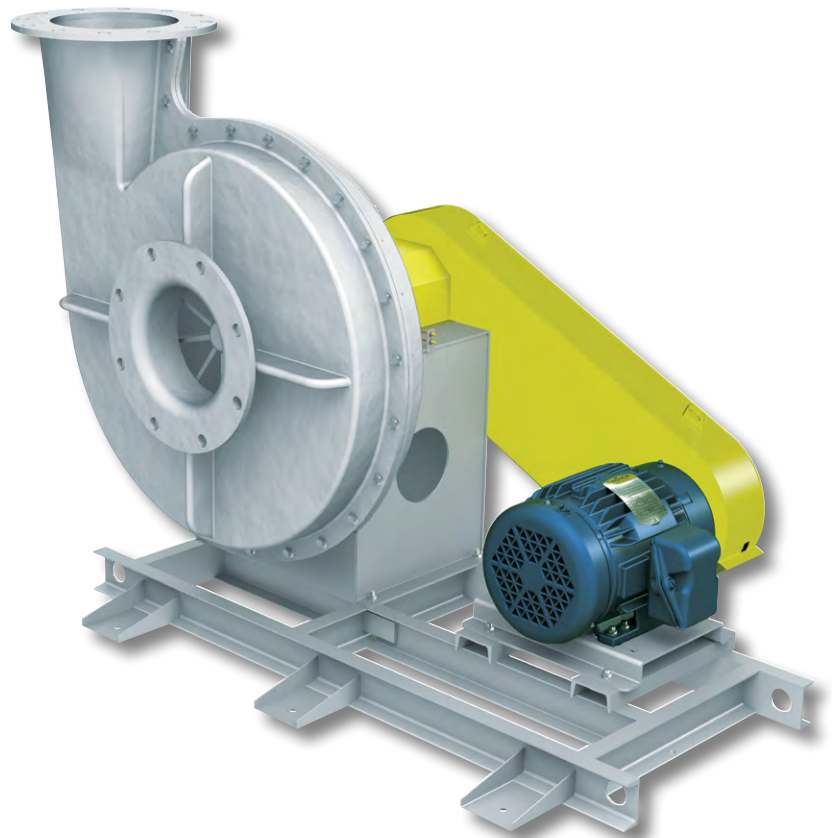




INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

FIBERGLASS FANS FOR CORROSIVE ENVIRONMENTS

BCSF | BAFF | RBOF | HPF | ILCF | TAHF | VAHF | TAMF | PRVF | TCWPF





Corrosive Applications

When dealing with corrosive environments, selecting the right fan is essential for achieving optimal performance and for increasing the longevity of the equipment. Whether you require a fan for a chemical, pulp and paper, or water treatment application, Twin City Fan can provide a wide range of fiberglass fans that are designed to deliver maximum corrosion resistance. We also offer a variety of accessories, multiple types of fiberglass materials, and optional features such as Spark Resistant Construction.

Typical Applications

- Fume control / fume exhausting
- Odor control
- Oil mist emissions
- Pollution / emissions control
- Process control, heating or cooling
- Scrubbers

Typical Industries

- Fertilizer
- Metal & mineral processing
- Pulp & paper
- Petrochemical
- Pharmaceutical
- Steel processing
- Water and wastewater treatment

Advantages of Fiberglass Fans

- Superior corrosion resistance to gases and vapors.
- Lower maintenance costs.
- More economical than stainless steel construction.



The corrosion resistance guide below provides general data to guide the application of Twin City Fan & Blower's standard fiberglass fans based on the corrosive agent within the gas stream. This data is based on a maximum gas stream temperature of 200°F at relatively low concentrations.

Legend of Symbols

S - Satisfactory Application L - Limited Life or Life Tests Incomplete U - Unsatisfactory

APPLICATION	SATURATED VAPOR	DRY VAPOR	EXCESS DRY AIR	APPLICATION	SATURATED VAPOR	DRY VAPOR	EXCESS DRY AIR
ACIDS				ALKALINE SALTS			
Acetic	L	S	S	Sodium Bicarbonate	L	S	S
Aqua Regia	U	U	L	Sodium Carbonate	L	S	S
Boric	S	S	S	Sodium Chloride	L	S	S
Butyric	S	S	S	Sodium Cyanide	L	S	S
Carbonic	S	S	S	Trisodium, Phosphate	L	L	S
Chromic	S	S	S	ALKALIS			
Citric	S	S	S	Ammonium Hydroxide	U	L	S
Formic	L	S	S	Calcium Hydroxide	U	L	S
Hydrochloric	S	S	S	Potassium Hydroxide	U	L	S
Hydrocyanic	L	S	S	Sodium Hydroxide	U	L	S
*Hydrofluoric	L	S	S	Sodium Hypochlorite	U	L	S
Hypochlorous	L	S	S	Ketones			
Lactic	S	S	S	Acetone	U	L	S
Maleic	S	S	S	Methyl Ethyl Ketone	U	U	L
Nitric	L	S	S	Methyl Isobutyl Ketone	U	U	L
Oleic	S	S	S	ESTERS			
Oxalic	S	S	S	Butyl Acetate	U	L	S
Perchloric	U	U	U	Ethyl Acetate	U	U	S
Phosphoric	S	S	S	Zinc Acetate	S	S	S
Picric	L	S	S	GASES			
Stearic	S	S	S	Ammonia	L	S	S
Sulfuric	S	S	S	Bromine	U	U	U
Sulfurous	S	S	S	Carbon Dioxide	S	S	S
Tannic	S	S	S	Carbon Disulfide	L	L	S
Tartaric	S	S	S	Chlorine	L	S	S
SALTS, ACID & NEUTRAL				*Fluorine	L	S	S
Alum	S	S	S	*Hydrogen Fluoride	L	S	S
Aluminum Chloride	S	S	S	Hydrogen Sulfide	S	S	S
Aluminum Sulphate	S	S	S	Sulfur Dioxide	S	S	S
Ammonium Chloride	S	S	S	HYDROCARBONS			
Ammonium Nitrate	S	S	S	Benzene	U	U	U
Ammonium Sulphate	S	S	S	Fuel Oil	S	S	S
Calcium Chloride	S	S	S	Gasoline	S	S	S
Calcium Sulphate	S	S	S	Kerosene	S	S	S
Copper Chloride	S	S	S	Lubricating Oil	S	S	S
Copper Sulphate	S	S	S	Mineral Oil	S	S	S
Ferric Chloride	S	S	S	Toluene	U	U	U
Ferric Nitrate	S	S	S	Vegetable Oil	S	S	S
Ferric Sulphate	S	S	S	Naphtha	S	S	S
Magnesium Salts	S	S	S	Methane	S	S	S
Nickel Salts	S	S	S	Butane	S	S	S
Potassium Chloride	S	S	S	Propane	S	S	S
Potassium Nitrate	S	S	S	Xylol	S	S	S
Potassium Sulphate	S	S	S	CHLORINATED SOLVENTS			
Sodium Chloride	S	S	S	Carbon Tetrachloride	L	S	S
Sodium Sulphate	S	S	S	Chlorobenzene	U	U	U
Sodium Sulphite	S	S	S	Chloroform	U	U	U
Stannous Chloride	S	S	S	Perchloroethylene	U	U	L
Zinc Chloride	S	S	S	Trichloroethylene	U	U	L
Zinc Sulphate	S	S	S	GLYCOLS			
ALCOHOLS	S	S	S		S	S	S

***Consult Twin City Fan & Blower for applications where the corrosive agent concentration and gas temperature is known.



Arrangement 1
Belt Driven



Sizes (Wheel Diameters)

- 16.5" to 60" (14 Sizes)

Performance

- Airflow to 151,000 CFM
- Static pressure to 34" w.g.
- Airstream temperature to 200° F

Arrangements

- Available in Arrangements 1, 8, 9, 9F, 10

Model BCSF

Backward Curved High Pressure Centrifugal Composite Fans, SWSI

The BCSF Centrifugal Composite Fan is a backward curved industrial fan designed for handling particulate-free, corrosive or caustic air in high pressure applications where conventional steel and stainless steel fans would corrode. Typical industries that utilize this style of fan include pulp-and-paper, steel processing, petrochemical plants, and wastewater-treatment facilities. All of the parts that are exposed to the airstream are constructed of high-quality corrosion resistant materials to avoid material breakdown from most chemicals. The BCSF also features a wide wheel and housing, producing a high volume of air at a lower velocity.

Wheel Design

Four wheel designs are available for the BCSF product line. Two medium pressure wheels (M1 and M2) and two high pressure wheels (H1 and H2) all feature a non-overloading wheel design suitable for applications requiring large volumes of air at moderate to high pressures. All wheels are available in either fiberglass (Class FG) or carbon fiber (Class CF) construction.

Optional Accessories

- Access Door
- Shaft Seal
- Flanged Inlet & Outlet
- Housing Drain
- Vibration Isolation Bases
- Inlet Box
- Outlet Damper
- Fan Guards

Optional Construction

- Static Grounding
- ASTM D4167 Construction

Optional Materials

- Vinyl Ester
- Surface Veil

Model BAFF **Airfoil Fiberglass** **Centrifugal Fans, SWSI**

The BAFF fiberglass fan is constructed for durability and resistance to most chemicals. All airstream parts are constructed of fiberglass reinforced plastic and mounted on an all-welded, heavy-gauge steel base. All fiberglass parts are coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal and provide protection from ultraviolet light. This results in a smooth, high gloss finish. All steel parts are finished with an air dry epoxy paint. The aluminum hub and carbon steel shaft assembly are bolted to the fiberglass wheel and completely coated with fiberglass laminate for maximum corrosion protection.

Wheel Design

Features Twin City Fan & Blower's FA9 wheel with backward inclined airfoil blades offering a power limiting characteristic, high operating efficiency, and low noise levels.

Optional Accessories

- Raised Bolted Cleanout Door
- Weather Cover (Arr. 10)
- OSHA Type Belt Guard (Arr. 1 & 9)
- Shaft & Bearing Guard (Arr. 1 & 9)
- Flanged Inlet
- Unitary Base (Arr. 1 & 9)
- Vibration Isolators (Rubber-in-shear or Spring)
- Housing Drain
- Shaft Seal

Optional Construction

- Static Grounding
- ASTM D4167 Construction

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin



Arrangement 9
Belt Driven



Backward Inclined Airfoil
Fiberglass Wheel

Sizes (Wheel Diameters)

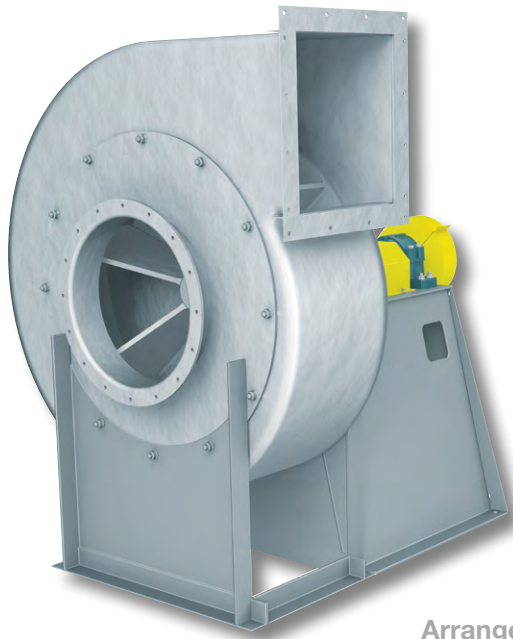
- 12" to 39" (6 Sizes)

Performance

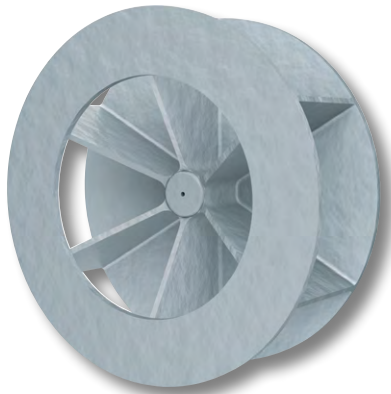
- Airflow to 31,100 CFM
- Static pressure to 13" w.g.
- Airstream temperature to 200° F

Arrangements

- Available in Arrangements 1, 9, 10



Arrangement 9
Belt Driven



Radial Bladed Fiberglass Wheel

Sizes (Wheel Diameters)

- 10" to 57" (14 Sizes)

Performance

- Airflow to 38,300 CFM
- Static pressure to 18" w.g.
- Airstream temperature to 200° F

Arrangements

- Available in Arrangements 1, 9, 10

Model RBOF Fiberglass Radial Bladed Centrifugal Fans

The RBOF fiberglass fan offers superior corrosion resistance to gases, fumes, and vapors. The RBOF's fan housings feature one piece, fabric-reinforced construction utilizing corrosion-grade resins. A glass veil is standard for airstream surfaces providing a resin rich liner to maximize chemical resistance.

The standard resin used for the RBOF is resistant to a large variety of alkalis and other chemical agents. When a corrosion resistant fan is required to withstand chemicals that attack glass or polyester resin, special plastic and reinforcing material can be supplied.

Wheel Design

The RBOF wheel features a radial blade design. All wheels are constructed of solid FRP with a steel hub embedded and encapsulated into the backplate.

Optional Accessories

- Bolted Inspection Door
- Weather Cover (Arr. 10)
- OSHA Type Belt Guard (Arr. 1 & 9)
- Flanged Inlet
- Unitary Base (Arr. 1)
- Vibration Isolators (Rubber-in-shear or Spring)
- Housing Drain
- Shaft Seal

Optional Construction

- Static Grounding (Hazardous Fumes)

Optional Materials

- 304 SS or 316 SS (bearing pedestals and inlet supports)
- Synthetic surfacing veil
- Special resins to suit specific applications
- Fire Retardant Resin reduces the resin's tendency to burn. Antimony trioxide is included to attain a flame spread rating of 25 or less.

Model HPF Fiberglass Radial Bladed High Pressure Blowers

HPF Fiberglass Pressure Blowers are recommended for relatively small, but constant, volumes of air at high static pressure. All airstream parts are constructed of fiberglass reinforced plastic, with excellent corrosion resistance to most chemicals. The radial type wheel is resin transfer molded (RTM) from a resin-glass mixture providing optimal strength and corrosion resistance. All wheels are dynamically and statically balanced after testing.

Belt driven Arrangement 1 or direct drive Arrangement 8 are available and are supplied with heavy-gauge steel bases, finished with two coats of light gray epoxy paint. Arrangement 1 can be furnished with a slide rail base for ease in adjusting belt tension.

Wheel Design

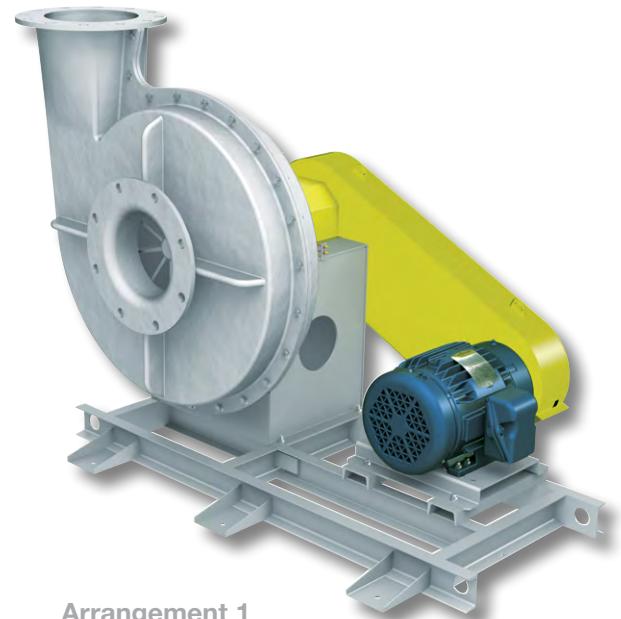
The HPF's wheel is cast from a resin-glass mixture providing optimal strength and corrosion resistance.

Optional Accessories

- OSHA Type Belt Guard (Arr. 1 & 9)
- Coupling Guard (Arr. 8)
- Shaft and Bearing Guard (Arr. 1 & 8)
- Housing Drain
- Flanged Inlet and Outlet
- Shaft Seal
- Vibration Isolators (Rubber-in-shear or Spring)
- Unitary Base
- Graphite Impregnation

Optional Materials

- 316 Stainless Steel Fan Shaft
- Dow Vinyl Ester
- Nexus Veil
- Fire Retardant Resin



Arrangement 1
Belt Driven



Radial Bladed Fiberglass Wheel

Sizes (Wheel Diameters)

- 18" to 28" (3 Sizes)

Performance

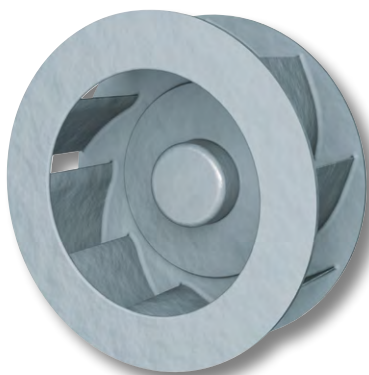
- Airflow to 4,700 CFM
- Static pressure to 36" w.g.
- Airstream temperature to 225° F

Arrangements

- Available in Arrangements 1, 8, 9, 10



Arrangement 9
Belt Driven



Backward Inclined Airfoil
Fiberglass Wheel

Sizes (Wheel Diameters)

- 12" to 39" (6 Sizes)

Performance

- Airflow to 35,900 CFM
- Static pressure to 7" w.g.
- Airstream temperature to 200° F

Arrangements

- Arrangement 9 (Belt Driven)

Model ILCF Fiberglass Inline Centrifugal Fan

The ILCF Fiberglass Inline Centrifugal Fan is designed to provide straight-through airflow. This combines the compact advantage of an axial flow fan with the performance characteristics of a centrifugal fan. The ILCF is constructed with straightening vanes to improve the efficiency and the pressure characteristics by minimizing turbulence downstream from the fan and converting rotational energy at the wheel discharge into useful work. The fan is also incorporates bearing lubrication lines that extend to the outside of the fan housing for ease of maintenance.

Constructed of fiberglass (FRP), the ILCF is primarily used for exhausting gases, fumes and vapors from chemical processes. Airstream parts are constructed of fiberglass reinforced plastic for resistance to a wide variety of acids, alkalis, and other chemical agents.

Wheel Design

Features Twin City Fan & Blower's FA9 wheel with backward inclined airfoil blades offering a power limiting characteristic, high operating efficiency, and low noise levels.

Optional Accessories

- Fiberglass Motor Cover
- Fiberglass Curb Base
- Fiberglass Stack Cap
- Exterior Stainless Steel Hardware
- Housing Drain
- Horizontal Support Legs
- Bolted Inspection Door
- Stack Cap Bird Screen
- Ceiling Suspension Brackets

Optional Construction

- Static Grounding (Hazardous Fumes)

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin

Model TAHF & VAHF High Pressure Axial Fans

Model TAHF (Tubeaxial)

The Model TAHF is the belt driven tubeaxial fiberglass axial flow fan utilizing a 7-bladed propeller. It fulfills the need for a corrosion resistant fan with more performance capability and lower noise level. The propeller, housing, bearing base and inner support structures are constructed of glass reinforced plastic.

Model VAHF (Vaneaxial)

Adding a vane section to the Model TAHF tubeaxial fiberglass axial flow fan converts it to a Model VAHF vaneaxial fan for improved performance.

Propeller Design

The TAHF & VAHF propellers are constructed using a resin transfer method (RTM). Glass cloth is cut to various template sizes to form laminations which are fitted into a mold. Glass is impregnated with "vinyl ester" in a low-pressure injection process. The fan's propeller is cured under pressure in the mold, forming a monolithic structure.

Optional Accessories

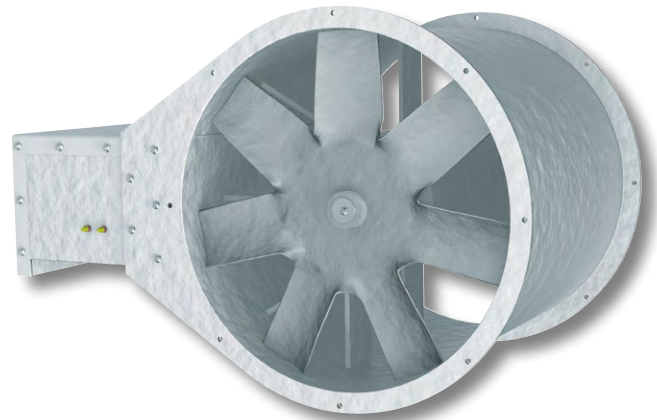
- Fiberglass Curb Base
- Fiberglass Stack Cap
- Companion Flanges
- Stack Cap Bird Screen
- OSHA Type Inlet/Outlet Guard
- Bolted Inspection Door
- Horizontal Support Legs
- Exterior Stainless Steel Hardware

Optional Construction

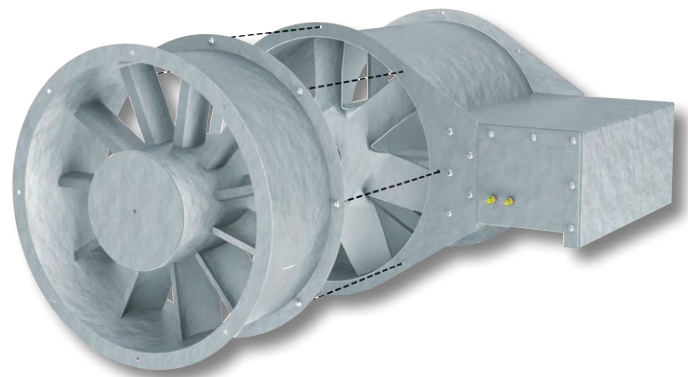
- Static Grounding (Hazardous Fumes)

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin



Model TAHF
Tubeaxial Fan



Model VAHF
Vaneaxial Fan

Sizes (Propeller Diameters)

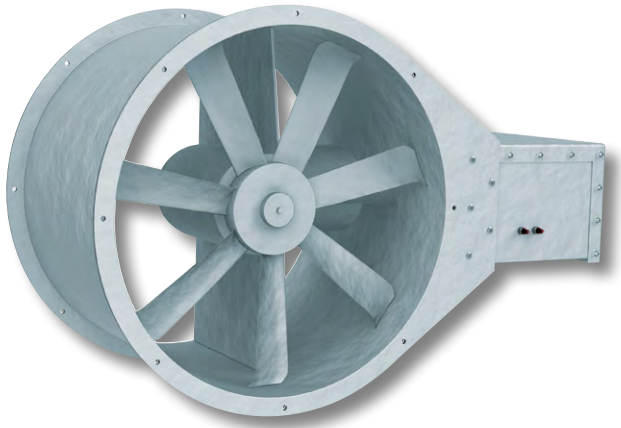
- 12" to 60" (16 Sizes)

Performance

- Airflow to 83,200 CFM
- Static pressure to 4" w.g. (VAHF)
- Static pressure to 2.5" w.g. (TAHF)
- Airstream temperature to 200° F

Arrangements

- Arrangement 9 (Belt Driven)



Arrangement 9
Belt Driven



Fiberglass propeller constructed with glass cloth impregnated with vinyl ester resin

Sizes (Propeller Diameters)

- 14" to 60" (10 Sizes)

Performance

- Airflow to 51,900 CFM
- Static pressure to 1.5" w.g.
- Airstream temperature to 200° F

Arrangements

- Arrangement 9 (Belt Driven)

Model TAMF

Fiberglass Tubeaxial Fans

The model TAMF belt driven tubeaxial fan is constructed from corrosion-resistant FRP and utilizes fiberglass propeller for medium performance range requirements. The standard resin used for the TAMF is resistant to a large variety of alkalis and other chemical agents. All fiberglass parts are coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal the surface and provide a smooth finish.

Propeller Design

The TAMF's propeller is constructed with glass cloth impregnated with vinyl ester resin and secured to a 316 stainless steel fan shaft by a stainless steel retainer bold and washer. Propellers shall be statically and dynamically balanced to ensure quiet operation.

Optional Accessories

- Fiberglass Curb Base
- Fiberglass Stack Cap
- Stack Cap Bird Screen
- Exterior Stainless Steel Hardware
- OSHA Type Inlet/Outlet Guard
- Horizontal Support Legs
- Bolted Inspection Door

Optional Construction

- Static Grounding (Hazardous Fumes)

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin



ROOF VENTILATORS

Model PRVF

Fiberglass Tubeaxial Roof Ventilators

The model PRVF is designed for roof mounted exhaust applications where corrosion resistance is a primary consideration.

Propeller Design

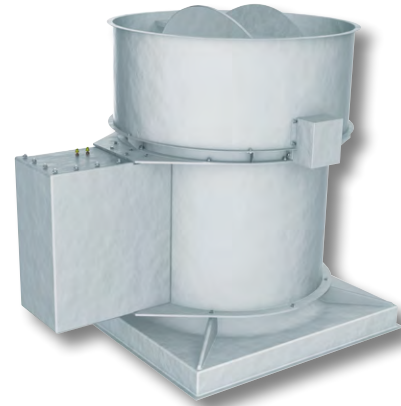
The PRVF's propeller is constructed with glass cloth impregnated with vinyl ester resin and secured to a 316 stainless steel fan shaft by a stainless steel retainer bold and washer.

Optional Accessories/Construction

- Stack Cap Bird Screen
- Exterior Stainless Steel Hardware
- Bolted Inspection Door
- Static Grounding (Hazardous Fumes)

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin



Sizes (Propeller Diameters)

- 14" to 60" (10 Sizes)

Performance

- Airflow to 50,800 CFM
- Static pressure to 1.5" w.g.
- Airstream temperature to 200° F

Arrangements

- Arrangement 9 (Belt Driven)

Model TCWPF

Fiberglass Wall Panels Fans

Design to withstand corrosive environments, the TCWPF's standard housing is fabricated with an integral inlet side mounting flange. It incorporates a solid FRP motor base that is reinforced with solid FRP support struts.

Propeller Design

The TCWPF's propeller is constructed with glass cloth impregnated with vinyl ester resin.

Optional Accessories

- Stainless Steel Hardware
- Inlet/Outlet Guard
- Automatic Stainless Steel or Fiberglass Shutter
- Stainless Steel Mounting Adapter
- Fiberglass Extension Sleeve
- Option Fiberglass Mounting Flange
- Inlet/Outlet Guard

Optional Materials

- Vinyl Ester
- Surface Veil
- Fire Retardant Resin



Sizes (Propeller Diameters)

- 12" to 48" (9 Sizes)

Performance

- Airflow to 41,900 CFM
- Static pressure to 1" w.g.
- Airstream temperature to 200° F

Arrangements

- Direct Drive

WALL PANEL FANS

INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS
MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | PROPELLER WALL FANS | PROPELLER ROOF VENTILATORS
CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS
RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS
LABORATORY EXHAUST FANS | FILTERED SUPPLY FANS | MANCOOLERS | FIBERGLASS FANS | CUSTOM FANS



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