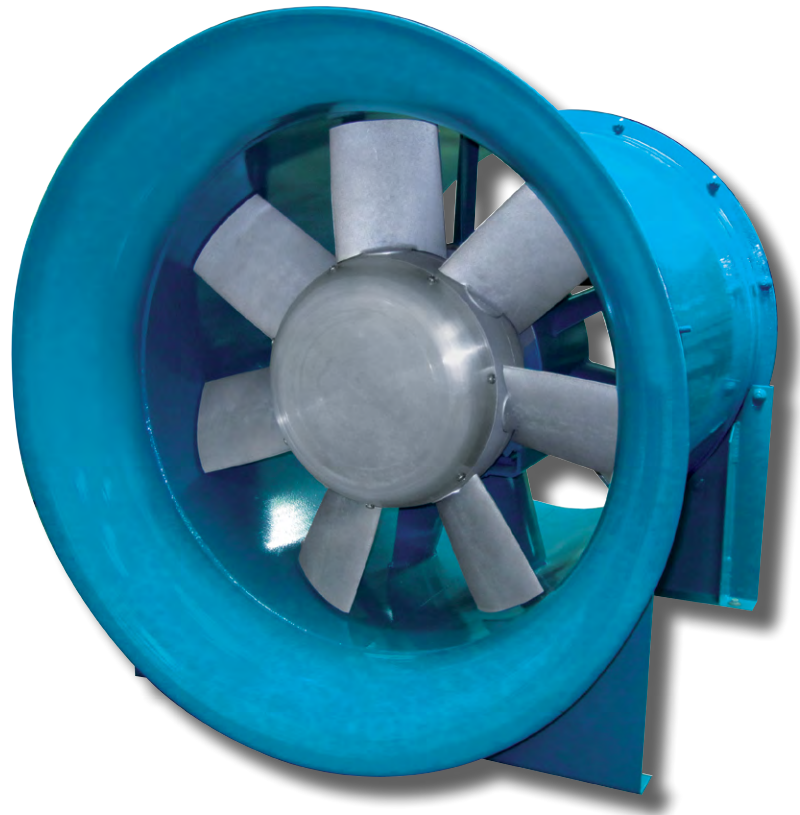


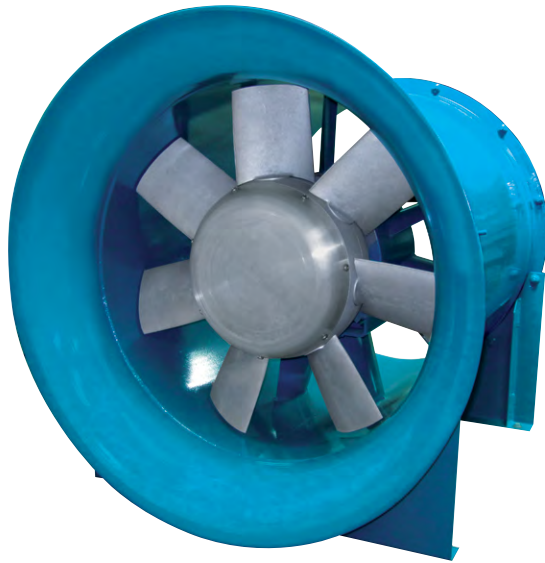


INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

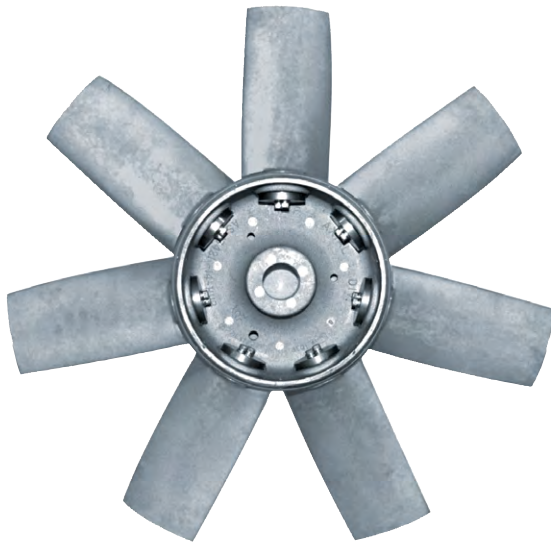
AXIFAN[®] ADJUSTABLE BLADE VANEAXIAL FANS

MODEL TCVX





TCVX Arr. 4



TCVX AXIFAN® Wheel

Model TCVX

The heart of the TCVX AXIFAN® lies in its wheel. The manually adjustable blades allow for custom-set blade positions without loosening or removal of any hardware. The cast aluminum rotor has been painstakingly developed to provide the highest efficiency and lowest noise possible. The patented method (U.S. Patent #4,934,904) for blade adjustment allows for quick and easy performance change without the necessity of special tools. Cast of high strength aluminum alloy, the TCVX AXIFAN® wheel provides efficiency and reliability for your air movement requirements.

Sizes & Performance

- Sizes 18" to 84" wheel diameters
- Hub available in 14", 18", 21", 27" and 30" diameters for various hub-to-tip ratios
- Airflow to 268,000 CFM
- Static pressures to 10" w.g.

Construction Features

- Cast aluminum adjustable propellers with cast aluminum hubs.
- Adjustable blade angles from 30 to 50 degrees.
- One-piece, heavy-gauge, continuously welded steel housings.
- Heavy-gauge steel motor and bearing supports provide maximum strength with minimal resistance to airflow.
- Airflow straightening guide vanes aerodynamically placed within the housing to minimize turbulence and aid in recovering rotative energy imparted to the air.
- Flanged housings with pre-punched mounting holes as standard.
- Dynamically balanced propellers for quiet, vibration free operation.
- Extended lube lines are standard on Arrangement 9 fans and Arrangement 4 where available.
- Externally mounted conduit box standard on Arrangement 4 fans.



Twin City Fan & Blower certifies that the models shown herein are licensed to bear the AMCA Seal for Sound and Air. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the AMCA Certified Ratings Program.

Refer to Catalog AX301 for sound power levels.

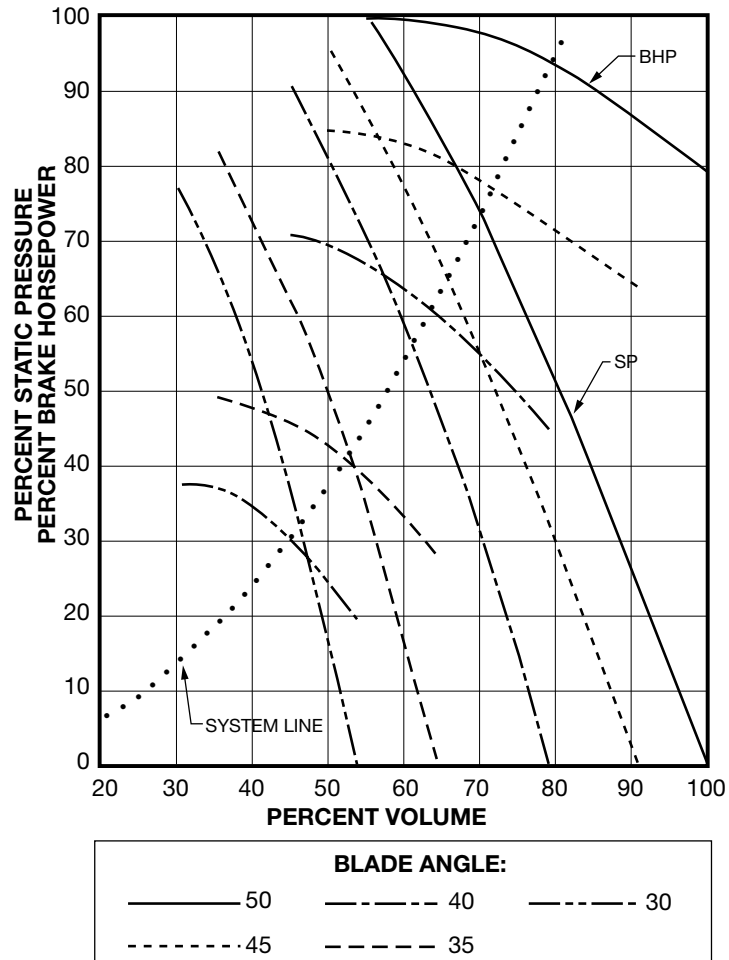


For complete product performance, drawings and available accessories, download our Fan Selector program at tcf.com.



Model TCVX is available with the UL/cUL 705 listing for electrical, File No. E158680.

Typical Performance Curve For TCVX AXIFAN®



ARRANGEMENTS



Arrangement 4 Direct Drive

The direct drive Arrangement 4 TCVX AXIFAN® is the logical choice when space is at a premium or a simple, dependable fan with minimum maintenance is required. The fan wheel is mounted directly on the fan motor shaft in this arrangement for a smaller overall size. Where exact performance of the system is required, the user can adjust the blade angle to fine-tune the system and obtain the necessary flow. The Arrangement 4 TCVX operating temperatures are limited to the maximum allowable operating temperature of the motor, usually 105°F. Contact factory for temperatures above 105°F. Performance tables for direct drive TCVX AXIFAN® units are located on pages 11 through 18.

Arrangement 9 Belt Driven

The belt driven Arrangement 9 TCVX AXIFAN® is the perfect choice for applications which require the motor to be out of the airstream. Driven by either a fixed or adjustable V-belt drive system, the exact point of rating can be easily achieved. Any future change in rating can be accomplished through a simple sheave change or blade angle adjustment. The Arrangement 9 TCVX AXIFAN® is good for operation up to 200°F as standard. It can be customized to handle even the most severe conditions. Performance tables for belt driven TCVX AXIFAN® units are located on pages 19 through 27.

APPLICATIONS

Ventilation

The TCVX AXIFAN® is a logical choice for any ventilation system, as either a supply or return fan. It can be ducted or provided with an inlet bell for open (or unducted) inlet installations. The ability to fine-tune the system performance through blade angle adjustment insures the user of a highly efficient, economical, versatile, quiet, and long-running fan.



ATEX

The TCVX AXIFAN® is available for explosive environment applications where fans must meet the European Union's ATEX Manufacturer's Directive (94/9/EC). Currently, Twin City Fan & Blower offers fans suitable for Zone 2 and 22, Category 3 environments with special modifications including, but not limited to, cast B413 aluminum (LM6 equivalent) impellers and navel brass rub-rings. Fans modified for ATEX environments are not AMCA certified.

Consult our website (<http://www.tcf.com/industries-applications/applications/ATEX>) or contact Twin City Fan & Blower for further information.

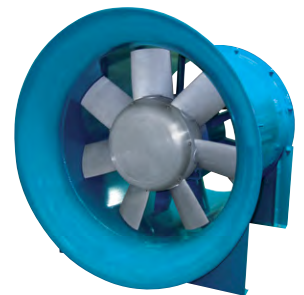
Industrial Process

The TCVX AXIFAN® is an ideal component for most industrial air systems. This unit is designed with a heavy-duty housing and large diameter shaft and bearings for rugged industrial service. The cast aluminum wheel alloy has strength qualities far exceeding common aluminum alloys, and the massive hub section makes the entire rotating assembly less sensitive to imbalance. The TCVX AXIFAN® housing and its accessories can also be provided in aluminum or stainless steel construction for corrosive applications.



Smoke Exhaust/Stairway Ventilation

The direct drive TCVX AXIFAN® is the perfect choice for stairway ventilation. The requirement for stairway pressurization has increased due to more stringent public building codes. During an emergency exit, the need to create a positive pressure within the stairway enclosure ensures a safe exit way. For this application, the TCVX AXIFAN® uses a maintenance-free, direct drive motor, and the blade adjustability allows fine-tuning of the system to the optimum point of rating.

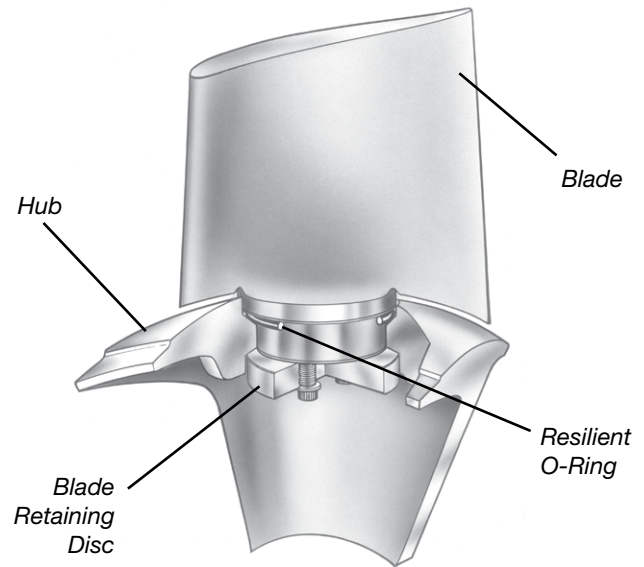


How It Works

The patented TCVX AXIFAN® blade design provides the customer with the ability to modify the blade angle in order to vary the performance without loosening or removing any hardware.

The resilient O-ring acts like a spring (producing friction between hub and blades so the blade does not turn during operation), to preload the blade retaining disc and hub arrangement, while providing a centering force. It insures a proper fit of blade and hub. The O-ring also minimizes vibration between the blades and hub, reducing the potential for material fatigue.

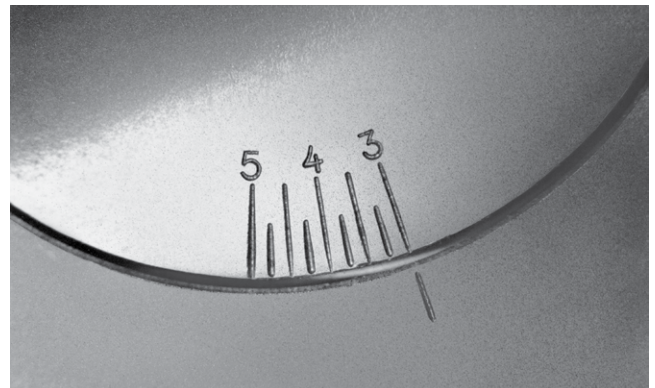
The angle of the TCVX AXIFAN® blades can be adjusted without tools. With the fan wheel in motion, the friction between the blade retaining disc and the hub itself is increased due to centrifugal force which holds the blade firm and prevents any undesired change in blade angle.



Blade Angles

The blade angle for TCVX AXIFAN® fans ranges from 30° to 50° and is indexed in the area where blade and hub meet. The ratings displayed in this catalog indicate the specific blade angle required, and the blade should be set accordingly.

The fan name tag, supplied on the housing exterior, indicates the CFM, static pressure, and corresponding blade angle setting for the specified flow rate and pressure.



Blade set at 30° angle

How To Adjust

Blade angle adjustment is a quick and simple procedure and can be accomplished through the fan inlet when convenient. When access to the wheel is not available from the fan inlet, the blades can be adjusted through the wheel area access door by hand or by using our TCVX blade adjusting tool. The wheel area access door and adjusting tool are provided with our TCVX AXIFAN® units as standard.

When adjusting the blade angle, care must be taken not to overload the fan motor. Refer to the TCVX fan curves or consult your Twin City Fan & Blower representative to assure the fan is properly applied. Further care must be taken to be sure that all fan blades are adjusted to the same blade angle, thus insuring proper airflow characteristics and balance.



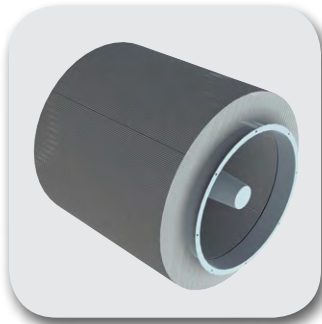
Blade angle adjustment tool



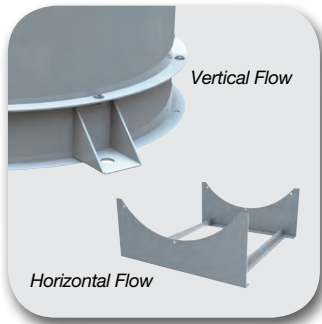
Inlet Bell



Inlet/Outlet Cone



Sound Attenuation



Support Legs



Suspension Clips



Belt Guard

Suspension Clips

For horizontal flow with ceiling mounting, four clips of formed angle are welded to the fan housing for suspension via ties to the ceiling support structure.

Vibration Isolation

All TCVX AXIFANS® can be provided with spring or rubber-in-shear isolators. Spring isolators are standard 1" deflection and can be provided for floor mount or ceiling hung orientation. Flexible connections are required on fans employing vibration isolation. Avoid collapsed flexible connections on the fan inlet.

Belt Guard

Available for Arrangement 9 belt driven fans, the belt guard encloses the motor sheave and V-belts. The guard is easily removable for inspection and maintenance.

Inlet Bell

For systems with no ductwork on the fan inlet, it is advantageous to install an inlet bell to avoid inlet losses. The inlet bell is a toroidal shape to provide a smooth entrance to the fan. Inlet bells are flanged and drilled to mate with the fan's flanged inlet.

Inlet/Outlet Cone

Transition pieces, called cones, can be provided for both the inlet and outlet. Cones are provided to adapt from the fan diameter to the adjacent ductwork diameter. Cones are flanged on both ends and drilled to mate with the fan's flange. Cones are available with an access door if required.

Outlet cones can be applied to transform velocity pressure into static pressure and improve efficiency.

Companion Flanges

For ease of installation of adjacent ductwork, companion flanges can be provided. Flanges are rolled angle rings, drilled to match the fan's inlet or outlet flange.

Variable Inlet Vanes

For frequent or continuous volume control, a variable inlet vane can be provided. Variable inlet vanes are available for each specific fan size and are bolted to the fan's flanged inlet. The vane action during dampening works to spin the air in the direction of the wheel rotation, thus resulting in lower power consumption. The vane mechanism is outside of the airstream and is controlled by a single vane lever.

Variable inlet vanes can be set up for manual or automatic operation. The variable inlet vane's inlet is flanged and drilled to accept ductwork or an inlet bell as the system requires.

Sound Attenuation

For applications requiring quiet operation, custom-built attenuation packages can be provided on the fan inlet or outlet. Attenuators are aerodynamically and acoustically matched to the specific system requirements and are designed to significantly reduce noise while adding only minor resistance to airflow.

Support Legs

Horizontal Flow

For horizontal flow with floor mounting, support legs are welded to the fan flange with bolt holes aligned for connection of ductwork.

Vertical Flow

For vertical flow with either floor or ceiling mounting, support legs are welded to the fan housing for four-point support.

Weather Cover

For outdoor installations of Arrangement 9 belt driven fans, the weather cover completely encloses the motor and V-belt drive from the elements. Provided with slots for ventilation, the cover is easily removable for inspection and maintenance. Weather covers are available for either horizontal or vertical flow fans.

Screening

Safety screening can be provided for installation in the fan inlet, fan outlet, inlet/outlet cone, or inlet bell.

Clamshell Construction

Clamshell construction provides complete access to the internal components of the fan for tough industrial systems requiring cleaning and maintenance with minimal down-time. Manufactured with two large doors running the length of the fan housing on heavy-duty hinges, clamshell construction is available on 18" – 60" diameter fans. A split inner cylinder is standard on all clamshell fans for easy access to the shaft and bearings.

Housing Door

General Observation

For inspection and maintenance of the internal section (V-belt drive area) of TCVX AXIFAN® units, a general observation access door can be provided. Doors are 5" x 5" for the 18" fan size and 8" x 8" for all others. Doors are gasketed, single-skinned, and bolted in place to the housing exterior. As standard, doors are located adjacent to the motor base (for belt driven fans) or adjacent to the motor conduit box (for direct drive fans).

Wheel Area

Similar in size and attachment to the general observation access door, a wheel area access door is also available. Wheel area access doors differ from general observation doors in that they are double-skinned to maintain a flush surface with the housing interior, thus eliminating the pressure losses that would result from a single-skinned door in this critical pressure developing area.

Shaft Seal

To limit the air entering the inner cylinder and avoid contact of airstream contaminants with the bearings and V-belt drive, a shaft seal can be provided. The shaft seal consists of a non-asbestos rubbing ring at the wheel end of the inner cylinder held in place by a cover plate. Note that a shaft seal does not make the inner cylinder gas-tight.

Discharge Cap

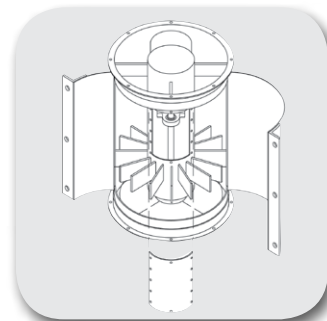
Discharge Cap with Wind Band and Butterfly Damper
All TCVX AXIFAN® units can be provided with a discharge cap for rooftop mounting. Discharge caps are designed for vertical discharge with a backdraft damper to seal out the weather when the fan is shut off. There is a minimum flow rate required in order for the damper blade to fully open. See page 10.



Weather Cover



Safety Screen



Clamshell Construction



Housing Door



Stack Cap



Shaft Seal

Spark-Resistant Construction

Belt driven TCVX AXIFAN® units are available with spark-resistant construction. Various grades of spark resistance are as dictated by AMCA: Types A, B, and C.

Curb Cap

TCVX AXIFAN® units can be supplied with a base (curb cap), attached to the fan's flange for curb mounting. The combination of a curb cap and discharge cap creates an upblast-style power roof ventilator (see "Industrial Process" application, page 4).

GETTING THE MOST FROM YOUR FAN

The Fan Rating

A fan's "point of rating" is the intersection of the independent system resistance curve and the fan's characteristic performance curve (refer to page 3 for a typical performance/system curve).

The resistance of the system is determined from the airflow requirements and the ductwork elements through which this airflow must pass. This ductwork creates resistance to flow and is measured in terms of pressure.

The total resistance for a system is the sum of the total pressure resistances at the specified flow rate (CFM) for each of the elements found in the system. This value is the "total pressure" for which a fan is selected.

The Total Pressure Concept

Fans are utilized to develop the total pressure to produce the specified flow rate within a system. Total pressure can be separated into the components of "static pressure" (analogous to the potential energy of the airstream) and "velocity pressure" (analogous to the kinetic energy of the airstream) at any point within the system, where total pressure is equal to the sum of the static pressure and velocity pressure (refer to "Useful Formulas" on page 9).

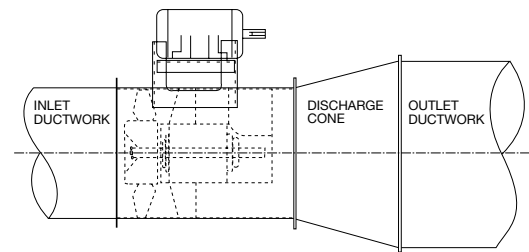
It is common industry practice to specify a system resistance in terms of static pressure. This system static pressure value is obtained by subtracting the velocity pressure from the system total pressure.

This velocity pressure is calculated based on the velocity of the specified airflow at the designated cross-sectional area.

TCVX AXIFAN® ratings are established from tests with the data corrected to the cross-sectional area of the fan outlet. It is important to note that to maintain accuracy, the specified system static pressure should be calculated at the same cross-sectional area as that of the fan outlet.

If the system does not have a cross-sectional area the same as the fan outlet, the true static pressure capability of the fan will be greater or less than the cataloged rating. This is due to the portion of the velocity pressure being converted to (or from) static pressure, with the total pressure remaining constant.

Due to industry preferences, TCVX AXIFAN® ratings are displayed in this catalog in static pressure (at the fan outlet area) only. In order to properly rate axial flow fans on a static pressure basis, the system cross-sectional area must be considered and the total pressure concept should be used.



Use of an Outlet Cone

As displayed above, fan outlet cones can be utilized to transition an axial fan to ductwork with a diameter larger than that of the fan. A cone of this type allows for the same quantity of air (CFM) to efficiently reduce the velocity of the airstream at the fan outlet to that of the cone outlet, thus converting or regaining much of the velocity pressure to static pressure. This velocity pressure is said to be "static pressure regained." The advantage of using an outlet cone is that a system that requires 1.5" of static pressure to overcome the duct friction losses may be able to use a fan supplying 1.25" static pressure at the fan outlet with the additional 0.25" being produced by the static pressure regain.

When a cone is used, the static pressure regain is defined as the increase in static pressure developed from the conversion of velocity pressure at the fan outlet minus the velocity pressure at the cone outlet: $SP \text{ Regain (ideal)} = VP_{\text{Fan}} - VP_{\text{Cone}}$

Although several quick rules of thumb are available to estimate this amount, upon final selection the actual SP regain for the specific fan size must be calculated and deducted from the rated static pressure.

The same principles can be used to adapt a fan outlet to any cone diameter larger or smaller. Given the same principles, additional velocity pressure can be imparted to a system by coning to a smaller diameter.

Please note that this simplified explanation does not take into account any inherent ductwork or energy conversion losses. It should be further noted that static pressure regain calculations are approximate and are not a part of the AMCA certified ratings program.

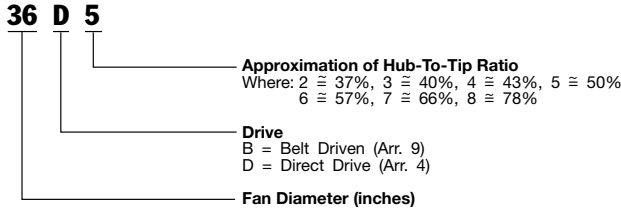
The cone dimensions shown below are for Twin City Fan & Blower standard cones which are the equivalent of the next fan size larger with an angle of divergence of 10°. To aid in the calculation of SP regain, this chart displays inside dimensions and outlet area for TCVX AXIFAN® units and the Twin City Fan & Blower standard cone.

Outlet Cone Dimensions

FAN SIZE	18	21	24	28	32	36	42	48	54	60	66	72	84
FAN I.D. (IN.)	18.16	21.19	24.19	28.25	32.25	36.25	42.38	48.38	54.38	60.38	66.44	72.50	84.50
CONE I.D. (IN.)	21.19	24.19	28.25	32.25	36.25	42.38	48.38	54.38	60.38	66.44	72.94	84.50	96.50
FAN AREA (FT²)	1.799	2.448	3.191	4.353	5.672	7.166	9.793	12.76	16.12	19.87	24.08	28.67	38.93
CONE AREA (FT²)	2.448	3.191	4.353	5.672	7.166	9.793	12.76	16.12	19.87	24.08	29.02	38.93	50.79
CONE LENGTH (IN.)	8.50	8.50	11.50	11.50	11.50	17.00	17.00	17.00	17.00	17.00	17.00	33.00	33.00

Model Nomenclature

TCVX AXIFAN® model numbers are represented as follows.



Useful Formulas

Total Pressure (TP) =
Static Pressure (SP) + Velocity Pressure (VP)

$$\text{Velocity (Vel.)} = \frac{\text{CFM}}{\text{Area in ft}^2}$$

$$\text{Velocity Pressure (VP)} = \left(\frac{\text{Vel.}}{1096.7} \right)^2 \times \text{Density in lb/ft}^3$$

$$\text{Efficiency} = \frac{\text{CFM} \times \text{Pressure (in. w.g.)}}{6356 \times \text{Brake Horsepower}}$$

Where total (or mechanical) efficiency is calculated using total pressure and static efficiency is calculated using static pressure.

Performance Tables

The performance tables in this catalog are based on standard air density which is defined by AMCA as that of dry air at 70°F and sea level pressure (29.92 inches of mercury). This is equal to a density value of 0.075 lb/ft³.

When a fan operates at other than standard conditions, the values must be converted to equivalent standard values before the fan can be selected from the performance tables, and then reconverted back

to the actual conditions after the specific selection is made. The temperature and altitude density ratios shown below should be used for this purpose with Example 2 displaying this procedure.

Sample Selections

The following examples illustrate conditions that may be encountered with the TCVX AXIFAN®. For additional performance corrections refer to the Twin City Fan & Blower Fan Selector Program.

Example 1: Make the optimum selection for an Arrangement 4 TCVX AXIFAN® at 20,000 CFM and 1.5" SP at standard conditions (0.075 lb/ft³ density). The performance tables direct us to a 36D5 fan size operating at 1170 RPM. Interpolating within this table yields the following selection:

36D5 TCVX @ 1170 RPM @ 8.48 BHP @ 42° blade angle

Example 2: Make the optimum selection for an Arr. 4 TCVX AXIFAN® at 20,000 CFM and 1.5" SP at 150°F and 10,000 feet elevation. Using the temperature and altitude density ratios from the table below, find a factor of 0.598. Dividing the operating SP by this factor (1.5 ÷ 0.598) = 2.5" equivalent SP at standard air and density. The performance tables direct us to the 32D6 fan size at 1750 RPM. Interpolating within this table yields a BHP of 13.77 and an approximate blade angle of 37°.

This is the BHP required at standard air density (0.075 lb/ft³), often referred to as "cold or starting horsepower." However, the actual BHP at the operating conditions of 150°F and 10,000 feet elevation will be 13.77 x 0.598 = 8.22. The selection is:

32D6 TCVX @ 1750 RPM @ 8.22 BHP @ 37° blade angle

Example 3: If the operating density is known, this same air density ratio can be calculated by:

$$\text{Operating Density} \div 0.075 = \text{Factor}$$

The factor is then used as in Example 2.

Temperature & Altitude Density Ratios

AIR TEMP °F	ALTITUDE IN FEET ABOVE SEA LEVEL												
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	15000	20000
	BAROMETRIC PRESSURE IN INCHES OF MERCURY												
	29.92	28.86	27.82	26.82	25.84	24.90	23.98	23.09	22.22	21.39	20.58	16.89	13.75
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.714	0.688	0.564	0.460
100	0.946	0.912	0.880	0.848	0.818	0.787	0.758	0.730	0.703	0.676	0.651	0.534	0.435
150	0.869	0.838	0.808	0.770	0.751	0.723	0.696	0.671	0.646	0.620	0.598	0.490	0.400
200	0.803	0.774	0.747	0.720	0.694	0.668	0.643	0.620	0.596	0.573	0.552	0.453	0.369

Bare Fan Weights (lb)

FAN SIZE	ARRANGEMENT 4																							
	CLASS I - HUB RATIO								CLASS II - HUB RATIO								CLASS III - HUB RATIO							
	2	3	4	5	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8			
18	—	—	—	—	—	—	169	—	—	—	—	—	—	198	—	—	—	—	—	—	208			
21	—	—	—	—	—	226	—	—	—	—	—	—	276	—	—	—	—	—	—	290	—			
24	—	—	—	—	267	—	—	—	—	—	—	303	—	—	—	—	—	318	—	—	—			
28	—	—	—	296	—	417	—	—	—	—	348	—	465	—	—	—	372	—	471	—	—			
32	—	—	328	—	443	612	—	—	—	378	—	497	670	—	—	—	395	—	519	692	—			
36	—	—	—	498	650	—	—	—	—	—	566	716	—	—	—	—	594	752	—	—	—			
42	—	—	688	845	—	922	—	—	—	824	998	—	1078	—	—	—	865	993	—	1152	—			
48	—	—	950	—	1200	1380	—	—	—	1060	—	1315	1515	—	—	—	1113	—	1451	1691	—			
54	—	1065	—	1135	1310	—	—	—	1270	—	1340	1545	—	—	—	1334	—	1388	1742	—	—			
60	—	—	1325	1525	—	—	—	—	—	1490	1715	—	—	—	—	—	1543	1757	—	—	—			
66	—	1560	1795	—	—	—	—	—	—	1560	1795	—	—	—	—	1618	1842	—	—	—	—			
72	1675	1930	—	—	—	—	—	—	—	1675	1930	—	—	—	—	1739	1981	—	—	—	—			
84	2100	—	—	—	—	—	—	—	—	2100	—	—	—	—	—	2159	—	—	—	—	—			

FAN SIZE	ARRANGEMENT 9																							
	CLASS I - HUB RATIO								CLASS II - HUB RATIO								CLASS III - HUB RATIO							
	2	3	4	5	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8			
18	—	—	—	—	—	—	185	—	—	—	—	—	—	220	—	—	—	—	—	—	233			
21	—	—	—	—	—	244	—	—	—	—	—	—	294	—	—	—	—	—	—	338	—			
24	—	—	—	—	295	—	—	—	—	—	—	335	—	—	—	—	—	—	367	—	—			
28	—	—	—	315	—	450	—	—	—	—	365	—	498	—	—	—	423	—	531	—	—			
32	—	—	355	—	485	646	—	—	—	409	—	535	696	—	—	—	469	—	579	740	—			
36	—	—	—	534	695	—	—	—	—	—	600	760	—	—	—	—	692	843	—	—	—			
42	—	—	728	889	—	978	—	—	—	860	1037	—	1126	—	—	—	992	1169	—	1178	—			
48	—	—	1027	—	1270	1460	—	—	—	1134	—	1380	1590	—	—	—	1284	—	1440	1670	—			
54	—	1125	—	1160	1340	—	—	—	1330	—	1365	1570	—	—	—	1499	—	1432	1649	—	—			
60	—	—	1537	1775	—	—	—	—	—	1735	2000	—	—	—	—	—	1809	2100	—	—	—			
66	—	1935	2245	—	—	—	—	—	—	1995	2295	—	—	—	—	—	2077	2410	—	—	—			
72	2135	2460	—	—	—	—	—	—	—	2235	2570	—	—	—	—	2324	2699	—	—	—	—			
84	2675	—	—	—	—	—	—	—	—	2795	—	—	—	—	—	2935	—	—	—	—	—			

Accessory Weights (lb)

FAN SIZE	BELT GUARD	WEATHER COVER	INLET / OUTLET SCREEN	INLET BELL	INLET / OUTLET CONE	COMPANION FLANGE	SUPPORT LEGS		INLET VANES	DIS-CHARGE CAP	CURB CAP	SUSPENSION CLIPS
							HORIZ. FLOW	VERT. FLOW				
18	8	18	4	16	12	10	12	10	60	55	17	3
21	10	21	5	21	13	11	20	10	62	65	23	3
24	11	23	7	30	20	13	24	17	68	78	26	4
28	12	26	8	40	22	15	32	17	71	98	34	4
32	14	32	10	54	25	17	47	17	80	120	45	4
36	16	34	11	82	52	19	58	17	89	165	51	4
42	18	40	13	100	62	25	83	19	98	230	64	4
48	21	45	18	114	70	33	97	19	107	288	72	4
54	25	56	24	128	76	37	126	26	116	384	82	5
60	30	68	33	139	86	41	265	26	134	400	133	5
66	50	93	48	157	101	48	295	36	160	450	195	7
72	70	125	68	186	121	57	370	36	178	500	270	7
84	70	132	98	490	260	70	425	36	365	700	310	8

Housing Gauges

FAN SIZE	ARRANGEMENT 4			ARRANGEMENT 9		
	CL I	CL II	CL III	CL I	CL II	CL III
18	10	7	7	12	7	7
21	10	7	7	12	7	7
24	10	7	7	10	7	7
28	10	7	7	10	7	7
32	10	7	7	10	7	7
36	10	7	7	10	7	7
42	7	0.25	0.25	7	0.25	0.25
48	7	0.25	0.25	7	0.25	0.25
54	7	0.25	0.25	7	0.25	0.25
60	0.25	0.25	0.25	7	0.25	0.25
66	0.25	0.25	0.25	0.25	0.25	0.25
72	0.25	0.25	0.25	0.25	0.25	0.25
84	0.25	0.25	0.25	0.25	0.25	0.25

Discharge Cap Min/Max CFM

FAN SIZE	MINIMUM CFM REQUIRED TO OPEN DAMPER		MAX CFM
	STEEL DAMPER	ALUM. DAMPER	
18	3130	2395	5525
21	4190	3205	7390
24	5455	4170	9625
28	8520	6515	15035
32	9779	7480	17506
36	12525	9580	22100
42	16850	12885	29730
48	21950	16765	38690
54	27670	21160	48825
60	34880	26050	60140
66	41315	31590	72905
72	49050	37510	86555
84	66565	50905	117460

Arrangement 4

TCVX 18D8

Wheel Dia.: 18"
Tip Speed: 4.71 x RPM

Outlet Area: 1.799 ft²
Fan Efficiency Grade: FEG63

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1170	30	1361	0.20																				
1170	35	1624	0.24																				
1170	40	1832	0.29																				
1170	45	2084	0.34																				
1170	50	2287	0.41																				
1750	30	2441	0.56	2290	0.61	2124	0.66																
1750	35	2850	0.68	2692	0.74	2518	0.79	2104	0.88														
1750	40	3214	0.83	3041	0.88	2837	0.93	2406	1.02														
1750	45	3604	1.03	3417	1.08	3218	1.13	2753	1.21														
1750	50	3975	1.27	3762	1.31	3538	1.35	2999	1.41														
3500	30	5295	3.73	5229	3.85	5162	3.98	5024	4.21	4881	4.45	4734	4.67	4580	4.88	4419	5.08	4247	5.28	4062	5.48		
3500	35	6131	4.72	6062	4.85	5993	4.97	5849	5.21	5701	5.45												

TCVX 21D7

Wheel Dia.: 21"
Tip Speed: 5.50 x RPM

Outlet Area: 2.448 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1170	30	2726	0.38	2276	0.44																		
1170	35	3250	0.48	2800	0.53																		
1170	40	3741	0.59	3257	0.64																		
1170	45	4218	0.73	3705	0.78																		
1170	50	4717	0.91	4158	0.94																		
1750	30	4662	1.04	4442	1.15	4200	1.24	3640	1.41														
1750	35	5473	1.34	5243	1.45	4990	1.55	4419	1.73														
1750	40	6255	1.72	6008	1.82	5735	1.92	5115	2.10														
1750	45	7008	2.19	6734	2.29	6449	2.39	5811	2.56	5042	2.66												
1750	50	7846	2.88	7536	2.95	7214	3.02	6504	3.13														
3500	30	9927	7.02	9830	7.25	9733	7.48	9532	7.92	9324	8.36	9108	8.78	8883	9.19	8647	9.57	8400	9.95	8142	10.31	7871	10.66
3500	35	11574	9.30	11474	9.55	11372	9.79	11162	10.28	10946	10.75												

TCVX 24D6

Wheel Dia.: 24"
Tip Speed: 6.28 x RPM

Outlet Area: 3.191 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	2872	0.34																				
880	35	3552	0.43																				
880	40	4173	0.53																				
880	45	4754	0.64																				
880	50	5422	0.81																				
1170	30	4743	0.66	4176	0.76																		
1170	35	5654	0.86	5071	0.95																		
1170	40	6545	1.10	5935	1.20	5196	1.27																
1170	45	7359	1.39	6737	1.48	5932	1.54																
1170	50	8322	1.83	7620	1.88	6825	1.91																
1750	30	7864	1.80	7574	1.98	7256	2.15	6532	2.44	5668	2.68												
1750	35	9254	2.42	8952	2.62	8625	2.79	7872	3.09	7022	3.37												
1750	40	10653	3.24	10319	3.43	9965	3.60	9185	3.92	8252	4.17												
1750	45	11933	4.20	11567	4.38	11189	4.56	10392	4.87	9403	5.08												
1750	50	13476	5.78	13075	5.93	12654	6.06	11744	6.24	10734	6.37												
3500	30	16528	12.14	16400	12.53	16270	12.91	16003	13.68	15728	14.42												

Performance certified is for installation Type B: Free inlet, ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I **Bold type face** = Class II
Italic type face = Class III

Arrangement 4

TCVX 28D5

Wheel Dia.: 28"
Tip Speed: 7.33 x RPM

Outlet Area: 4.353 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	4664	0.58																				
880	35	5751	0.74																				
880	40	6785	0.94																				
880	45	7704	1.15																				
880	50	8705	1.46																				
1170	30	7392	1.14	6652	1.30	5764	1.41																
1170	35	8874	1.51	8090	1.67	7229	1.81																
1170	40	10332	1.97	9512	2.13	8553	2.26																
1170	45	11586	2.49	10743	2.65	9764	2.76																
1170	50	13051	3.27	12115	3.38	11073	3.45																
1750	30	12089	3.14	11693	3.43	11270	3.70	10319	4.18	9221	4.59	7851	4.85										
1750	35	14361	4.33	13943	4.64	13498	4.92	12487	5.42	11384	5.87	10105	6.21										
1750	40	16634	5.88	16175	6.18	15693	6.47	14636	6.98	13433	7.41	12081	7.74										
1750	45	18604	7.64	18102	7.93	17582	8.21	16484	8.70	15260	9.10	13842	9.35										
1750	50	20905	10.39	20363	10.64	19798	10.86	18583	11.21	17249	11.46	15770	11.63										

TCVX 28D7

Wheel Dia.: 28"
Tip Speed: 7.33 x RPM

Outlet Area: 4.353 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	4990	0.68	4131	0.77																		
880	35	5963	0.85	5106	0.95																		
880	40	6883	1.06	5962	1.15																		
880	45	7770	1.31	6793	1.39																		
880	50	8714	1.65	7665	1.71																		
1170	30	7419	1.36	6925	1.52	6366	1.66																
1170	35	8748	1.75	8232	1.92	7652	2.07																
1170	40	10040	2.24	9482	2.40	8851	2.55	7387	2.78														
1170	45	11249	2.83	10660	3.00	10029	3.14	8456	3.33														
1170	50	12626	3.72	11960	3.84	11247	3.93	9568	4.04														
1750	30	11825	3.90	11540	4.18	11243	4.44	10603	4.93	9890	5.36	9086	5.77	8147	6.11								
1750	35	13843	5.16	13546	5.45	13236	5.74	12570	6.26	11824	6.71	11008	7.14	10086	7.51								
1750	40	15840	6.81	15517	7.09	15182	7.36	14460	7.87	13650	8.34	12765	8.75	11787	9.09								
1750	45	17750	8.83	17382	9.10	17006	9.36	16228	9.86	15413	10.32	14506	10.71	13433	10.98	12345	11.20						
1750	50	19924	11.93	19512	12.15	19089	12.36	18211	12.72	17286	13.01	16281	13.26	15164	13.45								

TCVX 32D4

Wheel Dia.: 32"
Tip Speed: 8.38 x RPM

Outlet Area: 5.672 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	7014	0.92																				
880	35	8640	1.21																				
880	40	10240	1.55																				
880	45	11580	1.91																				
880	50	13060	2.41																				
1170	30	10844	1.82	9887	2.06	8791	2.24																
1170	35	13102	2.46	12066	2.71	10976	2.93																
1170	40	15339	3.28	14248	3.52	13028	3.73																
1170	45	17167	4.13	16040	4.37	14818	4.56																
1170	50	19274	5.40	18062	5.58	16729	5.72																
1750	30	17586	5.05	17057	5.48	16499	5.90	15263	6.66	13881	7.27	12229	7.69										
1750	35	21051	7.18	20488	7.62	19893	8.04	18560	8.82	17117	9.51	15578	10.09										
1750	40	24508	9.87	23898	10.33	23259	10.77	21854	11.54	20289	12.19	18561	12.73										
1750	45	27373	12.83	26705	13.25	26014	13.65	24545	14.39	22954	15.01	21251	15.49										
1750	50	30637	17.23	29926	17.59	29189	17.93	27614	18.51	25891	18.97	23993	19.31										

Performance certified is for installation Type B: Free inlet, ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II

Arrangement 4

TCVX 36D6

Wheel Dia.: 36"
Tip Speed: 9.42 x RPM

Outlet Area: 7.166 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	11318	1.75	10425	2.02	9203	2.24																
880	35	13791	2.30	12788	2.61	11587	2.86																
880	40	16205	3.05	15175	3.37	13899	3.62																
880	45	18686	3.99	17559	4.30	16219	4.53																
880	50	20818	5.05	19582	5.31	18187	5.51																
1170	30	15908	3.55	15361	3.92	14760	4.28	13297	4.98														
1170	35	19331	4.78	18696	5.19	18008	5.60	16405	6.38														
1170	40	22631	6.47	21935	6.93	21199	7.37	19574	8.18	17276	8.69												
1170	45	25993	8.67	25258	9.14	24472	9.58	22684	10.33	20422	10.81												
1170	50	29064	11.35	28168	11.70	27251	12.04	25349	12.70	23004	13.07												
1750	30	24626	10.50	24298	11.05	23959	11.61	23244	12.71	22470	13.81	21619	14.91	20661	15.98	19548	16.91	18155	17.66				
1750	35	29890	14.44	29504	15.07	29106	15.69	28274	16.92	27384	18.15	26416	19.38	25355	20.57	24192	21.65	22919	22.56				
1750	40	34939	19.93	34506	20.64	34063	21.34	33146	22.71	32181	24.03	31172	25.33	30103	26.57	28918	27.69	27497	28.57	25744	29.10		
1750	45	40020	27.17	39567	27.93	39103	28.67	38137	30.11	37113	31.46	36018	32.72	34835	33.86	33545	34.85	32115	35.68	30455	36.20		
1750	50	44913	36.67	44335	37.21	43752	37.74	42562	38.78	41343	39.79	40112	40.82	38854	41.83	37518	42.74	36023	43.40	34315	43.74	32438	43.88

TCVX 42D4

Wheel Dia.: 42"
Tip Speed: 11.00 x RPM

Outlet Area: 9.793 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	18094	2.95	16324	3.34	14232	3.61																
880	35	21924	3.99	20013	4.41	18012	4.76																
880	40	25739	5.31	23706	5.71	21440	6.04																
880	45	28816	6.68	26729	7.06	24494	7.36																
880	50	32348	8.67	30116	8.97	27631	9.19																
1170	30	25841	5.98	24706	6.61	23467	7.20	20687	8.15	17057	8.63												
1170	35	31060	8.41	29849	9.05	28508	9.65	25587	10.72	22314	11.47												
1170	40	36258	11.49	34959	12.15	33547	12.75	30378	13.74	26861	14.50												
1170	45	40502	14.78	39096	15.39	37610	15.95	34384	16.90	30897	17.57												
1170	50	45334	19.61	43841	20.13	42261	20.59	38790	21.31	34855	21.80												
1750	30	40393	17.57	39704	18.58	38995	19.56	37509	21.47	35906	23.28	34175	24.94	32334	26.39	30349	27.59	28080	28.48	25359	28.90		
1750	35	48319	25.69	47582	26.70	46825	27.69	45237	29.62	43518	31.47	41631	33.20	39665	34.79	37700	36.27	35620	37.55	33248	38.42		
1750	40	56244	35.77	55447	36.87	54629	37.94	52922	39.98	51099	41.86	49114	43.52	46996	45.00	44781	46.37	42420	47.57				
1750	45	62793	47.09	61911	48.07	61012	49.03	59157	50.86	57215	52.59	55160	54.19										

TCVX 42D5

Wheel Dia.: 42"
Tip Speed: 11.00 x RPM

Outlet Area: 9.793 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	18393	2.79	17226	3.27	15751	3.68																
880	35	22526	3.91	21149	4.43	19574	4.90																
880	40	26609	5.36	25149	5.90	23539	6.40																
880	45	31030	7.38	29642	7.98	27872	8.41																
880	50	34603	9.53	32823	9.97	30969	10.42																
1170	30	25719	5.59	24906	6.23	24057	6.86	22220	8.12	19477	8.95												
1170	35	31399	8.12	30468	8.82	29486	9.52	27332	10.89	24777	12.00												
1170	40	36966	11.45	35942	12.20	34878	12.93	32629	14.36	29994	15.54												
1170	45	42648	15.93	41759	16.86	40801	17.73	38557	19.21	35586	20.14	31584	20.64										
1170	50	48000	21.55	46708	22.09	45391	22.65	42683	23.87	39829	24.93	36876	25.64										
1750	30	39752	16.30	39241	17.27	38719	18.24	37646	20.15	36525	22.05	35376	23.98	34171	25.88	32822	27.64	31155	29.05	29009	29.98		
1750	35	48428	24.51	47845	25.59	47251	26.65	46023	28.77	44736	30.86	43385	32.94	41957	35.01	40429	36.98	38771	38.72	36962	40.21	34860	41.38
1750	40	56920	35.48	56269	36.63	55608	37.78	54253	40.03	52851	42.24	51402	44.41	49909	46.57	48341	48.63	46650	50.51	44760	52.08	42646	53.32
1750	45	65162	49.70	64619	51.17	64060	52.63	62894	55.44	61649	58.12	60310	60.64	58841	62.92	57163	64.79	55244	66.24	53114	67.46	50652	68.46
1750	50	73888	70.15	73047	70.93	72199	71.73	70481	73.35	68733	74.99	66955	76.70	65149	78.54	63306	80.39	61412	82.10				

Performance certified is for installation Type B: Free inlet, ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II

Arrangement 4

TCVX 48D7

Wheel Dia.: 48"
Tip Speed: 12.57 x RPM

Outlet Area: 12.76 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	28335	7.06	27484	7.69	26553	8.32																
880	35	34329	9.30	33327	10.02	32254	10.73	26785	13.24														
880	40	40081	12.42	38981	13.23	37819	14.01	32013	16.58														
880	45	45949	16.43	44713	17.20	43417	17.93	37282	20.35														
880	50	51173	21.45	49736	22.07	48274	22.66	41809	24.54														
1170	30	38587	15.27	37998	16.13	37384	16.98	34595	20.30	30891	23.37												
1170	35	46737	20.36	46030	21.33	45300	22.30	42089	26.11	38177	29.65												
1170	40	54503	27.51	53718	28.61	52912	29.70	49439	33.87	45419	37.62	39374	39.52										
1170	45	62461	36.97	61575	38.04	60667	39.09	56787	43.03	52401	46.47	46633	48.55										
1170	50	69671	49.08	68610	49.95	67538	50.80	63172	53.98	58672	56.76	52091	57.73										
1750	30	58652	47.88	58278	49.18	57898	50.47	56310	55.60	54595	60.66	52715	65.63	50598	70.47	48171	75.11	45332	79.42				
1750	35	71039	64.50	70586	65.97	70126	67.43	68224	73.26	66204	79.01	64041	84.67	61698	90.32	59122	95.74	56239	100.52	52937	104.42		
1750	40	82784	87.90	82278	89.58	81766	91.26	79657	97.85	77441	104.26	75099	110.46	72641	116.48	70006	122.21	67020	127.23	63283	130.62	58642	132.33
1750	45	94857	119.70	94282	121.34	93702	122.96	91321	129.32	88832	135.45	86220	141.30	83487	146.89	80592	152.12	77428	156.75	73785	160.33	69518	162.54
1750	50	105945	160.91	105245	162.26	104543	163.60	101700	168.80	98807	173.76	95866	178.45	92970	182.99	90015	187.25	86772	190.90	82727	193.06	77647	193.18

TCVX 54D3

Wheel Dia.: 54"
Tip Speed: 14.14 x RPM

Outlet Area: 16.12 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	33982	5.77	31860	6.61	29444	7.32																
880	35	43262	8.66	40941	9.64	38367	10.55																
880	40	52048	12.59	49598	13.62	46931	14.58	40868	15.93														
880	45	61068	17.83	58486	18.90	55658	19.76	48860	20.94														
880	50	68759	23.84	65892	24.65	62807	25.46	55948	26.59														
1170	30	47566	11.74	46023	12.93	44450	14.09	41170	16.27	37171	17.84												
1170	35	59976	18.31	58395	19.65	56739	20.96	53123	23.53	49092	25.74	44536	27.32										
1170	40	71845	27.37	70140	28.83	68368	30.23	64580	32.92	60412	35.31	55842	37.04	50559	38.16								
1170	45	83969	39.45	82180	41.07	80316	42.60	76321	45.27	71865	47.34	66722	48.89	60810	49.70								
1170	50	94543	54.30	92526	55.43	90440	56.54	86026	58.70	81220	60.73	76031	62.18										

TCVX 54D5

Wheel Dia.: 54"
Tip Speed: 14.14 x RPM

Outlet Area: 16.12 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	40937	8.48	39535	9.50	38075	10.53																
880	35	49991	12.28	48386	13.40	46685	14.52	38281	18.28														
880	40	58869	17.27	57108	18.47	55273	19.63	46579	23.60														
880	45	67985	24.01	66447	25.48	64774	26.86	55344	30.42														
880	50	76447	32.33	74232	33.20	71970	34.09	62400	37.61														
1170	30	55974	17.84	54974	19.21	53947	20.57	49575	26.01	43944	30.64												
1170	35	68230	26.53	67090	28.05	65916	29.56	60824	35.49	54796	40.85												
1170	40	80229	38.11	78960	39.73	77663	41.34	72173	47.57	65982	53.26												
1170	45	92049	53.28	90979	55.35	89866	57.36	84863	64.70	78148	69.71	68591	72.36										
1170	50	104148	74.23	102519	75.36	100871	76.51	94085	81.32	86936	86.40	79451	89.76										
1750	30	85332	54.58	84686	56.65	84033	58.71	81346	66.91	78522	75.02	75583	83.15	72494	91.25	68920	98.55	64220	103.80				
1750	35	103888	83.14	103153	85.43	102410	87.71	99343	96.77	96109	105.71	92679	114.56	89018	123.36	85039	131.59	80650	138.60	75627	144.22		
1750	40	122054	121.43	121230	123.90	120398	126.35	116990	136.06	113444	145.55	109748	154.82	105914	163.97	101842	172.65	97325	180.22	92129	186.05		
1750	45	139386	170.44	138705	173.63	138013	176.79	135129	189.10	132029	200.79	128653	211.67	124894	221.42	120485	229.08	115332	234.78	109468	239.61	102210	242.22
1750	50	158440	244.27	157368	245.93	156290	247.61																

Performance certified is for installation Type B: Free inlet, ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II

Arrangement 4

TCVX 66D4

Wheel Dia.: 66"
Tip Speed: 17.28 x RPM

Outlet Area: 24.08 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	71798	18.35	69905	20.15	67932	21.94	63763	25.56	58821	28.71												
880	35	88521	27.56	86414	29.56	84219	31.53	79520	35.41	74264	39.02	68156	41.88										
880	40	104863	39.83	102555	41.96	100172	44.06	95167	48.12	89751	51.95	83483	55.00										
880	45	121474	56.21	119360	58.82	117130	61.31	112231	65.84	106366	69.28	99337	71.74	90419	73.15								
880	50	136790	77.16	133904	78.73	130955	80.31	124856	83.55	118453	86.93	111737	89.63	104858	91.44								
1170	30	97567	39.43	96201	41.84	94806	44.24	91921	49.02	88900	53.77	85765	58.61	82391	63.28	78508	67.23	73807	70.06				
1170	35	120040	60.63	118519	63.33	116966	66.01	113755	71.30	110386	76.50	106840	81.67	103079	86.71	99037	91.39	94646	95.49	89787	98.92	84039	101.42
1170	40	142011	89.17	140331	92.06	138623	94.93	135115	100.58	131474	106.08	127698	111.47	123777	116.75	119633	121.75	115143	126.18	110152	129.80	104644	132.65
1170	45	163840	126.56	162330	130.19	160780	133.73	157545	140.58	154100	147.05	150400	153.04	146330	158.29	141762	162.56	136682	166.01	131116	169.06	124508	171.15
1170	50	185138	178.15	183015	180.23	180867	182.32	176496	186.50	172016	190.70	167420	195.00	162697	199.55	157838	204.01	152828	207.97	147745	211.11	142650	213.67

TCVX 72D2

Wheel Dia.: 72"
Tip Speed: 18.85 x RPM

Outlet Area: 28.67 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	82796	19.56	79840	21.60	76824	23.59	70390	27.20														
880	35	104943	30.97	101956	33.30	98825	35.57	92008	39.92	84406	43.50	75598	45.93										
880	40	126130	46.63	122943	49.16	119625	51.60	112487	56.22	104646	60.12	96112	62.81										
880	45	147698	67.42	144256	70.12	140683	72.65	133089	77.08	124720	80.58	115020	83.02										
880	50	166331	92.90	162598	94.93	158725	96.89	150471	100.64	141398	103.94	131462	106.02										
1170	30	113406	41.70	111249	44.50	109059	47.25	104576	52.60	99993	57.84	95151	62.65	89809	66.48	83879	69.37						
1170	35	142840	67.89	140696	71.08	138500	74.23	133939	80.39	129111	86.37	123956	92.15	118469	97.44	112649	101.95	106360	105.63	99306	108.28		
1170	40	171248	104.26	168947	107.74	166597	111.17	161741	117.83	156649	124.20	151254	130.33	145547	136.03								

TCVX 72D3

Wheel Dia.: 72"
Tip Speed: 18.85 x RPM

Outlet Area: 28.67 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		4.5" SP		5" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	88846	23.78	86467	26.02	84005	28.22	78880	32.61	72967	36.41												
880	35	110712	36.57	108160	39.08	105509	41.56	99853	46.39	93598	50.92	86531	54.56										
880	40	131914	53.95	129134	56.65	126272	59.29	120278	64.35	113860	69.09	106688	73.03	98403	75.80								
880	45	153658	77.02	150963	80.17	148148	83.18	142077	88.66	135166	93.03	127210	96.34	117505	98.61								
880	50	172931	106.26	169573	108.30	166129	110.31	158956	114.31	151333	118.40	143219	121.87	134800	124.18								
1170	30	120791	51.27	119063	54.28	117303	57.28	113685	63.19	109934	69.04	106081	74.90	101983	80.50	97367	85.28						
1170	35	150045	80.73	148199	84.14	146316	87.51	142431	94.16	138367	100.67	134098	107.10	129589	113.39	124794	119.27	119661	124.46	114116	128.88		
1170	40	178514	121.17	176485	124.85	174425	128.49	170203	135.61	165836	142.52	161314	149.23	156634	155.76	151738	161.95	146535	167.57	140904	172.34	134784	176.20
1170	45	207293	174.34	205352	178.71	203368	182.99	199257	191.25	194929	199.04	190346	206.30	185432	212.78	180104	218.28	174327	222.94	168090	227.07	160986	230.37
1170	50	233713	245.55	231252	248.28	228757	251.00	223663	256.40	218420	261.73	213014	267.02	207418	272.48	201622	277.90	195616	282.90	189405	287.01	183126	290.26

TCVX 84D2

Wheel Dia.: 84"
Tip Speed: 21.99 x RPM

Outlet Area: 38.93 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
880	30	129747	35.94	125973	39.04	122148	42.02	114418	47.67	105924	52.44	96259	55.99	85373	58.71								
880	35	165251	58.94	161616	62.55	157839	66.08	149746	72.94	140807	79.34	131296	84.55	120921	88.40								
880	40	199032	91.02	195176	94.96	191196	98.80	182793	106.11	173616	112.88	163805	118.63	153522	122.96	141950	125.81						
880	45	233103	133.62	228618	137.68	224063	141.55	214748	148.67	205254	154.88	195143	160.17	183596	164.32								
880	50	262841	185.95	258412	189.22	253841	192.39	244219	198.38	233761	203.94	222335	208.71	209976	211.90								
1170	30	176806	77.96	174011	82.23	171193	86.41	165488	94.54	159730	102.35	153922	109.85	147864	116.82	141314	122.86	134257	127.89	118702	136.08		
1170	35	223769	131.04	221138	135.93	218455	140.77	212919	150.30	207132	159.59	201024	168.69	194527	177.58	187702	185.91	180657	193.30	165685	205.02	148573	212.04
1170	40	268950	205.67	266144	211.06	263290	216.37	257430	226.77	251349	236.82	245016	246.50	238346	255.84	231338	264.69	224049	272.79	208913	285.87	192222	294.61

Performance certified is for installation Type B: Free inlet, ducted outlet.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I **Bold type face** = Class II
Italic type face = Class III

Arrangement 9

TCVX 18B8

Wheel Dia.: 18"
Tip Speed: 4.71 x RPM

Outlet Area: 1.799 ft²
Fan Efficiency Grade: FEG60

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		4" SP		5" SP		6" SP		7" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1687	45	3210	1.00	3014	1.03	2792	1.05																
1932	45	3769	1.47	3616	1.52	3440	1.55	3055	1.61														
2126	45	4202	1.94	4069	1.99	3924	2.04	3580	2.09	3229	2.17												
2434	45	4879	2.87	4768	2.93	4651	2.99	4385	3.08	4078	3.14	3775	3.23	3416	3.29								
2886	45	5858	4.72	5768	4.80	5674	4.88	5476	5.01	5253	5.12	4999	5.19	4739	5.27	4196	5.48						
3303	45	6752	7.02	6675	7.11	6595	7.20	6430	7.37	6254	7.53	6061	7.65	5846	7.74	5393	7.92	4931	8.18				
3636	45	7461	9.31	7392	9.42	7322	9.52	7175	9.72	7021	9.90	6859	10.06	6683	10.20	6284	10.38	5875	10.61	5455	10.90		
4000	45	8234	12.35	8172	12.47	8109	12.58	7978	12.80	7843	13.01	7701	13.21	7553	13.39	7225	13.67	6853	13.85	6482	14.11	6107	14.43

MAXIMUM RPM: Class I — 3792 Class II — 3792 Class III — 4000

TCVX 21B7

Wheel Dia.: 21"
Tip Speed: 5.50 x RPM

Outlet Area: 2.448 ft²
Fan Efficiency Grade: FEG67

RPM	ANG	0.5" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1282	45	4531	0.98	3584	1.05																		
1468	45	5399	1.43	4655	1.53																		
1616	45	6063	1.88	5430	2.00																		
1849	45	7084	2.75	6580	2.93	5294	3.13																
2193	45	8557	4.50	8163	4.73	7201	5.05	6034	5.24														
2510	45	9895	6.65	9562	6.93	8801	7.38	7886	7.68														
2763	45	10954	8.80	10657	9.12	10003	9.67	9220	10.04	8358	10.35												
3214	45	12829	13.71	12579	14.10	12047	14.80	11452	15.37	10767	15.78	10037	16.15	9240	16.45								
3537	45	14164	18.19	13940	18.61	13468	19.41	12957	20.12	12384	20.67	11747	21.09	11084	21.50	10374	21.86						
3811	45	15295	22.67	15088	23.14	14656	24.01	14195	24.81	13696	25.50	13139	26.03	12538	26.47	11921	26.91	11266	27.31	10531	27.50		
4000	45	16073	26.17	15877	26.65	15469	27.58	15037	28.44	14575	29.21	14067	29.84	13513	30.33	12933	30.78	12337	31.25	11700	31.63	10991	31.81

MAXIMUM RPM: Class I — 3236 Class II — 3236 Class III — 4000

TCVX 24B6

Wheel Dia.: 24"
Tip Speed: 6.28 x RPM

Outlet Area: 3.191 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		1" SP		1.5" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1192	45	7225	1.54	5825	1.64																		
1312	45	8171	2.01	7010	2.16																		
1502	45	9616	2.93	8700	3.16	7567	3.28																
1780	45	11669	4.73	10967	5.06	10142	5.29	9192	5.44														
2038	45	13537	6.97	12951	7.38	12300	7.71	11559	7.96	9808	8.22												
2243	45	15006	9.20	14485	9.65	13923	10.06	13301	10.39	11864	10.84												
2568	45	17315	13.63	16872	14.17	16404	14.67	15906	15.13	14781	15.82	13490	16.28	11997	16.47								
2826	45	19137	18.03	18740	18.64	18325	19.21	17890	19.75	16939	20.65	15854	21.30	14646	21.75	13278	21.95						
3046	45	20685	22.47	20320	23.13	19941	23.76	19547	24.36	18703	25.43	17756	26.26	16709	26.88	15555	27.30	14274	27.48				
3237	45	22026	26.88	21684	27.59	21331	28.26	20966	28.91	20194	30.10	19345	31.09	18405	31.85	17389	32.45	16269	32.83				
3563	45	24309	35.68	24001	36.46	23685	37.22	23360	37.96	22681	39.34	21957	40.58	21167	41.61	20310	42.43	19397	43.12	18412	43.62	17338	43.90

MAXIMUM RPM: Class I — 2855 Class II — 2855 Class III — 3625

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 28B5

Wheel Dia.: 28"
Tip Speed: 7.33 x RPM

Outlet Area: 4.353 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		4" SP		5" SP		6" SP		7" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1058	45	9781	1.96	8756	2.06																		
1211	45	11693	2.86	10869	2.99	9957	3.09																
1435	45	14354	4.60	13731	4.79	13036	4.94	11485	5.19														
1643	45	16752	6.75	16235	6.99	15683	7.20	14433	7.53	13051	7.80												
1809	45	18637	8.89	18179	9.16	17698	9.42	16638	9.84	15451	10.17	14166	10.44										
2071	45	21576	13.13	21187	13.46	20784	13.77	19929	14.33	18980	14.80	17946	15.18	16859	15.52								
2279	45	23889	17.35	23540	17.71	23182	18.06	22432	18.72	21626	19.30	20743	19.79	19801	20.20	17776	20.90						
2486	45	26178	22.36	25862	22.76	25538	23.15	24868	23.90	24160	24.58	23402	25.19	22585	25.71	20832	26.59	18896	27.24				
2642	45	27896	26.73	27601	27.16	27299	27.58	26677	28.38	26026	29.14	25340	29.84	24606	30.44	23008	31.44	21298	32.31				
2908	45	30817	35.44	30551	35.91	30280	36.38	29726	37.29	29151	38.16	28553	38.98	27929	39.74	26570	41.03	25092	42.09	23535	43.03		
3004	45	<i>31868</i>	<i>39.00</i>	<i>31611</i>	<i>39.49</i>	<i>31351</i>	<i>39.98</i>	<i>30817</i>	<i>40.92</i>	<i>30265</i>	<i>41.83</i>	<i>29692</i>	<i>42.69</i>	<i>29098</i>	<i>43.50</i>	<i>27814</i>	<i>44.90</i>	<i>26409</i>	<i>46.04</i>	<i>24933</i>	<i>47.07</i>	<i>23347</i>	<i>47.89</i>

MAXIMUM RPM: Class I — 2436 Class II — 2436 Class III — 3004

TCVX 28B7

Wheel Dia.: 28"
Tip Speed: 7.33 x RPM

Outlet Area: 4.353 ft²
Fan Efficiency Grade: FEG67

RPM	ANG	0.5" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1001	45	8811	1.96	7143	2.09																		
1146	45	10457	2.86	9140	3.06																		
1359	45	12775	4.63	11794	4.94	9231	5.25																
1553	45	14834	6.77	14032	7.18	12032	7.68																
1713	45	16509	8.98	15805	9.45	14112	10.11	12057	10.50														
1961	45	19079	13.30	18485	13.86	17142	14.79	15518	15.37	13661	15.76												
2158	45	21106	17.58	20575	18.22	19413	19.33	18039	20.11	16498	20.69	14739	21.03										
2325	45	22816	21.87	22329	22.57	21279	23.82	20082	24.80	18708	25.47	17230	26.06										
2509	45	24694	27.36	24247	28.12	23295	29.52	22246	30.71	21044	31.56	19735	32.25	18333	32.83								
2761	45	27258	36.28	26856	37.12	26010	38.71	25100	40.13	24097	41.31	22976	42.18	21784	42.93	20528	43.61	19130	44.01				
2974	45	29420	45.19	29049	46.11	28275	47.85	27452	49.45	26570	50.87	25595	52.00	24531	52.87	23421	53.68	22259	54.42	20990	54.93		
3161	45	31314	54.13	30967	55.11	30246	56.99	29486	58.74	28681	60.33	27812	61.70	26861	62.79	25844	63.68	24796	64.54	23701	65.32	22520	65.89
3169	45	<i>31395</i>	<i>54.54</i>	<i>31049</i>	<i>55.52</i>	<i>30330</i>	<i>57.41</i>	<i>29573</i>	<i>59.16</i>	<i>28770</i>	<i>60.76</i>	<i>27906</i>	<i>62.14</i>	<i>26959</i>	<i>63.24</i>	<i>25947</i>	<i>64.13</i>	<i>24902</i>	<i>65.00</i>	<i>23812</i>	<i>65.78</i>	<i>22640</i>	<i>66.37</i>

MAXIMUM RPM: Class I — 2436 Class II — 2436 Class III — 3169

TCVX 32B4

Wheel Dia.: 32"
Tip Speed: 8.38 x RPM

Outlet Area: 5.672 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1029	45	14107	2.98	12741	3.13																		
1220	45	17568	4.79	16516	5.00	15360	5.18																
1397	45	20638	7.01	19788	7.29	18847	7.52	16813	7.94														
1537	45	23015	9.20	22268	9.52	21467	9.80	19673	10.28	17783	10.73												
1760	45	26744	13.58	26113	13.95	25454	14.31	24014	14.94	22420	15.48	20784	16.00										
1937	45	29669	17.92	29106	18.34	28524	18.75	27286	19.50	25910	20.14	24447	20.72	22960	21.30								
2087	45	32131	22.27	31615	22.73	31083	23.17	29968	24.02	28756	24.77	27437	25.42	26074	26.04	24689	26.66						
2219	45	34288	26.63	33806	27.13	33312	27.61	32283	28.53	31187	29.37	29993	30.11	28727	30.78	27445	31.44	26134	32.10				
2442	45	37916	35.26	37483	35.81	37041	36.35	36128	37.39	35172	38.37	34158	39.28	33069	40.09	31925	40.83	30759	41.56	28375	42.98		
2631	45	40978	43.91	40579	44.51	40173	45.09	39338	46.23	38471	47.32	37566	48.35	36609	49.31	35592	50.17	34531	50.97	32367	52.54	30109	54.00
2717	45	<i>42368</i>	<i>48.28</i>	<i>41983</i>	<i>48.89</i>	<i>41591</i>	<i>49.50</i>	<i>40787</i>	<i>50.68</i>	<i>39955</i>	<i>51.82</i>	<i>39090</i>	<i>52.90</i>	<i>38183</i>	<i>53.92</i>	<i>37220</i>	<i>54.85</i>	<i>36210</i>	<i>55.70</i>	<i>34122</i>	<i>57.31</i>	<i>31993</i>	<i>58.92</i>

MAXIMUM RPM: Class I — 2132 Class II — 2132 Class III — 2717

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 32B6

Wheel Dia.: 32"
Tip Speed: 8.38 x RPM

Outlet Area: 5.672 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
935	45	13467	2.98	12351	3.12	11067	3.20																
1109	45	16639	4.79	15811	5.01	14870	5.17	12675	5.37														
1270	45	19471	7.02	18794	7.30	18055	7.54	16362	7.88	14373	8.06												
1398	45	21682	9.23	21086	9.55	20452	9.84	19022	10.30	17396	10.61												
1600	45	25125	13.60	24621	13.98	24094	14.34	22960	14.98	21675	15.47	18702	16.08										
1761	45	27842	17.95	27392	18.38	26926	18.79	25941	19.55	24861	20.19	22382	21.10										
1897	45	30124	22.28	29710	22.75	29285	23.20	28395	24.06	27440	24.82	25263	25.96	22772	26.71								
2029	45	32329	27.11	31946	27.62	31553	28.12	30737	29.05	29874	29.92	27943	31.30	25748	32.29	23248	32.85						
2233	45	35725	35.90	35380	36.47	35028	37.02	34303	38.09	33546	39.09	31907	40.84	30047	42.16	28007	43.17	25722	43.77				
2406	45	38594	44.71	38276	45.32	37953	45.93	37290	47.10	36602	48.21	35140	50.24	33515	51.89	31719	53.16	29785	54.17	27637	54.77		
2556	45	41077	53.43	40779	54.09	40476	54.74	39858	55.99	39220	57.20	37877	59.44	36416	61.37	34802	62.91	33066	64.17	31200	65.14	29145	65.70
2754	45	44347	66.61	44072	67.32	43793	68.02	43225	69.39	42642	70.72	41426	73.22	40130	75.49	38720	77.41	37191	78.97	35571	80.31	33845	81.37

MAXIMUM RPM: Class I — 2132 Class II — 2132 Class III — 2947

TCVX 32B7

Wheel Dia.: 32"
Tip Speed: 8.38 x RPM

Outlet Area: 5.672 ft²
Fan Efficiency Grade: FEG67

RPM	ANG	0.5" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
921	45	12783	3.00	10972	3.29																		
1092	45	15665	4.81	14360	5.25																		
1251	45	18271	7.06	17187	7.59	14277	8.25																
1377	45	20307	9.28	19350	9.89	17113	10.86																
1576	45	23488	13.68	22677	14.40	20885	15.68	18558	16.48														
1734	45	25992	18.05	25267	18.86	23693	20.33	21905	21.54	19280	21.93												
1868	45	28106	22.42	27440	23.30	26012	24.94	24442	26.36	22528	27.36	19669	27.29										
1986	45	29961	26.82	29339	27.76	28019	29.53	26583	31.12	24974	32.43	22776	32.99										
2186	45	33095	35.54	32536	36.59	31362	38.59	30102	40.42	28756	42.07	27235	43.42	25210	44.00								
2355	45	35736	44.25	35220	45.39	34145	47.57	33005	49.62	31795	51.50	30504	53.18	29025	54.52	27077	55.02	24668	54.65				
2503	45	38044	52.97	37560	54.18	36559	56.53	35505	58.75	34391	60.82	33223	62.72	31961	64.41	30494	65.68	28579	66.04	26303	65.64		
2696	45	41048	65.98	40601	67.29	39681	69.85	38721	72.29	37714	74.59	36660	76.76	35561	78.77	34377	80.55	33028	81.95	31336	82.55	29268	82.25
2713	45	41312	67.22	40869	68.54	39955	71.11	39002	73.57	38004	75.90	36959	78.08	35870	80.12	34703	81.94	33384	83.39	31747	84.10	29723	83.88

MAXIMUM RPM: Class I — 2132 Class II — 2132 Class III — 2713

TCVX 36B5

Wheel Dia.: 36"
Tip Speed: 9.42 x RPM

Outlet Area: 7.166 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		1" SP		1.5" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
793	45	15343	2.93																				
944	45	19383	4.75	16525	5.14																		
1081	45	22855	6.94	20559	7.48	17847	7.84																
1190	45	25549	9.11	23582	9.77	21268	10.23																
1362	45	29726	13.38	28107	14.22	26253	14.87	24193	15.38														
1500	45	33032	17.67	31603	18.62	30027	19.44	28253	20.07	24274	21.02												
1615	45	35766	21.87	34462	22.93	33053	23.87	31492	24.64	28001	25.84												
1717	45	38179	26.13	36967	27.27	35673	28.31	34268	29.21	31097	30.59	27512	31.57										
1913	45	42791	35.82	41722	37.12	40598	38.33	39411	39.45	36758	41.25	33814	42.67										
2061	45	46257	44.57	45274	45.98	44249	47.32	43177	48.57	40841	50.74	38212	52.41	35400	53.84								
2190	45	49269	53.27	48350	54.78	47398	56.23	46408	57.60	44287	60.06	41911	62.01	39351	63.65	36614	65.04						
2360	45	53229	66.40	52382	68.04	51509	69.62	50608	71.14	48707	73.95	46621	76.32	44335	78.25	41932	79.98	39369	81.43				
2597	45	58733	88.09	57970	89.91	57188	91.68	56385	93.40	54711	96.64	52928	99.58	50989	102.06	48905	104.16	46733	106.09	44463	107.82	42007	109.10

MAXIMUM RPM: Class I — 1895 Class II — 1895 Class III — 2740

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 36B6

Wheel Dia.: 36"
Tip Speed: 9.42 x RPM

Outlet Area: 7.166 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		1" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP		10" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
1044	45	21989	6.65	20129	7.27																		
1195	45	25613	9.71	24112	10.51	20112	11.50																
1315	45	28451	12.74	27136	13.66	23879	14.99																
1506	45	32918	18.79	31814	19.88	29270	21.71	26026	22.89														
1657	45	36421	24.76	35437	25.99	33252	28.17	30610	29.76	27318	30.76												
1785	45	39376	30.74	38474	32.08	36509	34.52	34226	36.47	31507	37.88												
2004	45	44410	43.09	43619	44.62	41933	47.48	40067	50.01	37932	52.00	35484	53.55	32570	54.51								
2130	45	47296	51.52	46558	53.16	44996	56.25	43296	59.06	41399	61.43	39250	63.28	36813	64.75								
2294	45	51045	64.08	50364	65.85	48937	69.24	47408	72.38	45745	75.19	43898	77.51	41844	79.41	39548	80.94	36898	81.84				
2525	45	56314	85.03	55700	87.00	54426	90.79	53079	94.37	51647	97.71	50106	100.70	48420	103.23	46580	105.37	44578	107.21	42328	108.56		
2602	45	58068	92.92	57473	94.95	56242	98.88	54946	102.61	53575	106.10	52111	109.29	50522	112.06	48793	114.40	46924	116.42	44870	118.10	42570	119.22

MAXIMUM RPM: Class I — 1895 Class II — 1895 Class III — 2602

TCVX 42B4

Wheel Dia.: 42"
Tip Speed: 11.00 x RPM

Outlet Area: 9.793 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
784	45	24039	4.96	21603	5.23																		
897	45	28722	7.21	26703	7.55	24560	7.86																
987	45	32304	9.43	30578	9.84	28666	10.18																
1130	45	37851	13.83	36439	14.34	34899	14.79	31533	15.58														
1244	45	42190	18.21	40944	18.78	39624	19.32	36678	20.24	33580	21.11												
1340	45	45806	22.55	44668	23.18	43479	23.79	40869	24.85	38019	25.77	35097	26.70										
1424	45	48947	26.88	47890	27.56	46791	28.22	44426	29.41	41799	30.42	39099	31.42										
1568	45	54294	35.56	53350	36.33	52376	37.07	50326	38.46	48078	39.69	45658	40.78	43206	41.88	40663	42.93						
1690	45	58797	44.25	57929	45.08	57039	45.90	55183	47.45	53198	48.87	51038	50.12	48773	51.28	46500	52.47	44150	53.62				
1796	45	62693	52.88	61882	53.77	61053	54.64	59335	56.32	57524	57.90	55574	59.32	53493	60.59	51353	61.82	49213	63.10				
1934	45	67747	65.72	67000	66.68	66238	67.63	64669	69.48	63031	71.23	61307	72.87	59462	74.36	57520	75.72	55532	77.04	51525	79.76		
2129	45	74861	87.21	74188	88.28	73505	89.34	72104	91.41	70656	93.40	69154	95.31	67585	97.11	65923	98.77	64181	100.30	60580	103.22	56941	106.23

MAXIMUM RPM: Class I — 1635 Class II — 1635 Class III — 2402

TCVX 42B5

Wheel Dia.: 42"
Tip Speed: 11.00 x RPM

Outlet Area: 9.793 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		4" SP		5" SP		6" SP		7" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
747	45	24296	4.78	21900	5.03																		
855	45	28858	6.90	27052	7.29	24925	7.57																
942	45	32385	8.98	30937	9.51	29106	9.86																
1078	45	37766	13.04	36605	13.71	35302	14.29	32006	15.03														
1186	45	41967	17.03	40954	17.80	39857	18.51	37177	19.55	34136	20.34												
1278	45	45512	21.04	44595	21.88	43617	22.68	41381	24.03	38557	24.86	35834	25.80										
1358	45	48576	25.00	47727	25.91	46832	26.78	44857	28.34	42388	29.41	39704	30.28	37176	31.31								
1495	45	53792	32.91	53038	33.94	52252	34.93	50562	36.77	48636	38.33	46286	39.37	43848	40.33								
1610	45	58148	40.74	57457	41.86	56742	42.95	55226	45.01	53567	46.86	51635	48.34	49379	49.37	45005	51.66						
1712	45	61998	48.67	61355	49.87	60692	51.04	59299	53.28	57798	55.35	56144	57.17	54197	58.54	49946	60.73						
1844	45	66966	60.40	66375	61.70	65769	62.98	64505	65.44	63163	67.76	61725	69.91	60137	71.78	56294	74.31	52463	76.91				
2029	45	73907	79.85	73376	81.30	72833	82.72	71713	85.49	70538	88.14	69301	90.66	67990	93.01	64973	96.84	61365	99.38	57907	102.29		
2186	45	79782	99.35	79293	100.92	78794	102.47	77770	105.49	76705	108.41	75594	111.22	74430	113.89	71900	118.71	68844	122.18	65455	124.81	62276	128.04

MAXIMUM RPM: Class I — 1635 Class II — 1635 Class III — 2440

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 42B7

Wheel Dia.: 42"
Tip Speed: 11.00 x RPM

Outlet Area: 9.793 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5" SP		1" SP		1.5" SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP		9" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
757	45	24227	6.25	21476	6.86																		
867	45	28400	9.12	26198	9.92	23397	10.45																
954	45	31638	11.94	29709	12.87	27508	13.63	24431	13.95														
1092	45	36701	17.54	35085	18.67	33319	19.66	31338	20.49														
1202	45	40694	23.12	39258	24.39	37714	25.55	36052	26.59	31808	27.89												
1295	45	44049	28.69	42735	30.07	41339	31.37	39850	32.55	36453	34.46	31337	34.79										
1376	45	46959	34.22	45734	35.71	44444	37.11	43077	38.42	40078	40.67	36072	41.86										
1515	45	51932	45.31	50834	46.97	49689	48.56	48492	50.07	45923	52.80	42997	54.99	39009	55.87								
1724	45	59374	66.20	58422	68.11	57440	69.97	56425	71.76	54283	75.12	51984	78.13	49434	80.65	46271	82.21	42106	82.13				
1898	45	65547	87.88	64689	90.00	63809	92.08	62906	94.09	61022	97.94	59020	101.49	56899	104.71	54573	107.47	51822	109.42	48282	109.82		
1987	45	68698	100.61	67881	102.85	67045	105.03	66190	107.16	64413	111.24	62536	115.06	60558	118.58	58447	121.73	56093	124.33	53235	125.88	49669	125.90

MAXIMUM RPM: Class I — 1635 Class II — 1635 Class III — 1987

TCVX 48B4

Wheel Dia.: 48"
Tip Speed: 12.57 x RPM

Outlet Area: 12.76 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
733	45	34146	7.28	31130	7.65	28078	8.01																
807	45	38586	9.47	36072	9.97	33273	10.36																
924	45	45354	13.74	43421	14.47	41139	15.00	36289	15.90														
1017	45	50609	17.95	48937	18.80	47078	19.53	42696	20.54														
1095	45	54960	22.09	53451	23.05	51825	23.91	47955	25.15	43875	26.23												
1164	45	58777	26.26	57385	27.30	55904	28.26	52492	29.78	48601	30.88	44765	32.03										
1281	45	65199	34.49	63966	35.67	62671	36.78	59842	38.75	56479	40.14	52952	41.37	49470	42.63								
1380	45	70596	42.70	69468	44.00	68295	45.23	65784	47.49	62917	49.31	59654	50.64	56418	52.00	53168	53.34						
1467	45	75316	50.93	74267	52.32	73181	53.66	70882	56.16	68354	58.33	65441	59.96	62328	61.31	59319	62.80	56230	64.19				
1580	45	81422	63.15	80459	64.66	79468	66.13	77391	68.91	75163	71.44	72688	73.57	69908	75.20	67014	76.66	64221	78.26				
1739	45	89979	83.47	89115	85.16	88230	86.81	86395	89.97	84457	92.94	82400	95.66	80140	97.98	77642	99.83	75014	101.42	69903	104.89		
1874	45	97219	103.87	96423	105.70	95612	107.50	93938	110.97	92188	114.28	90351	117.38	88410	120.24	86289	122.69	83979	124.69	79118	128.19	74415	131.99

MAXIMUM RPM: Class I — 1431 Class II — 1431 Class III — 2219

TCVX 48B6

Wheel Dia.: 48"
Tip Speed: 12.57 x RPM

Outlet Area: 12.76 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		4" SP		5" SP		6" SP		7" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
759	45	37920	10.47	36175	11.04	34094	11.47																
836	45	42386	13.69	40893	14.37	39205	14.95	35148	15.77														
957	45	49279	20.01	48043	20.84	46717	21.60	43617	22.83	39974	23.72												
1053	45	54675	26.26	53583	27.19	52431	28.08	49875	29.64	46811	30.79	43431	31.73										
1135	45	59250	32.56	58255	33.58	57214	34.55	54967	36.35	52361	37.81	49374	38.93	46178	39.89								
1206	45	63192	38.77	62267	39.87	61305	40.92	59254	42.90	56962	44.63	54312	45.97	51428	47.10								
1327	45	69878	51.13	69050	52.35	68197	53.54	66403	55.81	64469	57.90	62320	59.71	59898	61.18	54565	63.56						
1434	45	75764	64.08	75007	65.41	74229	66.71	72610	69.22	70889	71.58	69044	73.75	67001	75.63	62336	78.55	57199	80.87				
1569	45	83166	83.35	82480	84.82	81780	86.26	80334	89.06	78816	91.74	77217	94.28	75519	96.64	71645	100.50	67259	103.49	62512	105.95		
1700	45	90327	105.46	89699	107.06	89060	108.64	87746	111.72	86381	114.69	84957	117.55	83466	120.26	80203	125.11	76430	128.88	72331	132.04	67934	134.67

MAXIMUM RPM: Class I — 1431 Class II — 1431 Class III — 1849

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 48B7

Wheel Dia.: 48"
Tip Speed: 12.57 x RPM

Outlet Area: 12.76 ft²
Fan Efficiency Grade: FEG71

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		3" SP		4" SP		5" SP		6" SP		7" SP		8" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
706	45	34289	9.48	32677	9.98	30879	10.39																
777	45	38317	12.39	36913	12.97	35392	13.48	31711	14.21														
890	45	44614	18.17	43441	18.87	42199	19.53	39464	20.64	36066	21.39												
979	45	49507	23.85	48466	24.64	47376	25.39	45030	26.75	42382	27.85												
1055	45	53654	29.56	52702	30.43	51713	31.26	49610	32.80	47310	34.13	41382	35.76										
1121	45	57237	35.22	56350	36.15	55434	37.05	53501	38.74	51417	40.25	46492	42.52										
1234	45	63342	46.54	62546	47.58	61730	48.59	60029	50.52	58222	52.31	54215	55.34	49067	57.16								
1329	45	68450	57.78	67718	58.91	66970	60.01	65421	62.13	63793	64.14	60258	67.69	56150	70.43	50640	71.54						
1534	45	79424	87.98	78798	89.29	78162	90.59	76858	93.12	75508	95.56	72648	100.10	69542	104.11	66077	107.41	61886	109.60	56547	109.97		
1652	45	85718	109.42	85139	110.85	84553	112.26	83356	115.01	82124	117.69	79539	122.75	76770	127.37	73783	131.41	70452	134.76	66461	136.95	61520	137.38

MAXIMUM RPM: Class I — 1431 Class II — 1431 Class III — 1804

TCVX 54B3

Wheel Dia.: 54"
Tip Speed: 14.14 x RPM

Outlet Area: 16.12 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		2.5' SP		3" SP		3.5' SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
707	45	45074	9.90	41237	10.42	37241	10.84																
810	45	53479	14.41	50445	15.14	47028	15.70																
891	45	59883	18.79	57295	19.69	54368	20.40	48112	21.54														
960	45	65250	23.16	62926	24.18	60373	25.05	54633	26.38														
1020	45	69867	27.49	67726	28.60	65426	29.60	60167	31.13	54689	32.39												
1123	45	77715	36.14	75821	37.41	73827	38.58	69382	40.56	64427	42.08	59405	43.40										
1210	45	84284	44.75	82556	46.14	80752	47.46	76847	49.80	72404	51.61	67798	53.18										
1286	45	89989	53.33	88382	54.83	86715	56.26	83166	58.89	79176	61.03	74845	62.77	70542	64.40								
1385	45	97383	66.09	95909	67.73	94389	69.31	91191	72.26	87706	74.85	83844	76.95	79796	78.78	75808	80.52						
1524	45	107710	87.27	106387	89.10	105032	90.88	102211	94.27	99222	97.39	95979	100.12	92454	102.41	88778	104.43	85146	106.39				
1642	45	116438	108.51	115221	110.50	113978	112.44	111409	116.18	108714	119.69	105868	122.92	102788	125.74	99495	128.17	96083	130.35	89321	134.47		

MAXIMUM RPM: Class I — 1273 Class II — 1273 Class III — 2075

TCVX 54B5

Wheel Dia.: 54"
Tip Speed: 14.14 x RPM

Outlet Area: 16.12 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		2.5' SP		3" SP		3.5' SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
619	45	43639	9.39	40086	9.88	36453	10.36																
709	45	51511	13.57	48947	14.38	45698	14.88																
780	45	57540	17.64	55395	18.63	52824	19.38	46927	20.50														
840	45	62558	21.67	60645	22.78	58500	23.74	53066	24.97														
893	45	66948	25.71	65197	26.92	63285	28.02	58487	29.54	53392	30.87												
983	45	74335	33.69	72797	35.08	71155	36.37	67363	38.52	62610	39.86	58086	41.42										
1059	45	80524	41.63	79126	43.15	77651	44.59	74402	47.18	70348	48.97	65916	50.40	61749	52.12								
1125	45	85870	49.49	84573	51.12	83215	52.69	80275	55.57	76822	57.88	72662	59.40	68622	61.08	64677	62.88						
1212	45	92887	61.30	91701	63.08	90469	64.81	87842	68.05	84932	70.92	81437	73.02	77509	74.58	73798	76.44	70146	78.40				
1334	45	102682	80.89	101621	82.88	100528	84.82	98231	88.52	95756	91.95	93034	94.98	89832	97.26	86270	98.98	82814	100.89				
1438	45	111000	100.61	110026	102.78	109027	104.89	106946	108.98	104735	112.83	102369	116.39	99761	119.51	96746	121.88	93443	123.74	87114	128.02		

MAXIMUM RPM: Class I — 1273 Class II — 1273 Class III — 1800

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 54B6

Wheel Dia.: 54"
Tip Speed: 14.14 x RPM

Outlet Area: 16.12 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		2.5' SP		3" SP		3.5' SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
693	45	49538	14.11	47367	14.88	44826	15.46	38912	16.30														
794	45	57850	20.61	56079	21.57	54144	22.42	49529	23.65	44224	24.56												
874	45	64326	27.01	62769	28.11	61110	29.13	57307	30.77	52855	31.96												
941	45	69700	33.32	68284	34.53	66791	35.67	63493	37.66	59591	39.10	55313	40.30										
1000	45	74405	39.65	73091	40.95	71716	42.19	68745	44.45	65301	46.21	61423	47.57	57258	48.74								
1101	45	82412	52.29	81241	53.75	80027	55.16	77452	57.80	74615	60.11	71383	61.91	67847	63.39	64119	64.74						
1186	45	89116	64.85	88041	66.44	86934	67.98	84609	70.92	82111	73.60	79346	75.89	76260	77.72	72958	79.30	69509	80.77				
1301	45	98148	84.87	97180	86.64	96188	88.36	94127	91.68	91948	94.80	89626	97.67	87084	100.14	84296	102.18	81321	103.95	75016	107.13		
1402	45	106053	105.59	105162	107.51	104253	109.39	102374	113.03	100408	116.50	98340	119.77	96147	122.78	93765	125.40	91186	127.62	85626	131.40	79621	134.61

MAXIMUM RPM: Class I — 1273 Class II — 1273 Class III — 1780

TCVX 60B4

Wheel Dia.: 60"
Tip Speed: 15.71 x RPM

Outlet Area: 19.87 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		2.5' SP		3" SP		3.5' SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
548	45	49599	9.77	44556	10.30																		
628	45	59200	14.17	55230	14.94	50805	15.54																
691	45	66429	18.42	63203	19.44	59261	20.14																
744	45	72390	22.59	69564	23.78	66216	24.70	58805	26.13														
791	45	77612	26.79	75037	28.11	72132	29.23	65165	30.77														
870	45	86288	35.00	84037	36.52	81605	37.90	75727	39.93	69393	41.60												
938	45	93681	43.31	91644	44.99	89476	46.55	84507	49.15	78549	50.90	72804	52.79										
996	45	99946	51.38	98059	53.19	96069	54.90	91673	57.93	86306	60.03	80741	61.92										
1073	45	108218	63.60	106496	65.58	104697	67.48	100820	70.96	96302	73.74	91080	75.73	86004	77.85								
1182	45	119861	84.06	118326	86.28	116737	88.43	113372	92.48	109694	96.10	105419	98.93	100656	101.09	96008	103.39	91462	105.76				
1273	45	129535	104.23	128126	106.64	126675	109.00	123634	113.49	120373	117.63	116789	121.27	112671	124.08	108225	126.38	103901	128.85				

MAXIMUM RPM: Class I — 1220 Class II — 1220 Class III — 1615

TCVX 60B5

Wheel Dia.: 60"
Tip Speed: 15.71 x RPM

Outlet Area: 19.87 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5' SP		0.75' SP		1" SP		1.5' SP		2" SP		2.5' SP		3" SP		3.5' SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
519	45	49082	9.56	44149	10.07																		
595	45	58474	13.85	54735	14.65	50378	15.21																
654	45	65460	17.92	62456	18.98	58647	19.66																
705	45	71384	22.04	68754	23.26	65616	24.21	58360	25.60														
749	45	76434	26.07	74039	27.42	71336	28.58	64535	30.06														
825	45	85060	34.15	82975	35.71	80714	37.14	75158	39.22	68933	40.82												
888	45	92142	42.04	90253	43.75	88236	45.36	83595	48.05	77761	49.71	72186	51.64										
944	45	98399	50.01	96652	51.87	94806	53.62	90724	56.76	85595	58.87	80106	60.66	74901	62.75								
1017	45	106512	61.87	104919	63.90	103253	65.85	99649	69.43	95433	72.33	90338	74.23	85352	76.29	80514	78.54						
1119	45	117787	81.46	116366	83.73	114894	85.92	111768	90.07	108341	93.81	104319	96.73	99653	98.78	95068	100.97	90700	103.48				
1206	45	127362	101.17	126059	103.64	124717	106.04	121898	110.65	118864	114.91	115536	118.70	111631	121.57	107264	123.72	102995	126.05				

MAXIMUM RPM: Class I — 1220 Class II — 1220 Class III — 1628

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 66B3

Wheel Dia.: 66"
Tip Speed: 17.28 x RPM

Outlet Area: 24.08 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
563	45	66773	14.69	61130	15.44	55398	16.10																
620	45	75440	19.14	70690	20.14	65434	20.90																
668	45	82546	23.52	78410	24.73	73632	25.61																
710	45	88669	27.86	84937	29.24	80653	30.31	71554	32.02														
782	45	99016	36.51	95769	38.13	92216	39.54	84023	41.58														
842	45	107531	44.98	104590	46.79	101452	48.44	94200	50.94	86524	52.97												
895	45	114992	53.50	112272	55.47	109400	57.29	102939	60.28	95656	62.49	88478	64.58										
964	45	124641	66.15	122160	68.31	119564	70.36	113919	73.95	107388	76.60	100656	78.93										
1061	45	<i>138109</i>	<i>87.15</i>	<i>135896</i>	<i>89.59</i>	<i>133603</i>	<i>91.92</i>	<i>128738</i>	<i>96.22</i>	<i>123303</i>	<i>99.79</i>	<i>117234</i>	<i>102.52</i>	<i>111123</i>	<i>105.09</i>	<i>105059</i>	<i>107.53</i>						
1143	45	<i>149428</i>	<i>108.09</i>	<i>147398</i>	<i>110.76</i>	<i>145307</i>	<i>113.33</i>	<i>140916</i>	<i>118.15</i>	<i>136177</i>	<i>122.45</i>	<i>130868</i>	<i>125.89</i>	<i>125157</i>	<i>128.71</i>	<i>119508</i>	<i>131.49</i>	<i>113902</i>	<i>134.14</i>				

MAXIMUM RPM: Class I — 1042 Class II — 1042 Class III — 1531

TCVX 66B4

Wheel Dia.: 66"
Tip Speed: 17.28 x RPM

Outlet Area: 24.08 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
532	45	65824	14.34	60381	15.07	54768	15.78																
586	45	74264	18.66	69825	19.69	64654	20.40																
631	45	81121	22.87	77306	24.13	72693	24.98																
671	45	87126	27.10	83696	28.54	79661	29.62	70708	31.33														
739	45	97191	35.46	94219	37.15	90946	38.62	83002	40.57	74894	42.55												
796	45	105528	43.70	102845	45.58	99960	47.29	93105	49.81	85529	51.81												
846	45	112786	51.92	110308	53.96	107675	55.86	101668	58.95	94530	61.01	87508	63.32										
911	45	122160	64.10	119903	66.34	117531	68.47	112337	72.22	106085	74.81	99432	77.07	92867	79.54								
1003	45	135339	84.46	133331	86.98	131243	89.41	126783	93.88	121748	97.60	115874	100.20	109832	102.68	103918	105.45						
1081	45	<i>146452</i>	<i>104.83</i>	<i>144613</i>	<i>107.59</i>	<i>142713</i>	<i>110.26</i>	<i>138703</i>	<i>115.28</i>	<i>134350</i>	<i>119.78</i>	<i>129368</i>	<i>123.29</i>	<i>123792</i>	<i>125.91</i>	<i>118206</i>	<i>128.64</i>	<i>112731</i>	<i>131.64</i>				

MAXIMUM RPM: Class I — 1042 Class II — 1042 Class III — 1551

TCVX 72B2

Wheel Dia.: 72"
Tip Speed: 18.85 x RPM

Outlet Area: 28.67 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
563	45	84812	19.80	78403	20.82	71577	21.62																
607	45	93206	24.39	87526	25.60	81292	26.56																
645	45	100324	28.87	95160	30.26	89453	31.37																
710	45	112297	37.78	107807	39.44	102914	40.84	92255	43.03														
764	45	122100	46.46	118024	48.33	113672	49.98	104009	52.58														
812	45	130731	55.24	126958	57.27	122983	59.13	114199	62.15	104785	64.53												
875	45	141969	68.38	138526	70.63	134934	72.73	127142	76.33	118548	79.15	109674	81.50										
963	45	<i>157533</i>	<i>90.07</i>	<i>154460</i>	<i>92.61</i>	<i>151281</i>	<i>95.02</i>	<i>144546</i>	<i>99.40</i>	<i>137141</i>	<i>102.98</i>	<i>129238</i>	<i>105.95</i>	<i>121186</i>	<i>108.52</i>								
1038	45	<i>170706</i>	<i>111.88</i>	<i>167887</i>	<i>114.66</i>	<i>164986</i>	<i>117.33</i>	<i>158914</i>	<i>122.30</i>	<i>152357</i>	<i>126.59</i>	<i>145273</i>	<i>130.15</i>	<i>137903</i>	<i>133.27</i>	<i>130394</i>	<i>135.97</i>						

MAXIMUM RPM: Class I — 955 Class II — 955 Class III — 1459

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

Arrangement 9

TCVX 72B3

Wheel Dia.: 72"
Tip Speed: 18.85 x RPM

Outlet Area: 28.67 ft²
Fan Efficiency Grade: FEG75

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
531	45	83335	19.33	77108	20.33	70566	21.18																
572	45	91379	23.70	85992	24.96	79859	25.88																
608	45	98312	28.05	93512	29.52	87899	30.58																
669	45	109863	36.60	105752	38.37	101097	39.80	90694	41.98														
721	45	119568	45.15	115869	47.14	111843	48.89	102390	51.42	92740	53.67												
766	45	127889	53.57	124478	55.74	120833	57.72	112354	60.73	103247	63.18												
825	45	138715	66.15	135613	68.54	132340	70.78	125007	74.52	116542	77.22	108182	79.85										
908	45	153822	87.03	151065	89.74	148190	92.31	142003	96.96	134842	100.52	127073	103.39	119504	106.30								
979	45	<i>166659</i>	<i>108.12</i>	<i>164138</i>	<i>111.08</i>	<i>161528</i>	<i>113.92</i>	<i>155992</i>	<i>119.20</i>	<i>149846</i>	<i>123.68</i>	<i>142878</i>	<i>127.10</i>	<i>135684</i>	<i>130.19</i>	<i>128669</i>	<i>133.31</i>						

MAXIMUM RPM: Class I — 955 Class II — 955 Class III — 1478

TCVX 84B2

Wheel Dia.: 84"
Tip Speed: 21.99 x RPM

Outlet Area: 38.93 ft²
Fan Efficiency Grade: FEG80

RPM	ANG	0.5" SP		0.75" SP		1" SP		1.5" SP		2" SP		2.5" SP		3" SP		3.5" SP		4" SP		5" SP		6" SP	
		CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP	CFM	BHP
512	45	121347	29.68	112877	31.21	103801	32.35																
564	45	136723	38.85	129385	40.70	121400	42.22																
607	45	149195	47.75	142574	49.83	135435	51.65	120065	54.31														
646	45	160365	56.92	154267	59.22	147765	61.28	133617	64.51														
695	45	174253	70.06	168690	72.61	162840	74.95	150094	78.87	136503	81.66												
766	45	194157	92.54	189211	95.43	184072	98.16	173063	103.00	161076	106.84	148536	109.62										
825	45	<i>210547</i>	<i>114.58</i>	<i>206012</i>	<i>117.76</i>	<i>201330</i>	<i>120.78</i>	<i>191439</i>	<i>126.32</i>	<i>180714</i>	<i>131.00</i>	<i>169437</i>	<i>134.74</i>										

MAXIMUM RPM: Class I — 819 Class II — 819 Class III — 1291

Performance certified is for installation Type B: Free inlet, ducted outlet.
Power rating (BHP) does not include transmission losses.
Performance ratings do not include the effects of appurtenances (accessories).

Regular type face = Class I
Bold type face = Class II
Italic type face = Class III

DIMENSIONAL DATA

FAN SIZE	ARRANGEMENT 9 — HUB RATIO														
	2		3		4		5		6		7		8		
	CL I & II	CL III	CL I & II	CL III	CL I & II	CL III	CL I & II	CL III	CL I & II	CL III	CL I & II	CL III	CL I & II	CL III	
18	—	—	—	—	—	—	—	—	—	—	—	—	—	32.00	36.25
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	36.25	44.00	—	—	32.00	44.00
28	—	—	—	—	—	—	—	32.00	44.00	—	—	—	—	40.25	47.00
32	—	—	—	—	36.25	47.00	—	—	—	47.00	55.00	47.00	55.00	—	—
36	—	—	—	—	—	—	—	40.25	55.00	47.00	60.25	—	—	—	—
42	—	—	—	—	—	47.00	60.25	47.00	60.25	—	—	—	55.00	60.25	—
48	—	—	—	—	—	47.00	60.25	—	—	—	55.00	60.25	60.25	60.25	—
54	—	—	47.00	60.25	—	—	—	55.00	60.25	60.25	60.25	—	—	—	—
60	—	—	—	—	—	55.00	60.25	60.25	60.25	—	—	—	—	—	—
66	—	—	55.00	60.25	60.25	60.25	—	—	—	—	—	—	—	—	—
72	55.00	60.25	60.25	60.25	—	—	—	—	—	—	—	—	—	—	—
84	60.25	60.25	—	—	—	—	—	—	—	—	—	—	—	—	—

AC13956D
AC13957D
AC13961G
AC13962H
AC16151B
AC16152C
AC16156C
AC16157D
AC1001172
AC1001173
AC1001176
AC1001177
AC1001178
AC1001179

FAN SIZE	ARRANGEMENT 4 — HUB RATIO																				
	2			3			4			5			6			7			8		
	CL I	CL II	CL III	CL I	CL II	CL III	CL I	CL II	CL III	CL I	CL II	CL III	CL I	CL II	CL III	CL I	CL II	CL III	CL I	CL II	CL III
18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22.00	27.00	27.00
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	—	27.00	27.00	32.00	—	—	—	—	—	—	29.00	35.00	36.25
32	—	—	—	—	—	—	27.00	29.00	32.00	—	—	—	35.00	36.25	40.25	35.00	36.25	40.25	—	—	—
36	—	—	—	—	—	—	—	—	—	35.00	40.25	40.25	35.00	40.25	40.25	—	—	—	—	—	—
42	—	—	—	—	—	—	36.25	42.50	42.50	40.25	42.50	42.50	—	—	—	—	—	—	42.50	49.50	57.00
48	—	—	—	—	—	—	42.50	45.00	45.00	—	—	—	42.50	45.00	57.00	—	—	—	42.50	50.50	66.00
54	—	—	—	40.25	47.00	47.00	—	—	—	45.00	53.25	57.00	45.00	50.50	66.00	—	—	—	—	—	—
60	—	—	—	—	—	—	45.00	53.25	57.00	45.00	63.00	66.00	—	—	—	—	—	—	—	—	—
66	—	—	—	45.00	53.25	57.00	45.00	63.00	66.00	—	—	—	—	—	—	—	—	—	—	—	—
72	45.00	53.25	57.00	45.00	63.00	66.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
84	45.00	63.00	66.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

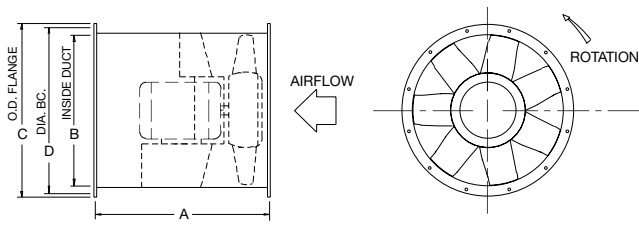
FAN SIZE	B	C (MAX.)	D	G (MAX.)		
				CL I	CL II	CL III
18	18.16	21.16	19.88	27.50	29.13	29.13
21	21.19	24.19	22.88	31.75	31.88	31.88
24	24.19	27.19	25.88	34.50	33.75	33.75
28	28.25	31.25	30.00	38.25	39.63	39.63
32	32.25	35.25	34.00	41.00	41.56	41.56
36	36.25	40.25	38.00	45.25	47.13	47.13
42	42.38	46.38	44.63	49.50	52.75	52.75
48	48.38	53.38	50.63	53.25	56.88	56.88
54	54.38	59.38	56.63	59.00	62.88	62.88
60	60.38	66.38	63.38	60.25	66.44	66.44
66	66.44	72.44	69.38	64.00	69.88	69.88
72	72.50	78.50	75.50	67.25	73.25	73.25
84	84.50	90.50	88.00	73.25	79.25	79.25

FAN SIZE	MAXIMUM MOTOR FRAME		
	CL I	CL II	CL III
18	215T	256T	256T
21	256T	256T	256T
24	256T	286T	286T
28	286T	326T	365T
32	286T	326T	405T
36	326T	365T	405T
42	326T	405T	445T
48	365T	405T	445T
54	365T	445T	445T
60	365T	445T	445T
66	365T	445T	445T
72	365T	445T	445T
84	365T	445T	445T

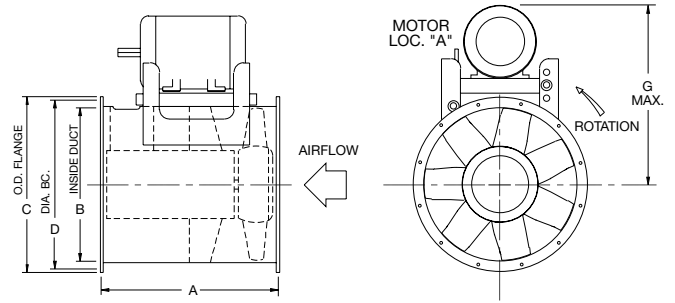
FAN SIZE	MAXIMUM MOTOR FRAME														MAXIMUM MOTOR FRAME							
	ARRANGEMENT 4 — CL I — HUB RATIO							ARRANGEMENT 4 — CL II — HUB RATIO							ARRANGEMENT 4 — CL III — HUB RATIO							
	2	3	4	5	6	7	8	2	3	4	5	6	7	8	2	3	4	5	6	7	8	
18	—	—	—	—	—	—	145T	—	—	—	—	—	—	184T	—	—	—	—	—	—	—	184T
21	—	—	—	—	—	145T	—	—	—	—	—	—	—	—	—	—	—	—	—	—	215T	—
24	—	—	—	—	184T	—	—	—	—	—	—	—	215T	—	—	—	—	—	—	215T	—	—
28	—	—	—	184T	—	215T	—	—	—	—	256T	—	286T	—	—	—	—	256T	—	286T	—	—
32	—	—	256T	—	256T	256T	—	—	—	256T	—	326T	326T	—	—	—	256T	—	326T	326T	—	—
36	—	—	—	256T	256T	—	—	—	—	—	326T	—	—	—	—	—	—	326T	—	—	—	—
42	—	—	286T	326T	—	326T	—	—	—	326T	365T	—	405T	—	—	—	—	326T	365T	—	405T	—
48	—	—	326T	—	326T	365T	—	—	—	365T	—	365T	405T	—	—	—	—	365T	—	445T	449T	—
54	—	326T	—	365T	365T	—	—	—	405T	—	445T	445T	—	—	—	405T	—	445T	449T	—	—	—
60	—	—	365T	365T	—	—	—	—	—	445T	449T	—	—	—	—	—	—	445T	449T	—	—	—
66	—	365T	365T	—	—	—	—	—	—	445T	449T	—	—	—	—	—	445T	449T	—	—	—	—
72	365T	365T	—	—	—	—	—	—	445T	449T	—	—	—	—	—	445T	449T	—	—	—	—	—
84	365T	—	—	—	—	—	—	—	449T	—	—	—	—	—	—	449T	—	—	—	—	—	—

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION. CERTIFIED DRAWINGS AVAILABLE UPON REQUEST.

ARR. 4 - HORIZONTAL



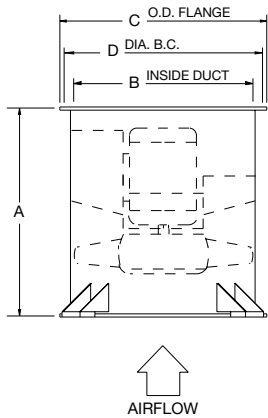
ARR. 9 - HORIZONTAL



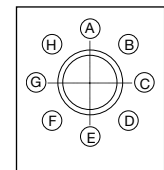
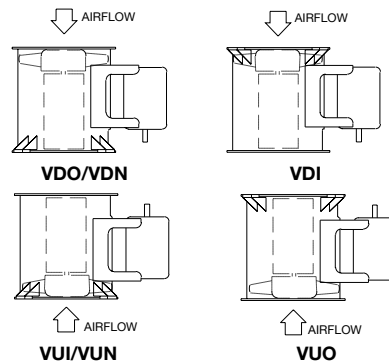
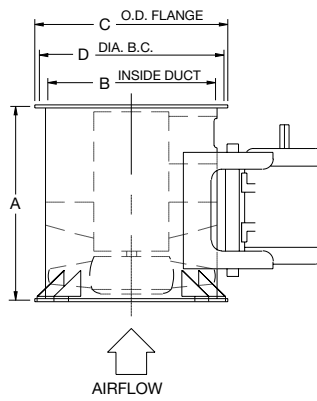
HORIZONTAL DISCHARGES

HOR = Horizontal - No Clips or Legs **HCH** = Horizontal Ceiling Hung with Suspension Clips **HBM** = Horizontal Base Mounted with Support Legs

ARR. 4 - VERTICAL



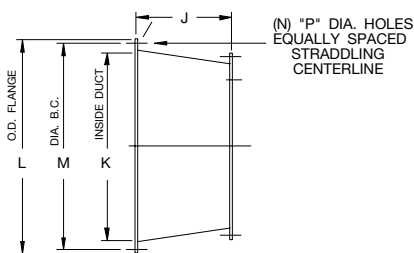
ARR. 9 - VERTICAL



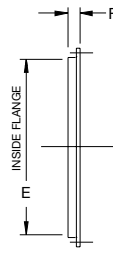
HORIZONTAL MOTOR LOCATIONS (VIEWED FROM FAN OUTLET)

VERTICAL DISCHARGES

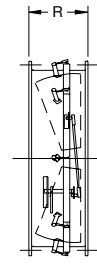
VDO = Vertical Down Floor Mounted With Legs **VDI** = Vertical Down Ceiling Hung With Legs **VUN** = Vertical Up Discharge Without Legs
VDN = Vertical Down Discharge Without Legs **VUI** = Vertical Up Floor Mounted With Legs **VUO** = Vertical Up Ceiling Hung With Legs



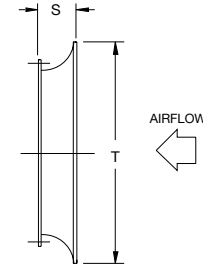
CONE



COMPANION FLANGE



VARIABLE INLET VANE



INLET BELL

FAN SIZE	COMPANION FLANGE		CONE						VARIABLE INLET VANE	INLET BELL		FAN AREA (FT ²)	CONE AREA (FT ²)
	E	F	J	K	L	M	N	P		R	S		
18	18.16	1.50	8.50	21.19	24.50	22.88	8	0.56	7.50	3.71	23.72	1.80	2.45
21	21.19	1.50	8.50	24.19	27.50	25.88	12	0.56	8.75	4.31	27.67	2.45	3.19
24	24.19	1.50	11.50	28.25	31.56	30.00	12	0.56	10.00	4.96	31.63	3.19	4.35
28	28.25	1.50	11.50	32.25	35.56	34.00	12	0.56	11.50	5.75	36.90	4.35	5.67
32	32.25	1.50	11.50	36.25	39.56	38.00	16	0.56	13.00	6.54	42.17	5.67	7.17
36	36.25	1.50	17.00	42.38	46.81	44.63	16	0.69	10.00	7.39	47.44	7.17	9.80
42	42.38	2.00	17.00	48.38	52.81	50.63	16	0.69	11.75	8.59	55.34	9.80	12.77
48	48.38	2.00	17.00	54.38	58.69	56.63	16	0.69	13.25	9.76	63.25	12.77	16.13
54	54.38	2.00	17.00	60.38	64.94	63.38	20	0.69	14.75	10.98	71.16	16.13	19.88
60	60.38	3.00	17.00	66.44	70.94	69.38	24	0.69	16.25	12.20	79.06	19.88	24.08
66	66.44	3.00	17.00	72.94	76.94	75.50	24	0.81	13.75	11.75	78.88	24.08	29.02
72	72.44	3.00	33.00	84.50	91.13	88.00	24	0.81	15.00	12.00	84.00	28.62	38.94
84	CF	CF	34.00	96.63	103.00	100.00	24	0.75	CF	12.00	96.19	38.94	50.79

CF = CONSULT FACTORY

DIMENSIONS ARE NOT TO BE USED FOR CONSTRUCTION.

AC13716L



Model TCVX

Fans shall be Model TCVX AXIFAN® Adjustable Blade Vaneaxial fans, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota. Fans shall be Arrangement 9, V-belt driven with the fan wheel mounted on a separate shaft and bearings supported completely within an enclosed tube isolated from the high velocity airstream or Arrangement 4, having the fan wheel mounted directly on the motor shaft with the wheel and motor assembly enclosed entirely within the fan housing. The blade pitch angle of attack shall be individually manually adjustable when the fan is stopped.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 205 (fan efficiency grade), 211 (air performance) and 311 (sound performance). Fans shall be tested in accordance with ANSI/AMCA Standard 210 (air performance) and 300 (sound performance) in an AMCA accredited laboratory. Fans shall be licensed to bear the AMCA certified ratings seal for both sound and air, and fan efficiency grade (FEG).

Model TCVX shall be available UL 705 listed. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

CONSTRUCTION — Fan housings shall be of welded one-piece 12-gauge ASTM A-569 hot rolled steel on sizes 18 and 21, 10-gauge hot rolled steel on sizes 24 through 36, 7-gauge hot rolled steel on sizes 42 through 60, and 1/4 inch hot rolled steel on sizes 66 through 84. The housing seam shall be continuously welded and ground smooth for less resistance to airflow. Inlet and outlet flanges are standard.

GUIDE VANES — Fan housings shall be fitted with eleven aerodynamically designed, stationary, straightening guide vanes on the air discharge side of the fan wheel. Vanes shall be welded to both the housing and the inner cylinder and act to straighten the swirling motion of the air downstream of the fan blades, thereby recovering rotational energy losses, improving efficiency and static pressure capability, reducing power requirements, and reducing fan noise generation.

WHEEL — The fan wheel shall be of individually manually adjustable blade pitch design and shall consist of a hub and blade assembly of permanent mold A356-T6 heat treated aluminum alloy castings. The wheel shall have blades of airfoil shape designed with a variable hub ratio system to allow the selected fan to operate at the highest efficiency possible. The blade pitch angle shall be completely adjustable through a service access door located in the fan housing. It shall never be necessary to remove the fan from the system or remove any connecting ductwork to manually adjust the blade pitch settings. Blade angle markings shall be permanently stamped into each blade and a corresponding index mark shall be permanently stamped into the hub near the blade sockets. The fan wheel assembly shall be machined to the proper diameter so that blade tip clearance shall be within tolerance necessary to insure certified fan performance. The fan wheel shall be secured to the fan/motor shaft with a Trantorque® or taperlock bushing. The blade angle is to be factory set at the blade angle required to achieve the specified flow rate and pressure. This blade angle shall be indicated on the fan nameplate.

SHAFT (ARR. 9) — Shafts shall be AISI 1040 or 1045 hot rolled steel, accurately turned, ground, polished, and ring gauged for accuracy. Shafts shall be sized for the first critical speed of at least 1.43 times the maximum speed.

BEARINGS (ARR. 9) — Bearings shall be heavy duty, grease lubricated, anti-friction ball or roller, self-aligning, pillow block type and selected for a minimum average bearing life (AFBMA L-50) in excess of 200,000 hours at the maximum fan RPM. All bearings shall be provided with pre-filled factory extended lubrication lines fitted with grease fittings terminating at the housing exterior.



Model TCVX

DRIVE (ARR. 9) — Fans shall be equipped with a (fixed/adjustable) pitch V-belt drive selected to operate at the required RPM. The V-belt drive is to consist of cast iron sheaves and anti-static conducting belts. Drives shall be selected with a (1.2/1.5) service factor based upon the required brake horsepower of the fan.

The complete fan shaft and bearing assembly is mounted within a steel fabricated inner cylinder. The V-belt drive assembly is extended through a two-piece belt fairing which is continuously welded to both the housing and inner cylinder, thus avoiding any direct contact between the belts and high velocity airstream. The belt fairing is to be an aerodynamically shaped tube designed to maximize fan efficiency, minimize air blockage and reduce noise generation.

MOTOR — Motors for Arrangement 9 fans shall be manufactured in accordance with current applicable standards. Motors shall be foot-mounted, NEMA standard (ODP, TEFC, Explosion-Proof), continuous duty, ball bearing type with class (B, F) insulation and of cast iron construction when commercially available.

Motors for Arrangement 4 fans shall be foot-mounted, NEMA standard, totally enclosed fan cooled (TEFC), continuous duty, ball bearing type with class “F” insulation and of cast iron construction when commercially available. For ease in wiring the motor, wiring connections shall be extended to an exterior conduit box located on the exterior of the fan casing. A duplicate motor nameplate is to be mounted on the exterior of the fan adjacent to the fan nameplate. External grease fittings with pre-filled factory extended grease leads shall be supplied for lubrication of the motor bearings on all motors that provide grease fittings. Motor bearings shall have a minimum of L-10 life as defined by AFBMA of at least 40,000 hours (200,000 hours average life).

FINISH — The entire fan assembly, excluding the shaft, shall be thoroughly degreased and deburred before application of a rust-preventative primer. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly. The fan shaft shall be coated with a petroleum-based rust protectant. Aluminum components shall be unpainted.

ACCESSORIES — When specified, accessories shall be provided by Twin City Fan & Blower to maintain one-source responsibility.

FACTORY RUN TEST — All fans with motors and drives mounted by Twin City Fan & Blower shall be completely assembled and test run as a unit at the specified operating speed prior to shipment. Each wheel shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 “Balance Quality and Vibration Levels for Fans” to Fan Application Category BV-3, Balance Quality Grade G6.3. Balance readings shall be taken by electronic type equipment in the axial, vertical, and horizontal directions on each of the bearings. Records shall be maintained and a written copy shall be available upon request.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its TCVX AXIFAN® adjustable blade vaneaxial fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.

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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