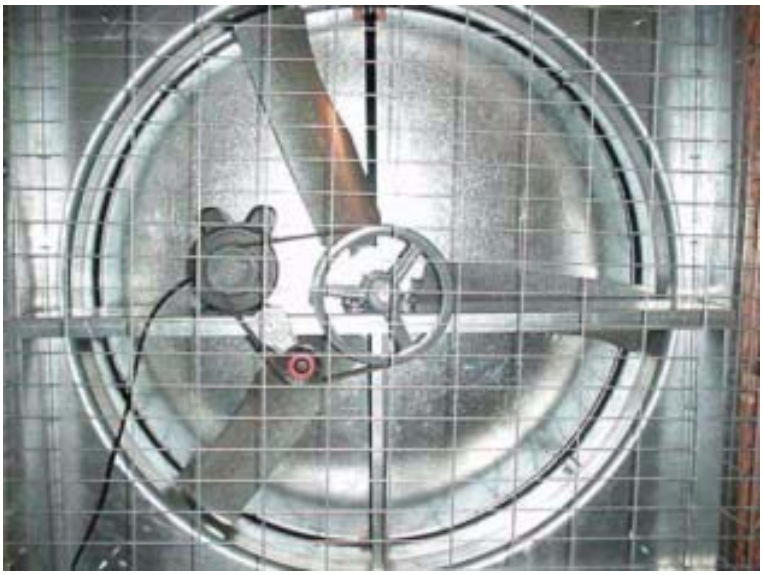




50" Galvanized Butterfly Fan

Model:
G50CBF16GA

Installation and Operation Manual

PNEG-1425
Date: 08-09-13

BY THE
GSI GROUP

PNEG-1425

Congratulations

You have just purchased one of the best ventilation fans in the industry designed to give years of high velocity airflow while saving hundreds of dollars in electrical usage. Please take some time to read through this manual and familiarize yourself with the proper installation methods and operation of the fan.

FEATURES

- 23500 CFM @ 24.0 CFM/W @ 0.05" S.P.
- One year warranty on parts
- Shutterless operation - No shutters to clean
- Consistent airflow through flock growout
- Easy assembly and maintenance
- On-site service and support

Unpacking

Before beginning installation, check the condition of the fan. Remove the overwrap and packing materials and examine all parts and components for shipping damage. Any damage incurred must be reported immediately to the freight carrier.

Model	:	G50CBF16GA
Size	:	50" Galvanized Housing and Cone
Voltage	:	115V/230V
Amps	:	13.0/6.5
Frequency	:	50/60 Hz Single Phase

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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 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.

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.

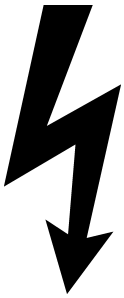
As owner and/or operator, it is your responsibility to know what requirements, hazards, and precautions exist, and to inform all personnel associated with the equipment or in the area. Safety precautions may be required from the personnel. Avoid any alterations to the equipment. Such alterations may 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.

Install and Operate Electrical Equipment Properly

Electrical controls should be installed by a qualified electrician and must meet the standards set by the National Electrical Code and all local and state codes.

Disconnect and lock out all power sources before installing wires/cables or servicing equipment.



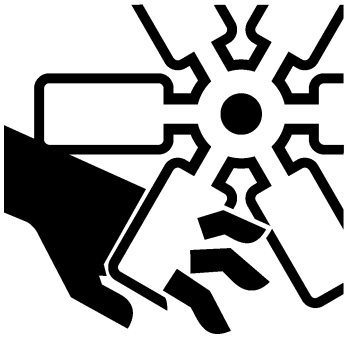
Electric Shock Hazard

Keep Hands Away from Moving Parts

DO NOT put hand or arm in fan. Rotating parts can crush and dismember.

DO NOT put any kind of tool inside fan to try and clear debris while the fan is running. Damage to the equipment will result.

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



Rotating Fan Blade

Lifting Hazard

Single person lift could cause injury.

Use two or more people or a mechanical lifting device to lift/move heavy equipment.



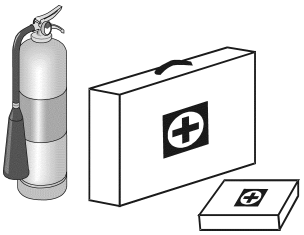
Use Assistance When Lifting or Moving Heavy Equipment

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.

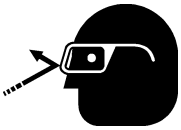
Wear steel-toed boots to help protect your feet from falling debris. Tuck in any loose or dangling shoestrings.

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



General Safety Information

Users Manual

This manual contains information and instructions essential to the safe installation and use of the **50" Galvanized Butterfly Fan**. This manual should be read thoroughly before attempting any installation or use of the fan. Keep this manual in a location that it can be readily accessed. Failure to read the manual and its safety instructions constitutes misuse of the product.

Safety in Handling the Butterfly Fan

This unit should be installed and maintained by a qualified technician familiar with the use and function of ventilation fans. This will prevent situations leading to damaged components and/or injury. Whenever possible, use mechanical lifting equipment when lifting or moving the fan during installation. Where manual handling is required, seek assistance from other people.

Correct Use of the Butterfly Fan

The fan is designed solely for the purpose of ventilating agricultural buildings. Use of the fan in any other way is a misuse of the equipment and may endanger yours or another person's safety and health.

In the installation and use of the Butterfly Fan only genuine Cumberland parts are to be used. Use of other non-genuine parts is a misuse and may lead to dangerous situations.

This fan is not designed for use in atmospheres where the risk of explosion is foreseen. Such environments may include enclosed areas of high dust concentrations, gas, vapors and fumes. Use in such an environment is prohibited. If in doubt, contact Cumberland or your dealer.

Safety Guards

The Butterfly Fan contains moving and electrical parts which will cause serious injury, even death if touched. Guards are placed on the fan to protect you. Operating the fan at any time with guards removed or incorrectly fitted is a serious misuse of the fan and endangers you and others safety.

Safety in Maintenance

While the Butterfly Fan is designed to keep maintenance to a minimum, some items such as greasing the bearings and belt replacement will be required over the life of the fan. Do not attempt any maintenance or repairs on the fan unless you are competent to do so. Remember that the fan may, in certain situations, operate under automatic control and will start without warning. Never attempt any work on the fan without first isolating it from the power supply and locking out the isolator so that only you can turn the power back ON. For your safety, follow the guidelines given in the maintenance section *on Page 18* of this manual.

Before re-starting the fan, ensure that all electrical enclosures are locked, closed and all guards and other safety measures are correctly fitted. If in doubt, contact your dealer or Cumberland for assistance.

Electrical Safety

Provisions for an adequate and safe power supply to the fan unit are essential to your safety. Cumberland recommends that a competent and qualified electrician undertake all electrical wiring. **All wiring is to be installed in accordance with National, State, and Local electrical codes.** Fans used to ventilate livestock buildings and other rooms where continuous air movement is essential should be connected to individual electrical circuits with a minimum of two (2) circuits per room.

We strongly recommend the installation of supplementary natural ventilation as well as a back-up thermostat. There should also be an alarm system on at least one cooling stage. For connection requirements, refer to the diagram on the motor nameplate and also to information enclosed with the fan control used.

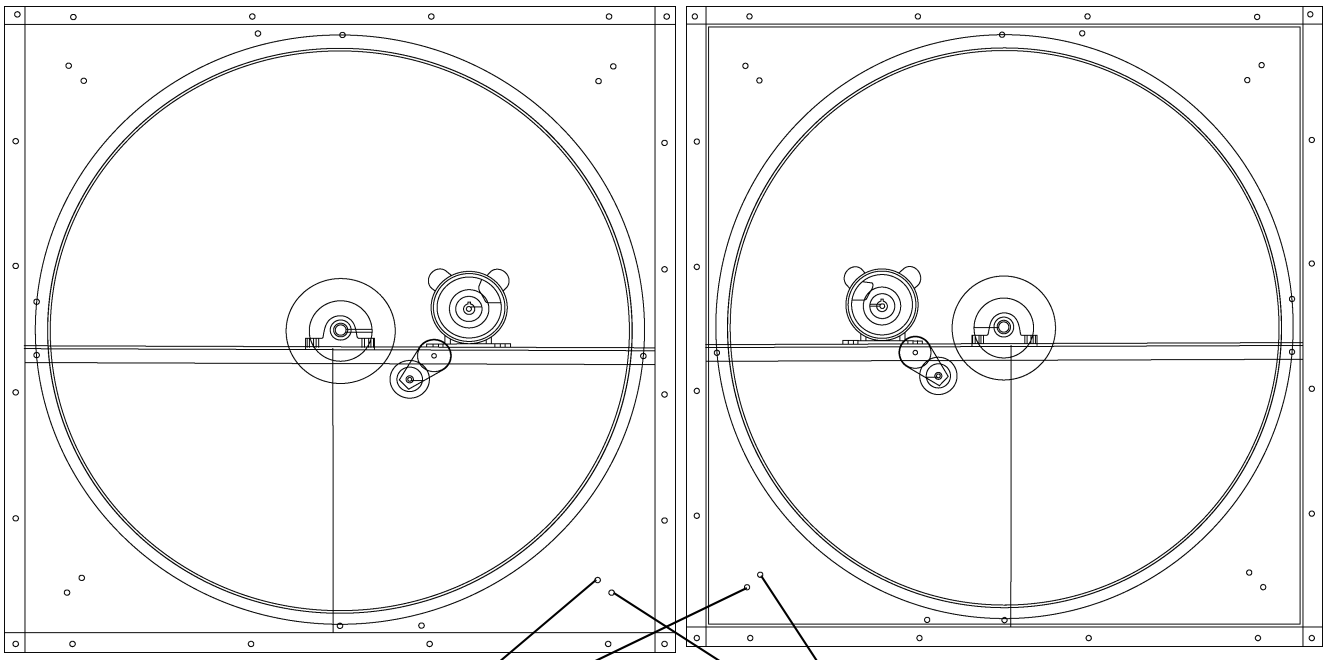
For single phase fans, motor overload protection should be provided for each fan. A circuit breaker or slow blow motor type fuse must be used. A safety cut-off switch should be located adjacent to each fan. Contact your local distributor for the correct cut-off switch.

The motor must be securely and adequately grounded. This can be accomplished by wiring with a grounded conduit or a separate ground wire attached to the motor's ground lug. Do not attempt operation unless the motor is sufficiently grounded.

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

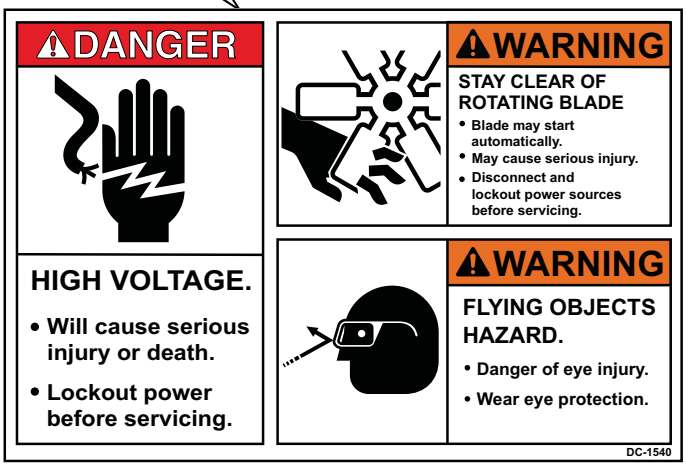
Remember, electrical safety is <u>your</u> responsibility.

Warning Decals and Locations





DC-995 - 2.0" x 4.5"
WARNING Shear Point
Located in lower right corner on both front and back sides of the fan housing.



DC-1540 - 5.0" x 7.5"
DANGER High Voltage
WARNING Stay Clear of Rotating Blade
WARNING Flying Objects Hazard
Located in lower right corner on both front and back sides of the fan housing.

Framing and Positioning

1. Construct the opening frame to the correct size (55-1/4" H x 55-1/4" W) as shown below in *Figure 3A*. Remember, framing must be able to support the weight of the fan assembly. Ensure the load bearing portion of the bottom sill is rigid and properly supported.

   IMPORTANT: *When installing more than one fan, maintain a minimum of 10" between rough openings to ensure clearance of cones outside of buildings. The cone largest diameter is 59" and allowances must be made to keep the cones separated. If not sure of sufficient clearance, contact your local distributor for more information. (See Figure 3B.)*

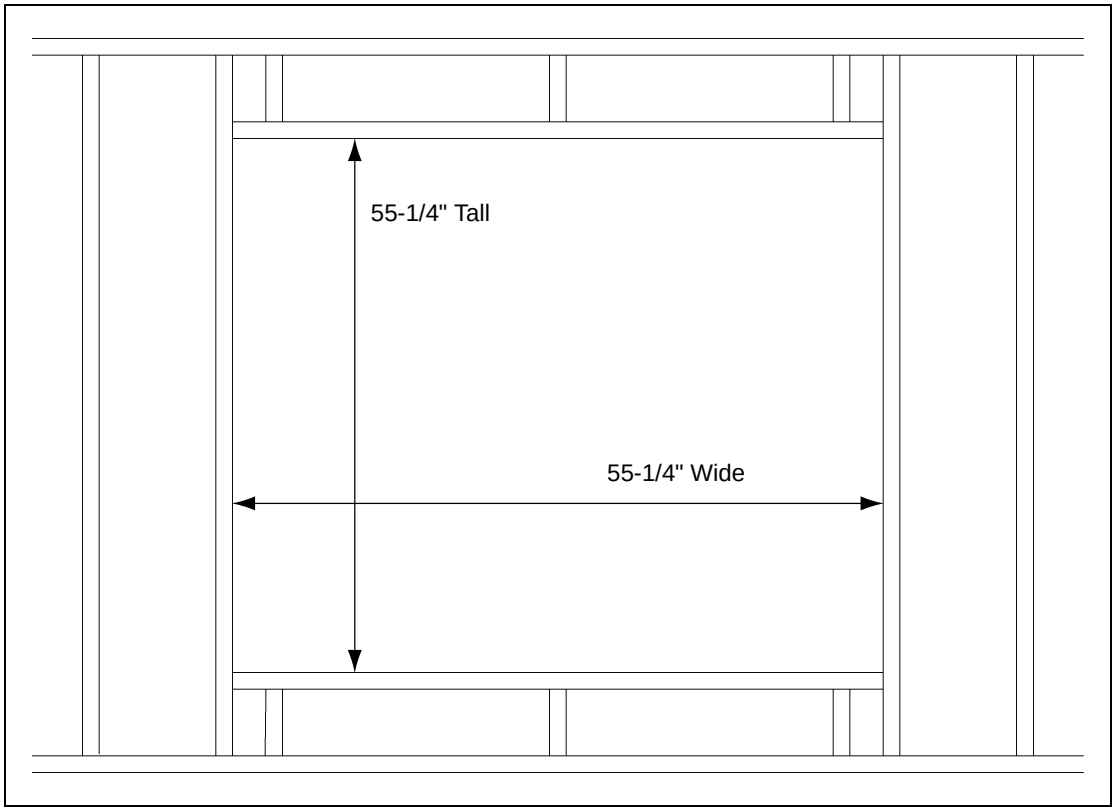


Figure 3A

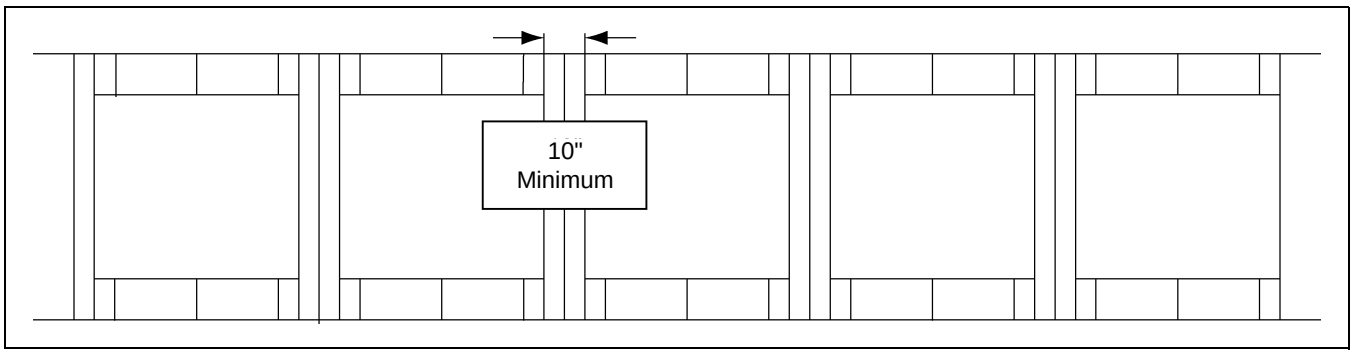
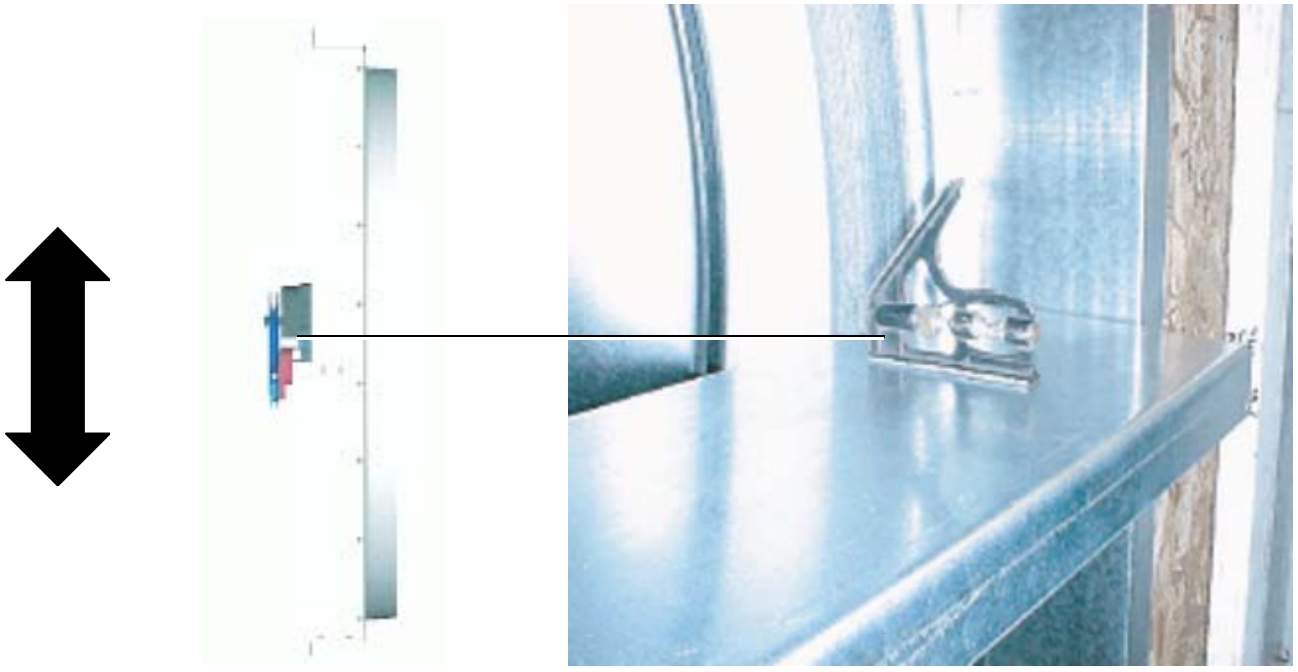


Figure 3B

Installation of the Fan on a Vertical Plane

Lifting Hazard. Single person lift could cause injury. Use two (2) or more people or a mechanical lifting device to lift/move heavy equipment.

1. Position the fan in front of the opening from the inside of the building. Using a minimum of two (2) people, lift fan housing into the opening.
2. **Because of the design and operation of the butterfly flaps it is necessary to mount the fan vertical regardless of the angle of the wall to which it is mounted.** In order to accomplish this it is recommended that a level be positioned vertical on the housing and shims (furring strips can be used) be placed behind either the top or bottom mounting flanges until the fan is fully vertical. *(See Figure 3C.)* Once you confirm the fan is setting vertical in the opening, fasten flanges to the rough opening framework with the wood mounting screws provided. Failure to complete this step can result in insufficient closure of the butterfly flaps. The fan housing should now be flush and level inside of the framing.



NOTE: *Fan must be vertical.*

Figure 3C

Tabbed Cone Panel Assembly

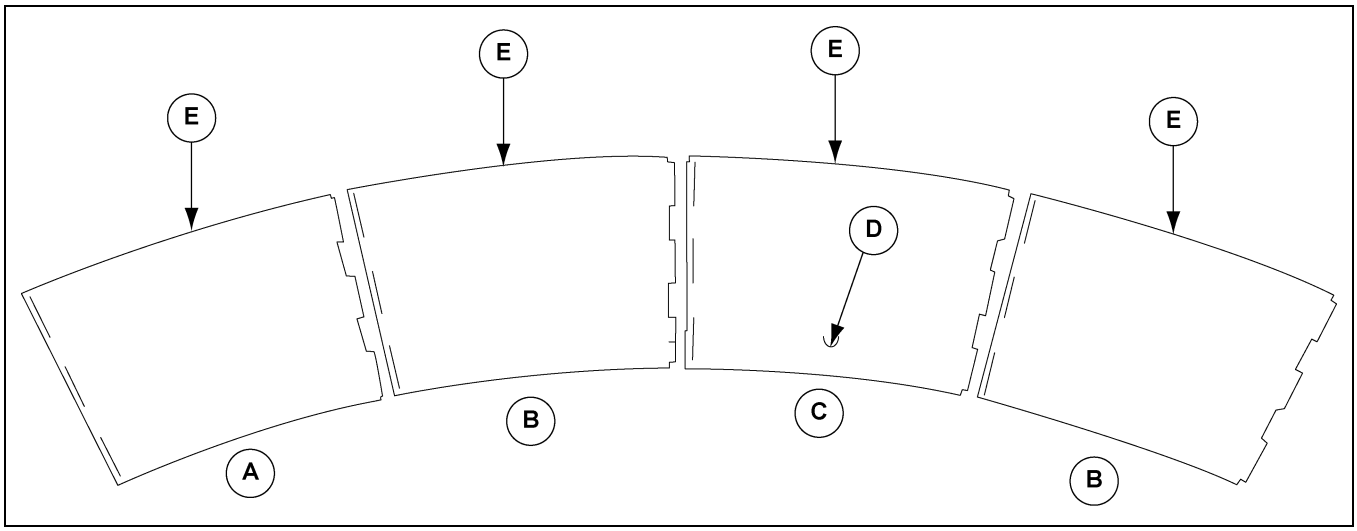


Figure 3D

Ref #	Description
A	Top Panel
B	Side Panel
C	Bottom Panel
D	Drain Hole
E	Large Radius

Assembly Steps

1. Lay cone panels on the ground as shown in *Figure 3D*.
2. Slip four (4) cone panels together using tab and slot connections on edges of each panel. (Please note that all tabs must be on the inside of the cone assembly.)
3. Place bolts through holes and thread nuts into place to hold four (4) cone panels together. (Nuts must be located on the outside of the cone assembly.) (Do not tighten nuts.) *(See Figure 3E on Page 13.)*
4. Once four (4) cone panels are assembled stand assembly up on large radius side. *(See Figure 3D.)*
5. Pull both ends together create a heart shape as shown in *Figure 3E on Page 13* to slide tabs into slots.
6. Place remaining bolts through holes and thread remaining nuts into place to hold cone together. (Nuts must be located on the outside of the cone assembly.) (Do not tighten nuts.)
7. Install assembled cone onto fan venturi unit using cone strut angles provided. *(See Figure 3F on Page 13.)* (Make sure bottom panel with drain hole is closest to the ground.)



Figure 3E

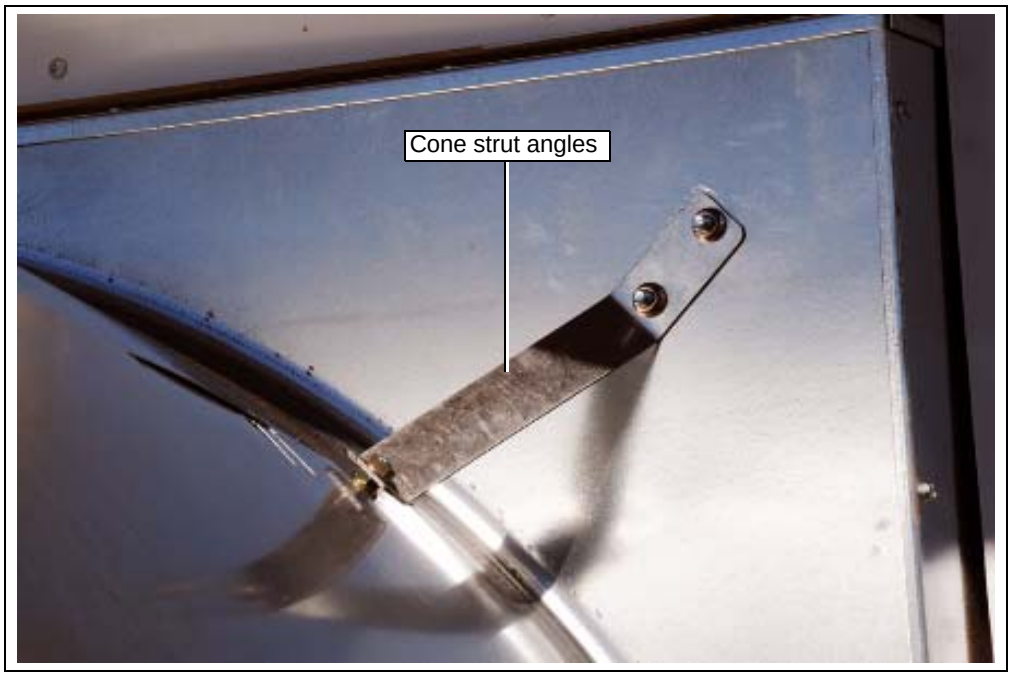


Figure 3F

Butterfly Assembly

1. Install the spring clips (12-0457) (2 pieces) as shown in *Figure 3G* onto the butterfly frame.
2. The V-shaped center bar of the butterfly frame weldment should be positioned vertically, with the bottom lining up with the slots farthest out on the cone and the top lined up with the slots farthest in on the cone. This will give the butterfly frame weldment a slight tilt back (~ 1"). This aids the closing of the butterfly flaps.
3. Use 1/4" x 1-1/4" bolts and nuts to fasten the butterfly frame weldment to the panels. Tighten the 1/4" nuts. Attach the springs from the doors to the spring clip and push the flaps open and they should close automatically from the spring tension, completely sealed by the magnets on the butterfly frame weldment assembly. *See Figure 3H* for assembly inside of cone.

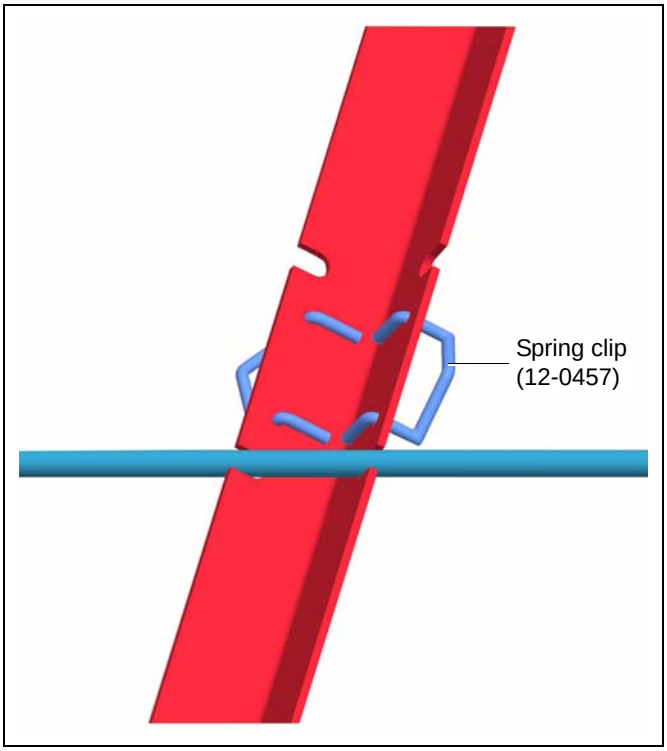


Figure 3G *Spring Clip*



Figure 3H *Inside Cone*

Grill Guard Assembly

Position grill guard lining up attachment hoops with the holes in the cone panels at 3, 6, 9, 12 o'clock positions. Attach and tighten using the 5/16" x 1" bolts and 5/16" whiz nuts. *(See Figure 3I.)*



Figure 3I

Inlet Grill Assembly

1. Remove the folded Inlet grill from the packaging. Unfold all four (4) sides lining them up perpendicular to each other. Using the black wire ties, link the sides together using two (2) ties per corner. *(See Figure 3J.)* After pulling them tight, clip off excess wire tie. *(See Figure 3K.)* Attach hanging hooks in corners as shown in *Figure 3L* and *Figure 3M on Page 16* (upper left and lower right shown).

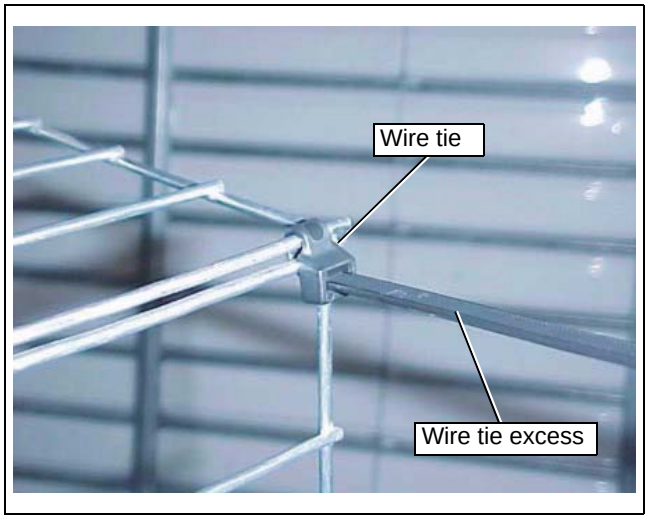


Figure 3J *Unclipped Wire Tie*

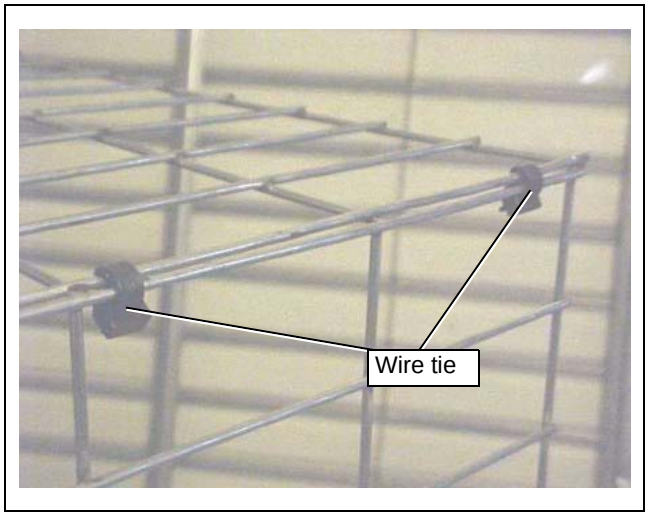


Figure 3K *Clipped Wire Tie*

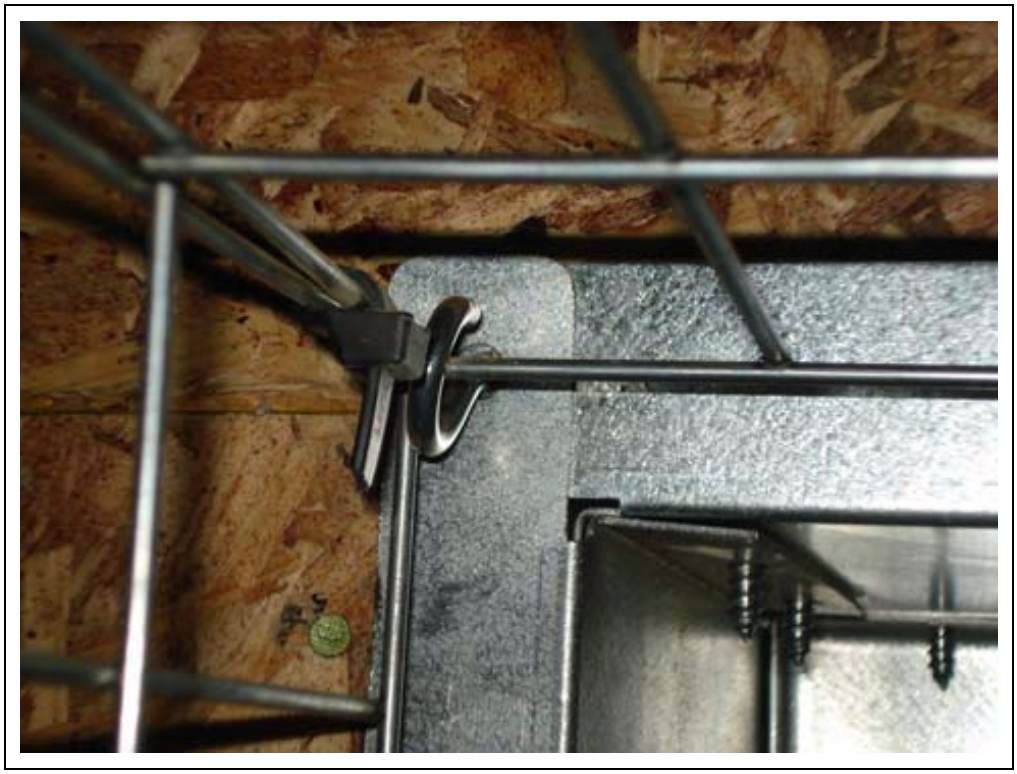


Figure 3L *Inlet Grill Hanging Hook - Top*



Figure 3M *Inlet Grill Hanging Hook - Bottom*

Electrical Hook-Up

As previously mentioned, **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.

1. First, remove the back cover of the motor exposing the wiring block. *(See Figure 4A.)*

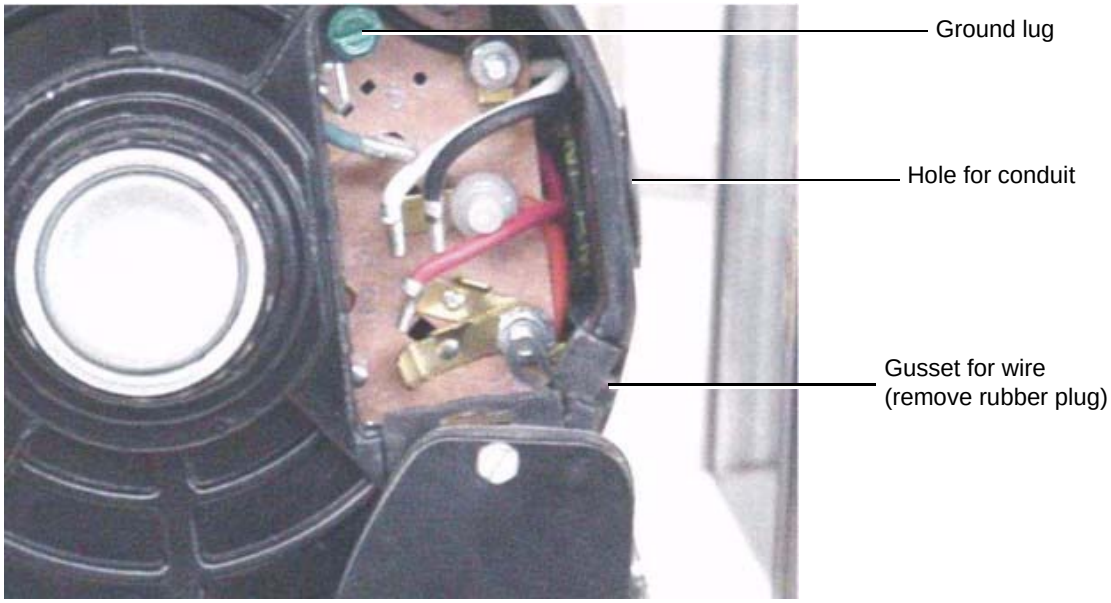


Figure 4A

2. The motor is designed to use either a solid clamping conduit on the side of the motor or the supplied wire with a three-prong plug attached. In either case, it is important to attach the ground wire to the ground lug as depicted in *Figure 4A*. For correct motor rotation (CCW), the Red wire should be located on the L2 connection as depicted. If this is not the case, switch the Red and Black wires. Refer to wiring diagram on the side of the motor for correct wiring for 115V and 230V supply.

3. Fans used to ventilate livestock buildings or other rooms where continuous air movement is essential should be connected to individual electrical circuits with a minimum of two (2) circuits per room. For connection requirements, refer to diagram on the motor nameplate. For single phase fans motor overload protection should be provided for each fan. A safety cut-off switch should be located next to each fan. A circuit breaker switch or slow blow motor type fuses must be used. *(See Figure 4B.)* 3 Phase fans require three (3) pole contactors with overload protection.

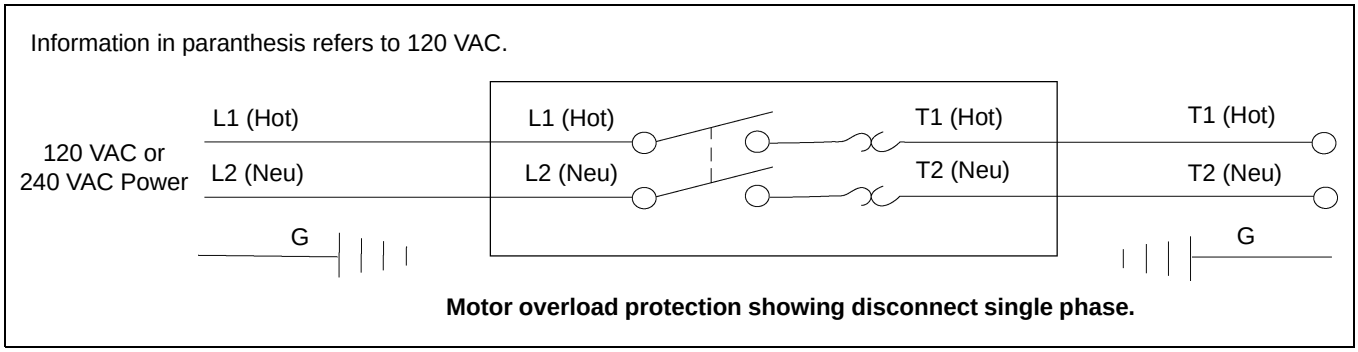


Figure 4B

Start-Up and Operation of the Butterfly Fan



Disconnect and lock out all power sources before servicing equipment.

1. With the fan de-energized, rotate the prop by turning the fan pulley, look for clearance between the prop tip and the housing. Replace all guards and check all fasteners to ensure they are tight. When satisfied, energize the fan and make note of direction of rotation. The prop should turn counterclockwise when viewed from inside the house and the butterfly flaps should open completely. They are designed to stay open during fan operation and close when the fan is de-energized. If the prop is turning backwards, the flaps will not open. If this is the case, refer to *Figure 3J on Page 15* and switch the black and red wires as noted after de-energizing the fan. Re-check the operation and when satisfied the fan is operating properly, follow the instructions below.

2. Write down the date that the Butterfly Fan went into service and follow the maintenance schedule as listed below:

   a. Check the belt, pulleys and the bearings after every two (2) months of service. The belt tensioner should be positioned between the 2nd and 3rd notch as indicated by the mark on the body of the tensioner. Under tensioning will result in belt slippage, over tensioning will lead to premature belt and bearing failure.

   b. The motor and shaft bearings are lubricated at the factory. The motor bearings should never require lubrication over the life of the fan but the fan shaft bearings should be greased after every 2-3 months of use, using the zerks on top of the pillow blocks. Only use a small amount of lithium soap base grease after cleaning the zerks. Contact your fan distributor for the proper grease.

3. When cleaning the fans, ***Do Not Spray*** bearings, tensioner or motor directly with a pressure washer as this ***Will*** lead to premature failure of these components. After cleaning the fan, simply wipe these parts with a clean rag to remove dirt and debris. Failure to follow these instructions will void the warranty on these components.

Troubleshooting Guide

Fan would not Start

1. Check the power supplied to the fan at the point closest to the fan.
2. Check the wiring to the fan.
3. Override the controller (set to manual) and re-check.
4. Contact your Cumberland distributor.

Fan Turns Slow

1. Check the voltage supplied (must be within ± 10% if the nominal voltage).
2. De-energize the power and check the wiring at the rear of the motor.
3. De-energize the power, remove the belt and rotate both the motor and fan pulleys. Do they turn freely? If not, contact your Cumberland distributor.

Fan is Noisy or Vibrates

1. De-energize the fan. Check for loose parts, i.e., bolts, screws, motor, pulleys, prop. Are the fan blades even? Turn the prop inside of the venturi and look at the blade tips as they move past the same location. Do they all three appear even? (**NOTE:** *They can be a little different without any problems.*) If they are significantly different contact your Cumberland distributor for more information.
2. Is the noise coming from the bearings? Lubricate per instructions and energize the fan. Did the noise subside? If not, the bearings are probably damaged and in need of replacement.

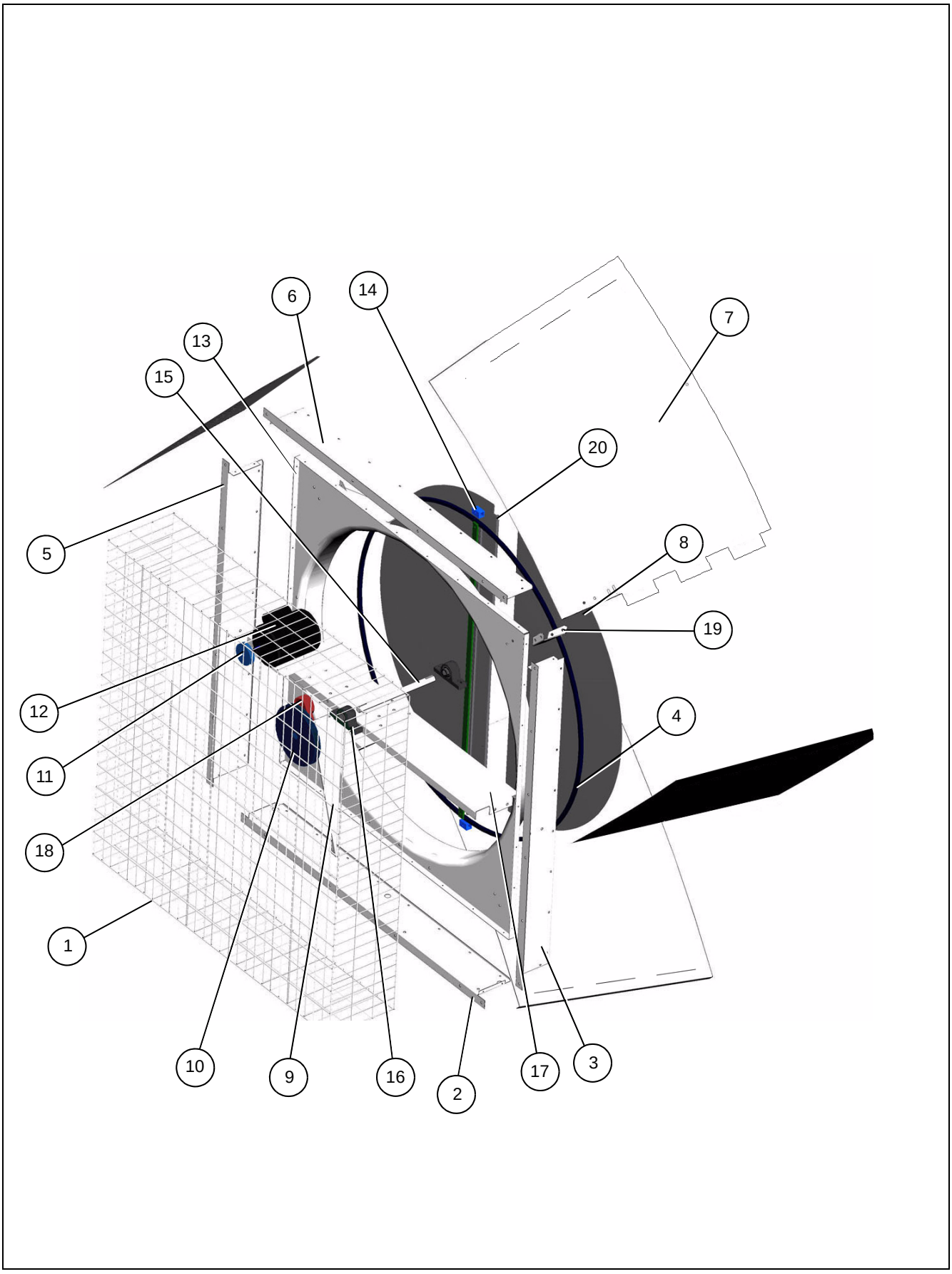
Butterfly Flaps do not Close Completely

1. Check vertical alignment of the butterfly frame using a level. If not level, shim the housing out as described on *Page 11.*
2. Check the springs, are they attached? If not, re-attach. Are they stretched and no longer under tension? Contact your Cumberland distributor for replacements.
3. Check the butterfly flap bushings, are they full of contamination? Rinse with water and remove all buildup of dirt and contamination. Move the flap by hand until loose and moving freely.
4. Look to see if the flap is bent. With the fan OFF completely close both flaps and look along mating surface of the butterfly frame. Are all points contacting? If not, bend the flap slightly until all surfaces contact.

No.	Part #	Description	Qty	U/M
1	**10-0200**	**Galvanized Cone Mounting Hardware**	**1**	**EA**
2	12-0312	50" Galvanized Butterfly Cone Bracket	4	
3	S-10268	Flange Nut 5/16"-18 JS Grade 5	32	
4	S-6606	Flange Bolt 5/16"-18 x 3/4" ZN Grade 5	32	
5	**10-0103**	**Cord/Terminal Bag - Galvanized Fans**	**1**	**EA**
6	10-0102	Terminal Bag - Galvanized Fans	1	
7	S-7145	Cord, 96"-16/3 SJT w/ Male	1	
8	**10-0106**	**50" Galvanized Butterfly Fan Install Kit**	**1**	**EA**
9	CW-2002	Hook 3/16" x 1-1/2" Lagged Thread	4	
10	S-6997	Bolt, HHCS 1/4"-20 x 1-1/4" ZN Grade 5	4	
11	S-7215	Flange Nut 1/4"-20 Zinc	5	
12	S-9248	Screw, WS 1/4"-10 x 1-1/2" FHP ZN	16	
13	12-0457	Clip, Spring Mounting (Butterfly Fans)	2	
14	S-6998	Bolt, HHCS 1/4"-20 x 1" ZN Grade 5	1	
15	**12-0486**	**50" Galvanized Butterfly Sub-Assembly**	**1**	**EA**
16	12-0487-GY	Butterfly Frame Weldment 53" Painted Grey	1	
17	12-0464	Block, Nylon Mounting	2	
18	12-0319	Washer, Nylon	4	
19	12-0492	Butterfly Flap 50" Galvanized Fan	2	
20	S-1101	Bolt, HHCS 1/4"-20 x 1/2" ZN	2	
21	S-853	Bolt, HHCS 1/4"-20 x 1-1/2" ZN	4	
22	12-0405	Galvanized Flap Shaft 50" Butterfly	2	
23	16-0092	Disk Magnet 1/2" Diameter 1/8" Thick	4	
24	S-10264	Tape Foam Seal 1/2" x 14'	14'	
25	16-0100	Spring, SS 8.70" Long - Butterfly Flap	2	
26	S-9440	Rivet, POE 1/8" Diameter	4	
27	S-1429	Bolt, HHCS 1/4"-20 x 3/4" ZN Grade 2	2	
28	S-3229	Bolt, HHCS 1/4"-20 x 1-3/4" ZN Grade 2	2	
29	S-7025	Nylock Nut 1/4"-20 ZN Hex Grade 5	4	
30	S-7215	Flange Nut 1/4"-20 Zinc	4	
31	11-0494	Conefan Bearing Plate Strut	1	
32	11-0495	Bearing Plate, Galvanized Fan, Tensioner	1	
33	11-0333	Front Inlet Grill 50" Short Fan	1	
34	11-0334	Side Inlet Grill 50" Short Fan	4	

No.	Part #	Description	Qty	U/M
35	S-9351	Clip 7/8" x 43/64" HRCLP 34G	20	
36	11-0342-WH	Guard, 59" 50" Short Fan Paint	1	
37	12-0274	Venturi, 50" Butterfly Metal (50-1/2" I.D.)	1	
38	12-0481	Top Panel 50" Galvanized Fan	1	
39	12-0482	Bottom Panel 50" Galvanized Fan	1	
40	12-0483	Left Panel 50" Galvanized Fan	1	
41	12-0484	Right Panel 50" Galvanized Fan	1	
42	12-0306	50" Galvanized Butterfly Cone Panel	3	
43	12-0311	50" Galvanized Butterfly Bottom Cone Panel	1	
44	13-0103RS	Propeller, 50" Galvanized (Solid Rivet)	1	
45	15-0126	Motor 1.5 HP, 1 PH, 1725 RPM 50/60 Hz	1	
46	16-0007	Pulley AL104 x 1" MXB Fans	1	
47	16-0016	Sheave 1 Groove 3.45" Diameter x 5/8" Bore	1	
48	16-0076	Bearing 1" Pillow Block AVS FA	2	
49	16-0087	1" Shaft - Dual Key - Tensioner	1	
50	16-0088	A-46 V-Belt, 48" Nominal Length	1	
51	91-0057	Rotary Tensioner Assembly w/ Splash Guards	1	
52	DC-1540	Decal, Danger/Warning	2	
53	DC-1571	Decal Grease Instructions All BD Fans	1	
54	DC-983	Decal, AVS Logo 10-1/2" x 2"	2	
55	DC-995	Decal, Warning Shear Point	2	
56	S-1054	Split Lock Washer 3/8" ZN	1	
57	S-248	Flat Washer 3/8" USS ZN YDP Grade 2	4	
58	S-10268	Flange Nut 5/16"-18 JS Grade 5	13	
59	S-4336	Screw, MS 5/16"-18 x 1" THS ZN Grade 2	4	
60	S-6606	Flange Bolt 5/16"-18 x 3/4" ZN Grade 5	13	
61	S-7383	Nylock Nut 3/8"-16 ZN Grade 5	4	
62	S-7419	Screw, SDS #10-16 x 1-1/4" HWH SS	6	
63	S-8978	Screw, TCSF #10-32 x 1/2" HWH ZN	40	
64	S-9168	Square Key 1/4" x 1"	2	
65	S-9303	Flange Bolt 3/8"-16 x 1-1/2" YDP Grade 8	5	
66	PNEG-1425	50" Galvanized Butterfly Fan Instruction Manual	1	

8. Exploded Diagram



Exploded Diagram

Ref #	Part #	Description	Qty
1	11-0333	Inlet Grill	1
2	12-0482	Bottom Panel	1
3	12-0484	Right Panel	1
4	12-0487-GY	Butterfly Frame	1
5	12-0483	Left Panel	1
6	12-0481	Top Panel	1
7	12-0306	50" Galvanized Butterfly Cone Panel	3
	12-0311	50" Galvanized Butterfly Bottom Cone Panel	1
8	12-0492	Butterfly Flap 50" Galvanized Fan	2
9	11-0494	Bearing Plate Strut	1
10	16-0007	Pulley AL104	1
11	16-0016	Sheave 1 Groove 3.45 Diameter	1
12	15-0126	Motor 1.5 HP, 1 PH/60 Hz	1
13	12-0274	Venturi 50"	1
14	12-0464	Block, Nylon Mounting	2
15	16-0087	1" Shaft/Dual Key	1
16	16-0076	Bearing 1" Pillow Block	2
17	11-0495	Bearing Plate 50" Fan	1
18	91-0045	Rotary Tensioner	1
19	12-0312	50" Galvanized Butterfly Cone Bracket	4
20	12-0405	Galvanized Flap Shaft 50" Butterfly	1

Exploded Diagram for XG50CBF356A

Ref #	Part #	Description	Qty
1	11-0333	Inlet Grill	1
2	12-0482	Bottom Panel	1
3	12-0484	Right Panel	1
4	12-0487-GY	Butterfly Frame	1
5	12-0483	Left Panel	1
6	12-0481	Top Panel	1
7	12-0306	50" Galvanized Butterfly Cone Panel	3
	12-0311	50" Galvanized Butterfly Bottom Cone Panel	1
8	12-0492	Butterfly Flap 50" Galvanized Fan	2
9	11-0494	Bearing Plate Strut	1
10	16-0015	Sheave, AL 94 - 8.875" O.D. x 1" I.D. with Keyway	1
11	16-0050	Drive Sheave, 36" Fans - AK 39 x 5/8"	1
12	15-0138	Motor 1.75 HP 3 PH 115/230V 60 Hz 15/7.5 A	1
13	12-0274	Venturi 50"	1
14	12-0464	Block, Nylon Mounting	2
15	16-0087	1" Shaft/Dual Key	1
16	16-0076	Bearing 1" Pillow Block	2
17	11-0495	Bearing Plate 50" Fan	1
18	91-0045	Rotary Tensioner	1
19	12-0312	50" Galvanized Butterfly Cone Bracket	4
20	12-0405	Galvanized Flap Shaft 50" Butterfly	1

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
	All Fiberglass Housings	Lifetime
	All Fiberglass Propellers	Lifetime
Cumberland Feeding/Watering Systems	Feeder System Pan Assemblies	5 Years **
	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
	Portable and 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^{th}) month from the date of purchase and continuing until the sixtieth (60^{th}) 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.

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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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CN-307813