

6", 8" and 10" Roof Augers

Assembly and Operation Manual

PNEG-1434

Date: 07-22-08

GSI GROUP



PNEG-1434

This manual is valid for the roof auger catalog numbers in the table below.

Auger Length	6" Roof Auger	8" Roof Auger	10" Roof Auger
11'	GRA6111A	GRA8111A	GRA10111A
16'	GRA6161A	GRA8161A	GRA10161A
21'	GRS6211A	GRA8211A	GRA10211A

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1. Introduction

General Information

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.

Receiving Merchandise and Filing Claims

INSPECT the shipment immediately upon arrival. The customer is responsible for ensuring that all quantities are correct. Report any damage or shortages by recording a detailed description on the bill of lading to justify the customer's claim from the transport firm. When receiving merchandise, it is important to check both the quantity of parts and their descriptions 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.

Capacity

A. The capacities may vary greatly under varying conditions. The following factors play a role in the performance of the auger:

- Speed
- Angle of operation
- Moisture content
- Amounts of foreign matter
- Different materials
- Methods of feeding

B. For example, a twenty-five percent (25%) moisture could cut capacity by as much as 40% under some conditions.

Specifications

6" Roof Auger	8" Roof Auger	10" Roof Auger
16 Gauge Housing	14 Gauge Housing	12 Gauge Housing
1.25" Flight Shaft	1.90" Flight Shaft	2.375" Flight Shaft
10 Gauge Flight	0.188" Flight	0.188" Flight
12" O.D., 2 Belt, 1" Bore Pulley	12" O.D., 2 Belt, 1.25" Bore Pulley	15" O.D., 2 Belt, 1.5" Bore Pulley (3 Belt Pulley for 41' Model)
Available Lengths: 11', 16', 21'	Available Lengths: 11', 16', 21'	Available Lengths: 11', 16' (w/ Internal Bearing), 21' (w/ Internal Bearing)
Available Extensions: 5', 10', 15', 20'	Available Extensions: 5', 10', 15', 20'	Available Extensions: 5', 10', 15', 20'
Horsepower Requirements: 11' (1-1.5 HP), 16' (1-1.5 HP), 21' (1.5-2 HP)	Horsepower Requirements: 11' (1.5-2 HP), 16' (1.5-2 HP), 21' (2-3 HP)	Horsepower Requirements: 11' (2-3 HP), 16' (2-3 HP), 21' (3-5 HP)
Hopper Tail Piece w/ Lid, 3 Mounting Brackets, and 90° Spout Included.	Hopper Tail Piece w/ Lid, 3 Mounting Brackets, and 90° Spout Included.	Hopper Tail Piece w/ Lid, 3 Mounting Brackets, and 90° Spout Included.

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.

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.

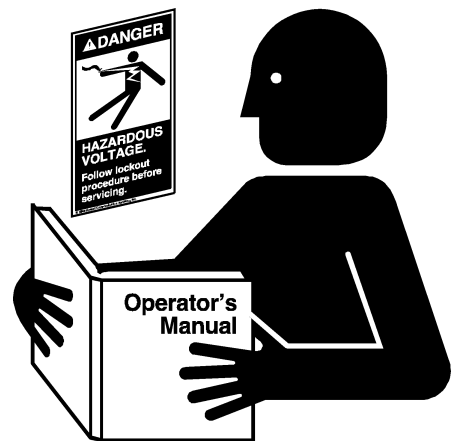
Follow Safety Instructions

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

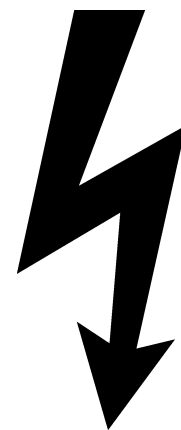
To avoid serious injury or death, stay away from unit and make sure everyone is clear of the equipment before starting or operating the unit.

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

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**

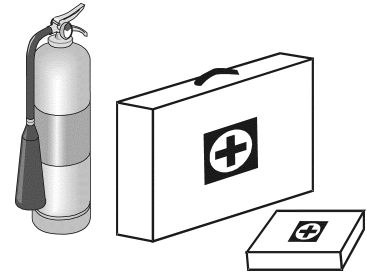
2. Safety

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.

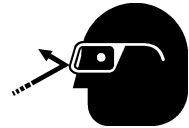
Wear steel toe boots to help protect your feet from falling debris. Tuck in any loose or dangling shoe strings.

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



Operator Qualifications

- A. The User/Operator must be competent and experienced to operate auger equipment. Anyone who works with or around augers must have good common sense in order to be qualified. These persons must also know and meet all other qualifications, such as:
- i. Any person who has not read and/or does not understand all operation and safety procedures is not qualified to operate any auger systems.
 - ii. Certain regulations apply to personnel operating power machinery. Personnel under the age of 18 years may not operate power machinery, including augers. It is your responsibility, as owner and/or supervisor, to know what these regulations are in your area or situation.
 - iii. Unqualified or incompetent persons are to remain out of the work area.
 - iv. O.S.H.A. (Occupational Safety and Health Administration) regulations state: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved". (Federal Occupational Safety and Health Standards for Agriculture. Subpart D, Section 19287.57 (a) (6)).
- B. As a requirement of O.S.H.A., it is necessary for the employer to train the employee in the safe operating and safety procedures for this auger. The sign-off sheet is provided for your convenience and personal record keeping. All unqualified persons are to stay out of the work area at all times. It is strongly recommended that another qualified person who knows the shut down procedure is in the area in the event of an emergency.

<i>Date</i>	<i>Employee Name</i>	<i>Supervisor Name</i>

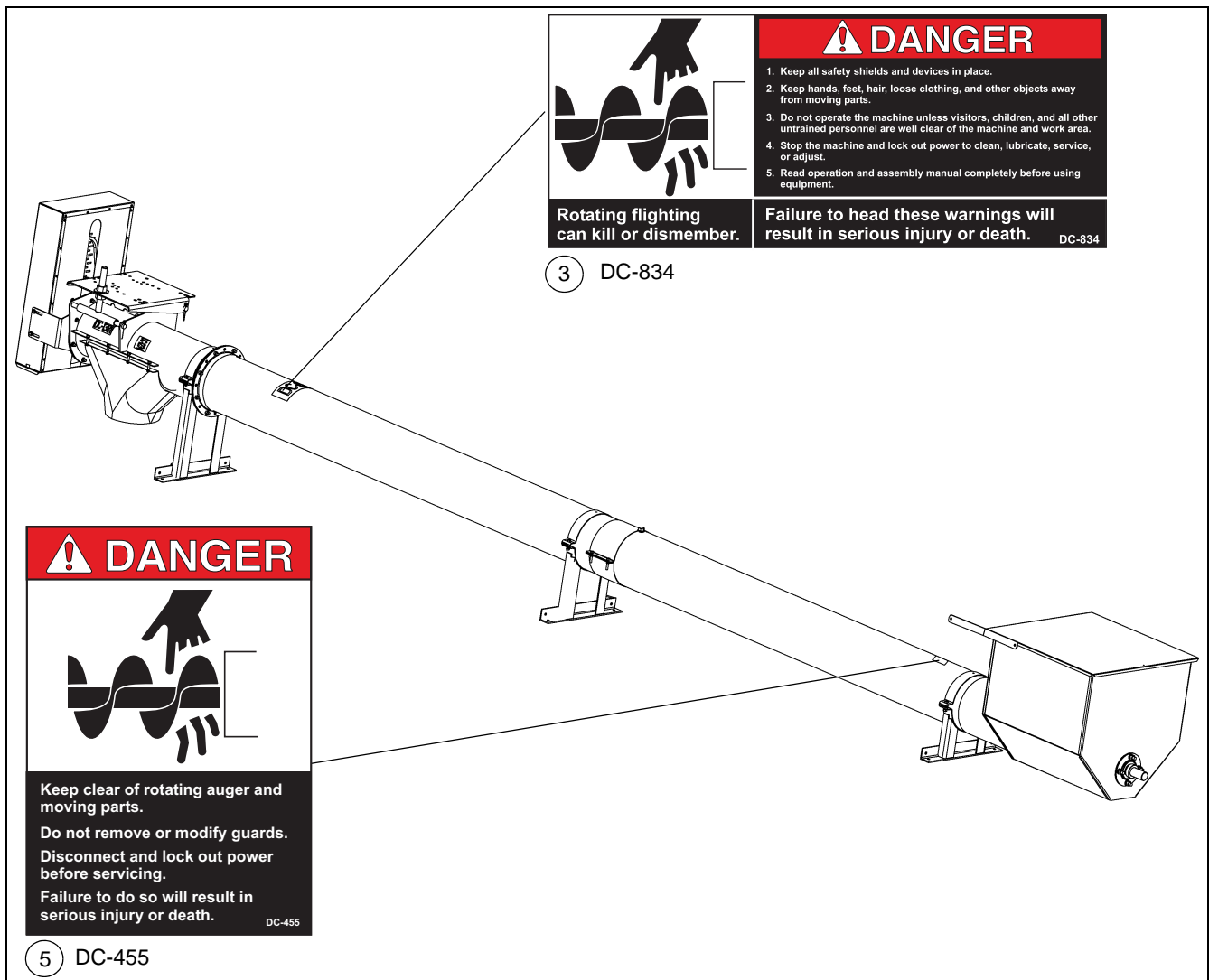
3. Safety Decals

The decal list below has all the safety decals that should be included with your equipment. The following [Pages 10-11](#) show what the decals look like and where they should be located on the equipment. Inspect all decals and replace any that are illegible, worn, or missing. Contact your local dealer or the manufacturer to order replacement decals free of charge.

Contact:

The GSI Group
 1004 E. Illinois Street
 Assumption, IL. 62510
 Phone: 217-226-4421

6", 8" and 10" Roof Auger Decal List			
Ref #	Part #	Description	Size
1	DC-1381	Danger - Shear Point	4-1/2" x 2"
2	DC-994	Danger - Shear Point	4-1/2" x 2"
3	DC-834	Danger - Unloading	9" x 3-3/4"
4	DC-1379	Notice - 1-11	5-1/8" x 7-3/8"
5	DC-455	Danger - Rotating Flight	4" x 5-3/4"
6	DC-1234	Caution	2-1/4" x 2-3/4"
7	DC-1395	Danger - Rotating Flight	4-1/4" x 6-1/4"



Check components shown 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.

Contact:

The GSI Group
 1004 E. Illinois Street
 Assumption, IL. 62510
 Phone: 217-226-4421

⚠ DANGER
SHEAR POINT
 Keep hands clear of moving parts. Do not operate with guard removed. Disconnect and lockout power before servicing.
 DC-994

2 DC-994

⚠ DANGER
SHEAR POINT
 Keep clear of rotating auger and moving parts. Do not remove or modify guards. Disconnect and lock out power before servicing. Failure to do so will result in serious INJURY or DEATH.
 DC-1381

1 DC-1381

(Decal located on both sides of tube.)

NOTICE

1. READ AND UNDERSTAND THE OPERATOR'S MANUAL AND ALL SAFETY INSTRUCTIONS.
2. DO NOT OPERATE WHILE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.
3. DO NOT OPERATE UNLESS ALL SAFETY EQUIPMENT, SWITCHES, GUARDS AND SHIELDS ARE SECURELY IN PLACE AND OPERATIONAL.
4. ALLOW ONLY TRAINED AUTHORIZED PERSONNEL IN THE OPERATING AREA.
5. ANY ELECTRICAL WIRING OR SERVICE WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN. IT MUST MEET ALL STATE AND LOCAL ELECTRICAL CODES.
6. DO NOT ALLOW CHILDREN IN THE AREA OF OPERATION.
7. KEEP HANDS, FEET AND CLOTHING AWAY FROM MOVING PARTS.
8. DISCONNECT AND LOCKOUT POWER BEFORE MAKING ANY ADJUSTMENTS OR PERFORMING ANY SERVICE WORK.
9. DISCONNECT POWER PRIOR TO RESETTING ANY MOTOR OVERLOAD.
10. MAKE CERTAIN ALL ELECTRIC MOTORS ARE GROUNDED.
11. REPLACE ALL WORN OR DAMAGED LABELS IMMEDIATELY.

DC-1379

4 DC-1379

⚠ CAUTION

FAILURE TO PROPERLY SELECT, INSTALL OR MAINTAIN AN AUGER, ITS DRIVE OR OTHER COMPONENTS CAN RESULT IN DANGEROUS OPERATION.

THIS EQUIPMENT IF IMPROPERLY SELECTED, INSTALLED OR MAINTAINED MAY FAIL AND COULD RESULT IN SERIOUS INJURY OR PROPERTY DAMAGE.

CHECK PRODUCT LITERATURE AND EQUIPMENT MANUFACTURER'S LITERATURE OR CALL THE FACTORY FOR FURTHER INFORMATION.

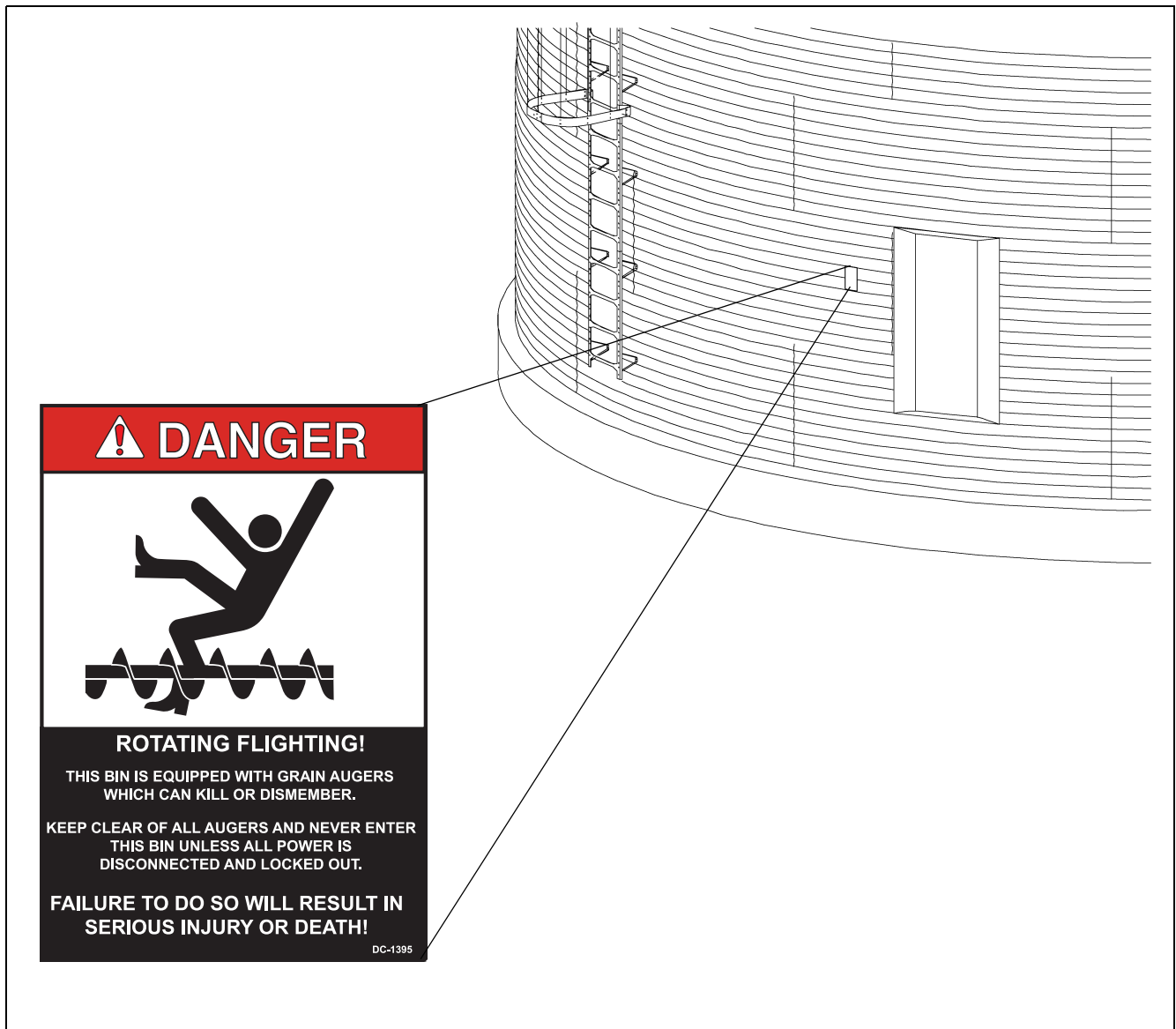
DC-1234

6 DC-1234

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

Installing Intake Shaft

- A. Begin by assembling the intake shaft to the flight using the required grade 8 bolts and stover nuts. (See [Chart below](#) and [See Figure 4A.](#))

Flight Hardware	
6"	3/8"-16 x 2" Grade 8 Hex Bolts
8"	7/16"-14 x 3" Grade 8 Hex Bolts
10"	1/2"-13 x 3-1/2" Grade 8 Hex Bolts

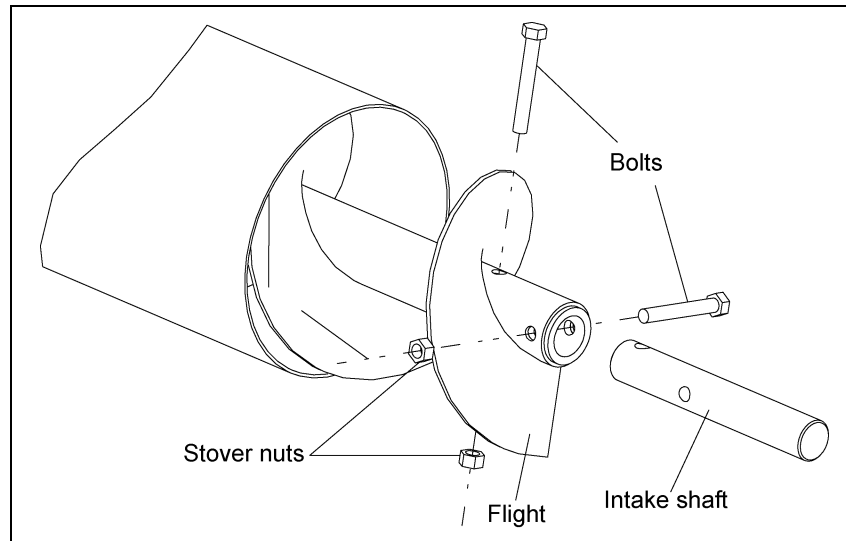


Figure 4A

- B. Next bolt the bearing with flangette to the studs on the hopper using the required lock washer and nut. (See [Chart below](#) and [See Figure 4B.](#))

Hopper Bearing Nut	
6"	5/16"-18 Hex Nut
8"	3/8"-16 Hex Nut
10"	1/2"-13 Hex Nut

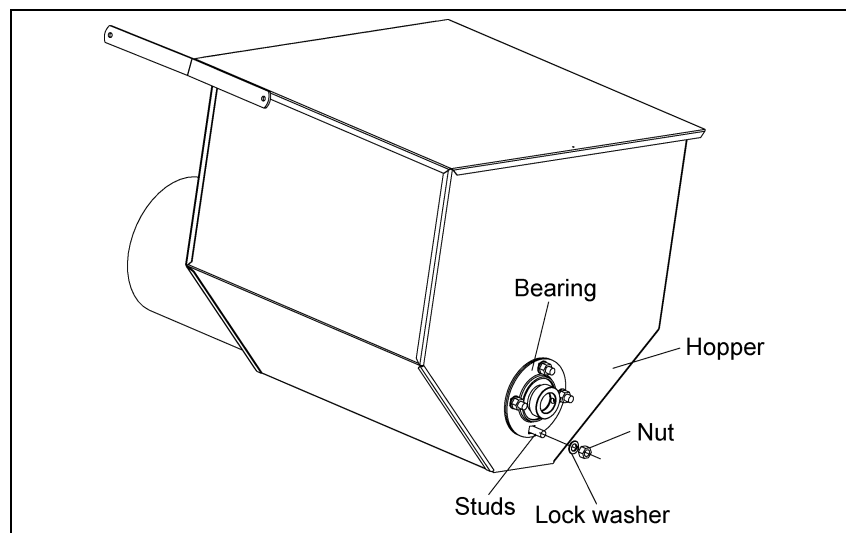


Figure 4B

Cutting Tube to Correct Size

- A. With the bearing attached, slide the hopper onto the tube and align the end surface of the flight approximately 1/2" from the surface of the bearing. When the proper distance is achieved, mark the tube for the cut. (See Figure 4C.)

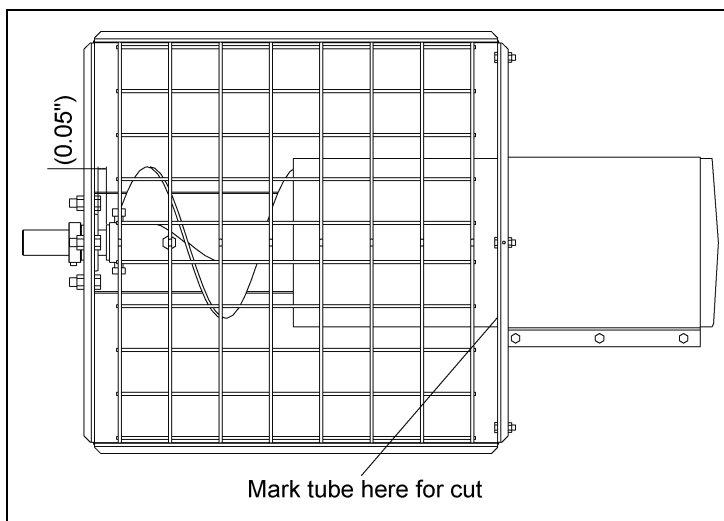


Figure 4C

- B. Remove the hopper from the tube. Slide the flight out of the discharge end of the tube. It is not necessary to remove the flight completely; just slide it out far enough to clear the area where you have marked the cut. (See Figure 4D.)

NOTE: For 10" systems, the inspection cover and hanger bearing bolt will need to be removed before flight can be slid out of discharge end.

- C. Cut the tube where marked. Once cut is completed, can slide the flight back into the tube.

NOTE: On 10" systems, secure the hanger bearing to the U-joint with the bolt and lock washer and reinstall the inspection cover. (See Figure 4E.)

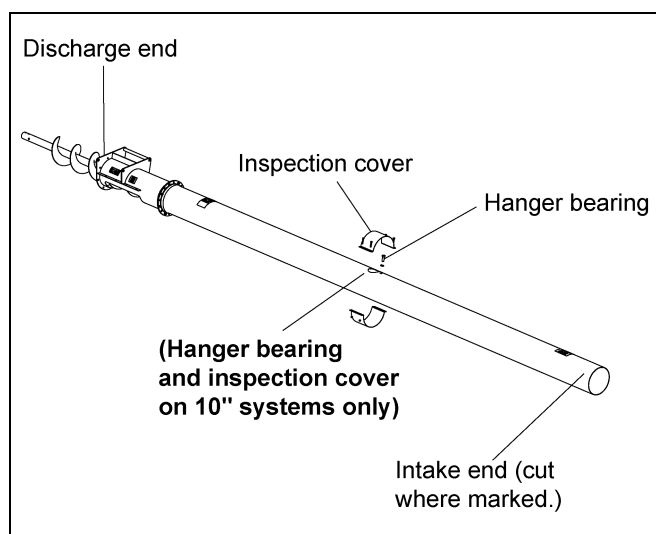


Figure 4D

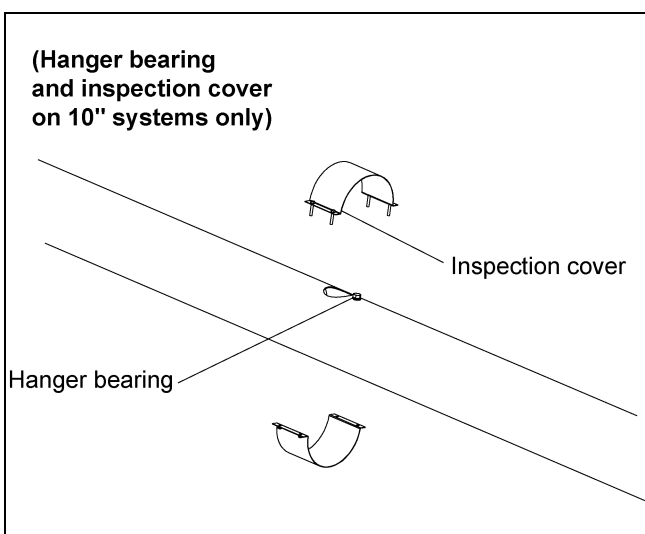


Figure 4E

Attach Hopper

- A. Slide the hopper onto the tube and align the end of the flight approximately 1/2" from the surface of the bearing. With the proper distance set, install the proper bolt, lock washer and nut, and secure the hopper to the tube. (See Chart below and See Figure 4F.)

Hopper Connecting Band Bolt	
6" and 8"	5/16"-18 x 1" Hex Bolt
10"	5/16"-18 x 1-1/2" Hex Bolt

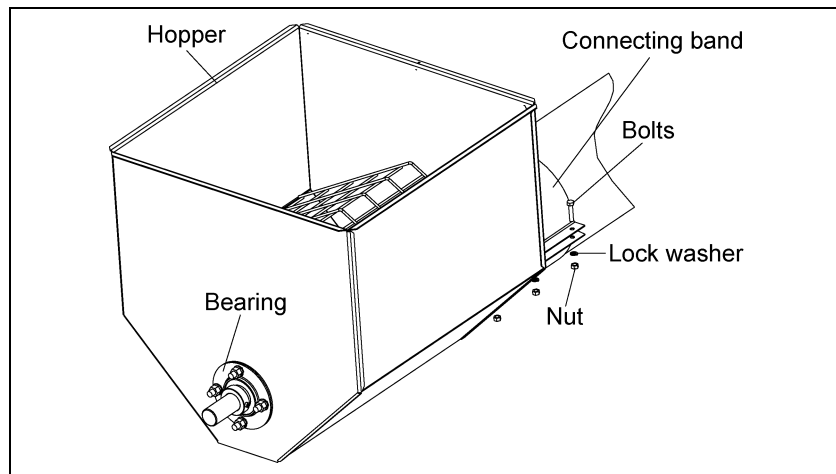


Figure 4F

Installing Drive Shaft

- A. Insert the drive shaft into the opposite end of flight with keyway facing outward. Align the holes in the shaft and secure with grade 8 bolts and stover nuts. (See Chart below and See Figure 4G.)

Flight Hardware	
6"	3/8"-16 x 2" Grade 8 Hex Bolts
8"	7/16"-14 x 3" Grade 8 Hex Bolts
10"	1/2"-13 x 3-1/2" Grade 8 Hex Bolts

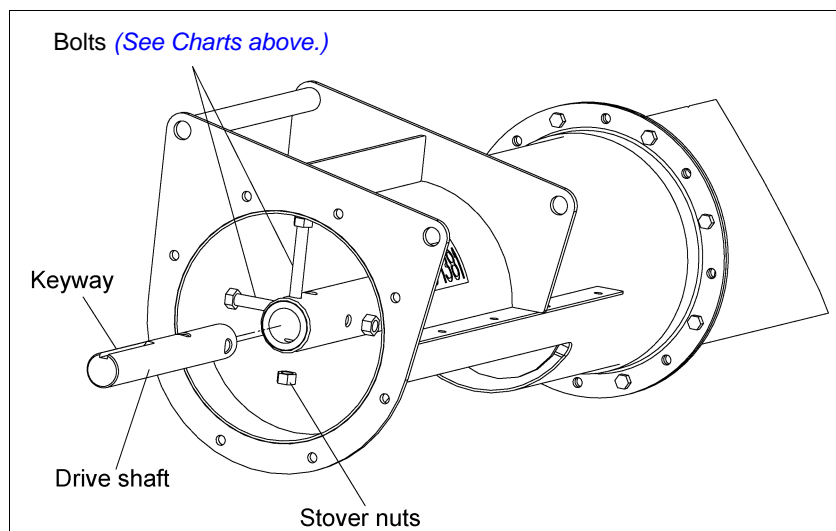


Figure 4G

Mounting Bearing to Bearing Plate

- A. Align bolt holes on bearing flange with bolt holes on bearing plate.
- B. Secure bearing to bearing plate using appropriate bolts, lock washers, and nuts. (See Chart below and See Figure 4H.)

Bearing Bolts	
6"	7/16"-14 x 1-1/2" Hex Bolts
8" and 10"	1/2"-13 x 1-1/2" Hex Bolts

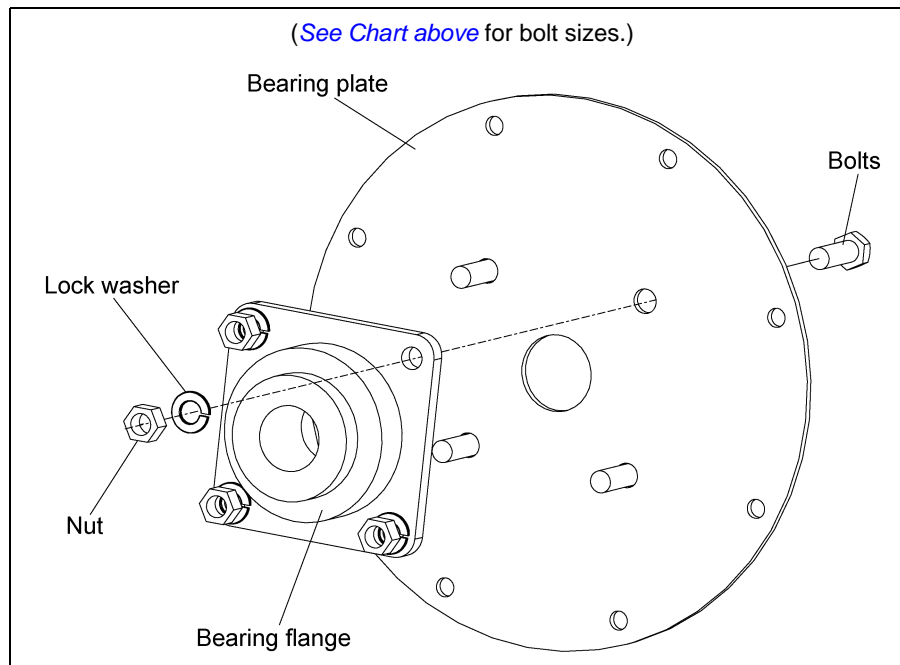


Figure 4H

Installing Bearing Plate onto Tube

- A. Align bearing with drive shaft and slip shaft through bearing.
- B. Rotate plate until bolt holes in tube flange and plate align. Secure with appropriate bolts and serrated flange nuts. (See Chart below.)

Bearing Plate Bolts	
6" and 8"	5/16"-18 x 1" Hex Bolt
10"	3/8"-16 x 1" Hex Bolt

- C. Only secure with UPPER and LOWER four (4) bolts. (See Figure 4I on Page 17.) The other four (4) bolts will be installed later with the belt guard mounting brackets.

NOTE: On the 10" systems use the four (4) 3/8"-16 x 1" bolts in this step, the longer bolts will be used to attach the belt guard mounting brackets in a future step.

Installing Bearing Plate onto Tube (Continued)

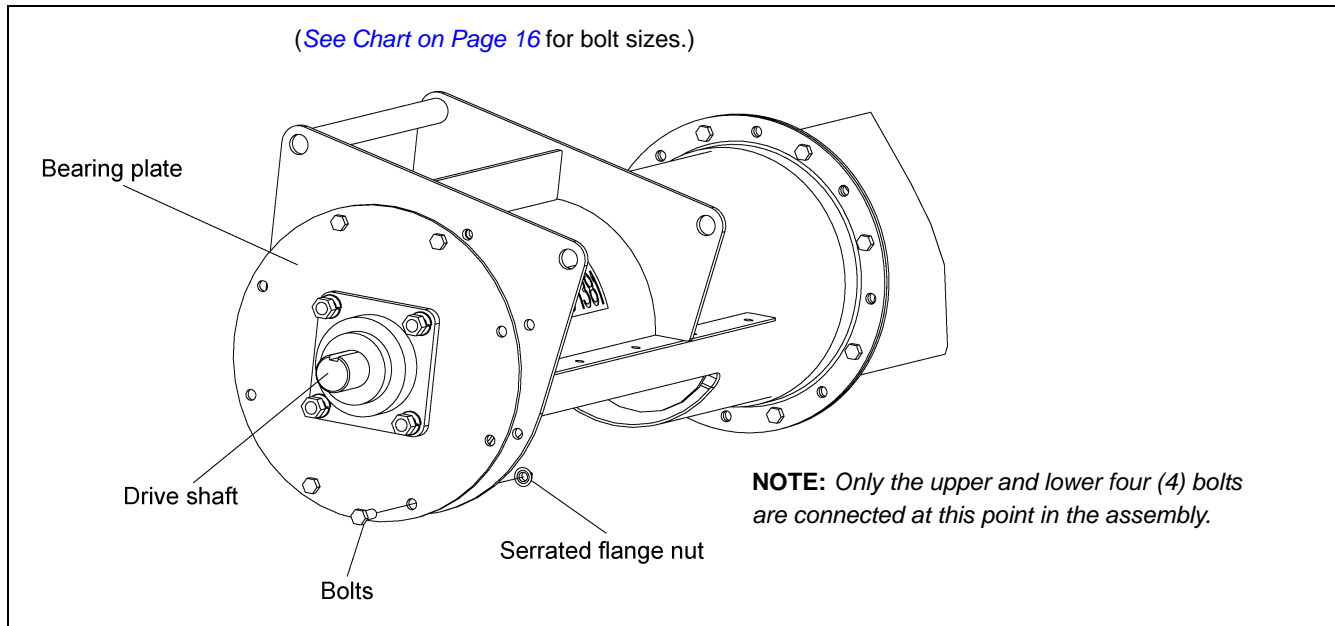


Figure 4I

Installing the Motor Mount Adjuster

- A. Place motor mount adjuster between the back plate and head plate on the discharge tube.
- B. 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 4J.)

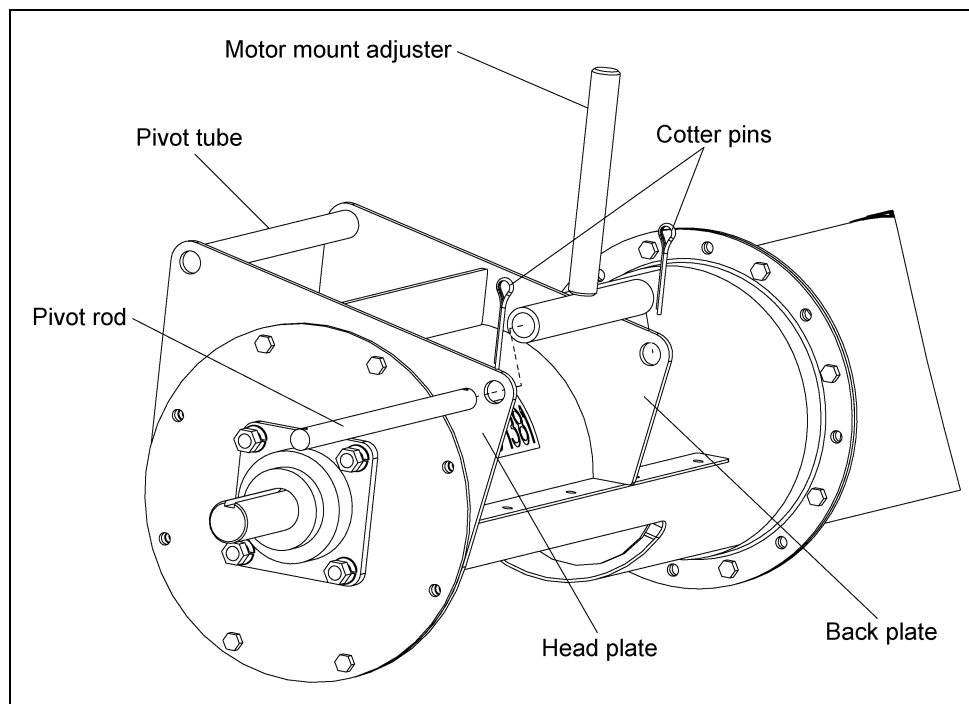


Figure 4J

Installing the Motor Mount Plate

- A. Secure one (1) of the motor mount adjustment nuts and one (1) the motor mount adjustment washers approximately 3/4" of the way down the motor mount adjuster's threaded shaft.
- B. Once the nut and washer is secure, slip the motor mount plate over the adjuster and align the pivot holes with the pivot tube. *(See Figure 4K.)*
- C. Slide the motor mount pivot rod through the pivot tube on the discharge tube.
- D. 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 4L.)*

NOTE: *The number of spacers will vary between each size of unloader.*

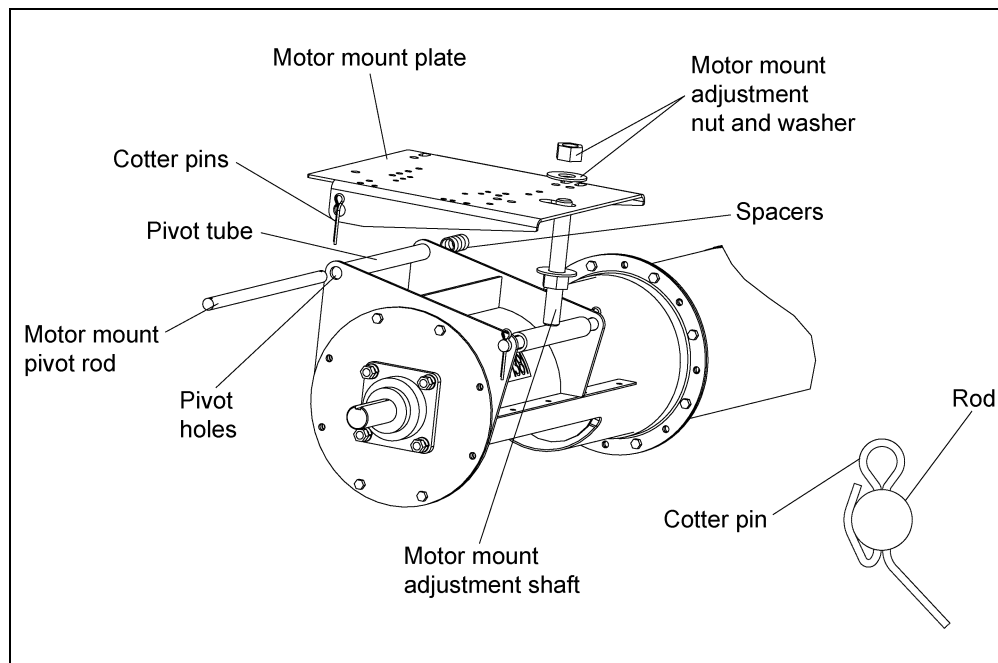


Figure 4K

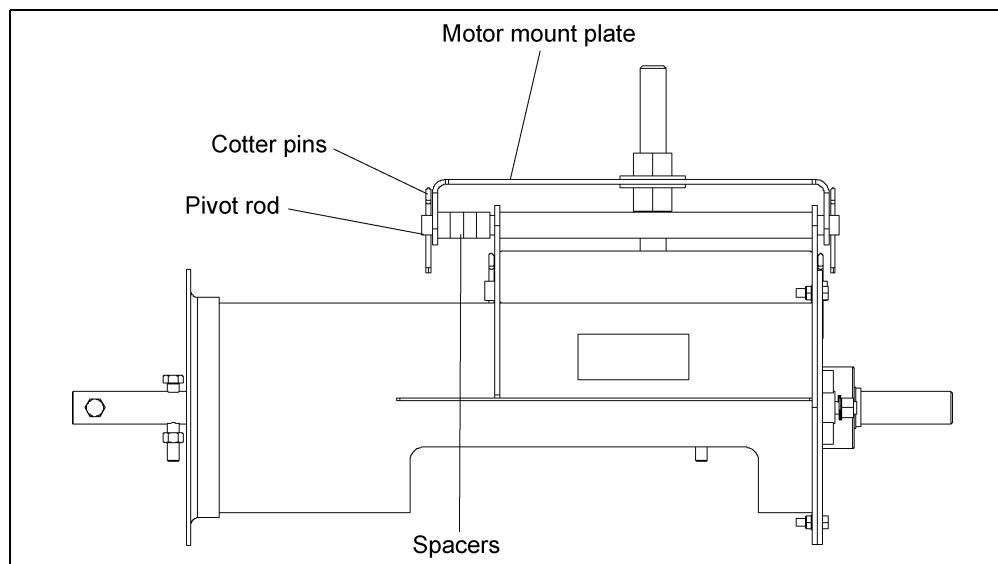


Figure 4L

Installing the Belt Guard Brackets

- A. Align the holes on the bearing plate with the slots on the belt guard mounting brackets.
- B. Secure the brackets with proper bolts, flat washers, and serrated flange nuts. (See Chart below and See Figure 4M.)

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.

Bearing Plate Bolts	
6" and 8"	5/16"-18 x 1" Hex Bolt
10"	3/8"-16 x 1-1/4" Hex Bolt

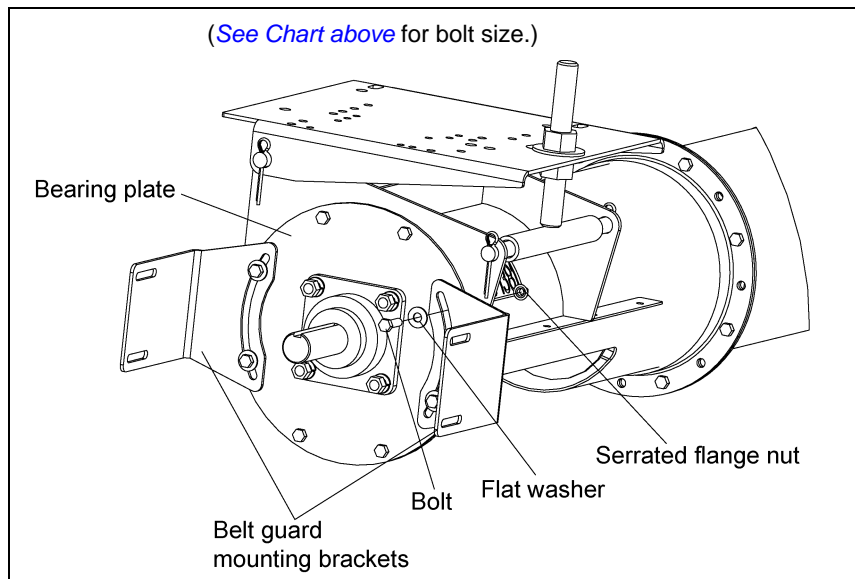


Figure 4M

Installing the Lock Collar

- A. Slide the lock collar over the drive shaft, positioning it against the bearing. Do not tighten the lock collar at this time as it will be tightened later in the assembly. (See Figure 4N.)

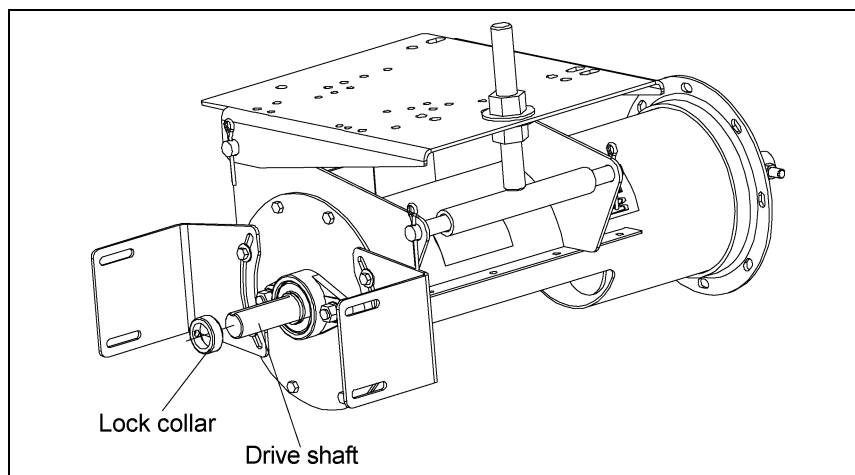


Figure 4N

Installing the Pulley

- A. Place and position the key into the keyway located on the drive shaft.
- B. Place the pulley onto the drive shaft with the set screw side of the pulley facing away from the bearing plate. Position the pulley so that it is as close to the lock collar as possible, but not touching it.
- C. Once the pulley is appropriately positioned, tighten the set screw with a hex head wrench to secure it to the drive shaft. (See [Figure 40.](#))

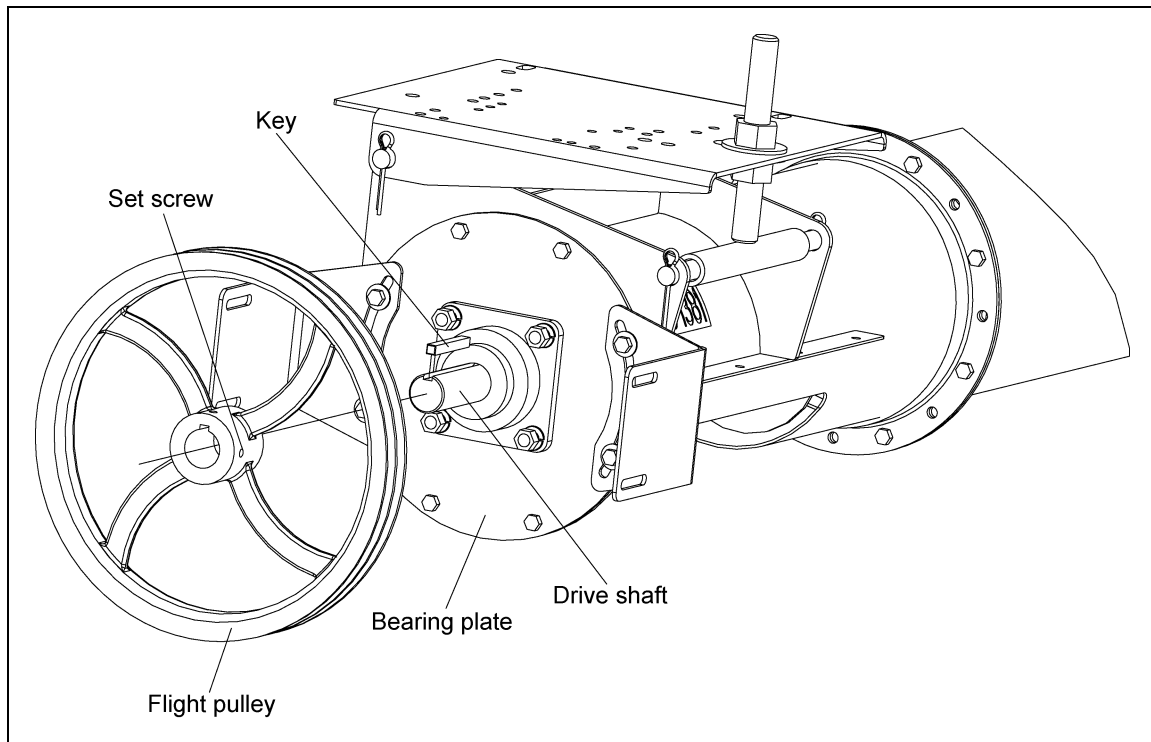


Figure 40

Tightening the Lock Collar

- A. Using a punch and hammer, drive the lock collar clockwise (the same direction as 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.*

Installing the Motor (Not Provided)

- A. Attach the motor to the motor mount plate using appropriate bolts, lock washers, and hex nuts. *(See Chart below.)*
- B. 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 4P.)*

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

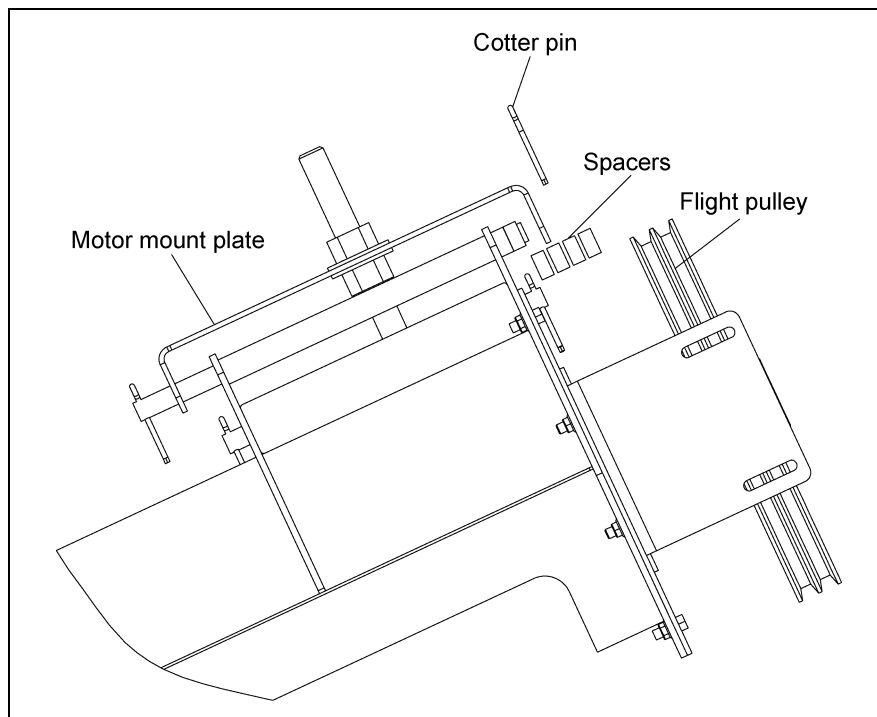


Figure 4P

Installing the Belts

- A. Place the belts onto the pulleys.
- B. First screw the lower motor mount adjustment nut upward, raising the motor mount plate and putting tension on the belts.
- C. Once the desired tension is reached, tighten the upper motor mount adjustment nut down onto the motor mount plate locking it into place.

Installing the Belt Guard

- A. With the belts properly tensioned, remove the bottom belt guard cover and slip belt guard down over the motor shaft.
- B. Bolt the belt guard to the belt guard mounting brackets, the brackets should still be loose at this time.
- C. 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, and tighten down the belt guard mounting brackets to the bearing plate. (See Figure 4Q.)
- D. Once the brackets are tightened, slide the bottom cover back into place and secure with supplied bolt.

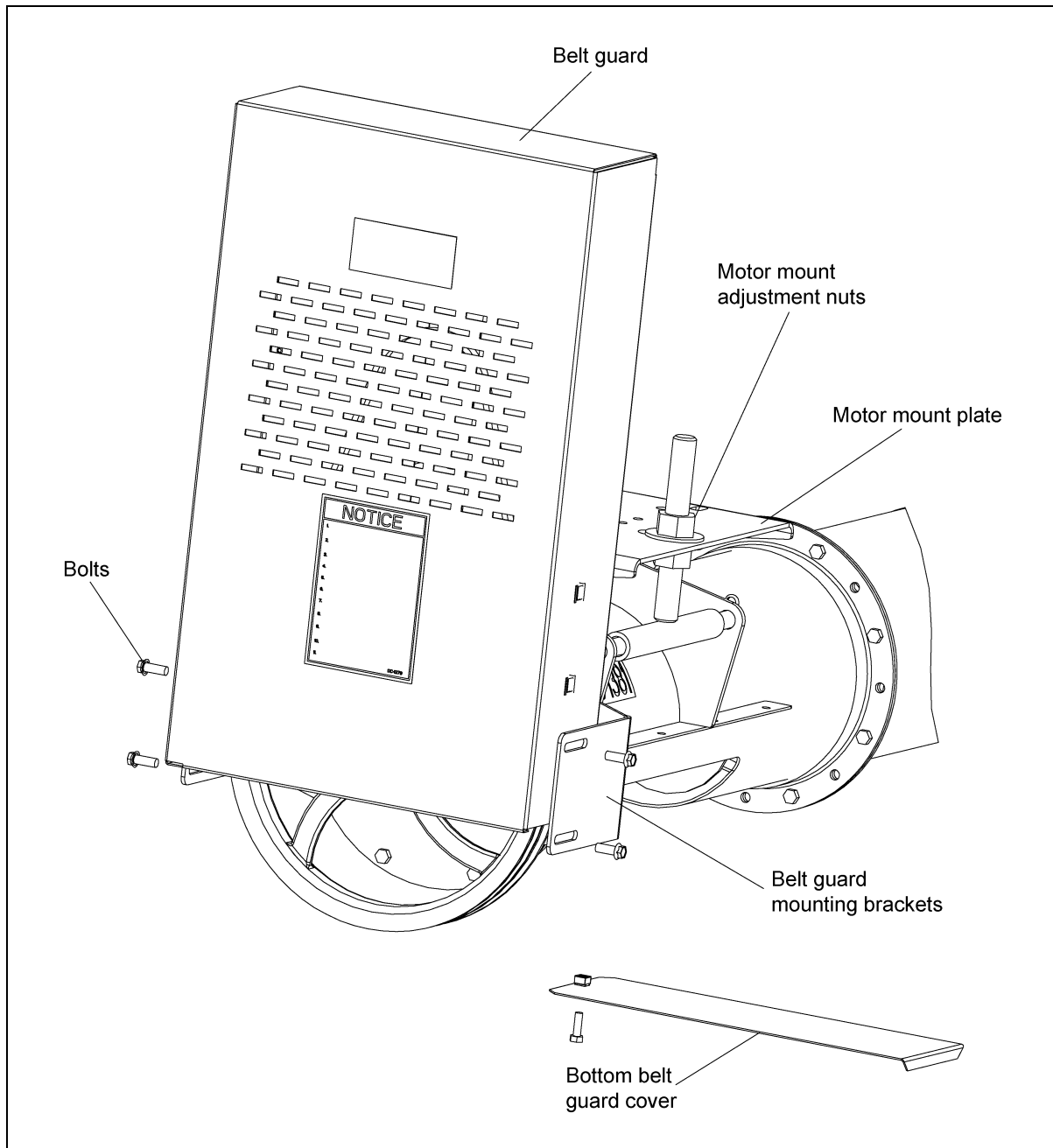


Figure 4Q

Installing the Spout

- A. Align spout with holes on motor mount tube.
- B. Attach spout using 5/16"-18 x 1-1/2" hex bolt and lock nut. (See Figure 4R.)

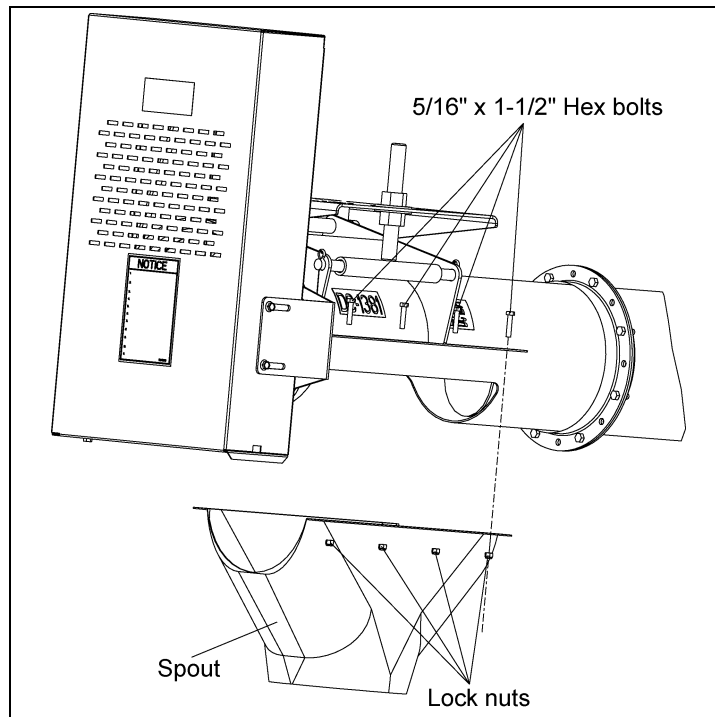


Figure 4R

Installing the Auger Stands

- A. Attach the tallest stand on the motor mount side of the connecting flange. It is necessary to place the stand on the motor mount side of the flange to help support the weight of the motor. (See Figure 4S.)

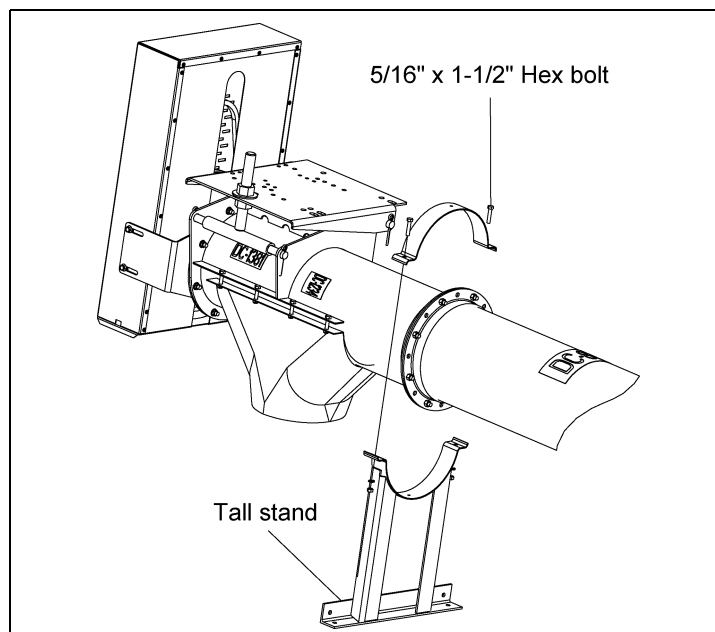


Figure 4S

Installing the Auger Stands (Continued)



Do not place roof auger support stands directly on roof panel surface. Attach stands to angle iron that spans completely across the roof panel ribs.

- B. Install the shortest stand as close to the intake hopper as possible. Positioning the stand as close as possible to the hopper will help to distribute the hoppers weight. (See Figure 4T.)

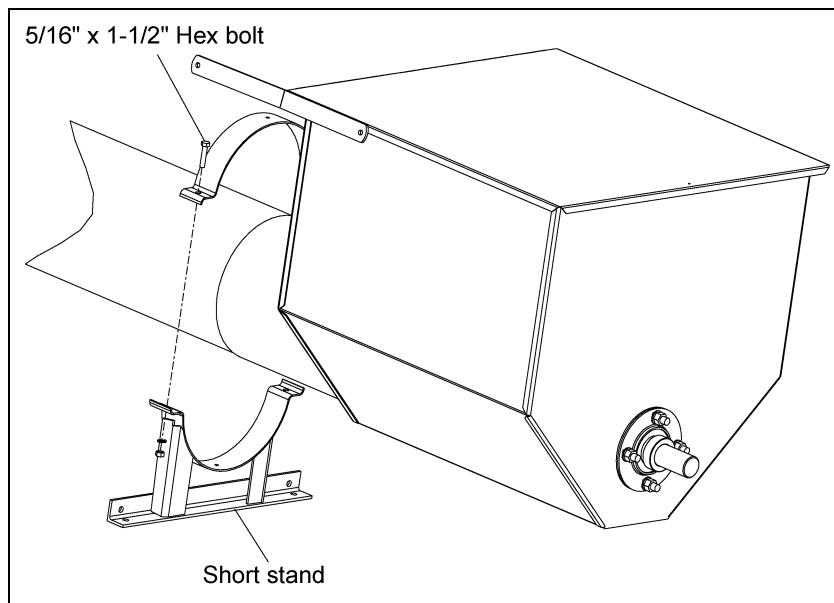


Figure 4T

- C. Install the remaining stand in the center of the tube. Placing the stand in the center of the tube will help minimize vibration in the system when the auger is running. (See Figure 4U.)

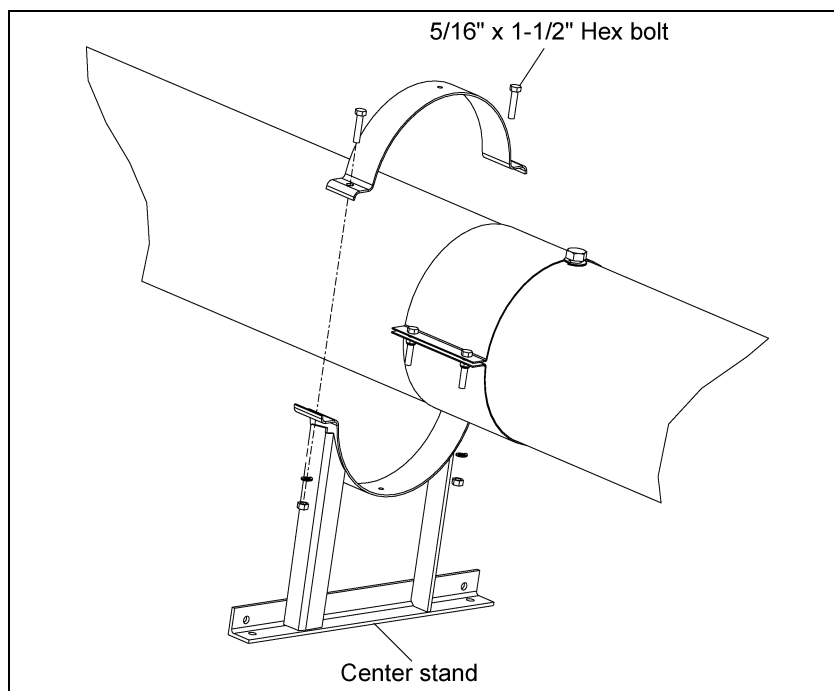


Figure 4U

Horsepower Information for Electric Motors

- A. 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 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.
- B. Auger speeds in excess of 750 RPM should be avoided as excessive wear will result. Auger speeds 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.

The charts below are a suggested horsepower requirement for standard 6", 8", and 10" roof augers.

6" Horsepower Chart			
Length	11'	16'	21'
Motor HP	1 - 1.5	1 - 1.5	1.5 - 2

8" Horsepower Chart			
Length	11'	16'	21'
Motor HP	1.5 - 2	1.5 - 2	2 - 3

10" Horsepower Chart			
Length	11'	16'	21'
Motor HP	2 - 3	2 - 3	3 - 5



Electrical controls and wiring should be installed by a qualified electrician. The motor disconnect switches and conductor cables should comply with the National Electrical Code and any local codes which apply. Motor starting control stations should be so located that the operator can see that all personnel are clear of the equipment.

Start-Up and Break-In



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

- 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. Double check the assembly instructions to see that all parts have been assembled properly.
- D. During operation of equipment, one (1) person should be in a position to monitor the entire operation.

NOTE: *During the initial start-up and break-in period, the operator should note any unusual vibrations or noises and take the appropriate action.*



Make certain everyone is clear before operating or moving the machine.

- E. The bin well inside the bin should have a control gate. The gate should be closed before start-up and closed before shut down to allow the machine to clean out.
- F. The controls for the control gate should either pull or push open, depending on the type of well in use. Use the control gate to regulate a flow of less than full capacity until several hundred bushels of grain have been augured to polish the flighting assembly and tube.
- G. Any new screw conveyor or one that has set idle for a season should go through a “break-in” period. This “break-in” consists of running the auger at half capacity until the screw becomes polished and smooth before attempting to run at full capacity. It is recommended that several hundred bushels of grain be augured at partial capacity.



Failure of the auger is very likely to occur if it is run at full capacity before the screw has become polished.



NEVER operate augers empty for any length of time as excessive wear will result.

- H. Do not stop or start augers under load, especially before the flight and tube become well polished, as this may cause the auger to “lock up”.



Excessive wear will result if auger is run at speeds in excess of what is recommended.

- I. Do not run auger at too slow of a speed as this will load up or overload the auger. An loading up of the auger will cause the motor to overload and a higher torque will be required to turn the auger, which in turn may cause damage to the auger.

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. Twenty-five percent (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 restarted under full load, it may result in damage to the auger. Using a larger diameter auger and reducing its load level will be far better than subjecting a smaller diameter auger to big loads. If an auger is kept from absolute filling, it will make start-up easier and will convey more efficiently.

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

8. Shut Down

Normal Shut Down

- A. Make certain unloading tubes are empty before stopping the unit.
- 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. Disconnect and lock out the power source.
- C. Close bin well control gates.
- D. Clear out as much grain from the auger and hopper as possible.



Never restart when under a full load. Starting unit under load may result in damage to the machine. Such damage is considered abuse of the equipment.

- E. Reconnect and unlock the power source.
- F. Gradually clear the auger until there is no grain or obstruction.

Lock Out

- A. Always stop and disconnect the power source whenever the operator must leave the work area or for maintenance of the machinery.
- B. Make sure equipment is locked out and that the machinery cannot be started while the operator is not in the work area.



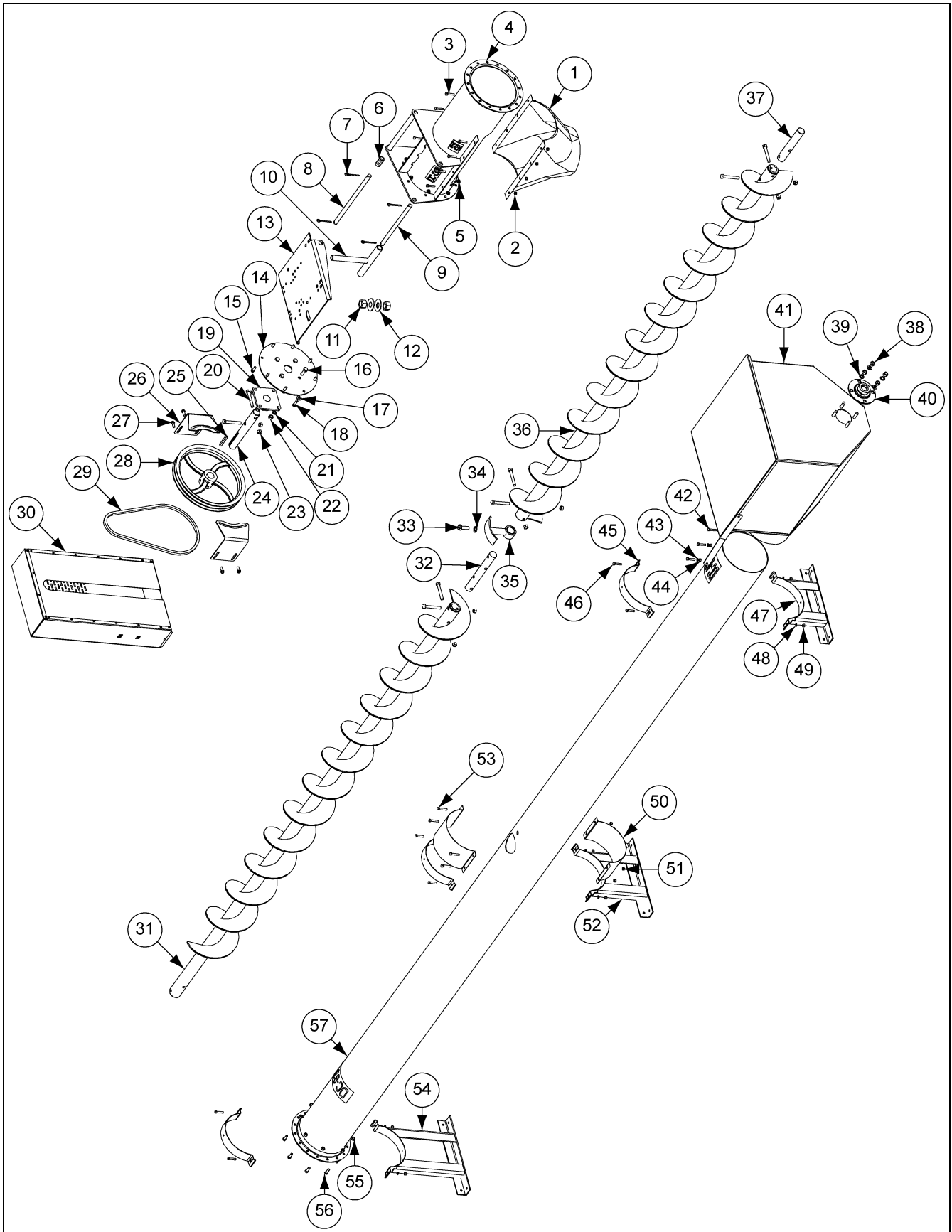
Use the type of main power disconnect switch that is capable of being locked only in the OFF position.

Storage Preparation

- A. Close all wells to discharge tube.
- B. Be sure the unload tube is empty.
- C. Make sure power source is disconnected and locked out.
- D. Check to see that all fasteners are secure.

1. 6" Roof Augers Parts
2. 8" Roof Augers Parts
3. 10" Roof Augers Parts

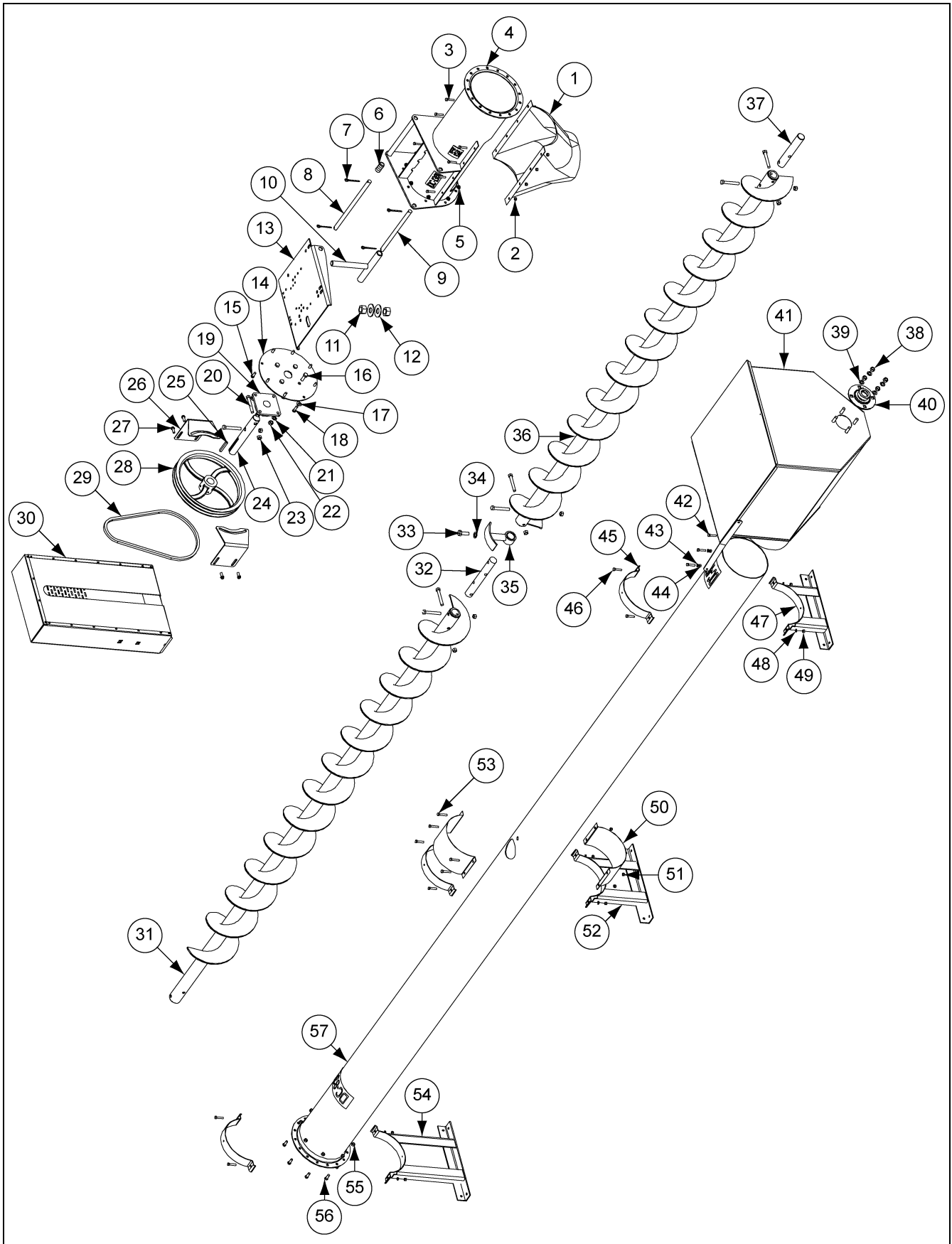
6" Roof Augers Parts



6" Roof Auger Parts

Ref #	Part #	Description and System
1	GK7173	90° Spout
2	S-7382	Spout 5/16"-18 Nylock Nut
3	S-2741	Spout 5/16"-18 x 1-1/2" Hex Bolt
4	GK6996	Horizontal Power Head Tube
5	S-3611	Bearing Plate 5/16"-18 Serrated Flange Nut
6	GK7014	Pivot Tube Spacer
7	S-6994	Pivot Tube Cotter Pin
8	GK7058	Motor Mount Pivot Rod
10	GK7060	Motor Mount Adjuster
11	S-3234	Motor Mount Adjuster 3/4"-10 Nut
12	S-866	Motor Mount Adjuster 3/4" Flat Washer
13	GK7052	Motor Mount Plate
14	GK7061	Bearing Plate
15	S-1196	Bearing Plate 5/16"-18 x 1" Hex Bolt
16	S-7837	Discharge Bearing 7/16"-14 x 1-1/2" Hex Bolt
17	S-845	Belt Guard Bracket 5/16" Flat Washer
18	S-1196	Belt Guard Bracket 5/16"-18 x 1" Hex Bolt
19	GK1049	Discharge Bearing 1" I.D. with 2 Hole Flangette
20	S-7687	Flight Connecting 3/8"-16 x 2" Grade 8 Hex Bolt
21	S-7014	Discharge Bearing 7/16" Lock Washer
22	S-7332	Discharge Bearing 7/16"-14 Nut
23	S-8251	Flight Connecting 3/8"-16 Stover Nut
24	GK2025	Drive Shaft 1" O.D. x 10"
25	S-4513	Drive Shaft 1/4" x 2" Square Key
26	GK7062	Belt Guard Mounting Bracket
27	S-9065	Belt Guard 3/8"-16 x 1" Grade 5 Bolt
28	GK1321	Sheave 12" x 1"
29	GK1323	B48 V-Belt
30	GK7005	Belt Guard
31	GK2854	Discharge Flight 6" x 11' - System
	GK2855	Discharge Flight 6" x 16' - System
	GK2856	Discharge Flight 6" x 21' - System
37	GK1117	Intake Shaft 1" O.D. x 7"
38	S-396	Intake Bearing 5/16"-18 Hex Nut
39	S-1147	Intake Bearing 5/16" Lock Washer
40	GK1583	Intake 1" Bearing with 3 Hole Flangette
41	GK3995	Hopper
42	S-1146	Hopper Connecting Band 5/16"-18 x 1" Hex Bolt
43	S-1147	Hopper Connecting Band 5/16" Lock Washer
44	S-396	Hopper Connecting Band 5/16"-18 Hex Nut
45	GK1053	Support Stand 6" x 2" 12 Gauge Half Band
46	S-2741	Support Stand 5/16"-18 x 1-1/2" Grade 5 Bolt
47	GK7297	Support Stand Short
48	S-1147	Support Stand 5/16" Lock Washer
49	S-396	Support Stand 5/16"-18 Hex Nut
52	GK7298	Support Stand Medium
54	GK7299	Support Stand Tall
55	S-3611	Power Head Connecting 5/16"-18 Serrated Flange Nut
56	S-275	Power Head Connecting 5/16"-18 x 3/4" Bin Bolt
57	GK7082	Auger Tube 6" x 9' - System (6" x 11')
	GK7083	Auger Tube 6" x 14' - System (6" x 16')
	GK7084	Auger Tube 6" x 19' - System (6" x 21')

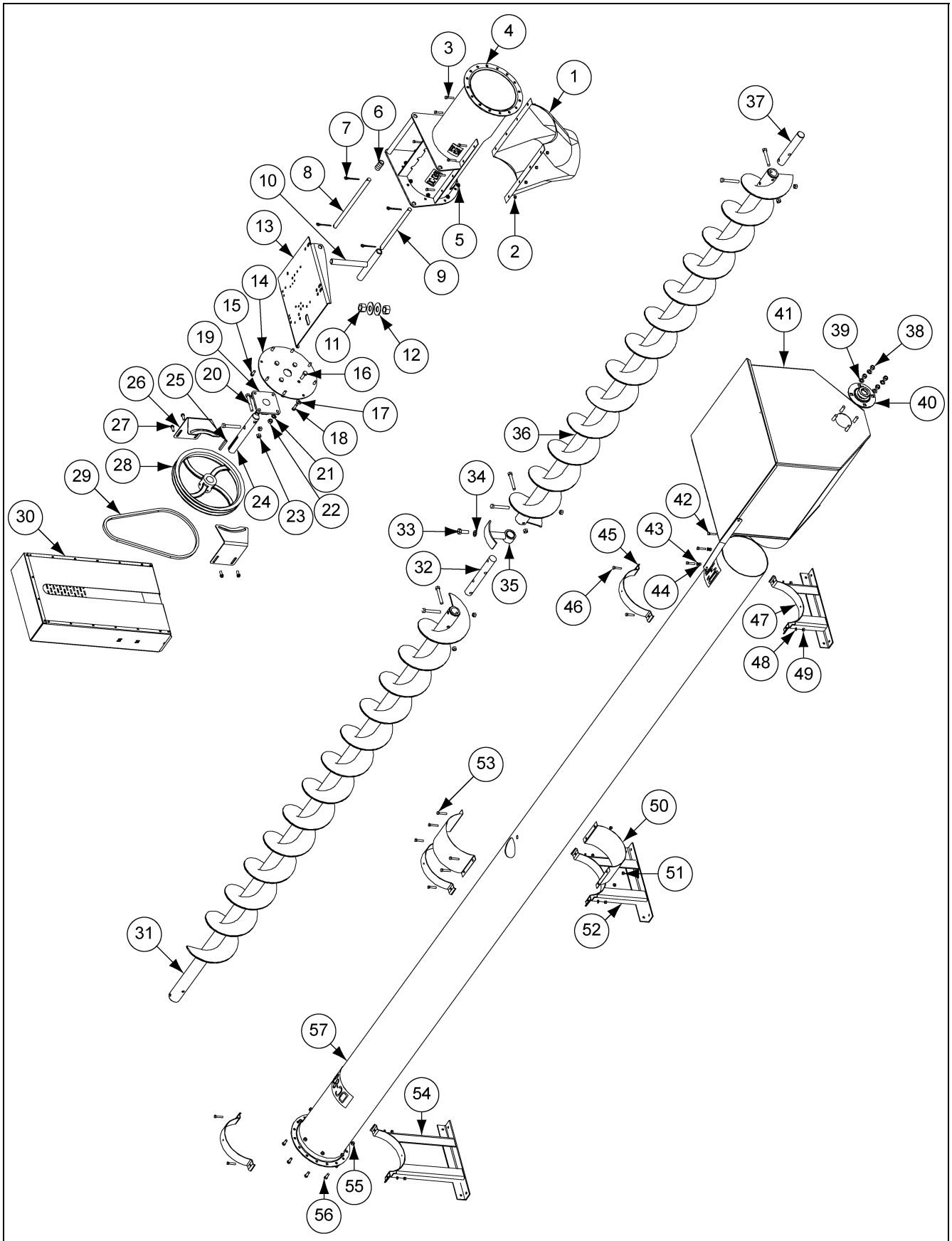
8" Roof Augers Parts



8" Roof Auger Parts

Ref #	Part #	Description and System
1	GK3394	90° Spout
2	S-7382	Spout 5/16"-18 Nylock Nut
3	S-2741	Spout 5/16"-18 x 1-1/2" Hex Bolt
4	GK6997	Horizontal Power Head Tube
5	S-3611	Bearing Plate 5/16"-18 Serrated Flange Nut
6	GK7014	Pivot Tube Spacer
7	S-6994	Pivot Tube Cotter Pin
8	GK7013	Motor Mount Pivot Rod
9	GK7012	Motor Mount Adjustment Rod
10	GK6942	Motor Mount Adjuster
11	S-240	Motor Mount Adjuster 1"-8 Nut
12	S-7835	Motor Mount Adjuster 1" Flat Washer
13	GK6986	Motor Mount Plate
14	GK6987	Bearing Plate
15	S-1196	Bearing Plate 5/16"-18 x 1" Hex Bolt
16	S-8760	Discharge Bearing 1/2"-13 x 1-1/2" Hex Bolt
17	S-845	Belt Guard Bracket 5/16" Flat Washer
18	S-1196	Belt Guard Bracket 5/16"-18 x 1" Hex Bolt
19	GK1330	Discharge Bearing 1-1/4" I.D. with 2 Hole Flangette
20	S-8316	Flight Connecting 7/16"-14 x 3" Grade 8 Hex Bolt
21	S-236	Discharge Bearing 1/2" Lock Washer
22	S-3729	1/2"-13 Hex Nut YDP Grade 5
23	S-8317	Flight Connecting 7/16"-14 Stover Nut
24	GK1331	Drive Shaft 1-1/4" O.D. x 10-1/2"
25	S-4513	Drive Shaft 1/4" x 2" Square Key
26	GK7006	Belt Guard Mounting Bracket
27	S-9065	Belt Guard 3/8"-16 x 1" Grade 5 Bolt
28	GK1335	Sheave 12" x 1-1/4"
29	GK1952	B50 V-Belts
30	GK7005	Belt Guard
31	GK2879	Discharge Flight 8" x 11' - System
	GK2880	Discharge Flight 8" x 16' - System
	GK2881	Discharge Flight 8" x 21' - System
37	GK1884	Intake Shaft 1-1/4" O.D. x 9"
38	S-456	Intake Bearing 3/8"-16 Hex Nut
39	S-1054	Intake Bearing 3/8" Lock Washer
40	GK7221	Intake 1-1/4" Bearing with 3 Hole Flangette
41	GK3996	Hopper
42	S-1146	Hopper Connecting Band 5/16"-18 x 1" Hex Bolt
43	S-1147	Hopper Connecting Band 5/16" Lock Washer
44	S-396	Hopper Connecting Band 5/16"-18 Hex Nut
45	GK1055	Support Stand 8" x 2" 12 Gauge Half Band
46	S-2741	Support Stand 5/16"-18 x 1-1/2" Grade 5 Bolt
47	GK7300	Support Stand Short
48	S-1147	Support Stand 5/16" Lock Washer
49	S-396	Support Stand 5/16"-18 Hex Nut
52	GK7301	Support Stand Medium
54	GK7302	Support Stand Tall
55	S-3611	Power Head Connecting 5/16"-18 Serrated Flange Nut
56	S-275	Power Head Connecting 5/16"-18 x 3/4" Bin Bolt
57	GK7079	Auger Tube 8" x 8' - System (8" x 11')
	GK7080	Auger Tube 8" x 13' - System (8" x 16')
	GK7081	Auger Tube 8" x 18' - System (8" x 21')

10" Roof Augers Parts



10" Roof Auger Parts

Ref #	Part #	Description and System
1	GK3397	90° Spout
2	S-7382	Spout 5/16"-18 Nylock Nut
3	S-2741	Spout 5/16"-18 x 1-1/2" Hex Bolt
4	GK6998	Horizontal Power Head Tube
5	S-968	Bearing Plate 3/8"-16 Serrated Flange Nut
6	GK7014	Pivot Tube Spacer
7	S-6994	Pivot Tube Cotter Pin
8	GK7013	Motor Mount Pivot Rod
9	GK7012	Motor Mount Adjustment Rod
10	GK6942	Motor Mount Adjuster
11	S-240	Motor Mount Adjuster 1"-8 Nut
12	S-7835	Motor Mount Adjuster 1" Flat Washer
13	GK6986	Motor Mount Plate
14	GK7017	Bearing Plate
15	S-7469	Bearing Plate 3/8"-16 x 1" Hex Bolt
16	S-8760	Discharge Bearing 1/2"-13 x 1-1/2" Hex Bolt
17	S-248	Belt Guard Bracket 3/8" Flat Washer
18	S-2071	Belt Guard Bracket 3/8"-16 x 1-1/4" Hex Bolt
19	GK1343	Discharge Bearing 1-1/2" I.D. with 2 Hole Flangette
20	S-8314	Flight Connecting 1/2"-13 x 3-1/2" Grade 8 Hex Bolt
21	S-236	Discharge Bearing 1/2" Lock Washer
22	S-3729	1/2"-13 Hex Nut YDP Grade 5
23	S-8315	Flight Connecting 1/2"-13 Stover Nut
24	GK1289	Drive Shaft 1-1/2" O.D. x 11-1/2"
25	S-9181	Drive Shaft 3/8" x 3" Square Key
26	GK7018	Belt Guard Mounting Bracket
27	S-9065	Belt Guard 3/8"-16 x 1" Grade 5 Bolt
28	GK1345	Sheave 15" x 1-1/2"
29	GK1346	B57 V-Belt
30	GK7005	Belt Guard
31	GK5143	Discharge Flight
32	GK1951	Connecting Shaft 1-1/2" O.D. x 11-1/2"
33	S-7886	Hanger Bearing 5/8"-11 x 1-3/4" Grade 8 Bolt
34	S-3208	Hanger Bearing 5/8" Lock Washer
35	GC06396	Hanger Bearing
36	GK3708	Extension Flight 10" x 16' - System
	GK3706	Extension Flight 10" x 21' - System
37	GK2907	Intake Shaft 1-1/2" O.D. x 9-1/2"
38	S-3729	1/2"-13 Hex Nut YDP Grade 5
39	S-236	Intake Bearing 1/2" Lock Washer
40	GK5653	Intake 1-1/2" Bearing with 3 Hole Flangette
41	GK4127	Hopper
42	S-2741	Hopper Connecting Band 5/16"-18 x 1-1/2" Hex Bolt
43	S-1147	Hopper Connecting Band 5/16" Lock Washer
44	S-396	Hopper Connecting Band 5/16"-18 Hex Nut
45	GK1057	Support Stand 10" x 2" 12 Gauge Half Band
46	S-2741	Support Stand 5/16"-18 x 1-1/2" Grade 5 Bolt
47	GK7303	Support Stand Short
48	S-1147	Support Stand 5/16" Lock Washer
49	S-396	Support Stand 5/16"-18 Hex Nut
50	GK3670	Inspection Cover Half Band
51	S-7382	Inspection Cover 5/16"-18 Lock Nut
52	GK7304	Support Stand Medium
53	S-7149	Inspection Cover 5/16"-18 x 1-3/4" Grade 5 Bolt
54	GK7305	Support Stand Tall
55	S-456	Power Head Connecting 3/8"-16 Hex Nut
56	S-7520	Power Head Connecting 3/8"-16 x 1" Bin Bolt
57	GK7095	Auger Tube 10" x 7' 6" - System (10" x 11')
	GK7098	Auger Tube 10" x 12' 6" - System (10" x 16')
	GK7099	Auger Tube 10" x 17' 6" - System (10" x 21')

10. Troubleshooting

Problem	Possible Cause	Solution
The auger is vibrating.	1. Damage can occur to the auger flighting, causing noise. Damage usually is caused from foreign material being run through the auger.	1. It may be necessary to remove the flighting for inspection.
	2. Drive belt may be overtightened, putting head stub and flight in a bind.	2. Loosen the drive belts.
Capacity is too low.	1. There may not be enough grain reaching the auger.	1. Make sure the intake has not bridged over, restricting flow. The flighting at the intake should be covered with grain for maximum capacity.
	2. The auger is moving too slowly.	2. Check the auger speed. Low capacity will result from speeds slower than recommended.
The auger plugs.	1. The auger may be "jamming" because too much grain is reaching the auger.	1. Use the control gates to decrease the amount of grain the auger is gathering.
	2. The grain may be wet.	2. If wet grain or other hard-to-move material is being augured, use a larger size motor than recommended for normal use.
	3. The auger may be jammed with foreign material.	3. Remove any foreign material in the auger.
	4. The motor may be too small or wired incorrectly.	4. Check wiring or consider using the next larger size motor.



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 (1.75" & 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 & Tower Dryers	2 Years
	Portable & 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 (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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