

# CE Compliant Direct Gear Drive Bin Sweep Auger (with Roller Wells)

Assembly and Operation Manual -  
Original Instructions

PNEG-1421CE

Version: 3.0

Date: 12-09-15



PNEG-1421CE



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

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

+1 217 226 4429

The GSI Group declares that the machine, parts or equipment.

**Bin Power Sweep Augers**

**Models**

| Bin Diameter | 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      |

**EXCLUDING**

- **Low profile centre and intermediate floor wells.**

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

- 1.1.2 and sub-clauses principles of safety integration
- 1.3.1 Risk of loss of stability
- 1.3.2 Risk of break-up during operation
- 1.3.7 Risk related to moving parts
- 1.3.8 Choice of protection against risks arising from moving parts
  - 1.3.8.1 Moving transmission parts
- 1.3.9 Risks of uncontrolled movements
- 1.4 Required characteristics of guards and protective devices
  - 1.4.1 General requirements
  - 1.4.2 Special requirements for guards
    - 1.4.2.1 Fixed guards
- 1.5.4 Errors of fitting
- 1.5.5 Extreme temperatures



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- 1.5.6 Fire
- 1.5.7 Explosion
- 1.5.8 Noise
- 1.5.9 Vibrations
- 1.5.13 Emissions of hazardous materials and substances
- 1.6 Maintenance
  - 1.6.1 Machinery maintenance
  - 1.6.4 Operator intervention
- 1.7 Information
  - 1.7.1 Information and warnings on the machinery
    - 1.7.1.1 Information and information devices
  - 1.7.2 Warning of residual risks
  - 1.7.4. Instructions
    - 1.7.4.1 General principles for the drafting of instructions
    - 1.7.4.2 Contents of the instructions but not inclusive of sub-clause (u)
    - 1.7.4.3 Sales literature

This declaration applies only to the mechanical elements of the above machines and does not imply conformity by any other items of equipment fitted to or connected with the above machines. The equipment above must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of all relevant Directives, nor until these components have been assembled in the manner recommended in the attached manufacturers instructions.

Signed :

Name:

Position:

Date:

---

# NOTES

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

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

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

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

### Safety Guidelines

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

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

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

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

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

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

**ST-0001-3**



## Cautionary Symbols Definitions

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



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



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



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



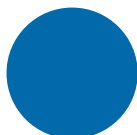
This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

### Safety Cautions

#### Use Personal Protective Equipment

- Use appropriate personal protective equipment:

**Eye Protection**



**Respiratory Protection**



**Foot Protection**



**Hearing Protection**



**Head Protection**



**Fall Protection**



**Hand Protection**



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

ST-0004-1

#### Follow Safety Instructions

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



ST-0002-1

### Maintain Equipment and Work Area

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



ST-0003-1

### Operate Motor Properly

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



ST-0009-2

### Rotating Auger Hazard

- Keep clear of rotating augers and moving parts.
- Do not remove or modify guards. 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

## 2. Safety

### 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



## 2. Safety

### Possible Hazards Inside Grain Bins

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



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

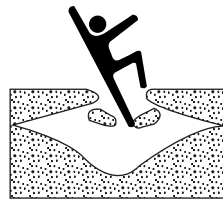
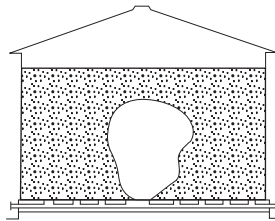
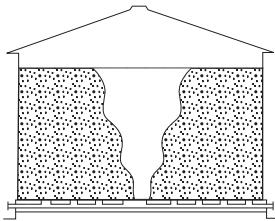
#### Hazards present at any time may include:



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



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



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



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



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



High temperature combustible material.



## Minimum Auger Safety Requirements



*Incorrect use of augers can be extremely dangerous. Rotating flights and shafts can cause serious injury and kill.*

### Correct Use

1. The auger is for the final process of emptying whole agricultural seeds and grains from inside a circular grain bin. Any other use is prohibited and may result in injury or equipment damage.
2. These sweep augers are to be permanently installed inside the grain bin and in are not designed to be portable.
3. The sweep auger can only be safely used inside a grain bin with no person inside the bin.
4. The installer and operator have responsibility to ensure the final installation is in accordance with all the safety requirements outlined in this manual and fulfils the Essential Requirements of the Machinery Directive 2006/42/EC.
5. Never use the auger with any guards removed.
6. Never enter the grain bin unless the power supply to the auger and all other equipment in the bin is OFF, TAGGED and LOCKED. (See [Figure 2A](#).)

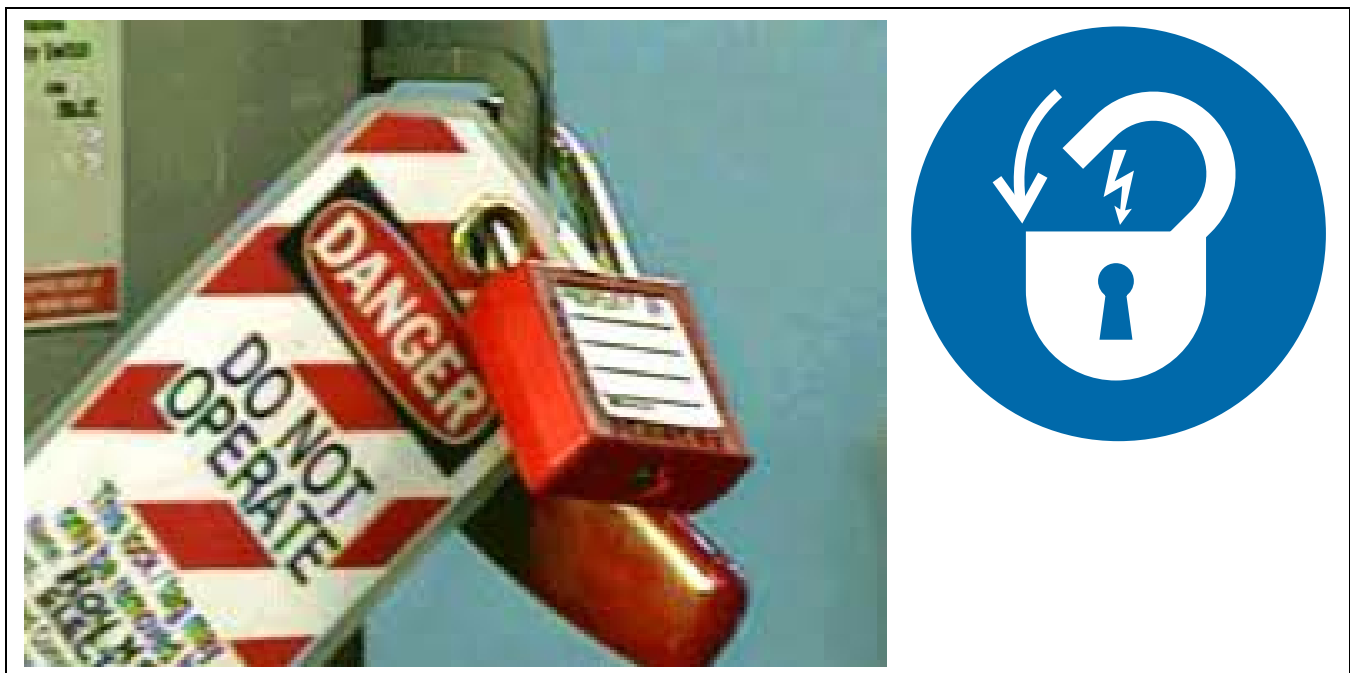


Figure 2A

7. Never leave the auger running unattended.
8. Always TURN OFF and LOCK the power supply to the auger before leaving it unattended.
9. Never allow an untrained person less or one less than 18 years old to operate the auger.
10. Never allow someone under the influence of alcohol or drugs to operate the equipment.

## 2. Safety

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11. Never modify the auger from it's original specification.
12. Never work alone.
13. Never start equipment until all persons are clear of the grain bin.
14. Keep hands and feet away from the auger outlet and other moving parts.
15. Always think before acting. Never act impulsively around the equipment.
16. Never allow anyone inside a bin, truck or wagon which is being loaded or unloaded. Flowing grain can trap and suffocate in seconds.

### Electrical Safety Equipment

Please refer to [Chapter 5 on Page 40](#) for electrical control requirements.

1. All electrical installation and design must be carried out by a qualified electrical engineer and in accordance with EU Directives and standards and in accordance with local laws and codes.
2. The electrical supply must include a properly designed protective earth system (PE).
3. The motor must be connected to protective earth at the terminal provided.
4. The control system must include short circuit protection.
5. It is recommended to provide earth leakage protection, such as Residual Current Device (RCD) or Residual Current Circuit Breaker (RCCB) to provide automatic disconnection from the power in the event of a fault.



Below are the safety warning decals that should be fitted to the auger. These warn of residual risks and required safety measures and must remain intact, legible and undamaged for the life of the machine. If any decals have become damaged or unreadable, please contact GSI or your dealer for free replacements.

## International Decals

International, translated versions of the decals fitted to the equipment are available as part of the language pack that was supplied with the product. If you need further copies or a different language, please contact GSI or you dealer.

The international decals have been designed to be placed directly over the USA standard versions. Normally these will be factory fitted, but if you need to change them, please refer to decal cross reference sheet, provided with the language pack and the decal locations given in the user's manual.

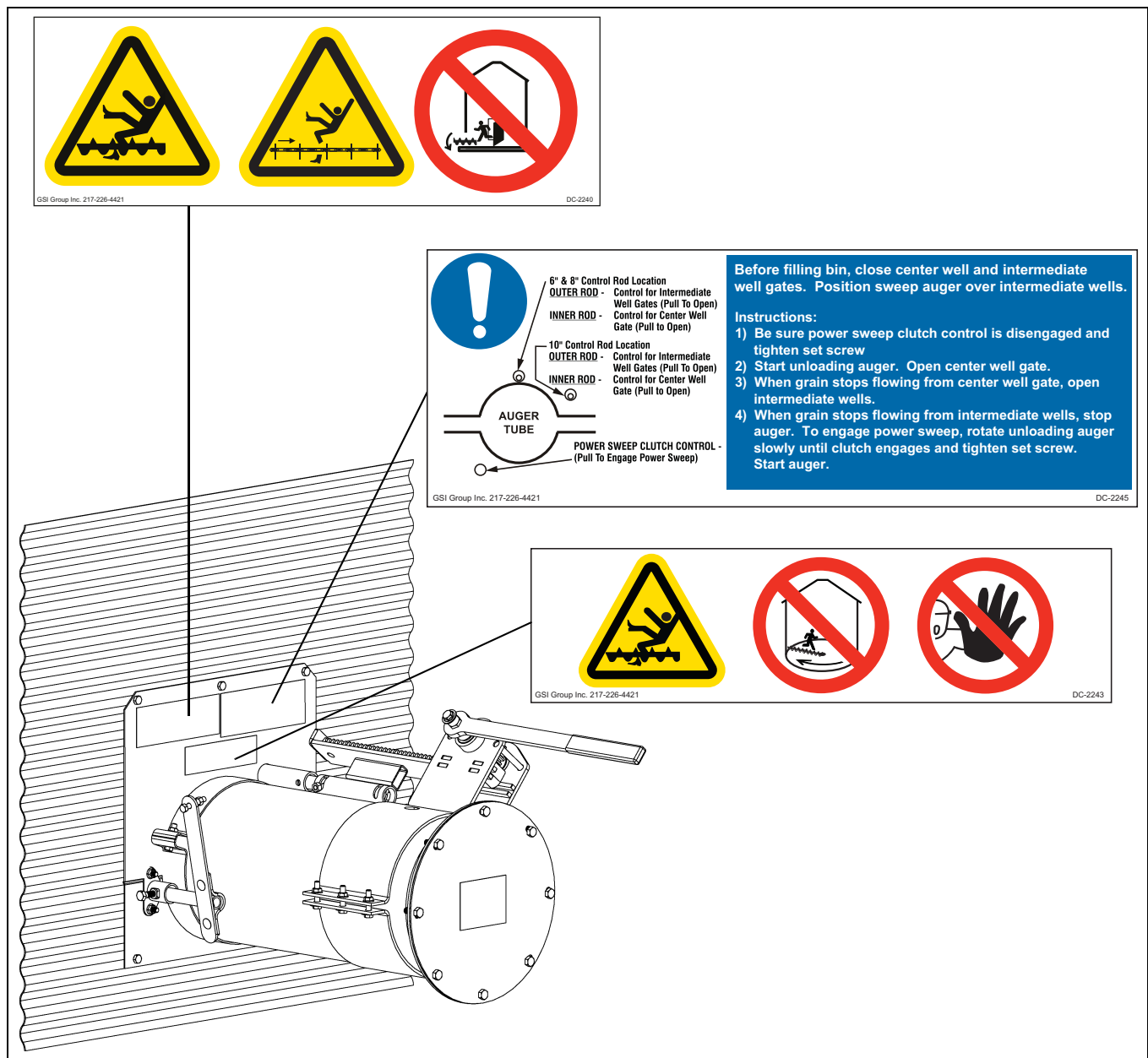


Figure 3A

### 3. Safety Decals

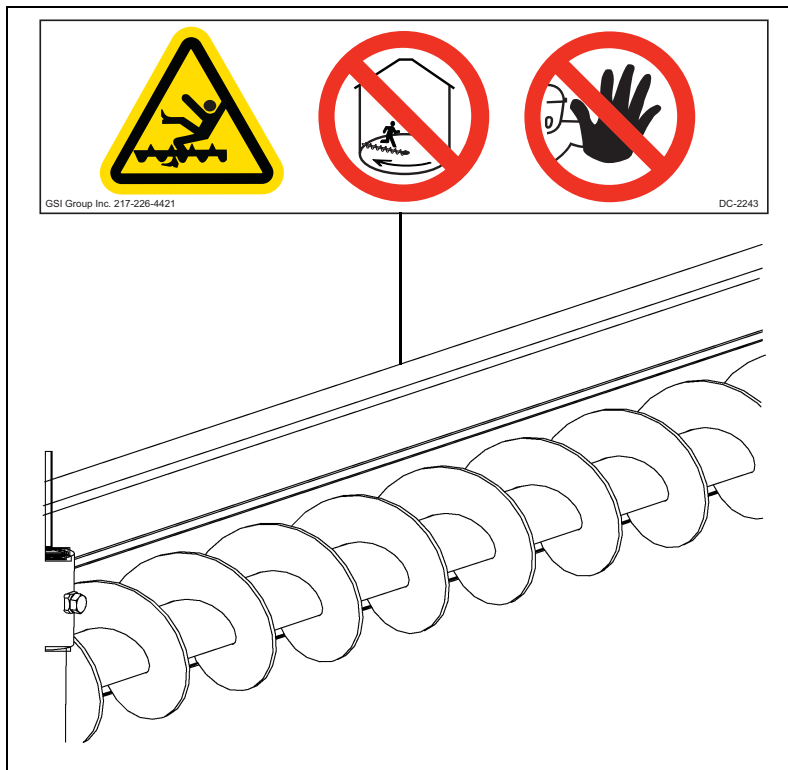


Figure 3B

DC-2244 Should be fitted to all bins where augers are installed. This should be located in clear view adjacent to all personnel entry points on the bin. (See Figure 3C.)

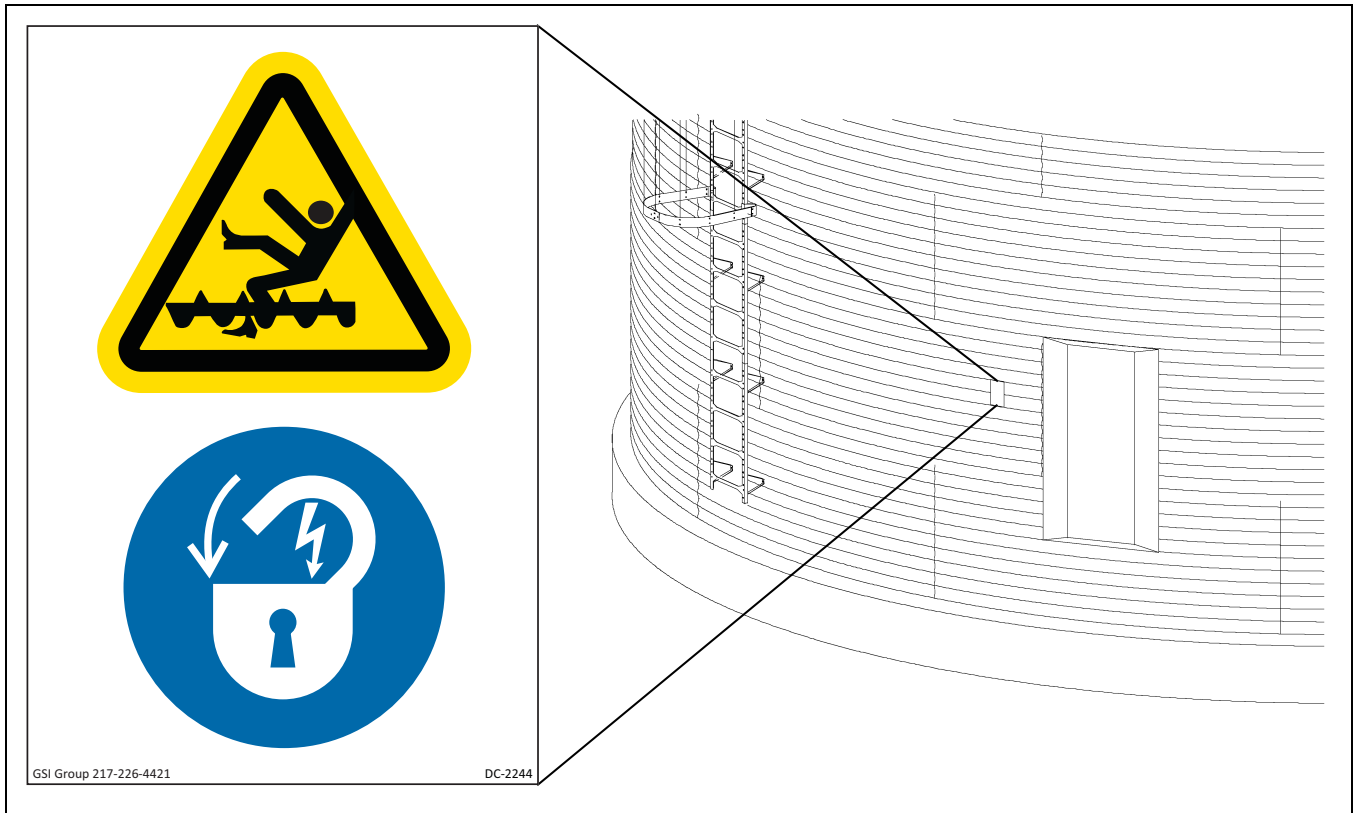
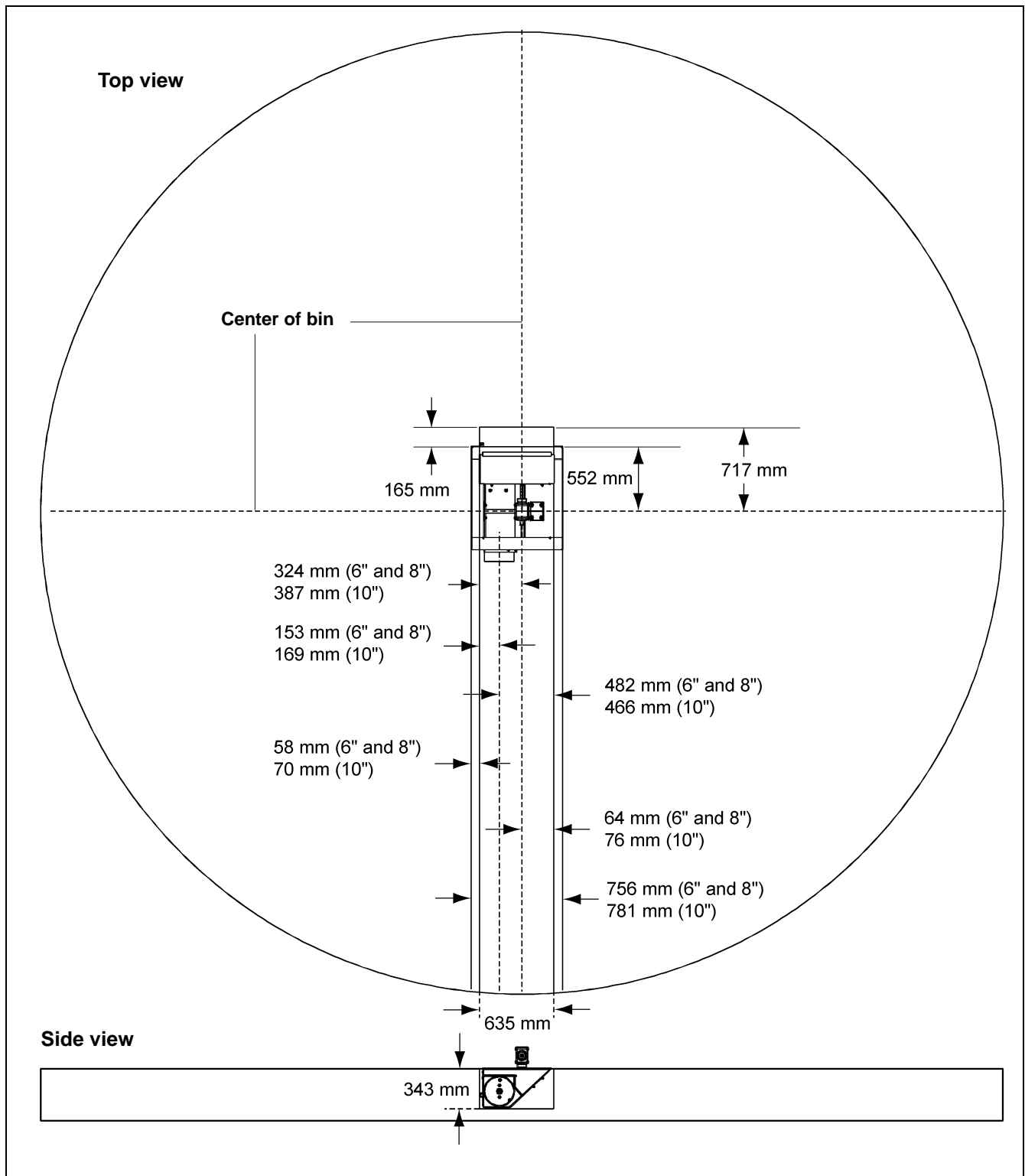


Figure 3C

## Power Sweep in Bins with Concrete Floors

**NOTE:** We 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 [Figure 4A](#) below.



**Figure 4A** Concrete Trench Layout for 6", 8" and 10" Power Sweeps

## 4. Installation

### Power Sweeps in Bins with Raised Metal Floors

For bins with raised metal floors, cut openings for the center well and intermediate wells. Floor must be high enough to provide space for the wells. Ideally, complete bin floor assembly whilst installing the power sweep.

1. Locate the center of the bin and make a cut-out for the center well. (*See Figure 4B or Figure 4C.*)
2. Locate the vertical shaft between the gearboxes in the center of the bin and place suitable supports under the center well to hold it in position.

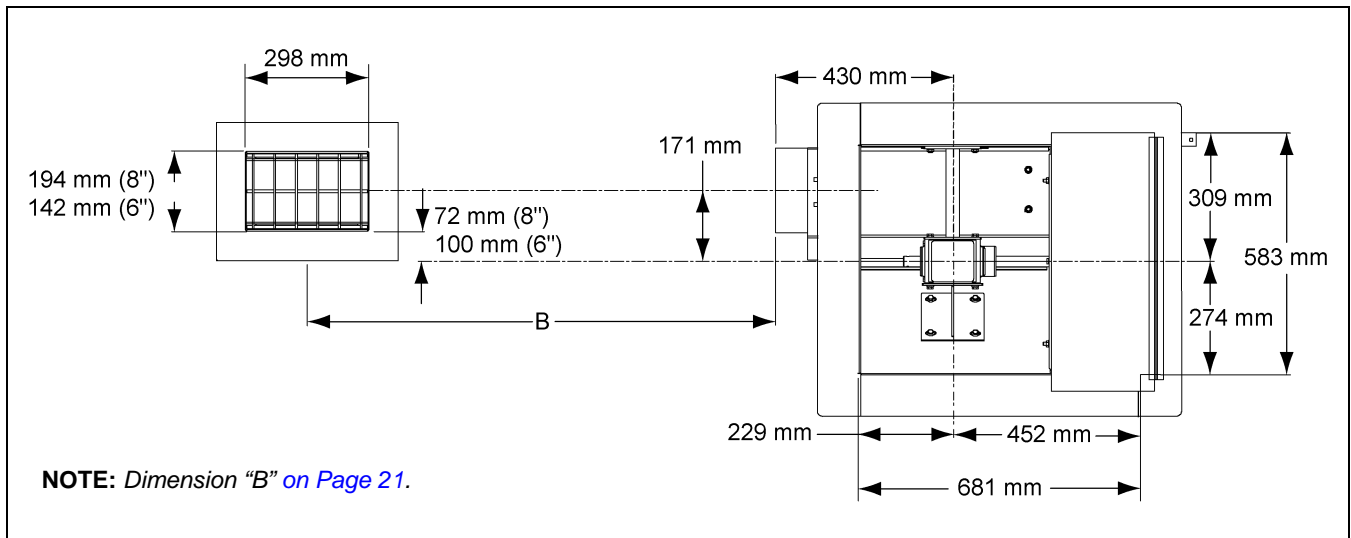


Figure 4B 6" and 8" Floor Well Cut-Outs

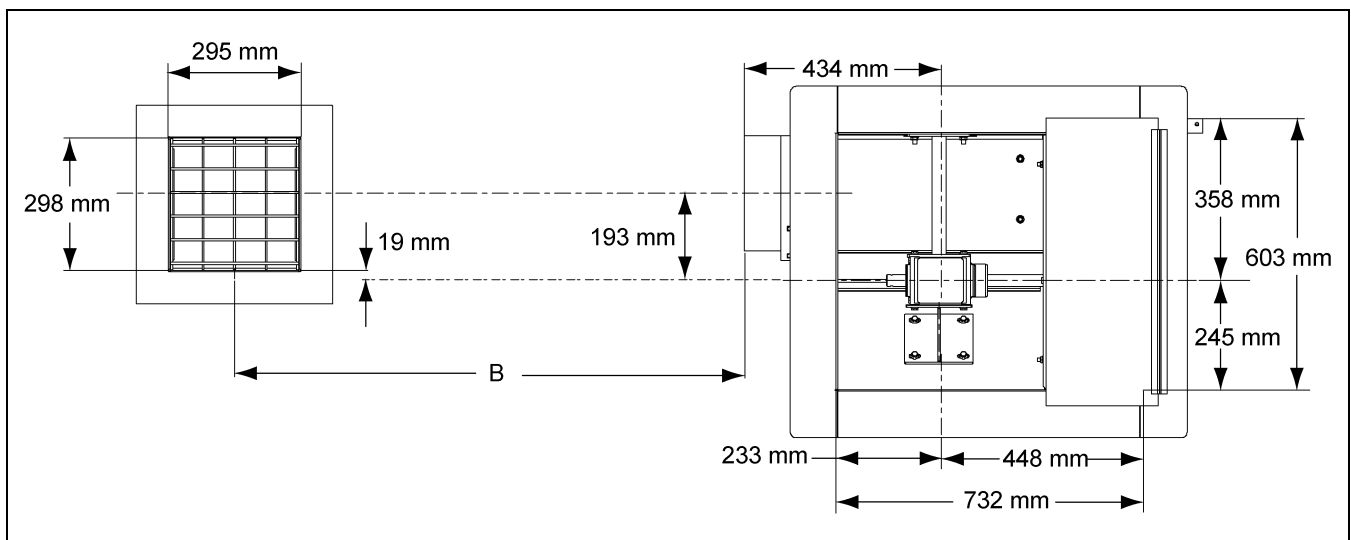


Figure 4C 10" Floor Well Cut-Outs

## Intermediate Well Installation

1. Cut openings in the bin floor for the intermediate wells. *(See Figure 4B and Figure 4C on Page 20.)*
2. The number of wells depends on bin size.
3. The distances between intermediate wells and the center well should be equal. *See Figure 4D and Chart below.*

| Bin Size | # of Intermediate Wells | A    | B    | C    | D    |
|----------|-------------------------|------|------|------|------|
| 15'      | 1                       | 2273 | 1000 | -    | 2870 |
| 18'      | 1                       | 2729 | 933  | -    | 3480 |
| 21'      | 2                       | 3183 | 826  | 1264 | 3785 |
| 24'      | 2                       | 3639 | 978  | 1416 | 4242 |
| 27'      | 2                       | 4094 | 1130 | 1568 | 4699 |
| 30'      | 2                       | 4547 | 1283 | 1721 | 5156 |
| 33'      | 3                       | 5002 | 1005 | 1443 | 5766 |
| 36'      | 3                       | 5458 | 1081 | 1519 | 5817 |
| 39'      | 3                       | 5912 | 1195 | 1634 | 6528 |
| 42'      | 4                       | 6367 | 991  | 1429 | 7137 |
| 48'      | 4                       | 7277 | 1173 | 1612 | 8052 |

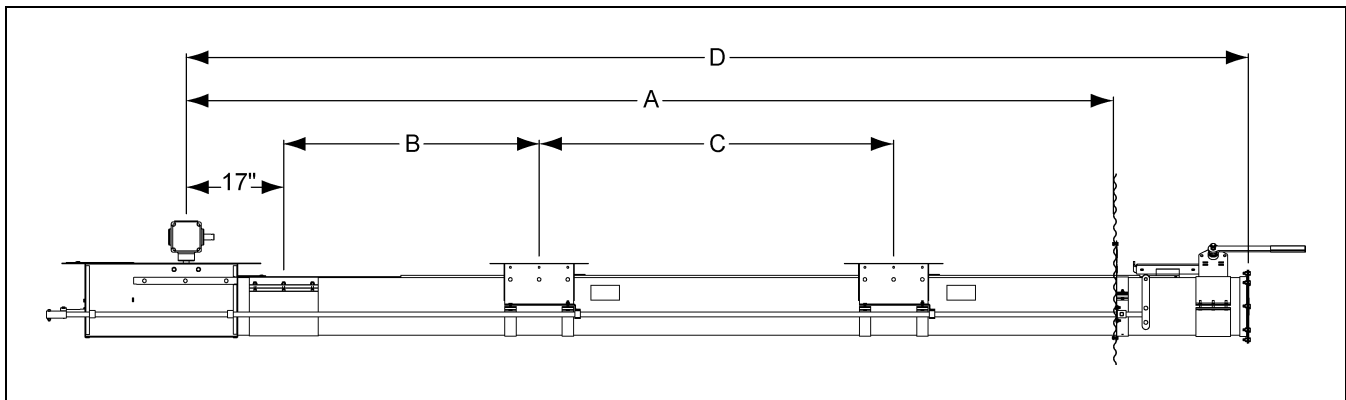
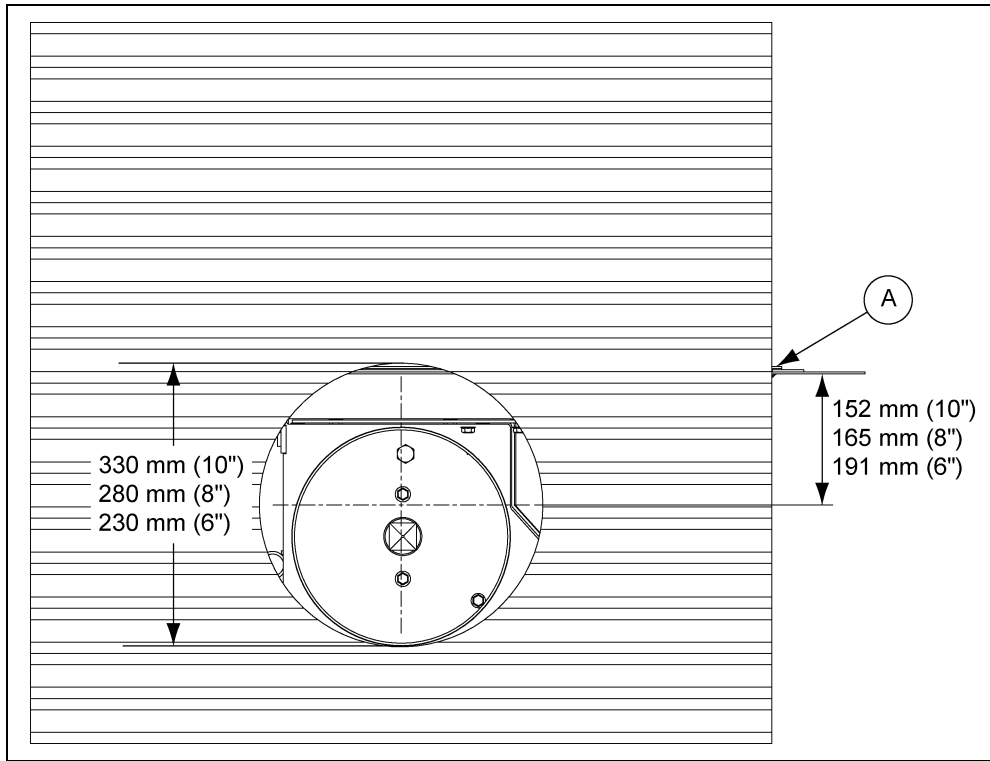


Figure 4D Wells Spacing

## 4. Installation

### Unload Tube Installation

1. Cut an opening in the bin wall for the unloading tube to pass through. See chart [on Page 21](#) for hole information. (See [Figure 4E.](#))



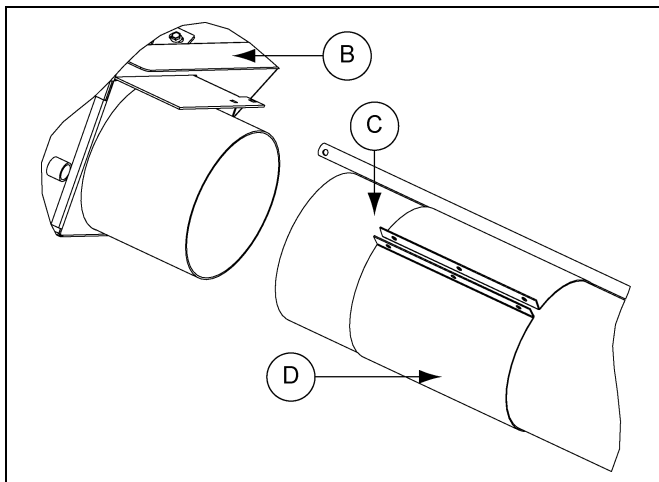
**Figure 4E** Wall Cut-Out

| Ref # | Description     |
|-------|-----------------|
| A     | Bin Floor Level |

2. 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.

3. Place the connecting band onto the end of the unload tube closest to the center well. (See [Figure 4F.](#))



**Figure 4F**

| Ref # | Description     |
|-------|-----------------|
| B     | Center Well     |
| C     | Unload Tube     |
| D     | Connecting Band |

## Unload Tube Installation (Continued)

4. Position the unload tube flush against the center well tube. (See Figure 4G.)

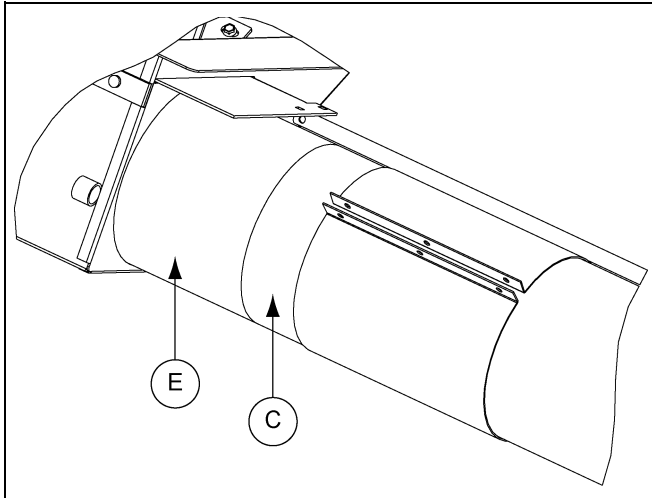


Figure 4G

| Ref # | Description      |
|-------|------------------|
| C     | Unload Tube      |
| E     | Center Well Tube |

5. 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 4H.)

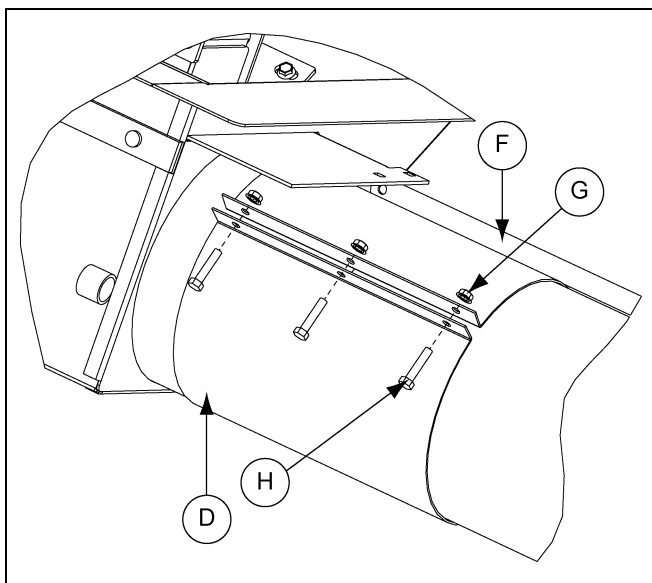


Figure 4H

| Ref # | Description         |
|-------|---------------------|
| D     | Connecting Band     |
| F     | Control Rod         |
| G     | Serrated Flange Nut |
| H     | 5/16" x 1-1/2" Bolt |

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

## 4. Installation

### Install Bin Flange

1. Attach the upper and lower bin flanges loosely to the auger tube using two (2) 5/16" x 1-1/2" bolts and serrated flange nuts. (See Figure 4I.)

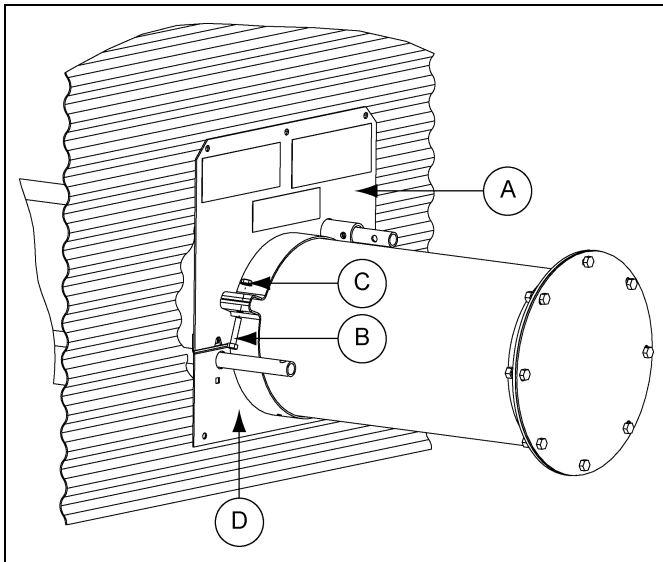


Figure 4I

| Ref # | Description         |
|-------|---------------------|
| A     | Upper Bin Flange    |
| B     | 5/16" x 1-1/2" Bolt |
| C     | Serrated Flange Nut |
| D     | Lower Bin Flange    |

2. Next, install the clutch lock collar to the lower bin flange using two (2) 5/16" x 3/4" carriage bolts and serrated flange 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 4J.)

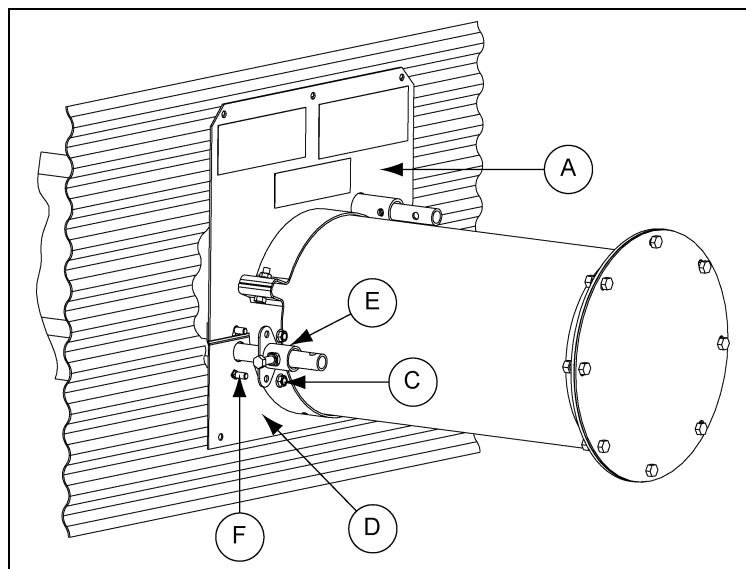


Figure 4J

| Ref # | Description         |
|-------|---------------------|
| A     | Upper Bin Flange    |
| C     | Serrated Flange Nut |
| D     | Lower Bin Flange    |

| Ref # | Description                |
|-------|----------------------------|
| E     | Clutch Lock Collar         |
| F     | 5/16" x 3/4" Carriage Bolt |



## Install Bin Flange (Continued)

3. 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.
4. Slide the bin flanges flush up to the bin wall and tighten the bolts connecting the two (2) flanges.
5. Drill into the bin wall through the holes located on the four (4) corners of bin flanges. Fasten the bin flanges to the bin wall using four (4) 5/16" x 3/4" bin wall bolts and serrated flange nuts. (See Figure 4K.)

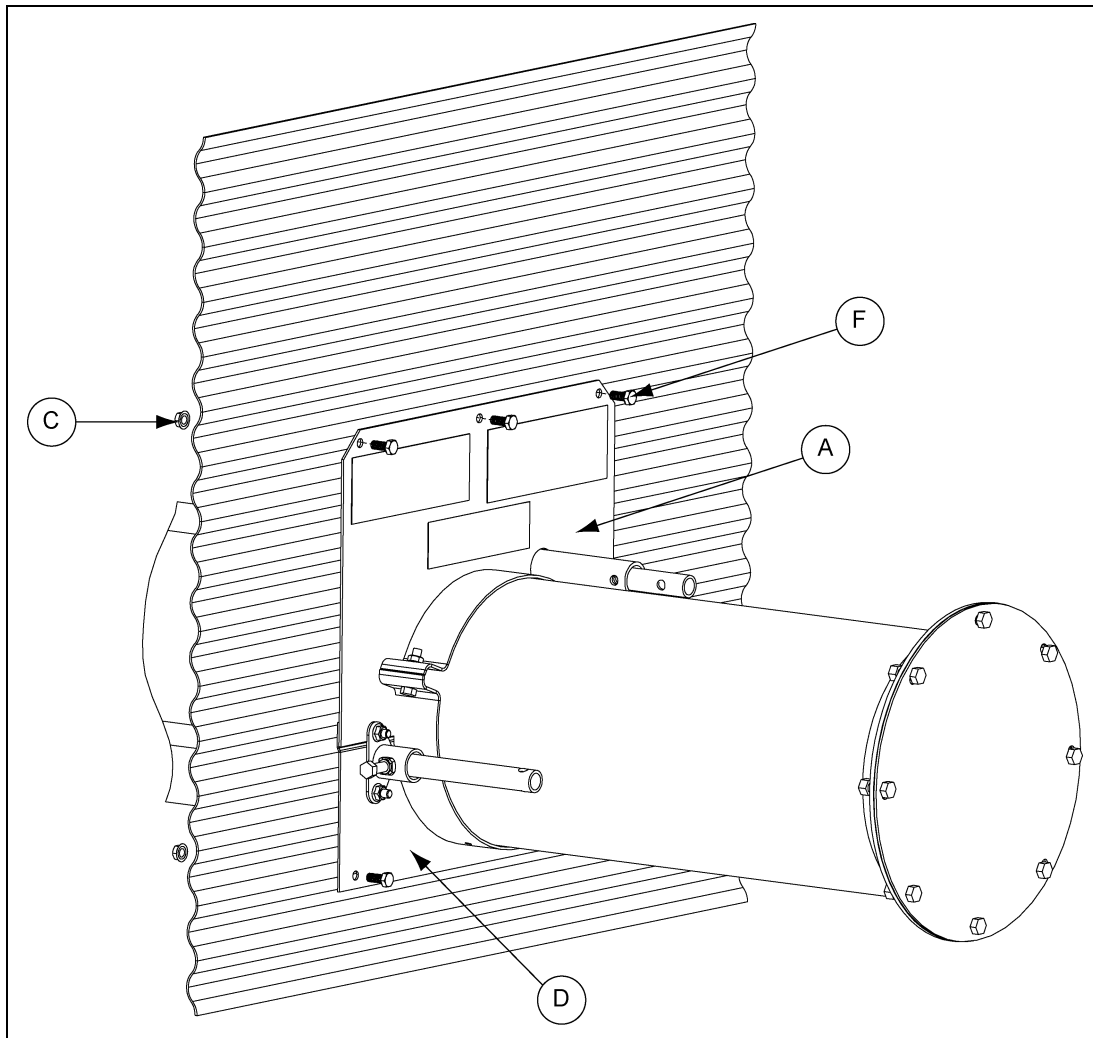


Figure 4K

| Ref # | Description         |
|-------|---------------------|
| A     | Upper Bin Flange    |
| C     | Serrated Flange Nut |

| Ref # | Description                |
|-------|----------------------------|
| D     | Lower Bin Flange           |
| F     | 5/16" x 3/4" Carriage Bolt |

6. Drill the remaining holes into the bin wall and attach the remaining 5/16" x 3/4" bin wall bolts and serrated flange nuts.

## 4. Installation

### Center Well Slide Gate Assembly

1. Close the center slide gate completely.
2. Align control rod between holes in gate.
3. Attach control gate clamp to control rod by sliding 5/16" x 1-3/4" long roll pin through clamp and control pipe.
4. Fasten clamp to bottom side of control gate by using two (2) 5/16" x 3/4" long carriage bolts, flat washers and serrated flange nuts. (See Figure 4L.)

**NOTE:** 6" and 8" rods attach on the TOP side of the center well gate.

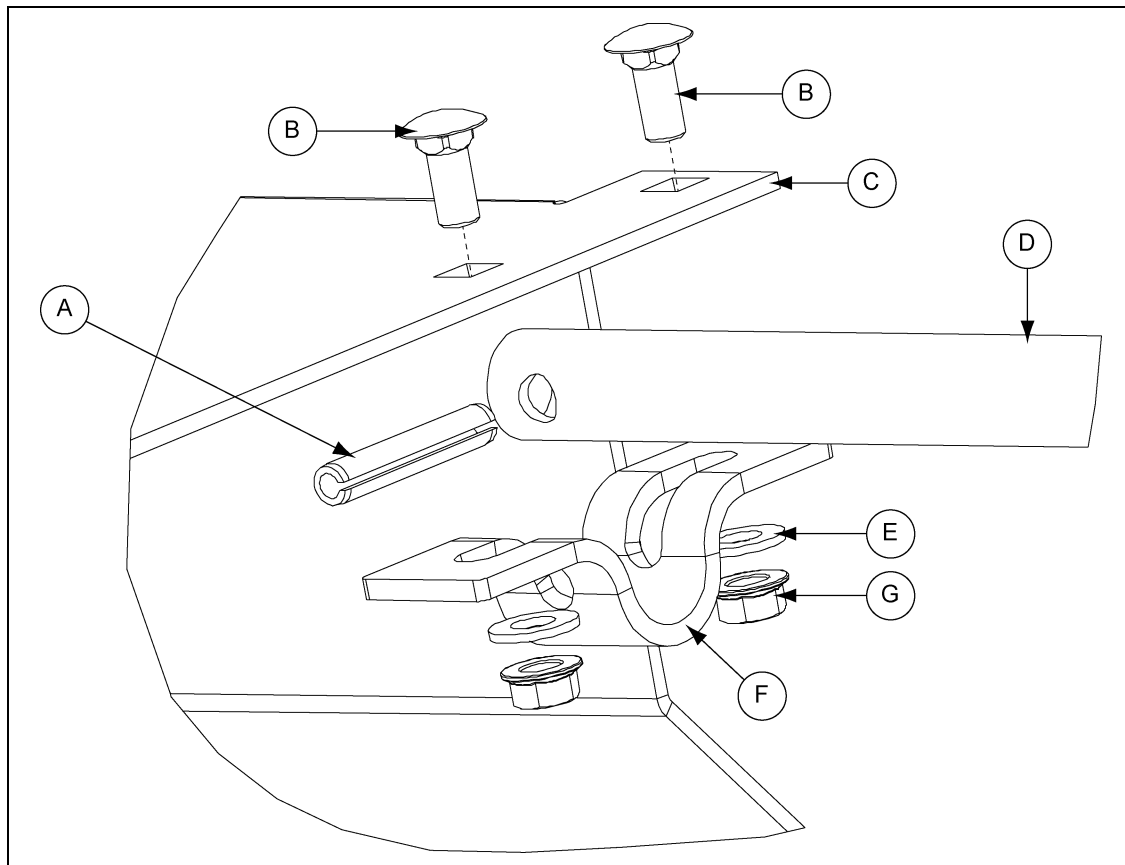


Figure 4L

| Ref # | Description                 |
|-------|-----------------------------|
| A     | 5/16" x 1-3/4" Roll Pin     |
| B     | 5/16" x 3/4" Carriage Bolts |
| C     | Center Well Control Gate    |
| D     | Center Well Control Rod     |
| E     | Flat Washer                 |
| F     | 1/2" Control Gate Clamp     |
| G     | 5/16" Serrated Flange Nut   |

## Control Lever Installation (6" Systems)

1. Close all slide control gates and keep them closed.
2. Attach the control lever by sliding the safety snap-on pin through the lever and both control rods. Close the center well and intermediate well gates using the control lever and the various slots.
3. Place the safety snap-on pin through the center well control rod and the control lever as shown in *Figure 4M*.

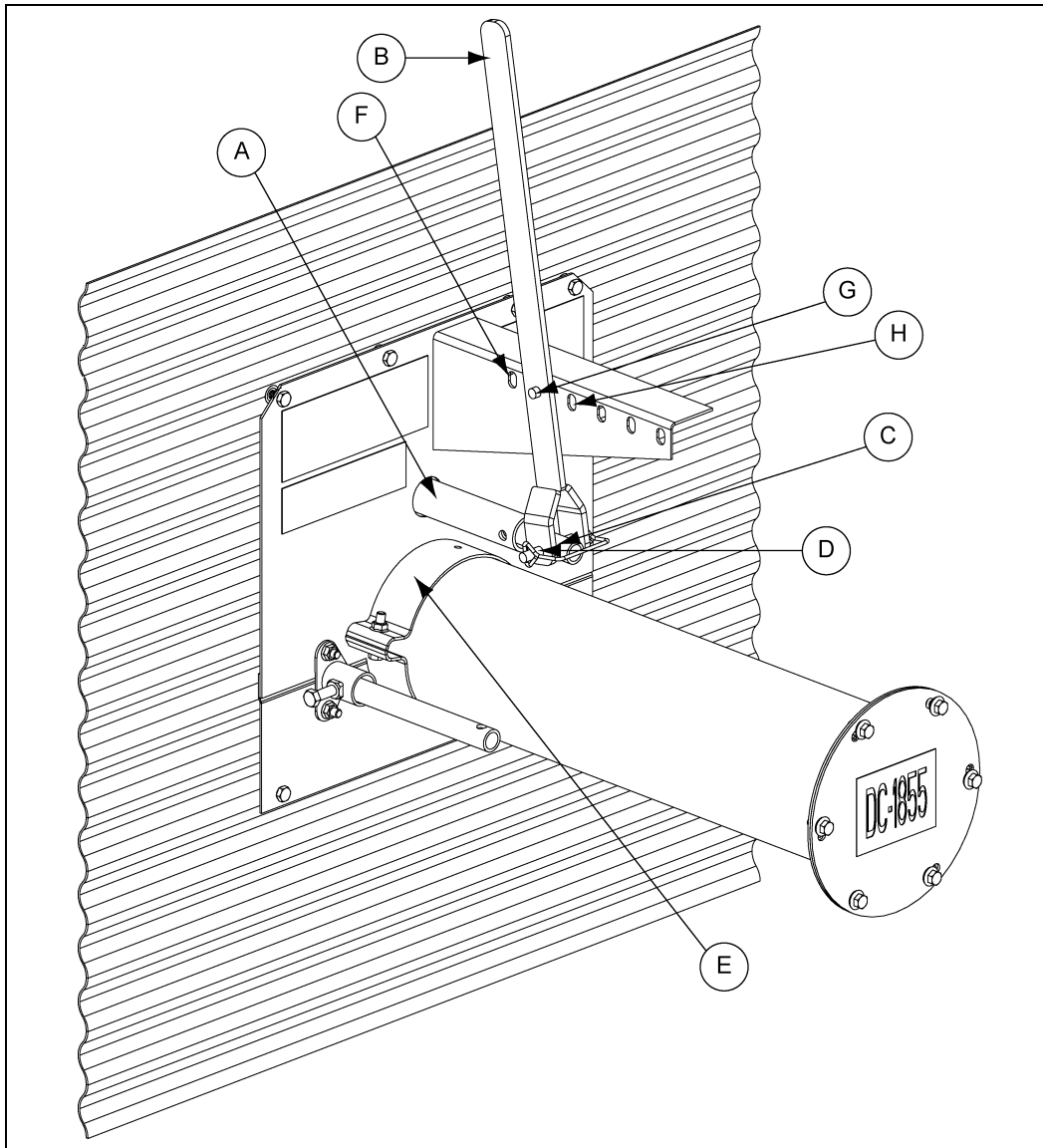


Figure 4M 6" Systems

| Ref # | Description                   |
|-------|-------------------------------|
| A     | Intermediate Well Control Rod |
| B     | Control Lever                 |
| C     | Center Well Control Rod       |
| D     | Safety Snap-On Pin            |

| Ref # | Description                |
|-------|----------------------------|
| E     | Bin Flange                 |
| F     | Hole #1 (Gates Closed)     |
| G     | Hole #2 (Gates 1/2 Open)   |
| H     | Hole #3 (Gates Fully Open) |

## 4. Installation

### Rack and Pinion Installation (8" and 10" Systems)

1. Make sure all gates are fully closed.
2. Slip rack and pinion tube over center gate control rod and align holes, making sure rack and pinion is fully extended toward bin wall. *(See Figure 4N.)*
3. With rack and pinion resting on unload tube and tube holes aligned, insert one 5/16" x 1-3/4" bolt through the rack and pinion tube and center gate control rod. Fasten together with a nut. *(See Figure 4N.)*

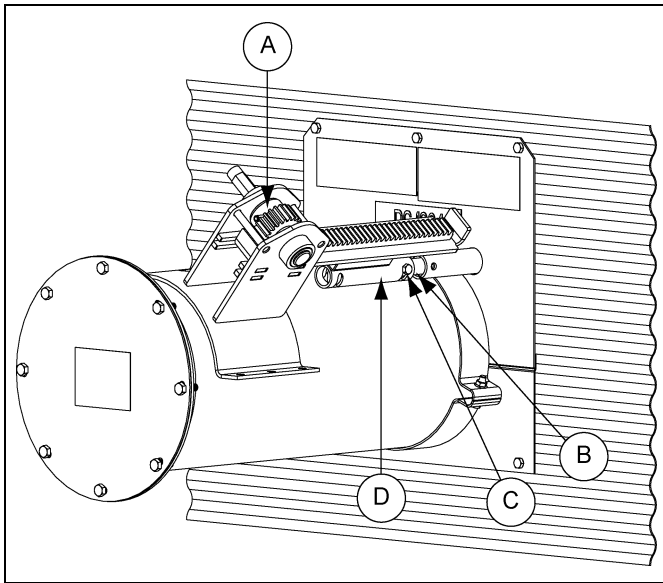


Figure 4N 8" and 10" Systems

| Ref # | Description             |
|-------|-------------------------|
| A     | Rack and Pinion         |
| B     | Center Well Control Rod |
| C     | 5/16" x 1-3/4" Bolt     |
| D     | Rack and Pinion Tube    |

4. Slide wrench over shaft on rack and 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 4O.)*

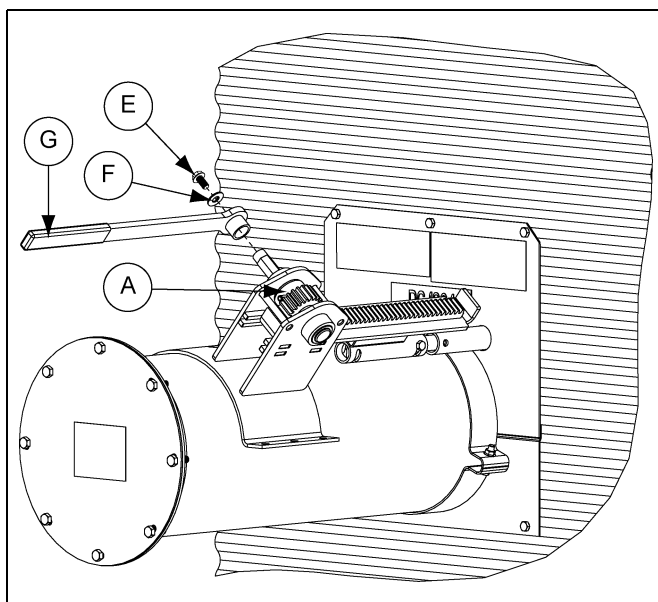


Figure 4O 8" and 10" Systems

| Ref # | Description          |
|-------|----------------------|
| A     | Rack and Pinion      |
| E     | 3/8" x 3/4" Hex Bolt |
| F     | Flat Washer          |
| G     | Wrench               |

## Rack and Pinion Installation (8" and 10" Systems) (Continued)

5. With rack and pinion fully extended, attach lower half band and secure to unload tube with six (6) 5/16" x 1-1/2" bolts, washers and serrated flange nuts. (See Figure 4P.)
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.

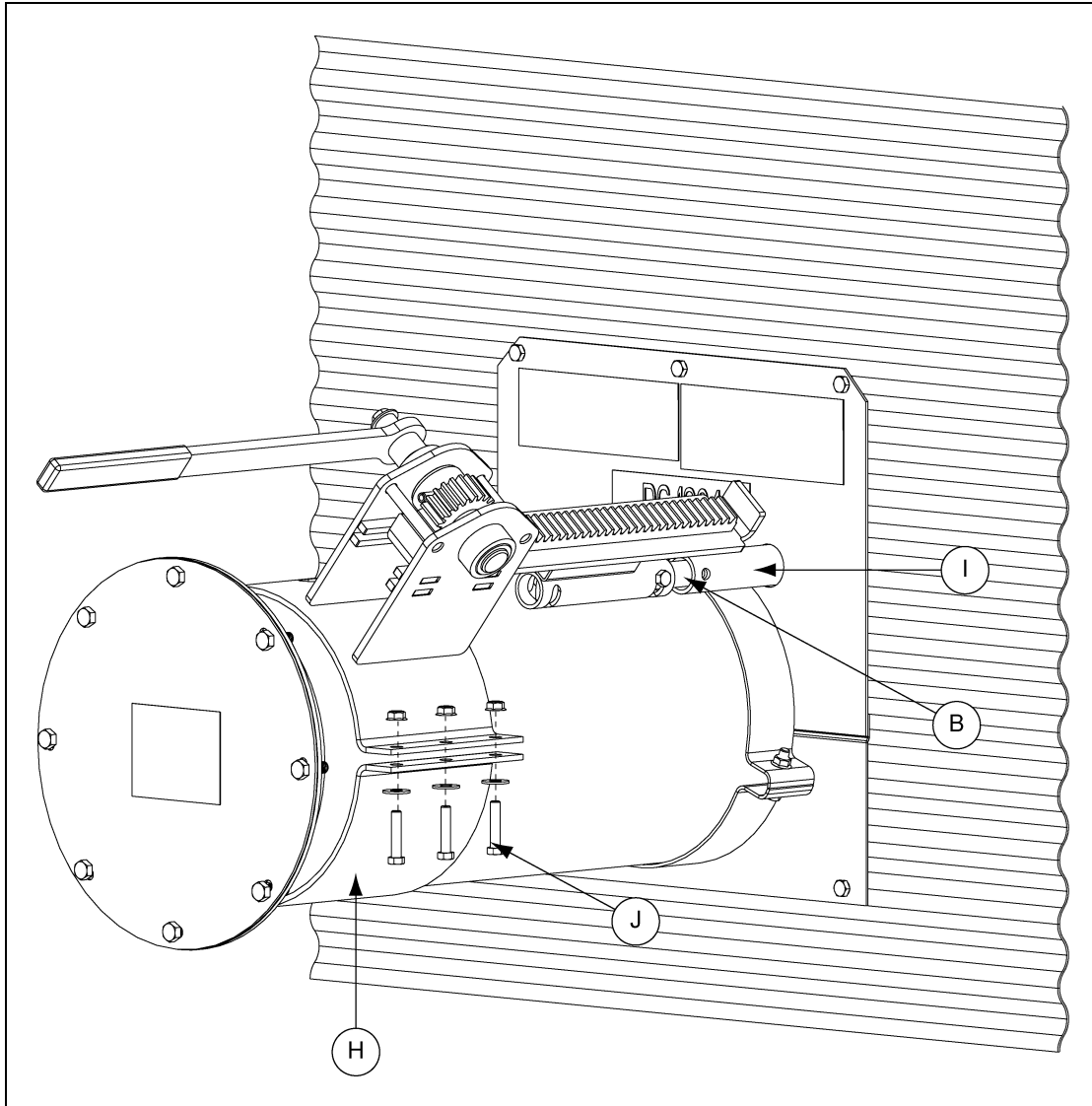


Figure 4P 8" and 10" Systems

| Ref # | Description                   |
|-------|-------------------------------|
| B     | Center Well Control Rod       |
| H     | Lower Half Band               |
| I     | Intermediate Well Control Rod |
| J     | 5/16" x 1-1/2" Bolt           |

## 4. Installation

### Clutch Control Installation

- 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 4Q](#) and [Figure 4R](#).)

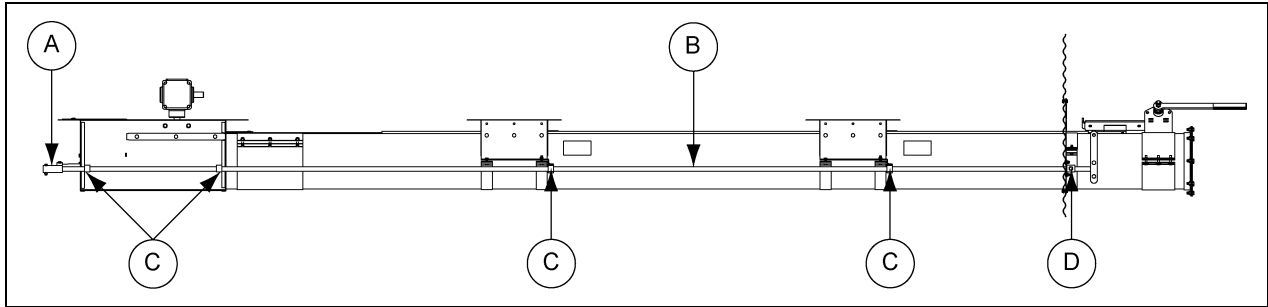


Figure 4Q

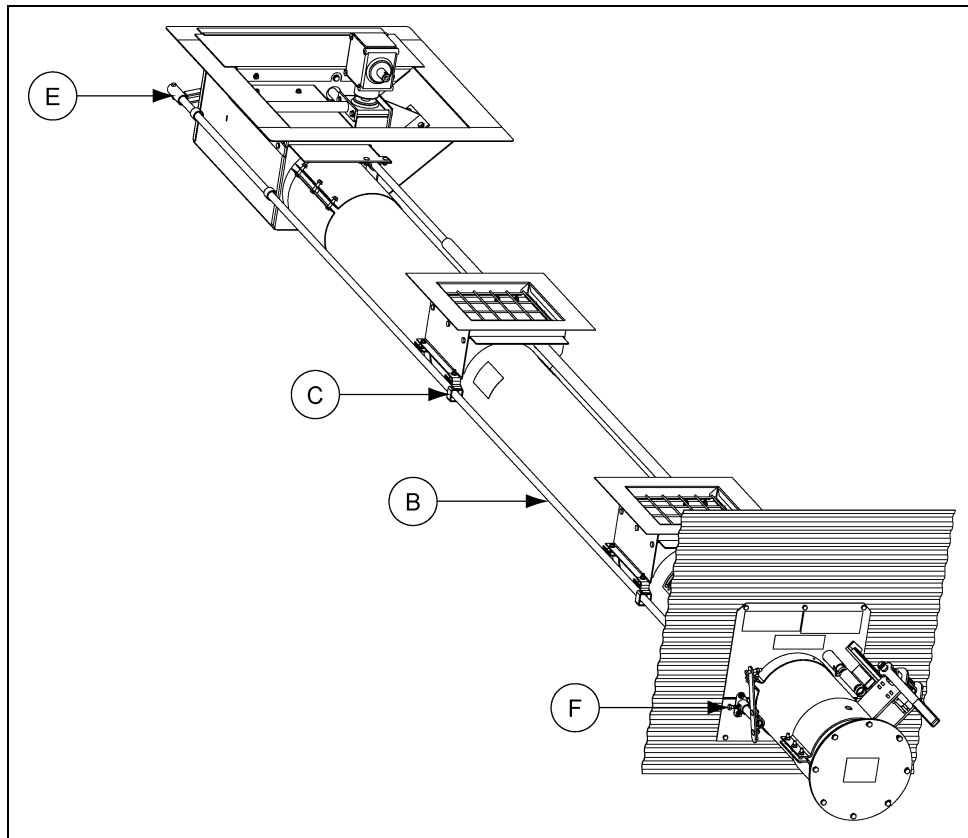


Figure 4R

| Ref # | Description         |
|-------|---------------------|
| A     | Clutch Collar       |
| B     | Clutch Control Pipe |
| C     | Support Brackets    |

| Ref # | Description      |
|-------|------------------|
| D     | Lock Collar      |
| E     | Clutch           |
| F     | Lock Collar Bolt |

## Clutch Control Installation (Continued)

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

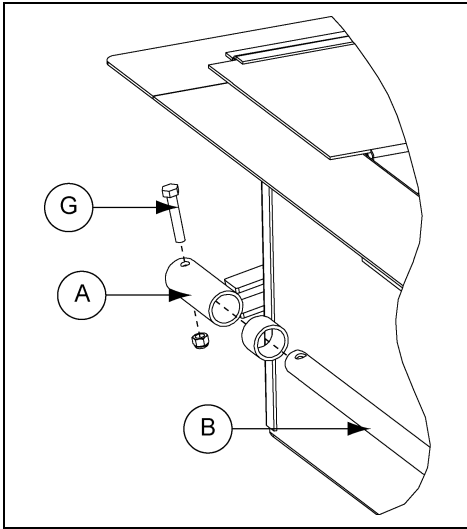


Figure 4S

| Ref # | Description              |
|-------|--------------------------|
| A     | Clutch Collar            |
| B     | Clutch Control Pipe      |
| G     | 5/16" x 1-3/4" Long Bolt |

3. Attach the control rod clamp to the clutch rod by sliding 5/16" x 1-3/4" long roll pin through the clamp and control rod.
4. Fasten the clutch handle to the clamp using two (2) 5/16" x 3/4" carriage bolts, flat washers and serrated flange nuts. The short end of the clutch handle should be closest to the bin pad, so as not to interfere with it. Install the nuts so that they secure the roll pin in place. (See Figure 4T.)

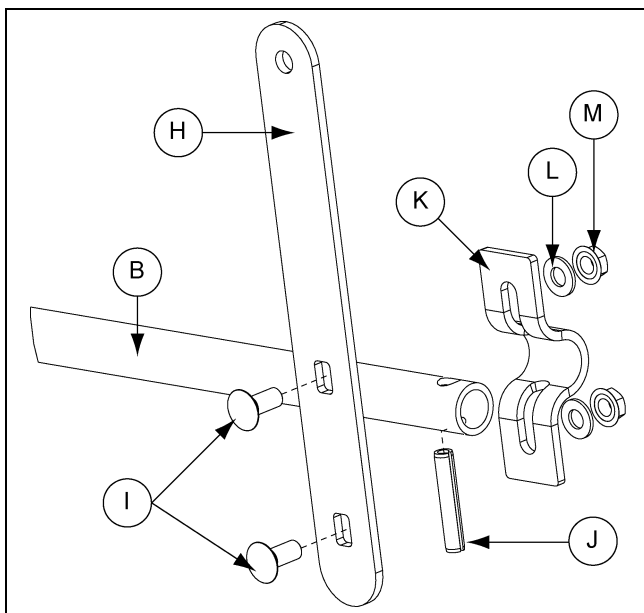


Figure 4T

| Ref # | Description                 |
|-------|-----------------------------|
| B     | Clutch Control Pipe         |
| H     | Clutch Handle               |
| I     | 5/16" x 3/4" Carriage Bolts |
| J     | 5/16" x 1-3/4" Roll Pin     |
| K     | 1/2" Control Rod Clamp      |
| L     | Flat Washer                 |
| M     | 5/16" Serrated Flange Nut   |

**NOTE:** *Clutch control pipe is shipped INSIDE unload flight.*

5. 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 Page 30.)

## 4. Installation

### Installing the Unload Tube Flight

1. Begin by removing the tube end cap if you have not already done so.
2. 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 4U.)

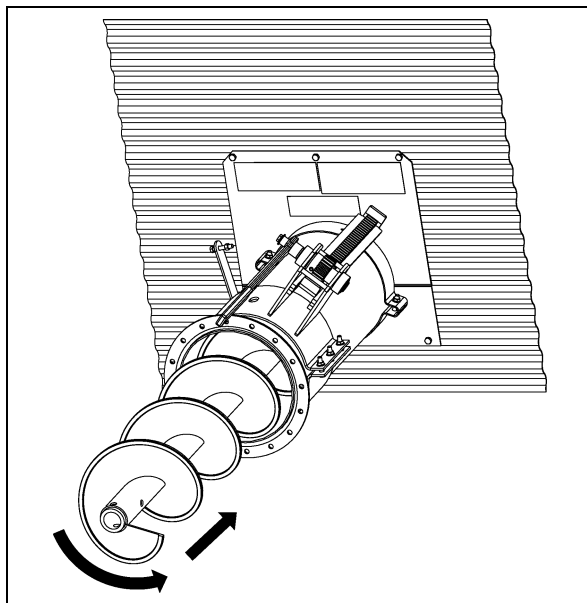


Figure 4U

3. When the flight is approaching the center well shaft, it will be necessary to rotate the flight counterclockwise 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 4V.)

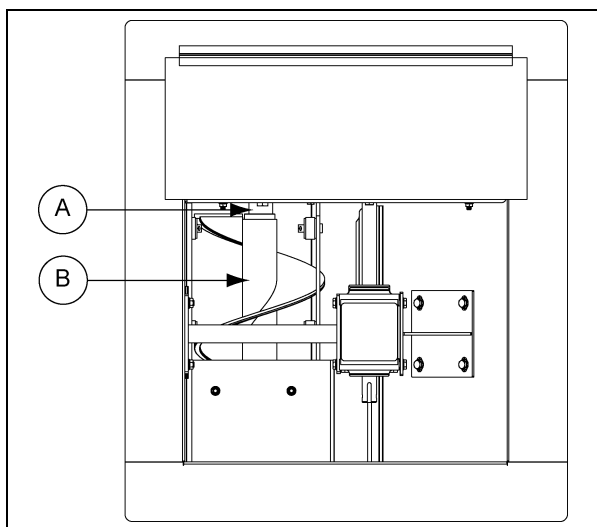


Figure 4V

| Ref # | Description  |
|-------|--------------|
| A     | Clutch Shaft |
| B     | Flight       |

4. On the initial stage, 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 of the flight on the discharge end when it has seated properly. (See Figure 4V.)



## Install the Sweep Flighting

1. Assemble the U-joint.
  - a. Insert the stub into the U-joint.
  - b. Secure the U-joint using a 5/16" x 2" roll pin. Drive the pin in with a hammer. *(See Figure 4W.)*

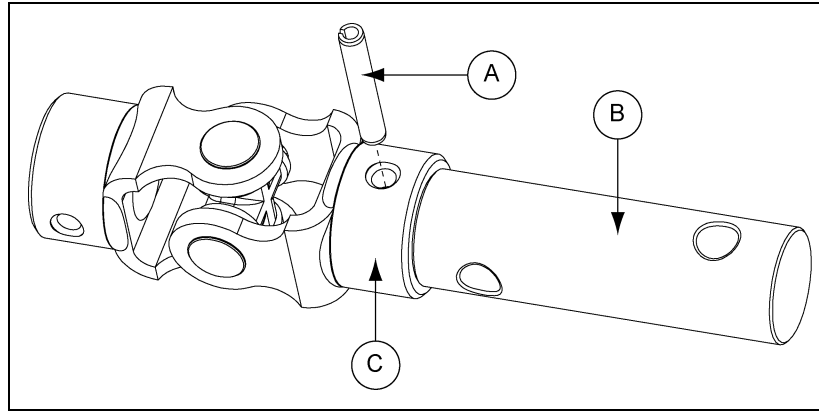


Figure 4W

| Ref # | Description         |
|-------|---------------------|
| A     | 5/16" x 2" Roll Pin |
| B     | Stub                |
| C     | U-Joint             |

2. Attach the U-joint.
  - a. Slide the U-joint onto the top gearbox output shaft.
  - b. Secure the U-joint using a 5/16" x 2" roll pin. *(See Figure 4X.)*

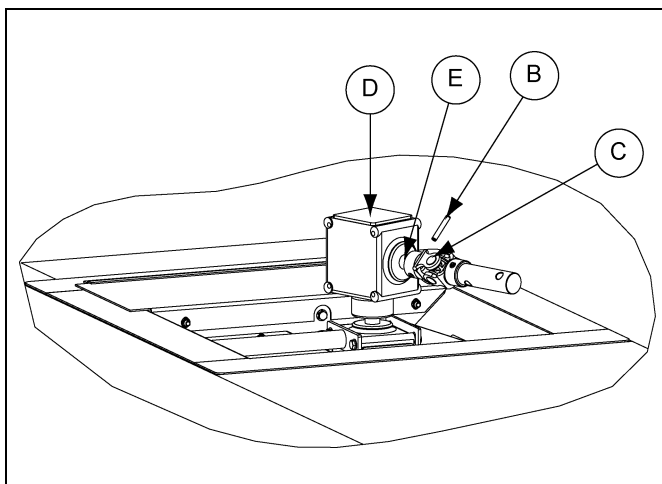


Figure 4X

| Ref # | Description         |
|-------|---------------------|
| B     | 5/16" x 2" Roll Pin |
| C     | U-Joint             |
| D     | Top Gearbox         |
| E     | Output Shaft        |

## 4. Installation

### Install the Sweep Flighting (Continued)

3. Attach the pivot bracket to the left side of the gearbox using four (4) 3/8" x 3/4" flange bolts. (See Figure 4Y.)

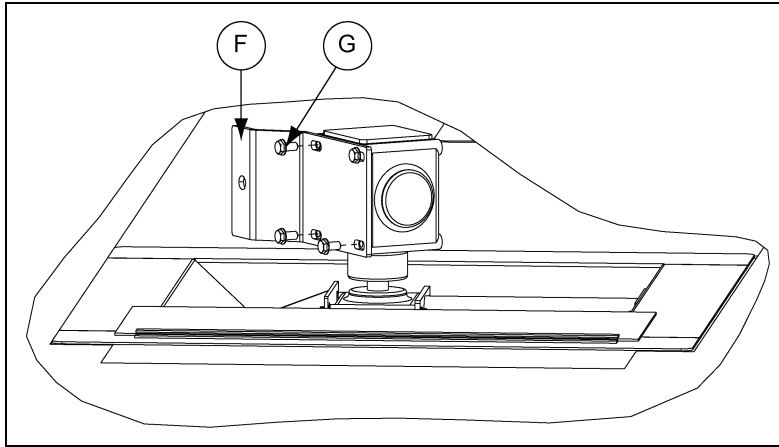


Figure 4Y

| Ref # | Description             |
|-------|-------------------------|
| F     | Pivot Bracket           |
| G     | 3/8" x 3/4" Flange Bolt |

4. Attach a flighting section to the U-joint stub located on the gearbox. Making sure that the Dura-Edge<sup>®</sup> side of the flight faces the center of the bin. Secure it with bolts and stover nuts. (See Note for Bolt Size and Figure 4Z.)

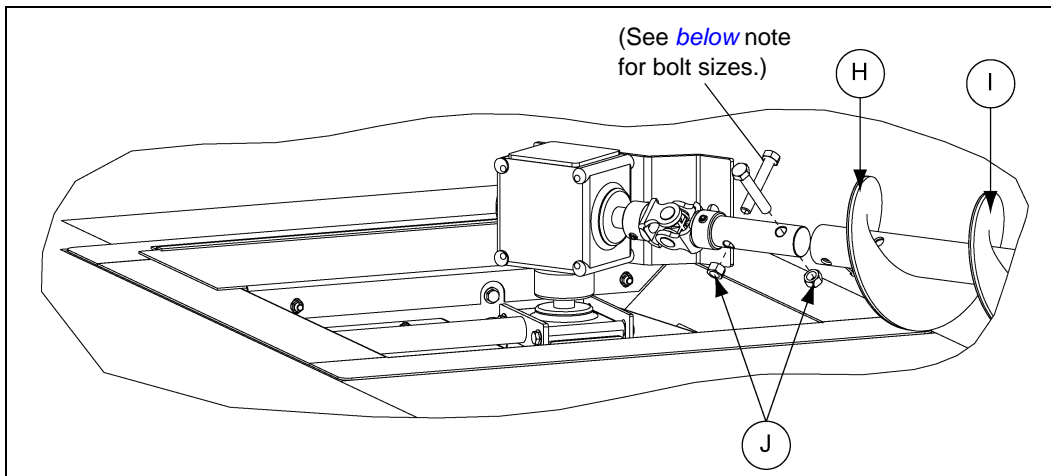


Figure 4Z

**NOTE:** 6" Two (2) 7/16" x 3" bolts.  
 8" Two (2) 1/2" x 3" bolts.  
 10" Two (2) 1/2" x 3" bolts.

| Ref # | Description            |
|-------|------------------------|
| H     | Dura-edge <sup>®</sup> |
| I     | Flight                 |
| J     | Stover Nuts            |

## Install the Sweep Flighting (Continued)

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 | Standard Lengths | # of Flighting and Shields Required | Double Frame Door 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                                   | 5'-6"                     |
|          | 1                                   | 7'-4"            | 1                                   | 6'-10"                    |
| 33'      | 1                                   | 5'-10"           | 1                                   | 5'-6"                     |
|          | 1                                   | 8'-6"            | 1                                   | 8' - 3-1/2"               |
| 36'      | 1                                   | 7'-4"            | 1                                   | 7'-0"                     |
|          | 1                                   | 8'-6"            | 1                                   | 8' - 3-1/2"               |
| 39'      | 1                                   | 8'-6"            | 1                                   | 8'-6"                     |
|          | 1                                   | 8'-10"           | 1                                   | 8' - 3-1/2"               |
| 42'      | 1                                   | 4'-4"            | 2                                   | 5'-6"                     |
|          | 1                                   | 7'-0"            | 1                                   | 7'-0"                     |
|          | 1                                   | 7'-4"            |                                     |                           |
| 48'      | 1                                   | 7'-0"            | 1                                   | 5'-6"                     |
|          | 2                                   | 7'-4"            | 1                                   | 7'-0"                     |
|          |                                     |                  | 1                                   | 8'-6"                     |

5. Insert the connecting stub into the flighting. Secure it with bolts and stover nuts. *(See Note for Bolt Size on Page 34 and Figure 4AA below.)*

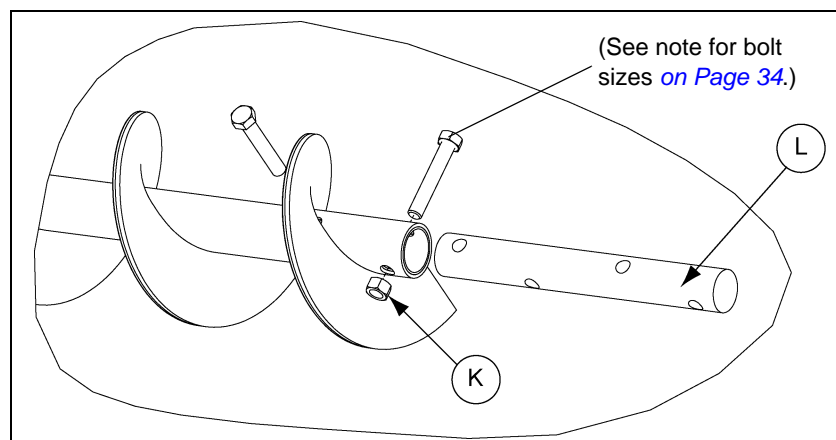


Figure 4AA

| Ref # | Description     |
|-------|-----------------|
| K     | Stover Nut      |
| L     | Connecting Stub |

## 4. Installation

### Install the Sweep Flighting (Continued)

6. Place the hanger bearing bracket onto the connecting stub. (See Figure 4AB.)

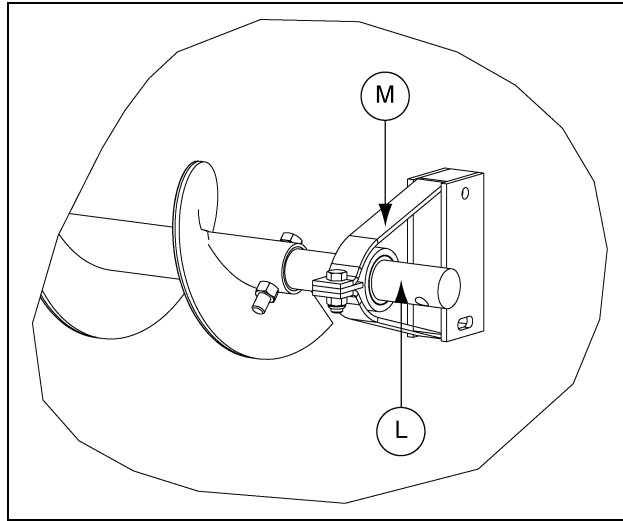


Figure 4AB

| Ref # | Description            |
|-------|------------------------|
| L     | Connecting Stub        |
| M     | Hanger Bearing Bracket |

7. Install the next section of flighting onto the connecting stub. Secure the flighting with bolts and stover nuts. (See Note for Bolt Size on Page 34 and Figure 4AC below.)
8. Keep repeating [Step 5 on Page 35-Step 7 above](#) for additional sections of flighting.

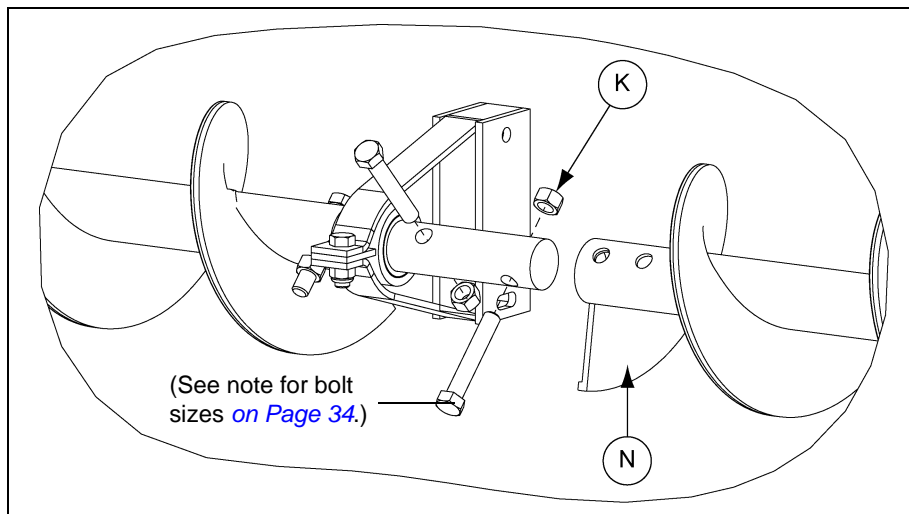


Figure 4AC

| Ref # | Description     |
|-------|-----------------|
| K     | Stover Nut      |
| N     | Sweep Flighting |

## 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 lock nuts. (See Figure 4AD.)
2. Fasten the shield bracket to the pivot bracket on the gearbox using one 1/2" x 1/2" shoulder bolt and lock nut. (See Figure 4AD.)

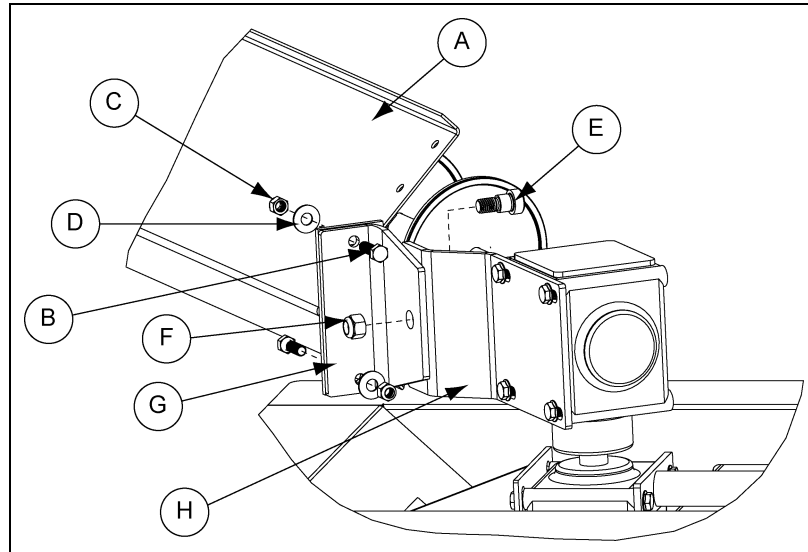


Figure 4AD

| Ref # | Description         |
|-------|---------------------|
| A     | First Back Shield   |
| B     | 3/8" x 1-1/4" Bolt  |
| C     | 3/8" Nylon Lock Nut |
| D     | 3/8" Flat Washer    |

| Ref # | Description               |
|-------|---------------------------|
| E     | 1/2" x 1/2" Shoulder Bolt |
| F     | 1/2" Nylon Lock Nut       |
| G     | Shield Mounting Bracket   |
| H     | Pivot Bracket             |

3. Install the first and second flighting shield (when applicable) to the hanger bracket using two (2) 3/8" x 3" carriage bolts, flat washers and lock nuts. (See Figure 4AE.)

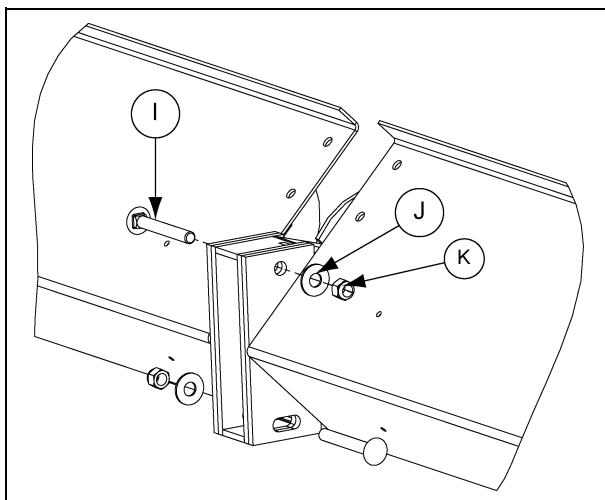


Figure 4AE

| Ref # | Description             |
|-------|-------------------------|
| I     | 3/8" x 3" Carriage Bolt |
| J     | 3/8" Flat Washer        |
| K     | 3/8" Lock Nut           |

## 4. Installation

### Install the Flighting Shield (Continued)

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

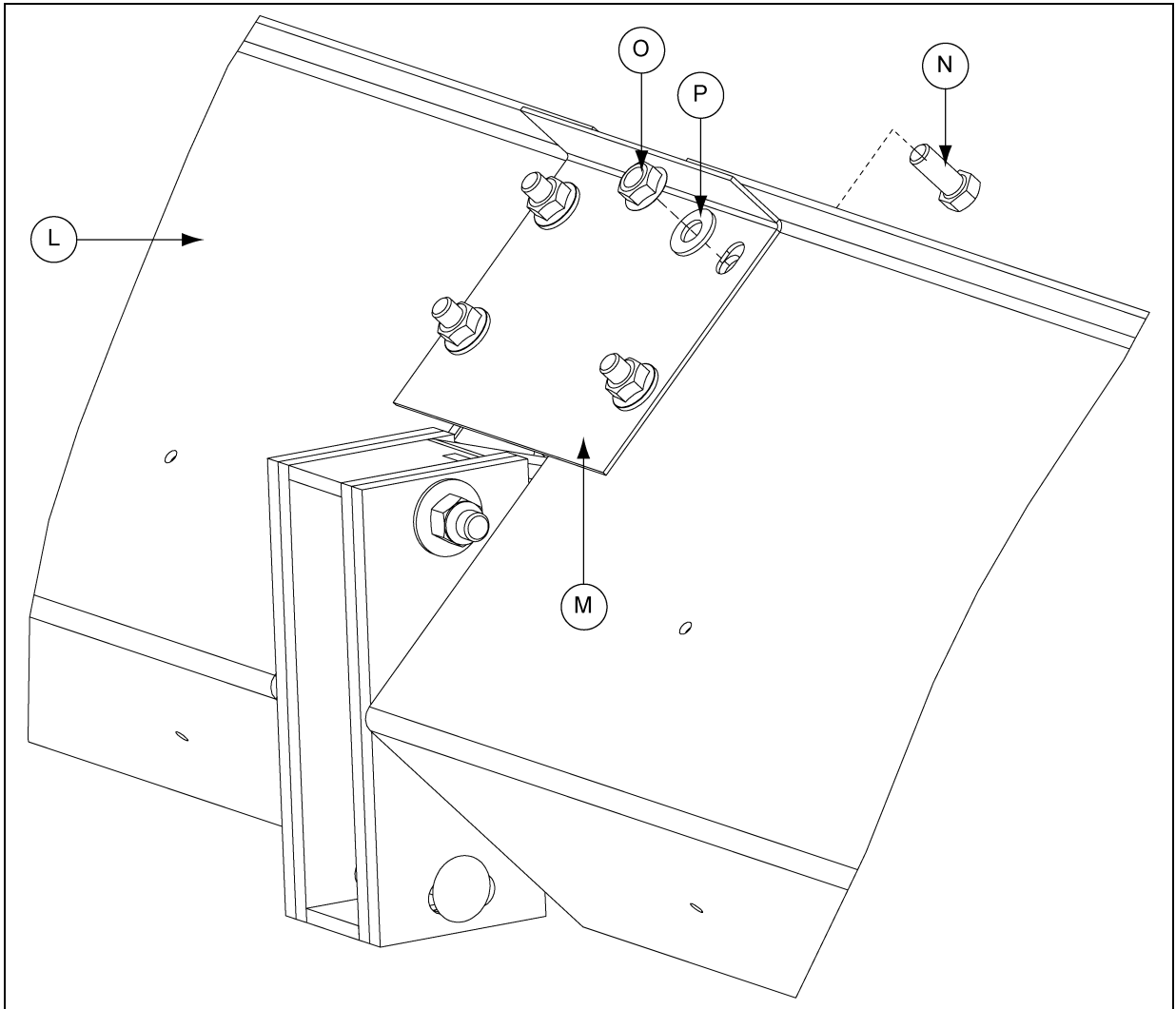


Figure 4AF

| Ref # | Description               |
|-------|---------------------------|
| L     | Shield                    |
| M     | Shield Splice Bracket     |
| N     | 5/16" x 3/4" Bolt         |
| O     | 5/16" Serrated Flange Nut |
| P     | 5/16" Flat Washer         |

5. Keep repeating [Step 3 on Page 37](#) and [Step 4 above](#) for additional sections of flighting shields.

## Sweep Wheel Installation

1. Insert the input shaft of the reduction drive into the open end of the flight. Attach the drive to the flight with one 7/16" x 3" grade 8 bolt and stover nut for 6" or one 1/2" x 3" grade 8 bolt and stover nut for 8" and 10". (See Figure 4AG.)
2. Mount the reducer to the back shield with two (2) 3/8" x 1-1/4" serrated flange bolts, one flat washer and nylock nut.
3. Attach the wheel hub welded assembly to the reduction drive with one 3/8" x 2-1/2" grade 8 bolt and stover nut.
4. Attach the rubber discs and outer wheel disc to the wheel hub welded assembly with four (4) 5/16" x 2" grade 2 bolts and nylock nuts. (See Figure 4AG.)

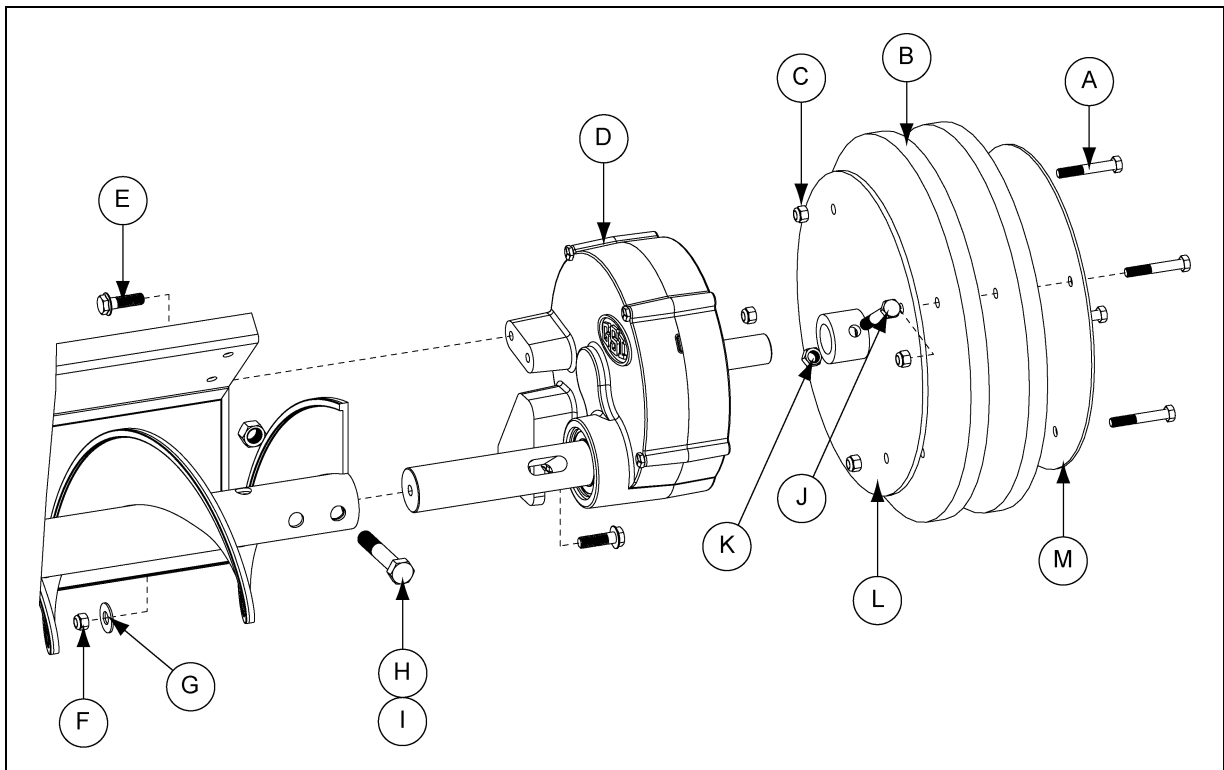


Figure 4AG

| Ref # | Description               |
|-------|---------------------------|
| A     | 5/16" x 2" Bolt           |
| B     | Rubber Disc               |
| C     | 5/16" Nylock Nut          |
| D     | Wheel Reducer Drive       |
| E     | 3/8" x 1-1/4" Flange Bolt |
| F     | 3/8" Nylock Nut           |
| G     | 3/8" Flat Washer          |

| Ref # | Description  |
|-------|--|
| H     | 7/16" x 3" Grade 8 Bolt and Stover Nut for 6"        |
| I     | 1/2" x 3" Grade 8 Bolt and Stover Nut for 8" and 10" |
| J     | 3/8" x 2-1/2" Grade 8 Bolt                           |
| K     | 3/8" Stover Nut                                      |
| L     | Hub Welded Assembly                                  |
| M     | Outer Wheel Disc                                     |

### Motor Requirements

Motor size depends on the style of bin unload head selected and on the grain type being conveyed. Minimum motor sizes are given below. Please also refer to the unload head manual for further details.

| Bin Diameter | Horizontal Head |     |     | 25° Head |     |      | Vertical Head |     |      |
|--------------|-----------------|-----|-----|----------|-----|------|---------------|-----|------|
|              | 6"              | 8"  | 10" | 6"       | 8"  | 10"  | 6"            | 8"  | 10"  |
| 15'          | 2.3             | 2.3 | -   | 2.3      | 3.8 | -    | 3.8           | 3.8 | -    |
| 18'          | 2.3             | 2.3 | -   | 2.3      | 3.8 | -    | 3.8           | 3.8 | -    |
| 21'          | 2.3             | 3.8 | -   | 3.8      | 3.8 | -    | 3.8           | 5.6 | -    |
| 24'          | 2.3             | 3.8 | 5.6 | 3.8      | 3.8 | 7.5  | 3.8           | 5.6 | 7.5  |
| 27'          | 3.8             | 3.8 | 5.6 | 3.8      | 3.8 | 7.5  | 3.8           | 5.6 | 7.5  |
| 30'          | 3.8             | 3.8 | 5.6 | 3.8      | 5.6 | 7.5  | 5.6           | 5.6 | 11.3 |
| 33'          | 3.8             | 3.8 | 5.6 | 3.8      | 5.6 | 7.5  | 5.6           | 5.6 | 11.3 |
| 36'          | 3.8             | 5.6 | 7.5 | 3.8      | 5.6 | 7.5  | 5.6           | 5.6 | 11.3 |
| 39'          | -               | 5.6 | 7.5 | -        | 7.5 | 11.3 | -             | -   | -    |
| 42'          | -               | 5.6 | 7.5 | -        | 7.5 | 11.3 | -             | -   | -    |
| 48'          | -               | 5.6 | 7.5 | -        | 7.5 | 11.3 | -             | -   | -    |

Minimum motor power requirements (kW).

### Electrical Control System

Correct design of the control system is vitally important to ensure safe use of the power sweep and unloading auger. In particular:

1. No-one can enter the bin when the system is running.
2. The system is not started when some-one is in the bin.
3. For service and maintenance purposes, the equipment can be locked out with no risk if inadvertent re-start.

The following items are the minimum required when making electrical connections to the auger:

1. Main power supply with protective earth, over-current and short circuit protection.
2. Main electrical disconnect.



- a. Wired to disconnect all electrical power to the auger and other associated equipment.
- b. Lockable.



### 3. Service disconnect.



- a. Wired to break all electrical power to the auger motor.
- b. Lockable.

### 4. Emergency stop.



- a. Wired to stop the auger motor (and any other associated equipment) immediately when pressed.
- b. Must remain engaged until manually disengaged.

### 5. Start/Stop controls.



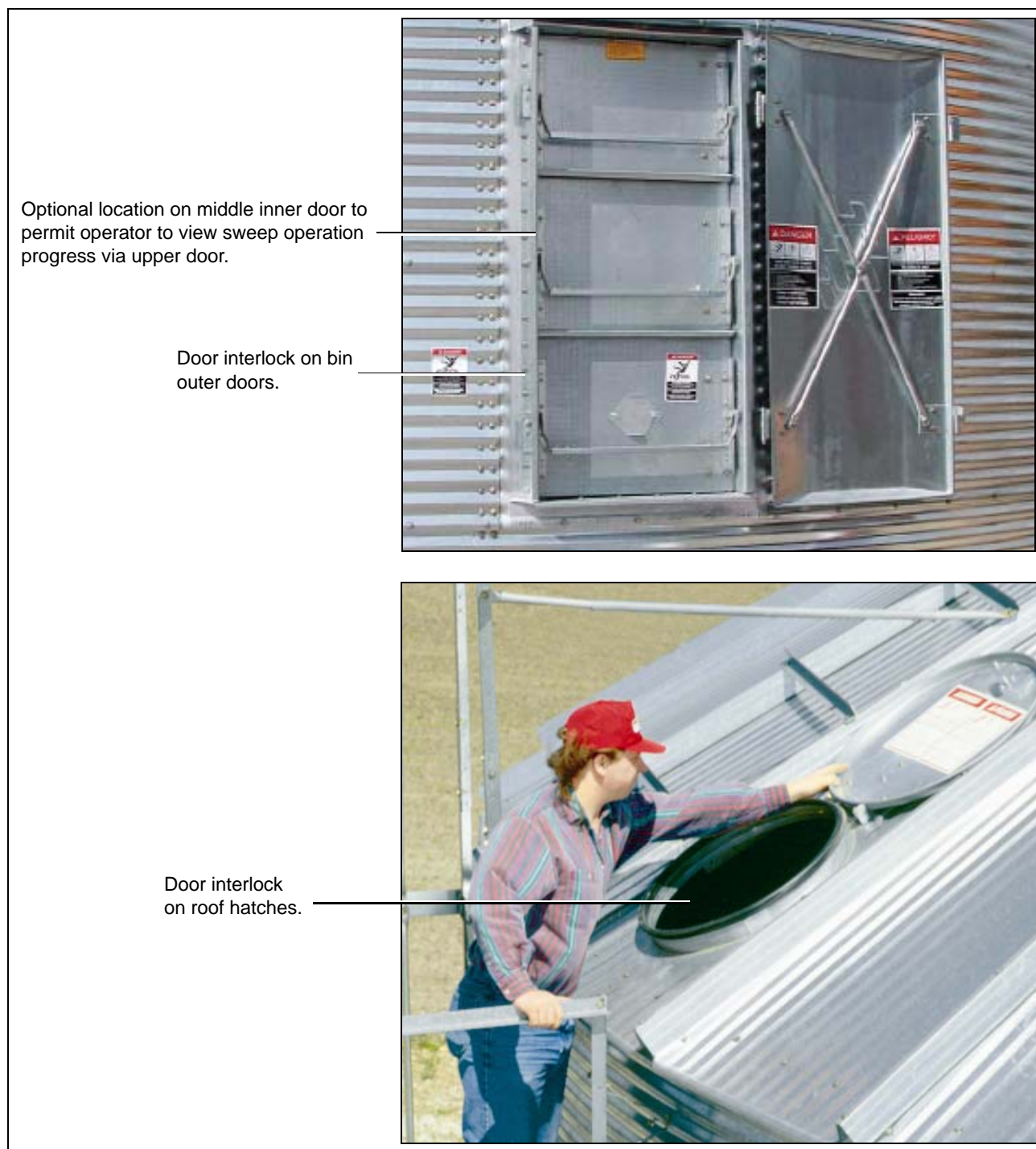
- a. Recessed start push button labelled 1.
- b. Non recessed stop push button labelled 0.
- c. Motor starter, short circuit protection and motor overload.
- d. Control must be designed to default to OFF after a power interruption. (Eg. Self maintained relay.)
- e. The auger **MUST NOT** be able to immediately re-start following re-establishment of power.

### 6. Door interlocks.



- a. Fitted on all bin access doors (including roof hatches).
- b. Door interlock to be wired to stop the auger (and any other equipment) immediately the door is opened.
- c. Auger **MUST NOT** be able to re-start immediately the door is re-closed.
- d. This does not override the need to LOCK OUT electrical power before entering the bin.

## 5. Electrical Installation



**Figure 5A** *Door Interlock Switch Locations*

### Setting Clutch Control

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 center well and the intermediate well control rods towards the bin to close well gates.
3. With the power shut OFF and locked out enter the bin and position the sweep auger along side of the intermediate wells.
4. Open the center well cover plate and set it aside.
5. While observing the clutch components in the center well, pull the clutch control pipe from the outside of the bin, until the two (2) clutch jaws are fully engaged.
6. Make a distinguishing mark on the clutch control rod, outside the bin, to designate the fully engaged position.
7. Next, push the clutch control pipe toward the bin to disengage the two (2) clutch jaws.
8. Verify that the clutch is fully disengaged in the center well.
9. Make a distinguishing mark on the clutch control rod, outside the bin, to designate the fully disengaged position.
10. Tighten the clutch control pipe position lock out bolt.
11. Re-install the center well cover plate.

## 6. Operation

### Power Recommendations

1. 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 than 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 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 forty percent (40%) under some conditions.*

**Horsepower Chart**

| Bin Diameter | Horizontal Head |       |       | 25° 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  | -             | -     | -   |

## Perform Pre-Start Checks



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

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



***ALWAYS keep ALL guards and shields 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 any emergency shut down procedures. Two (2) people must always be in a position where the operation of the equipment can be monitored.
5. Before starting the auger for the first time, make sure that all parts are assembled correctly according to the instructions in this manual.



***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.***

## Operation



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



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



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

## 6. Operation

### A. Operation for 6" systems

1. Start the unloading auger.
2. The safety snap pin should be inserted through the center well control rod and the control lever. Make sure it has NOT been inserted through the intermediate well control rod. (See Figure 6A.)
3. Place control lever in the second slot and pull lever to open gradually until the desired flow is established. (See Figure 6A.) It should not be necessary to open the gate more than 3" to 6".
4. Always close well gates and allow the unloader to clean out before stopping the unloader. Do not open the gate more than 3"-6" as the flow of grain into the center well will be at a higher rate than what the unload system can remove. This will cause the auger to plug or jam.

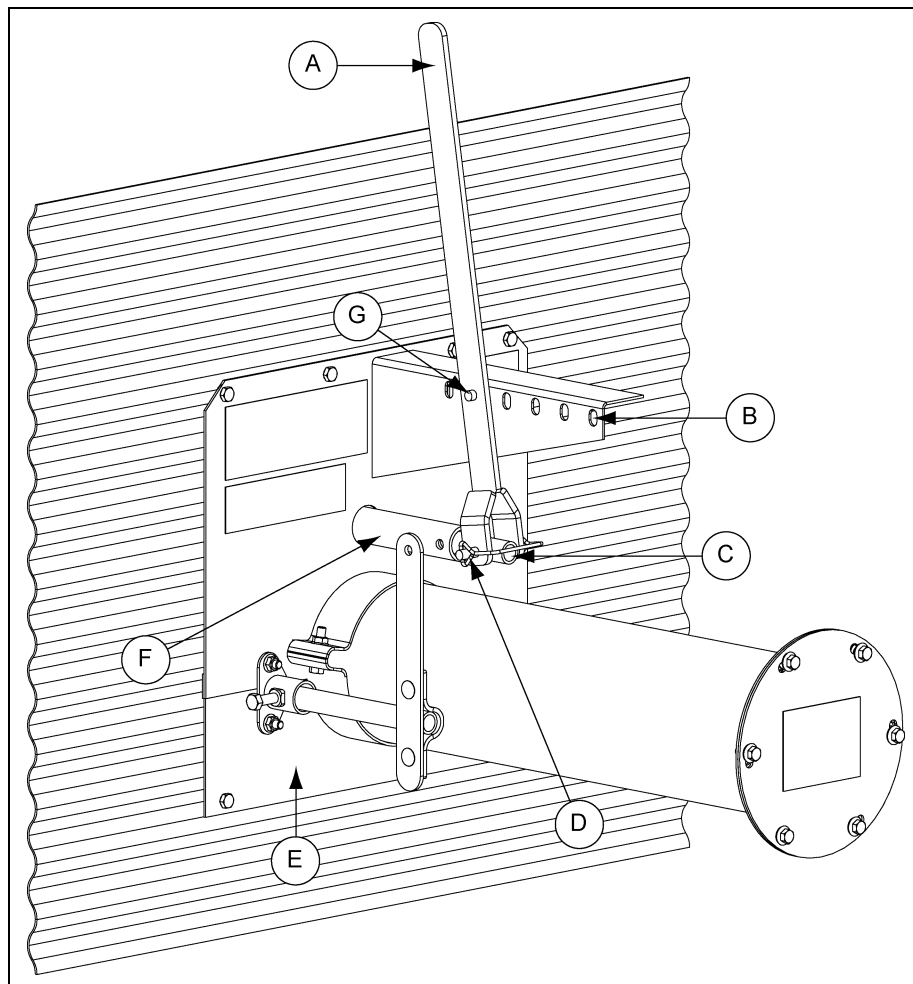


Figure 6A

| Ref # | Description             |
|-------|-------------------------|
| A     | Control Lever           |
| B     | Last Pivot Slot         |
| C     | Center Well Control Rod |
| D     | Safety Snap Pin         |

| Ref # | Description                    |
|-------|--------------------------------|
| E     | Upper Bin Flange               |
| F     | Intermediate Well Control Rod  |
| G     | Second (2 <sup>nd</sup> ) Slot |

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 *Figure 6C*. The remaining grain should look similar to *Figure 6B*.

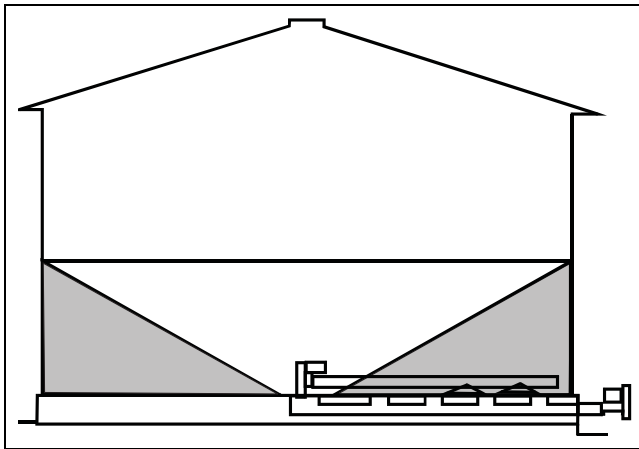


Figure 6B

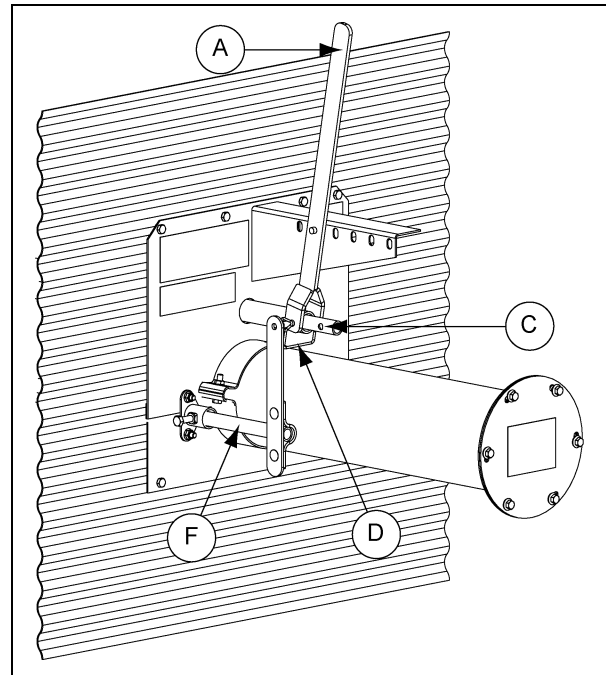


Figure 6C

| Ref # | Description             |
|-------|-------------------------|
| A     | Control Lever           |
| C     | Center Well Control Rod |

| Ref # | Description                   |
|-------|-------------------------------|
| D     | Safety Snap Pin               |
| F     | Intermediate Well Control Rod |

6. Gradually open gates using the middle pivot slot until the desired flow of grain is reached. You should not open the gates more than 2" to 4". If gates need to be opened further, use the last slot for more leverage. (See *Figure 6A on Page 46*.) The remaining grain should look similar to *Figure 6D*.

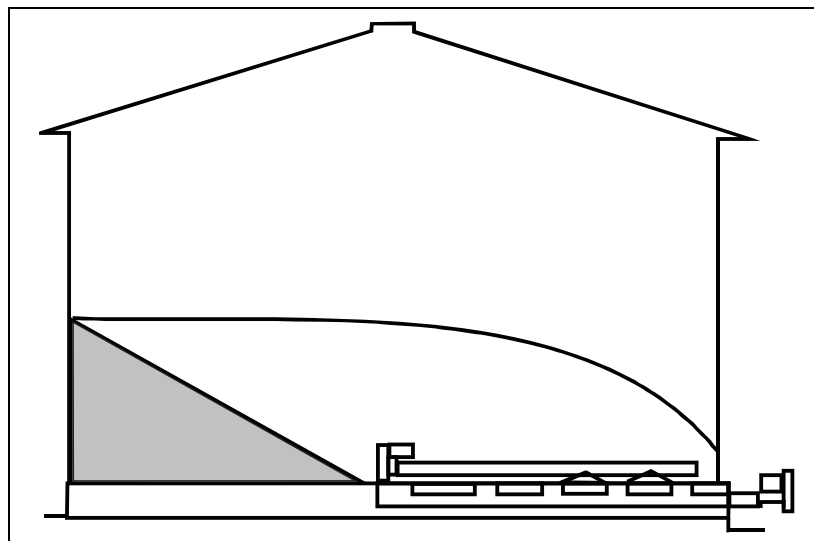


Figure 6D



## 6. Operation

### B. For 8" and 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 the equipment, use the horsepower chart on [Page 44](#).
2. Make sure the center well bolt is inserted through the rack and pinion tube and center well control rod. Make sure the intermediate well control rod is not attached to the center well control rod. (See [Figure 6E](#).)

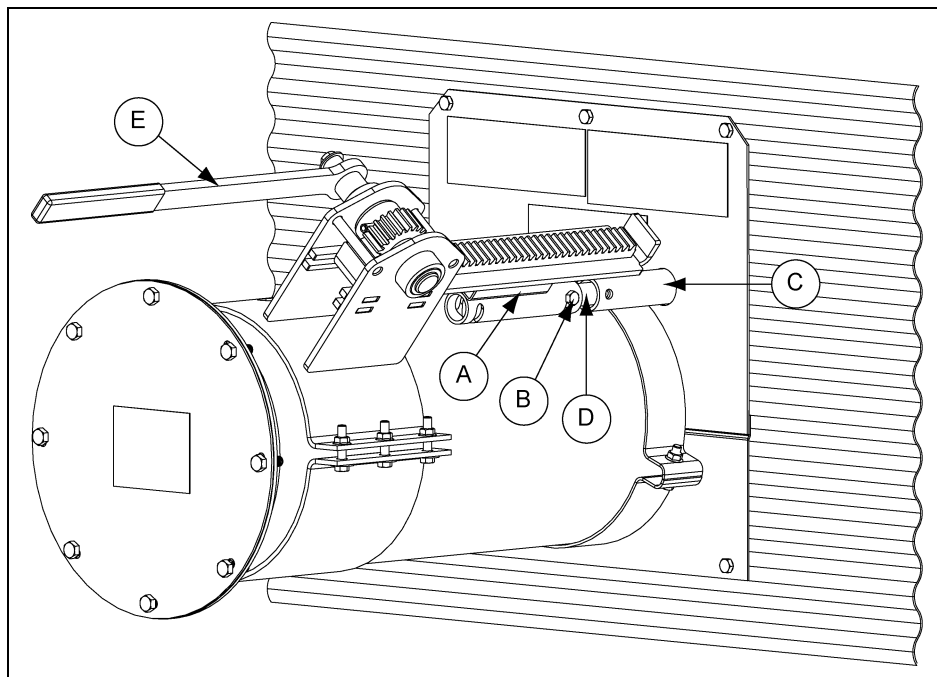


Figure 6E

| Ref # | Description                   |
|-------|-------------------------------|
| A     | Rack and Pinion Tube          |
| B     | Center Well Bolt              |
| C     | Intermediate Well Control Rod |
| D     | Center Well Control Rod       |
| E     | Well Control Wrench           |

3. Using the wrench on rack and pinion, open center gate until desired flow is established. It should not be necessary to open gate more than 3" to 6". Do not open the gate more than 3" to 6" as the flow of grain into the center well will be at a higher rate than what the unload system can remove. This will cause auger to plug or jam.
4. Always close the well gates 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. Remaining grain should look like [Figure 6B on Page 47](#).
6. Gradually open the gates until the desired flow of grain is reached. You should not open the gate more than 2" to 4". The remaining grain should look like [Figure 6D on Page 47](#).



## Engaging the Clutch for Bin Sweep

1. All power should be OFF 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 before filling the bin.
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. (See Figure 6F.)



**The center well gate must be FULLY open during the bin sweep operation.**

4. 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.

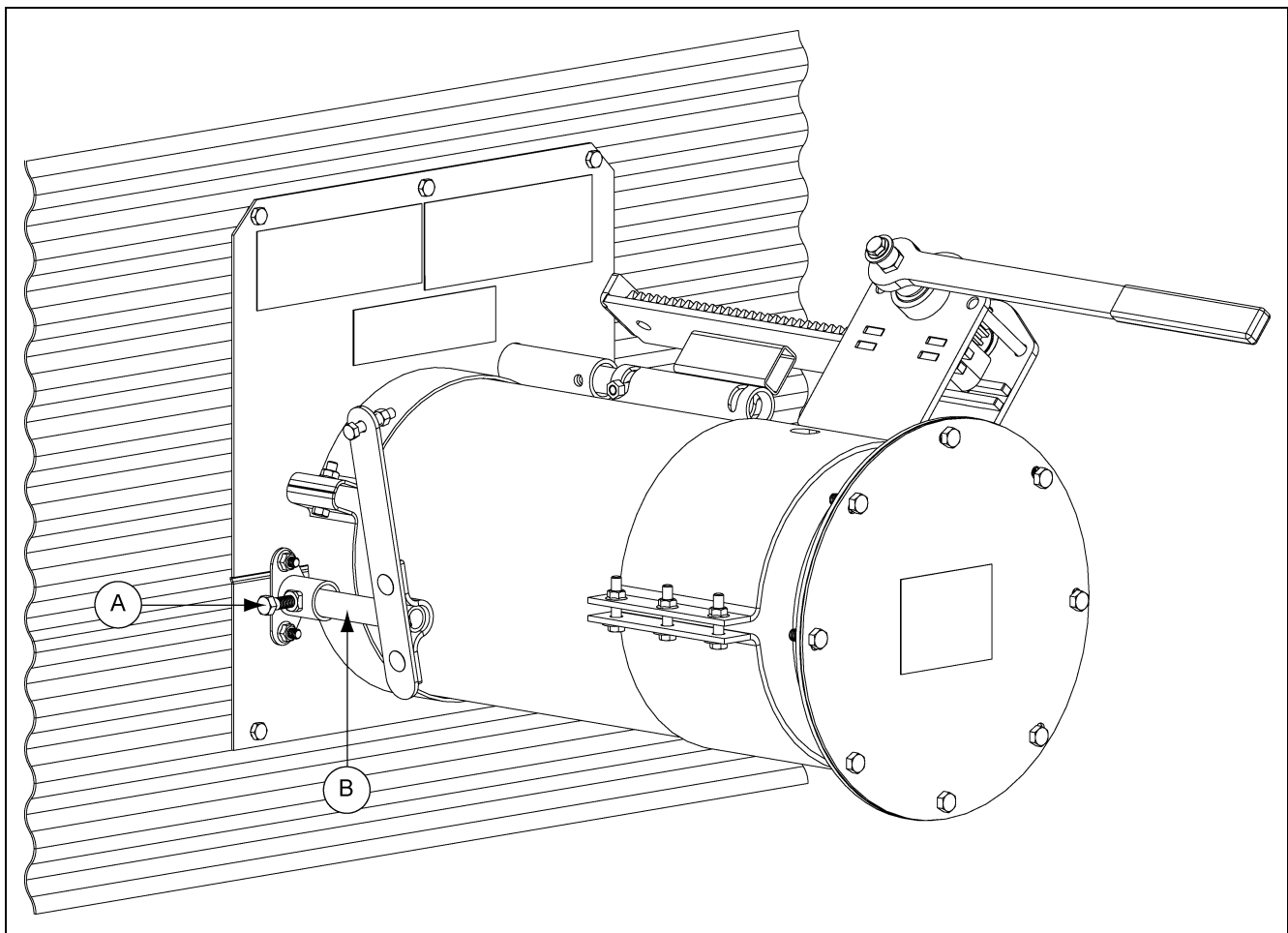


Figure 6F

| Ref # | Description                                       |
|-------|---|
| A     | Lock Collar Set Screw                             |
| B     | Slide clutch control handle out to engage clutch. |

## 6. Operation

### 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.



**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 Figure 6G.)
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.
6. Get out of the bin.
7. Repeat [Steps 3-6](#) until all grain has been removed from the bin.

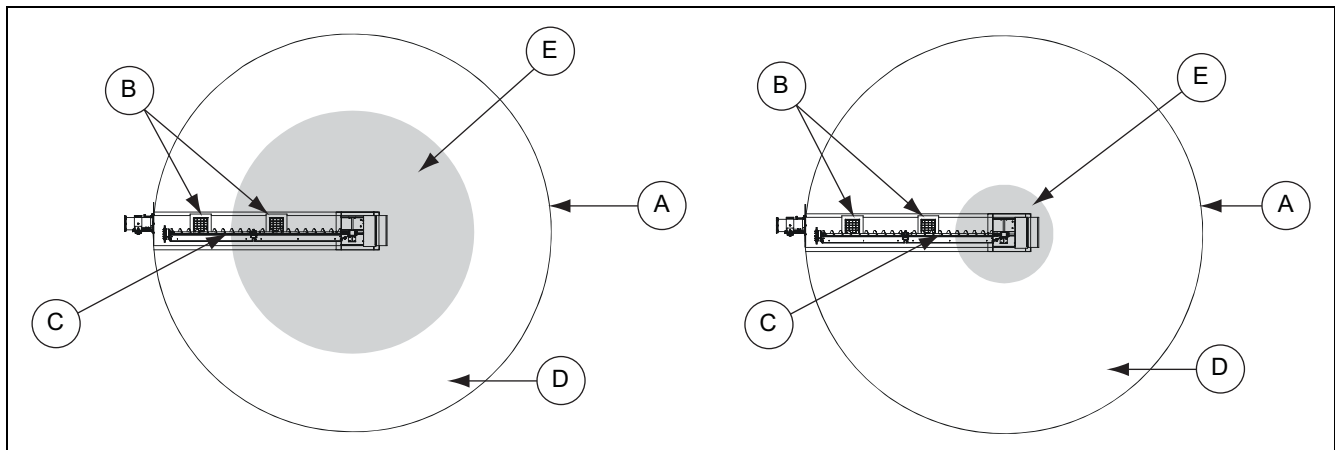


Figure 6G Top View of Bin

| Ref # | Description |
|-------|-------------|
| A     | Bin Wall    |
| B     | Bin Wells   |
| C     | Sweep Auger |

| Ref # | Description      |
|-------|------------------|
| D     | Cleaned Area     |
| E     | Remaining Grains |



**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.**



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

## 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 directly over the intermediate wells.

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

### Maintaining the Auger



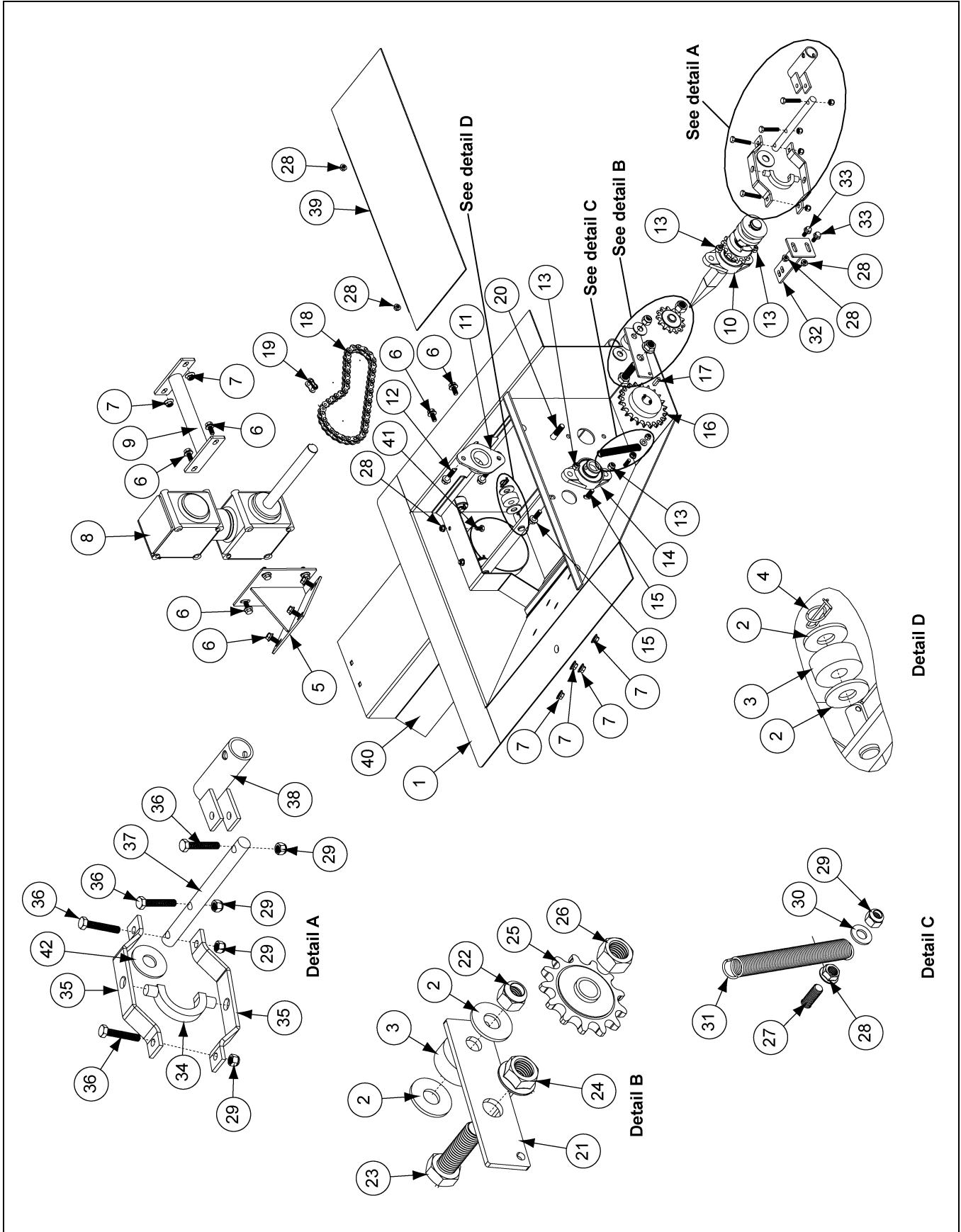
*Properly maintaining this equipment will help to ensure it continues to work properly. Failure to properly maintain this equipment may result in damage to the equipment or may cause **SERIOUS INJURY** or **DEATH** to the operator.*

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

1. The U-joint must be lubricated with SAE multipurpose grease every 10 operational hours or after each use.
2. The upper and lower gearboxes in the center well should be half-full with oil. They must be checked and possibly filled with SAE 80W90 gear oil every 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 auger. If necessary, replace them **FREE OF CHARGE** by contacting the dealer, warehouse or the 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.

1. **Center Well Parts List** - *(See Pages 54 and 55.)*
2. **Shaft Assembly** - *(See Page 56.)*
3. **Center Connection Parts** - *(See Page 57.)*
4. **6" Intermediate Well Parts** - *(See Pages 58 and 59.)*
5. **8" Intermediate Well Parts** - *(See Pages 60 and 61.)*
6. **10" Intermediate Well Parts** - *(See Pages 62 and 63.)*
7. **6" Bin Flange Parts** - *(See Page 64.)*
8. **8" Bin Flange Parts** - *(See Page 65.)*
9. **10" Bin Flange Parts** - *(See Page 66.)*
10. **6" Well Gate Control Parts** - *(See Page 68.)*
11. **8" and 10" Rack and Pinion** - *(See Pages 70 and 71.)*
12. **Assembled Sweep Arm Components** - *(See Pages 72 and 73.)*
13. **6", 8" and 10" Flight and Shield Bundle** - *(See Page 74.)*
14. **Spacer Plates for Reduction Drive Wheel** - *(See Page 75.)*
15. **Reduction Wheel Drive Components** - *(See Pages 76 and 77.)*

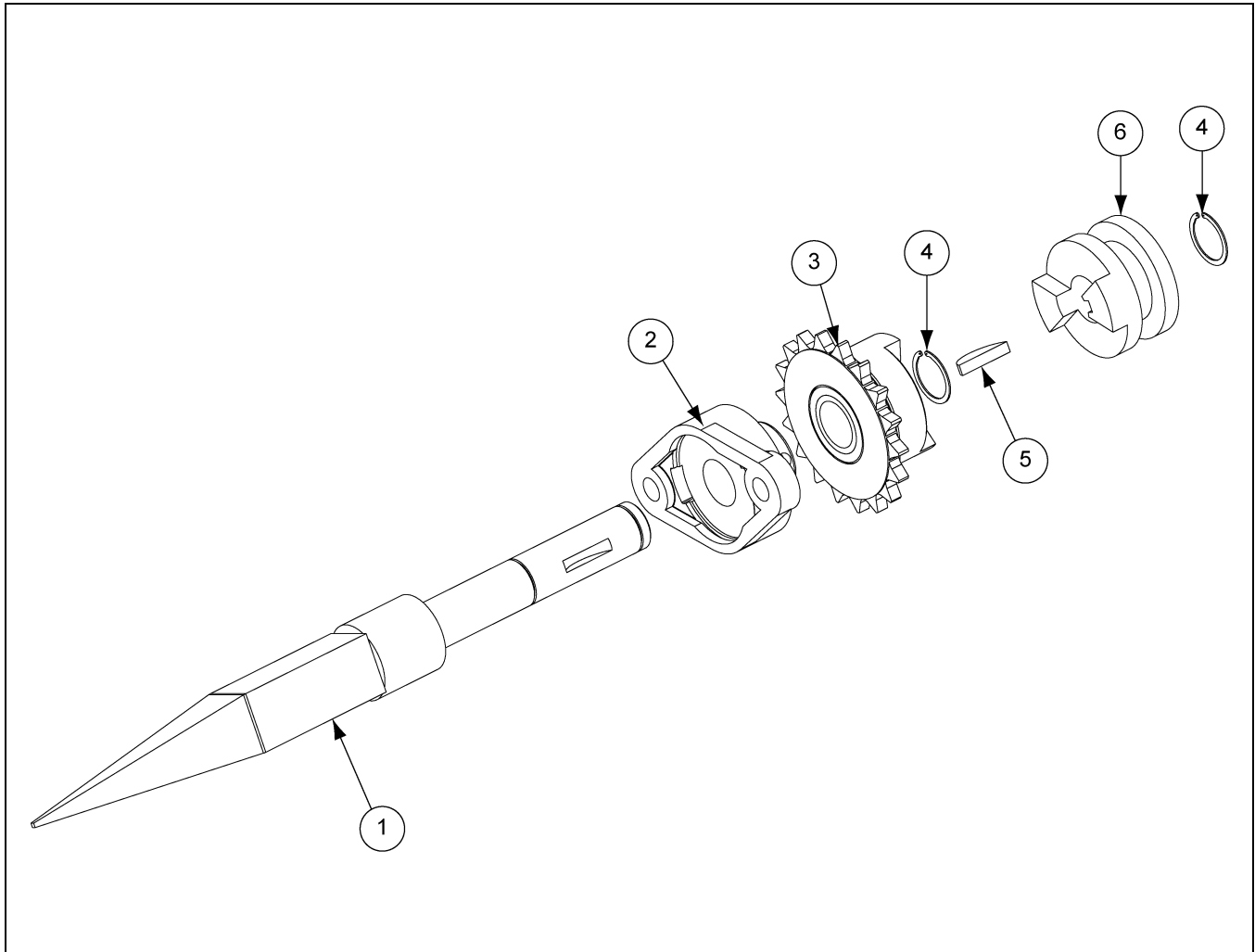
# Center Well Parts



## Center Well Parts List

| Ref # | Part #    | Description   |
|-------|-----------|---|
| 1     | GK7231    | Center Well - 6"  |
|       | GK7230    | Center Well - 8"  |
|       | GK7227    | Center Well - 10"   |
| 2     | S-2121    | 1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D.   |
| 3     | GC03064   | 1-1/2" O.D. x 5/8" Polyurethane Roller                      |
| 4     | S-9422    | 1/2" Cotter Pin   |
| 5     | GK1689-RD | Offset Mounting Bracket - 6" and 8" (Red Powercoat)         |
|       | GK4429-RD | Offset Mounting Bracket - 10" (Red Powercoat)               |
| 6     | S-9067    | 3/8"-16 x 3/4" Serrated Flange Bolt Zinc Grade 5            |
| 7     | S-968     | 3/8"-16 Serrated Flange Nut Zinc Grade 5                    |
| 8     | GK80187   | Gearbox, 6"-10" DS Standard, CW Rotation                    |
| 9     | GK1688-RD | Gearbox Mounting Bracket - 6" and 8" (Red Powercoat)        |
|       | GK4430-RD | Gearbox Mounting Bracket - 10" (Red Powercoat)              |
| 10    | GK7089    | 6"-8" Clutch Stub Assembly SQR                              |
|       | GK7090    | 10" Clutch Stub Assembly SQR                                |
| 11    | GK7886    | 6"-8" Clutch Stub Support                                   |
|       | GK7885    | 10" Clutch Stub Support                                     |
| 12    | S-9064    | Flange Bolt 3/8"-16 x 1-1/2" Zinc Grade 5                   |
| 13    | S-7383    | 3/8"-16 Nylock Nut Zinc Grade 5                             |
| 14    | GK4410    | 2H Flange Bearing 1" B LC 1.313" Peer Bearing #HCFTS205-16G |
| 15    | S-9066    | 3/8"-16 x 1-1/4" Serrated Flange Bolt Zinc Grade 5          |
| 16    | GK1110    | Sprocket, #50 22 Tooth 1" Bore w/ Keyway                    |
| 17    | S-9168    | Square Key 1/4" x 1"  |
| 18    | GK1705    | 43P #50 Roller Chain - 6" and 8"                            |
|       | GK6830    | 47P #50 Roller Chain - 10"                                  |
| 19    | D32-0015  | Connecting Link #50 Roller Chain                            |
| 20    | S-7811    | 1/2"-13 x 2" HHCS Bolt, Zinc                                |
| 21    | GK80156   | PS Center Well Pivot Bracket (Flat) - 2011 Present          |
| 22    | S-8260    | 1/2"-13 Nylock Nut Zinc Grade 5                             |
| 23    | S-8399    | Bolt, HHTB 5/8"-11 x 2" Zinc Grade 5                        |
| 24    | S-9259    | 5/8"-11 Flange Nut Zinc                                     |
| 25    | GK1701    | Sprocket, #50 13T w/ 5/8" Bore Bearing and HRD Teeth        |
| 26    | S-6494    | 5/8"-11 Deformed Lock Nut Zinc Grade 5                      |
| 27    | S-7470    | 5/16"-18 x 1" Flange Bolt Zinc Grade 5                      |
| 28    | S-3611    | 5/16"-18 Serrated Flange Nut YDP Grade 2                    |
| 29    | S-7382    | 5/16"-18 Nylock Nut Zinc/Clear Grade 5                      |
| 30    | S-1937    | 5/16" Flat Washer Zinc SAE Grade 2                          |
| 31    | GK1704    | Spring, Return x 5" x 0.063P Zinc                           |
| 32    | GK1693-RD | PS Clutch Pivot Bracket (Red Powercoat)                     |
| 33    | S-6606    | Flange Bolt 5/16"-18 x 3/4" Zinc Grade 5                    |
| 34    | GK1698    | Yoke, PS Clutch Replaces Hutch # 6828F                      |
| 35    | GK1697-RD | PS Clutch Yoke Bracket                                      |
| 36    | S-7149    | 5/16"-18 x 1-3/4" HHTB Bolt Zinc Grade 5                    |
| 37    | GK1695-RD | PS Clutch Control Rod                                       |
| 38    | GK1694-RD | PS Clutch Control Arm - 6" and 8" (Red Powercoat)           |
|       | GK1923-RD | PS Clutch Control Arm - 10" (Red Powercoat)                 |
| 39    | GK7229    | Drive Cover Plate - 6" and 8"                               |
|       | GK7228    | Drive Cover Plate - 10"                                     |
| 40    | GK7226    | DS 6"/8" Center Well Gate                                   |
|       | GK7224    | DS 10" Center Well Gate                                     |
| 41    | S-8999    | 5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5                      |
| 42    | S-858     | 5/8" Flat Washer USS Zinc Grade 2                           |

## Shaft Assembly

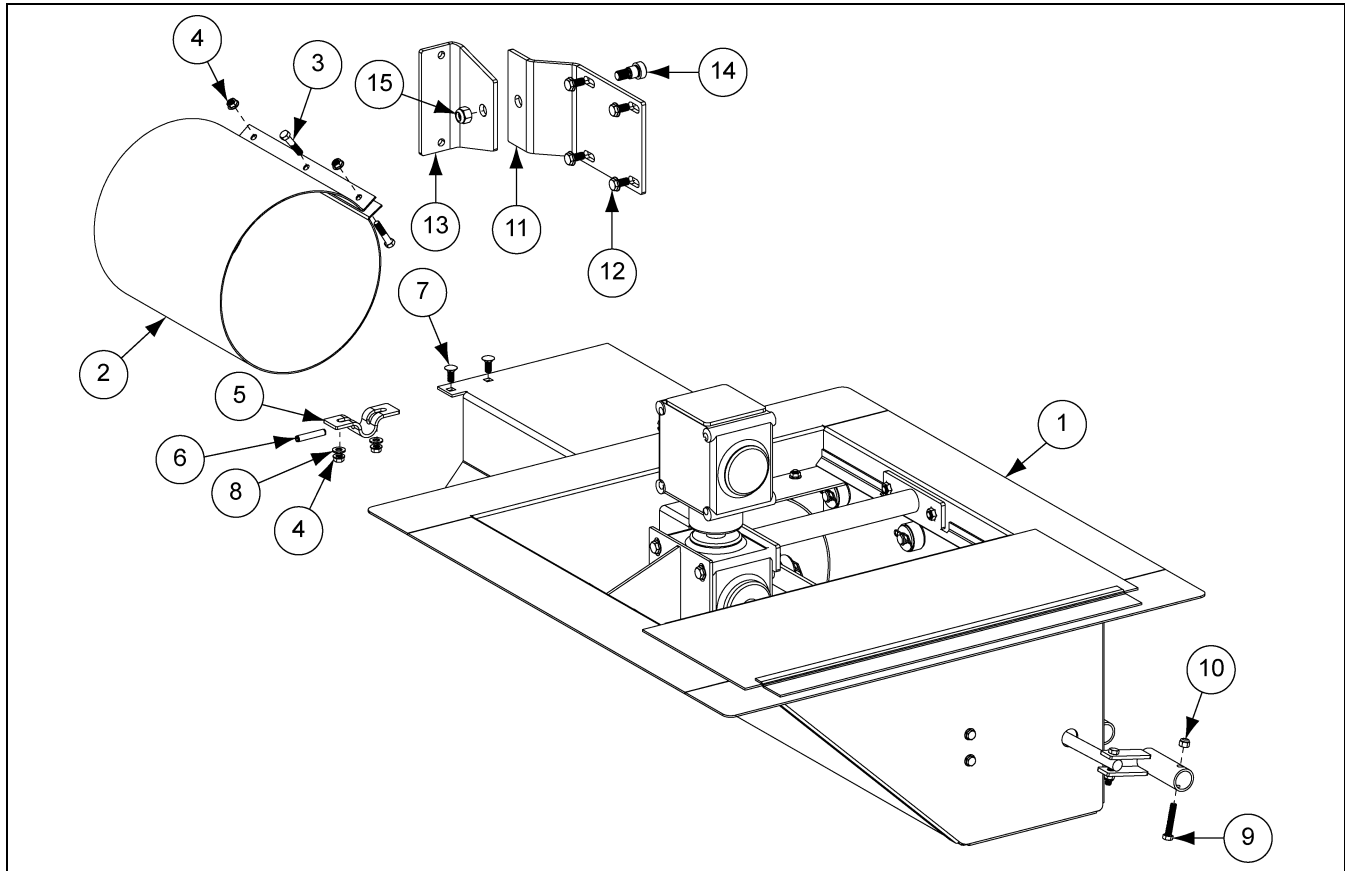


**Shaft Assembly Parts List**

| Ref # | Part # | Description                                      |
|-------|--------|--|
| 1     | GK6698 | Center Well Square Shaft - 6" and 8"             |
|       | GK6699 | Center Well Square Shaft - 10"                   |
| 2     | GK4410 | Flange Bearing, 1" Bore, 2 Hole with Lock Collar |
| 3     | GK1699 | 13 Tooth Clutch Yoke Driver Jaw - 6" and 8"      |
|       | GK6809 | 18 Tooth Clutch Yoke Driver Jaw - 10"            |
| 4     | S-8902 | 1" O.D. x 15/16" I.D. Groove Snap Ring           |
| 5     | S-8901 | 1/4" x 1/4" #21 Woodruff Key                     |
| 6     | GK1696 | Clutch Yoke Driven Sliding Jaw                   |



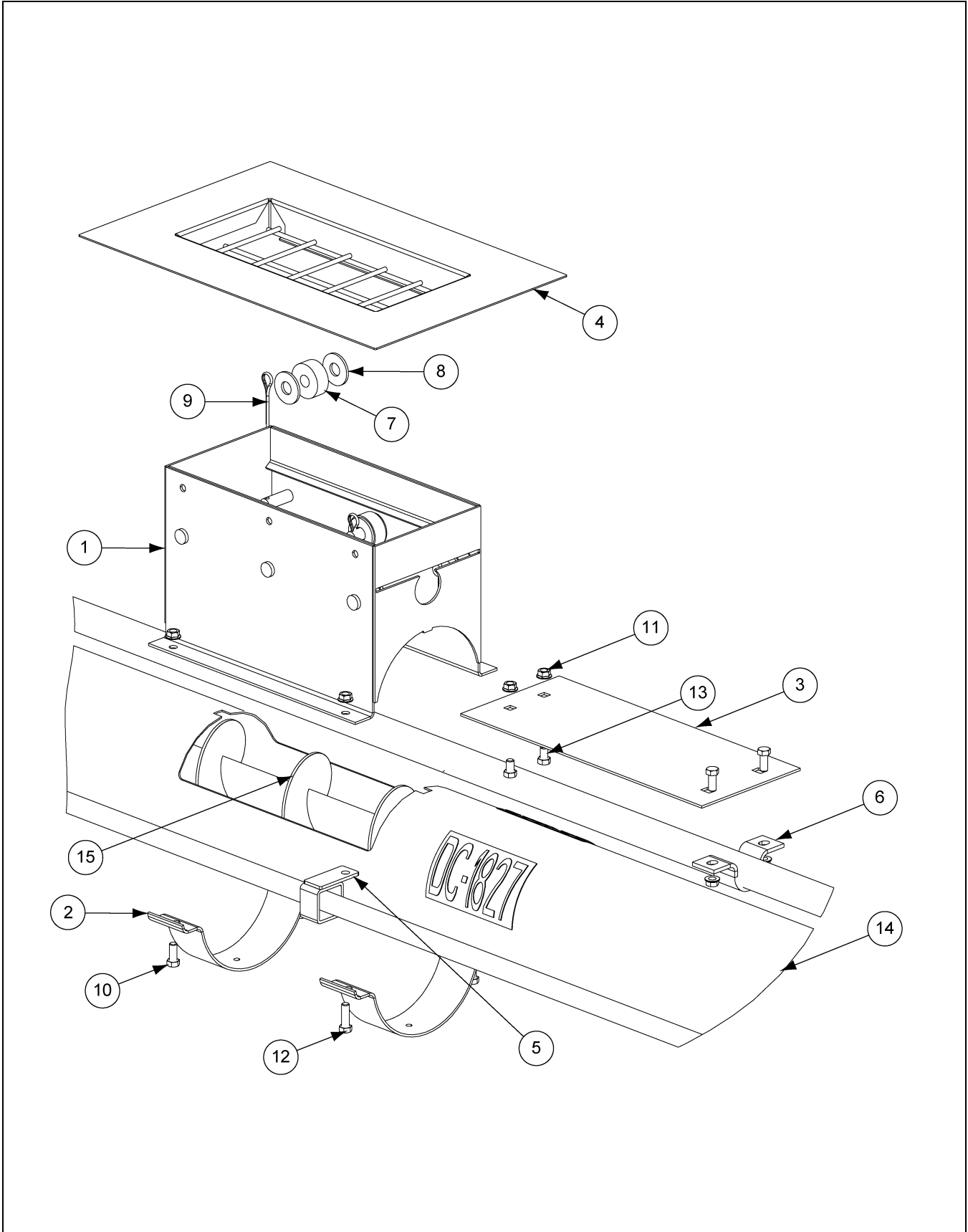
## Center Connection Parts



## Center Connection Parts List

| Ref # | Part #  | Description                                      |
|-------|---------|--|
| 1     | GK7129  | Center Well Assembly - 6"                        |
|       | GK7130  | Center Well Assembly - 8"                        |
|       | GK7131  | Center Well Assembly - 10"                       |
| 2     | GK1624  | Connecting Band - 6"                             |
|       | GK1677  | Connecting Band - 8"                             |
|       | GK1796  | Connecting Band - 10"                            |
| 3     | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5         |
| 4     | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2         |
| 5     | GK1726  | 1/2" Control Rod Clamp                           |
| 6     | S-8397  | 5/16" x 1-3/4" Spring Pin                        |
| 7     | S-6076  | 5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2       |
| 8     | S-1937  | 5/16" Flat Washer 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    | GK4460  | Gearbox Pivot Bracket                            |
| 12    | S-9067  | 3/8"-16 x 3/4" Serrated Flange Bolt Zinc Grade 5 |
| 13    | GK6175  | Shield Mounting Bracket - 6" and 8"              |
|       | GK4461  | Shield Mounting Bracket - 10"                    |
| 14    | S-10110 | 1/2"-13 x 1/2" Shoulder Bolt                     |
| 15    | S-8260  | 1/2"-13 Nylock Nut Zinc Grade 5                  |

### 6" Intermediate Well Parts



## 6" Intermediate Well Parts List

| Ref # | Part #  | Description   |
|-------|---------|---|
| 1     | GC10126 | 6" Intermediate Well Weldment                             |
| 2     | GK1053  | 6" Half Band  |
| 3     | GK6756  | 6" Intermediate Well Gate                                 |
| 4     | GK6757  | 6" Intermediate Well Top Flange                           |
| 5     | GK6713  | 6" Control Rod Guide                                      |
| 6     | GC00174 | Control Gate Clamp with Dimple for 6" and 8"              |
| 7     | GC03064 | 1-1/2" O.D. x 5/8" Polyurethane Roller                    |
| 8     | S-2121  | 1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D. |
| 9     | S-7241  | 1/8" x 1-1/4" Cotter Pin Zinc Grade 2                     |
| 10    | S-4275  | 5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5                    |
| 11    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2                  |
| 12    | S-1196  | 5/16"-18 x 1" HHCS Bolt Grade 5                           |
| 13    | S-8999  | 5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5                    |

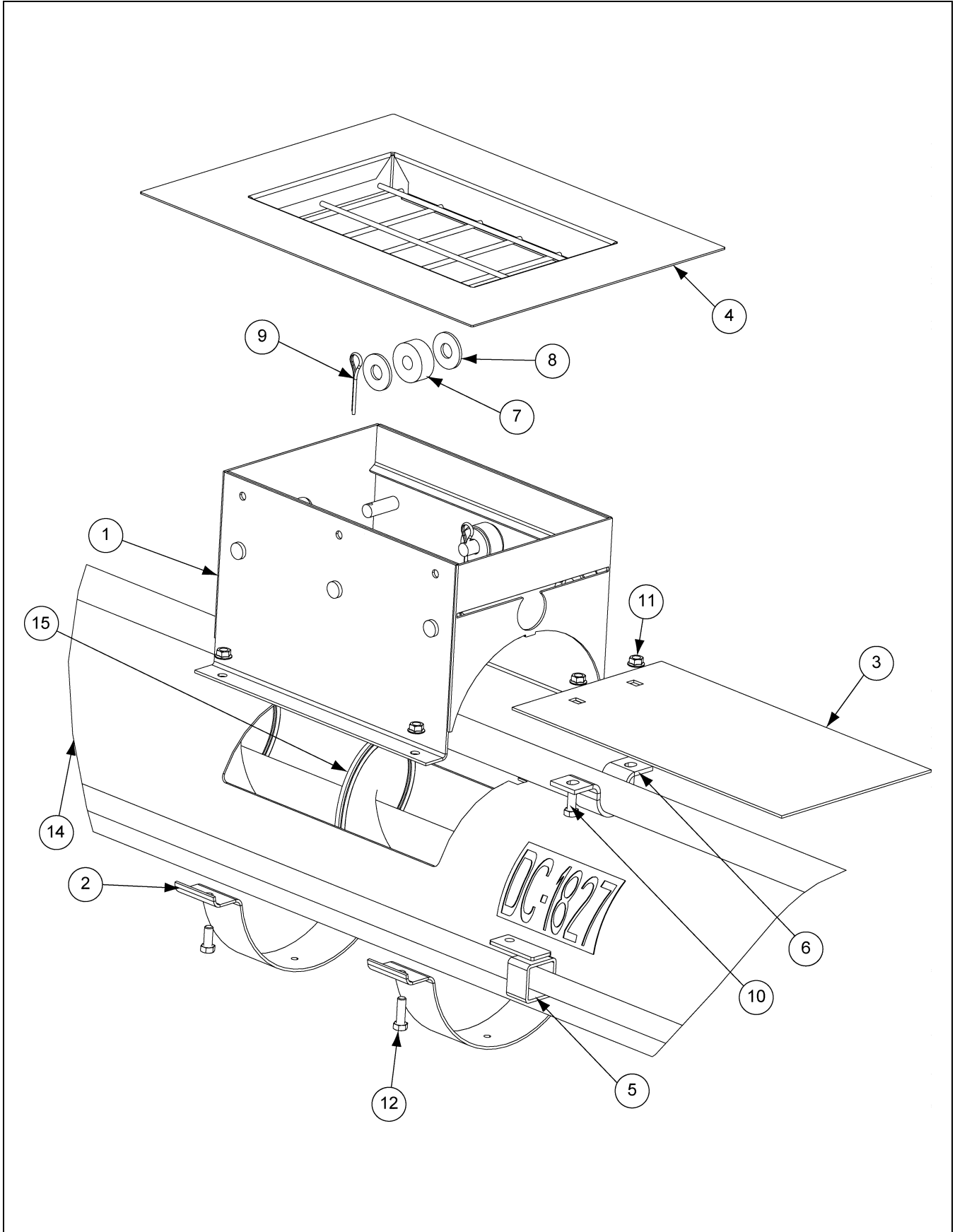
## Tube (14)

| Part # | Description           |
|--------|-----------------------|
| GK6890 | 6" x 15' Bin 12" Well |
| GK6891 | 6" x 18' Bin 12" Well |
| GK6892 | 6" x 21' Bin 12" Well |
| GK6893 | 6" x 24' Bin 12" Well |
| GK6894 | 6" x 27' Bin 12" Well |
| GK6895 | 6" x 30' Bin 12" Well |
| GK6896 | 6" x 33' Bin 12" Well |
| GK6897 | 6" x 36' Bin 12" Well |

## Flight (15)

| Part # | Description           |
|--------|-----------------------|
| GK7020 | 6" x 121-1/4" 15' Bin |
| GK7021 | 6" x 145-1/4" 18' Bin |
| GK7022 | 6" x 157-1/4" 21' Bin |
| GK7023 | 6" x 175-1/4" 24' Bin |
| GK7024 | 6" x 193-1/4" 27' Bin |
| GK7025 | 6" x 211-1/4" 30' Bin |
| GK7026 | 6" x 235-1/4" 33' Bin |
| GK7027 | 6" x 247-1/4" 36' Bin |

### 8" Intermediate Well Parts



## 8" Intermediate Well Parts List

| Ref # | Part #  | Description   |
|-------|---------|---|
| 1     | GC10129 | 8" Intermediate Well Weldment                             |
| 2     | GK1055  | 8" Half Band  |
| 3     | GK6759  | 8" Intermediate Well Gate                                 |
| 4     | GK6760  | 8" Intermediate Well Top Flange                           |
| 5     | GK6711  | 8" Control Rod Guide                                      |
| 6     | GC00174 | Control Gate Clamp with Dimple for 6" and 8"              |
| 7     | GC03064 | 1-1/2" O.D. x 5/8" Polyurethane Roller                    |
| 8     | S-2121  | 1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D. |
| 9     | S-7241  | 1/8" x 1-1/4" Cotter Pin Zinc Grade 2                     |
| 10    | S-4275  | 5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5                    |
| 11    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2                  |
| 12    | S-1196  | 5/16"-18 x 1" HHCS Bolt Grade 5                           |

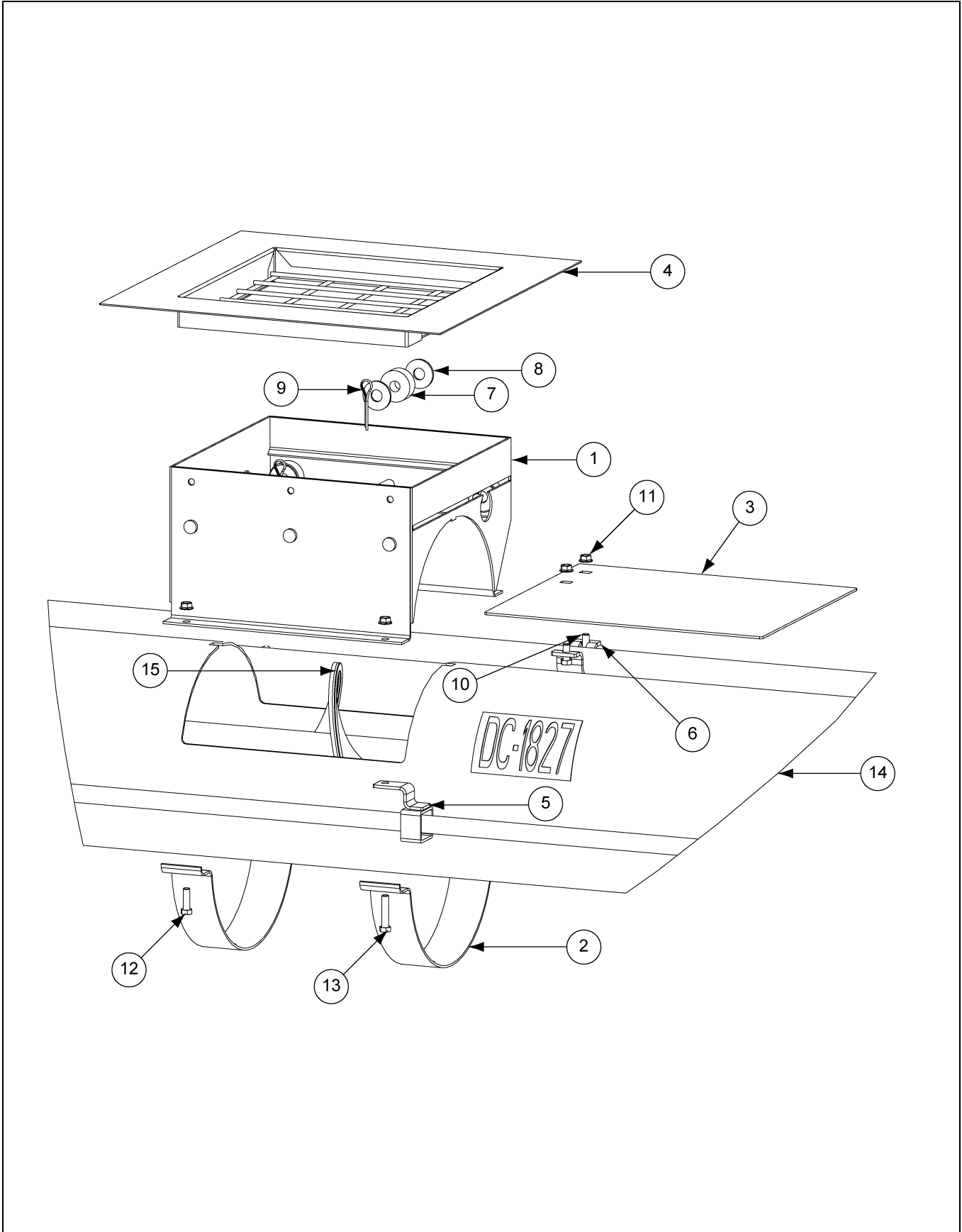
## Tube (14)

| Part # | Description           |
|--------|-----------------------|
| GK6899 | 8" x 15' Bin 12" Well |
| GK6900 | 8" x 18' Bin 12" Well |
| GK6901 | 8" x 21' Bin 12" Well |
| GK6902 | 8" x 24' Bin 12" Well |
| GK6903 | 8" x 27' Bin 12" Well |
| GK6904 | 8" x 30' Bin 12" Well |
| GK6905 | 8" x 33' Bin 12" Well |
| GK6906 | 8" x 36' Bin 12" Well |
| GK6907 | 8" x 39' Bin 12" Well |
| GK6908 | 8" x 42' Bin 12" Well |
| GK6909 | 8" x 48' Bin 12" Well |

## Flight (15)

| Part # | Description           |
|--------|-----------------------|
| GK7028 | 8" x 121-1/4" 15' Bin |
| GK7029 | 8" x 145-1/4" 18' Bin |
| GK7030 | 8" x 157-1/4" 21' Bin |
| GK7031 | 8" x 175-1/4" 24' Bin |
| GK7032 | 8" x 193-1/4" 27' Bin |
| GK7033 | 8" x 211-1/4" 30' Bin |
| GK7034 | 8" x 235-1/4" 33' Bin |
| GK7035 | 8" x 247-1/4" 36' Bin |
| GK7036 | 8" x 265-1/4" 39' Bin |
| GK7037 | 8" x 289-1/4" 42' Bin |
| GK7038 | 8" x 325-1/2" 48' Bin |

# 10" Intermediate Well Parts



## 10" Intermediate Well Parts List

| Ref # | Part #  | Description   |
|-------|---------|---|
| 1     | GC10131 | Intermediate Well Weldment                                |
| 2     | GK1057  | 10" Half Band   |
| 3     | GK6762  | 10" Intermediate Well Gate                                |
| 4     | GK6763  | 10" Intermediate Well Top Flange                          |
| 5     | GK6714  | 10" Control Rod Guide                                     |
| 6     | GC09006 | Control Pipe Clamp with Dimple                            |
| 7     | GC03064 | 1-1/2" O.D. x 5/8" Polyurethane Roller                    |
| 8     | S-2121  | 1/2" Flat Washer Plated, 9/16" I.D. x 1/10" x 1-3/8" O.D. |
| 9     | S-7241  | 1/8" x 1-1/4" Cotter Pin Zinc Grade 2                     |
| 10    | S-4275  | 5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5                    |
| 11    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2                  |
| 12    | S-1196  | 5/16"-18 x 1" HHCS Bolt Grade 5                           |
| 13    | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5                  |

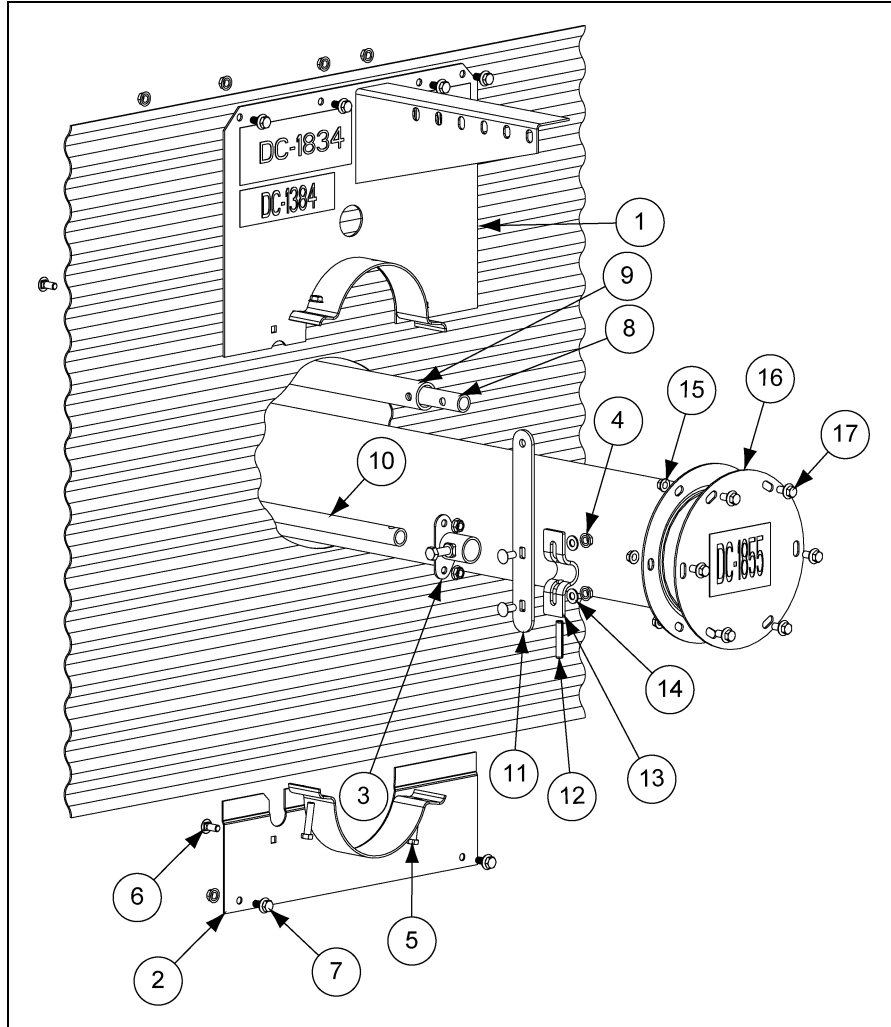
## Tube (14)

| Part # | Description            |
|--------|------------------------|
| GK6921 | 10" x 24' Bin 12" Well |
| GK6922 | 10" x 27' Bin 12" Well |
| GK6923 | 10" x 30' Bin 12" Well |
| GK6924 | 10" x 33' Bin 12" Well |
| GK6925 | 10" x 36' Bin 12" Well |
| GK6926 | 10" x 39' Bin 12" Well |
| GK6927 | 10" x 42' Bin 12" Well |
| GK6928 | 10" x 48' Bin 12" Well |

## Flight (15)

| Part # | Description            |
|--------|------------------------|
| GK7039 | 10" x 175-1/4" 24' Bin |
| GK7040 | 10" x 193-1/4" 27' Bin |
| GK7041 | 10" x 211-1/4" 30' Bin |
| GK7042 | 10" x 235-1/4" 33' Bin |
| GK7043 | 10" x 247-1/4" 36' Bin |
| GK7044 | 10" x 265-1/4" 39' Bin |
| GK7045 | 10" x 289-1/4" 42' Bin |
| GK7046 | 10" x 325-1/4" 48' Bin |

## 6" Bin Flange Parts

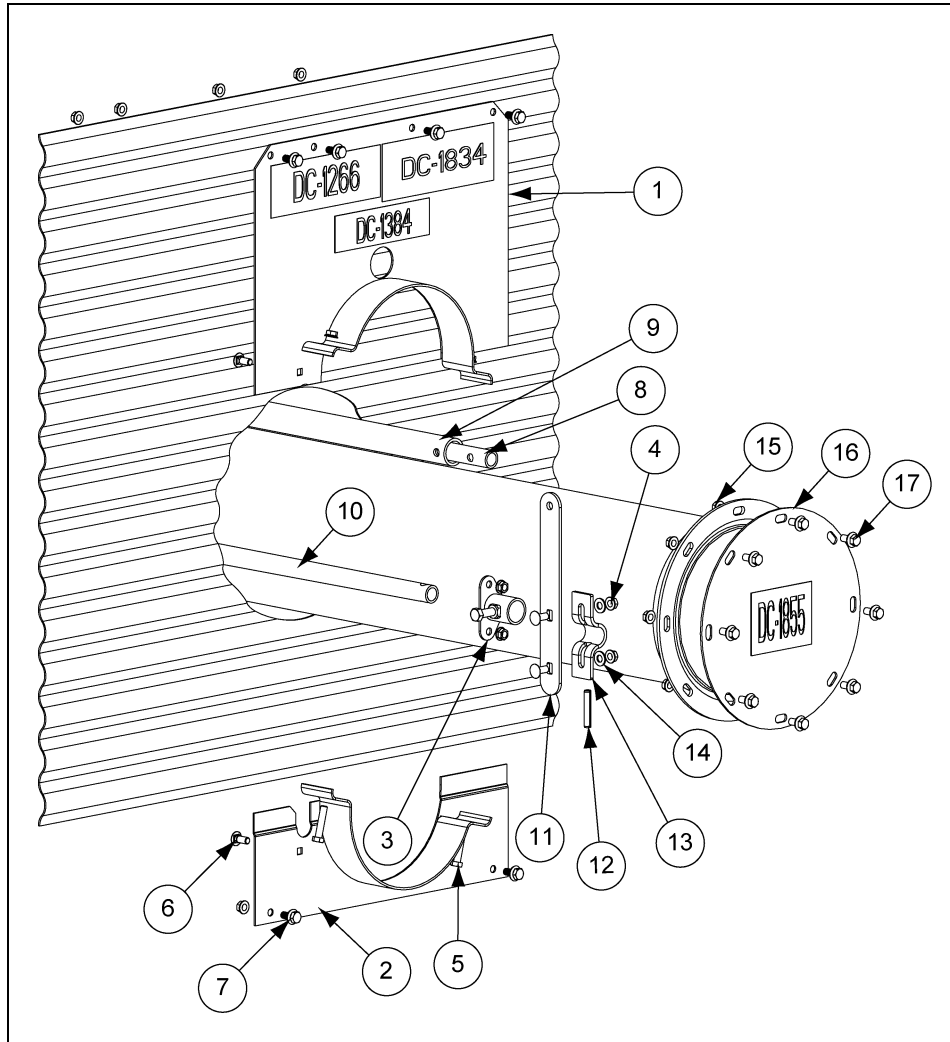


**6" Bin Flange Parts List**

| Ref # | Part #  | Description                                |
|-------|---------|--|
| 1     | GC10546 | 6" Top Bin Flange                          |
| 2     | GC10547 | 6" Bottom Bin Flange                       |
| 3     | GK1619  | Clutch Control Rod Position Lock Flange    |
| 4     | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2   |
| 5     | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5   |
| 6     | S-6076  | 5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2 |
| 7     | S-275   | 5/16"-18 x 3/4" HH Bin Bolt YDP Grade 5    |
| 8     |         | <a href="#">See Page 67</a>                |
| 9     |         | <a href="#">See Page 67</a>                |
| 10    |         | <a href="#">See Page 67</a>                |
| 11    | GC12074 | Clutch Control Rod Handle                  |
| 12    | S-8397  | 5/16" x 1-3/4" Spring Pin                  |
| 13    | GK1726  | 1/2" Control Rod Clamp                     |
| 14    | S-1937  | 5/16" Flat Washer Zinc Grade 2             |
| 15    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2   |
| 16    | GK1206  | 6" End Cap                                 |
| 17    | S-275   | 5/16"-18 x 3/4" HH Bin Bolt YDP Grade 5    |



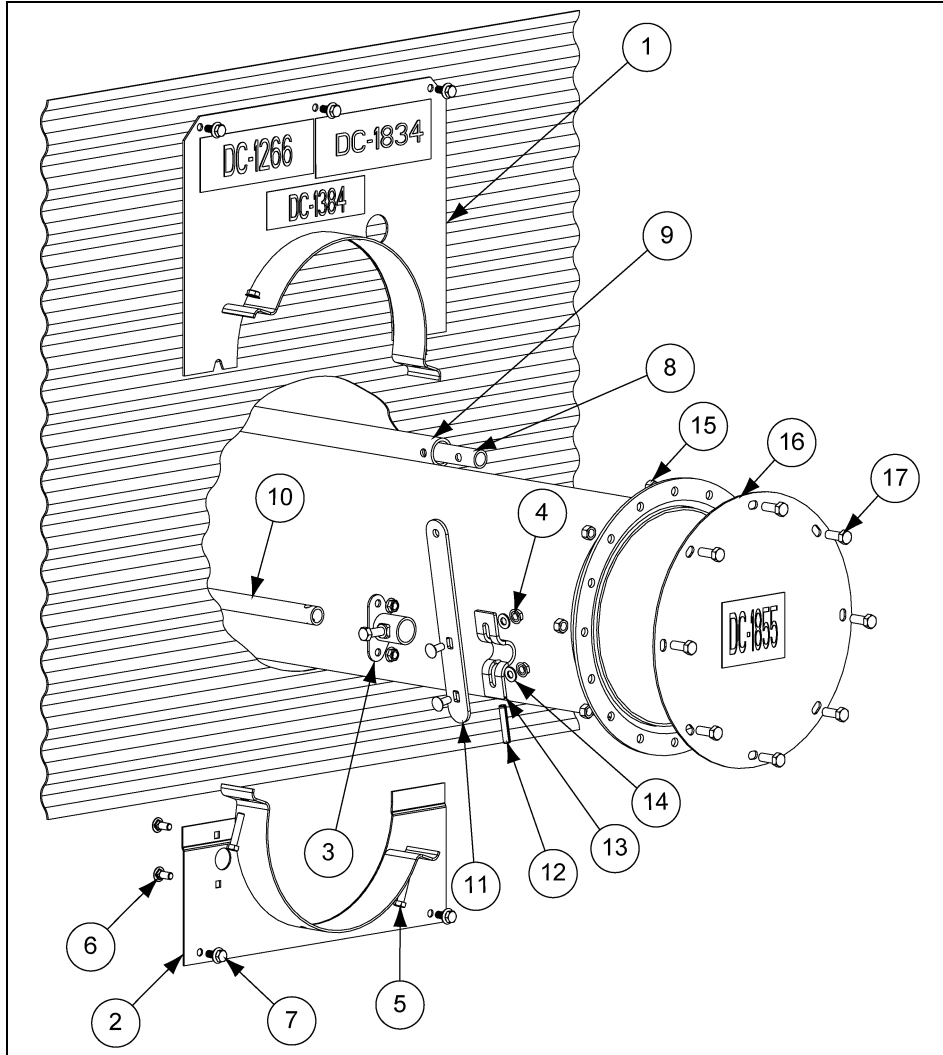
## 8" Bin Flange Parts



## 8" Bin Flange Parts List

| Ref # | Part #  | Description                                |
|-------|---------|--|
| 1     | GC10534 | 8" Top Bin Flange                          |
| 2     | GC10536 | 8" Bottom Bin Flange                       |
| 3     | GK1619  | Clutch Control Rod Position Lock Flange    |
| 4     | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2   |
| 5     | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5   |
| 6     | S-6076  | 5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2 |
| 7     | S-275   | 5/16"-18 x 3/4" HH Bin Bolt YDP Grade 5    |
| 8     |         | <a href="#">See Page 67</a>                |
| 9     |         | <a href="#">See Page 67</a>                |
| 10    |         | <a href="#">See Page 67</a>                |
| 11    | GC12074 | Clutch Control Rod Handle                  |
| 12    | S-8397  | 5/16" x 1-3/4" Spring Pin                  |
| 13    | GK1726  | 1/2" Control Rod Clamp                     |
| 14    | S-1937  | 5/16" Flat Washer Zinc Grade 2             |
| 15    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2   |
| 16    | GK1216  | 8" End Cap                                 |
| 17    | S-275   | 5/16"-18 x 3/4" HH Bin Bolt YDP Grade 5    |

## 10" Bin Flange Parts



**10" Bin Flange Parts List**

| Ref # | Part #  | Description                                |
|-------|---------|--|
| 1     | GC10560 | 10" Top Bin Flange                         |
| 2     | GC10588 | 10" Bottom Bin Flange                      |
| 3     | GK1619  | Clutch Control Rod Position Lock Flange    |
| 4     | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2   |
| 5     | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5   |
| 6     | S-6076  | 5/16"-18 x 3/4" Carriage Bolt Zinc Grade 2 |
| 7     | S-275   | 5/16"-18 x 3/4" HH Bin Bolt YDP Grade 5    |
| 8     |         | <a href="#">See Page 67</a>                |
| 9     |         | <a href="#">See Page 67</a>                |
| 10    |         | <a href="#">See Page 67</a>                |
| 11    | GC12074 | Clutch Control Rod Handle                  |
| 12    | S-8397  | 5/16" x 1-3/4" Spring Pin                  |
| 13    | GK1726  | 1/2" Control Rod Clamp                     |
| 14    | S-1937  | 5/16" Flat Washer Zinc Grade 2             |
| 15    | S-456   | 3/8"-16 Hex Nut YDP Grade 5                |
| 16    | GK2184  | 10" End Cap                                |
| 17    | S-7469  | 3/8"-16 x 1" HHCS Bolt Zinc Grade 5        |

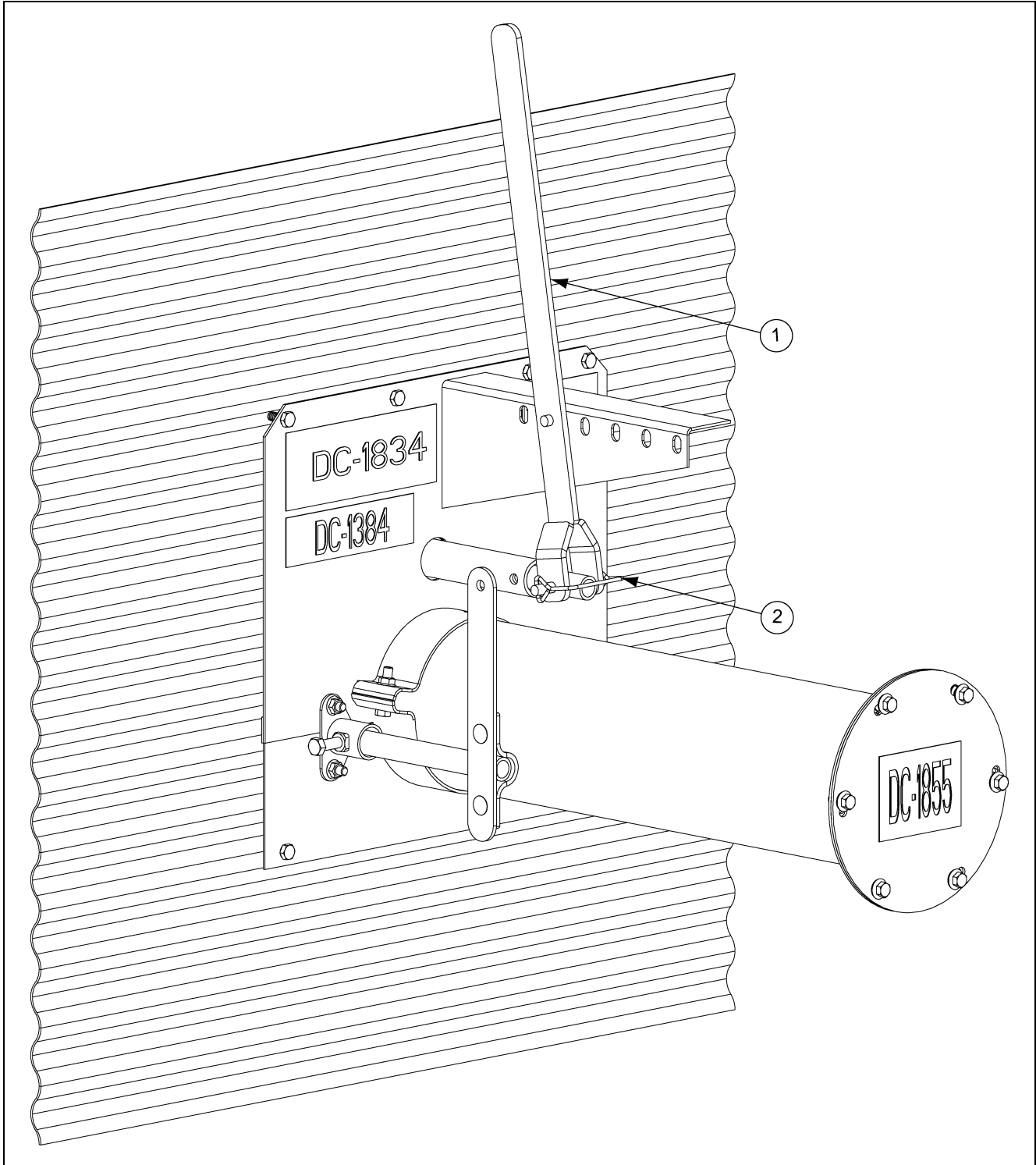
## 6", 8" and 10" Bin Flange Parts

### Control Pipe

**NOTE:** All two (2) 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) |                      |
|----------|------------------------------|----------------------|------------------------------------|------------------|-----------------------|--------------------------|----------------------|
|          | Part #                       | Description          | 6" Part #                          | 8" or 10" Part # | Description           | Part #                   | Description          |
| 15'      | GC09110                      | 0.840" O.D. x 7'     | GC10360                            | GC11114          | 1" O.D. x 5' 1.851"   | GK1709                   | 0.840" O.D. x 10'    |
| 18'      | GC09111                      | 0.840" O.D. x 8' 6"  | GC10359                            | GC11115          | 1" O.D. x 6' 10.475"  | GK1720                   | 0.840" O.D. x 11' 6" |
| 21'      | GC09112                      | 0.840" O.D. x 10'    | GC10358                            | GC11117          | 1" O.D. x 8' 6.824"   | GK1730                   | 0.840" O.D. x 13'    |
| 24'      | GC09113                      | 0.840" O.D. x 11' 6" | GC10357                            | GC11118          | 1" O.D. x 9' 8.726"   | GK1744                   | 0.840" O.D. x 14' 6" |
| 27'      | GC09114                      | 0.840" O.D. x 13'    | GC10356                            | GC11119          | 1" O.D. x 10' 8.726"  | GK1749                   | 0.840" O.D. x 16'    |
| 30'      | GC09115                      | 0.840" O.D. x 14' 6" | GC10355                            | GC11120          | 1" O.D. x 11' 8.726"  | GK1754                   | 0.840" O.D. x 17' 6" |
| 33'      | GC09116                      | 0.840" O.D. x 16'    | GC10354                            | GC11121          | 1" O.D. x 14' 1.664"  | GK1761                   | 0.840" O.D. x 19' 6" |
| 36'      | GC09117                      | 0.840" O.D. x 17' 6" | GC10353                            | GC11122          | 1" O.D. x 515' 4.664" | GK1769                   | 0.840" O.D. x 20' 6" |
| 39'      | GC09118                      | 0.840" O.D. x 19'    | -                                  | GC11123          | 1" O.D. x 16' 6.164"  | GK1766                   | 0.840" O.D. x 1'     |
|          |                              |                      |                                    |                  |                       | GK1776                   | 0.840" O.D. x 21'    |
| 42'      | GC09119                      | 0.840" O.D. x 20' 6" | -                                  | GC11124          | 1" O.D. x 18' 8.226"  | GK1784                   | 0.840" O.D. x 2' 6"  |
|          |                              |                      |                                    |                  |                       | GK1776                   | 0.840" O.D. x 21'    |
| 48'      | GK1776                       | 0.840" O.D. x 21'    | -                                  | GC11125          | 1" O.D. x 21'         | GK1718                   | 0.840" O.D. x 5' 6"  |
|          | GC09075                      | 0.840" O.D. x 2' 6"  |                                    |                  |                       | GK1776                   | 0.840" O.D. x 21'    |

6" Well Gate Control Parts



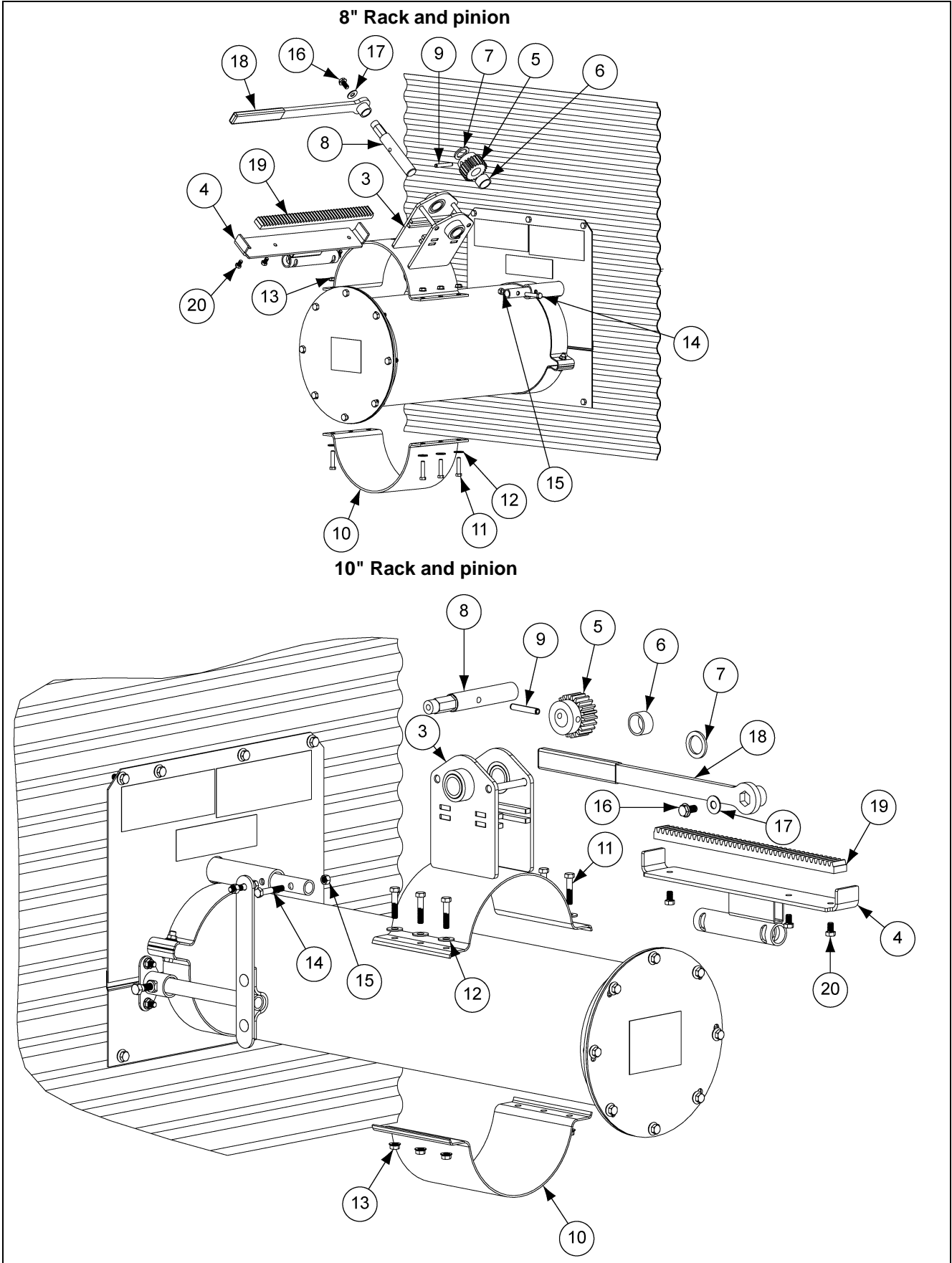
6" Well Gate Control Parts List

| Ref # | Part # | Description                      |
|-------|--------|----------------------------------|
| 1     | GK5063 | 6" Control Lever Handle Weldment |
| 2     | S-8480 | 3/8" x 2-3/4" Safety Snap Pin    |

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# NOTES

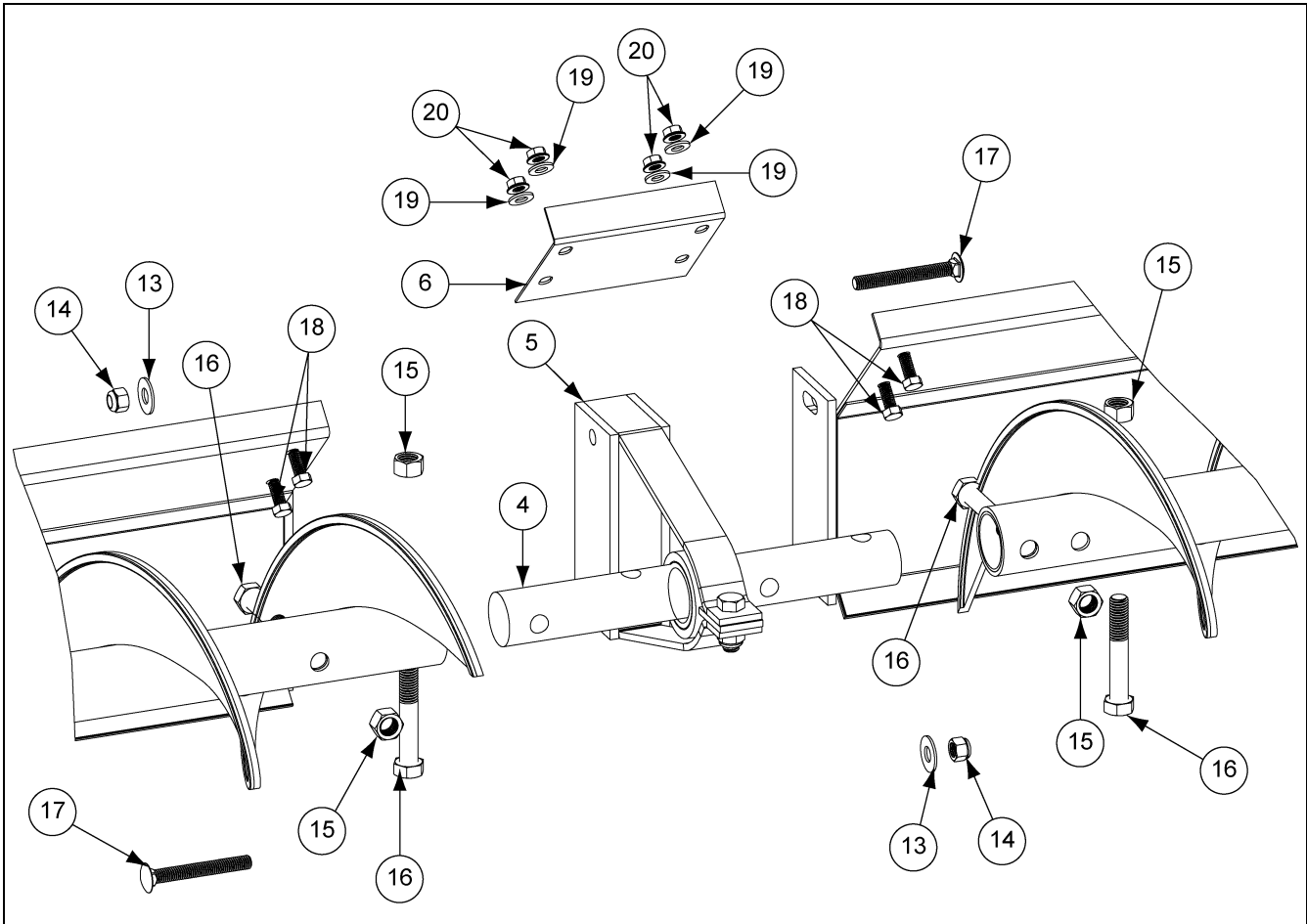
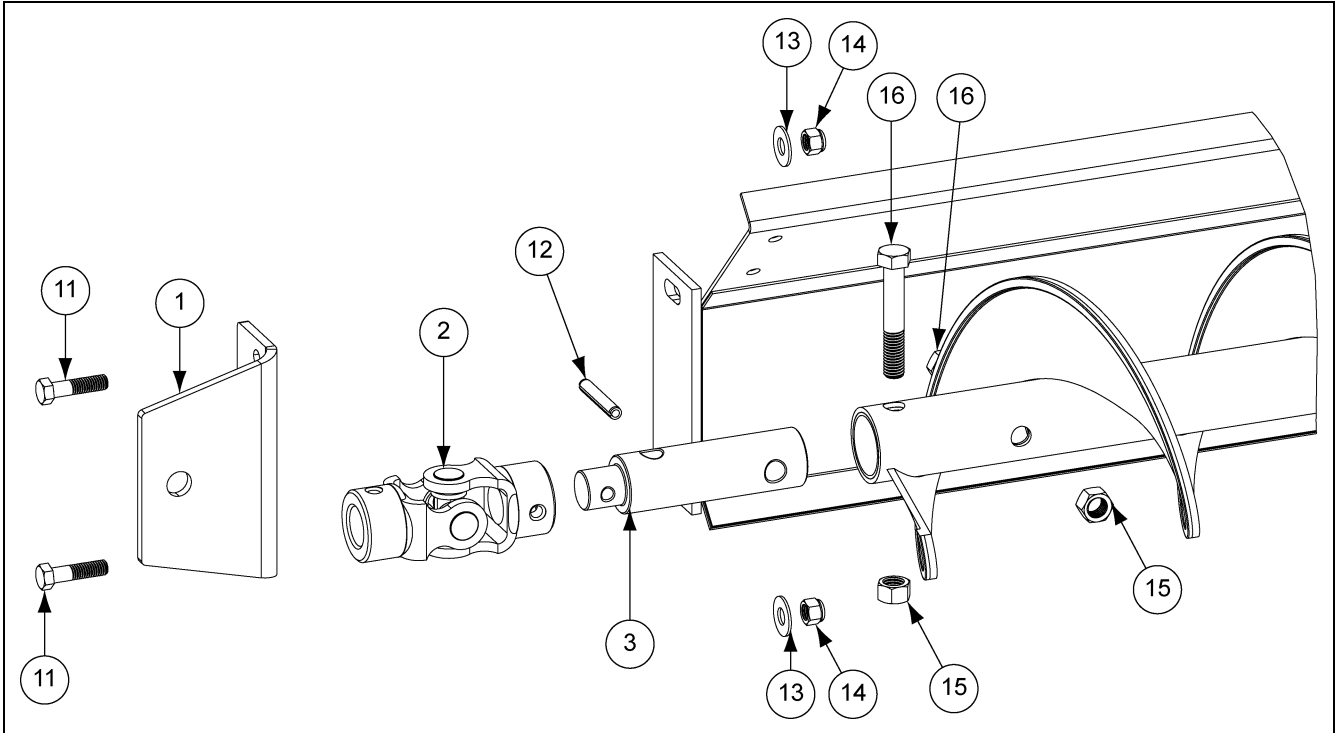
# 8" and 10" Rack and Pinion



## 8" and 10" Rack and Pinion Parts List

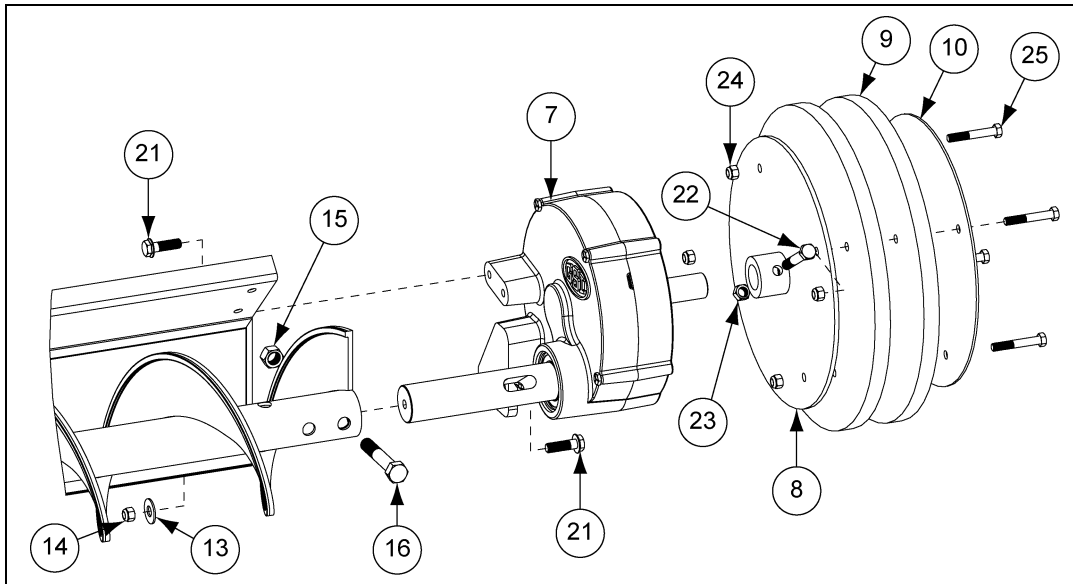
| Ref # | Part #  | Description                                      |
|-------|---------|--|
| 3     | GK6838  | 8" Rack and Pinion Housing Assembly              |
| 3     | GK6966  | 10" Rack and Pinion Housing Assembly             |
| 4     | GK80079 | 8" Rack and Pinion Body Assembly                 |
| 4     | GK80080 | 10" Rack and Pinion Body Assembly                |
| 5     | GC09859 | Spur Gear 10DP 1" Face 22T                       |
| 6     | GK6841  | Rack and Pinion Spacer Tube                      |
| 7     | GK4211  | 1" I.D. x 1-1/2" O.D. Flat Washer 10 Gauge Zinc  |
| 8     | GK6845  | Rack and Pinion Crank Shaft                      |
| 9     | S-4377  | 5/16" x 2" Grooved Roll Pin                      |
| 10    | GK1603  | 8" Half Band                                     |
| 10    | GK5116  | 10" Half Band                                    |
| 11    | S-2741  | 5/16"-18 x 1-1/2" HHCS Bolt Zinc Grade 5         |
| 12    | S-845   | 5/16" Flat Washer Zinc Grade 2                   |
| 13    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2         |
| 14    | S-7149  | 5/16"-18 x 1-3/4" HHTB Bolt Zinc Grade 5         |
| 15    | S-396   | 5/16" Hex Nut Zinc Grade 2                       |
| 16    | S-9067  | 3/8"-16 x 3/4" Serrated Flange Bolt Zinc Grade 5 |
| 17    | S-248   | 3/8" Flat Washer Zinc Grade 2                    |
| 18    | GK7260  | 3/4" Wrench Assembly                             |
| 19    | GC10316 | Rack Bar 10P x 1" x 14"                          |
| 20    | S-8999  | 5/16"-18 x 1/2" HHCS Bolt Zinc Grade 5           |

# Assembled Sweep Arm Components





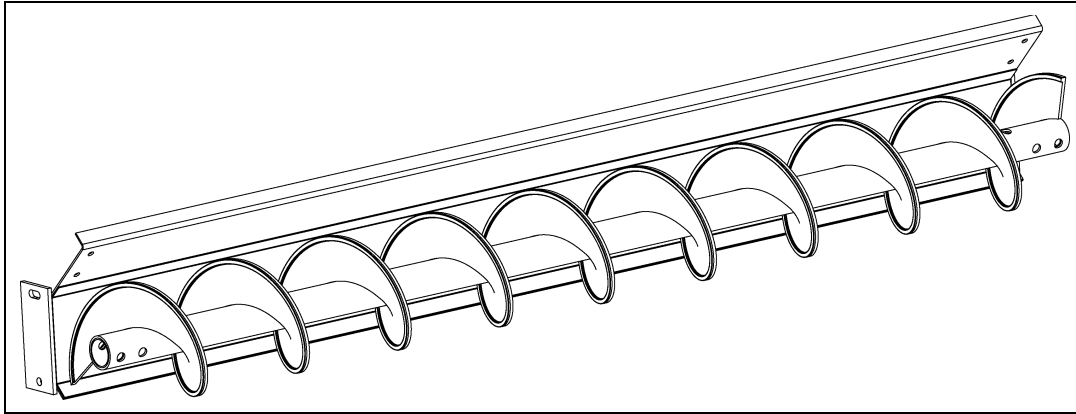
## Assembled Sweep Arm Components (Continued)



### Assembled Sweep Arm Components Parts List

| System     | Ref # | Part #  | Description  |
|------------|-------|---------|--|
| 6"         | 1     | GK6175  | Shield Mounting Bracket                            |
| 8" and 10" |       | GK4461  |  |
| ALL        | 2     | GK1266  | Universal Joint 1" Bore x 5" Long                  |
| 6"         | 3     | GK1678  | Universal Joint Stub Shaft 1-1/4" x 5-3/4"         |
| 8" and 10" |       | GK5929  |  |
| 6"         | 4     | GK1736  | Connecting Shaft 1-1/4" x 11-1/2"                  |
| 8" and 10" |       | GK1951  |  |
| 6"         | 5     | GK2107  | Bearing Stand Assembly                             |
| 8" and 10" |       | GK1954  |  |
| ALL        | 6     | GK5615  | Shield Splice Plate                                |
| 6"         | 7     | GK80023 | Reduction Wheel Drive, 7.889:1, Gear               |
| 8" and 10" |       | GK7960  |  |
| 6"         | 8     | GK80071 | Wheel Hub Welded Assembly                          |
| 8" and 10" |       | GK80072 |  |
| 6"         | 9     | GK4218  | Wheel Disc, Rubber, 11"                            |
| 8" and 10" |       | GK4241  |  |
| 6"         | 10    | GK4219  | Outer Wheel Disc                                   |
| 8" and 10" |       | GK4240  |  |
| ALL        | 11    | S-2086  | 3/8"-16 x 1-1/2" HHCS Bolt Zinc Grade 8            |
| ALL        | 12    | S-4377  | 5/16" x 2" Grooved Roll Pin                        |
| ALL        | 13    | S-248   | 3/8" Flat Washer Zinc Grade 2                      |
| ALL        | 14    | S-7383  | 3/8" Nylock Nut Zinc Grade 5                       |
| 6"         | 15    | S-8317  | 7/16"-14 Stover Nut Zinc Grade C                   |
| 8" and 10" |       | S-8315  |  |
| 6"         | 16    | S-8316  | 7/16"-14 x 3" HHCS Bolt Zinc Grade 8               |
| 8" and 10" |       | S-8252  |  |
| ALL        | 17    | S-8055  | 3/8"-16 x 3" Carriage Bolt Zinc Grade 5            |
| ALL        | 18    | S-4275  | 5/16"-18 x 3/4" HHTB Bolt Zinc Grade 5             |
| ALL        | 19    | S-1937  | 5/16" Flat Washer Zinc Grade 2                     |
| ALL        | 20    | S-3611  | 5/16"-18 Serrated Flange Nut YDP Grade 2           |
| ALL        | 21    | S-9066  | 3/8"-16 x 1-1/4" Serrated Flange Bolt Zinc Grade 5 |
| ALL        | 22    | S-10107 | 3/8"-16 x 2-1/2" HHCS Bolt Zinc Grade 8            |
| ALL        | 23    | S-8251  | 3/8"-16 Stover Nut Grade C                         |
| ALL        | 24    | S-7382  | 5/16"-18 Nylock Nut Zinc Grade 5                   |
| ALL        | 25    | S-7329  | 5/16"-18 x 2" HHCS Bolt Zinc Grade 2               |

6", 8" and 10" Flight and Shield Bundle



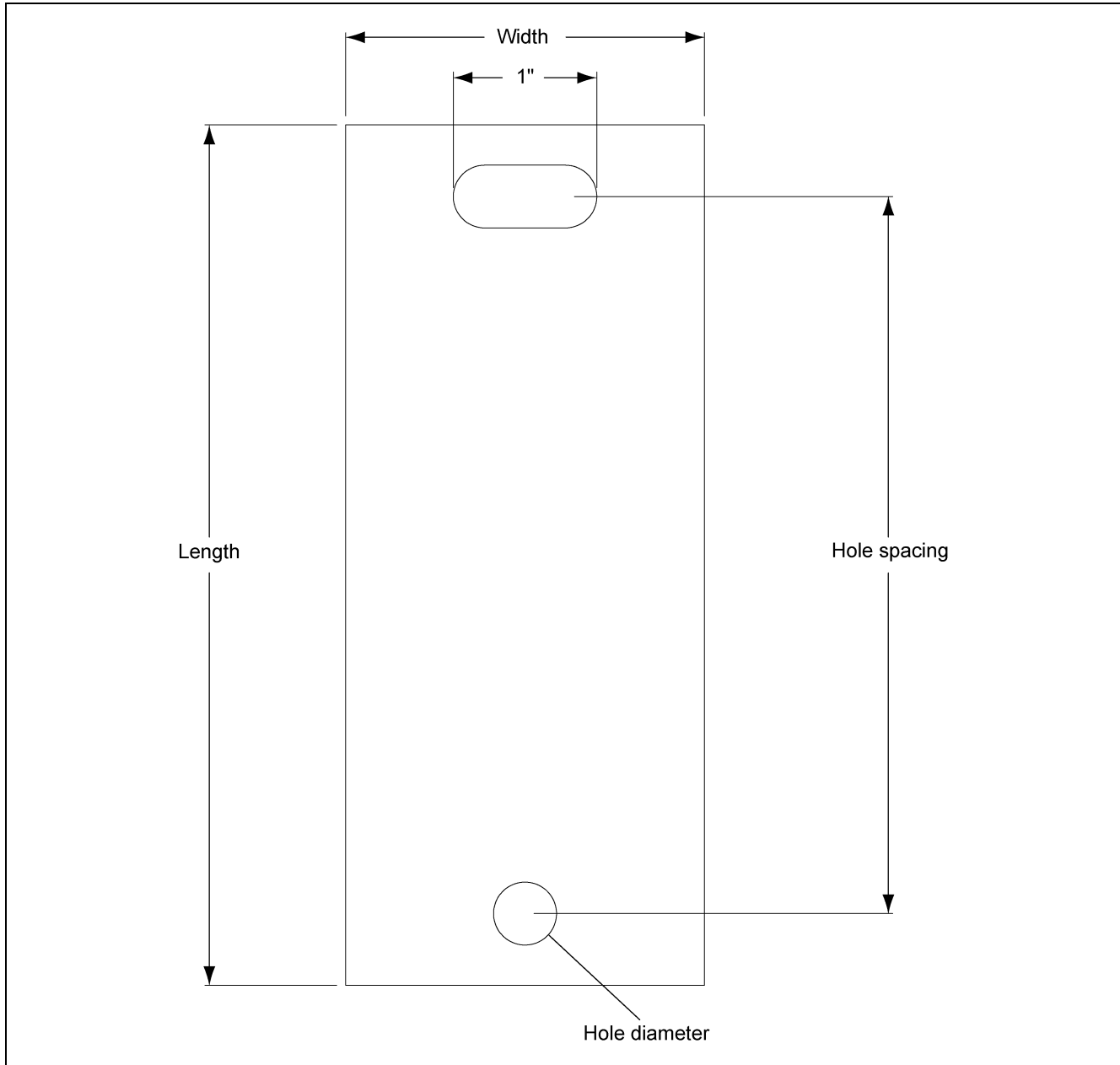
6" Flight and Shield Bundle Parts List

| Bundle # | Part # | Description                 |
|----------|--------|-----------------------------|
| GK6180   | GK6178 | 6" x 4'-4" Flight Weldment  |
|          | GK5605 | 6" x 4'-4" Shield Assembly  |
| GK6181   | GK5932 | 6" x 5'-6" Flight Weldment  |
|          | GK5687 | 6" x 5'-6" Shield Assembly  |
| GK5017   | GK2134 | 6" x 5'-10" Flight Weldment |
|          | GK4537 | 6" x 5'-10" Shield Assembly |
| GK6182   | GK5933 | 6" x 7'-0" Flight Weldment  |
|          | GK5688 | 6" x 7'-0" Shield Assembly  |
| GK6183   | GK6179 | 6" x 7'-4" Flight Weldment  |
|          | GK5606 | 6" x 7'-4" Shield Assembly  |
| GK6184   | GK5934 | 6" x 8'-6" Flight Weldment  |
|          | GK5689 | 6" x 8'-6" Shield Assembly  |
| GK5018   | GK2129 | 6" x 8'-10" Flight Weldment |
|          | GK4538 | 6" x 8'-10" Shield Assembly |

8" and 10" Flight and Shield Bundle Parts List

| Bundle # | Part #  | Description                     |
|----------|---------|---------------------------------|
| GK6185   | GK5911  | 8"/10" x 4'-4" Flight Weldment  |
|          | GK5757  | 8"/10" x 4'-4" Shield Assembly  |
| GK6186   | GK5912  | 8"/10" x 5'-6" Flight Weldment  |
|          | GK5690  | 8"/10" x 5'-6" Shield Assembly  |
| GK4827   | GK2080  | 8"/10" x 5'-10" Flight Weldment |
|          | GK4740  | 8"/10" x 5'-10" Shield Assembly |
| GK80238  | GK80239 | 8"/10" x 6'-10" Flight Weldment |
|          | GK80240 | 8"/10" x 6'-10" Shield Weldment |
| GK6187   | GK5913  | 8"/10" x 7'-0" Flight Weldment  |
|          | GK5691  | 8"/10" x 7'-0" Shield Assembly  |
| GK6188   | GK5914  | 8"/10" x 7'-4" Flight Weldment  |
|          | GK5756  | 8"/10" x 7'-4" Shield Assembly  |
| GK6189   | GK5915  | 8"/10" x 8'-6" Flight Weldment  |
|          | GK5692  | 8"/10" x 8'-6" Shield Assembly  |
| GK4828   | GK2074  | 8"/10" x 8'-10" Flight Weldment |
|          | GK4745  | 8"/10" x 8'-10" Shield Assembly |

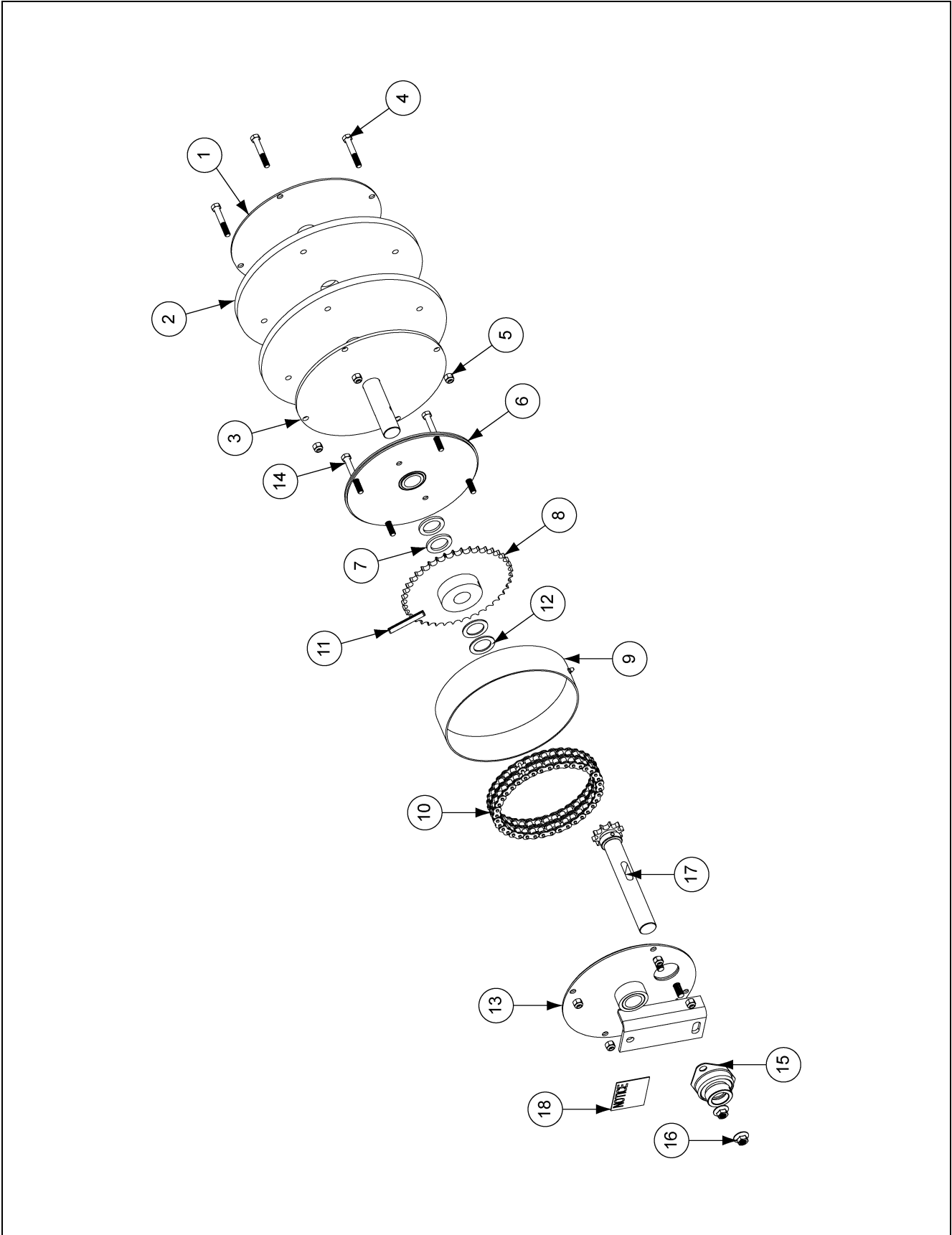
## Spacer Plates for Reduction Drive Wheel



**Spacer Plates for Reduction Drive Wheel Parts List**

| System     | Part # | Thickness | Length | Width  | Hole Diameter | Hole Spacing |
|------------|--------|-----------|--------|--------|---------------|--------------|
| 6"         | GK4209 | 14 Gauge  | 5"     | 2"     | 7/16"         | 4"           |
|            | GK4208 | 12 Gauge  |        |        |               |              |
|            | GK4207 | 1/4"      |        |        |               |              |
| 8" and 10" | GK4224 | 14 Gauge  | 6"     | 2-1/2" | 7/16"         | 5"           |
|            | GK4225 | 12 Gauge  |        |        |               |              |
|            | GK4226 | 1/4"      |        |        |               |              |

# Reduction Wheel Drive Components



## Reduction Wheel Drive Components Parts List

| Ref # | Part #  |         | Description                                     |
|-------|---------|---------|---|
|       | GK5903  | GK5904  |   |
| 1     | GK4219  | GK4240  | Outer Wheel Disk                                |
| 2     | GK4218  | GK4241  | Wheel Disk, Rubber                              |
| 3     | GK4217  | GK4242  | Inner Wheel Weldment                            |
| 4     | S-7329  | S-7329  | 5/16"-18 x 2" HHCS Bolt Zinc Grade 2            |
| 5     | S-7382  | S-7382  | 5/16"-18 Nylock Nut Zinc Grade 5                |
| 6     | GK4223  | GK4223  | Outer Drive Housing Weldment with Bushing       |
| 7     | GK4211  | GK4211  | 1" I.D. x 1-1/2" O.D. Flat Washer 10 Gauge Zinc |
| 8     | GK4234  | GK4234  | #40 40T Sprocket with Hub                       |
| 9     | GK4215  | GK4215  | Housing Ring with Grease Zerk                   |
| 10    | GK4233  | GK4233  | # 40 Double Roller Chain with Link              |
| 11    | S-4383  | S-4383  | 5/16" x 2-1/4" Rolled Spring Pin                |
| 12    | GK4210  | GK4210  | 1" I.D. x 1-1/2" O.D. Flat Washer 14 Gauge Zinc |
| 13    | GK4213  | GK4228  | Inner Drive Housing Weldment with Bushing       |
| 14    | S-7076  | S-7076  | 5/16"-18 x 2-1/2" HHCS Bolt Zinc Grade 5        |
| 15    | GK4232  | GK4233  | Bearing, 1" I.D., 2 Hole Flange                 |
| 16    | S-968   | S-968   | 3/8"-16 Serrated Flange Nut Zinc Grade 5        |
| 17    | GK6526  | GK6526  | Drive Shaft, with Sprocket and Roll Pin         |
| 18    | DC-1687 | DC-1687 | Shipped without Grease Decal                    |

## Reduction Wheel Drive Additions Components Parts List

| System  | Part # | Description                             |
|---|--------|---|
| <b>Complete Drive</b>                               |        |   |
| 6"  | GK5903 | Reduction Wheel Drive, 4:1, Chain       |
| 8" and 10"  | GK5904 | Reduction Wheel Drive, 4:1, Chain       |
| <b>Bushing for Drives</b>                           |        |   |
| 6"  | GK4205 | Bushing 1" x 1" x 4-3/8"                |
| 8" and 10"  | GK4206 | Bushing 1-1/2" x 1" x 4-3/8"            |
| <b>Hardware for Flight, Bushing and Drive Shaft</b> |        |   |
| 6"  | S-6762 | 3/8"-16 x 2-1/2" HHCS Bolt Zinc Grade 5 |
| 8" and 10"  | S-8677 | 3/8"-16 x 3" HHCS Bolt YDP Grade 8      |
| ALL   | S-8251 | 3/8"-16 Stover Nut Grade C              |
| <b>Hardware for Shield and Drive Housing</b>        |        |   |
| 6"  | S-3727 | 3/8"-16 x 1-3/4" HHCS Bolt YDP Grade 8  |
| 8" and 10"  | S-8706 | 3/8"-16 x 1-3/4" HHTB Bolt Zinc Grade 5 |
| ALL   | S-248  | 3/8" Flat Washer Zinc Grade 2           |
| ALL   | S-7383 | 3/8" Nylock Nut Zinc Grade 5            |

## 10. Troubleshooting

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

## 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 |   |
|--|---|-----------------|---|
| <b>AP Fans and Flooring</b>                | Performer Series Direct Drive Fan Motor                       | 3 Years         | * Warranty prorated from list price:<br>0 to 3 years - no cost to end-user<br>3 to 5 years - end-user pays 25%<br>5 to 7 years - end-user pays 50%<br>7 to 10 years - end-user pays 75% |
|  | All Fiberglass Housings                                       | Lifetime        |   |
|  | All Fiberglass Propellers                                     | Lifetime        |   |
| <b>AP and Cumberland</b>                   | Flex-Flo/Pan Feeding System Motors                            | 2 Years         |   |
| <b>Cumberland Feeding/Watering Systems</b> | Feeder System Pan Assemblies                                  | 5 Years **      | ** Warranty prorated from list price:<br>0 to 3 years - no cost to end-user<br>3 to 5 years - end-user pays 50%   |
|  | Feed Tubes (1-3/4" and 2.00")                                 | 10 Years *      |   |
|  | Centerless Augers   | 10 Years *      |   |
|  | Watering Nipples  | 10 Years *      |   |
| <b>Grain Systems</b>                       | Grain Bin Structural Design                                   | 5 Years         |   |
| <b>Grain Systems Farm Fans Zimmerman</b>   | Portable and Tower Dryers                                     | 2 Years         | † Motors, burner components and moving parts not included.<br>Portable dryer screens included.<br>Tower dryer screens not included.   |
|  | Portable and Tower Dryer Frames and Internal Infrastructure † | 5 Years         |   |

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

### Conditions and Limitations:

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

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

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

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

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

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



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**GSI is a worldwide brand of AGCO Corporation.**