

# AIR POLLUTION CONTROL PRODUCTS

## HPC SERIES



FRP Centrifugal Fans



# GENERAL INFORMATION



**AMCA Seal**  
 HEE Environmental Engineering certifies that the HPC series FRP Centrifugal Fans shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA PUBLICATION 211 and comply with the requirements of the AMCA Certified Ratings Program.

All Wheels are statically and dynamically balanced on electronically controlled balancing machines. The necessary weight adjustments are made by removing excess materials, or by permanently bonding fiberglass materials to the wheel. After assembly, the fans are test run at the customers operating speed to locate and correct any minor misalignments that may have occurred during assembly. They are checked for proper bearing operation.

The performance tables shown in this brochure are based on unobstructed air flow into the inlet of the fan. During installation, the fan inlet conditions should be designed to allow the air to enter the housing resembling a fan with an unobstructed inlet. The fan performance can be adversely affected by poor inlet conditions creating uncontrolled spin, unequal air loading or imbalance. Elbows located directly at the inlet should be avoided and properly sized inlet boxes or straightening vanes should be utilized. It is good practice to include the equivalent of two duct diameters prior to the fan inlet.

The addition of the short outlet stack will improve the overall performance of the fan. Testing has shown up to a 7% improvement in performance by the addition of an outlet stack.

The BI wheel provides non-overloading performance. This allows the brake horsepower to level off at a point where motors can be economically selected so they will not overload if the system pressure drops.

The brake horsepower shown in the performance tables does not include the drive losses. Normally, the belt drive losses vary from 5% to 20% of the motor horsepower output.

The chemical and structural properties of fiberglass are excellent. FRP fans moving air at higher temperatures will usually affect the chemical resistance. In addition, the maximum safe operating speed should be de-rated using the following table:

## MAXIMUM SAFE SPEED CORRECTION FACTORS

Temp (F)	70	100	150	175	200
Factor	1	1	0.95	0.93	0.91

To obtain the new maximum safe speed when temperature is involved, multiply the maximum safe speed as listed for each fan sized by correction factor.

Each of the following capacity tables include a CFM, Static Pressure, outlet velocity, and the corresponding RPM and BHP. If capacities are not at standard conditions (0.75 lbs/ft<sup>3</sup>), correction factors must be applied to the static pressure and BHP.

Temp (F)	70	100	150	175	200
Factor	1	1.06	1.15	1.2	1.25

Altitude	0	1000	2000	3000	4000
Factor	1	1.04	1.08	1.12	1.16

Altitude	5000	6000	7000	8000	9000
Factor	1.2	1.25	1.3	1.35	1.4

To correct for temperature and elevation multiply the static pressure at standard conditions by the factors above. Then make the section as usually. The BHP can be calculated at actual conditions by dividing the tabulated value by the temperature/elevation correction factor.

### EXAMPLE:

1500 CFM at 3" WC Corrected for 100F and 3000' Altitude.  
 $3" \times 1.06 \times 1.12 = 3.56" \text{ WC}$   
 FROM TABLES

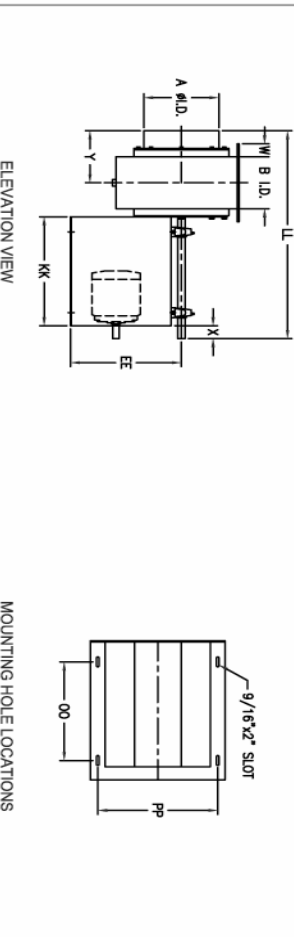
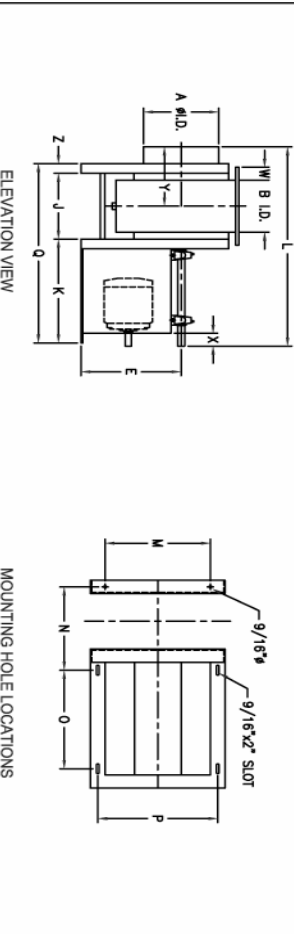
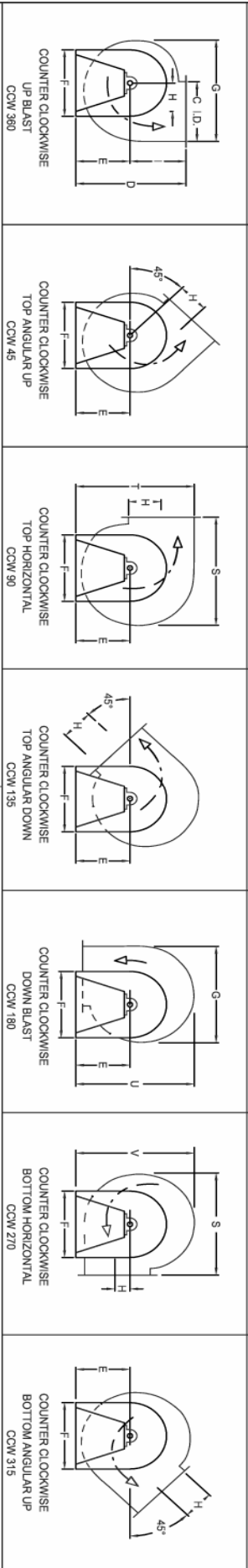
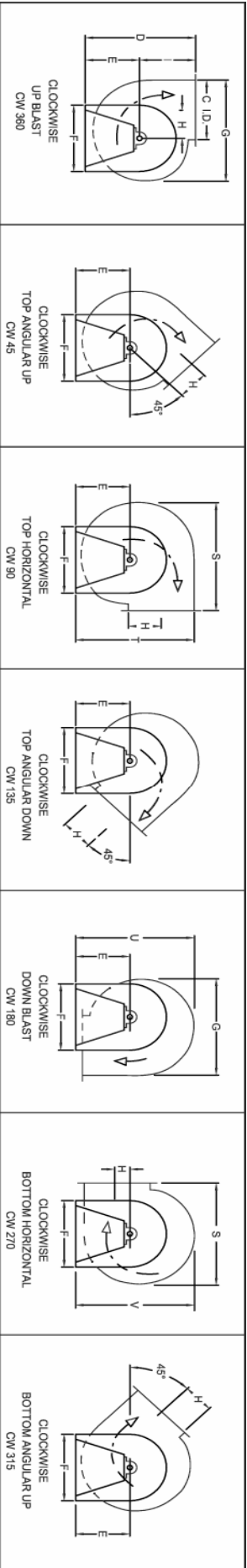
HPC 1225  
 RPM = 3236, BHP = 1.79

BHP correction:  $1.79 / 1.06 / 1.12 = 1.51 \text{ BHP}$

Final Selection:

RPM = 3172  
 BHP = 1.15

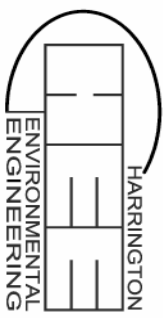
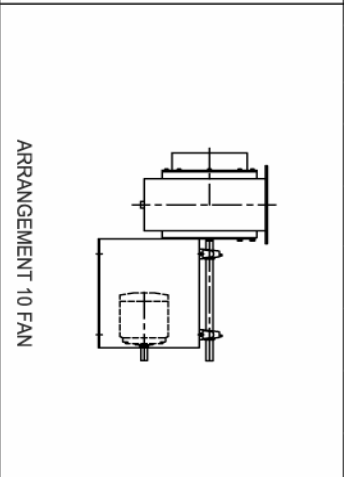
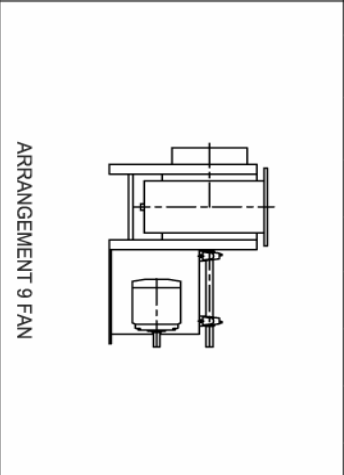
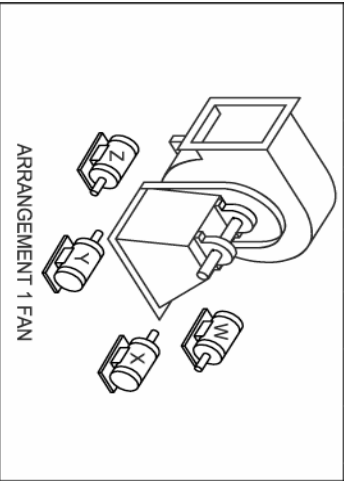




HPC	A	B	C	D	E/EE	F	G	H	I	J	K	KK	L	LL	M	N	O	OO	P	PP	Q	S	T	U	V	W	X	Y	Z	FAN WGT	SHAFT SIZE CLASS III	SHAFT SIZE CLASS III
1050	10 1/2	8	11 3/4	22 1/16	14 15 1/2	13 1/4	19 1/8	5 3/8	8 1/16	10 1/8	16	16 3/4	32 5/8	32	9 1/4	13 1/2	10	13	11 3/4	14 3/4	27 5/8	17 3/16	25 1/4	23 1/8	23 7/8	2	4	9 1/8	1 1/2	155	1"	1 7/16"
1225	13 1/4	9 1/2	12 1/2	23 7/8	13 3/4 15 3/4	16 1/2	22 1/4	5 3/4	10 1/8	11 5/8	17 1/2	16 3/4	34 3/8	34 1/8	12 1/2	15	11 1/2	13	15	14 3/4	30 5/8	20 3/8	26 1/4	24	25 3/4	2	2 3/4	9 7/8	1 1/2	185	1 3/16"	1 7/16"
1500	16 1/4	12	15 3/4	29 3/8	17 3/8	20 1/4	26 1/4	7 1/8	12	14 1/8	18 1/2	18	38 5/8	36 7/8	16 1/4	17 1/2	12 1/2	14	18 3/4	19 1/2	34 1/8	25 1/4	32 5/8	30 5/8	31	2	3 1/2	11 1/8	1 1/2	245	1 3/16"	1 11/16"
1825	20 1/4	14	19	34 3/8	20 1/2	24	32	8 1/4	13 7/8	16 3/8	20 3/4	19	44 1/8	44 5/8	20	20	14 1/2	15	22 1/2	22 3/4	35 5/8	29 5/8	38 1/2	36 1/4	37	2	3 1/2	13 1/4	1 1/2	350	1 7/16"	1 11/16"

**HEAVY DUTY FRAME**  
ARRANGEMENT 1 & 9

**STANDARD DUTY FRAME**  
ARRANGEMENT 9 & 10



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**HPC SERIES FRP CENTRIFUGAL FAN**  
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HEE ENVIRONMENTAL ENGINEERING provides air pollution control equipment for handling and control of corrosive inorganic gases, mist, fumes, vapors and particulates. We have served industries from Aerospace to Agriculture and all industries in between. We can meet your needs by providing you with a complete solution to your air pollution control requirements. Since 1972, our division has engineered, designed and manufactured thousands of air pollution control equipment systems providing protection for people, surrounding and the environment.

## **OUR PRODUCTS AND SERVICES INCLUDE . . . . .**

- **WET PACKED BED SCRUBBERS**

- Horizontal Cross flow Scrubbers
- Vertical Countercurrent Scrubbers
- Point of Use Scrubbers (PUO)

- **VENTURI SCRUBBERS**

- Educator Venture Scrubbers
- Venture Scrubbers
- Cyclonic Separators

- **MIST ELIMINATORS**

- Horizontal Flow-Blade Type
- Hexavalent Chrome Removal
- Coalesce and Mesh Pad Type
- Submicron Particulate Removal

- **FANS**

- Centrifugal Airfoil Exhaust Fans (AMCA Licensed)
- Inline Centrifugal Fans
- Radial Fans
- Tube Axial Fans
- Vane Axial Fans
- Laboratory Fans

- **ELECTRICAL CONTROLS AND INSTRUMENTATION**

- UL Approved Panels
- MMI Systems (Man Machine Interface)
- Soft Start
- Variable frequency Drives
- Factory Wiring per NEC
- Remote Systems Monitoring

- **COMPLETE SYSTEMS**

- Skid Mounted
- Pre-wired and Pre-plumbed
- Duct and Fittings
- Source Testing and Verification
- Quencher – Scrubber Systems
- Hoods and Tanks

- **SERVICES AND SUPPORT**

- Field Start-up
- Training
- Project Management
- Engineering Design and CAD
- Pilot Plant Testing
- Structural Design Calculations
- Chemical Engineering Support
- Application Engineering

- **OUR CORROSION RESISTANT MATERIALS OF CONSTRUCTION INCLUDE**

- Fiberglass
- Vinyl Ester
- PVC
- CPVC
- Polypropylene
- Has alloy