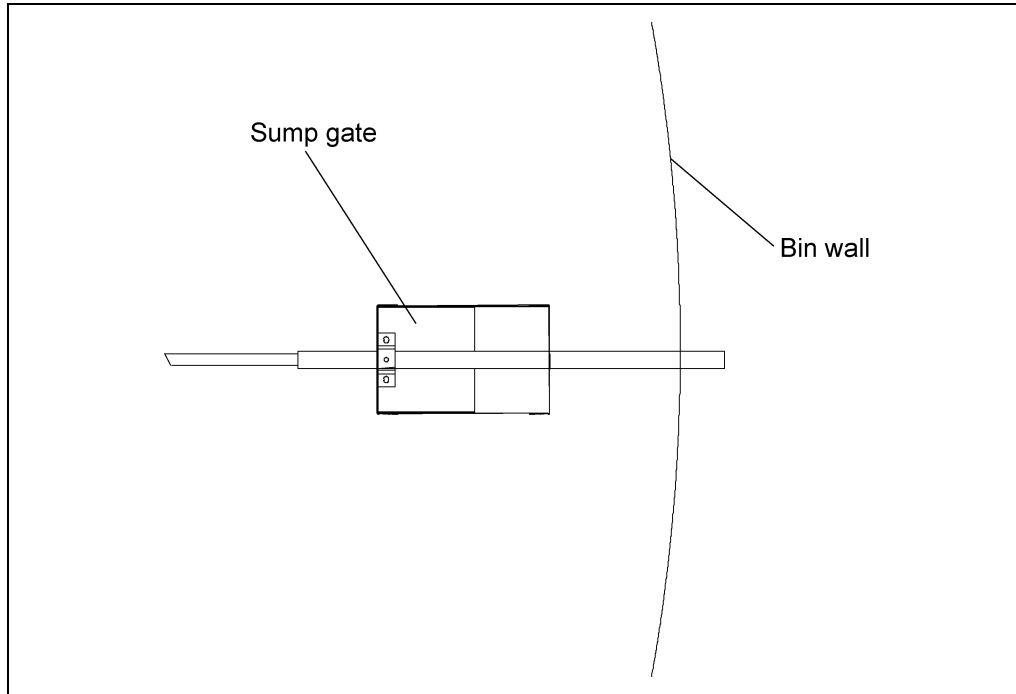


Figure 4D

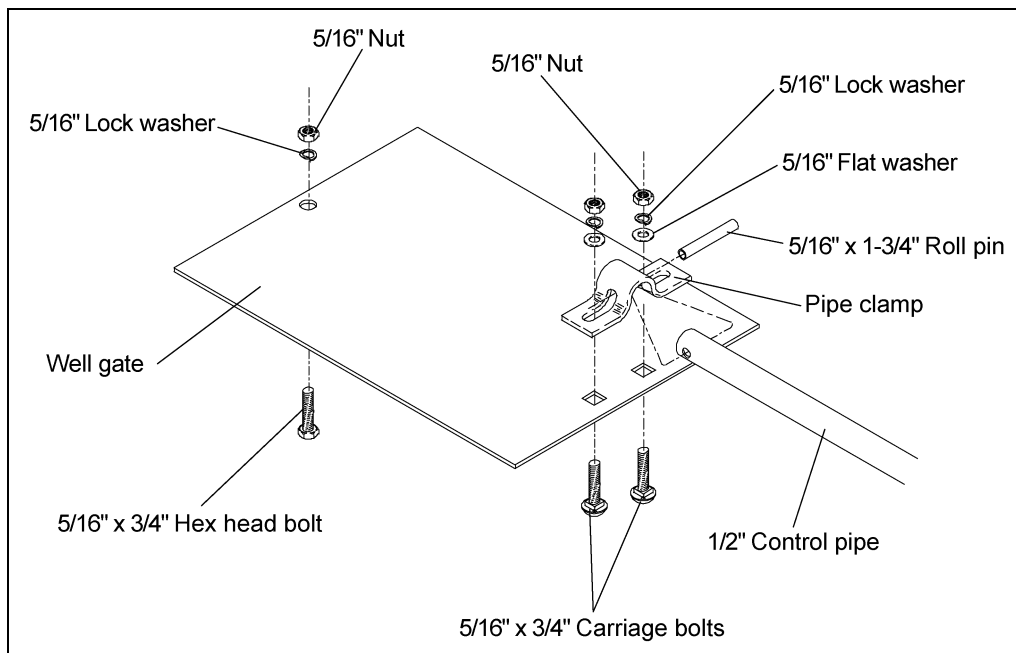


Figure 4E

## 4. Installation

7. Continue installing the floor to the desired intermediate well position. Locate the sump so that grain will be removed to allow entrance through the side door. The location will vary based on grain properties and the level of experience of the installer. The well is designed to fit in two (2) plank widths. The locking lip of the preceding plank may need to be removed to allow an easy fit between two (2) plank widths. Slide the well body tight against the preceding plank and mark the position of the well on the tube. Slide the well away and cut the opening in the tube.
8. Reposition the intermediate sump body over the hole. Secure in place with the band clamp and eight (8)  $\frac{3}{8}$ " x  $1\frac{1}{2}$ " bolts and nuts provided.
9. Position the intermediate control rod as shown in [Figure 4F](#) with 6" of pipe behind the body of the well. Mark the position of the gate clamp on the pipe with the gate slide shut. A  $\frac{3}{8}$ " hole must now be drilled on one side of the pipe to receive the dimple in the gate clamp. Bolt the clamp to the slide gate with two (2)  $\frac{5}{16}$ " x  $\frac{3}{4}$ " bolts and deformed lock nuts.

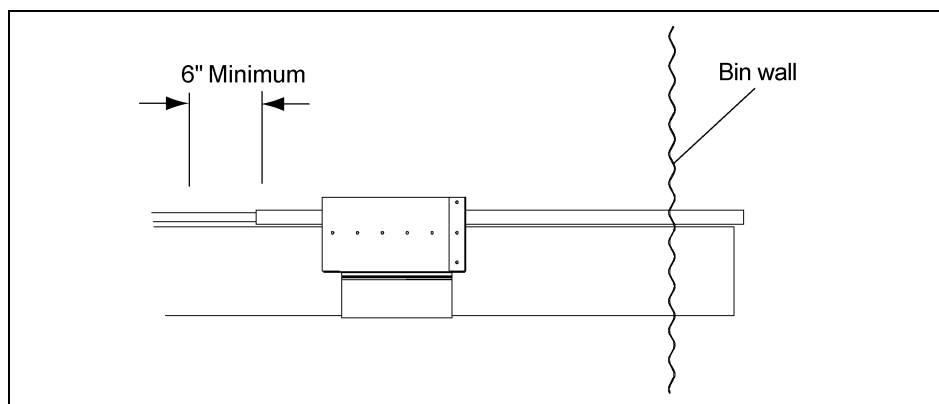


Figure 4F

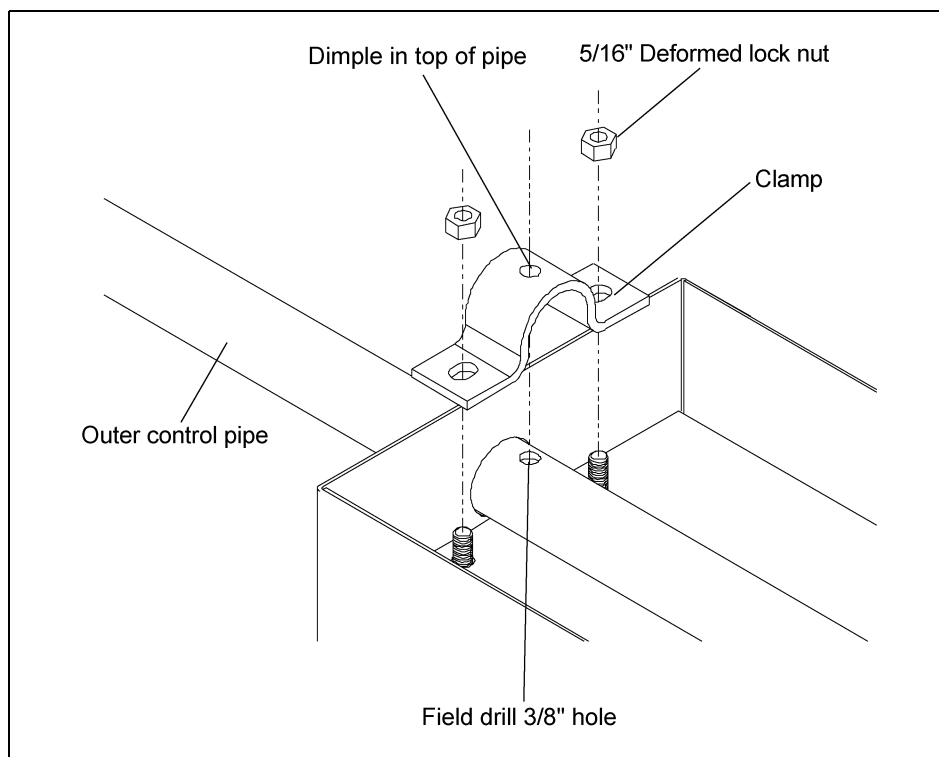
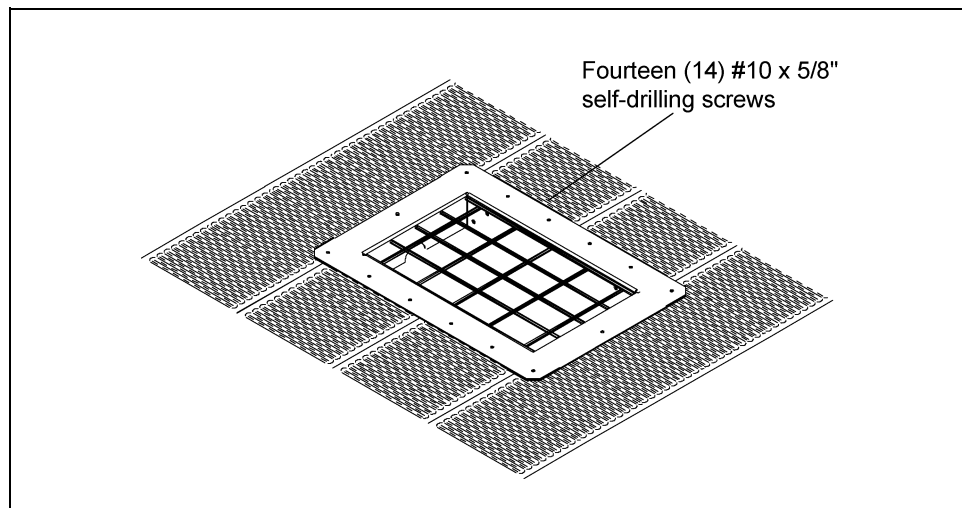


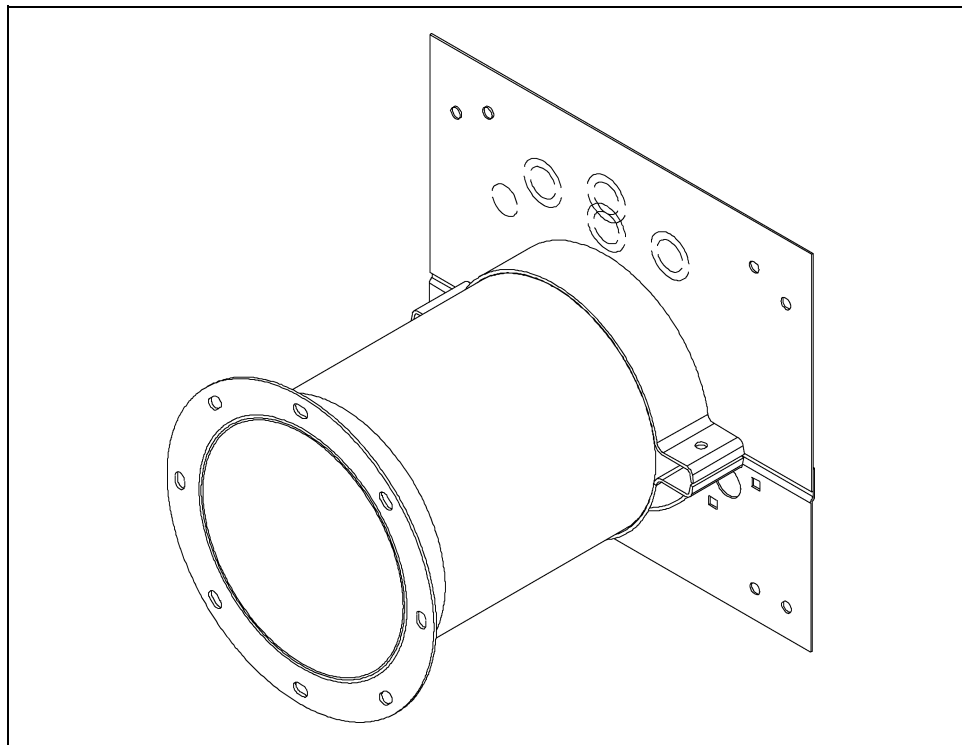
Figure 4G

10. Finish the floor installation and secure the intermediate well top assembly to the floor with the self-drilling screws provided. Install the floor flashing as shown in the floor installation manuals.



**Figure 4H**

11. Bin sealing flange halves may now be put in place to seal around the sidewall openings. Attach the flanges to the sidewall with the self-drilling screws that are provided. Handles on the control rods should be installed based upon what the customer requires and on the level of experience of the installer. (Handles and control rods are not supplied with the farm tubes and wells, but may be purchased separately.)



**Figure 4I**

12. When the installation is complete, be sure to place the warning decals near the door and near the unload powerhead as shown on [Page 11](#).

# NOTES

## Limited Warranty — N.A. Grain Products

The GSI Group, LLC. ("GSI") warrants products which it manufactures, to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months from the date of shipment (or, if shipped by vessel, 14 months from the date of arrival at the port of discharge). If, in GSI's sole judgment, a product is found to have a defect in materials and/or workmanship, GSI will, at its own option and expense, repair or replace the product or refund the purchase price. This Limited Warranty is subject to extension and other terms as set forth below.

**Warranty Enhancements:** The warranty period for the following products is enhanced as shown below and is in lieu of (and not in addition to) the above stated warranty period. (Warranty Period is from date of shipment.)

	Product	Warranty Period
Storage	Grain Bin Structural Design	5 Years
	• Sidewall, roof, doors, platforms and walkarounds • Flooring (when installed using GSI specified floor support system for that floor) • Hopper tanks (BFT, GHT, NCHT, and FCHT)	
Conditioning	Dryer Structural Design – (Tower, Portable and TopDry) • Includes (frame, portable dryer screens, ladders, access doors and platforms)	5 Years
	All other Dryer parts including: • Electrical (controls, sensors, switches and internal wiring)	2 Years
	All Non-PTO Driven Centrifugal and Axial Fans	3 Years
	Bullseye Controllers	2 Years
Material Handling	Bucket Elevators Structural Design	5 Years
	Towers Structural Design	5 Years
	Catwalks Structural Design	5 Years
	Accessories (stairs, ladders and platforms) Structural Design	5 Years

## Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH HEREIN; SPECIFICALLY, GSI DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) ANY PRODUCT MANUFACTURED OR SOLD BY GSI, OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

The sole and exclusive remedy for any claimant is set forth in this Limited Warranty and shall not exceed the amount paid for the product purchased. This Warranty only covers the value of the warranted parts and equipment, and does not cover labor charges for removing or installing defective parts, shipping charges with respect to such parts, any applicable sales or other taxes, or any other charges or expenses not specified in this Warranty. GSI shall not be liable for any other direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. Expenses incurred by or on behalf of a claimant without prior written authorization from the GSI warranty department shall not be reimbursed. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor. Prior to installation, the end-user bears all responsibility to comply with federal, state and local codes which apply to the location and installation of the products.

This Limited Warranty extends solely to products sold by GSI and does not cover any parts, components or materials used in conjunction with the product, that are not sold by GSI. GSI assumes no responsibility for claims resulting from construction defects, unauthorized modifications, corrosion or other cosmetic issues caused by storage, application or environmental conditions. Modifications to products not specifically delineated in the manual accompanying the product at initial sale will void all warranties. This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained.

### Notice Procedure:

In order to make a valid warranty claim a written notice of the claim must be submitted, using the RMA form, within 60 days of discovery of a warrantable nonconformance. The RMA form is found on the OneGSI portal.

### Service Parts:

GSI warrants, subject to all other conditions described in this Warranty, Service Parts which it manufactures for a period of 12 months from the date of purchase unless specified in Enhancements above.

(Limited Warranty - N.A. Grain Products\_ revised 01 October 2020)

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



**1004 E. Illinois St.  
Assumption, IL 62510-0020  
Phone: 1-217-226-4421  
Fax: 1-217-226-4420  
[www.gsiag.com](http://www.gsiag.com)**



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