

Scattergrain Grain Spreader

Model #: FFD-120-WH

Installation and Operation Manual

PNEG-258

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DMC

BY THE

GSI GROUP



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1. Safety

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 a hazardous situation which, if not avoided, will result in death or serious injury.



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



CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



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

General Safety Statement

Our foremost concern is your safety and the safety of others associated with grain handling equipment. This manual is to help you understand safe operating procedures and some problems that may be encountered by the operator and other personnel.

As owner and/or operator, you are responsible to know what requirements, hazards, and precautions exist and 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, which may produce a very dangerous situation, where **SERIOUS INJURY** or **DEATH** may occur.

You should consider the location of the bin site relative to power line locations or electrical transmission equipment. Contact your local power company to review your installation plan or for information concerning required equipment clearance. Clearance of portable equipment that may be taken to the bin site should also be reviewed and considered. Any electrical control equipment in contact with the bin should be properly grounded and installed in accordance with National Electric Code provisions and other local or national codes.

This product is intended for the use of grain storage only. Any other use is a misuse of the product.



This product has sharp edges, which may cause serious injury. To avoid injury, handle sharp edges with caution and always use proper protective clothing and equipment.

Sidewall bundles or sheets must be stored in a safe manner. The safest method of storing sidewall bundles is laying horizontally with the arch of the sheet upward, like a dome. Sidewall sheets stored on edge must be secured so that they cannot fall over and cause injury. Use care when handling and moving sidewall bundles.

Personnel operating or working around 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.

1. Safety

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 that 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

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 away from rotating parts.

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



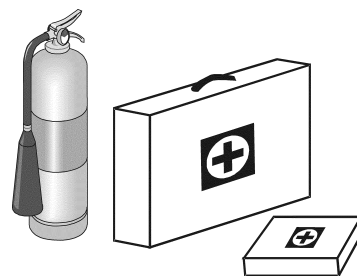
Maintain Equipment and Work Area

Prepare for Emergencies

Be prepared if fire starts.

Keep a first aid kit and fire extinguisher handy.

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



Keep Emergency Equipment Quickly Accessible

Wear Protective Clothing

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

Remove all jewelry.

Tie long hair up and back.

Wear safety glasses at all times to protect eyes from debris.

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

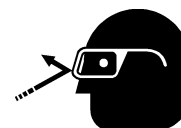
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

A respirator may be needed to prevent breathing potentially toxic fumes and dust.

Wear a hard hat to help protect your head.

Wear appropriate fall protection equipment when working at elevations greater than six feet (6').

Eye Protection



Gloves



Steel-Toed Boots



Respirator



Hard Hat



Fall Protection



2. Safety Alert Decals

GSI Group recommends contacting your local power company and having a representative survey your installation so the wiring is compatible with their system and adequate power is supplied to the unit.

Safety decals should be read and understood by all people in the grain handling area. Decal (DC-GBC 1A) on Page 9 should be present on the inside bin door cover of the 2 ring door, on the cover of the 24" porthole door and on the roof manway cover. DC-1224 and DC-1225 or similar decals, should be present on the bin. Please contact the dealer or factory for free replacements. All decals must be replaced if they are destroyed, missing, painted over or can no longer be read.

If a decal is damaged or is missing contact:



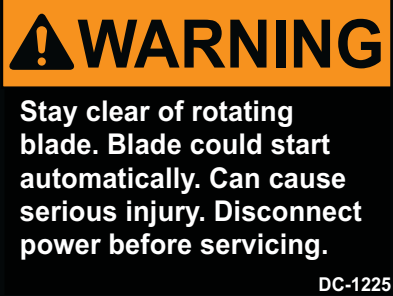
Contact:

GSI Decals

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

A free replacement will be sent to you.

NOTE: *Decals not to scale.*

		
<p>HIGH VOLTAGE.</p> <ul style="list-style-type: none">• Will cause serious injury or death.• Lockout power before servicing. <p>DC-1224</p>	<p>DC-1225</p>	



DANGER



Rotating flighting will
kill or dismember.



Flowing material will
trap and suffocate.



Crusted material will
collapse and suffocate.

Keep clear of all augers. DO NOT ENTER this bin!

If you must enter the bin:

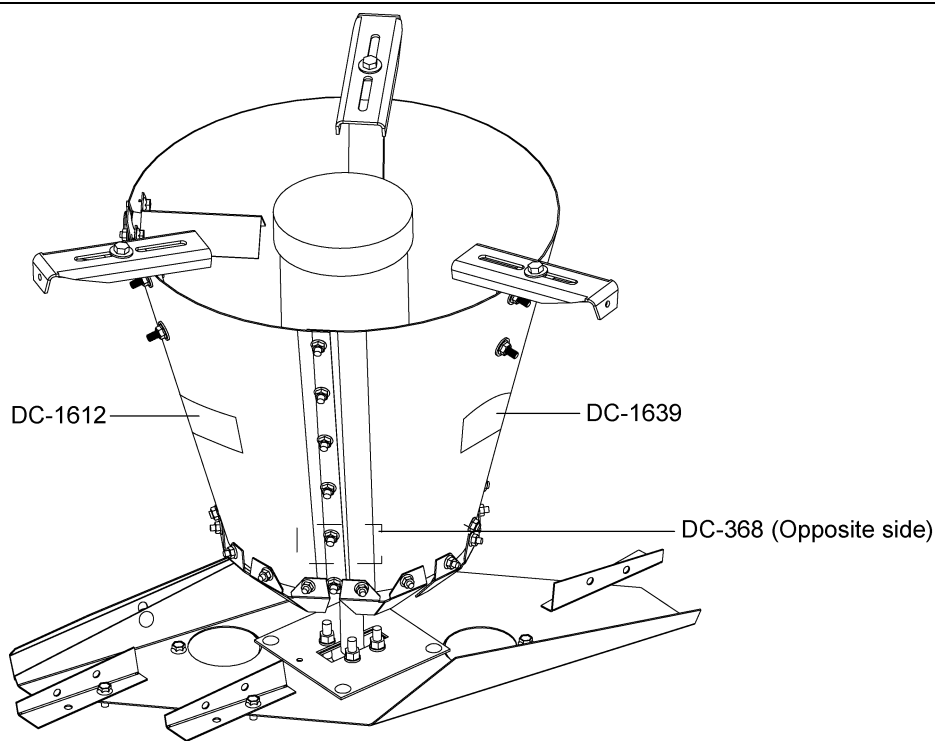
1. Shut off and lock out all power.
2. Use a safety harness and safety line.
3. Station another person outside the bin.
4. Avoid the center of the bin.
5. Wear proper breathing equipment or respirator.

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

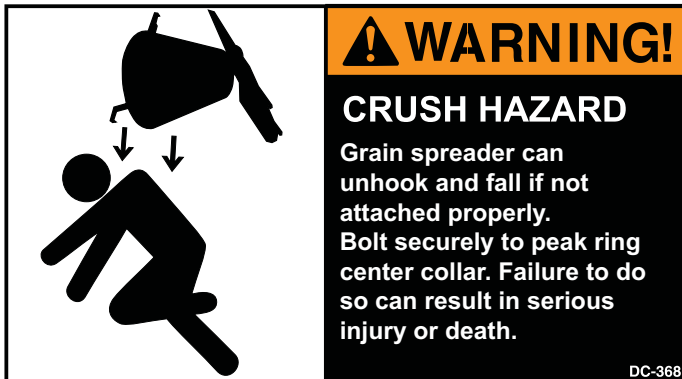
DC-GBC-1A

DC-GBC-1A

2. Safety Alert Decals



DC-1639 Located on the cone segment.



DC-368 Located on the cone segment.



DC-1612 Located on the cone segment.

3. Grain Spreader Assembly Instructions

1. Carefully unpack the unit and inspect for shipping damage.
2. Check tightness of all bolts in the cone and blade assemblies.
3. Select the proper number of diverter segments required. (See diverter segments chart [below](#).)

Diverter Segments Chart

Fill Auger (Diameter)	Diverter Segments (# Required)
6"	8
8"	4 (Equally Spaced)
10" or Larger	0

NOTE: *The various types of grain, moisture content, bin diameter and capacity of fill auger are all conditions that impact the evenness of spread. Some experimentation is needed to attain the ideal spread pattern.*

4. Installation

Grain Spreader Installation

1. Adjust hanger extensions to fit roof opening and install the power spread unit.
2. Use the 9/32" hole at the end of each hanger extension and bolt hanger extensions to hatch collar.
3. Tighten all bolts holding hanger extensions.
4. Once unit is installed, use a carpenter's level across the top of the spreader cone to confirm it is level in all directions. (See Figure 4A.)

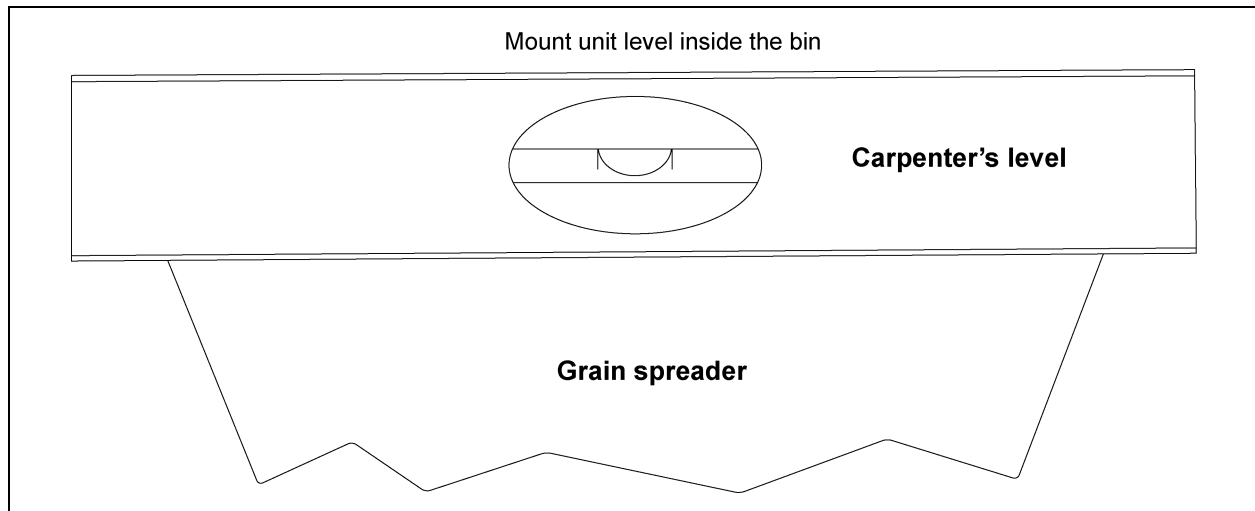


Figure 4A Mount Spreader and Check with Level

5. If the unit is not level, add spacer washers between hanger brackets and hanger extensions to level unit. (See Figure 4B.)

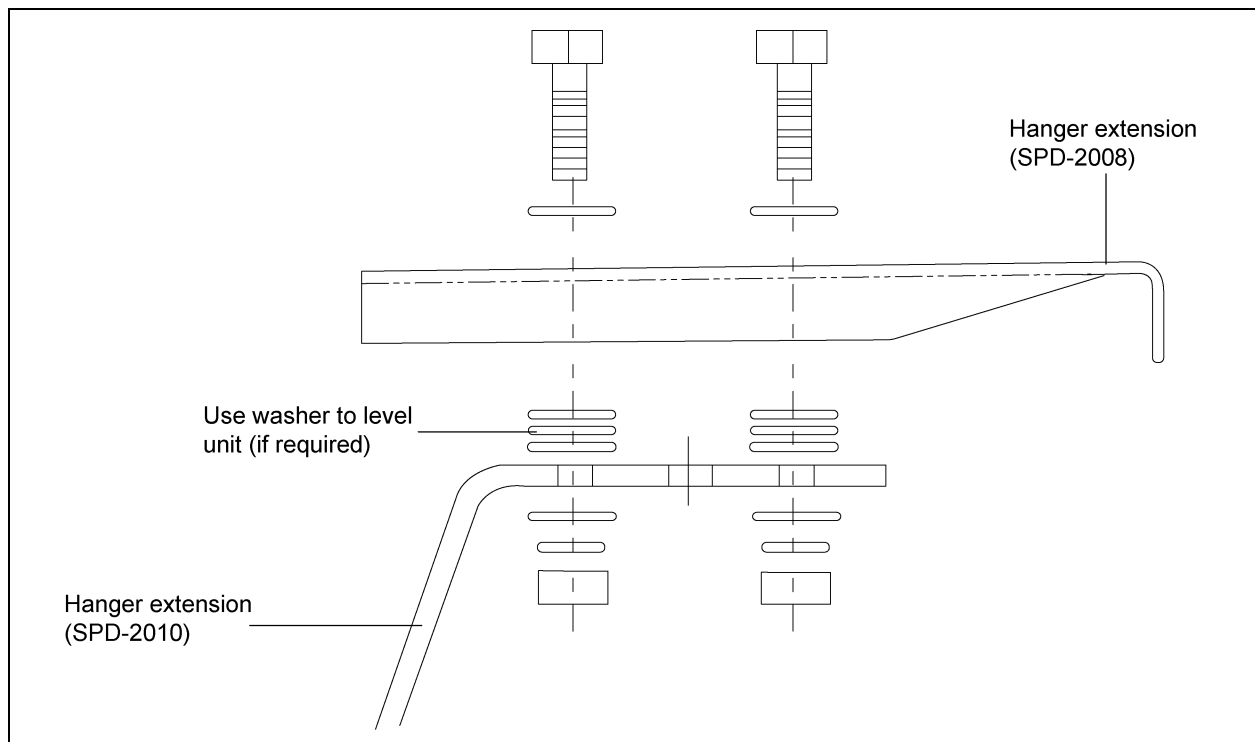


Figure 4B Use Washers to Level Unit

Grain Spreader Installation (Continued)



The Scattergrain 1/2 HP motor is protected with an internal automatic reset overload. Before servicing, all power to the unit must be disconnected and locked out to avoid a possible re-set/re-start and serious injury.

Before connecting and applying power, rotate the spreader blade by hand to be certain it rotates freely without obstruction. The motor turns the spreader blade counterclockwise as viewed from above the unit. The power spread unit requires 115 volt power supply. The minimum wire size is 14 gauge for runs up to 200'. It is advisable to provide additional protection such as 15 amp slow blow fuses or 20 amp circuit breaker. Consult a licensed electrician for wire size on longer runs. Regardless of grain type and bin size, the grain flow must be directly down (vertical) and centered (horizontal) within the spreader cone. (See Figure 4C.) This must be done in order to prevent high and low grain surface areas from one side of the bin to the other.

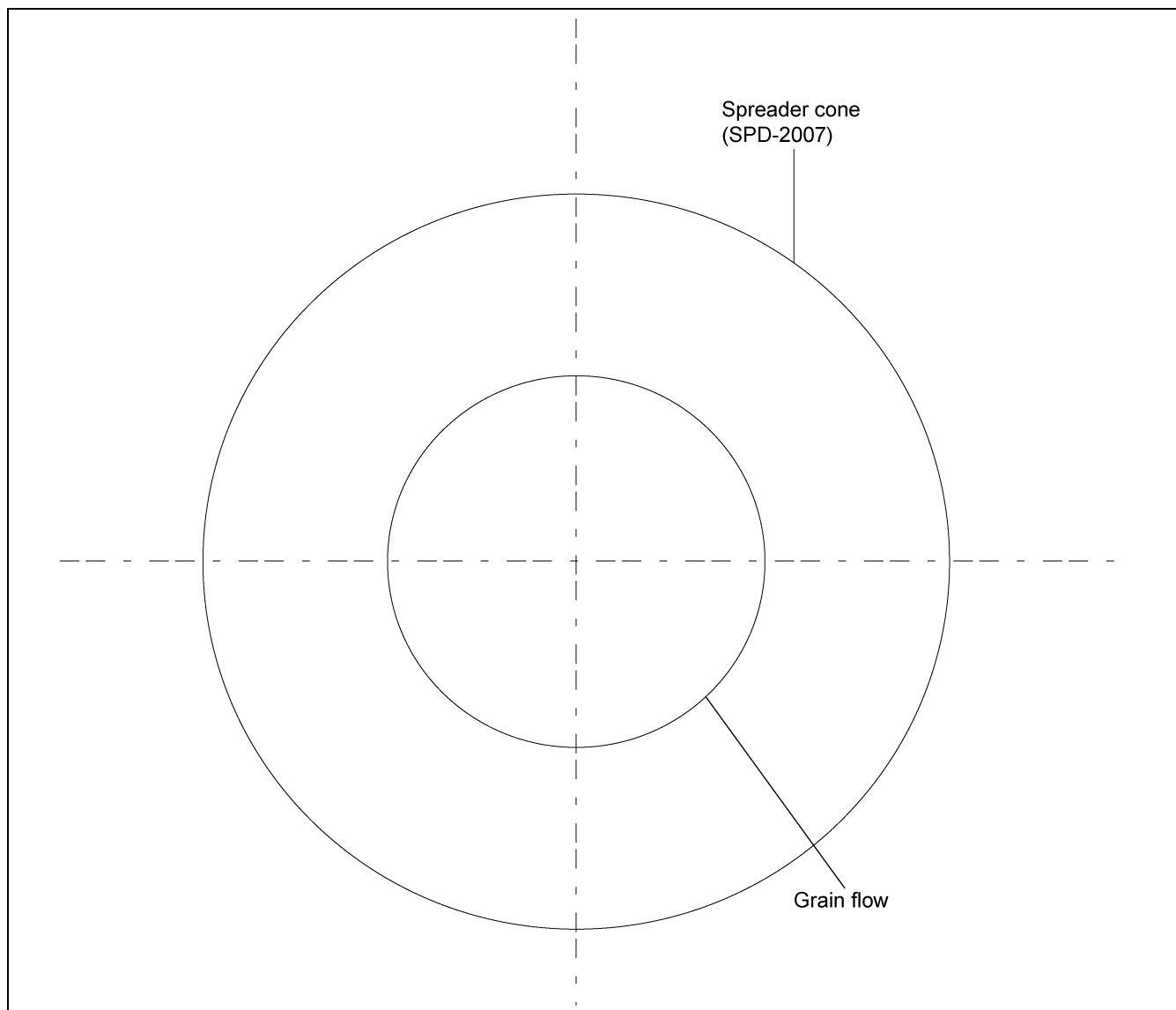


Figure 4C Grain flow must be centered within the spreader cone.

5. Instructions

Operating Instructions

The grain spreader blade assembly has four (4) features to adjust the grain flow pattern.

1. Tilt adjusts the entire spreader blade, which controls overall grain spread. To adjust tilt, loosen the two (2) U-bolts that allow the blade to tip up and down. This may vary according to bin diameter and fill rate. (See Figure 5A.)

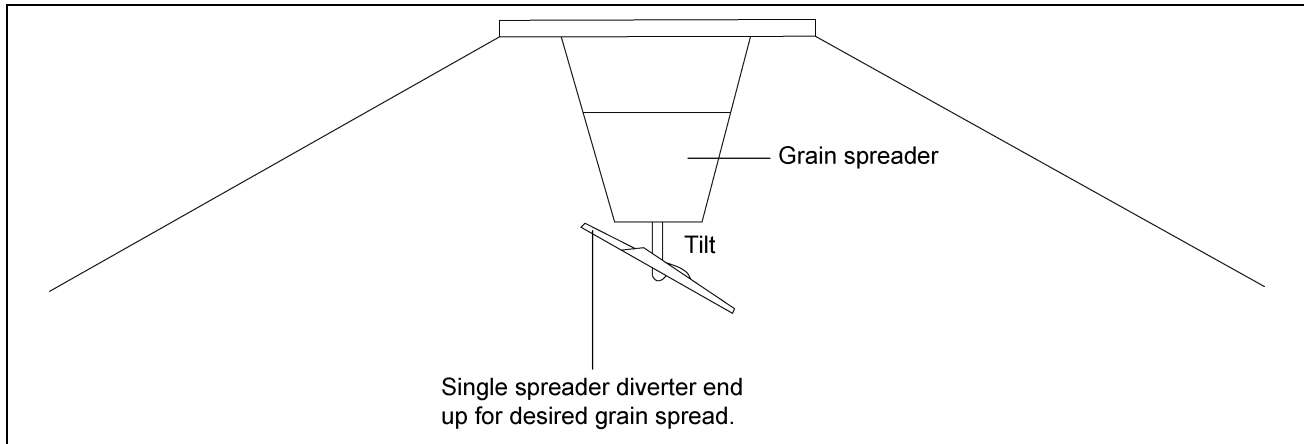


Figure 5A Adjustment of the Tilt

2. Spreader diverters (grain guide baffles) are used to increase or decrease grain flow resistance over the spreader blade. With the diverters straight, the grain will travel farther. Angled grain diverters shorten the throwing distance. (See Figure 5B.)

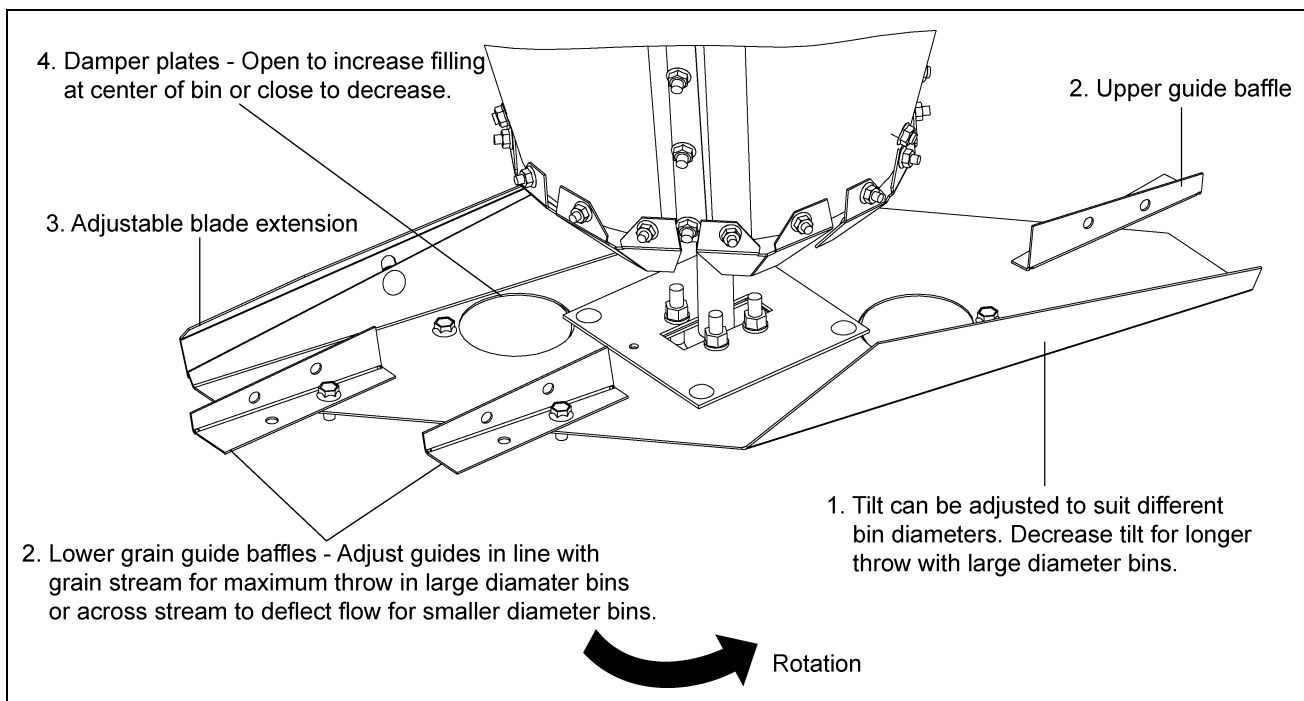


Figure 5B Four (4) Features for Adjusting the Grain Flow Pattern

3. Blade extension is used when extra throwing distance is required for larger bins.
4. Dampers are used to control center filling.

Adjustment for Bin Fill

			Large Bin 36" Diameter and Greater	Small Bin 24" Diameter and Less
Ref #	Part	Type	Operation/Procedure	Operation/Procedure
1	Spreader Blade	Tilt	Decrease (flatten)/loosen U-bolts and pivot the blade to horizontal. Always refer to single diverter side as gauge.	Increase/loosen U-bolts and pivot the blade (single diverter side) upward.
2	Spreader Diverter	Single Side	Decrease (center filling)/loosen bolts and rotate diverter clockwise.	Increase (center filling)/loosen bolt and rotate diverter counterclockwise.
		Dual Side	Decrease (center filling)/loosen bolts and rotate diverters clockwise to direct flow in line with grain stream.	Increase (center filling)/loosen bolt and rotate diverters counterclockwise to direct flow across grain stream.
3	Blade Extension	Tilt	Increase/loosen bolt and pivot the extension upward to maximum allowance in slotted hole.	Remove blade extension.
4	Damper	Opening	Decrease (center filling)/loosen bolts and pivot dampers to nearly closed position.	Increase (center filling)/loosen bolts and pivot dampers to almost fully open position.

1. Rotation is always viewed from top of the unit looking down on to the blade.
2. Be sure to fully tighten all bolts after each adjustment is made.
3. These adjustments describe the requirements for both extremes of bin sizes. For bin sizes between 24" and 36" in diameter, start with intermediate adjustments and vary slightly as required to reach desired results.

6. Maintenance

For normal operation, annually re-lubricate both motor bearings with approximately ten (10) drops of 5W-30 oil. The gears of the gearbox assembly are lubricated with a special high temperature, food grade lubricant (SPD-2109) at the time of manufacturing. The level of grease in the gearbox should be checked annually and will not normally require further lubrication unless seal breakage occurs. After the grease has settled to the bottom of the gearbox, the grease level can be checked. The grease level should not be more than 1/4" below the vent plug. (See Figure 6A.) It may be necessary to insert a wire through vent plug hole to determine the grease level. The grease level also can be checked by removing motor and viewing grease level through the hole for the motor pinion gear.

Inspect seals annually for signs of leakage (check bearings annually for tightness).

In the event the motor fails to start, check power supply to the motor. If power supply exists and motor still fails to start, disconnect power and check blade for freedom of rotation. If power does not exist, check for blown fuse or flipped circuit breaker.

If motor stops operating for no apparent reason, wait approximately 5 minutes for the automatic overload protection device to reset and reattempt operation. If problem continues, check power supply for voltage and check blade of unit for freedom of rotation.

If motor pinion requires removal for any reason, it must be properly installed and located, as shown in the parts assembly [on Page 18](#).

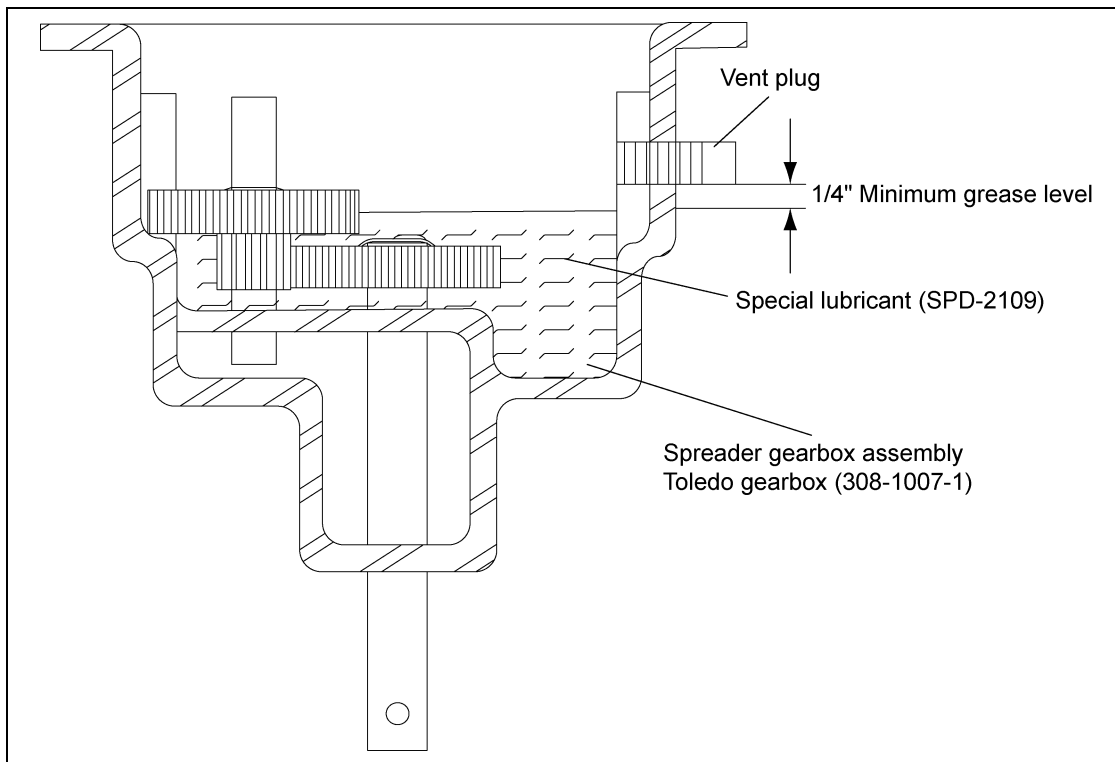


Figure 6A The gear box assembly showing grease level.

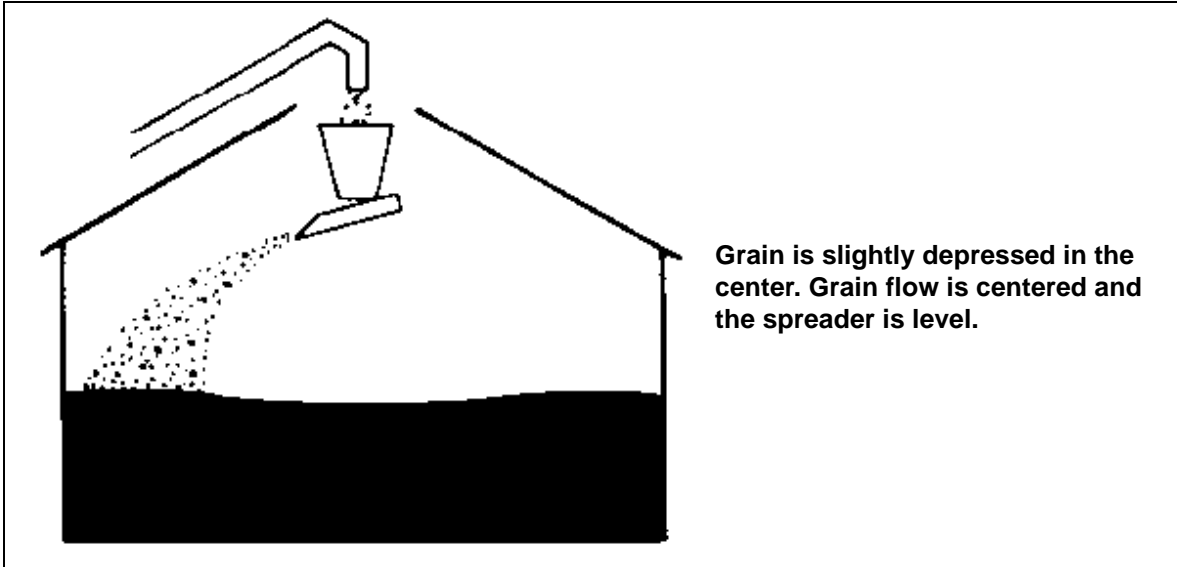


Disconnect power supply before attempting any type of service. The motor is protected with a self-resetting overload protection.



Failure to disconnect power can result in serious injury or death.

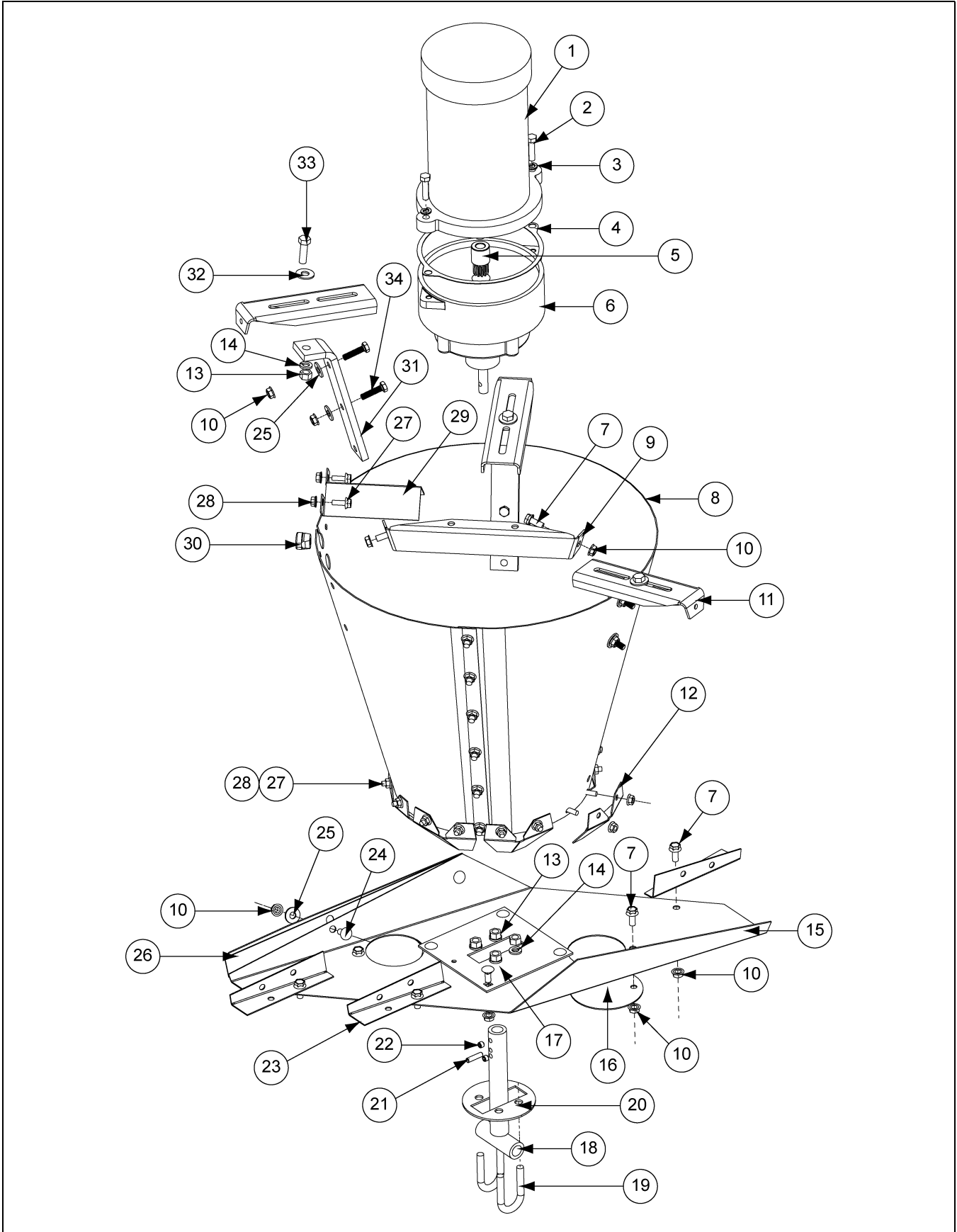
Correct Spreading Pattern



Trouble	Probable Cause	Illustration
Large doughnut shaped ring caused by grain hitting high on bin wall.	Tilt blade downward, decrease bite. Remove blade extension.	<p>Spreader blade too flat</p>
Grain is high in center of bin, small dough nut.	Flatten blade, increase bite, decrease grain flow to spreader. Add blade extension.	<p>Spreader blade too steep</p>
Grain is high on one side of bin.	Level spreader, correct grain flow to spreader, (never allow grain to flow into spreader at an angle or off center).	<p>Not level, not centered</p>

8. Power Spreader Parts Assembly

Scattergrain Spreader 1/2 HP Parts (FFD-120-WH)



8. Power Spreader Parts Assembly

Scattergrain Spreader 1/2 HP (FFD-120-WH) Parts List

Ref #	Part #	Description
1	002-1337-1	Motor, 1/2 HP 1 PH
2	S-4276	Bolt, HHCS 5/16"-18 x 1-1/4" ZN Grade 5
3	S-1147	Split lock Washer 5/16" ZN
4	321-1001-7	Gearbox Gasket
5	SPD-2186	Gearbox Pinion
5	017-1535-8	Sleeve, Pinion Gearbox
6	308-1007-1	Gearbox, 1/2 HP
7	S-6606	Flange Bolt 5/16"-18 x 3/4" ZN Grade 5
8	401-1032-2	Cone Segment
9	306-1169-3	Gearbox Mounting Bracket
10	S-3611	Flange Nut 5/16"-18 YDP Grade 2
11	SPD-2008	Hanger Extension
12	SPD-2095	Flow Diverter Segment
		6" Auger Use 8 Segments
		8" Auger Use 4 Segments
		10" Auger Use 0 Segments
13	S-456	Hex Nut 3/8"-16 YDP Grade 5
14	S-1054	Split lock Washer 3/8" ZN
15	SPD-2001	Spreader Blade
16	SPD-2006	Damper
17	SPD-2004	Upper Back Up Plate
18	SPD-2013-GY	Drive Shaft Weldment
19	S-6077	U-Bolt
20	SPD-2005	Lower Back Up Plate
21	S-6079	Pin, Spring 1/4" x 1" Plain Steel Slotted Rolled
22	S-6078	Set Screw 5/16"-18 x 1/4"
23	SPD-2003	Spreader Diverter
24	S-6076	Carriage Bolt 5/16"-18 x 3/4" ZN Grade 2
25	S-248	Flat Washer 3/8" 7/16" I.D. 1" O.D. YDP
26	SPD-2002	Blade Extension
27	S-8680	Flange Bolt 1/4"-20 x 3/4" ZN Grade 5
28	S-7215	Flange Nut 1/4"-20 ZN
29	SPD-2176	Cord Shield
30	S-6381	Fitting, Heyco 1247 BLK Strain Relief
31	SPD-2149	Hanger Bracket
32	S-248	Flat Washer 3/8" 7/16" I.D. 1" O.D. YDP
33	S-2071	Bolt, HHCS 3/8"-16 x 1-1/4" ZN Grade 5
34	S-277	Bolt, HH Bin 5/16"-18 x 1-1/4" YDP Grade 5

NOTES

GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
AP Fans and Flooring	Performer Series Direct Drive Fan Motor	3 Years	* 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	
Cumberland Feeding/Watering Systems	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 *	
Grain Systems	Grain Bin Structural Design	5 Years	
Grain Systems Farm Fans Zimmerman	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 (12th) month from the date of purchase and continuing until the sixtieth (60th) 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.

For more information, contact the DMC Distribution Center closest to you.



Illiana Distribution Center
1004 E. Illinois St.
Assumption, Illinois 62510
Phone: 1-217-226-5100
Fax: 1-217-226-5070

Clear Lake Distribution Center
5205 4th Ave South
Clear Lake, Iowa 50428
Phone: 1-641-357-3386
Fax: 1-641-357-1928

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