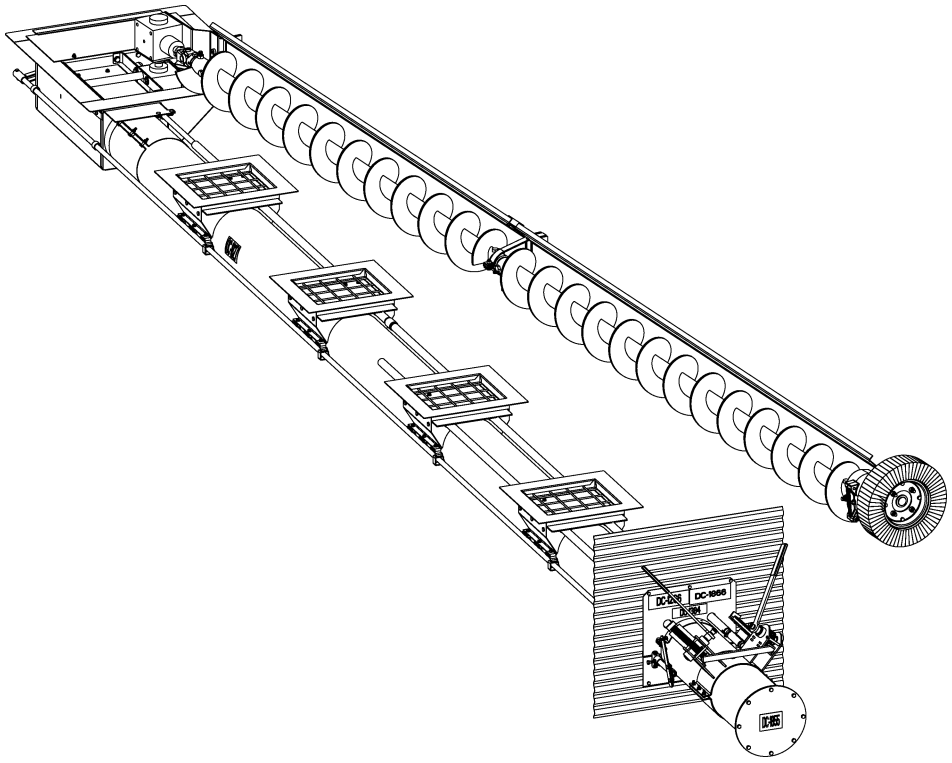


10" Commercial Direct Gear Drive Bin Sweep Auger

Assembly and Operation Manual

PNEG-1521

Date: 08-19-15

PNEG-1521

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

Bin Diameter	10" Commercial DGD Sweep
36'	CPS10360
42'	CPS10420
	CPS10420DF
48'	CPS10480
	CPS10480DF
54'	CPS10540
	CPS10540DF
60'	CPS10600
	CPS10600DF
72'	CPS10720
75'	CPS10750
78'	CPS10780

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

Contents

1. Introduction

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

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

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

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

Safety Guidelines

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

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

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

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

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

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

ST-0001-2

Cautionary Symbols Definitions

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

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

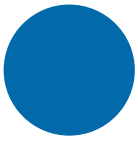
WARNING This symbol indicates a potentially hazardous situation which, if not avoided, **may result in serious injury or death.**

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

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

This symbol indicates a general hazard.

This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005

Safety Cautions

Use Personal Protective Equipment

- Use appropriate personal protective equipment:

Eye Protection

Respiratory Protection

Foot Protection

Hearing Protection

Head Protection

Fall Protection

Hand Protection

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

ST-0004-1

Follow Safety Instructions

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

ST-0002-1

Maintain Equipment and Work Area

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

ST-0003-1

Operate Motor Properly

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

ST-0009-1

Rotating Auger Hazard

- Keep clear of rotating augers and moving parts.
- Do not remove or modify guards. Failure to follow these precautions will result in serious injury or death.

ST-0037-1

Stay Clear of Hoisted Equipment

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

ST-0047-1

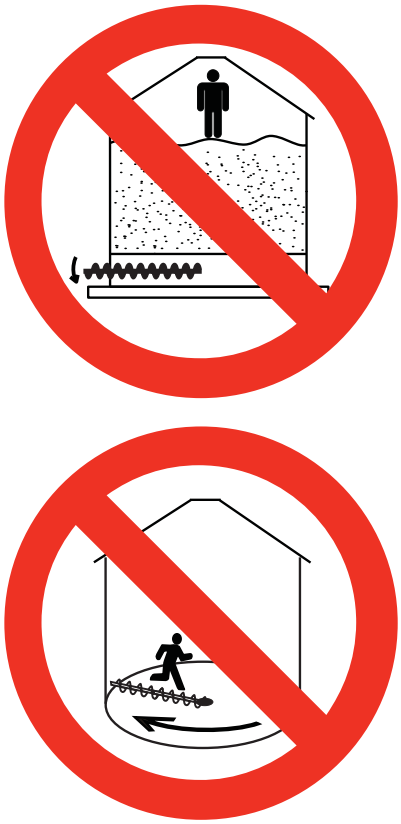
Stay Clear of Rotating Parts

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

ST-0008-1

Use Unload Equipment Properly

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



ST-0051-1

Safety Sign-Off Sheet

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

Date	*Employee Name*	*Supervisor Name*

ST-0007

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

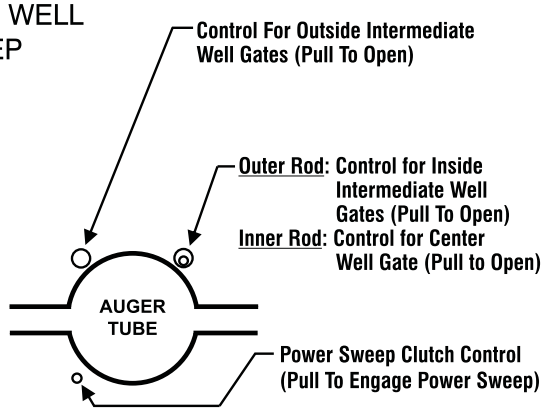
Decal Parts List

Part #	Description	Size
DC-1266	Danger - Bin Well	7-1/4" x 2-1/2"
DC-1384	Danger - Keep Out of Bin	6-1/4" x 1-3/4"
DC-1866	Important - Power Sweep Information (≥ 42' Bin)	7-3/8" x 2-3/4"
DC-1834	Important - Power Sweep Information (36' Bin)	7-3/8" x 2-3/4"
DC-1395	Danger - Rotating Flight	4-1/4" x 6-1/4"

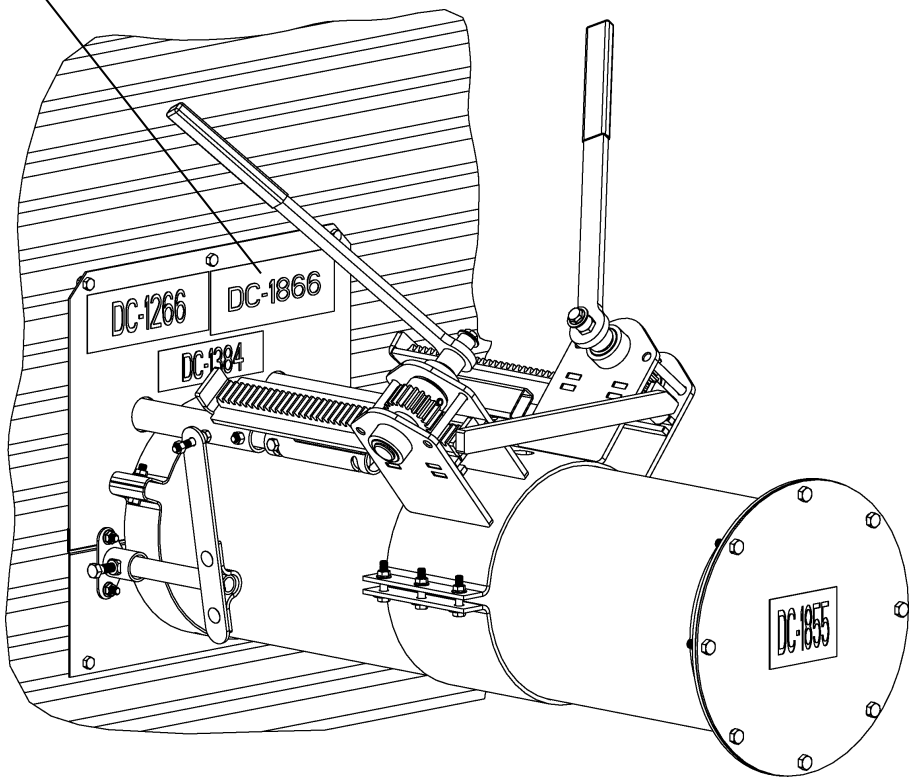
IMPORTANT: BEFORE FILLING BIN CLOSE CENTER WELL AND INTERMEDIATE WELL GATES. POSITION SWEEP AUGER OVER INTERMEDIATE WELLS.

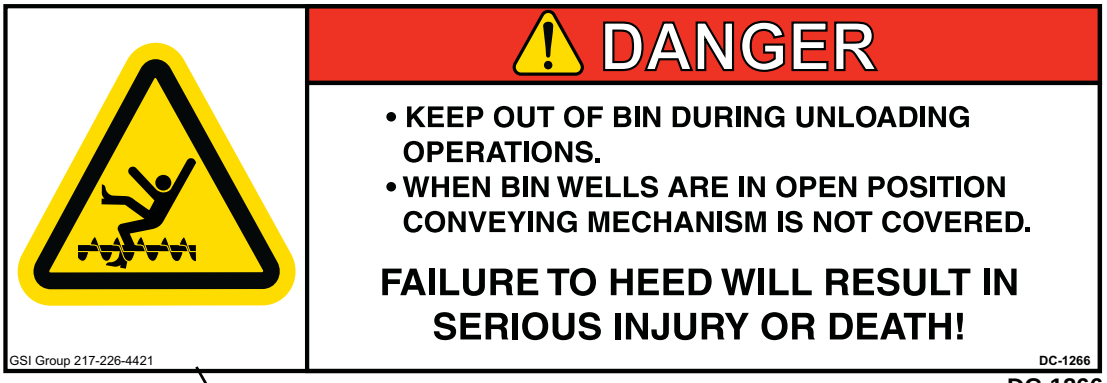
INSTRUCTIONS:

1. BE SURE POWER SWEEP CLUTCH CONTROL IS DISENGAGED AND TIGHTEN SET SCREW.
2. START UNLOADING AUGER. OPEN CENTER WELL GATE.
3. WHEN GRAIN STOPS FLOWING FROM CENTER WELL GATE, OPEN INSIDE INTERMEDIATE WELLS BEFORE OPENING OUTSIDE INTERMEDIATE WELLS.
4. WHEN GRAIN STOPS FLOWING FROM OUTSIDE INTERMEDIATE WELLS, STOP AUGER. TO ENGAGE POWER SWEEP, ROTATE UNLOADING AUGER SLOWLY UNTIL CLUTCH ENGAGES AND TIGHTEN SET SCREW. START AUGER.

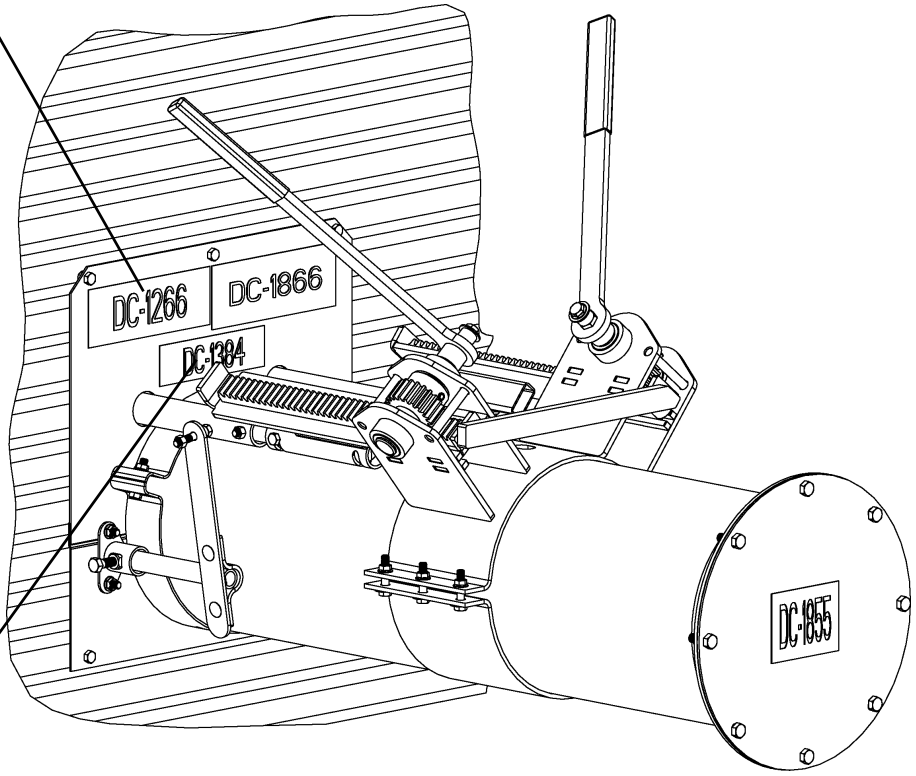


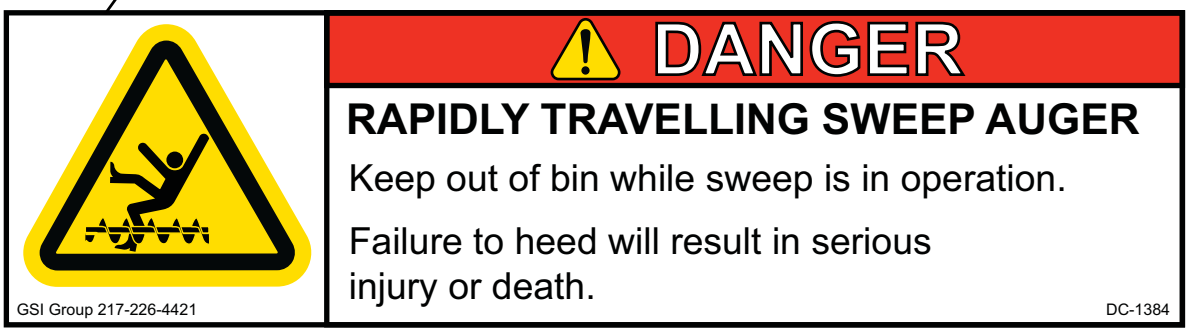
DC-1866



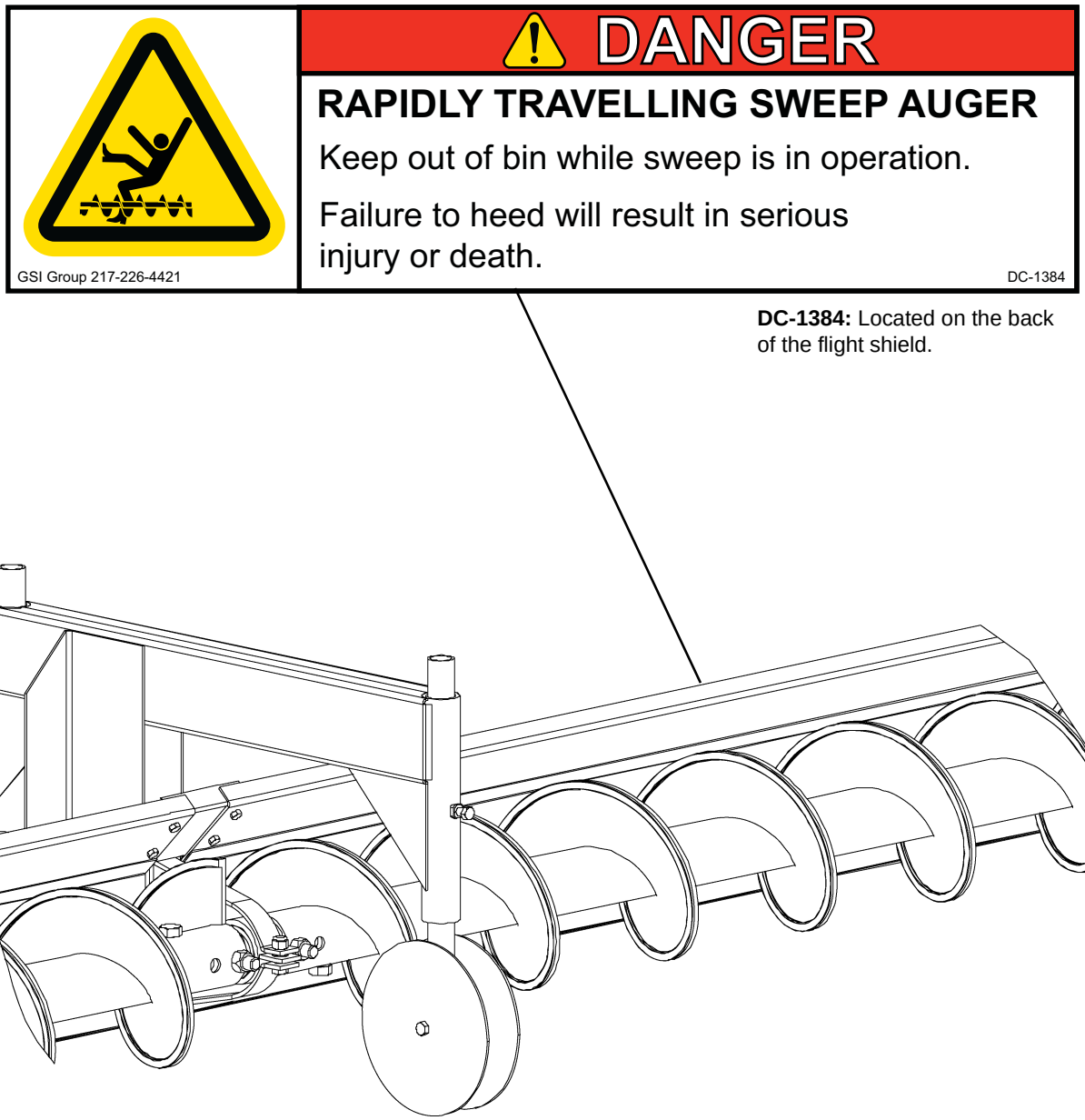


DC-1266





DC-1384


DANGER
RAPIDLY TRAVELLING SWEEP AUGER
Keep out of bin while sweep is in operation.
Failure to heed will result in serious injury or death.
GSI Group 217-226-4421
DC-1384
DC-1384: Located on the back of the flight shield.

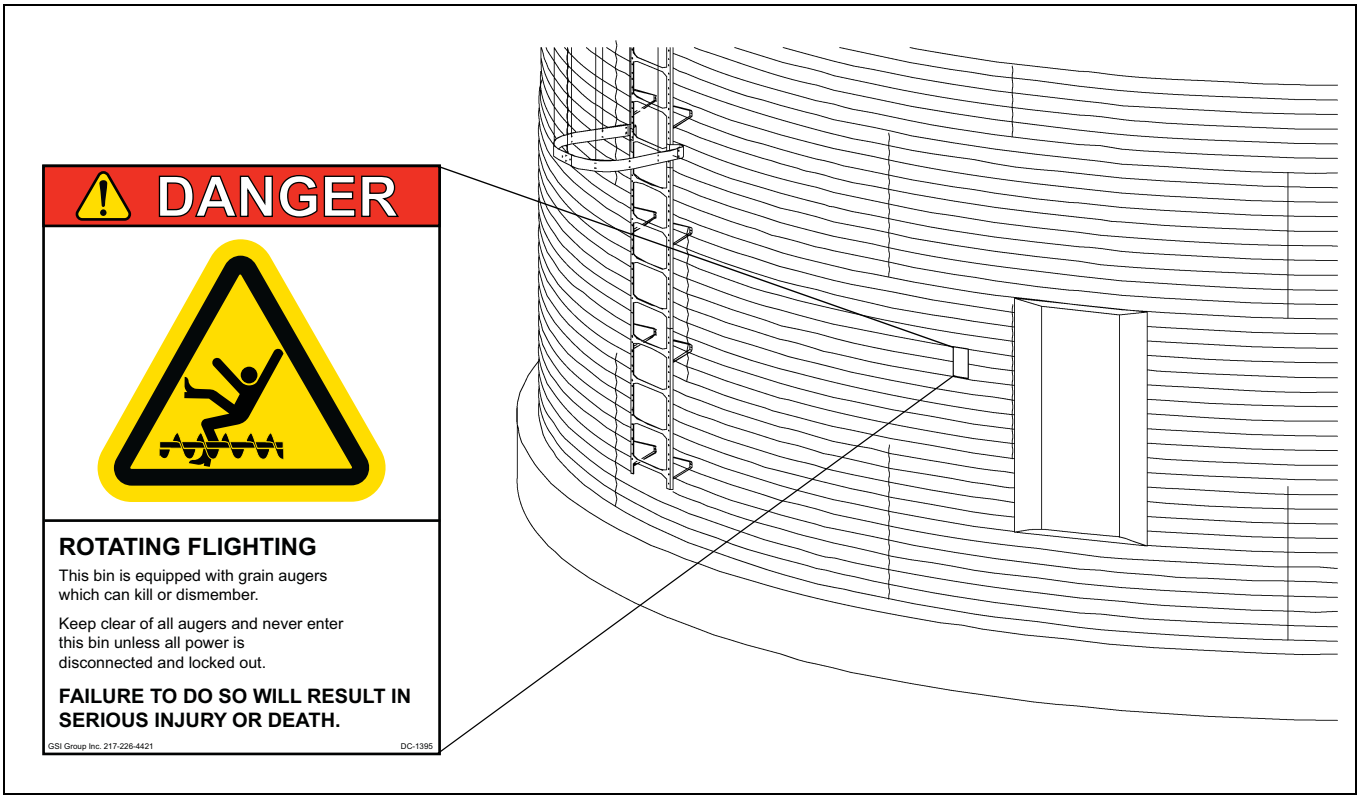
3. Decals

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

B. If the safety sign location suggested is not in full view because of equipment modifications, other equipment in the area or any reason, then locate the safety sign in a more suitable location.

C. Be certain the surface is clean, dry and free of dirt and oil. Peel paper backing from decals and stick into place. The adhesive backing will bond on contact.

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



NOTE: *If the safety sign cannot be easily read for any reason or has been painted over, replace it immediately. Additional safety signs may be obtained free of charge from your dealer, distributor or ordered from the factory.*

Order SAFETY SIGN NO. DC-1395

Power Sweeps in Bins with Concrete Floors

NOTE: *The company does not recommend setting the Direct Gear Drive Bin Sweep unit in concrete. If installing a unit flush with a concrete floor, we recommend the unit be installed in a preformed trench. Use the Figure 4A.*

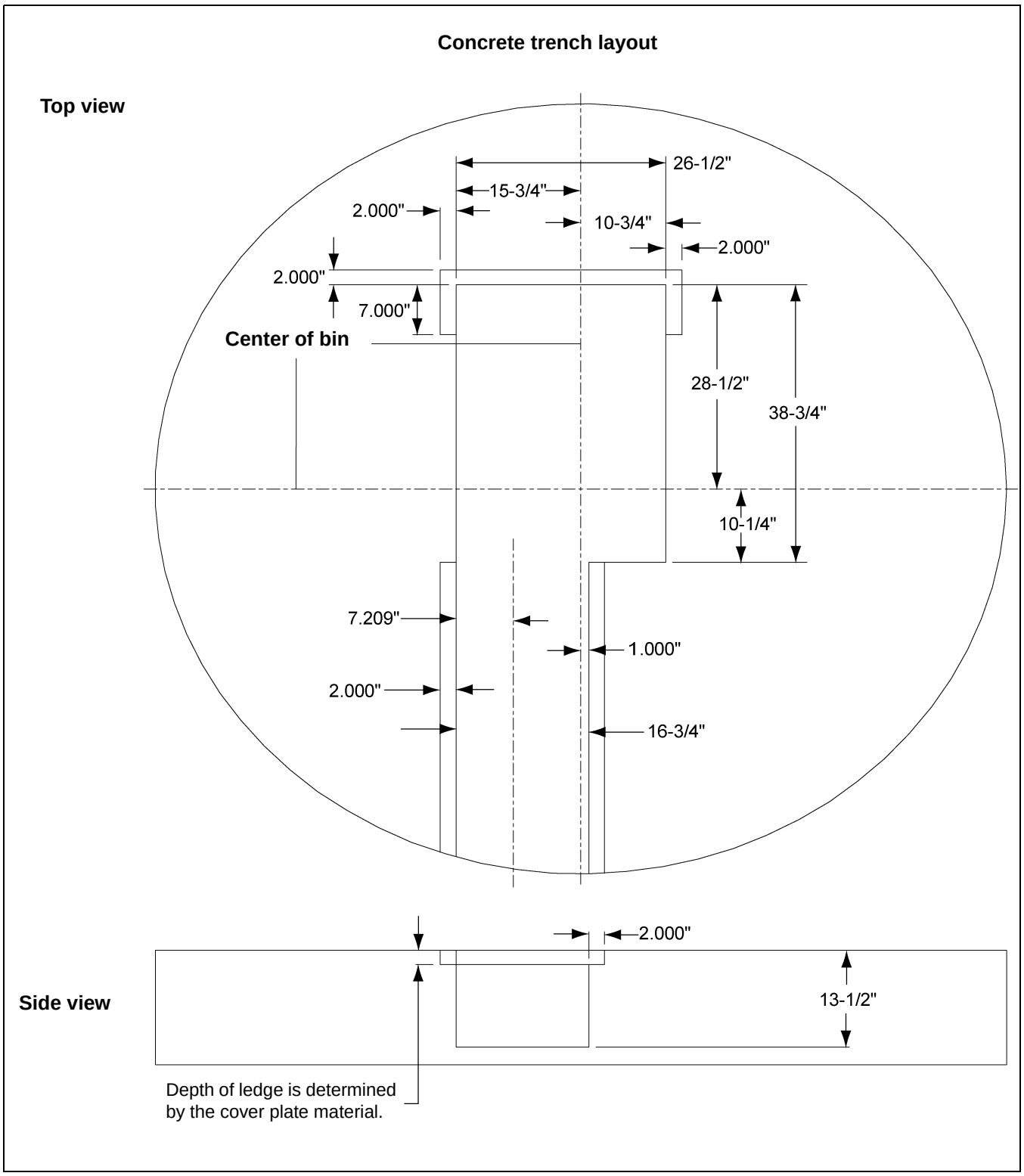


Figure 4A *Floor View*

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 centerwell and intermediate wells.

1. 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.
2. Locate the center of the bin and make a cut-out in the bin floor for the centerwell.
3. Place the centerwell into position, with the vertical shaft between the two (2) halves of the gearbox at the center of the bin. Place suitable supports under the centerwell to hold it in position.

Centerwell cut-out and location

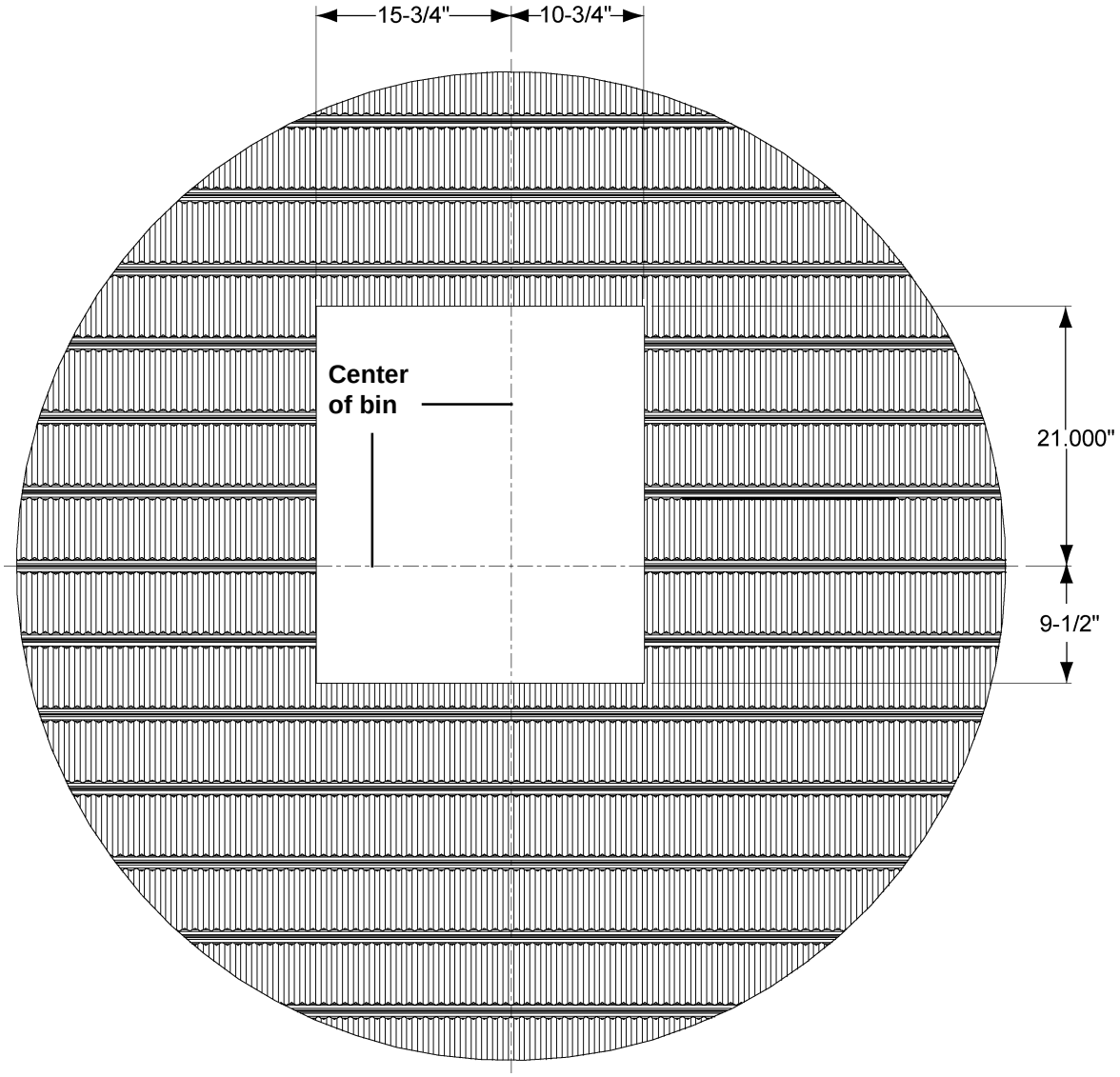


Figure 4B *Center Cut*

Intermediate Well Installation

1. Cut openings in the bin floor for the intermediate wells. *(See Figure 4C.)* The number of wells depends on bin size. The distance between intermediate wells and the centerwell should be equal.

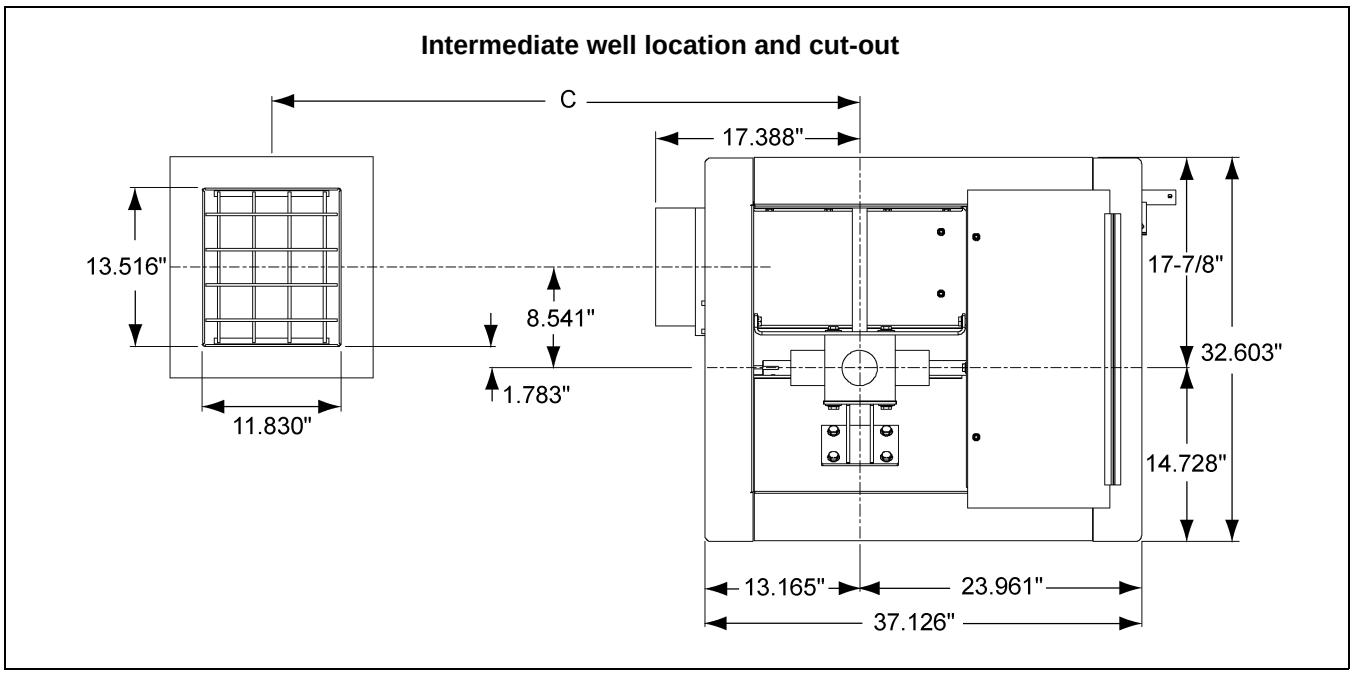


Figure 4C *Intermediate Wells*

Bin Size	Number of Intermediate Wells	Distance From Center of Bin to Wall (A)	Distance Between Centerwell and First Intermediate Well (B)	Distance Between Wells (C)	Distance From Center of Bin to Angle Ring (D)	Distance From Bin Wall to Angle Ring
36'	3	17' - 10-7/8"	36.363"	53-3/4"	250.888"	36.013"
42'	4	20' - 10-11/16"	32.613"	50.00"	286.638"	35.950"
48'	4	23' - 10-1/2"	39.863"	57-1/4"	322.388"	35.888"
54'	4	26' - 10-1/4"	47.113"	64-1/2"	358.388"	36.138"
60'	5	29' - 10-1/8"	42.363"	59-3/4"	394.138"	36.013"
72'	6	35' - 9-3/4"	44.113"	61-1/2"	465.638"	35.888"
75'	6	37' - 3-5/8"	46.613"	64.00"	483.638"	36.013"
78'	6	38' - 9-9/16"	49.113"	66-1/2"	501.638"	36.075"

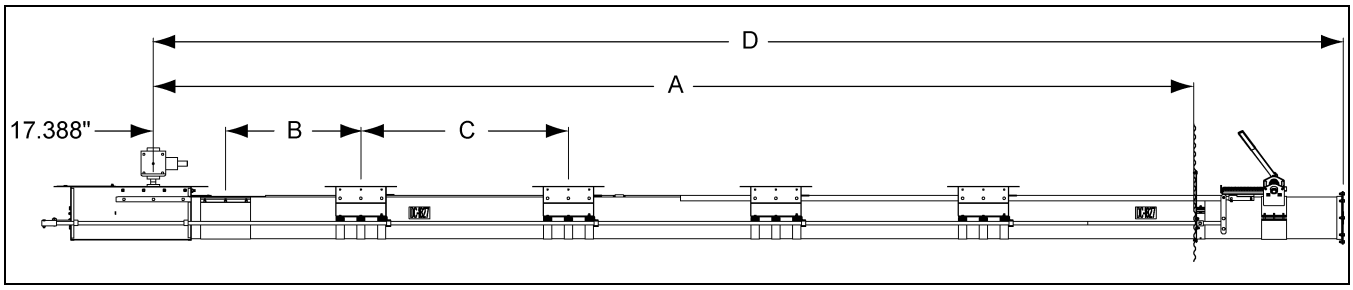


Figure 4D *Side View Distance*

Unload Tube Assembly Installation

1. Cut an opening in the bin wall for the unloading tube to pass through. The hole should be approximately 13-1/2" in diameter, 6" below the level of the floor and inline with the centerwell tube (A). *(See Figure 4E.)*

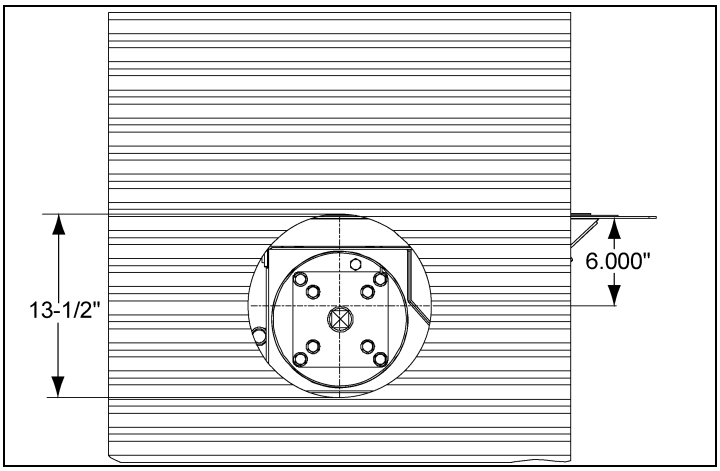


Figure 4E

2. From inside the bin, insert the angle ring end of the unload tube (B) assembly through the hole in the bin sidewall.
3. On bins > 60' in diameter, place the angle ring end of the outer unload tube assembly through the hole in the bin sidewall and then place the inner unload tube assembly into place.

NOTE: *Before installing the unload tube assembly, remove the unload flight from inside of the tube. On 36' and 42' diameter bins, the clutch control rod is shipped inside the unload flight.*

4. Place the 12" connecting band (C) onto the end of the unload tube (B) assembly closest to the centerwell (A). *(See Figure 4F.)*

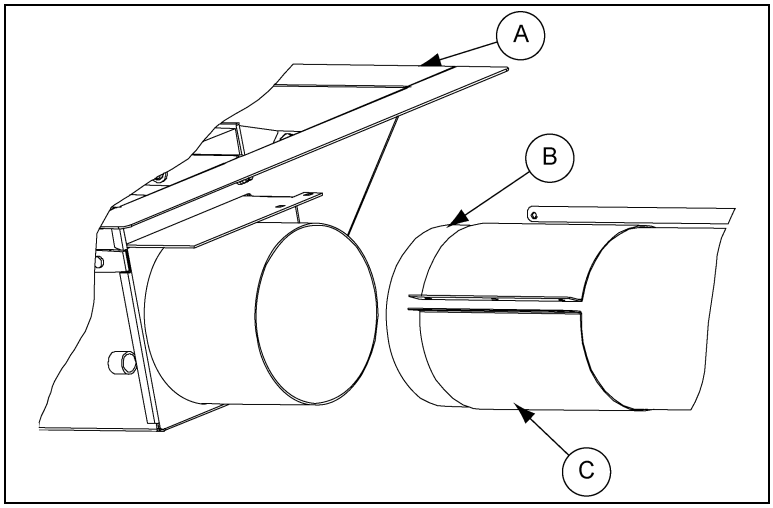


Figure 4F

Ref #	Description
A	Centerwell
B	Unload Tube
C	Connecting Band

Unload Tube Assembly Installation (Continued)

5. Position the unload tube (B) flush against the centerwell tube (D). *(See Figure 4G.)*

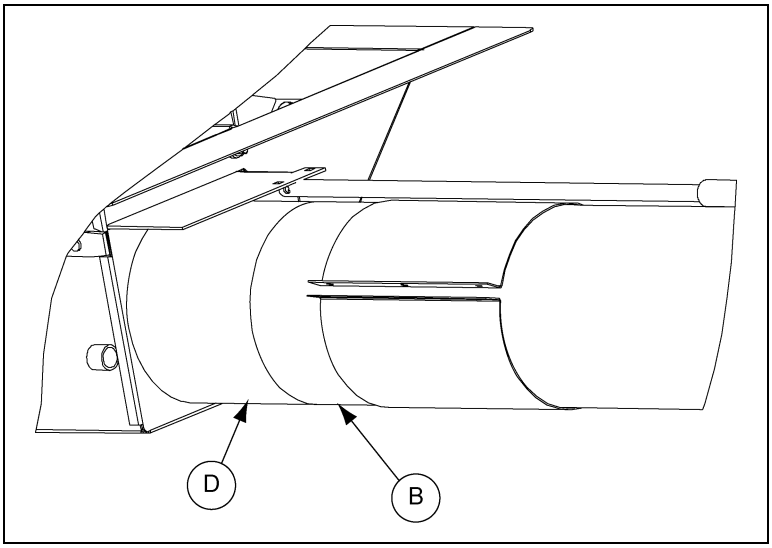


Figure 4G

Ref #	Description
B	Unload Tube
D	Centerwell Tube

6. Slide the connecting band (C) until it is equally positioned over both the unload tube and the centerwell tube. Position the connecting band (C) so that it will not interfere with the control rods.
7. Secure the connecting band (C) with three (3) 5/16" x 1-1/2" hex bolts (F) and serrated flange nuts (E), making sure the intermediate wells are level with the centerwell. *(See Figure 4H.)*

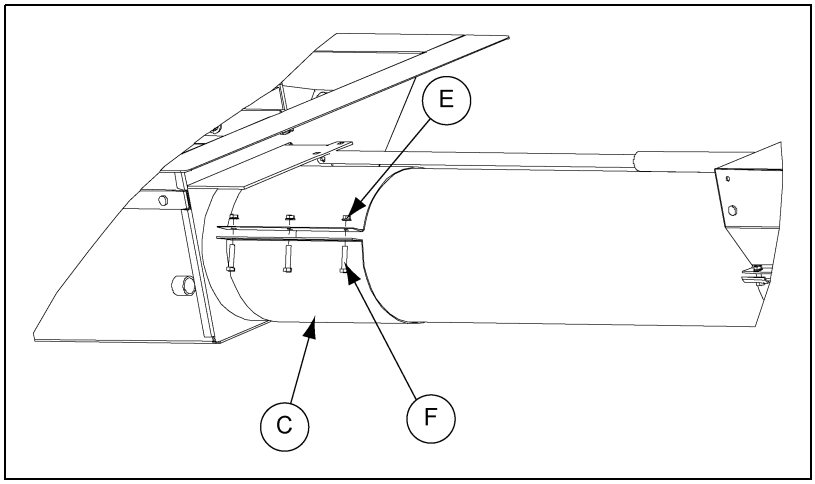


Figure 4H

Ref #	Description
C	Connecting Band
E	5/16" Serrated Flange Nuts
F	5/16" x 1-1/2" Hex Bolts

Outer Unload Tube Assembly Installation

1. On bins > 60' in diameter, loosen or unbolt the 30" connecting band from the outer unload tube assembly (B). *(See Figure 4I.)*

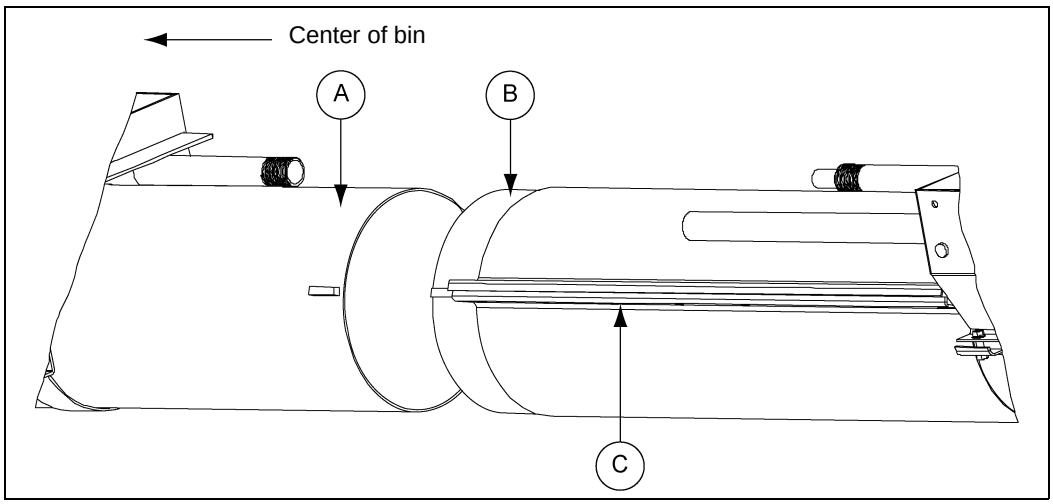


Figure 4I

Ref #	Description
A	Inner Unload Tube
B	Outer Unload Tube
C	Connecting band bolts and nuts removed.

2. Position the outer unload tube (B) assembly flush against the inner unload tube (A) assembly, aligning the two (2) keyways (D) so that they are inline and making sure all of the intermediate wells are level with the centerwell. *(See Figure 4J.)*

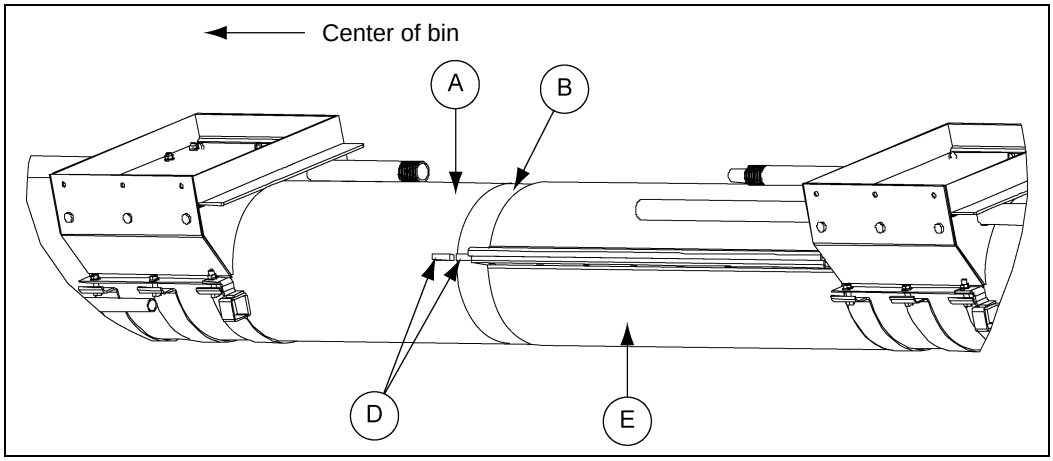


Figure 4J

Ref #	Description
A	Inner Unload Tube
B	Outer Unload Tube
D	Keys are Aligned
E	Connecting Band

Outer Unload Tube Assembly Installation (Continued)

3. Slide the connecting band until it is equally positioned over both the unload tube assemblies. Position the connecting band so that it is aligned with the keyways on the unload tubes.

4. Secure the connecting band with eight (8) 3/8" x 1-1/2" hex bolts (F) and stover nuts (H). *(See Figure 4K.)*

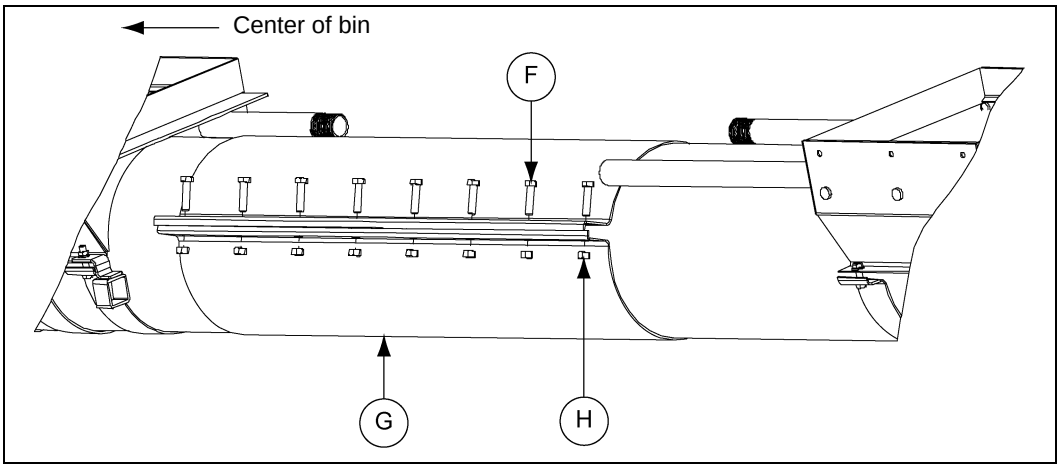


Figure 4K

Ref #	Description
F	3/8" x 1-1/2" Hex Bolts
G	Connecting band centered and aligned over keys.
H	3/8" Stover Nut

5. Thread the 1" external control pipe coupler (J) onto the intermediate control rod. Also thread the 1/2" internal control pipe coupler (L) onto the centerwell control rod (K). *(See Figure 4L.)*

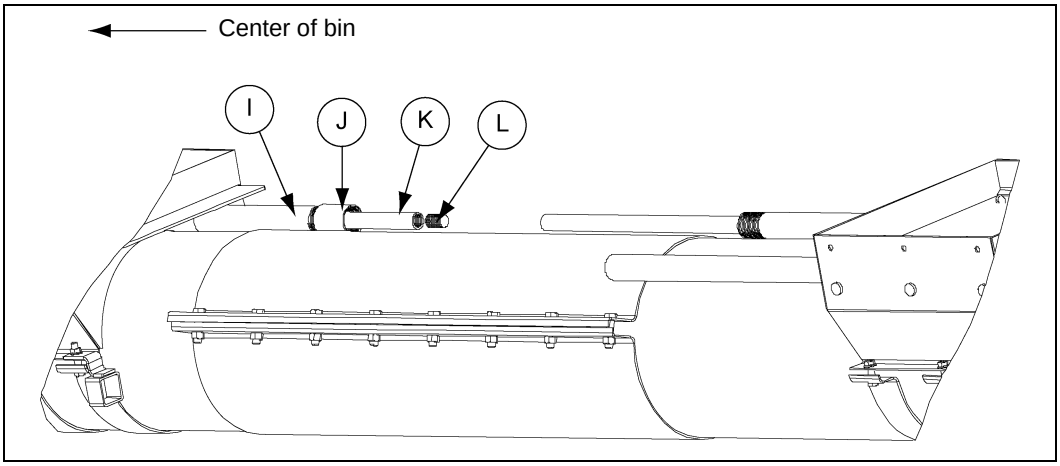


Figure 4L

Ref #	Description
I	Inside Intermediate Control Rod
J	1" External Control Pipe Coupler
K	Centerwell Control Rod
L	1/2" Internal Control Pipe Coupler

Outer Unload Tube Assembly Installation (Continued)

6. Thread the other centerwell rod onto the 1/2" coupler and leave it slightly loose. Also thread the other intermediate rod onto the 1" coupler. *(See Figure 4M.)*

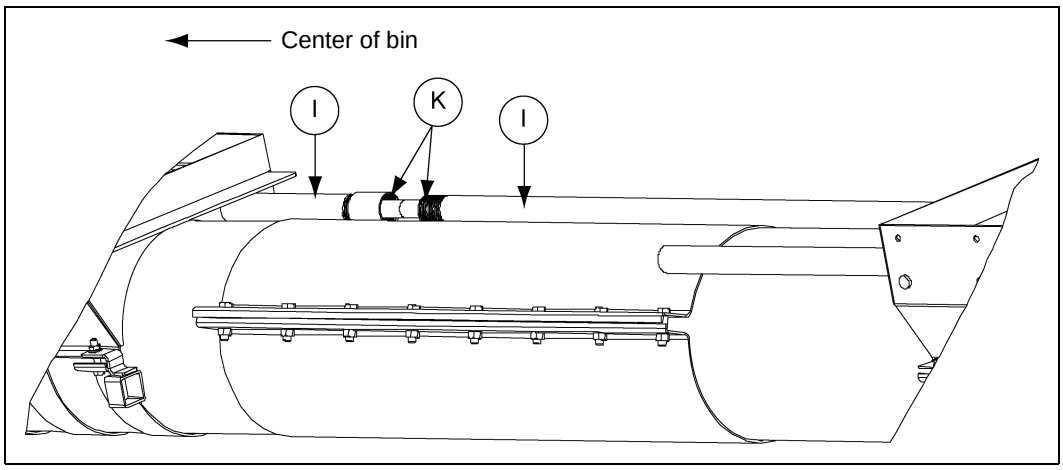


Figure 4M

Ref #	Description
I	Inside Intermediate Control Rods
K	Centerwell Control Rods

Centerwell Control Gate Assembly

1. Close the centerwell control gate (C) completely.
2. Align the centerwell control rod (D) between the two (2) holes in the centerwell control gate (C).
3. Attach the 1/2" control rod clamp (G) to the centerwell control rod (D) by sliding 5/16" x 1-3/4" roll pin (A) through the clamp and the rod.
4. Fasten the control rod clamp (G) to the bottom side of the centerwell control gate (C) by using two (2) 5/16" x 3/4" carriage bolts (B), flat washers (E) and serrated flange nuts (F). Install the nuts so that they secure the roll pin in place. *(See Figure 4N.)*

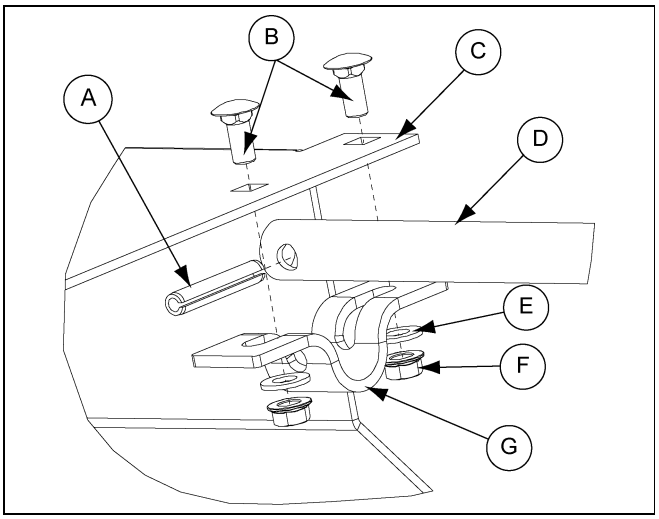


Figure 4N

Ref #	Description
A	5/16" x 1-3/4" Roll Pin
B	5/16" x 3/4" Carriage Bolts
C	Centerwell Control Gate
D	Centerwell Control Rod
E	5/16" Flat Washers
F	5/16" Serrated Flange Nuts
G	1/2" Control Rod Clamp

Centerwell Control Gate Assembly (Continued)

8. Adjust the centerwell control rod (D) and the intermediate control rods so that the second hole on the centerwell control rod and the hole on the intermediate control rod are aligned and that they are both horizontal.

   NOTE: *This alignment is important for proper gate control with the rack and pinion.*

9. Make sure all connections are tight. *(See Figure 4O.)*

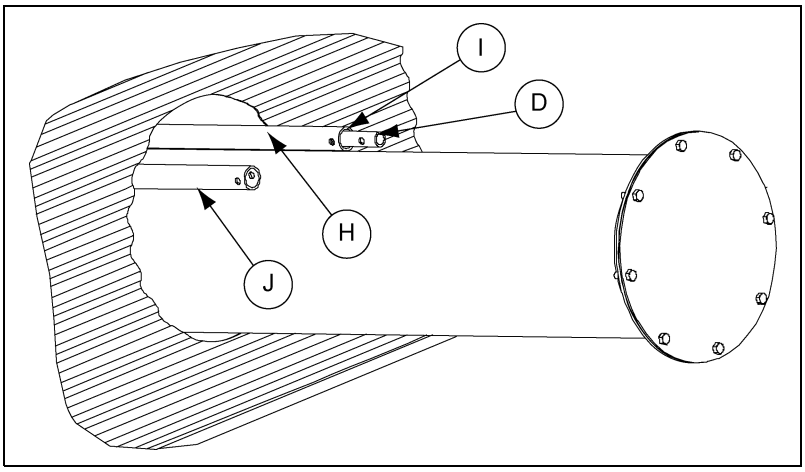


Figure 4O

Ref #	Description
D	Centerwell Control Rod
H	Inside Intermediate Well Control Rod

Ref #	Description
I	Holes are Aligned and Horizontal
J	Outside Intermediate Well Control Rod

Bin Flange Installation

1. Attach the upper and lower bin flanges (B and C) to the unload tube assembly using two (2) 5/16" x 1-1/2" hex bolts (D) and serrated flange nuts (A). *(See Figure 4P.)*

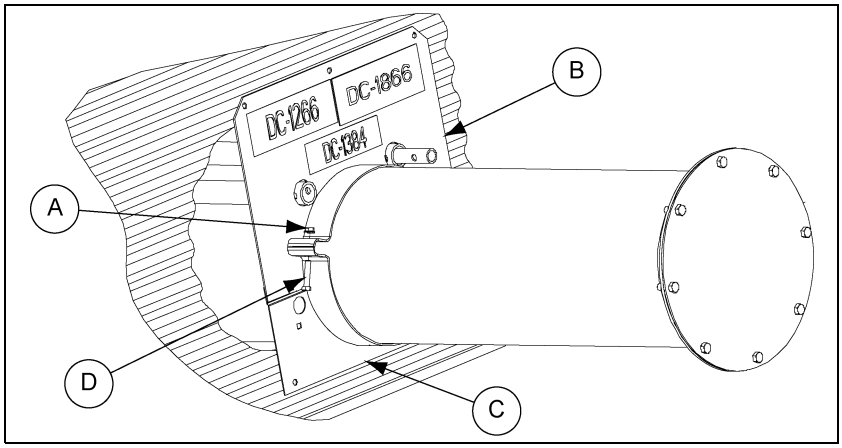


Figure 4P

Ref #	Description
A	5/16" Serrated Flange Nut
B	Upper Bin Flange

Ref #	Description
C	Lower Bin Flange
D	5/16" x 1-1/2" Hex Bolt

Bin Flange Installation (Continued)

2. Install the clutch control pipe position lock (F) to the lower bin flange using two (2) 5/16" x 3/4" carriage bolts (E) and serrated flange nuts (A). Install the carriage bolt heads on the backside of the lower bin flange so they will be next to the bin wall when the bin flanges are attached to the bin.
3. With the bin flanges 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. *(See Figure 4Q.)*

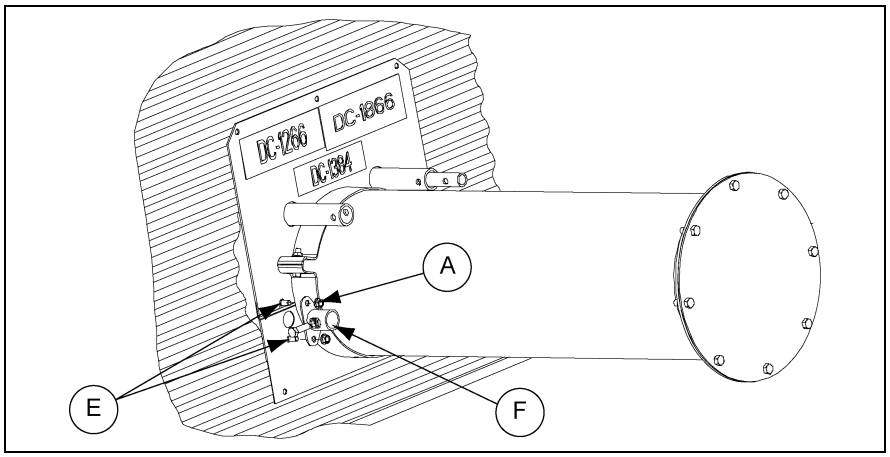


Figure 4Q

Ref #	Description
A	5/16" Serrated Flange Nuts
E	5/16" x 3/4" Carriage Bolts

Ref #	Description
F	Clutch Control Pipe Position Lock

4. Slide the bin flanges flush up to the bin wall and tighten the two (2) bolts connecting the two (2) flanges.
5. Drill into the bin wall through the holes located in the four (4) corners of the bin flanges. Fasten the bin flanges to the bin wall using four (4) 5/16" x 3/4" bin bolts (G) and serrated flange nuts (A).
6. Drill the remaining hole into the bin wall and attach the remaining 5/16" x 3/4" bin bolt (G) and serrated flange nut (A). *(See Figure 4R.)*

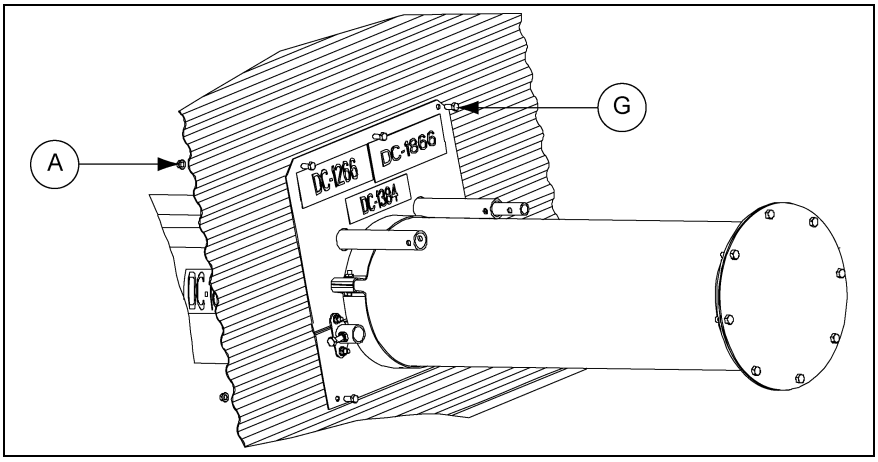


Figure 4R

Ref #	Description
A	5/16" Serrated Flange Nut

Ref #	Description
G	5/16" x 3/4" Bin Bolt

Rack and Pinion Installation

1. Make sure that all gates are fully closed.
2. Pin the inside intermediate control rod to the centerwell control rod, by using a 5/16" x 1-3/4" hex bolt (A) and hex nut through the aligned hole. *(See Figure 4S.)*

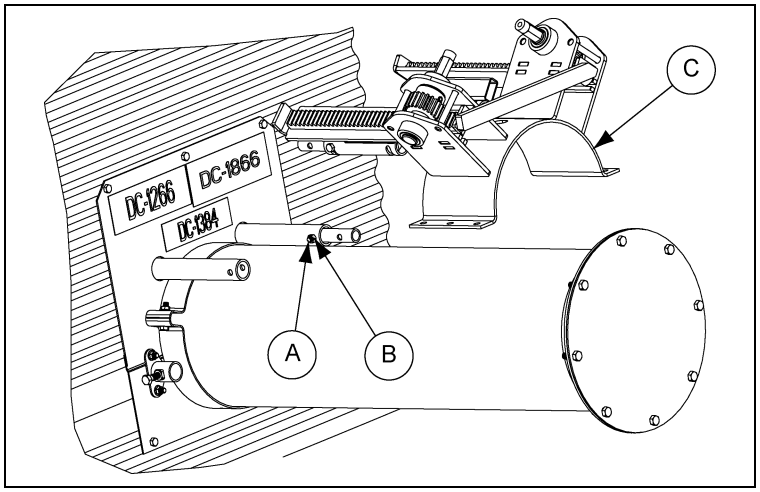


Figure 4S

Ref #	Description
A	5/16" x 1-3/4" Hex Bolt
B	5/16" Hex Nut

Ref #	Description
C	Rack and Pinion Assembly

3. Slip the rack and pinion tube over the centerwell gate control rod and slip the outside intermediate well adapter pipe into the outside intermediate control rod. Align the holes to the centerwell control rod (F) and the outside intermediate well control rod with the matching holes on the rack and pinion. Make sure the rack and pinion is fully extended towards the bin wall. *(See Figure 4T.)*

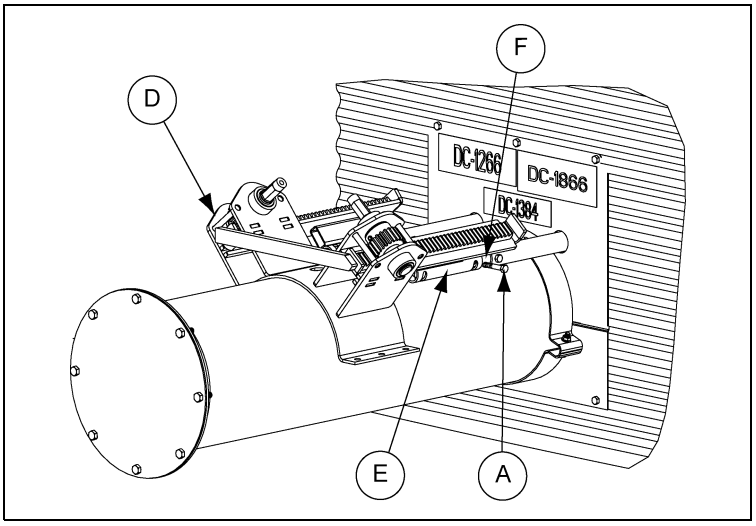


Figure 4T

Ref #	Description
A	5/16" x 1-3/4" Hex Bolt
D	Fully Extended Rack and Pinion

Ref #	Description
E	Rack and Pinion Tube
F	Centerwell Control Rod

Rack and Pinion Installation (Continued)

4. Attach the rack and pinion to the control rods using two (2) 5/16" x 1-3/4" hex bolts (A) and hex nuts (B). *(See Figure 4U.)*

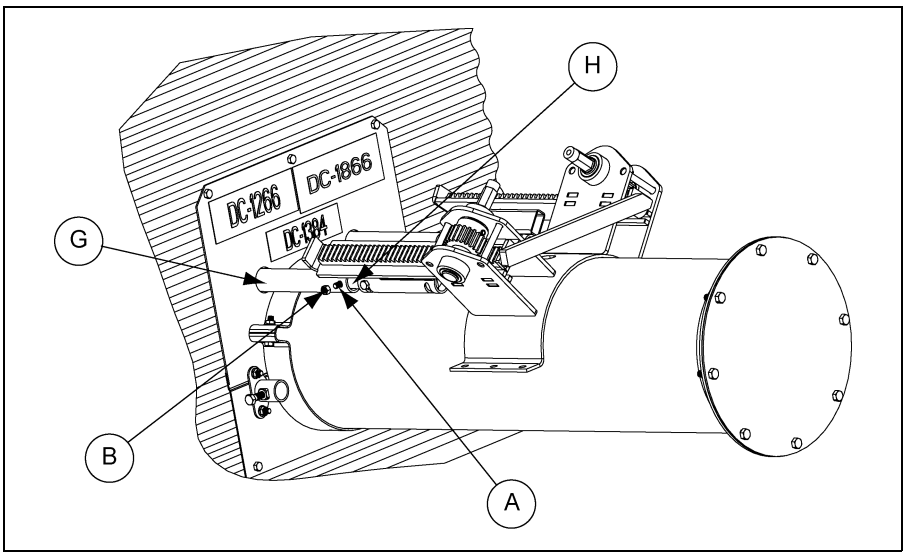


Figure 4U

Ref #	Description
A	5/16" x 1-3/4" Hex Bolt
B	5/16" Hex Nut

Ref #	Description
G	Outside Intermediate Control Rod
H	Outside Intermediate Well Adapter Pipe

5. With the rack and pinion fully extended towards the bin wall, attach the half band (L) with six (6) 5/16" x 1-3/4" hex bolts (K), flat washers (J) and serrated flange nuts (I). *(See Figure 4V.)*

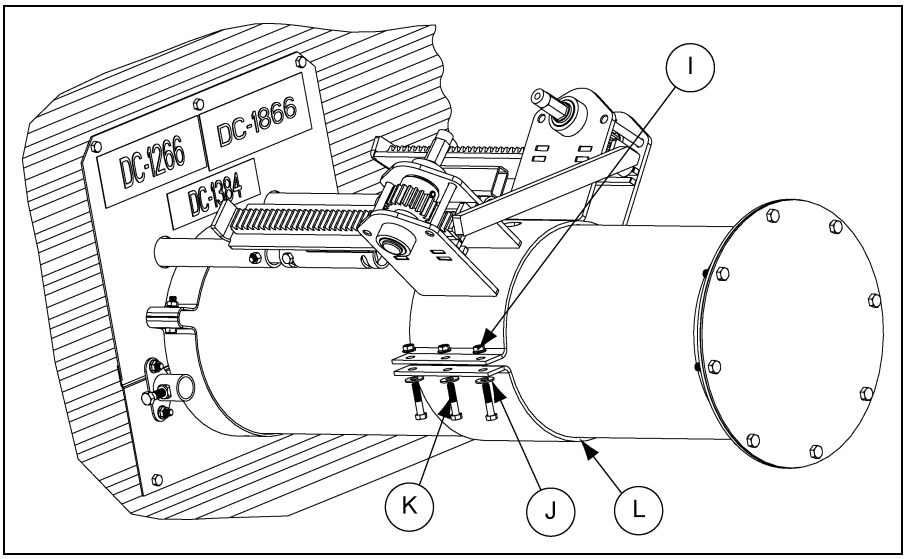


Figure 4V

Ref #	Description
I	5/16" Serrated Flange Nut
J	5/16" Flat Washer

Ref #	Description
K	5/16" x 1-1/2" Hex Bolt
L	Half Band

Rack and Pinion Installation (Continued)

6. Slide the 3/4" wrenches (M) over the shafts on the rack and pinion, making sure the collar (O) faces the gears. Fasten the wrenches with the two (2) 3/8" x 3/4" flange bolts (N) and flat washers (P). *(See Figure 4W.)*

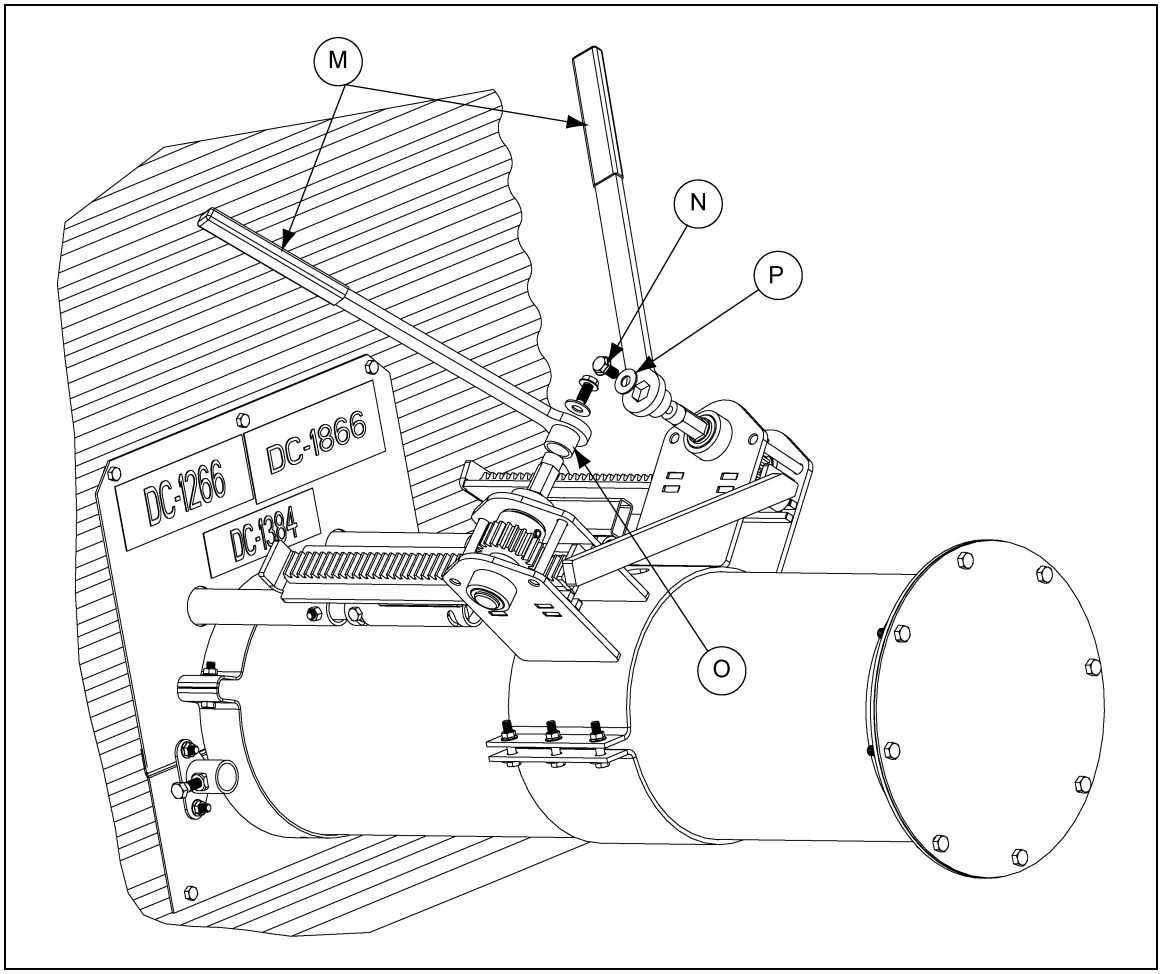


Figure 4W

Ref #	Description
M	3/4" Wrenches
N	3/8" x 3/4" Flange Bolts
O	Collar
P	3/8" Flat Washers

NOTE: *On 36' diameter bins, install the rack and pinion using the steps above, nothing that there is no outside intermediate control rod to attach to and only one rack to operate the center and intermediate wells.*

Clutch Control Installation

1. Install the longest section of the 1/2" clutch control rod (E) to the clutch control arm (C) on the centerwell (A). Make sure that it is contained in the square clutch control pipe guides on the intermediate wells. Bolt the rod to the arm with a 5/16" x 1-3/4" hex bolt (B) and nylock nut (D). *(See Figure 4X.)*

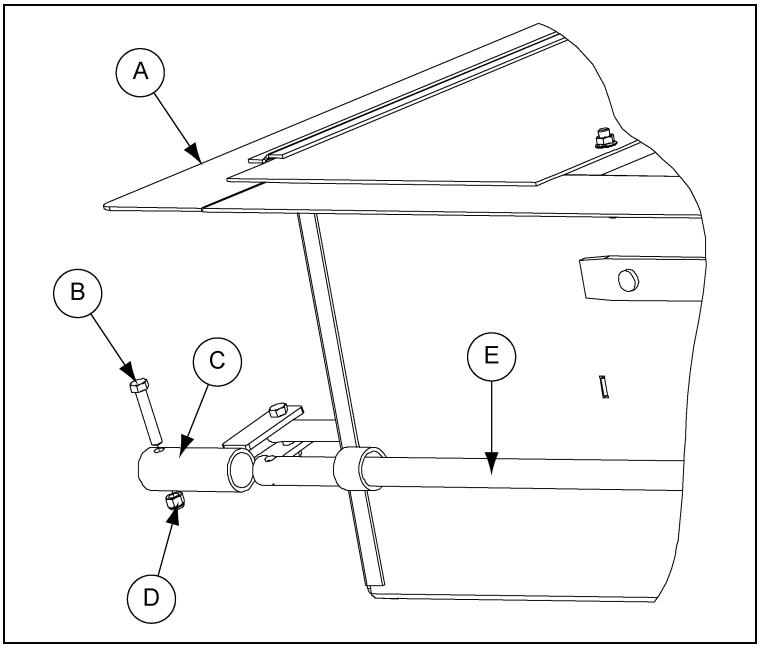


Figure 4X

Ref #	Description
A	Centerwell
B	5/16" x 1-3/4" Hex Bolt
C	Clutch Control Arm

Ref #	Description
D	5/16" Nylock Nut
E	Clutch Control Rod

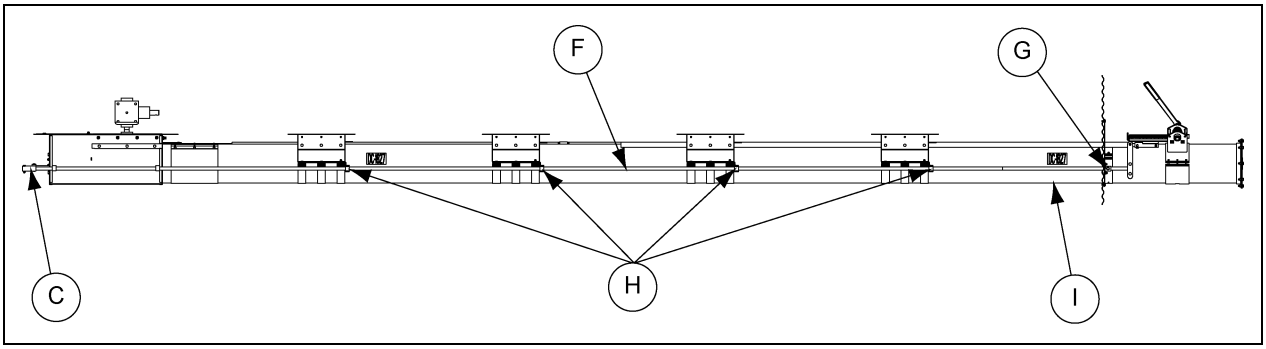


Figure 4Y

Ref #	Description
C	Clutch Control Arm
F	Long Clutch Control Rod
G	Clutch Control Pipe Position Lock

Ref #	Description
H	Clutch Control Pipe Guides
I	Short Clutch Control Rod

Clutch Control Installation (Continued)

NOTE: *On 36' and 42' diameter bins, the clutch control rod will come pre-assembled and shipped inside the unload flight.*

2. Connect the two (2) clutch control rods by threading the 1/2" internal pipe connector (J) halfway onto the rod attached to the centerwell. Bring the other clutch control rod up to it by running the rod through the clutch control pipe position lock in the bin flange, threaded end first and making sure that the rod is contained by the guides on the intermediate wells. Then thread the rod onto the remaining threads on the coupler. *(See Figure 4Z.)*

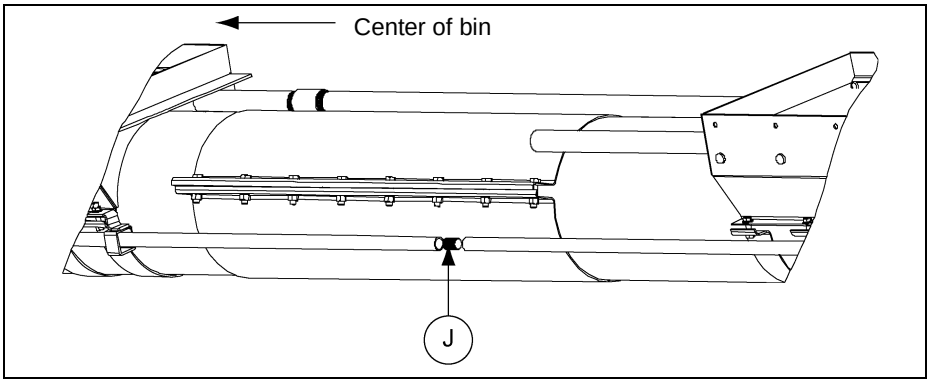


Figure 4Z

Ref #	Description
J	1/2" Internal Control Pipe Coupler

3. Attach the 1/2" control rod clamp (P) to the control rod by inserting the 5/16" x 1-3/4" long roll pin (O) through the clamp and control rod.
4. Fasten the clutch handle to the clamp (P) using two (2) 5/16" x 3/4" carriage bolts (N), flat washers (L) and serrated flange nuts (K). Install the nuts so that they secure the roll pin (O) in place. *(See Figure 4AA.)*

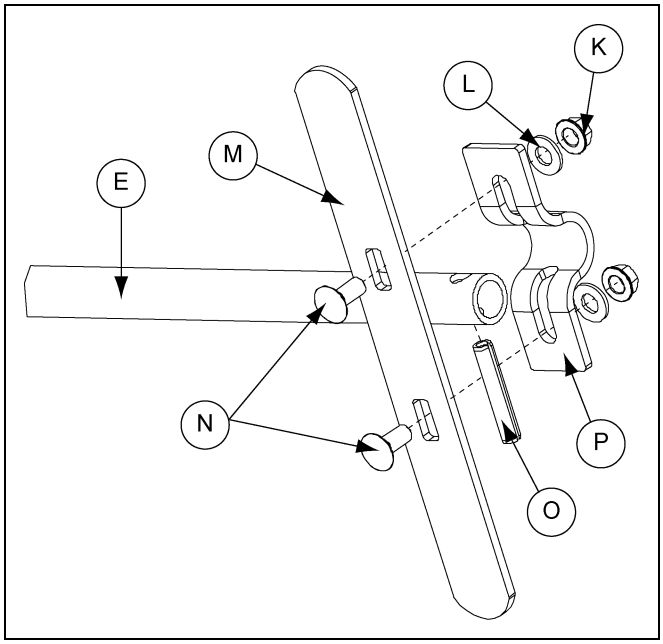


Figure 4AA

Ref #	Description
E	Clutch Control Rod
K	5/16" Serrated Flange Nut
L	Flat Washer
M	Clutch Handle
N	5/16" x 3/4" Carriage Bolts
O	5/16" x 1-3/4" Roll Pin
P	1/2" Control Rod Clamp

Clutch Control Installation (Continued)

5. Check the operation of the clutch rod (E) by pulling the handle to engage the clutch and then pushing the handle to disengage it. The clutch control pipe (H) should slide freely. Lock the control pipe into the disengaged position by tightening the bolt on the clutch control pipe (H) position lock that is attached to the bin flange. *(See Figure 4AB.)*

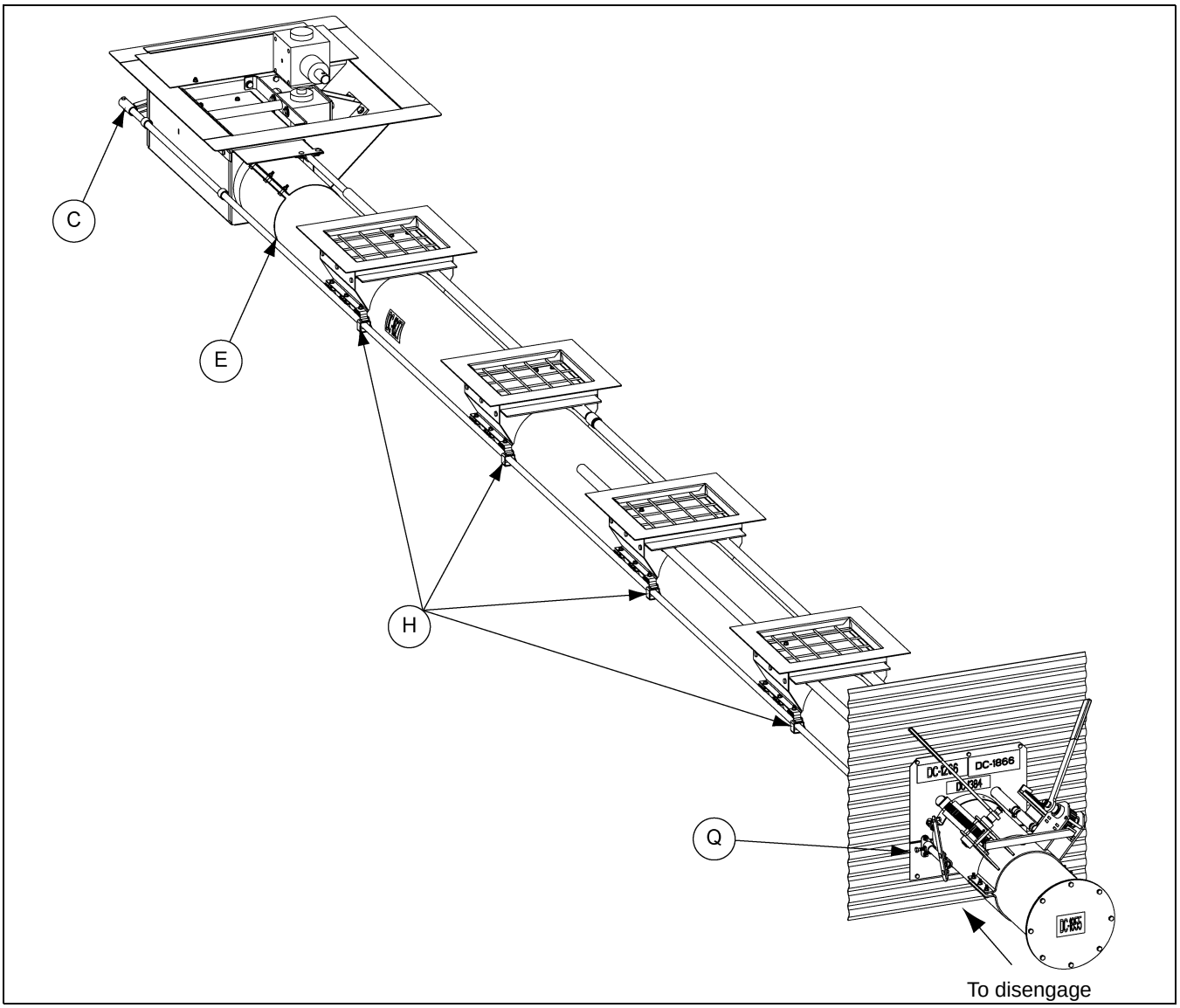


Figure 4AB

Ref #	Description
C	Clutch Control Arm
E	Clutch Control Rod
H	Clutch Control Pipe Guides
Q	Clutch Control Pipe Position Lock Bolt

Assembling and Installing the Unload Flight

1. Begin by removing the unload tube assembly end cap if you have not done so already.

   NOTE: *On 36' and 42' diameter bins, the unload flight is one piece. Skip Steps 2 and 3.*

2. Locate the inner unload flight. One end of this flight should have a square bushing; The other end has a round bushing with two (2) cross drilled holes. Attach the 1-1/2" O.D. x 9-1/2" connecting shaft (B) to the inner unload flight using two (2) 1/2" x 3-1/2" grade 8 hex bolts (C) and stover nuts (A).

3. Align the outer unload flight to the inner unload flight, making sure that the dura-edge on both flights are as continuous as possible, the angle between both faces being less than 90° wherever possible, but not greater than 180° and without overlapping. *(See Figure 4AC.)*

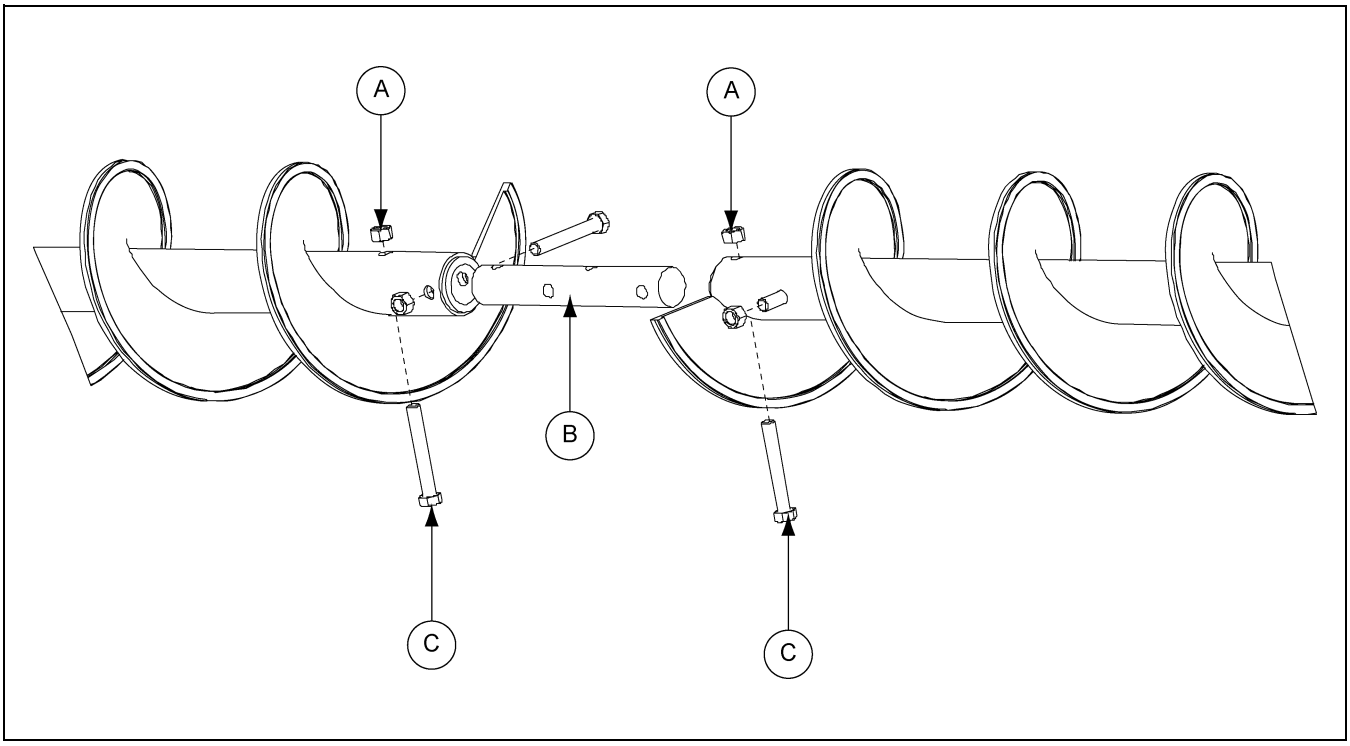


Figure 4AC

Ref #	Description
A	1/2" Stover Nuts
B	Connecting Shaft
C	1/2" x 3-1/2" Grade 8 Bolts

NOTE: *Overlapping the flights or having an angle between the ribbon faces be greater than 180°, will result in reduced unload capacity.*

4. Attach the discharge unload flight to the connecting shaft using two (2) 1/2" x 3-1/2" grade 8 bolts and stover nuts.

5. Insert the unload flight into the unload tube with the square bushing end facing the centerwell and the round bushing end facing the discharge end of the tube. *(See Figure 4AD on Page 32.)*

Assembling and Installing the Unload Flight (Continued)

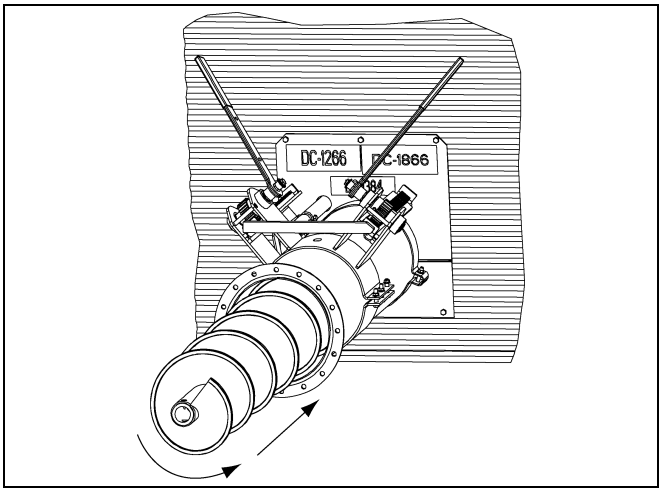


Figure 4AD

6. When the unload flight (E) is approaching the centerwell square shaft (D), it will be necessary to rotate the flight counterclockwise to get it to seat properly on the square 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.
7. On an initial install with an empty bin, the installer should open the centerwell gate 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 seated properly. *(See Figure 4AE.)*

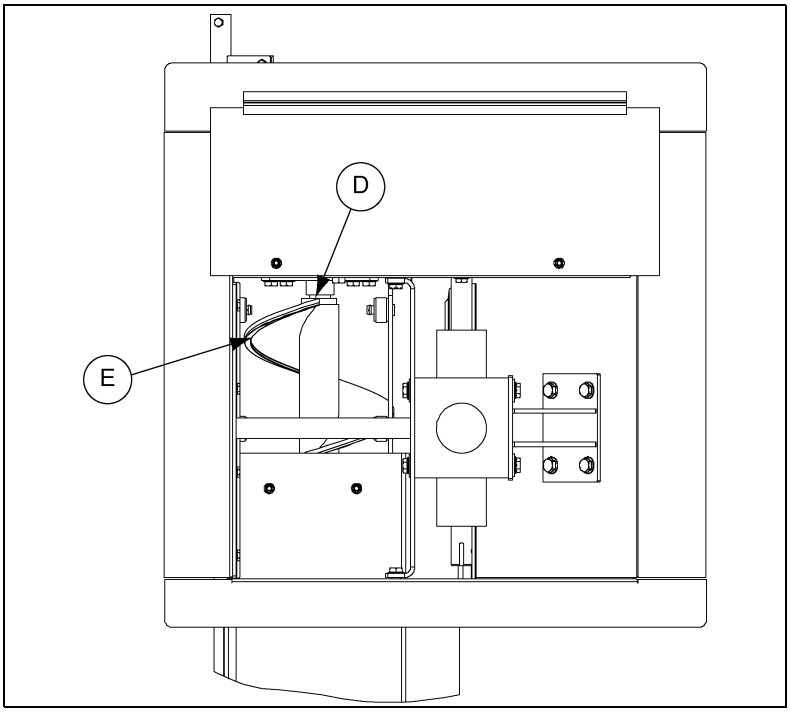


Figure 4AE

Ref #	Description
D	Centerwell Square Shaft
E	Unload Flight

Installing the Sweep Flighting

1. Attach the U-joint to the centerwell gearbox shaft (A) using a 1/4" x 1-1/4" square key (B) and a 3/8" x 3" hex bolt (E) and stover nut (C). *(See Figure 4AF.)*

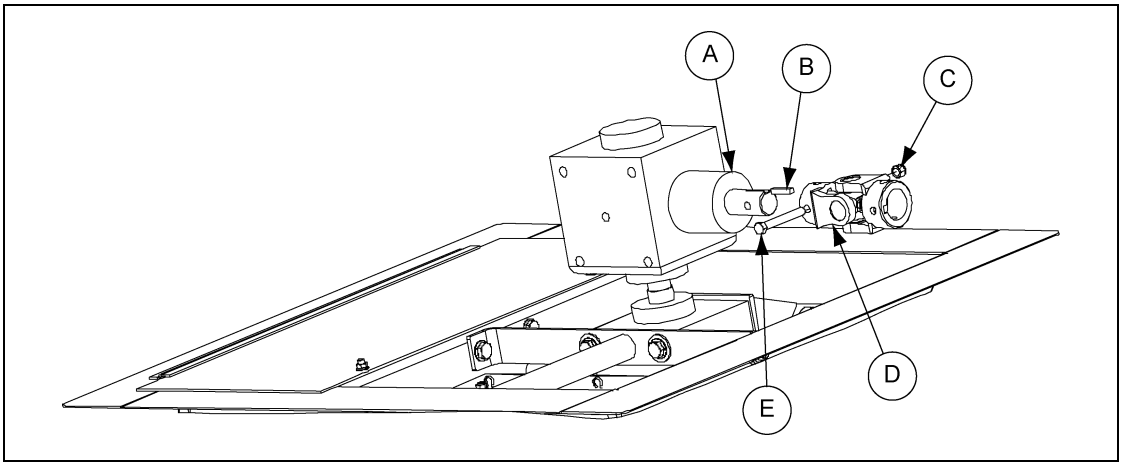


Figure 4AF

Ref #	Description
A	Centerwell Gearbox Shaft
B	1/4" x 1-1/4" Key
C	3/8" Stover Nut

Ref #	Description
D	U-Joint
E	3/8" x 3" Hex Bolt

2. Attach the U-joint flight shaft (G) to the U-joint (D) using a 3/8" x 1-1/2" square key (H) and a 1/2" x 3-1/4" hex bolt (F) and stover nut (I). Tighten both set screws after installation of keys. *(See Figure 4AG.)*

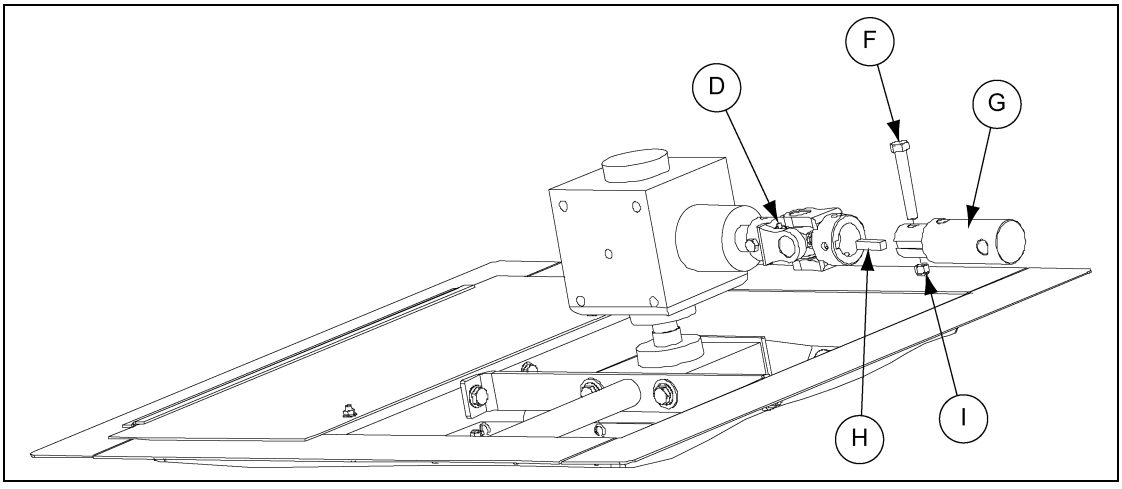


Figure 4AG

Ref #	Description
D	U-Joint
F	1/2" x 3-1/4" Hex Bolt
G	U-Joint Flight Shaft

Ref #	Description
H	3/8" x 1-1/2" Key
I	1/2" Stover Nut

Installing the Sweep Flighting (Continued)

NOTE: *Use the Table below to determine the length, quantity and position of the sweep flights and back shields from the Centerwell to the wall, for the given bin diameter.*

Sweep Flights and Back Shields

Bin Diameter	Length	Position from Center
36'	6'-10"	1
	8'-4"	2
42'	9' - 10-1/4"	1
	8'-4"	2
48'	6'-10"	1
	8' - 10-1/2"	2
	5'-4"	3
54'	9'-4"	1
	9'-4"	2
	5'-4"	3
60'	8'-4"	1
	9'-4"	2
	9'-4"	3

Bin Diameter	Length	Position from Center
72'	8'-4"	1
	8'-4"	2
	6'-10"	3
	8'-10"	4
75'	8'-4"	1
	8'-4"	2
	8'-4"	3
	9'-4"	4
78'	8'-4"	1
	9'-4"	2
	8'-4"	3
	9' - 10-1/4"	4

Sweep Flights and Back Shields for Bins with Double Frame Door

Bin Diameter	Length	Position from Center
42'	8'-10"	1
	8'-10"	2
48'	3' - 9-1/2"	1
	8'-6"	2
	8' - 3-1/2"	3
54'	5' - 3-1/2"	1
	8'-10"	2
	9' - 10-1/2"	3
60'	8' - 3-1/2"	1
	8'-10"	2
	9' - 10-1/2"	3

Installing the Sweep Flighting (Continued)

3. Fasten the first section of sweep flight to the U-joint flight shaft (G) with two (2) 5/8" x 4" grade 8 bolts (K) and stover nuts (J). Make sure that the dura-edge side of the sweep flight (L) faces the center of the bin. *(See Figure 4AH.)*

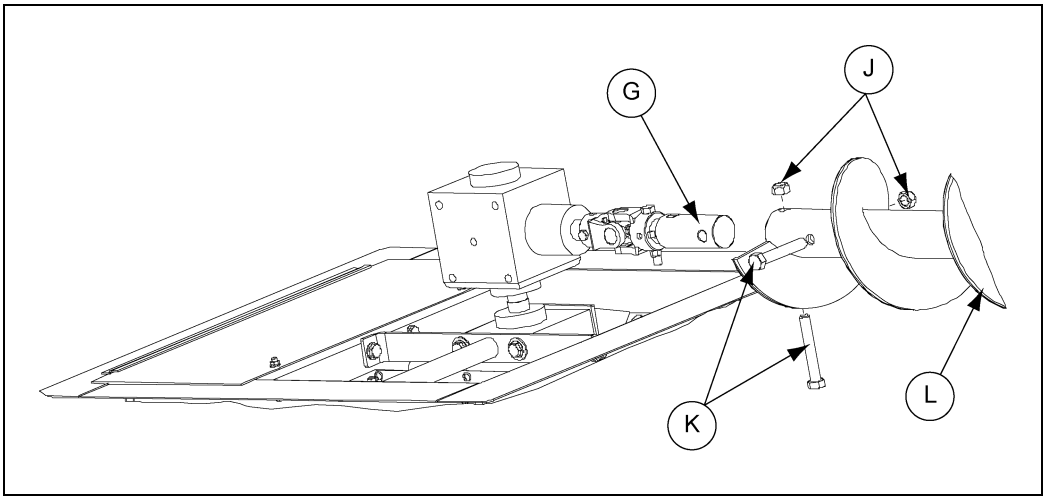


Figure 4AH

Ref #	Description
G	U-Joint Flight Shaft
J	5/8" Stover Nuts

Ref #	Description
K	5/8" x 4" Grade 8 Bolts
L	Sweep Flight

4. Next, bolt the 2" O.D. x 11-1/2" connecting shaft (O) to the sweep flight (M) with two (2) 5/8" x 4" grade 8 bolts (N) and stover nuts (J). *(See Figure 4AI.)*

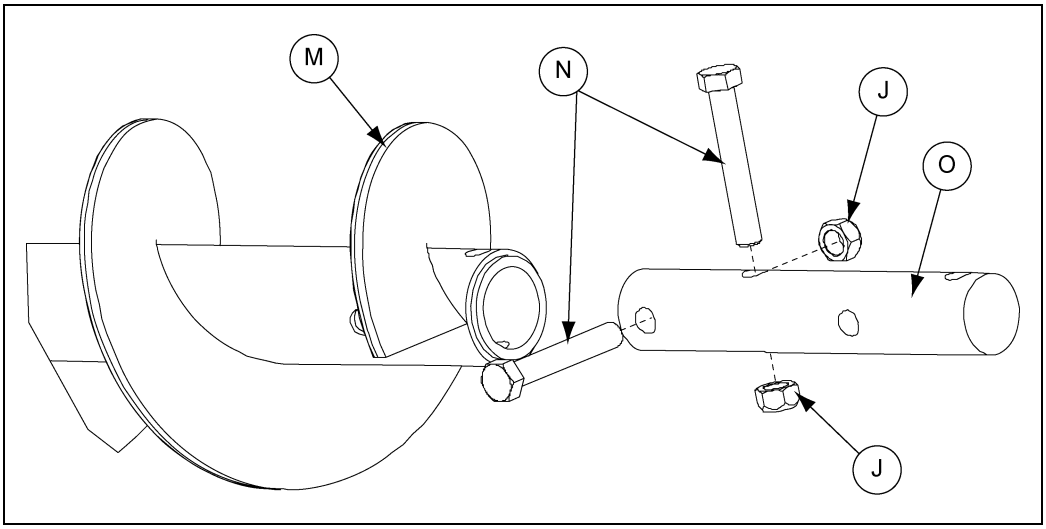


Figure 4AI

Ref #	Description
J	5/8" Stover Nuts
M	Assembled Sweep Flight

Ref #	Description
N	5/8" x 4" Hex Bolt
O	Connecting Shaft

Installing the Sweep Flighting (Continued)

5. Place the bearing stand assembly (P) onto the connecting shaft (O). *(See Figure 4AJ.)*

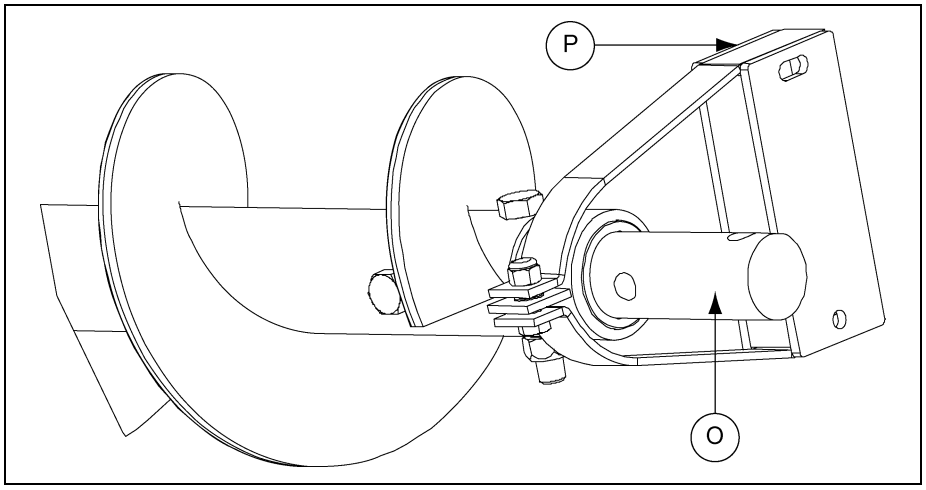


Figure 4AJ

Ref #	Description
O	Connecting Shaft
P	Bearing Stand Assembly

6. Align the next section of sweep flight making sure that the dura-edge on both flights are as continuous as possible, the angle between both faces being greater than 90° and less than 180° and without overlapping.

   NOTE: *Overlapping the flights or having an angle between the ribbon faces be less than 90° or greater than 180°, will result in reduced unload capacity.*

7. Install the next section of sweep flight. Bolt it to the connecting shaft using two (2) 5/8" x 4" grade 8 bolts (N) and stover nuts (J). *(See Figure 4AK.)*

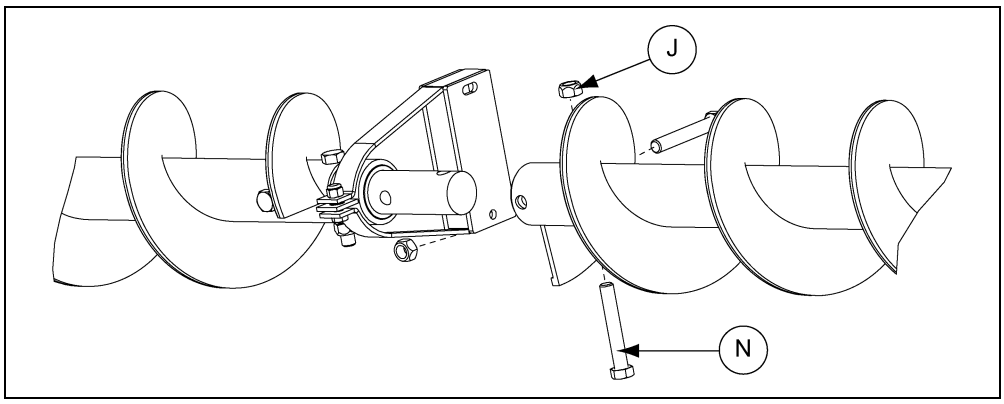


Figure 4AK

Ref #	Description
J	5/8" Stover Nuts
N	5/8" x 4" Hex Bolt

8. Repeat *Steps 4 on Page 35 and 7 on Page 36* for additional sections of sweep flight.

Installing the Sweep Flighting (Continued)

9. Attach the gearbox pivot bracket (Q) onto the gearbox with four (4) 1/2" x 1-1/4" flange bolts (S) and flat washers (R). *(See Figure 4AL.)*

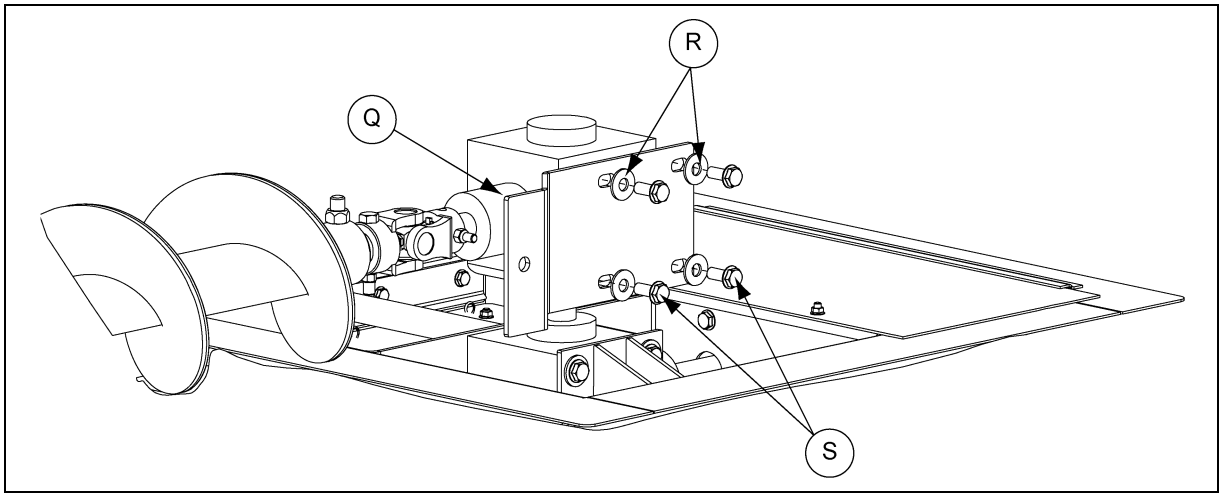


Figure 4AL

Ref #	Description
Q	Gearbox Pivot Bracket
R	Flat Washers
S	1/2" x 1-1/4" Flange Bolts

10. Attach the shield pivot bracket (V) to the gearbox pivot bracket using a 1/2" x 1/2" shoulder bolt (T) and nylock nut (U). *(See Figure 4AM.)*

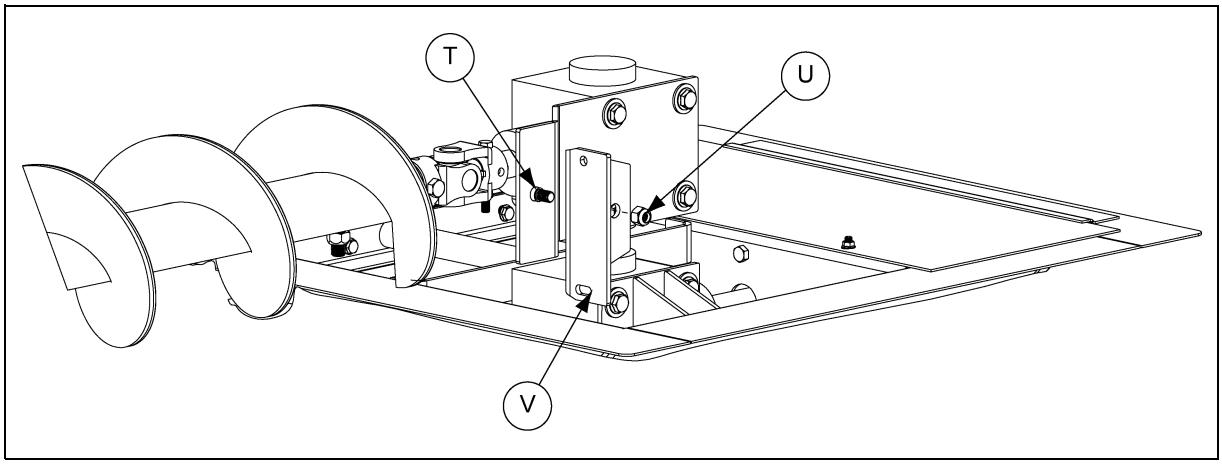


Figure 4AM

Ref #	Description
T	1/2" x 1/2" Shoulder Bolt
U	1/2" Nylon Lock Nut
V	Shield Pivot Bracket

Installing the Sweep Flighting (Continued)

11. Bolt the first section of back shield to the shield pivot bracket (V) with two (2) 3/8" x 1-1/2" grade 8 bolts (X), four (4) flat washers (R) and two (2) nylock nuts (W). *(See Figure 4AN.)*

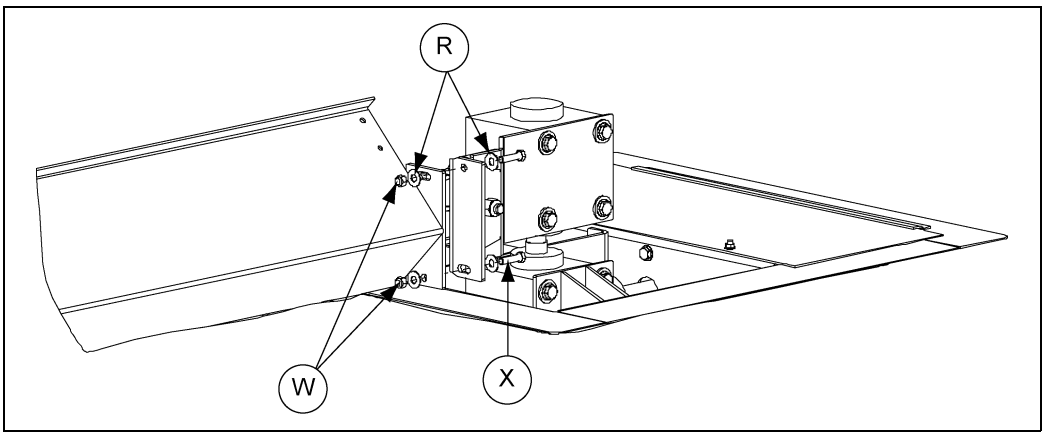


Figure 4AN

Ref #	Description
R	Flat Washers
W	3/8" Nylock Nuts
X	3/8" x 1-1/2" Hex Bolt

12. Attach the second section of back shield to the bearing stand assembly and the first section of back shield with two (2) 3/8" x 3" carriage bolts (Y), flat washers (R) and nylock nuts (W). *(See Figure 4AO.)*

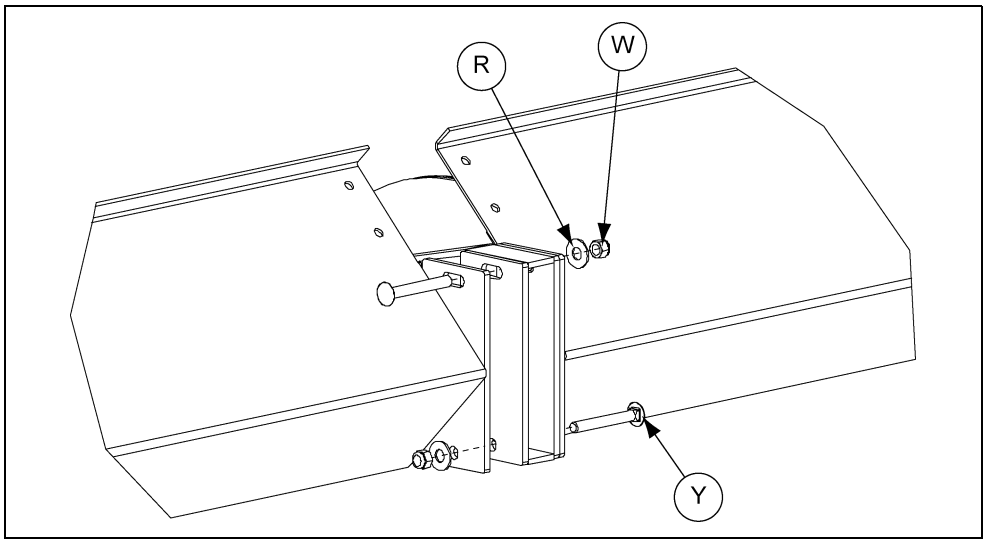


Figure 4AO

Ref #	Description
R	Flat Washers
W	3/8" Nylock Nuts
Y	3/8" x 3" Carriage Bolt

Installing the Sweep Flighting (Continued)

13. Bolt the shield splice plate (Z) to complete the connection of the two (2) back shields. Use four (4) 5/16" x 3/4" hex bolts (AB), flat washers (R) and serrated flange nuts (AA). *(See Figure 4AP.)*

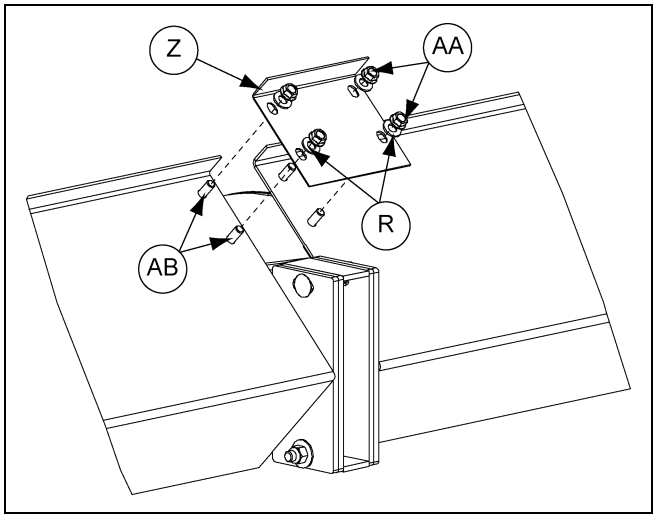


Figure 4AP

Ref #	Description
R	Flat Washers
Z	Shield Splice Plate
AA	5/16" Serrated Flange Nuts
AB	5/16" x 3/4" Hex Bolts

14. Attach the second and third sections of back shield to the bearing stand assembly together with the carrier wheel assembly. Use two (2) 3/8" x 3-1/2" hex bolts (AF), four (4) flat washers (R) and two (2) nylock nuts (W). *(See Figure 4AQ.)*

NOTE: *Sweep arms with three (3) or more flight and shield sections, a carrier wheel assembly is used. The carrier arm should be installed after the first two (2) sections of flight and shield.*

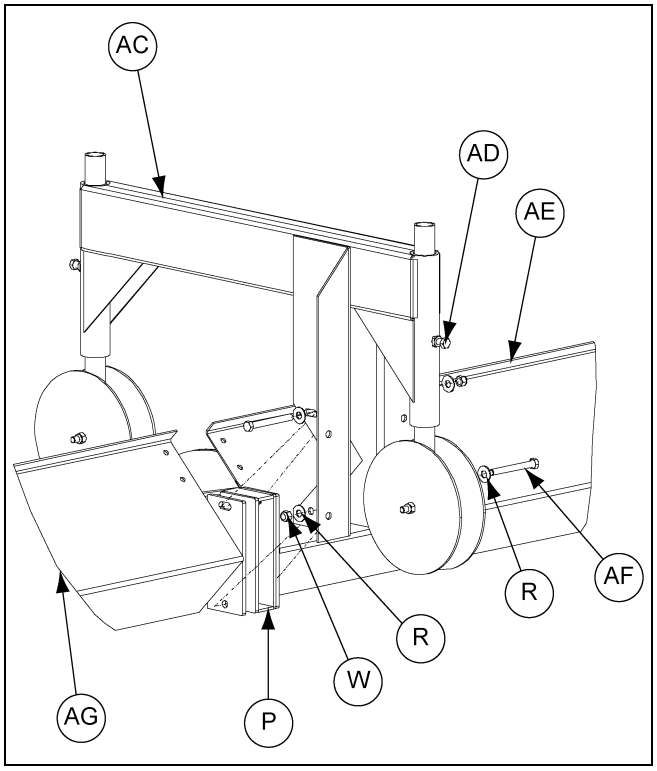


Figure 4AQ

Ref #	Description
R	Flat Washers
W	3/8" Nylock Nuts
AC	Carrier Wheel Assembly
AD	3/8" x 1" Height Adjustment Bolt
AE	Second Back Shield Assembly
AF	3/8" x 3-1/2" Hex Bolt
P	Bearing Stand Assembly
AG	Third Back Shield Assembly

Installing the Sweep Flighting (Continued)

15. Bolt the shield splice plate to complete the connection of the two (2) back shields. Use four (4) 5/16" x 3/4" hex bolts (AB), flat washers (R) and serrated flange nuts (AA).
16. The carrier wheel assembly height can be adjusted by using the 3/8" x 1" bolts on the sweep carrier body.
17. Repeat *Steps 12 on Page 38 and 13 on Page 39* until all shield sections are assembled.

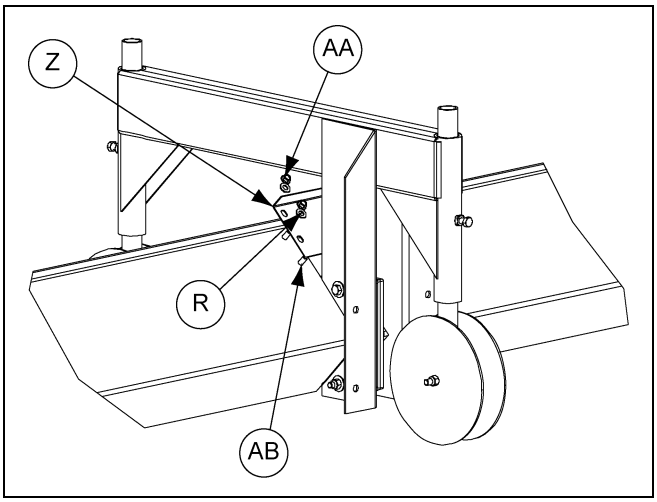


Figure 4AR

Ref #	Description
R	Flat Washers
AA	5/16" Serrated Flange Nuts
AB	5/16" x 3/4" Hex Bolts
Z	Shield Splice Plate

Sweep Wheel Installation

1. Join the housing bracket (A) and the gear driven reduction wheel together with two (2) 1/2" x 4-1/2" grade 5 bolts (B), two (2) flat washers (D) and two (2) nylock nuts (C). *(See Figure 4AS.)*

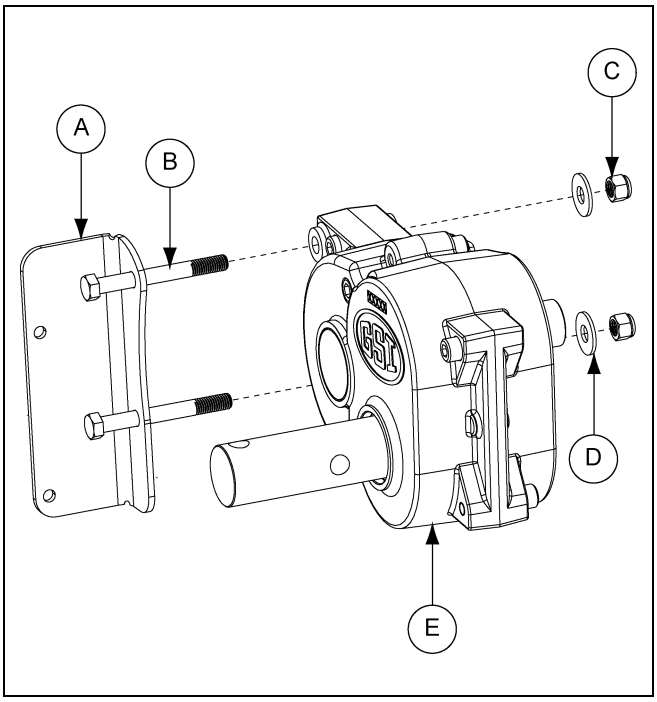


Figure 4AS

Ref #	Description
A	Housing Bracket
B	1/2" x 4-1/2" Hex Bolt
C	1/2" Nylock Nut
D	1/2" Flat Washer
E	Gear Driven Wheel Reduction Drive

Sweep Wheel Installation (Continued)

2. Attach the mounting bracket to the housing bracket using two (2) 3/8" x 1-1/2" grade 8 bolts (I), two (2) flat washers (H) and two (2) nylock nuts (F). *(See Figure 4AT.)*

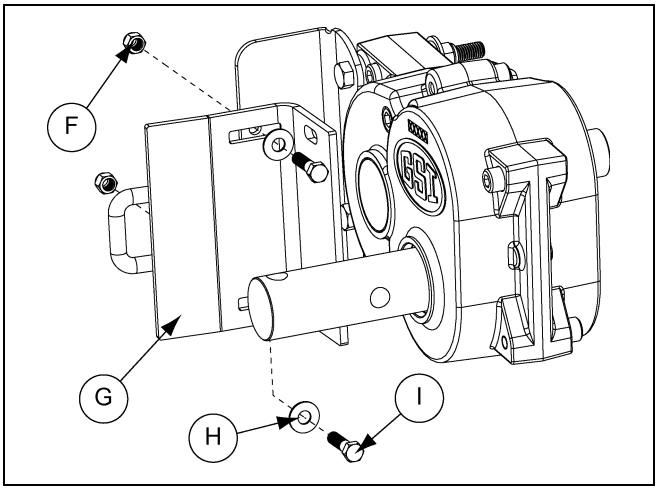


Figure 4AT

Ref #	Description
F	3/8" Nylock Nut
G	Mounting Bracket with Anchor Loop
H	3/8" Flat Washer
I	3/8" x 1-1/2" Hex Bolt

3. Attach the input shaft of the gear driven reduction drive to the final sweep flight using two (2) 5/8" x 4" grade 8 bolts (J) and stover nuts (K). Attach the mounting bracket to the final back shield with two (2) 3/8" x 1-1/2" grade 8 bolts (I), two (2) flat washers (H) and two (2) nylock nuts (F). *(See Figure 4AU.)*

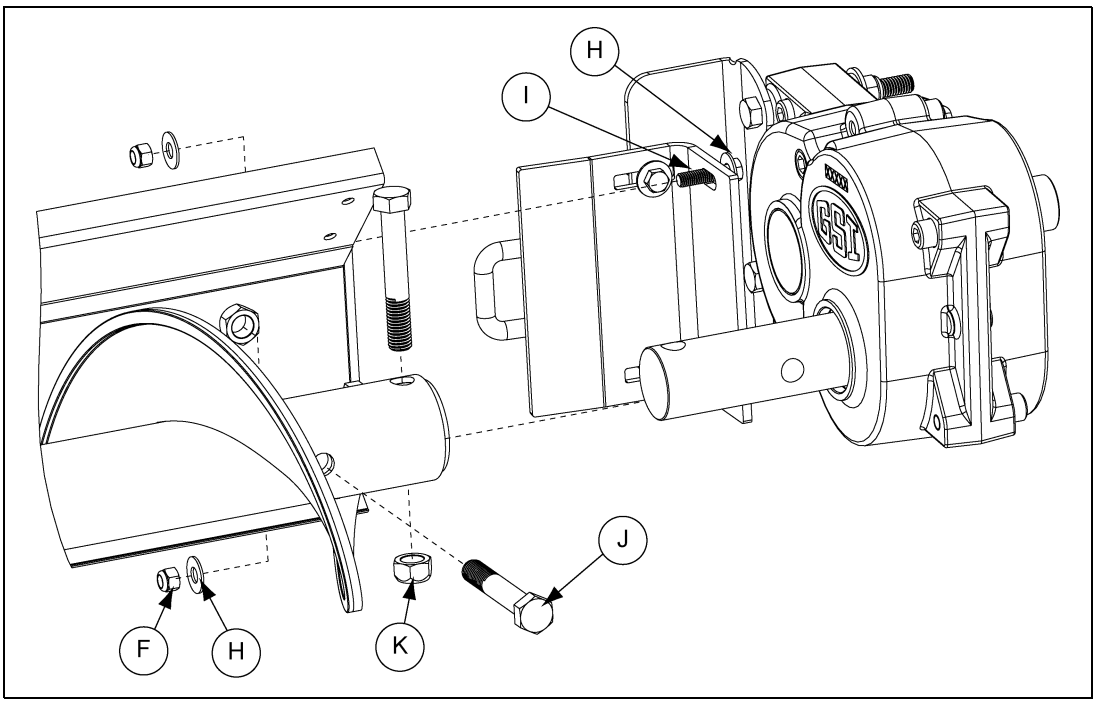


Figure 4AU

Ref #	Description
F	3/8" Nylock Nut
H	3/8" Flat Washer
I	3/8" x 1-1/2" Hex Bolt

Ref #	Description
J	5/8" x 4" Grade 8 Hex Bolt
K	5/8" Stover Nut

Sweep Wheel Installation (Continued)

4. Attach the sweep wheel hub to the gear driven reduction drive with one 1/2" x 3-1/2" grade 8 bolt (N) and stover nut (L).
5. Bolt the segmented rubber wheel (O) to the sweep wheel hub (M) with four (4) 1/2" nylock nuts.
6. Make final adjustments to the back shields and mounting brackets and tighten all hardware. Remember to leave the pivot bolt at the gearbox loose enough to pivot. *(See Figure 4AV.)*

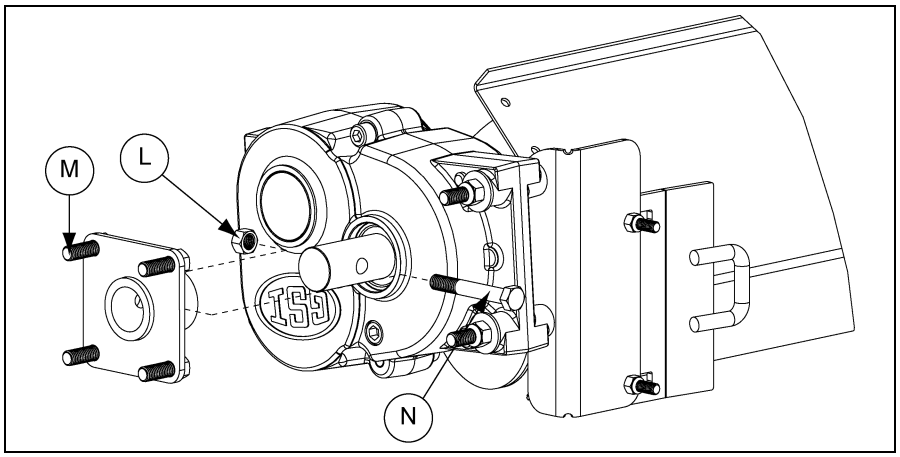


Figure 4AV

Ref #	Description
L	1/2" Stover Nut
M	Sweep Wheel Hub
N	1/2" x 3-1/2" Grade 8 Hex Bolt

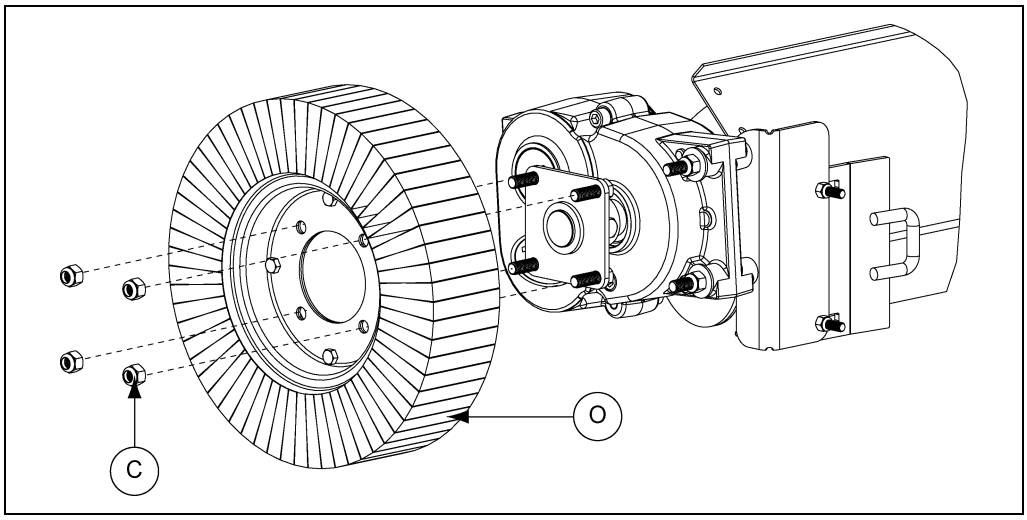


Figure 4AW

Ref #	Description
C	1/2" Nylock Nut
O	Segmented Rubber Wheel

NOTE: *A single section of sweep flight and back shield or just a few sections, can be used alone without all the other sections. Install the sweep wheel at the end of the last section being used.*

Motor Selection

1. The following horsepower recommendations are for conveyance of reasonably dry grain. Grain with moisture content above 15% will require a greater horsepower to obtain the designed capacity. The maximum possible capacity will be less with high moisture grain than it will be with dry grain. Use an 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 the column.
2. Consideration should be given to the proper size auger for a batch drying or any intermittent type of operation. When augers are stopped and restarted under full load, damage to the auger may result. Starting the auger at a reduced grain load will be better than starting it at full load. Start-up will be easier and convey more efficiently if the auger is kept from absolute filling.

Motor Selection

Bin Diameter	HP	Horizontal and 25° Powerheads	12" Commercial Vertical
		Belt Quantity	Belt Quantity
36'	15	3	3
42'	15	3	3
48'	15	3	3
54'	15	3	3
60'	15	3	3
72'	20	4	3
75'	20	4	3
78'	20	4	3

NOTE: *The auger capacity can fluctuate greatly under a variety of different conditions. Moisture content, different commodities, the amount of foreign matter and auger speeds affect the performance of the auger and its efficiency. Moisture content of 25% can reduce auger capacity by as much as 40% under some conditions.*

A main power disconnect switch capable of being locked only in the OFF position should be used. The switch should be locked out whenever work is being done on the Direct Gear Drive Bin Sweep.

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

Before Filling the Bin

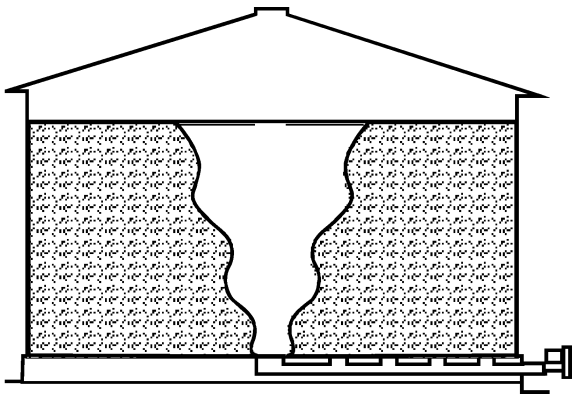
1. Read the instructional decal located on the upper bin flange to learn how to control the Direct Gear Drive Power Sweep Well Gates.
2. Push the centerwell and the intermediate well control rods towards the bin to close well gates.

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

DANGER ***NEVER enter the bin while the sweep auger is in operation.***

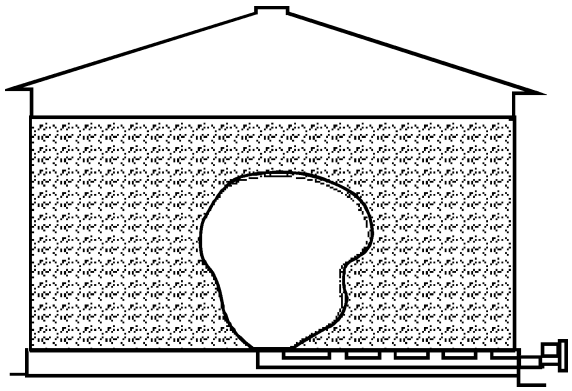
DANGER ***DO NOT enter the bin if the grain has bridged or has flown abnormally out of the bin. Consult Figures 5A and 5B for a visual. Suffocation can occur if the grain suddenly breaks loose and buries the persons inside the bin.***

3. With the power shut OFF and locked out, enter the bin and position the sweep auger along side of the intermediate wells.
4. Where a carrier wheel assembly is used, adjust the height so that the sweep arm assembly is close to the floor, but WILL NOT contact the floor, intermediate well top flanges or floor screws.
5. Open the centerwell cover plate and set it aside. while observing the clutch components in the centerwell, pull the clutch control pipe from the outside of the bin, until the two (2) clutch jaws are fully engaged. Make a distinguishing mark on the clutch control rod to designate the fully engaged position.
6. Next, push the clutch control pipe toward the bin to disengage the two (2) clutch jaws. Verify that the clutch is fully disengaged in the centerwell. Make a distinguishing mark on the clutch control rod to designate the fully disengaged position.
7. Tighten the clutch control pipe position lock out bolt.
8. Re-install the centerwell cover plate.



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

Figure 5A



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

Figure 5B

Pre-Start Checks

Failure to perform any and all of these pre-start checks may cause damage to the equipment and could cause SERIOUS INJURY or DEATH to those in the work area. A failure to perform any and all of these pre-start checks may also be a misuse of the equipment, which may void the warranty.

1. Make sure that ALL belt(s) are tensioned properly.
2. Make sure that ALL shield(s) are in place and that the belt(s) and pulley(s) are able to move freely.

ALWAYS keep ALL guard(s) and shield(s) in place until all the power is disconnected and locked out.

3. Inspect the drive unit for any problems or potential problems.
4. Be aware of ALL emergency shut down procedures. Two (2) people must always be in a position where the operation of the equipment can be monitored.
5. Before starting the auger for the first time, make sure that all parts are assembled correctly according to the instructions in this manual.

Make certain that ONLY trained operators are in the work area before operating or moving the equipment. Two (2) people must always be in a position where the operation of the equipment can be monitored.

Normal Operation

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

Failures may occur in the auger is run full before it has been polished by the grain, during the break-in period. The auger should run at a partial capacity until it becomes polished and smooth. Several hundred bushels of grain should be run before operating at full capacity.

Be aware of any unusual vibration or noises during the initial start-up and break-in. If anything unusual is detected, immediately shut down the auger, disconnect and lock out the power supply before servicing. Visually inspect the auger periodically during the operation.

1. Start the unloading auger. The motor is located on the powerhead outside the bin, attached to the unload tube. To find the motor horsepower recommended for the bin size, consult the *Chart* and *Step 1 on Page 43*.

Normal Operation (Continued)

2. Make sure that the centerwell bolt and nut is inserted through the rack and pinion tube and the centerwell control rod. **NOTE:** ***NO*** *bolt should be in the inside intermediate well control rod.*

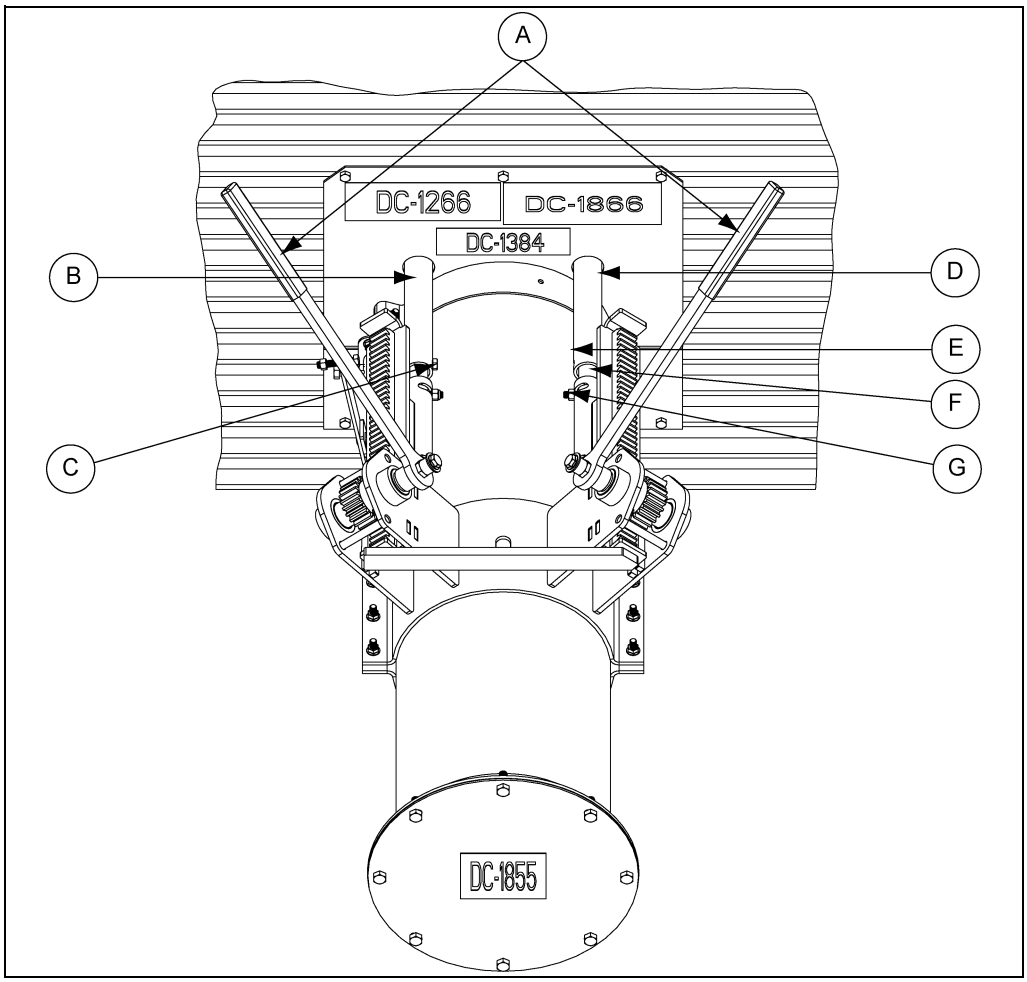


Figure 5C

Ref #	Description
A	3/4" Wrench
B	Outside Intermediate Well Control Rod
C	Outside Intermediate Well Bolt and Nut
D	Inside Intermediate Well Control Rod
E	Inside Intermediate Well Bolt and Nut **NOTE:** *Do not install until* *Step 5 on Page 47*.
F	Centerwell Control Rod
G	Centerwell Bolt and Nut

3. Use the 3/4" wrench on the rack and pinion and open the centerwell control gate until the desired flow has been established. It should not be necessary to open the gate more than 3" to 6". DO NOT open the gate more than 3" to 6", as the flow of grain into the centerwell will be at a higher rate than what the unload system can remove. This will cause the auger to plug or “jam.”

Normal Operation (Continued)

4. Always close the centerwell control gate and allow the unload auger to clean out before stopping the unload auger.
5. When the grain flow stops from the centerwell, close the centerwell gate. Insert the inside intermediate well bolt and nut through the inside intermediate well control rod and the centerwell control rod. The remaining grain should look like *Figure 5D.*
6. Gradually open the centerwell and inside intermediate wells until the desired flow has been established. You should not have to open the gate more than 2" to 4". Do not open the gates more than 2" to 4", as the flow of grain into the inside intermediate wells and occasional grain flow into the centerwell will be at a higher rate than what the unload system can remove. This will cause the auger to plug or “jam.”
7. Always close the well gates and allow the unload auger to clean out before stopping the unload auger.

WARNING ***NEVER unload the bin from the outside intermediate wells before unloading the grain from the centerwell and inside intermediate wells FIRST. This situation could result in structural damage to the Grain Bin.***

8. When the grain flow stops from the centerwell and inside intermediate wells, insert the outside intermediate well bolt and nut through the outside intermediate well control rod and the outside intermediate well adapter. The remaining grain should look like *Figure 5E*.
9. Gradually open the outside intermediate wells until the desired flow has been established. You should not have to open the gate more than 2" to 4". DO NOT open the gates more than 2" to 4", as the flow of grain into the outside intermediate wells and occasional grain flow into the centerwell and inside intermediate wells will be at a higher rate than what the unload system can remove. This will cause the auger to plug or “jam.”
10. Always close all of the well gates and allow the unload auger to clean out before stopping the unload auger.

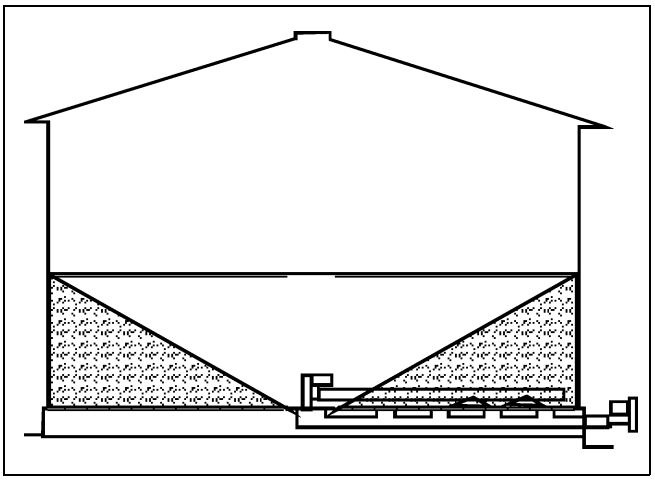


Figure 5D

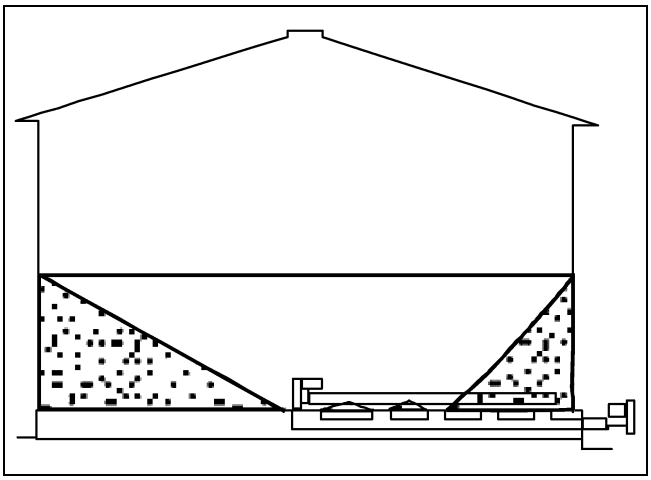


Figure 5E

Engaging the Clutch for the Bin Sweep

1. All power should be disconnected and locked out before starting.
2. Loosen the clutch control pipe position lock bolt. Pull on the clutch handle away from the bin to engage the clutch. Verify that the clutch is fully engaged, observing the distinguishing mark on the control rod, as done in *Step 5 on page 44*.
3. Once the clutch has been engaged, tighten the clutch control pipe position lock bolt to hold the clutch control rod in the engaged position.

CAUTION ***The centerwell gate must be FULLY open during the Bin Sweep operation.***

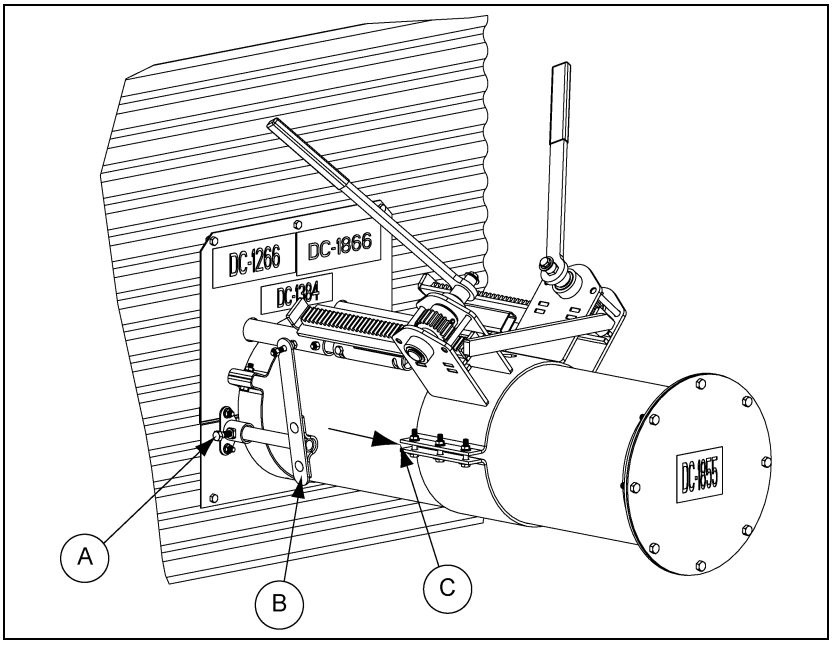


Figure 5F

Ref #	Description
A	Clutch Control Pipe Position Lock Bolt
B	Clutch Handle
C	To Engage

4. Restore power and start the unload auger motor. The sweep arm augers will start, being powered by the unload auger. Each time the auger is stopped, it may be necessary to adjust the sweep carrier wheel assembly up or down, so that the arm is allowed to feed into the grain pile, but also not come into contact with the floor. Follow proper safety procedures before entering the bin to adjust the carrier wheel assembly.

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

5. The sweep arm auger will clear most of the remaining grain in one pass. A second pass will clean out additional grain, before final clean out.

Final Clean-Out

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

1. After the bin sweep has made two (2) passes removing most of the grain, it will be necessary to clean the floor.
2. With all power disconnected and locked out, enter the grain bin. Sweep or scoop the remaining grain from the outer area of the floor and move it to a circular pile towards the center of the bin. *(See Figure 5G.)*

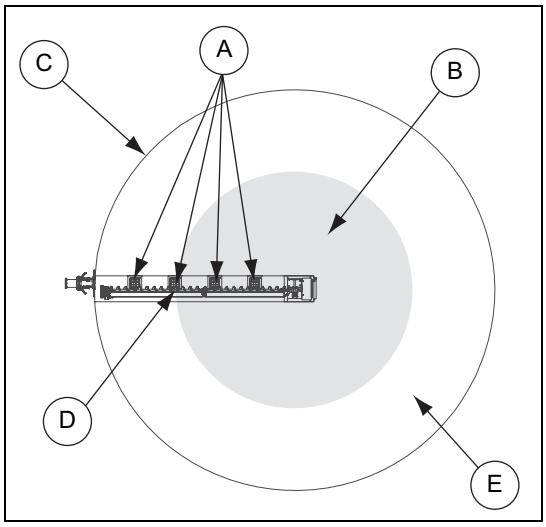


Figure 5G *Top View of Bin*

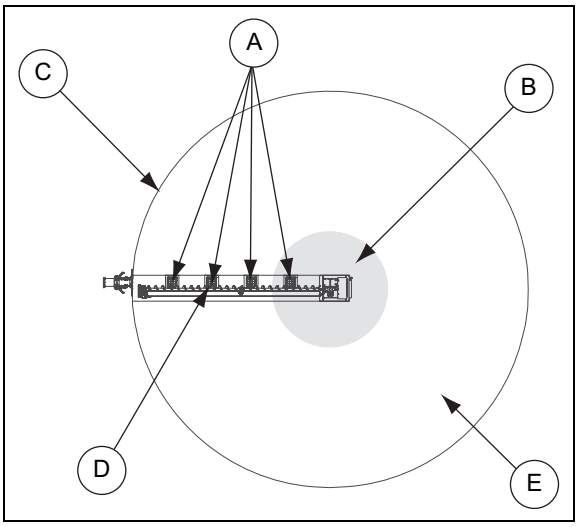


Figure 5H *Top View of Bin*

Ref #	Description
A	Bin Wells
B	Remaining Grain
C	Bin Wall

Ref #	Description
D	Sweep Auger
E	Cleaned Area

3. check the sweep carrier wheel assembly. If necessary, adjust the height so that the sweep arm assembly is close to the floor, but will not contact the floor, intermediate well top flanges or the floor screws.
4. Exit the grain bin.
5. Make sure everyone is outside of the bin and clear of the equipment.
6. Start the unload auger with the bin sweep still engaged. Shortly, the swept pile will have been removed by the bin sweep.
7. Disconnect and lock out all power to the unload auger.
8. Repeat *Step 2* moving the grain into a smaller circular pile, as shown in *Figure 5H*.
9. Repeat *Step 3*.
10. Exit the grain bin.

Final Clean-Out (Continued)

11. Make sure everyone is outside of the bin and clear of the equipment.
12. Start the unload auger with the bin sweep still engaged. Shortly, the swept pile will have been removed by the bin sweep.

Keep out of the bin while the bin sweep is in operation. The bin sweep travels rapidly around the bin. As the bin empties, the bin sweep travels around the bin faster.

Stay clear of the unload auger under the floor at the bin wells. The unload auger is exposed at these locations.

Shut Down

Normal Shut Down

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

Emergency Shut Down

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

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. Re-connect and unlock the power source.
5. Clear the auger gradually, until there is no grain and there are no obstructions.

Storage Preparation

1. Close all wells to the discharge auger.
2. Position the Direct Gear Drive Sweep along side the Intermediate Wells.

   NOTE: *Make sure the Clutch Control Rod is disengaged.*

3. Be sure the Unload Tube is empty.
4. Shut down the auger.
5. Make sure all fasteners are tight.

DO NOT enter the grain bin unless all power driven equipment has been shut down.

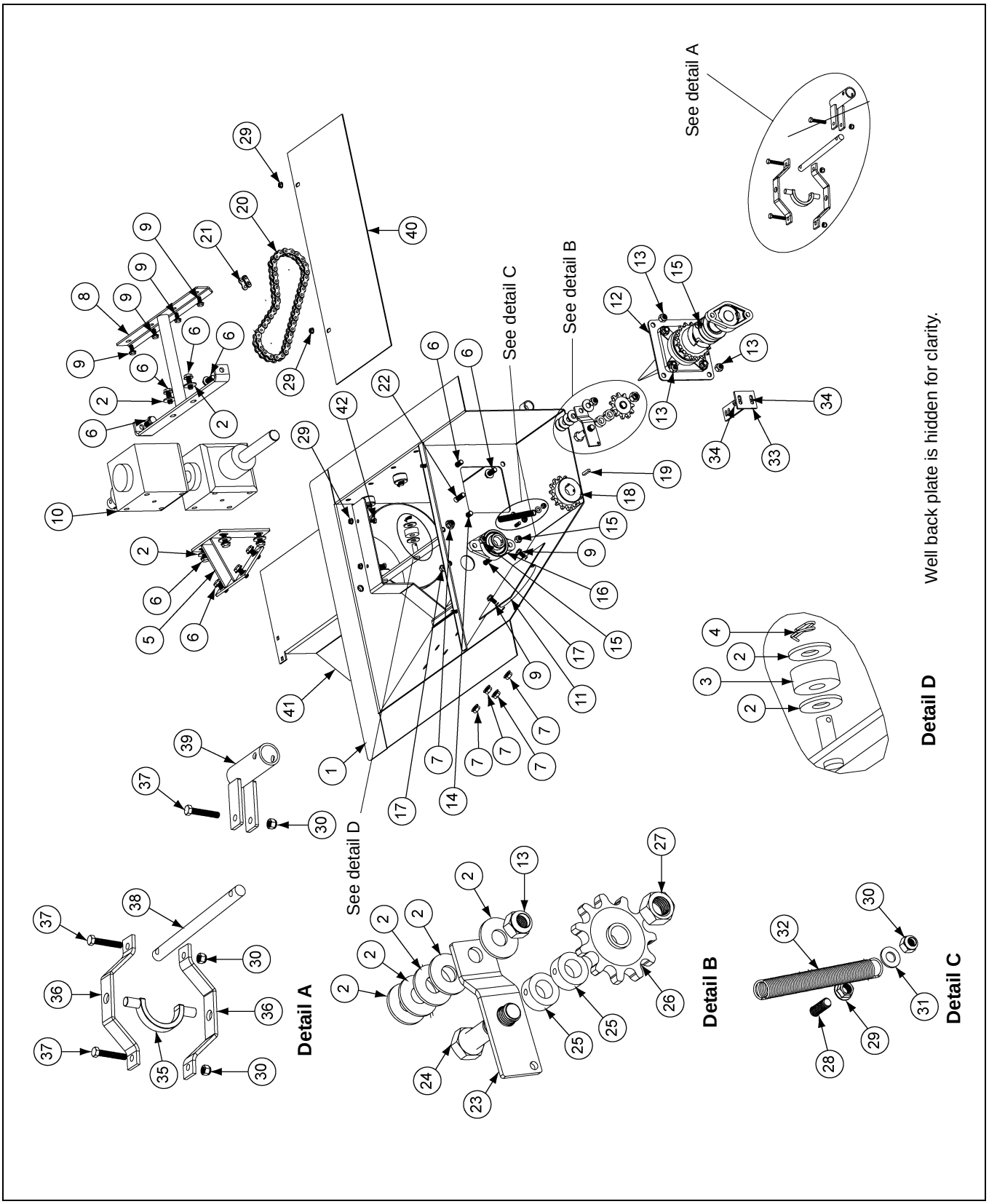
Maintain the Auger

Properly maintaining this equipment will help ensure it continues to work as designed. Failure to properly maintain this equipment may result in damage to the equipment and cause SERIOUS INJURY to the operator. Failure to properly maintain this equipment may also be a misuse of the equipment and may void the warranty.

1. The U-Joint must be lubricated with SAE multipurpose grease every ten (10) operational hours or after each use.
2. The upper and lower gearboxes in the centerwell should be half-full with oil. They must be checked and possibly filled with SAE 80W90 gear oil every ten (10) operational hours. Each gearbox should be filled up to the fill plug, approximately making them half-full overall. It is recommended to replace the oil in the gearboxes every season.
3. Use caution when repairing or replacing equipment parts.
4. Make sure ALL decals are legible and tightly attached to the equipment. If necessary, replace them **FREE OF CHARGE** by contacting the dealer, warehouse or manufacturer.
5. Mount controls for any electric motors at a safe distance from the machine and in a location accessible in case of an emergency.
6. Make sure ALL electrical wiring is not damaged and that it meets proper wiring codes.
7. Make sure ALL components are in good working condition before use.

Problem	Possible Cause	Solution
The auger is vibrating.	1. 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.	1. Adjust the drive belt to the proper tightness. 2. It may be necessary to remove the flighting for inspection.
Capacity is too low.	1. There may not be enough grain reaching the auger.	1. Make sure the intake has not bridged over, restricting flow. The flighting at the intake should be covered with grain for maximum capacity.
	2. The auger is moving too slowly.	2. Check the auger speed. Low capacity will result from speeds slower than recommended.
The auger plugs.	1. The auger may be “jamming” because too much grain is reaching the auger.	1. Decrease the amount of grain the auger is gathering.
	2. The motor may be too small or wired improperly.	2. If the motor is a newer light weight aluminum type, the next larger size may be desirable.
	3. The grain may be wet.	3. If wet grain or other hard-to-move material is being augered, use a larger size motor than recommended for normal use.
	4. The auger may be jammed with foreign material.	4. Remove any foreign material in the auger.
	5. The discharge end may be plugged.	5. Unplug any plugs at the discharge end of the auger.
The sweep flight and shield are no longer moving.	1. Too much drag.	1. 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.
	2. Worn sweep wheel.	2. The sweep wheel wears down over time. Replace the wheel.
	3. Unconditioned grain.	3. 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.

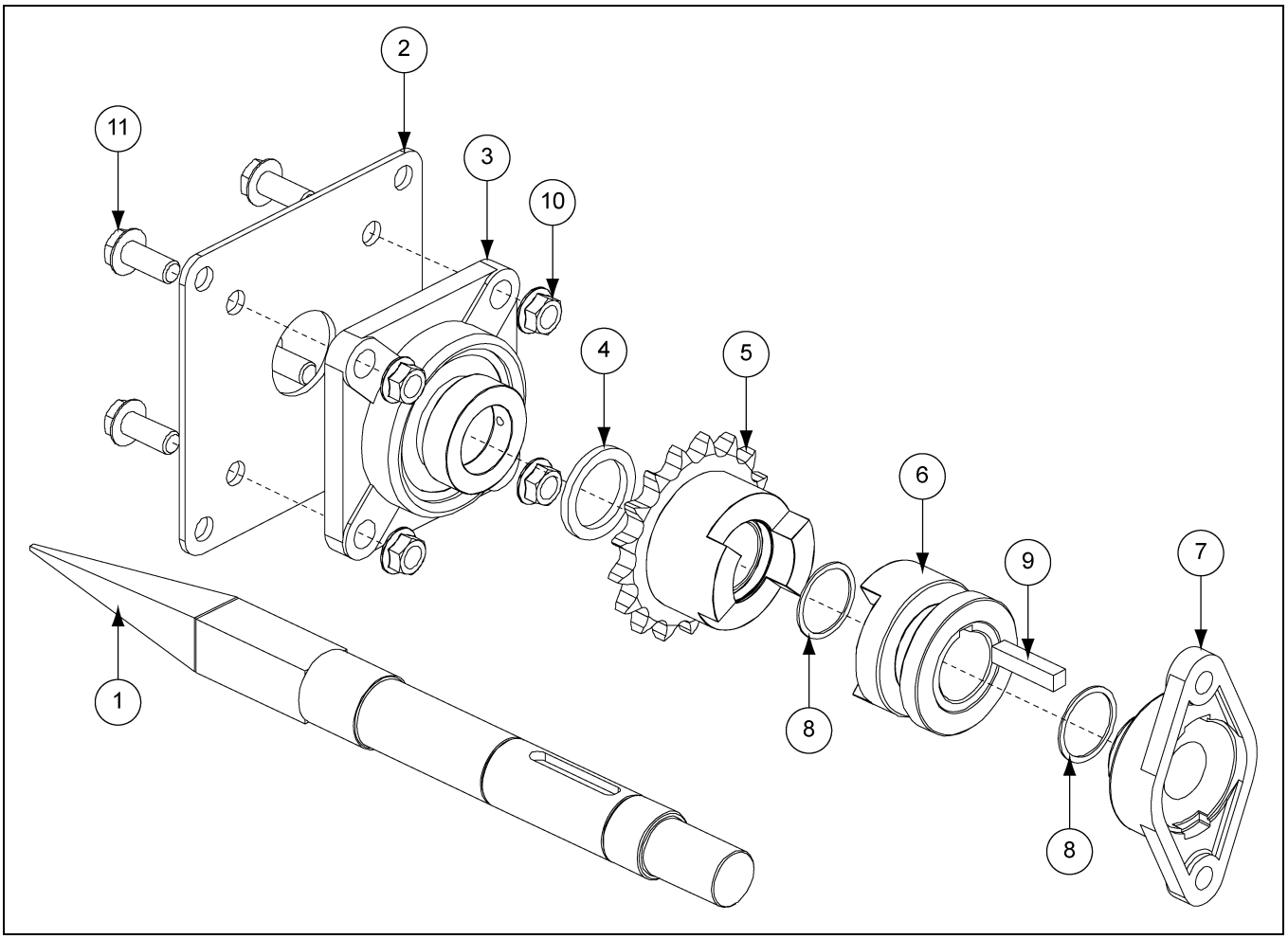
Centerwell Parts



Centerwell Parts List

Ref #	Part #	Description
1	GK7552	Centerwell Body
2	S-2121	1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.
3	GC03064	1/2" O.D. x 5/8" Polyurethane Roller
4	S-9422	1/2" Cotter Pin
5	GK7572	Wedge Gearbox Mount
6	S-9062	1/2"-13 x 1-1/4" Flange Bolt Zinc Grade 5
7	S-8506	1/2"-13 Serrated Flange Nut Zinc
8	GK7573	Gearbox Mounting Bracket
9	S-9067	3/8"-16 x 3/4" Flange Bolt Zinc Grade 5
10	GK7579	Gearbox with Clockwise Rotation
11	GK7646	Centerwell Access Door
12	GK7583	Centerwell Shaft Assembly
13	S-8260	1/2"-13 Nylock Nut Zinc Grade 5
14	S-7935	1/2"-13 x 1" HHCS Bolt Zinc Grade 5
15	S-8234	7/16"-14 Nylock Nut Zinc Grade 2
16	GK1330	Flange Bearing, 1-1/4" Bore, 2 Hole with Lock Collar
17	S-3886	7/16"-14 x 1-1/4" HHCS Bolt Zinc Grade 5
18	GK2323	15 Tooth Sprocket, 1-1/4" Bore, #60 with Keyway
19	S-8382	1/4" Square x 1-1/4" Key
20	GK7664	42P #60 Roller Chain
21	S-8618	Connecting Link, #60 Roller Chain
22	S-7876	1/2"-13 x 1-3/4" HHCS Bolt Zinc Grade 5
23	GK1702	Idler Sprocket Bracket
24	S-4108	5/8"-11 x 2-3/4" HHCS Bolt YDP Grade 8
25	S-4307	5/8" Locking Collar
26	GK4941	11 Tooth Idler Sprocket, 5/8" Bore, #60 with Bearing
27	S-6494	5/8"-11 Deformed Lock Nut Zinc Grade 5
28	S-7470	5/16"-18 x 1" Flange Bolt Zinc Grade 5
29	S-3611	5/16"-18 Serrated Flange Nut YDP Grade 2
30	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
31	S-1937	5/16" Flat Washer Zinc Grade 2
32	GK1704	Spring, Idler Bracket 5" Zinc 1/16" Pitch
33	GK1693	Clutch Pivot Bracket
34	S-6606	5/16"-18 x 3/4" Serrated Flange Bolt Zinc Grade 5
35	GK7589	Clutch Yoke
36	GK7592	Clutch Pivot Bracket
37	S-7149	5/16"-18 x 1-3/4" HHTB Bolt Zinc Grade 5
38	GK7637	Clutch Connection Rod
39	GK1923	Clutch Control Arm
40	GK7575	Centerwell Drive Cover Plate
41	GK7574	Slide Gate
42	S-8999	5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5

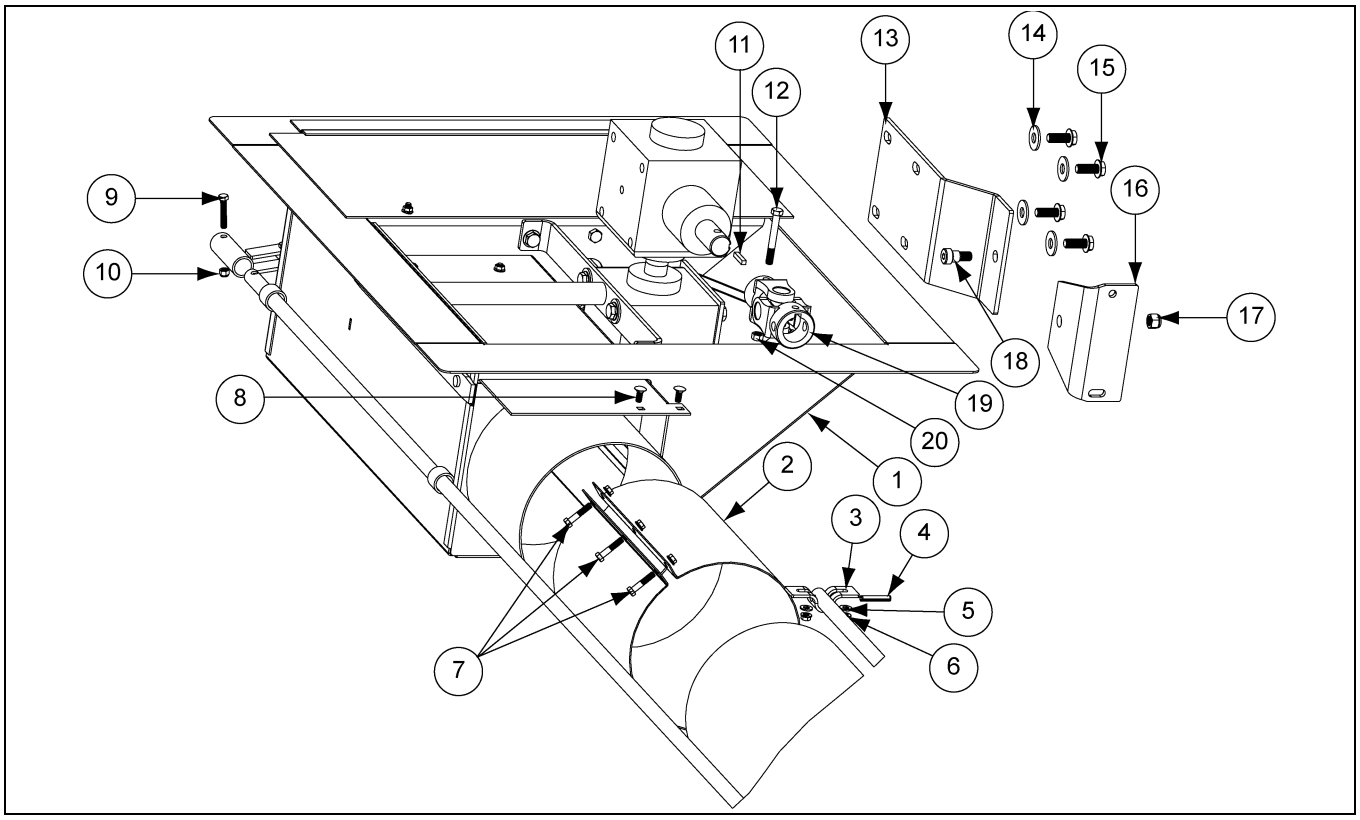
Centerwell Shaft Assembly Parts



Centerwell Shaft Assembly Parts List

Ref #	Part #	Description
1	GK7582	Centerwell Square Shaft
2	GK7581	Centerwell Assembly Bearing Plate
3	GK1343	1-1/2" 4-Hole Flange Bearing with Lock Collar
4	GK7830	Bushing: UHMW 1-1/2" Bore
5	GK7586	Clutch Jaw with Sprocket 1-1/2" Bore, #60 17T 2" Bore
6	GK7587	Clutch Yoke Retaining Jaw 1-1/2" Bore with 3/8" Keyway
7	GK1330	Flange Bearing, 1-1/4" Bore, 2 Hole with Lock Collar
8	GK7590	1-1/2" External Spiral Retaining Ring
9	S-9179	3/8" x 1-3/4" Square Key
10	S-8506	1/2"-13 Serrated Flange Nut Zinc
11	S-9062	1/2"-13 x 1-1/4" Flange Bolt Zinc Grade 5

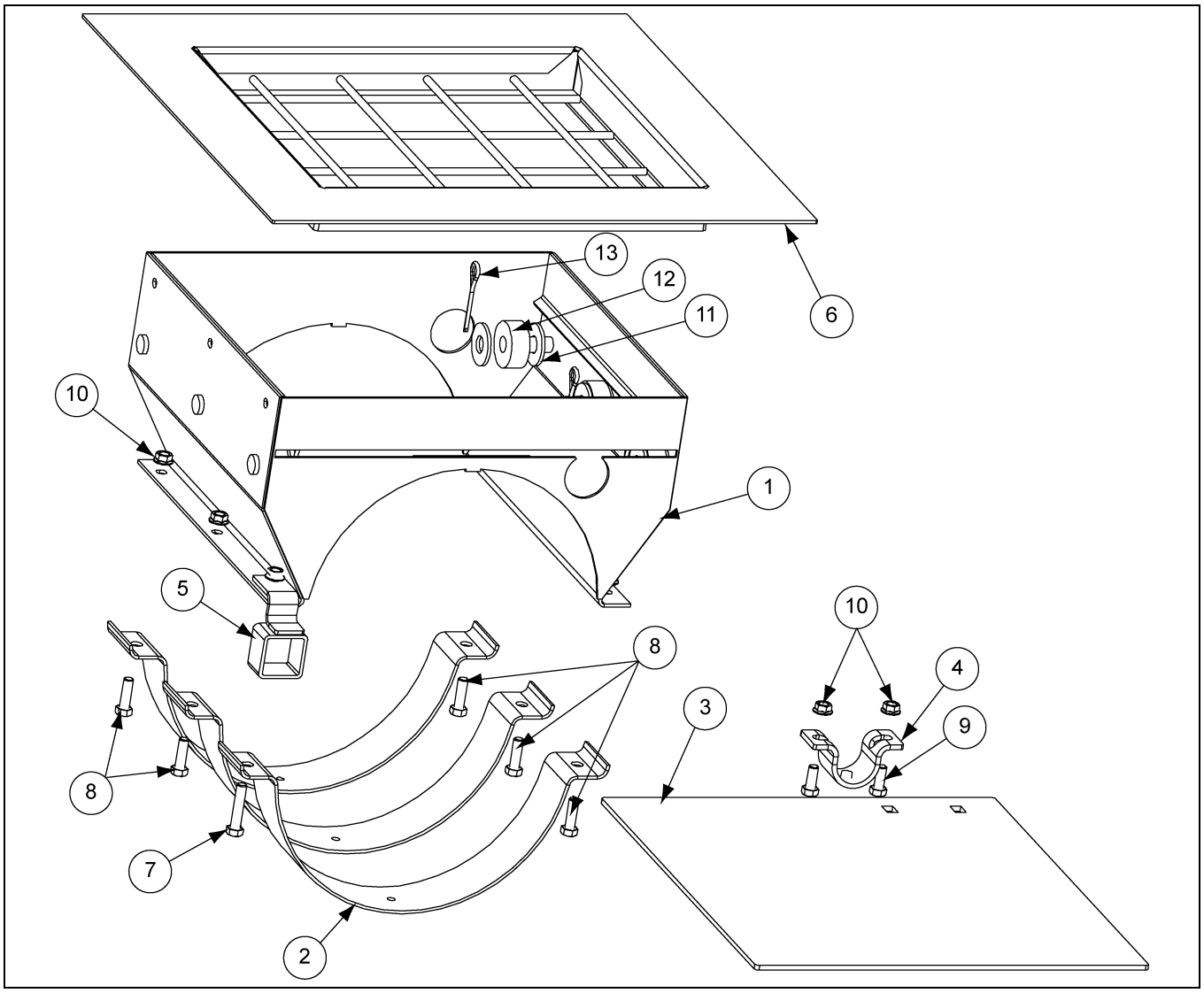
Center Components Parts



Center Components Parts List

Ref #	Part #	Description
1	GK7635	Centerwell Assembly
2	GK1796	Connecting Band
3	GK1726	Clamp, Schedule 40, 1/2" Control Rod
4	S-8397	5/16" x 1-3/4" Spring Pin
5	S-1937	5/16" Flat Washer Zinc Grade 2
6	S-3611	5/16"-18 Serrated Flange Nut YDP Grade 2
7	S-2741	5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5
8	S-6076	5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2
9	S-7149	5/16"-18 x 1-3/4" HHTB Bolt Zinc Grade 5
10	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
11	S-8382	1/4" Square x 1-1/4" Key
12	S-7249	3/8"-16 x 3" HHCS Bolt Zinc Grade 5
13	GK7629	Gearbox Pivot Bracket
14	S-2121	1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.
15	S-9062	1/2"-13 x 1-1/4" Flange Bolt Zinc Grade 5
16	GK7630	Shield Pivot Bracket
17	S-8260	1/2"-13 Nylock Nut Zinc Grade 5
18	S-10110	1/2"-13 x 1/2" Shoulder Bolt
19	GK7614	U-Joint 1-1/4" Bore and 1-1/2" Bore x 5-1/2" Long 12E
20	S-8251	3/8"-16 Stover Nut Zinc Grade C

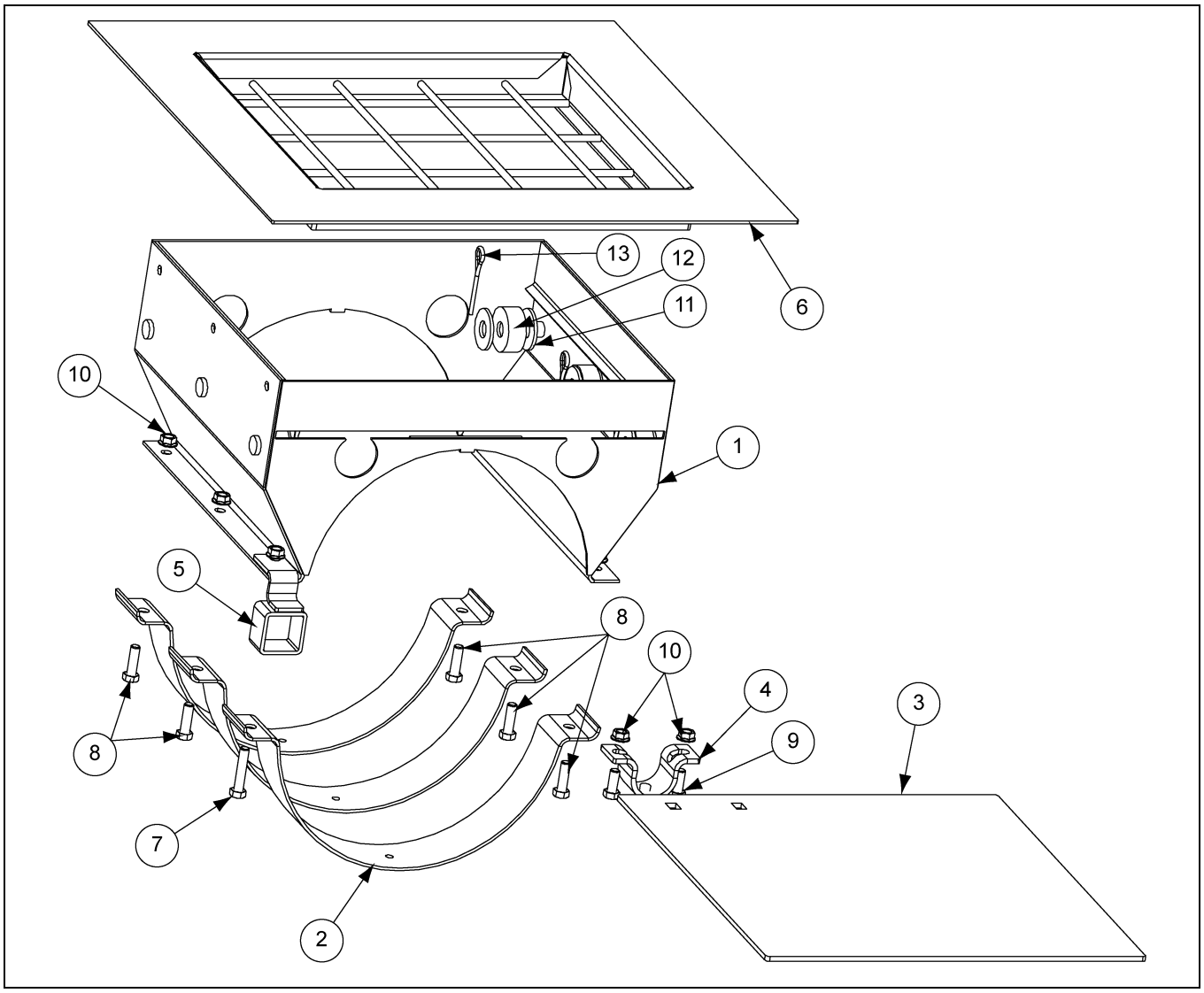
Intermediate Inside Well Parts



Intermediate Inside Well Parts List

Ref #	Part #	Description
1	GC11554	Inside Intermediate Well
2	GK1057	10" x 2" x 12 Gauge Half Band
3	GK7580	Intermediate Well Gate
4	GC09006	Control Pipe Clamp 1"
5	GK6714	Clutch Control Pipe Guide
6	GK7571	Intermediate Well Top Flange
7	S-2741	5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5
8	S-1196	5/16"-18 x 1" HHCS Bolt Zinc Grade 5
9	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5
10	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
11	S-2121	1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.
12	GC03064	1/2" O.D. x 5/8" Polyurethane Roller
13	S-7241	1/8" x 1-1/4" Cotter Pin Zinc Grade 2

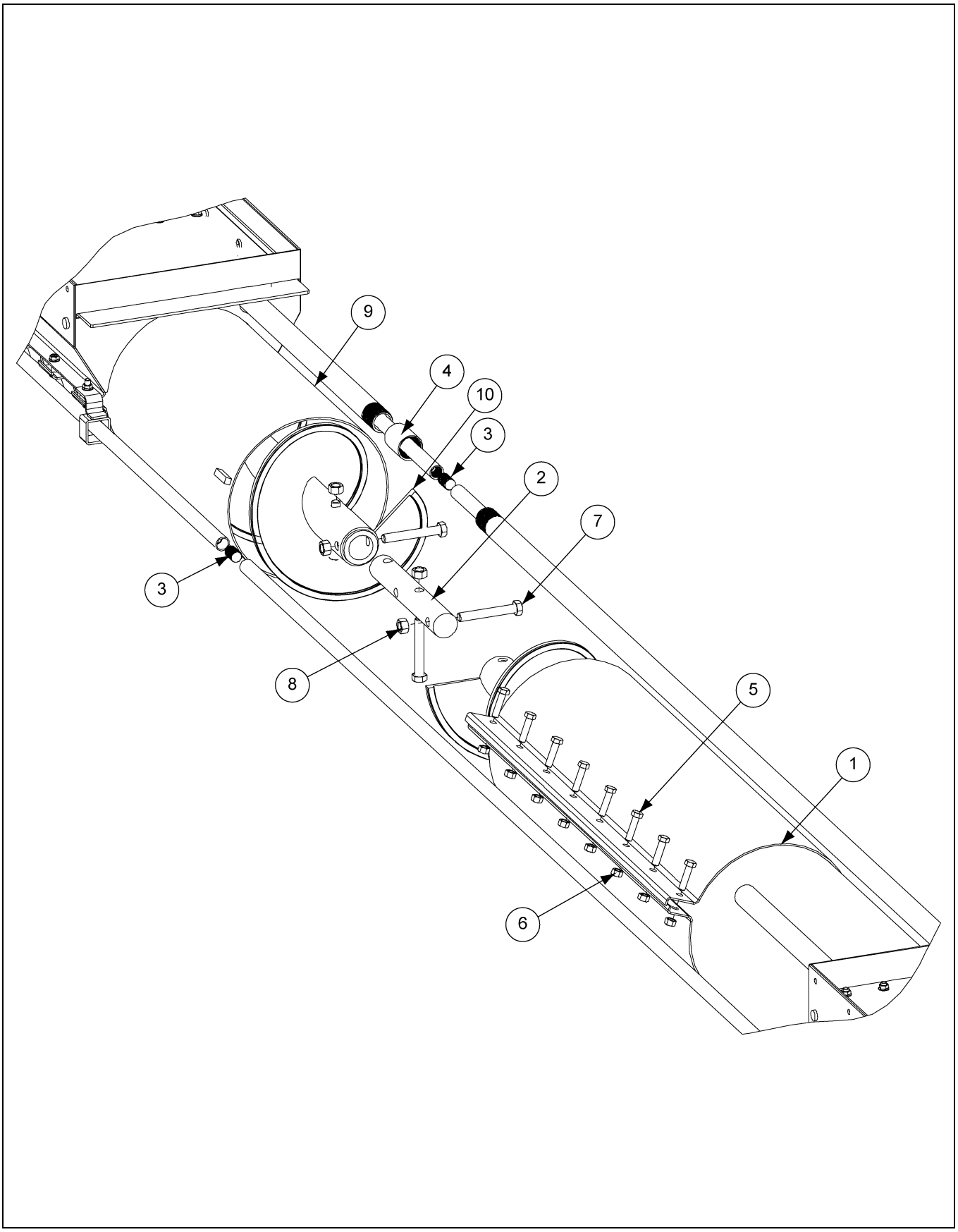
Intermediate Outside Well Parts



Intermediate Outside Well Parts List

Ref #	Part #	Description
1	GC11557	Outside Intermediate Well
2	GK1057	10" x 2" x 12 Gauge Half Band
3	GK7580	Intermediate Well Gate
4	GC09006	Control Pipe Clamp 1"
5	GK6714	Clutch Control Pipe Guide
6	GK7571	Intermediate Well Top Flange
7	S-2741	5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5
8	S-1196	5/16"-18 x 1" HHCS Bolt Zinc Grade 5
9	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5
10	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
11	S-2121	1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.
12	GC03064	1/2" O.D. x 5/8" Polyurethane Roller
13	S-7241	1/8" x 1-1/4" Cotter Pin Zinc Grade 2

Double Tube and Flight Parts



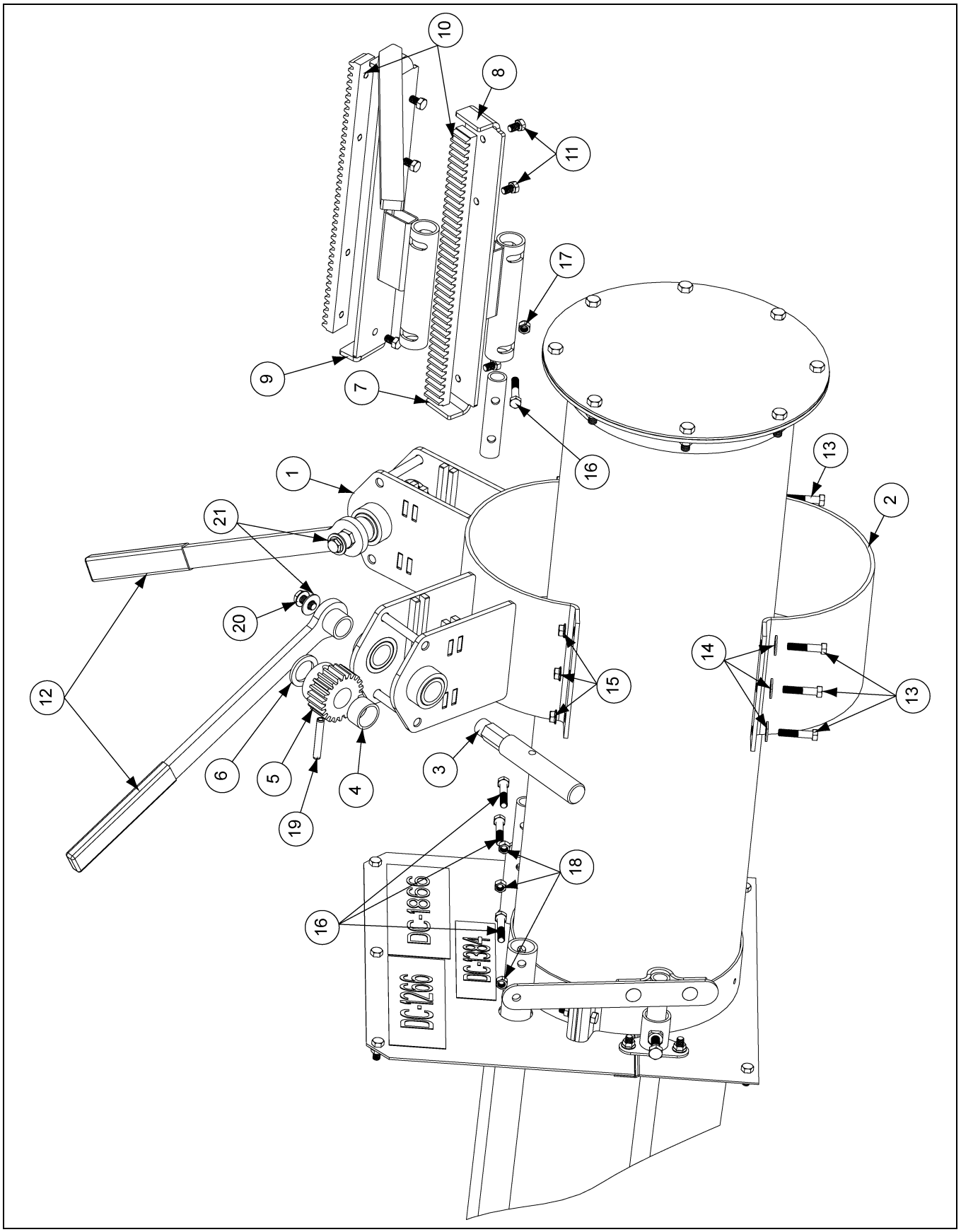
Connection Hardware Parts List

Ref #	Part #	Description
1	GK1883	10" x 30" x 12 Gauge Connecting Band
2	GK1339	Connecting Shaft 1-1/2" O.D. x 9-1/2"
3	GC05323	1/2" Control Pipe Internal Connector 3/8" NPT x 1"
4	GT3-0462	1" Control Pipe External Coupler
5	S-7515	3/8"-16 x 1-1/2" Hex Bolt Stainless Steel
6	S-8251	3/8"-16 Stover Nut Zinc Grade C
7	S-8314	1/2"-13 x 3-1/2" HHCS Bolt Zinc Grade 8
8	S-8315	1/2"-13 Stover Nut Zinc Grade C
9	*See Table below*	Unload Tube
10	*See Table below*	Unload Flight

Double Tube and Flight Parts List

Bin Diameter	Tube (9)				Flight (10)			
	Intake End		Discharge End		Intake End		Discharge End	
	Part #	Length	Part #	Length	Part #	Length	Part #	Length
36'	GK7593	223-1/2"	N/A		GK7638	258.56"	N/A	
42'	GK7594	269-1/4"			GK7639	94.31"		
48'	GK7595	305.00"			GK7640	89.81"	GK5207	240.00"
54'	GK7596	341.00"			GK7641	125.81"		
60'	GK7597	376-3/4"			GK7642	161.56"		
72'	GK7615	192-1/4"	GK7598	256.00"	GK7643	233.06"		
75'	GK7616	199-3/4"	GK7599	266.50"	GK7644	251.06"		
78'	GK7617	206-1/4"	GK7600	278.00"	GK7645	269.06"		

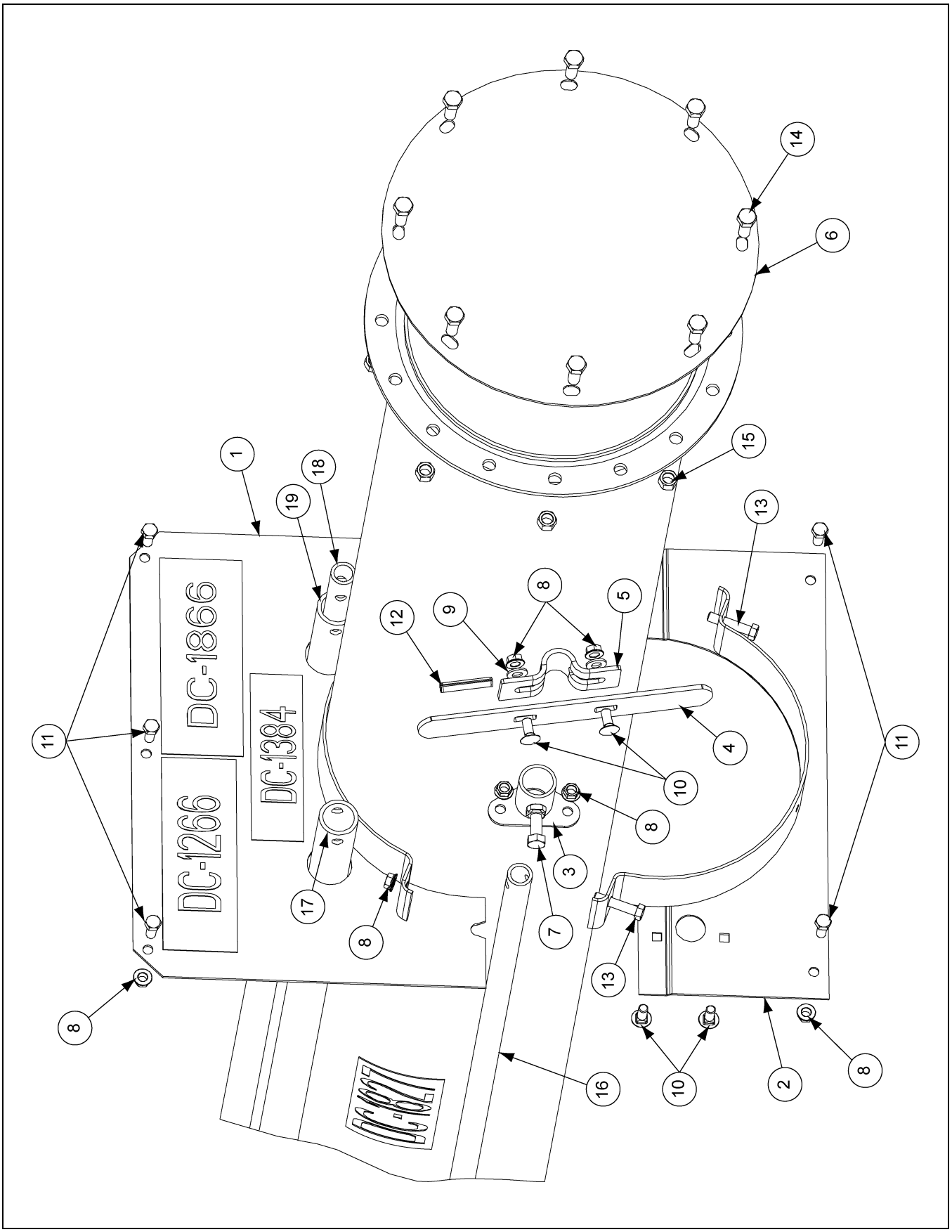
Well Gate Controls



Well Gate Controls Parts List

Ref #	Part #	Description
1	GK7568	42'-78' Bin Rack and Pinion Housing Assembly
1	GK6966	36' Bin Rack and Pinion Housing Assembly
2	GK5116	10" x 6" x 7 Gauge Half Band
3	GK6845	Rack and Pinion Crank Shaft
4	GK6841	Rack and Pinion Spacer Tube
5	GC09859	Spur Gear 10DP 1" Face 22T
6	GK4211	1" Flat Washer x 1-1/2" 10 Gauge Galvanized
7	GC11634	Outside Intermediate Well Rack and Pinion Adapter
8	GK80080	42'-78' Bin Outside Intermediate Rack Bar Body
9	GK80081	42'-78' Bin Inside Intermediate Rack Bar Body
9	GK80080	36' Bin Rack Bar Body
10	GC10316	Rack Bar 10P x 1" x 14"
11	S-8999	5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5
12	GK7260	3/4" Wrench Assembly
13	S-2741	5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5
14	S-845	5/16" Flat Washer Zinc Grade 2
15	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
16	S-7149	5/16"-18 x 1-3/4" HHTB Bolt Zinc Grade 5
17	S-7382	5/16"-18 Nylock Nut Zinc Grade 5
18	S-396	5/16" Hex Nut Zinc Grade 2
19	S-4377	5/16" x 2" Grooved Roll Pin
20	S-9067	3/8"-16 x 3/4" Flange Bolt Zinc Grade 5
21	S-248	3/8" Flat Washer Zinc Grade 2

Bin Flange Parts and Control Pipes



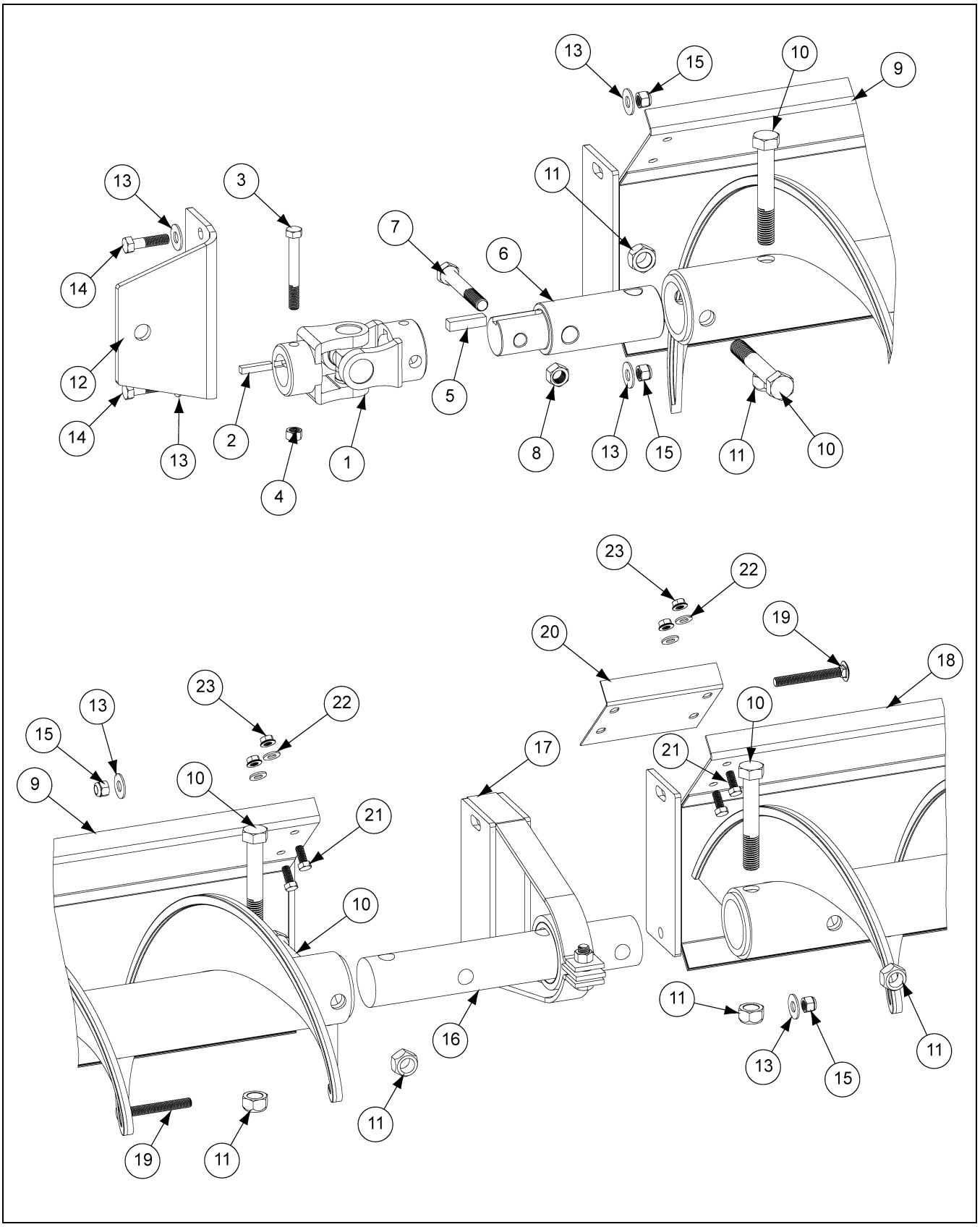
Bin Flange Components Parts List

Ref #	Part #	Description
1	GK7577	42'-78' Bin Top Bin Flange Weldment
1	GC10560	36' Bin Top Bin Flange Weldment
2	GC10558	10" Bottom Bin Flange Weldment
3	GK1619	Clutch Control Pipe Position Lock
4	GC01192	Clutch Control Pipe Handle
5	GK1726	Clamp, Schedule 40, 1/2" Control Rod
6	GK2184	10" 8 Hole End Cap
7	S-2071	3/8"-16 x 1-1/4" HHCS Bolt Zinc Grade 5
8	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
9	S-1937	5/16" Flat Washer Zinc Grade 2
10	S-6076	5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2
11	S-275	Bolt, HH Bin 5/16"-18 x 3/4" YDP Grade 5
12	S-8397	5/16" x 1-3/4" Spring Pin
13	S-2741	5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5
14	S-7469	3/8"-16 x 1" HHCS Bolt Zinc Grade 5
15	S-456	3/8" Hex Nut Zinc Grade 5
16	*See Table below*	Clutch Control Rod
17		Outside Intermediate Control Rod
18		Centerwell Control Rod
19		Inside Intermediate Control Rod

Control Pipes Part List

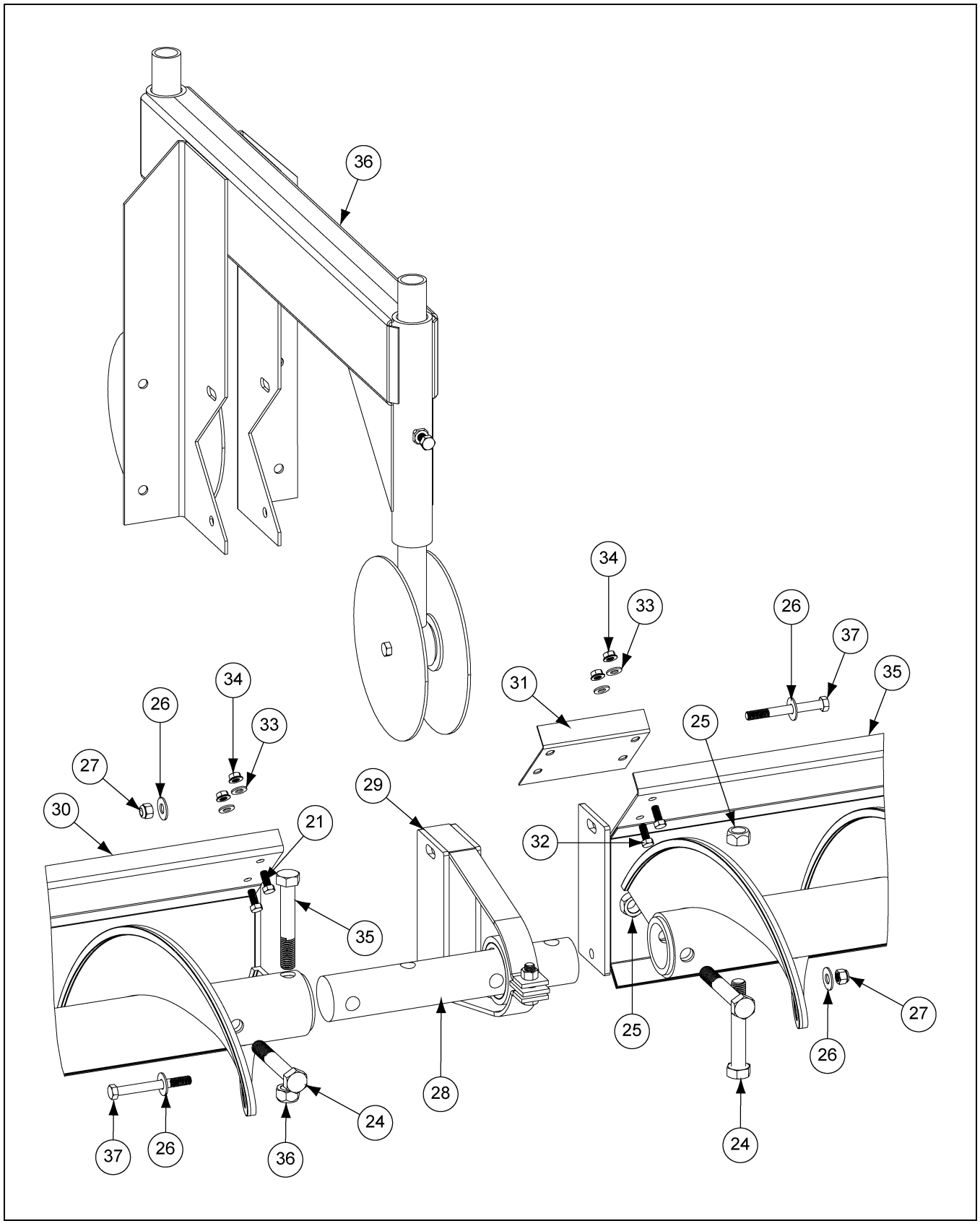
Bin Diameter	Outside Intermediate Well (17)		Inside Intermediate Well (19)				Centerwell (18)				Clutch (16)			
			Intake End		Discharge End		Intake End		Discharge End		Intake End		Discharge End	
	Part #	Length	Part #	Length	Part #	Length	Part #	Length	Part #	Length	Part #	Length	Part #	Length
36'	N/A		GC11621	191-3/4"	N/A		GC11624	212-1/4"	N/A		GC11681	248.50"	N/A	
42'	GK11619	131-1/4"	GC11620	85-1/4"	GC11614	146.00"	GC11625	248.00"			GK1776	252.00"	GC11682	33-1/4"
48'	GC11617	143-1/4"	GC11618	113-3/4"			GC11626	35-1/4"	GC11632	248.50"			GC11683	69.00"
54'	GC11615	159-1/2"	GC11616	193-1/2"	GC11613	95.00"	GC11627	71-1/4"					GC11684	105.00"
60'	GC11612	149-3/4"	GC11611	234.00"			GC11628	107.00"					GC11685	104-3/4"
72'	GC11610	214-1/4"	GC11609	158-1/2"	GC11606	248.00"	GC11629	178-1/2"					GC11686	212-1/4"
75'	GC11605	222-1/4"	GC11604	166-1/4"			GC11630	196-1/2"					GC11687	230-1/4"
78'	GC11608	230-1/4"	GC11607	181-3/4"			GC11631	214-1/2"					GC11688	248-1/4"

Assembled Sweep Arm Parts



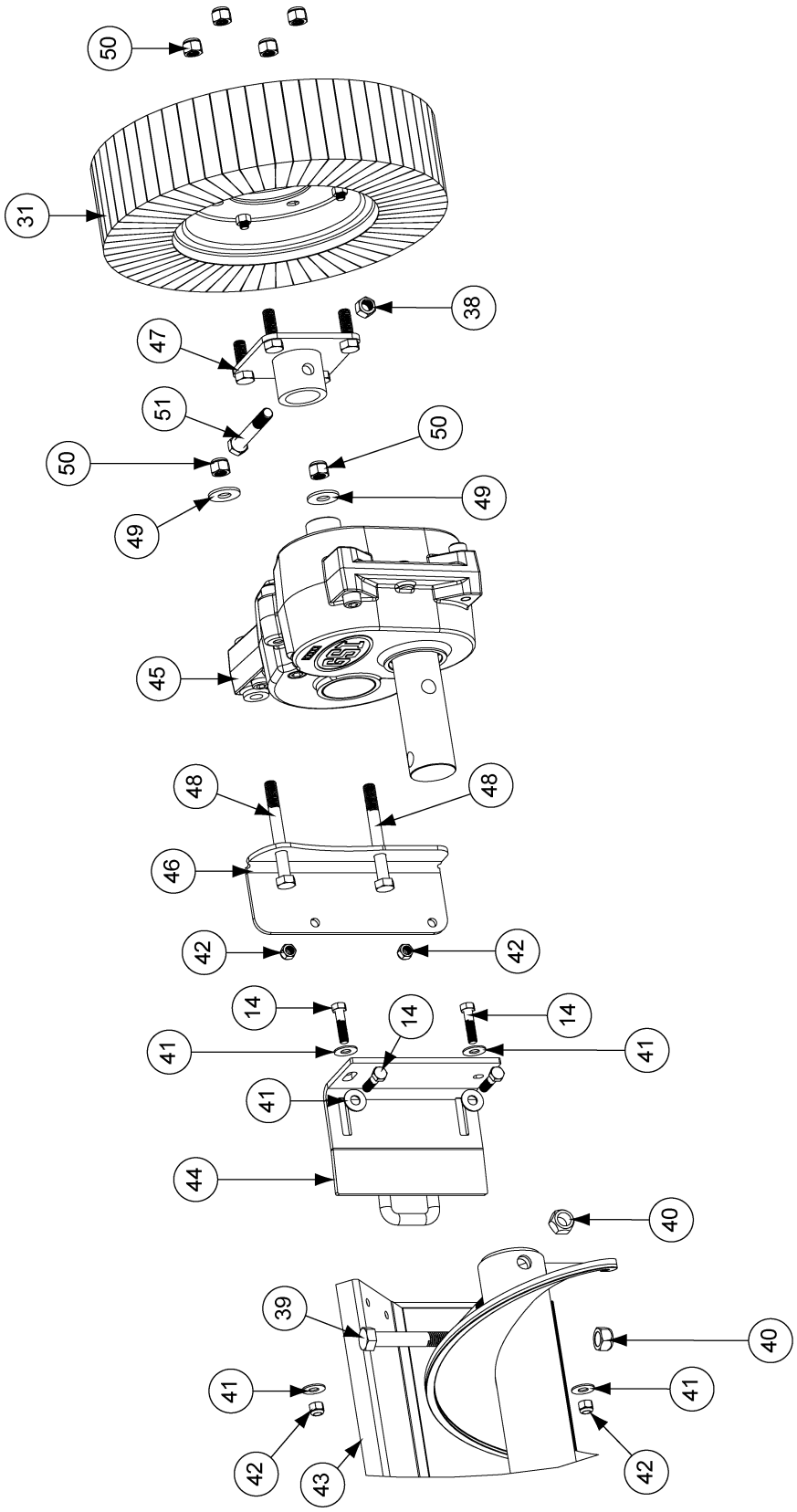
NOTE: *The parts pointed out on this page are listed* *on Page 69**.*

Assembled Sweep Arm Parts (Continued)



NOTE: *The parts pointed out on this page are listed* *on Page 69.*

Assembled Sweep Arm Parts (Continued)

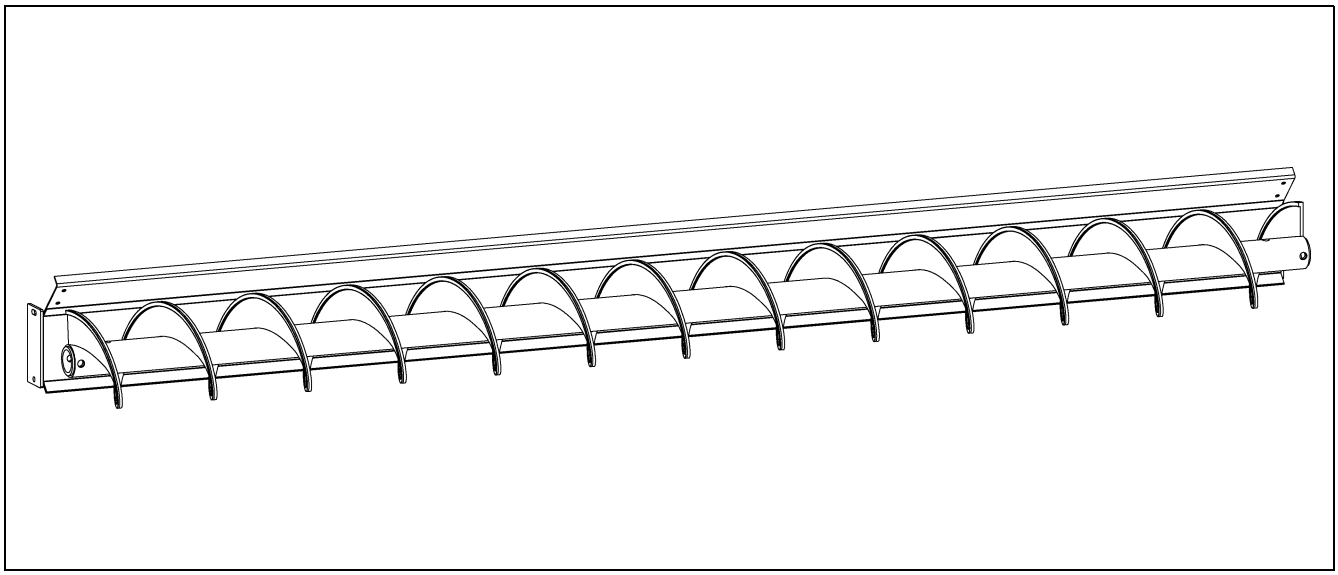


NOTE: *The parts pointed out on this page are listed* *on Page 69.*

Assembled Sweep Arm Components Parts List

Ref #	Part #	Description
1	GK7614	U-Joint 1-1/4" Bore and 1-1/2" Bore x 5-1/2" Long 12E
2	S-8382	1/4" Square x 1-1/4" Key
3	S-7249	3/8"-16 x 3" HHCS Bolt Zinc Grade 5
4	S-8251	3/8"-16 Stover Nut Zinc Grade C
5	S-4516	3/8" x 1-1/2" Square Key
6	GK7602	U-Joint Flight Shaft
7	S-7946	1/2"-13 x 3-1/4" HHCS Bolt Zinc Grade 5
8	S-8315	1/2"-13 Stover Nut Zinc Grade C
9	GK5376	Flight and Shield Bundle
10	S-7893	5/8"-11 x 4" HHCS Bolt Zinc Grade 8
11	S-8606	5/8"-11 Stover Nut Zinc Grade C
12	GK7630	Shield Pivot Bracket
13	S-248	3/8" Flat Washer Zinc Grade 2
14	S-2086	3/8"-16 x 1-1/2" HHCS Bolt Zinc Grade 8
15	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
16	GK2222	Connecting Shaft 2" O.D. x 11-1/2"
17	GK2047	Bearing Stand Assembly
18	GK5378	Flight and Shield Bundle
19	S-8055	3/8"-16 x 3" Carriage Bolt Zinc Grade 5
20	GK5615	Shield Splice Plate
21	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5
22	S-1937	5/16" Flat Washer Zinc Grade 2
23	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
24	S-7893	5/8"-11 x 4" HHCS Bolt Zinc Grade 8
25	S-8606	5/8"-11 Stover Nut Zinc Grade C
26	S-248	3/8" Flat Washer Zinc Grade 2
27	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
28	GK2222	Connecting Shaft 2" O.D. x 11-1/2"
29	GK2047	Bearing Stand Assembly
30	GK5378	Flight and Shield Bundle
31	GK5615	Shield Splice Plate
32	S-4275	5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5
33	S-1937	5/16" Flat Washer Zinc Grade 2
34	S-3611	5/16"-18 Serrated Flange Nut Zinc Grade 2
35	GK5380	Flight and Shield Bundle
36	GK5162	Carrier Wheel Assembly
37	S-8676	3/8"-16 x 3-1/2" HHCS Bolt Zinc Grade 5
38	S-8315	1/2"-13 Stover Nut Zinc Grade C
39	S-7893	5/8"-11 x 4" HHCS Bolt Zinc Grade 8
40	S-8606	5/8"-11 Stover Nut Zinc Grade C
41	S-248	3/8" Flat Washer Zinc Grade 2
42	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
43	GK5380	Flight and Shield Bundle
44	GK2347	Mounting Bracket with Anchor Loop
45	GK80022	Reduction Wheel Drive, Gear, 9.92:1
46	GK80049	Sweep Wheel Housing Bracket
47	GK80048	Sweep Wheel Hub
48	S-8232	1/2"-13 x 4-1/2" HHCS Bolt Zinc Grade 5
49	S-2121	1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.
50	S-8260	1/2"-13 Nylock Nut Zinc Grade 5
51	S-8314	1/2"-13 x 3-1/2" HHCS Bolt Zinc Grade 8

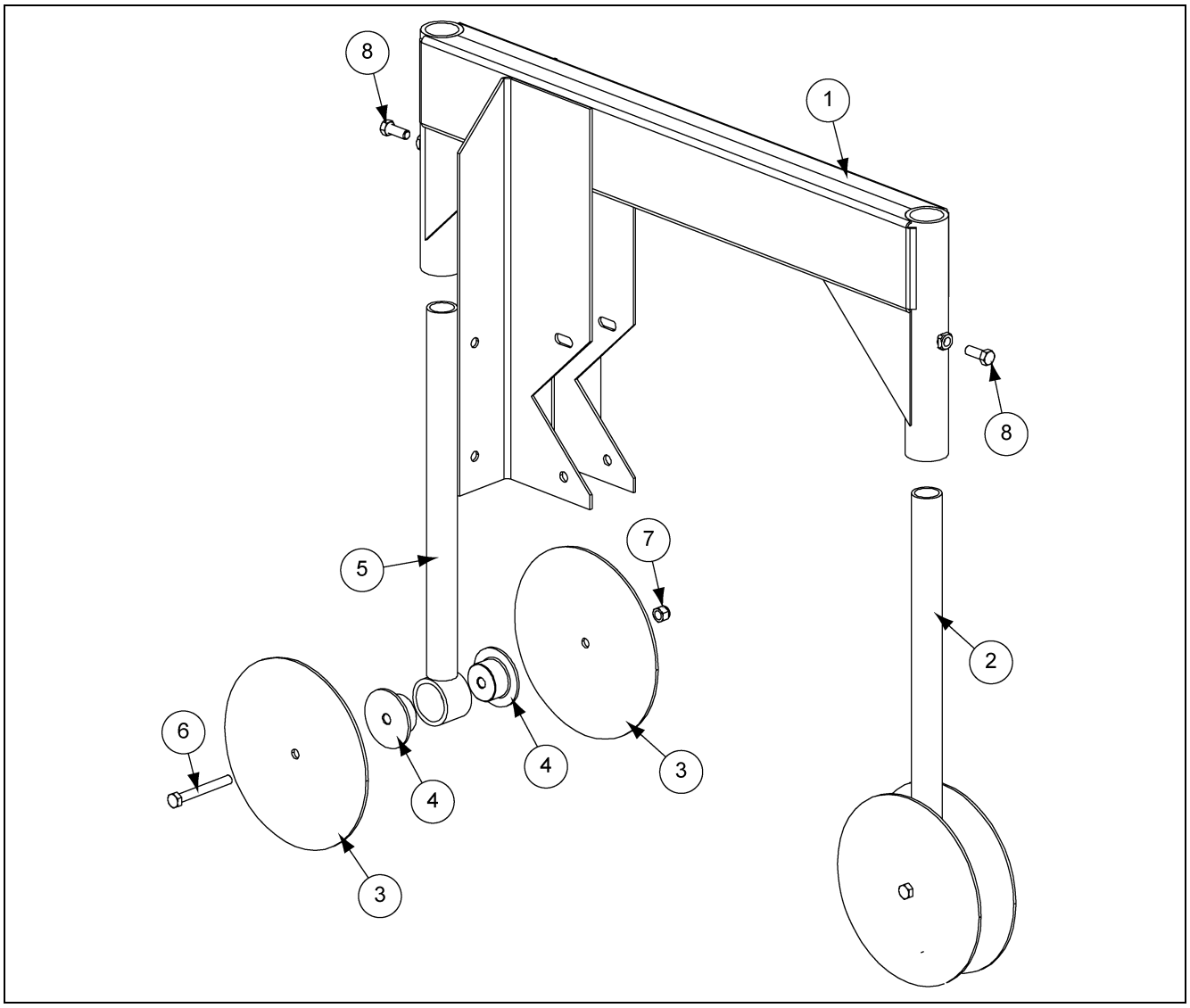
Intermediate Flight and Shield Bundles



Intermediate Flight and Shield Bundles

Bundle	Flight	Shield	Length
GK5375	GK2053	GK2052	46"
GK5376	GK2280	GK2279	64"
GK5377	GK2055	GK2054	70-1/2"
GK5378	GK2294	GK2293	82"
GK5379	GK2299	GK2298	100"
GK5380	GK2284	GK2283	106-1/2"
GK5381	GK2296	GK2295	112"
GK5382	GK2289	GK2288	118-1/4"
GK80217	GK80219	GK80218	102"

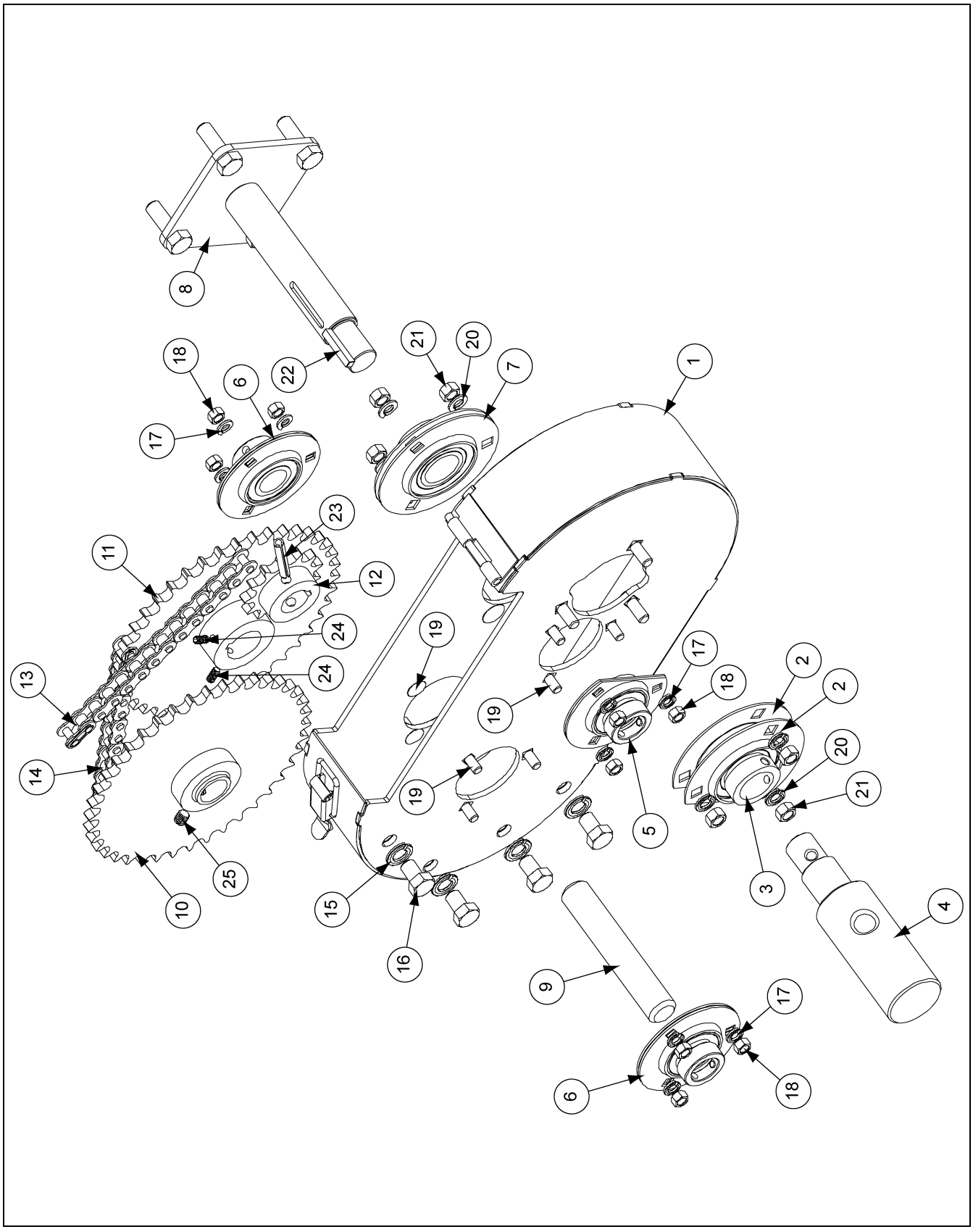
Sweep Carrier Assembly Parts



Sweep Carrier Assembly Parts List

Ref #	Part #	Description
1	GK5163	Sweep Carrier Body
2	GK5164	Sweep Carrier Leg Assembly
3	GK2085	Sweep Wheel Disc
4	GC09726	Sweep Carrier Wheel Bushing
5	GK5165	Sweep Carrier Wheel Leg
6	S-7249	3/8"-16 x 3" HHCS Bolt Zinc Grade 5
7	S-7383	3/8"-16 Nylock Nut Zinc Grade 5
8	S-7469	3/8"-16 x 1" HHCS Bolt Zinc Grade 5

Enclosed Chain Drive Parts



Enclosed Chain Drive Assembly for Sweep Wheel Parts List

Ref #	Part #	Description
1	GK4243	Enclosed Drive Sweep Wheel Housing
2	GK2359	1-1/4" 3-Hole Flangette, Cutback 51/64"
3	GK1008	1-1/4" Bearing with Lock Collar
4	GK2352	2" to 1" Input Shaft
5	GK2360	1" 3 Hole Flangette, Cutback 21/32"
6	GK1583	1" 3 Hole Flangette Bearing with Lock Collar
7	GK7221	1-1/4" 3 Hole Flangette Bearing with Lock Collar
8	GK2351	Wheel Shaft Weldment
9	GK2353	1" x 5-5/8" Idler Shaft
10	GK2354	Double Sprocket Assembly #50 40T 13T
11	GK2356	Sprocket #50 40T 1-14" Bore
12	GK4249	Sprocket #50 13T 1" Bore
13	GK2357	#50 x 54P Chain
14	GK2358	#50 x 46P Chain
15	S-236	1/2" Lock Washer Zinc
16	S-7932	1/2"-13 x 3/4" HHCS Bolt Zinc Grade 5
17	S-1147	5/16" Lock Washer Zinc
18	S-396	5/16" Hex Nut Zinc Grade 2
19	S-6076	5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2
20	S-1054	3/8" Lock Washer Zinc
21	S-456	3/8" Hex Nut Zinc Grade 5
22	S-9169	1/4" x 1-1/2" Square Key
23	S-4377	5/16" x 2" Grooved Roll Pin
24	S-2742	1/4"-20 x 1/2" Set Screw
25	S-7256	3/8"-16 x 3/8" Set Screw

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
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
AP and Cumberland	Flex-Flo/Pan Feeding System Motors	2 Years
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1-3/4" and 2.00")	10 Years *
	Centerless Augers	10 Years *
	Watering Nipples	10 Years *
Grain Systems	Grain Bin Structural Design	5 Years
Grain Systems Farm Fans Zimmerman	Portable and Tower Dryers	2 Years
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years

* Warranty prorated from list price:
0 to 3 years - no cost to end-user
3 to 5 years - end-user pays 25%
5 to 7 years - end-user pays 50%
7 to 10 years - end-user pays 75%

** Warranty prorated from list price:
0 to 3 years - no cost to end-user
3 to 5 years - end-user pays 50%

† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12^{th}) month from the date of purchase and continuing until the sixtieth (60^{th}) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

Conditions and Limitations:

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

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

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

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