

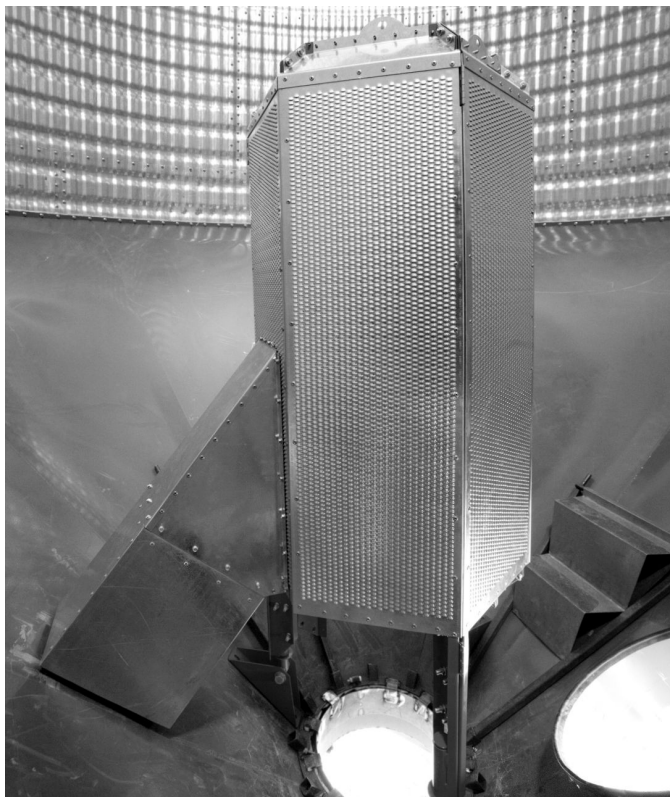


Retro Rocket Aeration Duct System

Aeration System Installation Manual

This manual applies to:

GRS-7004 / GRS-7006



Read this manual before using product. Failure to follow instructions and safety precautions can result in serious injury, death, or property damage. Keep manual for future reference.

Part Number: RNF-2666 R1

Revised: February 2025

Original Instructions

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1. Introduction

Before assembling, please read this manual. Familiarize yourself with the process and the necessary precautions for efficient and safe assembly of this AGI Retro Rocket Aeration Duct System.

Everyone present at the assembly site is required to be familiar with all safety precautions.

Keep this manual available for frequent reference and review it with new personnel. Call your local distributor or dealer if you need assistance or additional information.

General Description

The AGI Retro Rocket Aeration Duct System is an excellent addition to any new or existing hopper bottom bin that does not presently include an aeration system. It can allow you to harvest in damp conditions, maintain stored grain in peak condition, and reduce the likelihood of mould growth and insect infestations.

Key features of AGI Retro Rocket Aeration Duct System:

- Fits through existing bin openings that are at least 19" square, 22" diameter, or 18.5" x 16" oval openings
- Reduces grain drying time and increase fan efficiency by directing air into the core of the bin.
- Unique folding design allows it to be installed through an opening much smaller than itself.
- Inserts through smaller openings that are at least 16" round or 12" square by removing four bolts and inserting the rocket in sections.
- Can be assembled and unfolded into working position once inside the bin.

With proper care during and after installation, your aeration system will provide you with many years of trouble-free service.

Intended Use

The rocket aeration system is intended for use as listed below and described throughout this manual. Use in any other way is considered contrary to the intended use and is not covered by the warranty.

- Used with grains of all types.
- Do not use with fertilizer.

Refer to [Section – Specifications on page 18](#).

2. Safety

2.1. Safety Alert Symbol and Signal Words



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury or death, carefully read the message that follows, and inform others.

Signal Words: Note the use of the signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTICE** with the safety messages. The appropriate signal word for each message has been selected using the definitions below as a guideline.



DANGER Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death.

Indicates a hazardous situation that, if not avoided, could result in serious injury or death.



CAUTION Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.



NOTICE Indicates a potentially hazardous situation that, if not avoided, may result in property damage.

2.2. General Safety Information

Read and understand all safety instructions, safety decals, and manuals and follow them when assembling the equipment.

- Only experienced personnel who are familiar with this type of assembly and installation should perform this work. Untrained assemblers/installers expose themselves and bystanders to possible serious injury or death.
- Do not modify the rocket aeration system in any way or deviate from the instructions in this manual without written permission from the manufacturer. Unauthorized modification or methods may impair the function and/or safety. Any unauthorized modification will void the warranty.
- Follow a health and safety program for your worksite. Contact your local occupational health and safety organization for information.
- Contact your local representative or AGI if you need assistance or additional information.
- Always follow applicable local codes and regulations.



2.3. Safety Equipment

The following safety equipment should be kept on site.

- **Fire Extinguisher**



Provide a fire extinguisher for use in case of an accident. Store in a highly visible and accessible place.

- **First-Aid Kit**



Have a properly-stocked first-aid kit available for use should the need arise, and know how to use it.

2.4. Personal Protective Equipment

The following Personal Protective Equipment (PPE) should be worn when assembling the equipment.

- **Safety Glasses**



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

- **Work Gloves**



Wear work gloves to protect your hands from sharp and rough edges.

- **Steel-Toe Boots**



Wear steel-toe boots to protect feet from falling debris.

- **Hard Hat**



Wear a hard hat to help protect your head.

3. Installation

3.1. Installation Safety

- Do not take chances with safety. The components can be large, heavy, and hard to handle. Always use the proper tools, rated lifting equipment, and lifting points for the job.
- Always have two or more people installing the rocket aeration system.
- Make sure you have sufficient lighting for the work area.
- Tighten all fasteners according to their specifications. Do not replace or substitute bolts, nuts, or other hardware that is of lesser quality than the hardware supplied by the manufacturer.

3.2. Check the Shipment

Inspect the rocket aeration system and accessories on receipt to ensure that all items have arrived and that none are damaged.

A packing list is included in every crate for reference.

Report missing or damaged parts immediately to ensure that proper credit is received from AGI or your distributor/dealer, and to ensure that any missing parts can be shipped quickly to avoid holding up the installation.

Important

Do not use damaged components.

3.3. Required Tools

- SAE wrench and ratchet set (3/8", 7/16", 1/2", 9/16", 1-1/8")
- Electric drill with drill bits (3/16", 7/16", 13/32")
- Marker
- Torch or grinder with cutting wheel
- Impact driver or drill with 3/8" driver bit
- Level
- Tin snips
- Silicone
- Winching device with minimum load rating of 700 lbs
- Laser pointer or straight edge

3.4. Location Requirements

All models of the AGI Retro Rocket are designed to be installed in the center of hopper-bottom bins with the rocket center aligned with the center of hopper cone. To ensure structural integrity and proper airflow, the bin must be level and the rocket installed completely vertical.

NOTICE

AGI Retro Rocket are not to be used on hopper slopes more than 40° from the horizontal. For hoppers with slopes steeper than 40°, consult AGI before installation.

3.5. Methods of Installation

The two installation methods are covered in the following sections. The correct method to use depends on the opening size of the bin. Review both methods and confirm which will work best for your application. Also note that with the right lifting equipment, the Retro Rocket could also be inserted into the bin through the roof filler cap or inspection hatch.

NOTICE**To prevent equipment damage:**

- Check the bin manual to ensure bin roof is capable of holding at least 700 lbs concentrated load from the filler cap.
- If the bin roof is not capable of holding at least 700 lbs, use lifting apparatus rated to withstand the intended load.

3.5.1 Hopper Bins with Small Access Opening

Required minimum opening:

- Square: 16" (if opening is larger than 18.5" go to [Section 3.5.2 – Hopper Bins with Large Access Opening on page 10](#).)
 - Round: 16" (if opening is larger than 22" go to [Section 3.5.2 – Hopper Bins with Large Access Opening on page 10](#).)
1. Lay the rocket with the louvered side facing down.
 2. Remove the banding around the rocket.
 3. Remove the bolts from the hinges located between the 2nd and 3rd panels. See [Figure 2 on page 9](#).
 4. Remove the bolts from the hinges located between the 4th and 5th panels.
 5. Winch the panels 1 and 2 off together and place inside the bin through the bin opening.
 6. Lay the panels on the hopper cone with the side with hinge facing upward and leg pointing downward.
 7. Winch the panels 3 and 4 off together and place inside the bin through the bin opening.
 8. Align the hinge holes of panels 2 and 3 and place the hinge bolts back in place.
 9. Winch the panels 5 and 6 off together and place inside the bin through the bin opening.
 10. Align the hinge holes of panels 4 and 5 and replace the hinge bolts.

Figure 1. Panels and Hinge Bolts

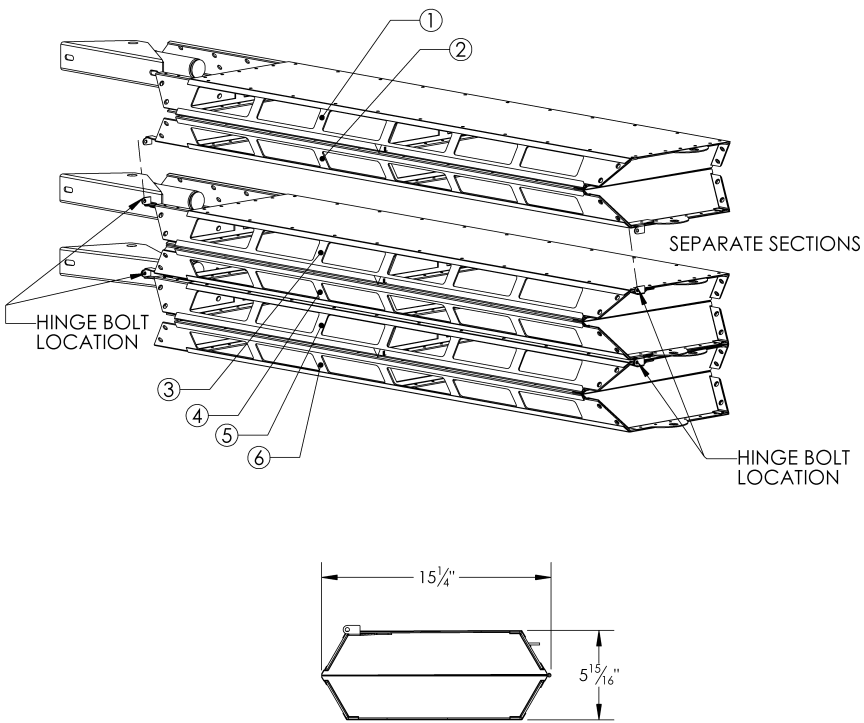
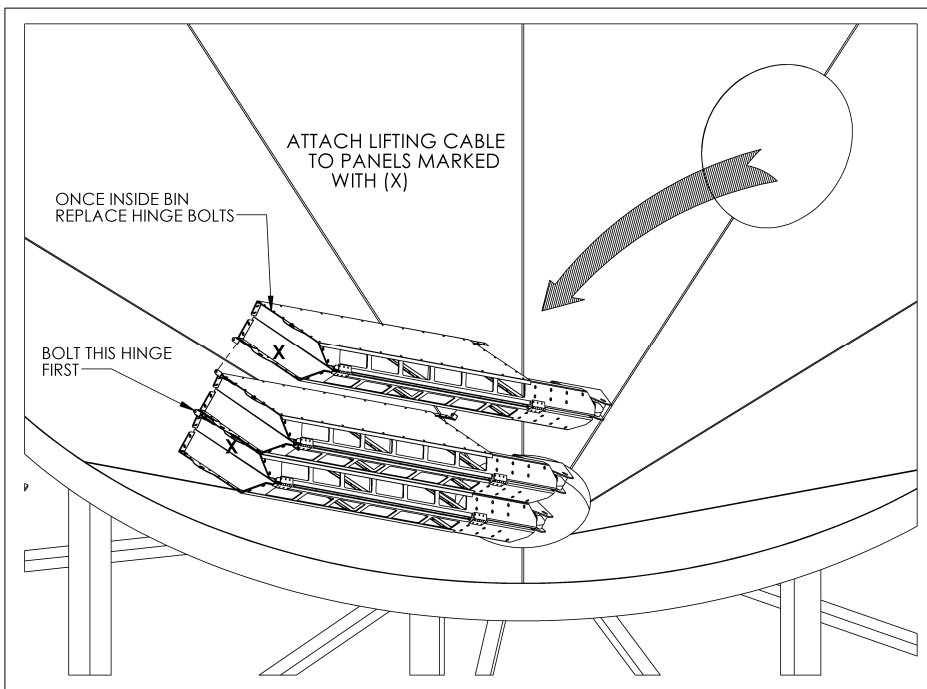


Figure 2. Panels inside the Bin



3.5.2 Hopper Bins with Large Access Opening

Required minimum opening:

- Square: 18.5"
 - Round: 22"
 - Oval or rectangle: 16" x 19"
1. Attach a lifting cable onto the lugs located on the 2nd and 5th panels.
 2. Position the folded up rocket into the opening of the hopper cone.
 3. Winch and guide the rocket through the bin opening.
 4. Remove the banding around the rocket.

Figure 3. Lifting Panels through the Bin Opening

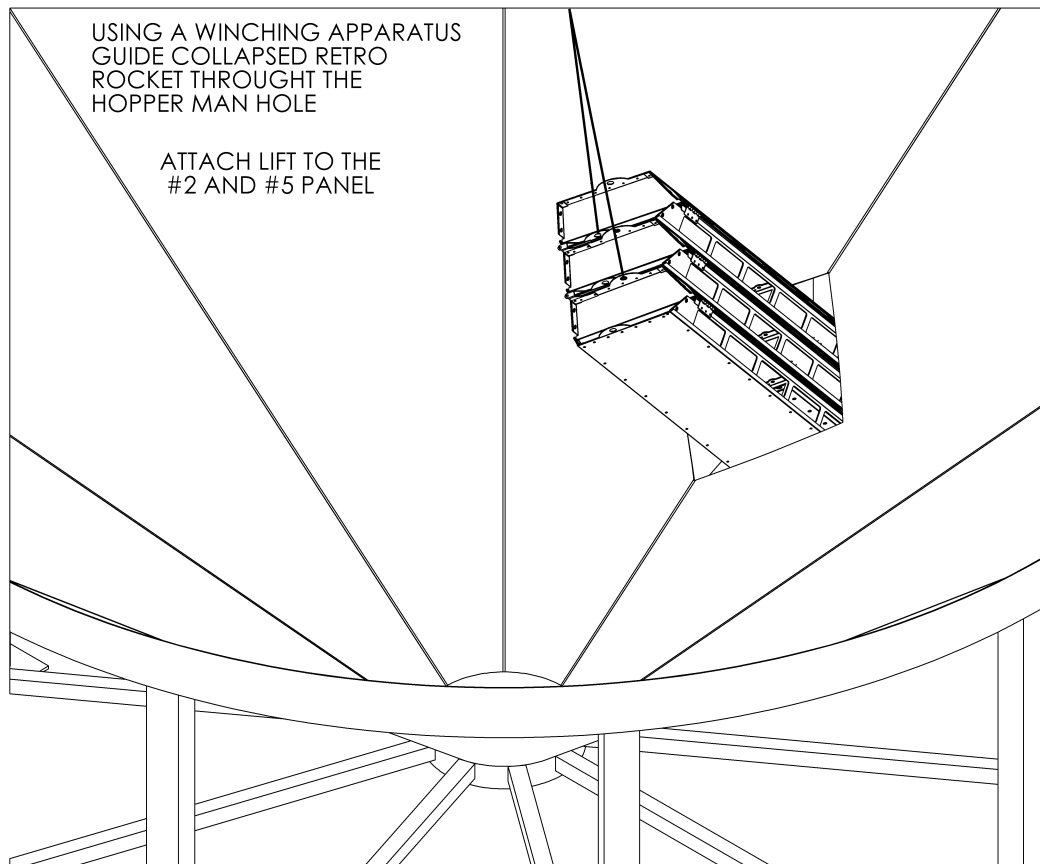
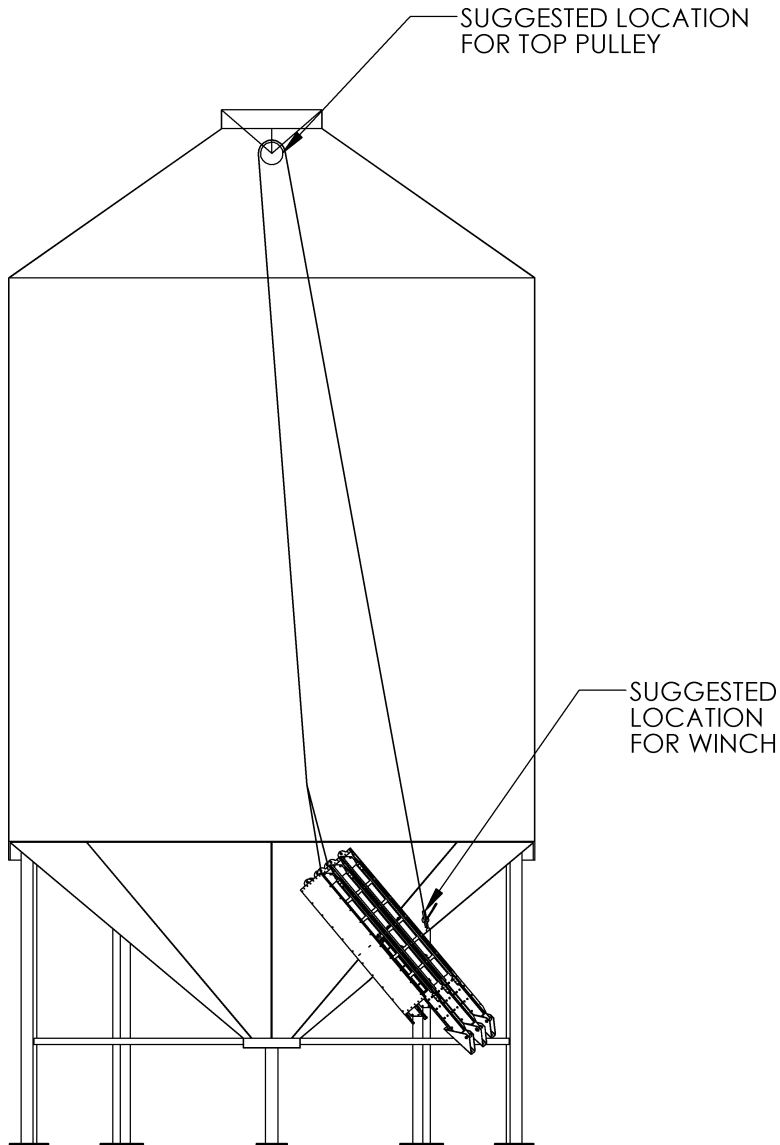


Figure 4. Lifting Panels inside the Bin**NOTICE**

To prevent personal injury or damage to equipment:

- Do not drop the panels.
- Use a winching device with minimum load rating of 700 lbs.

3.6. Attach the Weatherstripping on the Panels

Note

Weatherstripping can be applied prior to lifting rocket into the bin. If this is done, care must be taken not to damage weatherstripping during the lifting process. Visual inspection of the weatherstripping is advised after the rocket is in the bin.

1. Cut the provided weatherstripping to length.
2. Attach the weatherstripping as shown in the following figures.

Figure 5. Weatherstripping Locations

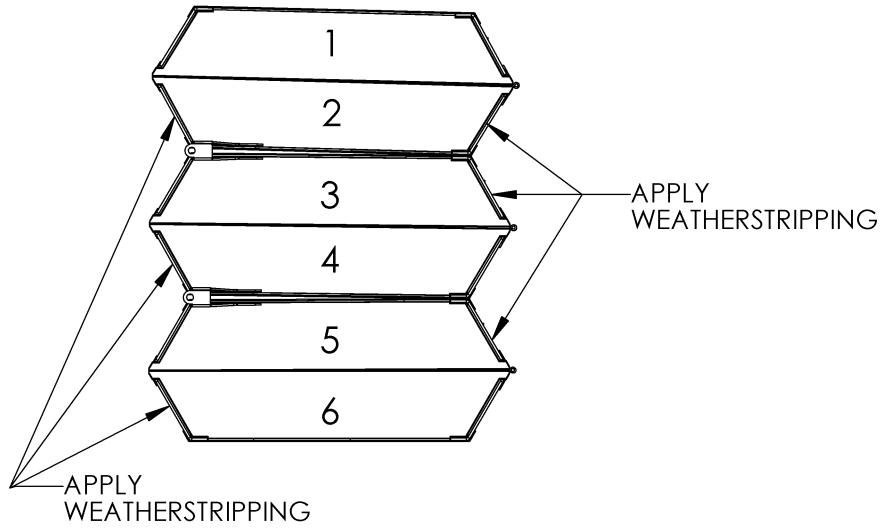
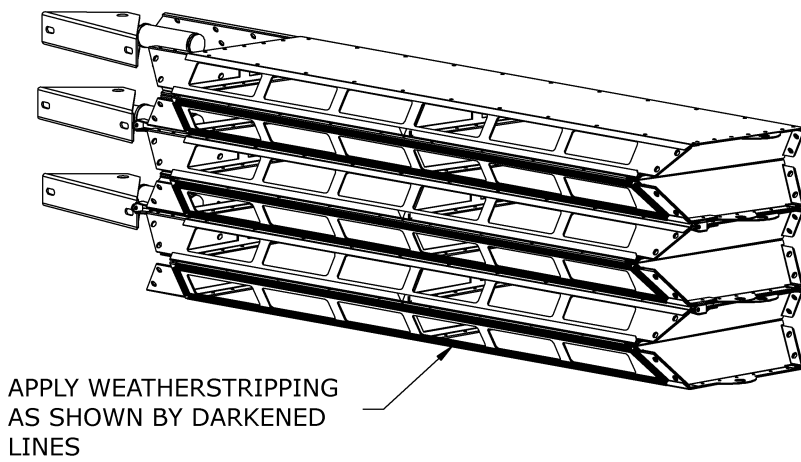


Figure 6. Weatherstripping Application



3.7. Unfold the Retro Rocket

Below is a suggested sequence to unfold the rocket.

CAUTION Pinching Hazard

- Hold swinging sections firmly to prevent loss of grip and to prevent panels closing together too quickly.
- Do not place fingers in between panels that hinge together.

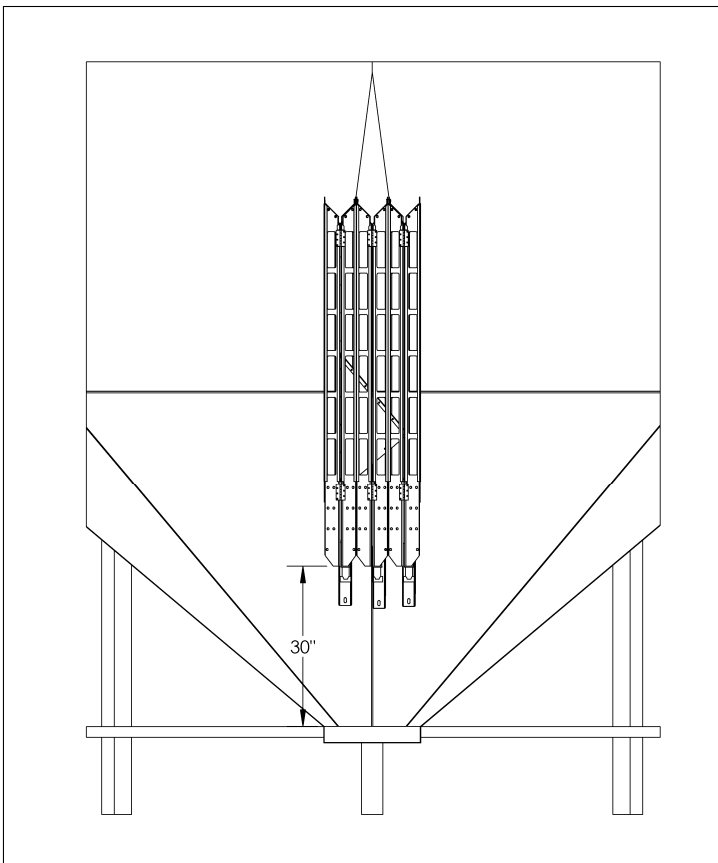
1. If not still attached, connect a lifting cable onto the lugs located on the 2nd and 5th panels.

Note

Sections can be fastened together with a clamp, wire or other means to prevent panels from swinging outward during lifting.

2. Winch the rocket with a lifting device until it is 30" to 36" off the bottom of the hopper cone.

Figure 7. Suspended Panels inside the Bin



Note

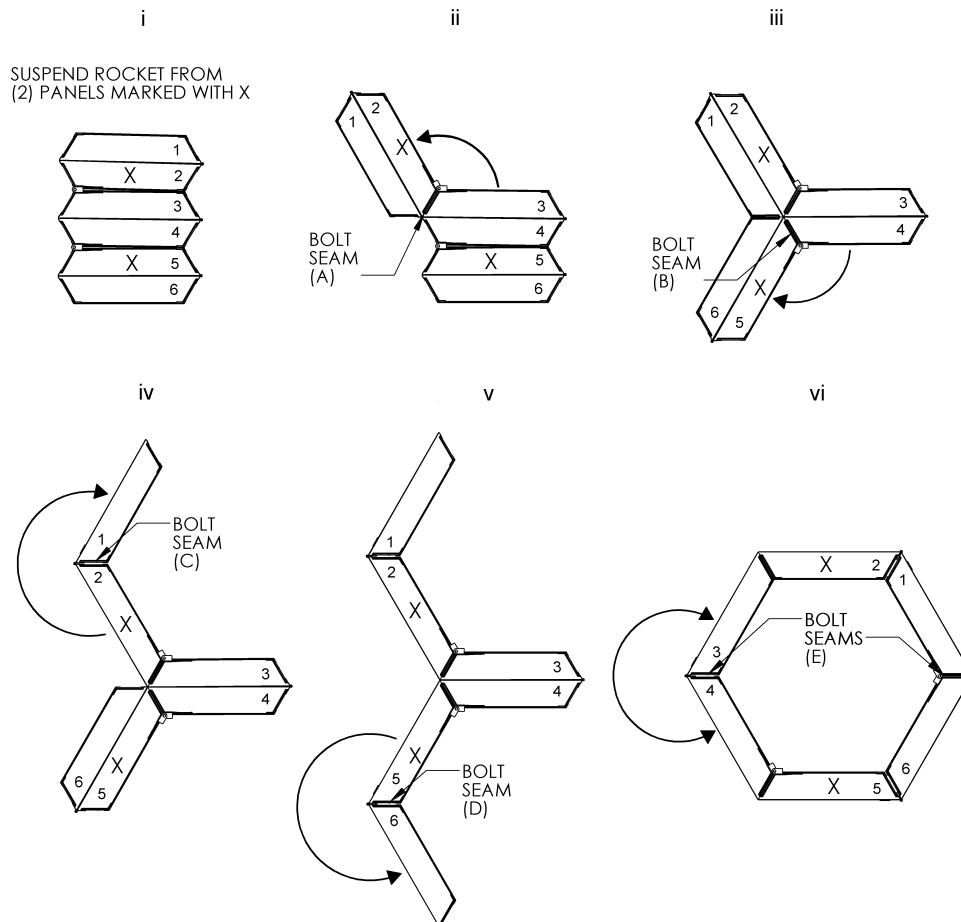
For steps 3 to 13:

- use punch to help align holes when needed
- install hardware hand tight only to allow adjustment

3. Swing the panels 1 and 2 together until the edge surfaces of panels 2 and 3 are in contact. See [Figure 8](#).

4. Insert a 5/16" x 1" bolt through the top flanges (A) of panels 2 and 3.
5. Swing the panels 5 and 6 together until the edge surfaces of panels 4 and 5 are in contact.
6. Insert a 5/16" x 1" bolt through the top flanges (B) of panels 4 and 5.
7. Unfold panel 1 until its edge is resting on panel 2.
8. Insert a 5/16" x 1" bolt through the top flanges (C) of panels 1 and 2.
9. Unfold panel 6 until its edge is resting on panel 5.
10. Insert a 5/16" x 1" bolt through the top flanges (D) of panels 5 and 6.
11. Connect the top flanges between panels 3 and 4 and panels 1 and 6.
12. Connect all the remaining top flanges using 5/16" x 1" bolts.
13. Fasten all 3/8" x 1" bolts through leg halves.
14. Tighten all top flange and leg bolts.

Figure 8. Unfolding the Panels



3.8. Attach the Retro Rocket

1. Orient the inlet opening towards the desired fan location.
2. Lower the rocket assembly while ensuring that it is centered over the discharge at the bottom cone and aligned vertically.

Note

Vertical alignment is critical to structural integrity of the rocket. Use level or plumb bob on all sides to check alignment.

3. Mark the bolt holes of the rocket feet on the hopper.
4. Lift the rocket up and drill hole the locations with a 13/32" drill bit.
5. Lower the rocket down onto the hopper and loosely install 3/8" x 1-1/4" bolts at the two feet opposite the inlet.

Note

Leave the bolts for the foot closest to the inlet opening until the straight duct is attached.

3.9. Attach the Air Inlet

1. Insert the top flange of the air inlet under the louvered sheet while the side flanges are resting along the sides of the rocket inlet opening.
2. Loosely install 1/4" x 3/4" bolts on both sides and bottom of the air inlet.
3. Fasten the air inlet at top using four #14 x 3/4" tek screws.
4. Tighten bolts at the sides and bottom of the air inlet.
5. Use a straight edge or laser along the sides, top and bottom of the air inlet to reach to the hopper cone and mark the outer edges of the air inlet on the hopper cone.
6. Check the size of the inlet opening outline before cutting. The hole should not be less than 9-3/16" x 14-1/16" and not more than 9-5/16" x 14-3/16".
7. Cut the inlet opening using torch or cutting wheel.

Note

Cut outside the marked line to keep the opening as clean as possible.



Grain Dust Explosion Hazard

When cutting air inlet opening, keep work area free of dust and debris.

8. The straight duct should now fit through the cut hole. If not, enlarge the hole as required. Slide the straight duct through the opening and into the air inlet.
9. Ensure the straight duct is aligned with the cut hole.
10. Attach the straight duct to the air inlet using twelve #14 x 1" sheet metal screws (four on sides, two on top and bottom).
11. Loosely fasten the last bolt in the rocket foot by the inlet.
12. Check the vertical alignment of the rocket, adjust as required.
13. Tighten the bolts on the rocket's feet.

3.10. Attach the Duct Elbow

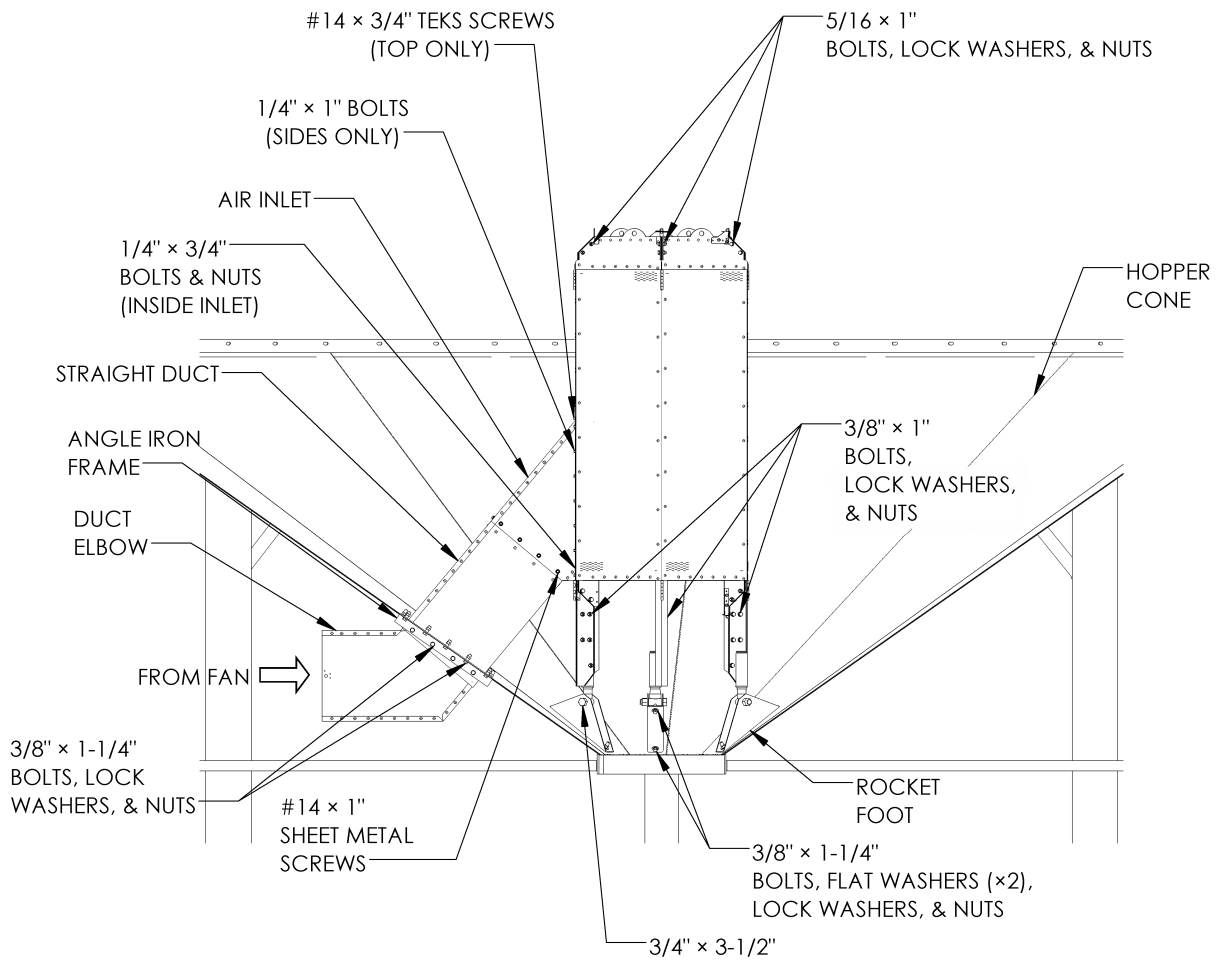
1. Place the angle iron frame over the straight duct on the uncapped (short) side of the elbow with the flat side of frame facing the opening.
2. Insert the duct elbow into the straight duct until it reaches the rivets on the inside of the straight duct. Hold the elbow at this position.

Note

Ensure straight duct and duct elbow (short end) are aligned and the long end of the elbow is parallel to the ground.

3. Move the duct angle frame up until it is flush with the hopper cone.
4. Mark the locations of the bolt holes:
 - 12 holes through the duct angle frame and hopper cone
 - 8 holes through the duct angle frame, straight duct, and duct elbow
5. Remove the straight duct, duct elbow and angle frame.
6. Pre-drill the marked holes with 3/16" drill bit and drill out using a 7/16" drill bit.
7. Attach the duct angle frame to the straight duct, and duct elbow using eight 3/8" x 1-1/4" bolts and 3/8" nuts.
8. Insert the assembled straight duct, duct elbow, and elbow angle frame into the hopper cone opening.
9. Secure the duct angle frame to the hopper cone using twelve 3/8" x 1-1/4" bolts and 3/8" nuts.
10. If desired, trim off any protruding portion of the straight duct outside the duct angle frame.

Figure 9. Retro Rocket Hardware “Where Used” Illustration



4. Specifications

Specifications

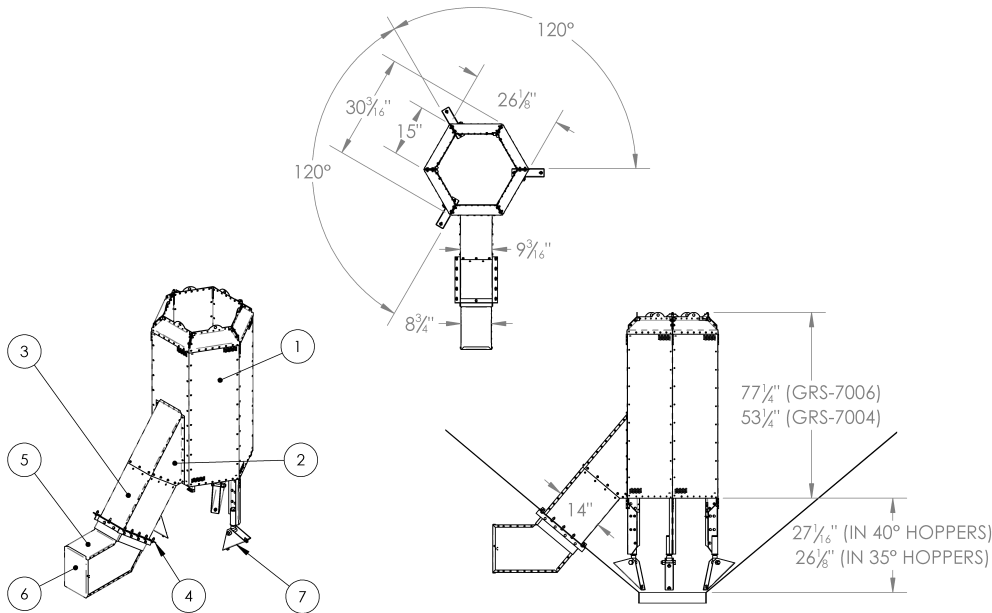
Hopper Aeration Systems — Rockets ¹											
Part Number	Description	Louvered Area (ft ²)	Contact Area (ft ²) ²	Airflow Capacity (CFM) ³	Duct Diameter (inches)	Supplied Legs	Air Inlet Size (inches)	Bin Diameter (max.)	Bin Wall Height (max.)	Hopper Angle (max.)	Weight (lbs)
GRS-7004	Retro Rocket 4'	45	30	3546	30"	3	9 x 14	19'	22'	40°	406
GRS-7006	Retro Rocket 6'	68	44	4868	30"	3	9 x 14	19'	22'	40°	406

1. Specifications are for farm use in aeration or natural air drying applications with one or two duty cycles per year. For use in other applications, contact the factory for recommendations (wet holding bins, high product turns etc.)
2. Contact area is the area in which the duct makes contact with the grain and can effectively distribute air to the the grain mass.
3. Airflow capacity is calculated at 1000 cfm/sq. ft. open area.

5. Appendix

5.1. Aeration System Parts List

GRS-7004 and GRS-7006



Item	Part Number	Description	Quantity
1	Call for Parts	Rocket body (4' or 6')	1
2	RZF-7294	9" x 14" Inlet	1
3	RZF-7728	15–1/8" Rectangular Duct	1
4	RXA-5224	9" x 14" Elbow Angle Frame	1
5	RZA-7230	9" x 14" Elbow Assembly (includes Weather Cap)	1
6	GGA-8618	9" x 14" Weather Cap	1
7	RXF-2362	Foot, Retro Rocket	3

6. Warranty

AG GROWTH INTERNATIONAL INC. – FORM OF LIMITED WARRANTY

Ag Growth International Inc. (“AGI”) warrants that the goods and/or services being supplied (the “Goods”) will be free from defects in materials and workmanship under normal conditions, use, service, and maintenance, for a period of twelve (12) months from the date of first operation of the Goods, but in no event more than eighteen (18) months from the date of delivery of the Goods to the end-user (the “Warranty Term”). If the Goods are being used for rental purposes, the Warranty Term for the subject Goods shall be limited to 90 days.

Subject to AGI’s sole discretion, if the Goods, or a component thereof, are found to have a default in materials and/or workmanship within the Warranty Term, AGI will, at its own option and expense, repair or replace the subject Goods or refund the purchase price for the applicable Goods. Any warranty related expenses incurred on behalf of or by the end-user without the prior written consent of AGI shall be the sole responsibility of the end-user. Expenses relating to travel, customs or import duties and tariffs, equipment rental, and any costs associated with accessing the Goods are the sole responsibility of the customer. Warranty shall be void in the event the Goods are returned or disposed of without the written consent of AGI.

The customer shall not assert a claim that the Goods are defective unless the customer gives written notice to AGI of such defect within forty-eight (48) hours of discovering such defect. In the event of a warranty claim, the customer must complete any and all information required by AGI in order to properly assess or investigate the claim. AGI shall be given a reasonable opportunity to inspect and test the Goods in question. Failure by the customer to notify AGI of such claim within 48 hours shall operate as a waiver of any and all such claims by the customer.

THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY AGI WITH RESPECT TO THE GOODS AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS, OR OTHERWISE, AND WHETHER OR NOT AGI’S GOODS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY AGI FOR BUYER’S USE OR PURPOSE.

This limited warranty extends solely to Goods manufactured by AGI and does not cover any third-party parts, components, or materials. To the extent permitted by the manufacturer, AGI will pass on applicable warranties on third-party parts, components or materials to the end-user. This warranty does not extend to any losses or damages due to misuse, use of a kind and/or to a degree not reasonably expected to be made of the Goods, any use of the Goods which is not an intended use as specified in AGI’s published product literature or otherwise specified by AGI in writing, accident, acts of God, abuse, neglect, normal wear and tear (including corrosion and cosmetic issues), any equipment attached to or used in conjunction with the Goods, any field modifications or substitutions to original Goods, component damage incurred during shipping and handling, unauthorized modification or alteration, used beyond rated capacity, or improper installation, maintenance or application.

THE SOLE AND EXCLUSIVE REMEDY FOR ANY CLAIM HEREUNDER SHALL BE LIMITED TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE. AGI SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE AND IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL AGI’S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PURCHASE PRICE OF THE GOODS. BUYER AGREED THAT IN NO EVENT SHALL AGI’S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXTEND TO INCLUDE INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES. THE TERM “CONSEQUENTIAL DAMAGES” SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF ANTICIPATED PROFITS, LOSS OF USE, LOSS OF REVENUE, FAILURE TO MEET GOVERNMENT AND/OR ADMINISTRATIVE REQUIREMENTS, CLEAN UP COSTS, COST OF CAPITAL AND DAMAGE OR LOSS TO OTHER GOODS, PROPERTY OR EQUIPMENT.

To the fullest extent permitted by law, Buyer, on behalf of itself, its suppliers, their agents, employees or any entity or person for which Buyer is or may be responsible (“Indemnitors”) shall fully indemnify, save and hold

AGI, its agents, employees, officers, directors, partners and related entities harmless from and against all liability, damage, loss, claims, demands, actions and expenses of any nature whatsoever, including, but not limited to reasonable attorney's fees which arise out of or are connected with: (a) any negligent act, error or omission by any Indemnitor in the performance of this agreement; (b) the failure of the Indemnitor to comply with the laws, statutes, ordinances or regulations of any governmental or quasi-governmental authority; or (c) the material breach of any term or condition of this agreement by any of the Indemnitors. Without limiting the generality of the foregoing, the indemnity hereinabove set forth shall include all liability, damage, loss, claims, demands, and actions on account of personal injury, death or property loss to any third party, any Indemnitee, any of Indemnitee's employees, agents, licensees or invitees. The indemnity set forth herein shall survive any termination of this agreement.






THIS WARRANTY IS NON-TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL END-USER AND SHALL BE CONSIDERED VOID IF NOT REGISTERED WITHIN 30 DAYS OF RECEIPT OF THE GOODS BY THE ORIGINAL END USER.

AGI is a leading provider of equipment solutions for agriculture bulk commodities including seed, fertilizer, grain, and feed systems with a growing platform in providing equipment and solutions for food processing facilities. AGI has manufacturing facilities in Canada, the United States, the United Kingdom, Brazil, South Africa, India and Italy and distributes its products globally.



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