

# Commercial Bin Well Control Rod Kits & Rack & Pinion Controls

Assembly Manual

**PNEG-790**

**Date: 05-08-07**

GSI GROUP



PNEG-790

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

<b>Control Rod Kits</b>	
24' - GCP24000	63' - GCP63000
27' - GCP27000	68' - 69' - GCP68000
30' - GCP30000	72' - GCP72000
33' - 34' - GCP33000	75' - GCP75000
36' - GCP36000	78' - GCP78000
37' - 39' - GCP38000	80' - GCP80000
40' - GCP40000	82' - GCP82000
42' - GCP42000	90' - GCP90000
48' - 49' - GCP48000	92' - GCP92000
54' - 55' - GCP54000	105' - GCP105000
60' - GCP60000	113' - GCP113000
	120' - GCP120000

<b>Rock &amp; Pinion Control</b>
8" - GSA80110
10" - GSA10110
12" - GCA12110

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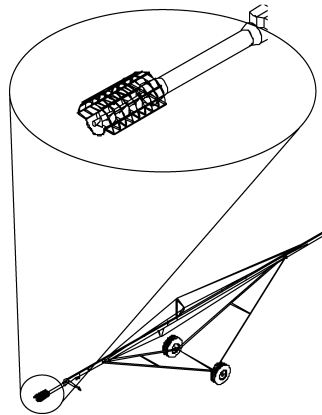
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# SAFETY 1<sup>st</sup>

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



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

One of the most important aspects of our engineering is **SAFETY 1<sup>st</sup>** design throughout all product lines. At our company -Safety is **NO ACCIDENT!**

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

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

If you need any of the above listed safety items or have safety questions, please contact the manufacturer or your local dealer.

The GSI Group  
PO Box 20  
1004 E. Illinois Street  
Assumption, IL 62510  
Ph: 1-217-226-4421

## Safety Guidelines

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



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



**DANGER** 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 to.

# 1. SAFETY

## Safety Instructions

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

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

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

### Operate Unload Equipment Properly

Make sure **ALL** equipment is locked in position before operating.

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

Use caution not to hit the auger when positioning the load.

Be sure all operators are adequately rested and prepared to perform all functions of operating this equipment.

Untrained operators subject themselves and others to **SERIOUS INJURY** or **DEATH**. **NEVER** allow untrained personnel to operate this equipment.

Keep children and other unqualified personnel out of the working area at **ALL** times.

**NEVER** allow any person intoxicated or under the influence of alcohol or drugs to operate the equipment.

**NEVER** work alone. Make sure someone is nearby who is aware of the proper shutdown sequence in the event of an accident or emergency.

**ALWAYS** think before acting. **NEVER** act impulsively around the equipment.

**NEVER** allow anyone inside a bin, truck or wagon which is being unloaded by an auger or conveyor. Flowing grain can trap and suffocate in seconds.

Use ample overhead lighting after sunset to light the work area.

Keep area around intake free of obstacles such as electrical cords, blocks, etc. that might trip workers.

**NEVER** drive, stand or walk under the equipment.

**ALWAYS** lockout **ALL** power to the equipment when finished unloading a bin.

Be aware of pinch points. A Pinch point is a narrow area between two surfaces that is likely to trap or catch objects and so is a potential safety hazard.



**Operate Unload  
Equipment Safely**

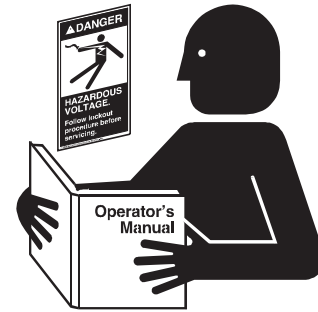
## Follow Safety Instructions

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

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

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

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



**Read and Understand Manual**

## Keep Hands Away from Moving Parts

Keep hands and feet away from auger intake and other moving parts. Rotating auger can sever a person's limbs or even kill.

Keep hair, loose clothing, and shoestrings away from rotating and moving parts. NEVER wear loose fitting clothing when working around augers.

ALWAYS turn off and lock out all power sources before servicing equipment.

ALWAYS keep belt and chain guards in place during operation.

NEVER attempt to assist machinery operation or to remove trash from equipment while in operation.



**Rotating Auger**

## Operate Motor Properly

In an emergency, shut down the power source.

Turn off and lock out all power sources before performing any maintenance.

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

Disconnect power on electrical driven units before resetting motor overloads.

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



**Electrical Shock Hazard**

## Practice Safe Maintenance

Understand service procedures before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is in operation. Keep hands, feet, and clothing from rotating shafts, screws, belts, or other moving equipment.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any build up grease, oil, or debris.



**Maintain Equipment and Work Area**

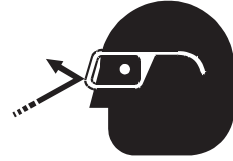
# 1. SAFETY

## Wear Protective Clothing

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

Safety glasses should be worn at all times to protect eyes from debris.

**Eye Protection**



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

**Gloves**



Use a respirator to prevent breathing potentially toxic fumes and dust..

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

**Steel Toe Boots**



Remove all jewelry.  
Tuck in any loose or dangling shoe strings.

**Respirator**



Long hair should be tied up and back.

**Hard Hat**

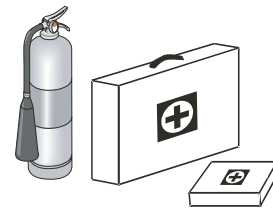


## Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

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



**Keep Emergency Equipment Quickly Accessible**



## Operator Qualifications

1. The User/Operator must be competent and experienced to operate auger equipment. Anyone who works with or around augers must have good common sense in order to be qualified. These persons must also know and meet all other qualifications, such as:
  - a. Any person who has not read and/or does not understand all operation and safety procedures is not qualified to operate any auger systems.
  - b. Certain regulations apply to personnel operating power machinery. Personnel under the age of 18 years may not operate power machinery, including augers. It is your responsibility, as owner and/or supervisor, to know what these regulations are in your area or situation.
  - c. Unqualified or incompetent persons are to remain out of the work area.
  - d. O.S.H.A. (Occupational Safety & Health Administration) regulations state: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved". (Federal Occupational Safety & Health Standards for Agriculture. Subpart D, Section 19287.57) (a) (6).
2. As a requirement of O.S.H.A, it is necessary for the employer to train the employee in the safe operating and safety procedures for this auger. We included this sign-off sheet for your convenience and personal record keeping. All unqualified persons are to stay out of the work area at all times. It is strongly recommended that another qualified person who knows the shutdown procedure is in the area in the event of an emergency. A person who has not read this manual and understands all operating and safety instructions is not qualified to operate the machine.

Date	Employer's Signature	Employee Signature
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

## 2. SAFETY DECALS

**ATTENTION:** The decal shown below should be present on the outside of the outside of the door cover of the two ring, 24" porthole door cover and roof manway cover. If a decal has been damaged or is missing in any of these locations contact the manufacturer for a free replacement decal.

### DECALS

P.O. BOX 602  
1004 East ILLinois Street  
Assumption, IL. 62510-0020  
(217)-226-4421



# DANGER

 <p><b>Rotating flighting will kill or dismember.</b></p>	 <p><b>Flowing material will trap and suffocate.</b></p>	 <p><b>Crusted material will collapse and suffocate.</b></p>
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## Keep clear of all augers. DO NOT ENTER this bin!

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If you must enter the bin:

1. Shut off and lock out all power.
2. Use a safety harness and safety line.
3. Station another person outside the bin.
4. Avoid the center of the bin.
5. Wear proper breathing equipment or respirator.

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### Failure to heed these warnings will result in serious injury or death.

DC-GBC-1A

### Control Rod Handle Assembly Diagram.

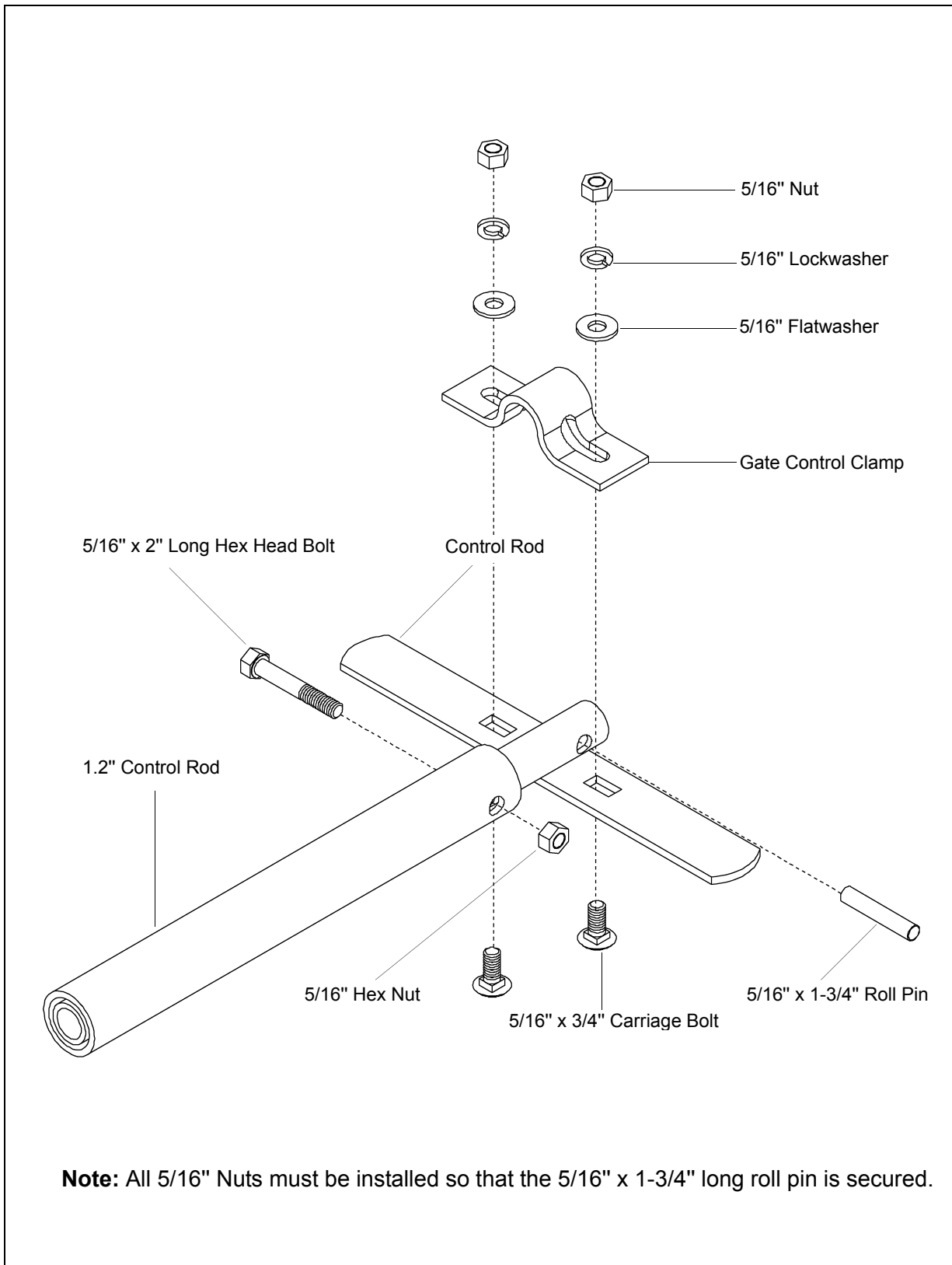


Figure 2A

## 2. ASSEMBLY

### Commercial Bin Control Rod Kits.

Commercial Bin Control Rod Kit is used for opening and closing the bin well control gates from outside the bin.

The optional Rack & Pinion Control can be used to make the job easier. Contact your distributor for more information.

The Commercial Bin Control Rod Kit can be used on 24' - 75' (7.32 m - 22.86 m) diameter bins.

The Commercial Bin Control Rod Kit comes with three (3) control rods to be used with a minimum of two (2) Intermediate Bin Wells and the Center Bin Well.

Two (2) or more rod sections are used for larger diameter bins. The rod sections are connected with an Internal Threaded Coupler.

1. Use the following illustration [Figure 2B](#) and the chart on [Page 13](#) to determine the necessary pipe lengths.

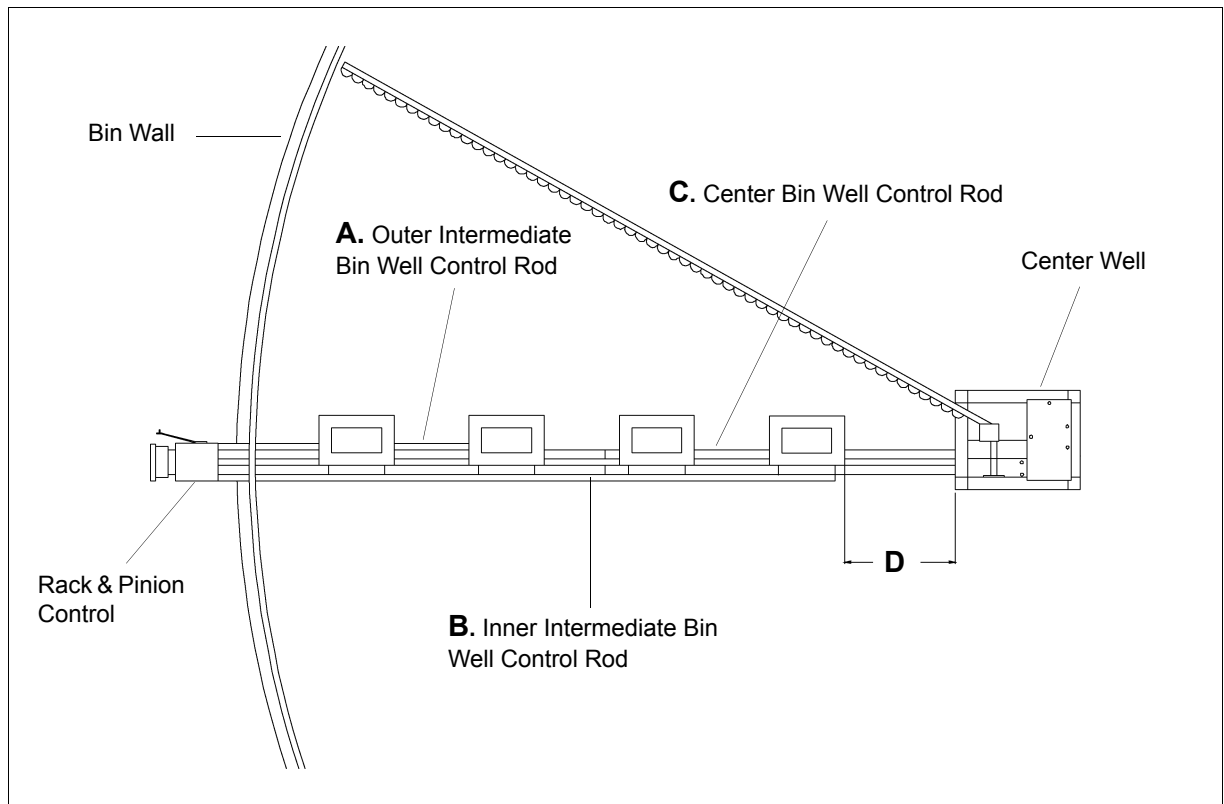


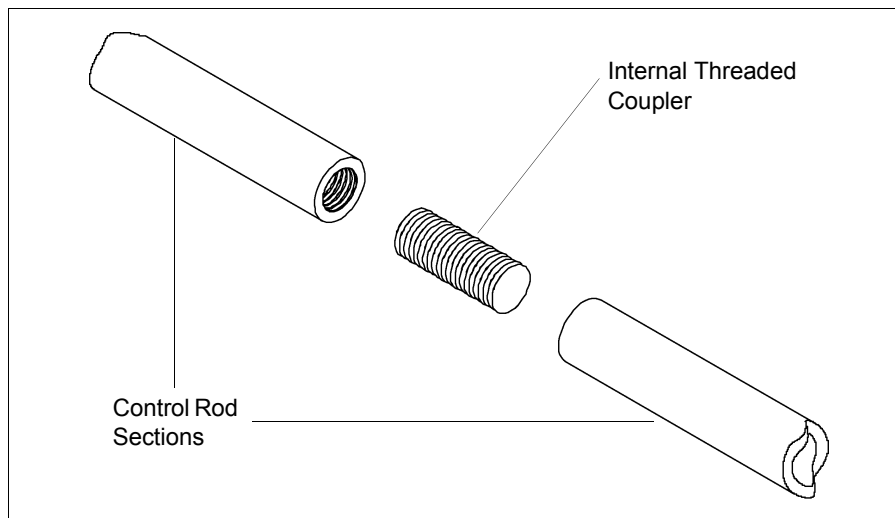
Figure 2B

## 2. ASSEMBLY

Length of Control Rods								
D			A		B		C	
			Center Well		Inner Intermediate Wells		Outer Intermediate Wells	
Bin Diameter	Spacing Between Intermediate Bin Wells	Number of Intermediate Bin Wells	Assembly Length	Length of Sections	Assembly Length	Length of Sections	Assembly Length	Length of Sections
24'	31 - 1/2"	2	11' 11 - 1/2"	11' 11 - 1/2"	8' 2 - 1/2"	8' 2 - 1/2"	3' 4 - 1/2"	3' 4 - 1/2"
27'	38 - 1/2"	2	13' 5 - 1/2"	13' 5 - 1/2"	9' 1 - 1/2"	9' 1 - 1/2"	3' 8 - 1/2"	3' 8 - 1/2"
30'	45 - 1/2"	2	14' 11 - 1/2"	14' 11 - 1/2"	10' 1/2"	10' 1/2"	4' 1/2"	4' 1/2"
34'	55 - 1/2"	2	16' 11 - 1/2"	16' 11 - 1/2"	11' 2 - 1/2"	11' 2 - 1/2"	4' 4 - 1/2"	4' 4 - 1/2"
36'	35 - 1/2"	3	17' 11 - 1/2"	17' 11 - 1/2"	13' 10 - 1/2"	13' 10 - 1/2"	8' 8 - 1/2"	8' 8 - 1/2"
39'	40 - 1/2"	3	19' 5 - 1/2"	19' 5 - 1/2"	14' 11 - 1/2"	14' 11 - 1/2"	9' 4 - 1/2"	9' 4 - 1/2"
40'	42 - 1/2"	3	19' 11 - 1/2"	19' 11 - 1/2"	15' 3 - 1/2"	15' 3 - 1/2"	9' 6 - 1/2"	9' 6 - 1/2"
42'	29 - 1/2"	4	20' 11 - 1/2"	20' 11 - 1/2"	17' 4 - 1/2"	17' 4 - 1/2"	8' 1/2"	8' 1/2"
49'	38 - 1/2"	4	24' 5 - 1/2"	21' & 3' 5 - 1/2"	20' 1 - 1/2"	20' 1 - 1/2"	9' 4 - 1/2"	9' 4 - 1/2"
55'	46 - 1/2"	4	27' 5 - 1/2"	21' & 6' 5 - 1/2"	22' 5 - 1/2"	21' & 1' 5 - 1/2"	10' 9 - 1/2"	10' 9 - 1/2"
60'	53 - 1/2"	4	29' 11 - 1/2"	21' & 8' 11 - 1/2"	24' 4 - 1/2"	21' & 3' 4 - 1/2"	9' 1"	9' 1"
63'	57 - 1/2"	4	31' 5 - 1/2"	21' & 10' 5 - 1/2"	25' 6 - 1/2"	21' & 4' 6 - 1/2"	13' 9 - 1/2"	13' 9 - 1/2"
68'	65 - 1/2"	4	34' 5 - 1/2"	21' & 13' 5 - 1/2"	27' 10 - 1/2"	21' & 6' 10 - 1/2"	12' 6 - 1/2"	12' 6 - 1/2"
72'	69 - 1/2"	4	35' 11 - 1/2"	21' & 14' 11 - 1/2"	29' 1/2"	21' & 8' 1/2"	13' 1/2"	13' 1/2"
75'	73 - 1/2"	4	36' 5 - 1/2"	21' & 16' 5 - 1/2"	30' 2 - 1/2"	21' & 9' 2 - 1/2"	13' 6 - 1/2"	13' 6 - 1/2"

The labels "A", "B", "C" and "D" correlate with the same labels *in Figure 2B on page 6.*

### Control Rod Assembly.



**Figure 2C**

1. Screw two (2) 1/2" rod sections together using an Internal Threaded Coupler, as shown *in Figure 2D*.

## 2. ASSEMBLY

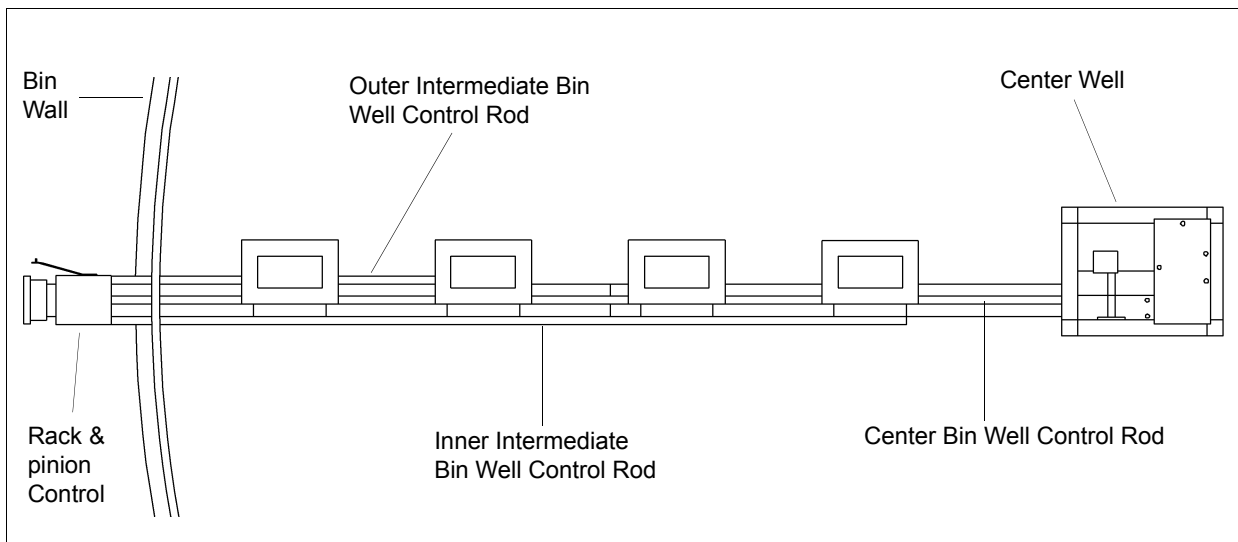
### Optional Commercial Bin Well Rack & Pinion Control.

**F** The optional Rack & Pinion Control can be used with up to three (3) sets of controls.

The center controller is used to open and close the Center Bin Well.

The two (2) other controls are used to open and close the Intermediate Bin Wells.

Control Rod Kits can be purchased with the rods pre-cut to be ready for use. See your distributor for more information.



**Figure 2D**

1. Place the Rack & Pinion Control on the Unload Tube, positioning the control rod sleeves toward the bin.
2. Turn the control rod sleeves into the housing.
3. Move the Rack & Pinion Control as close as possible to the unload tube flange.
  - a. Be sure to leave room to reach the flange bolts, especially if frequently installing and removing the Powerhead.
4. Tighten the Rack & Pinion Control in place by using the half bands and 5/16" x 1" bolts and nuts.
5. Close the Center Bin Well control gate.
6. Turn the control sleeve assembly toward the bin as far as possible.
7. Measure from the Center Bin Well control gate to the hole in the center control rod sleeve.
8. Add 2" (5.08 cm) to the measurement from [Step 7](#).
9. Use the total from [Step 8](#) and cut a control rod of that length.
10. Attach the control rod to the Center Bin Well control gate.

11. Attach the control rod to the Rack & Pinion Control.
12. Bolt the control rod to the control rod sleeve, using a roll pin or 5/16" bolt and nut.
  - a. Available for purchase are Control Rod Guides. Control Rod Guides are necessary when not using the recommended number of Intermediate Bin Wells or when there is a larger-than-normal distance between the bin wells.
  - b. The control rods **MUST** be supported. Unsupported control rods can sag causing misalignment which will cause the controls to grind. This is a misuse of the equipment. Any misuse of the equipment may void the warranty.
13. Make sure the Intermediate Bin Wells are properly distanced.
14. Make sure the Intermediate Bin Well control gates open toward the center of the bin.
  - a. The control rods must be pulled to open the bin well control gates.
15. Close all control gates.
16. Know which control rod opens each well.
  - a. One control rod should control the Center Bin Well.
  - b. One control rod should control the Intermediate Bin Wells nearest to the center Bin wall.
  - c. The control rod should control the Intermediate Bin Wells nearest to the bin wall.
  - d. The control rods for the Intermediate Bin Wells should each control an even number of bin wells.
17. Measure from the Intermediate Bin Well control gates clamps to the holes in their respective control rod sleeves.
18. Add 2" (5.08 cm) to the measurement from [Step 17](#).
19. Cut a control rod the length of the total determined [Step 18](#).
20. Attach the control rod to the Intermediate Bin Wells it will control.
21. Attach the opposite end to the Rack & Pinion Control.
22. Secure the control rod to the control rod sleeve, using a roll pin or a 5/16" bolt and nut.

## 2. ASSEMBLY

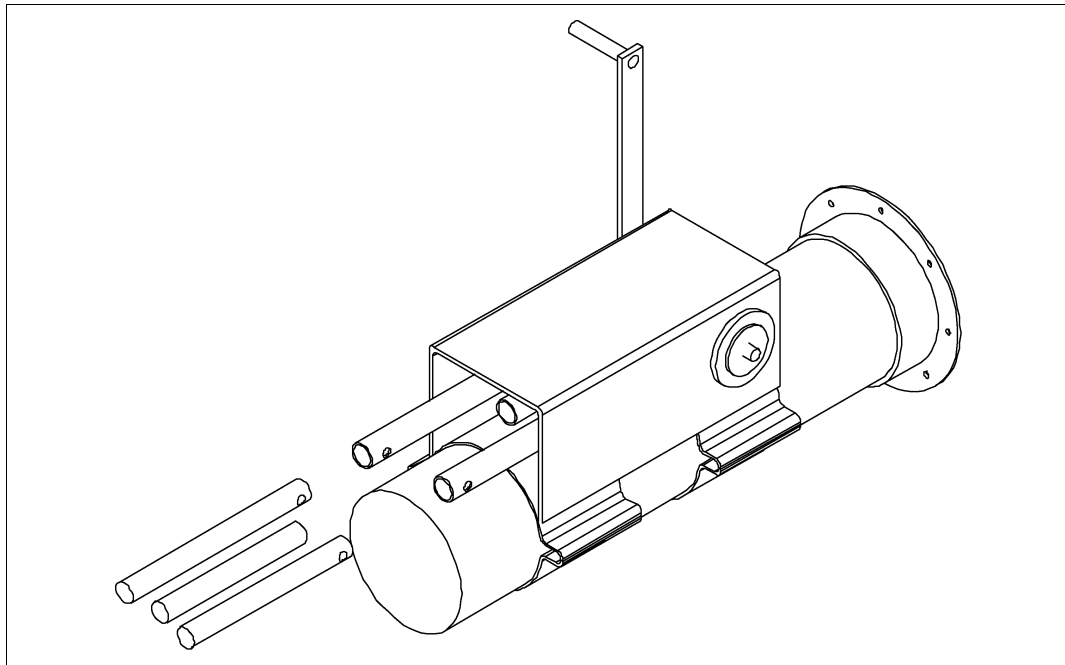


Figure 2E

### Operation of the Optional Commercial Bin Well Rack & Pinion Control.

1. Move all the control rod sleeves toward the bin as far as possible.
2. Check to see that all bin well control gates are properly closed.
3. Open the Center Bin Well to the proper flow rate.
  - a. The control rods must be pulled to open the bin well control gates.
4. NEVER open the Intermediate Bin Wells until grain is no longer flowing from the Center Bin Well.
  - a. When it is time to open the Intermediate Bin Wells control gates, they can be opened one at a time, or all at once.



**Be sure the Center Bin Well is also open when the Intermediate Bin Wells are open.**

5. If using the Direct Gear Drive Bin Sweep Auger, open the Center Bin Well control gate as far as possible, by removing the pin from the center control rod. Then place the control rod in the **CLOSED** position, and insert the pin in the second (2nd) hole of the center control rod.
6. To close the opening, perform [Step 5](#) in reverse.





## 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
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **
	Feed Tubes (1.75" & 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 & Tower Dryers	2 Years
	Portable & Tower Dryer Frames and Internal Infrastructure †	5 Years

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

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

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

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12<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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