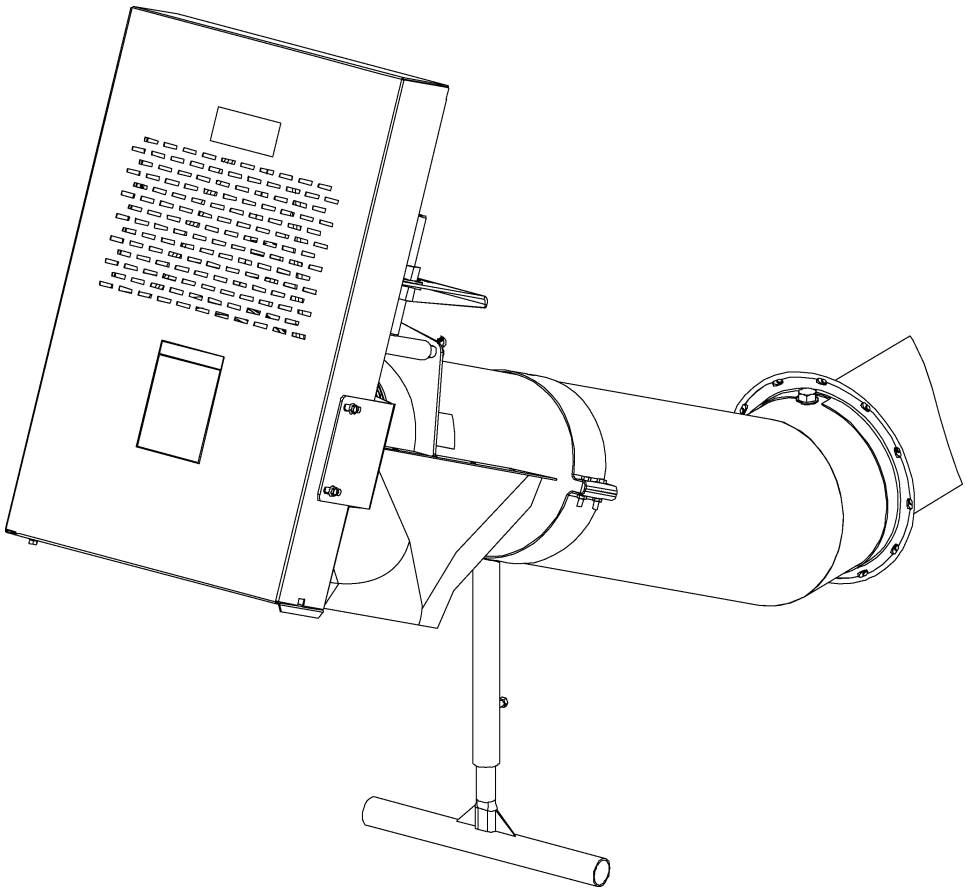

CE Compliant 6"-6", 6"-8", 8"-8", 8"-10" and 10"-12" 25° Farm Bin Unloader

Assembly and Operation Manual - Original Instructions

PNEG-1430CE

Date: 08-20-13

GSI GROUP

PNEG-1430CE

GSI GROUP

CE Declaration of Incorporation
MACHINERY DIRECTIVE 2006/42/EC

1004 East Illinois Street, Assumption, IL, 62510, USA

+1 217 226 4429

The GSI Group declares that the machine, parts or equipment.

25° Bin Unloaders

Models

G662501A; G682501A; G882500A; G810252A; G810253A; G810253B; G1012252A; G1012253A; G1012254A.

Inclusive of unload accessories

With the following required elements:

- 6" Outlet spouts GK7173, GK7181 or GK7177
- 8" Outlet spouts GK7174, GK7182 or GK7178
- 10" Outlet spouts GK7175, GK7183 or GK7179
- 12" Outlet spouts GK7176, GK7184 or GK7180
- Each of the above supplied and fitted with minimum 850 mm long rigid steel grain tube.

Meet the following clauses of the Essential Requirements of the Machinery Directive 2006/42/EC.

1.1.2 and sub-clauses principles of safety integration

1.3.1 Risk of loss of stability

1.3.2 Risk of break-up during operation

1.3.7 Risk related to moving parts

1.3.8 Choice of protection against risks arising from moving parts

1.3.8.1 Moving transmission parts

1.3.8.2 Moving parts involved in the process

1.3.9 Risks of uncontrolled movements

1.4 Required characteristics of guards and protective devices

1.4.1 General requirements

1.4.2 Special requirements for guards

1.4.2.1 Fixed guards

1.5.4 Errors of fitting

1.5.5 Extreme temperatures

1.5.6 Fire

1.5.7 Explosion

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1.5.8 Noise

1.5.9 Vibrations

1.5.13 Emissions of hazardous materials and substances

1.6 Maintenance

1.6.1 Machinery maintenance

1.6.4 Operator intervention

1.7 Information

1.7.1 Information and warnings on the machinery

1.7.1.1 Information and information devices

1.7.2 Warning of residual risks

1.7.4 Instructions

1.7.4.1 General principles for the drafting of instructions

1.7.4.2 Contents of the instructions but not inclusive of sub-clause (u)

1.7.4.3 Sales literature

This declaration applies only to the mechanical elements of the above machines and does not imply conformity by any other items of equipment fitted to or connected with the above machines. The equipment above must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of all relevant Directives, nor until these components have been assembled in the manner recommended in the attached manufacturers instructions.

Signed : F. G. Ward

Name: Frank Ward Director Hennock International Limited On behalf The GSI Group

Date: 08-20-13

F. G. Ward

Digitally signed by Frank Ward
DN: cn=Frank Ward, o=Hennock International Limited, ou, email=fward@gsiag.com, c=GB
Date: 2013.08.30 12:41:08 +01'00'

NOTES

Contents

1. Introduction

READ THIS MANUAL carefully to learn how to properly use and install equipment. Failure to do so could result in personal injury or equipment damage.

INSPECT the shipment immediately upon arrival. The customer is responsible for ensuring that all quantities are correct. The customer should report and note any damage or shortage on the bill of lading to justify their claim to the transport company.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your equipment and should be easily accessible when needed.

This warranty provides you the assurance that the company will back its products when defects appear within the warranty period. In some circumstances, the company also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the factory specifications, the warranty will become void and field improvements may be denied.

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 a hazardous situation which, if not avoided, will result in death or serious injury.

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

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE is used to address practices not related to personal injury.

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 that 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.

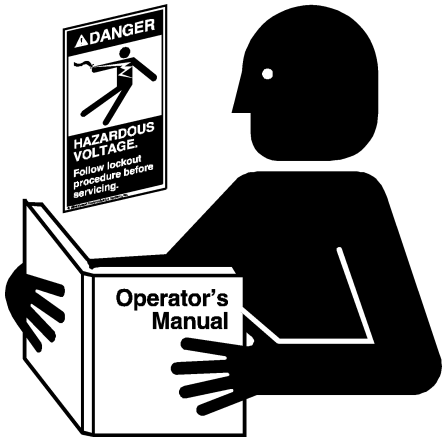
Follow Safety Instructions

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.



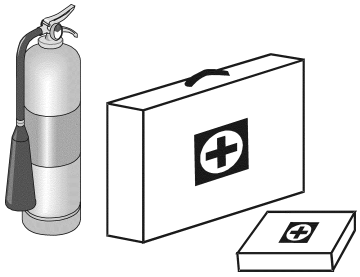
Read and Understand Manual

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.

Tie long hair up and back.

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

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

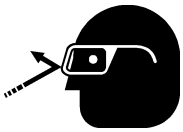
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

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

Wear a 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-Toed Boots

Respirator

Hard Hat

Fall Protection

Possible Hazards Inside Grain Bins

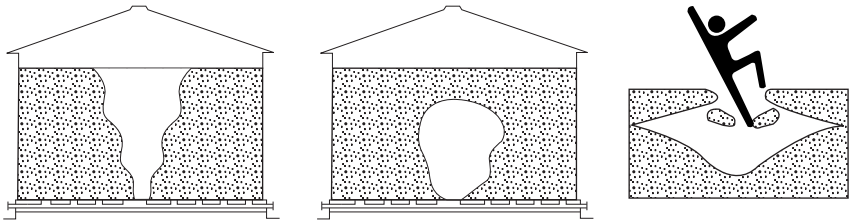
The inside of a grain bin, no matter what size, is a dangerous location. Grain bins should be kept **locked shut** at all times.

NEVER allow a child or untrained, inexperienced person to enter a grain bin.

Hazards present at any time may include:

Mass flow of grain when filling or emptying which could draw you in and cause suffocation/burial.

Bridged, crusted or capped grain which could collapse if you stand on it. It is recommended **NEVER** to walk on the surface of the stored material.



If grain has stopped flowing, become bridged, capped or crusted, the **only safe way** to remedy this is from the outside of the bin.

Exposed machinery such as fans, augers and conveyors with which you could become entangled.

Hazardous substances such as dust, mould spores, vapors and gases or low oxygen levels which could cause respiratory problems.

High temperature combustible material.

Minimum Auger Safety Requirements

Incorrect use of augers can be extremely dangerous. Rotating flights and shafts can cause serious injury and kill.

Required Guarding

The following guarding must be fitted to the drive unit at all times.

1. Outlet guard, comprising discharge spout and minimum 850 mm long solid steel extension tube. *(See Figure 2A.)*

   a. This length of tube is required to reduce the risk of persons reaching the auger flight or shaft.

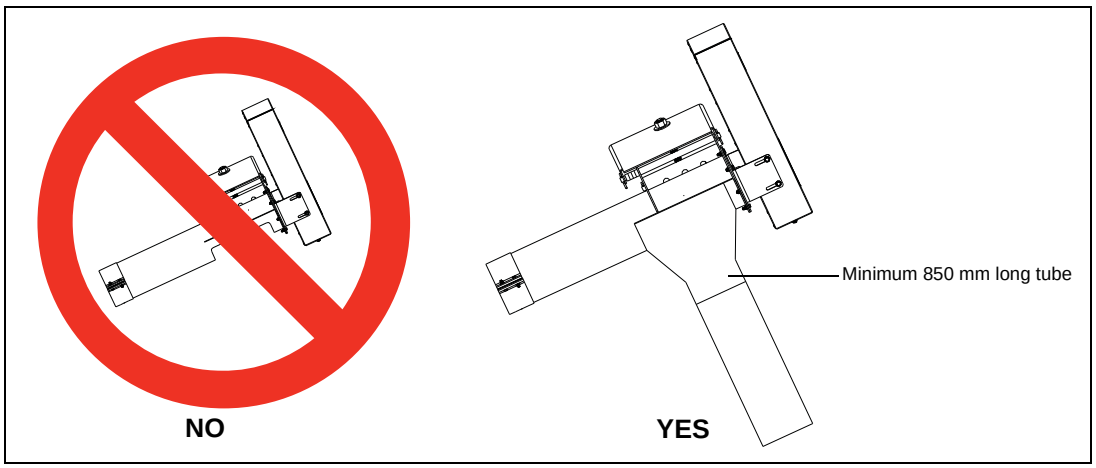


Figure 2A

   b. A shorter tube may be used only where the tube is directly connected to other handling equipment. *(See Figure 2B.)*

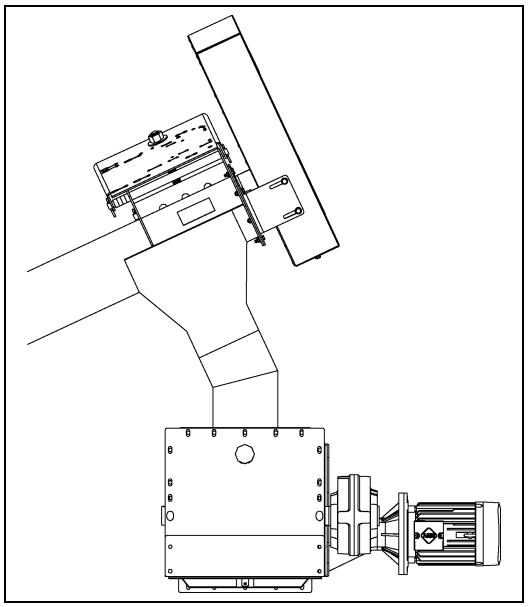


Figure 2B

2. Belt drive and pulley guard. *(See Figure 2C.)*

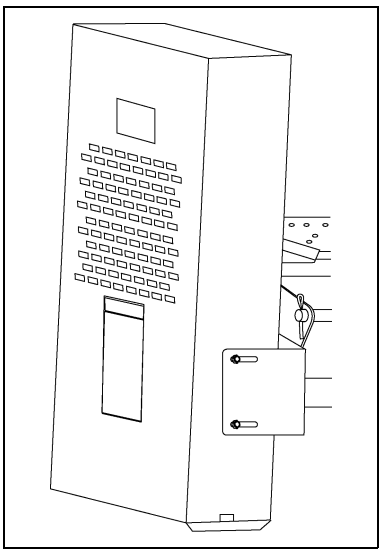


Figure 2C

Correct Use

1. The equipment is for use with GSI bin unload augers and direct drive power sweep augers, up to 48' diameter (14.63 m).
2. It is for conveying whole agricultural seeds and grains from inside a circular grain bin. Any other use is prohibited and may result in injury or equipment damage.
3. The sweep and unload auger can only be safely used inside a grain bin when there is no person inside the bin.
4. The installer and operator have responsibility to ensure the final installation is in accordance with all the safety requirements outlined in this manual and fulfils the Essential Requirements of the Machinery Directive 2006/42/EC.
5. Never use the auger with any guards removed.
6. Never enter the grain bin unless the power supply to the auger and all other equipment in the bin is OFF, TAGGED and LOCKED. *(See Figure 2D.)*

Figure 2D

7. Never leave the auger running unattended.
8. Always TURN OFF and LOCK the power supply to the auger before leaving it unattended.
9. Never allow an untrained person less or one less than 18 years old to operate the auger.
10. Never allow someone under the influence of alcohol or drugs to operate the equipment.
11. Never modify the auger from it is original specification.
12. Never work alone.
13. Never start equipment until all persons are clear of the grain bin.
14. Keep hands and feet away from the auger outlet and other moving parts.
15. Always think before acting. Never act impulsively around the equipment.
16. Never allow anyone inside a bin, truck or wagon which is being loaded or unloaded. Flowing grain can trap and suffocate in seconds.

Moving the Incline Drive Unit

The drive unit may be installed to be transferred between a number of grain bins. In this case, the following precautions must be observed:

1. Power supply to the drive unit motor must be made via a suitable plug and socket, to allow the unit to be disconnected and re-connected as required.
2. The plug and socket must have provision to provide protective earth connection to the unit in all required locations and must be suitably weather-proof (recommended IP67).
3. The drive unit must be moved mechanically, using suitable lift equipment.
4. Due to the weight of the motor, the unit will be top heavy and therefore must be lifted from on top of the motor (motor lifting eye) or around the motor. A second lift point should be adjacent to the bin flange.

Electrical Safety Equipment

Please refer to *Chapter 5 on Page 28* for electrical control requirements.

1. All electrical installation and design must be carried out by a qualified electrical engineer, in accordance with EU Directives and standards and in accordance with local laws and codes.
2. The electrical supply must include a properly designed protective earth system (PE).
3. The motor must be connected to protective earth at the terminal provided.
4. The control system must include short circuit protection.
5. It is recommended to provide earth leakage protection, such as residual current device (RCD) or residual current circuit breaker (RCCB) to provide automatic disconnection from the power in the event of a fault.

Below are the safety warning decals that should be fitted to the auger. These warn of residual risks and required safety measures and must remain intact, legible and undamaged for the life of the machine. If any decals have become damaged or unreadable, please contact GSI or your dealer for free replacements.

International Decals

International, translated versions of the decals fitted to the equipment are available as part of the language pack that was supplied with the product. If you need further copies or a different language, please contact GSI or you dealer.

The international decals have been designed to be placed directly over the USA standard versions. Normally these will be factory fitted, but if you need to change them, please refer to decal cross reference sheet, provided with the language pack and the decal locations given in the user's manual.

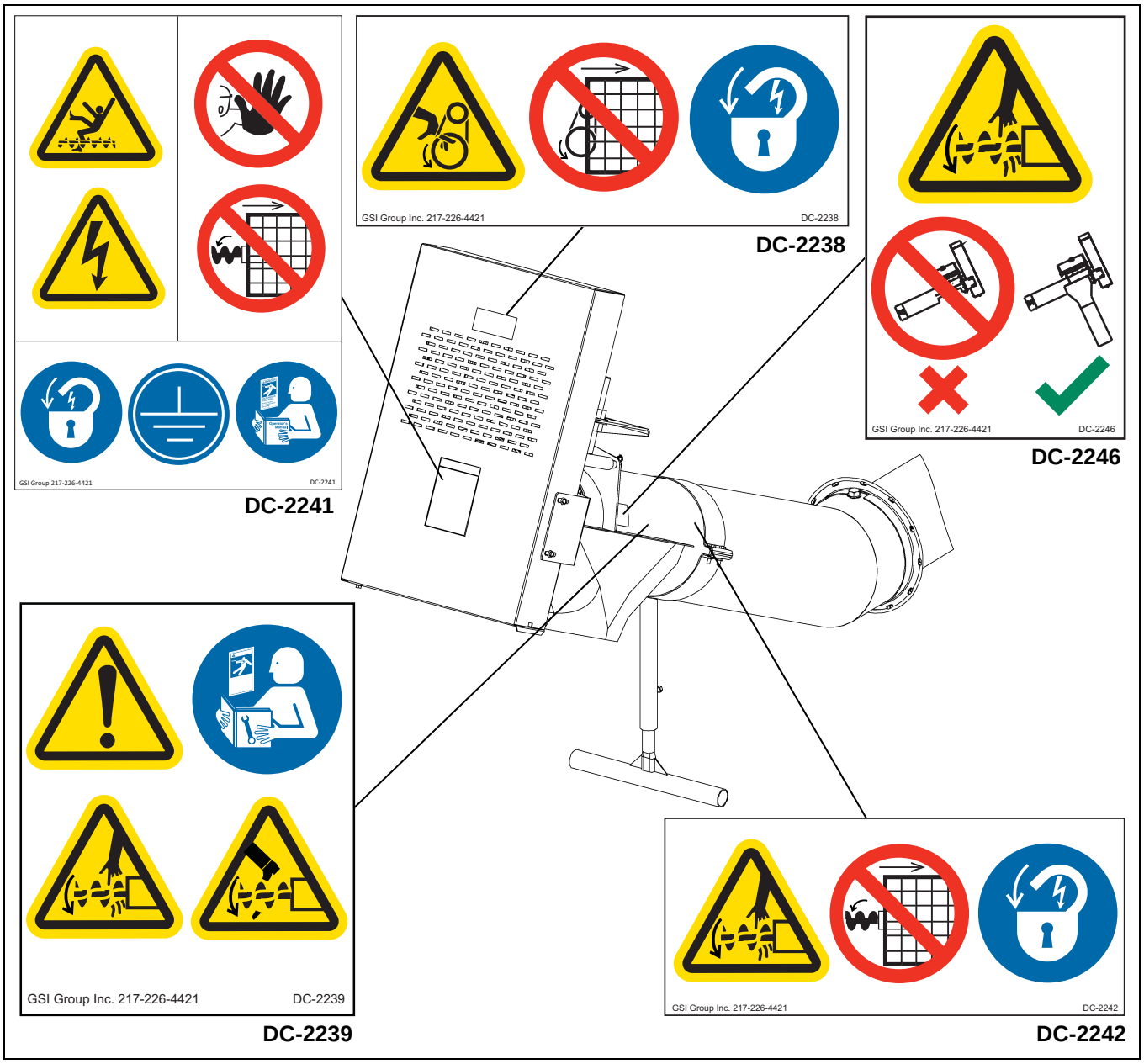
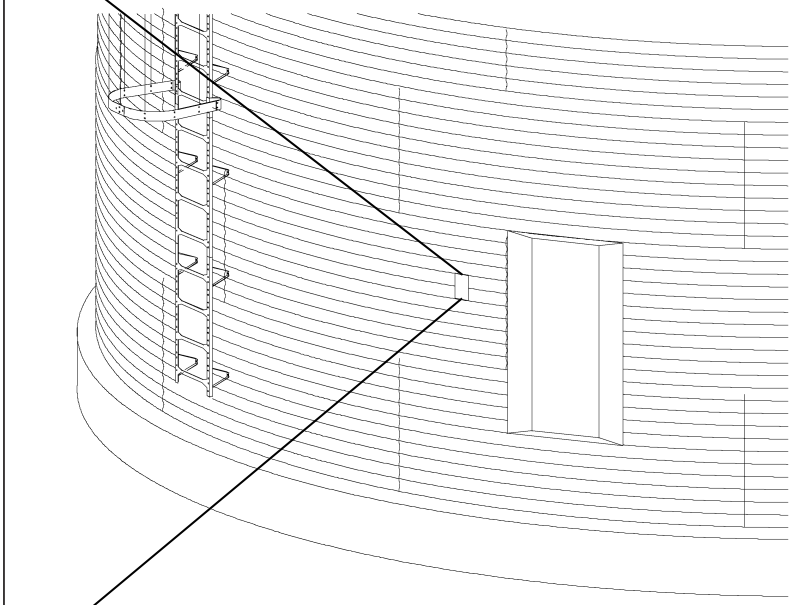


Figure 3A

DC-2244 Should be fitted to all bins where augers are installed. This should be located in clear view adjacent to all personnel entry points on the bin.

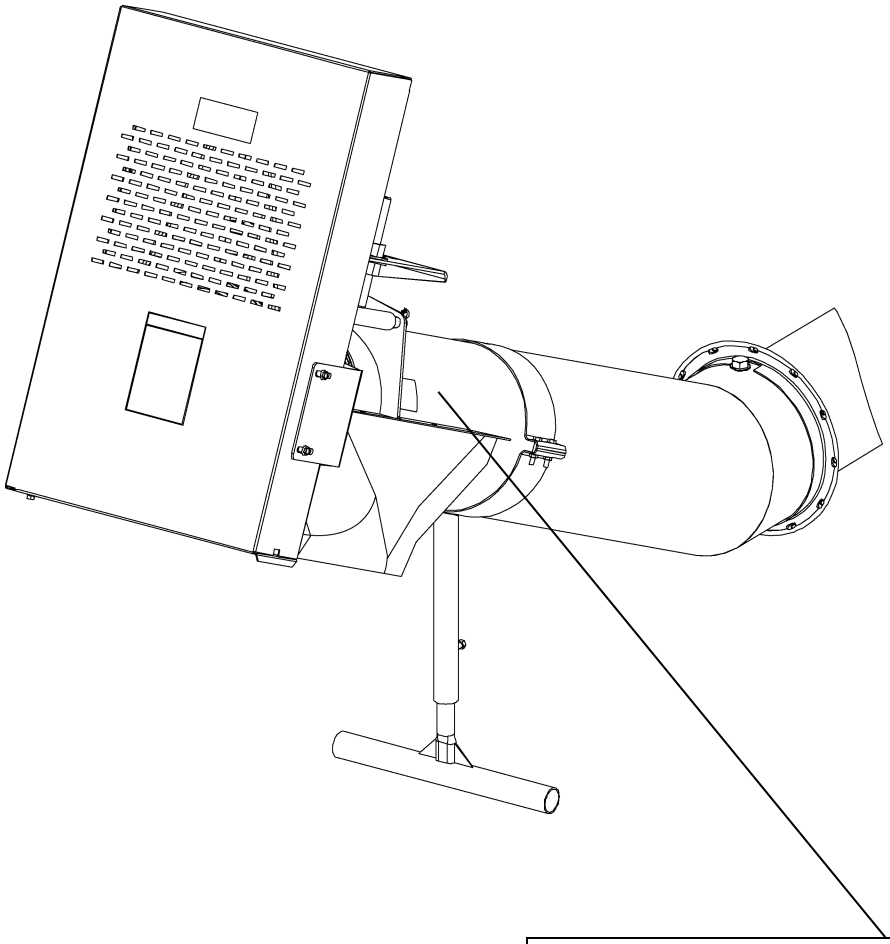


DC-2244

Figure 3B

CE Mark and Rating Plate

Once the unload power head has been assembled with the power sweep auger, in accordance with the instructions given in this manual, the installer or supplier shall make the full Declaration of Conformity and apply the CE mark, in accordance with the EU Machinery Directive 2006/42/EC. The rating plate, supplied with the drive unit should be fitted on the unload tube.



The GSI Group
1004 E. Illinois St.
Assumption, IL. 62510
USA

CE

25° INCLINE BIN UNLOAD	
Model	G1012254A
Bin auger diameter	10"/254 mm
Unload auger diameter	12"/305 mm
Maximum input speed	1450 RPM
Maximum input power	25 HP/18.75 kW
SN	123456789
Date	08 May 2012

Figure 3C

Attaching the Adapter Plate (for 6"-8", 8"-10" and 10"-12")

1. Align studs on adapter plate with the holes on the unload tube's angle ring.
2. Insert studs through the holes and fasten using nuts from tube end plate. *(See Figure 4A.)*

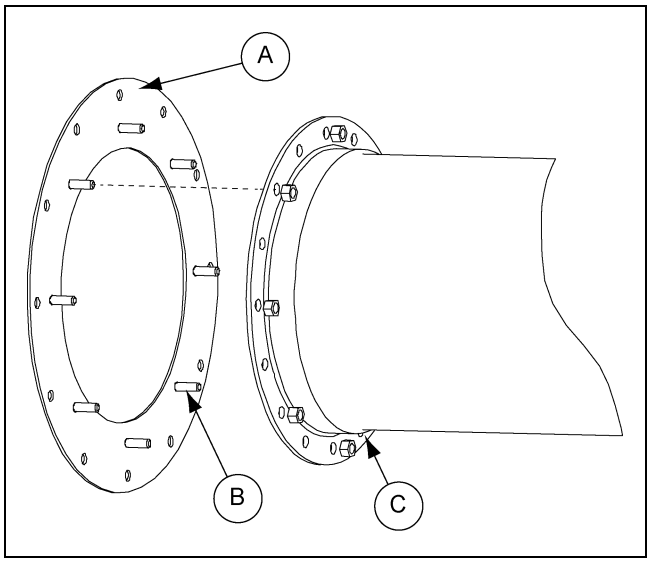


Figure 4A

Ref #	Description
A	Adapter Plate
B	Stud
C	Unload Tube Angle Ring

Assembling Support Stand

1. Insert support stand base into support stand top and secure with 3/8" x 1-1/4" bolt. *(See Figure 4B.)*

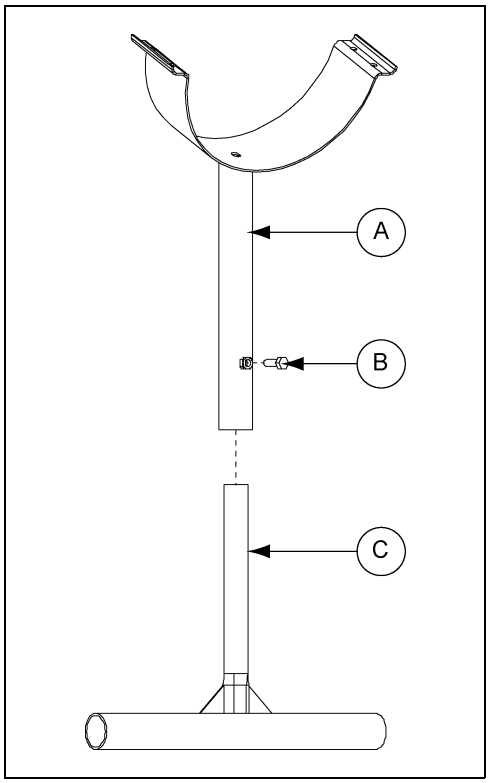


Figure 4B

Ref #	Description
A	Support Stand Top
B	3/8" x 1-1/4" Bolt
C	Support Stand Base

Attaching Support Stand to Tube

1. Place support stand and half band around tube and secure together with 5/16" bolts and serrated flange nuts. *(See Figure 4C.)*

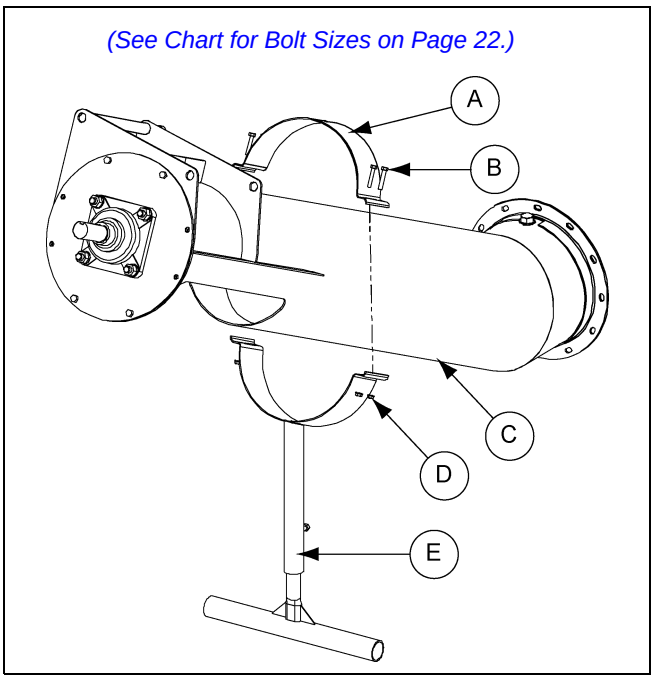


Figure 4C

Ref #	Description
A	Half Band
B	Bolt
C	Tube
D	5/16" Serrated Flange Nut
E	Support Stand

Attaching Flights

1. Pull bin unload flight out of unload tube approximately one foot (1').
2. Remove bearing connecting stub bolts and nuts from connecting stub.
3. Position 25° unloader assembly in-line with bin tube.
4. Align holes in unload flight with holes in bearing connecting stub and slide flight onto stub.
5. With holes aligned, secure with bearing connecting stub bolts and nuts that were removed in *Step 2*. *(See Figure 4D.)*

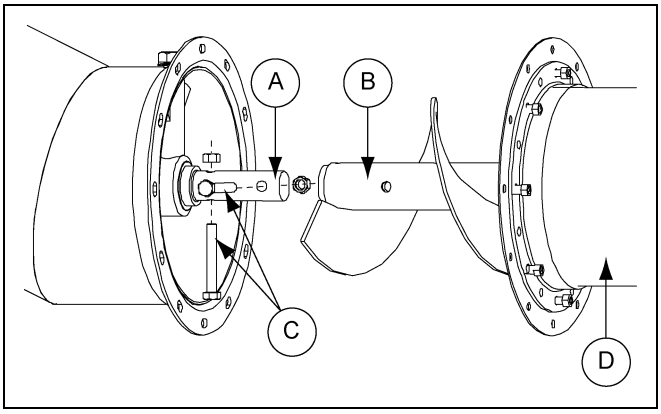


Figure 4D

Ref #	Description
A	Bearing Connecting Stub
B	Bin Unload Flight
C	Bearing Connecting Stub Bolts
D	Unload Tube

Installing the Motor Mount Adjuster

1. Place motor mount adjuster between the head plate and back plate on the discharge tube.
2. Insert pivot rod through the tube plates and motor mount adjuster. Secure in place with two (2) 3/16" x 2" cotter pins. *(See Figure 4E.)*

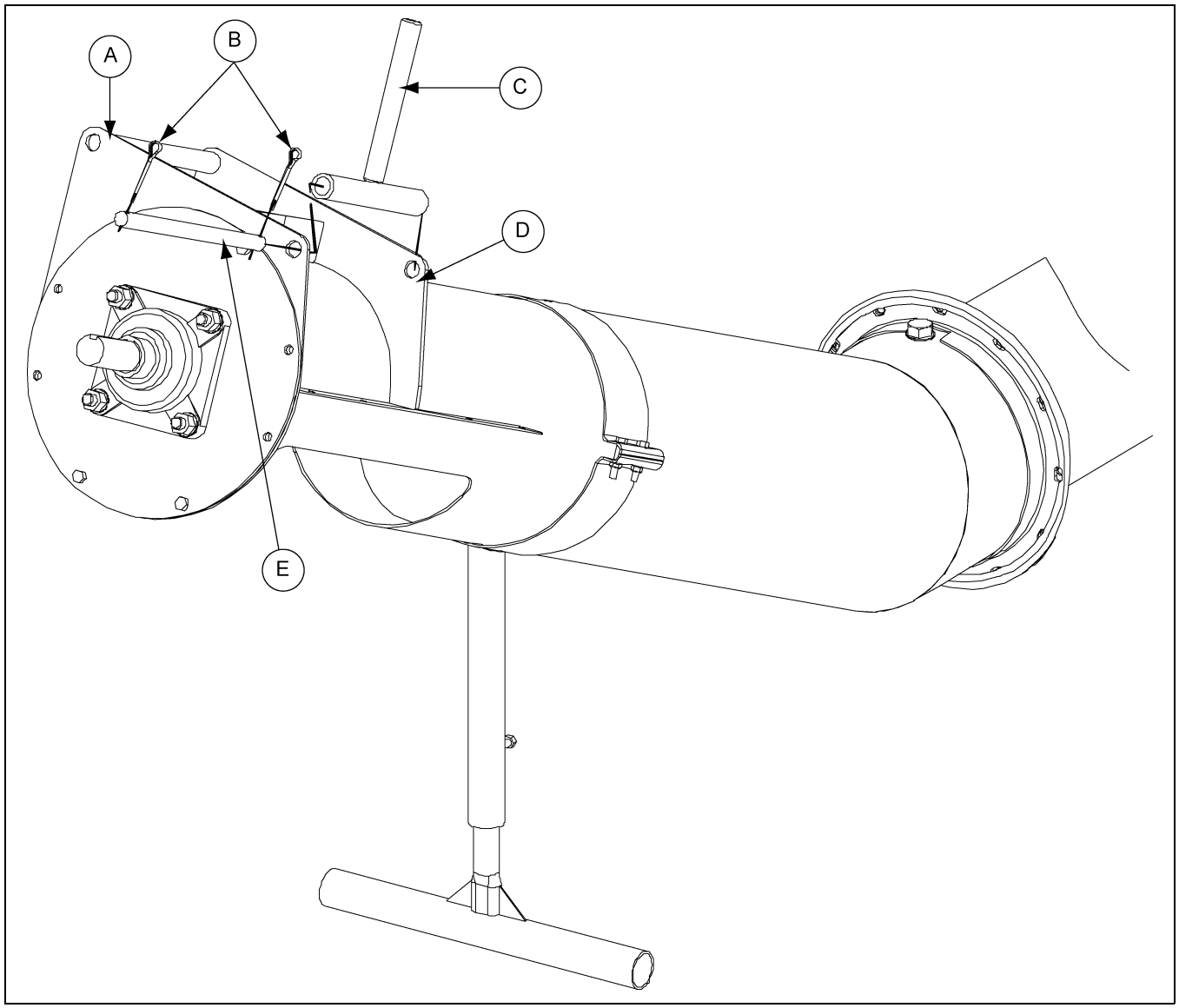


Figure 4E

Ref #	Description
A	Head Plate
B	Cotter Pins
C	Motor Mount Adjuster
D	Back Plate
E	Pivot Rod

Installing the Motor Mount Plate

1. Secure one of the motor mount adjustment nuts and one of the motor mount adjustment washers approximately 20 mm of the way down the motor mount adjuster's threaded shaft.
2. Once the nut and washer are secure, slip the motor mount plate over the adjuster and align the pivot holes with the pivot tube. *(See Figure 4F.)*

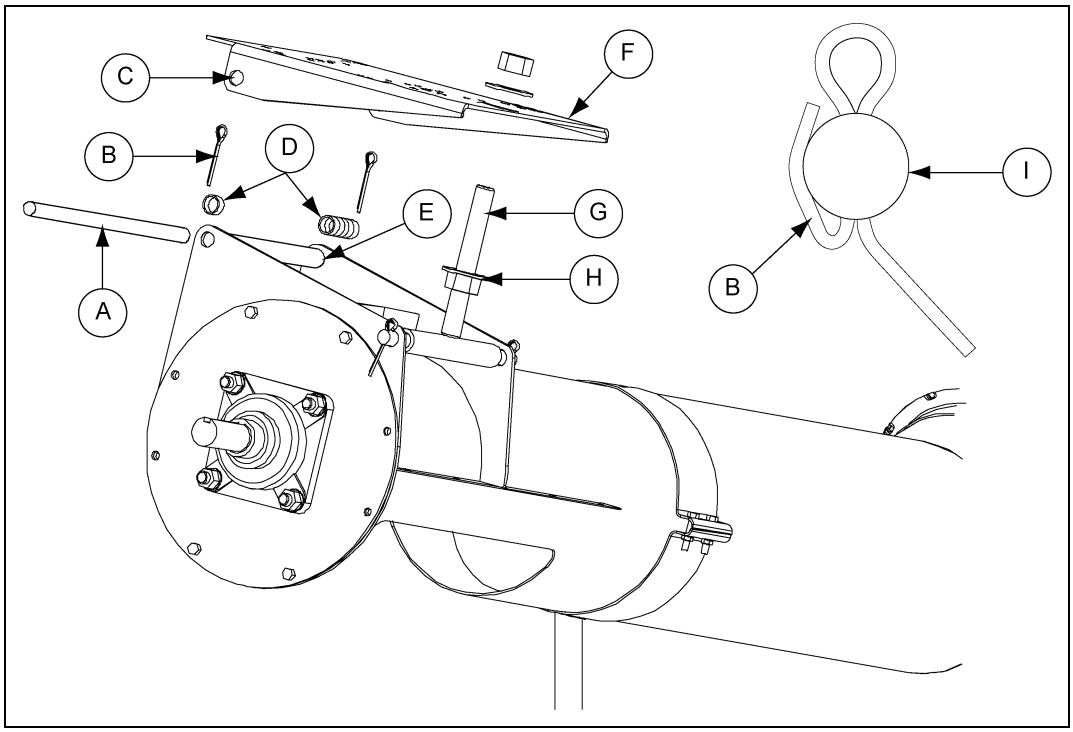


Figure 4F

Ref #	Description
A	Motor Mount Pivot Rod
B	Cotter Pins
C	Pivot Hole
D	Spacers
E	Pivot Tube
F	Motor Mount Plate
G	Motor Mount Adjustment Shaft
H	Motor Mount Adjustment Nut and Washer
I	Rod

Installing the Motor Mount Plate (Continued)

3. Slide the motor mount pivot rod through the pivot tube on the discharge tube.
4. When the pivot rod begins to extend through the pivot tube, install the spacers BETWEEN the back plate and the inner face of the motor mount plate. *(See Figure 4G.)*

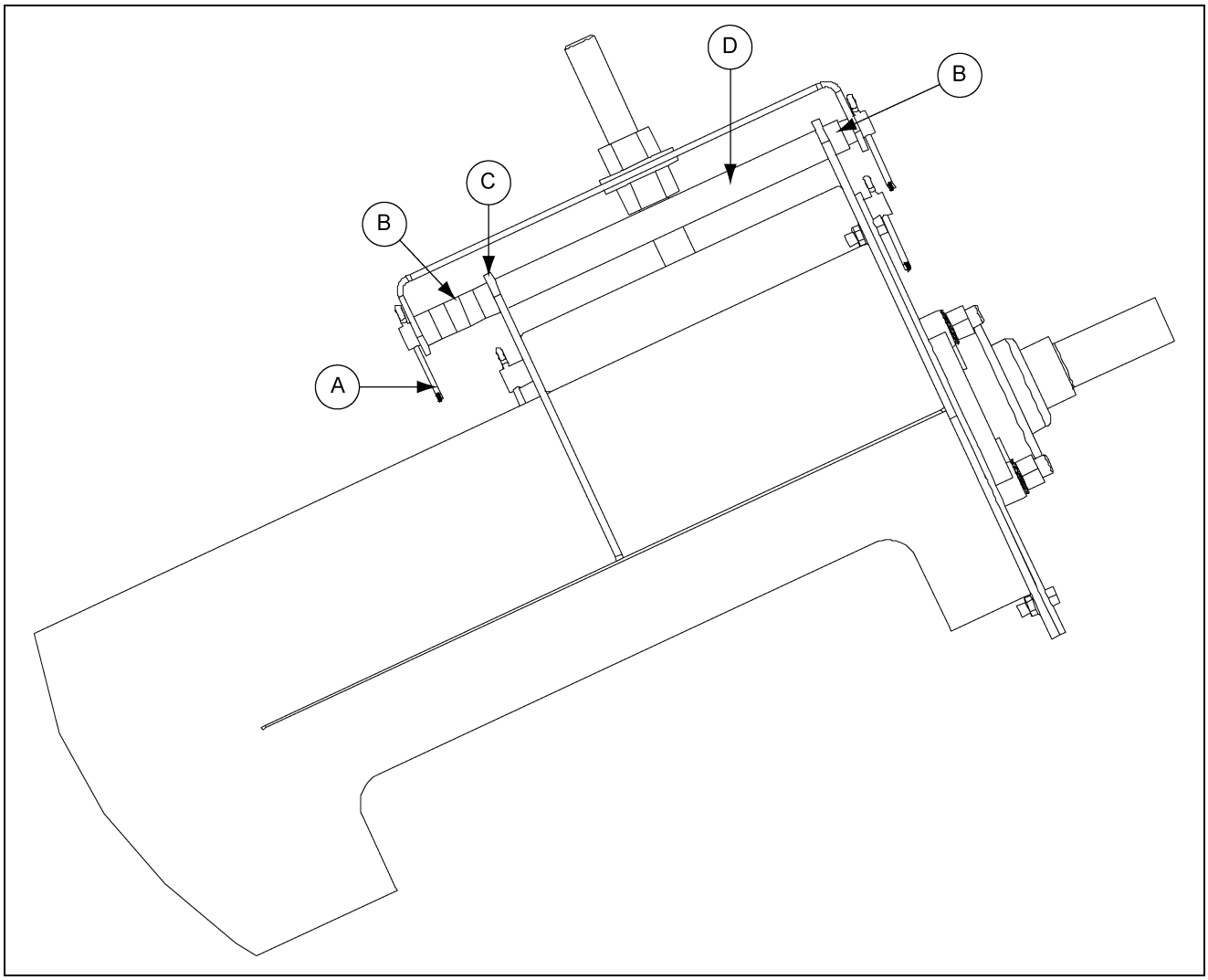


Figure 4G

Ref #	Description
A	3/16" x 2" Cotter Pin
B	Spacer
C	Back Plate
D	Pivot Tube

5. Secure pivot rod with two (2) 3/16" x 2" cotter pins.

   NOTE: *The number of spacers will vary depending on size of unloader.*

Installing the Belt Guard Brackets

1. Align the holes on the bearing plate with the slots on the belt guard mounting brackets.
2. Secure the brackets with proper bolts, flat washers and serrated flange nuts. *(See Chart below and Figure 4H.)*

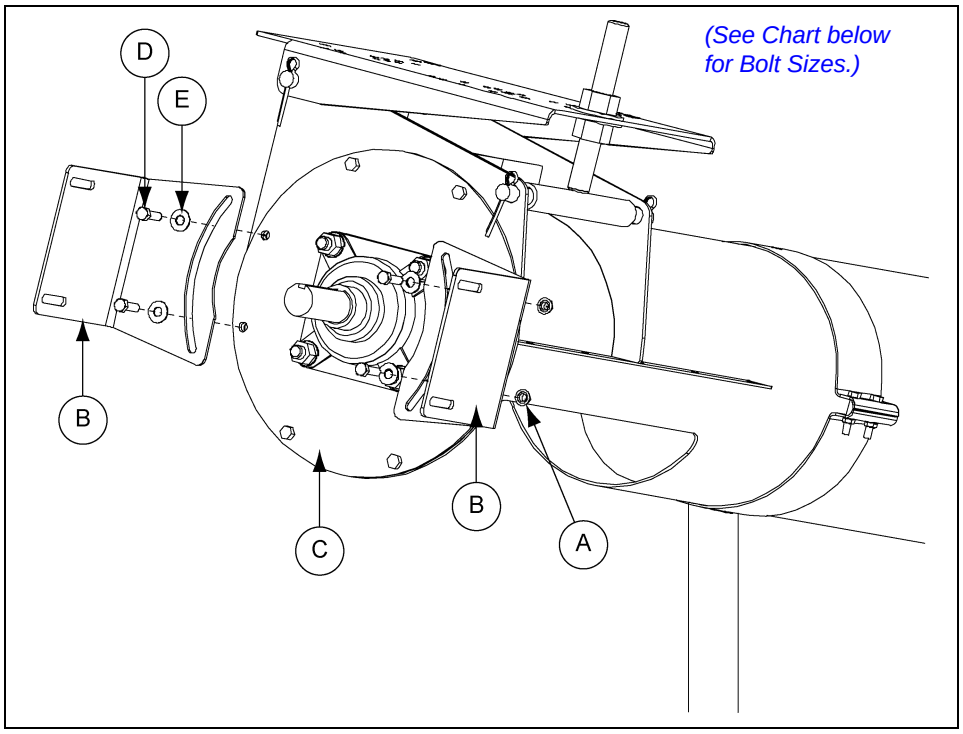


Figure 4H

Ref #	Description
A	Nut
B	Belt Guard Mounting Bracket
C	Bearing Plate
D	Bolt
E	Washer

Belt Guard Mounting Bracket Bolt		
Part #	**Bolt Size**	**Description**
S-1196	6" to 6", 6" to 8" and 8" to 8"	5/16"-18 x 1" Grade 5 Bolt
S-2071	8" to 10" and 10" to 12"	3/8"-16 x 1-1/4" Grade 5 Bolt

NOTE: ***DO NOT*** *tighten the bolts completely. The brackets will need to be rotated to align the slot in the belt guard with the shafts on the motor and flight.*

Installing the Pulley

1. Place and position the key into the keyway located on the drive shaft.
2. Place the pulley onto the drive shaft with the set screw side of the pulley facing away from the bearing plate. *(See Figure 4I.)* Position the pulley so that it is as close to the lock collar as possible, but without touching it.
3. Once the pulley is appropriately positioned, tighten the set screw with a hex head wrench to secure it to the drive shaft. *(See Figure 4I.)*

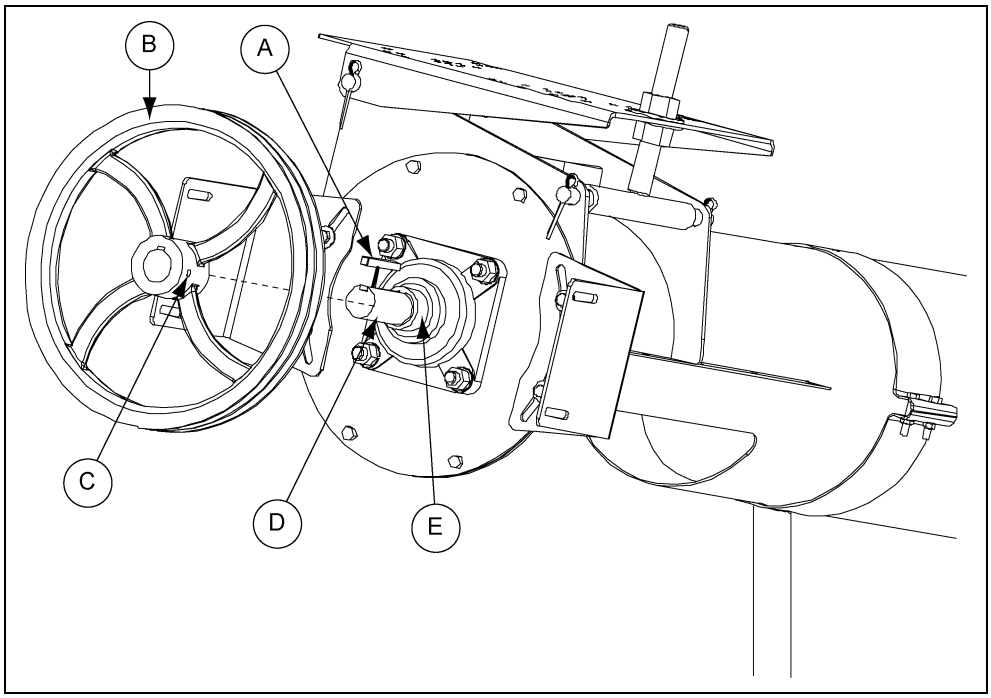


Figure 4I

Ref #	Description
A	Key
B	Flight Pulley
C	Set Screw
D	Drive Shaft
E	Lock Collar

Tightening the Lock Collar

1. Use a punch and hammer to drive the lock collar clockwise or in the same direction as the shaft rotation. Once the lock collar is set in place, use a hex head wrench to tighten the lock collar by tightening the set screw.

   NOTE: *If the lock collar is not turned far enough, the set screw will not lock it into place.*

Attaching Discharge Spout and Grain Tube

WARNING

NEVER operate the auger without a discharge spout and grain tube to a minimum length of 850 mm OR directly connect the discharge to other handling equipment.

1. Auger flight and shaft must be fully enclosed or inaccessible.
2. Align the spout holes with those on the motor tube.
3. Fix with hardware as shown in *Figure 4J*.

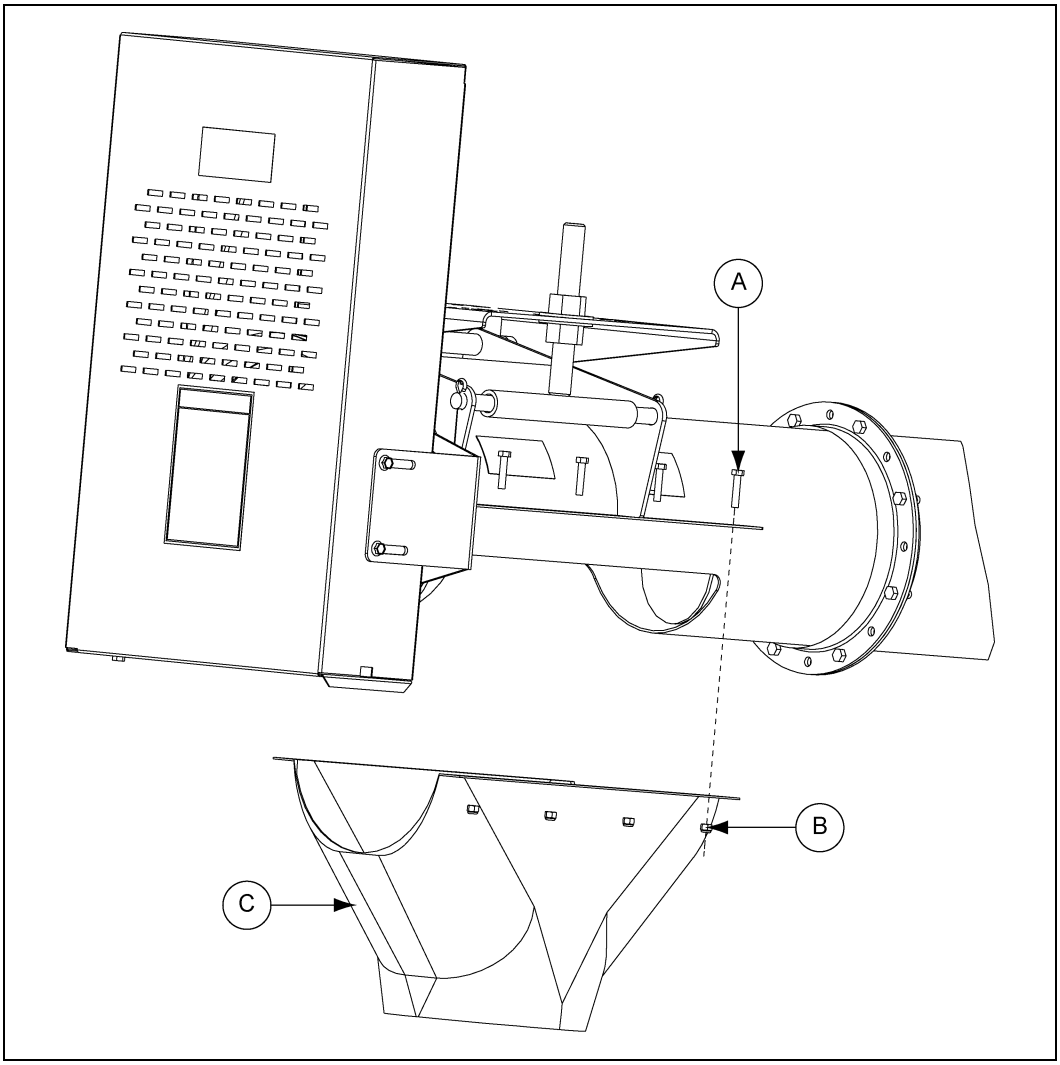


Figure 4J

Ref #	Description
A	5/16" x 1-1/2" Hex Bolt
B	Lock Nut
C	Spout

Attaching Discharge Spout and Grain Tube (Continued)

4. EITHER fit the length of steel grain tube supplied with the outlet spout and attach with nuts and bolts or weld to the discharge spout. *(See Figure 4K.)*

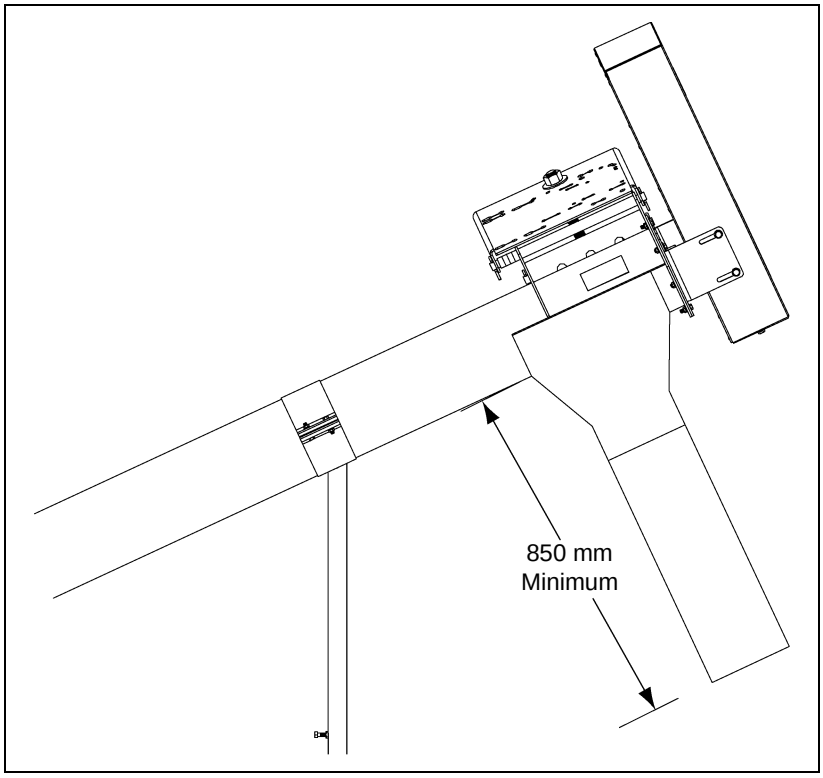


Figure 4K

5. OR connect the outlet direct to other equipment. *(See Figure 4L.)*

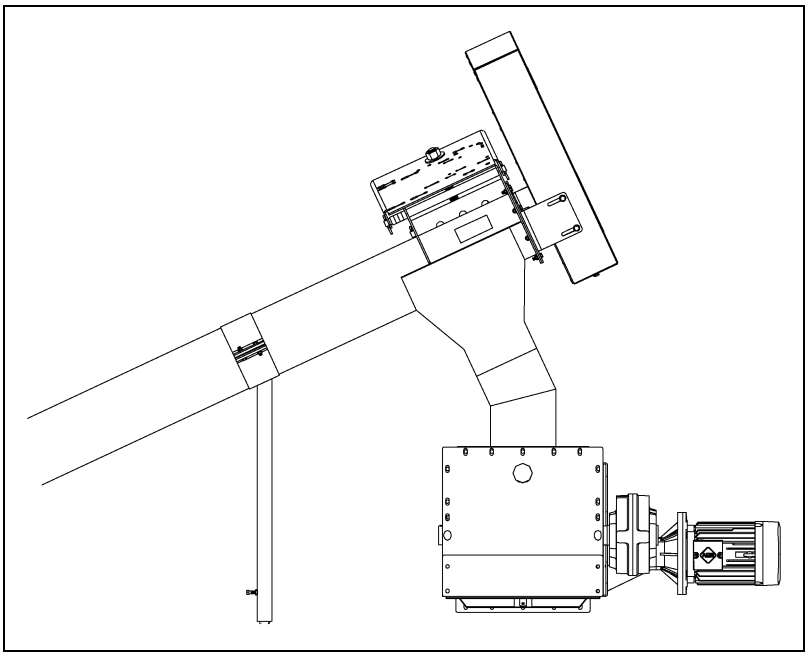


Figure 4L

Installing the Motor (Not Provided)

1. Attach the motor to the motor mount plate using appropriate bolts, lock washers and hex nuts. *(See Motor Bolt Chart below.)*
2. Install pulley onto motor shaft making sure that it is aligned with the flight pulley. It may be necessary to move spacers to gain shaft alignment. *(See Figure 4M.)*

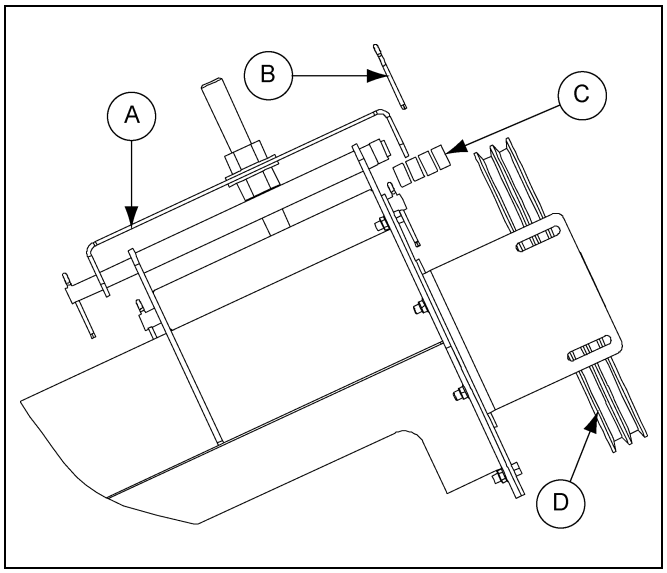


Figure 4M

Motor Bolt Chart		
Motor Size	**Hex Bolt Size**	**Qty**
56 143T 145T	5/16"-18 x 1-1/4"	4
182T 184T 213T 215T	3/8"- 16 x 1-1/4"	4
254T 256T	1/2"-13 x 1-3/4"	4

Ref #	Description
A	Motor Mount Plate
B	Cotter Pin
C	Spacer
D	Flight Pulley

Installing the Belts

1. Place the belts on the pulleys.
2. Screw the lower motor mount adjustment nut upward, thereby raising the motor mount plate and putting tension on the belts.
3. Once the desired tension is reached, tighten the upper motor mount adjustment nut down onto the motor mount plate to lock it into place. *(See Figure 4N on Page 27.)*

Installing the Belt Guard

1. With the belts properly tensioned, remove the bottom belt guard cover and slip belt guard down over motor shaft.
2. Bolt the belt guard to the belt guard mounting brackets. Note that the brackets should still be loose at this time.
3. Align the motor shaft and the flight drive shaft in the belt guard's slot, making sure that the belt guard DOES NOT contact either pulley or shaft and tighten down the belt guard mounting brackets to the bearing plate. *(See Figure 4N.)*
4. Once the brackets are tightened, slide the bottom cover back into place and secure with supplied bolt.

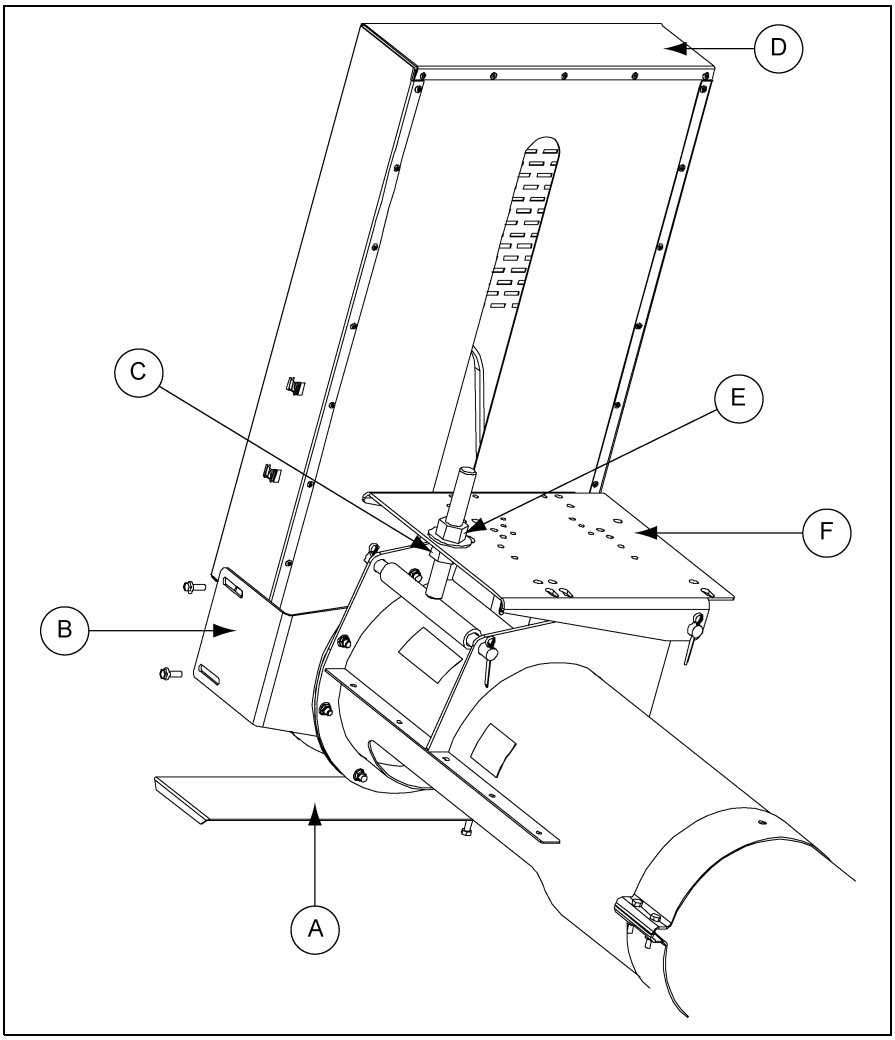


Figure 4N

Ref #	Description
A	Bottom Cover
B	Belt Guard Mounting Bracket
C	Lower Motor Mount Adjustment Nut

Ref #	Description
D	Belt Guard
E	Upper Motor Mount Adjustment Nut
F	Motor Mount Plate

Motor Requirements

Motor size depends on the style of bin unload head selected and on the grain type being conveyed. Minimum motor sizes are given below. Please also refer to the unload head manual for further details.

Bin Diameter	Horizontal Head			25° Head			Vertical Head		
	6"	8"	10"	6"	8"	10"	6"	8"	10"
15'	2.3	2.3	-	2.3	3.8	-	3.8	3.8	-
18'	2.3	2.3	-	2.3	3.8	-	3.8	3.8	-
21'	2.3	3.8	-	3.8	3.8	-	3.8	5.6	-
24'	2.3	3.8	5.6	3.8	3.8	7.5	3.8	5.6	7.5
27'	3.8	3.8	5.6	3.8	3.8	7.5	3.8	5.6	7.5
30'	3.8	3.8	5.6	3.8	5.6	7.5	5.6	5.6	11.3
33'	3.8	3.8	5.6	3.8	5.6	7.5	5.6	5.6	11.3
36'	3.8	5.6	7.5	3.8	5.6	7.5	5.6	5.6	11.3
39'	-	5.6	7.5	-	7.5	11.3	-	-	-
42'	-	5.6	7.5	-	7.5	11.3	-	-	-
48'	-	5.6	7.5	-	7.5	11.3	-	-	-

Minimum motor power requirements (kW).

Electrical Control System

Correct design of the control system is vitally important to ensure safe use of the power sweep and unloading auger. In particular:

1. No-one can enter the bin when the system is running.
2. The system is not started when some-one is in the bin.
3. For service and maintenance purposes, the equipment can be locked out with no risk if inadvertent re-start.

The following items are the minimum required when making electrical connections to the auger:

1. Main power supply with protective earth, over-current and short circuit protection.
2. Main electrical disconnect. 
    a. Wired to disconnect all electrical power to the auger and other associated equipment.
    b. Lockable.

3. Service disconnect.

a. Wired to break all electrical power to the auger motor.

b. Lockable.

4. Emergency stop.

a. Wired to stop the auger motor (and any other associated equipment) immediately when pressed.

b. Must remain engaged until manually disengaged.

5. Start/Stop controls.

a. Recessed start push button labelled 1.

b. Non recessed stop push button labelled 0.

c. Motor starter, short circuit protection and motor overload.

d. Control must be designed to default to OFF after a power interruption. (Ex: Self maintained relay.)

e. The auger MUST NOT be able to immediately re-start following re-establishment of power.

6. Door interlocks.

a. Fitted on all bin access doors (including roof hatches).

b. Door interlock to be wired to stop the auger (and any other equipment) immediately the door is opened.

c. Auger MUST NOT be able to re-start immediately the door is re-closed.

d. This does not override the need to LOCK OUT electrical power before entering the bin.

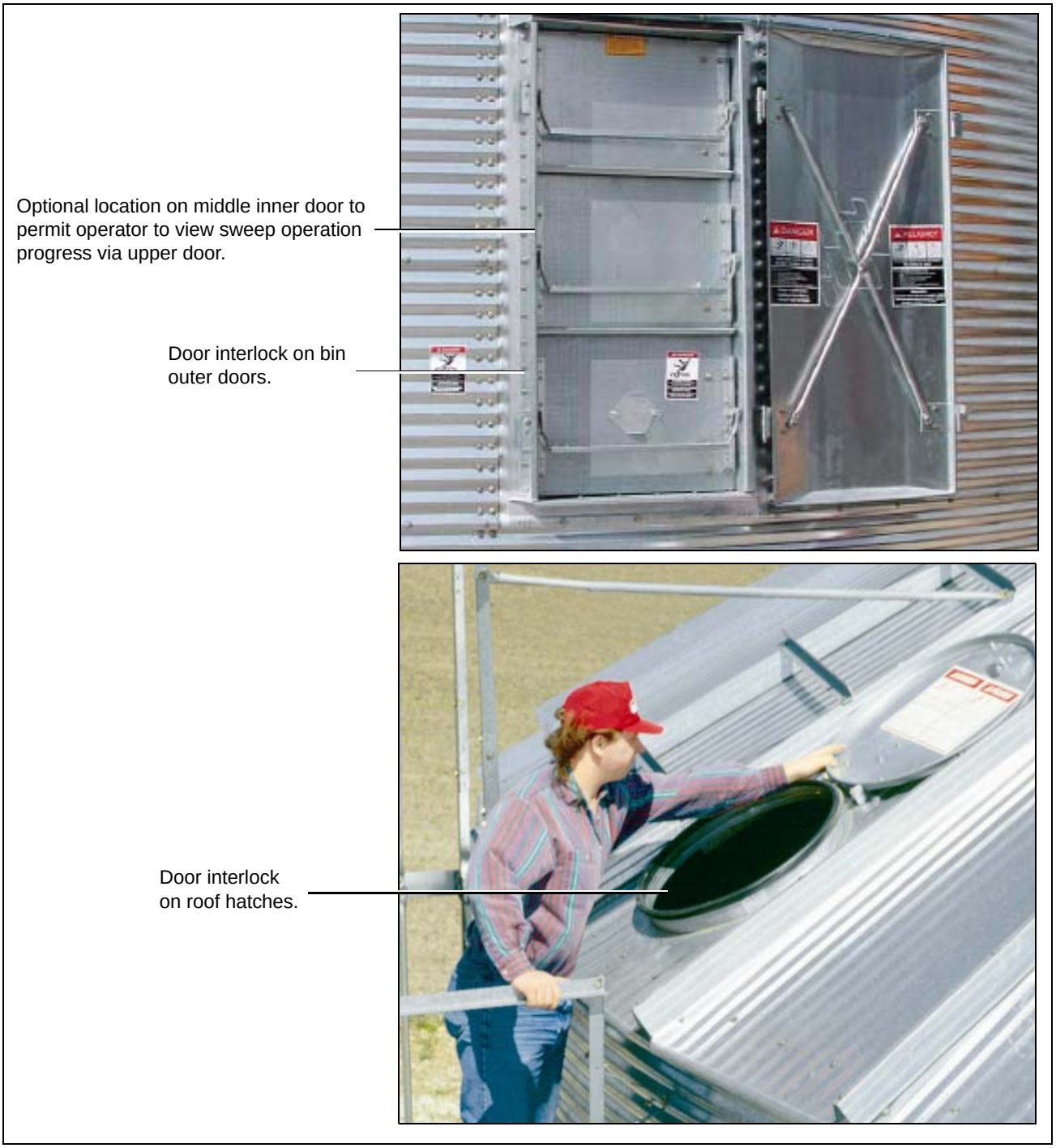


Figure 5A *Door Interlock Switch Locations*

NOTE: *Electrical controls located on the side of the bin will be subject to significant water due to run-off from the roof during rain. These controls should be rated for out door use (minimum IP65) and will also benefit from covered to protect from direct water.*

Perform Pre-Start Checks

DANGER

Failure to perform any or all of these pre-start checks may cause damage to the equipment and/or cause SERIOUS INJURY or DEATH to those in the work area.

Failure to perform any or all of these pre-start checks may also be a misuse of the equipment. Any misuse of the equipment may void the warranty.

A. Make sure ALL belts are tensioned properly.

B. Make sure ALL shields are in place and that the belt(s) and pulley(s) are able to move freely.

C. Inspect the drive unit for any problems or potential problems.

D. Be aware of any emergency shut down procedures. Two (2) people must always be in a position where the operation of the equipment can be monitored.

E. Before starting the auger for the first time, make sure that all parts are assembled correctly according to the instructions in this manual.

DANGER

ALWAYS keep ALL guards and shields in place, until all the power is disconnected and locked out.

WARNING

Make certain ONLY trained operators are in the work area before operating or moving the machine. Two (2) people must always be in a position where the operation of the equipment can be monitored.

Start the Auger

A. Start the auger.

> **CAUTION** ***DO NOT start or stop the auger while it is under load. Doing so may cause the auger to jam.***

B. Run the auger through a “break-in” period if it is being used for the first time or for the first time of the season.

C. Polish the flighting by running the auger at partial capacity until it is smooth, before attempting to run it at full capacity.

> **CAUTION** ***Failures may occur if the auger is run full before it has been “polished” during the “break-in” period.***

> **CAUTION** ***NEVER operate the auger empty. Operating augers empty for any length of time will cause excessive wear.***
> ***NEVER operate the auger at speeds higher than recommended. Auger flight speed in excess of recommended speed causes excessive wear.***

> **CAUTION** ***Be aware of any unusual vibration or noises during the initial start-up and “break-in” period. If anything unusual is detected, immediately shut down the auger and disconnect and lock out the power supply before servicing.***

Operate the Auger

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

A. Make certain there are at least two (2) people in the work area to monitor operations at all times.

B. Visually inspect the auger periodically during operation.

Be alert for any unusual vibrations, noises and the loosening of any fasteners. If anything unusual is detected, immediately shut down the auger, disconnect and lock out the power source before servicing.

C. Consideration should be given to the proper size auger for a batch drying or any intermittent type operations. When augers are stopped and re-started under full load, it may result in damage to the auger. Using a larger diameter auger and reducing its load level is generally preferable to subjecting a smaller diameter auger to big loads. If an auger is kept from absolute filling, it will make start-up easier and it will convey more efficiently.

Normal Shut Down

A. Before shutting down the unit, be sure the hoppers and augers are empty.

B. Disconnect and lock out the power source before leaving the work area.

Emergency Shut Down

A. Know how to shut down the auger in case of an emergency.

B. Do not re-start the auger when it is under load.

C. Close the bin well control gates.

D. Re-connect and unlock the power source.

E. Clear the auger gradually until there is no grain and there are no obstructions.

NEVER start the equipment under load. Doing so may cause damage. This type of damage is considered a misuse of the equipment. Any misuse of the equipment may void the warranty.

Storage Preparation

A. Close all wells to the discharge auger.

B. Be sure the unload tube is empty.

C. Shut down the auger.

D. Make sure all fasteners are tight.

Maintain the Auger

ALWAYS shut down and disconnect the power supply before adjusting, servicing or cleaning the equipment.

A. Use caution when repairing or replacing equipment parts.

B. Make sure ALL decals are legible and tightly attached to the auger. If necessary, replace them **FREE OF CHARGE** by contacting your dealer or the manufacturer.

C. Ensure that ALL electric motors, etc., are operating at the proper speed.

D. Maintain proper adjustments on the belt(s).

E. Mount controls for any electric motors at a safe distance from the machine and in a location accessible in case of an emergency.

F. Make sure ALL electrical wiring is not damaged and that it meets proper wiring codes.

G. Make sure ALL components are in good working condition before use.

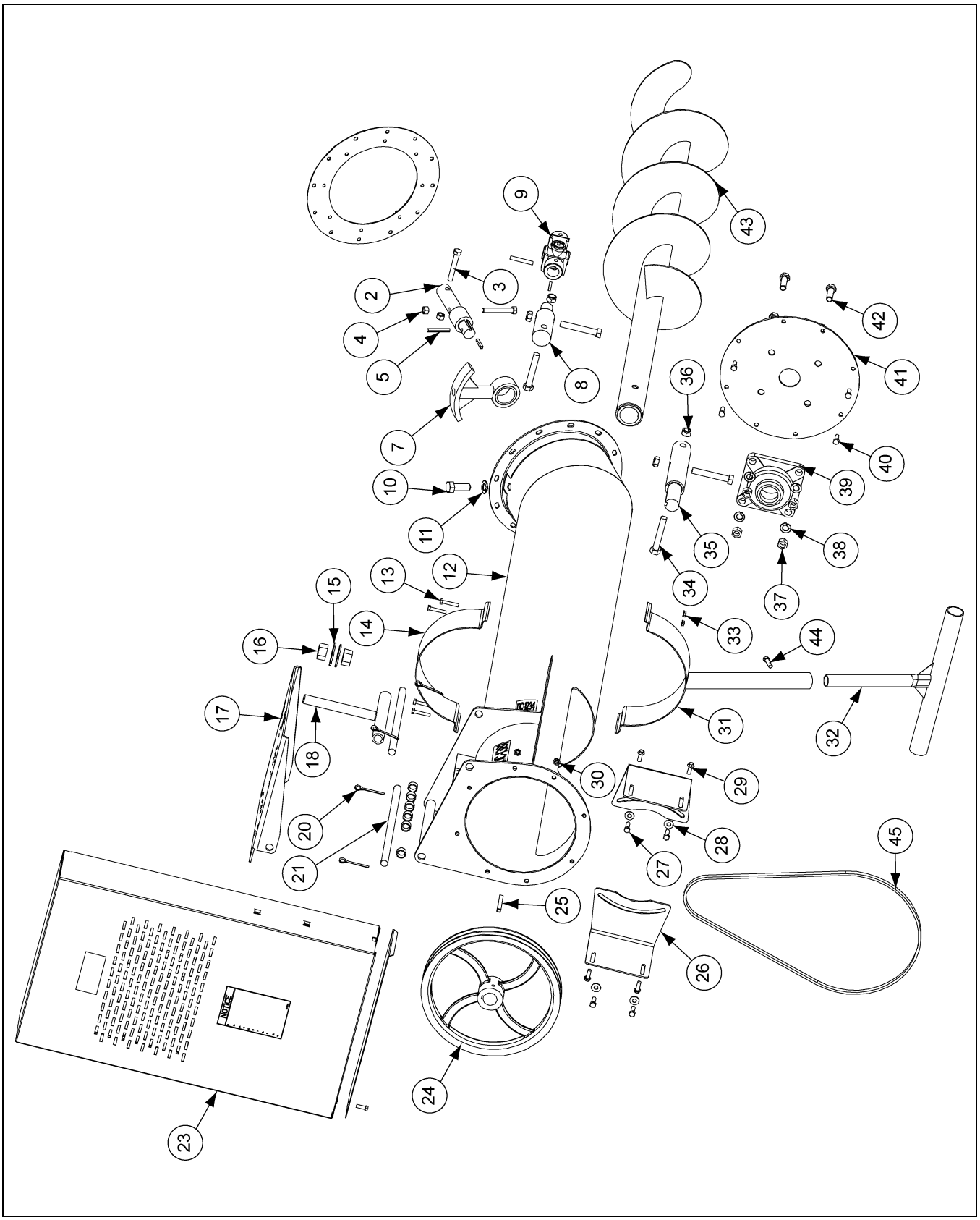
H. Check the auger flighting to make sure it is in good working condition.

I. Check the internal bearing bracket, bearing and universal joint to make sure they are in good working condition.

J. Grease bearing at least two (2) times each season.

NOTES

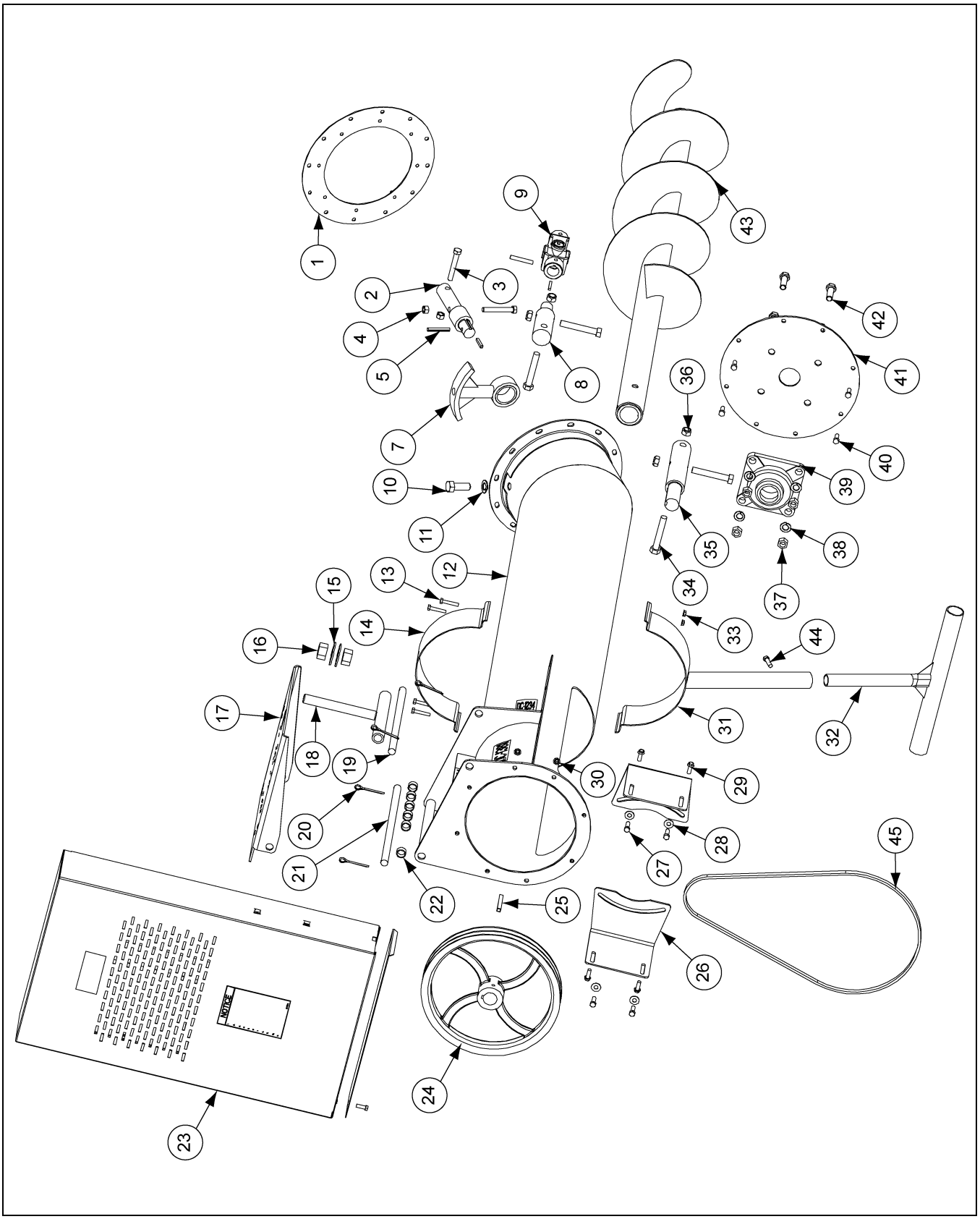
6" to 6" 25° Unloader Parts



6" to 6" 25° Unloader Parts List

Ref #	Part #	Description
2	GK5706	1" x 7-7/8" Bearing Connecting Stub
3	S-6762	3/8"-16 x 2-1/2" Grade 5 Bearing Connecting Stub Bolt
4	S-8251	3/8"-16 Bearing Connecting Stub Stover Nut
5	S-8397	5/16" x 1-3/4" U-Joint Rolled Pin
7	GC06392	Hanger Bearing
8	GK1267	1" x 6" Connecting Stub
9	GK1266	1" Bore x 5" Long U-Joint
10	S-7886	5/8"-11 x 1-3/4" Grade 8 Hanger Bearing Bolt
11	S-3208	5/8" Hanger Bearing Lock Washer
12	GK7072	6" 25° Unload Tube Assembly
13	S-2741	5/16"-18 x 1-1/2" Grade 5 Stand Connecting Band Bolt
14	GK1122	6" x 4" 12 Gauge Half Band
15	S-866	3/4" Motor Mount Adjustment Flat Washer
16	S-234	3/4"-10 Motor Mount Adjustment Hex Nut
17	GK7052	Motor Mount Plate
18	GK7060	Motor Mount Adjustment Weldment
20	S-6994	3/16" x 2" Cotter Pin
21	GK7058	Motor Mount Plate Pivot Rod
23	GK7005	Belt Guard
24	GK1321	12" Diameter x 1" Bore 2 Belt Sheave
25	S-4513	1/4" x 2" Sheave Key
26	GK7062	Belt Guard Mounting Brackets
27	S-1196	5/16"-18 x 1" Grade 5 Belt Guard Mounting Bracket Bolt
28	S-845	5/16" Belt Guard Mounting Bracket Flat Washer
29	S-9065	3/8"-16 x 1" Grade 5 Bolt
30	S-3611	5/16"-18 Bearing Plate Serrated Flange Nut
31	GK2825	Support Stand Top
32	GK1277	Support Stand Base
33	S-3611	5/16"-18 Serrated Flange Nut
34	S-6762	3/8"-16 x 2-1/2" Grade 5 Flight Connection Bolt
35	GK2025	1" x 10" Drive Shaft
36	S-8251	3/8"-16 Flight Connection Stover Nut
37	S-860	7/16"-14 Bearing Hex Nut
38	S-7014	7/16" Bearing Lock Washer
39	GK1049	1" Two (2) Hole Flange with Lock Collar (Bearing with Flange)
40	S-1196	5/16"-18 x 1" Grade 5 Bearing Plate Bolt
41	GK7061	Bearing Plate
42	S-3886	7/16"-14 x 1-1/4" Grade 5 Bearing Bolt
43	GK2827	6" 25° Weldment Discharge Flight
44	S-2071	3/8"-16 x 1-1/4" Grade 5 Bolt
45	GK1323	B48 V-Belt

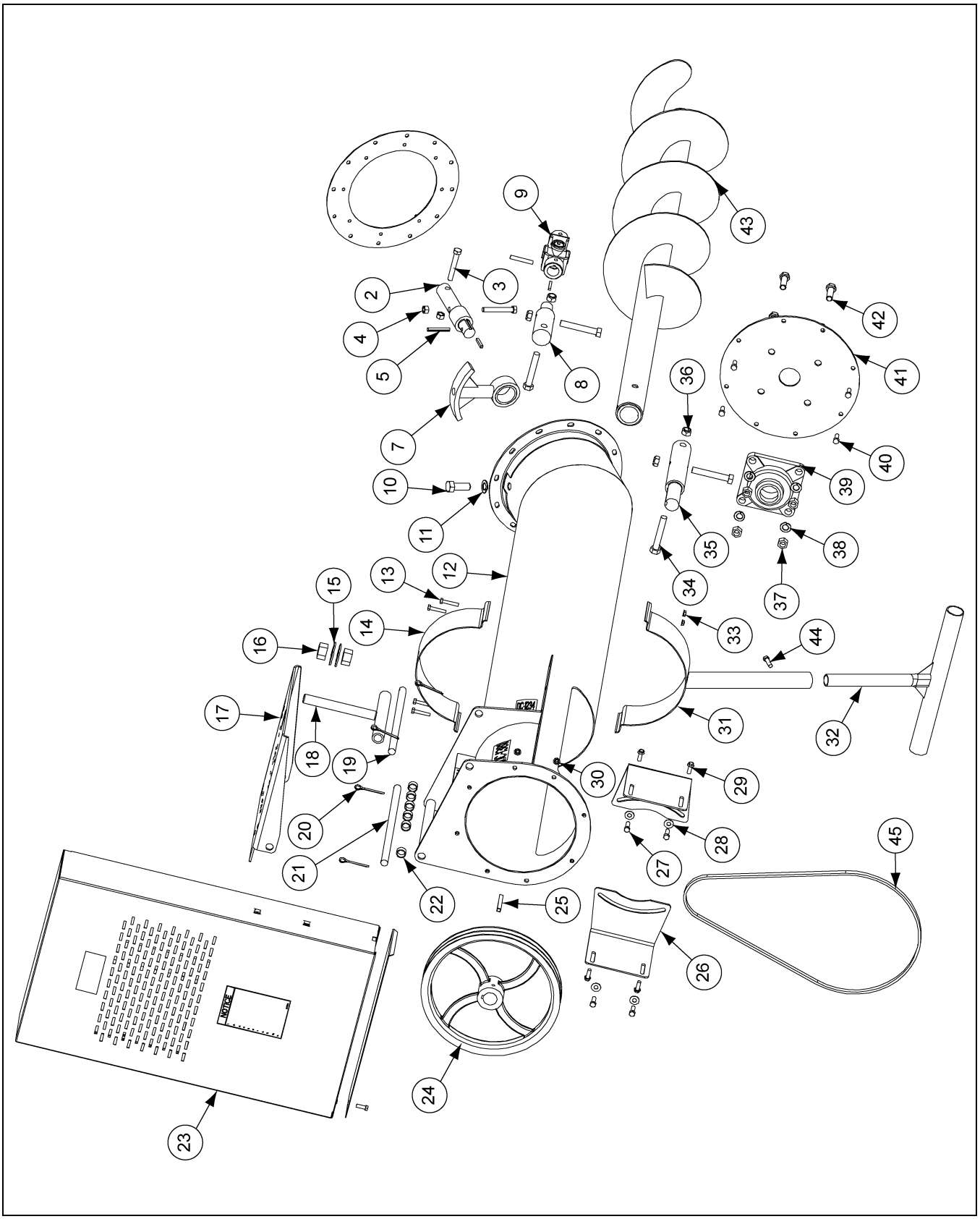
6" to 8" 25° Unloader Parts



6" to 8" 25° Unloader Parts List

Ref #	Part #	Description
1	GK1280	Adapter Plate
2	GK7241	1" x 8-1/2" Bearing Connecting Stub
3	S-6762	3/8"-16 x 2-1/2" Grade 5 Bearing Connecting Stub Bolt
4	S-8251	3/8"-16 Bearing Connecting Stub Stover Nut
5	S-8397	5/16" x 1-3/4" U-Joint Rolled Pin
7	GC06394	Hanger Bearing
8	GK1267	1" x 6" Connecting Stub
9	GK1266	1" Bore x 5" Long U-Joint
10	S-7886	5/8"-11 x 1-3/4" Grade 8 Hanger Bearing Bolt
11	S-3208	5/8" Hanger Bearing Lock Washer
12	GK7073	8" 25° Unload Tube Assembly
13	S-2741	5/16"-18 x 1-1/2" Grade 5 Stand Connecting Band Bolt
14	GK1059	8" x 4" 12 Gauge Half Band
15	S-7835	1" Motor Mount Adjustment Flat Washer
16	S-240	1"-8 Motor Mount Adjustment Hex Nut
17	GK6986	Motor Mount Plate
18	GK6942	Motor Mount Adjustment Weldment
19	GK7012	Motor Mount Adjustment Pivot Rod
20	S-6994	3/16" x 2" Cotter Pin
21	GK7013	Motor Mount Plate Pivot Rod
22	GK7014	Pivot Spacer Tube
23	GK7005	Belt Guard
24	GK1335	12" Diameter x 1-1/4" Bore 2 Belt Sheave
25	S-4513	1/4" x 2" Sheave Key
26	GK7006	Belt Guard Mounting Brackets
27	S-1196	5/16"-18 x 1" Grade 5 Belt Guard Mounting Bracket Bolt
28	S-845	5/16" Belt Guard Mounting Bracket Flat Washer
29	S-9065	3/8"-16 x 1" Grade 5 Bolt
30	S-3611	5/16"-18 Bearing Plate Serrated Flange Nut
31	GK1278	Support Stand Top
32	GK1277	Support Stand Base
33	S-3611	5/16"-18 Serrated Flange Nut
34	S-8316	7/16"-14 x 3" Grade 8 Flight Connection Bolt
35	GK1331	1-1/4" x 10-1/2" Drive Shaft
36	S-8317	7/16"-14 Flight Connection Stover Nut
37	S-7510	1/2"-13 Bearing Hex Nut
38	S-236	1/2" Bearing Lock Washer
39	GK1330	1-1/4" Two (2) Hole Flange with Lock Collar (Bearing with Flange)
40	S-1196	5/16"-18 x 1" Grade 5 Bearing Plate Bolt
41	GK6987	Bearing Plate
42	S-8760	1/2"-13 x 1-1/2" Grade 5 Bearing Bolt
43	GK1268	8" 25° Weldment Discharge Flight
44	S-2071	3/8"-16 x 1-1/4" Grade 5 Bolt
45	GK1952	B50 V-Belt

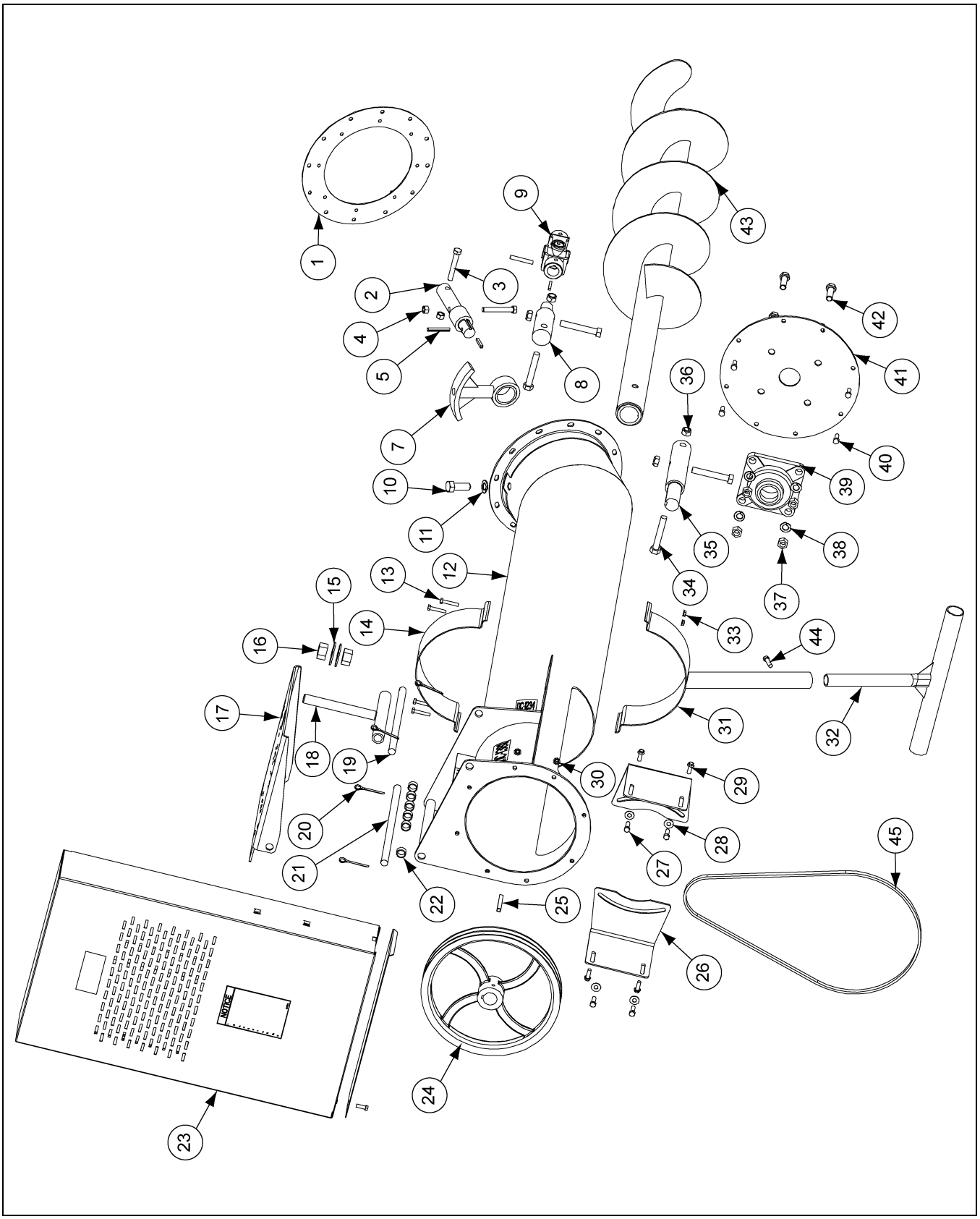
8" to 8" 25° Unloader Parts



8" to 8" 25° Unloader Parts List

Ref #	Part #	Description
2	GK1283	1-1/4" x 7-7/8" Bearing Connecting Stub
3	S-8316	7/16"-14 x 3" Grade 5 Bearing Connecting Stub Bolt
4	S-8317	7/16"-14 Bearing Connecting Stub Stover Nut
5	S-8397	5/16" x 1-3/4" U-Joint Rolled Pin
7	GC06394	Hanger Bearing
8	GK1267	1" x 6" Connecting Stub
9	GK1266	1" Bore x 5" Long U-Joint
10	S-7886	5/8"-11 x 1-3/4" Grade 8 Hanger Bearing Bolt
11	S-3208	5/8" Hanger Bearing Lock Washer
12	GK7073	8" 25° Unload Tube Assembly
13	S-2741	5/16"-18 x 1-1/2" Grade 5 Stand Connecting Band Bolt
14	GK1059	8" x 4" 12 Gauge Half Band
15	S-7835	1" Motor Mount Adjustment Flat Washer
16	S-240	1"-8 Motor Mount Adjustment Hex Nut
17	GK6986	Motor Mount Plate
18	GK6942	Motor Mount Adjustment Weldment
19	GK7012	Motor Mount Adjustment Pivot Rod
20	S-6994	3/16" x 2" Cotter Pin
21	GK7013	Motor Mount Plate Pivot Rod
22	GK7014	Pivot Spacer Tube
23	GK7005	Belt Guard
24	GK1335	12" Diameter x 1-1/4" Bore 2 Belt Sheave
25	S-4513	1/4" x 2" Sheave Key
26	GK7006	Belt Guard Mounting Brackets
27	S-1196	5/16"-18 x 1" Grade 5 Belt Guard Mounting Bracket Bolt
28	S-845	5/16" Belt Guard Mounting Bracket Flat Washer
29	S-9065	3/8"-16 x 1" Grade 5 Bolt
30	S-3611	5/16"-18 Bearing Plate Serrated Flange Nut
31	GK1278	Support Stand Top
32	GK1277	Support Stand Base
33	S-3611	5/16"-18 Serrated Flange Nut
34	S-8316	7/16"-14 x 3" Grade 8 Flight Connection Bolt
35	GK1331	1-1/4" x 10-1/2" Drive Shaft
36	S-8317	7/16"-14 Flight Connection Stover Nut
37	S-7510	1/2"-13 Bearing Hex Nut
38	S-236	1/2" Bearing Lock Washer
39	GK1330	1-1/4" Two (2) Hole Flange with Lock Collar (Bearing with Flange)
40	S-1196	5/16"-18 x 1" Grade 5 Bearing Plate Bolt
41	GK6987	Bearing Plate
42	S-8760	1/2"-13 x 1-1/2" Grade 5 Bearing Bolt
43	GK1268	8" 25° Weldment Discharge Flight
44	S-2071	3/8"-16 x 1-1/4" Grade 5 Bolt
45	GK1952	B50 V-Belt

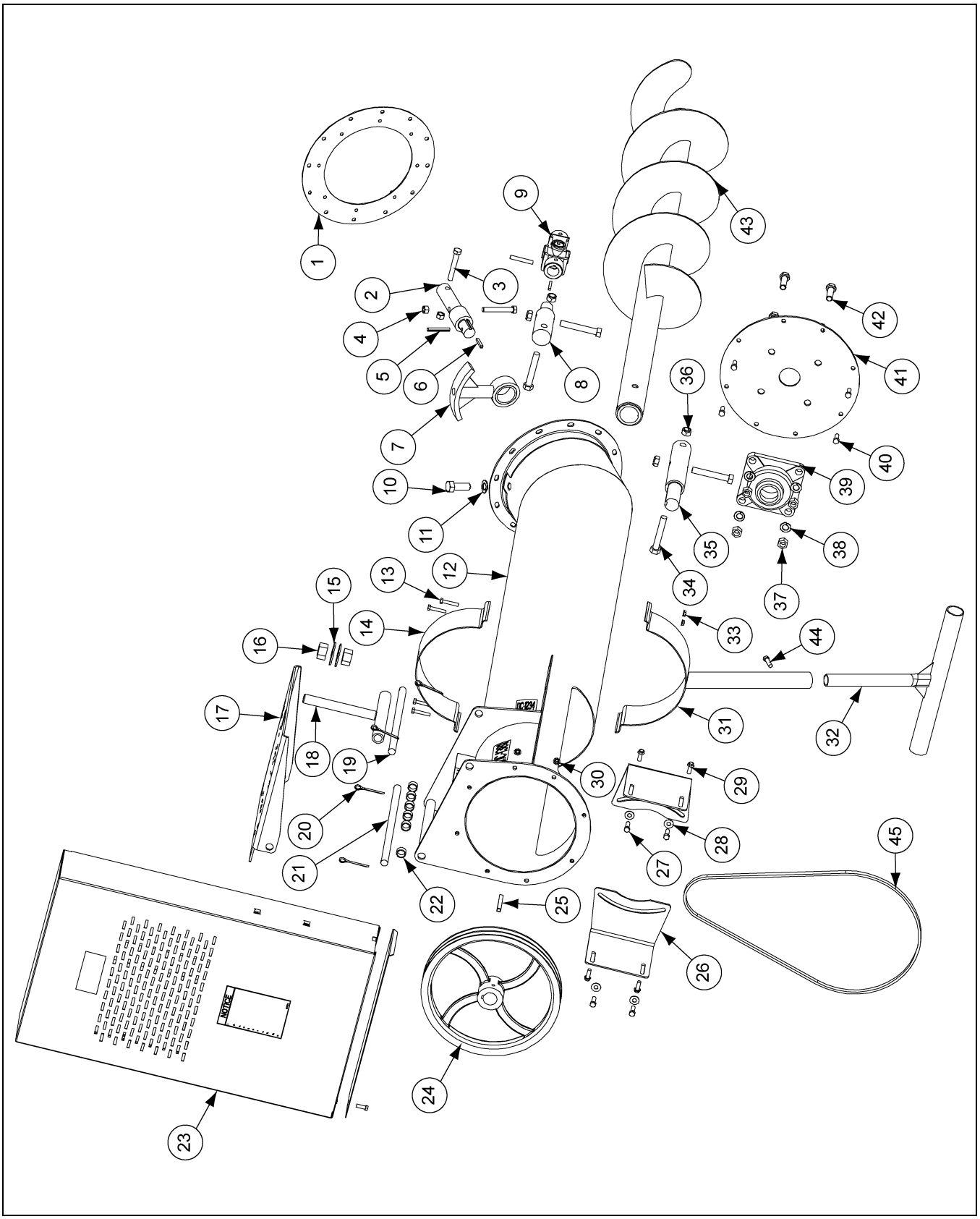
8" to 10" 25° Unloader Parts



8" to 10" 25° Unloader Parts List

Ref #	Part #	Description
1	GK1298	Adapter Plate
2	GK7240	1-1/4" x 9" Bearing Connecting Stub
3	S-8316	7/16"-14 x 3" Grade 5 Bearing Connecting Stub Bolt
4	S-8317	7/16"-14 Bearing Connecting Stub Stover Nut
5	S-7245	3/8" x 2-1/2" U-Joint Rolled Pin
7	GC06396	Hanger Bearing
8	GK1290	1-1/4" x 6-1/2" Connecting Stub
9	GK1291	1-1/4" Bore x 7" Long U-Joint
10	S-7886	5/8"-11 x 1-3/4" Grade 8 Hanger Bearing Bolt
11	S-3208	5/8" Hanger Bearing Lock Washer
12	GK7074	10" 25° Unload Tube Assembly
13	S-2741	5/16"-18 x 1-1/2" Grade 5 Stand Connecting Band Bolt
14	GK1301	10" x 4" 12 Gauge Half Band
15	S-7835	1" Motor Mount Adjustment Flat Washer
16	S-240	1"-8 Motor Mount Adjustment Hex Nut
17	GK6986	Motor Mount Plate
18	GK6942	Motor Mount Adjustment Weldment
19	GK7012	Motor Mount Adjustment Pivot Rod
20	S-6994	3/16" x 2" Cotter Pin
21	GK7013	Motor Mount Plate Pivot Rod
22	GK7014	Pivot Spacer Tube
23	GK7005	Belt Guard
24	GK1345	15" Diameter x 1-1/2" Bore 2 Belt Sheave
24	GK1304	15" Diameter x 1-1/2" Bore 3 Belt Sheave
25	S-9181	3/8" x 3" Sheave Key
26	GK7018	Belt Guard Mounting Brackets
27	S-2071	3/8"-16 x 1-1/4" Grade 5 Belt Guard Mounting Bracket Bolt
28	S-248	3/8" Belt Guard Mounting Bracket Flat Washer
29	S-9065	3/8"-16 x 1" Grade 5 Bolt
30	S-968	3/8"-16 Bearing Plate Serrated Flange Nut
31	GK1300	Support Stand Top
32	GK1277	Support Stand Base
33	S-3611	5/16"-18 Serrated Flange Nut
34	S-8316	7/16"-14 x 3" Grade 8 Flight Connection Bolt
34	S-8314	1/2"-13 x 3-1/2" Grade 8 Flight Connection Bolt
35	GK1289	1-1/2" x 11-1/2" Drive Shaft
36	S-8317	7/16"-14 Flight Connection Stover Nut
36	S-8315	1/2"-13 Flight Connection Stover Nut
37	S-7510	1/2"-13 Bearing Hex Nut
38	S-236	1/2" Bearing Lock Washer
39	GK1343	1-1/2" Four (4) Hole Flange with Lock Collar (Bearing with Flange)
40	S-7469	3/8"-16 x 1" Grade 5 Bearing Plate Bolt
41	GK7017	Bearing Plate
42	S-8760	1/2"-13 x 1-1/2" Grade 5 Bearing Bolt
43	GK6396	10" 25° Weldment Discharge Flight
44	S-2071	3/8"-16 x 1-1/4" Grade 5 Bolt
45	GK1346	B57 V-Belt

10" to 12" 25° Unloader Parts



10" to 12" 25° Unloader Parts List

Ref #	Part #	Description
1	GK2013	Adapter Plate
2	GK7242	1-1/2" x 9" Bearing Connecting Stub
3	S-8314	1/2"-13 x 3-1/2" Grade 5 Bearing Connecting Stub Bolt
4	S-8315	1/2"-13 Bearing Connecting Stub Stover Nut
5	S-7245	3/8" x 2-1/2" U-Joint Rolled Pin
6	S-9169	1/4" x 1-1/2" U-Joint Square Key
7	GC06398	Hanger Bearing
8	GK2008	1-1/4" to 2" x 6-1/2" Connecting Stub
9	GK2009	1-1/4" Bore with Key Way x 7" Long (U-Joint)
10	S-869	3/4"-10 x 2" Grade 8 Hanger Bearing Bolt
11	S-233	3/4" Hanger Bearing Lock Washer
12	GK7075	12" 25° Unload Tube Assembly
13	S-7149	5/16"-18 x 1-3/4" Grade 5 Stand Connecting Band Bolt
14	GK2014	12" x 4" 12 Gauge Half Band
15	S-7835	1" Motor Mount Adjustment Flat Washer
16	S-240	1"-8 Motor Mount Adjustment Hex Nut
17	GK6986	Motor Mount Plate
18	GK6942	Motor Mount Adjustment Weldment
19	GK7012	Motor Mount Adjustment Pivot Rod
20	S-6994	3/16" x 2" Cotter Pin
21	GK7013	Motor Mount Plate Pivot Rod
22	GK7014	Pivot Spacer Tube
23	GK7068	Belt Guard
24	GK1345	15" Diameter x 1-1/2" Bore 2 Belt Sheave
24	GK1304	15" Diameter x 1-1/2" Bore 3 Belt Sheave
25	S-9181	3/8" x 3" Sheave Key
26	GK7065	Belt Guard Mounting Brackets
27	S-2071	3/8"-16 x 1-1/4" Grade 5 Belt Guard Mounting Bracket Bolt
28	S-248	3/8" Belt Guard Mounting Bracket Flat Washer
29	S-9065	3/8"-16 x 1" Grade 5 Bolt
30	S-968	3/8"-16 Bearing Plate Serrated Flange Nut
31	GK2011	Support Stand Top
32	GK1277	Support Stand Base
33	S-3611	5/16"-18 Serrated Flange Nut
34	S-8345	5/8"-11 x 4" Grade 5 Flight Connection Bolt
35	GK2006	2" x 12" Drive Shaft
36	S-8606	5/8"-11 Flight Connection Stover Nut
37	S-4110	5/8"-11 Bearing Hex Nut
38	S-3208	5/8" Bearing Lock Washer
39	GK2004	2" Four (4) Hole Flange with Lock Collar (Bearing with Flange)
40	S-7469	3/8"-16 x 1" Grade 5 Bearing Plate Bolt
41	GK7064	Bearing Plate
42	S-8399	5/8"-11 x 2" Grade 5 Bearing Bolt
43	GK2001	12" 25° Weldment Discharge Flight
44	S-2071	3/8"-16 x 1-1/4" Grade 5 Bolt
45	GK-2546	B62 V-Belt

Problem	Possible Cause	Solution
Auger vibration	1. Drive belt may be overtightened, putting head stub and flight in a bind. Damage can occur to the auger flighting, thus causing noise. Damage usually is 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 lightweight 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
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **
	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
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 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%

** Warranty prorated from list price:
0 to 3 years - no cost to end-user
3 to 5 years - end-user pays 50%

† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.

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 (12^{th}) month from the date of purchase and continuing until the sixtieth (60^{th}) 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.

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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.

GSI GROUP

GSI

GSI Group
1004 E. Illinois St.
Assumption, IL 62510-0020
Phone: 1-217-226-4421
Fax: 1-217-226-4420
www.gsiag.com

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