

4" Utility and Bulk Tank Auger

Operation and Assembly Instructions

PNEG-195

Date: 12-06-10

GSI GROUP



PNEG-195

Contents

Chapter 1 Introduction	4
Receiving Merchandise and Filing Claims	4
Operating Capacities	4
Improvements	4
Chapter 2 Safety	5
Safety Guidelines	5
Safety Instructions	6
Operator Qualifications	9
Chapter 3 Safety Decals	10
Chapter 4 Assembly	13
Assembly Instruction for GSI 4" Utility and Bulk Tank Auger	13
Bearing and Washer Detail	14
Chapter 5 Electric Motor Drives	15
Horsepower Information for Electric Motor Drive	15
Chapter 6 Start-Up	16
Start-Up and Break-In Information	16
Chapter 7 Operation	17
Utility Augers Only	17
Bulk Tank Augers	17
Full Load Operating Procedures	17
Chapter 8 Shut Down	18
Normal Shut Down	18
Emergency Shut Down	18
Lock Out	18
Storage Preparation	18
Chapter 9 Parts List	20
4" Bulk Tank Auger Components	20
Chapter 10 Troubleshooting	22
Chapter 11 Warranty	23

1. Introduction

Receiving Merchandise and Filing Claims

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

Operating Capacities

The results of capacity can alter greatly under varying conditions. Moisture content, different commodities, amount of foreign matter and speeds all play a part in the performance of the auger. 25% Moisture may cut capacity by as much as 40% under some conditions.

Improvements

It is the plan of GSI Group to improve its products 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.

Safety Guidelines

This manual contains information that is important for you, the owner/operator, to know and understand. This information relates to protecting **personal safety** and **preventing equipment problems**. It is the responsibility of the owner/operator to inform anyone operating or working in the area of this equipment of these safety guidelines. To help you recognize this information, we use the symbols that are defined below. Please read the manual and pay attention to these sections. Failure to read this manual and its safety instructions is a misuse of the equipment and may lead to serious injury or death.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



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



CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.



NOTE indicates information about the equipment that you should pay special attention.

2. Safety

Safety Instructions

Our foremost concern is your safety and the safety of others associated with this equipment. We want to keep you as a customer. This manual is to help you understand safe operating procedures and some problems which may be encountered by the operator and other personnel.

As owner and/or operator, it is your responsibility to know what requirements, hazards and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may produce a very dangerous situation where **SERIOUS INJURY** or **DEATH** may occur.

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.

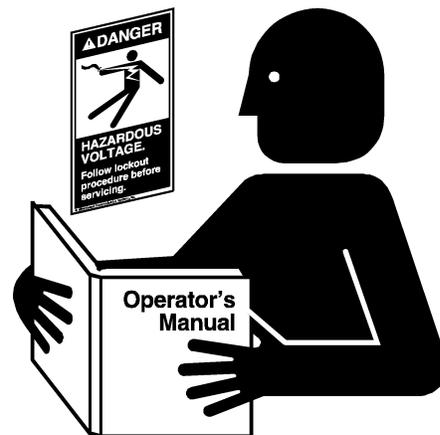
Follow Safety Instructions

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.

Keep your machinery in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual or need assistance, contact your dealer.



Read and Understand Manual

Operate Motor Properly

To avoid serious injury or death, stay away from unit and make sure everyone is clear of the equipment before starting or operating the unit.

All electrical connections should be made in accordance with the National Electric Code. Be sure equipment and bins are properly grounded.

Do not operate electric motor equipped units until motors are properly grounded.

Disconnect power on electrical driven units 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/or drive components.



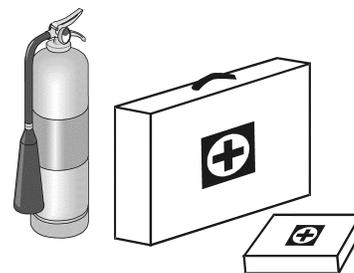
Electric Shock Hazard

Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital and fire department near your telephone.



Keep Emergency Equipment Quickly Accessible

Wear Protective Clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Remove all jewelry.

Long hair should be tied up and back.

Safety glasses should be worn at all times to protect eyes from debris.

Wear gloves to protect your hands from sharp edges on plastic or steel parts.

Wear steel toe boots to help protect your feet from falling debris. Tuck in any loose or dangling shoe strings.

A respirator may be needed to prevent breathing potentially toxic fumes and dust.

Wear hard hat to help protect your head.

Wear appropriate fall protection equipment when working at elevations greater than six feet (6').

Eye Protection



Gloves



Steel Toe Boots



Respirator



Hard Hat



Fall Protection



Operate Unload Equipment Properly

- Untrained operators subject themselves and others to **SERIOUS INJURY** or **DEATH**. **NEVER** allow untrained personnel to operate this equipment.
- **NEVER** work alone.
- Keep children and other unqualified personnel out of the working area at **ALL** times. Refer to the **Start-Up** section of this manual for diagrams of the work area.
- Make sure **ALL** equipment is locked in position before operating.
- **NEVER** start equipment until **ALL** persons are clear of the work area.
- Keep hands and feet away from the auger intake and other moving parts.
- **NEVER** attempt to assist machinery operation or to remove trash from equipment while in operation.
- Be sure all operators are adequately rested and prepared to perform all functions of operating this equipment.
- **NEVER** allow any person intoxicated or under the influence of alcohol or drugs to operate the equipment.
- Make sure someone is nearby who is aware of the proper shut down sequence in the event of an accident or emergency.
- **ALWAYS** think before acting. **NEVER** act impulsively around the equipment.
- **NEVER** allow anyone inside a bin, truck or wagon which is being unloaded by an auger or conveyor. Flowing grain can trap and suffocate in seconds.
- Use ample overhead lighting after sunset to light the work area.
- Keep area around intake free of obstacles such as electrical cords, blocks, etc., that might trip workers.
- **NEVER** drive, stand or walk under the equipment.
- Use caution not to hit the auger when positioning the load.
- **ALWAYS** lock out **ALL** power to the equipment when finished unloading a bin.
- Be aware of pinch points. A pinch point is a narrow area between two surfaces that is likely to trap or catch objects and so is a potential safety hazard.



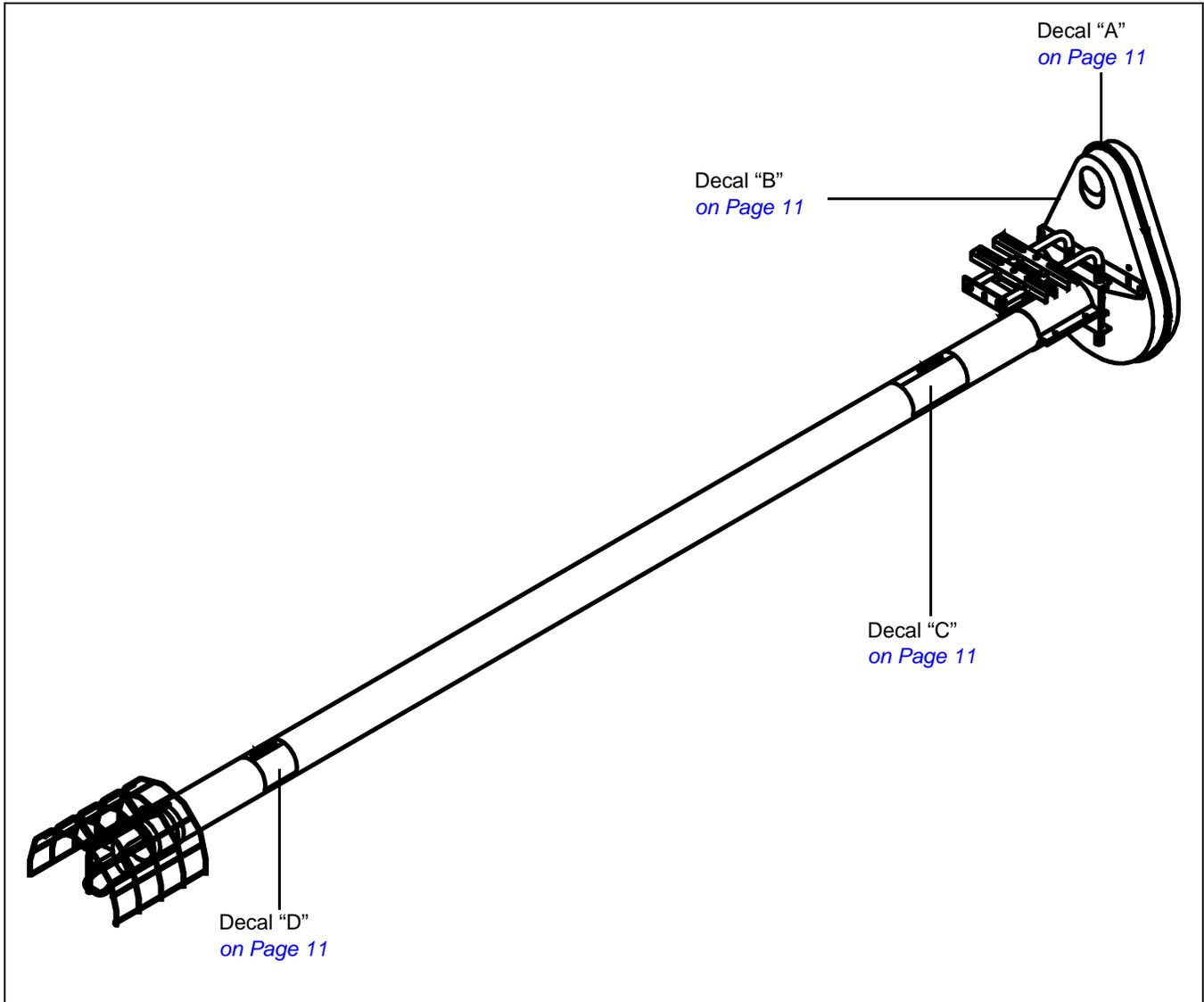
**Operate Unload
Equipment Safely**

3. Safety Decals

Check components as specified below to ensure that the safety decals are in place and in good condition. If a decal cannot be easily read for any reason or has been painted over, replace it immediately. Contact your dealer or the manufacturer to order a replacement decal free of charge.

GSI Decals

1004 E. Illinois St.
Assumption, IL. 62510
Phone: 1-217-226-4421





⚠ WARNING

SHEAR POINT

Keep hands clear of moving parts. Do not operate with guard removed. Disconnect and lock out power before servicing.

DC-995

DC-995

Decal "A"

"WARNING" Decal

Located on outside of front belt guard cover.

Size: 2-1/4" x 5"

Part #: DC-995



⚠ DANGER

SHEAR POINT

Keep hands clear of moving parts. Do not operate with guard removed. Disconnect and lock out power before servicing.

DC-994

DC-994

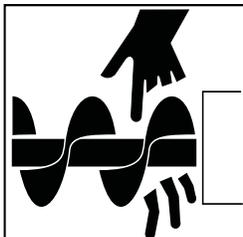
Decal "B"

"DANGER" Decal

Located on inside of back belt guard cover.

Size: 2-1/4" x 5"

Part #: DC-994



⚠ DANGER

1. Keep all safety shields and devices in place.
2. Keep hands, feet, hair, loose clothing, and other objects away from moving parts.
3. Do not operate the machine unless visitors, children, and all other untrained personnel are well clear of the machine and work area.
4. Stop the machine and lock out power to clean, lubricate, service, or adjust.
5. Read operation and assembly manual completely before using equipment.

Rotating flying parts can kill or dismember.

Failure to heed these warnings will result in serious injury or death.

DC-834

DC-834

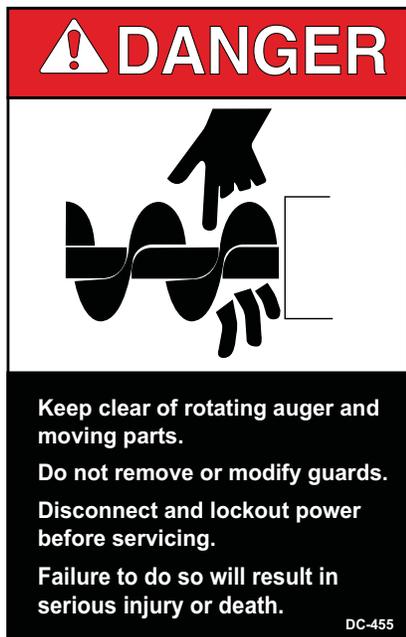
Decal "C"

"DANGER" Decal

Located on unloading tube near head plate.

Size: 4" x 9"

Part #: DC-834



DC-455

Decal "D"

"DANGER" Decal

Located on unloading tube near intake guard.

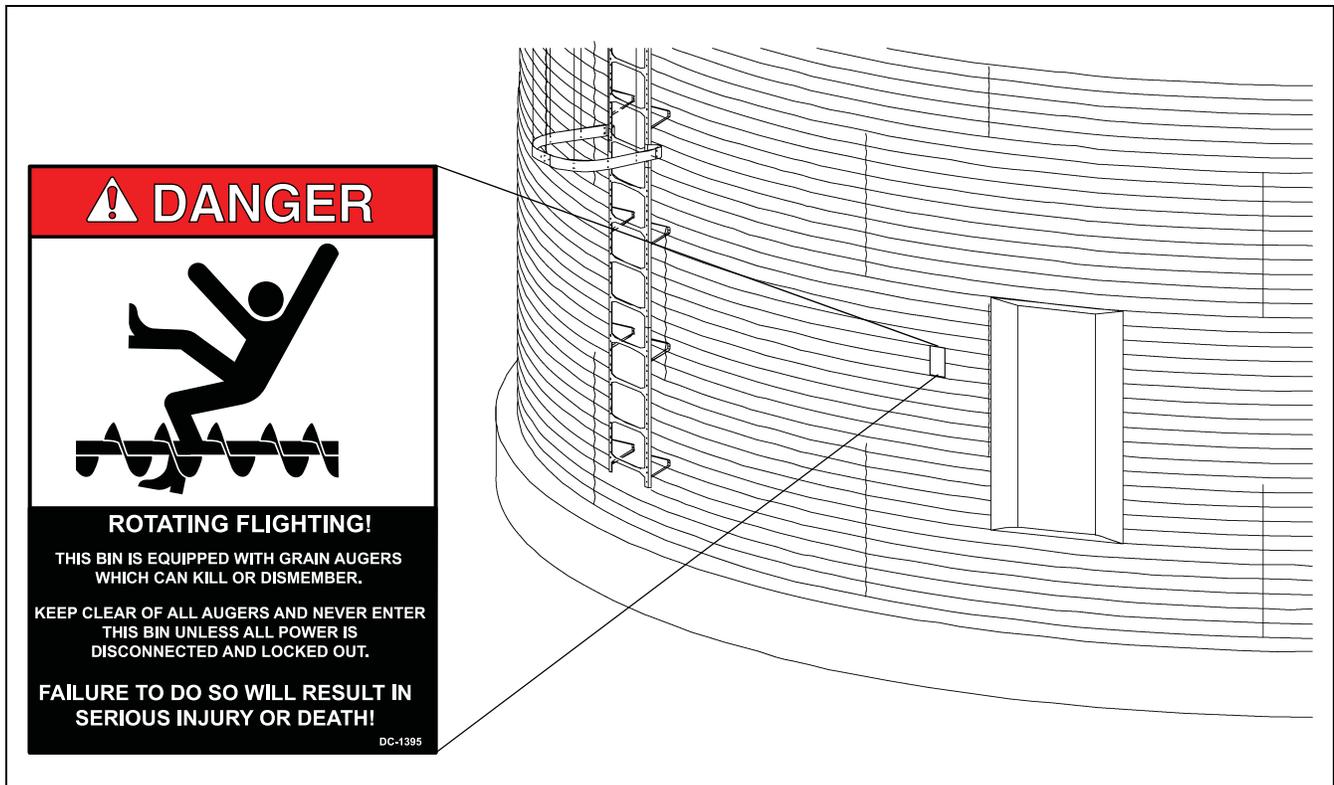
Size: 4-1/4" x 5-7/16"

Part #: DC-455

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

Assembly Instruction for GSI 4" Utility and Bulk Tank Auger

See Figure [on Page 20](#).

1. Bolt head bearing to head plate assembly using three (3) 5/16" x 3/4" carriage bolts with lock washers and nuts. Bearing lock collar must be on front of bearing next to pulley.
2. Attach motor mount rods into head plate assembly with belt guard mounting angle under top nuts. Note the position of the angle.
3. Slide head plate assembly over discharge end of auger housing. Bolt on head plate assembly using four (4) 5/16" x 1-1/4" hex head bolts and nuts
4. Attach belt guard back cover to belt guard mounting angle using two (2) 5/16" x 3/4" bolts, flat washers and lock nuts.

NOTE: *Leave bolts loose until motor, pulley and belts are installed.*

5. Slide flighting shaft through head bearing enough to install 8" pulley on shaft with 5/16" x 2" roll pin.

NOTE: *Roll pin side of pulley must be next to bearing lock collar. Locate head pulley in as close as possible to head bearing. Tighten lock collar on bearing.*

6. Position motor straps and motor clips on motor mounting rods and clamp together with four (4) 5/16" x 1" bolts and nuts. Install electric motor on motor mount and pulley on motor (motor and pulley not furnished with unloading auger). Install A38 belts, tighten belts and lock in place with 5/8" nuts.
7. Place support strap on auger housing directly behind head plate, clamp in place with half band using two (2) 5/16" x 1-1/4" hex head bolts. Slide rod support strap over ends of 5/8" motor mount rods and attach to support strap with one 5/16" x 3/4" carriage bolt, flat washer, lock washer and nut.
8. Adjust belt guard back cover so that the belts and pulleys will clear the belt guard front cover when it is installed. Tighten bolts securing the back cover to the mounting angle.
9. Attach belt guard front cover to belt guard back cover using six (6) #10 x 3/4" self-drilling screws.
10. **Bulk Tank Augers Only:** Fasten full band to auger housing using a 5/16" x 1-1/4" hex head bolt and nut. A cable can be used to support the bulk tank auger.
11. If unit has trouble starting under load, cut down on amount of exposed flight on auger intake.

NOTE: *Slide extension flighting assembly into extension housing assembly. Bolt flighting assemblies together so that the ends of the flighting are approximately a half turn apart using 5/16" x 1-1/2" hex head bolts and lock nuts. Connect auger housing together with connecting band. Be sure auger housings are tight together. Use bolts already in connecting band. The connecting band should be half on each housing assembly.*

4. Assembly

Bearing and Washer Detail

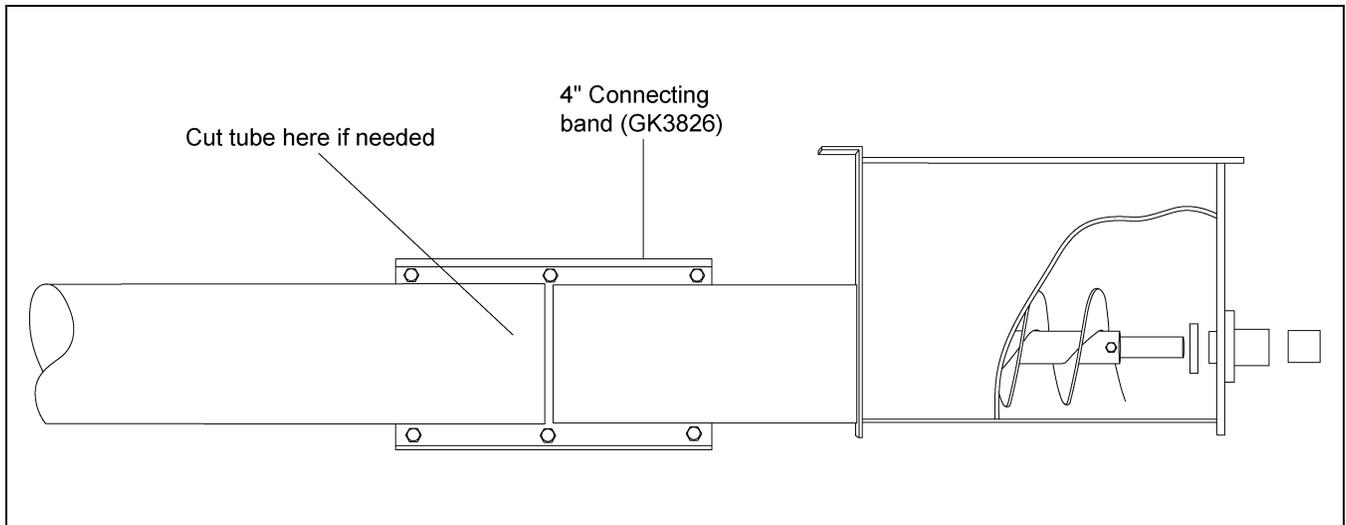


Figure 4A

Install supplied stub shaft inside auger flight with 1/4" x 1-1/2" bolt and a 1/4" lock nut. Position flight with stub shaft and washer into unloader bearing. (See [Figure 4A.](#))

4" Unloaders require 17" of exposed flight. It is necessary to field cut auger tube lengths to accommodate required exposure. Butt the auger tube to the unloader tube and attach using a connecting band.

IMPORTANT: *Auger stub shaft supplied is designed to fit GSI 4" bulk tank augers. If using a different auger supplier it may be necessary to modify or fabricate a stub shaft for the unloader bearing.*

Suggested horsepower is listed in below [Chart](#). 1750 RPM electric motors and controls shall be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes. Reset and motor starting controls shall be located where the operator has unrestricted access to the controls.

Magnetic starter should be used for the protection and the motors. This is to assure the operator of accidental restart caused by power interruption, conductor fault, low voltage, circuit interruption or thermal overload protection, make sure this type motor has a manual reset.

Horsepower Information for Electric Motor Drive

This chart is a suggested horsepower requirement for standard 4" Utility Augers.

Length	Motor HP
11'	1/2
15'	1/2
20'	3/4

Horsepower recommendations are for augering reasonably dry grain at different angles. Grain with 15% moisture and above may require more horsepower if maximum capacity is to be maintained. Use a 2-1/2" to 3" motor pulley for a recommended auger speed of 550 RPM to 650 RPM. Motor pulley not furnished. Excessive wear will result if auger speed is in excess of 700 RPM and auger load up will occur if auger speed is less than 500 RPM or flow gate is required.

Auger speeds in excess of 750 RPM should be avoided as excessive wear will result. Auger speed below 450 RPM require a flow control to restrict intake to the auger. High torque is required to turn the flighting if it is permitted to "load up" at low speed and damage to the auger can result. An optional control gate is available for this purpose.



Disconnect power before resetting motor overloads. Make certain electric motors are grounded.

6. Start-Up

Start-Up and Break-In Information

Before adding power it is essential to inspect the drive unit and know how and where to shut down the unit in case of an emergency. Have one person in a position to where they can monitor the operation of the equipment during operation.

Any auger should go through a “break-in” period, whether new or being idle of a season. The “break-in” period is to polish the auger and tube to make surfaces smooth. The auger should be run at partial capacity until several hundred bushels of grain have been augered through. After the auger and tube are polished it can be run at full capacity.

Never operate the auger empty for any length of time, for excessive wear will result. If at all possible, do not stop or start the auger while loaded, especially before the auger and tube are well polished, this may cause auger to “bind-up”.



The operator should be aware of any unusual vibration or noises during the initial start-up and break-in period. All safety shields and guards are to remain in place. Keep hands, feet and clothing away from rotating and moving parts.

For efficient operation of the equipment, auger speed is very important.

1. Extreme wear result if auger speed is in excess of what is recommended.
2. Auger will load up or overload if auger speed is too slow. Overload of the auger will cause motor to overload and higher torque will be required to turn auger, which in turn may cause damage to the auger.

Utility Augers Only

Utility augers are primarily designed as portable units. These augers are not designed for permanent installations. A utility auger has many different uses. Since it is not sold with an undercarriage or other method of support, it must be supported by the user satisfactorily for the specific job. Always be sure to fasten the discharge and intake end in place so the auger will stay in place throughout operation.

Bulk Tank Augers

Bulk tank augers are primarily designed for use in bulk tank unloading augers only. These units are not furnished with intake guards. **THEY ARE TO BE USED ONLY IN A BULK TANK.** If removed with the intention of using as a utility auger, an intake guard is required, order from parts page, and install prior to use.

Since it is not sold with an undercarriage or other method of support, it must be supported by the user satisfactorily for the specific job. Always be sure to fasten the discharge and intake end in place so the auger will stay in place throughout operation.



Before operating augers be sure all personnel are clear.

Full Load Operating Procedures

It is good practice to visually inspect the auger periodically during the actual operation. You should be alert for unusual vibrations, noises and the loosening of any fasteners.



Observe work area restrictions. Make certain everyone is clear before operating the machine.

8. Shut Down

Normal Shut Down

Before stopping the unit, make certain that hopper and inclined tube are empty. Never leave the work area without locking out the power supply.

Emergency Shut Down

If the auger has to be shut down while in full operation, disconnect and lock out the power source. Never attempt to restart when auger tube is full.

NOTE: *Damage may occur to the auger if attempting to start the auger while unit is under load.*

This type damage is considered abuse to the equipment. Re-connect power source and clear auger gradually.



Stop motor and lock out power source when servicing and/or adjusting the equipment.

Lock Out

Augers must be stopped and power source turned OFF when operator is:

1. Away from work area.
2. Servicing or adjusting equipment.



Precaution should be made to prevent anyone from entering work area.

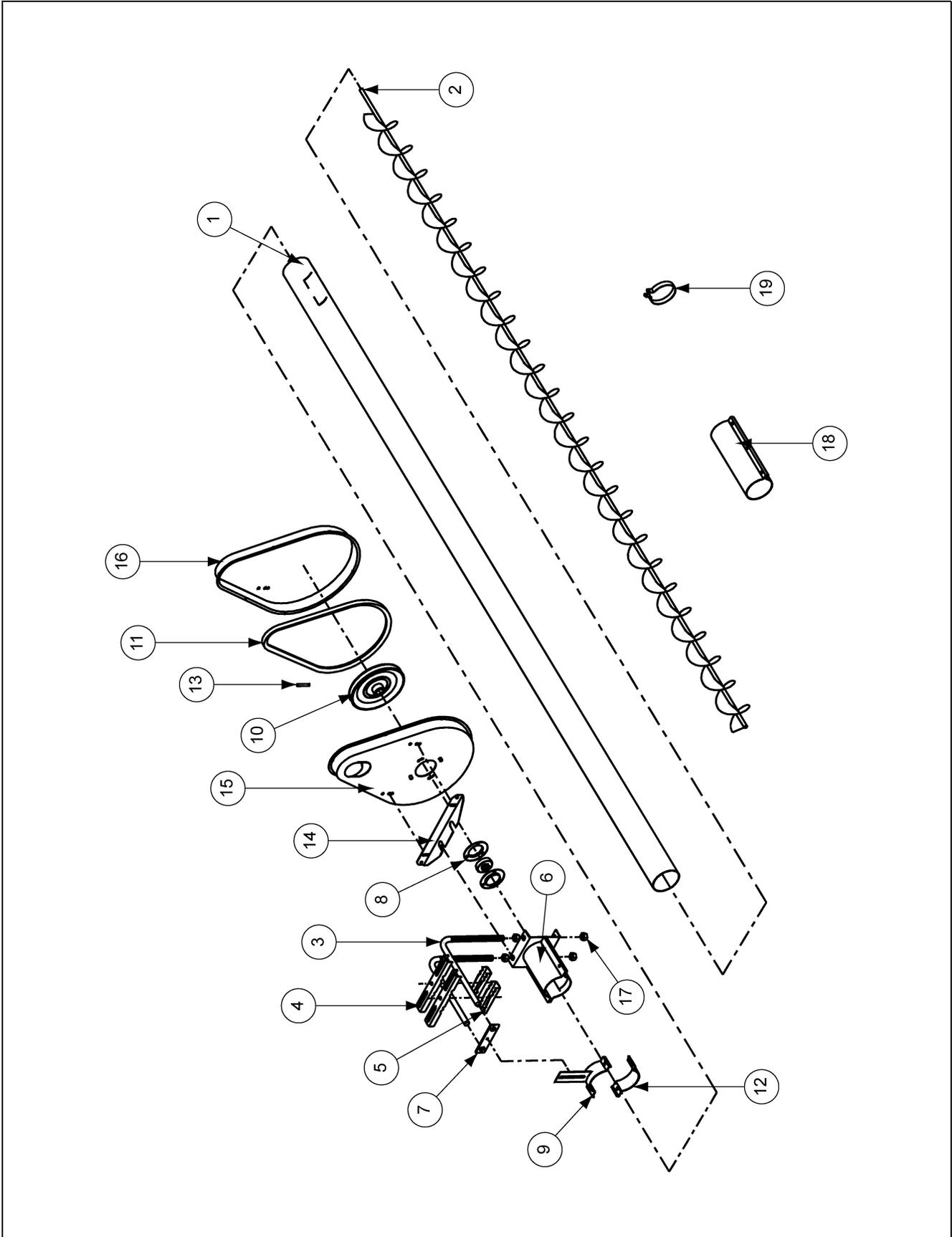
Storage Preparation

1. Check all guards and shields making sure they are in place, secured and functional.
2. Replace any safety signs or warning decals that are worn, missing or illegible. These items are listed [on Page 11](#) and may be obtained from GSI Group dealer or from the factory.
3. Check to ensure all fasteners are tight.

NOTES



4" Bulk Tank Auger Components



4" Bulk Tank Auger Components Parts list

Ref #	Part #	Description	Qty
	G60618	4" Bulk Tank Utility Auger Boxed Parts	1
1	RA-3144	4" x 114" Feed Auger Housing	1
1	RA-3145	4" x 162" Feed Auger Housing	1
1	RA-3146	4" x 222" Feed Auger Housing	1
2	G6977A1-A	4" x 134-1/2" Auger Flight Weld 11' Utility	1
2	G6977A1-B	4" x 182-1/2" Auger Flight Weld 15' Utility	1
2	G6977A1-C	4" x 242-1/2" Auger Flight Weld 20' Utility	1
3	GK2843	Rod, Motor Mount 5/8" Plated	2
4	GK2841	4" Top Motor Mount Strap	2
5	GK2842	4" Bottom Motor Mount Clip	2
6	GK3500	4" Head Plate Weldment	1
7	G5012A1	4" Rod Support	1
8	GK1583	Flangette Bearing 1"	1
9	G6049A1	4" Support Strap Weldment	1
10	GK3498	8" 1 Groove Pulley (1" Bore)	1
11	G40105	A38 Belt	1
12	GK2155	Half Band 4" x 2" 12 Gauge Galvanized	1
13	S-4377	5/16" x 2" Long Grooved Roll Pin	1
14	GC00155	Belt Guard Mounting Angle	1
15	FLX-2987	Belt Guard Back Cover	1
16	FLX-2986	Belt Guard Front Cover	1
17	S-4110	Hex Nut 5/8"-11 ZN Grade 5	4
18	GK3826	4" Connecting Band (Bulk Tank Auger Only)	1
19	GC00005	4" Clamp Band (Bulk Tank Auger Only)	1

10. Troubleshooting

Problem	Possible Cause	Solution
Utility auger	1. Drive belt may be overtightened, putting head stub and flight in a bind. Damage can occur to the auger flighting, thus caused noise. Damage usually caused from foreign material having been run through the auger.	1. It may be necessary to remove the flighting for inspection.
		2. Adjust the drive belt to the proper tension.
Low capacity	1. The auger may not be getting enough grain.	1. Check that the intake has not bridged over, restricting flow. The exposed flighting at the auger intake should be covered with grain to achieve maximum capacity.
	2. The auger is moving too slowly.	2. Check the auger speed. Speeds slower than the recommended speed will result in low capacity.
Auger plugs	1. The auger may be getting too much grain, causing "jamming" inside the housing.	1. Decrease the amount of grain the auger is gathering.
	2. The motor may be too small or wired improperly.	2. If the motor is a newer light weight aluminum type, the next larger size should be considered.
	3. The grain may be wet.	3. If wet grain or other hard-to-move material is being augured, use a larger size motor than recommended for normal use.
	4. The auger may be jammed with foreign material.	4. Be sure there is no foreign material in the auger such as sacks, tarp corners, etc.
	5. The discharge end may be plugged.	5. Make sure the discharge end of the auger is not plugged. A plug of the discharge end will cause an auger plug.

GSI Group, LLC Limited Warranty

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 after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
Grain Systems	Grain Bin Structural Design	5 Years	
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12th) month from the date of purchase and continuing until the sixtieth (60th) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) 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.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. 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.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

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. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

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.

G S I G R O U P



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Assumption, IL 62510-0020
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