

CE Compliant Farm Bin Sweep Augers

Assembly and Operation Manual -
Original Instructions

PNEG-1020CE

Date: 09-11-13

G S I G R O U P



PNEG-1020CE



**CE Declaration of Incorporation
MACHINERY DIRECTIVE
2006/42/EC**

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

+1 217 226 4429

The GSI Group declares that **Farm Bin Sweep Augers - Models**

Bin Diameter		8"		10"	
		Model #	Motor Size	Model #	Motor Size
15'	4.57 m	GBS81500	1.1 kW		
18'	5.49 m	GBS81800	1.1 kW		
21'	6.40 m	GBS82100	1.1 kW		
24'	7.32 m	GBS82400	1.5 kW	GBS10240	2.25 kW
27'	8.23 m	GBS82700	1.5 kW	GBS10270	2.25 kW
30'	9.15 m	GBS83000	1.5 kW	GBS10300	2.25 kW
33'	10.06 m	GBS83300	1.5 kW	GBS10330	2.25 kW
36'	10.98 m	GBS83600	1.5 kW	GBS10360	2.25 kW
39'	11.89 m	GBS83900	1.5 kW	GBS10390	2.25 kW
42'	12.80 m	GBS84200	2.25 kW	GBS10420	2.25 kW
48'	14.63 m			GBS10480	3.75 kW

When fitted with mandatory drive guard part # GK80202

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

- 1.1.2. and sub-clauses principles of safety integration
- 1.3.1. Risk of loss of stability
- 1.3.2. Risk of break-up during operation
- 1.3.7. Risk related to moving parts
- 1.3.8. Choice of protection against risks arising from moving parts
 - 1.3.8.1. Moving transmission parts
- 1.3.9. Risks of uncontrolled movements
- 1.4. Required characteristics of Guards and Protective Devices
 - 1.4.1. General requirements
 - 1.4.2. Special requirements for guards
 - 1.4.2.1. Fixed guards
- 1.5.4. Errors of fitting
- 1.5.5. Extreme temperatures
- 1.5.6. Fire
- 1.5.7. Explosion
- 1.5.8. Noise
- 1.5.9. Vibrations
- 1.5.13. Emissions of hazardous materials and substances



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- 1.6. Maintenance
 - 1.6.1. Machinery maintenance
 - 1.6.4. Operator intervention
- 1.7. Information
 - 1.7.1. Information and warnings on the machinery
 - 1.7.1.1. Information and information devices
 - 1.7.2. Warning of residual risks
 - 1.7.4. Instructions
 - 1.7.4.1. General principles for the drafting of instructions
 - 1.7.4.2. Contents of the instructions but not inclusive of sub clause (u)
 - 1.7.4.3. Sales literature

This declaration applies only to the mechanical elements of the above machines and does not imply conformity by any other items of equipment fitted to or connected with the above machines.

The equipment above must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of all relevant Directives, nor until these components have been assembled in the manner recommended in the attached manufacturers instructions.

Signed :

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

Date:

NOTES

Contents

Chapter 1 Safety	6
Safety Guidelines	6
Safety Instructions	7
Correct Use	9
Electrical Safety	10
Possible Hazards Inside Grain Bins	13
Safety Guarding Requirements	14
Chapter 2 Safety Decals	15
Sweep Auger Safety Decals	15
Chapter 3 Specifications	17
Chapter 4 Assembly	18
8" Augers Assembly	18
10" Auger Assembly	32
Chapter 5 Electrical Installation	45
Chapter 6 Sweep Operation	47
Chapter 7 Maintenance	54
Chapter 8 Storage	55
Chapter 9 Warranty	57

Safety Guidelines

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



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



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



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



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



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

Safety Instructions

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

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

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

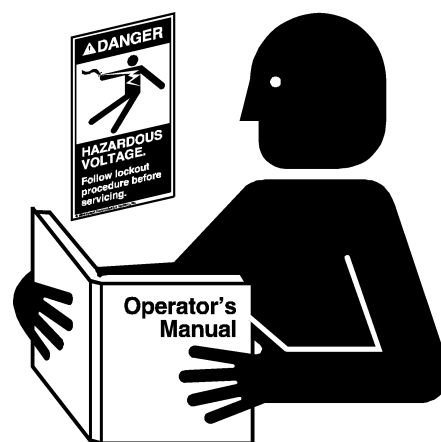
Follow Safety Instructions

Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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

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



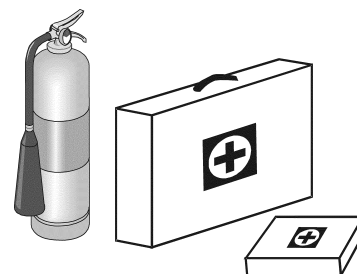
Read and Understand Manual

Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

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



Keep Emergency Equipment Quickly Accessible

1. Safety

Wear Protective Clothing

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

Remove all jewelry.

Tie long hair up and back.

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

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

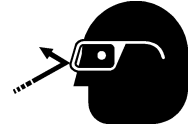
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

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

Wear a hard hat to help protect your head.

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

Eye Protection



Gloves



Steel-Toed Boots



Respirator



Hard Hat



Fall Protection



Correct Use



Incorrect use can be extremely dangerous. Moving auger flights, pulleys and shafts can cause serious injury and kill.

1. The Farm Bin Sweep system is for conveying whole agricultural seeds and grains only. Any other use is prohibited.
2. It shall be used only inside a circular grain bin, equipped with the correct centre pivot and safety equipment described in this manual.
3. It shall never be operated when any person is within the bin being cleared.
4. Electrical control systems shall be designed to the requirements of the Machinery Directive 2006/42/EC, risk assessment and should be in accordance with EN60204:2006, EN ISO 13849:2006 and/or EN 954-1.
5. The final installation shall be accordance with all the safety requirements outlined in this manual and fulfil the Essential Requirements of the Machinery Directive 2006/42/EC.
6. Never use the sweep auger with any guards removed.
7. Never enter the grain bin or store or attempt to work on the sweep auger unless the power supply to the auger and all other equipment associated with the bin and auger is OFF, TAGGED and LOCKED. (See Figure 1A.)



Figure 1A

1. Safety

8. Never leave the sweep auger running unattended.
9. Always TURN OFF and LOCK the power supply to the auger before leaving it unattended.
10. Never allow an untrained person less or one less than 18 years old to operate the sweep auger.
11. Never allow someone under the influence of alcohol or drugs to operate the equipment.
12. Never modify the sweep auger from it is original specification.
13. Never work alone.
14. Never start equipment until all persons are clear of the grain bin.
15. Keep hands and feet away from all moving parts.
16. Always think before acting. Never act impulsively around the equipment.
17. Never allow anyone inside a bin, truck or wagon which is being loaded or unloaded. Flowing grain can trap and suffocate in seconds.
18. Farm bin sweep augers are 'carry-in' sweep augers and shall not remain in the bin after emptying is complete.

Electrical Safety



Equipment shall include:

1. Fuse protected main power supply.
 - a. The electrical supply should include earth leakage protection, eg Residual Current Device (RCD) or Residual Current Circuit Breaker (RCCB), to provide automatic disconnection in the event of a fault.



2. Lockable main safety disconnect.
 - a. Disconnects all electrical power.



3. Lockable motor service disconnect.
 - a. Adjacent to each motor (or group of motors).
 - b. Disconnects all power to the motors.



4. Emergency stops.
 - a. Stops all equipment immediately when pressed.
 - b. Must remain engaged until manually disengaged.
 - c. Equipment shall not immediately re-start when the emergency stop is re-set.

5. Door safety interlocks. (See Figure 1B.)

- a. Immediately stops and prevents re-start of all equipment when the door is open.
- b. Equipment shall not immediately re-start when the door is closed.
- c. Safety switches shall be SIL3 in accordance with IEC62061:2005.
- d. Safety circuits should be Category 3 in accordance with EN 954-1:1997 or PLc in accordance with ISO 13849-1:2006.
- e. Electrical control for the sweep auger shall include a 'hold to run' system, which cannot be readily bypassed, ensuring the operator is in attendance at all times during sweep operation.
- f. Electrical connection to the sweep from the control centre shall be via a suitable plug and socket connector.
- g. The controls should be position to give the operator clear view of the sweep whilst it is operating.

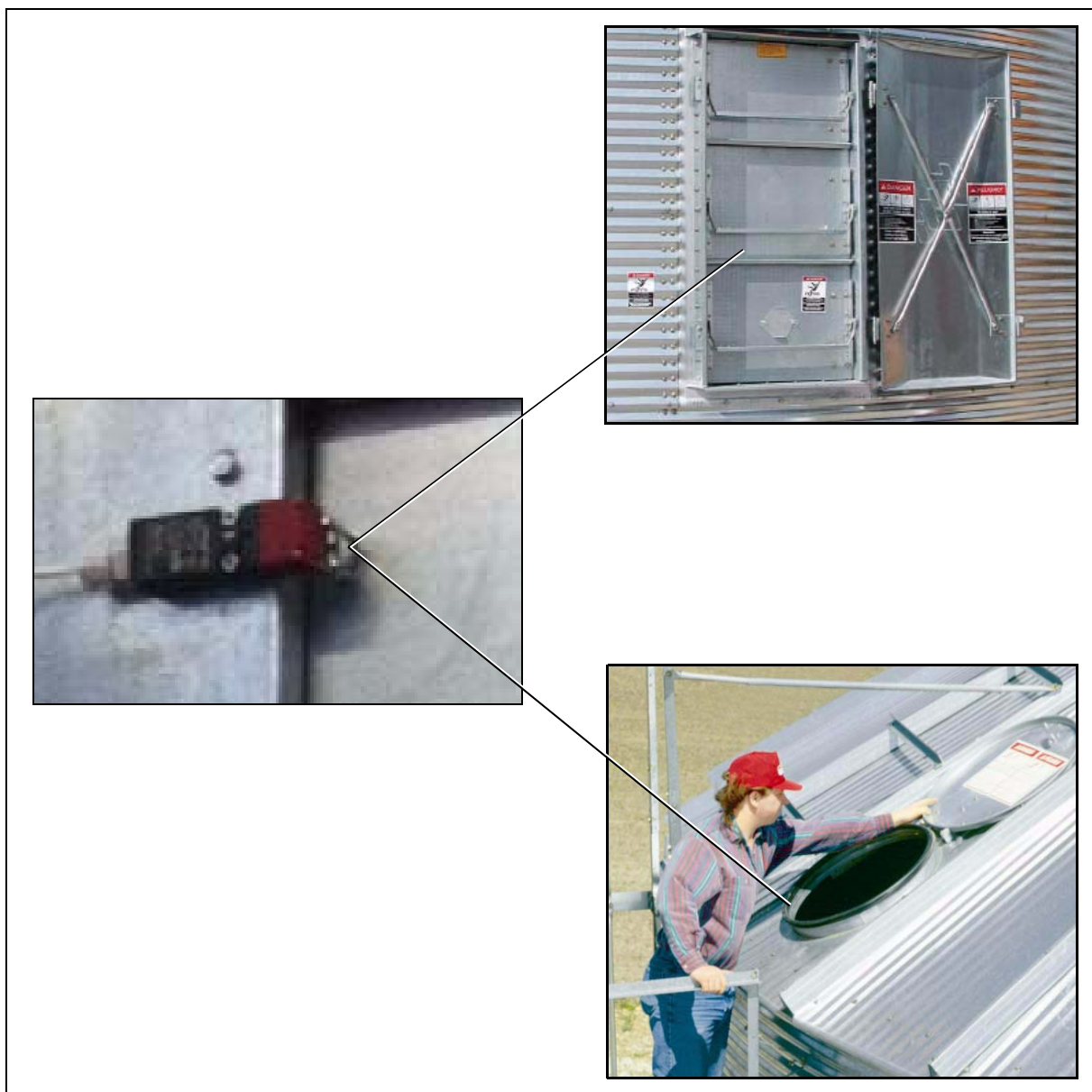
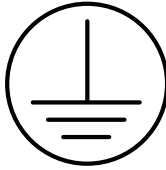


Figure 1B

1. Safety

6. The electrical supply must include a properly designed protective earth system (PE), with connection to all exposed conductive parts.



7. All motors shall be connected to protective earth at the terminal provided.

8. The control system shall include,

- a. Short circuit protection.



- b. 'Hold to run' start/stop controls.

- c. Equipment shall not immediately re-start following re-establishment of power.

- d. Motor circuits shall include over current protection set according to the full load current, stated on the motor rating plate.

- e. Motor thermal protection may also be required.

9. All electrical design, installation and testing must be carried out by a qualified electrical engineer, in accordance with EU Directives and Standards, local laws and codes.

Possible Hazards Inside Grain Bins

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



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

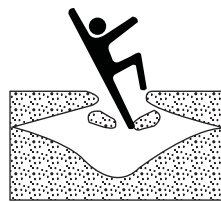
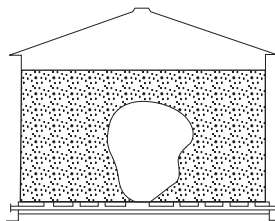
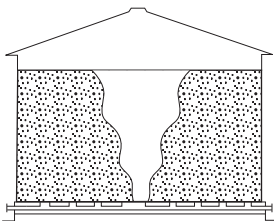
Hazards present at any time may include:



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



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



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



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



It is a recommended **additional** safety measure to fit grain bin doors and hatches with electrical interlock switches, to stop all equipment if the door or hatch is opened. However this does not override the need to lock out power before entering.



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



High temperature combustible material.



1. Safety

Safety Guarding Requirements

Guards provided with the equipment must be fitted at all times. (See Figure 1C.)

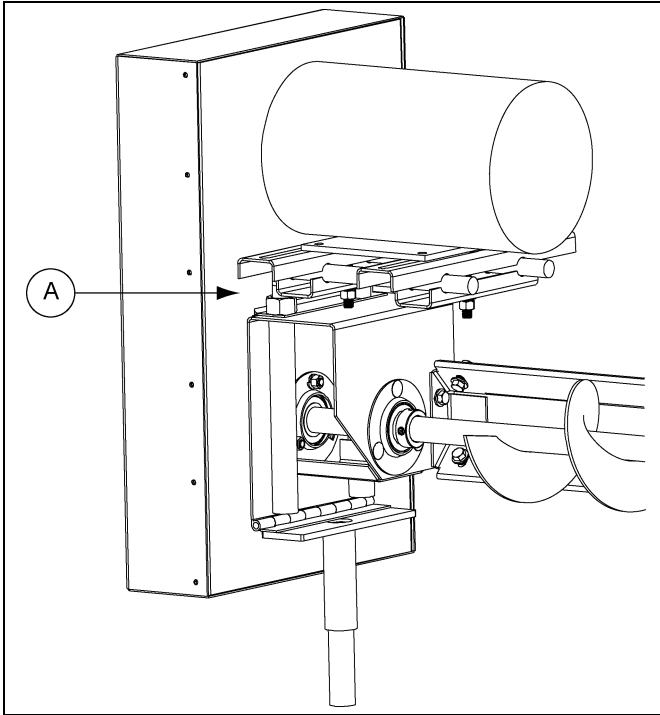


Figure 1C

Ref #	Description
A	Belt Drive Guard

Belt Guard

The sweep augers shall only be used within an enclosed grain bin.

User's shall be prevented from gaining access during operation by use of electrical safety interlocks. See electrical safety section on [Page 10](#).

Manual Handling

1. Installing sweep augers requires manual handling.
2. Follow safe procedures to avoid injury.
3. Wear protective equipment. (See [Figure 1D](#).)

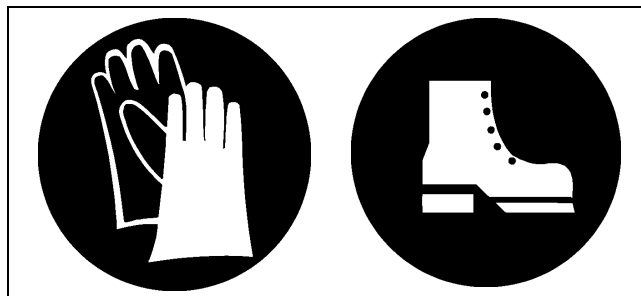


Figure 1D

4. Do not work alone.
5. Check auger weights before lifting. (See [Page 17](#).)
6. Lift in sub-assemblies. (See [Page 17](#).)

Sweep Auger Safety Decals

Safety and instructions decals shall be fitted.

- Standard language is English. For other languages, please order a Bin Sweep Language Pack, part number is LPAK-0024-**. The last two (2) letters denote the language. This contains a translated manual and decals.

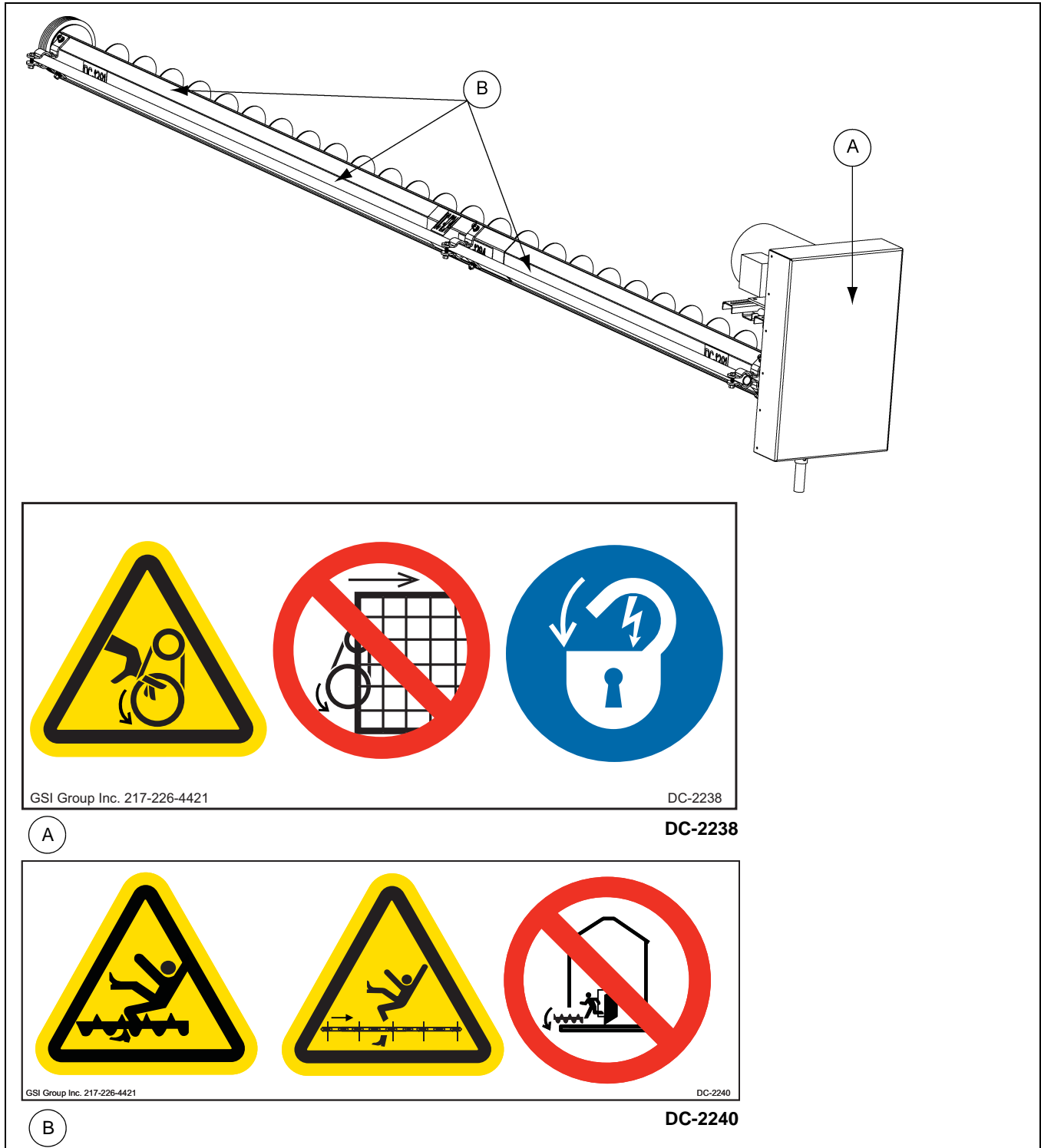


Figure 2A

2. Safety Decals

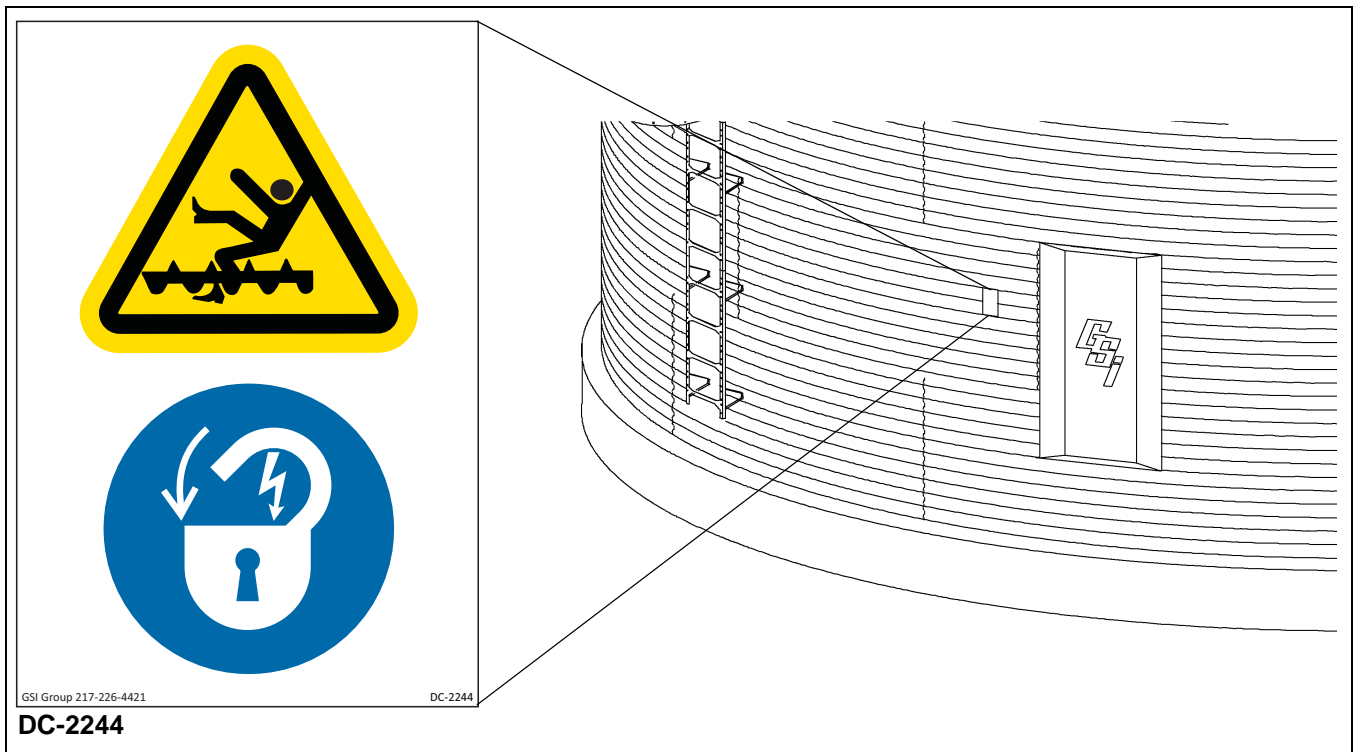


Figure 2B

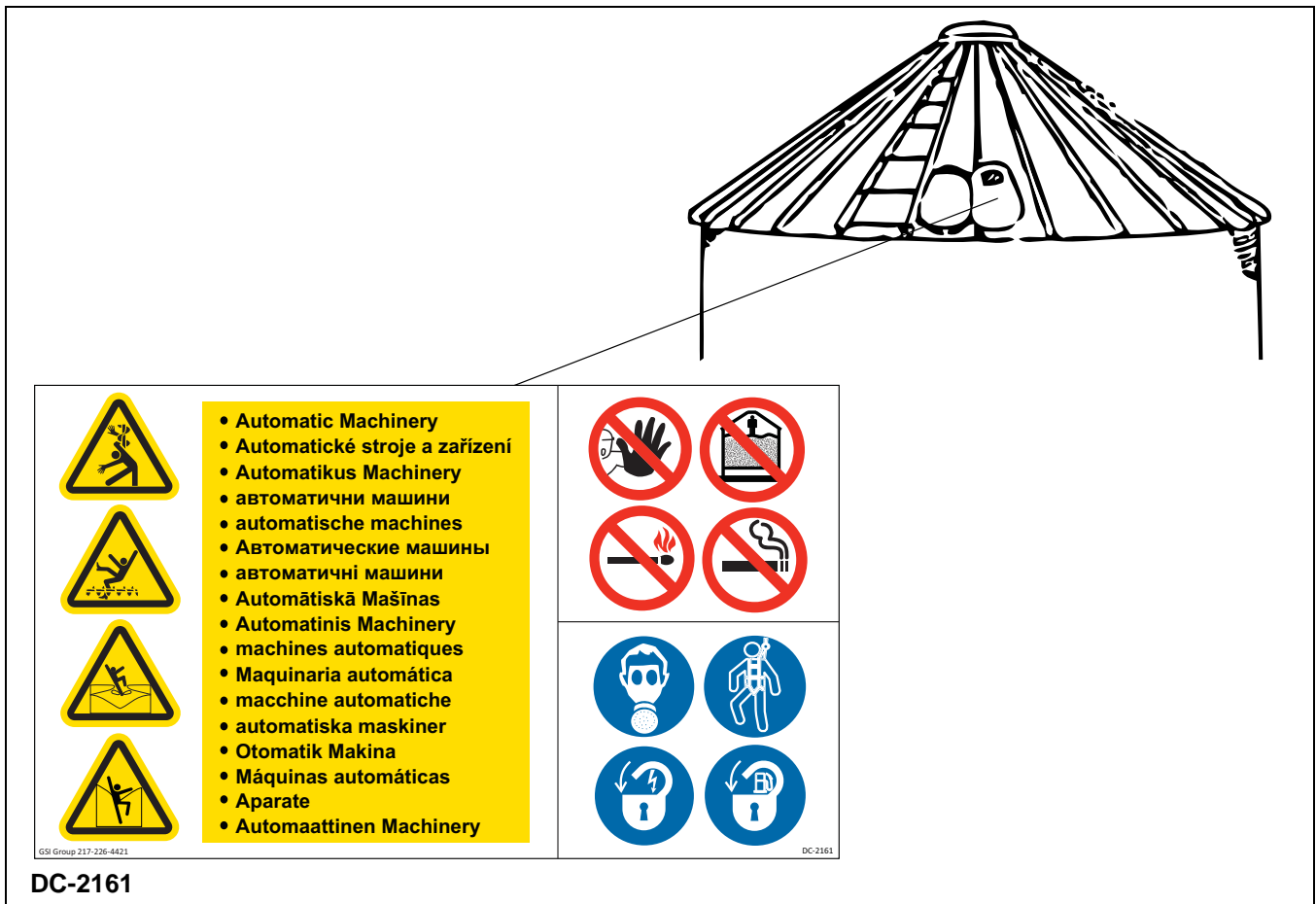


Figure 2C

Sweep Auger Specifications

Bin Diameter		8"						Total Weight (kg)
		Model #	Motor Size	Auger Pulley (mm)	Motor Pulley (mm) 369 RPM	Motor Pulley (mm) 438 RPM	Motor Pulley (mm) 525 RPM	
15'	4.57 m	GBS81500	1.1 kW	250	64	76	91	32
18'	5.49 m	GBS81800	1.1 kW	250	64	76	91	35
21'	6.4 m	GBS82100	1.1 kW	250	64	76	91	40
24'	7.32 m	GBS82400	1.5 kW	250	64	76	91	45
27'	8.23 m	GBS82700	1.5 kW	250	64	76	91	48
30'	9.15 m	GBS83000	1.5 kW	250	64	76	91	52
33'	10.06 m	GBS83300	1.5 kW	250	64	76	91	54
36'	10.98 m	GBS83600	1.5 kW	250	64	76	91	57
39'	11.89 m	GBS83900	1.5 kW	250	64	76	91	60
42'	12.8 m	GBS84200	2.25 kW	250	64	76	91	62

Bin Diameter		10"				Total Weight (kg)
		Model #	Motor Size	Auger Pulley (mm)	Motor Pulley (mm) 438 RPM	
24'	7.32 m	GBS10240	2.25 kW	300	91	95
27'	8.23 m	GBS10270	2.25 kW	300	91	99
30'	9.15 m	GBS10300	2.25 kW	300	91	105
33'	10.06 m	GBS10330	2.25 kW	300	91	107
36'	10.98 m	GBS10360	2.25 kW	300	91	109
39'	11.89 m	GBS10390	2.25 kW	300	91	114
42'	12.8 m	GBS10420	2.25 kW	300	91	119
48'	14.63 m	GBS10480	3.75 kW	300	91	127

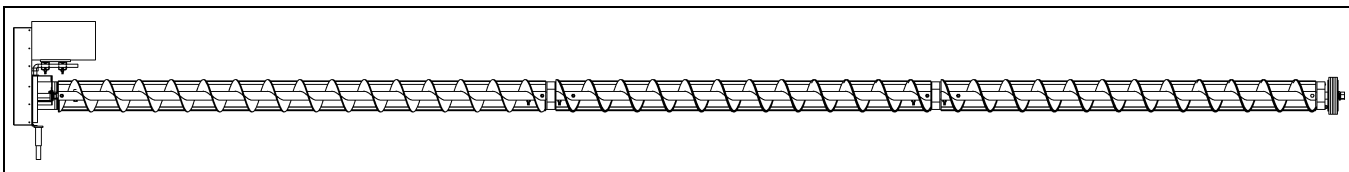


Figure 3A

Sweep Auger Sections

Model #	1 st Section	2 nd Section	3 rd Section
GBS10240	GK1960	GK1960	
	1613 mm	1613 mm	
GBS10270	GK1947	GK1960	
	2020 mm	1613 mm	
GBS10300	GK1947	GK1947	
	2020 mm	2020 mm	
GBS10330	GK1966	GK1947	
	2527 mm	2020 mm	
GBS10360	GK1966	GK1966	
	2527 mm	2527 mm	
GBS10390	GK1963	GK1966	
	2985 mm	2527 mm	
GBS10420	GK1963	GK1963	
	2985 mm	2985 mm	
GBS10480	GK6469	GK1947	GK1947
	2693 mm	2020 mm	2020 mm

4. Assembly

8" Augers Assembly

Step 1: Fit flange bearings. (See Figure 4A.)

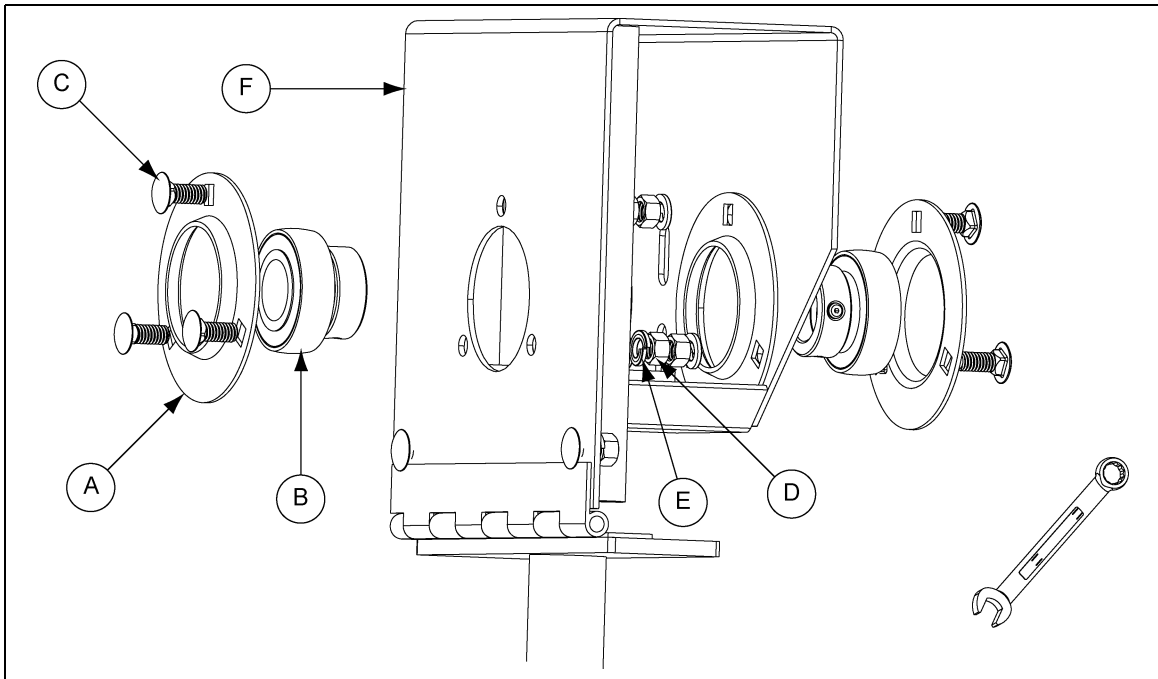


Figure 4A

Ref #	Part #	Description	Qty
A	GK1319	Flange	4
B	GK1318	Bearing	2
C	S-6076	5/16"-18 x 3/4" Bolt	6
D	S-396	5/16"-18 Nut	6
E	S-1147	5/16" Washer	6
F		Motor Mount	1

Step 2: Loosen eccentric lock collars. (See Figure 4B.)

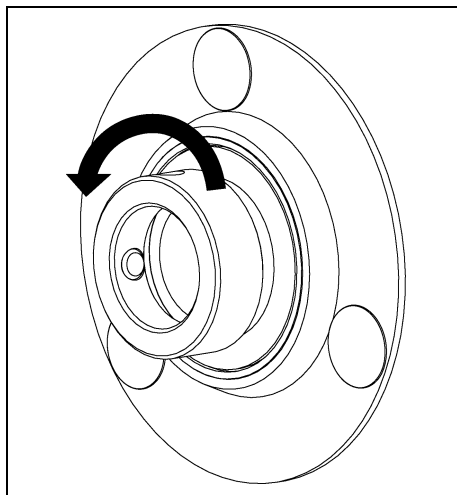


Figure 4B

Step 3: Insert auger. (See Figure 4C.)

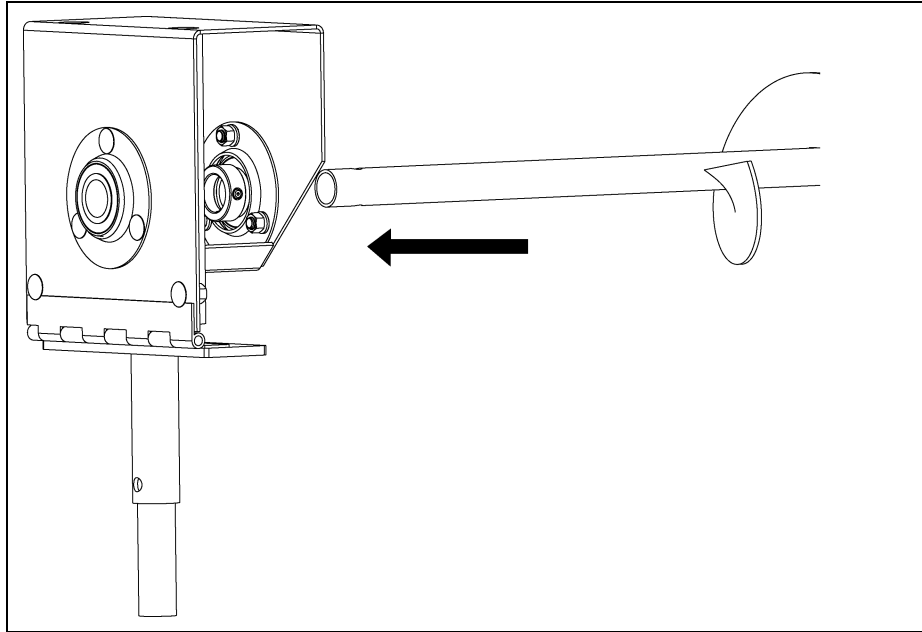


Figure 4C

Step 4: Fit guard back plate. (See Figure 4D.)

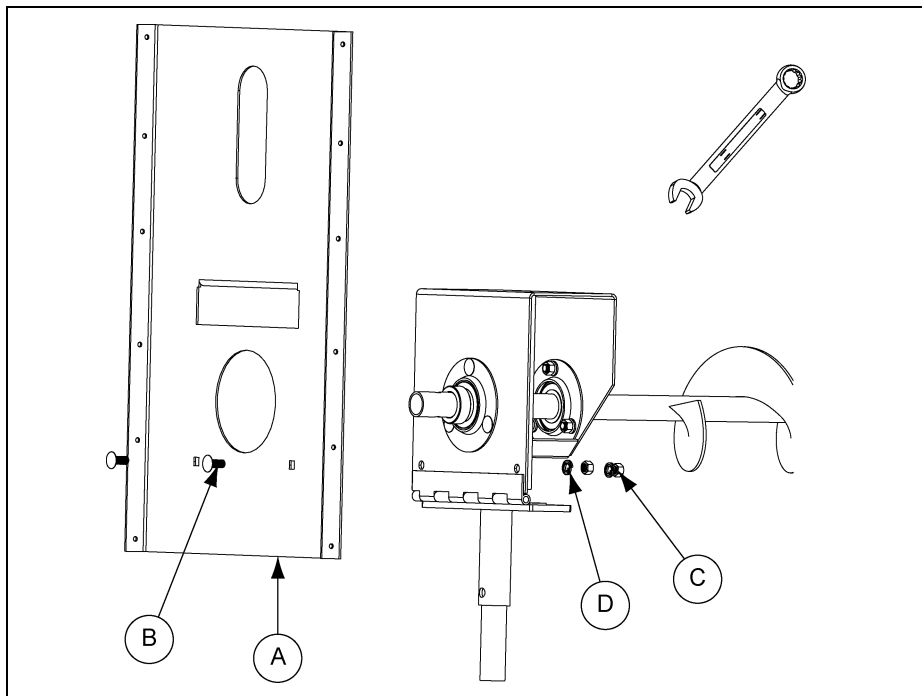


Figure 4D

Ref #	Part #	Description	Qty
A	GK80202	Guard Backplate	1
B	S-6076	5/16"-18 x 3/4" Bolt	2
C	S-396	5/16"-18 Nut	2
D	S-1147	5/16" Washer	2

4. Assembly

Step 5: Fit auger pulley (8" augers). (See Figure 4E.)

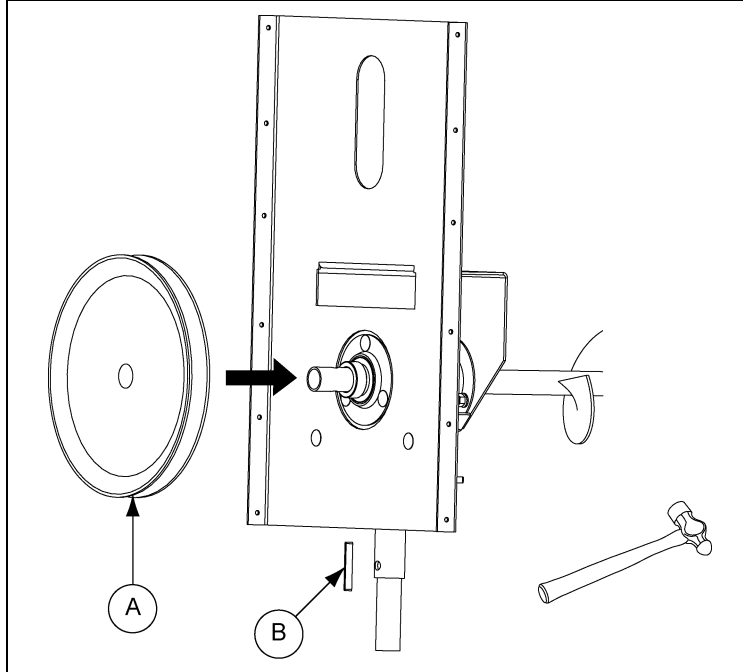


Figure 4E

Ref #	Part #	Description	Qty
A	GK1066 (GBS8*)	Driven Pulley	1
B	S-4377	5/16" x 2" Roll Pin	1

Step 6: Adjust drive body position. (See Figure 4F.)

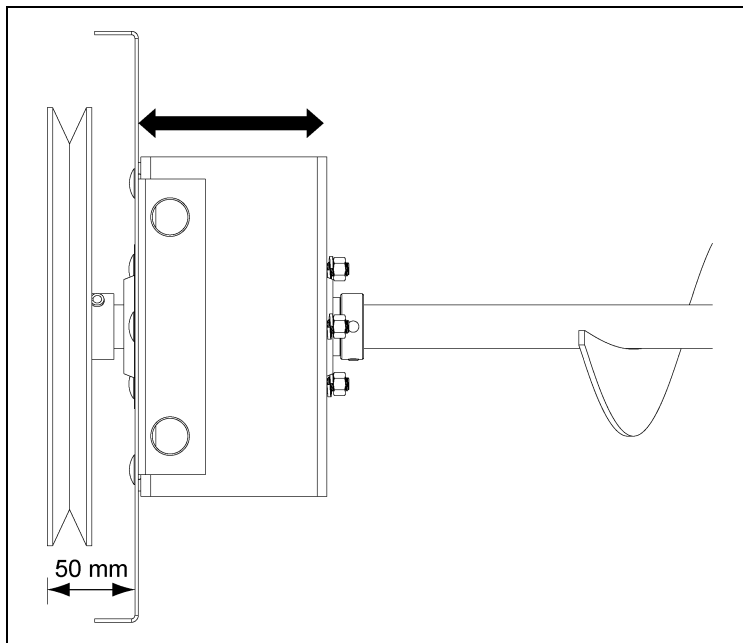


Figure 4F

Step 7: Tighten lock collars. (See Figure 4G.)

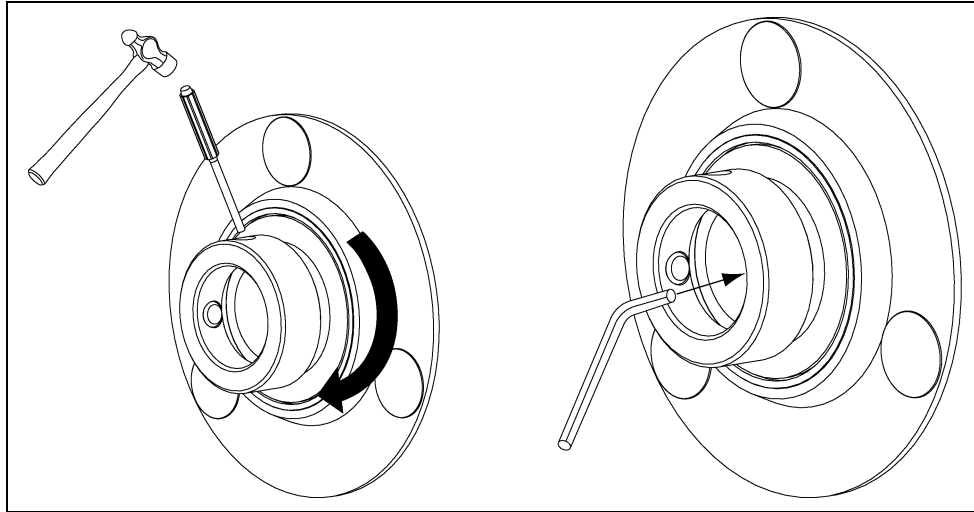


Figure 4G

Step 8: Fit shield mount plate. (See Figure 4H.)

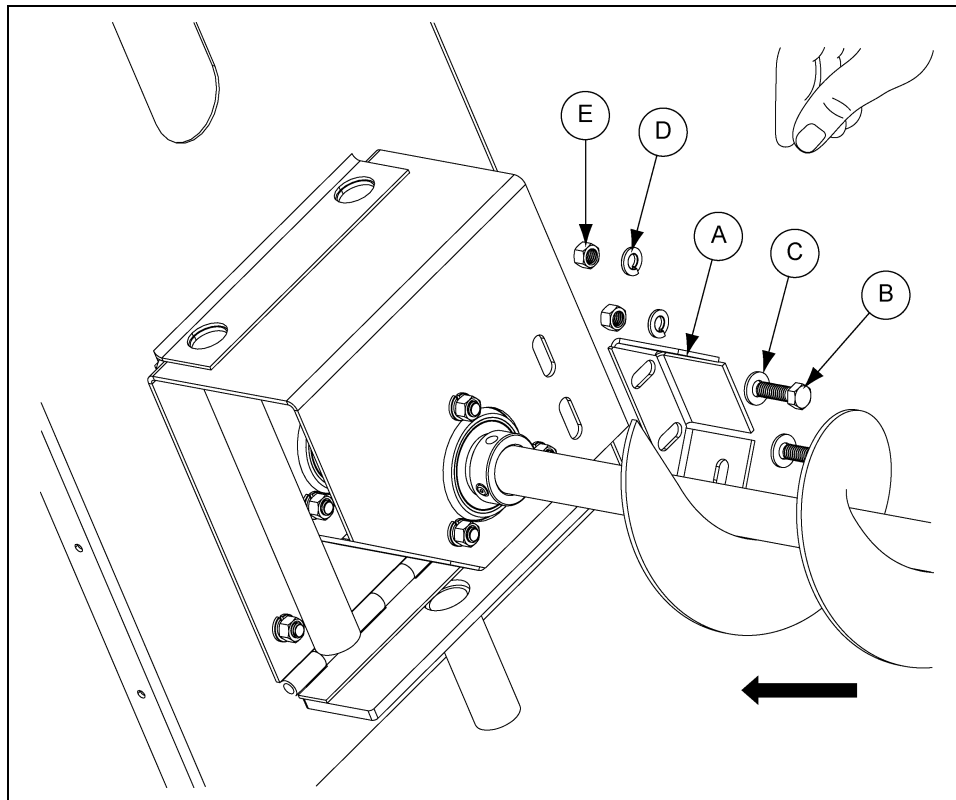


Figure 4H

Ref #	Part #	Description	Qty
A	GK1075	Shield Bracket	1
B	S-1196	5/16"-18 x 1" Bolt	2
C	S-1937	5/16" Washer	2
D	S-1147	5/16" Lock Washer	2
E	S-396	5/16" Nut	2

4. Assembly

Step 9: Fit bronze bushing. (See Figure 4I.)

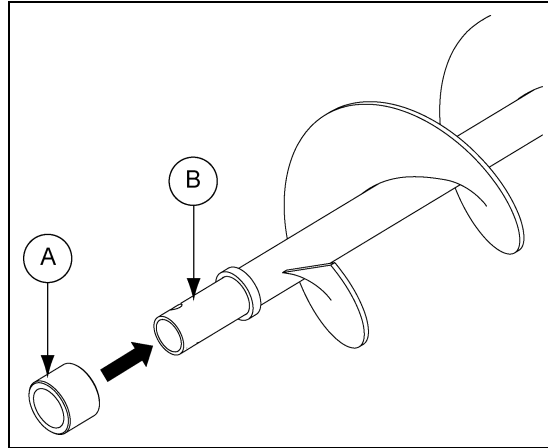


Figure 4I

Ref #	Part #	Description	Qty
A	GK1070	Bronze Bushing	1
B		Auger	1

Step 10: Fit bearing retainer. (See Figure 4J.)

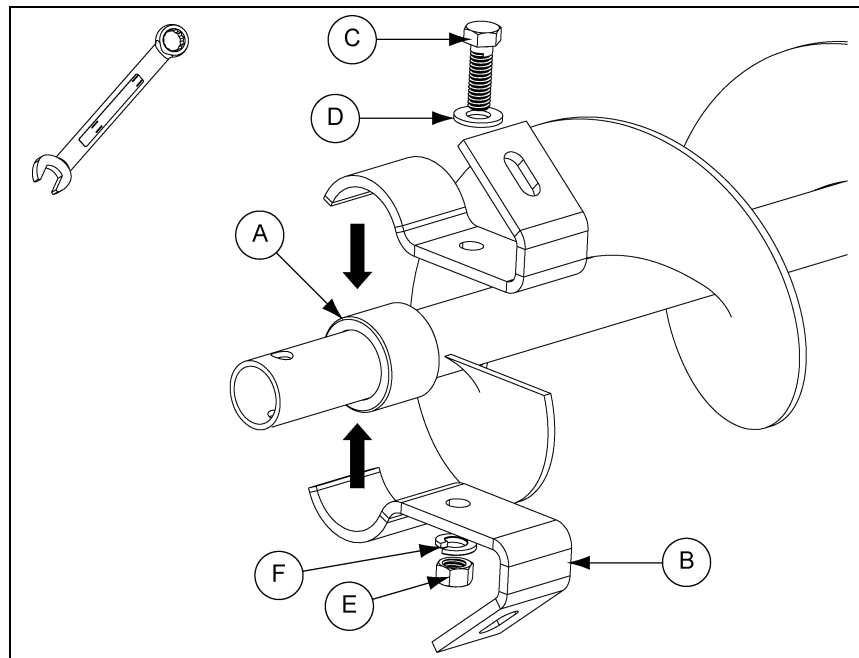


Figure 4J

Ref #	Part #	Description	Qty
A	GK1070	Bronze Bushing	1
B	GK1074	Retaining Bracket	1
C	S-1196	5/16"-18 x 1" Bolt	1
D	S-1937	5/16" Washer	1
E	S-396	5/16" Lock Nut	1
F	S-1147	5/16" Lock Washer	1

Step 11: Fit back shield. (See Figure 4K.)

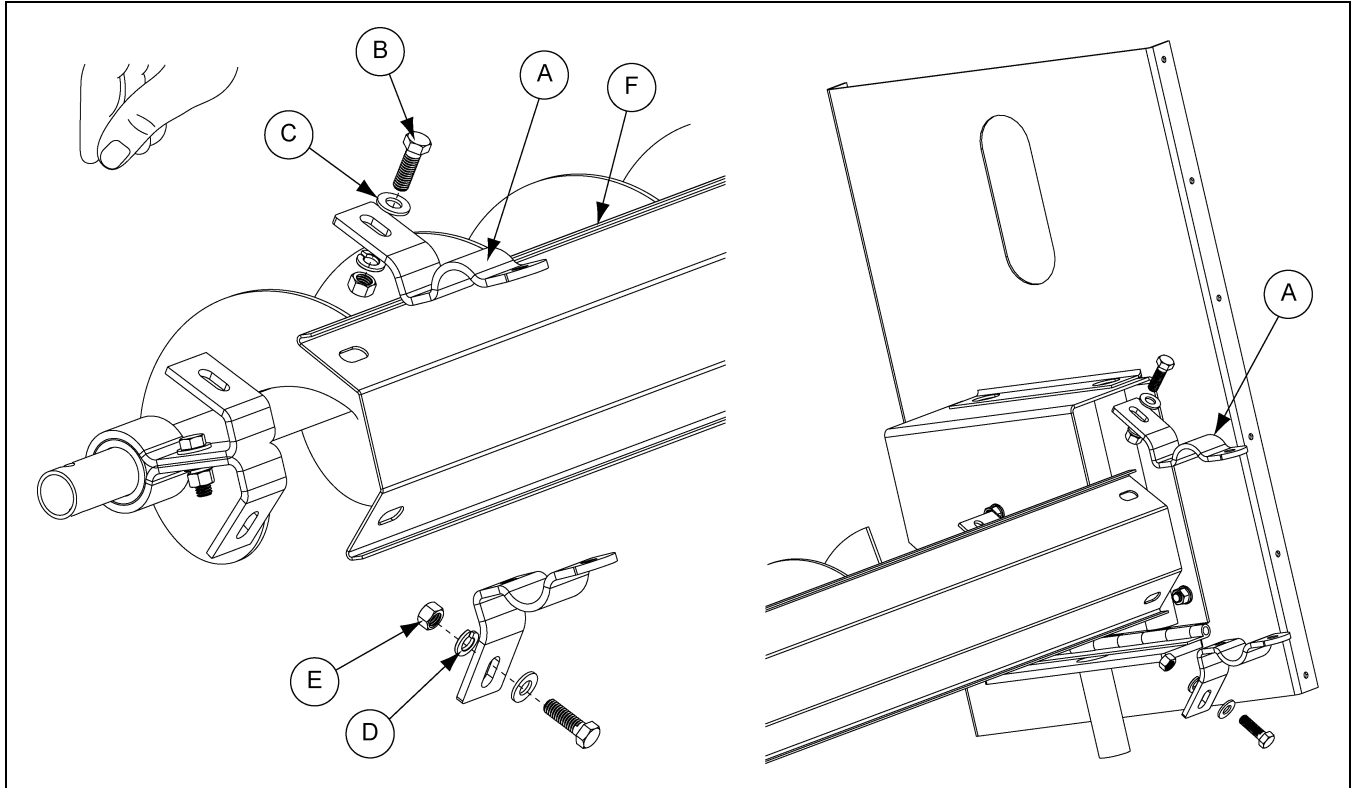


Figure 4K

Ref #	Part #	Description	Qty
A	GK1078	Torque Tube Bracket	4
B	S-1196	5/16"-18 x 1" Bolt	4
C	S-1937	5/16" Washer	4
D	S-1147	5/16" Lock Washer	4
E	S-396	5/16" Nut	4
F		Back Shield	1

4. Assembly

Step 12: Centre support on 8" augers > 29' (8.8 m). (See Figure 4L.)

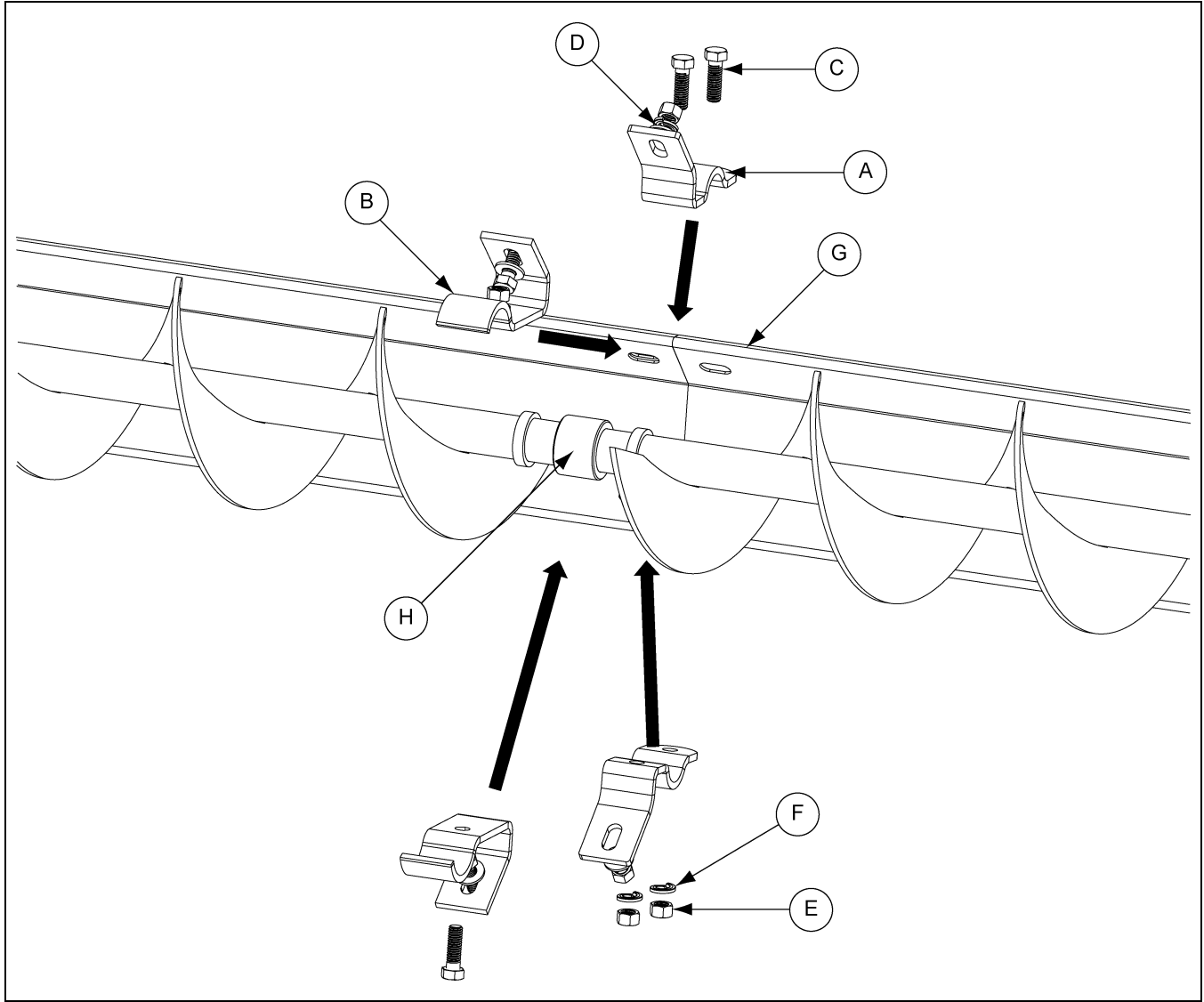


Figure 4L

Ref #	Part #	Description	Qty
A	GK1078	Torque Tube Bracket	2
B	GK1074	Retaining Bracket	2
C	S-1196	5/16"-18 x 1" Bolt	6
D	S-1937	5/16" Washer	10
E	S-1147	5/16" Lock Washer	6
F	S-396	5/16" Nut	6
G		Back Shield	1
H		Intermediate Bronze Bushing	1

Step 13: Fit torque tube. (See Figure 4M.)

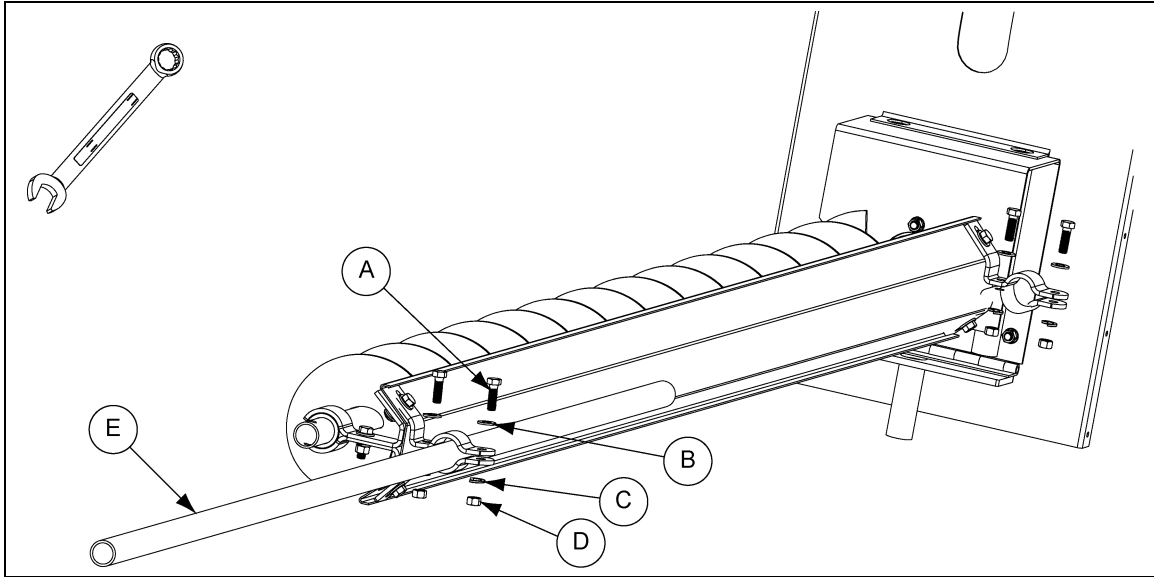


Figure 4M

Ref #	Part #	Description	Qty
A	S-1196	5/16"-18 x 1" Bolt	4
B	S-1937	5/16" Washer	4
C	S-1147	5/16" Lock Washer	4
D	S-396	5/16" Nut	4
E		Torque Tube	1

Step 14: Fit wheel shaft. (See Figure 4N.)

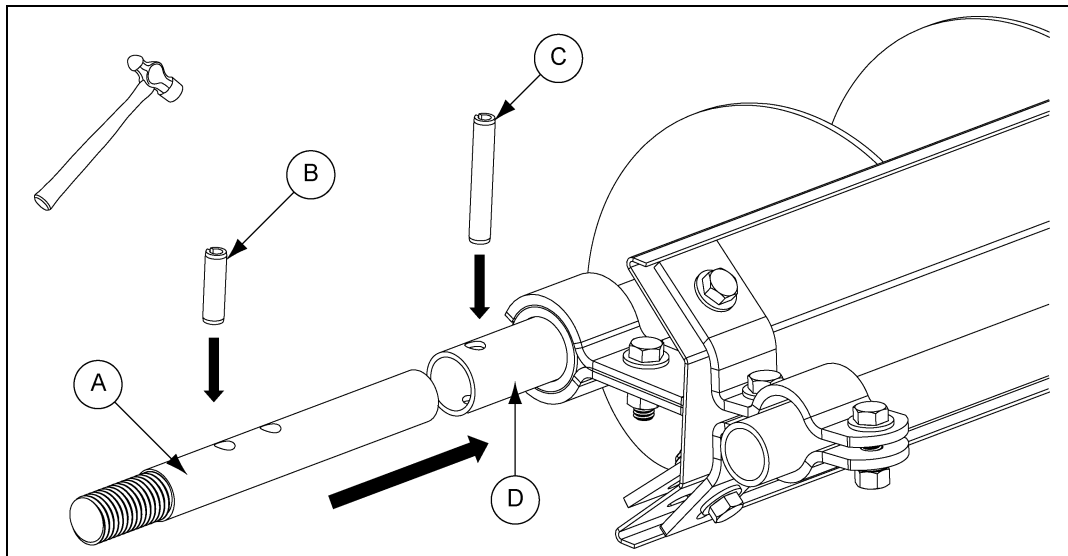


Figure 4N

Ref #	Part #	Description	Qty
A	GK1077	Wheel Shaft	1
B	S-7058	5/16" x 1-1/8" Roll Pin	1
C	S-4377	5/16" x 2" Roll Pin	1
D		Auger Shaft	1

4. Assembly

Step 15: Assemble and fit wheel. (See Figure 40.)

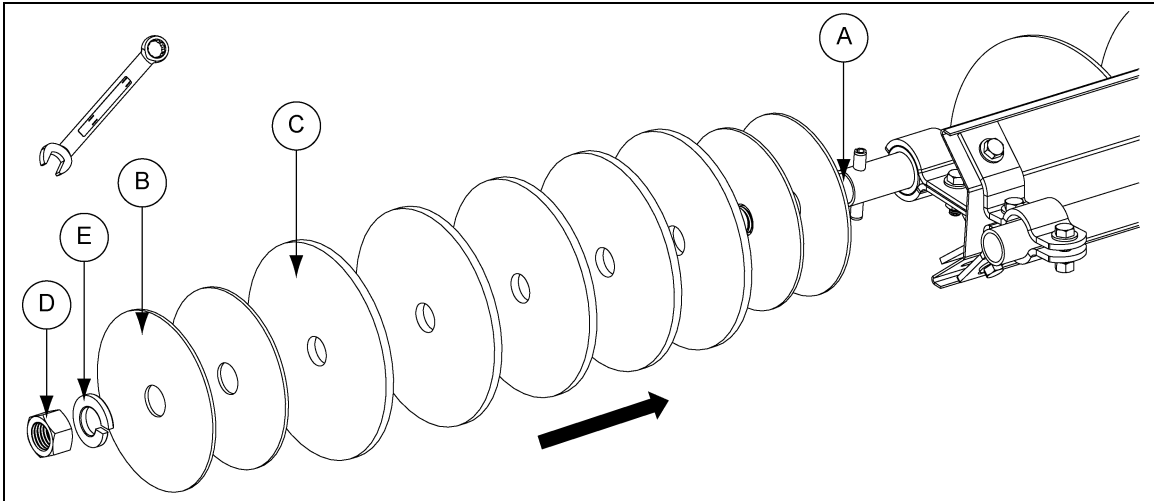


Figure 40

Ref #	Part #	Description	Qty
A	GK1077	Wheel Shaft	1
B	GK1076	Steel Disc	4
C	GK1067	Rubber Disc	5
D	S-234	3/4" Nut	1
E	S-233	3/4" Lock Washer	1

Step 16: Assemble motor mount. (See Figure 4P.)

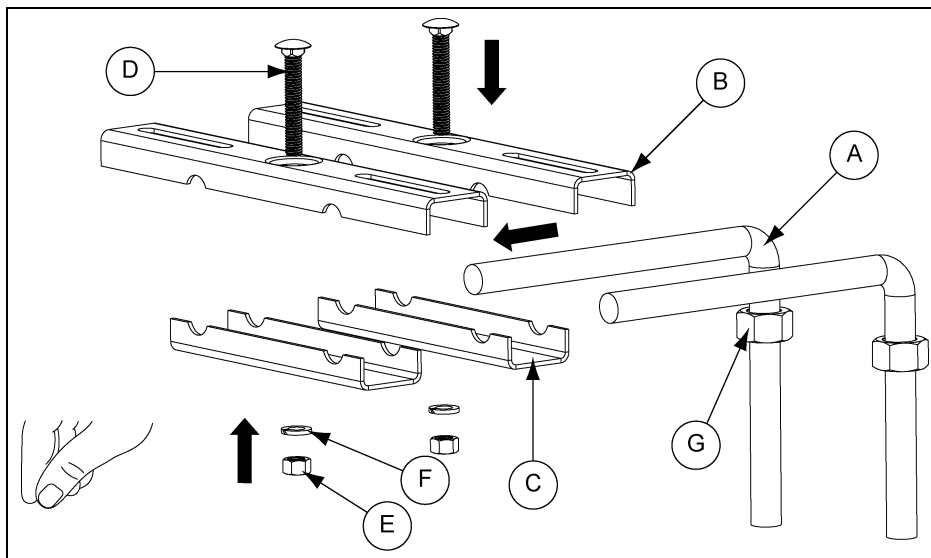


Figure 4P

Ref #	Part #	Description	Qty
A	GK1239	Motor Mount Rods	2
B	GK1063	Upper Mount Strap	2
C	GK1064	Lower Mount Strap	2
D	S-6995	3/8" x 2" Carriage Bolt	2
E	S-456	3/8" Hex Nut	2
F	S-1054	3/8" Lock Washer	2
G	S-234	3/8" Hex Nut	2

Step 17: Attach drive mount. (See Figure 4Q.)

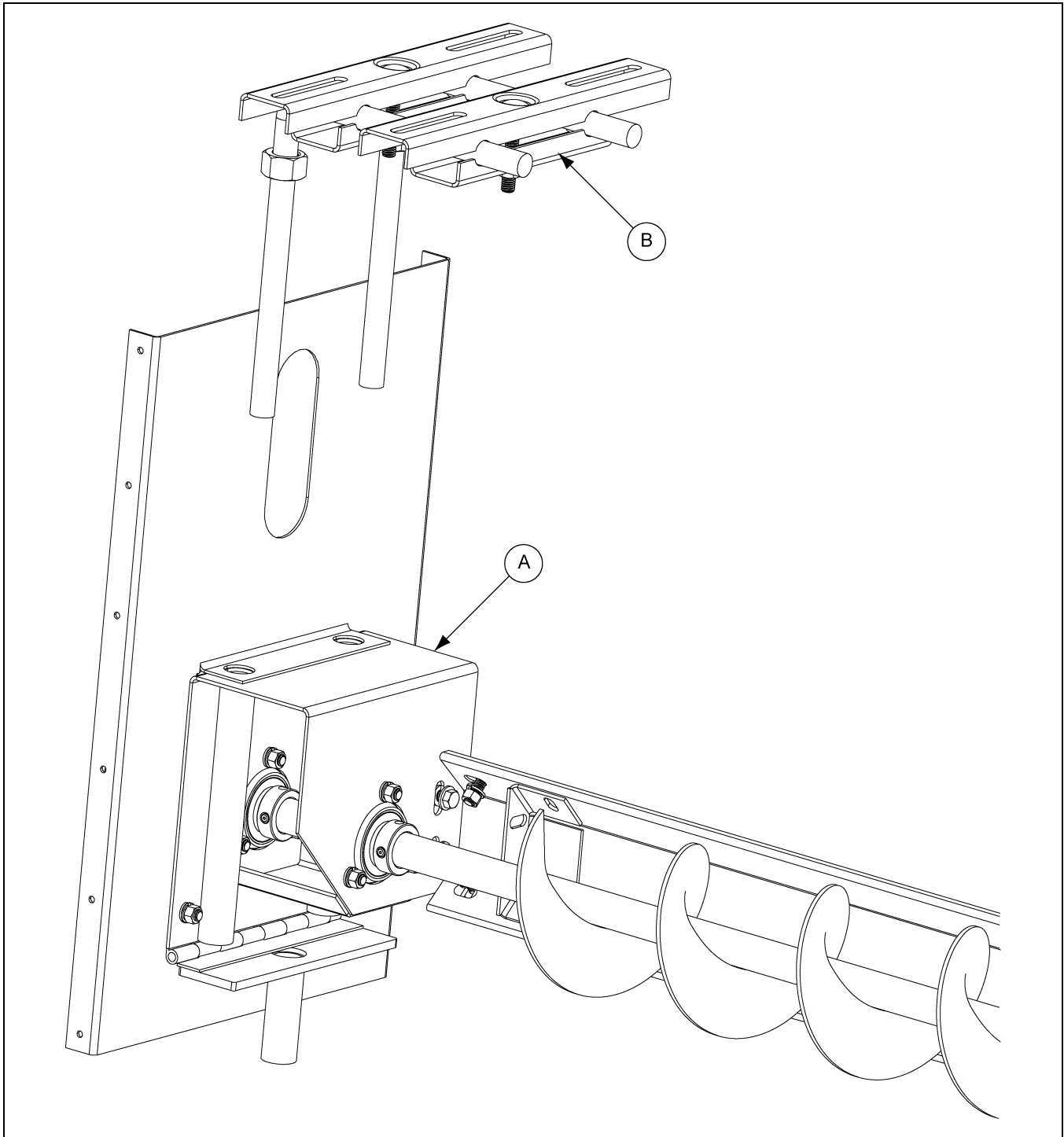


Figure 4Q

Ref #	Description	Qty
A	Drive Body	1
B	Drive Mount Assembly	1

4. Assembly

Step 18: Fit motor. (See Figure 4R.)

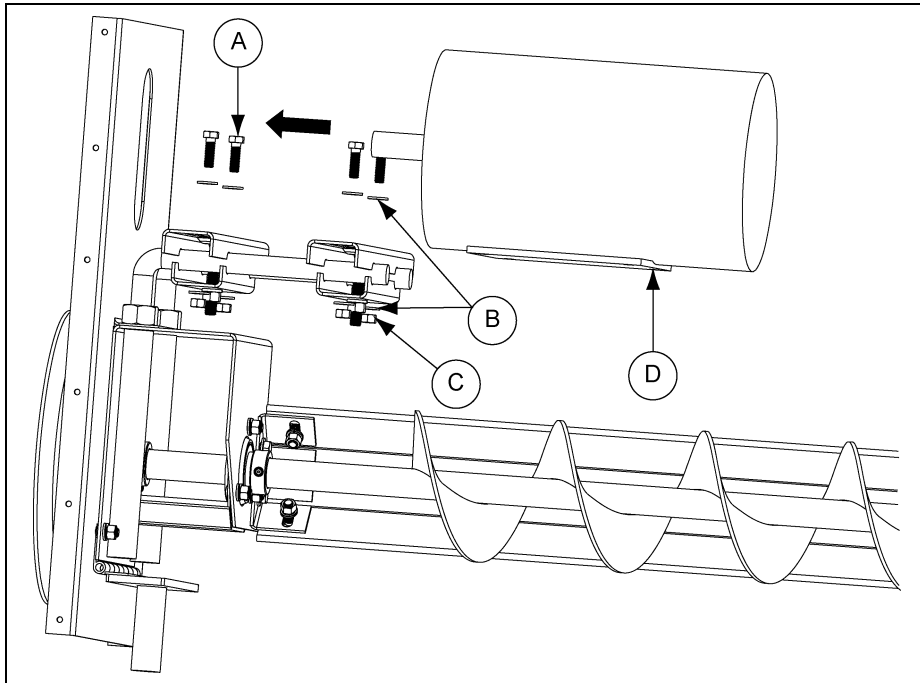


Figure 4R

Ref #	Part #	Description	Qty
A	S-1196	5/16"-18 x 1" Bolt	4
B	S-1937	5/16" Washer	8
C	S-396	5/16" Nut	4
D		Motor	1

Step 19: Fit motor pulley. (See Figure 4S.)

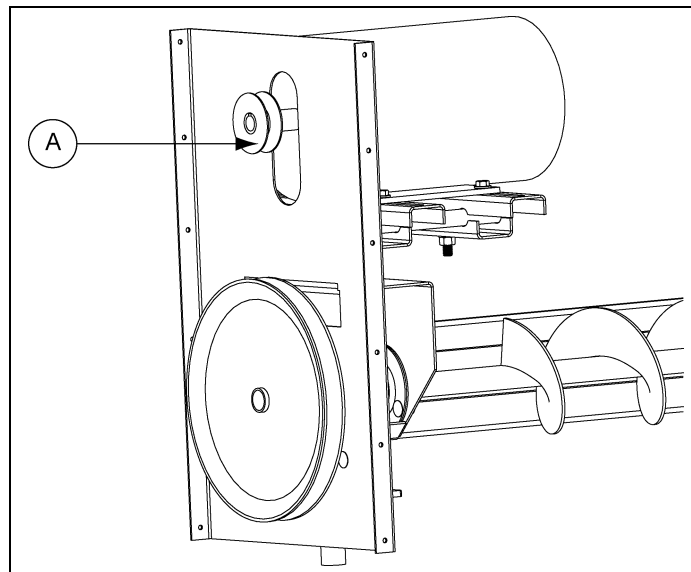


Figure 4S

Ref #	Description	Qty
A	Motor Pulley	1

Step 20: Position motor and tighten mount hardware. (See Figure 4T.)

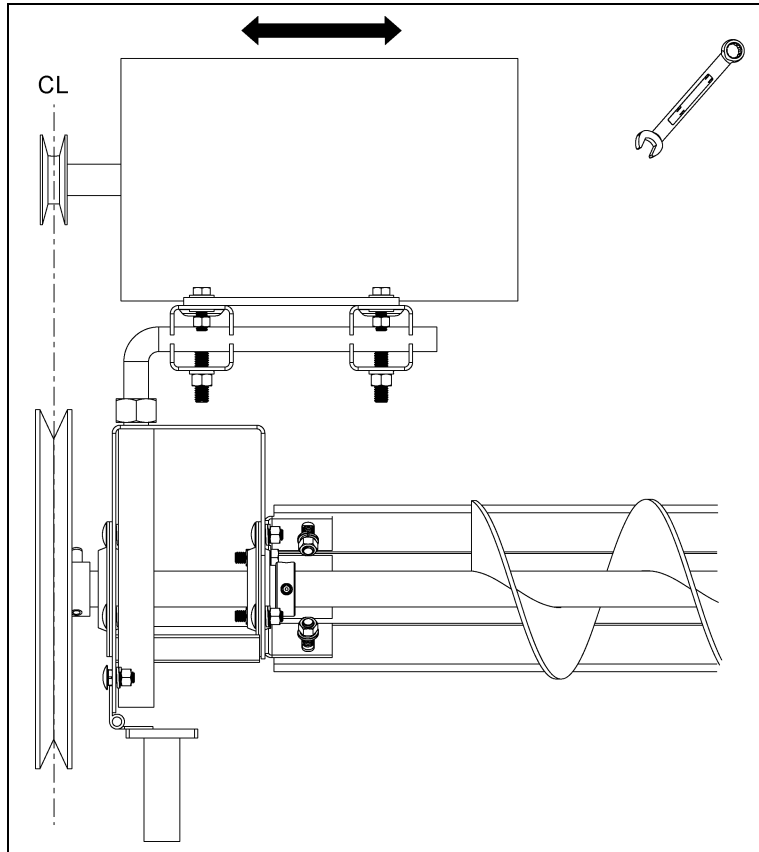


Figure 4T

Step 21: Fit drive belt. (See Figure 4U.)

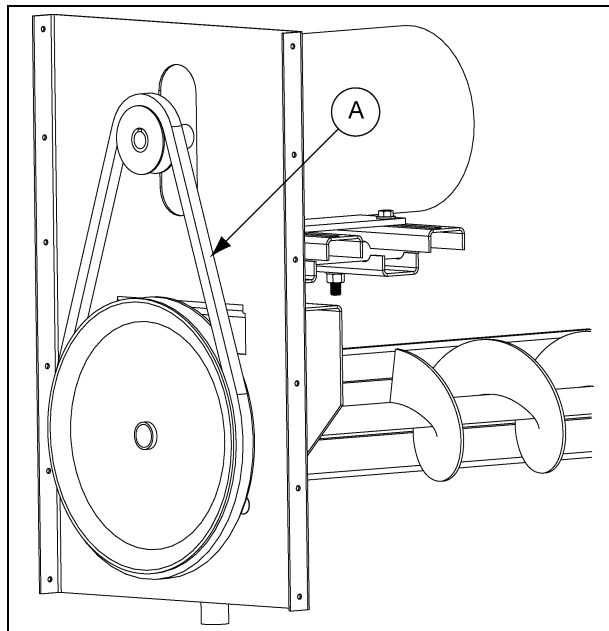


Figure 4U

Ref #	Description	Qty
A	Drive Belt	1/2

4. Assembly

Step 22: Adjust belt tension. (See Figure 4V and Figure 4W.)

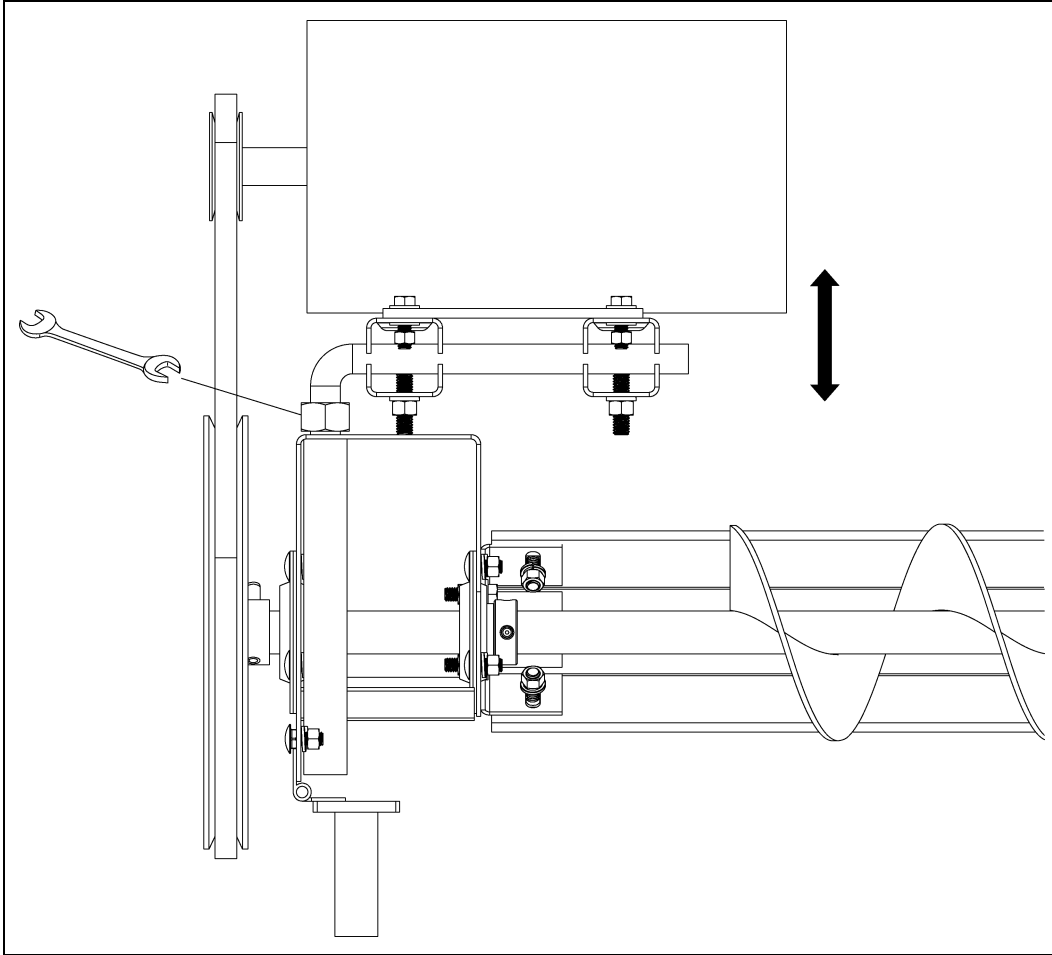


Figure 4V

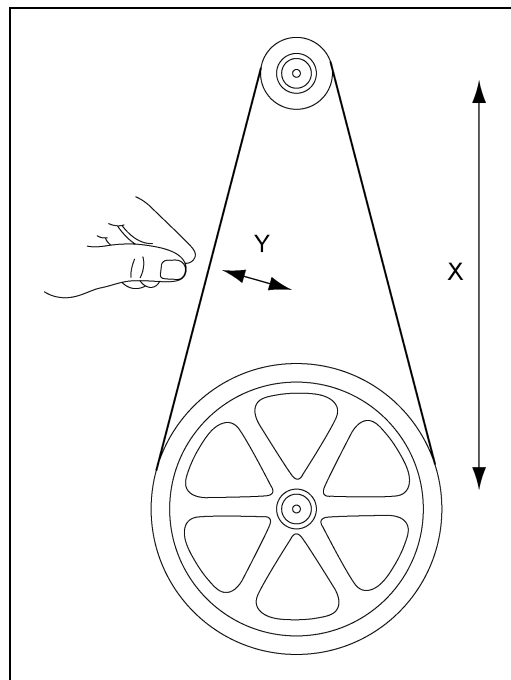


Figure 4W $Y = X/60$

Step 23: Attach belt drive cover. (See Figure 4X.)

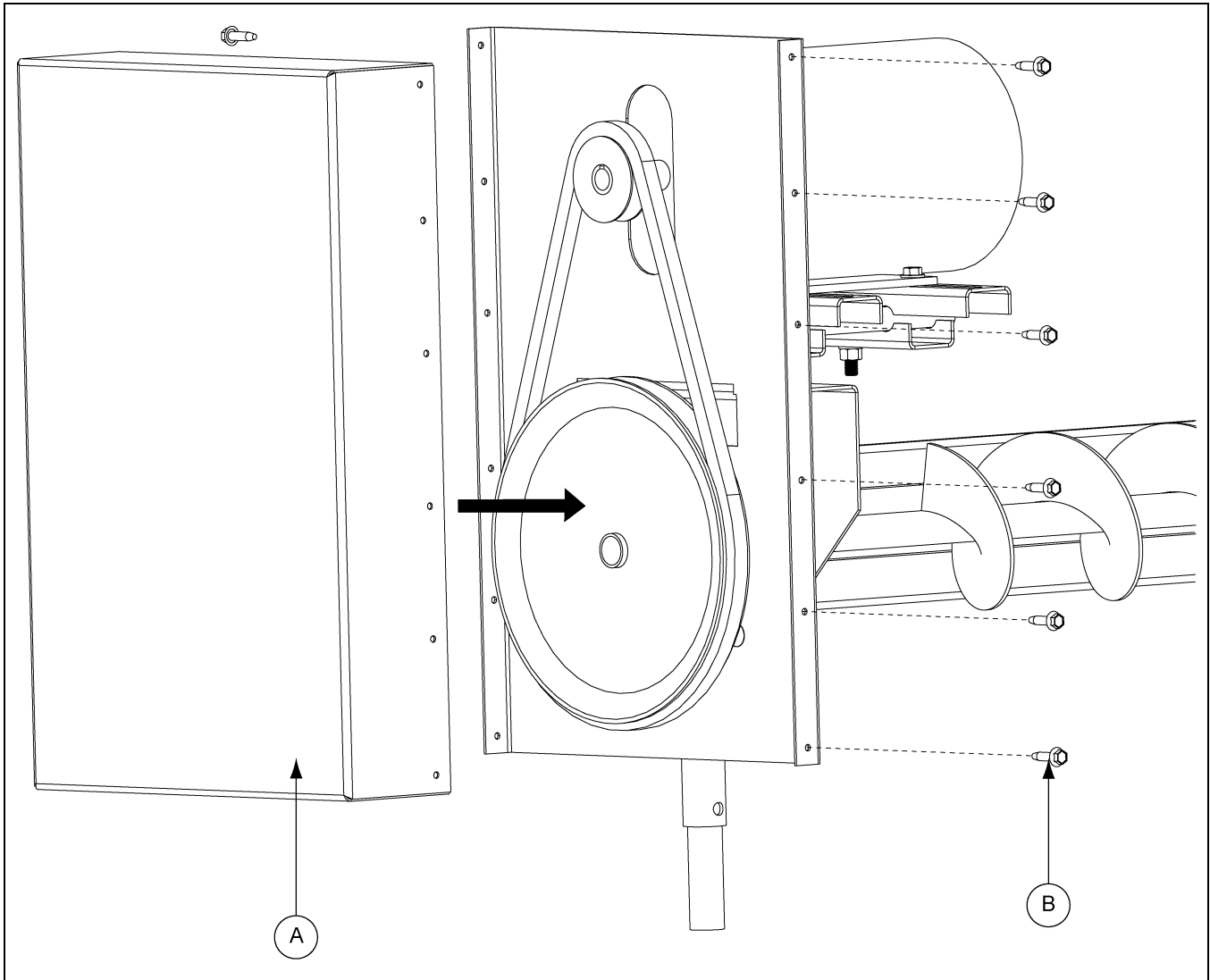


Figure 4X

Ref #	Part #	Description	Qty
A	GK80202	Drive Cover	1
B	S-8832	1/4" x 1" Screw	12

4. Assembly

10" Auger Assembly

Step 1: Fit flange bearings. (See Figure 4Y.)

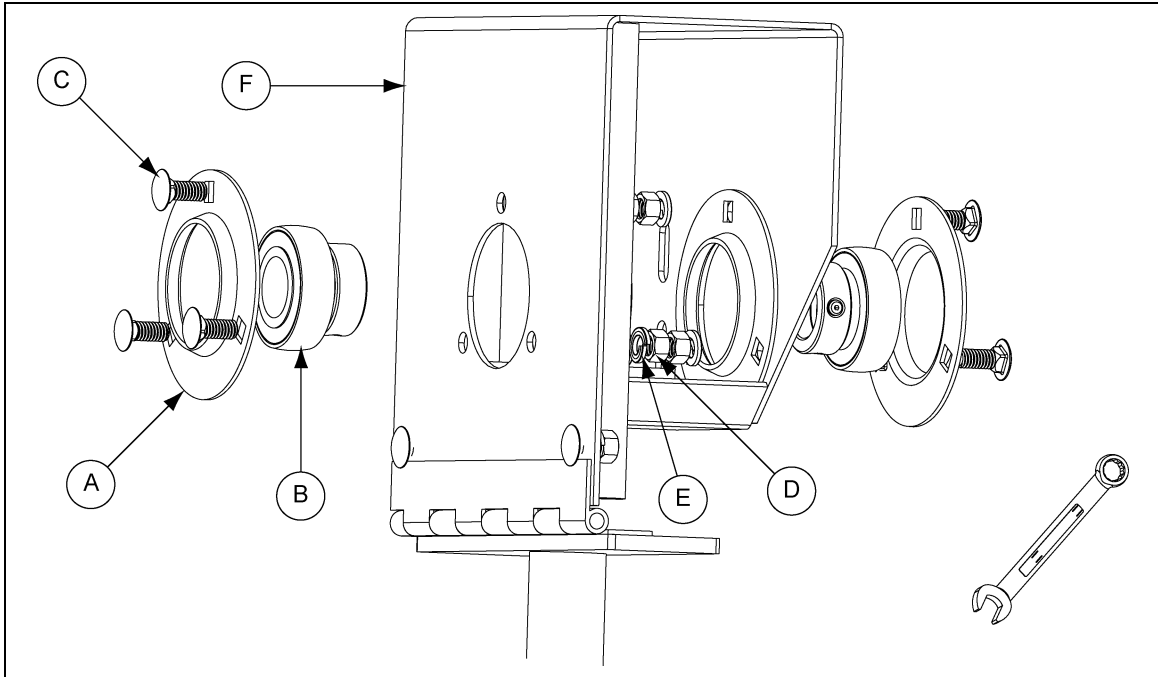


Figure 4Y

Ref #	Part #	Description	Qty
A	GK1319	Flange	4
B	GK1318	Bearing	2
C	S-6076	5/16"-18 x 3/4" Bolt	6
D	S-396	5/16"-18 Nut	6
E	S-1147	5/16" Washer	6
F		Motor Mount	1

Step 2: Loosen eccentric lock collars. (See Figure 4Z.)

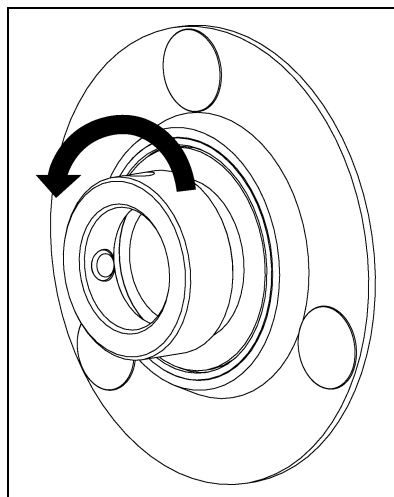


Figure 4Z

Step 3: Assemble first auger section. (See Figure 4AA.)

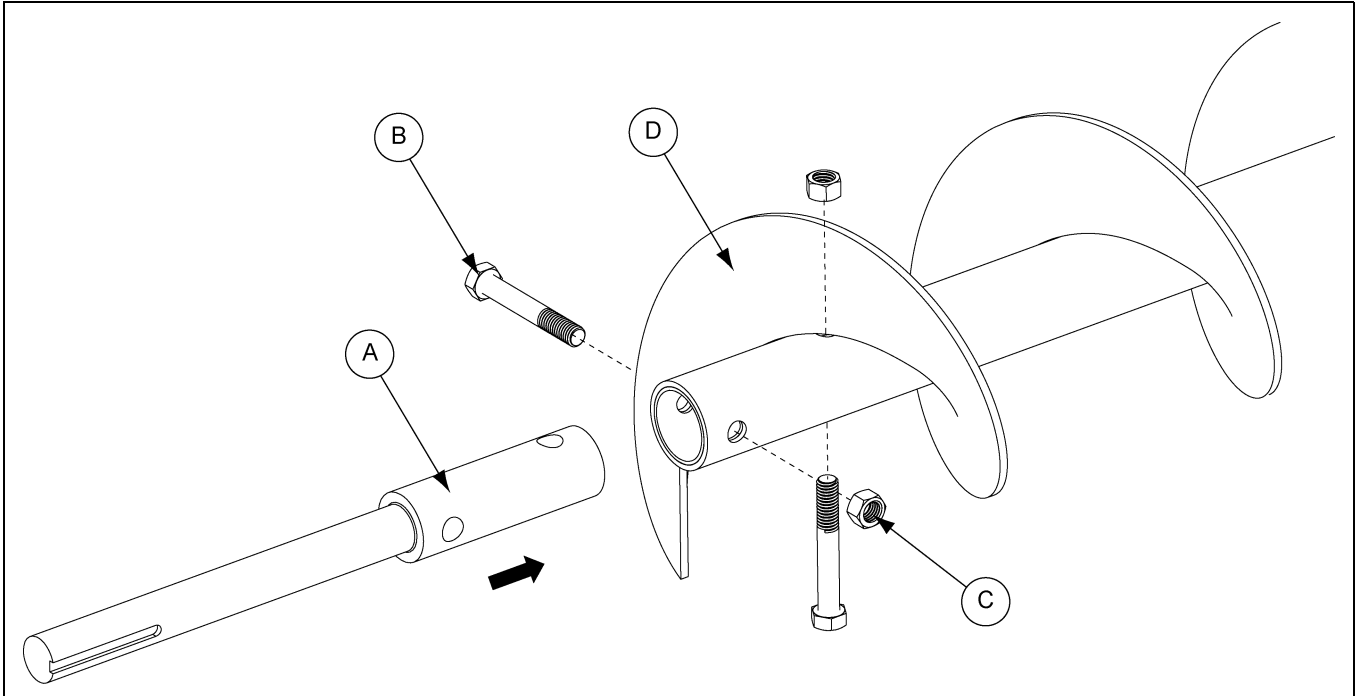


Figure 4AA

Ref #	Part #	Description	Qty
A	GK1949	Auger Drive Shaft	1
B	S-8316	7/16" x 3" Bolt	2
C	S-8317	7/16" Stover Nut	2
D		First 10" Auger Section	1

Step 4: Insert auger. (See Figure 4AB.)

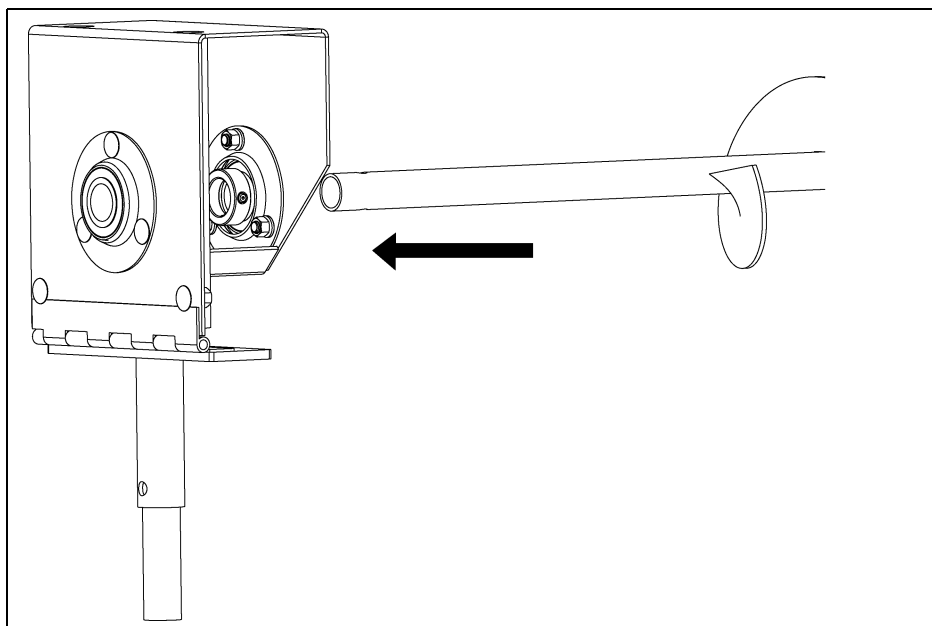


Figure 4AB

4. Assembly

Step 5: Fit guard back plate. (See Figure 4AC.)

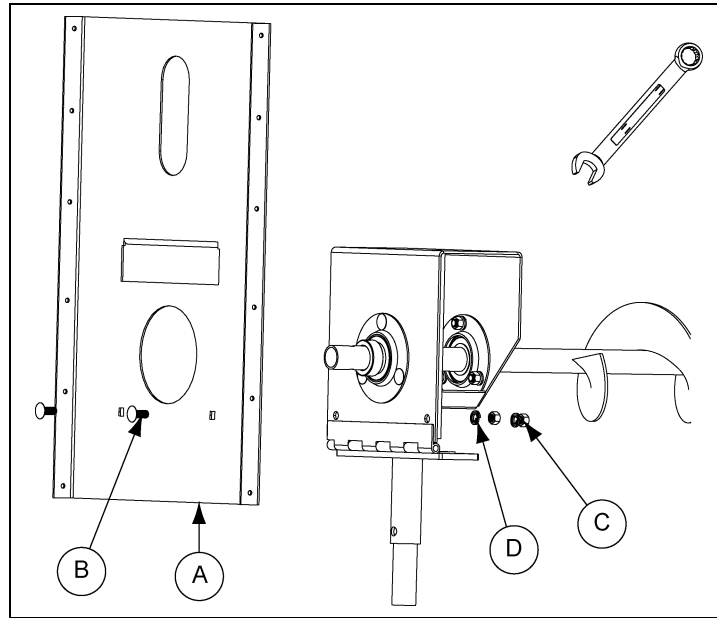


Figure 4AC

Ref #	Part #	Description	Qty
A	GK80202	Guard Back Plate	1
B	S-6076	5/16\"-18 x 3/4\" Bolt	2
C	S-396	5/16\"-18 Nut	2
D	S-1147	5/16\" Washer	2

Step 6: Fit guard back plate. (See Figure 4AD.)

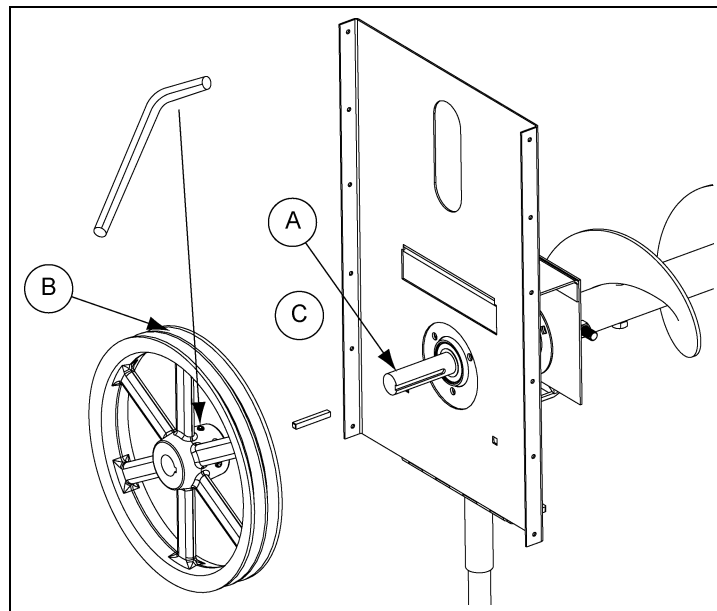


Figure 4AD

Ref #	Part #	Description	Qty
A	GK1949	Auger Drive Shaft	1
B	GK1321	Auger Pulley	1
C	S-4513	Key	1

Step 7: Adjust pulley position. (See Figure 4AE.)

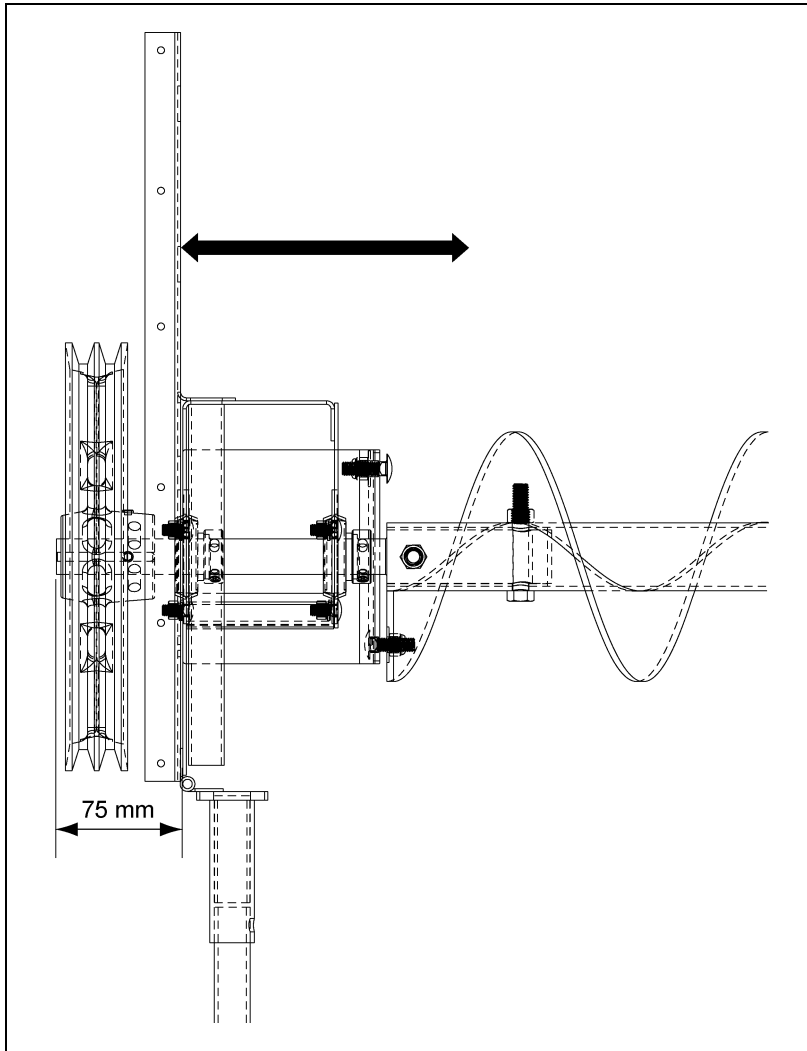


Figure 4AE

Step 8: Tighten lock collars. (See Figure 4AF.)

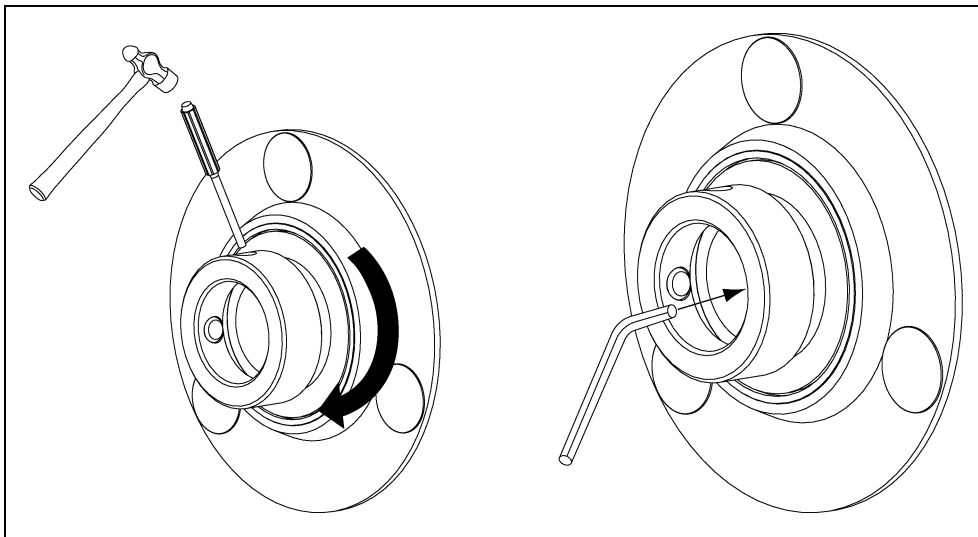


Figure 4AF

4. Assembly

Step 9: Insert auger stub shaft. (See Figure 4AG.)

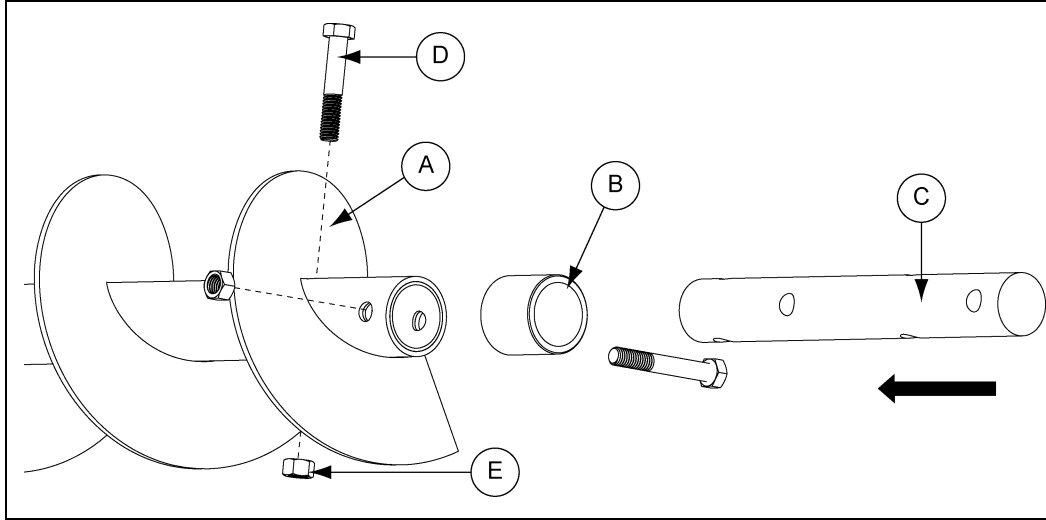


Figure 4AG

Ref #	Part #	Description	Qty
A	See Table on Page 17	First Auger	1
B	GK80176	Bronze Bushing	1
C	GK1951	Connecting Stub	1
D	S-8316	7/16" x 3" Bolt	2
E	S-8317	7/16" Stover Nut	2

Step 10: Fit first rear shield section. (See Figure 4AH.)

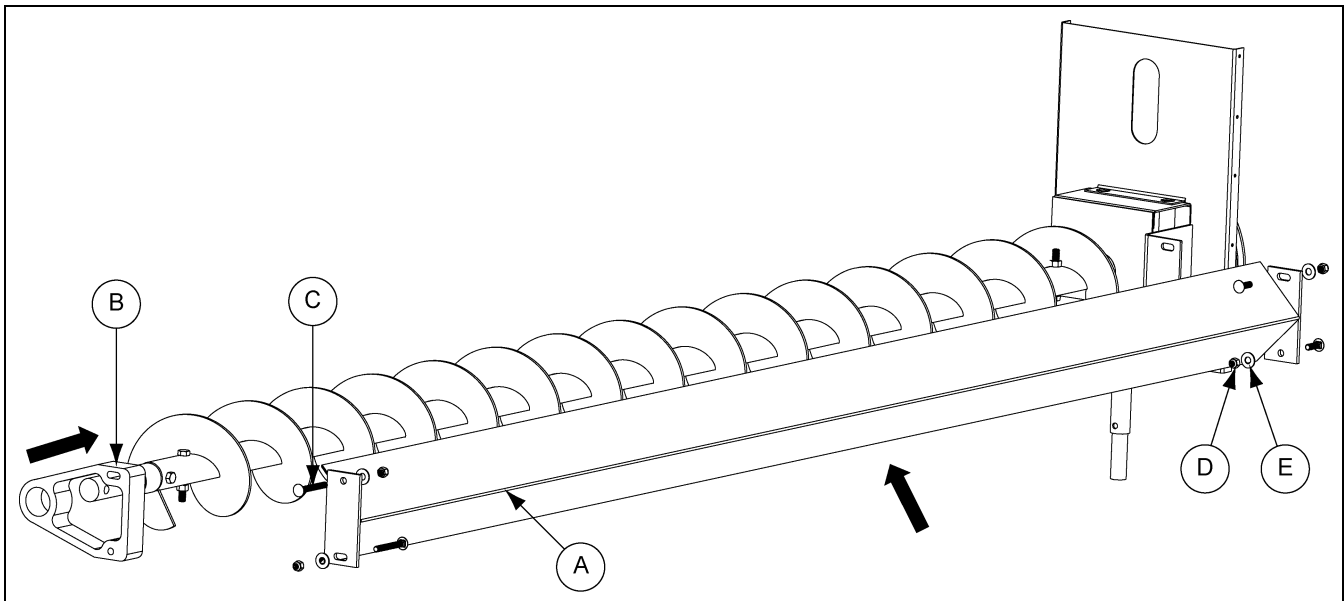


Figure 4AH

Ref #	Part #	Description	Qty
A	See Table on Page 17	Rear Shield	1
B	GK80195	Bearing Bracket	1
C	S-8055	3/8" x 3" Carriage Bolt	4
D	S-8317	3/8" Flat Washer	4
E	S-7383	3/8" Stover Nut	4

Step 11: Fit second auger section. (See Figure 4AI.)

NOTE: Augers for 48' (14.63 m) bins have three (3) sections of auger. Others have two (2).

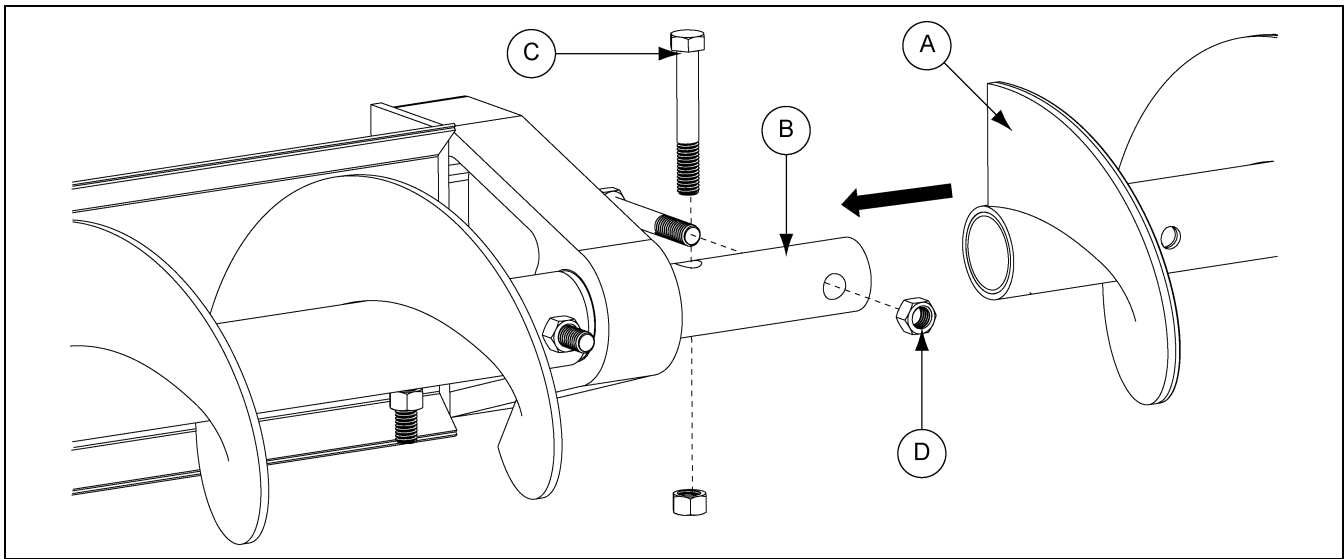


Figure 4AI

Ref #	Part #	Description	Qty
1	See Table on Page 17	Auger Section	1
2	GK1951	Connecting Stub	1
3	S-8316	7/16" x 3" Bolt	2
4	S-8317	7/16" Stover Nut	2

Step 12: Fit second shield section. (See Figure 4AJ.)

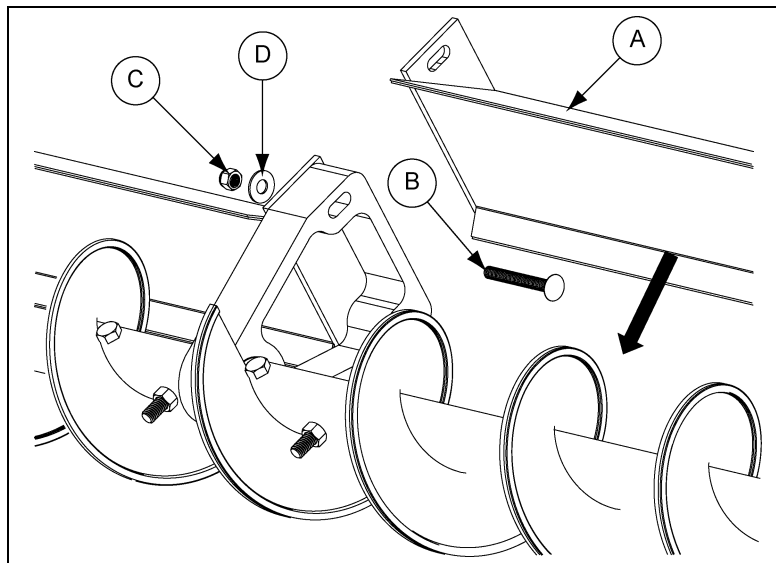


Figure 4AJ

Ref #	Part #	Description	Qty
A	See Table on Page 17	Second Shield Section	1
B	S-8055	3/8" x 3" Carriage Bolt	2
C	S-8317	3/8" Flat Washer	2
D	S-7383	3/8" Stover Nut	2

4. Assembly

Step 13: Fit wheel shaft. (See Figure 4AK.)

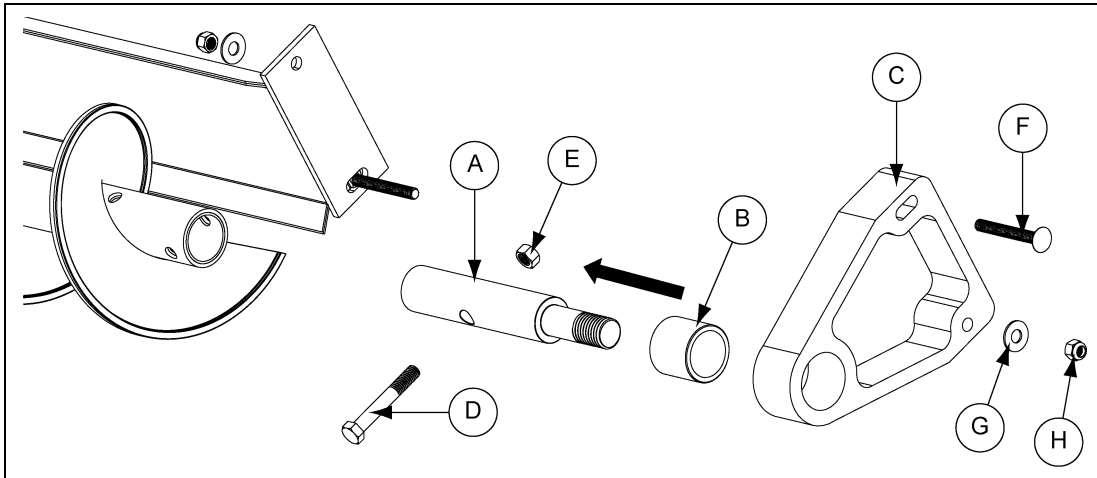


Figure 4AK

Ref #	Part #	Description	Qty
A	GK1953	Wheel Shaft	1
B	GK80176	Bronze Bushing	1
C	GK80195	Bearing Bracket	1
D	S-8316	7/16" x 3" Bolt	1
E	S-8317	7/16" Stover Nut	1
F	S-8055	3/8" x 3" Carriage Bolt	2
G	S-8317	3/8" Flat Washer	2
H	S-7383	3/8" Stover Nut	2

Step 14: Fit wheel. (See Figure 4AL.)

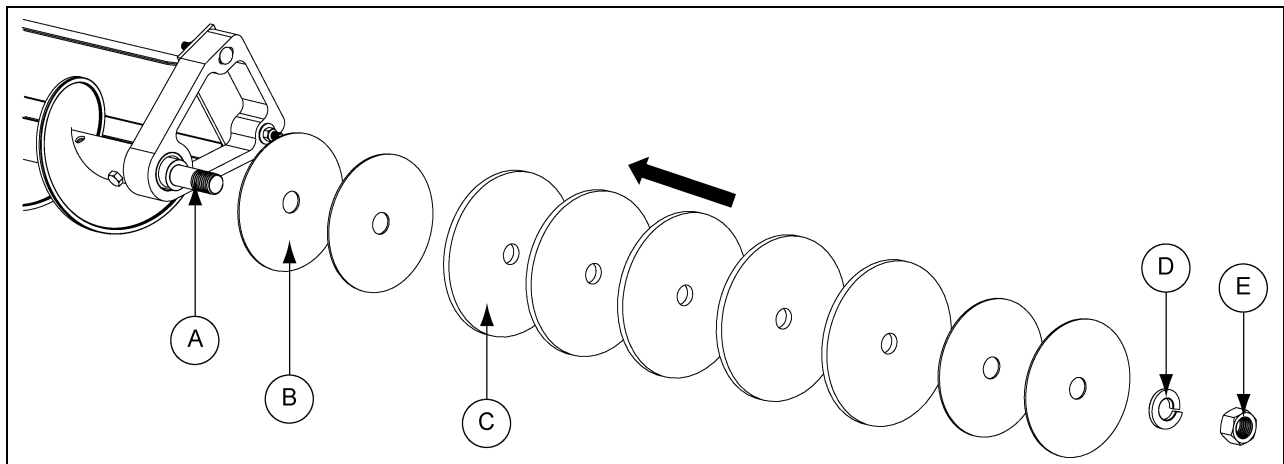


Figure 4AL

Ref #	Part #	Description	Qty
A	GK1953	Wheel Shaft	1
B	GK1670	Steel Disc	4
C	GK1671	Rubber Disc	5
D	S-7273	1" Lock Washer	1
E	S-240	1" Nut	1

Step 15: Assemble motor mount. (See Figure 4AM.)

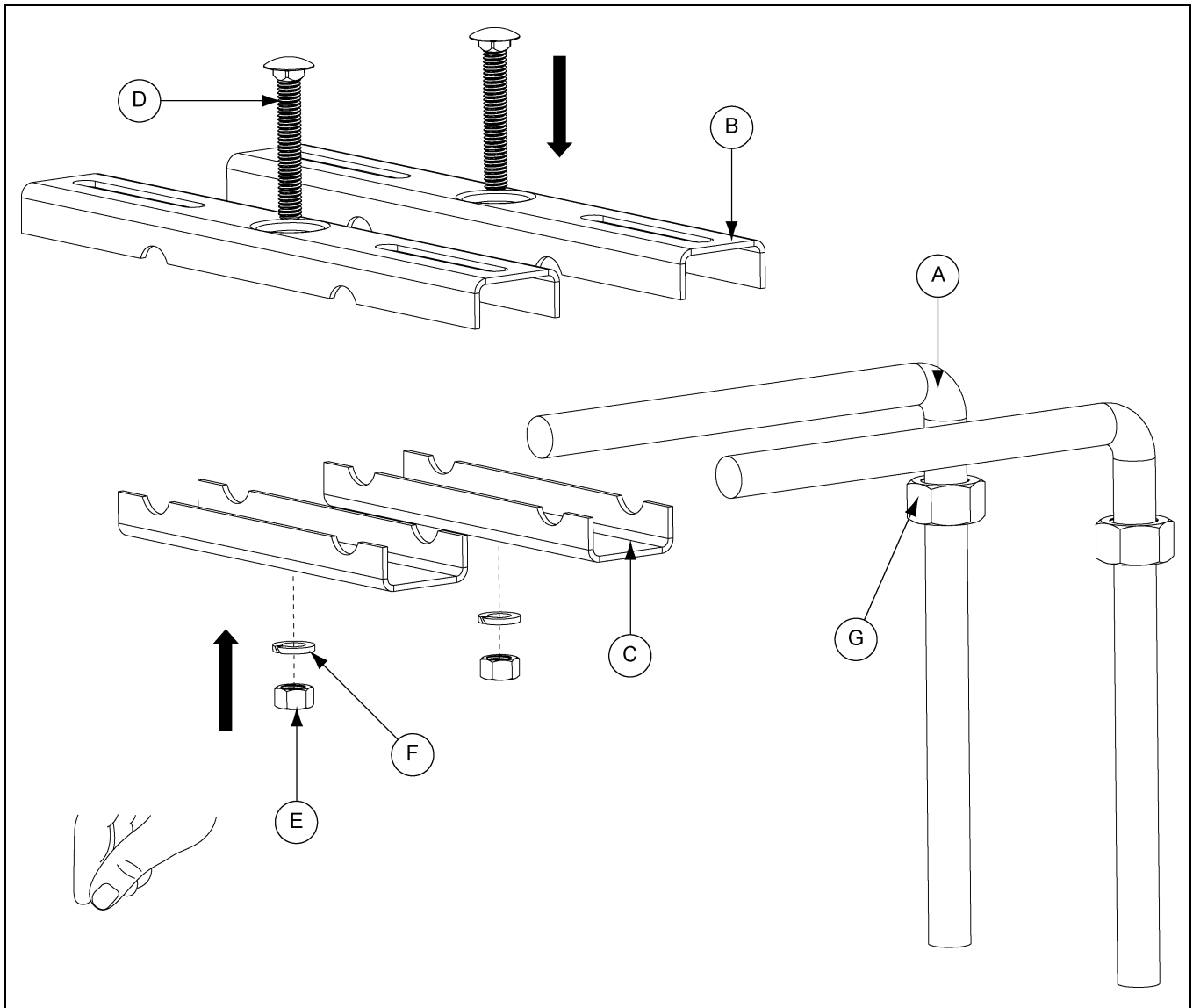


Figure 4AM

Ref #	Part #	Description	Qty
A	GK1239	Motor Mount Rods	2
B	GK1063	Upper Mount Strap	2
C	GK1064	Lower Mount Strap	2
D	S-6995	3/8" x 2" Carriage Bolt	2
E	S-456	3/8" Hex Nut	2
F	S-1054	3/8" Lock Washer	2
G	S-234	3/4" Hex Nut	2

4. Assembly

Step 16: Attach drive mount. (See Figure 4AN.)

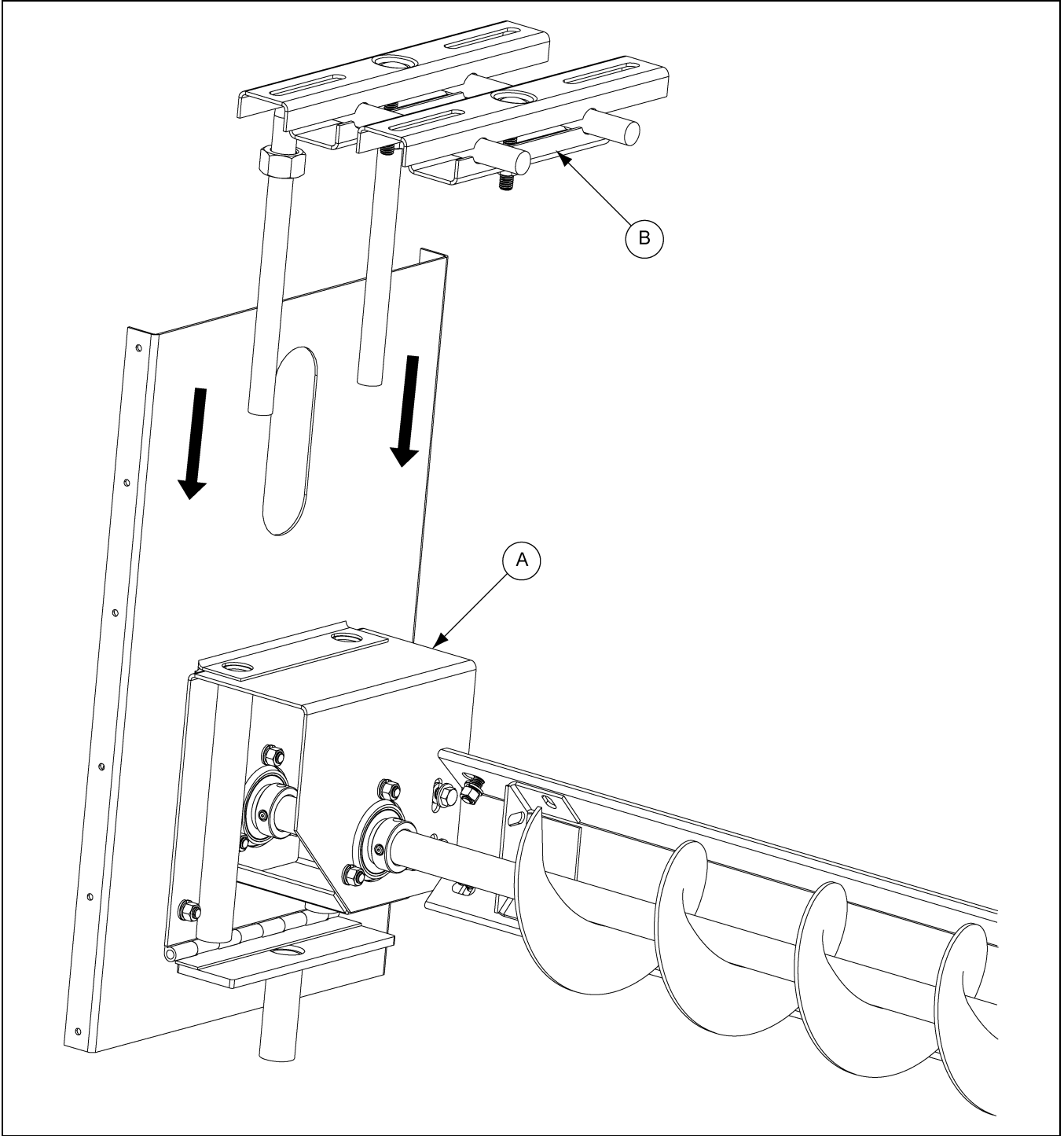


Figure 4AN

Ref #	Description	Qty
A	Drive Body	1
B	Drive Mount Assembly	1

Step 17: Fit motor. (See Figure 4AO.)

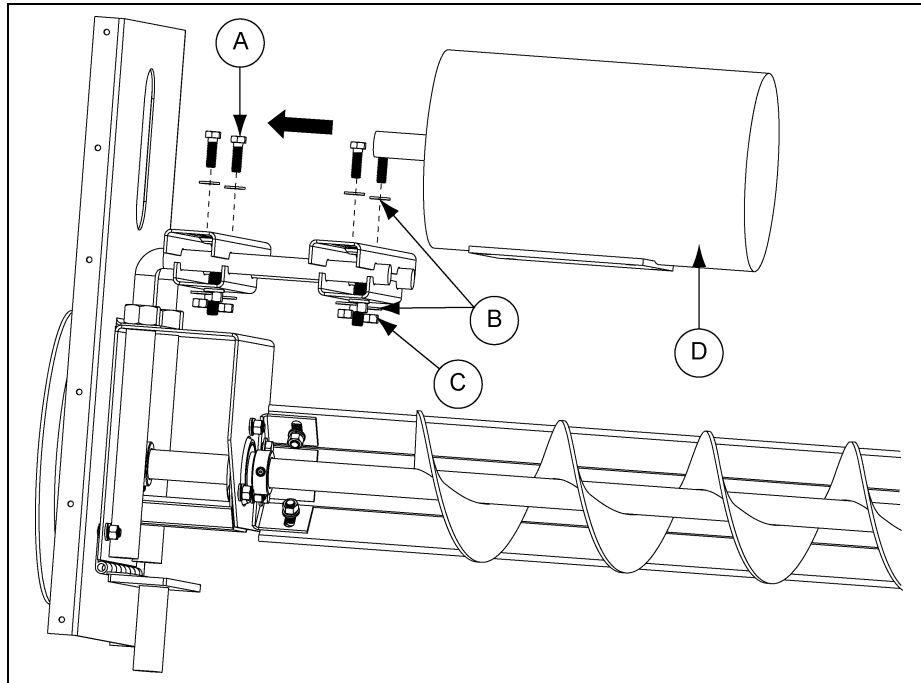


Figure 4AO

Ref #	Part #	Description	Qty
A	S-1196	5/16"-18 x 1" Bolt	4
B	S-1937	5/16" Washer	8
C	S-396	5/16" Nut	4
D		Motor	1

Step 18: Fit motor pulley. (See Figure 4AP.)

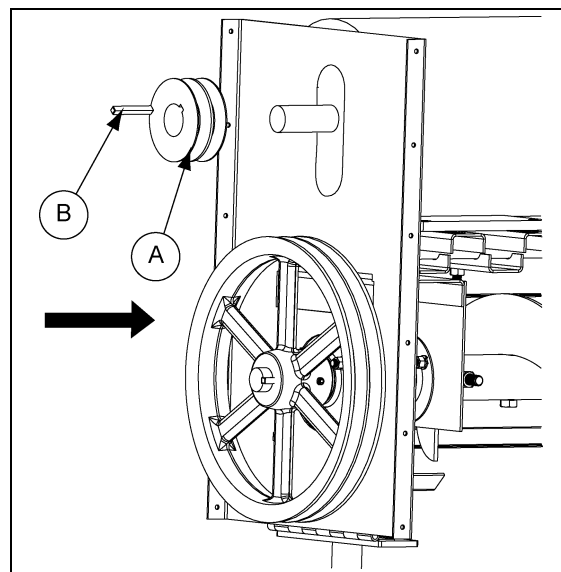


Figure 4AP

Ref #	Description	Qty
A	Pulley	1
B	Key	1

4. Assembly

Step 19: Position motor and tighten hardware. (See [Figure 4AQ.](#))

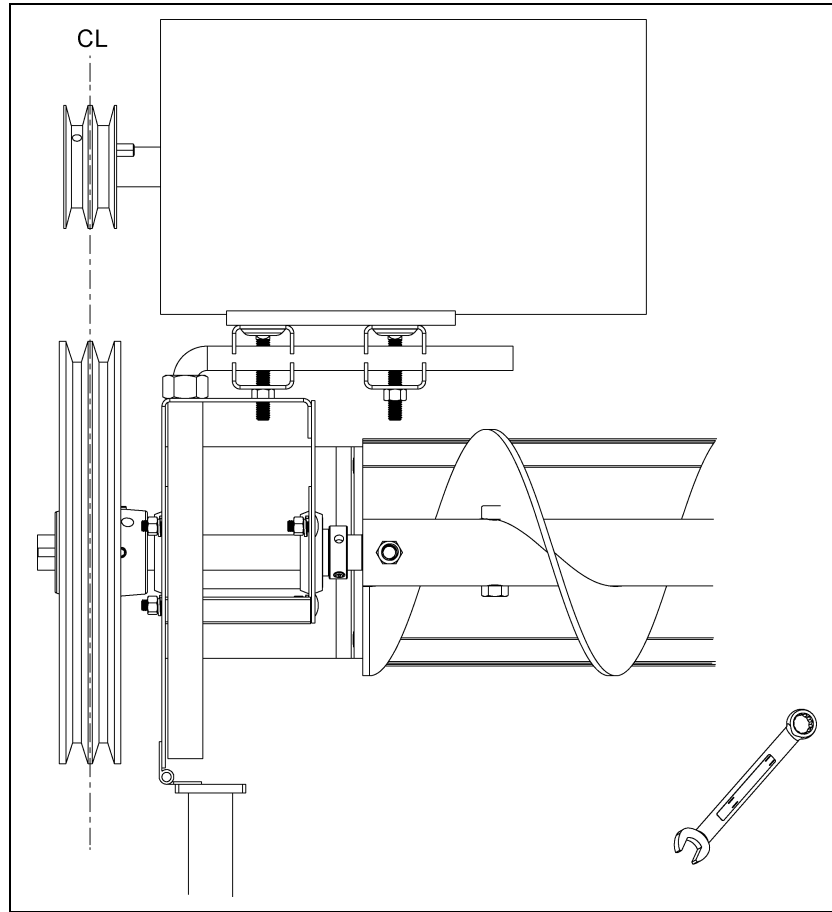


Figure 4AQ

Step 20: Fit belts. (See [Figure 4AR.](#))

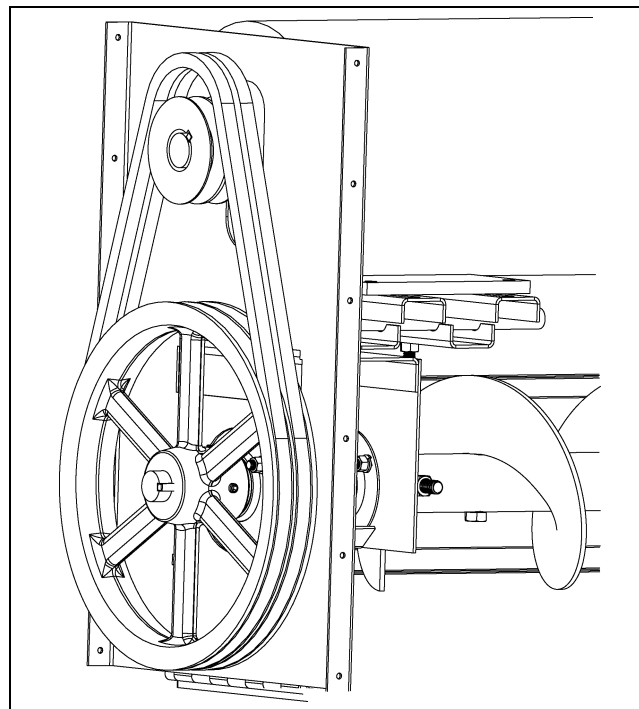


Figure 4AR

Step 21: Tension belts. (See Figure 4AS and Figure 4AT.)

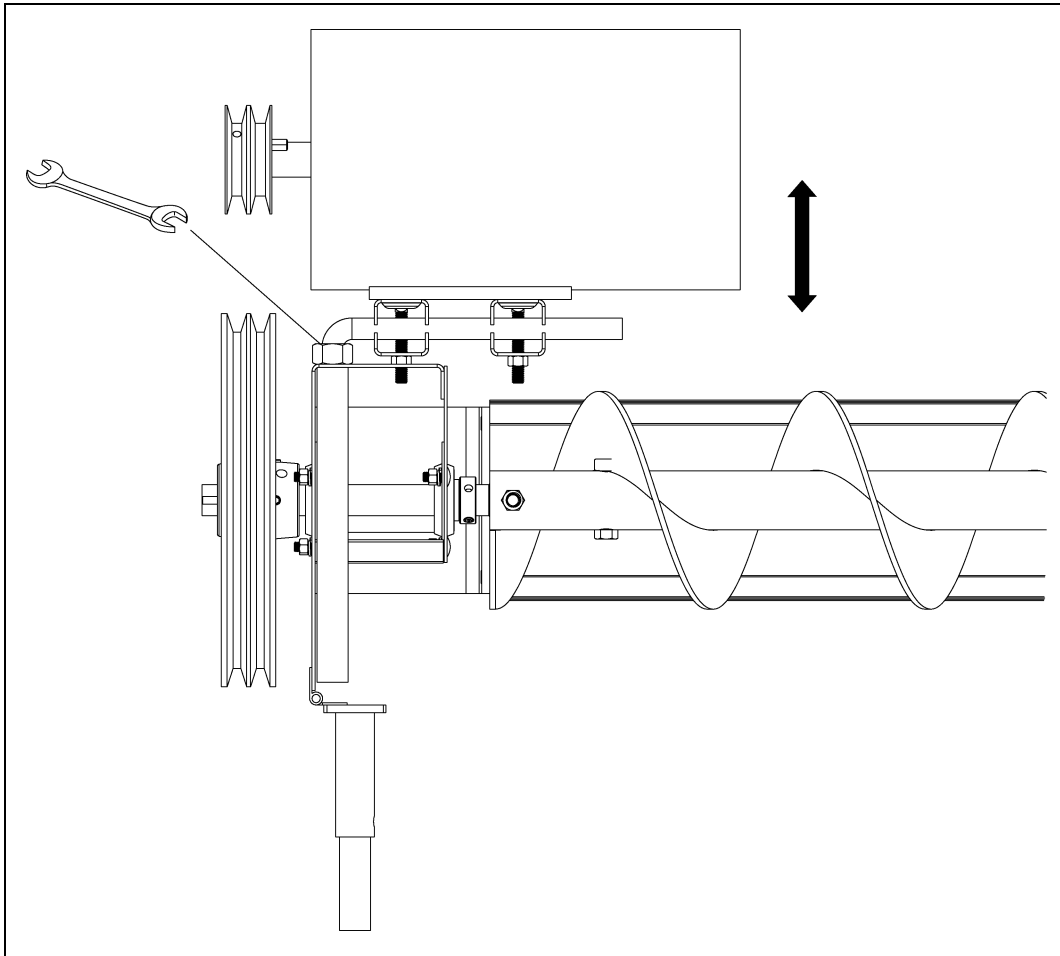


Figure 4AS

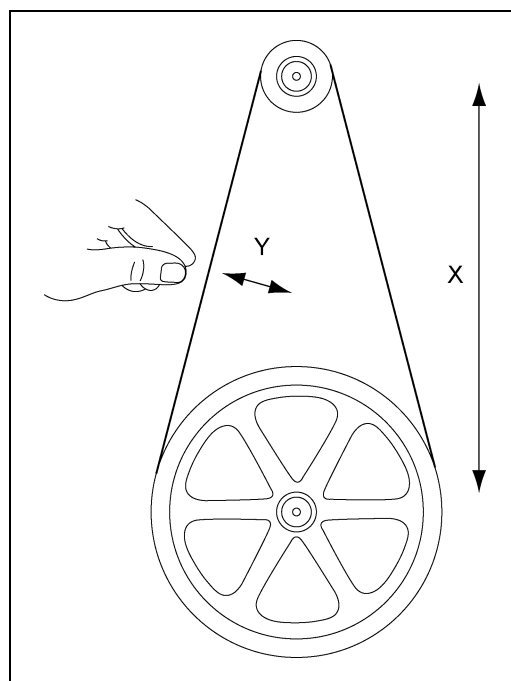


Figure 4AT $Y = X/60$

4. Assembly

Step 22: Attach belt drive cover. (See Figure 4AU.)

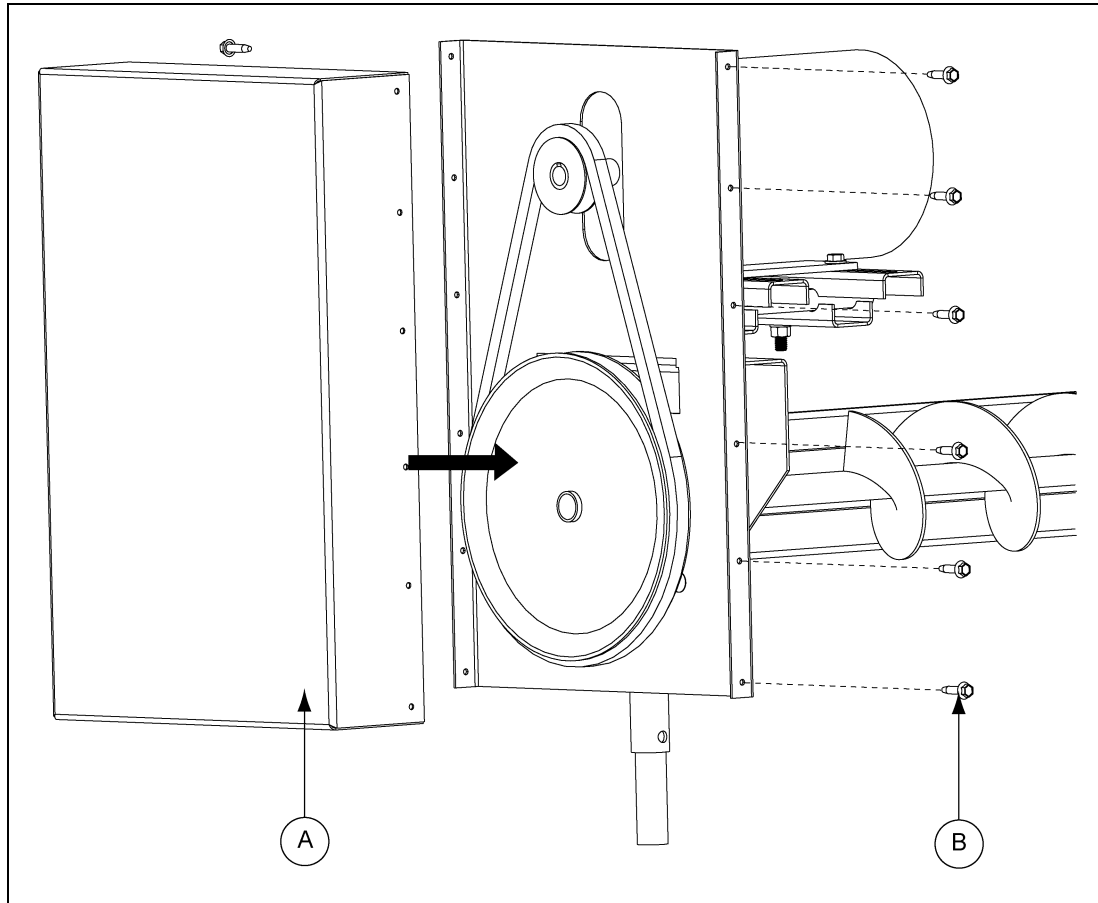


Figure 4AU

Ref #	Part #	Description	Qty
A	GK80202	Drive Cover	1
B	S-8832	1/4" x 1" Screw	12

Refer to electrical safety section [Page 10](#) for required control elements.



Cable used to connect the auger to the power supply must be of the flexible type, H07-RN or equivalent.

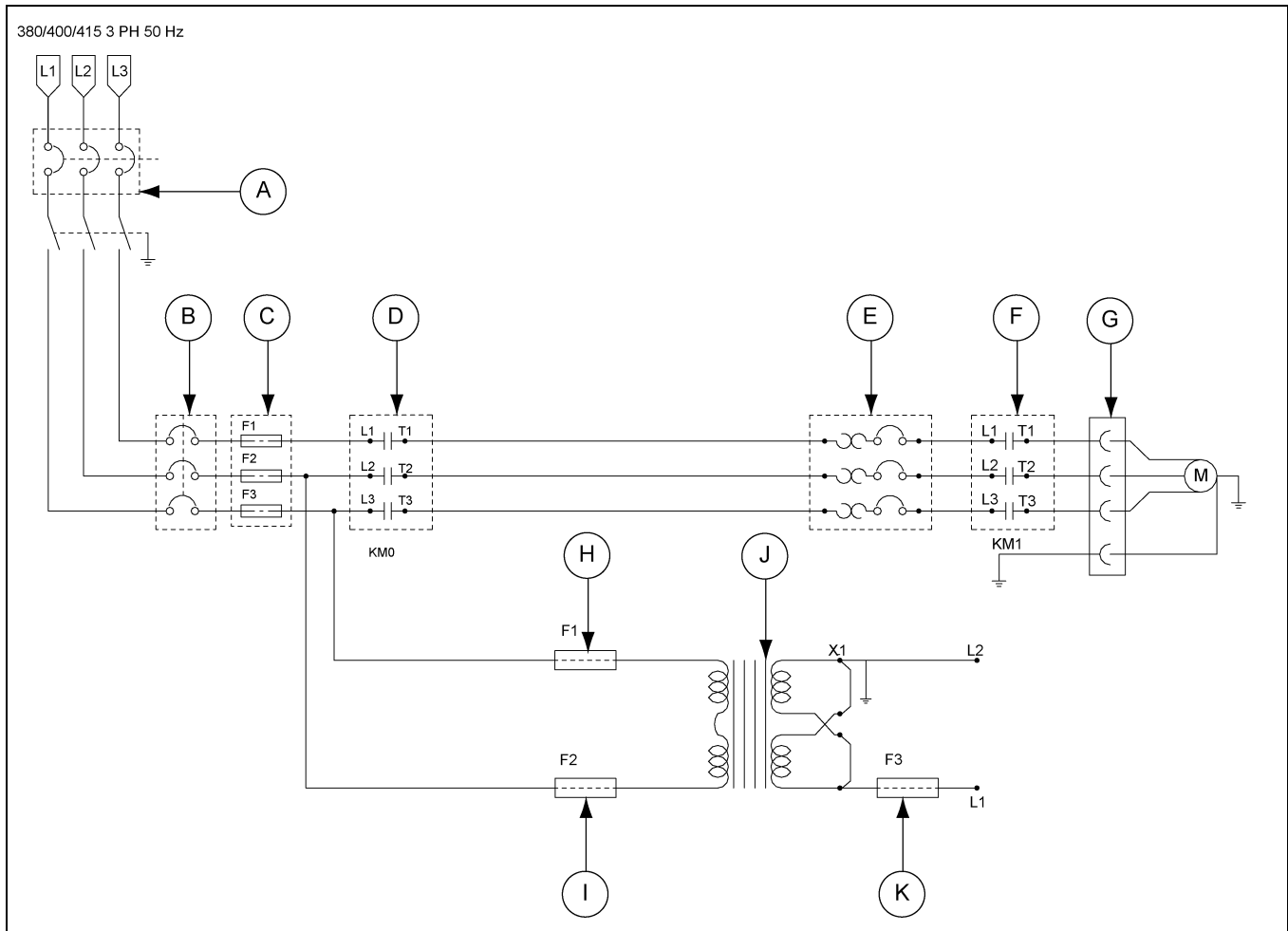


Figure 5A 3 Phase Wiring Diagram

Ref #	Description
A	Main Supply with RCD/RCCB
B	Control Panel Isolator
C	Short Circuit Protection
D	Safety Contactor KM0
E	Motor Overload Relay
F	Motor Starter/Contactor KM1
G	Plug/Socket Connector
H and I	Control Transformer Primary Fuse
J	Control Isolating Transformer
K	Transformer Secondary Fuse

5. Electrical Installation

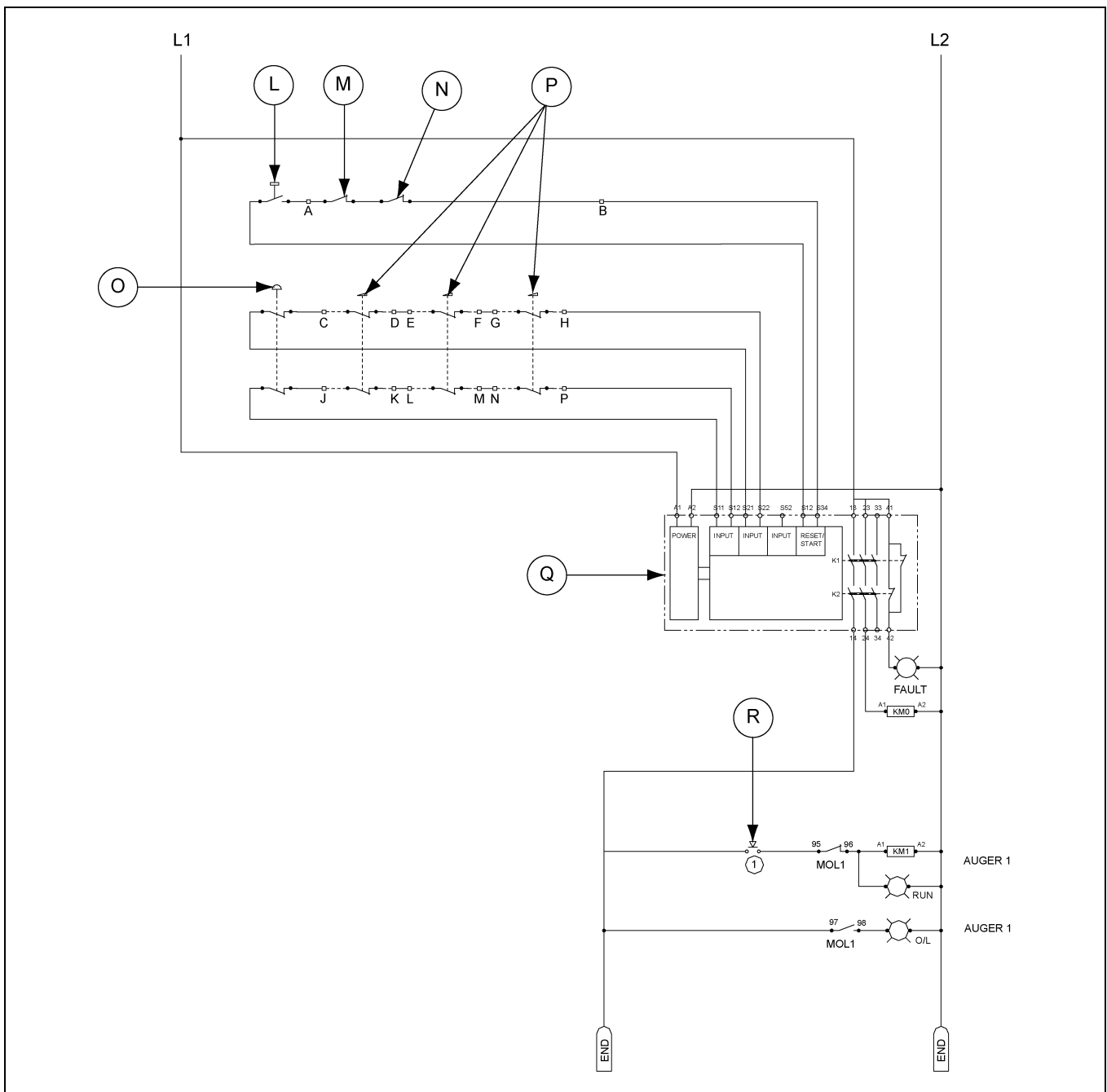


Figure 5B Auger Control Diagram

Ref #	Description
L	Safety Circuit Enable/Reset
M	KM0 N.C. Contacts
N	KM1 N.C. Contacts
O	Emergency Stop (SIL3/PLe)
P	Door Safety Switches (SIL3/PLe)
Q	Safety Relay Module 2 Channel, Cat 3/PLe
R	'Hold to Run' ON/OFF Control

Before operating the sweep,

1. Refer to section grain bin safety on [Page 13](#).
2. Check belt tension ([See Pages 30 and 43](#)), safety guards ([See Page 14](#)) and motor connections ([See Page 45](#)).

Bin Emptying

1. Start unload system. ([See Figure 6A.](#))

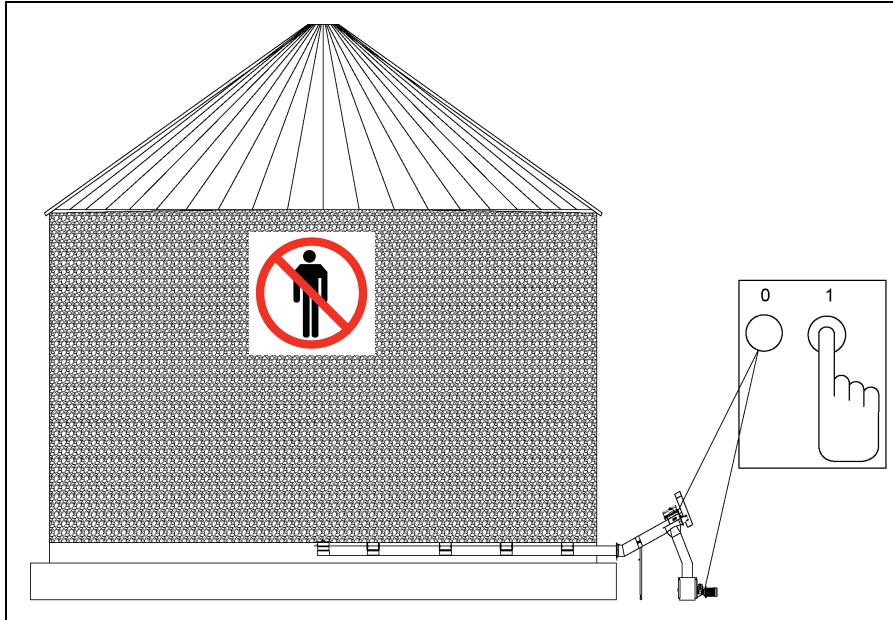


Figure 6A

2. Open centre well only. ([See Figure 6B.](#))

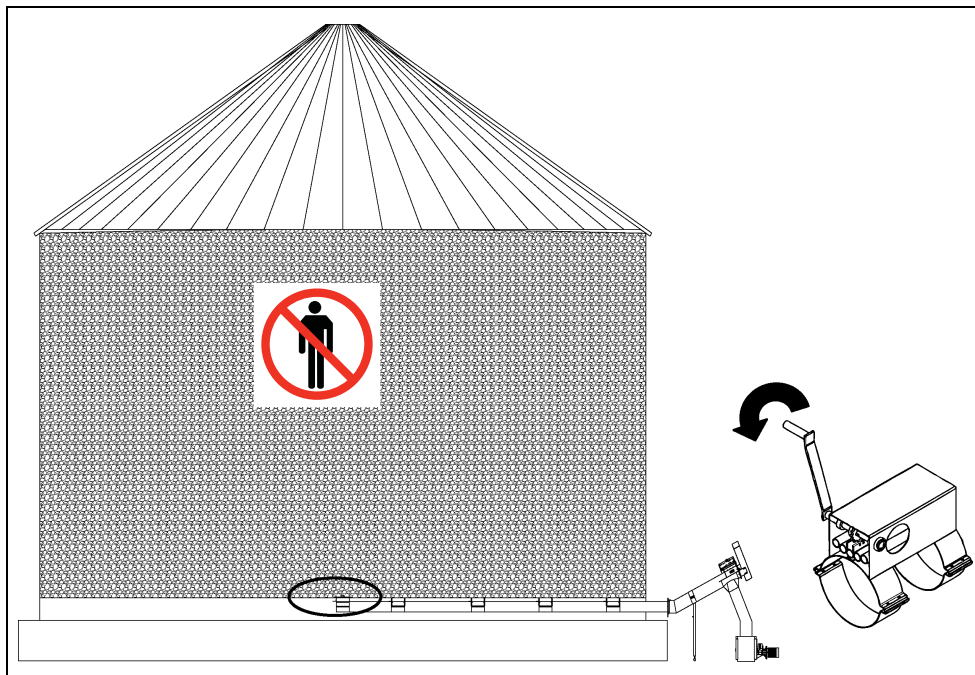


Figure 6B

6. Sweep Operation

3. Open inner intermediate wells when centre stops running. (See Figure 6C.)

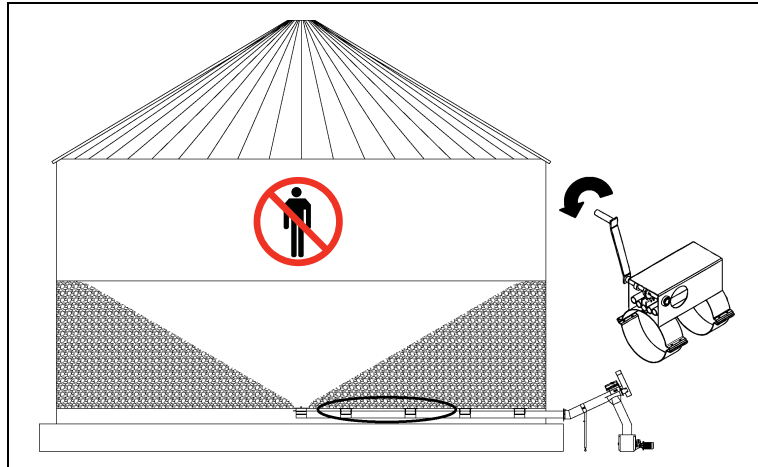


Figure 6C

4. Open outer intermediate wells. (See Figure 6D.)

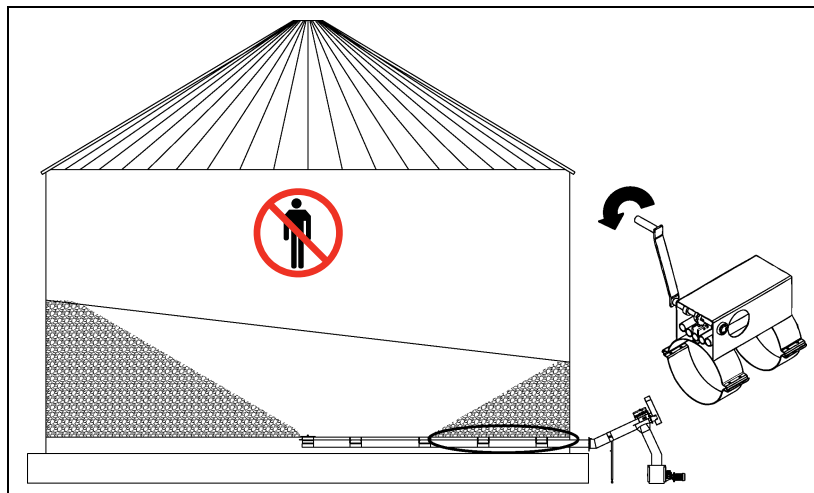


Figure 6D

5. Close wells, switch OFF and lock out power. (See Figure 6E.)

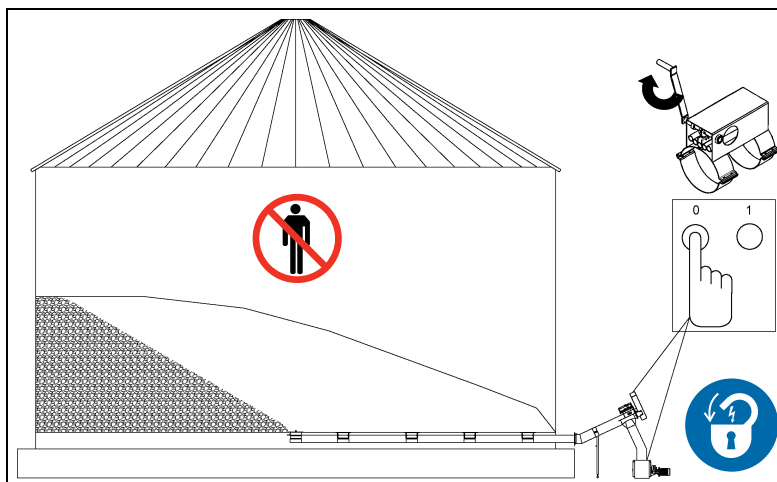


Figure 6E

6. Place sweep in bin. (See Figure 6E on Page 48.)

NOTE: Longer sweeps may require partial disassembly to carry into the bin. (See Figure 6F.)

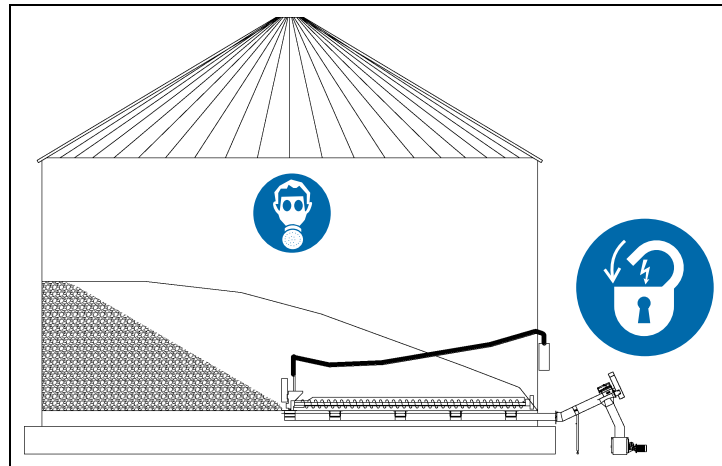


Figure 6F

7. Make power connection. (See Figure 6G.)

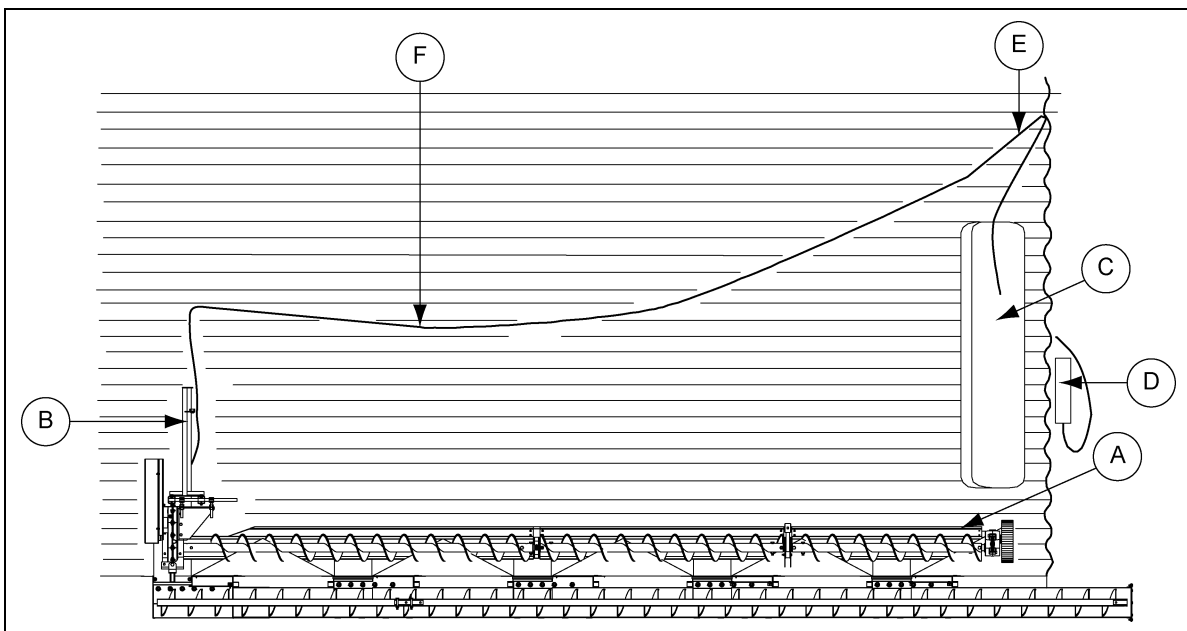


Figure 6G

Ref #	Description
A	Sweep
B	Motor
C	Door Opening
D	Control Box with Power Outlet Socket
E	Fix Cable to Wall Above Door
F	Ensure cable is clear of grain and auger. Use H07-RN flexible cable.

6. Sweep Operation

8. Exit bin, close ALL doors, FULLY open centre well. (See Figure 6H.)

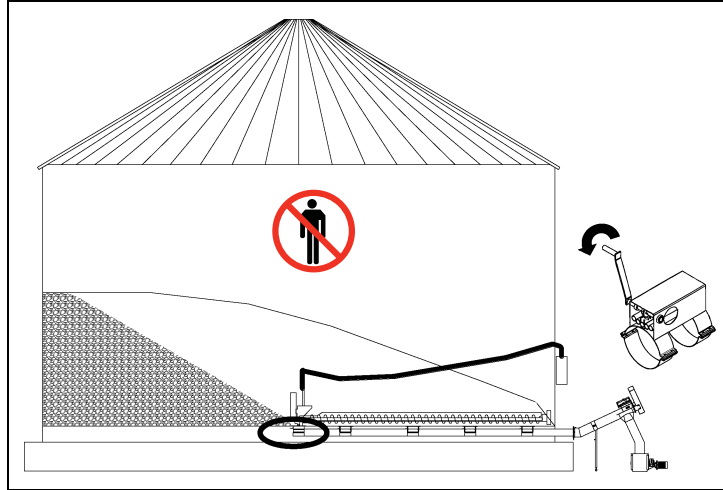


Figure 6H

9. Start unload system. (See Figure 6I.)

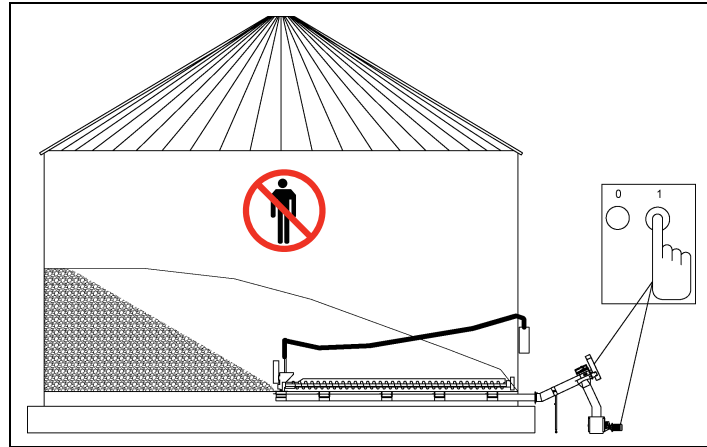


Figure 6I

10. Start sweep. (See Figure 6J.)

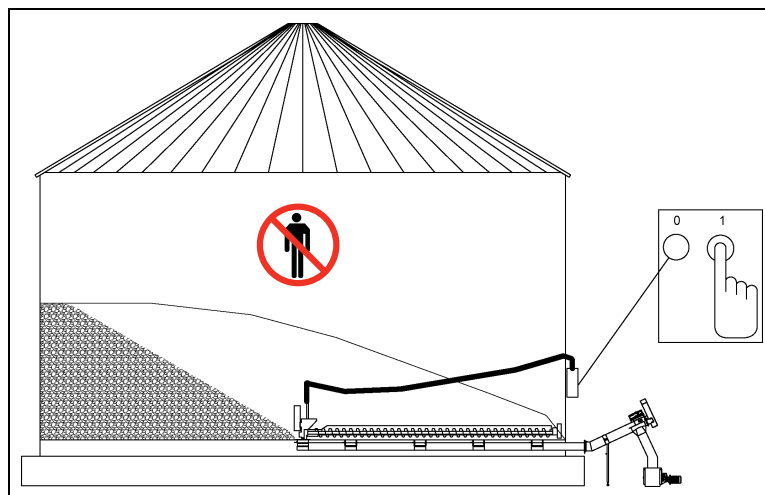


Figure 6J

11. Sweep grain. (See Figure 6K.)

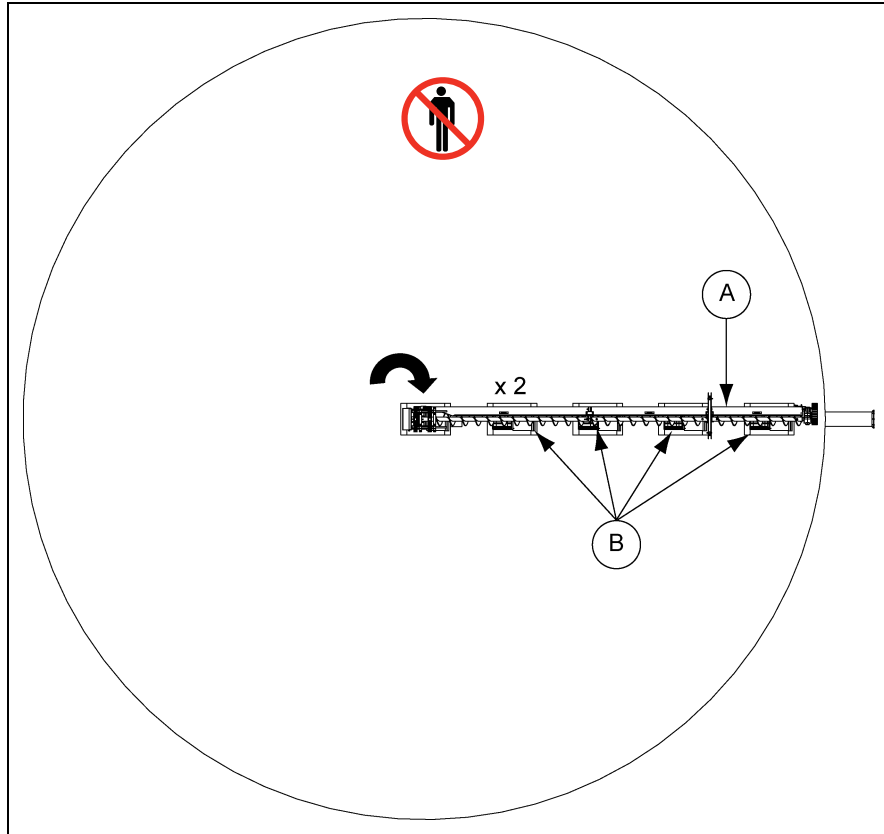


Figure 6K

Ref #	Description
A	Sweep
B	Floor Wells

12. Stop all systems and lock out power. (See Figure 6L.)

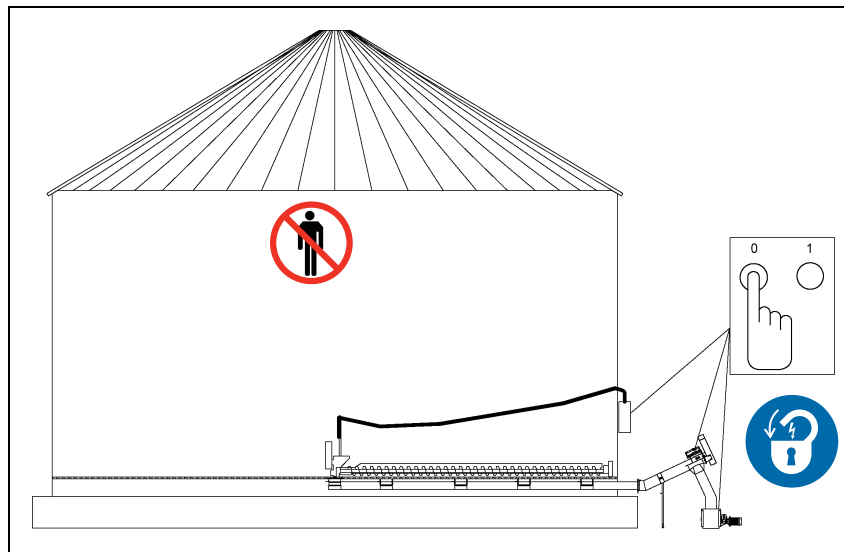


Figure 6L

6. Sweep Operation

13. Brush remaining grain to centre. (See Figure 6M.)

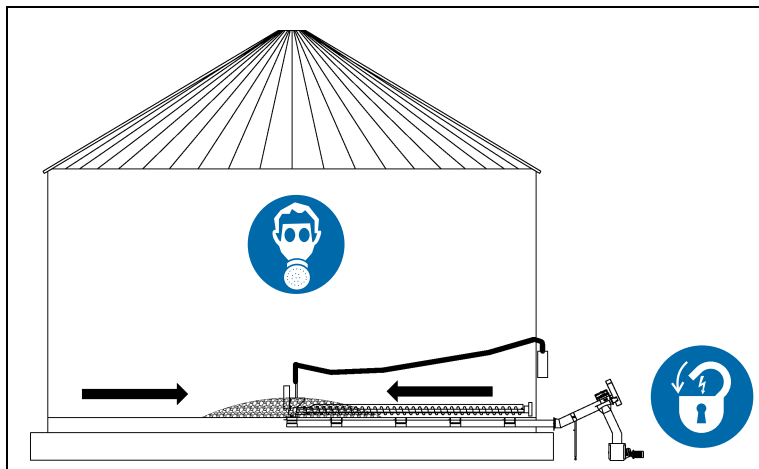


Figure 6M

14. Close doors and start unload systems. (See Figure 6N.)

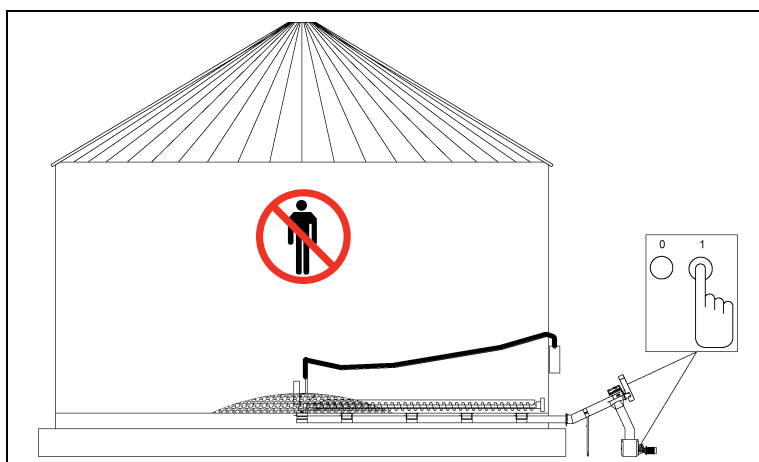


Figure 6N

15. Start sweep. (See Figure 6O.)

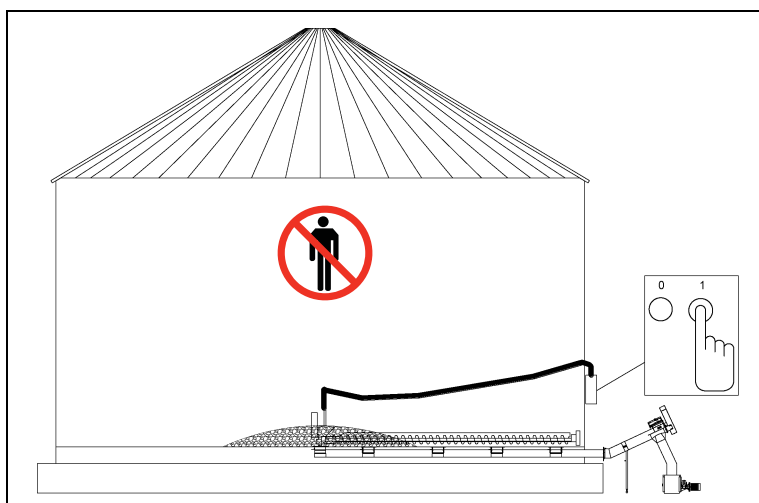


Figure 6O

16. Shut down all systems and lock out. (See Figure 6P.)

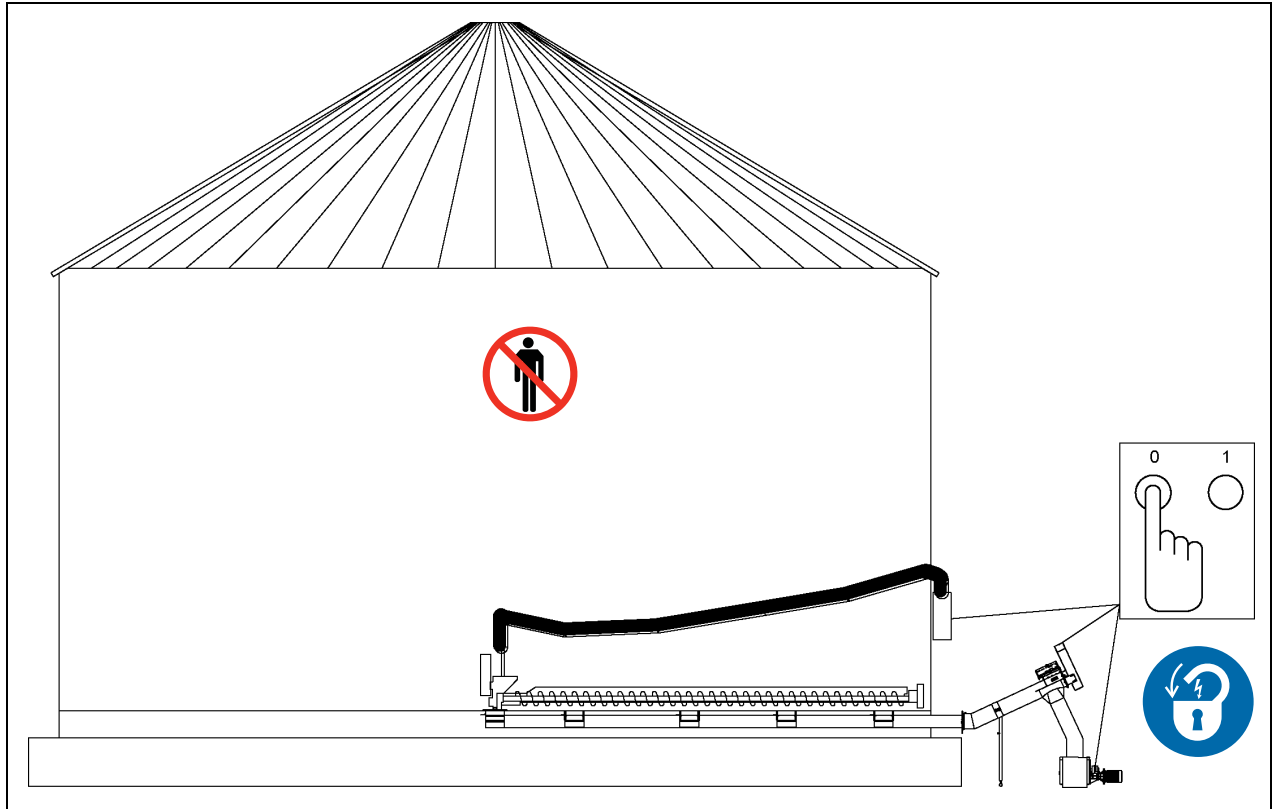


Figure 6P

17. **Always** remove sweep before re-filling bin.

7. Maintenance

Before carrying out maintenance, refer to section grain bin safety on [Page 13](#).

Lock out power.



Each use check:

1. Safety decals ([See Page 15.](#))
2. Belt tension ([See Pages 30 and 43.](#))
3. Safety guards ([See Page 14.](#))
4. Motor connections ([See Page 45.](#))

1. Do NOT store in bin.
2. Keep dry.
3. Remove belts for long term storage.

NOTES

GSI Group, LLC Limited Warranty

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

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75% ** 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.
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **	
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
Grain Systems	Grain Bin Structural Design	5 Years	
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years	
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

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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