

# In-line Mount and Crosscut Mount Flush Style Intermediate Discharge Gates

Installation Manual

PNEG-1732

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GSI GROUP



PNEG-1732



# Contents

<b>Chapter 1 Safety</b> .....	<b>4</b>
Safety Guidelines .....	4
Safety Instructions .....	5
<b>Chapter 2 Decals</b> .....	<b>7</b>
<b>Chapter 3 Installation</b> .....	<b>8</b>
Overall Gate Dimensions .....	8
Cut Trough Bottom for Gate Placement .....	9
Manual Gate Installation .....	10
Motor Driven Gate Installation .....	11
Install Gate to Trough bottom .....	14
Flipping the Shaft to Change Gate Drive Side .....	15
<b>Chapter 4 Wiring Diagram</b> .....	<b>16</b>
Typical Wiring Diagram .....	16
<b>Chapter 5 Warranty</b> .....	<b>17</b>

### Safety Guidelines

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



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



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



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



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



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



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

## Safety Instructions

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

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

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

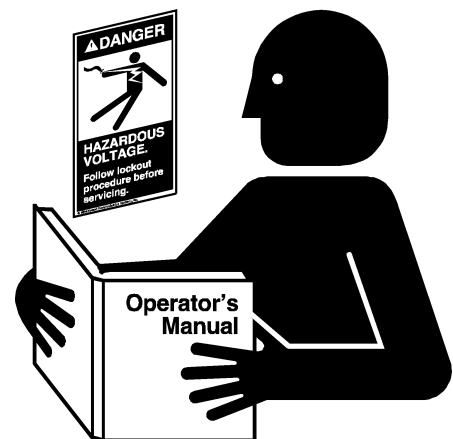
### Follow Safety Instructions

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

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

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

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



**Read and Understand Manual**

## 1. Safety

### Operate Motor Properly

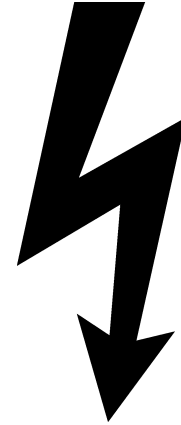
To avoid serious injury or death, stay away from unit and make sure everyone is clear of the equipment before starting or operating the unit.

All electrical connections should be made in accordance with the National Electric Code. Be sure equipment and bins are properly grounded.

Do not operate electric motor equipped units until motors are properly grounded.

Disconnect power on electrical driven units before resetting motor overloads.

Do not repetitively stop and start the drive in order to free a plugged condition. Jogging the drive in this manner can damage the equipment and/or drive components.

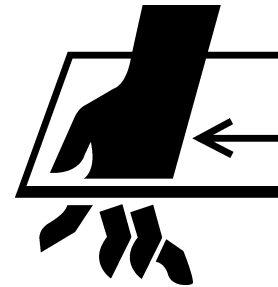


**Electric Shock Hazard**

### Stay Clear of Moving Parts

Keep arms and hands away from slide gate opening. Slide gate can crush and dismember. Motor may start at any time.

Always stop and lock out power source before making adjustments, cleaning, or maintaining equipment.

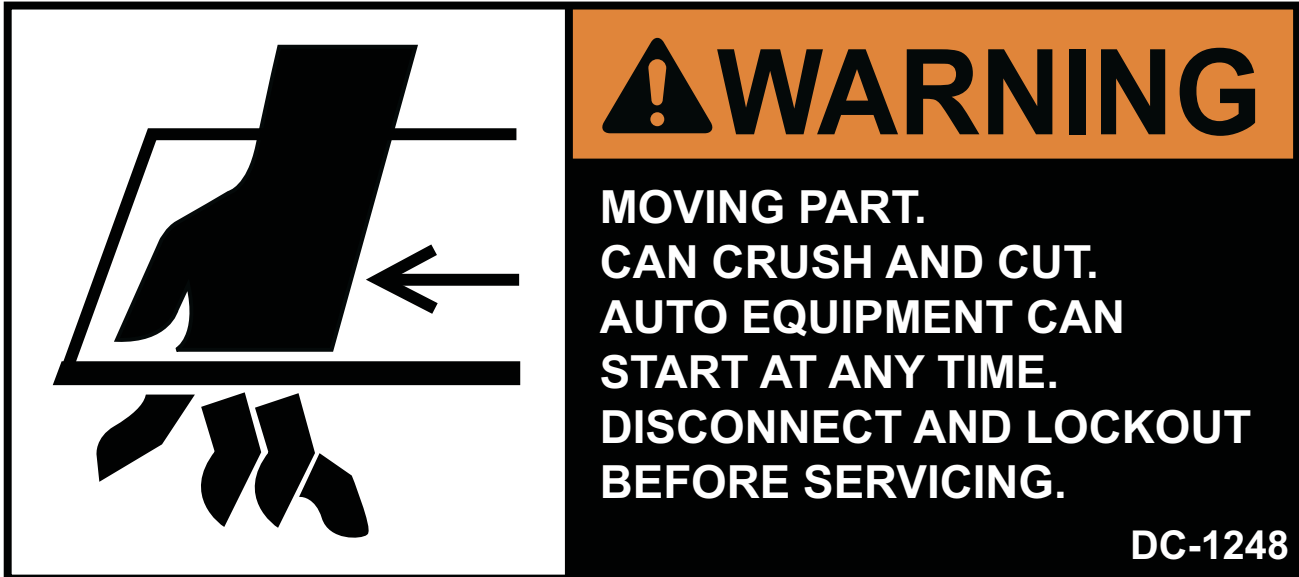


**Slide Hazard**

Please remember, safety decals provide important safety information for people working near equipment that is in operation. If a safety sign cannot be easily read for any reason or has been painted over, replace it immediately. Additional safety signs may be obtained from your dealer, distributor or ordered from the factory free of charge.

**Contact:**

The GSI Group  
1004 E. Illinois St.  
Assumption, IL. 62510  
Phone: 1-217-226-4421



DC-1248  
(Not to scale.)

## Overall Gate Dimensions

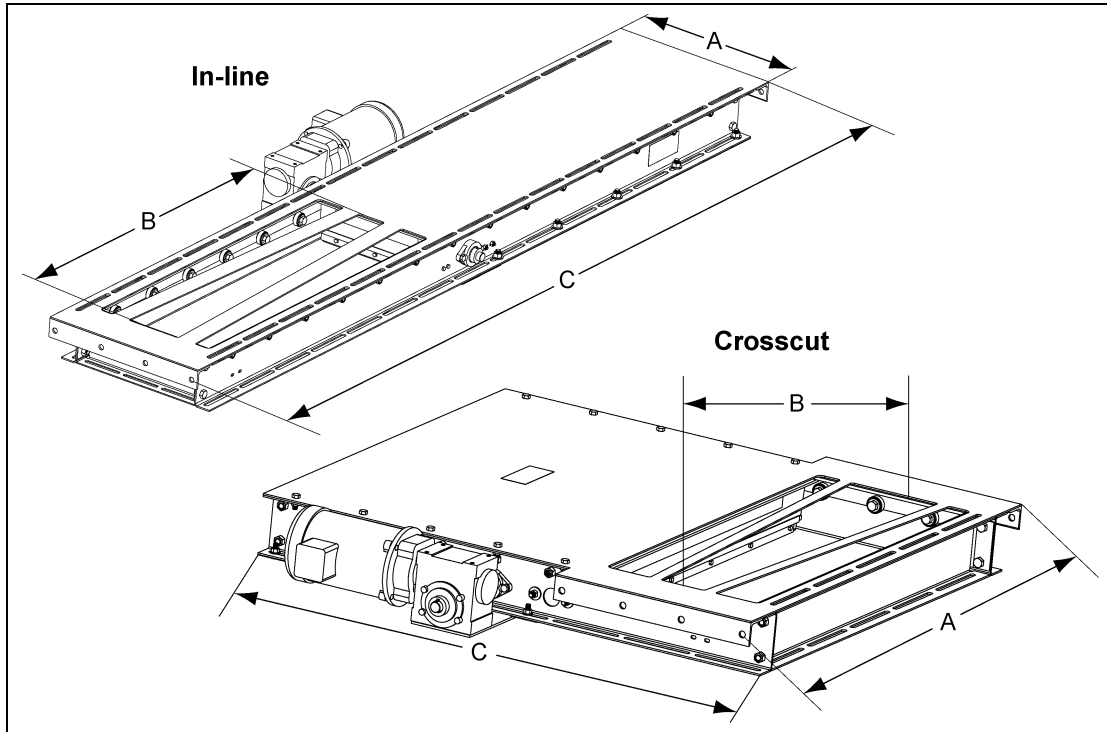


Figure 3A Overall Gate Dimensions

### Overall Flush Gate Dimensions

Gate Size (Conveyor Width)		A	B	C
09	In-line	15"	36"	94.86"
	Crosscut	45.813"	35-3/4"	40-1/4"
12	In-line	16"	36"	94.86"
	Crosscut	45.813"	35-3/4"	44-1/4"
14	In-line	18"	36"	94.86"
	Crosscut	45.813"	35-3/4"	48-1/4"
16	In-line	20"	36"	94.86"
	Crosscut	45.813"	35-3/4"	52-1/4"
20	In-line	24"	36"	94.86"
	Crosscut	45.813"	35-3/4"	60-1/4"
21	In-line	25"	36"	94.86"
	Crosscut	45.813"	35-3/4"	62-1/4"
26	In-line	30"	36"	94.86"
	Crosscut	45.813"	35-3/4"	72-1/4"
32	In-line	36"	36"	94.86"
	Crosscut	45.813"	35-3/4"	84-1/4"



## Cut Trough Bottom for Gate Placement

1. Start by locating the center of the proposed discharge location. Dimension "A" shown *in Figure 3B*.
2. When locating gate try to position so that at least three (3) holes on the conveyor bottom line up with mounting slots on the gate.
3. If holes cannot be aligned new holes must be drilled in the trough side and bottom.
4. Dimension "B" would be 94.86" for in-line gates or 45.813" for crosscut gates.
5. Center this dimension around the point found with the "A" dimension and cut the bottom as straight as possible on either side of the center.
6. Weld the extra angle iron flanges provided with the gate to each trough bottom cut, as shown *in Figure 3B*, so that the gate can be bolted to each side.
7. Remove burrs on the inside edge of the trough bottom.
8. Apply paint to welds on outside of trough.

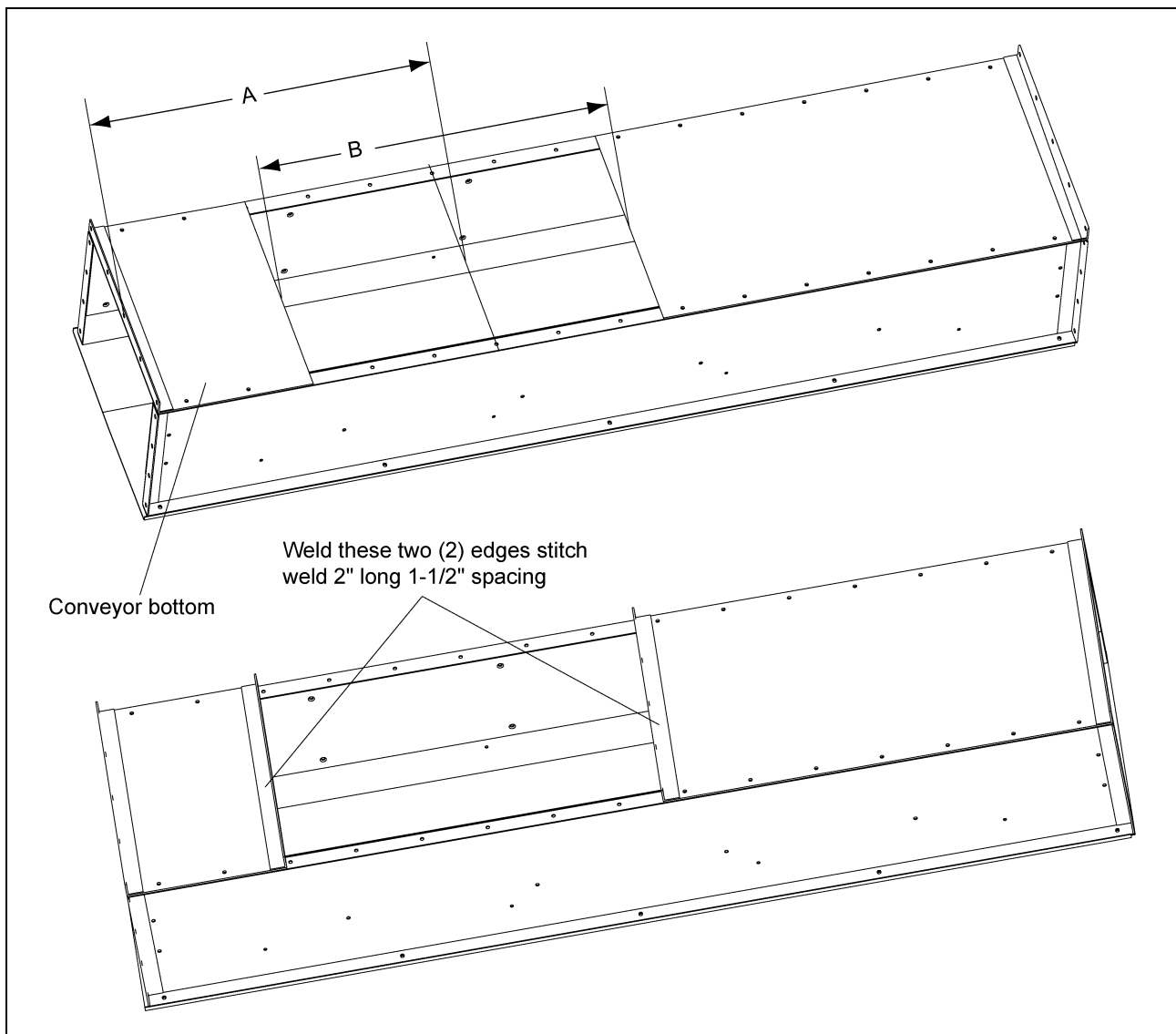


Figure 3B

## Manual Gate Installation

### Manually Operated Gate

1. Install the specified wheel to the shaft by aligning the key and key way, then tighten the set screw. This gate can be operated by a chain, cable or hand wheel. (See Figure 3C.)
2. All flush mount style gates have a double gear rack for slide actuation.
3. The slide plate rides on 1-3/8" double shielded radial bearings, as well as being guided and sealed by UHMW strips for smooth operation.

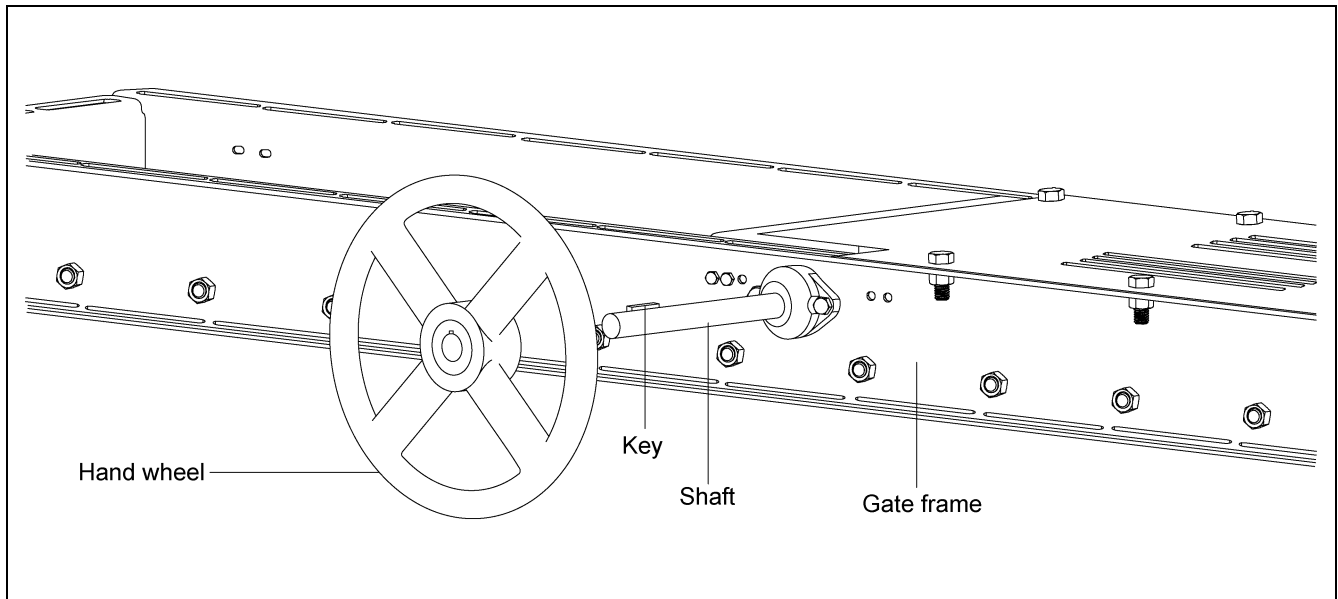


Figure 3C

## Motor Driven Gate Installation

### Install Motor Bracket

1. Install the motor bracket to the gate. Then attach the motor to the bracket as shown *in Figure 3D*, using the provided hardware.

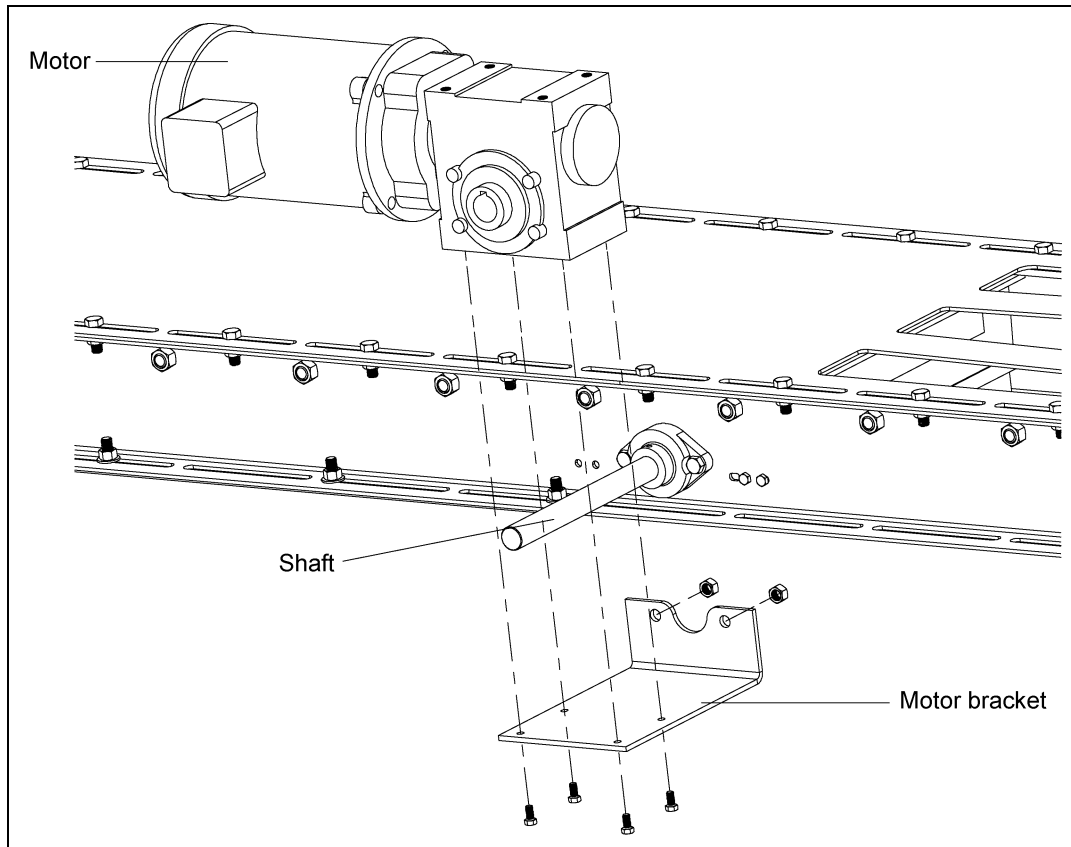


Figure 3D

### Install Limit Switch

1. Using limit switches that are available in NEMA 4 or explosion proof standards, achieves accurate positioning of these gates. Limit switches are located on both sides of the frame to detect when the gate is completely open or closed.
2. Attach the switch brackets to the inside of the gate as shown using hardware provided. (*See Figure 3E on Page 12.*) Attach limit switch to the bracket as shown *in Figure 3F on Page 12.*
3. After switches are securely fastened, adjust lever arms so they come in contact with tripper blocks on underneath side of slide plate.
4. Disconnect the power at the electrical panel and run the proper gauge electrical wire to the motors and limit switches. (See wiring diagram *on Page 16.*) **Be sure that the limit switches are adjusted properly before operating the gate.** Turn the power back ON and CAUTIOUSLY operate the gate, opening and closing the gate slide, making the necessary adjustments to the limit switch arms to assure complete opening and closing of the gate.
5. Motor driven gates are available in both TEFC and explosion proof configurations.

### 3. Installation

#### Install Limit Switch (Continued)

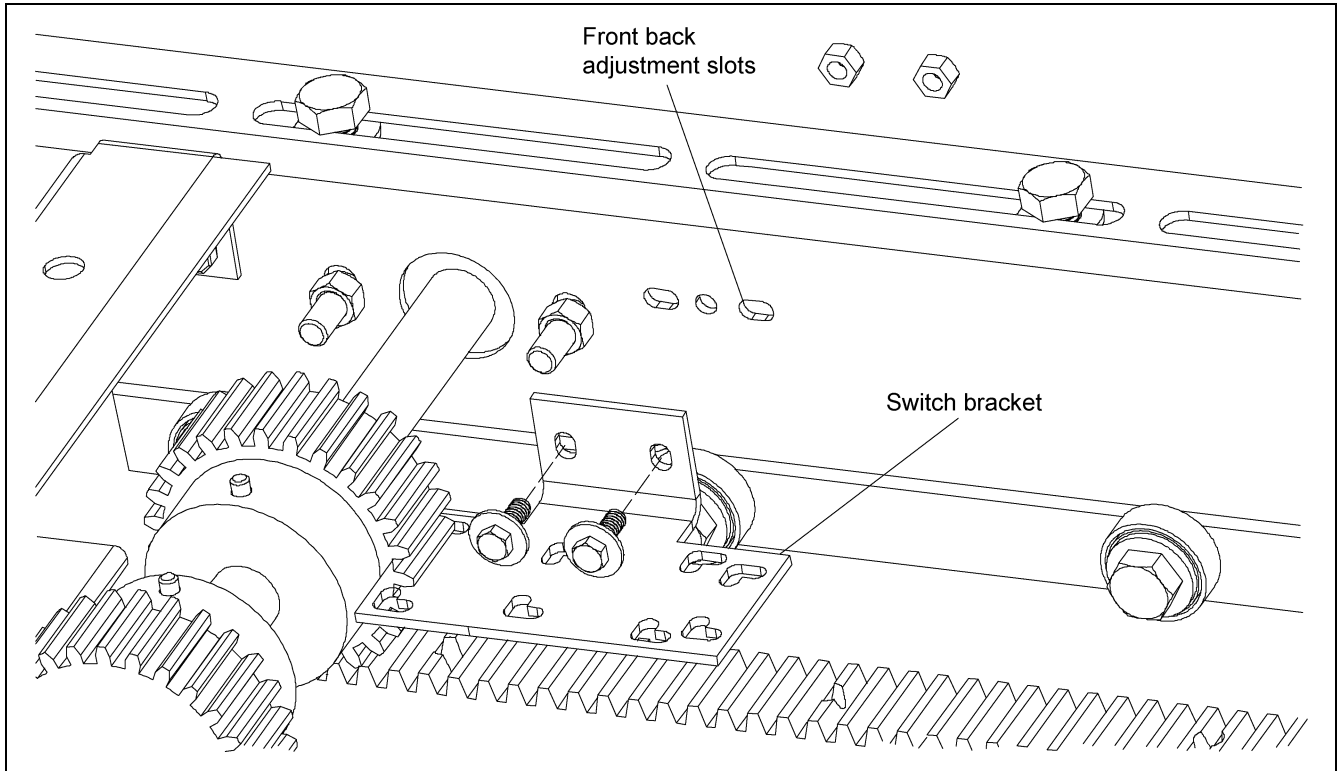


Figure 3E

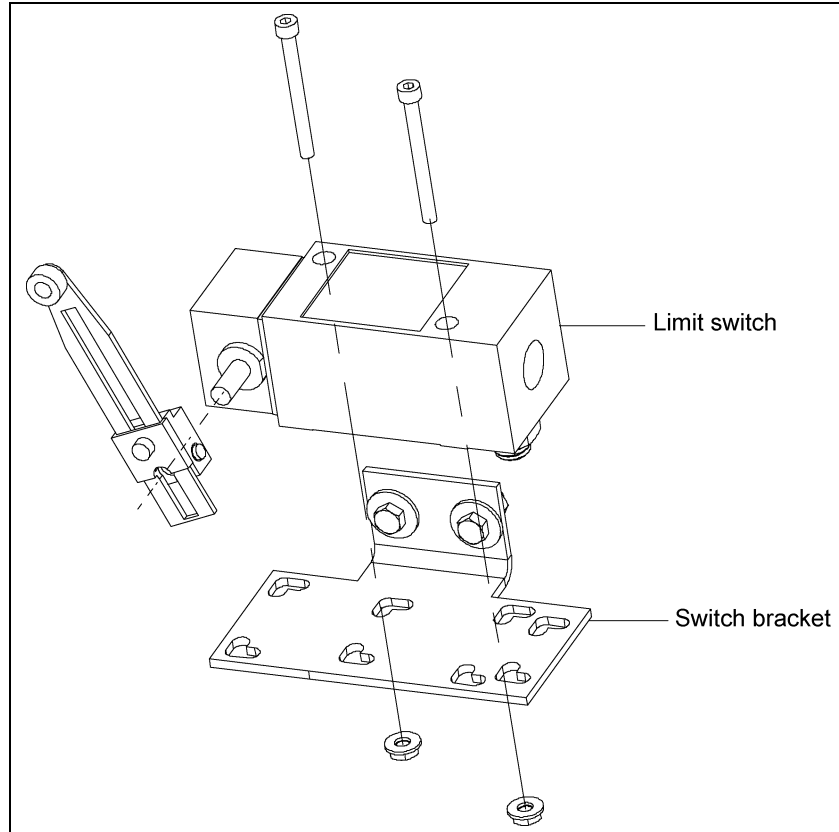


Figure 3F

### Install Limit Switch (Continued)

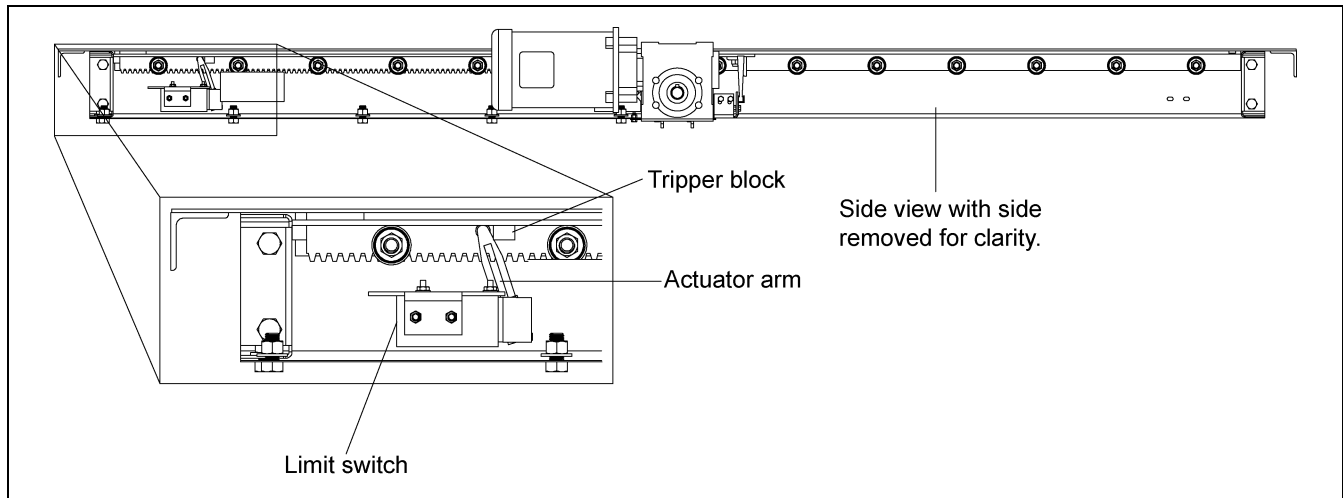


Figure 3G

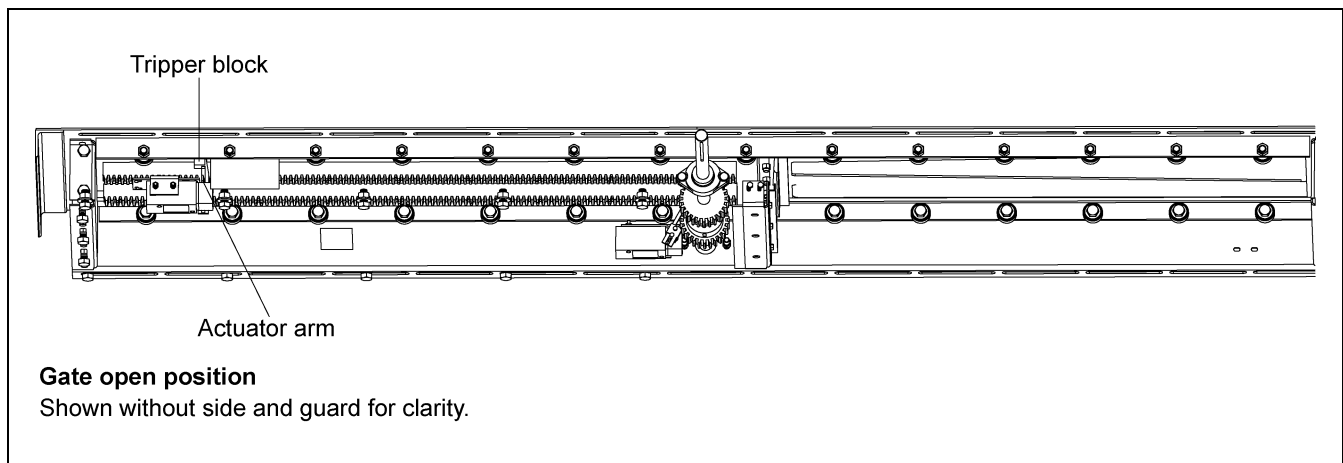


Figure 3H

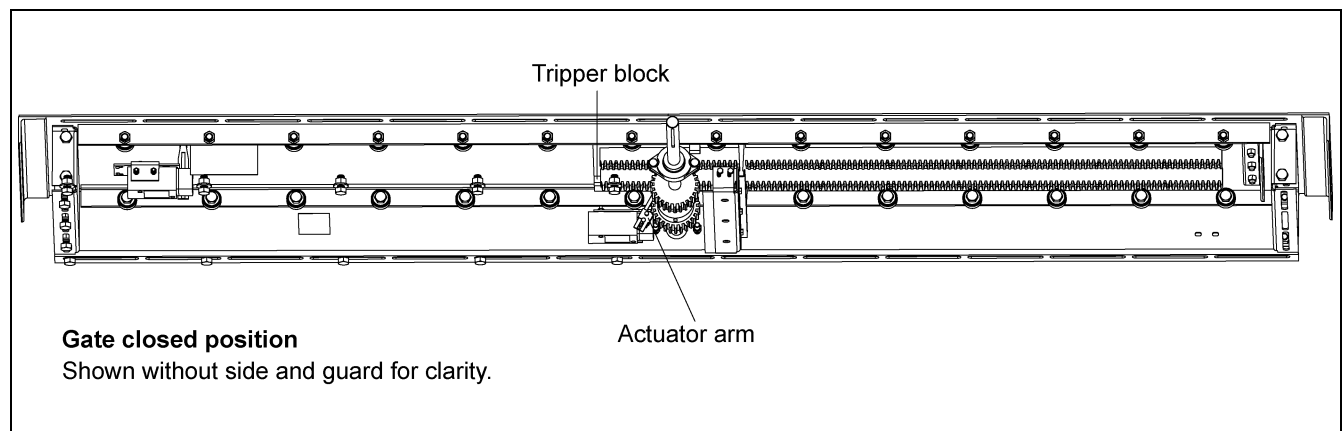


Figure 3I

### 3. Installation

## Install Gate to Trough bottom

1. Assemble the gate to the trough bottom using existing hardware in the trough bottom and the supplied hardware from the bottom flanges.
2. There are no carry-over bars to adjust, the carry-over feature is built into the gate.
3. For in-line gates, it is preferred that the gate is oriented so that it closes toward the head section of the conveyor.
4. For crosscut gates, it will be necessary to seal the trough side where the gate does not bolt to the trough with silicone sealant.
5. On 12" tall and 14" tall conveyors, there will be some overhang (1/2") of the gate frame past the edge of the trough bottom.
6. On the sides of the gate frame, there are some duplicate holes in the open portion of the gate that need to be sealed with silicone. (See Figure 3J.)

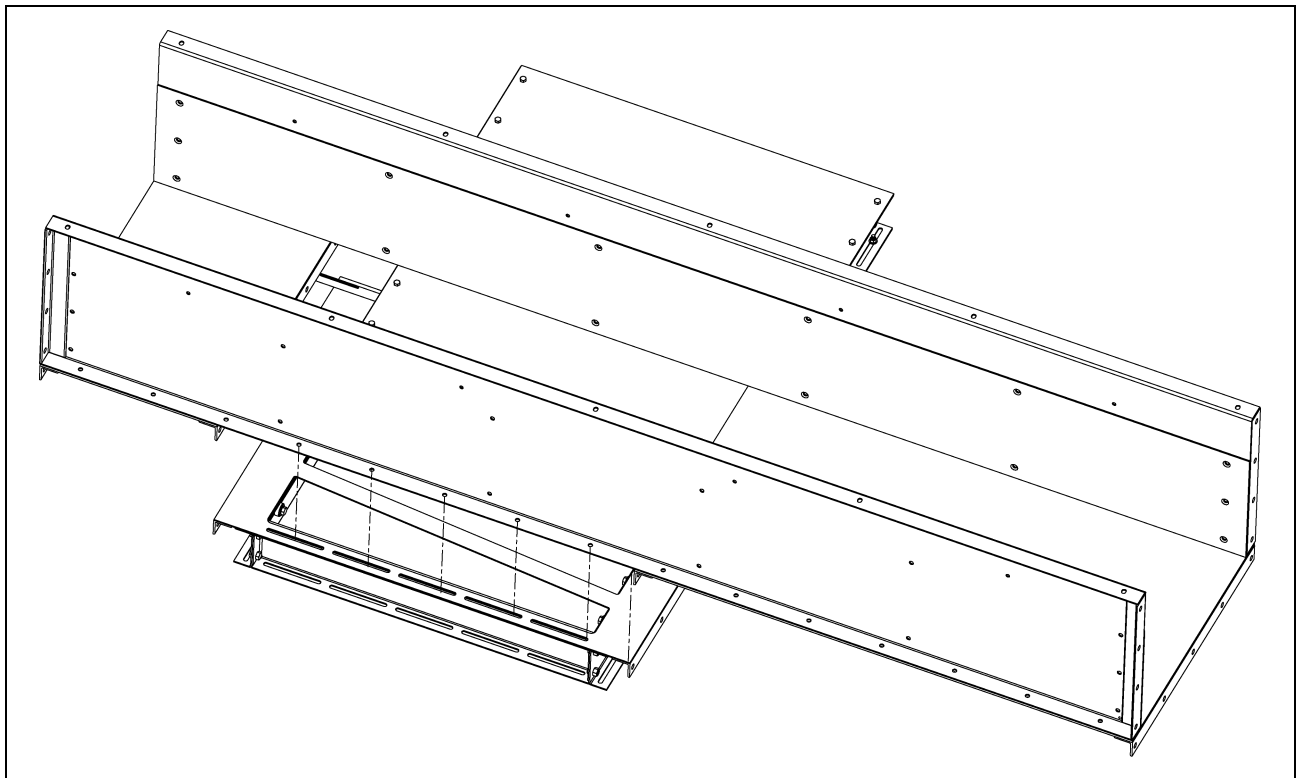


Figure 3J

## Flipping the Shaft to Change Gate Drive Side

1. Loosen set screws for shaft on both bearings. *(See Figure 3K.)*
2. Remove bearing on the long side of the shaft.
3. Flip shaft and re-install bearing.
4. Tighten set screws on shaft.
5. On guard move filler plate to opposite side if applicable.
6. If gate will be electric operated install motor mount on appropriate side for gearbox and motor.

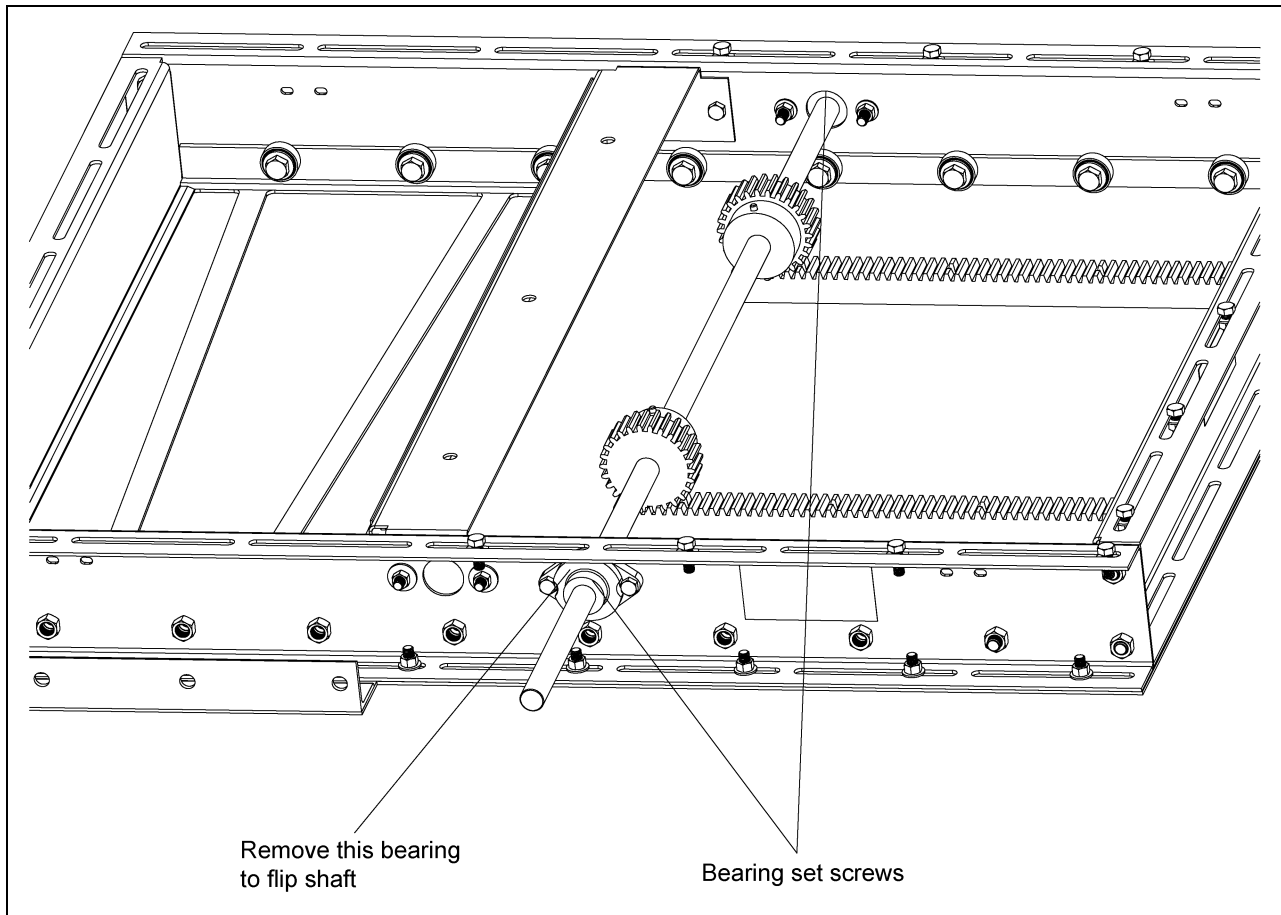
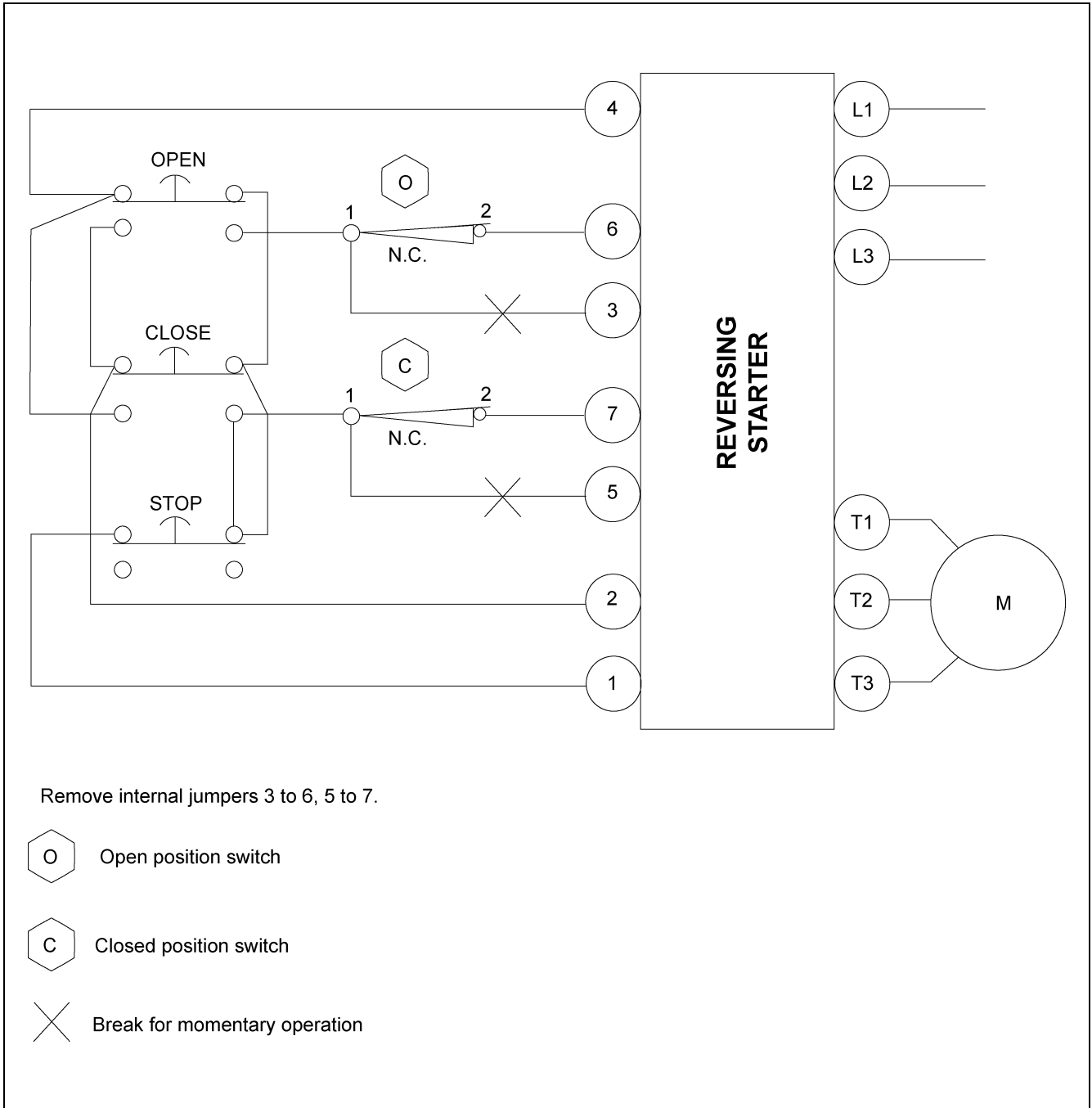


Figure 3K

# Typical Wiring Diagram





## 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: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 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. Portable dryer screens included. 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.

G S I G R O U P



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