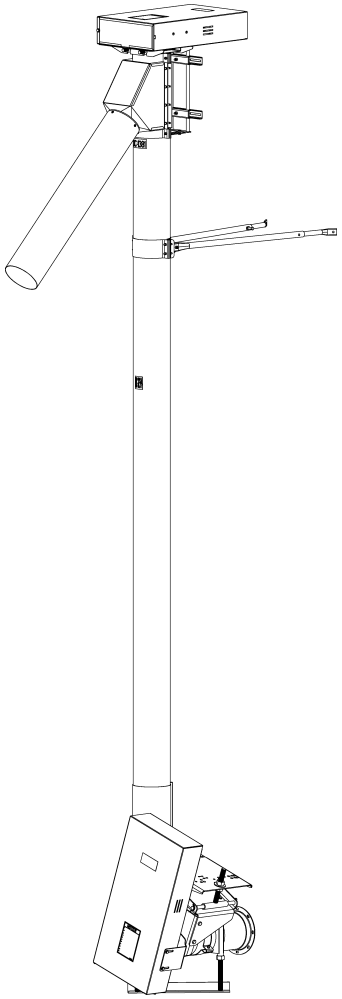


8" Commercial Vertical Drive Unit - Dual Drive, Top and Bottom

Installation Manual

GSI GROUP

PNEG-1631

Date: **12-21-20**

PNEG-1631

Contents

1. Introduction

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

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

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

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

Safety Guidelines

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

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

DANGER indicates 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.

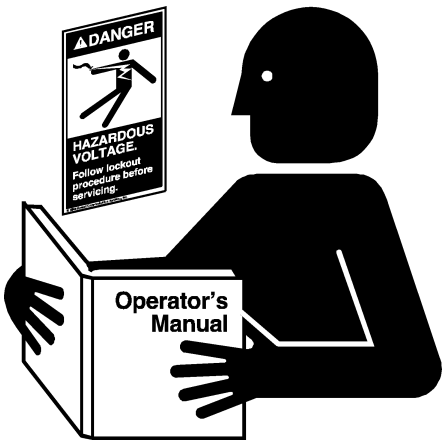
Follow Safety Instructions

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

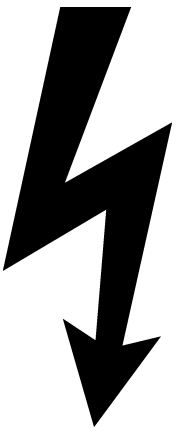
To avoid serious injury or death, stay away from unit and make sure everyone is clear of the equipment before starting or operating the unit.

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

Operate Unload Equipment Safely

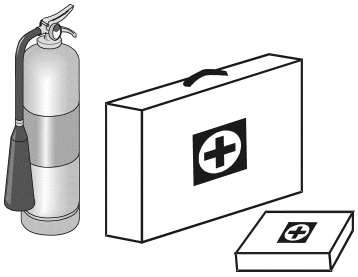
- Untrained operators subject themselves and others to **SERIOUS INJURY** or **DEATH**. **NEVER** allow untrained personnel to operate this equipment.
- **NEVER** work alone.
- Keep children and other unqualified personnel out of the working area at **ALL** times. Refer to the **Start-Up** section of 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.

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.

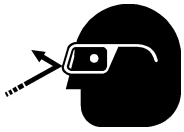
Wear steel toe boots to help protect your feet from falling debris. Tuck in any loose or dangling shoe strings.

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.

Date	***Employee Name***	***Supervisor Name***

3. Decals

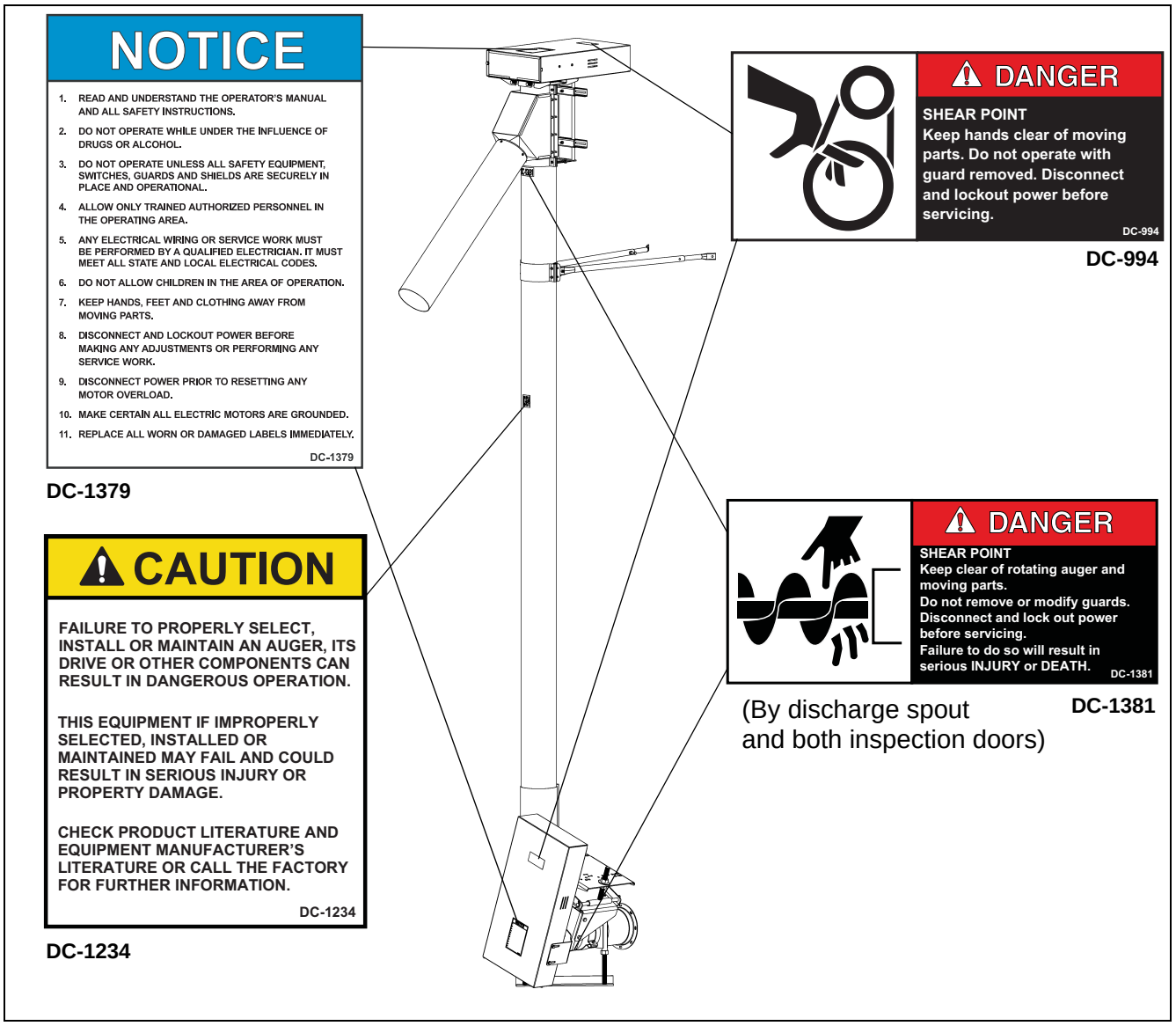
Check the components shown below to ensure that the safety decals are in place and in good condition. If a decal cannot be easily read for any reason or has been painted over, replace it immediately. Contact your dealer or the manufacturer to order a replacement decal free of charge.

Contact:

GSI Group
1004 E. Illinois St.
Assumption, IL. 62510
Phone: 217-226-4421
Fax: 217-226-4420

Decal List

Part #	Description	Size
DC-1234	Caution	2-1/4" x 2-3/4"
DC-1379	Danger - Notice	5-1/8" x 7-3/8"
DC-1381	Danger - Rotating Auger	2" x 4-1/2"
DC-994	Danger - Shear Point	4-1/2" x 2"

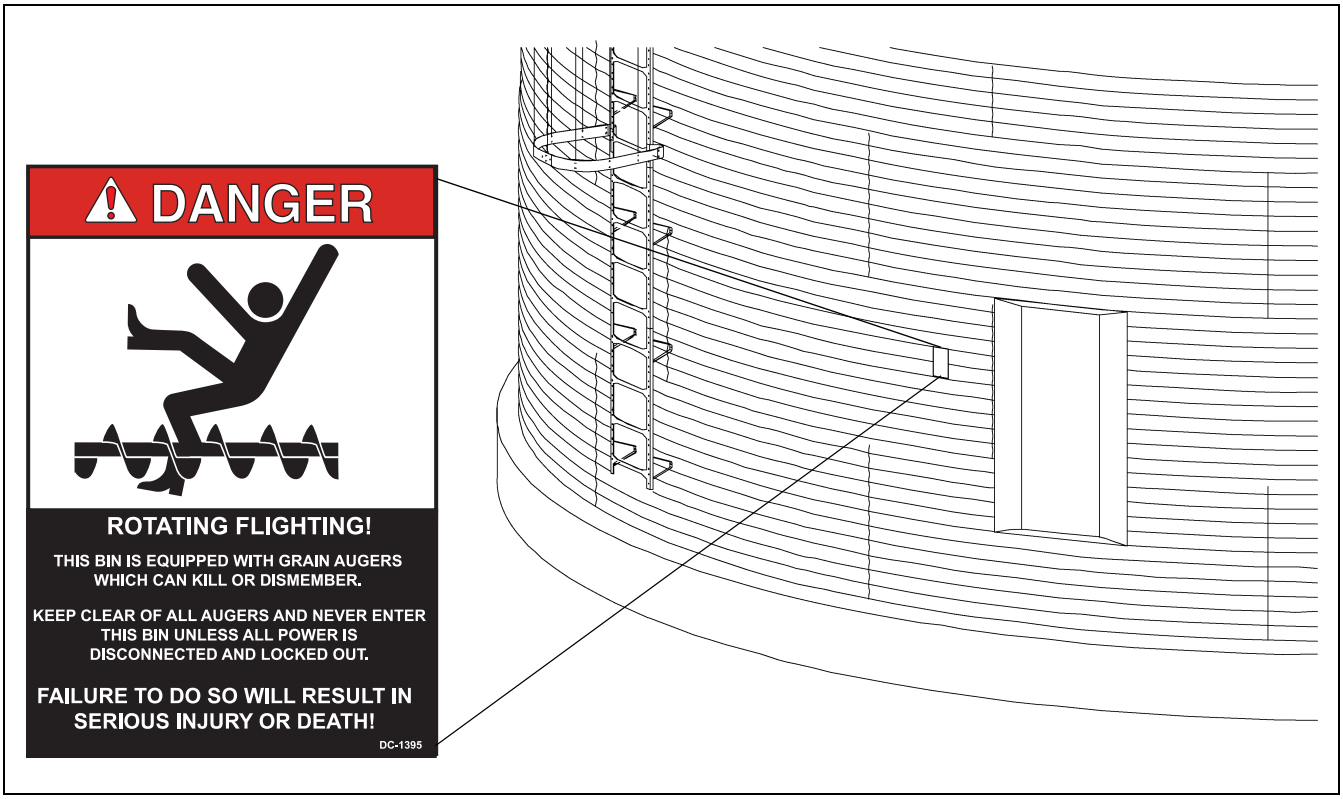


A. DANGER Sign No. DC-1395 was supplied with your bin unloading equipment. This safety sign should be applied to the side of the bin near the bin opening, so it will be viewed by people entering into the bin storage building. Do not cover any safety signs or any other signs that are already there.

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. Bolt the 1-1/4" drive shaft to the vertical flight using two (2) 7/16" x 3" grade 8 bolts and stover nuts.

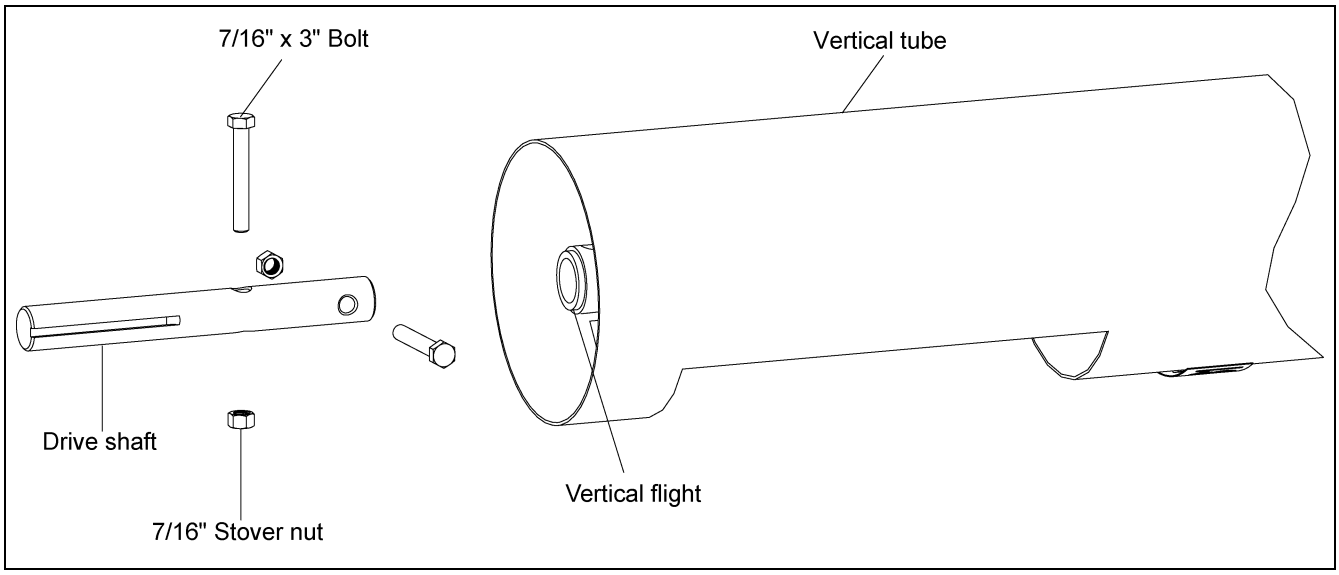


Figure 4A

2. Find the head plate assembly. Attach the 1-1/4" flange bearing to the head plate using two (2) 7/16" x 1-1/4" bolts and nylock nuts.

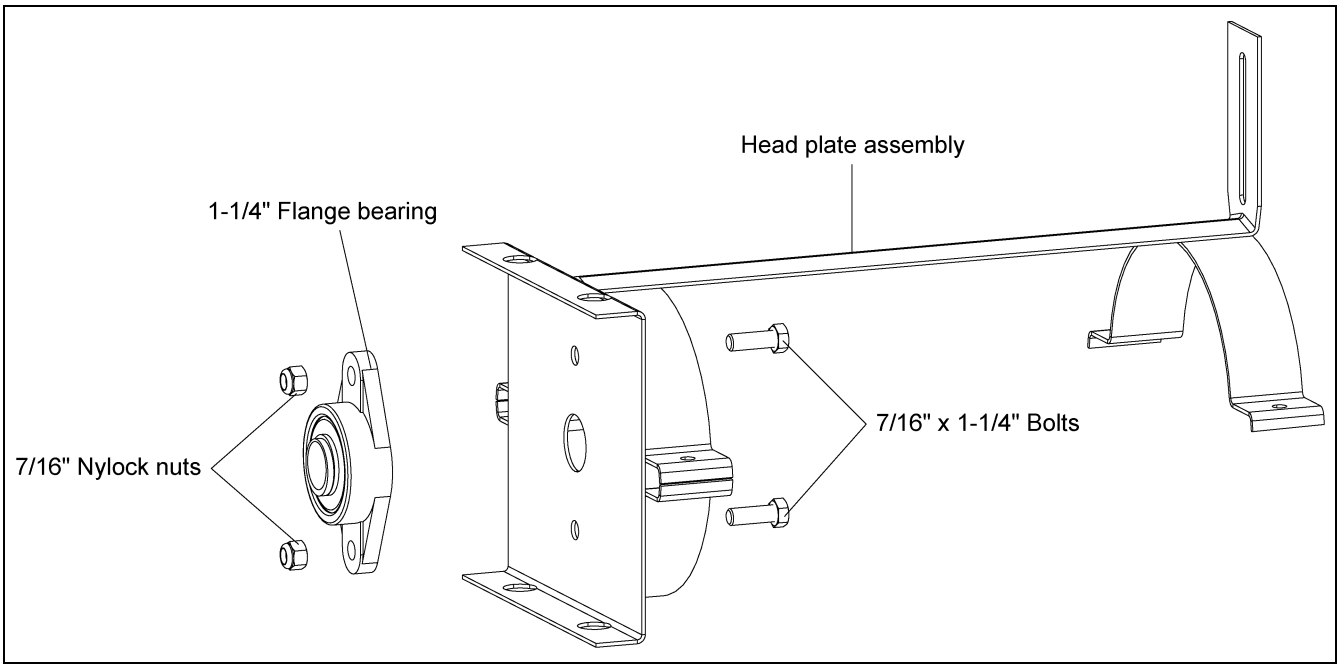


Figure 4B

3. Place the head plate assembly over the end of the vertical tube, with the spout back band in between the head plate assembly 2" half bands. Bolt the head plate assembly half bands together with four (4) 5/16" x 1-1/2" bolts and hex nuts.

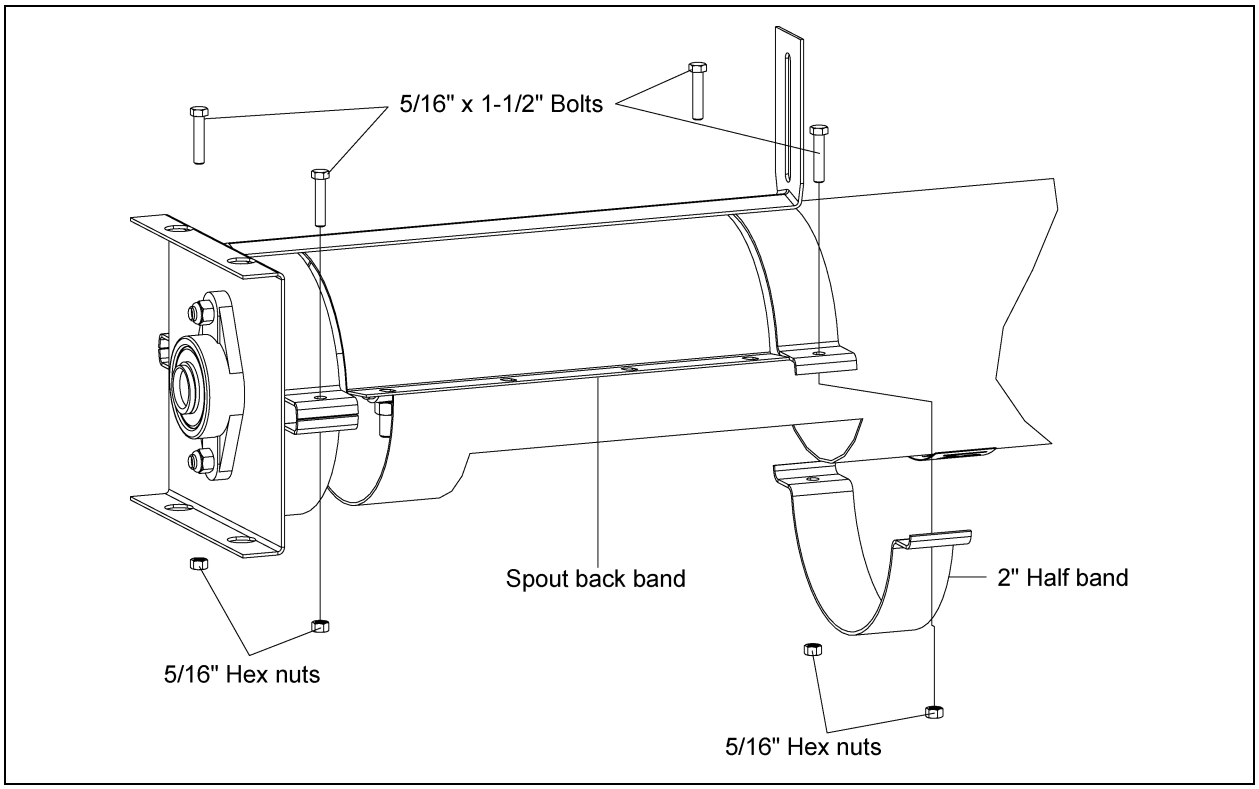


Figure 4C

4. With the head plate assembly secured to the vertical tube, 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.

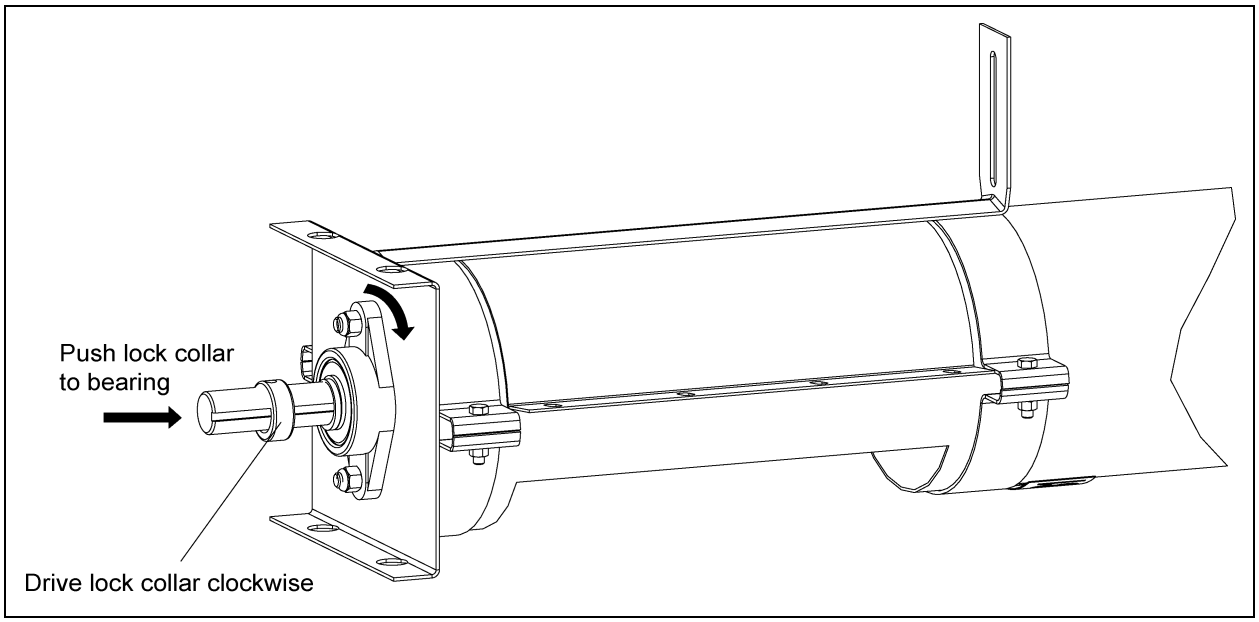


Figure 4D

5. Place the belt guard mounting angles onto the head plate, with the tops of the brackets facing away from the drive shaft. Place the threaded rod motor mount weldment through the head plate, and sandwich it to the belt guard mounting angles using four (4) 3/4" hex nuts. Attach the back of the threaded rod motor mount weldment to the head plate assembly using one (1) 5/16" x 3/4" carriage bolt, washer, and hex nut.

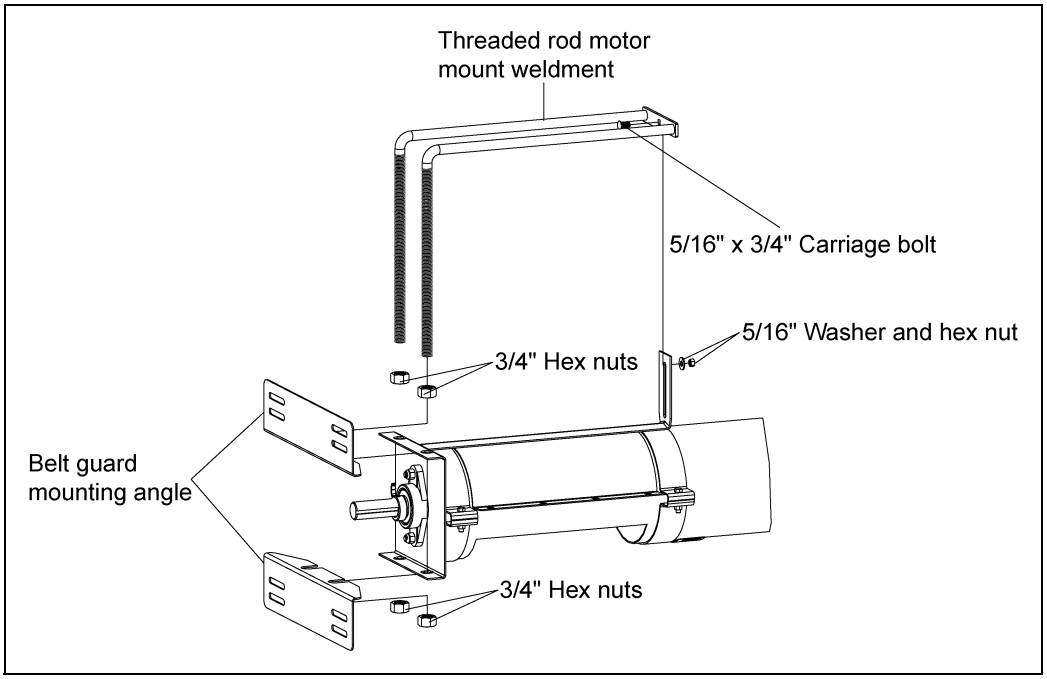


Figure 4E

6. Place the two (2) top motor mount straps onto the threaded rod motor mount weldment. Join them to the two (2) bottom motor mount straps using two (2) 3/8" x 2-1/2" carriage bolts and hex nuts.

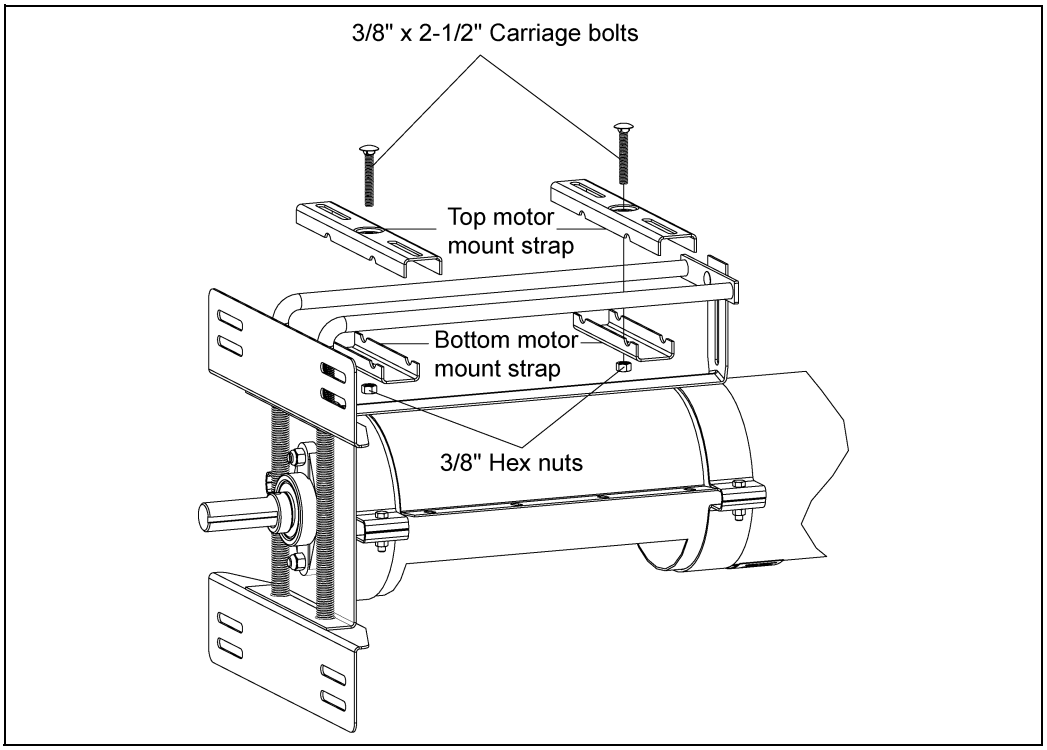


Figure 4F

7. Place and position the 1/4" square x 3" key into the keyway located on the drive shaft.
8. 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.
9. Once the pulley is appropriately positioned, tighten the set screw with a hex head wrench to secure it to the drive shaft.

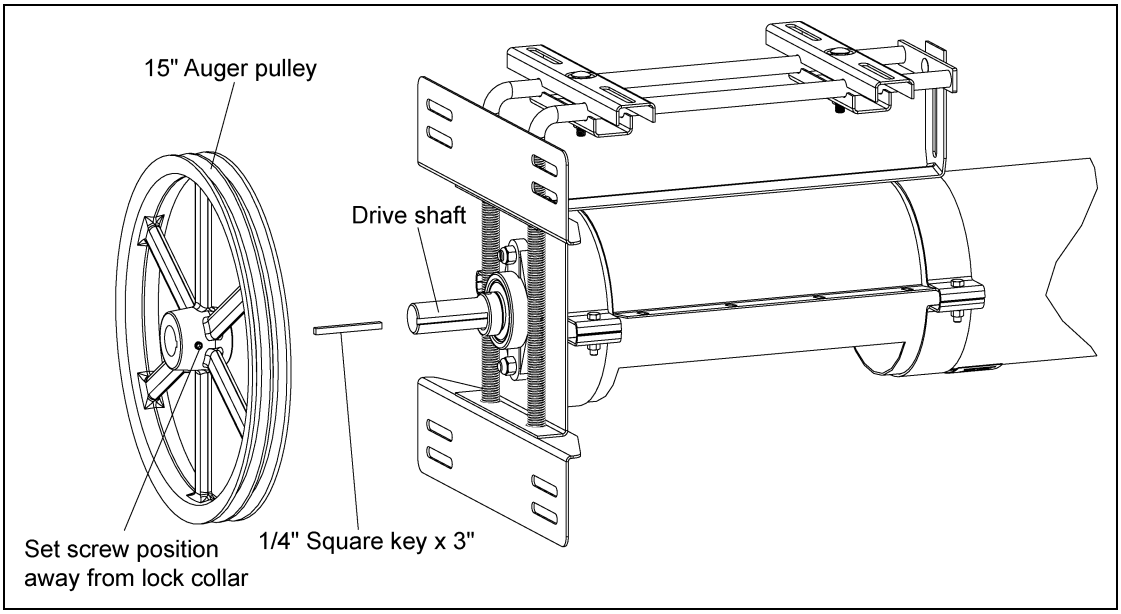


Figure 4G

10. After the drive unit is raised, attached to the bin, and has the horizontal drive completely assembled, the remaining vertical drive assembly can be completed.
11. At this time, assemble the 45° spout assembly to the spout back band, with eight (8) 5/16" x 1-1/2" bolts and nylock nuts.

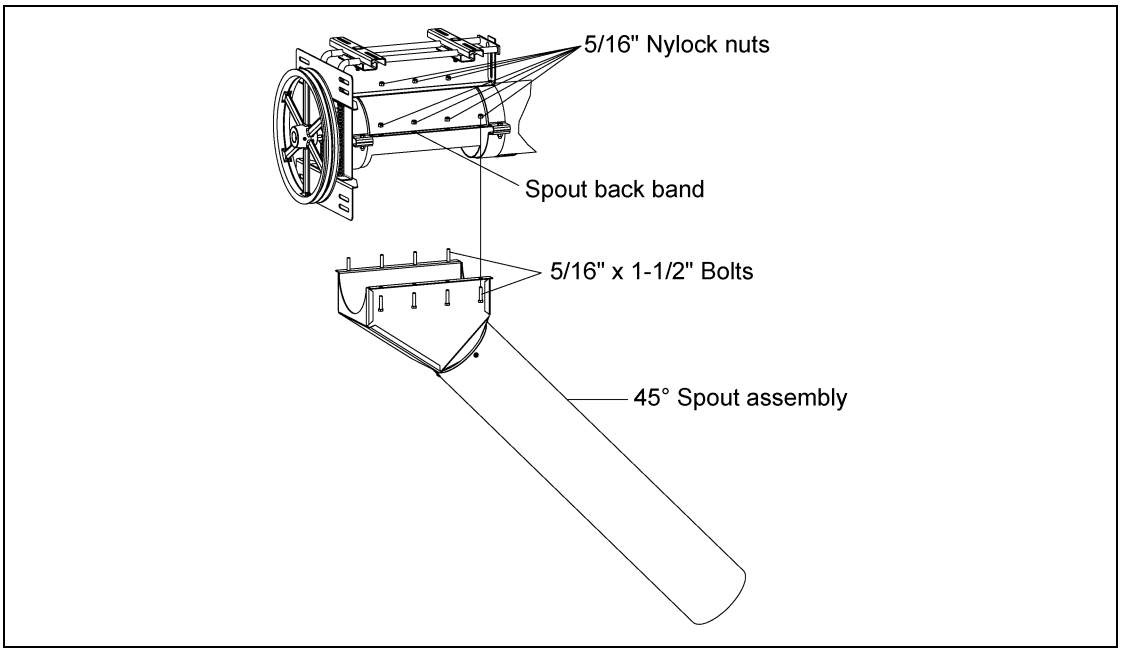


Figure 4H

12. Begin assembly of the mounting legs. Join the two (2) 4" half bands together with the adjustable mounting ears using two (2) 5/16" U-bolts and hex nuts.

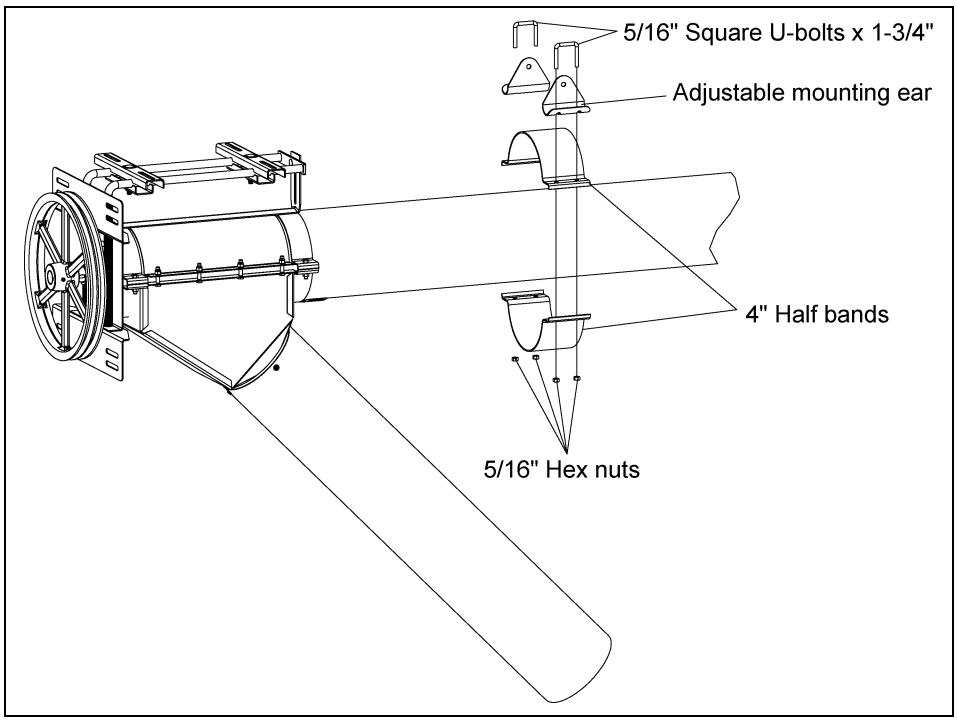


Figure 4I

13. Attach the two (2) telescoping outer legs to the adjustable mounting ears with two (2) 3/8" x 3/4" hex bolts and nylock nuts.

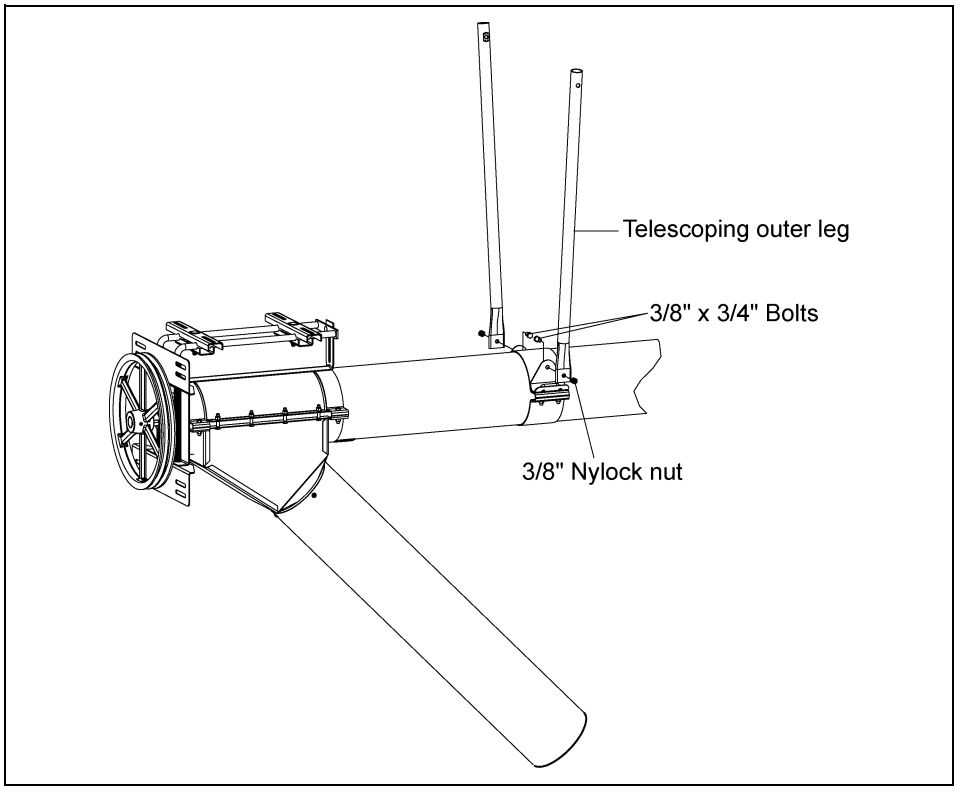


Figure 4J

14. Slide the two (2) telescoping inner legs into the telescoping outer legs and install the two (2) 3/8" x 1-1/4" bolts. As the drive unit is attached to the bin, the final position of the legs will be set. All connections should be loose at this time.

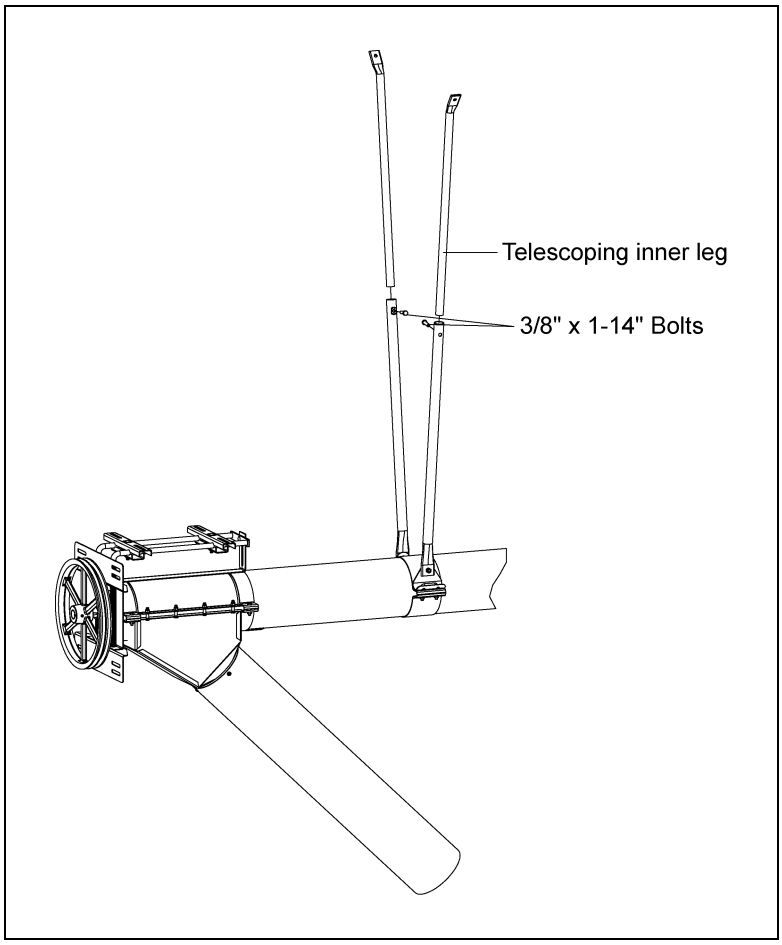


Figure 4K

15. If the application requires an adapter plate, secure it to the bin unload tube before attaching the drive unit. Make sure that the adapter plate has a bolt located at 12 O'clock, when facing the unload tube.
16. Set aside the horizontal drive unit flight assembly. This connection will be made to the unload flight after the drive unit is attached to the bin.
17. Raise the drive unit and bolt the angle ring on the drive unit to the angle ring on the unload tube.
18. Adjust the feet at the bottom of the drive unit to support the weight, at a minimum of 12" below the center of the unload tube.
19. Adjust the 4" half bands for the mounting legs below the discharge spout, so that they are 1/3 of the distance between the discharge spout and the top of the bin door.
20. Attach the telescoping inner legs to the bin wall. The legs should be no more than 30° from the center plane of the drive unit vertical tube. Therefore, the angle between both telescoping legs should be no more than 60°.
21. Adjust and tighten all the hardware for the telescoping legs.
22. Slide the bin unload flight out through the drive unit. In some applications the flight may have to be unbolted from the center well.

23. Attach the horizontal drive unit flight assembly to the unload flight with the supplied 7/16" x 3" grade 8 bolts and stover nuts.

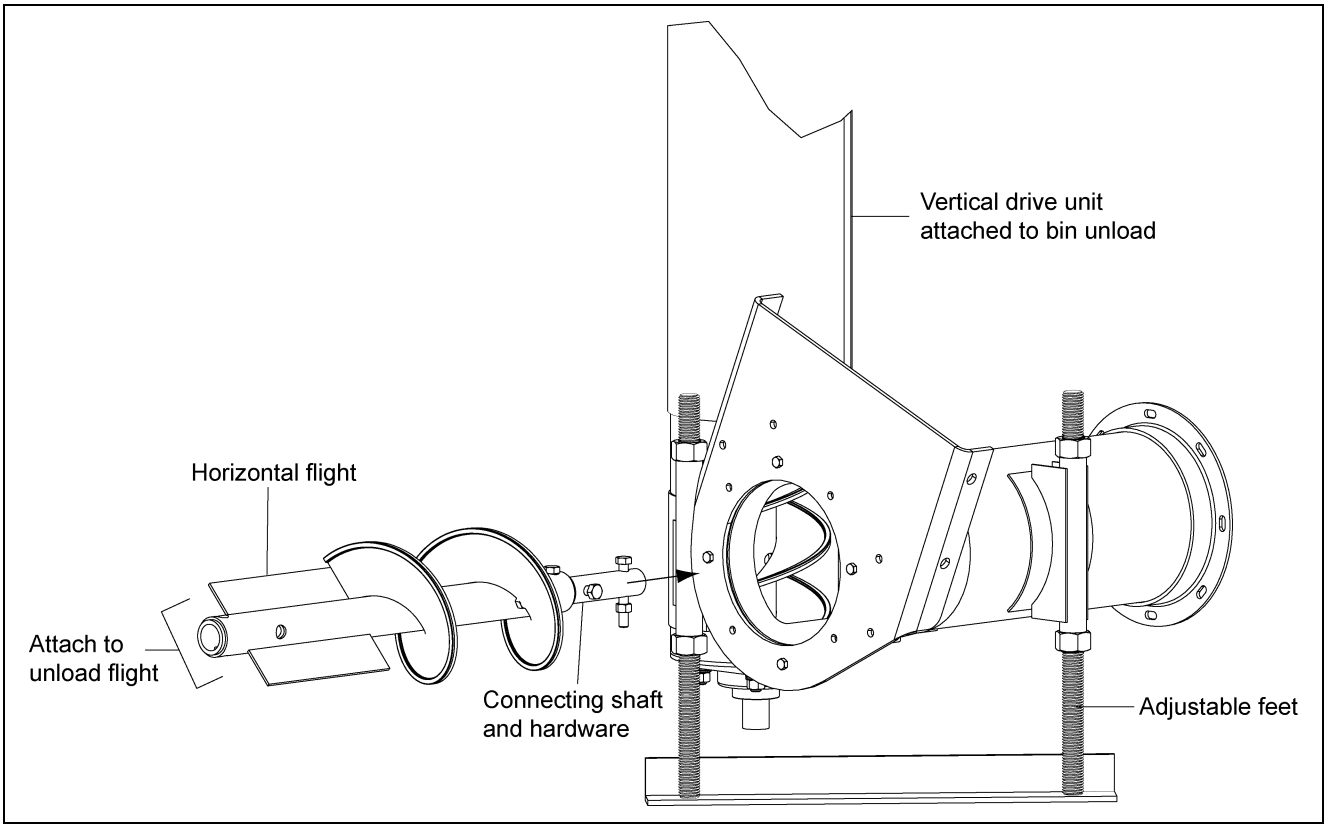


Figure 4L

24. Bolt the 1-1/4" flange bearing to the bearing plate using four (4) 1/2" x 1-1/2" bolts, lock washers, and hex nuts.

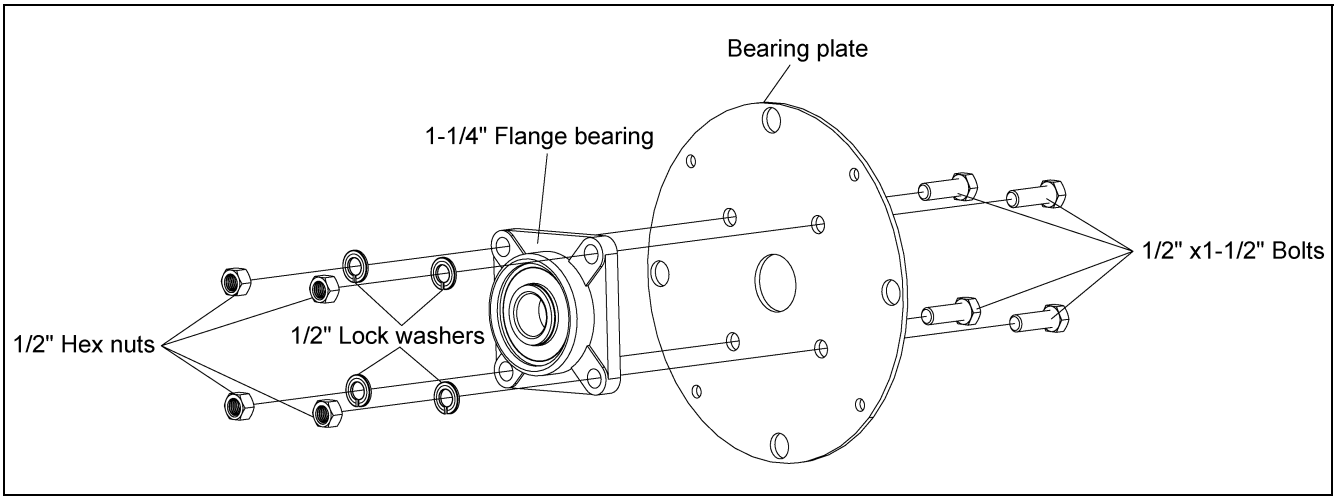


Figure 4M

25. 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.

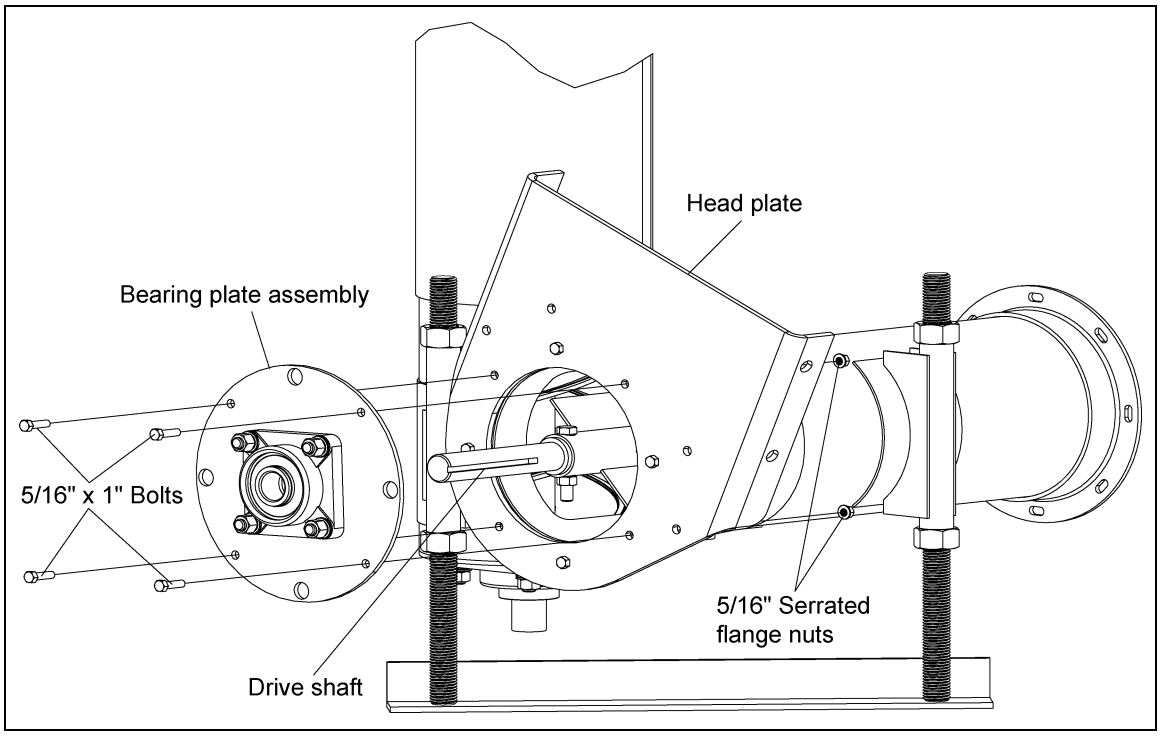


Figure 4N

26. 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.

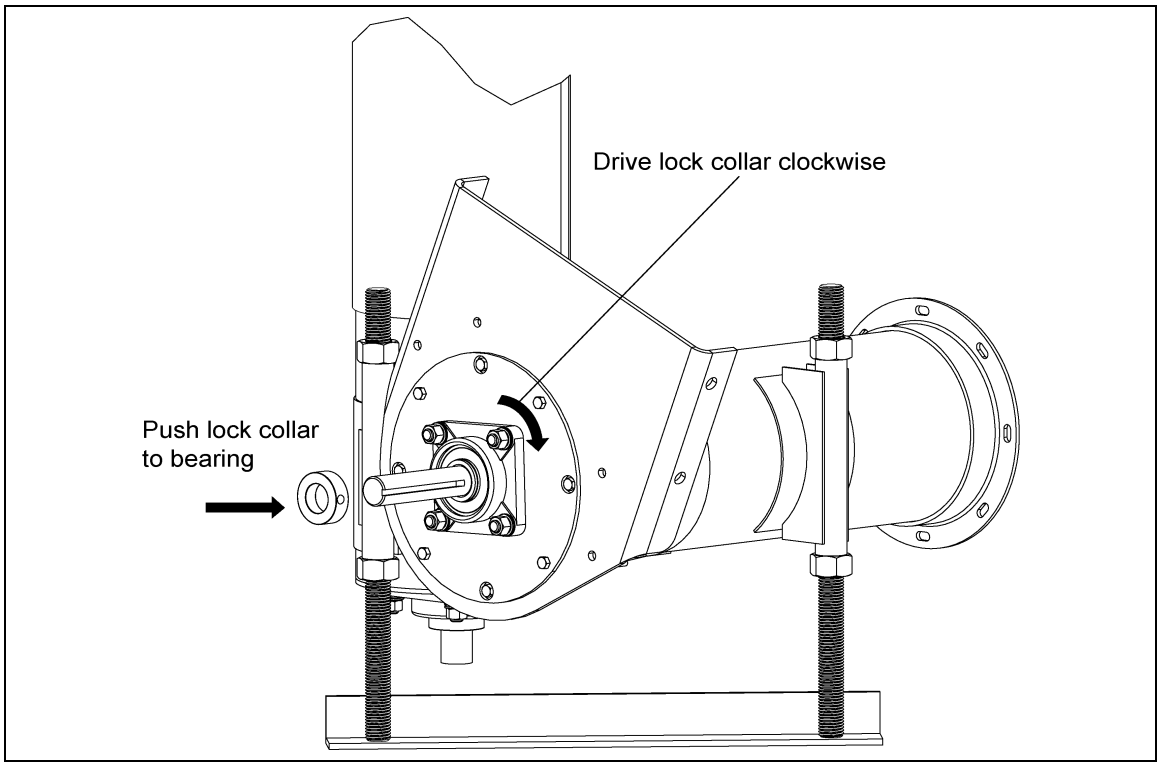


Figure 4O

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

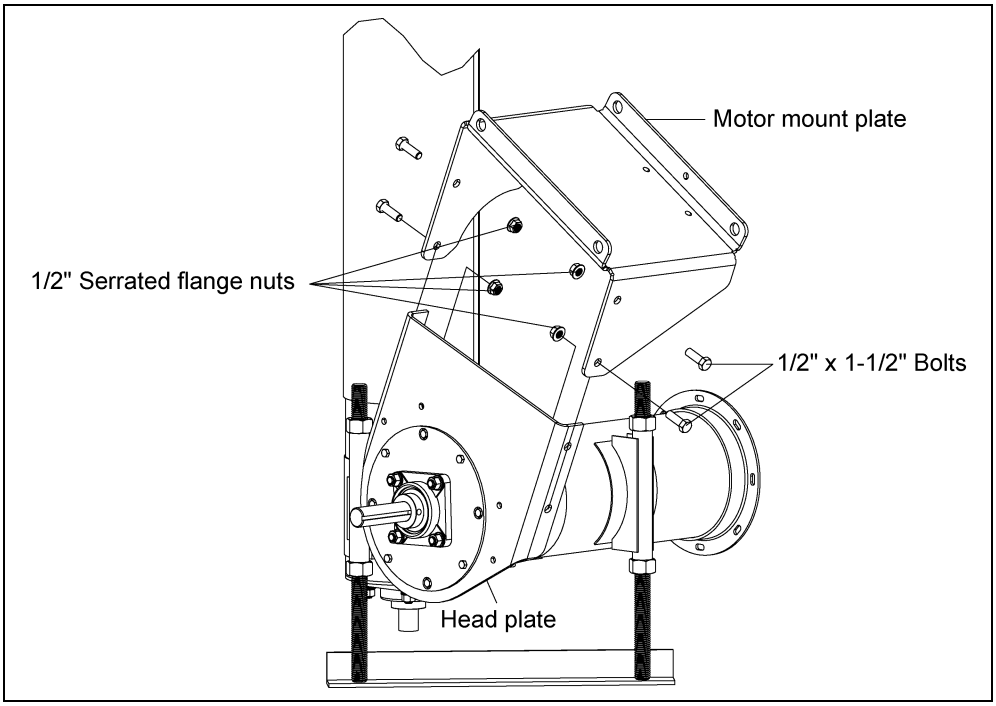


Figure 4P

28. 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.

29. 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.

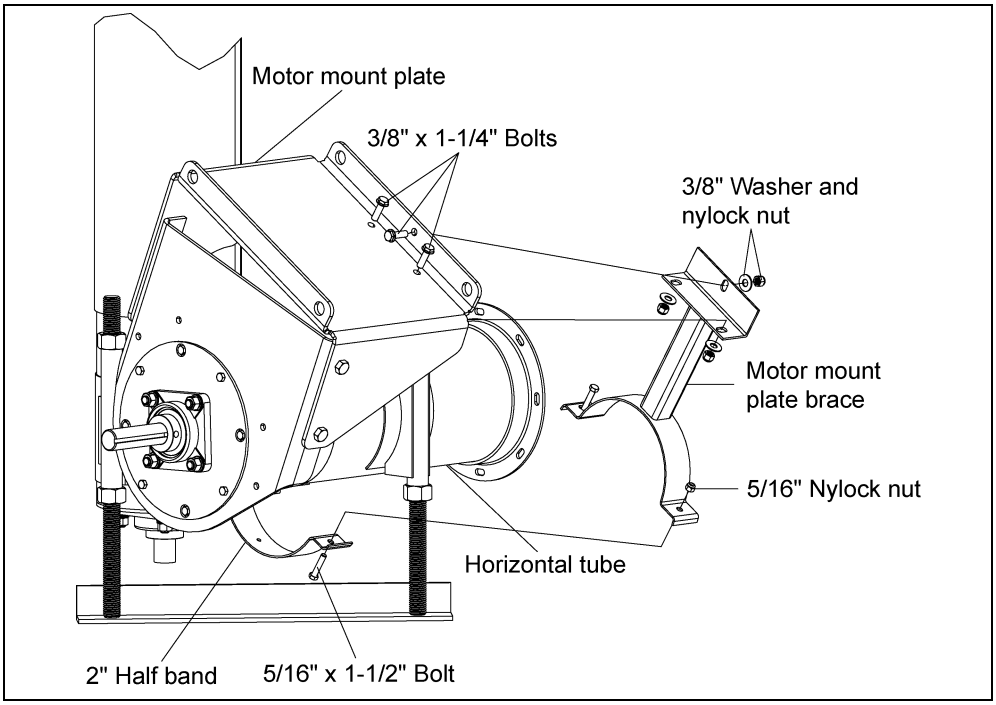


Figure 4Q

30. Place the motor mount adjuster between the bottom pivot holes on the motor mount plate.
31. 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.

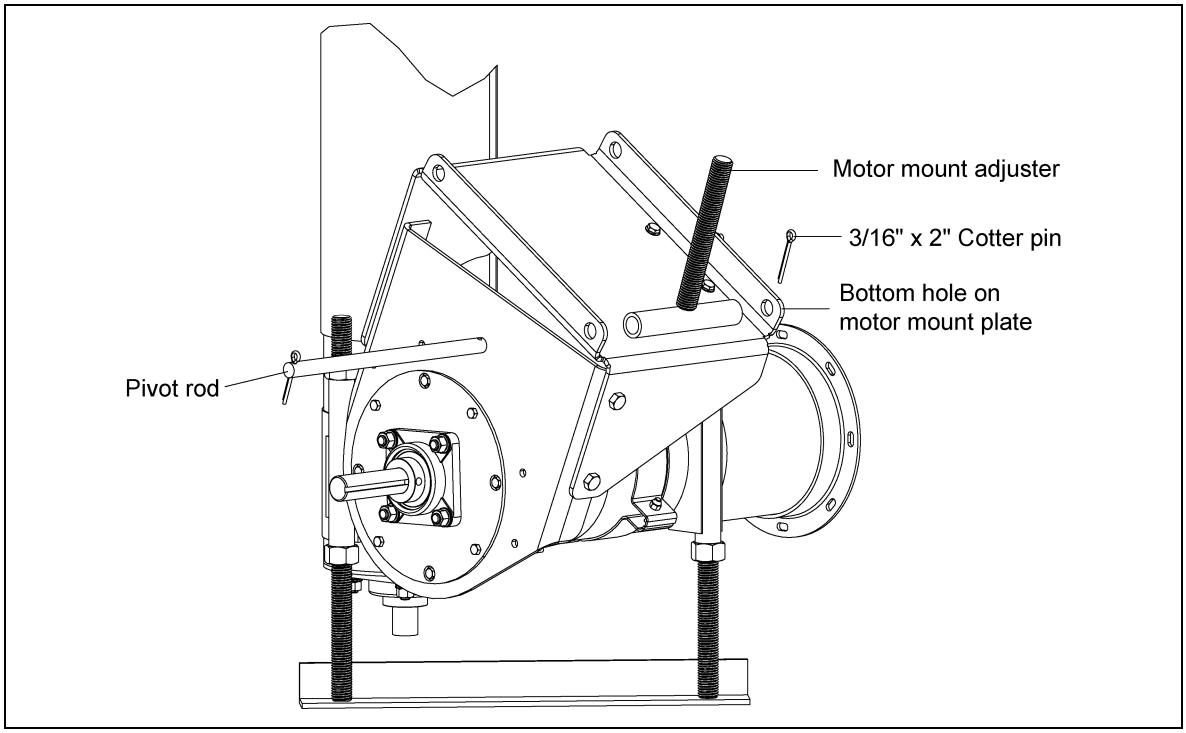


Figure 4R

32. With the cotter pins in the pivot rod, bend one (1) 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.

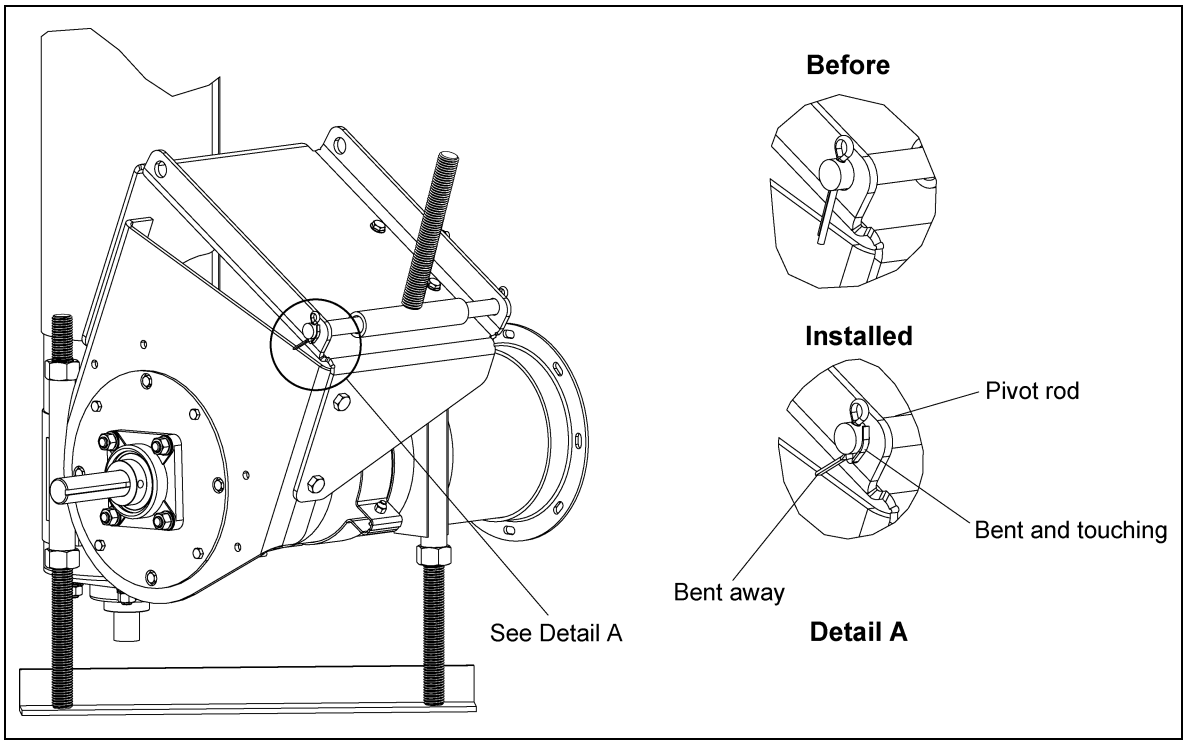


Figure 4S

33. Thread 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 threaded rod.

34. 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.

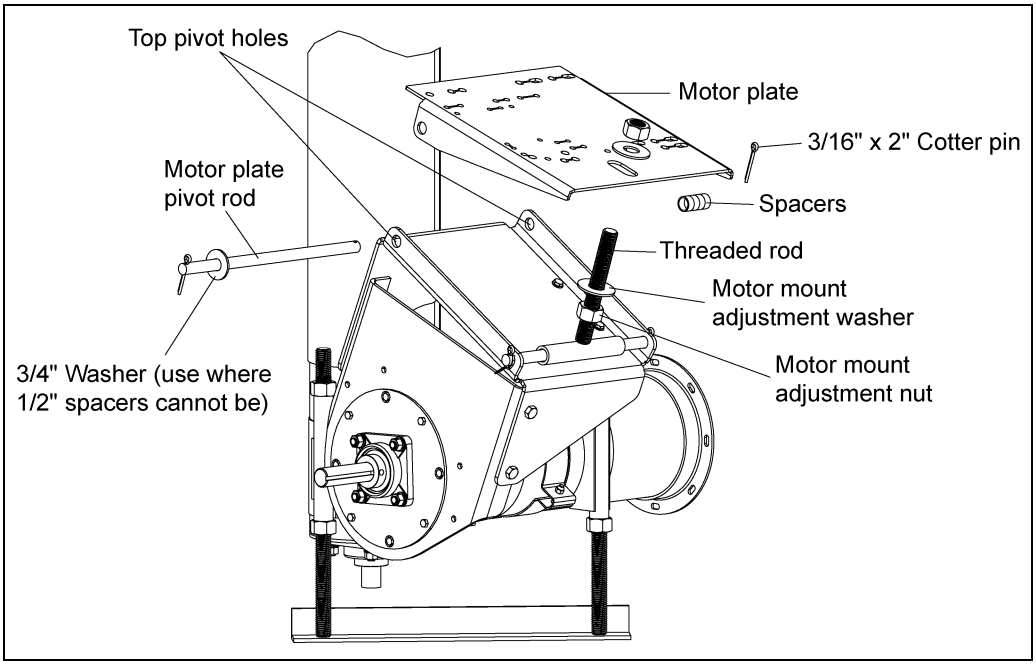


Figure 4T

35. 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.

36. 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.

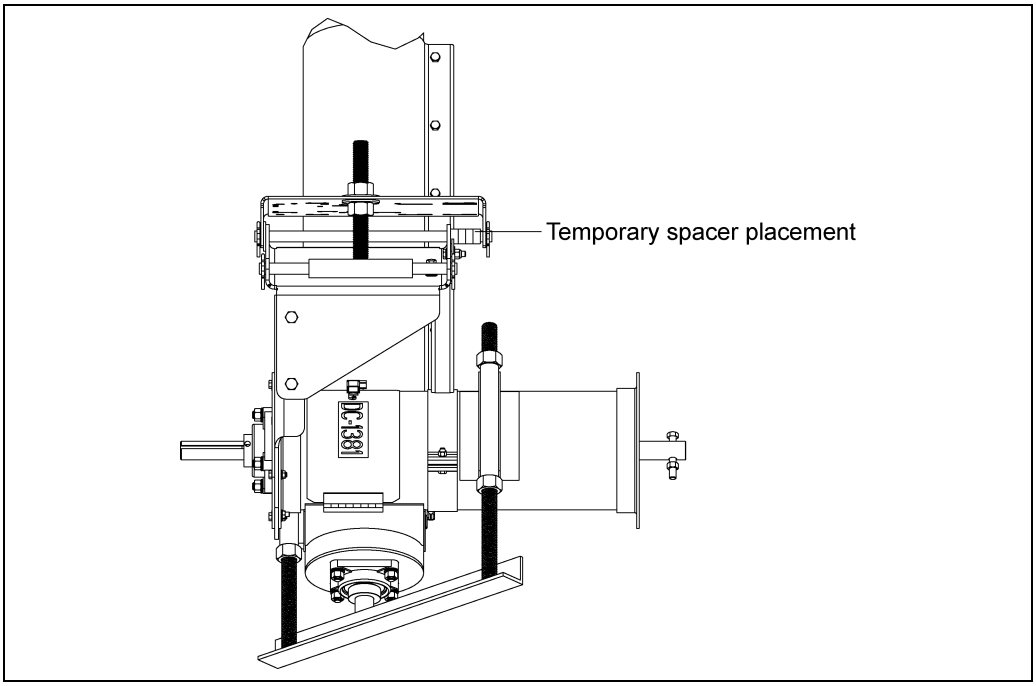


Figure 4U

37. 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 (1) 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.
38. Loosely install the upper motor mount adjustment washer and nut onto the threaded rod, over the motor mount plate.
39. 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.

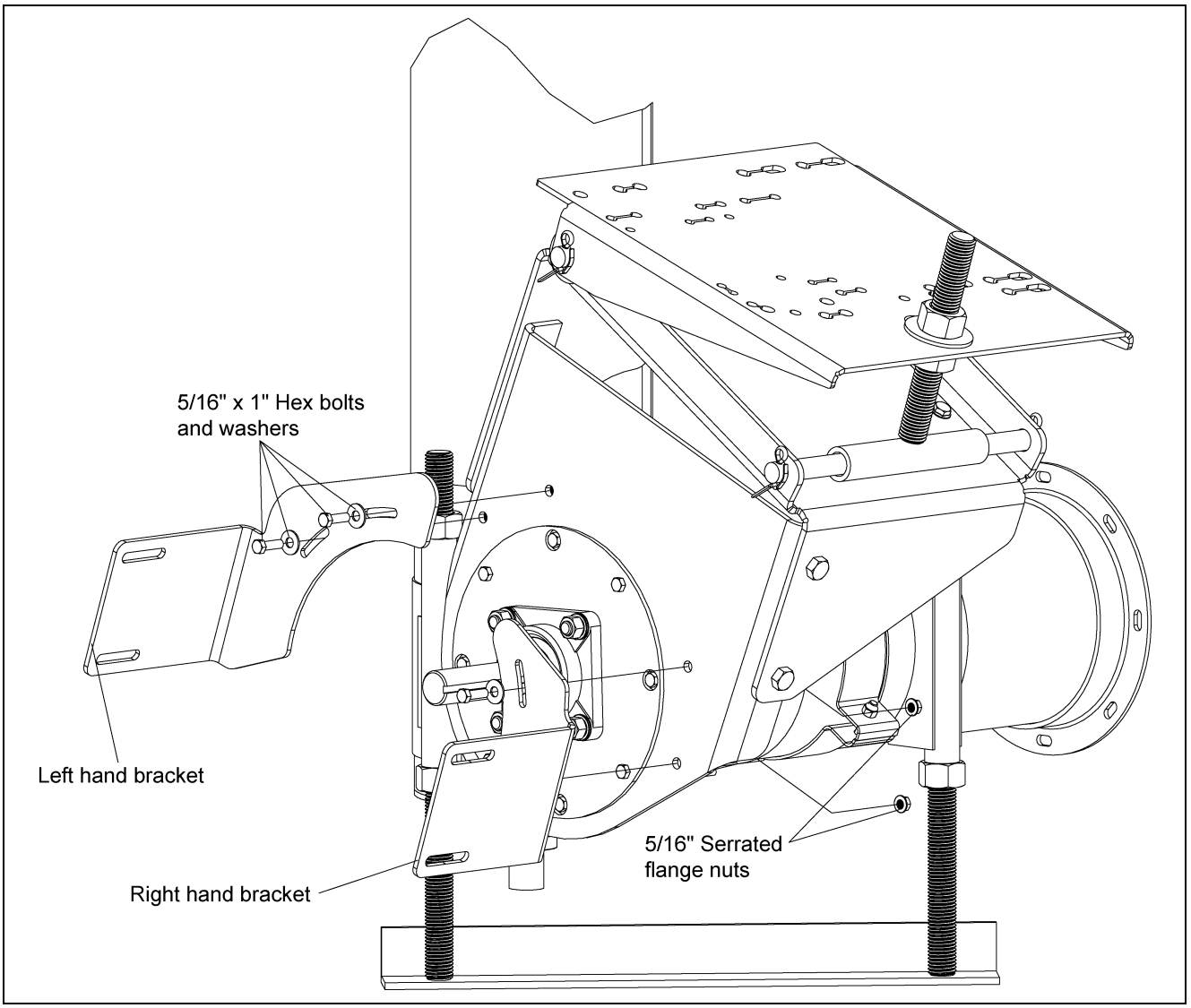


Figure 4V

40. Loosely bolt the brackets to the head plate using four (4) 5/16" x 1" bolts, flat washers, and serrated flange nuts.
41. Place and position the 1/4" square x 3" key into the keyway located on the drive shaft.
42. 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.

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

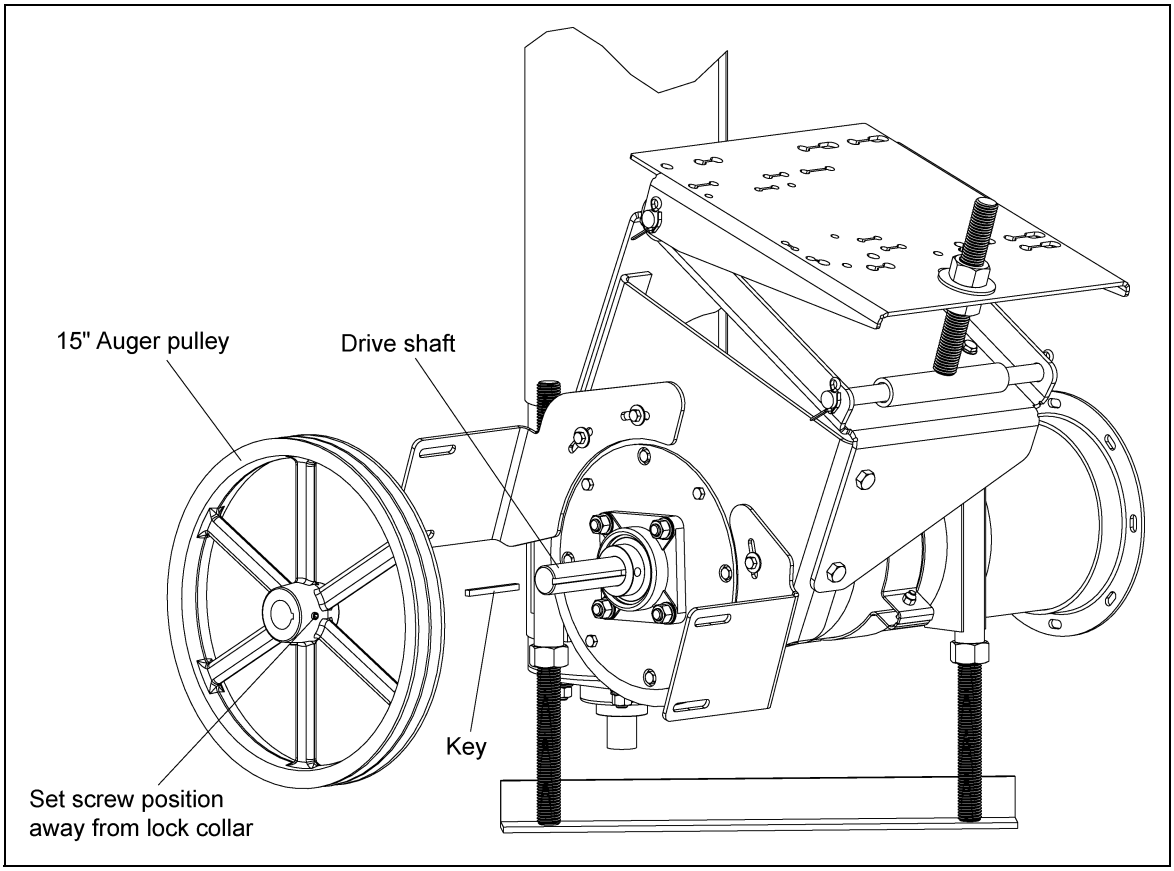


Figure 4W

44. 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

45. 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.

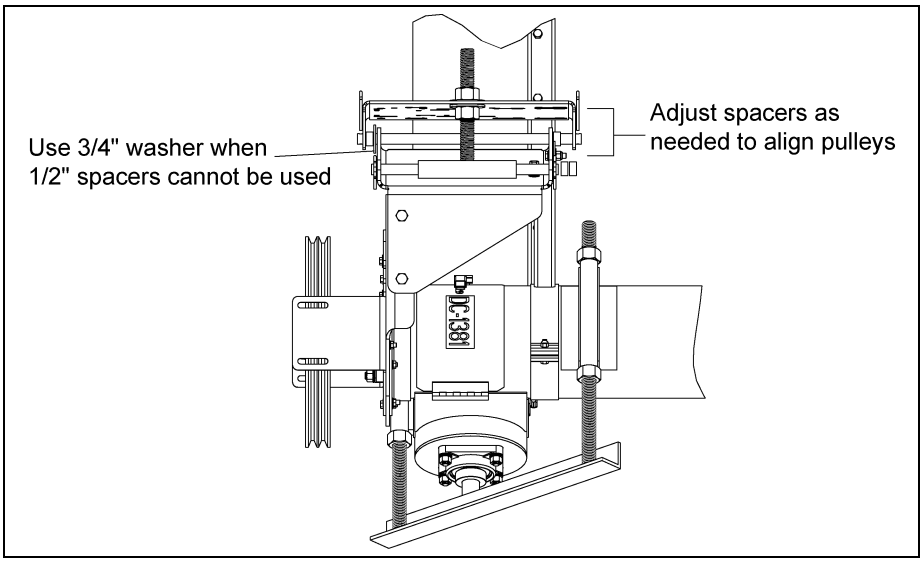


Figure 4X

46. Place the belts onto the pulleys.
47. First, screw the lower motor mount adjustment nut upward, raising the motor mount plate and putting tension on the belts.
48. Once the desired tension is reached, tighten the upper motor mount adjustment nut down onto the motor plate locking it into place.
49. With the belts properly tensioned, remove the bottom belt guard cover.
50. Slip the belt guard down over the motor and drive pulleys, enclosing the drive belts.
51. Bolt the belt guard loosely to the belt guard brackets with four (4) 3/8" x 3/4" flange bolts.

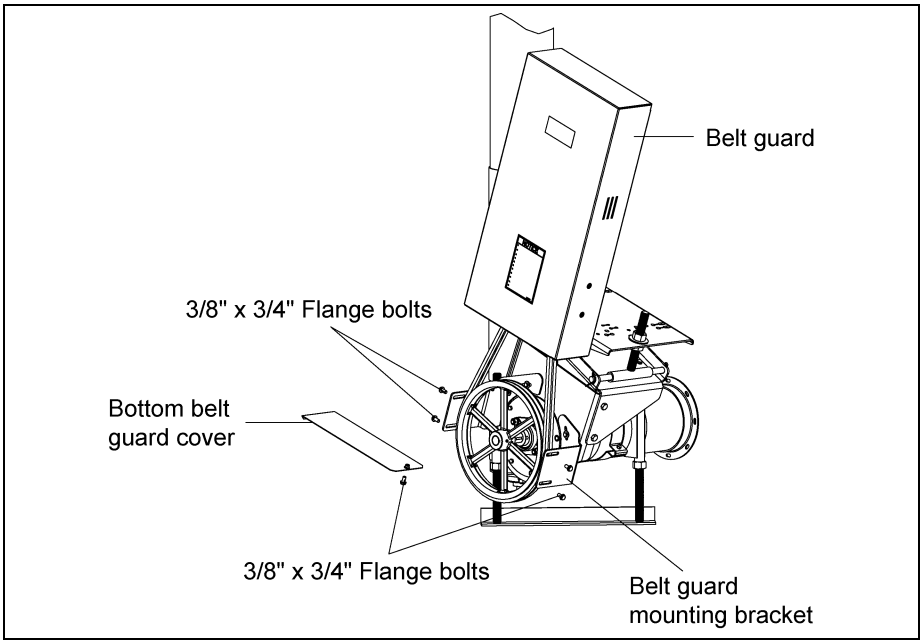


Figure 4Y

52. 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.
53. 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.
54. With the horizontal drive completely assembled, complete the vertical drive installation.
55. Attach the motor to the top motor mount straps, assembled in *Step 6 on Page 14*, with appropriate bolts, lock washers, and hex nuts.
56. Install the drive pulley onto motor shaft making sure that it is aligned with the auger pulley.
57. Place the belts onto the pulleys.
58. Adjust the position of the threaded rod motor mount weldment to obtain proper belt tension.
59. Once the desired tension is reached, tighten the 3/4" nuts to the head plate locking them into place.
60. Tighten all motor mount component nuts and bolts on the vertical drive.
61. Remove the 3/8" x 3/4" flange bolt from the bottom belt guard cover, holding it in place
62. Remove the bottom belt guard cover.
63. Slip the belt guard down over the motor and drive pulleys, enclosing the drive belts.
64. Bolt the belt guard loosely to the belt guard mounting brackets with the supplied four (4) 3/8" x 3/4" flange bolts.
65. 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.

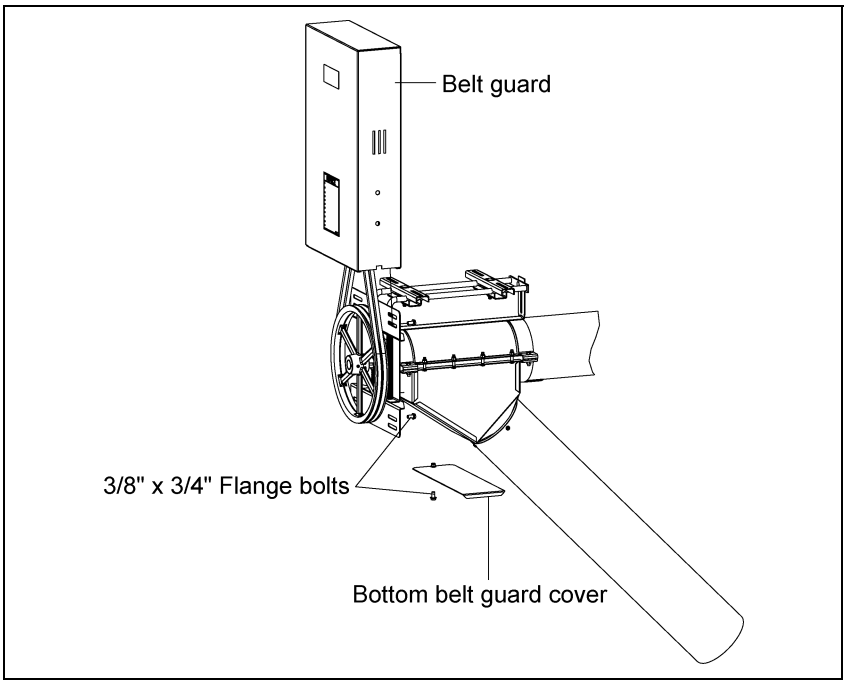


Figure 4Z

66. 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 28.)*
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 28.)*

8" Flights and Motors

				Unloader HP	
Product #	Part #	Description	Bin Diameter	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 Selection

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

WARNING

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.

WARNING

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.

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

> **WARNING** ***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

> **DANGER** ***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.

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

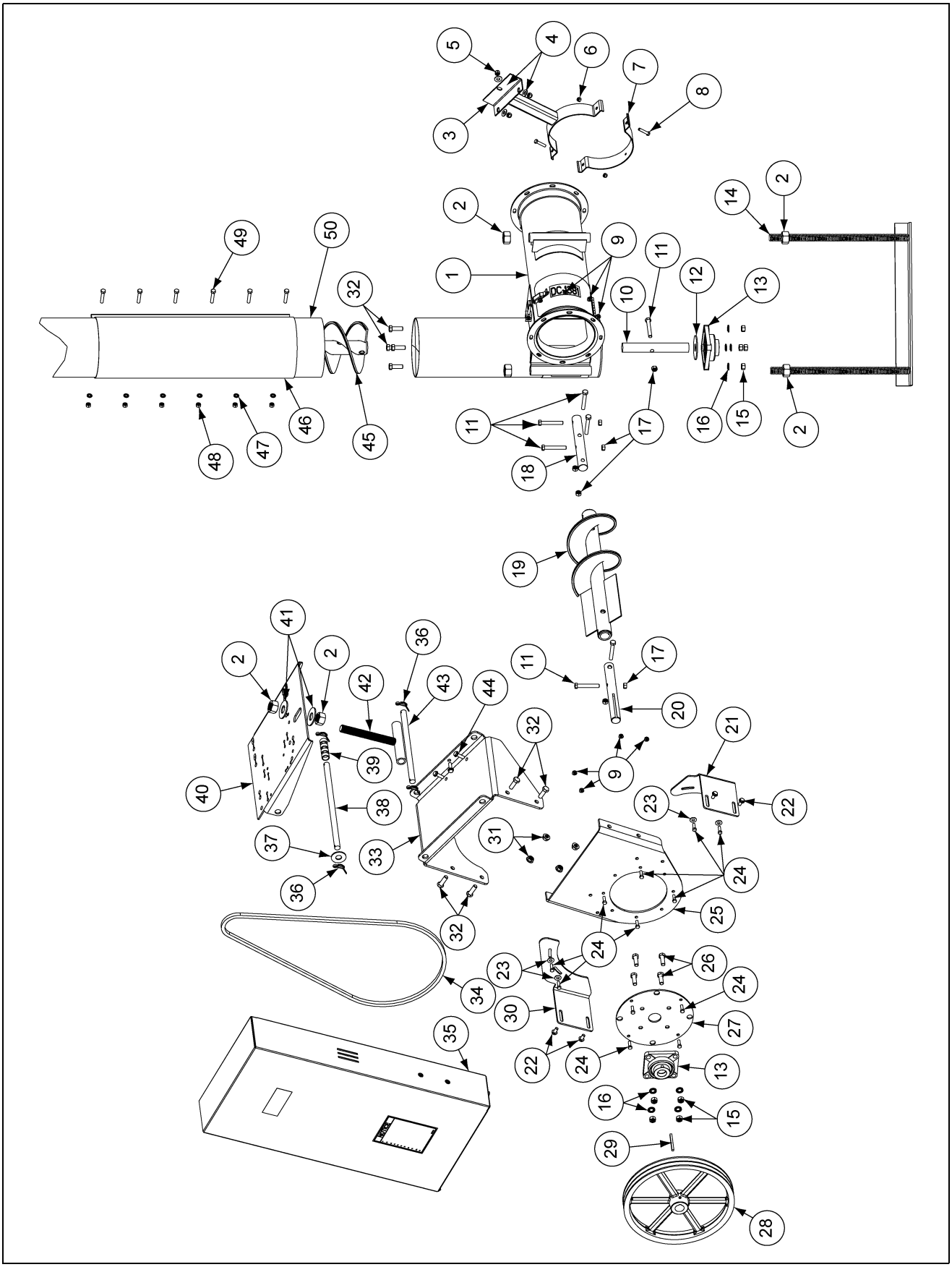
1. Always stop and disconnect the power source whenever the operator must leave the work area or for maintenance of the machinery.
2. Make sure no one can operate the unload auger while the operator is not in the work area.

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.

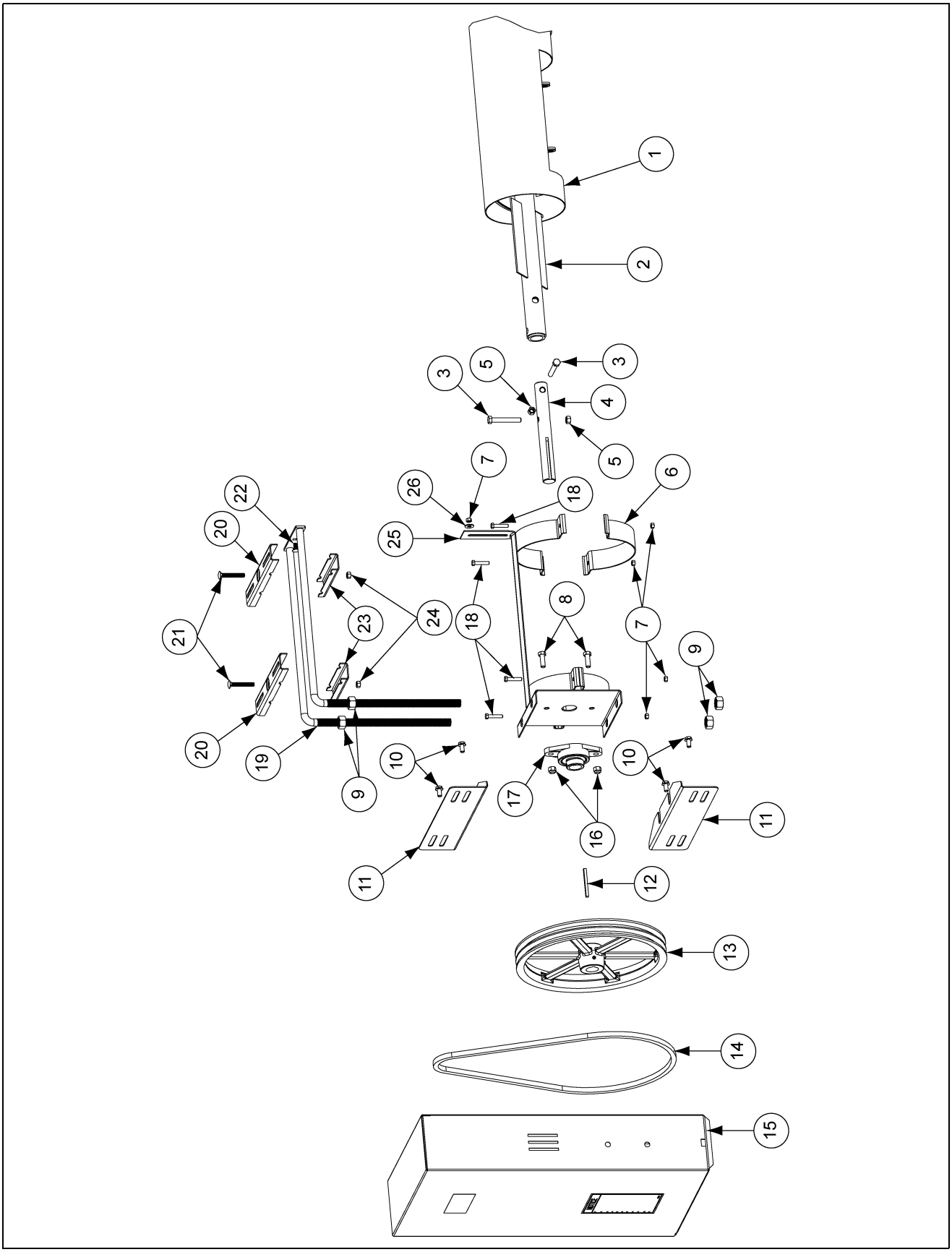
Horizontal Drive Parts



Horizontal Drive Parts

Ref #	Part #	Description
1	GK3090	8" Vertical Cross Assembly
2	S-240	1"-8 Hex Nut Zinc Grade 5
3	GK7882	Motor Mount Brace
4	S-248	3/8" Flat Washer YDP
5	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
6	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
7	GK1055	8" x 2" Half Band - 12 Gauge
8	S-2741	5/16"-18 x 1-1/2" HHCS Zinc Grade 5
9	S-3611	5/16"-18 Serrated Flange Nut YDP Grade 2
10	GK1884	Intake Stub Shaft 1-1/4" O.D. x 9"
11	S-8316	7/16"-14 x 3" HHCS Zinc YDP Grade 8
12	GK1113	3-14" O.D. Rubber Gasket
13	GK1017	1-1/4" Flange Bearing with Lock Collar, 4 Hole
14	GK3088	Vertical Support Stand
15	S-7510	1/2"-13 Hex Nut Zinc Grade 2
16	S-236	1/2" Lock Washer Zinc
17	S-8317	7/16"-14 Stover Nut Zinc Grade C
18	GK1328	Connecting Shaft 1-1/4" O.D. x 9-1/2"
19	GK3087	Horizontal Flight
20	GK1331	Drive Shaft 1-1/4" O.D. x 10-1/2"
21	GK7767	Right Belt Guard Bracket
22	S-9067	3/8"-16 x 3/4" Flange Bolt Zinc Grade 5
23	S-845	5/16" Flat Washer YDP Grade 2
24	S-1196	5/16"-18 x 1" HHCS Zinc Grade 5
25	GK7769	Head Plate
26	S-7528	1/2"-13 x 1-1/2" HHCS Zinc Grade 2
27	GK7768	Bearing Plate
28	GK1869	15" O.D. 1-1/4" I.D. 2 Groove Sheave
28	GK2234	15" O.D. 1-1/4" I.D. 3 Groove Sheave
29	S-8276	1/4" x 3" Square Key
30	GK7770	Left Belt Guard Bracket
31	S-8506	1/2"-13 Serrated Flange Nut Zinc
32	S-8760	1/2"-13 x 1-1/2" HHCS Zinc Grade 5
33	GK7771	Motor Mount Plate
34	MHC00487	V-Belt, BX71
35	GK7773	Horizontal Drive Belt Guard
36	S-6994	3/16" x 2" Cotter Pin Zinc Grade 2
37	S-866	3/4" Flat Washer Zinc Grade 2
38	GK7013	Motor Plate Pivot Rod
39	GK7014	Pivot Spacer Tube
40	GK6986	Motor Plate
41	S-7835	1" Flat Washer Zinc
42	GK6942	Motor Plate Adjustment Rod
43	GK7012	Motor Plate Adjustment Pivot Rod
44	S-9066	3/8"-16 x 1-1/4" Flange Bolt Zinc Grade 5
45	GK1004-2	Vertical Flight
46	GK1015	8" x 27" Connecting Band
47	S-1054	3/8" Lock Washer Zinc
48	S-456	3/8"-16 Hex Nut YDP Grade 5
49	S-7522	3/8"-16 x 2" HHCS Zinc Grade 2
50	GK1019-2	Vertical Unload Tube

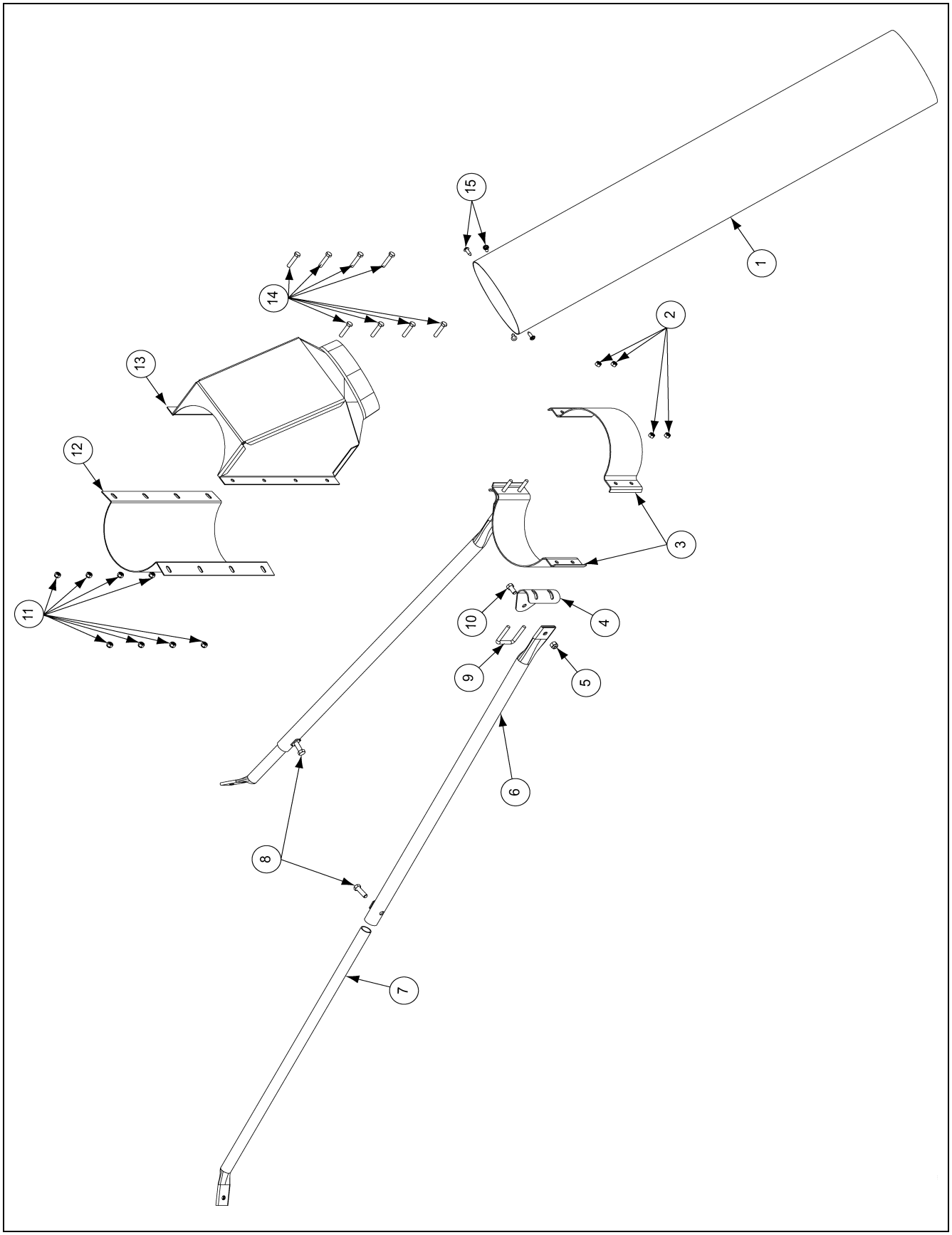
Vertical Drive Parts



Vertical Drive parts

Ref #	Part #	Description
1	GK1019-2	Vertical Unload Tube
2	GK1004-2	Vertical Flight
3	S-8316	7/16"-14 x 3" HHCS Zinc YDP Grade 8
4	GK1331	Drive Shaft 1-1/4" O.D. x 10-1/2"
5	S-8317	7/16"-14 Stover Nut Zinc Grade C
6	GK1055	8" x 2" Half Band - 12 Gauge
7	S-396	5/16"-18 Hex Nut YDP Grade 2
8	S-3886	7/16"-14 x 1-1/4" HHCS Zinc Grade 5
9	S-234	3/4"-10 Hex Nut Zinc Grade 5
10	S-9067	3/8"-16 x 3/4" Flange Bolt Zinc Grade 5
11	GC11544	Belt Guard Mounting Angle
12	S-8276	1/4" x 3" Square Key
13	GK1869	15" O.D. 1-1/4" I.D. 2 Groove Sheave
14	GK1346	V-Belt B57
15	GK7532	Vertical Drive Belt Guard
16	S-8234	7/16"-14 Nylock Nut Zinc Grade 2
17	GK1330	1-1/4" Flange Bearing with Lock Collar, 2 Hole
18	S-2741	5/16"-18 x 1-1/2" HHCS Zinc Grade 5
19	GK1327	Threaded Rod Motor Mount Weldment
20	GK1063	Top Motor Mount Strap
21	S-6995	3/8"-16 x 2-1/2" Carriage Bolt Zinc Grade 5
22	S-6076	5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2
23	GK1064	Bottom Motor Mount Strap
24	S-456	3/8"-16 Hex Nut YDP Grade 5
25	GK1329	8" Head Plate Assembly
26	S-845	5/16" Flat Washer YDP Grade 2

Spout and Legs



Spout and Legs

Ref #	Part #	Description
1	GK1039	8" Spout Extension, 44"
2	S-396	5/16"-18 Hex Nut YDP Grade 2
3	GK1059	8" x 4" Half Band - 12 Gauge
4	GK1034	Adjustable Mounting Ear
5	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
6	GK1892	Telescoping Outer Leg - 36"
7	GK1891	Telescoping Inner Leg - 32"
8	S-2071	3/8"-16 x 1-1/4" HHCS Zinc Grade 5
9	S-7079	5/16"-18 x 1-3/4" Square U-Bolt
10	S-7105	3/8"-16 x 3/4" HHCS Grade 5
11	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
12	GK1505	8" x 14" Half Band Galvanized
13	GK6509	8" 45° Spout Weldment
14	S-2741	5/16"-18 x 1-1/2" HHCS Zinc Grade 5
15	S-6497	1/4" x 3/4" Screw

NOTES

Limited Warranty — N.A. Grain Products

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

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

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

Conditions and Limitations:

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

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

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

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

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

(Limited Warranty - N.A. Grain Products_ revised 01 October 2020)

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

GSI GROUP

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