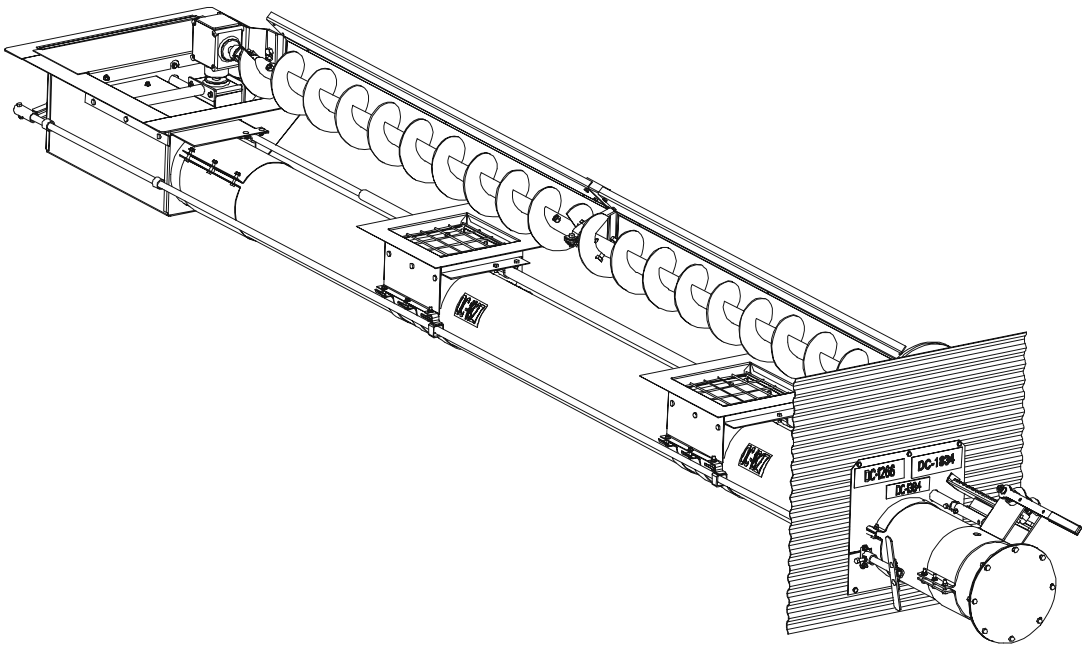
PNEG-1421

Direct Gear Drive Bin Sweep Auger

(with Roller Wells)

Assembly & Operation Manual



DATE: 6-15-06

PNEG-1421

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

Bin Dia.	6" DGD Sweep	8" DGD Sweep	10" DGD Sweep
15'	GPS61503	GPS81503	-
18'	GPS61803	GPS81803	-
21'	GPS62103	GPS82103	-
24'	GPS62403	GPS82403	GPS10242
27'	GPS62703	GPS82703	GPS10272
30'	GPS63003	GPS83003	GPS10302
33'	GPS63303	GPS83303	GPS10332
36'	GPS63603	GPS83603	GPS10362
39'	-	GPS83903	GPS10392
42'	-	GPS84203	GPS10422
48'	-	GPS84803	GPS10482

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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. Report any damage or shortages by recording a detailed description on the Bill of Lading to justify the Customer's claim from the Transport Firm.

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

WARRANTY is provided as part of the company's support program for customers who use and maintain their equipment as described in the manual. The warranty is explained on the warranty page located on the inside of the back cover.

This warranty provides you the assurance that the company will back its products where defects appear within the warranty period. Should the equipment be abused, or modified to change its performance beyond the factory specifications, the warranty will become void.

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

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

⚠ CAUTION **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION **CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE **NOTE** indicates information about the equipment that you should pay special attention to.

Safety Instructions

GSI's principle concern is your safety and the safety of others associated with grain handling 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.

OPERATE UNLOAD EQUIPMENT PROPERLY

Operate Unload Equipment Safely

Make sure ALL equipment is locked in position before operating.

NEVER start equipment until ALL persons are clear of the work area.

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.

NEVER work alone.

Make sure someone is nearby who is aware of the proper shutdown 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 lockout ALL power to the equipment when finished unloading a bin.

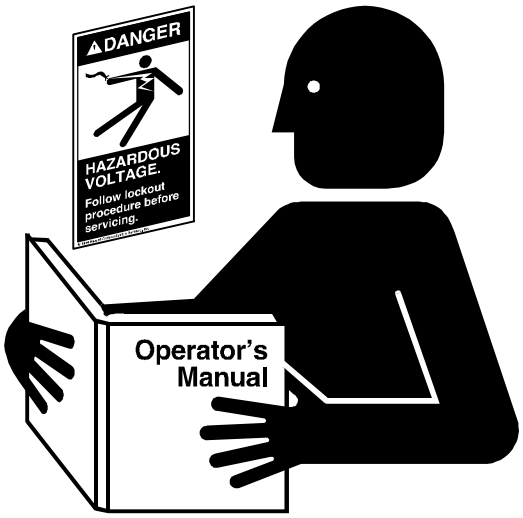
FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine safety signs. 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 and need assistance, contact your dealer.



Read and Understand Manual.

INSTALL & OPERATE ELECTRICAL EQUIPMENT PROPERLY

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

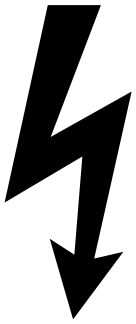
Electrical controls should be installed by a qualified electrician and must meet the standards set by the national electrical code and all local and state codes.

Disconnect and lock out all power sources before installing wires/cables or servicing equipment .

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 type of condition can damage the equipment.



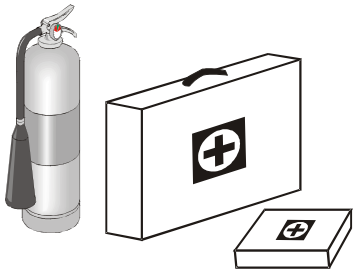
Electric Shock Hazard.

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.

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.

A respirator may be needed if a hog house has poor ventilation. Waste fumes can be toxic.

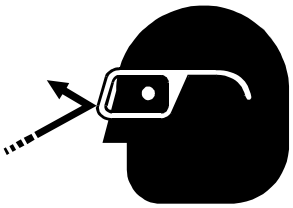
Wear hard hat and steel toe boots to help protect your head and toes from falling debris.

Remove all jewelry.

Tuck in any loose or dangling shoe strings.

Long hair should be tied up and back.

Eye Protection



Gloves

Steel Toe Boots

Respirator

Hard Hat

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:

1. Any person who has not read and/or does not understand all operation and safety instructions is not qualified to operate any auger systems.

2. 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.

3. Unqualified or incompetent persons are to remain out of work area.

4. O.S.H.A. (Occupational Safety & 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 & Health Standards for Agriculture. Sub part D, Section 19287.57 (a) (6).

B. As a requirement of OSHA, it is necessary for the employer to train the employee in the safe operating and safety procedures for this auger. We included this sign-off sheet for your convenience and personal record keeping. All unqualified people are to stay out of the work area at all times. It is strongly recommended that another qualified person who knows the shutdown procedure is in the area in the event of an emergency. A person who has not read this manual and understands all operating and safety instructions, is not qualified to operate the machine.

Date	***Employees Name (printed)***	***Employees Signature***
	1	
	2	
	3	
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	13	
	14	
	15	

SAFETY 1st

Replace missing guards and shields ***FREE OF CHARGE****!*

Our equipment is built to provide many years of dependable service to our customers through durable craftsmanship.

One of the most important aspects of our engineering is ***SAFETY*** **1st** design throughout all product lines. Safety is NO ACCIDENT!

That is why we are implementing its ***SAFETY*** **1st** program. Should you ever need guards, shields, safety decals, or owner/operator manuals, simply contact us, and we will supply you with them **FREE OF CHARGE**!

While it is our main goal to be the world leader in auger manufacturing, it is always our first priority to keep our customers safe.

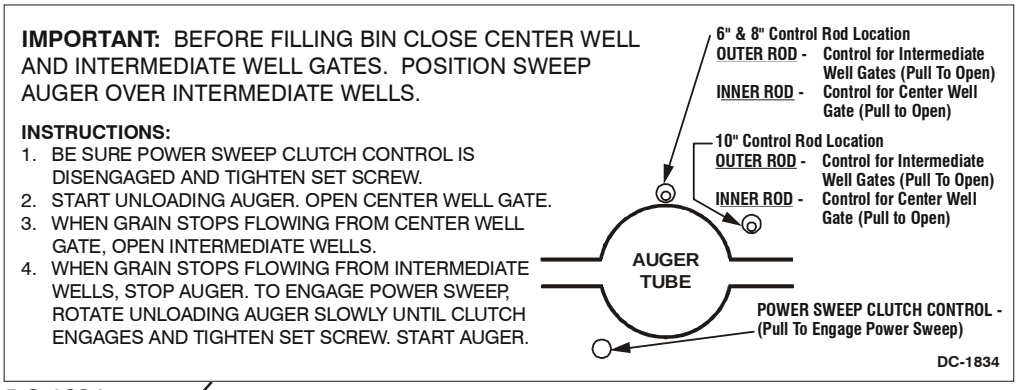
If you need any of the above listed safety items or have safety questions, please contact:

The GSI Group
PO Box 20
1004 E. Illinois Street
Assumption, IL 62510
Ph: 217-226-4421

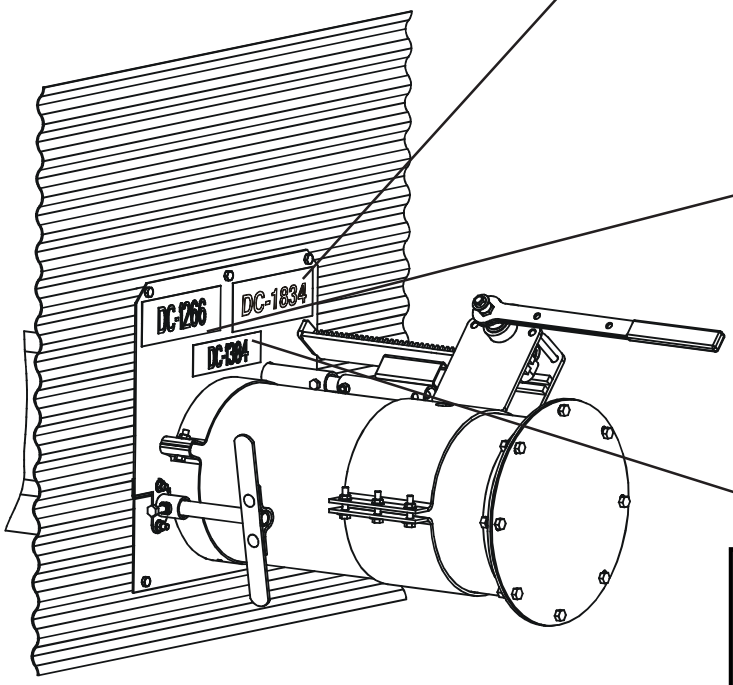
SAFETY DECALS

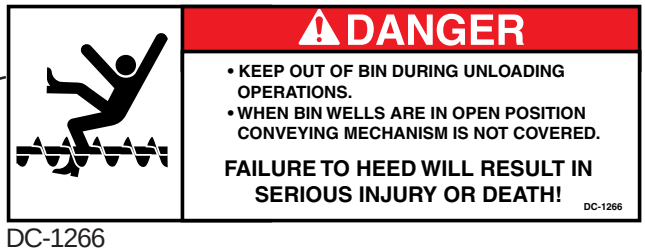
Check components shown below to insure that the safety decals are in place and in good condition. If a decal cannot be easily read for any reason or has been painted over, replace it immediately. Contact your dealer or the manufacturer to order a replacement decal free of charge.

DECAL PART LIST		
Part #	**Description**	**Size**
DC-1834	**Important** - Power Sweep Position	7-3/8" x 2-3/4"
DC-1266	**Danger** - Bin Well	7-1/2" x 2-1/2"
DC-1384	**Danger** - Keep Out of Bin	6-1/4" x 1-1/4"
DC-1395	**Danger** - Rotating Flight	4-1/4" x 6-1/4"



DC-1834





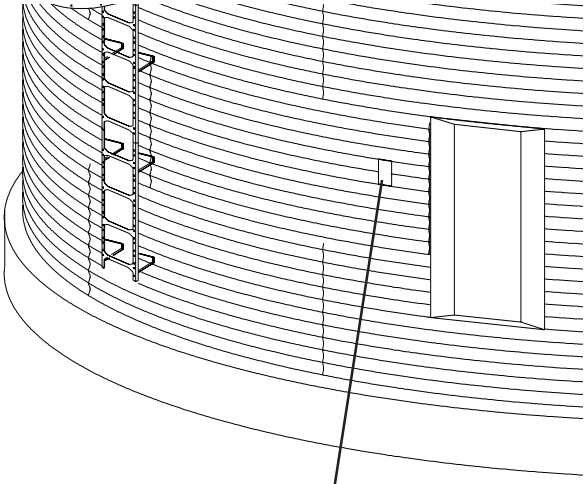
DC-1266

DC-1384

SAFETY DECALS

Check components shown below to insure 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.

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.

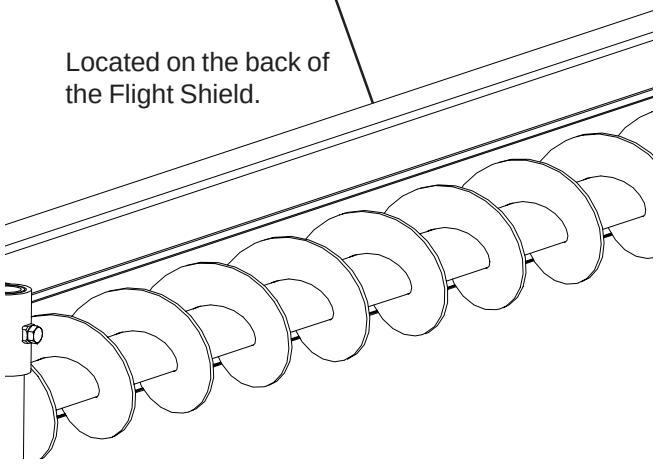


NOTE **Please remember, safety signs provide important safety information for people working near bin unloading equipment that is in operation.**

DC-1384

DC-1395

Located on the back of the Flight Shield.



WARNING **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.**

1. Power Sweeps in Bins with Concrete Floors

NOTE

The company does not recommend setting the Direct Gear Drive Bin Sweep Auger unit in concrete. If installing a unit flush with a concrete floor, we recommend that the unit be installed in a preformed trench. Use the diagram below.

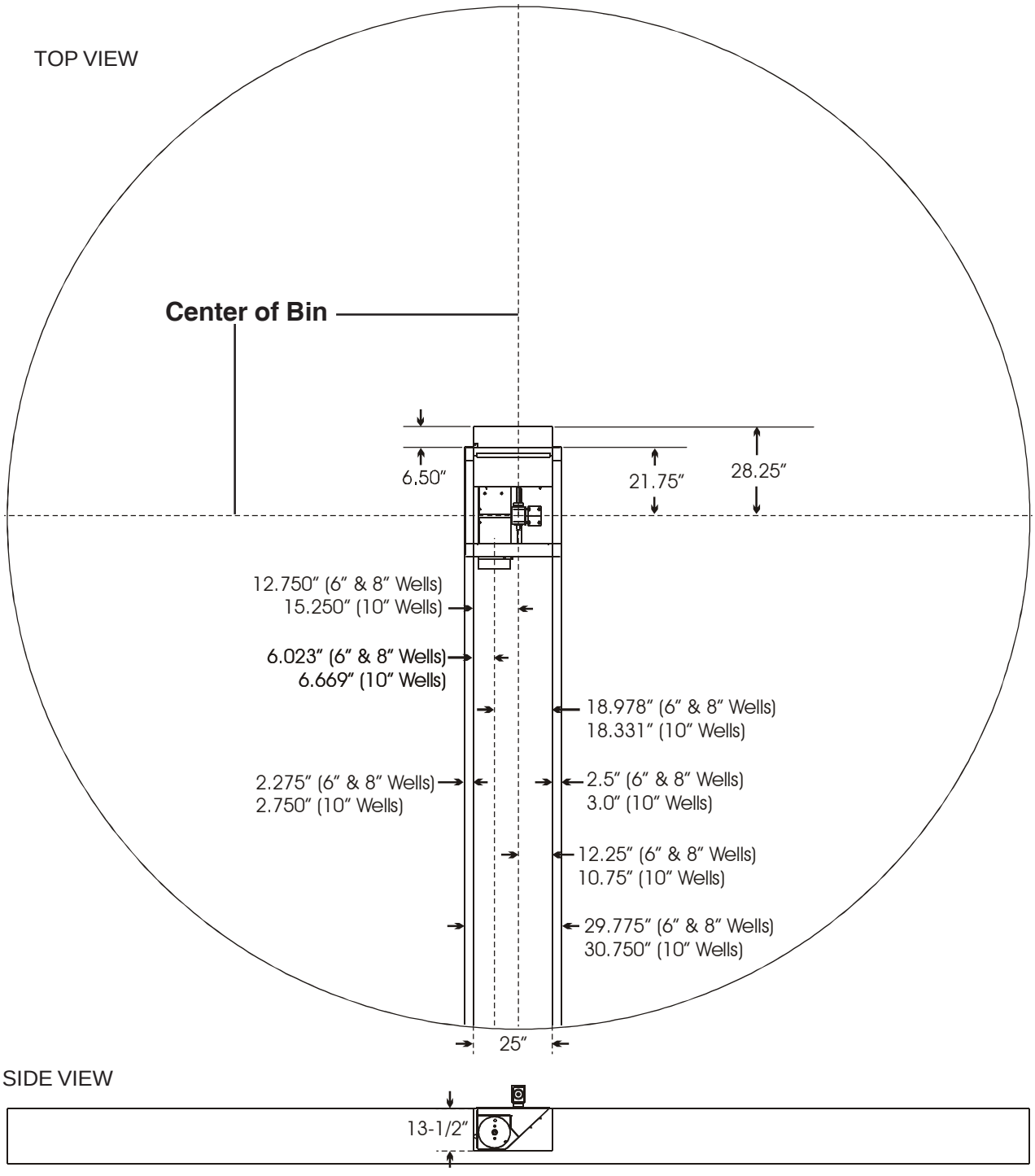


FIG.1 - **CONCRETE TRENCH LAYOUT FOR 6", 8", & 10" POWER SWEEPS**

2. Power Sweeps in Bins with Raised Metal Floors

For bins with raised metal floors, it is necessary to cut openings in the floor for the center well and intermediate wells. Make sure the metal floor is high enough above the concrete base so there is space for the wells. It would be convenient to complete assembly of the bin floor as the power sweep is being installed for better access to components under the floor.

1. Locate the center of the bin and make a cut-out in the bin floor for the center well. See Fig. 2-A for cut-out size and location of 6" & 8" wells. See Fig. 2-B for 10" wells. Locate the vertical shaft between the gearboxes in the center of the bin. Place suitable supports under the center well to hold it in position.

Fig. 2-A

6" & 8" (15.24 cm 20.32 cm)
Center and Intermediate Well(s) Bin Floor Cut-Outs.

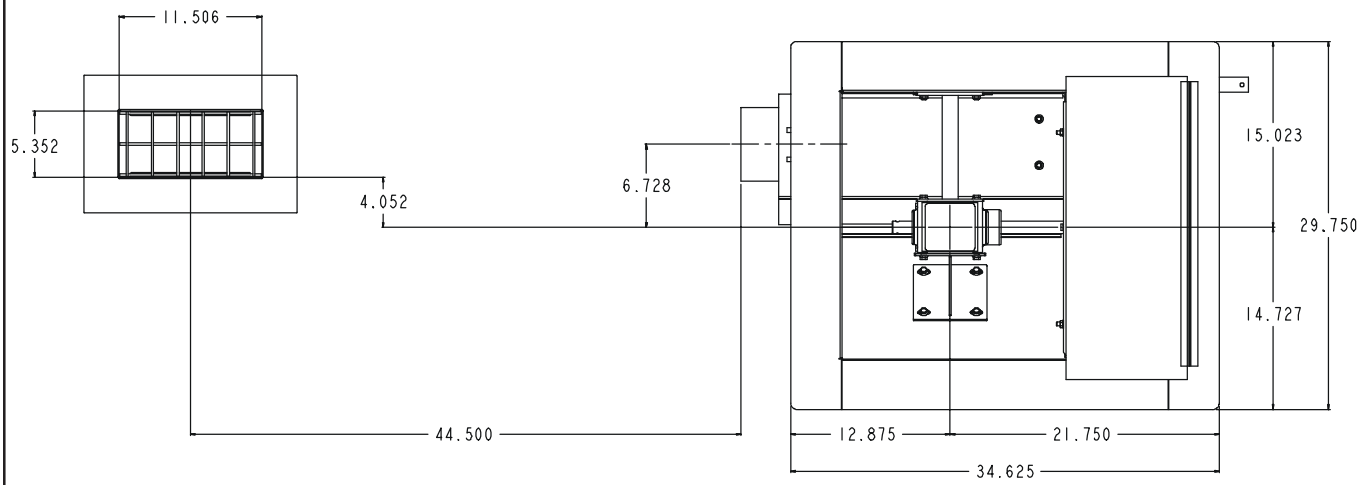
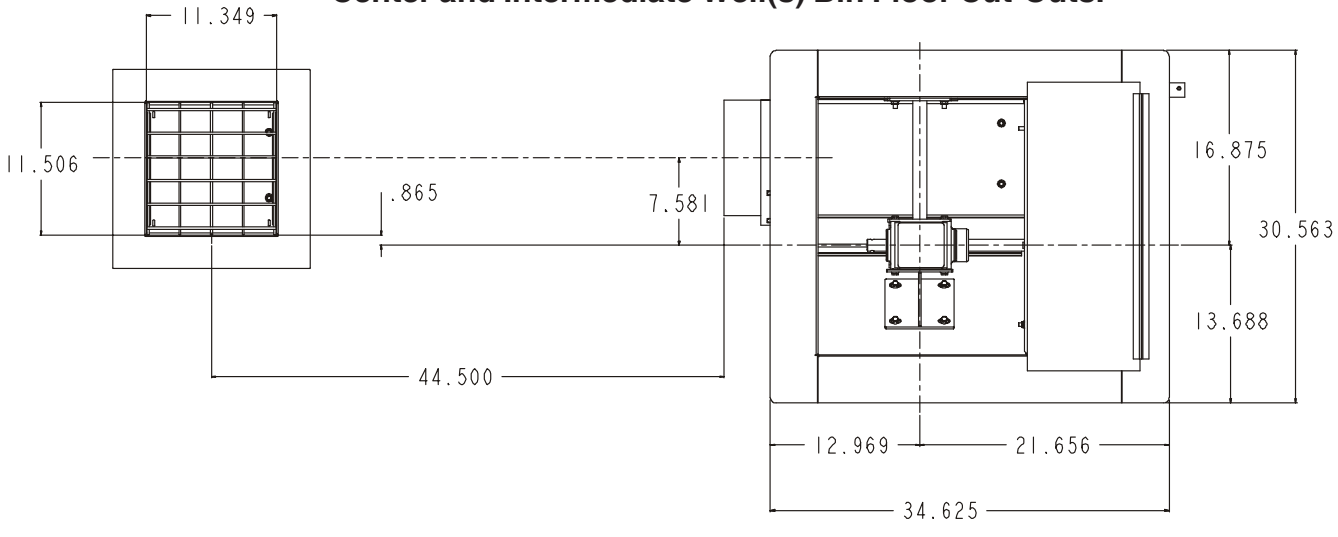


Fig. 2-B

10" (25.40 cm)
Center and Intermediate Well(s) Bin Floor Cut-Outs.



3. Intermediate Well Installation

A. Cut openings in the bin floor for the intermediate wells. (See Fig. 2-A & 2-B on page 14.) The number of wells depends on bin size. The distances between intermediate wells and the center well should be equal. (See Fig. 3 and Chart below.)

BIN SIZE	NUMBER OF INTERMEDIATE WELLS	DISTANCE FROM CENTER OF BIN TO WALL (A)	DISTANCE BETWEEN CENTER WELL AND FIRST INTERMEDIATE WELL (B)	DISTANCE BETWEEN WELLS (C)	DISTANCE FROM CENTER OF BIN TO ANGLE RING (D)
15'	1	7' 5-1/2"	39.375"	*	9' 5"
18'	1	8' 11-7/16"	36.75"	*	11' 5"
21'	2	10' 5-5/16"	32.5"	49.75"	12' 5"
24'	2	11' 11-1/4"	38.5"	55.75"	13' 11"
27'	2	13' 5-3/16"	44.5"	61.75"	15' 5"
30'	2	14' 11"	50.5"	67.75"	16' 11"
33'	3	16' 4-15/16"	39.563"	56.813"	18' 11"
36'	3	17' 10-7/8"	42.563"	59.813"	19' 11"
39'	3	19' 4-3/4"	47.063"	64.313"	21' 5"
42'	4	20' 10-11/16"	39"	56.25"	23' 5"
48'	4	23' 10-1/2"	46.2"	63.45"	26' 5"

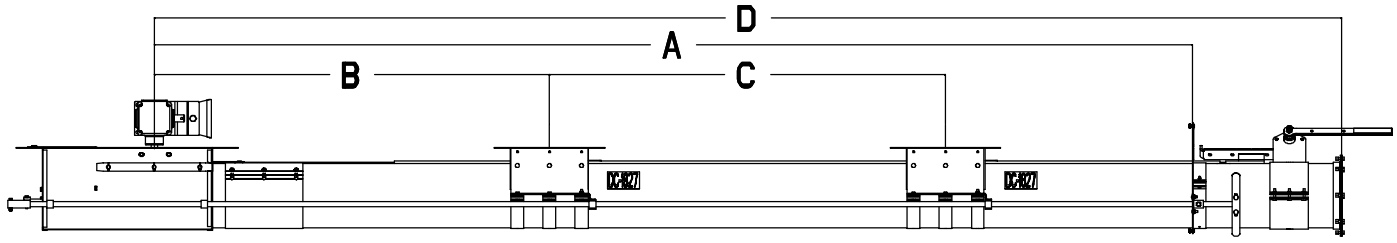


Fig. 3

4. Unload Tube Installation

A. Cut an opening in the bin wall for the unloading tube to pass through. See chart below for hole information. Additional views of the holes can be found in Figures 4-A, 4-B, and 4-C.

Tube Size	Hole Size and Location
10"	13" hole, approximately 6" below the bin floor, inline with the Center Well Tube
8"	11" hole, approximately 6-1/5" below the bin floor, inline with the Center Well Tube
6"	9" hole, approximately 7-1/2"below the floor, directly inline with the Center Well Tube

B. From inside the bin, insert the angle ring end of the unload tube through the hole in the bin sidewall.

NOTE

Before installing tube, remove flight from inside of tube.

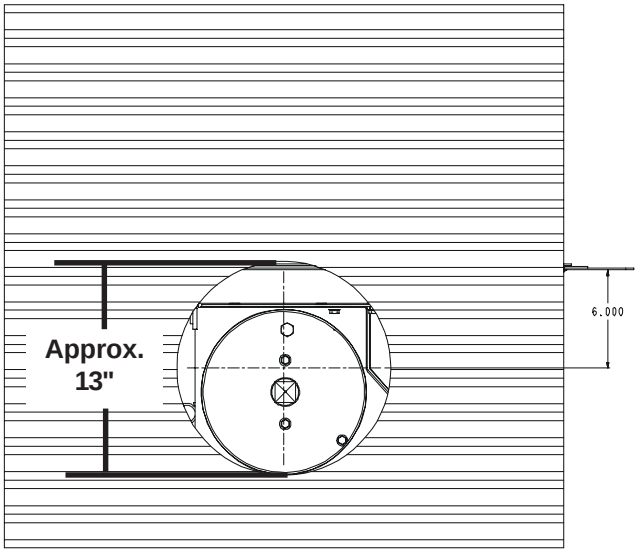


Fig. 4-A (10" Tube)

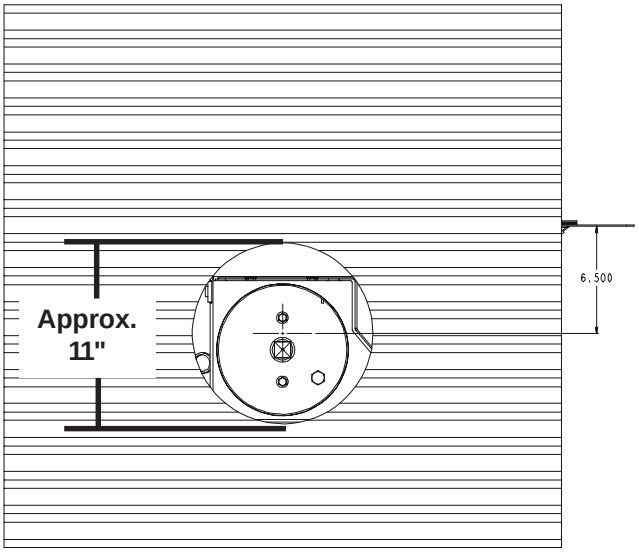


Fig. 4-B (8" Tube)

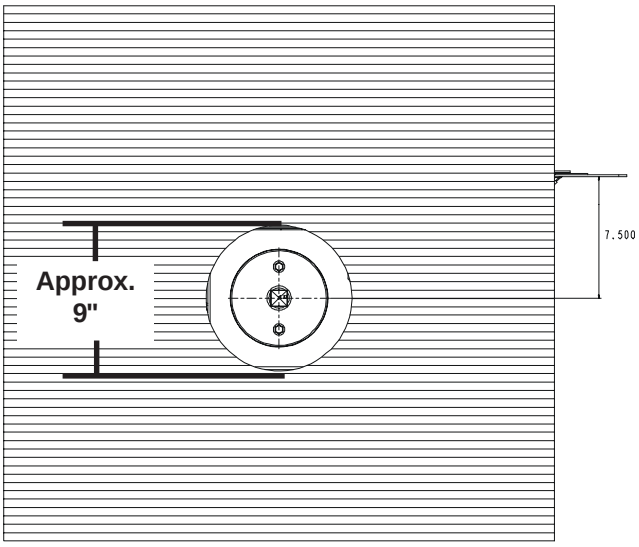


Fig. 4-C (6" Tube)

4. Unload Tube Installation (cont.)

C. Place the connecting band onto the end of the unload tube closest to the center well. (See Figure 4-D)

D. Position the unload tube flush against the center well tube. (See Figure 4-E)

E. Slide the connecting band until it is equally positioned over both the unload tube and the center well tube. Position the connecting band so that it will not interfere with the control rods. (See figure 4-F)

F. Secure the connecting band with three (3) 5/16" x 1-1/2" bolts and Whizz nuts, makign sure the intermediate wells are aligned to the center wells.

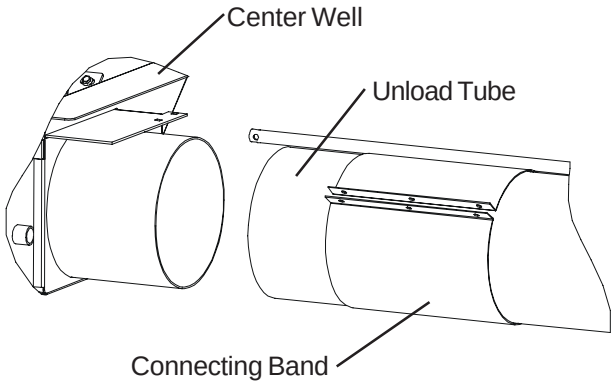


Fig. 4-D

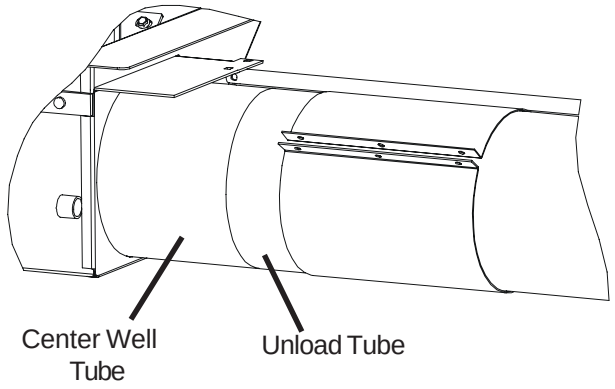


Fig. 4-E

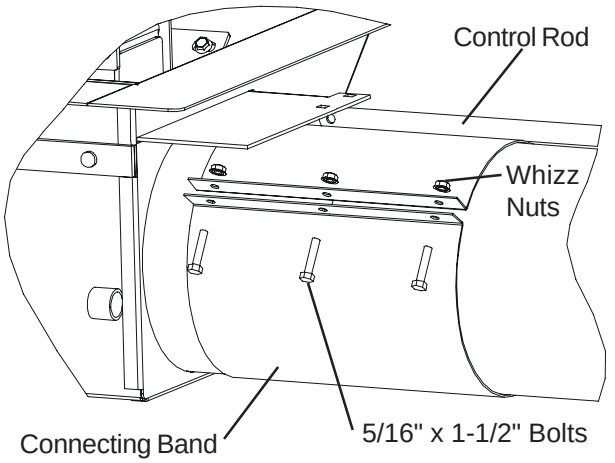


Fig. 4-F

5. Install Bin Flange

A. Attach the upper and lower bin flanges loosely to the auger tube using (2) 5/16" x 1-1/2" bolts and Whizz nuts. (See figure 5-A.)

B. Next, install the clutch lock collar to the lower bin flange using (2) 5/16" x 3/4" carriage bolts and whiz nuts. Install the bolt heads on the backside of the lower bin flange so they will be next to the bin wall when the flanges are attached to the bin. (See Figure 5-B)

C. With the flange not yet attached to the bin wall, make sure that the bin wall opening is large enough for the clutch and well control rods to pass through the bin wall.

D. Slide the bin flanges flush up to the bin wall and tighten the bolts connecting the two flanges.

E. Drill into the bin wall through the holes located on the four corners of bin flanges. Fasten the bin flanges to the bin wall using (4) 5/16" x 3/4" bin wall bolts and Whizz nuts. (See Figure 5-C)

F. Drill the remaining holes into the bin wall and attach the remaining 5/16" x 3/4" bin wall bolts and Whizz nuts.

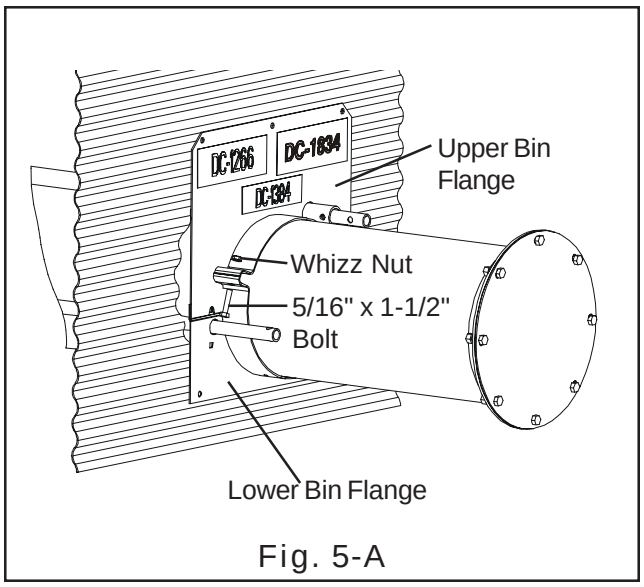


Fig. 5-A

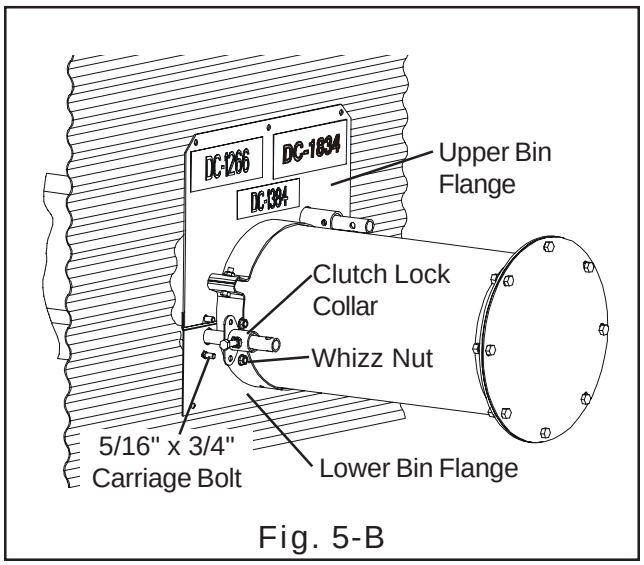


Fig. 5-B

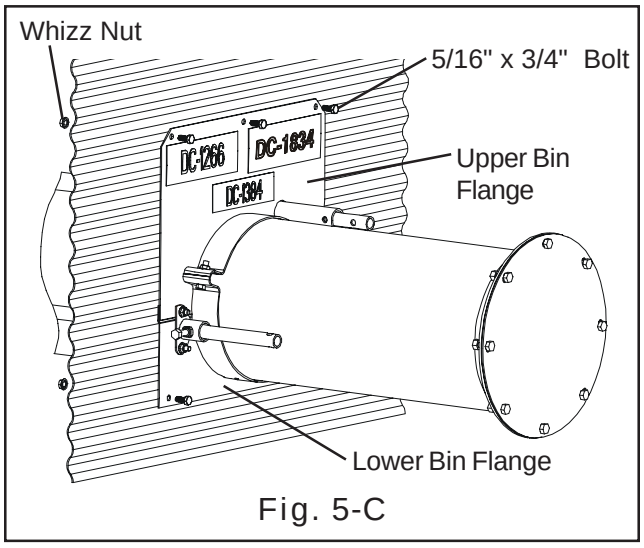


Fig. 5-C

6. Center Well Slide Gate Assembly

A. Close the center slide gate completely.

B. Align control rod between holes in gate.

C. Attach control gate clamp to control rod by sliding 5/16" x 1-3/4" long roll pin through clamp and control pipe.

D. Fasten clamp to bottom side of control gate by using two (2) 5/16" x 1-3/4" long carriage bolts and Whizz nuts. (See Figure 6) (**NOTE: 6" & 8" rods attach on the TOP side of the center well gate.**)

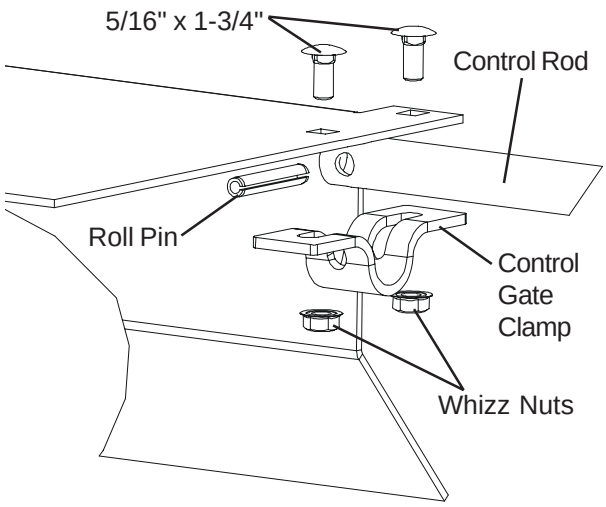


Fig. 6 (10" Shown)

7A. Control Lever Installation (6" Systems)

1. Close all slide control gates & keep them closed.

2. Attach the control lever by sliding the safety snap-on pin through the lever and both control rods as shown in Figure 7-A.

3. Put the control lever in the 1st slot closest to the bin flange. This slot should be used to close the gates.

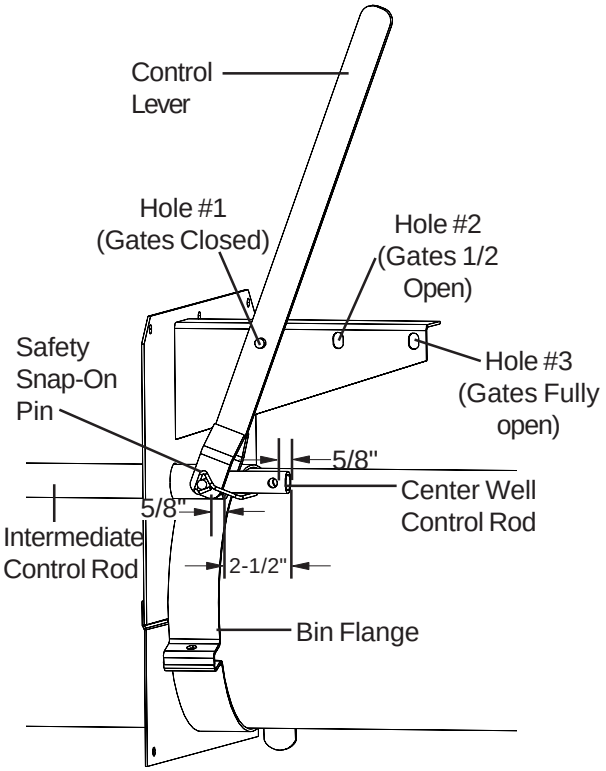


Fig. 7-A (6" Systems)

7B. Rack & Pinion Installation (8" & 10" Systems)

1. Make sure all gates are fully closed.

2. Slip Rack & Pinion tube over center gate control rod and align holes, making sure Rack & Pinion is fully extended toward bin wall. (See Figure 7-B)

3. With Rack & Pinion resting on unload tube, and tube holes aligned, insert one (1) 5/16" x 1-3/4" bolt through the Rack & Pinion tube and center gate control rod. Fasten together with a nut. (See Figure 7-B)

4. Slide Wrench over shaft on Rack & Pinion, making sure the collar faces the gears. Fasten down with 3/8" flat washer and 3/8" x 3/4" hex bolt. (See Figure 7-C)

5. With Rack & Pinion fully extended attach lower half band and secure to unload tube with six (6) 5/16" x 1-1/2" bolts, washers, and Whiz nuts. (See Figure 7-D)

6. To open all gates, with center gate closed, place second 5/16" x 1-3/4" bolt through center gate control rod and intermediate gate control rod, and secure with nut. (See Figure 7-D)

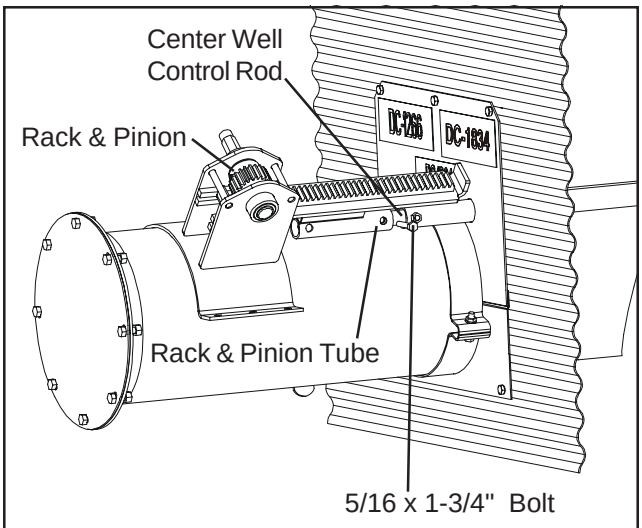


Fig. 7-B (8" & 10" Systems)

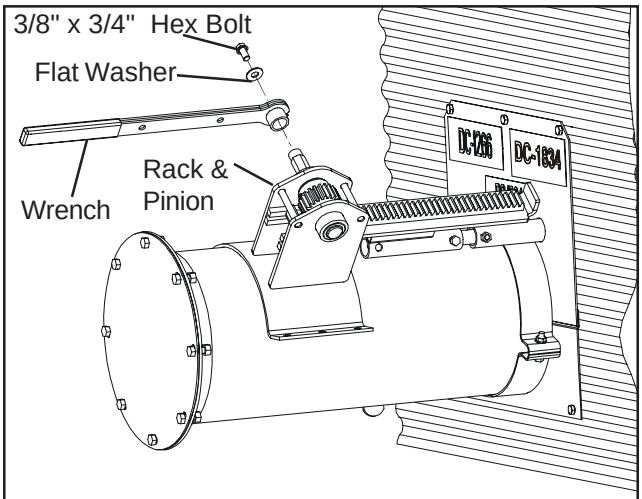


Fig. 7-C (8" & 10" Systems)

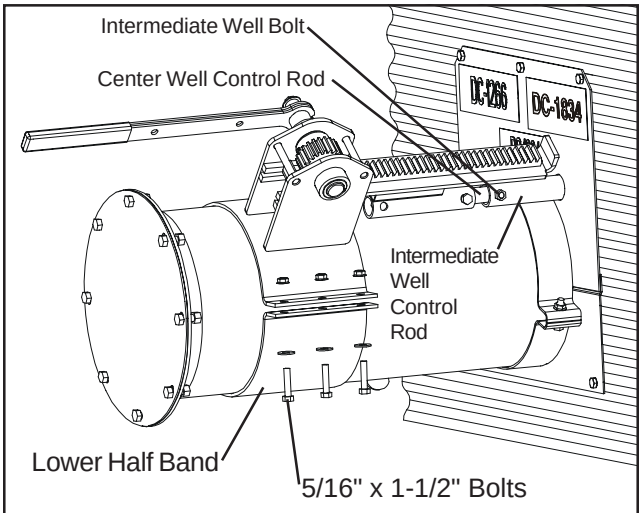


Fig. 7-D (8" & 10" Systems)

8. Clutch Control Installation

A. Slide the clutch control pipe through the bin flange and the support brackets on the intermediate and center wells. Slide the clutch control pipe into clutch collar on the center well. (See Figure 8-B and 8-D)

B. Bolt the clutch control pipe to the collar on the center well using a 5/16" x 1-3/4" long bolts and lock nut. (See Figure 8-C)

C. Attach clamp to the control pipe by sliding 5/16" x 1-3/4" long roll pin through the clamp and control pipe. Fasten the clamp handle by using two 5/16" x 3/4" carriage bolts, flat washers, and Whiz nuts. Install nuts so they secure the 5/16" x 1-3/4" long roll pin in place. (See Figure 8-A)

D. Check operation of clutch by pulling the handle to engage the clutch and then pushing the handle to disengage it. The Control pipe should slide freely. Lock the control pipe into the disengaged position by tightening the bolt on the lock collar that is attached to the bin flange. (See Figure 8-D)

NOTE

<u>Clutch Control Pipe</u> is shipped INSIDE unload flight.

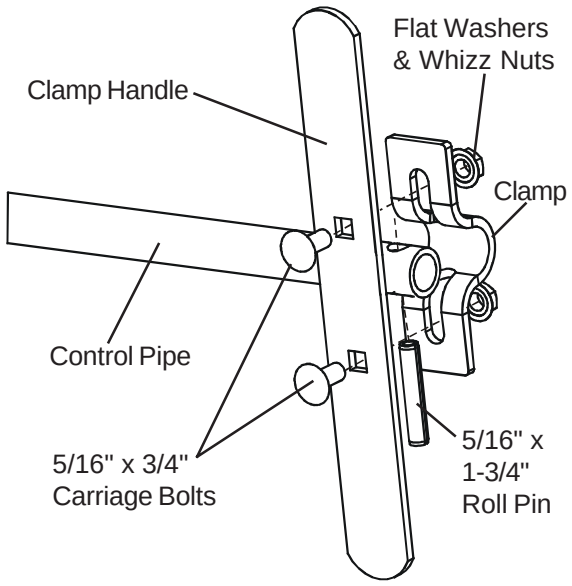


Fig. 8-A (8" & 10" Systems)

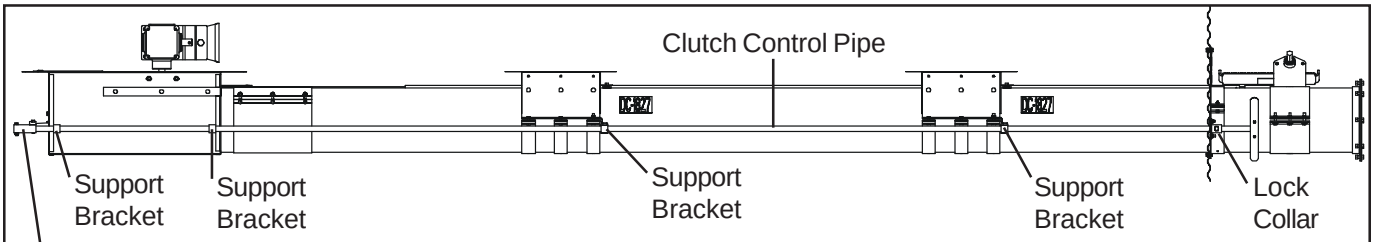


Fig. 8-B (8" & 10" Systems)

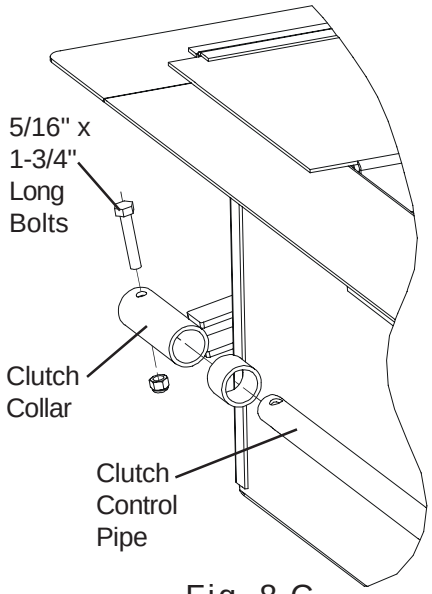


Fig. 8-C

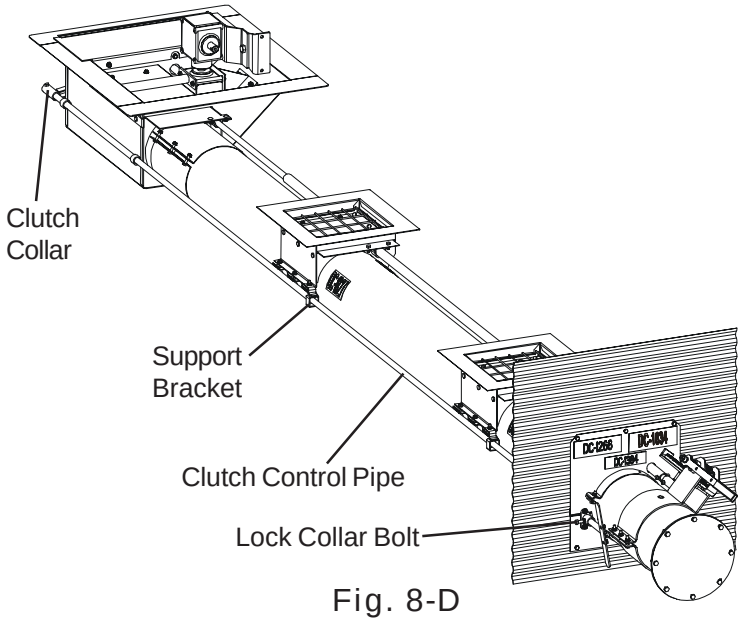


Fig. 8-D

9. Installing the Unload Tube Flight

A. Begin by removing the tube end cap if you have not already done so.

B. Insert the Flight into the tube with the square bushing end facing the center well and the round bushing end facing the discharge end of the tube. (See Figure 9-A)

C. When the flight is approaching the clutch shaft it will be necessary to rotate flighting counter-clockwise in order to get it to seat properly on the squared clutch shaft. When the flight is properly seated the flight should be entirely inside the unload tube. It may be necessary to pull the flight out a small amount and attempt this step multiple times in order to seat the flight properly. (See Figure 9-B)

D. On the initial install with an empty bin, the installer might want to open the center well and enter the bin to check and see that the flight is seated. Once they have seen that it has seated they will know the proper position the flight is in on the discharge end when it has seated properly. (See Figure 9-A)

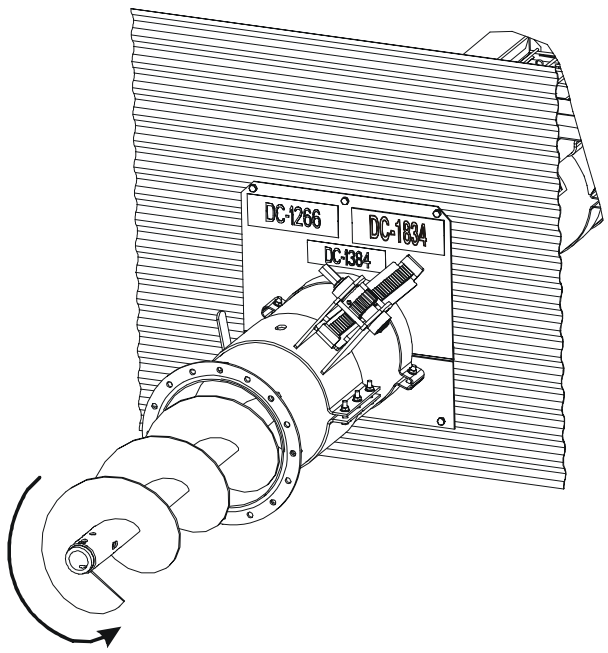


Fig. 9-A

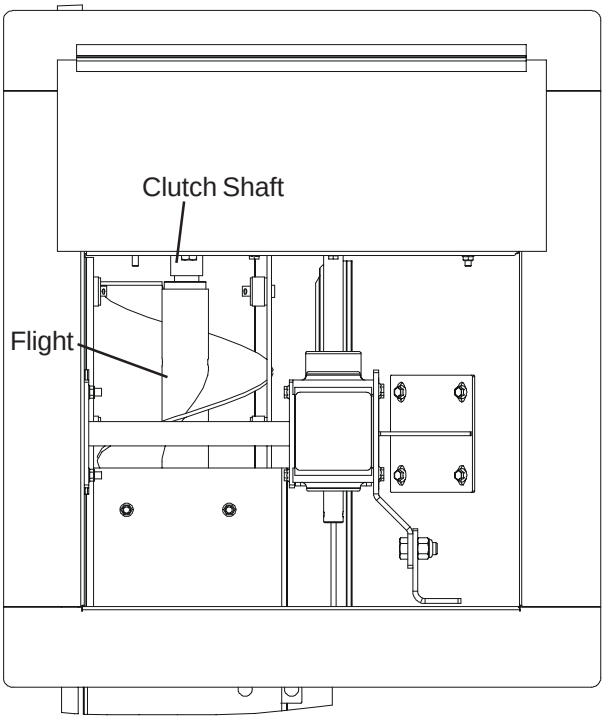


Fig. 9-B

10. Install the Sweep Flighting

A. Assemble the U-joint.

1. Insert the stub into the u-joint.
2. Secure the u-joint using a 5/16" x 2" roll pin. Drive the pin in with a hammer. (See Figure 10-A)

B. Attach the U-joint.

1. Slide the u-joint onto the top gear box output shaft.
2. Secure the u-joint using a 5/16" x 2" roll pin. (See Figure 10-B)

C. Install the Pivot Bracket

1. Attach the Pivot Bracket to the left side of the gear box using four (4) 3/8" x 3/4" Flange Bolts. (See Figure 10-C)

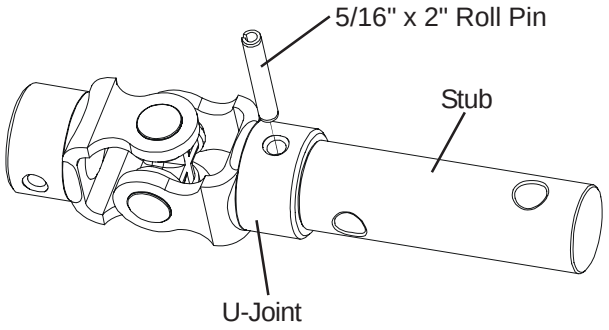


Fig. 10-A

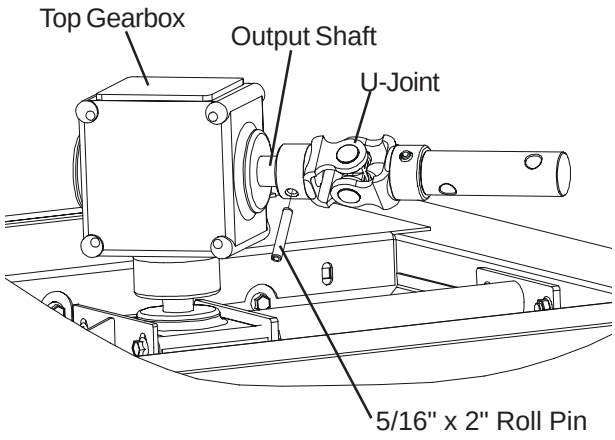


Fig. 10-B

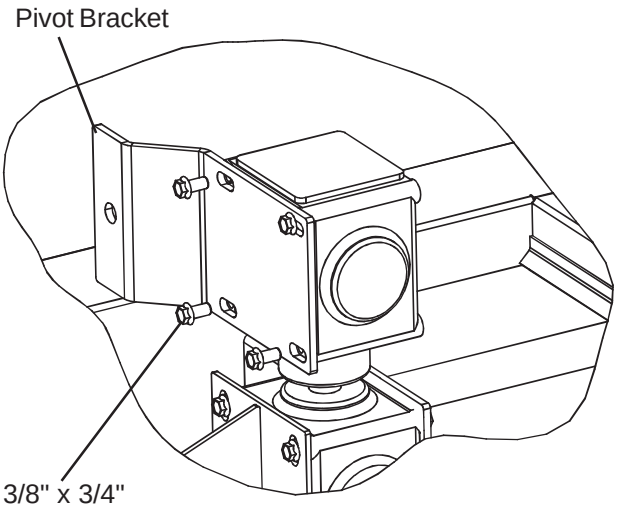


Fig. 10-C

10. Install the Sweep Flighting (cont.)

D. Install the Flighting.

Attach a flighting section to the u-joint stub located on the gearbox. Making sure that the Dura-Edge side of the flight faces the center of the bin. Secure it with bolts (see Note), and stover nuts. (See Figure 10-D)

NOTE

6" Two (2) 7/16" x 2-1/2" Bolts
8" Two (2) 1/2" x 3" Bolts
10" Two (2) 1/2" x 3" Bolts

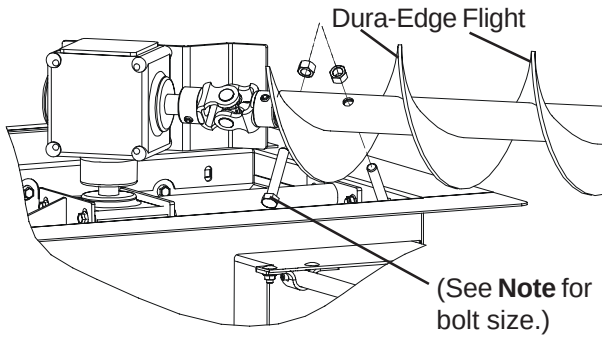


Fig. 10-D

Use the chart below to determine the number of flighting and shield sections needed for the length of sweep to be used.

Bin Size	# of Flighting and Shields Required	Lengths
15'	1	5' 6"
18'	1	7' 0"
21'	1	8' 6"
24'	1	4' 4"
	1	5' 6"
27'	1	5' 6"
	1	5' 10"
30'	1	5' 6"
	1	7' 4"
33'	1	5' 10"
	1	8' 6"
36'	1	7' 4"
	1	8' 6"
39'	1	8' 6"
	1	8' 10"
42'	1	4' 4"
	1	7' 0"
	1	7' 4"
48'	1	7' 0"
	2	7' 4"

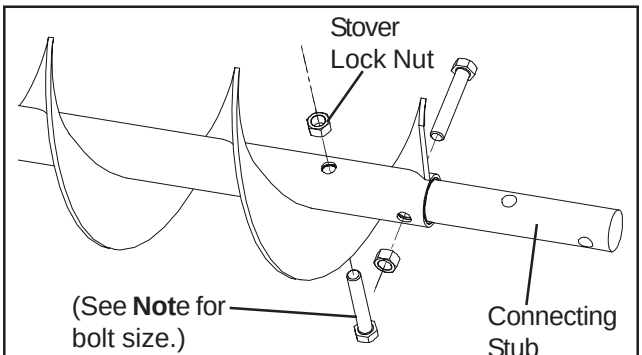


Fig. 10-E

E. Install the Connecting Stub to Sweep Flight.

1. Insert the connecting stub into the flighting. Secure it with bolts (See NOTE), and stover nuts.(See Figure 10-E).

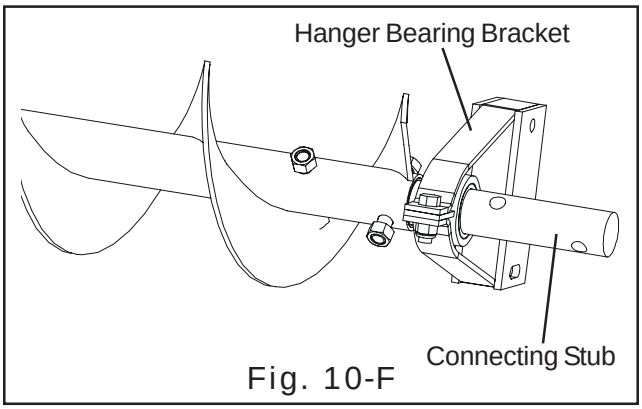


Fig. 10-F

F. Install the Bearing Bracket

1. Place the hanger bearing bracket onto the connecting stub. (See Figure 10-F).

G. Install the Sweep Flighting.

1. Install the next section of flighting onto the connecting stub. Secure the flighting with bolts (See NOTE) and stover nuts. (See Figure 10-G)

2. Keep repeating steps E – G for additional sections of flighting.

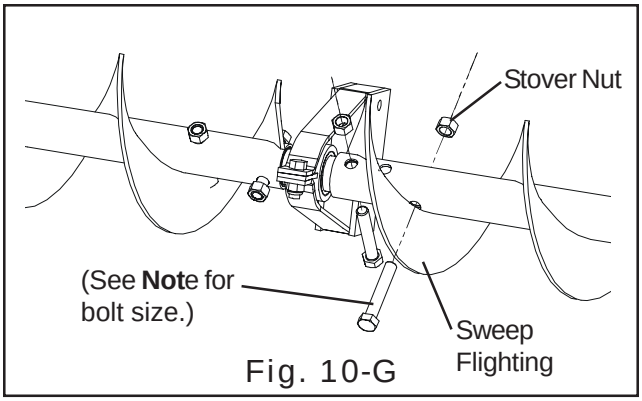


Fig. 10-G

10. Install the Sweep Flighting (cont.)

H. Install the Flighting Shield.

1. Install the first shield to the shield mounting bracket. Secure using two (2) 3/8" x 1-1/4" bolts, flat washers, and locknuts. Make sure the nut is on the side of the slotted hole for adjustment. (See figure 10-H)

2. Fasten the shield bracket to the pivot bracket on the gear box using one (1) 5/8" x 1-1/2" bolt and lock nut. (See Figure 10-H)

3. Install the first and second flighting shield to the hanger bracket (when applicable) using two (2) 3/8" x 3" carriage bolts, flat washers, and lock nuts. (See Figure 10-I)

4. Install shield splice brackets to back side of flighting shields using four (4) 5/16" x 3/4" bolts, flat washers, and Whizz nuts. (See Figure 10-J)

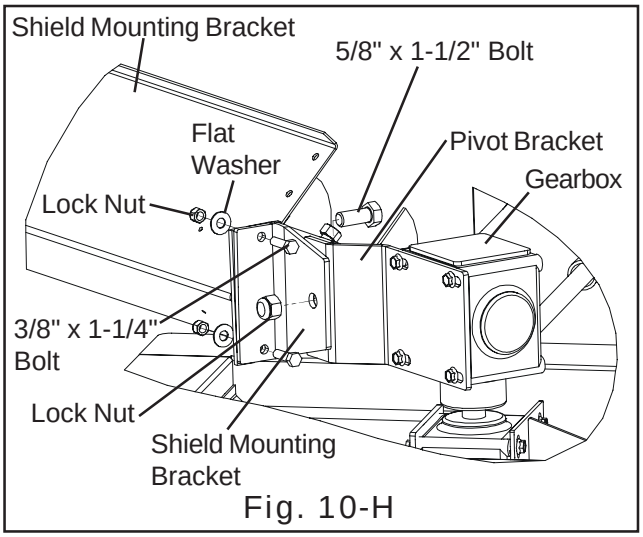


Fig. 10-H

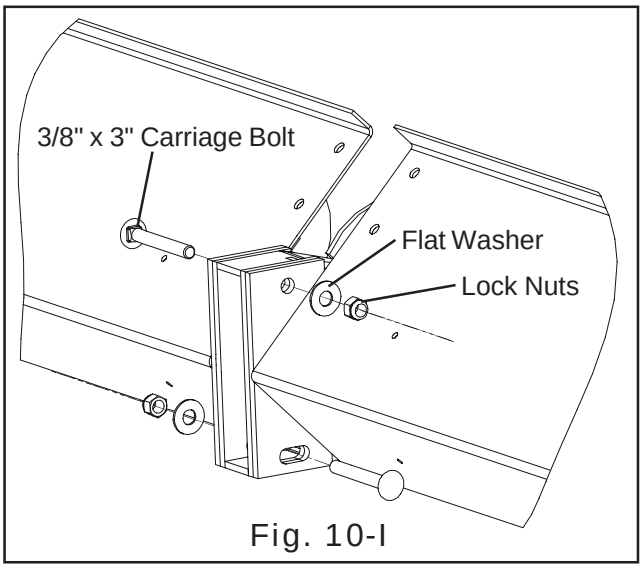


Fig. 10-I

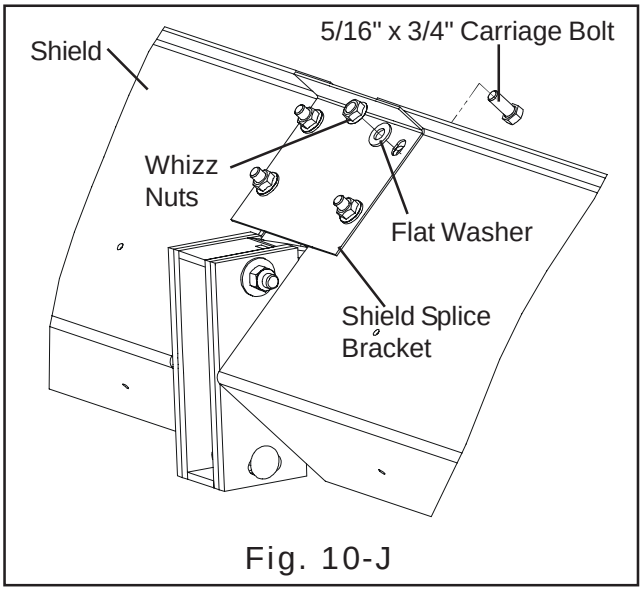


Fig. 10-J

11. Sweep Wheel Installation

A. Insert the 4-3/8" long bushing into the flight making sure to align the outer most hole in the flight with the hole in the bushing. Align the slot in the wheel shaft with the hole in the bushing and insert the shaft into the bushing. Connect them all together using a 3/8" x 2-1/2" grade 8 HHCS bolt for 6" and a 3/8" x 3" grade 8 HHCS bolt for 8" & 10" along with the appropriate sized lock nut. Mount the sweep wheel to the back shield using 3/8" x 1-3/4" HHCS bolts, flat washers, and lock nuts. Use spacers as necessary to connect the wheel angle bracket to the back shield. (See Figure 11)

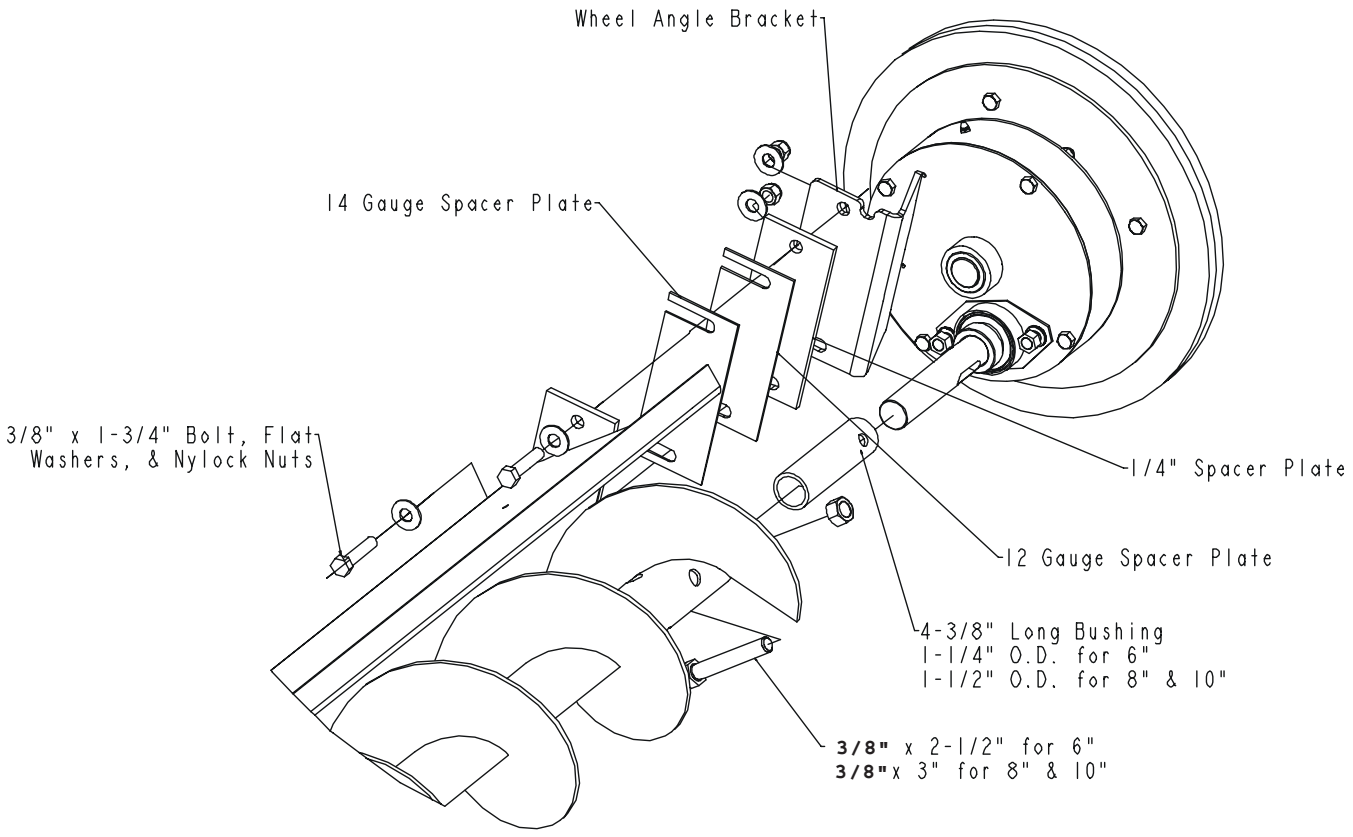


Fig. 11

12. Power Recommendations

A. The horsepower recommendations are for augering reasonably dry grain. High moisture grain above (15%) will require greater power if maximum capacity is to be maintained. The maximum possible capacity will be less with high moisture grain that with dry grain. Use and electric motor of the correct size that operates at 1750 RPM. DO NOT use a motor size that is greater than what is shown for the largest bin size in your column.

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

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.

Horsepower Chart

Bin Dia.	Horizontal Head			25 Degree Head			Vertical Head		
	6"	8"	10"	6"	8"	10"	6"	8"	10"
15'	3	3	--	3	5	--	5	5	--
18'	3	3	--	3	5	--	5	5	--
21'	3	5	--	5	5	--	5	7 1/2	--
24'	3	5	7 1/2	5	5	10	5	7 1/2	10
27'	5	5	7 1/2	5	5	10	5	7 1/2	10
30'	5	5	7 1/2	5	7 1/2	10	7 1/2	7 1/2	15
33'	5	5	7 1/2	5	7 1/2	10	7 1/2	7 1/2	15
36'	5	7 1/2	10	5	7 1/2	10	7 1/2	7 1/2	15
39'	--	7 1/2	10	--	10	15	--	--	--
42'	--	7 1/2	10	--	10	15	--	--	--
48'	--	7 1/2	10	--	10	15	--	--	--

⚠ DANGER

1. **Electric motors and controls must be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.**
2. **A main power disconnect switch capable of being locked only in the OFF position shall be provided. This shall be locked whenever work is being done on the auger.**
3. **A magnetic starter should be used to protect your motor when starting and stopping. It should stop the motor in case of power interruption, conductor fault, low voltage, circuit interruption or motor overload. Then the motor must be restarted manually. Some motors have built-in thermal overload protection. If this type motor is used, use only those with a manual reset.**
4. **The motor starting controls must be located outside the bin. Locate the motor starting controls outside the bin but near the bin door so the operator has full view of the operation inside the bin.**
5. **Disconnect power before resetting motor overloads.**
6. **Reset and motor starting controls must be located so that the operator has full view of the entire operation.**
7. **Make certain electric motors are grounded.**
8. **Shut off power to adjust, service or clean.**

13. Before Filling the Bin

A. Close the center well and the intermediate well gates. Push the control pipes to close.

B. Disengage the power sweep clutch control. Push to disengage.

C. Position the sweep auger a long side the intermediate wells.

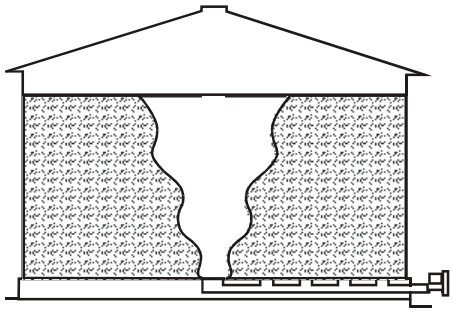


Figure 13-A

Abnormal grain flow can easily fall and bury a person, suffocating them. **DO NOT** enter a bin with abnormal grain flow.

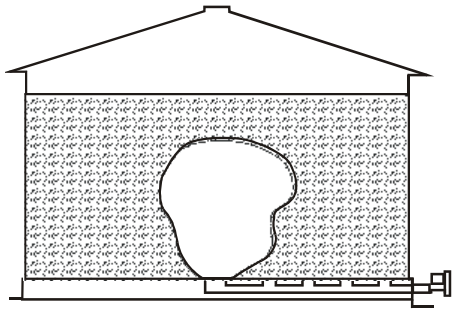


Figure 13-B

Bridged grain can easily break loose and bury a person, suffocating them. **DO NOT** enter a bin with bridged grain.

⚠ DANGER

DO NOT enter the grain bin unless all power driven equipment has been shut down and locked out. Never enter the grain bin unless monitored by another person.

DO NOT enter the bin if the grain has bridged or has flowed abnormally out of the bin as shown in Fig. 13-A or Fig. 13-B. Suffocation can occur if grain suddenly breaks loose, burying persons who are inside the bin.

14. Perform Pre-start Checks

⚠ CAUTION

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

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

A. Make sure ALL belts are tensioned properly.

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

⚠ DANGER

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

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

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

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

⚠ 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.

15. Operation

CAUTION **DO NOT start/stop the auger while it is under load, this may cause the auger to "jam."**

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

CAUTION **Be aware of any unusual vibration or noises during the initial start-up and "break-in" period. If anything unusual is detected, immediately shutdown the auger, and disconnect and lockout the power supply before servicing. Visually inspect the auger periodically during operation.**

A. Operation for 6" Systems

1. Start the unloading auger. The motor is located on the power head outside the bin on the unload tube. To figure out the horsepower needed for your equipment use the Horsepower Chart on page 27.
2. The safety snap pin should be inserted through the center well control rod & the control lever. Make sure it has NOT been inserted through the intermediate control rod. (See Fig. 15-D)
3. Place control lever in the second slot & pull lever to open gradually until the desired flow is established. (See Fig. 15-D) It shouldn't be necessary to open the gate more than 3" to 6".
4. Always close center well gate and allow the unloader to clean out before stopping the unloader.
5. When grain flow stops from the center well, close the center well gate. Insert the safety snap pin through the control lever and both the intermediate and center well control rods as shown in fig. 15-C. The remaining grain should look similar to fig 15-A.
6. Gradually open gates using the middle pivot slot until the desired flow of grain is reached. You shouldn't have to open the gates more than 2 to 4 inches. If gates need to be opened further use the last slot for more leverage. (See Fig. 15-D) The remaining grain should look similar to fig 15-B.

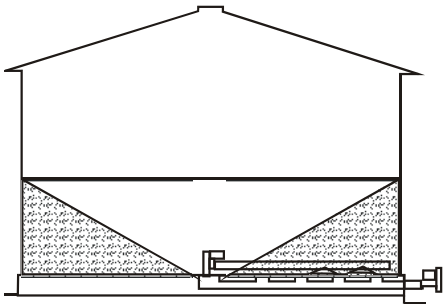


Fig. 15-A

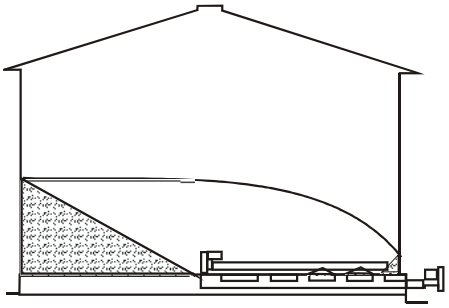


Fig. 15-B

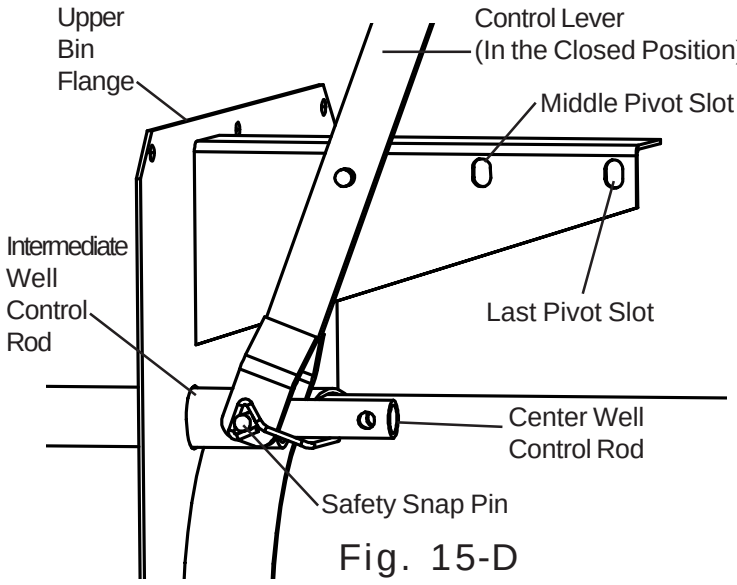


Fig. 15-D

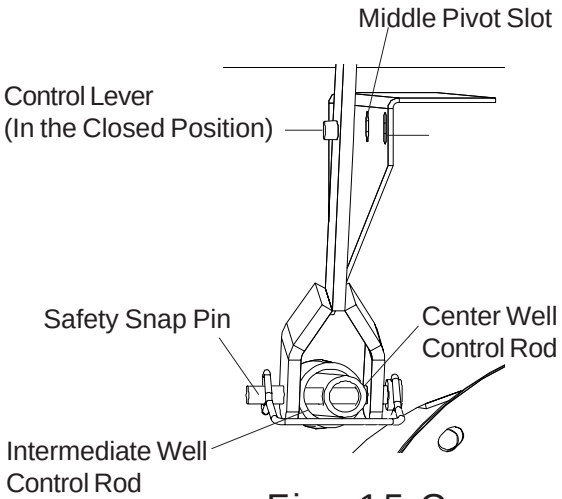


Fig. 15-C

15.Operation (cont.)

B. For 8" & 10" Systems

1. Start the unloading auger. The motor is located on the power head outside the bin on the unload tube. To find the horsepower needed for your equipment, use the Horsepower Chart on page ***27***.

2. Make sure the Center Well Bolt is inserted through the Rack & Pinion Tube and Center Well Control Rod. **NOTE: NO** bolt should be in the Intermediate Well Control Rod. (See Figure 15–E).

3. Place wrench on Rack & Pinion and open center gate until desired flow is established. It shouldn't be necessary to open gate more than 3" to 6".

4. Always close the center well gate and allow the unloader to clean out before stopping the unloader.

5. When grain flow stops from the center well, close the center well gate. Insert the Intermediate Well Bolt through the Intermediate Well Control Rod and the Center Well Control Rod (See Figure 15 – E). Remaining grain should look like Figure 15 – A on page 29.

6. Gradually open the gates until the desired flow of grain is reached. You shouldn't have to open the gate more than 2" to 4". The reaming grain should look like Figure 15 – B on page 29.

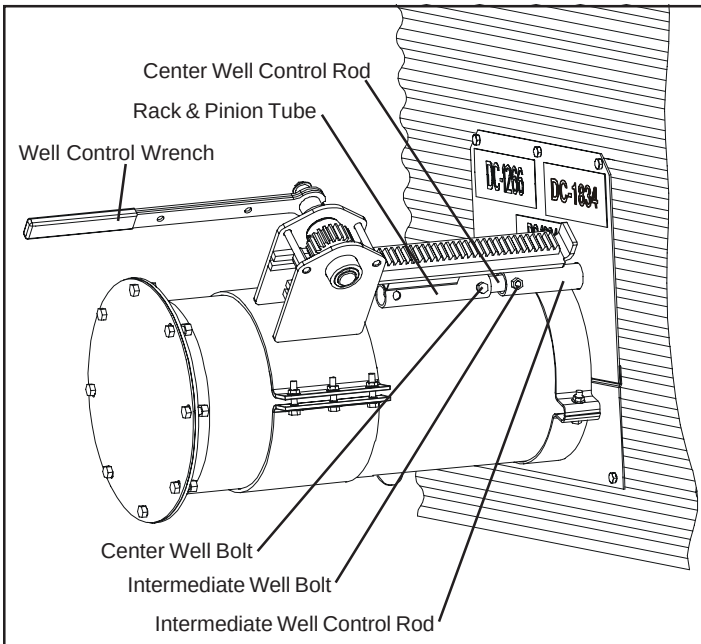


Fig. 15-E

16. Engaging the Clutch for Bin Sweep

A. All power should be off and locked out before starting.

B. Loosen the Lock Collar Set Screw and pull on Clutch Control Handle to engage clutch. (See Figure 16)

C. Once engagement is felt tighten the Lock Collar Set Screw to hold the clutch engaged.

D. Fully open the **Center Well ONLY**.

CAUTION **Center well slide gate must be fully open during sweep operation.**

E. Restore power and start the Power Sweep motor. The sweep auger will start along with the unload auger. The sweep auger will remain on the floor and clear most of the grain in one pass. A second pass will clean out additional grain, before final clean out.

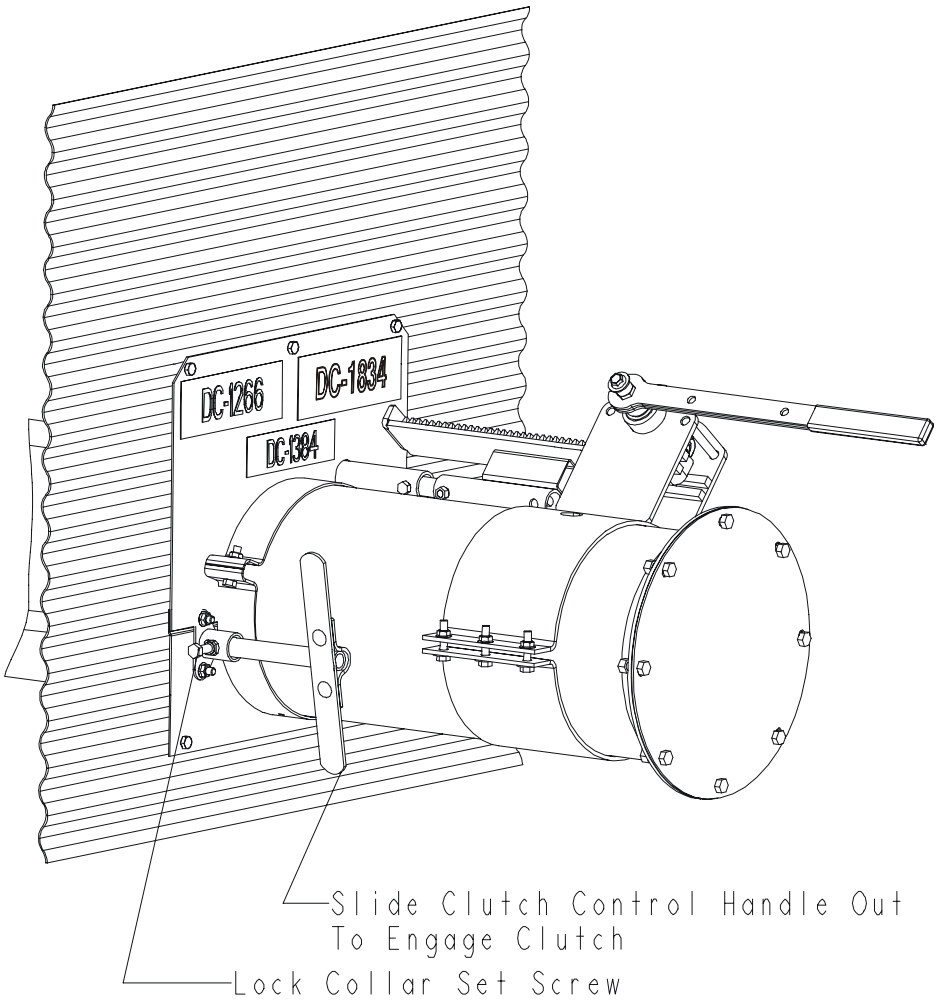


Fig. 16

17. FINAL CLEAN-OUT

The following procedure is recommended for cleaning the floor of the bin after the sweep auger has removed as much grain as possible.

⚠ DANGER **DO NOT enter a grain bin unless all power driven equipment has been shut down and locked out.**

1. Clean (scoop and sweep by hand) the outer area of the floor into a circular pile towards the center of the bin. (See Fig. 17-A)
2. Get out of the bin.
3. After making sure everyone is outside the bin and clear of the equipment, start the under floor unloader and the sweep auger. In a short time, the circular pile towards the center of the bin will have been removed.
4. Stop the equipment and lock out.
5. Scoop and sweep by hand the remaining floor area to the center of the bin. (See Fig. 17-B)
6. Get out of the bin.
7. Repeat steps 3, 4, 5, and 6 until all grain has been removed from the bin.

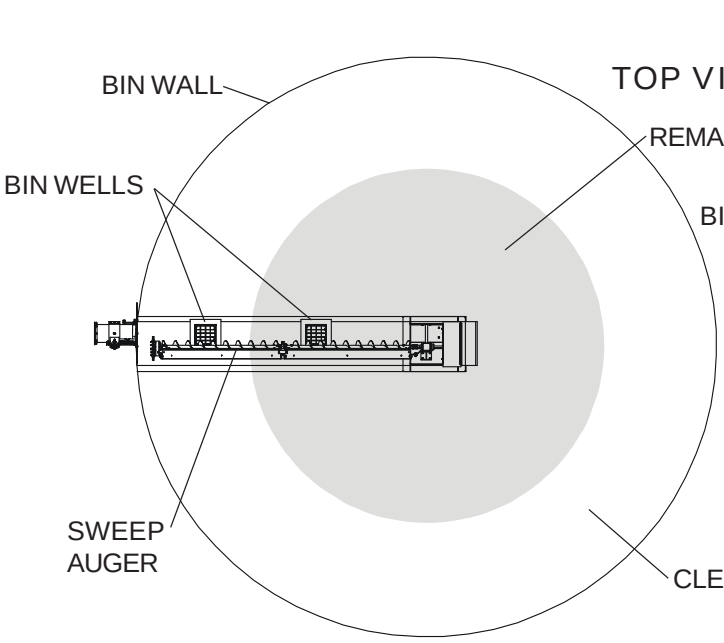


FIG. 17-A

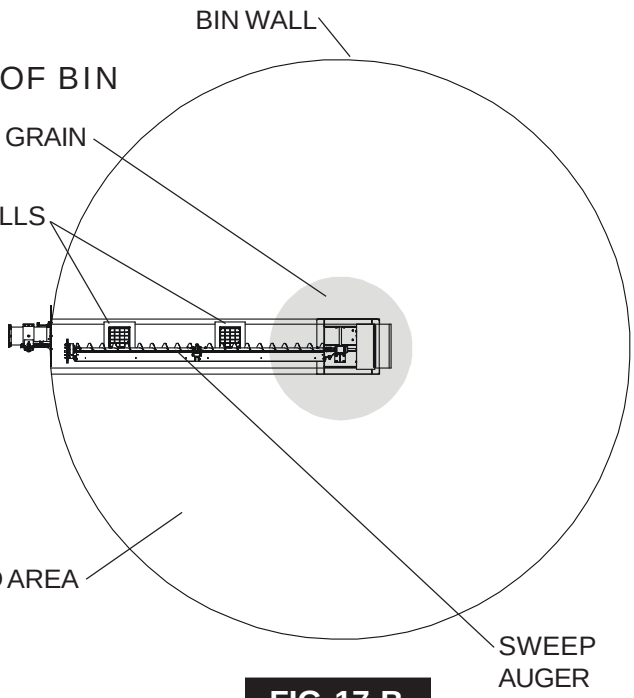


FIG. 17-B

⚠ DANGER **Keep out of bin while sweep is in operation. Rapidly traveling sweep auger. The sweep auger will move rapidly around the bin when the bin is nearly empty.**

⚠ DANGER **Stay clear of the under floor unloader at the bin wells. The under floor unloader is exposed at these locations in the bin floor.**

18. Shutdown

A. Normal Shutdown.

1. Before shutting down the unit, be sure the hoppers and augers are empty.
2. Disconnect and lockout the power source before leaving the work area.

B. Emergency Shutdown.

1. Know how to shutdown the auger in case of an emergency.
2. Do not restart the auger while it is under load.

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

3. Close the bin well control gates.
4. Reconnect and unlock the power source.
5. Clear the auger gradually, until there is no grain and there are no obstructions.

C. Storage Preparation.

1. Close all wells to the discharge auger.
2. Position the direct gear drive sweep directly over the intermediate wells.

NOTE **Make sure that the clutch control rods are disengaged.**

3. Be sure the unload tube is empty.
4. Shutdown the auger.
5. Make sure all fasteners are tight.

⚠ DANGER **DO NOT enter the grain bin unless all power driven equipment has been shutdown.**

19. Maintain the Auger

⚠ DANGER **Properly maintaining this equipment will help to ensure it continues to work properly. Failure to properly maintain this equipment may result in damage to the equipment or may cause SERIOUS INJURY or DEATH to the operator.**

Failure to properly maintain this equipment may also be a misuse of the equipment. Any misuse of the equipment may void the warranty.

A. The u-joint must be lubricated with SAE multipurpose grease every 10 operational hours, or after each use.

B. When it is time to re-lubricate the gear boxes, do so as follows:
Upper: Fill about half-full, or add approximately 14 fl. oz.
Lower: Fill about half-full, or add approximately 14 fl. oz.

C. Use caution when repairing or replacing equipment parts.

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

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

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

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

Problem	Possible Cause	Solution
1. The auger is vibrating.	A. The drive belt may be too tight, binding the head stub and flight. Damage can occur to the auger flighting, causing noise. Damage usually is caused from foreign material being run through the auger.	A1. Adjust the drive belt to the proper tightness. A2. It may be necessary to remove the flighting for inspection.
2. Capacity is too low.	A. There may not be enough grain reaching the auger.	A1. Make sure the intake has not bridged over, restricting flow. The flighting at the intake should be covered with grain for maximum capacity.
	B. The auger is moving too slowly.	B1. Check the auger speed. Low capacity will result from speeds slower than recommended.
3. The auger plugs.	A. The auger may be "jamming" because too much grain is reaching the auger.	A1. Decrease the amount of grain the auger is gathering.
	B. The motor may be too small or wired improperly.	B1. If the motor is a newer light weight aluminum type, the next larger size may be desirable.
	C. The grain may be wet.	C1. If wet grain or other hard-to-move material is being augered, use a larger size motor than recommended for normal use.
	D. The auger may be jammed with foreign material.	D1. Remove any foreign material in the auger.
	E. The discharge end may be plugged.	E1. Unplug any plugs at the discharge end of the auger.

Problem	Possible Cause	Solution
4. The sweep flight and shield are no longer moving.	A. Too much drag.	A1. Check the clearance between the shield and the bin floor. Make sure there is room for the auger to move. Adjusting the shield may be necessary.
	B. Worn sweep wheel.	B1. The sweep wheel wears down over time. Replace the wheel.
	C. Unconditioned grain.	C1. Moisture and/or insects can cause the grain to harden or “cake-up”. Disconnect and lockout the power to the auger before going into the bin to correct this problem or to address any other problem.

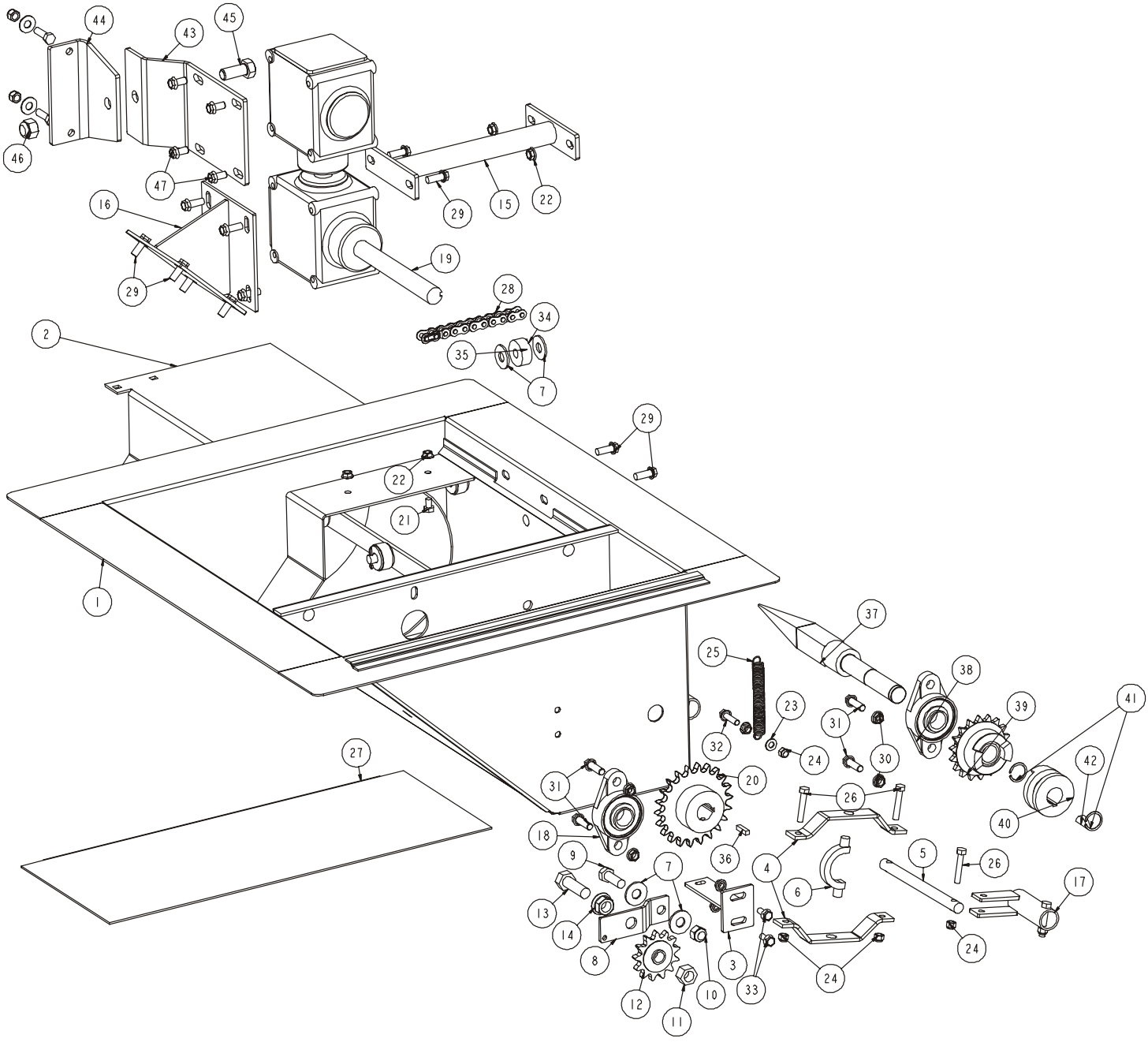
PARTS SECTION

Center Well Parts

Center Well Parts		
Ref #	Part #	Description
1		**Weldment**
	GK7231	6"
	GK7230	8"
	GK7227	10"
2		**Slide Gate**
	GK7224	6" & 8"
	GK7224	10"
3	GK1693	Clutch Pivot Bracket
4	GK1697	Clutch Yoke Bracket
5	GK1695	Clutch Control Rod
6	GK1698	Clutch Yoke
7	S-2121	1/2" Flat Washer Zinc
8	GK1702	Center Well Pivot Bracket
9	S-8760	1/2"-13 x 1 1/2" HHCS Bolt Zinc Grade 5
10	S-8260	1/2" Nylock Lock Nut Zinc Grade 5
11	S-6494	5/8"-11 Deformed Lock Nut Zinc Grade 5
12	GK1701	Sprocket #50 13T 5/8" Bore
13	S-4329	5/8"-11 x 2" HHCS Bolt Plated Grade 8
14	S-9259	5/8"-11 Flange Whizz Nut Zinc
15		**Gearbox Mounting Bracket**
	GK1688	6" & 8"
	GK4430	10"
16		**Offset Mounting Bracket**
	GK1689	6" & 8"
	GK4429	10"
17		**Clutch Control Arm**
	GK1694	6" & 8"
	GK1923	10"
18	GK4410	Bearing 2 Hole Flange
19	GK5208	Gearbox w/ Clockwise Rotation - 6", 8", & 10"
20	GK1110	Sprocket #50 22T 1" Bore
21	S-8999	5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5
22	S-3611	5/16"-18 Flange Whizz Nut Zinc
23	S-1937	5/16" Flat Washer Zinc
24	S-7382	5/16" Nylock Lock Nut Zinc Grade 5

Center Well Parts		
Ref #	Part #	Description
25	GK1704	5" Return Spring
26	S-7149	5/16"-18 x 1 3/4" HHCS Bolt Zinc Grade 5
27		**Cover Plate**
	GK7229	6" & 8"
	GK7228	10"
28		**Roller Chain**
	GK1705	#50 x 43P, **6" & 8"**
	GK4944	#60 x 70P, **10"**
29	S-9067	3/8"16 x 3/4" Flange Bolt Zinc Grade 5, **6" & 8"**
	S-9065	3/8"16 x 1" Flange Bolt Zinc Grade 5, **10"**
30	S-968	3/8"-16 Flange Whizz Nut Zinc
31	S-9066	3/8"-16 x 1 1/4" Flange Bolt Zinc Grade 5
32	S-7470	5/16"-18 x 1" Flange Bolt Zinc Grade 5
33	S-6606	5/16"-18 x 3/4" Flange Bolt Zinc Grade 5
34	GC03064	Polyurethane Roller
35	S-4322	3/32" x 1" Cotter Pin Zinc Grade 2
36	S-9168	1/4" x 1" Square Keyway
37		**Clutch Stub**
	GK6698	6" & 8"
	GK6699	10"
38	GK4410	Bearing 2 Hole Flange
39		**Clutch Yoke Drive Jaw**
	GK1699	6" & 8"
	GK6809	10"
40	GK1696	Clutch Sliding Jaw
41	S-8902	1" OD Snap Ring
42	S-8901	1/4" x 1" Woodruff Key
43		**Pivot Bracket**
	GK4460	6", 8", & 10"
44		**Shield Mounting Bracket**
	GK6175	6"
	GK4461	8" & 10"
45	S-9009	5/8"-11 x 1 1/2" HHCS Bolt Zinc Grade 5
46	S-8806	5/8"-11 Nylock Lock Nut Zinc Grade 5
47	S-9067	3/8"16 x 3/4" Flange Bolt Zinc Grade 5

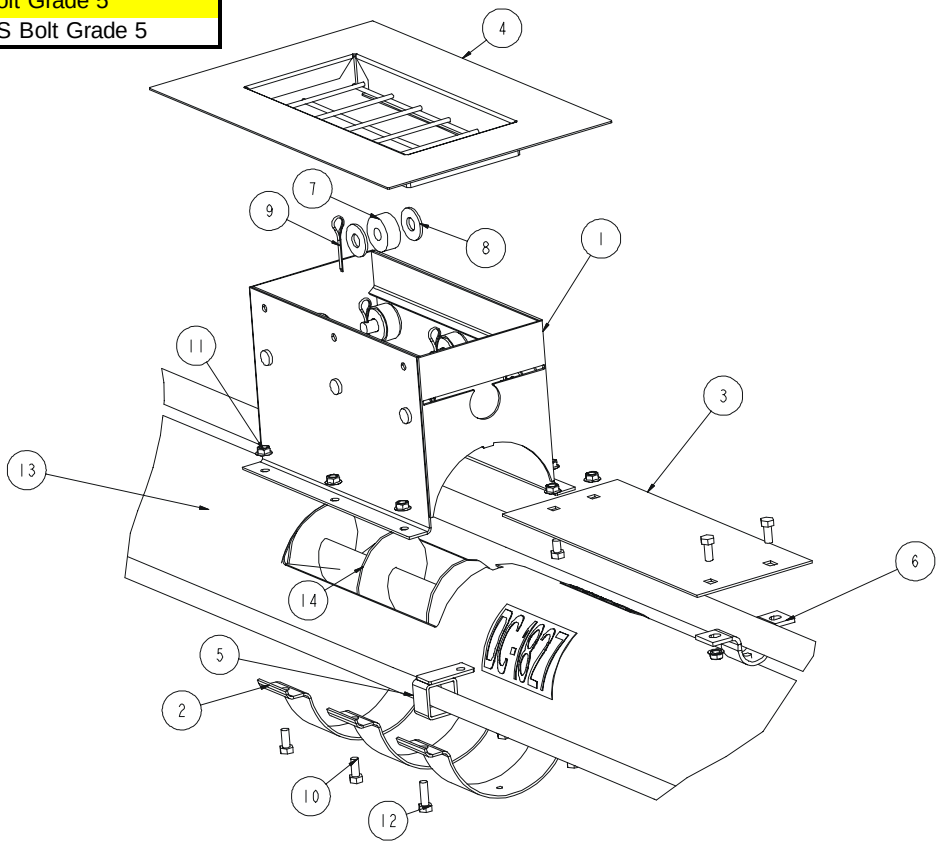
Center Well Parts



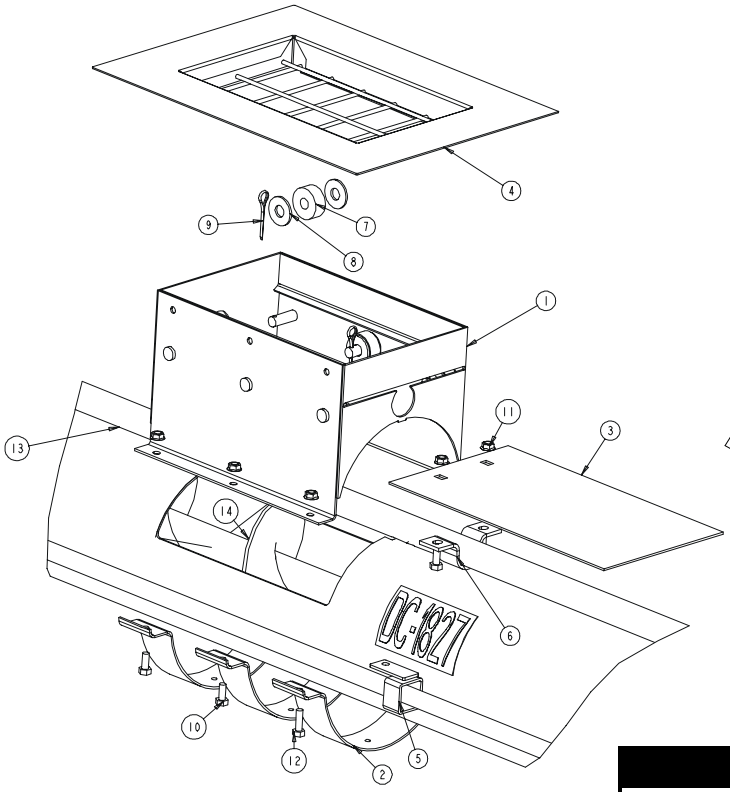
Intermediate Well Parts

Intermediate Wells		
Ref #	**Part #**	**Description**
1		**Intermediate Well Weldment**
	GC10126	6"
	GC10129	8"
	GC10131	10"
2		**Half Band**
	GK1053	6"
	GK1055	8"
	GK1057	10"
3		**Intermediate Well Gate**
	GK6756	6"
	GK6759	8"
	GK6762	10"
4		**Intermediate Well Top Flange**
	GK6757	6"
	GK6760	8"
	GK6763	10"
5		**Control Rod Guide**
	GK6713	6"
	GK6711	8"
	GK6714	10"
6	GC00174	Control Gate Clamp with Dimple for 6" and 8"
	GC09006	Control Pipe Clamp w/ Dimple for 10"
7	GC03064	Polyurethane Roller
8	S-2121	1/2" Flat Washer Zinc
9	S-7241	1/8" x 1 1/4" Cotter Pin Zinc Grade 2
10	S-4275	5/16" x 3/4" - 18 HHTB Bolt Zinc Grade 5
11	S-3611	5/16"-18 Flange Whizz Nut Zinc
12	S-1196	5/16" x 1" - 18 HHCS Bolt Grade 5
13	S-2741	5/16" x 1 1/2" - 18 HHCS Bolt Grade 5

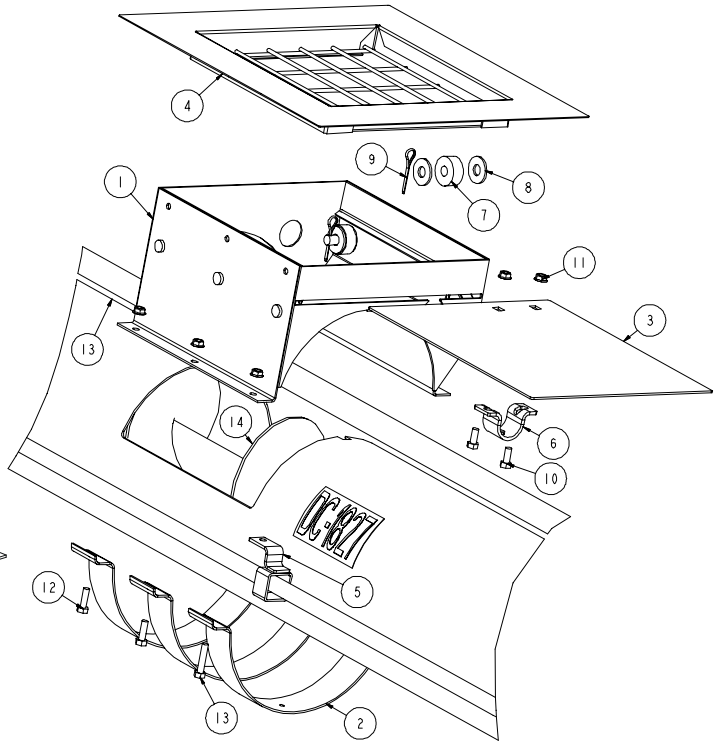
6" Intermediate Well



8" Intermediate Well



10" Intermediate Well

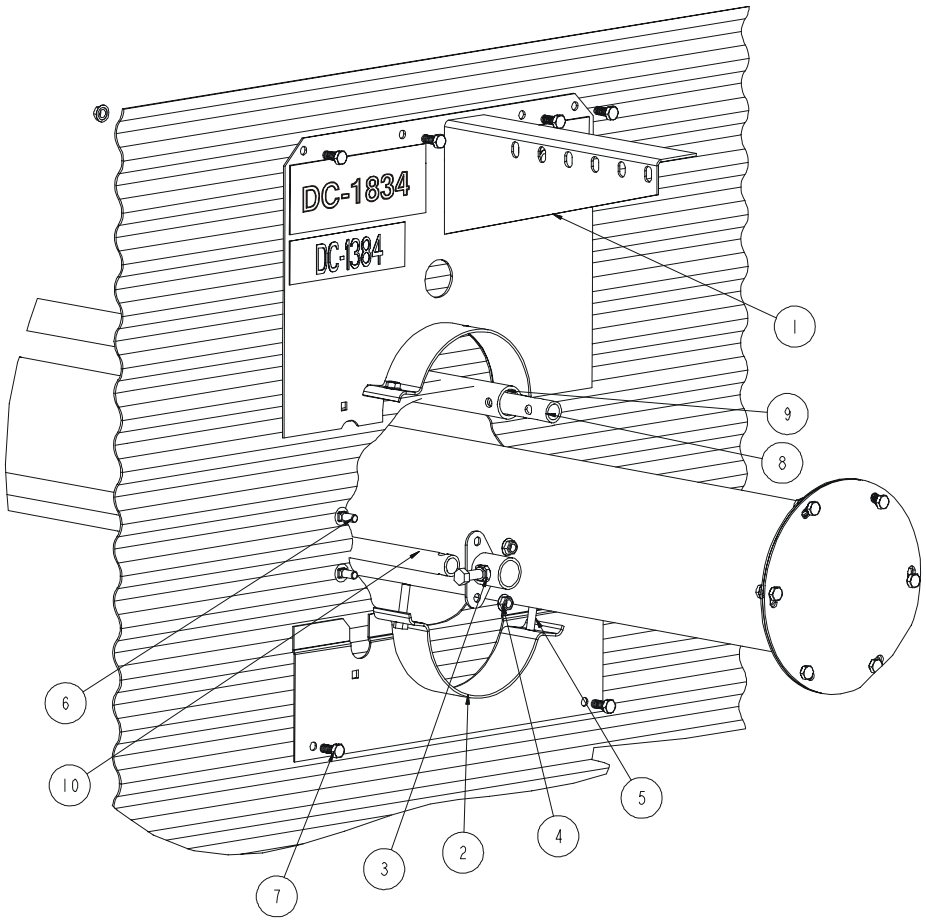


Tube (13)		Flight (14)	
Description	Part #	Description	Part #
6"X15'BIN 12"WELL	GK6890	6" X 120.75" 15'BIN	GK7020
6"X18'BIN 12"WELL	GK6891	6" X 144.75" 18'BIN	GK7021
6"X21'BIN 12"WELL	GK6892	6" X 156.75" 21'BIN	GK7022
6"X24'BIN 12"WELL	GK6893	6" X 174.75" 24'BIN	GK7023
6"X27'BIN 12"WELL	GK6894	6" X 192.75" 27'BIN	GK7024
6"X30'BIN 12"WELL	GK6895	6" X 210.75" 30'BIN	GK7025
6"X33'BIN 12"WELL	GK6896	6" X 234.75" 33'BIN	GK7026
6"X36'BIN 12"WELL	GK6897	6" X 246.75" 36'BIN	GK7027
8"X15' BIN 12"WELL	GK6899	8" X 120.75" 15'BIN	GK7028
8"X18' BIN 12"WELL	GK6900	8" X 144.75" 18'BIN	GK7029
8"X21' BIN 12"WELL	GK6901	8" X 156.75" 21'BIN	GK7030
8"X24' BIN 12"WELL	GK6902	8" X 174.75" 24'BIN	GK7031
8"X27' BIN 12"WELL	GK6903	8" X 192.75" 27'BIN	GK7032
8"X30' BIN 12"WELL	GK6904	8" X 210.75" 30'BIN	GK7033
8"X33' BIN 12"WELL	GK6905	8" X 234.75" 33'BIN	GK7034
8"X36' BIN 12"WELL	GK6906	8" X 246.75" 36'BIN	GK7035
8"X39' BIN 12"WELL	GK6907	8" X 264.75" 39'BIN	GK7036
8"X42' BIN 12"WELL	GK6908	8" X 288.75" 42'BIN	GK7037
8"X48' BIN 12"WELL	GK6909	8" X 325.50" 48'BIN	GK7038
10"X24'BIN 12"WELL	GK6921	10" X 174.75" 24'BIN	GK7039
10"X27'BIN 12"WELL	GK6922	10" X 192.75" 27'BIN	GK7040
10"X30'BIN 12"WELL	GK6923	10" X 210.75" 30'BIN	GK7041
10"X33'BIN 12"WELL	GK6924	10" X 228.75" 33'BIN	GK7042
10"X36'BIN 12"WELL	GK6925	10" X 246.75" 36'BIN	GK7043
10"X39'BIN 12"WELL	GK6926	10" X 264.75" 39'BIN	GK7044
10"X42'BIN 12"WELL	GK6927	10" X 288.75" 42'BIN	GK7045
10"X48'BIN 12"WELL	GK6928	10" X 324.75" 48'BIN	GK7046

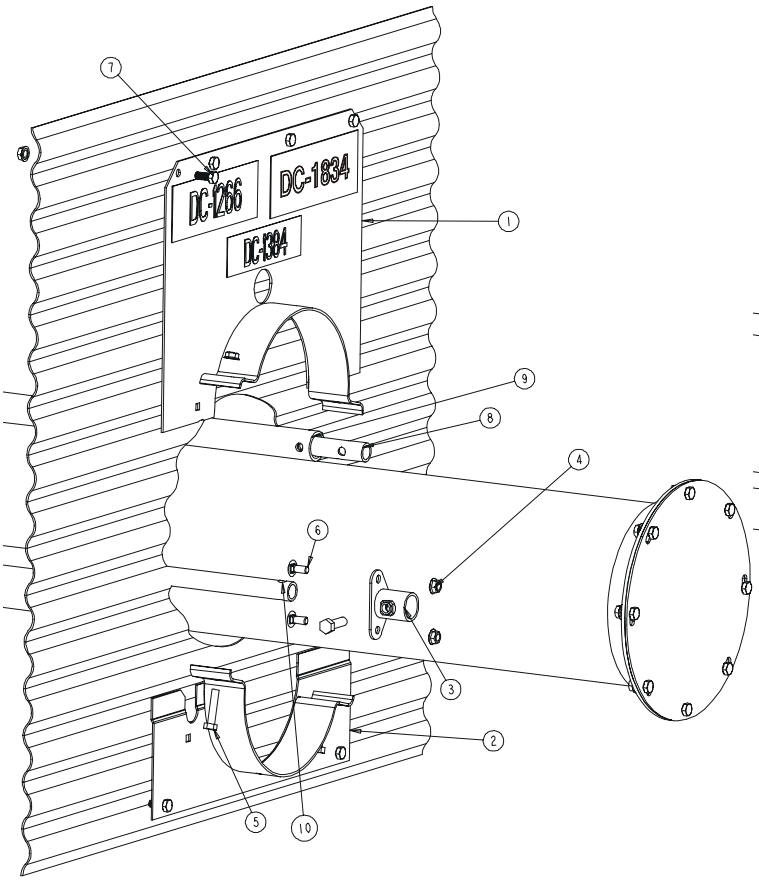
Bin Flange Parts

Bin Flange Components		
Ref #	**Part #**	**Description**
1		**Top Bin Flange**
	GC10546	6"
	GC10534	8"
	GC10560	10"
2		**Bottom Bin Flange**
	GC10547	6"
	GC10536	8"
	GC10558	10"
3	GK1619	Clutch Flange 6"/8"/10"
4	S-3611	5/16"-18 Flange Whizz Nut Zinc
5	S-2741	5/16"-18 x 1 1/2" HHCS Bolt Zinc Grade 8
6	S-6076	5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2
7	S-275	5/16-18x3/4 HHBIN Bolt Grade 5

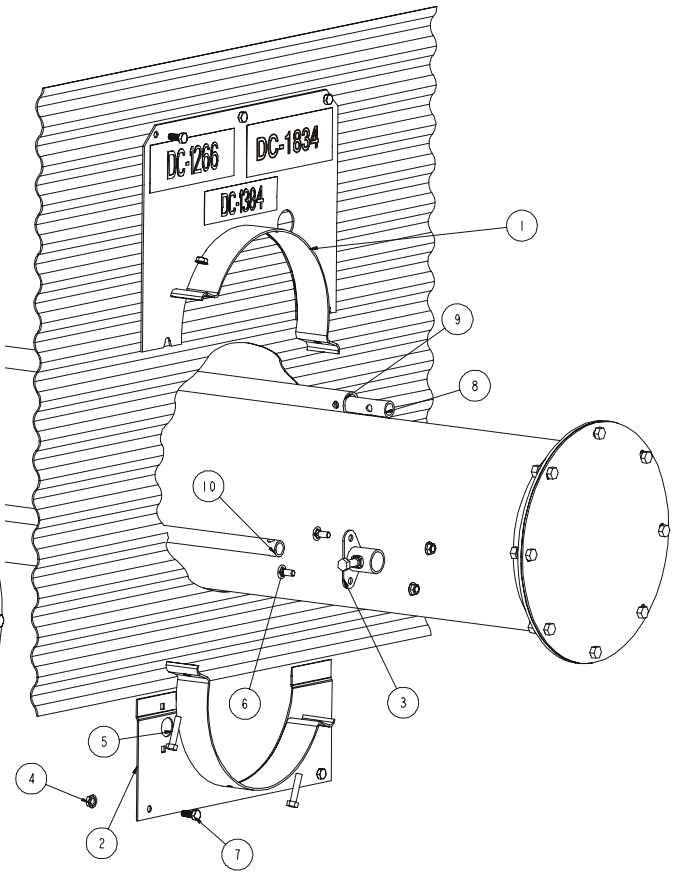
6" Bin Flange



8" Bin Flange



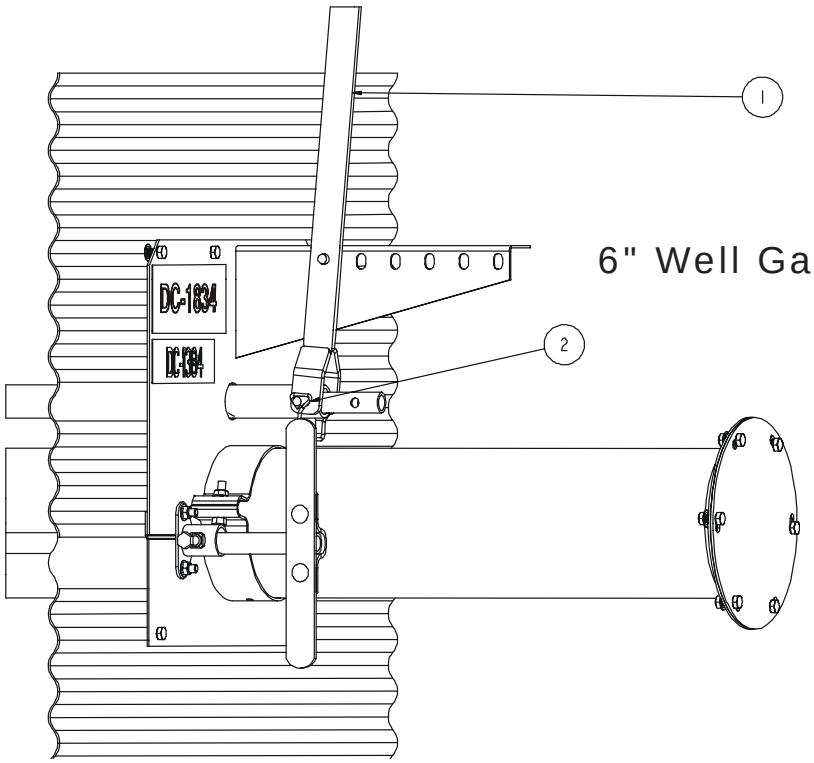
10" Bin Flange



Control Pipes NOTE: All Two Piece Pipes Assemble With GC05323; 3/8" NPT X 1.0" Pipe Connector							
Bin Size	Center Well Control Pipe (8)		Intermediate Well Control Pipe (9)			Clutch Control Pipe (10)	
	Description	Part #	Description	6" Part #	8" or 10" Part #	Description	Part #
15'	.840" OD x 7'	GC09110	1" OD x 5' 1.851"	GC10360	GC11114	.840" OD x 10'	GK1709
18'	.840" OD x 8' 6"	GC09111	1" OD x 6' 10.475"	GC10359	GC11115	.840" OD x 11' 6"	GK1720
21'	.840" OD x 10'	GC09112	1" OD x 8' 6.824"	GC10358	GC11117	.840" OD x 13'	GK1730
24'	.840" OD x 11' 6"	GC09113	1" OD x 9' 8.726"	GC10357	GC11118	.840" OD x 14' 6"	GK1744
27'	.840" OD x 13'	GC09114	1" OD x 10' 8.726"	GC10356	GC11119	.840" OD x 16'	GK1749
30'	.840" OD x 14' 6"	GC09115	1" OD x 11' 8.726"	GC10355	GC11120	.840" OD x 17' 6"	GK1754
33'	.840" OD x 16'	GC09116	1" OD x 14' 1.664"	G10354	GC11121	.840" OD x 19' 6"	GK1761
36'	.840" OD x 17' 6"	GC09117	1" OD x 515' 4.664"	GC10353	GC11122	.840" OD x 20' 6"	GK1769
39'	.840" OD x 19'	GC09118	1" OD x 16' 6.164"	-	GC11123	.840" OD x 1' .840" OD x 21'	GK1766 GK1776
42'	.840" OD x 20' 6"	GC09119	1" OD x 18' 8.226"	-	GC11124	.840" OD x 2' 6" .840" OD x 21'	GK1784 GK1776
48'	.840" OD x 21' .840" OD x 2' 6"	GK1776 GC09075	1" OD x 21'	-	GC11125	.840" OD x 8' 6" .840" OD x 21'	GK1719 GK1776

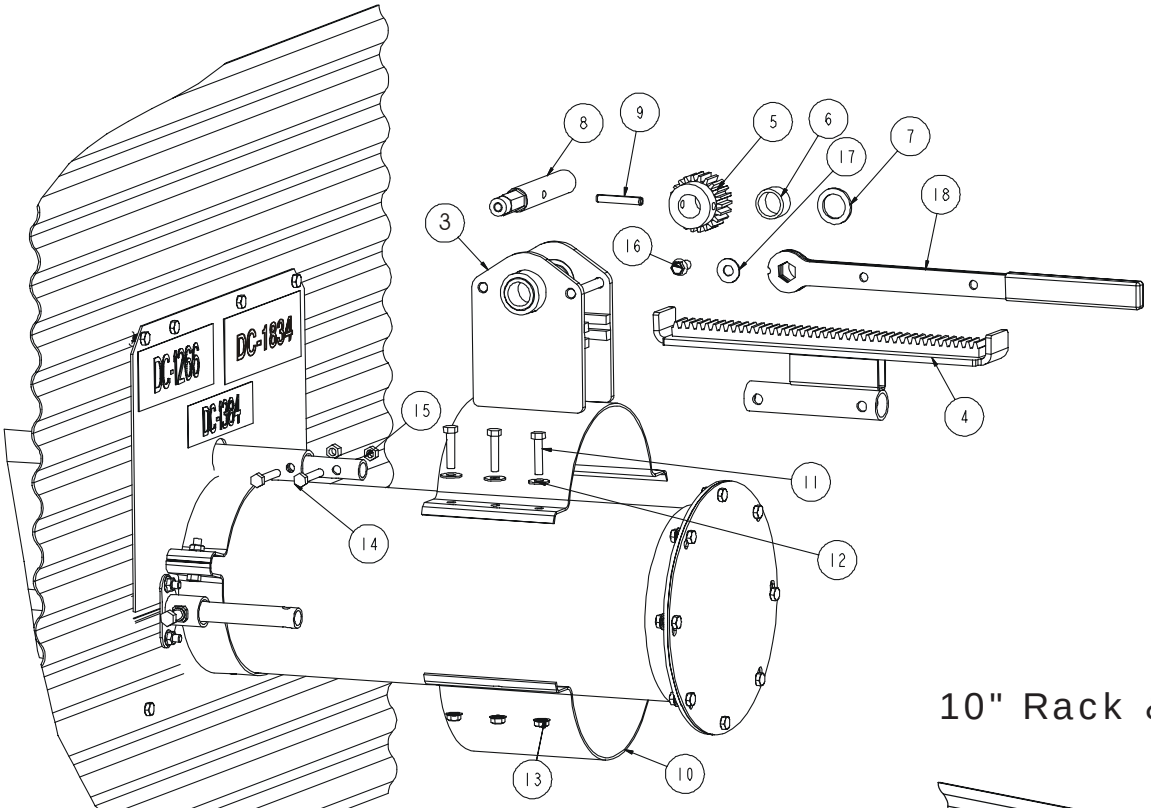
Well Gate Control Parts

Well Gate Controls		
Ref #	**Part #**	**Description**
	6" System	
1	GK5063	6" Control Lever Handle Weldment
2	S-8480	3/8" x 2 3/4" Safety Snap Pin
	8" & 10" System	
3		**Rack & Pinion Housing Assembly**
	GK6838	8"
	GK6966	10"
4		**Rack & Pinion Bar Assembly**
	GK6831	8"
	GK7011	10"
5	GC09859	Spur Gear 10DP 1" Face 22 Teeth
6	GK6841	Rack & Pinion Spacer Tube
7	GK4211	1" Flat Washer
8	GK6845	Rack & Pinion Crank Shaft
9	S-4377	2" x 5/16" Pin Spring
10		**Half Band**
	GK1603	8"
	GK5116	10"
11	S-2741	5/16" x 1 1/2" - 18 HHCS Bolt Grade 5
12	S-845	5/16" Flat Washer Grade 2 Zinc
13	S-3611	5/16"-18 Flange Whizz Nut Zinc
14	S-7149	5/16"-18 x 1 3/4" HHCS Bolt Zinc Grade 5
15	S-396	5/16" - 18 Hex Nut Grade 2 Zinc
16	S-9067	3/8" - 16 x 3/4" Hex Bolt
17	S-248	3/8" Flat Washer
18	GK7260	3/4" Wrench Assembly

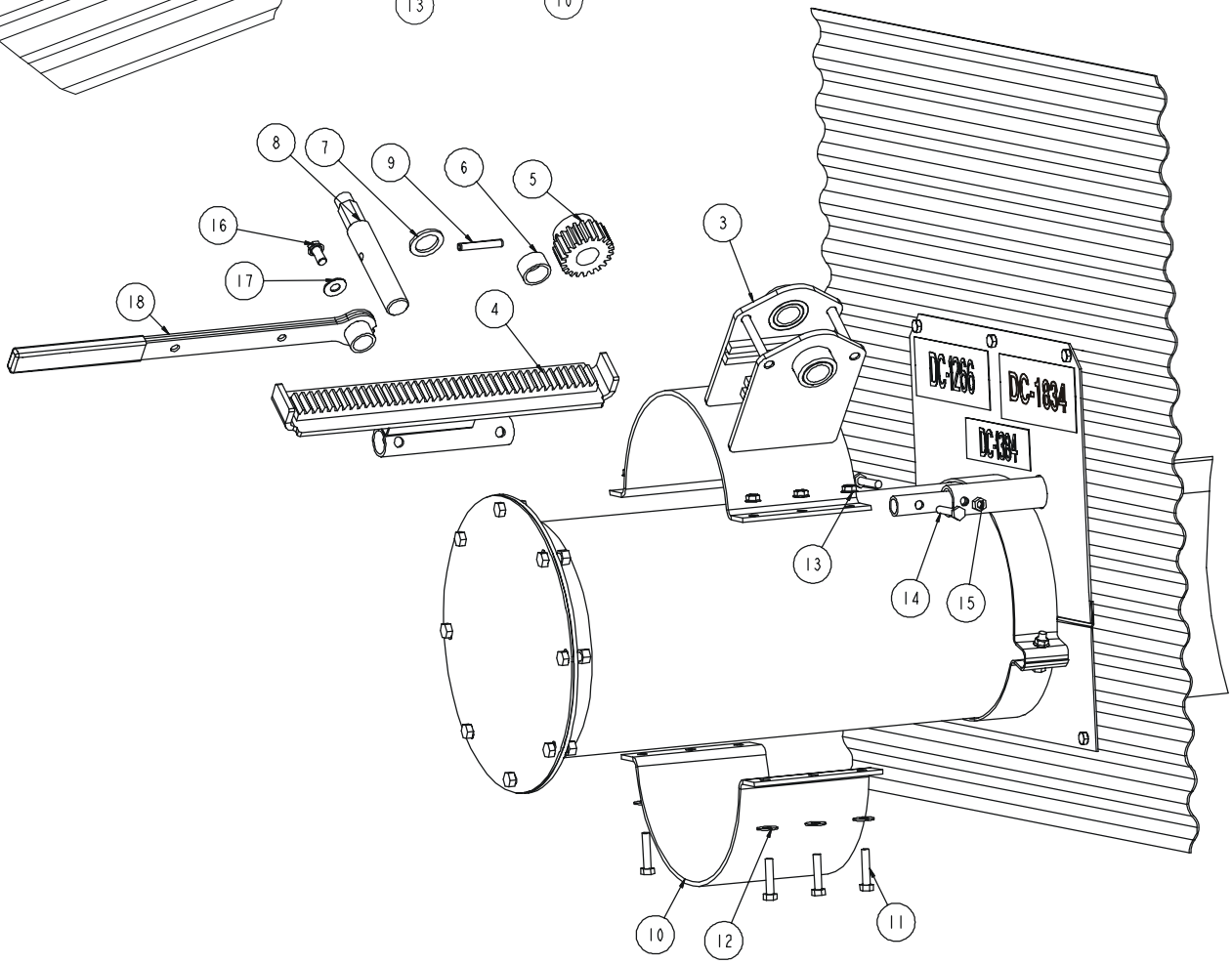


6" Well Gate Control

8" Rack & Pinion

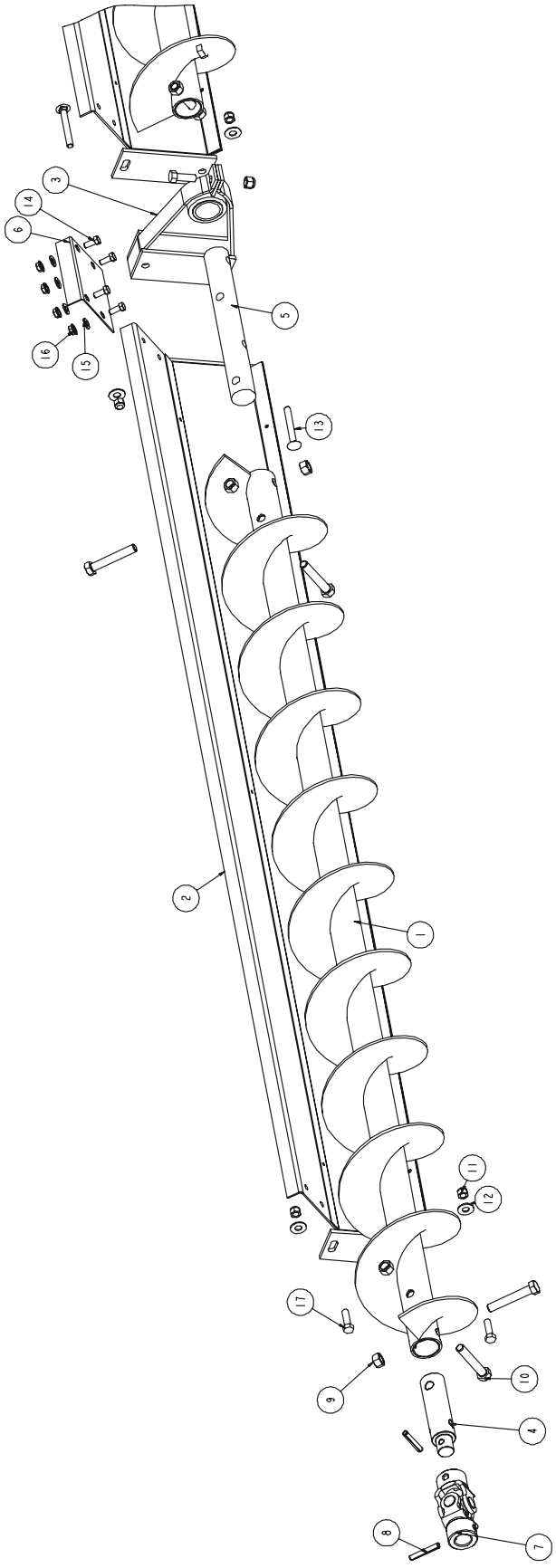


10" Rack & Pinion



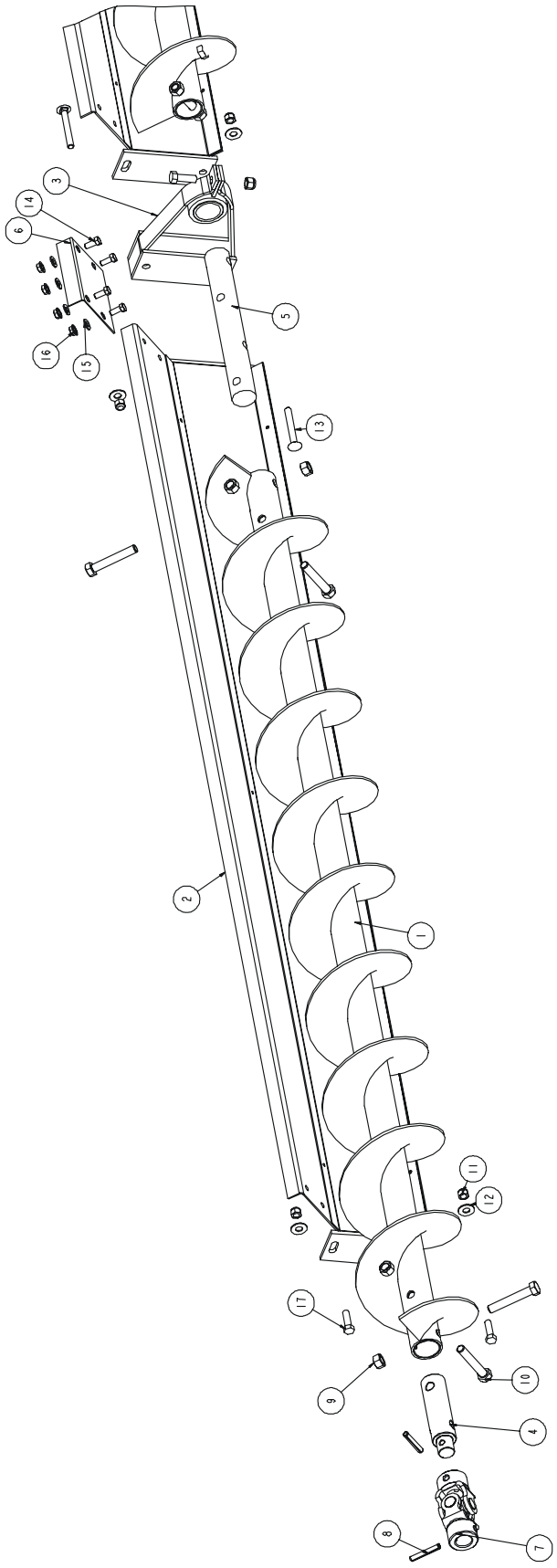
6" Flight & Shield Parts

6" Flight & Shields			
Ref #	**Bundle #**	**Part #**	**Description**
	GK6180	6" x 4' 4" RH Bundle	
1		GK6178	6" x 4' 4" Flight Weldment
2		GK5605	6" x 4' 4" Shield Assembly
	GK6181	6" x 5' 6" RH Bundle	
1		GK5932	6" x 5' 6" Flight Weldment
2		GK5687	6" x 5' 6" Shield Assembly
	GK5017	6" x 5' 10" RH Bundle	
1		GK2134	6" x 5' 10" Flight Weldment
2		GK4537	6" x 5' 10" Shield Assembly
	GK6182	6" x 7' 0" RH Bundle	
1		GK5933	6" x 7' 0" Flight Weldment
2		GK5688	6" x 7' 0" Shield Assembly
	GK6183	6" x 7' 4" RH Bundle	
1		GK6179	6" x 7' 4" Flight Weldment
2		GK5606	6" x 7' 4" Shield Assembly
	GK6184	6" x 8' 6" RH Bundle	
1		GK5934	6" x 8' 6" Flight Weldment
2		GK5689	6" x 8' 6" Shield Assembly
	GK5018	6" x 8' 10" RH Bundle	
1		GK2129	6" x 8' 10" Flight Weldment
2		GK4538	6" x 8' 10" Shield Assembly
3	GK2107	Hanger Bearing Bracket	
4	GK1678	6" U-Joint Stub Connector	
5	GK1736	6" Connecting Stub	
6	GK5615	Shield Splice Plate	
7	GK1266	U-Joint 1" Bore	
8	S-4377	5/16" X 2" Grooved Roll Pin	
9	S-8317	7/16"-14 Stover Nut Zinc Grade C	
10	S-7372	7/16"-14 x 2 1/2" HHCS Bolt Zinc Gra	
11	S-7383	3/8" Nylock Lock Nut Zinc Grade 5	
12	S-248	3/8" Flat Washer Zinc	
13	S-8055	3/8"-16 x 3" Carriage Bolt Zinc Grade	
14	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade	
15	S-1937	5/16" Flat Washer Zinc	
16	S-3611	5/16"-18 Flange Whizz Nut Zinc	
17	S-2086	3/8"-16 x 1 1/2" HHCS Bolt Zinc Grad	



8" & 10" Flight & Shield Parts

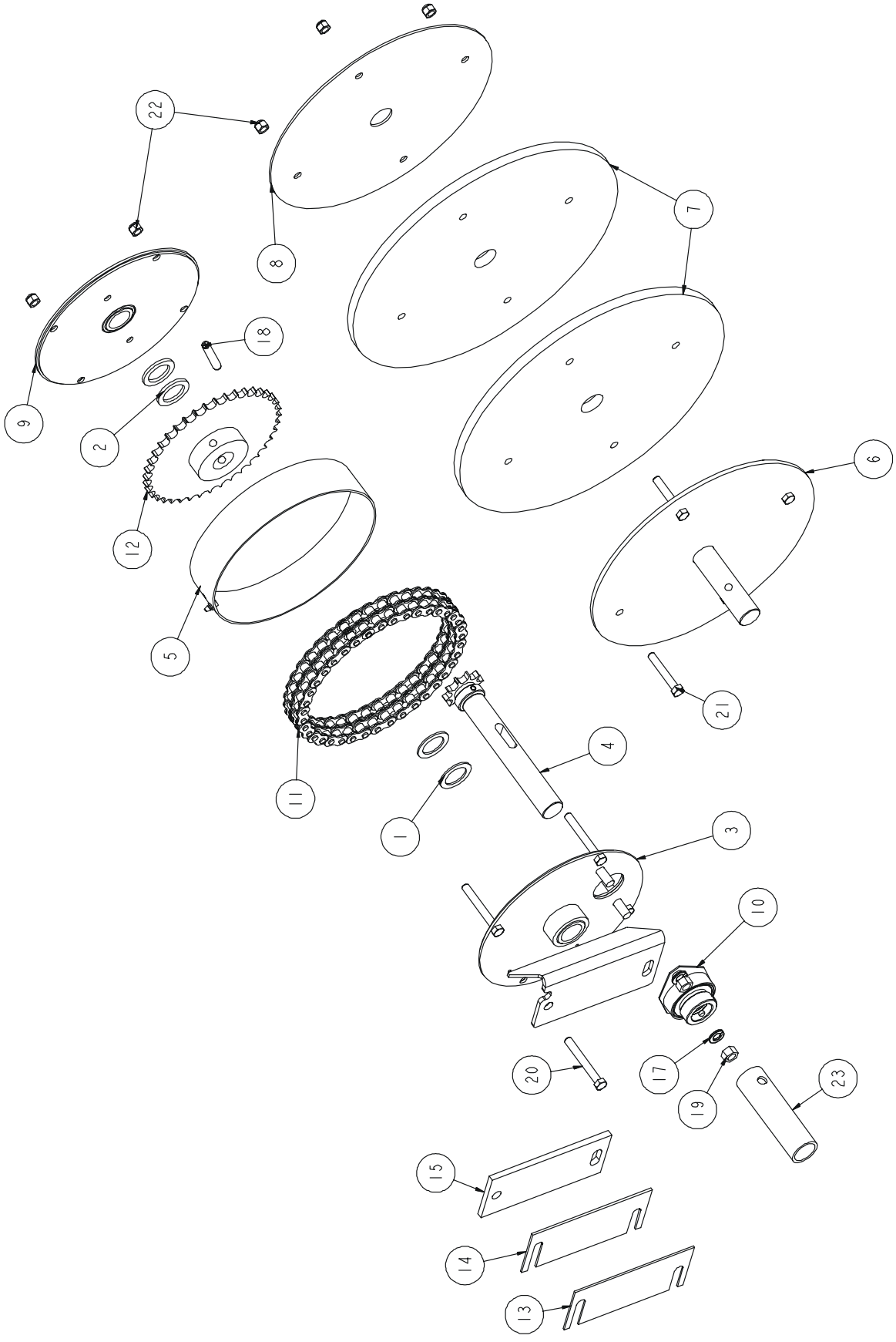
8" & 10" Flight & Shields			
Ref #	**Bundle #**	**Part #**	**Description**
	GK6185	8"/10" x 4' 4" RH Bundle	
1		GK5911	8"/10" x 4' 4" Flight Weldment
2		GK5757	8"/10" x 4' 4" Shield Assembly
	GK6186	8"/10" x 5' 6" RH Bundle	
1		GK5912	8"/10" x 5' 6" Flight Weldment
2		GK5690	8"/10" x 5' 6" Shield Assembly
	GK4827	8"/10" x 5' 10" RH Bundle	
1		GK2080	8"/10" x 5' 10" Flight Weldment
2		GK4740	8"/10" x 5' 10" Shield Assembly
	GK6187	8"/10" x 7' 0" RH Bundle	
1		GK5913	8"/10" x 7' 0" Flight Weldment
2		GK5691	8"/10" x 7' 0" Shield Assembly
	GK6188	8"/10" x 7' 4" RH Bundle	
1		GK5914	8"/10" x 7' 4" Flight Weldment
2		GK5756	8"/10" x 7' 4" Shield Assembly
	GK6189	8"/10" x 8' 6" RH Bundle	
1		GK5915	8"/10" x 8' 6" Flight Weldment
2		GK5692	8"/10" x 8' 6" Shield Assembly
	GK4828	8"/10" x 8' 10" RH Bundle	
1		GK2074	8"/10" x 8' 10" Flight Weldment
2		GK4745	8"/10" x 8' 10" Shield Assembly
3	GK1954	Hanger Bearing Bracket	
4	GK5929	8"/10" U-Joint Stub Connector	
5	GK1951	8"/10" Connecting Stub	
6	GK5615	Shield Splice Plate	
7	GK1266	U-Joint 1" Bore	
8	S-4377	5/16" X 2" Grooved Roll Pin	
9	S-8315	1/2"-13 Stover Nut Zinc Grade C	
10	S-8252	1/2"-13 x 3" HHCS Bolt Zinc Grade 8	
11	S-7383	3/8" Nylock Lock Nut Zinc Grade 5	
12	S-248	3/8" Flat Washer Zinc	
13	S-8055	3/8"-16 x 3" Carriage Bolt Zinc Grade 5	
14	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5	
15	S-1937	5/16" Flat Washer Zinc	
16	S-3611	5/16"-18 Flange Whizz Nut Zinc	
17	S-2086	3/8"-16 x 1 1/2" HHCS Bolt Zinc Grade 8	



Reduction Wheel Parts

Reduction Wheel		
Ref #	**Part #**	**Description**
1	GK4210	1" x 1 1/2" 14 GA Galvanized Flat Washer
2	GK4211	1" x 1 1/2" 10 GA Galvanized Flat Washer
3	GK4213	Inner Drive Housing with Bushing; **6"**
	GK4228	Inner Drive Housing with Bushing; **8"/10"**
4	GK6526	Drive Shaft w/ Sprocket and Roll Pin
5	GK4215	Housing Ring with Zerk
6	GK4217	Inner Wheel Weldment; **6"**
	GK4242	Inner Wheel Weldment; **8"/10"**
7	GK4218	Rubber Wheel Disk 11" O.D.; **6"**
	GK4241	Rubber Wheel Disk 13" O.D.; **8"/10"**
8	GK4219	Outer Wheel Disk; **6"**
	GK4240	Outer Wheel Disk; **8"/10"**
9	GK4223	Outer Drive Housing with Bushing
10	GK4232	1" Bearing with 2 Hole Flange
11	GK4233	Chain Roller #40 Double with Link
12	GK4234	40 Tooth Sprocket with Hub
13	GK4209	14 GA Spacer Plate; **6"**
	GK4226	14 GA Spacer Plate; **8"/10"**
14	GK4208	12 GA Spacer Plate; **6"**
	GK4225	12 GA Spacer Plate; **8"/10"**
15	GK4207	1/4" Spacer Plate; **6"**
	GK4224	1/4" Spacer Plate; **8"/10"**
16	GK4205	1" I.D. x 1 1/4" O.D. x 4 3/8" Long Bushing; **6"**
	GK4206	1" I.D. x 1 1/2" O.D. x 4 3/8" Long Bushing; **8"/10"**
17	S-1054	3/8" Zinc Split Washer
18	S-4383	5/16" x 2 1/4" Rolled Pin Spring
19	S-456	3/8" Zinc YDP Grade 5 Hex Nut
20	S-7075	5/16" x 2 1/2" - 18 HHCS Bolt Grade 5 Zinc
21	S-7329	5/16" x 2 " - 18 HHCS Bolt Grade 2 Zinc
22	S-7382	5/16" - 18 Nylock Nut Grade 5 Zinc
23	GK4205	1"ID x 1-1/4"OD x 4.3/8" Bushing, **6"**
	GK4206	1"ID x 1-1/2"OD x 4.3/8" Bushing **8"/10"**

Reduction Wheel Parts



NOTES

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

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