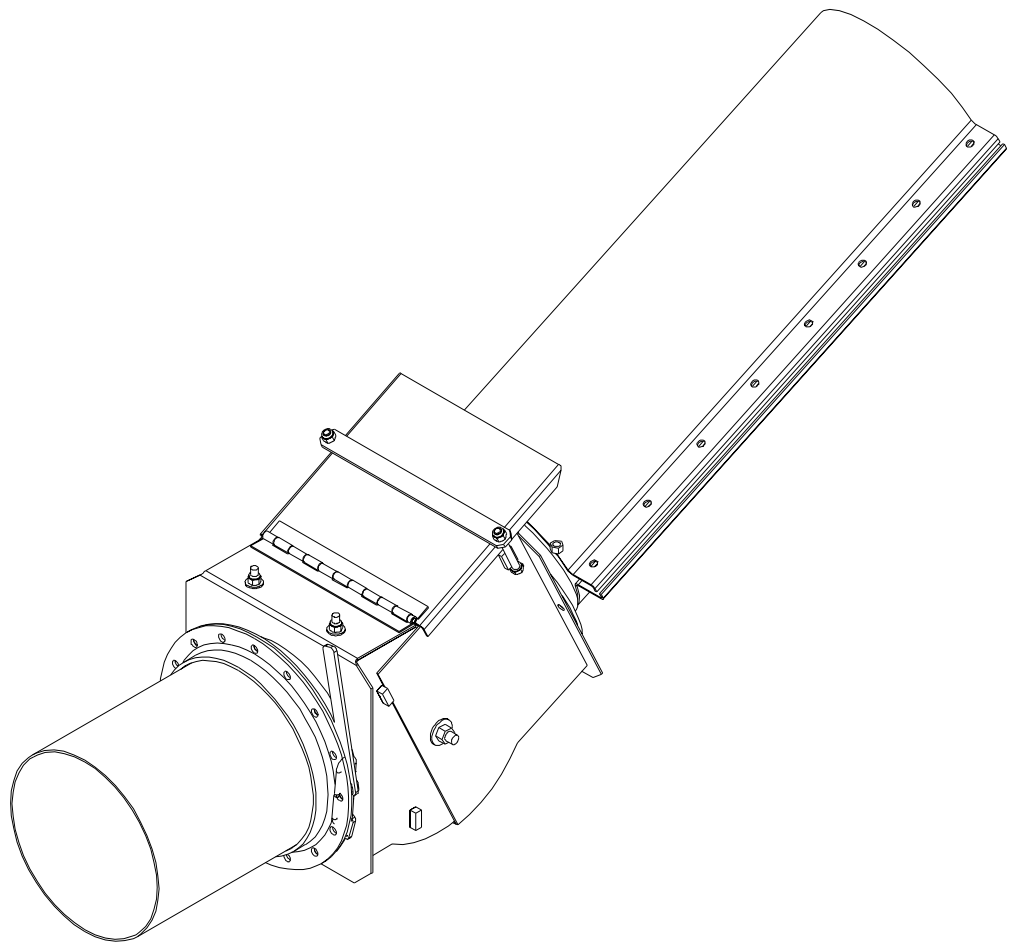


PNEG-1060
06-30-01
Revision No. 0

6", 8", & 10" Variable Angle Auger Connector

Assembly & Installation Manual



PNEG-1060
06-30-01
Revision No. 0

6", 8", & 10" Variable Angle Auger Connector



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 to.

SAFETY GUIDELINES

1. General Safety Guidelines

- A. **DO NOT** make any alterations to the equipment. Such alterations may produce a very dangerous situation, where **SERIOUS INJURY** or **DEATH** may occur.
- B. This equipment shall be installed in accordance with any regulations or installation codes that are required by law. Authorities having jurisdiction should be consulted before installations are made.
- C. Untrained operators subject themselves and others to **SERIOUS INJURY** or **DEATH**. **NEVER** allow untrained personnel to operate this equipment.
- D. Keep children and other unqualified personnel out of the working area at **ALL** times.
- E. **NEVER** start equipment until **ALL** persons are clear of the work area.
- F. Be sure **ALL** operators are adequately rested and prepared to perform **ALL** functions of operating this equipment.
- G. Keep hair, loose clothing, and shoestrings away from rotating and moving parts. **NEVER** wear loose fitting clothing when working around augers.
- H. **NEVER** allow any person intoxicated or under the influence of alcohol or drugs to operate the equipment.
- I. **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.
- J. Make sure someone is nearby who is aware of the proper shutdown sequence in the event of an accident or emergency.
- K. **NEVER** work alone.
- L. **ALWAYS** think before acting. **NEVER** act impulsively around the equipment.
- M. Make sure **ALL** equipment is locked in position before operating.
- N. Keep hands and feet away from the auger intake and other moving parts.
- O. **NEVER** attempt to assist machinery operation or to remove trash from equipment while in operation.
- P. **NEVER** drive, stand, or walk under the equipment.
- Q. Use caution not to hit the auger when positioning the load.
- R. Use ample overhead lighting after sunset to light the work area.
- S. **ALWAYS** lockout **ALL** power to the equipment when finished unloading.
- T. Keep area around intake free of obstacles such as electrical cords, blocks, etc. that might trip workers.

SAFETY GUIDELINES

2. Personal Protective Equipment

A. The proper personal protective equipment should be worn at **ALL** times by anyone in the work area.



2-B

B. **ALWAYS** wear safety glasses when in the work area.



2-C

C. The operator should **NEVER** wear jewelry.

D. Loose clothing should not be worn. Any clothing that becomes loosened should be tucked in tightly.



2-D, E

E. Loose or dangling shoe strings should be tucked in.

F. Long hair should be tied up and/or back.



2-F

SAFETY GUIDELINES

3. Emergency Shutdown Sequence

- A. In an emergency, shutdown the power source.

4. Pinch Points



NOTE: A *Pinch Point* is any place on the equipment which can injure the operator.

- A. Components of this equipment have sharp edges which can scrape and/or cut an operator.
- B. A moving auger can sever an operator's limbs or even kill him/her.

5. Shields and Guards

- A. **ALWAYS** keep **ALL** shields and guards in place during operation.

We will replace any missing shields or guards free of charge!

See (page VI) for more information on our Safety First program.

Safety **1st**

6. Operator Qualifications

- A. 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:
 - 1. Any person who has not read and/or does not understand all operation and safety procedures is not qualified to operate any auger systems.
 - 2. 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.
 - 3. Unqualified or incompetent persons are to remain out of the work area.
 - 4. 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).

SAFETY GUIDELINES

6. Operator Qualifications (*cont.*)

B. As a requirement of OSHA, 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		
16		
17		
18		
19		
20		
21		
22		

SAFETY GUIDELINES



*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 1st** design throughout all product lines. At our company - safety is **NO ACCIDENT!**

That is why we have implemented a **SAFETY 1st** 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 company 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 any safety questions, please contact the manufacturer or your local dealer.

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.

Safety Guidelines i

SAFETY 1st vi

Table of Contents vii

Decals 1

Introduction 3

Assembly 4

Parts List 7

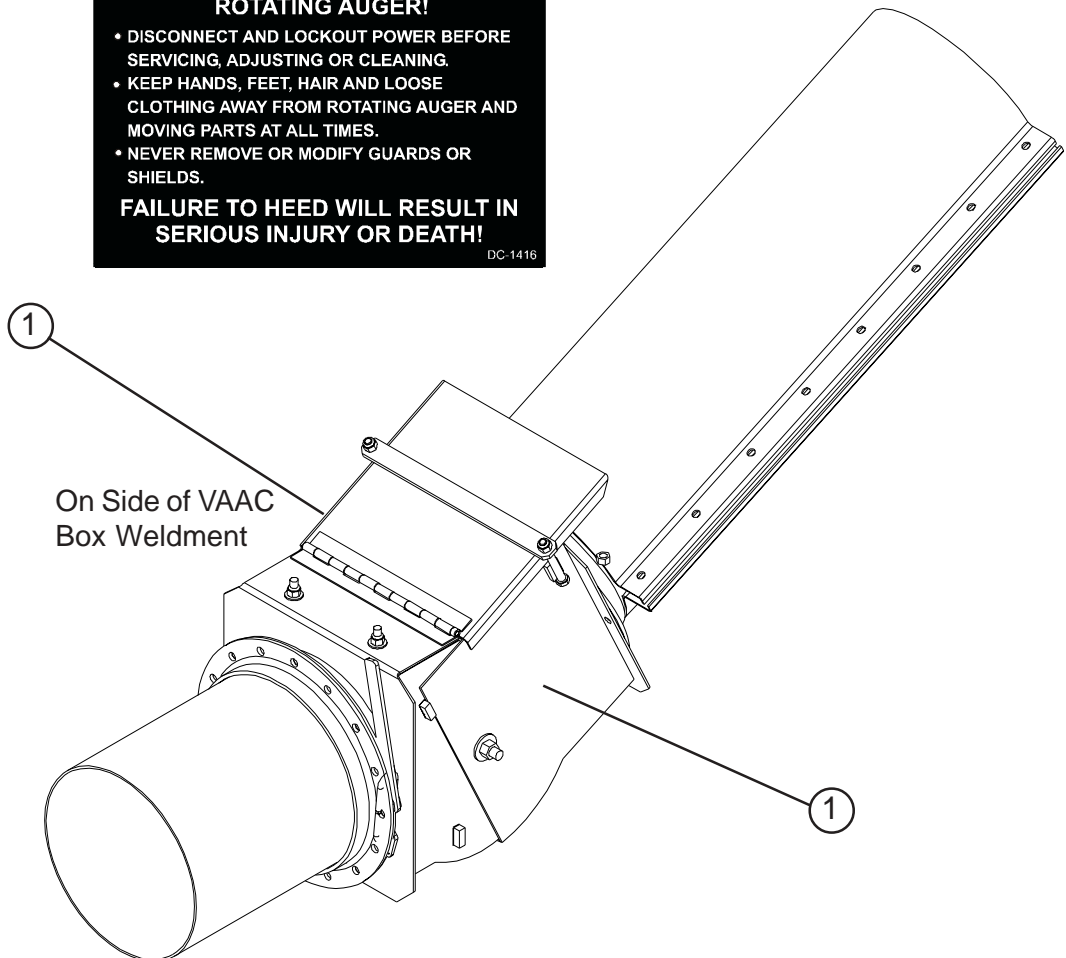
Warranty

SAFETY DECALS

The Decal List below has all the safety decals that should be included with your equipment. The illustration below shows what the decals look like and where they should be located on the equipment. Inspect all decals and replace any that are illegible, worn, or missing. Contact your local dealer or the manufacturer to order replacement decals free of charge.

VAAC Decal List			
Ref. #	Part #	Description	Size
1	DC-1416	Danger - Rotating Flight	4" x 5-1/4"

①
DC-1416



On Side of VAAC
Box Weldment

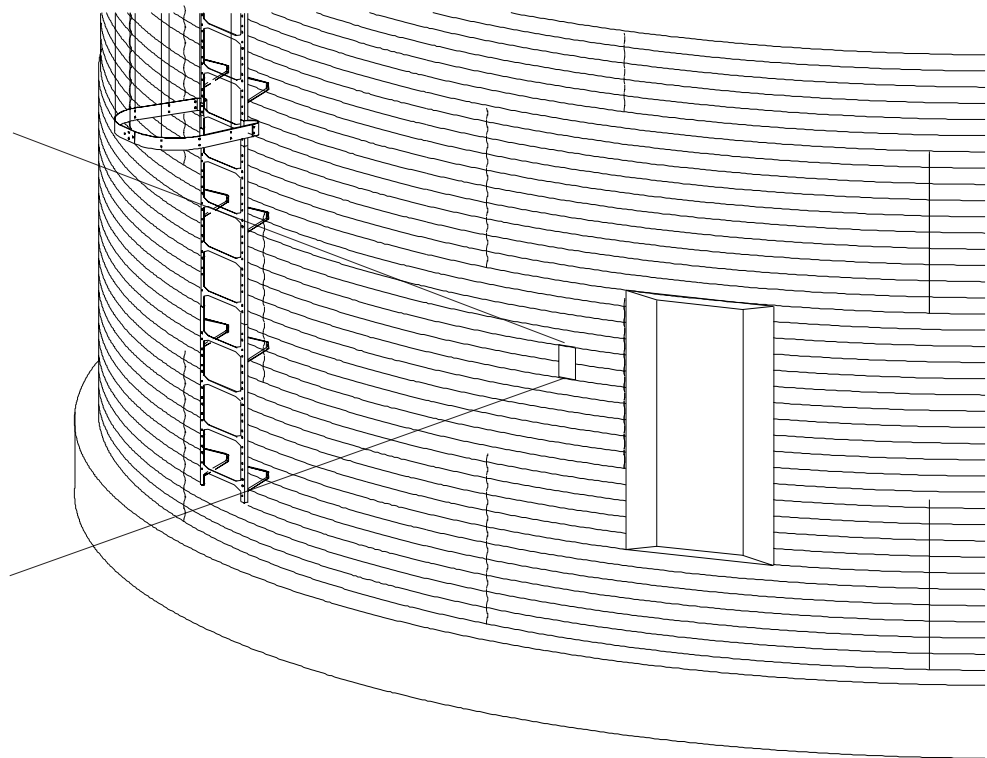
SAFETY DECALS

- DANGER Sign No. DC-1395 was supplied with your bin unloading equipment. This safety sign should be applied to the side of the bin near the bin opening, so it will be viewed by people entering into the bin storage building. Do not cover any safety signs or any other signs that are already there.
- If the safety sign location suggested is not in full view because of equipment modifications, other equipment in the area, or any reason, then locate the safety sign in a more suitable location.
- Be certain the surface is clean, dry and free of dirt and oil. Peel paper backing from decals and stick into place. The adhesive backing will bond on contact.



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

DC-1395



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

Order SAFETY SIGN NO. DC-1395

1. General Information

- A. We reserve the right to improve our product whenever possible and practical to do so. We reserve the right to change, improve, and modify products at any time without obligation to make changes, improvements, and modifications on equipment sold previously.
- B. The Variable Angle Auger Connectors have been designed and manufactured to give years of dependable service. The care and maintenance of this machine will affect the satisfaction and service obtained. By observing the instructions and suggestions we have recommended, the owner should receive competent service for many years. If additional information or assistance should be required, please contact the factory or your local dealer.
- C. **Receiving Merchandise and Filing Claims**
1. When receiving merchandise, it is important to check both the quantity of parts and their descriptions with the packing list enclosed within each package. All claims for freight damage or shortage must be made by the consignee within ten (10) days from the date of the occurrence of freight damage. The consignee should accept the shipment after noting the damage or loss.

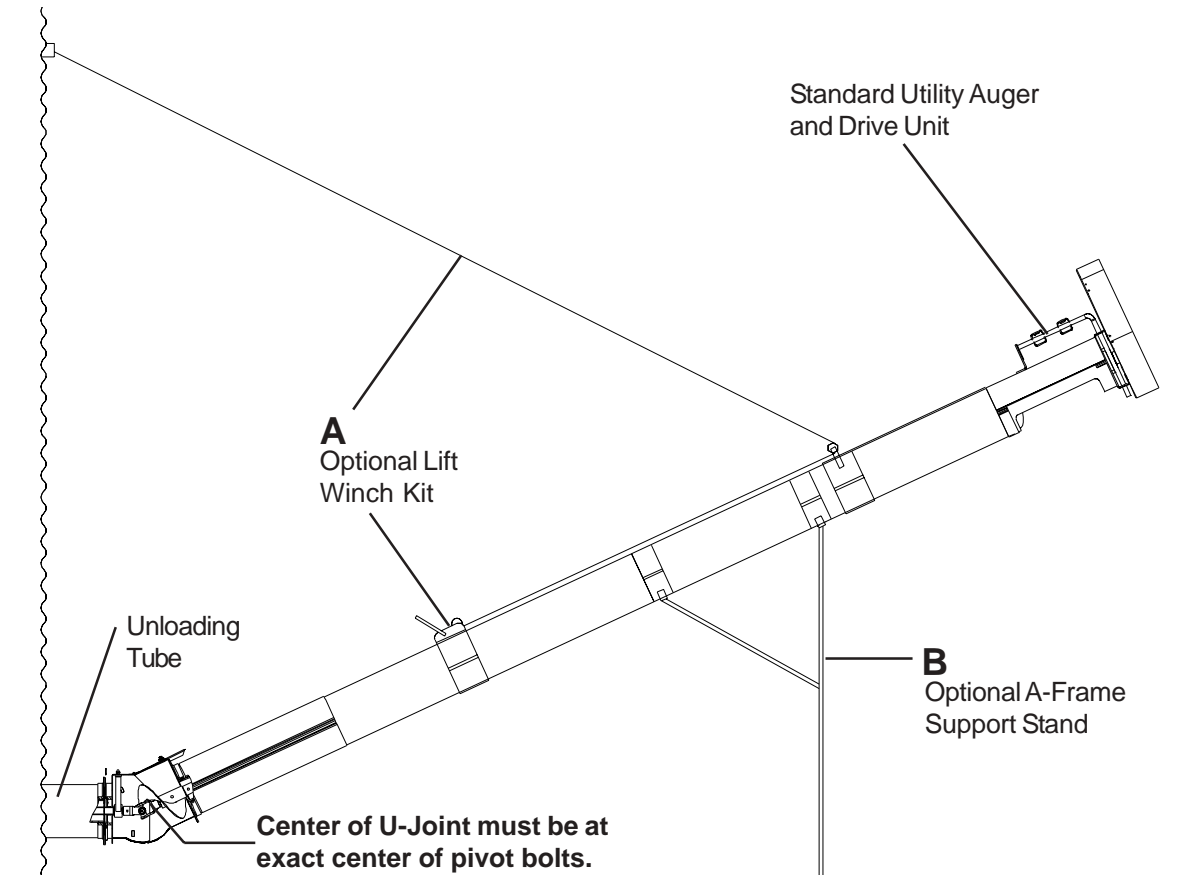
2. Capacity

- A. The capacities may vary greatly under varying conditions. The following factors play a role in the performance of the auger:
- Speed
 - Angle of operation
 - Moisture content
 - Amounts of foreign matter
 - Different materials
 - Methods of feeding
- B. For example, a twenty-five percent (25%) moisture could cut capacity by as much as 40% under some conditions.

1. INSTALLATION

With an operating range of 0° to 25°, the Variable Angle Auger Connector can be used for a variety of applications. The intake end should attach to standard flange rings for standard bin unloading flight and tubes. The discharge side of the connector box can bolt to standard flange rings, or it can make a smooth tube type connection using the short flanged tube with connecting band. The smooth tube connection allows standard utility augers to be attached to the connector box.

The illustration below shows the intake side with a VAAC connector box attached to an unloading tube and flight. The discharge side of the VAAC connector box is attached to a standard utility auger.



2. INCLINED AUGER SUPPORT

The illustration above shows two different methods of supporting the inclined auger.

NOTE The connector box **CANNOT** support the weight of the auger system attached to the output side of the connector box.

CAUTION Loosen lid strap on connector box before raising or lowering incline auger or damage may occur to equipment. The connector box will not raise higher than 25°.

OPTION A: WINCH KIT - a winch kit provides an easy means to adjust the discharge height of the inclined auger. The kit includes winch, winch mount, roller assembly, roller assembly mounts, lift cable and hardware.

OPTION B: SUPPORT STAND - An A-Frame Support Stand provides a band on support for incline auger. The support stand can be attached at different locations along the auger tube to create various operating angles.

3. CONNECTING BOX ANGLE ADJUSTMENT

⚠ DANGER DO NOT Adjust the Angle while the auger is in operation. Stop machine and lockout power before cleaning, adjusting, or servicing.

⚠ DANGER DO NOT Operate with Cover Open!

CAUTION The inclined auger must always be supported. The connector box cannot support the weight of the auger system attached to the output side of the connect box.

1. Loosen the cover strap on the connector box before changing the angle of operation.
2. Change angle of the inclined auger, by re-supporting the inclined auger at the desired angle.
3. Check to see if the u-joint is centered with pivot bolts and make sure the input flight is not rubbing on the bearing or bearing hanger on the inside of the connector box.
4. Close cover and secure the cover strap.

4. HORSEPOWER FOR AN AUGER SYSTEM WITH AN INCLINED DISCHARGE

To figure out the horsepower required for your auger system follow these steps and use the chart below.

1. Determine the overall length of auger system (horizontal plus inclined unit).
2. Multiply the total auger system length by the horsepower per foot from the chart below.
3. Round up HP to next common size motor.

HORSEPOWER CHART	
Auger Dia.	Per Foot Horsepower Multiplier
6"	0.1
8"	0.15
10"	0.23

The horsepower recommendations are for augering reasonably dry grain at varying angles. High moisture grain (above 15%) will require greater power and maximum possible capacity will be less with high moisture grain than with dry grain.

Example for 10" Unit:

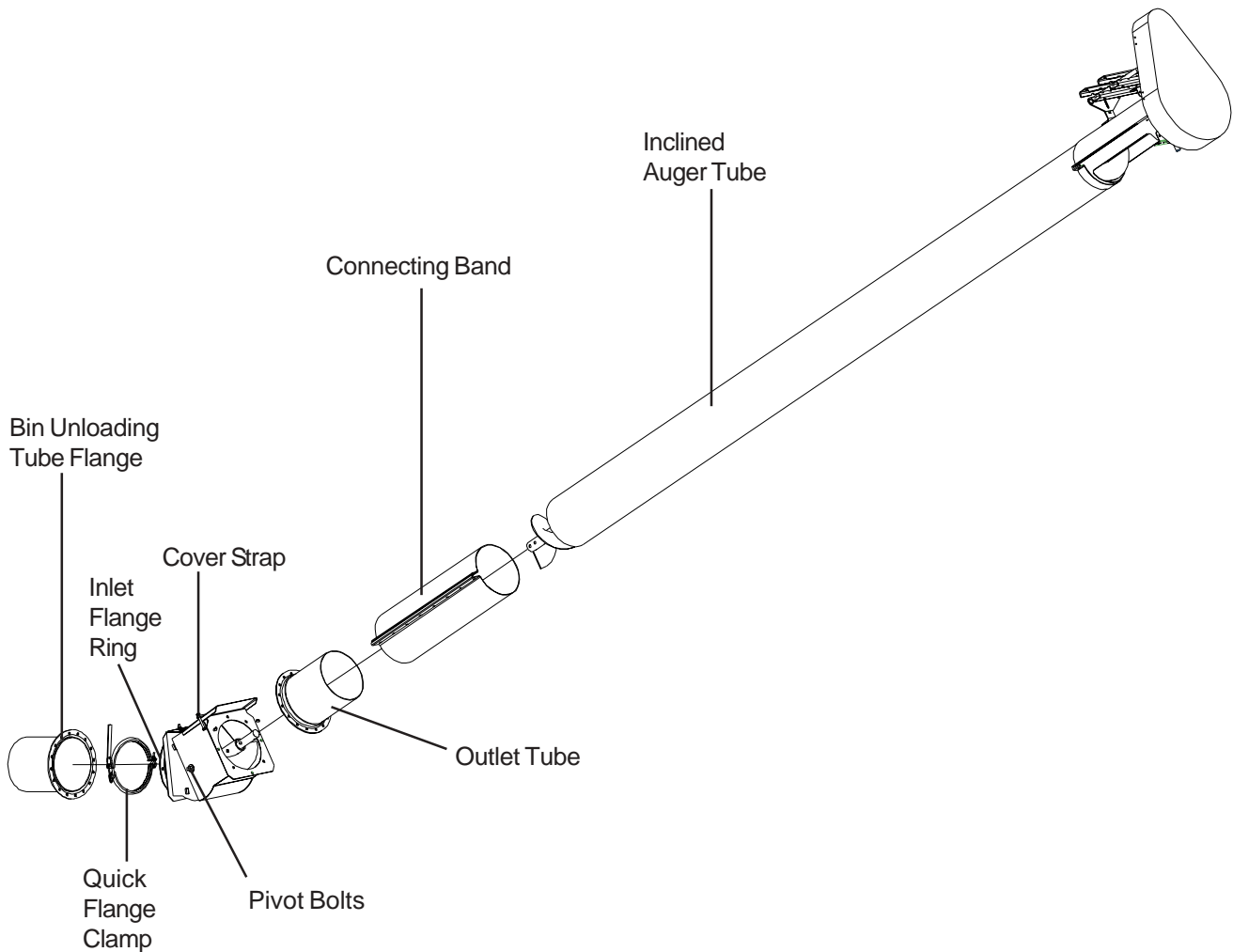
1. 16' Horizontal Portion and 11' Inclined Portion = 27' total length of auger system.
2. $27 \times .23 = 6.21$ H.P.
3. Round Up to 7 H.P. Motor.

⚠ WARNING Refer to your installation manual received with your unloading equipment for information on safety and operating procedures. This should include start-up, shutdown, lockout, break-in, full load operation, power source, and trouble shooting.

5. ASSEMBLY INSTRUCTIONS

(Assembly instruction reference numbers refer to numbers in illustration on page 9.)

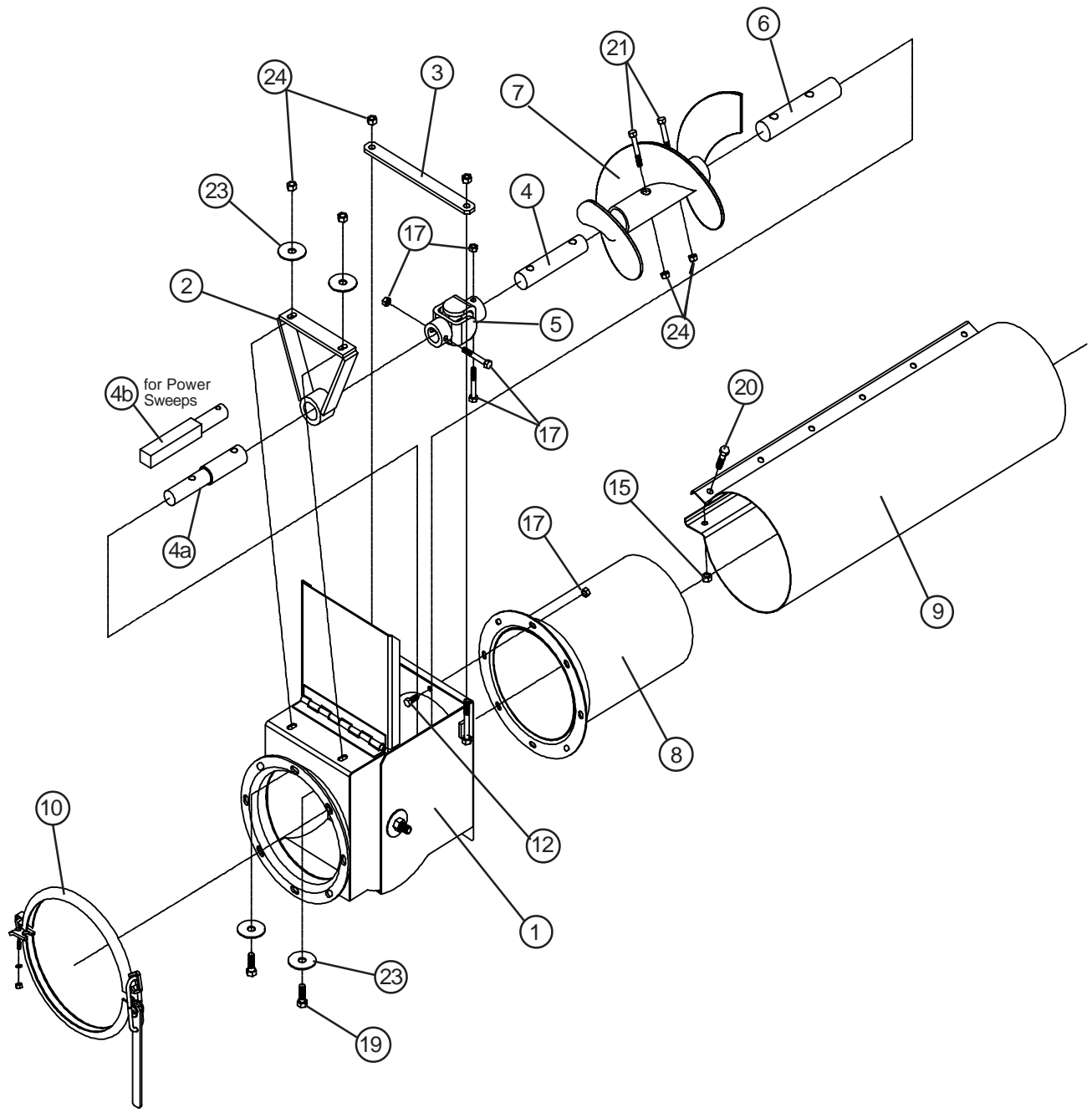
1. Connect the inlet stub (4a or 4b) to the bin unloading flight.
2. Connect the box weldment inlet flange (1) to the unloading tube flange using the quick clamp (10) or by directly bolting them together. (Note: If you have a 6" to 8" or 8" to 10" VAAC bolt the adapter plate (11) to the box weldment inlet flange (1) before attaching to the bin unloading tube flange.)
3. Remove Cover Strap (3).
4. Attach the incline auger flight to the discharge connecting stub (6).
5. Fasten the outlet tube (8) to the inclined auger tube using the connecting band (9).
6. Once the angle of the auger is adjusted, support auger with one of the options shown on page 4.
7. Replace cover strap (3) over the lid and tighten.



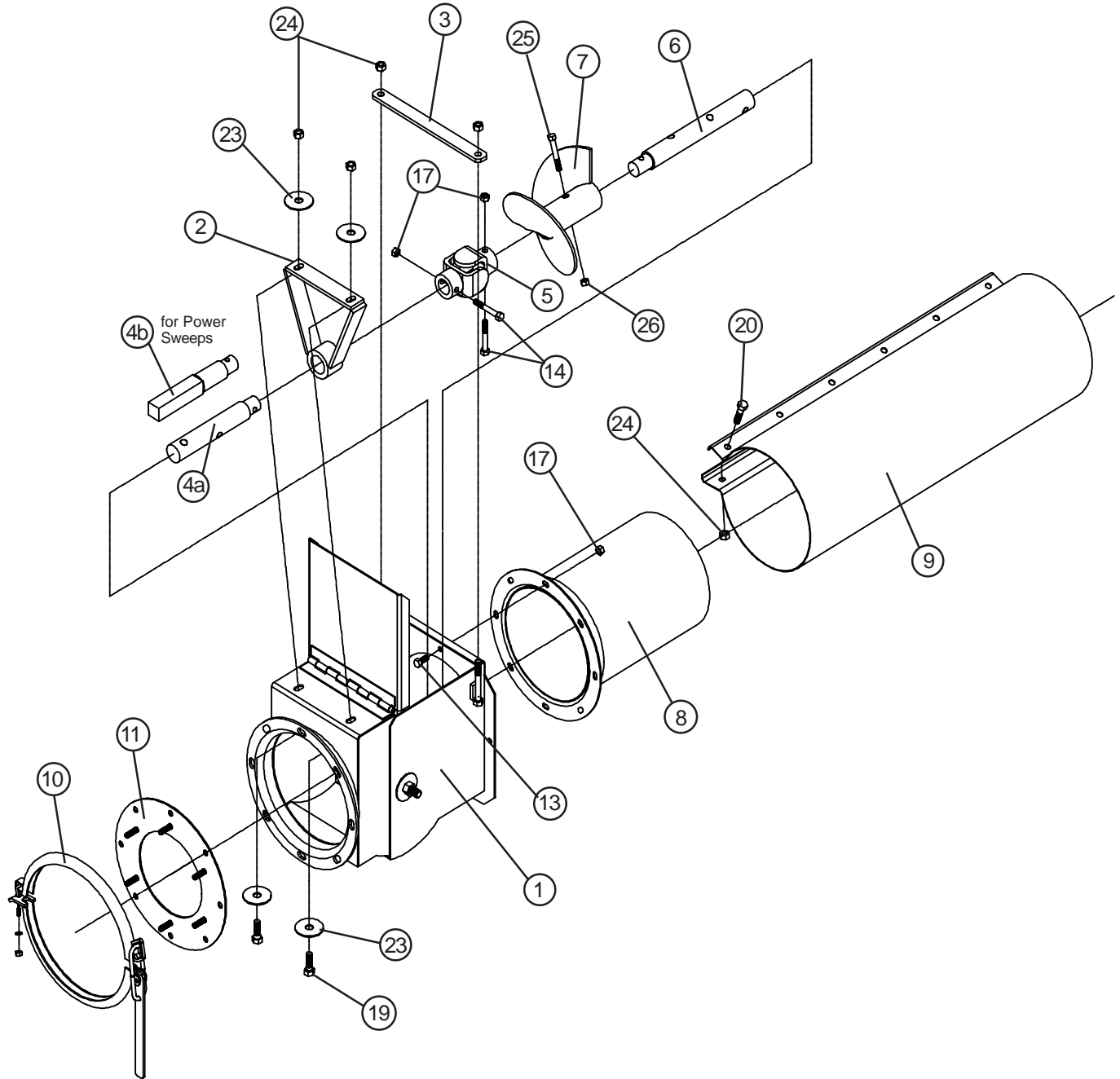
6", 8" & 10" VAAC Parts List		
Ref #	Part #	Description
1	--	VAAC Box Assembly
	GK2241	6" to 6"
	GK2251	8" to 8", 6" to 8"
	GK2258	10" to 10", 8" to 10"
2	--	Bearing with Bushing
	GK1357	for 6" VAAC
	GK2252	for 8" VAAC
	GK4253	for 10" VAAC
3	--	Cover Strap
	GK2245	for 6" VAAC
	GK2255	for 8" VAAC
	GK4956	for 10" VAAC
4a	--	Inlet Stub
	GK2249	for 6"
	GK1264	for 8"
	GK1283	for 8"
	GK1292	for 10"
	GK2263	for 10" (1-1/4" to 1-1/2" x 11-1/2")
4b	--	Inlet Stub for Power Sweeps
	GK2269	for 6"
	GK4690	for 8"
	GK2273	for 10"
5	--	U-Joint
	GK2248	1" x 3-3/4" Long for 6" to 6"
	GK1266	1" x 5" Long for 6" to 8" and 8" to 8"
	GK1291	1-1/4" x 7" Long for 8" to 10" and 10" to 10"
6	--	Connecting Stub
	GK2244	for 6" (Optional) 1" O.D. to .813" O.D.
	GK2247	for 6"
	GK2254	for 8"
	GK2264	for 10"
7	--	Flight Assembly
	GK2243	for 6"
	GK2253	for 8"
	GK2261	for 10"
8	--	Outlet Tube
	GK2246	for 6" Outlet Tube Weldment
	GK2256	for 8" Outlet Tube Weldment
	GK2266	for 10" Outlet Tube Weldment
9	--	Connecting Band
	GK1048	for 6" (24" Long)
	GK1015	for 8" (27" Long)
	GK1883	for 10" (30" Long)
10	--	Quick Clamp Assembly
	GK1013	for 6"
	GK1279	for 8"
	GK1299	for 10"
11	--	Adapter Ring
	GK1290	for 6" to 8" Adapter
	GK1298	for 8" to 10" Adapter
	--	Hardware
12	S-8072	5/16"-18 x 3/4" Zinc Grade 2 HHCS Bolt
13	S-4275	5/16"-18 x 3/4" Zinc Grade 5 HHCS Bolt
14	S-6989	5/16"-18 x 2-1/4" Zinc Grade 2 HHCS Bolt
15	S-7076	5/16"-18 x 2-1/2" Zinc Grade 5 HHCS Bolt
16	S-1937	5/16" SAE Zinc Grade 2 Flat Washer
17	S-7382	5/16"-18 Zinc Grade 5 Nylock Nut
18	S-7469	3/8"-16 x 1" Zinc Grade 5 HHCS Bolt
19	S-2071	3/8"-16 x 1-1/4" Zinc Grade 5 HHCS Bolt
20	S-2086	3/8"-16 x 1-1/2" Zinc Grade 8 HHCS Bolt
21	S-3727	3/8"-16 x 1-3/4" Zinc Grade 8 HHCS Bolt
22	S-7249	3/8"-16 x 3" Zinc Grade 5 HHCS Bolt
23	S-248	3/8" USS Zinc Grade 2 Flat Washer
24	S-7383	3/8"-16 Zinc Grade 5 Nylock Nut
25	S-7013	7/16"-14 x 2-1/2" Zinc Grade 5 HHCS Bolt
26	S-3887	7/16"-14 Zinc Grade 5 Nylock Nut

The "Ref #" refers to the numbers in the illustrations on the following two pages.

6" to 6" and 6" to 6" Power Sweep VAAC Parts



**6" to 8", 8" to 8", & 8" to 8" Power Sweep VAAC Parts
8" to 10", 10" to 10", & 10" to 10" Power Sweep VAAC Parts**



THE COMPANY WARRANTS ALL PRODUCTS MANUFACTURED TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USAGE AND CONDITIONS FOR A PERIOD OF TWELVE (12) MONTHS AFTER RETAIL SALE TO THE ORIGINAL END USER OF SUCH PRODUCTS. OUR ONLY OBLIGATION IS, AND PURCHASER'S SOLE REMEDY SHALL BE TO REPAIR OR REPLACE, AT THE COMPANY'S OPTION AND EXPENSE, PRODUCTS THAT, IN THE MANUFACTURERS SOLE JUDGEMENT, CONTAIN A MATERIAL DEFECT DUE TO MATERIALS OR WORKMANSHIP. ALL DELIVERY AND SHIPMENT CHARGES TO AND FROM THE FACTORY WILL BE PURCHASER'S RESPONSIBILITY. EXPENSES INCURRED BY OR ON BEHALF OF THE PURCHASER WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AN AUTHORIZED EMPLOYEE OF THE COMPANY SHALL BE THE SOLE RESPONSIBILITY OF THE PURCHASER.

EXCEPT FOR THE ABOVE EXPRESS LIMITED WARRANTIES, THE COMPANY MAKES NO WARRANTY OF ANY KIND, EXPRESSED 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 THE COMPANY OR (ii) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF THE COMPANY REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCT OR PRODUCTS.

IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF ANTICIPATED PROFITS OR BENEFITS. PURCHASER'S SOLE AND EXCLUSIVE REMEDY SHALL BE LIMITED TO THAT STATED ABOVE, WHICH SHALL NOT EXCEED THE AMOUNT PAID FOR THE PRODUCT PURCHASED. THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASER. WE SHALL HAVE NO OBLIGATION OR RESPONSIBILITY FOR ANY REPRESENTATIVE OR WARRANTIES MADE BY OR ON BEHALF OF ANY DEALER, AGENT OR DISTRIBUTOR OF THE COMPANY.

THE COMPANY ASSUMES NO RESPONSIBILITY FOR FIELD MODIFICATIONS. MODIFICATIONS TO THE PRODUCT NOT SPECIFICALLY COVERED BY THE CONTENTS OF THIS MANUAL WILL NULLIFY ANY PRODUCT WARRANTY THAT MIGHT HAVE BEEN OTHERWISE AVAILABLE. THE USE OF OUR EQUIPMENT TO HANDLE MATERIALS OTHER THAN FREE FLOWING, NONABRASIVE AND DRY MATERIALS, AS INTENDED, WILL RESULT IN THE VOIDING OF THIS LIMITED WARRANTY.

THE FOREGOING WARRANTY SHALL NOT COVER PRODUCTS OR PARTS WHICH HAVE BEEN DAMAGED BY NEGLIGENT USE, MISUSE, ALTERATION, OR ACCIDENT. ANY NEGLIGENT USE, MISUSE, ALTERATION, OR DAMAGE DUE TO ACCIDENT, AS DETERMINED BY A COMPANY REPRESENTATIVE, MAY VOID THE WARRANTY. THIS WARRANTY COVERS ONLY PRODUCTS MANUFACTURED BY THE COMPANY. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. WE RESERVES THE RIGHT TO MAKE DESIGN OR SPECIFICATION CHANGES AT ANY TIME, BEARING NO RESPONSIBILITY TO MAKE SIMILAR DESIGN OR SPECIFICATION CHANGES ON PREVIOUSLY SOLD MERCHANDISE.

PRIOR TO INSTALLATION, PURCHASER HAS THE RESPONSIBILITY TO RESEARCH AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES WHICH MAY APPLY TO THE LOCATION AND INSTALLATION.

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 installation occurs.

GRAIN KING

**1004 East Illinois Street
Assumption, IL 62510
217-226-4421 Phone**
