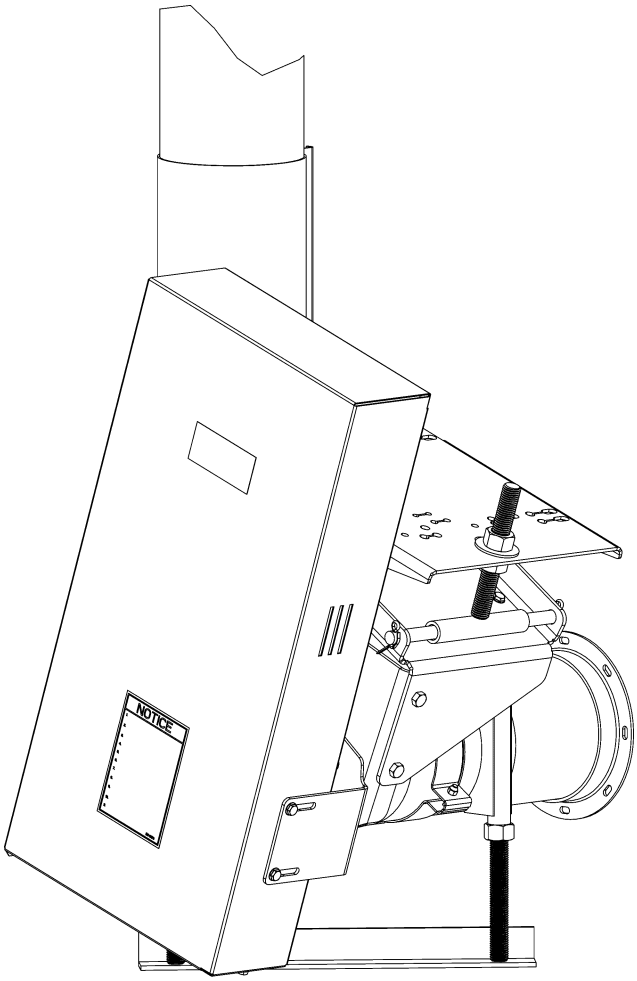

8" Commercial Vertical Drive Unit - Dual Drive - Top and Bottom Drive Replacement Horizontal Drive Kit

Installation Manual

PNEG-1555

Version: 2.0

Date: 01-08-16

PNEG-1555

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

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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

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

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

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

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

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

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

ST-0001-3

Cautionary Symbols Definitions

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

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

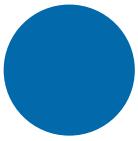
WARNING This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**

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

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

This symbol indicates a general hazard.

This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

Safety Cautions

Use Personal Protective Equipment

- Use appropriate personal protective equipment:

Eye Protection

Respiratory Protection

Foot Protection

Hearing Protection

Head Protection

Fall Protection

Hand Protection

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

ST-0004-1

Follow Safety Instructions

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

ST-0002-1

Maintain Equipment and Work Area

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

ST-0003-1

Operate Motor Properly

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

ST-0009-2

Rotating Auger Hazard

- Keep clear of rotating augers and moving parts.
- Do not remove or modify guards or covers.
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.
- Failure to follow these precautions will result in serious injury or death.

ST-0037-1

Stay Clear of Hoisted Equipment

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

ST-0047-1

Stay Clear of Rotating Parts

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

ST-0008-1

Use Unload Equipment Properly

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

ST-0051-1

Safety Sign-Off Sheet

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

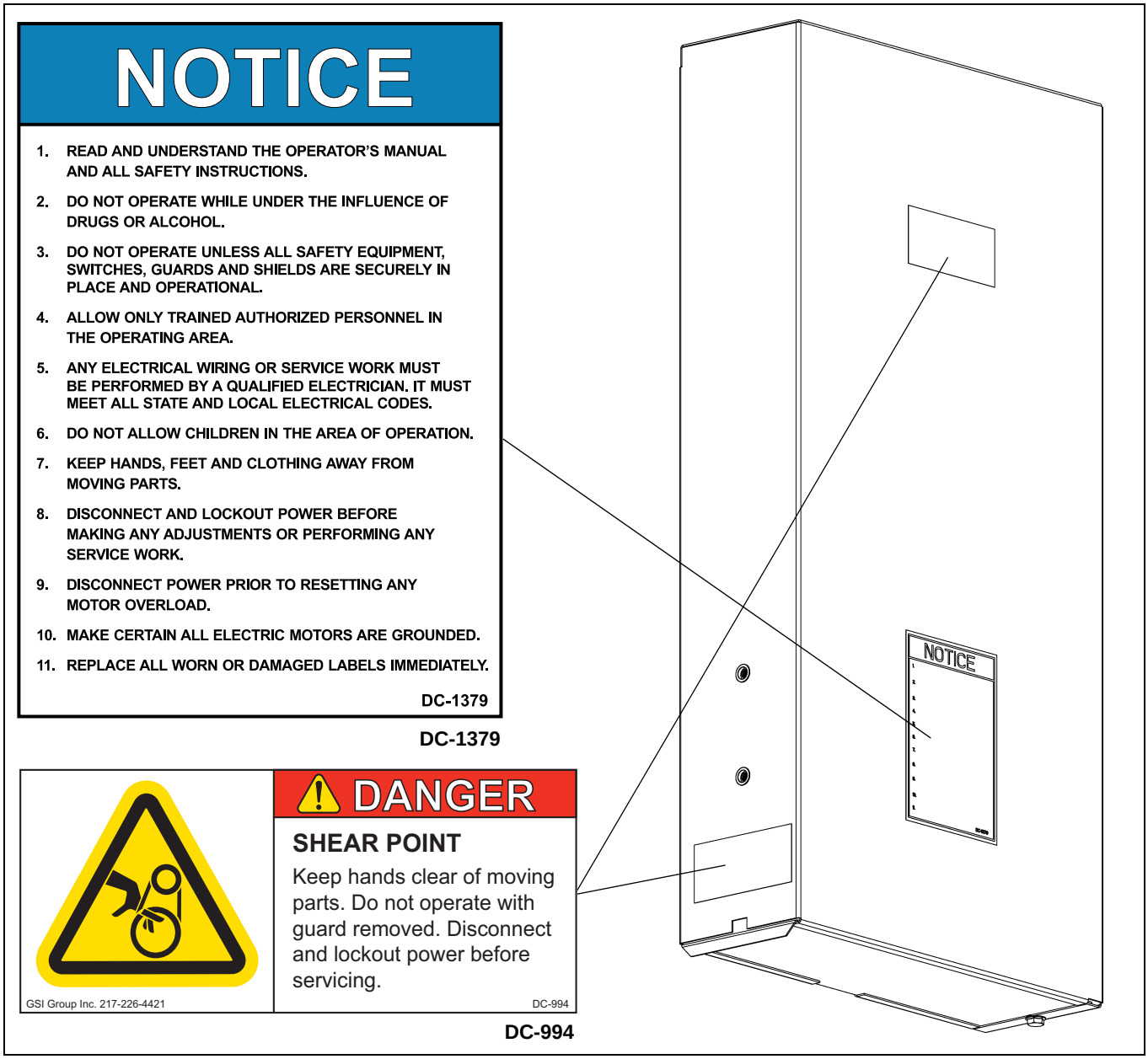
Date	*Employee Name*	*Supervisor Name*

ST-0007

Check the 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:
GSI Decals
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 217-226-4421

Decal List		
Part #	**Description**	**Size**
DC-1379	Danger - Notice	5-1/8" x 7-3/8"
DC-994	Danger - Shear Point	4-1/2" x 2"



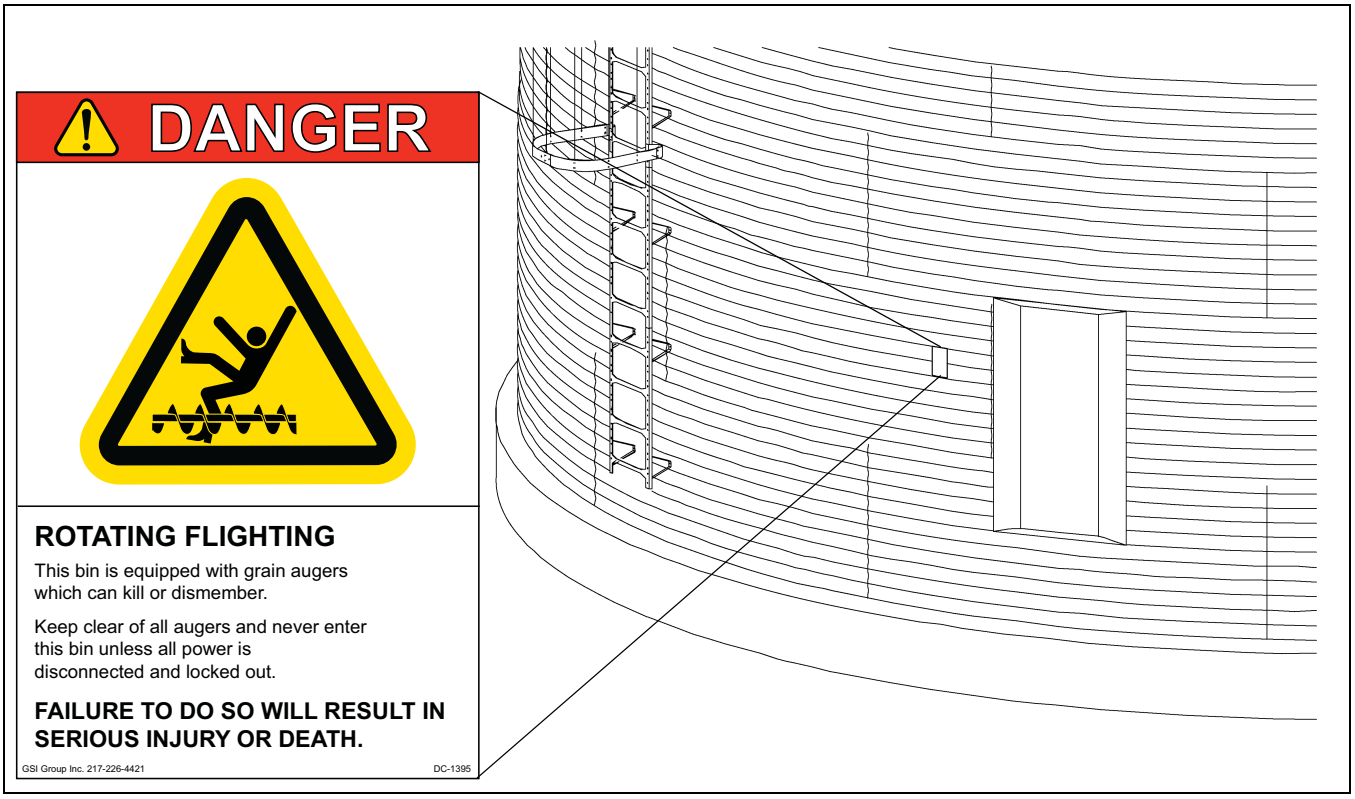
3. Safety Decals

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

1. Prepare the powerhead.

A. Disconnect and lock out all power to the 8" commercial double drive vertical unload auger.

DANGER ***A main power disconnect switch capable of being locked only in the OFF position should be used. The switch should be locked out whenever work is being done on the powerhead.***

B. After the power has been disconnected and locked out, remove the existing belt guard assembly on the horizontal drive.

a. Open the existing belt guard.

b. Adjust the motor mount assembly to relieve the tension on the drive belts.

c. Remove the drive belts.

d. Remove the motor pulley and drive sheave.

e. Unbolt and remove the existing belt guard assembly.

C. Remove the horizontal drive motor from the powerhead.

D. After the motor has been removed, loosen and remove the 3/4" hex nut underneath the motor mount sides, holding down the motor mount assembly.

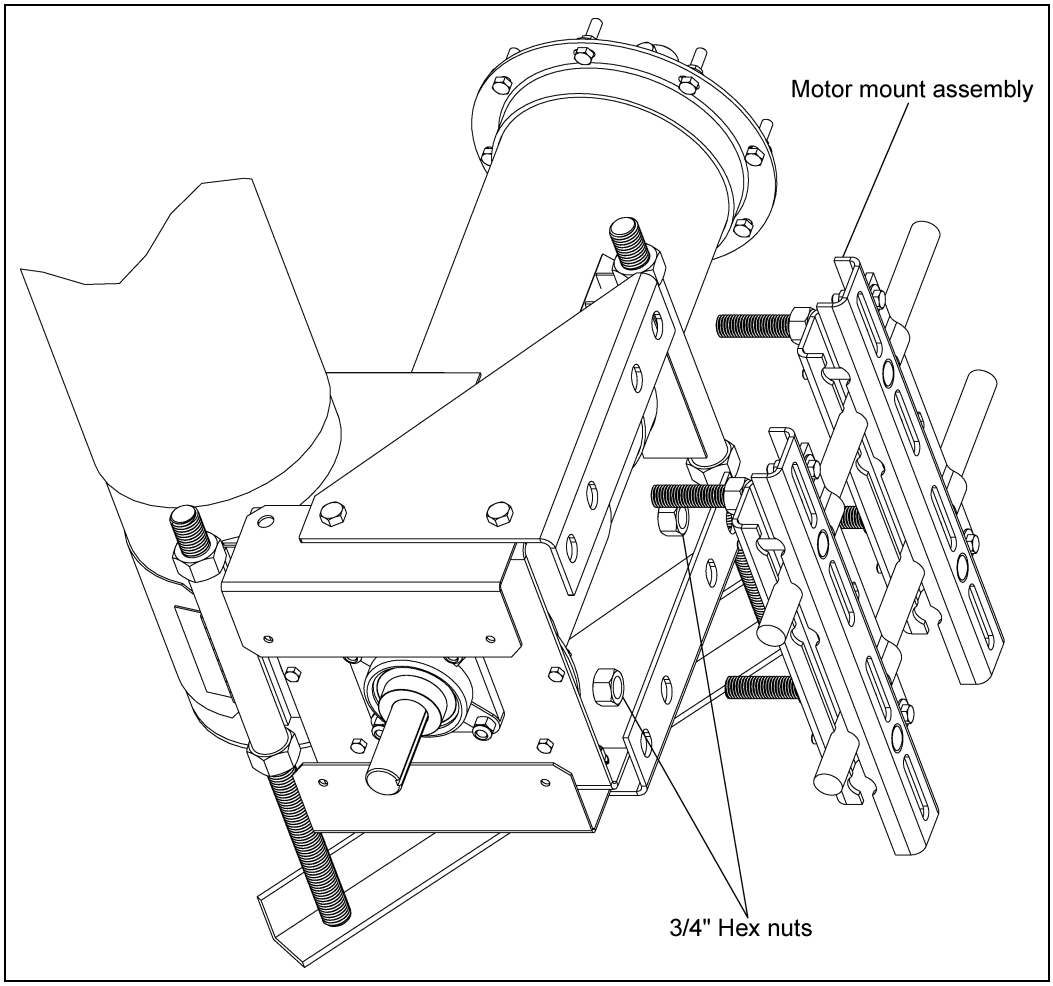


Figure 4A

E. Remove the motor mount assembly.

F. Unbolt the four (4) 1/2" x 1" hex bolts, lock washers, and hex nuts, and remove the existing belt guard brackets and motor mount sides.

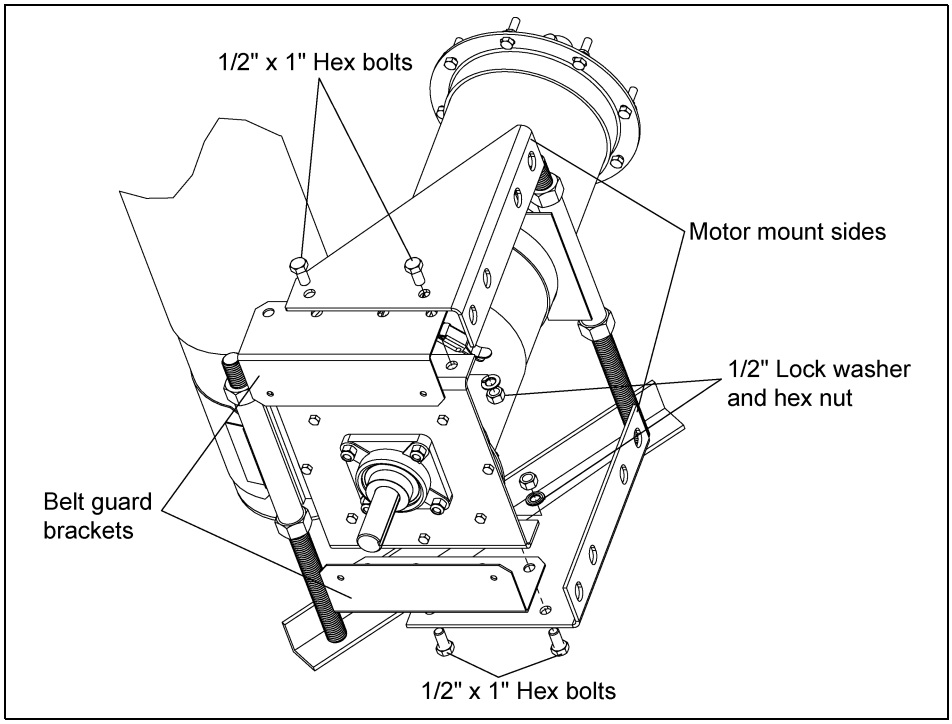


Figure 4B

G. Loosen and remove the lock collar on the 1-1/4" four (4) hole flange bearing.

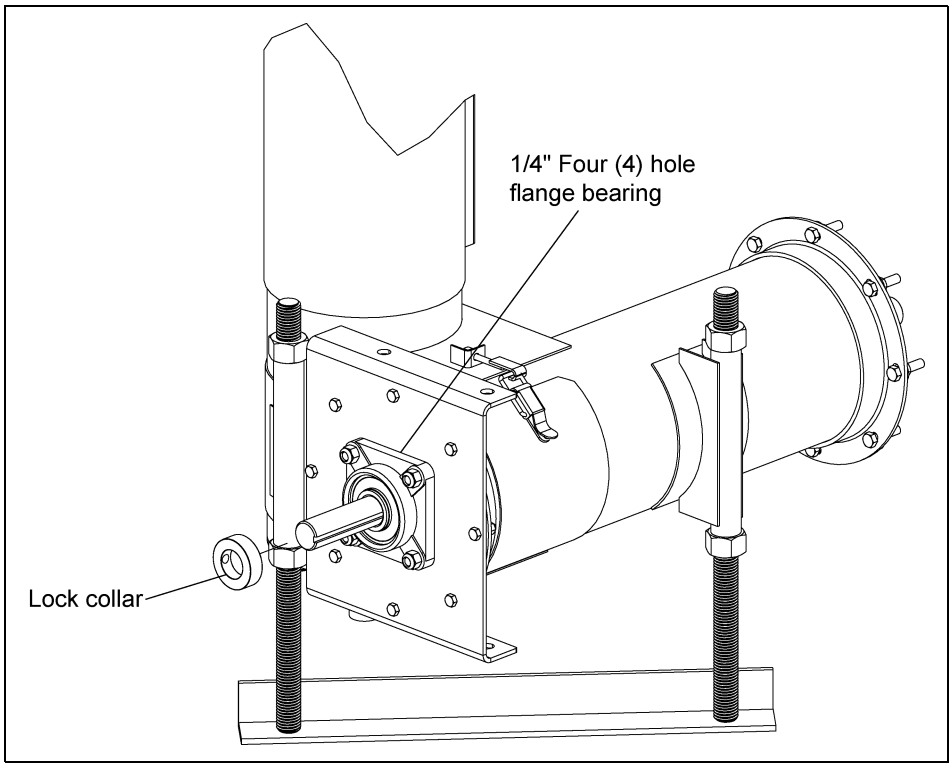


Figure 4C

H. Remove the horizontal head plate from the vertical auger by removing the eight (8) 5/16" x 1" hex bolts, flat washers, lock washers and hex nuts.

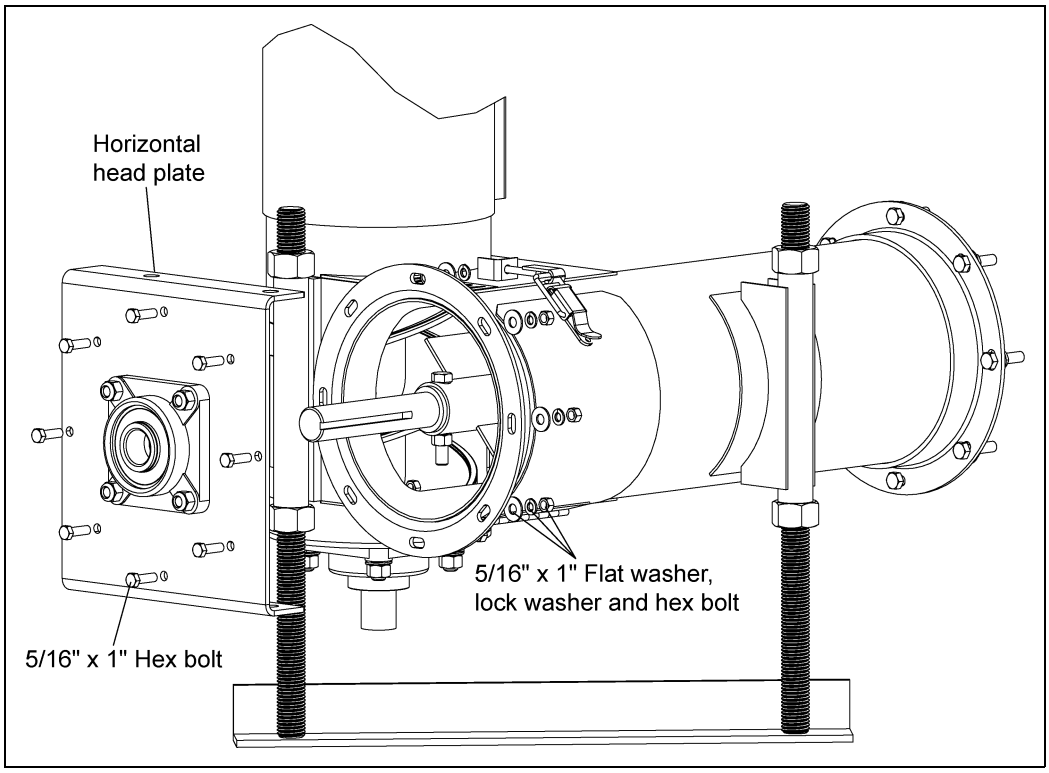


Figure 4D

I. Unbolt and remove the 1-1/4" four (4) hole flange bearing. Where possible, this bearing will be reused with the new horizontal drive parts.

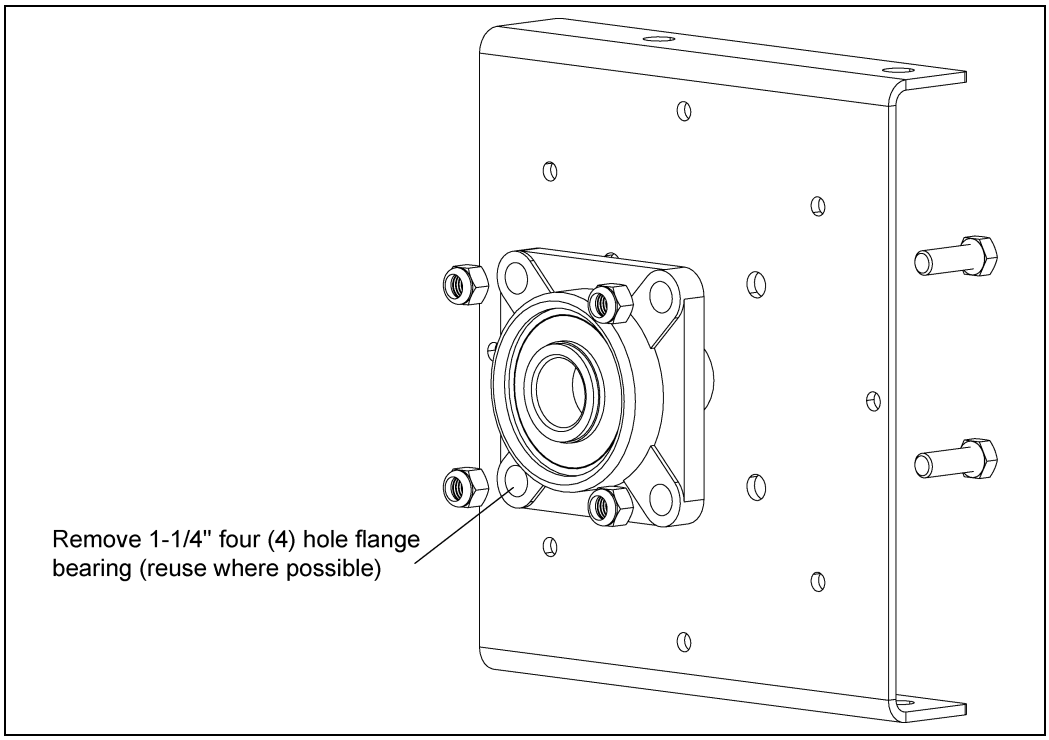


Figure 4E

2. Assembling the motor mount plate to the new head plate.

A. Position the motor mount plate over the new head plate so that the motor mount plate is almost flush with the new head plate, and so that the curved side of the motor mount plate is on the left side of the new head plate.

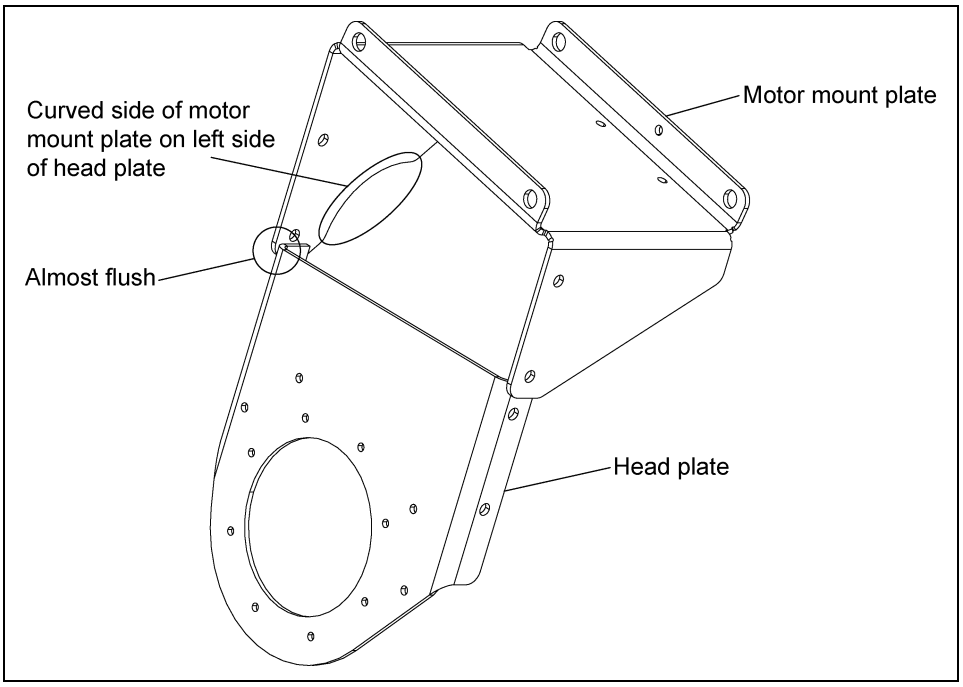


Figure 4F

B. Bolt the motor mount plate to the head plate using four (4) 1/2" x 1-1/2" bolts and serrated flange nuts.

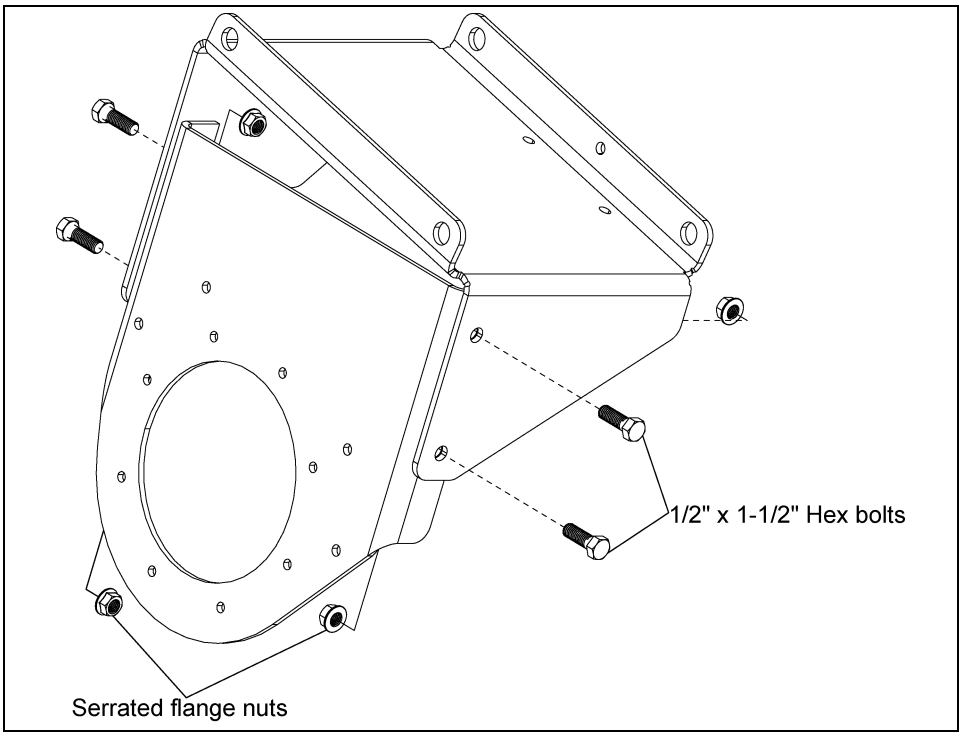


Figure 4G

3. Installing the head plate assembly to the drive unit.

A. Place the head plate assembly against the angle ring on the horizontal tube.

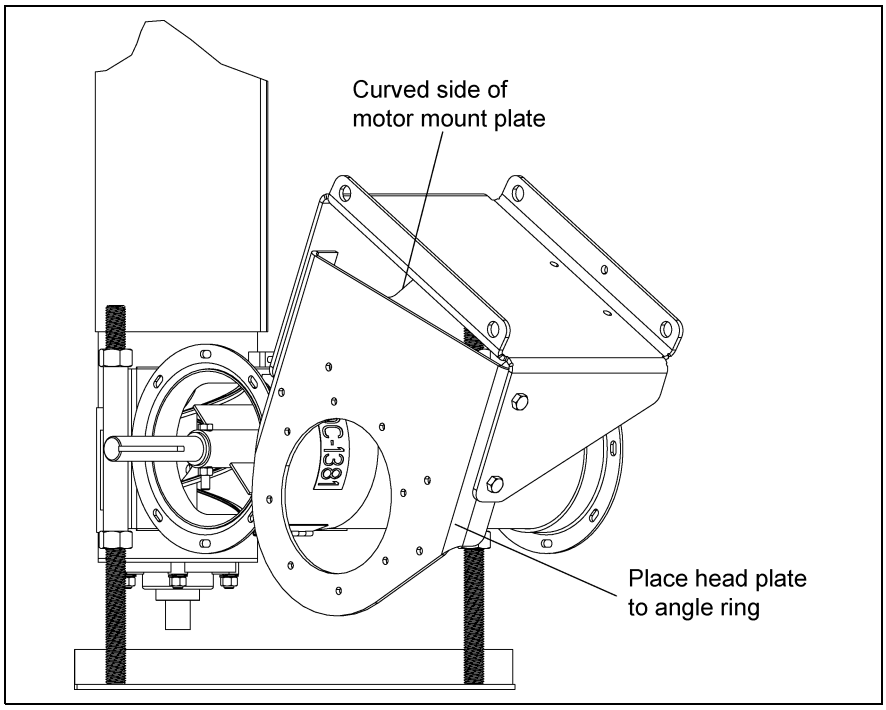


Figure 4H

B. Rotate the head plate assembly so that the curved side of the motor mount plate is as close as possible to the vertical connecting band, while making sure that the mounting holes in the head plate still align with the mounting holes in the angle ring.

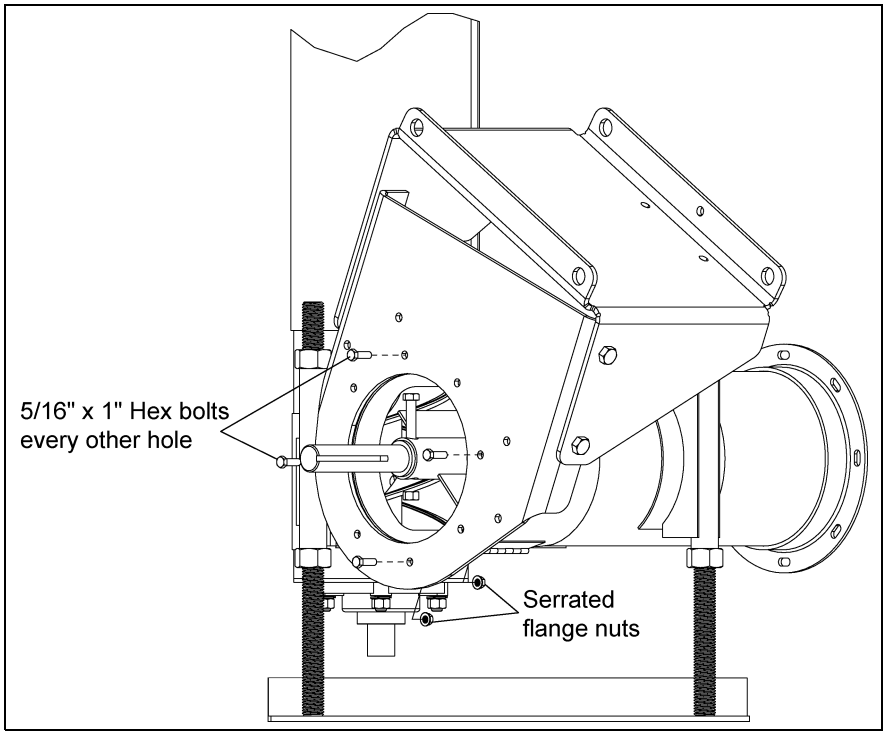


Figure 4I

C. Bolt the head plate assembly to the angle ring on the horizontal tube using four (4) 5/16" x 1" bolts and serrated flange nuts. Use every other hole to attach the assembly to the tube.

NOTE: *Where the first bolt and nut is placed in the head plate and angle ring is irrelevant. It is important to use every other mounting hole in the head plate and angle ring.*

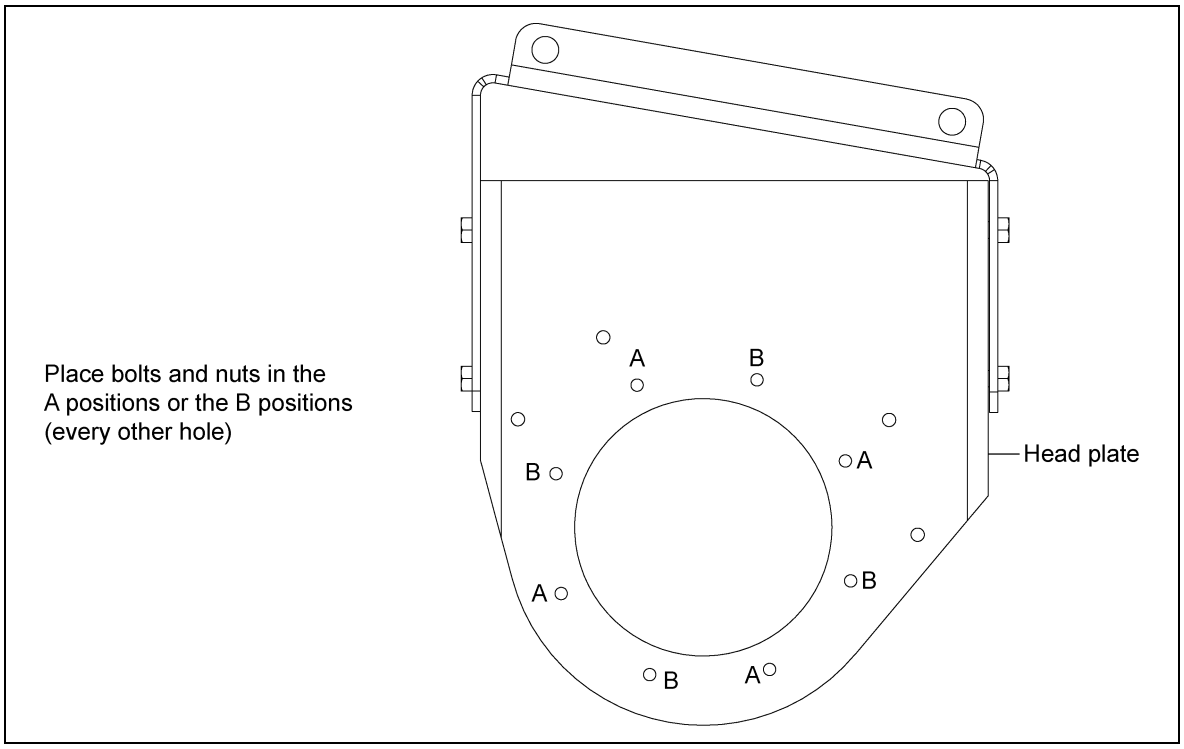


Figure 4J

4. Assemble the bearing to the bearing plate.

A. Using the previously removed 1-1/4" flange bearing, bolt it to the bearing plate using four (4) 1/2" x 1-1/2" bolts, lock washers, and hex nuts.

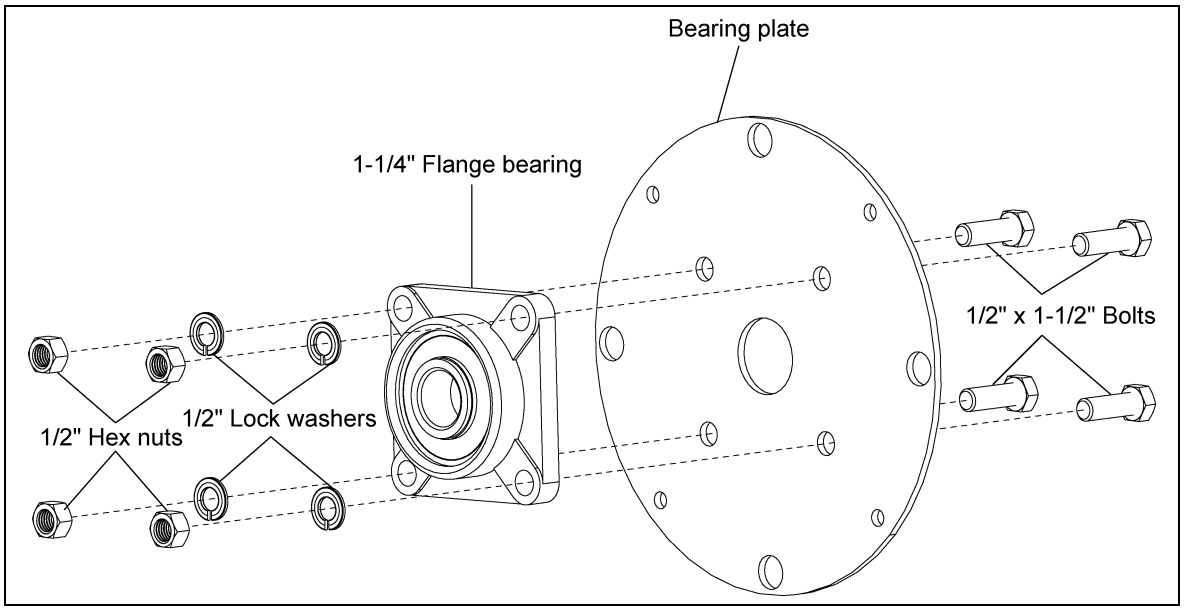


Figure 4K

B. Slide the bearing plate assembly over the drive shaft and line it up with the open holes in the head plate. Bolt the bearing plate assembly to the head plate using four (4) 5/16" x 1" bolts and serrated flange nuts.

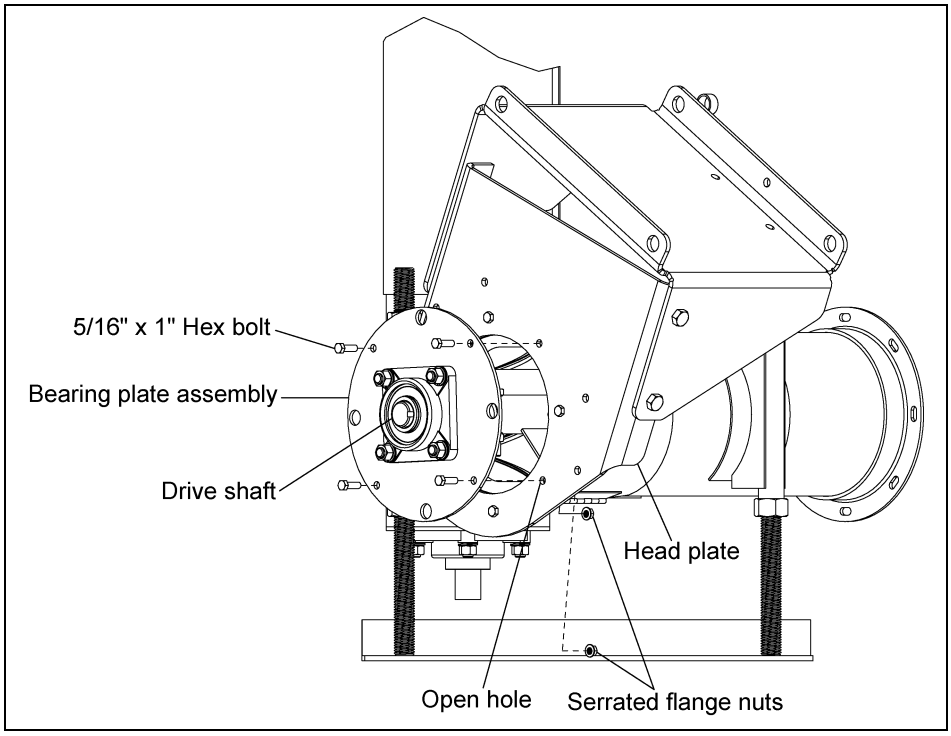


Figure 4L

C. Place the lock collar onto the drive shaft. Push the lock collar to the bearing and make them interlock. Using a hammer and center punch, drive the lock collar clockwise onto the drive shaft.

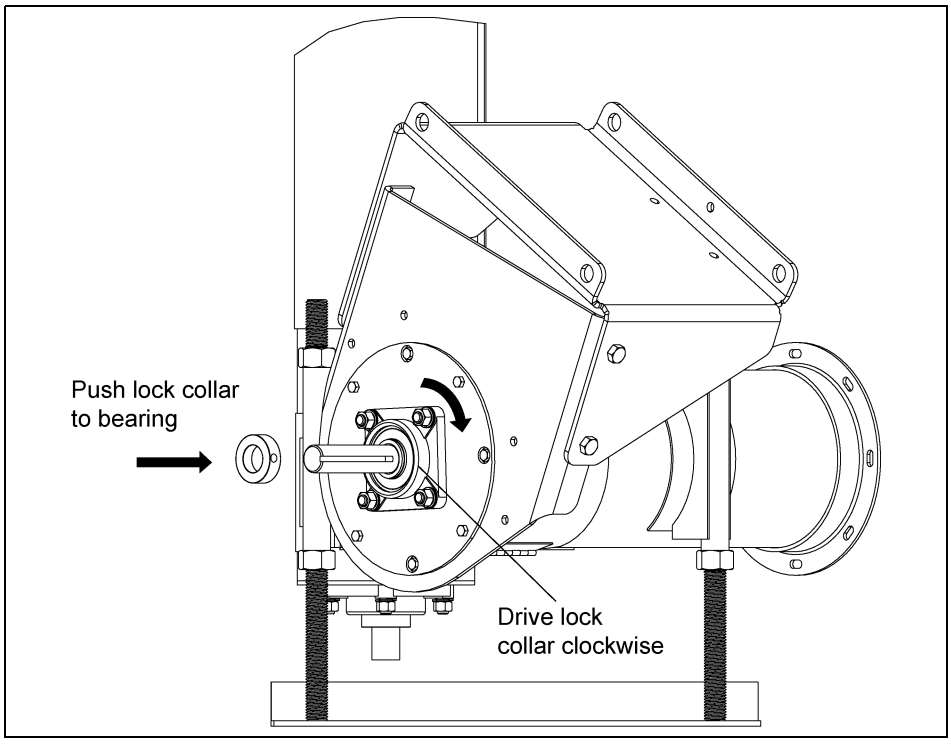


Figure 4M

D. Place the motor mount plate brace onto the horizontal tube, aligning the angle bracket holes to the holes in the motor mount plate. Insert the three (3) 3/8" x 1-1/4" flange bolts through the motor mount plate, and secure with three (3) 3/8" washers and nylock nuts.

E. Clamp the 2" half band to the motor mount plate brace using two (2) 5/16" x 1-1/2" bolts and nylock nuts around the horizontal tube.

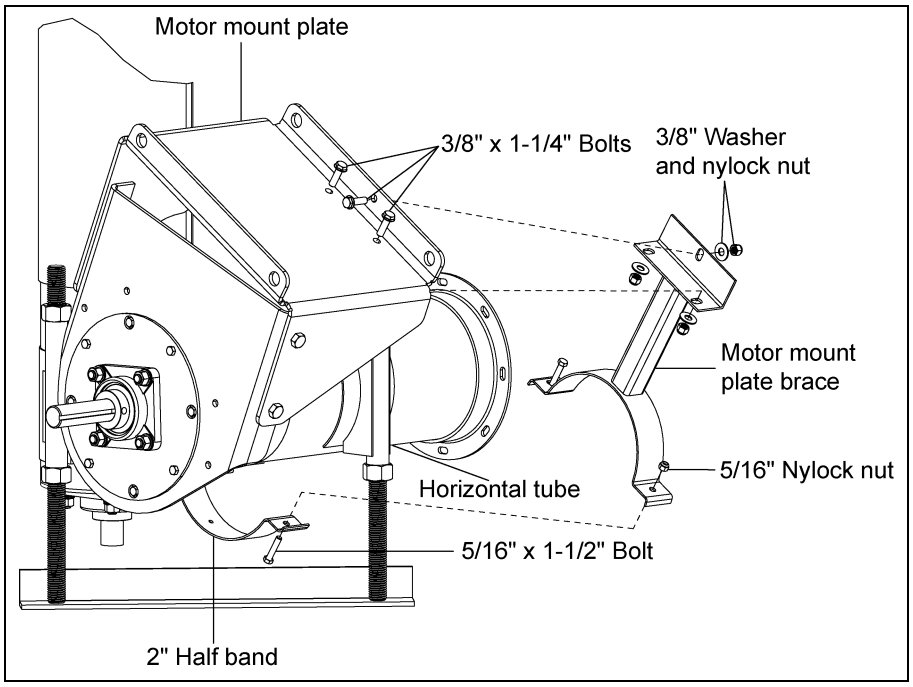


Figure 4N

F. Place the motor mount adjuster between the bottom pivot holes on the motor mount plate.

G. Insert the pivot rod through the front bottom pivot hole, the motor mount adjuster, and the back bottom pivot hole. Secure the pivot rod in place with two (2) 3/16" x 2" cotter pins.

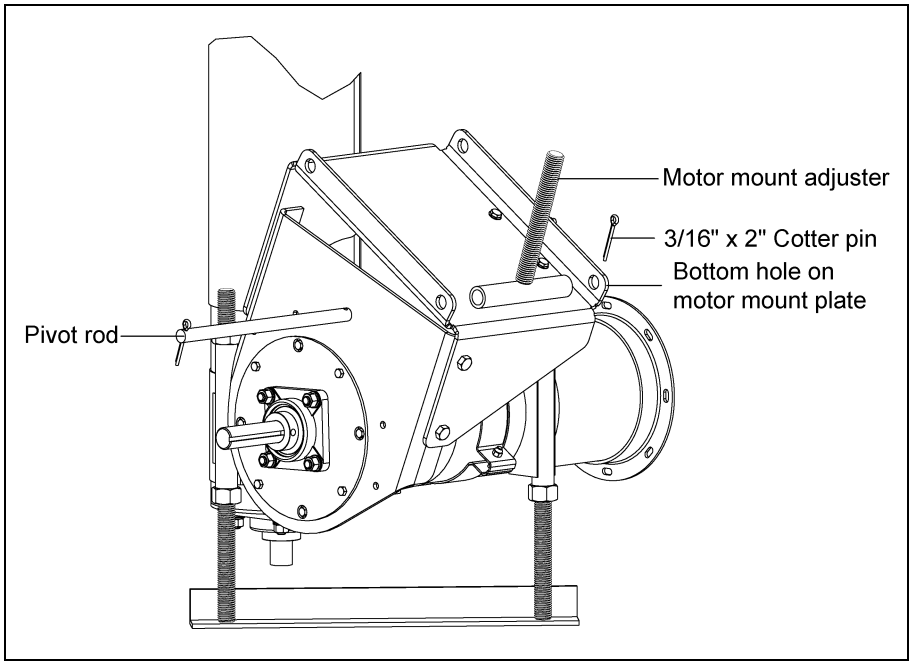


Figure 4O

H. With the cotter pins in the pivot rod, bend one tab of the cotter pin back so that it touches the pivot rod, and bend the other tab of the cotter pin away from the first tab.

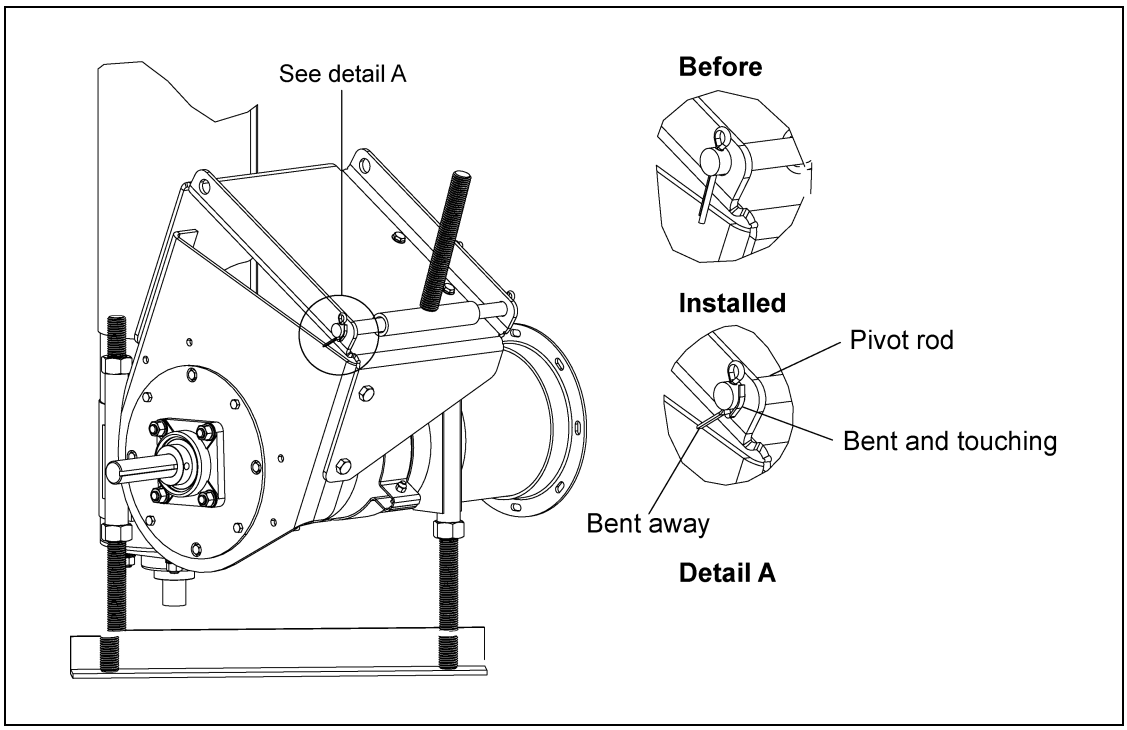


Figure 4P

I. Thread one of the motor mount adjustment nuts and one the motor mount adjustment washers approximately 3/4 of the way down the motor mount adjuster threaded rod.

J. Once the nut and washer are in place, slip the motor plate over the adjuster and align its pivot holes with the top pivot holes on the motor mount plate.

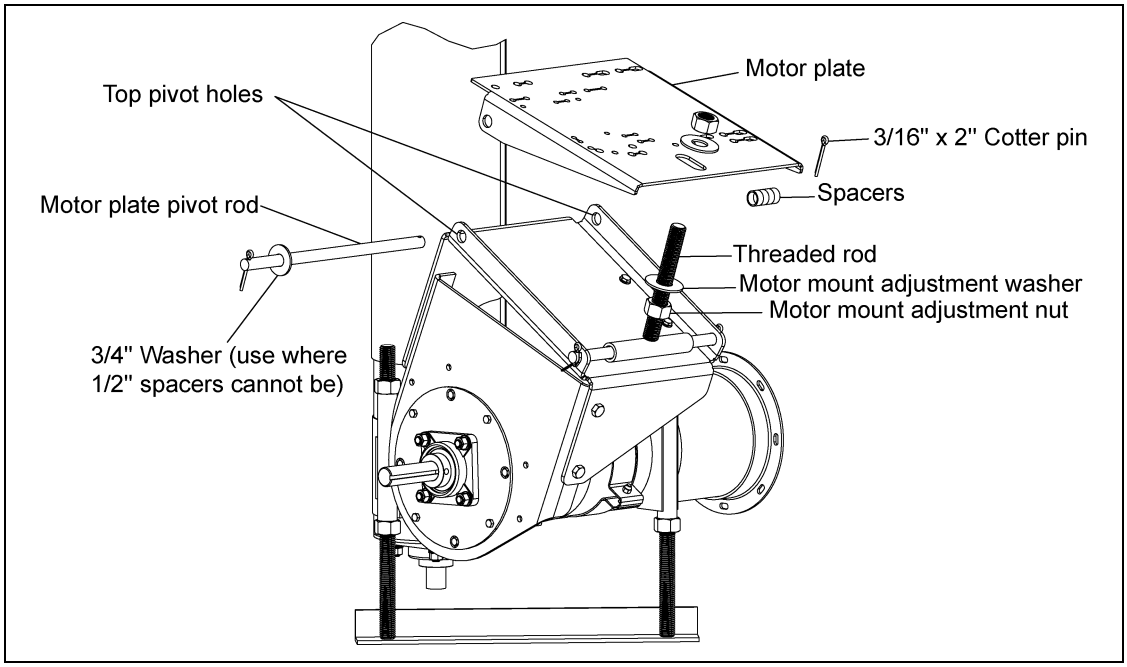


Figure 4Q

K. Slide the motor mount pivot rod through the pivot holes on the motor plate and motor mount plate. Insert the 3/4" flat washer between the motor plate and the motor mount plate for the front pivot hole.

L. When the pivot rod begins to extend through the back pivot hole on the motor mount plate, install the spacers BETWEEN it and the inner face of the motor plate.

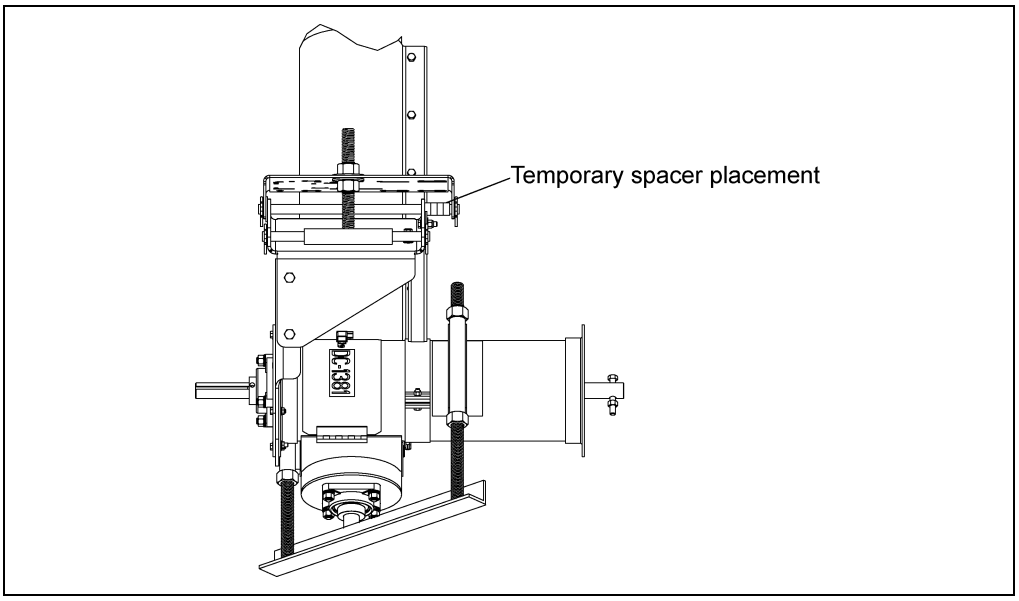


Figure 4R

M. Secure the motor mount pivot rod in place with two (2) 3/16" x 2" cotter pins. With the cotter pins in the pivot rod, bend one tab of the cotter pin back so that it touches the pivot rod, and bend the other tab of the cotter pin away from the first tab.

N. Loosely install the upper motor mount adjustment washer and nut onto the threaded rod, over the motor mount plate.

O. Place the left and right hand belt guard brackets up to the head plate. The left hand bracket is longer than the right hand bracket.

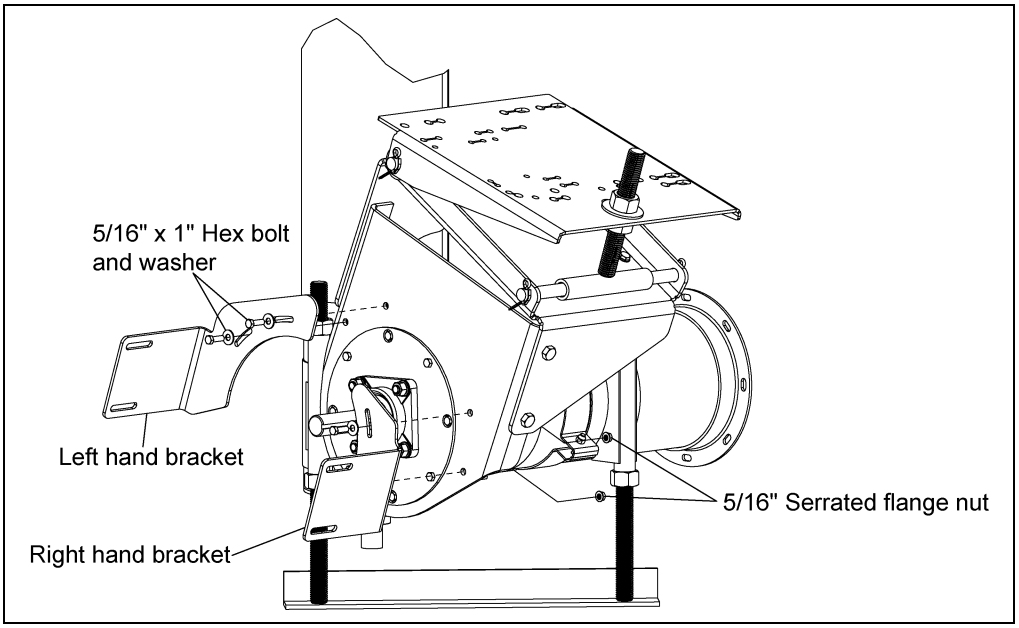


Figure 4S

P. Loosely bolt the brackets to the head plate using four (4) 5/16" x 1" bolts, flat washers, and serrated flange nuts.

Q. Place and position the 1/4" square x 3" key into the keyway located on the drive shaft.

R. Place the 15" auger pulley onto the drive shaft with the set screw side of the auger pulley facing away from the head plate. Position the auger pulley so that it is as close to the lock collar as possible, but not touching it.

S. Once the pulley is appropriately positioned, tighten the set screw with a hex head wrench to secure it to the drive shaft.

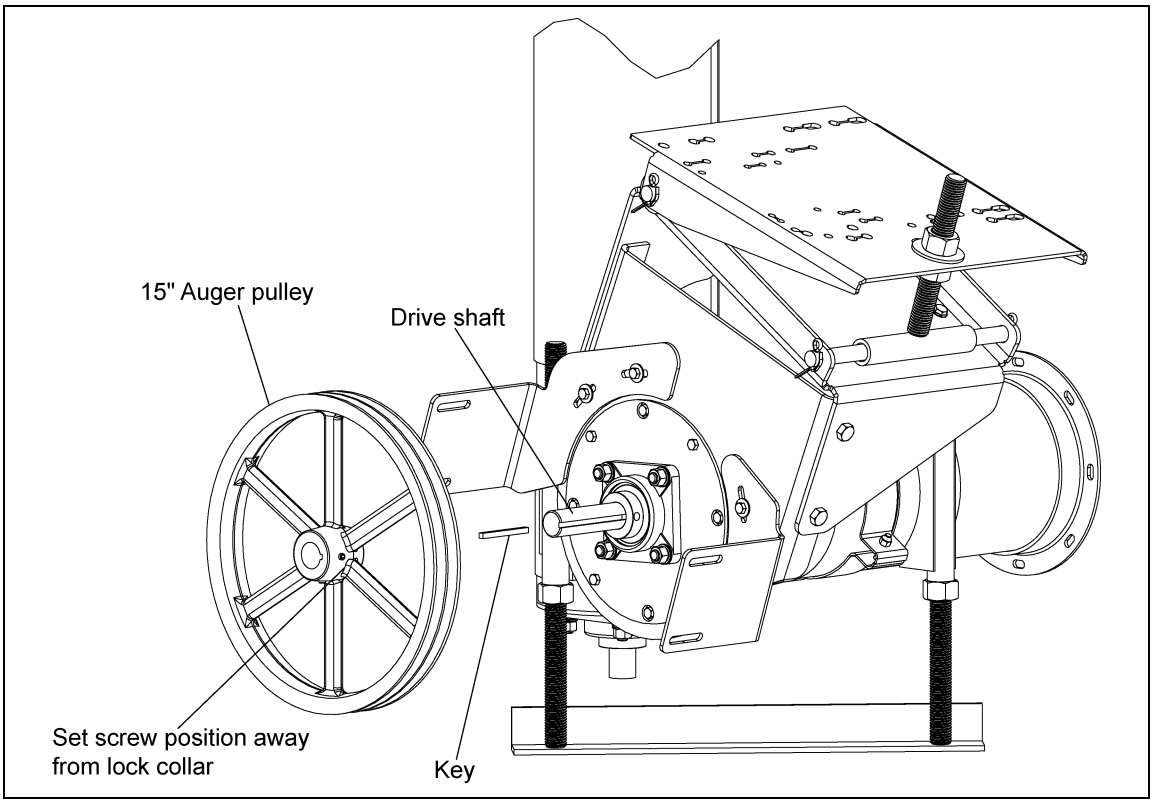


Figure 4T

T. Attach the motor to the motor mount plate on the horizontal drive, using appropriate bolts, lock washers, and hex nuts.

Motor Bolt Selection		
Motor Frame	**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

U. Install the drive pulley onto motor shaft making sure that it is aligned with the auger pulley. It may be necessary to move spacers to gain shaft alignment. Use the 3/4" flat washer where the 1/2" spacers cannot be used.

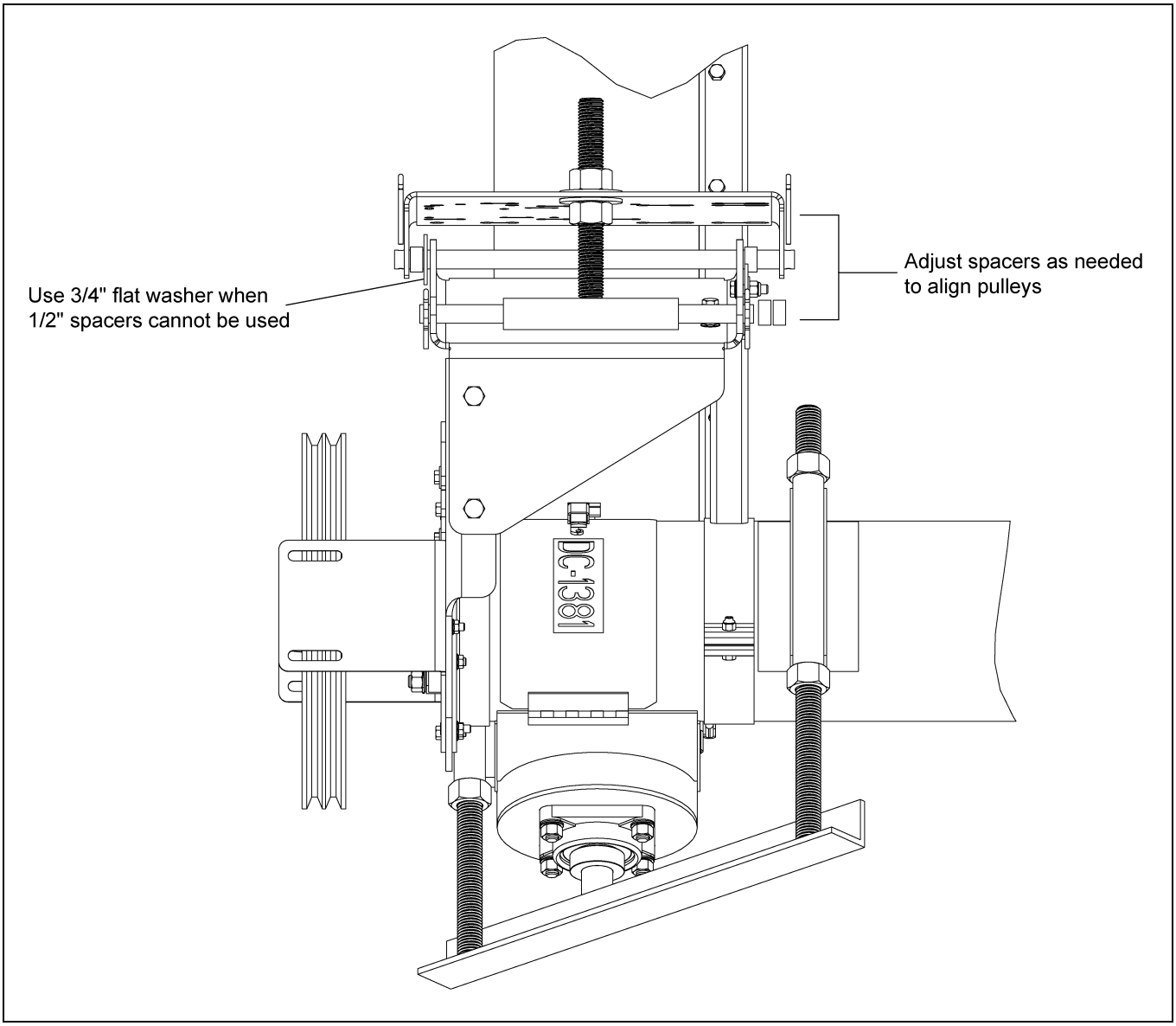


Figure 4U

V. Place the belts onto the pulleys.

W. First, screw the lower motor mount adjustment nut upward, raising the motor mount plate and putting tension on the belts.

X. Once the desired tension is reached, tighten the upper motor mount adjustment nut down onto the motor plate locking it into place.

Y. With the belts properly tensioned, remove the bottom belt guard cover.

Z. Slip the belt guard down over the motor and drive pulleys, enclosing the drive belts.

AA. Bolt the belt guard loosely to the belt guard brackets with four (4) 3/8" x 3/4" flange bolts.

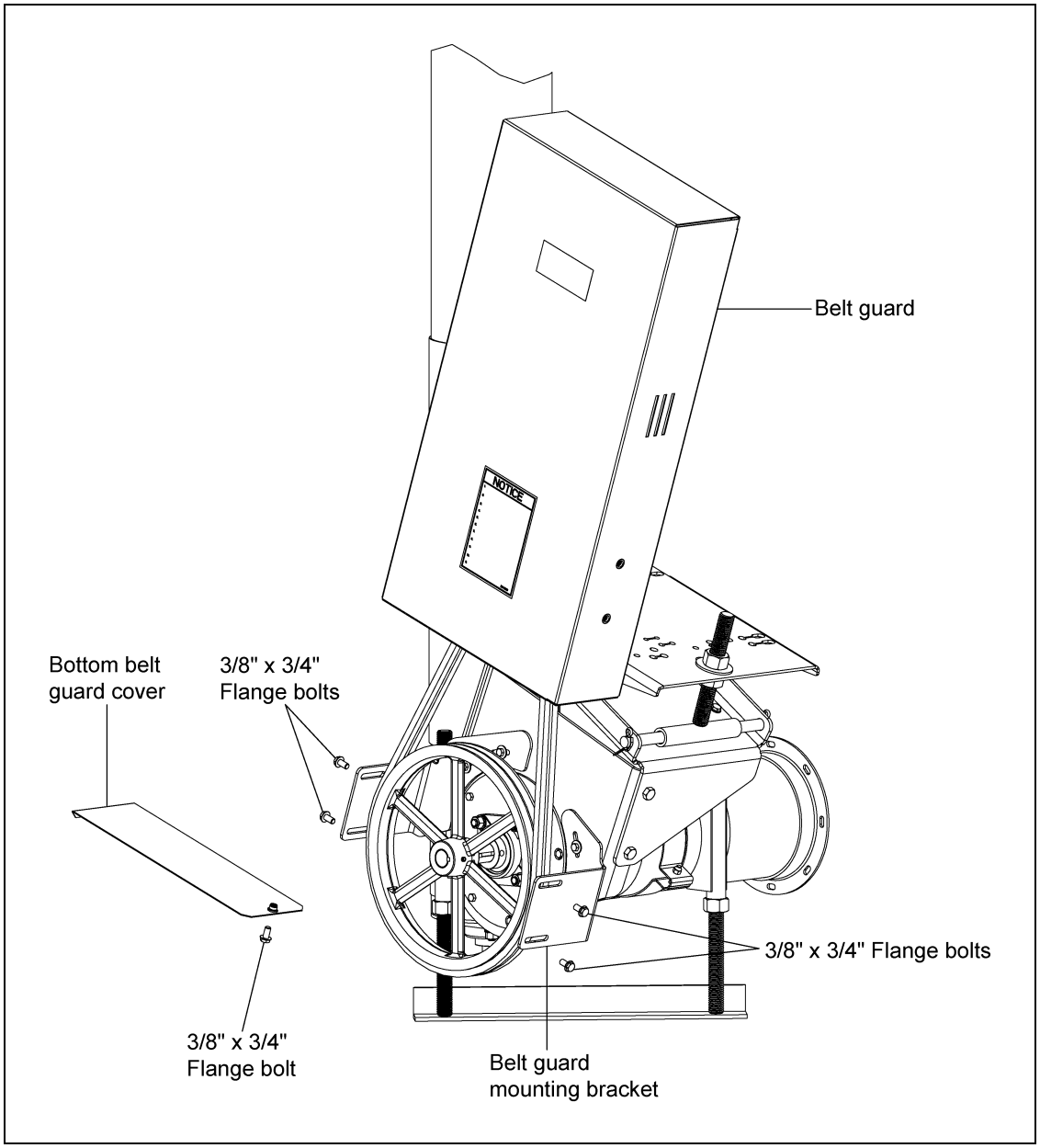


Figure 4V

AB. Center the belt guard slot with the motor shaft and the auger drive shaft. Make sure the belt guard DOES NOT contact the pulleys, belts, or bearing, and tighten the belt guard to the belt guard mounting brackets.

AC. Once the belt guard is secured, slide the bottom belt guard cover back into place and secure it with the 3/8" x 3/4" flange bolt previously removed.

WARNING ***A qualified electrician should install electrical controls and wiring. The motor disconnect switches and conductor cables should comply with the National Electrical code and any local codes which apply. Reset and motor starting stations should be located so that the operator can see that all personnel are clear of the equipment.***

1. Knowing the bin size and the length of horizontal flight being used will be necessary to determine how many horsepower is required for the job.
2. Use the following tables to determine the size of motor required. Use a larger motor when encountering high moisture or when high capacity is required. *(See Tables 8" Flights and Motors below and Belt Selection on Page 27.)*
3. The following horsepower recommendations are for moving fairly dry grain. Use an electric motor of the proper size that operates at 1750 RPM. Motor pulleys are not furnished with the auger. *(See Tables 8" Flights and Motors below and Belt Selection on Page 27.)*

8" Flights and Motors

Product #	Part #	Description	Bin Diameter	Unloader HP	
				Horizontal	Vertical
GFC82400	GK1799	14'-6" x 7" O.D. Flight	24'	3	5
GFC82700	GK1800	16'-0" x 7" O.D. Flight	27'		
GFC83000	GK1801	17'-6" x 7" O.D. Flight	30'	5	
GFC83300	GK1802	19'-6" x 7" O.D. Flight	33'-34'		
GFC83600	GK1803	20'-6" x 7" O.D. Flight	36'		
GFC83800	GK1804	22'-6" x 7" O.D. Flight	37'-39'		
GFC84000	GK1805	23'-0" x 7" O.D. Flight	40'		
GFC84200	GK1806	24'-0" x 7" O.D. Flight	42'		
GFC84800	GK1807	7'-0" x 7" O.D. Flight (Intake)	48'-49'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC85400	GK5878	10'-0" x 7" O.D. Flight (Intake)	54'-55'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC86000	GK1810	13'-0" x 7" O.D. Flight (Intake)	60'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC86300	GK5880	14'-6" x 7" O.D. Flight (Intake)	63'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC86800	GK5881	17'-6" x 7" O.D. Flight (Intake)	68'-69'	7-1/2	
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC87200	GK5882	19'-0" x 7" O.D. Flight (Intake)	72'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC87500	GK5883	20'-6" x 7" O.D. Flight (Intake)	75'		
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC87800	GK5884	22'-6" x 7" O.D. Flight (Intake)	78'	10	
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC88000	GK5885	4'-6" x 7" O.D. Flight (Intake)	80'		
	GK1130	20'-0" x 7" O.D. Flight (Intermediate)			
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC88200	GK5886	5'-6" x 7" O.D. Flight (Intake)	82'		
	GK1130	20'-0" x 7" O.D. Flight (Intermediate)			
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC89000	GK5887	9'-6" x 7" O.D. Flight (Intake)	90'		
	GK1130	20'-0" x 7" O.D. Flight (Intermediate)			
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			
GFC89200	GK5888	10'-6" x 7" O.D. Flight (Intake)	92'		
	GK1130	20'-0" x 7" O.D. Flight (Intermediate)			
	GK1808	20'-0" x 7" O.D. Flight (Discharge)			

Belt Section

Horizontal Drive									
Auger	Part #	Motor Sheave Size	Flight Sheave		NEMA Motor Frame	Motor HP	Belt Size	Belt Qty	Belt Type
			Size	RPM					
8"	MHC00487	3-1/2"	15"	409	182T and 184T	3-5 HP	71	2	BX
					213T and 215T	7-1/2 - 10 HP		3	

Vertical Drive									
Auger	Part #	Motor Sheave Size	Flight Sheave		NEMA Motor Frame	Motor HP	Belt Size	Belt Qty	Belt Type
			Size	RPM					
8"	GK1346	5"	15"	584	184T	5 HP	57	2	B

1750 RPM electric motors and controls shall be installed by a qualified electrician, and must meet the standards set by the National Electrical Code and all local and state codes. Reset and motor starting controls shall be located where the operator has unrestricted access to the controls.

4. A magnetic starter should be used for the operator's protection and for the protection of the motor. This is to protect the operator against accidental restart caused by power interruption, conductor fault, low voltage, circuit interruption or motor overload. Therefore, the motor must be restarted manually. If using a motor with built-in thermal overload protection, make sure this type of motor has a manual reset.

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

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.

1. Make sure ALL belts are tensioned properly.
2. Make sure ALL shields are in place and that the belt(s) and pulley(s) are able to move freely.
3. Inspect the drive unit for any problems or potential problems.
4. 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.
5. Before starting the auger for the first time, make sure that all parts are assembled correctly according to the instructions in this manual.
6. The bin well inside the bin should have a control gate. The gate should be closed before start-up.

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

1. Start the auger.

CAUTION

DO NOT start or stop the auger while it is under load. Doing so may cause the auger to “jam”.

2. 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. 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.
3. 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.
4. 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 run to polish the flight assembly and tube.

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 flights running in excess of recommended speeds will cause excessive wear.

5. 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”. Make sure to use the control gate as a flow control so the vertical auger cannot become plugged.

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.

CAUTION

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

Normal Shut Down

1. Before shutting down the unit, make certain that bin well and unloading tubes are empty.
2. Disconnect and lock out the power source before leaving the work area.

Emergency Shut Down

1. Know how to shut down the auger in case of an emergency.
2. Disconnect and lock out the power source.
3. Do not restart the auger under load.
4. Close the bin well control gates.
5. Clear out as much grain from the auger and hopper as possible.
6. Unlock and reconnect the power source.
7. Gradually clear the auger until there is no grain or obstruction.

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.

Lock Out

1. Always stop and disconnect the power source whenever the operator must leave the work area or for maintenance of the machinery.
2. Make sure no one can operate the unload auger 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

1. Close all wells to discharge auger.
2. Be sure the unload tube is empty.
3. Shut down the auger.
4. Make sure power source is locked out and disconnected.
5. Make sure all fasteners are tight.

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.*

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

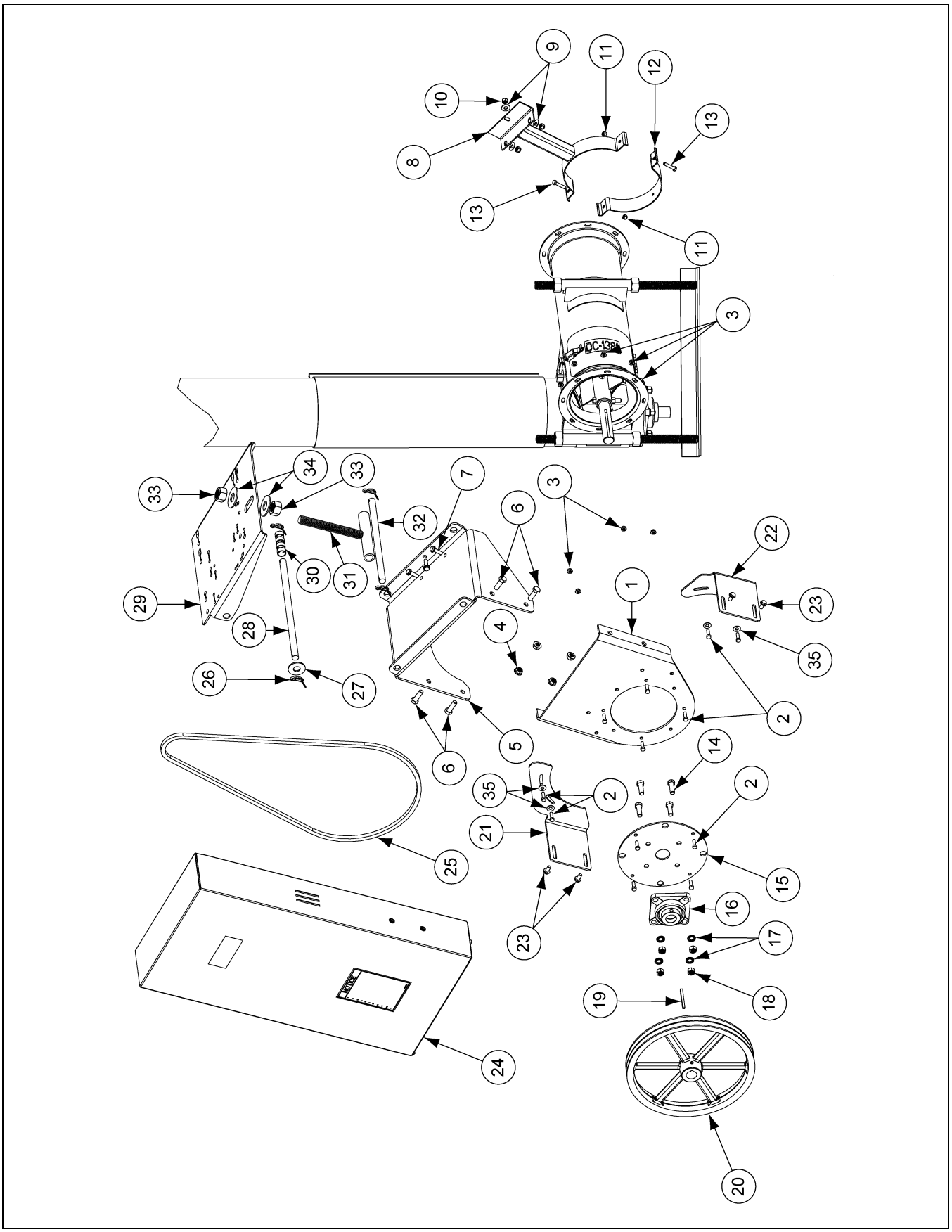
3. When augers are stopped and restarted under full load, it may result in damage to the auger. Using a larger diameter auger and reducing its load level will be far better than subjecting a smaller diameter auger to big loads. If an auger is kept from absolute filling, it will make start-up easier and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

Maintain the Auger

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

1. Use caution when repairing or replacing equipment parts.
2. 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.
3. Ensure that ALL electric motors, etc., are operating at the proper speed.
4. Maintain proper adjustments on the belt(s).
5. Mount controls for any electric motors at a safe distance from the machine and in a location accessible in case of an emergency.
6. Make sure ALL electrical wiring is not damaged, and that it meets proper wiring codes.
7. Make sure ALL components are in good working condition before use.
8. Check the auger flight to make sure it is in good working condition.
9. Grease the bearings at least two (2) times each season.

8" Commercial Vertical Drive Unit - Dual Drive Parts



8" Commercial Vertical Drive Unit - Dual Drive Parts List

Ref #	Part #	Description
1	GK7769-BS	Head Plate - Bin Silver
2	S-1196	5/16"-18 x 1" HHCS Zinc Grade 5
3	S-3611	5/16"-18 Serrated Flange Nut YDP Grade 2
4	S-8506	1/2"-13 Serrated Flange Nut Zinc
5	GK7771-BS	Motor Mount Plate - Bin Silver
6	S-8760	1/2"-13 x 1-1/2" HHCS Zinc Grade 5
7	S-9066	3/8"-16 x 1-1/4" Flange Bolt Zinc Grade 5
8	GK7882-BS	Motor Mount Brace - Bin Silver
9	S-248	3/8" Flat Washer YDP
10	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
11	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
12	GK1055	8" x 2" Half Band - 12 Gauge
13	S-2741	5/16"-18 x 1-1/2" HHCS Zinc Grade 5
14	S-7528	1/2"-13 x 1-1/2" HHCS Zinc Grade 2
15	GK7768-BS	Bearing Plate - Bin Silver
16	GK1017	1-1/4" Flange Bearing with Lock Collar
17	S-236	1/2" Lock Washer Zinc
18	S-7510	1/2"-13 Hex Nut Zinc Grade 2
19	S-8276	1/4" x 3" Square Key
20	GK1869	15" O.D. 1-1/4" I.D. 2 Groove Sheave
20	GK2234	15" O.D. 1-1/4" I.D. 3 Groove Sheave
21	GK7770	Left Belt Guard Bracket
22	GK7767	Right Belt Guard Bracket
23	S-9067	3/8"-16 x 3/4" Flange Bolt Zinc Grade 5
24	GK7773	Belt Guard for Replacement Drive Kit
25	MHC00487	V-Belt, BX71
26	S-6994	3/16" x 2" Cotter Pin Zinc Grade 2
27	S-866	3/4" Flat Washer Zinc Grade 2
28	GK7013	Motor Plate Pivot Rod
29	GK6986-Y	Motor Plate
30	GK7014	Pivot Spacer Tube
31	GK6942	Motor Plate Adjustment Rod
32	GK7012	Motor Plate Adjustment Pivot Rod
33	S-240	1"-8 Hex Nut Zinc Grade 5
34	S-7835	1" Flat Washer Zinc
35	S-845	5/16" Flat Washer YDP Grade 2

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

GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years
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.

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