



## 24" Panel Pit Fan (78° and 90°)

Installation and Operation Manual

PNEG-1756

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BY THE  
GSI GROUP



PNEG-1756



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### Safety Guidelines

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



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



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



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



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



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



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

## Safety Instructions

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

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

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

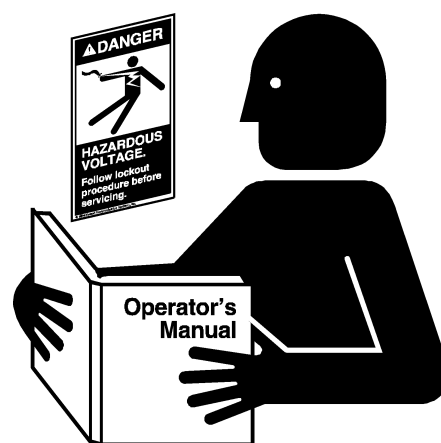
### Follow Safety Instructions

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

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

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

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



**Read and Understand Manual**

## User Manual

This manual contains information and instructions essential to the safe installation and use of the Panel Pit Fan. Read this manual thoroughly **before** attempting any installation or use of the Panel Pit Fan. Keep this manual with the Panel Pit Fan or in a location where it can be readily accessed. Failure to read this manual and its safety instructions is a misuse of the equipment.

## Correct Use of the Panel Pit Fan

The Panel Pit Fan is designed solely for the purpose of ventilating agricultural buildings. Use of the system in any other way is a misuse of the system and may endanger safety and health.

Only genuine AP/Cumberland parts are to be used in the installation and use of the Panel Pit Fan. Use of other non-genuine parts is a misuse of the system and may lead to dangerous situations imperilling the safety and health of you and others.

This machine is not designed for use in atmospheres where there is a risk of explosion. Such environments may include enclosed areas of high dusts concentrations, gas vapors and fumes. Use of the Panel Pit Fan in such an environment is prohibited. If in doubt, contact AP/Cumberland or your dealer.

## 1. Safety

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### Unpacking

When receiving the unit, inspect carefully for any damage that may have occurred during transit. Shipping damage claim must be filed with carrier.

### Electrical Safety

An adequate and safe power supply to the Panel Pit Fan unit is essential for safety. A competent and qualified electrician must undertake all electrical wiring. All wiring is to be installed according to the National Standards and Regulations relevant to your Country and Region.

### Safety Guards

The Panel Pit Fan contains many moving and electrical parts, which will cause serious injury or death if touched. Guards are placed on the machine for your protection. Operating the machine at any time with guards removed or incorrectly fitted is a serious misuse of the machine and endangers safety.

### Safety in Handling the Panel Pit Fan

Manual handling of the fans can be a cause of serious injury. Wherever possible, use mechanical lifting equipment when lifting or moving fans during installation. Where manual handling is required, seek assistance from other people.

To prevent injury, use suitable hand protection.

### Safety in Maintenance

While the Panel Pit Fan is designed to keep maintenance to a minimum, some repairs will be necessary in the course of the life of the machine. Do not attempt any repairs on the machine unless you are competent to do so. Remember that the Panel Pit Fan may in cases operate under automatic control and start without warning. Never attempt any work on the Panel Pit Fan without first isolating the machine from the mains power, and locking the isolator so that only you can turn the power back ON.

Follow all the guidelines given in the maintenance section [on Page 14](#) of this manual.

Before restarting the Panel Pit Fan, ensure that all electrical enclosures are locked closed and all guards and other safety measures are correctly fitted.

If in any doubt, contact your dealer or AP/Cumberland for assistance.

### General Safety Information

This unit should be assembled and installed by a qualified technician.


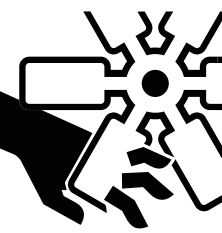
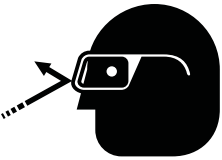
Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

Motor must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system by using a separate ground wire connected to the motor's ground lug or other suitable means.

Protect power cable from coming in contact with sharp objects.

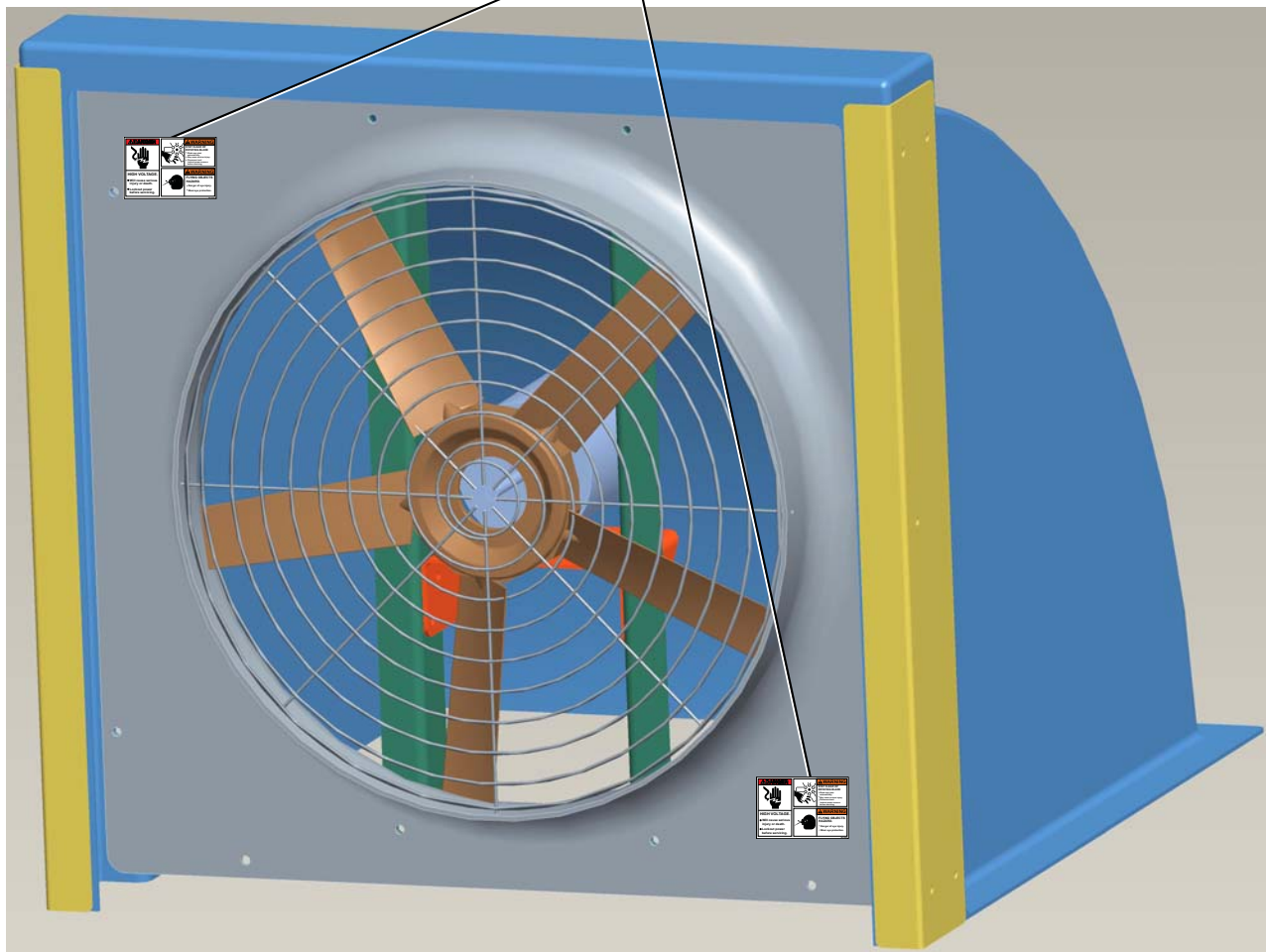
Do not kink power cable and never allow cable to come in contact with oil, grease, hot surfaces or chemicals.

Make certain that the power source conforms to requirements of the equipment.

<p><b>⚠ DANGER</b></p> 		<p><b>⚠ WARNING</b></p> <p><b>STAY CLEAR OF ROTATING BLADE</b></p> <ul style="list-style-type: none"> <li>• Blade may start automatically.</li> <li>• May cause serious injury.</li> <li>• Disconnect and lockout power sources before servicing.</li> </ul>
<p><b>HIGH VOLTAGE.</b></p> <ul style="list-style-type: none"> <li>• Will cause serious injury or death.</li> <li>• Lockout power before servicing.</li> </ul>		<p><b>⚠ WARNING</b></p> <p><b>FLYING OBJECTS HAZARD.</b></p> <ul style="list-style-type: none"> <li>• Danger of eye injury.</li> <li>• Wear eye protection.</li> </ul>

DC-1540

DC-1540



DC-1540

This decal is located on the front of the fiberglass orifice panel.

### 3. Specifications and Dimensions

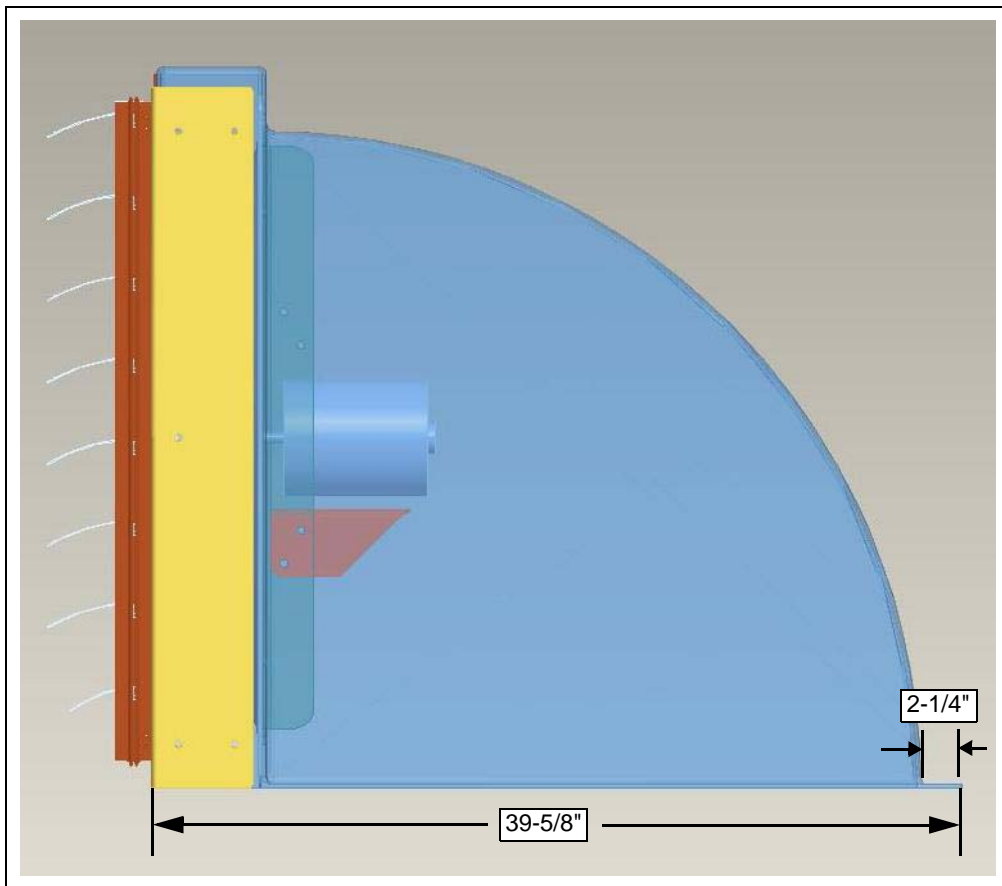


Figure 3A

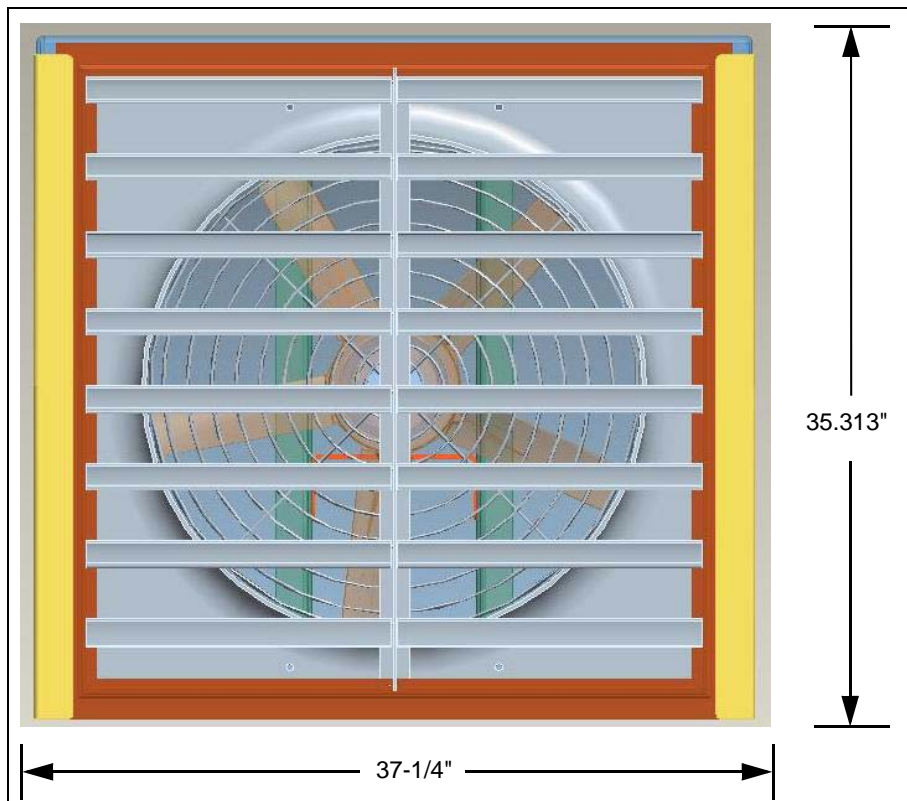


Figure 3B

1. Construct a 24" x 32" opening in either the pump-out lid, the horizontal opening or the opening in the 12° sloped top.
2. If the pump-out lid is concrete, a frame can be constructed around the opening.
3. Caulk around the base of the pit transition flange and secure to the frame, if needed.

## 5. Electrical Wiring

All wiring should be installed in accordance with National, State and Local Electrical Codes. A certified electrician should complete this portion of the installation to ensure safety and that the wiring is correct for the application.

Fans for use as livestock facility ventilation should be connected to individual electrical circuits, with a minimum of two (2) circuits per room.

For single phase fans: The motor overload protection should be provided for each fan. A circuit breaker switch or slow blow motor type fuse must be used.

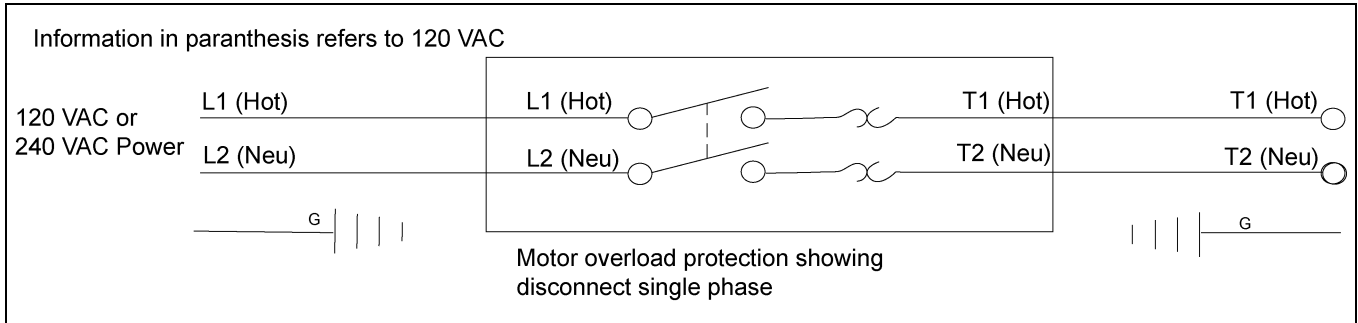


Figure 5A

### **Initial Start-Up**

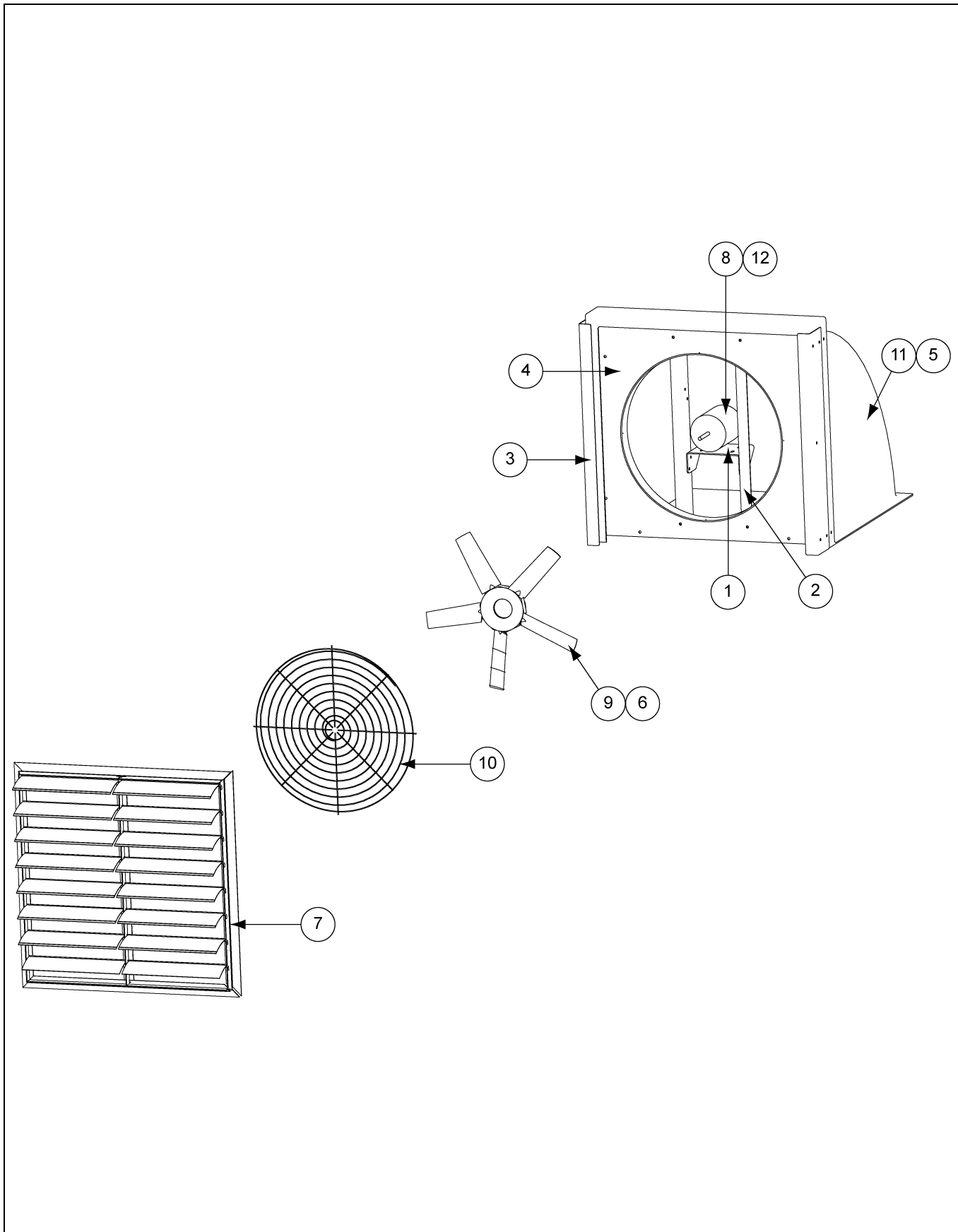
First, shut off power to the equipment, then verify that the fan propeller turns freely and that all fasteners are securely in place.

Turn power ON and verify that the fan is operating correctly.

### **Adjustments**

Set the fan control to the desired temperature. When variable speed controls are used, the fan idle speed will need to be set to the recommended minimum airflow rate. Refer to the procedure included with each control.

# Exploded Diagram



## Exploded Diagram Parts List

Ref #	Part #	Description	Qty
1	11-0410	Motor Mounting Plate	1
2	11-0457	Vertical Motor Mounting Channel	2
3	11-0414	Shutter Mounting Channel	2
4	12-0431	Fiberglass Orifice Panel	1
5	12-0433	Transition 78°	1
6	13-0209	24" Fiberglass Prop	1
7	PS-32C	Shutter	1
8	15-0083	Motor, 1/3 HP, 1100 RPM, 1 PH, 115/230V	1
9	13-0147	24" Plastic Prop	1
10	11-0419-WH	Grill Guard	1
11	12-0432	Transition 90°	1
12	15-0105	Motor, 1/3 HP, 1100 RPM, 1 PH, 115/230V for APP-24	1

## 8. Maintenance

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For best results from the equipment, proper inspection and cleaning procedures should be performed monthly:



*Always disconnect and lock out all power sources before performing maintenance.*

1. Inspect the propeller and verify that it is securely located on the motor shaft and that there are no signs of damage. The blades are self-cleaning and should not require additional maintenance.
2. Clean the following components regularly:
  - a. Fan motor - Dust with a brush or cloth (**DO NOT USE A PRESSURE WASHER**). Also, verify that it is mounted securely.
  - b. Shutter - Dust the blades and frame with a brush or cloth so that it can open and close freely.
  - c. Guard - Using a brush, clean dust and debris from the fan guards.
3. Inspect fasteners and tighten loose connections.
4. Check the fan control when the power is disconnected and inspect all electrical connections. Dust with a brush or cloth. **NEVER CLEAN ELECTRICAL EQUIPMENT WITH A POWER WASHER.**

Symptom	Probable Cause(s)	Corrective Action(s)
<b>Excessive noise.</b>	Defective motor bearing.	Replace.
	Defective pillow block bearing.	Replace.
	Parts are not securely anchored.	Check all bolts, screws and fasteners.
	Damaged fan blade.	De-energize fan. Turn prop and check tip clearance. Do they appear to be approximately the same? ( <b>NOTE:</b> <i>They can be a little different without any problems.</i> ) If they are significantly different, contact your distributor for more information.
<b>Fan inoperative.</b>	Electricity is turned OFF.	Contact local utility supplier.
	Belt is broken.	Replace.
	Defective motor.	Replace.
	Open power supply circuit.	Replace fuse or reset circuit breaker. Check for disconnected, cut or damaged power cord.
<b>Insufficient airflow.</b>	Intake/exhaust shutter is jammed/clogged.	Repair/replace/clean as necessary.
	Inlet/outlet guards clogged by dirt/debris.	Repair/replace/clean as necessary.
	Voltage supplied is not correct (must be within $\pm 10\%$ of the nominal voltage).	Check line voltage at motor, verify wiring. Check with local utility supplier for possible line problems.
<b>Excessive vibration.</b>	Fan blade has excessive dirt build-up.	Clean unit.
	Motor/drive shaft is bent.	Replace.
	Fan blade is bent or otherwise damaged.	Replace blade. Recoat shaft with anti-seize lubricant.
<b>Motor overheats and nuisance trips.</b>	Intake/exhaust shutter is jammed/clogged.	Repair/replace/clean as necessary.
	Inlet/outlet guards clogged by dirt/debris.	Repair/replace/clean as necessary.
	Motor has excessive dirt build-up.	Clean unit.
	Fan blade has excessive dirt build-up.	Clean unit.
	Building operating static pressure too high.	Adjust air inlets to lower static pressure.
	Power supply voltage is too low.	Check line voltage at motor; verify wiring is of sufficient gauge for load and length of conductor. Check with local utility supplier for possible line problems.

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# 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	
<b>AP Fans and Flooring</b>	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
<b>Grain Systems</b>	Grain Bin Structural Design	5 Years	
<b>Grain Systems Farm Fans Zimmerman</b>	Portable and Tower Dryers	2 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12<sup>th</sup>) month from the date of purchase and continuing until the sixtieth (60<sup>th</sup>) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

### Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

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



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