

Air Storm 18" Fiberglass Fan Installation and Operation Manual



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GrowerSELECT General Page

General Installation Notes:

Make sure that power is disconnected from system prior to servicing.

Installation of this equipment and related OEM equipment should be in accordance with these instructions, OEM's installation instructions and local codes (if applicable). Failure to follow specified instructions may cause damage to equipment and/or personal injury or death.

Take special note of any Warnings or Safety Decals on the equipment and in manuals.

Always wear protective clothing and any applicable Personal Protective Equipment (Safety Glasses and/or Ear Plugs) when working with the equipment.

Discarded materials, equipment and boxes should be recycled in accordance with local and national codes.

Safety Instructions:

Read all safety messages in this manual and on equipment safety decals. Follow recommended precautions and safe operating practices.

Ground all electrical equipment for safety.

Ground all non-current carrying metal parts to guard against electrical shock.

Always keep safety decals in good condition and replace missing or damaged decals.

Safety

Warning Labels

Warning Decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety signs.

Safety–Alert Symbol

This is a safety–alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. GrowerSelect equipment is designed to be installed and operated as safely as possible...however, hazards do exist.



Safety decals should be read and understood thoroughly by individuals within the local area of the fan. Safety decals should be visible from both the front and back of the fan. Should a decal be missing or damaged, please contact Hog Slat Inc. for a free replacement:

Hog Slat Inc.
 206 Fayetteville St.
 Newton Grove, NC 28366
 Toll Free: 800-949-4647
 Local: 910-594-0219

The below safety decal should be represented and visible on both the front and back sides of the fan. This label is identified by the HSLABEL-080 part number in the lower right corner.

WARNING – FLYING OBJECTS AND ROTATING PARTS

Ensure fan guards are in place during operation.
 Securely tighten propeller to shaft to avoid slipping.
 Disconnect power supply for inspection or service when guards are removed and personnel are exposed to propeller.

WARNING – HIGH VOLTAGE

Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically states otherwise.
 Ground all electrical equipment for safety.
 All electrical wiring must be done by a qualified electrician in accordance with local and national electrical codes.
 Ground all non-current carrying metal parts to guard against electrical shock. With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment.



Installation

Prior to any installation, product should be inspected for any damage caused during shipping. Any damage found should be documented and communicated to liable parties.

Operation Safety

When fan is in operation, no attempt should be made to service or interact with parts from the fan. Any attempt to interact with fan parts while the fan is operating could result in injury. Inlet and exit guards and or shutters are in place to help prevent foreign objects from entering inside the outer perimeter of the housing. If maintenance to the fan is required, interrupt the source of power to the motor and allow propeller to come to a complete stop before moving forward with any efforts to service.

Maintenance Safety

Air Storm Fans are designed and built with operator safety in mind. Some safeguards must be disassembled or removed for the parts to be serviced or replaced. As this fan does have moving parts and is supplied with electrical power, steps must be taken to ensure safety around these presented hazards.

READ THESE INSTRUCTIONS BEFORE SERVICE OR PART REPLACEMENT

1. Read and understand the operating manual before trying to install or operate Air Storm Fans.
2. Power supply should be turned OFF and LOCKED OUT for service to motor and electrical components. Use **CAUTION** in checking voltage or other procedures requiring power to be ON.
3. DO NOT attempt to bypass any safety features or devices to operate the fan.
4. Keep fan clean of all debris that may collect on the motor, prop, bearings, belts, or pulleys.
5. Use **CAUTION** when working around all moving parts of the fan.

Fan guards or shutters must be in place before fan can be safely started and operational.

Installation

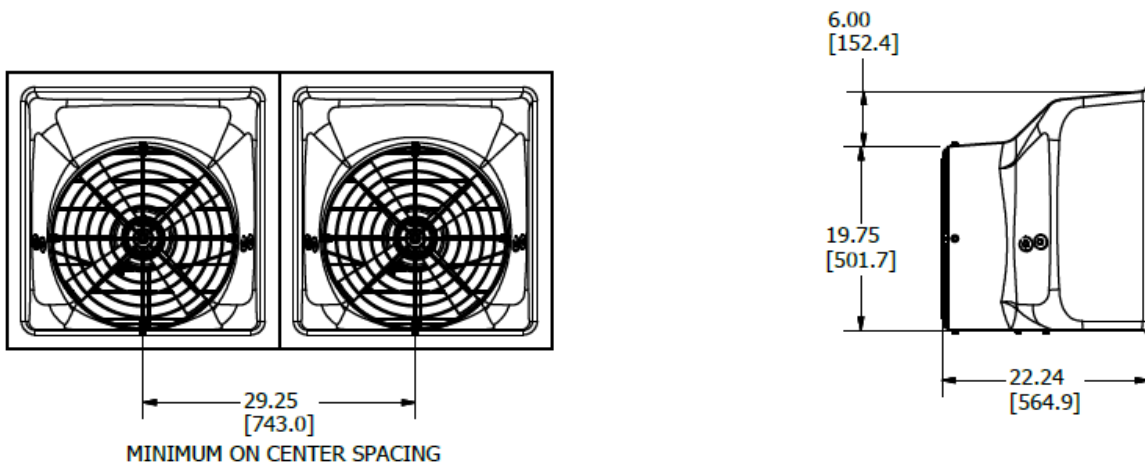
Framing

The rough in opening for the fan is an exact measurement that accounts for the heads of fasteners and openings for fan. Ensure there is proper clearance for installation or rough opening may require larger measurements.

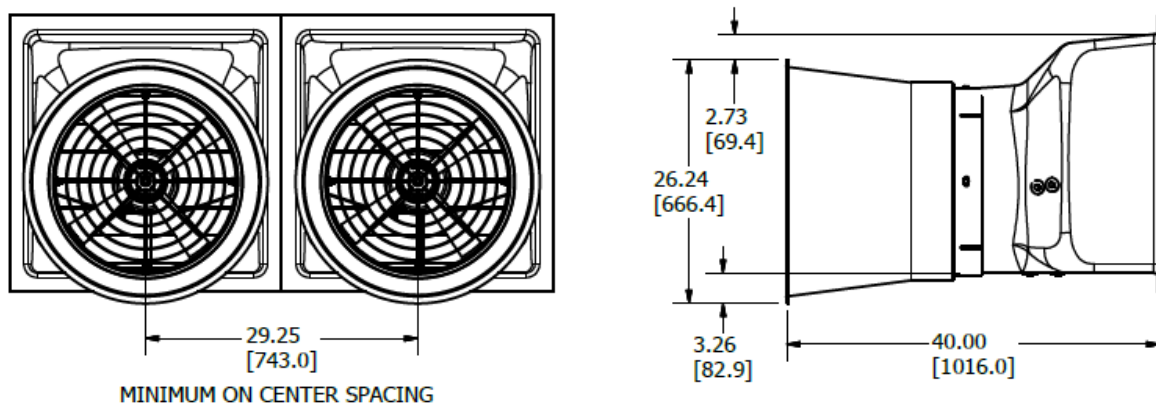
Fan Model	Rough Opening (Width x Height)
<p>18" Fiberglass Exhaust Fan</p>	<p>Interior: 25-1/2" W x 26" H (64.77 cm x 66.04 cm)</p> <p>See Diagram on Next Page for Wall Thickness Specific Dimensions</p>

! In some applications the slope on the fan housing requires exterior finish material to extend 3/4" below the top of the rough opening!

NO CONE

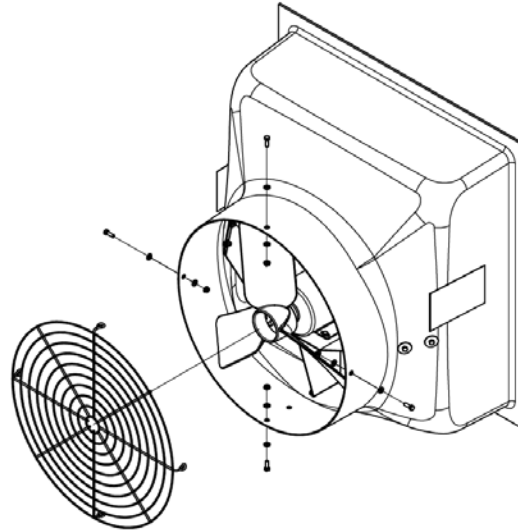


WITH CONE

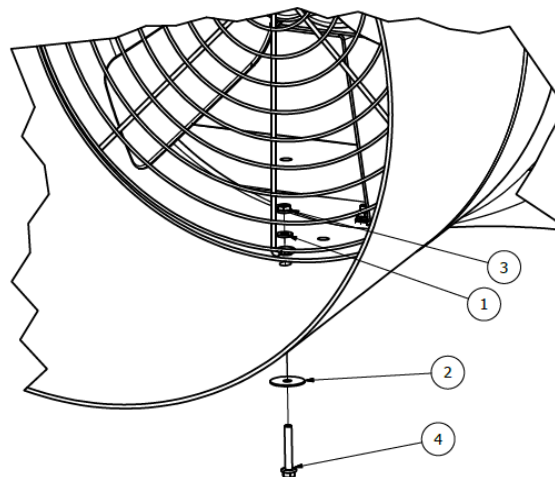


Assembly

1. If a cone is required follow steps 2 through 5, if a cone is not required continue to step 6.
2. Remove grill guard from fan by removing all 4 bolts, washers, and nuts

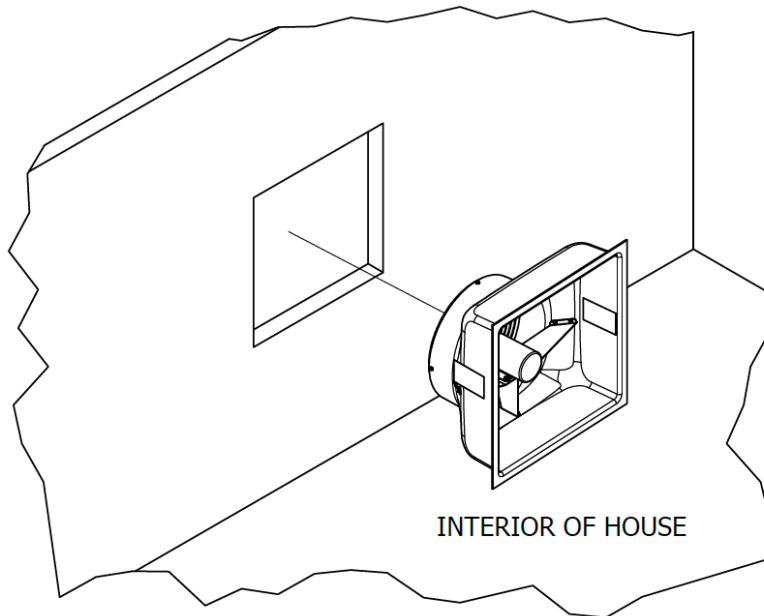


3. Place the fan inlet side down on a level surface. Slide cone over exit orifice of the housing and align pre drilled holes. There is no orientation for the cone. (This step can also be completed after the fan is mounted in the wall)
4. Place the grill guard back into the cone and utilizing extended fasteners (supplied with fan), secure cone to housing by inserting the threaded portion of the bolt through the cone, then through the housing, then through the grill guard from the exterior of the fan.
5. Secure all 4 bolts with washers and nuts removed in step 2.

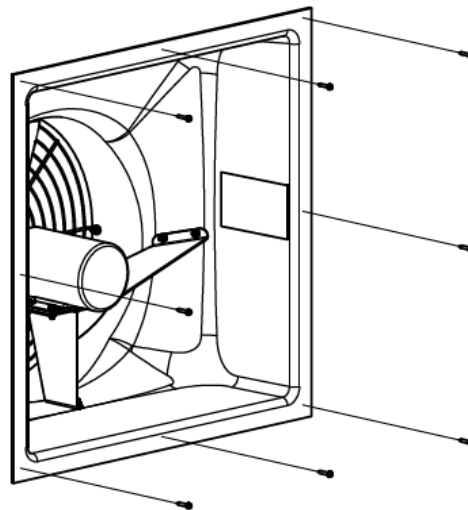


PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	26	60580	Washer Flat Ss 5/16"	
2	10	605803	Washer Fender Ss 5/16" X 1 1/2"	
3	18	606240	Nut Serrated Flange 5/16"-18 SS	
4	4	60511S	Bolt SS 5/16" X 2"	

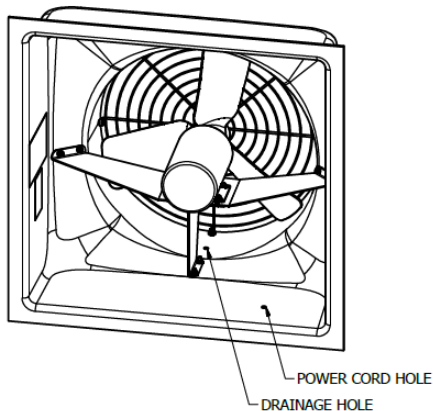
6. Insert fan shroud into rough opening from inside of house. This can be done with cone already installed as the major diameter of the cone is smaller than the required rough opening.



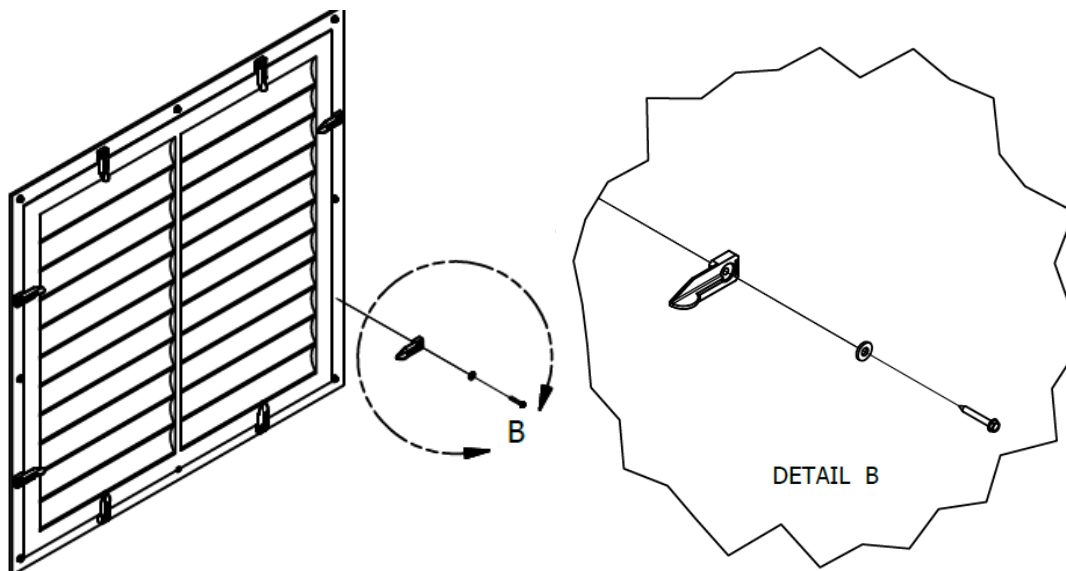
7. Using supplied #14 Sheet Metal Screws (805060), secure housing to framework.
 - A total of 8 fasteners are recommended to completely secure fan.
 - Each corner should be secured along with the midpoint between each corner.
 - Ensure adequate space is allowed inside for shutter to mount flush.



8. Using a 1/2" drill bit, drill a relief hole in the housing at desired location for entry of power cord
 - ! ENSURE HOLE LOCATION WILL NOT ALLOW POWER CORD TO APPROACH THE PATH OF THE ROTATING FAN BLADE OR SHUTTER ACTION!
 - Also ensure hole location will not allow excessive entry of water during adverse weather conditions
9. A second relief hole is recommended in most applications in the bottom of the housing to allow drainage of any liquid that could accumulate in the bottom of the housing. This hole should be drilled in base of the housing centered between the vertical support and orifice exit.



10. From the interior of the house use WS-003 Hardware package contents to secure the shutter to the fan inlet opening. Place shutter into fan inlet opening. Ensure shutter is oriented so shutter will swing upward when air flows from the interior of the house through the fan to the exterior of the house.
11. Attach (8) shutter retainer clips with aluminum washer and self tapping screw to fan housing. Space the retainer clips evenly between securing screws applied in step 7.



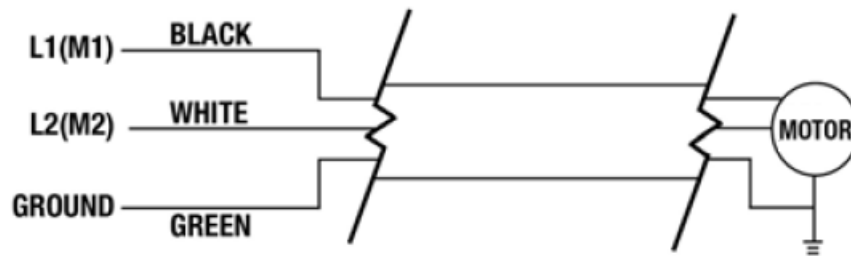
THIS COMPLETES THE HOUSING ASSEMBLY OF THE FAN

Wiring

To access motor, turn shutter retainer clips so shutter can be removed.

Again, make sure that power is disconnected from system prior to servicing.

This Power Unit is supplied prewired for 230 volt operation with the proper rotation direction for correct auger rotation. If 115 volt operation is required please see wiring instruction on Motor Data Label for converting to 115 volt operation. Black wire should connect to L1(M1) and White wire should connect to L2(M2). Green should be connected to Ground



ELECTRICAL SHOCK HAZARD!

- Motor replacement and the associated wiring changes should only be made by qualified and properly trained individuals.
- Failure to follow the above warning can cause improper equipment function, premature failure of equipment or electrical shock, leading to property damage or personal injury.

Pre-Operation Assessment

Before beginning fan operation, please follow the below checklist to ensure that:

- ✓ Fan power cord securely connected to a good power supply.
- ✓ All safety labels are visible to personnel that will work in the area.
- ✓ Exit wire guard and inlet shutter are in place and secured to the fan housing.
- ✓ No foreign objects are protruding through the fan housing.

Operation

At all times during operation, fan orifice should be free of debris. In the event any component of the fan is compromised, discontinue use immediately and contact your local Hog Slat representative.

Maintenance

In order to begin any maintenance or service to the fan, power must be turned OFF and all moving parts must come to a complete STOP before accessing. All parts inside of the fan housing are accessed by removing the exit wire guard and inlet shutter.

Once service is complete, clean excessive build-up from parts. Excessive dust and dirt on parts can cause vibration in the propeller and overheating of the motor. Before beginning operation again, ensure that all safeguards are back in place and all foreign objects are free from the area.

Troubleshooting

Trouble	Possible Cause(s)	Corrective Action
Excessive noise	Worn motor bearing.	Replace
	Damage to fan blade	Replace prop
	Loose fasteners on motor or housing	Tighten fasteners
Excessive vibration	Fan blade is out of balance due to dirt build-up.	Clean entire unit
	Fan blade is out of balance due to damage	Replace prop
Insufficient airflow	Intake or exhaust guards clogged with debris	Clean entire unit
	Intake or exhaust blocked by foreign object	Remove object from airflow path
Fan won't operate	Open power supply circuit.	Check wiring and reset circuit breaker
	Defective motor	Reset motor, repair, or replace
Motor overheats and nuisance trips	Improper airflow due to clogged Inlet/Outlet	Clean entire unit
	Motor or Fan prop has excessive debris build-up	Clean entire unit

Performance

Hog Slat Inc. takes great pride in supplying our customers with fans that meet or exceed their performance numbers. This is achieved by testing fans from the production line and continually working to maintain consistency in test data.

BESS LABS TEST NUMBER 15684 December 22, 2015 (With Cone)

Static Pressure (in.H2O)	Airflow (cfm)	Rpm	Volts	Amps	Watts	cfm/Watt
0.00	4980	1739	230.1	2.04	424	11.7
0.05	4780	1737	230.2	2.08	435	11.0
0.10	4580	1734	230.1	2.12	444	10.3
0.15	4350	1732	229.9	2.15	450	9.7
0.20	4140	1730	229.8	2.18	457	9.1
0.25	3890	1730	230.2	2.20	462	8.4
0.30	3620	1729	230.2	2.21	465	7.8

BESS LABS TEST NUMBER 15685 December 22, 2015 (No Cone)

Static Pressure (in.H2O)	Airflow (cfm)	Rpm	Volts	Amps	Watts	cfm/Watt
0.00	4490	1732	230.4	2.15	449	10.0
0.05	4310	1731	230.3	2.17	456	9.5
0.10	4120	1729	230.4	2.18	460	9.0
0.15	3920	1728	230.4	2.19	462	8.5
0.20	3710	1728	230.3	2.20	462	8.0
0.25	3410	1729	229.7	2.18	458	7.4
0.30	3100	1731	229.9	2.14	449	6.9

Voltage Speed Curves

Hog Slat Inc.



DATE: 10/4/2016
REV: 1R

WITH CONE

WITH OUT CONE

-0.05 in SP

AS-18EDDLP		Speed Curve			
Point	Volts	Target RPM	Actual RPM	CFM W/Cone	Actual Static Pressure
1	231.1	1736	1736	4630	-0.048
2	158.9	1636	1637	4320	-0.051
3	137.8	1536	1537	4031	-0.051
4	127.5	1436	1438	3719	-0.052
5	121.4	1336	1334	3408	-0.050
6	116.4	1236	1233	3076	-0.050
7	112.7	1136	1141	2598	-0.049
8	109.3	1036	1037	2221	-0.047
9	104.9	936	939	1779	-0.048
10	98.8	836	837	877	-0.047
11	98.9	736	739	524	-0.043
12	95.7	636	635	300	-0.029

AS-18EDDLP		Speed Curve			
Point	Volts	Target RPM	Actual RPM	CFM W/O Cone	Actual Static Pressure
1	230.4	1733	1733	4181	-0.049
2	160.8	1633	1632	3905	-0.049
3	139.7	1533	1531	3612	-0.050
4	130.1	1433	1435	3366	-0.047
5	122.7	1333	1332	3042	-0.051
6	117.5	1233	1235	2693	-0.052
7	113.7	1133	1134	2310	-0.046
8	109.0	1033	1037	1997	-0.042
9	104.0	933	936	1551	-0.045
10	97.6	833	832	1023	-0.042
11	98.2	733	738	591	-0.044
12	95.7	633	640	281	-0.041

Point 1 Target 230 Volts
All point taken at "-0.05" static pressure
All points to be taken with proper chamber differential pressure

Point 1 Target 230 Volts
All point taken at "-0.05" static pressure
All points to be taken with proper chamber differential pressure

-0.10 in SP

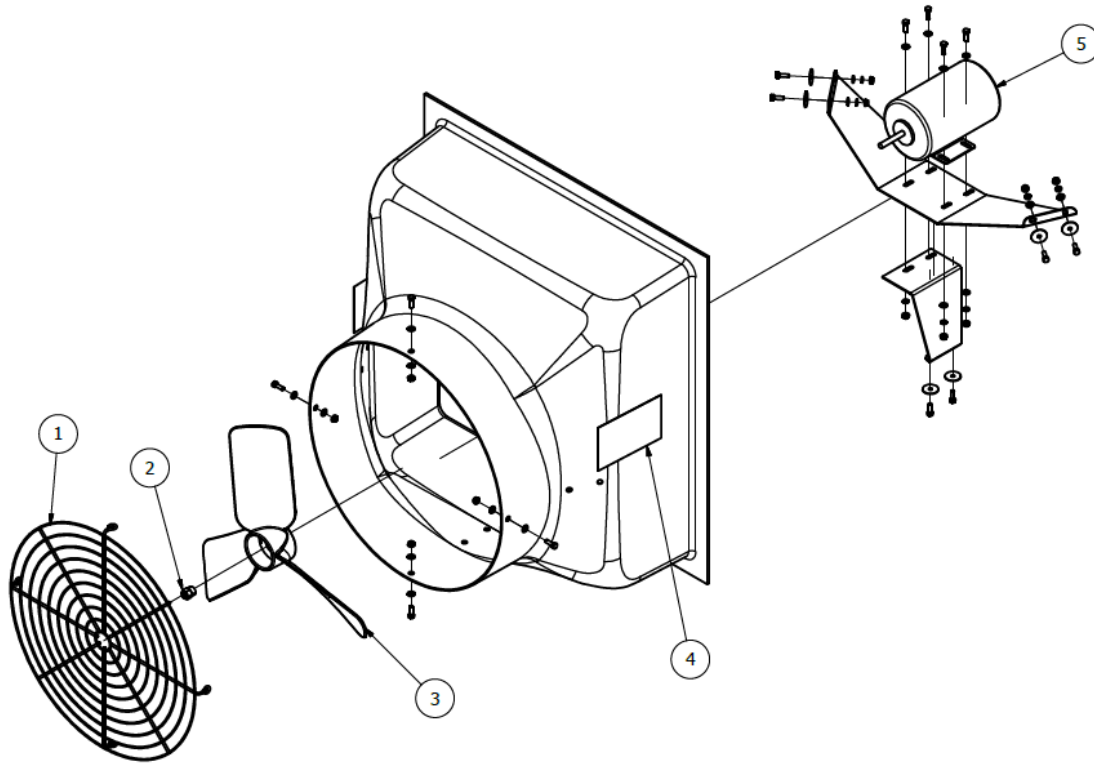
AS-18EDDLP		Speed Curve			
Point	Volts	Target RPM	Actual RPM	CFM W/Cone	Actual Static Pressure
1	230.0	1730	1730	4413	-0.100
2	162.4	1630	1635	4130	-0.099
3	140.2	1530	1531	3770	-0.101
4	129.2	1430	1432	3475	-0.096
5	122.6	1330	1333	3133	-0.096
6	117.9	1230	1233	2705	-0.097
7	114.0	1130	1130	2264	-0.096
8	107.0	1030	1037	1504	-0.092
9	105.2	930	937	802	-0.091
10	106.0	830	830	442	-0.084
11	101.6	730	739	359	-0.062
12	94.0	630	629	281	-0.037

AS-18EDDLP		Speed Curve			
Point	Volts	Target RPM	Actual RPM	CFM W/O Cone	Actual Static Pressure
1	231.0	1728	1728	3997	-0.094
2	162.0	1628	1631	3695	-0.101
3	139.7	1528	1526	3397	-0.097
4	129.9	1428	1426	3116	-0.096
5	122.5	1328	1330	2796	-0.091
6	116.8	1228	1227	2355	-0.098
7	111.6	1128	1131	1968	-0.096
8	104.0	1028	1022	1366	-0.086
9	105.0	928	927	729	-0.101
10	104.5	828	826	466	-0.088
11	101.9	728	732	350	-0.067
12	94.4	628	632	249	-0.046

Point 1 Target 230 Volts
All point taken at "-0.10" static pressure
All points to be taken with proper chamber differential pressure

Point 1 Target 230 Volts
All point taken at "-0.10" static pressure
All points to be taken with proper chamber differential pressure

Exploded Diagrams



Replacement Parts

Item Key	Replacement Part Number	Description
1	HS902-18	Guard Fan 18"
2	HS903-1	Nut Transtorque 1/2" With 7/8" Hex Nut Keyless Bushing
3	HS900-18A	Prop 18" Fiberglass
4	HSLABEL-080	Label Warning-High Voltage, Flying Objects, Rotating Blade
5	HS9008	Motor 1/3 HP 1725 RPM Variable Speed 115/230V 50/60Hz
N/S	AS-18206	Cone 18" Poly
N/S	10115-5	Shutter PVC 24 1/2" X 24 1/2"
N/S	WS-HW1	Hardware Kit Shutter Retainer 8ct.
N/S	WS-HW3	Hardware Kit Cone Mounting 24" Fan

For OSHA compliant guards, contact your local Hog Slat representative.

Hog Slat Limited Warranty (Air Storm AS-18EDDLP Fan)

Hog Slat warrants products to be free from defects in material or workmanship for a period of twenty-four (24) months from the date of **original purchase**. Hog Slat will credit, repair, or replace, at its option any product deemed defective within this time period. Labor costs associated with the replacement or repair of the product are not covered by the Seller/Manufacturer.

Warranty Extension Coverage

The Limited Warranty period is extended for the following products:

Direct Drive Motor	3 Years (from the date of installation)
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Conditions and Limitations

1. The product must be installed by and operated in accordance with the instructions published by the **Seller/Manufacturer or Warranty will be void.**
2. Warranty is void if **all components** are not original equipment supplied by the **Seller/Manufacturer.**
3. This product must be purchased from and installed by an authorized retailer/distributor or certified representative thereof or the Warranty will be void.
4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under the Warranty.
5. This Warranty applies only to components/systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.
6. This Warranty applies only to the Original Purchaser of the product.

The **Seller/Manufacturer** shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to suffer as a result of any defect in the product. **“Consequential” or “Special Damages”** as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.

THIS WARRANTY CONSTITUTES THE SELLER/MANUFACTURER'S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Hog Slat Retailers/Distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for GrowerSelect products in addition to those terms expressly stated above. An officer of Hog Slat must authorize any exceptions to this Warranty in writing. The Seller/Manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

This equipment must be installed in accordance with all State and Local Codes and applicable Regulations which should be followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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Part Number: HSMANUAL-071 Rev A1
HSART-413
Market: Hog & Poultry