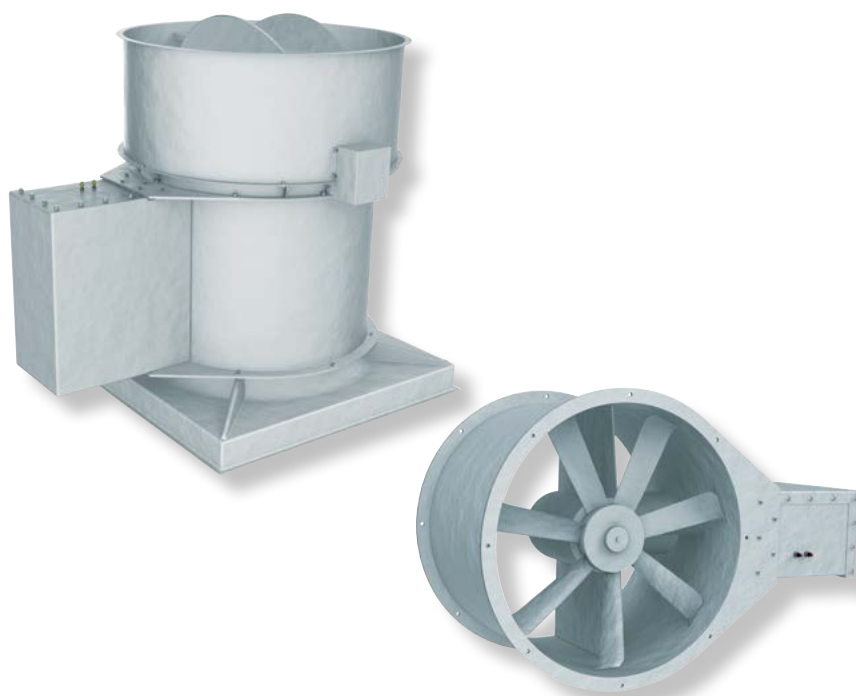




INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

FIBERGLASS AXIAL FLOW FANS

Models TCWPF | PRVF | TAMF | TAHF | VAHF

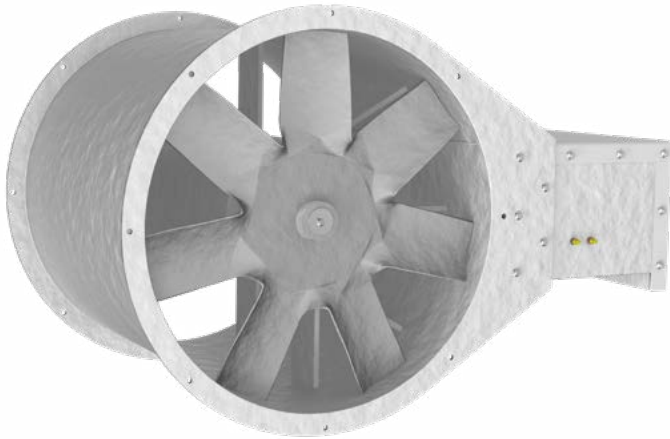


FIBERGLASS AXIAL FLOW FANS

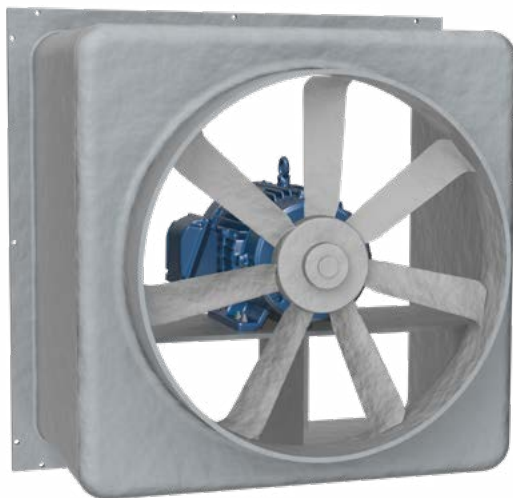


Overview

TCWPF | PRVF | TAMF | TAHF | VAHF



Model TAHF, Tubeaxial



Model TCWPF, Panel Fan

Twin City Fan & Blower's axial flow FRP (Fiberglass Reinforced Plastic) fans are built in a variety of sizes and designs as shown in this catalog. Aerovent also builds an FRP single-width centrifugal model (shown in Catalog 1900), an FRP high-pressure blower (shown in Catalog 1910) and an FRP inline centrifugal model (shown in Catalog 1915). Corrosion resistance is the primary consideration when selecting a fiberglass fan. The standard resin used is selected for resistance to a large variety of corrosive agents. When a corrosion resistant fan is required to withstand chemicals that attack glass or polyester resin, special construction features can be supplied. For reference, a Corrosion Resistance Guide is included on page 10.

All models shown in this catalog have housings and fan impellers made of continuous glass lay-up using a combination of fabric-woven roving and mat.

Typical Applications Include

Wastewater Treatment, Semiconductor Manufacturing, Swimming Pool Exhaust, Chemical Process, Pulp and Paper, Food Processing, Breweries, Clean Rooms, Petro-Chemical, Power Generation

Arrangements

Available in Arrangement 4 (Direct Drive) & Arrangement 9 (Belt Driven) Configurations

Impeller Types

Type FG7 and Type TF

Standard Construction

Vinylester Resin (Impeller) and Polyester Resin (Housing), 316SS Fan Shaft (Arrangement 9 Fans)

Optional Construction

Vinylester Resin (Housing), Surface Veil, Fire Retardant Resin, Static Grounding w/ Graphite Impregnation (Spark Resistant Construction)



For complete product performance, drawings and available accessories, download our Fan Selector software at tcf.com.

FIBERGLASS AXIAL FLOW FANS

Belt Driven Models

The bearing supports are integral with the housing and motor support flanges. The bearing bases are reinforced with cross-strutting, constructed out of glass and resin. Fan shafts are stainless steel. Bearing covers are sealed, but still allow for access to the bearings. Grease lines extend to outside the housing for ease of maintenance. The motor is located outside the airstream, with protective motor covers standard on all models.

Advantages of Fiberglass Fans

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



Energy Regulations

Twin City Fan & Blower supports energy efficiency regulations enacted by the U.S. Department of Energy (DOE) and specific states. The selection and application of fan products is a significant part of these regulations. Engineers and specifiers must understand how to apply TCF products to their specific applications to meet applicable DOE and state regulatory requirements. Twin City Fan & Blower has made significant investments in product testing and development to provide efficient products. Developments in Twin City Fan & Blower's Fan Selector software are in place to aid your decision in product selection to assist with meeting the efficiency requirements as stipulated in the applicable regulations.

TCWPF (Panel Fan)

12" to 48" impeller diameters
Airflow to 41,900 CFM
Static pressure to 1" w.g.



PRVF (Roof Ventilator)

14" to 60" impeller diameters
Airflow to 50,800 CFM
Static pressure to 1.5" w.g.



TAMF (Type FG7 Tubeaxial)

14" to 60" impeller diameters
Airflow to 51,900 CFM
Static pressure to 1.5" w.g.



TAHF (Type TF Tubeaxial)

12" to 60" impeller diameters
Airflow to 83,200 CFM
Static pressure to 2.5" w.g.



VAHF (Type TF Vaneaxial)

12" to 60" impeller diameters
Airflow to 81,200 CFM
Static pressure to 4" w.g.



Impeller Design

The impellers for FRP fans are constructed with glass cloth impregnated with vinyl ester resin and secured to a 316 stainless steel fan shaft by a stainless steel retainer bolt and washer.

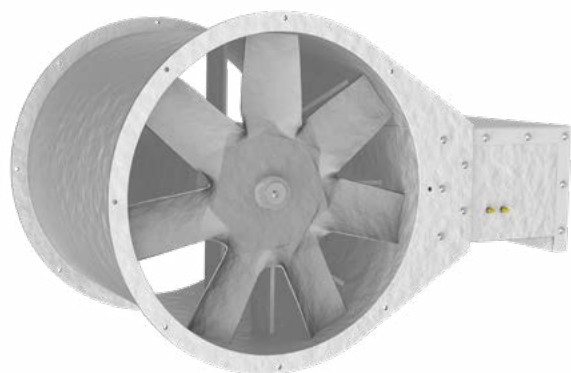


Type FG7 Impeller



Type FG Impeller

FIBERGLASS AXIAL FLOW FANS



Tubeaxial Model TAHF

TAHF - Type TF Tubeaxial

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

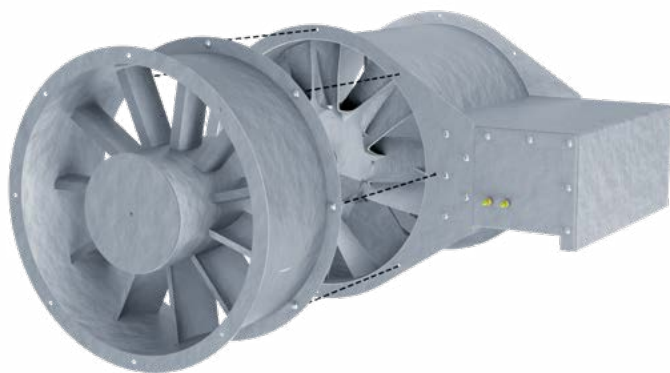
Sizes

12" to 60" impeller diameters

Performance

Airflow to 83,200 CFM

Static pressure to 2.5" w.g.



Vaneaxial Model VAHF

VAHF - Type TF 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.

Sizes

12" to 60" impeller diameters

Performance

Airflow to 81,200 CFM

Static pressure to 4" w.g.



Roof Ventilator Model PRVF

PRVF - Type FG Roof Ventilator

For roof mounted exhaust applications, the Model FBD tubeaxial fan can be converted into a roof ventilator (Model FRV) with the addition of a fiberglass stack cap, curb cap and motor cover. See page 7 for details.

Sizes

14" to 60" impeller diameters

Performance

Airflow to 50,800 CFM

Static pressure to 1.5" w.g.

TCWPF - Type FG Direct Drive Panel Fan

Designed to withstand corrosive environments, the TCWPF's standard housing is fabricated with an integral inlet side mounting flange and is constructed from corrosion resistant, reinforced plastic. It is provided with a solid FRP motor base that is reinforced with solid FRP support struts. The type FG 7-bladed impellers are high-efficient, one-piece airfoil, 7-blade FRP construction. Stainless steel set screws and airstream hardware are provided for maximum corrosion resistance. The Model TCWPF panel fan is constructed from corrosion resistant plastic. Optional accessories include stainless steel expanded metal inlet and discharge guards, FRP shutter extension sleeve, FRP shutter and extra FRP mounting flange.

Sizes

12" to 48" impeller diameters

Performance

Airflow to 41,900 CFM

Static pressure to 1" w.g.



Direct Drive Panel Fan
Model TCWPF

TAMF - Type FG Tubeaxial

The Model TAMF is the standard Aerovent FRP belt driven tubeaxial with many years of proven success in numerous and varied applications. It is furnished with the efficient semi-pressure type FG 7-bladed impeller on sizes up to 48 and the type FG 6-bladed impeller on sizes 54 and 60. For the medium performance range requirements, these fans generally run at a slightly higher speed than the type TF models, but have an economical advantage in many applications.

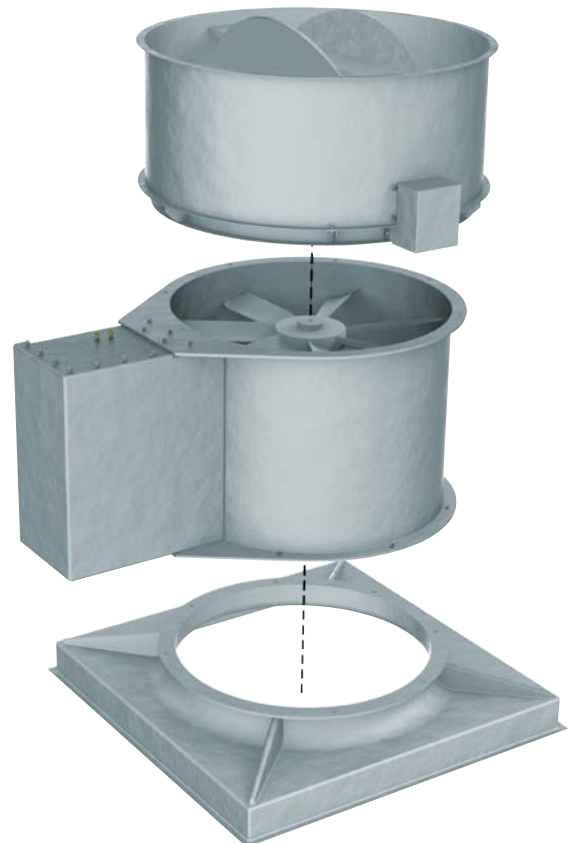
Sizes

14" to 60" impeller diameters

Performance

Airflow to 51,900 CFM

Static pressure to 1.5 inches w.g.



Tubeaxial
Model TAMF

CONSTRUCTION FEATURES

Corrosion Resistant

All airstream parts of fiberglass reinforced plastic have resistance to most chemicals. The fiberglass impellers are standard with vinyl ester resin (optional on housing). See "Corrosion Resistance Guide" on page 10.

Impeller

The Type TF and FG fan impellers 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 impeller is cured under pressure in the mold, forming a monolithic structure.

Housing

The fan housing is polyester resin reinforced with cloth and mat with integral flanges. The bearing, base and drive enclosure is supported by gussets interlocked into and taped to the outer housing. These structural parts are all of laminated glass and resin.

Product Finish

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 finish. All steel parts are finished with light gray epoxy paint.

Vane Section

The vane section is of all laminated glass and resin construction with curved guide vanes interconnected with an inner and outer shell.

Fire Retardant Resin

Standard fire retardant resin reduces the resin's tendency to burn, attaining a flame spread rating of 25 or less.

Shaft

The 316 stainless steel step shaft is machined and keyed with the end drilled and tapped. The impeller is held tightly against the shaft shoulder by a stainless steel retainer bolt and washer in the end of the shaft.

Shaft Seal

The bearing and shaft enclosures have covers that are sealed into place with an inert silicone sealant. The shaft is fitted with a rotating seal that rides against a heavy wear plate.

Bearings

The bearings are sealed pillow block type with grease lines extending to the outside of the fan housing for ease of maintenance. The bearings, shaft and drive are enclosed to protect them from airstream contaminants.

Motor Base

A steel motor base with slide rail arrangement for belt adjustment is bolted between wide gussets integral with the flanges of the fan housing. The standard motor cover is made of fiberglass reinforced plastic and extends over the entire base, motor and drive assembly.

Drives

All belts and sheaves used on Twin City Fan & Blower fiberglass fans are selected to provide additional allowances of 1.3 to 2 times the normal satisfactory capacity.



OPTIONAL CONSTRUCTION

Special Fiberglass Materials

Please contact the factory to ensure a suitable material is selected for the specific application.

- **Vinyl Ester** — Provides increased corrosion resistance to stronger acids, chlorine and oxidizing agents. For use in industrial applications such as chemical and water treatment plants, and commercial applications where urban or salt air corrosion exists. Fiberglass impellers are standard with vinyl ester resin (optional on housing).
- **Surface Veil** — Produces a smooth reinforced final surface with greater corrosion resistance and contains UV inhibitor.

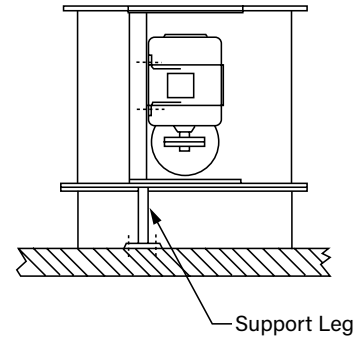
Spark Resistant Construction

Spark resistant construction (Static grounding w/ graphite impregnation) for fiberglass fans is recommended when the fan is handling explosive fumes. Although fiberglass is a non-sparking material, it can build and retain a static charge that can be potentially hazardous. With spark resistant construction, the fan is statically grounded by graphite impregnation to reduce a static charge build-up.

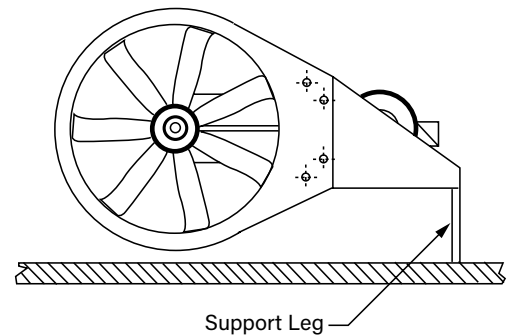
Installing Fiberglass Reinforced Plastic (FRP) Fans

The installation of FRP tubeaxial fans requires some special considerations. The material is very strong, but it is more flexible than steel; therefore, large fans with heavy motors should not be expected to support themselves by the flange mounting alone. A fan mounted in the vertical position should not be mounted to support a heavy stack without some reinforcement. It is usually satisfactory to mount fans having motors up to 3 HP by the flanges alone. Match drill the flanges with the mating duct flange, using eight equally spaced holes, $\frac{7}{16}$ " diameter to accept a $\frac{3}{8}$ " bolt when bolting the fan to ductwork. Use a large washer under the head and nut to increase the bearing area, and do not tighten these to the point of crushing the flange. If the fan has a 5 HP or larger motor, it is good practice to attach a support leg or hanger rod to the outer edge of the motor base plate to take some of the weight. If the fan is to be mounted on the roof with a high discharge stack, brace the stack just above the fan so that not all of the stack weight is carried on the fan mounting flanges.

Accessibility for service and cleaning is a very important consideration in installing an FRP fan. They should be mounted for easy removal for cleaning and service. A removable section of duct on either side of the fan may be installed to provide access. Access doors are available as an option.



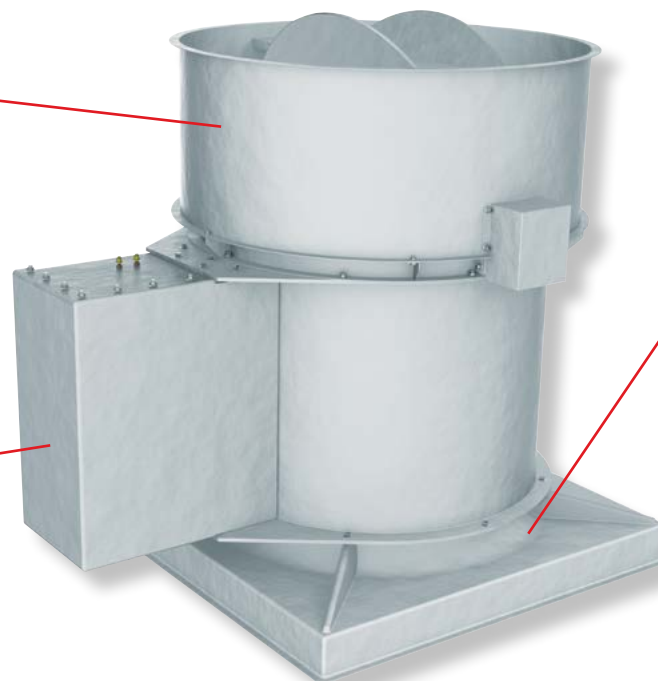
Vertical Mount



Horizontal Mount

Stack Caps — Designed with backdraft dampers that protect the interior of the building from precipitation when the fan is shut off.

Motor Covers — Designed to protect the motor and drive parts from the weather.



Curb Caps — Designed for mounting vertical fans on roof curbs and to provide easy installation of the unit.



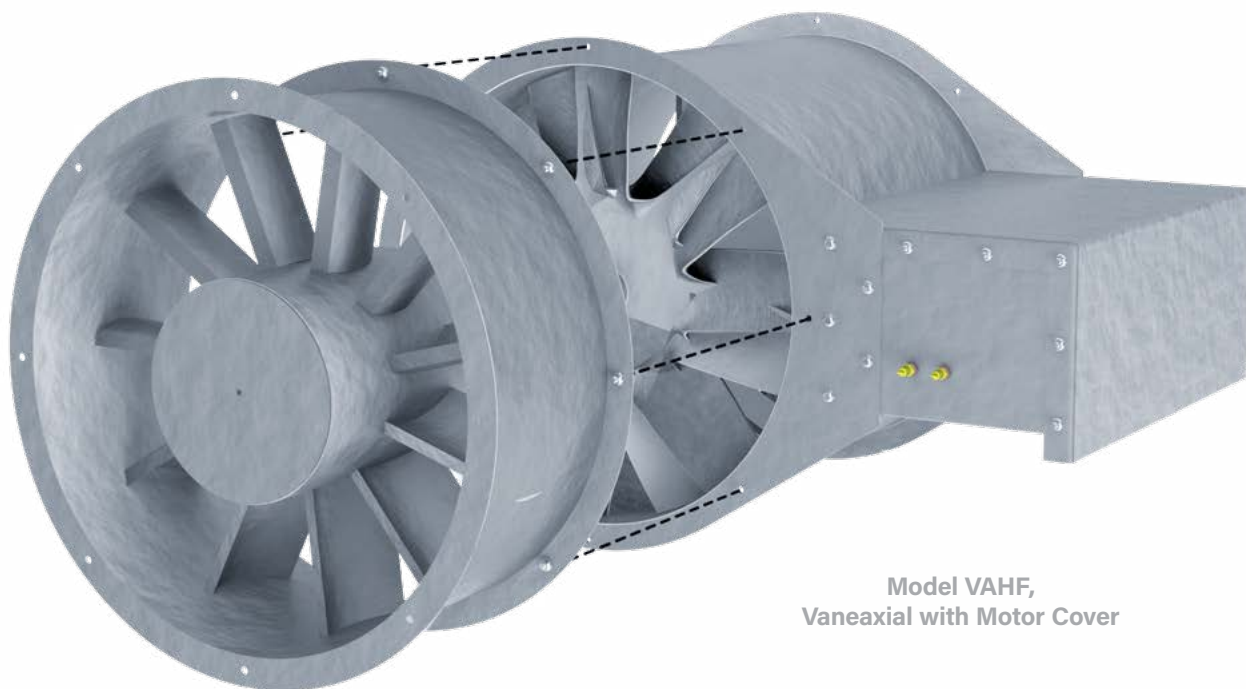
Inlet/Outlet Flange Fiberglass flanges are standard on the inlet and outlet. Drilling of holes in the flange is available as an option.

Shaft Seal The shaft seal rides against a heavy wear plate. It is suitable for operation up to 225°F.

Graphite Impregnation Static grounding by graphite impregnation is available as an option, recommended for when the fan is handling potentially explosive fumes.

316 Stainless Steel Fan Shaft A 316SS shaft is standard on all fiberglass axial arrangement 9 fans.

Special Fiberglass Materials Vinyl ester, resin, synthetic veil, abrasion-resistant construction and static-grounding are available as options.



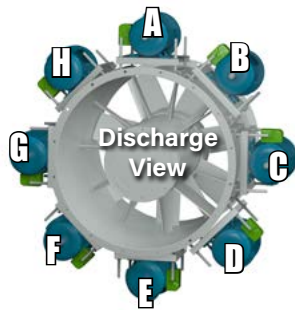
Model VAHF,
Vaneaxial with Motor Cover

Horizontal Construction

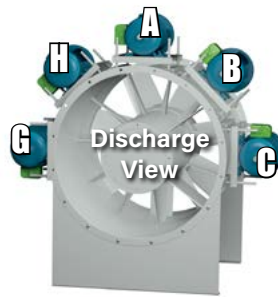
Horizontal Base Mounted (HBM) — Support legs are provided at each end of the fan for floor mounting.

Horizontal Ceiling Hung (HCH) — For duct mounted fans, four suspension clips are welded to the fan casing to allow ceiling suspension using rod hangers.

Horizontal (HOR) — For mounting configurations where support legs and suspension clips are not required.



HCH
Horizontal
Ceiling Hung



HBM
Horizontal Base
Mounted



HOR
Horizontal
No Mounting
Brackets

Vertical Construction

Floor or Ceiling Mounted (VUI/VUO/VDI/VDO) — Four vertical brackets are welded to either end of the fan housing. Bracket location is determined by airflow direction and support details (see below).

Roof Mounted (VRM) — A curb cap provides weathertight seal for roof curb mounted fans. A stack cap and weather cover are also available for the upblast style roof ventilator.

Vertical (VUN/VDN) — For mounting configurations where support brackets are not required.



VUS
Vertical Upblast
with Stack Cap



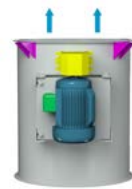
VUH
Vertical Upblast
with Hood and
Curb Cap



VDH
Vertical Downblast
with Hood and Curb
Cap



VUI
Vertical Discharge Up,
Floor Mount Support
Brackets On Inlet



VUO
Vertical Discharge Up,
Ceiling Hung Support
Brackets On Outlet



VUN
Vertical Up
No Brackets



VDI
Vertical Discharge Down,
Ceiling Hung Support
Brackets On Inlet



VDO
Vertical Discharge Down, Floor
Mount Support
Brackets On Outlet



VDN
Vertical Down
No Brackets

CORROSION RESISTANCE GUIDE

The following table lists gases, fumes and vapors that are commonly exhausted from chemical processes. Using the "Legend of Symbols," the table indicates how Twin City Fan & Blower's standard fiberglass fans will withstand exhausting the particular gas, fume or vapor.

This data is based on a maximum temperature of 200°F (93°C).

Legend of Symbols

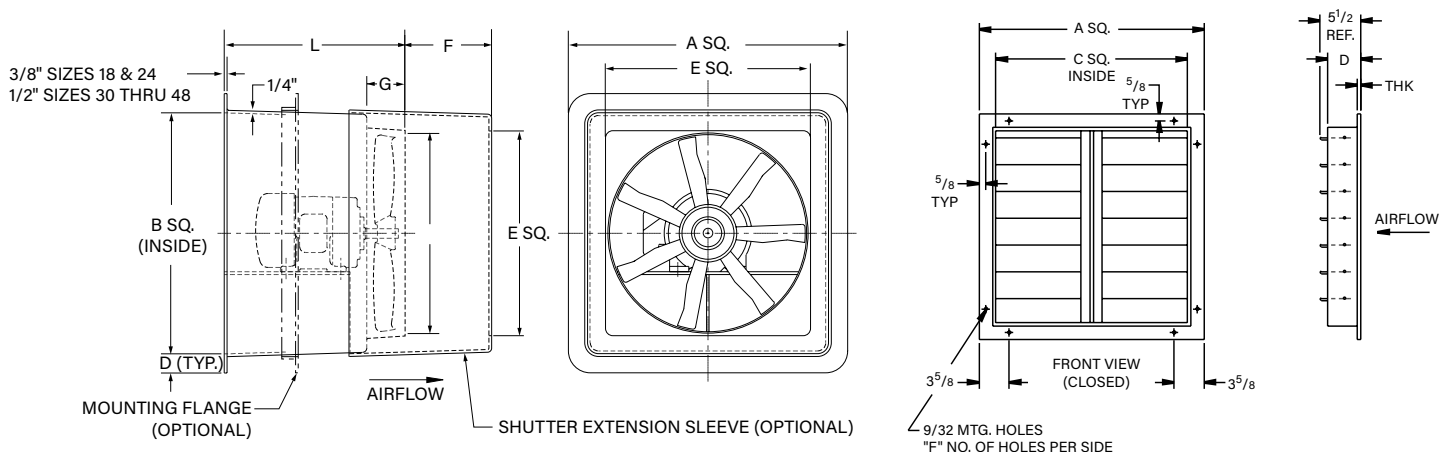
- S — Satisfactory Application
- L — Limited Life or Life Tests Incomplete
- U — Unsatisfactory

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	Perchlorethylene	U	U	L
Zinc Chloride	S	S	S	Trichlorethylene	U	U	L
Zinc Sulphate	S	S	S	GLYCOLS			
ALCOHOLS	S	S	S		S	S	S

* Surface finished with Synthetic Surfacing Veil Required.

Fiberglass Panel Fans

Model TCWPF



SIZE	A	B	C	D	E	F	G	L	MAX. MTR. FRAME
12	19.00	16.00	12.06	1.50	12.50	6.50	3.00	15.63	48
14	21.00	18.00	14.06	1.50	14.50	6.50	4.00	16.81	56
16	23.00	20.00	16.06	1.50	16.50	6.50	4.00	16.81	56
18	25.44	22.00	18.06	1.72	18.50	6.50	4.00	16.81	145T
24	31.25	28.00	24.06	1.63	24.50	8.50	4.00	18.75	182T
30	39.50	36.00	30.06	1.75	30.50	10.50	5.25	18.75	184T
36	45.50	42.00	36.06	1.75	36.50	12.50	5.25	18.75	215T
42	52.00	48.00	42.06	2.00	42.50	14.50	5.00	25.00	256T
48	58.00	54.00	48.06	2.00	48.50	16.50	5.00	25.00	256T

R-13259-00-E

SIZE	A	C	D	F	THK	MAX. CFM
12	15.50	12.50	3.00	2.00	0.13	2713
14	15.50	12.50	3.00	2.00	0.13	3650
16	19.50	16.50	3.00	2.00	0.13	4726
18	21.50	18.50	3.00	2.00	0.13	5942
24	27.50	24.50	3.00	2.00	0.13	10421
30	33.50	30.50	3.00	2.00	0.13	16150
36	39.50	36.50	3.00	2.00	0.13	23129
42	45.50	42.50	3.00	2.00	0.13	31359
48	51.50	48.50	3.00	2.00	0.13	40838

(For Exhaust Only) R-32183-00-A

*MINIMUM WALL OPENING REQUIRED FOR FACE MOUNTING.

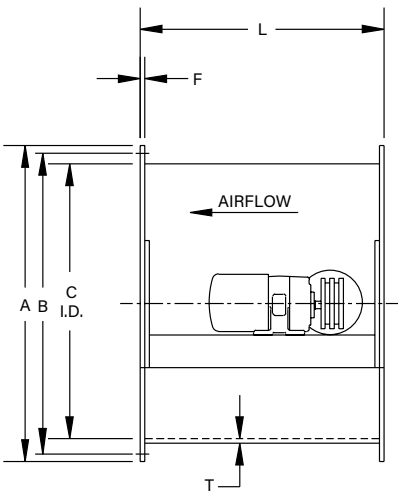
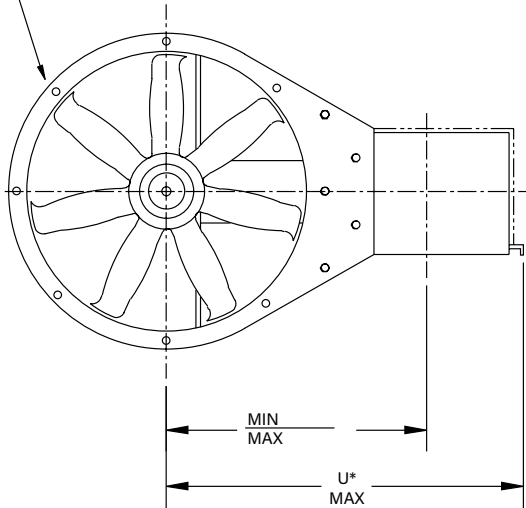
DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.



Fiberglass Tubeaxials and Vaneaxials

Model TAMF

"G" DIA. HOLE (H)
REQ'D EQUAL SPACE



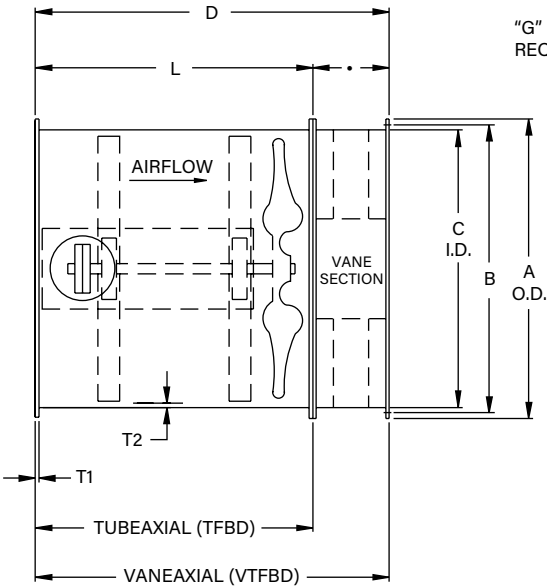
SIZE	A	B	C	F	G	H	L	T	U*
14	18.38	15.88	14.38	0.38	0.31	8.00	18.38	0.09	23.13
16	20.38	18.25	16.38	0.38	0.31	8.00	18.38	0.09	24.13
18	22.38	20.38	18.38	0.38	0.31	8.00	18.38	0.09	25.13
24	28.38	26.56	24.38	0.38	0.31	8.00	21.00	0.13	31.63
30	34.50	33.00	30.50	0.38	0.44	8.00	27.75	0.13	34.88
36	40.75	39.44	36.75	0.50	0.44	8.00	27.75	0.13	42.00
42	46.75	45.44	42.75	0.50	0.44	8.00	27.75	0.16	44.88
48	52.75	51.56	48.75	0.50	0.44	8.00	32.00	0.19	47.88
54	59.25	57.25	54.75	0.50	0.56	12.00	36.00	0.28	54.00
60	65.25	63.25	60.75	0.50	0.56	12.00	36.00	0.38	57.38

*U dimension based on maximum motor frame for each size.

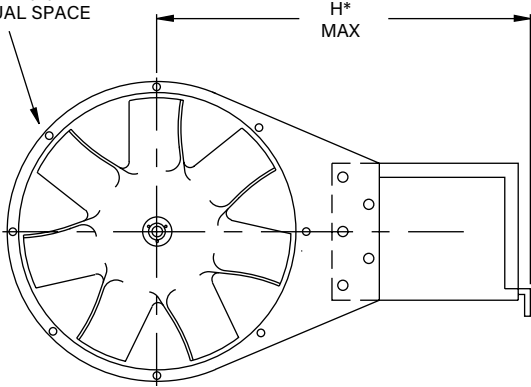
Dimensions in inches. R-2340-00-D
R-10101-00

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

Models TAHF and VAHF



"G" DIA. HOLE (H)
REQ'D EQUAL SPACE

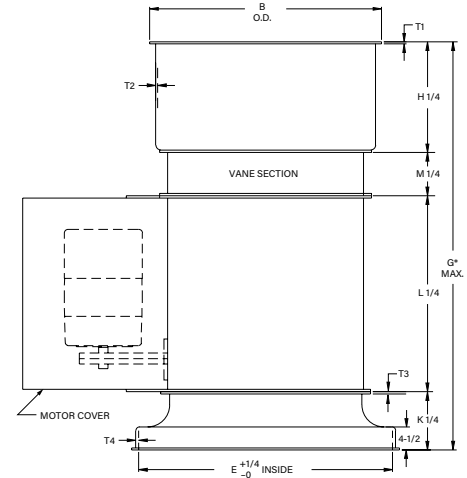
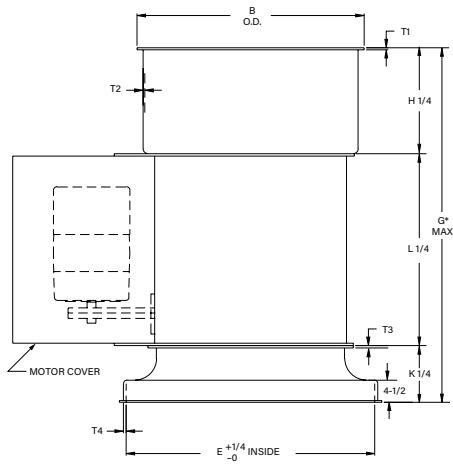


SIZE	A	B	C	D	E	F	G	H	L	T1	T2
12	15.50	14.38	12.25	26.00	6.00	0.31	8.00	26.25	20.00	0.38	0.19
15	19.50	18.25	15.25	26.00	6.00	0.31	8.00	27.63	20.00	0.38	0.19
18	21.50	20.38	18.19	30.00	6.00	0.31	8.00	29.13	24.00	0.38	0.19
22	25.50	24.25	22.19	32.00	8.00	0.31	8.00	31.63	24.00	0.38	0.19
25	29.31	28.00	25.31	42.50	10.50	0.31	8.00	39.25	32.00	0.38	0.25
29	33.25	32.00	29.25	47.00	11.00	0.44	8.00	42.75	36.00	0.38	0.25
33	37.31	36.00	33.31	51.00	15.00	0.44	8.00	44.75	36.00	0.38	0.31
38	42.31	41.00	38.31	57.00	15.00	0.44	8.00	49.25	42.00	0.38	0.31
43	47.38	46.13	43.38	61.00	19.00	0.44	8.00	51.75	42.00	0.50	0.38
48	52.44	51.56	48.44	67.00	19.00	0.44	8.00	60.75	48.00	0.50	0.38
54	58.50	57.25	54.25	84.00	24.00	0.56	12.00	67.75	60.00	0.50	0.38
60	64.50	63.25	60.50	84.00	24.00	0.56	12.00	70.50	60.00	0.50	0.38

Dimensions in inches. R-8756-00-G
R-10101-00

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

Fiberglass Roof Ventilators



*Includes allowance for gasketing between sections

NOTES:

1. 316 stainless steel shaft.
2. Impeller end cover plate fitted with shaft seal.
3. Bearings are sealed pillow block type with grease tubes extending to outside of fan housing.
4. Motor cover is standard.

Model PRVF

SIZE	CFM**	B	E	G*	H	K	L	STACK CAP		BASE	
								T1	T2	T3	T4
14	1200	20.50	24.88	33.25	6.00	8.13	18.38	0.25	0.09	0.31	0.16
16	2000	22.50	27.88	35.13	8.00	8.00	18.38	0.25	0.09	0.31	0.16
18	2700	24.50	29.88	35.13	8.00	8.00	18.38	0.25	0.09	0.38	0.19
24	4700	31.00	35.81	42.25	11.00	9.50	21.00	0.25	0.13	0.38	0.19
30	7600	39.00	43.81	52.50	14.00	10.00	27.75	0.25	0.13	0.38	0.19
36	11000	45.00	49.81	56.50	18.00	10.00	27.75	0.25	0.13	0.50	0.25
42	15000	51.00	55.81	61.00	21.00	11.50	27.75	0.25	0.13	0.50	0.25
48	19600	58.00	61.81	67.25	24.00	10.50	32.00	0.25	0.13	0.50	0.25
54	24000	65.00	70.00	75.50	27.00	11.75	36.00	0.25	0.13	0.50	0.25
60	29500	72.00	78.00	78.50	30.00	11.75	36.00	0.25	0.13	0.50	0.25

Dimensions in inches.

R-13429-00-J

Model TAHF

SIZE	CFM**	B	E	G*	H	K	L	STACK CAP		BASE	
								T1	T2	T3	T4
12	1200	19.63	23.88	35.00	6.00	8.25	20.00	0.25	0.09	0.31	0.16
15	1800	22.50	27.88	36.75	8.00	8.00	20.00	0.25	0.09	0.31	0.16
18	2700	24.50	29.88	40.75	8.00	8.00	24.00	0.25	0.09	0.38	0.19
22	4700	29.50	33.81	43.75	11.00	7.63	24.00	0.25	0.13	0.38	0.19
25	7600	33.25	37.81	54.75	12.00	10.00	32.00	0.25	0.13	0.38	0.19
29	7600	37.25	43.81	59.25	14.00	8.50	36.00	0.25	0.13	0.38	0.19
33	11000	41.25	46.81	64.25	17.00	10.50	36.00	0.25	0.13	0.38	0.25
38	15000	46.50	51.81	73.00	19.00	11.25	42.00	0.25	0.13	0.50	0.25
43	19600	51.50	56.81	76.50	22.00	11.75	42.00	0.25	0.13	0.50	0.25
48	19600	58.00	61.81	83.25	24.00	10.50	48.00	0.25	0.13	0.50	0.25
54	24000	65.00	70.00	99.25	27.00	11.75	60.00	0.25	0.13	0.50	0.25
60	29500	72.00	78.00	102.5	30.00	11.75	60.00	0.25	0.13	0.50	0.25

Dimensions in inches.

R-13429-00-J

Model VAHF

SIZE	CFM**	B	E	G*	H	K	L	M	STACK CAP		BASE	
									T1	T2	T3	T4
12	1200	19.63	23.88	41.25	6.00	8.25	20.00	6.00	0.25	0.09	0.31	0.16
15	1800	22.50	27.88	43.00	8.00	8.00	20.00	6.00	0.25	0.09	0.31	0.16
18	2700	24.50	29.88	47.00	8.00	8.00	24.00	6.00	0.25	0.09	0.38	0.19
22	4700	29.50	33.81	51.63	11.00	7.63	24.00	8.00	0.25	0.13	0.38	0.19
25	7600	33.25	37.81	66.50	12.00	10.00	32.00	10.50	0.25	0.13	0.38	0.19
29	7600	37.25	43.81	70.50	14.00	8.50	36.00	11.00	0.25	0.13	0.38	0.19
33	11000	41.25	46.81	79.50	17.00	10.50	36.00	15.00	0.25	0.13	0.38	0.25
38	15000	46.50	51.81	88.25	19.00	11.25	42.00	15.00	0.25	0.13	0.50	0.25
43	19600	51.50	56.81	95.75	22.00	11.75	42.00	19.00	0.25	0.13	0.50	0.25
48	19600	58.00	61.81	102.50	24.00	10.50	48.00	19.00	0.25	0.13	0.50	0.25
54	24000	65.00	70.00	123.75	27.00	11.75	60.00	24.00	0.25	0.13	0.50	0.25
60	29500	72.00	78.00	126.75	30.00	11.75	60.00	24.00	0.25	0.13	0.50	0.25

Dimensions in inches.

R-13428-00-H

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

**Minimum CFM required for full open damper operation.



Model
TCWPF

Fiberglass fans, where indicated on drawings and schedules, shall be Model TCWPF Type FG Direct Drive Panel Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota, and shall be of the size and capacity indicated in the fan schedule. Model TCWPF fans shall be tested in accordance with ANSI/ASHRAE 51 and ANSI/AMCA 210 test codes and shall be guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — The fan housing shall be constructed of a fire-retardant polyester resin with ASTME-84 Class 1 flame spread of <25, reinforced with fiberglass cloth, mat with integral flanges and constructed with a solid FRP motor base that is reinforced with solid FRP support struts. Stainless steel airstream hardware shall be used for maximum corrosion resistance.

IMPELLER — The Model TCWPF Type FG 7-bladed impeller shall be constructed using glass cloth impregnated with vinyl ester resin. Impellers shall be statically and dynamically balanced to ensure quiet operation.

MOTORS — Fan motors shall be foot-mounted NEMA Design B, heavy-duty industrial, continuous-duty, variable-torque and shall be provided with the enclosure type, voltage, phase and hertz as listed in the fan schedule. Unless otherwise specified, all motors shall be equipped with ball bearings for heavy-duty performance. Motor bearings shall have a minimum L-10 life, defined by AFBMA, of at least 40,000 hours (200,000 hours average life).

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204 “Balance Quality and Vibration Levels for Fans” to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, belt driven fan impellers shall be balanced on their fan shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — All fans shall be coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal the surface and provide a smooth finish. Optional resins and finishes include: Vinyl Ester, Surface Veil and Fire-Retardant Resin.

- ACCESSORIES** — The fan(s) shall be furnished complete with:
- Inlet Guard – Square Motor Side Expanded Metal (304SS/316SS)
 - Outlet Guard – Round Prop Side Expanded Metal (304SS/316SS)
 - FRP Shutter Extension Sleeve
 - FRP Automatic Shutter
 - Optional Mounting Flange
 - Stainless Steel Mounting Adapter
 - Stainless Steel Automatic Shutter





Model PRVF

Fiberglass fans, where indicated on drawings and schedules, shall be Model PRVF Type FG Belt Driven Roof Ventilators as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota, and shall be of the size and capacity indicated in the fan schedule. Model PRVF fans shall be tested in accordance with ANSI/ASHRAE 51 and ANSI/AMCA 210 test codes and guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — The fan housing shall be constructed of a fire-retardant polyester resin with ASTM E-84 Class 1 flame spread of <25, reinforced with fiberglass cloth, and mat with integral flanges. The flanges are designed to ensure housing concentricity, housing strength and to permit duct mounting. Fan shall include a fiberglass stack cap constructed with a one-piece wind band with drain channels and drain holes. Fan shall include a one-piece fiberglass curb cap with seamless construction. Tapered gussets interlocked into the outer housing shall support the bearing base and drive enclosure. A Viton type shaft seal and Teflon wear plate, to protect the shaft and bearings, shall be supplied as standard. The motor base shall be constructed of mild steel and bolted between gussets integral with the fan housing flanges. The motor cover shall be constructed of fiberglass and shall be supplied as standard. The motor base shall be finished with a gray air dried epoxy paint.

Bearings and belts are enclosed in an air insulated fiberglass housing to protect them from the airstream gases, fumes and vapors.

IMPELLER — The Model PRVF Type FG impeller shall be constructed using glass cloth impregnated with vinyl ester resin and shall be secured to a 316 stainless steel fan shaft by a stainless steel retainer bolt and washer. Impellers shall be statically and dynamically balanced to ensure quiet operation.

BEARINGS — Model PRVF belt driven fans shall be supplied with pillow block type bearings with lubrication lines extended to the outside of the fan housing for easy maintenance. Bearings shall have a minimum L-10 life as defined by AFBMA of at least 20,000 hours (100,000 hours average life). Bearings and belts shall be enclosed in an air-insulated fiberglass housing for protection.

DRIVE — All drive selections on Model PRVF belt driven fans shall be designed with a 1.4 service factor, unless otherwise specified. Sheaves shall be cast iron with static conducting belts. Belt adjustment shall be accomplished with an adjustable motor slide rail base.

MOTORS — Belt driven fan motors shall be NEMA Design B, standard industrial, continuous duty, ball bearing, variable torque and shall be provided with the enclosure type, voltage, phase and hertz as listed in the fan schedule. Unit shall be supplied with a bolt-on fiberglass motor cover.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, belt driven fan impellers shall be balanced on their fan shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — All fiberglass parts shall be coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal the surface and provide a smooth finish. Optional resins and finishes include: Vinyl Ester, Surface Veil and Fire-Retardant Resin. All steel parts shall be finished with a gray air dried epoxy paint.

ACCESSORIES — The fan(s) shall be furnished complete with:

- Stack Cap Bird Screen
- Spark Resistant Construction
- Bolted Inspection Door
- Exterior 316 Stainless Steel Hardware

TYPICAL SPECIFICATIONS



Model TAMF

Fiberglass fans, where indicated on drawings and schedules, shall be Model TAMF Type FG Belt Driven Tubeaxial Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota, and shall be of the size and capacity indicated in the fan schedule. Model TAMF fans shall be tested in accordance with ANSI/ASHRAE 51 and ANSI/AMCA 210 test codes and guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — The fan housing shall be constructed of a polyester resin reinforced with fiberglass cloth and mat with integral flanges. The flanges are designed to ensure housing concentricity, housing strength and to permit duct mounting. Tapered gussets interlocked into the outer housing shall support the bearing base and drive enclosure. A shaft seal fitted with a rotary elastomeric seal that rides against a PTFE wear plate to protect the shaft and bearings, shall be supplied as standard. The motor base shall be constructed of mild steel and bolted between gussets integral with the fan housing flanges. The motor cover shall be constructed of fiberglass and shall be supplied as standard. The motor base shall be finished with a gray air dried epoxy paint.

Bearings and belts are enclosed in an air insulated fiberglass housing to protect them from the airstream gases, fumes and vapors.

IMPELLER — The Model TAMF Type FG impeller shall be constructed using glass cloth impregnated with vinyl ester resin and shall be secured to a 316 stainless steel fan shaft by a stainless steel retainer bold and washer. Impellers shall be statically and dynamically balanced to ensure quiet operation.

BEARINGS — Model TAMF belt driven fans shall be supplied with pillow block type bearings with lubrication lines extended to the outside of the fan housing for easy maintenance. Bearings shall have a minimum L-10 life as defined by AFBMA of at least 20,000 hours (100,000 hours average life). Bearings and belts shall be enclosed in an air-insulated fiberglass housing for protection.

DRIVE — All drive selections on Model TAMF belt driven fans shall be designed with a 1.4 service factor, unless otherwise specified. Sheaves shall be cast iron with static conducting belts. Belt adjustment shall be accomplished with an adjustable motor slide rail base.

MOTORS — Belt driven fan motors shall be NEMA Design B, standard industrial, continuous duty, ball bearing, variable torque and shall be provided with the enclosure type, voltage, phase and hertz as listed in the fan schedule. Unit shall be supplied with a bolt-on fiberglass motor cover.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204 “Balance Quality and Vibration Levels for Fans” to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, belt driven fan impellers shall be balanced on their fan shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — All fiberglass parts shall be coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal the surface and provide a smooth finish. Optional resins and finishes include Vinyl Ester, Surface Veil and Fire-Retardant Resin. All steel parts shall be finished with a gray air-dried epoxy paint.

ACCESSORIES — The fan(s) shall be furnished complete with:

- Fiberglass Curb Cap
- Companion Flanges (stainless steel/steel/aluminum)
- Fiberglass Stack Cap
- Stack Cap Bird Screen
- OSHA Type Inlet/Outlet Guard
- Bolted Inspection Door
- Horizontal Support Legs
- Spark Resistant Construction
- Exterior 316 Stainless Steel Hardware



Model

TAHF | VAHF

Fiberglass fans, where indicated on drawings and schedules, shall be Model TAHF Type TF (Tubeaxial) or VAHF Type TF (Vaneaxial) Belt Driven Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota, and shall be of the size and capacity indicated in the fan schedule. Model TAHF and VAHF fans shall be tested in accordance with ANSI/ASHRAE 51 and ANSI/AMCA 210 test codes and guaranteed by the manufacturer to deliver at the rated published performance levels. In addition, each unit shall be factory run tested prior to shipment.

CONSTRUCTION — The fan housing shall be constructed of a polyester resin reinforced with fiberglass cloth and mat with integral flanges. The flanges are designed to ensure housing concentricity, housing strength and to permit duct mounting. Tapered gussets interlocked into the outer housing shall support the bearing base and drive enclosure. Straightening vanes (Model VAHF Only) constructed of laminated glass and resin shall be interconnected to the inner and outer shell. A shaft seal fitted with a rotary elastomeric seal that rides against a PTFE wear plate to protect the shaft and bearings, shall be supplied as standard. The motor base shall be constructed of mild steel and bolted between gussets integral with the fan housing flanges. The motor cover shall be constructed of fiberglass and shall be supplied as standard. The motor base shall be finished with a gray air dried epoxy paint.

Bearings and belts are enclosed in an air insulated fiberglass housing to protect them from the airstream gases, fumes and vapors.

IMPELLER — The Model TAHF and VAHF fiberglass Type TF, 7-bladed impeller shall be constructed using glass cloth impregnated with vinyl ester resin and shall be secured to a 316 stainless steel fan shaft by a stainless steel retainer bolt and washer. Impellers shall be statically and dynamically balanced to ensure quiet operation.

BEARINGS — Model TAHF and VAHF belt driven fans are to be supplied with pillow block type bearings with lubrication lines extended to the outside of the fan housing for easy maintenance. Bearings shall have a minimum L-10 life as defined by AFBMA of at least 20,000 hours (100,000 hours average life). Bearings and belts shall be enclosed in an air-insulated fiberglass housing for protection.

DRIVE — All drive selections on Model TAHF and VAHF belt driven fans shall be designed with a 1.4 service factor, unless otherwise specified. Sheaves shall be cast iron with static conducting belts. Belt adjustment shall be accomplished with an adjustable motor slide rail base.

MOTORS — Belt driven fan motors shall be NEMA Design B, standard industrial, continuous duty, ball bearing, variable torque and shall be provided with the enclosure type, voltage, phase and hertz as listed in the fan schedule. Unit shall be supplied with a bolt-on fiberglass motor cover.

BALANCING — The impeller assembly shall be statically and dynamically balanced in accordance with ANSI/AMCA 204 "Balance Quality and Vibration Levels for Fans" to Fan Application Category BV-3, Balance Quality Grade G6.3. In addition, belt driven fan impellers shall be balanced on their fan shaft after final assembly in the fan casing, in the manufacturing facility, to the following peak velocity values, filter-in, at the fan test speed:

Fan Application Category	Rigidly Mounted (in./s)	Flexibly Mounted (in./s)
BV-3	0.15	0.20

FINISH — All fiberglass parts shall be coated inside and outside with resin (with UV inhibitor), approximately 10 mils in thickness, to seal the surface and provide a smooth finish. Optional resins and finishes include Vinyl Ester, Surface Veil and Fire-Retardant Resin. All steel parts shall be finished with a gray air-dried epoxy paint.

ACCESSORIES — The fan(s) shall be furnished complete with:

- Fiberglass Curb Cap
- Companion Flanges (stainless steel/steel/aluminum)
- Fiberglass Stack Cap
- Stack Cap Bird Screen
- OSHA Type Inlet/Outlet Guard
- Bolted Inspection Door
- Horizontal Support Legs
- Spark Resistant Construction
- Exterior 316 Stainless Steel Hardware

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