



INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

DIRECT DRIVE EXHAUST & SUPPLY PANEL FANS

Model TCPE



Overview

TCPE



TCPE
Panel Fan

TCPE panel fans are direct drive panel fans designed for low static pressures. All units come standard with a spun galvanized panel, zinc plated motor mount/guard, custom engineered motor and an aluminum blade that is statically and dynamically balanced. They are manufactured under strict ISO 9001 quality standards and performance is certified by AMCA.

Configurations

Exhaust and supply configurations available

Certifications

AMCA Sound/Air and FEI

Construction Features

- TCPE spun panels are constructed of 16-gauge G90 galvanized steel. Prepunched panel holes for easy mounting.
- The standard motor mount also serves as a motor side guard that complies with OSHA standards. The motor mount/guard is secured to the fan panel with captivated nut inserts that allow for easy servicing without the removal of the full panel after installation. All ODP and TE motors are custom engineered and come in a variety of standard voltages. All single phase 115V ODP motors can be used with a variable speed controller.
- Steel guards are zinc plated to inhibit corrosion.

Now Available with



see page 4

Energy Regulations

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



Twin City Fan & Blower certifies that the Model TCPE fans shown herein are licensed to bear the AMCA Seal. Certified performance data may be found in Twin City Fan & Blower's Fan Selector software.



Fan Energy Index (FEI) certification applies to Model TCPE, Size 242A.



Scan the QR code to search Twin City Fan & Blower's AMCA-certified products.



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

Overview

TCPE

The Wall Mounted Panel Fan is designed for low static pressures and can be mounted in a wall vertically or in a ceiling horizontally. These fans can be configured for both supply and exhaust applications. Typical applications include Warehouse Exhaust, Restroom Exhaust, Attic Exhaust and Garage Exhaust.

Sizes

- 8" to 24" impeller diameters
- Motor and blade pitch combinations make up a total of 31 unique performing model sizes

Performance

- Airflow to 7,600 CFM
- Static pressures to $5/8$ " w.g.
- The addition of speed control adds flexibility to the performance capabilities of all sizes



General HVAC Exhaust

ELECTRONICALLY COMMUTATED MOTORS



Model TCPE
with GridSmart™ EC Motor

Twin City Fan & Blower offers its own line of custom engineered Electronically Commutated (EC) motors. Electronic commutation is the latest motor technology to be used in direct drive fans. Also known in the industry as Brush Free or Brushless DC, the EC motors utilize an electronic circuit board to control the functionality of the motor. The motor operates off of single-phase AC power, which is converted to DC power within the motor's circuitry. Twin City Fan & Blower has motor options available for 115V, 208V or 230V single phase electrical power. The result is a highly efficient motor, even at part load, with an expanded speed control range and a variety of speed control options from which to choose. EC motors are available in ODP and TENV enclosures.



Benefits

- Efficiencies up to 85%
- Constant efficiency as the motor speed is varied
- Up to 66% energy savings over traditional PSC motors
- Performance range comparable to a belt drive fan with reduced maintenance benefits of a direct drive fan
- 80% usable turndown range as compared with 40% maximum on PSC motors
- Soft start gives fans smooth, quiet start
- Lower operating temperatures result in longer life and reduces energy consumption
- Heavy-duty ball bearings are permanently lubricated
- Elimination of VFD results in lower initial cost

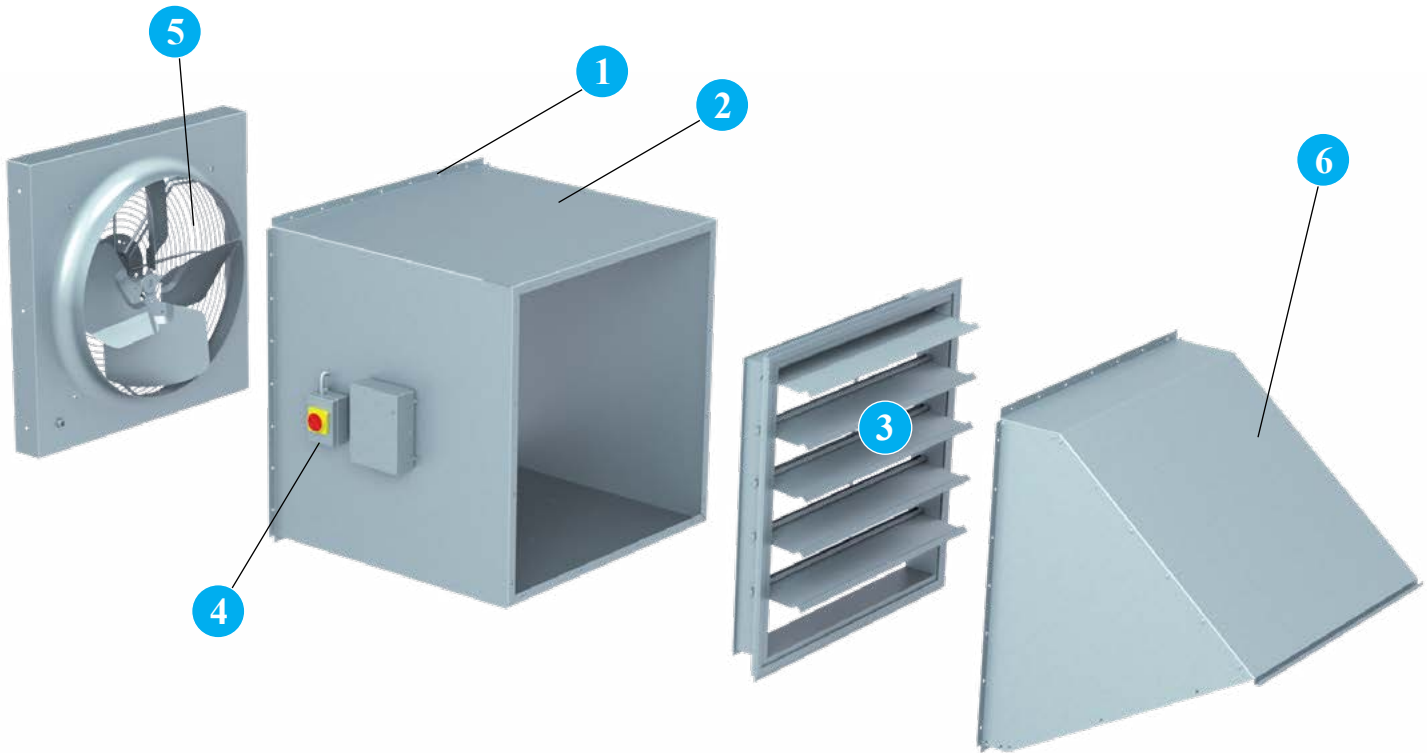
EC Motor Options

1/8 HP to 1 HP

- 1/8 HP – 1 HP: 115V, 208V or 230V single-phase
- ODP or TENV enclosure
- 0-10VDC control leads as standard
- Available with remote mounted speed control dial or GridPoint controller, depending on the motor



1/8 HP to 1 HP
GridSmart™ EC Motors



- 1 Wall Collar** The wall collar is used to mount the TCPE fan and accessories cleanly into a wall. The collar will give the fan package a finished look when fully installed. It is constructed of 16-gauge G90 galvanized steel and can be ordered fully assembled or as a kit (field assembly required) to reduce shipping costs.
- 2 Wall Box** The wall box is used to completely enclose the fan and accessories. Constructed of 16-gauge galvanized steel with a removable screen. It is available fully assembled or as a kit.
- 3 Backdraft Damper** Backdraft dampers with automatic or motorized operation, feature a felt seal on the edge of the damper blades for quiet operation. Damper frames are constructed of galvanized steel and blades are constructed of 26-gauge aluminum. All dampers ship loose for field mounting in ductwork. Motorized dampers are recommended for low CFM applications to assure unrestricted airflow. Motorized dampers are available with 115, 208, 230, 460, 575 or 24 volt service; 575 volt service requires a step-down transformer. When a motorized damper option is selected a 12" (or greater) high roof curb is required.
- 4 Disconnect Switch** A NEMA 1 disconnect switch provides positive electrical shutoff during fan cleaning or maintenance. Available shipped loose for field mounting and wiring or factory mounted and wired with ODP or TEFC motors.
- 5 Damper Guard Screen** The damper guard screen is used to protect the backdraft damper when a weather hood is not being used. It is constructed of 18-gauge G90 galvanized steel and comes with a galvanized screen. The screening complies with OSHA standards and will keep birds out of the fan and building.
- 6 Weather Hood with Guard Screen** The weather hood is used to keep the elements from entering the building and to prevent wind from affecting the performance of the fan and backdraft damper. It easily fits over the backdraft damper and can be installed to the wall collar or wall box through the prepunched holes. The weather hood is constructed of 18-gauge G90 galvanized steel and comes standard with a removable bird screen. It can be ordered fully assembled or as a kit (field assembly required) to reduce shipping costs.



NEMA 1 Disconnect Switch

Disconnect switches provide positive electrical shutoff during fan cleaning or maintenance.

NEMA 1 Disconnect Switch

A NEMA 1 disconnect switch is available shipped loose for field mounting and wiring or factory mounted and wired with ODP or TEFC motors.



NEMA 3R Disconnect Switch

NEMA 3R Disconnect Switch

A NEMA 3R, rain proof, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.



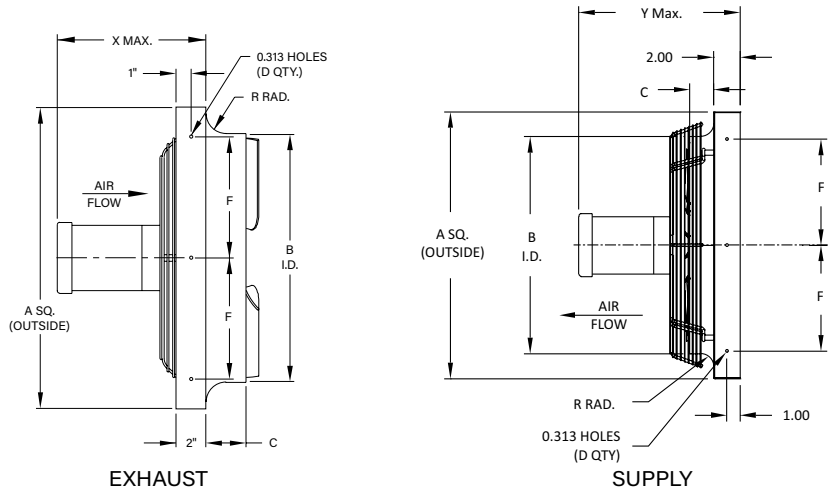
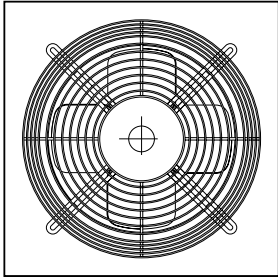
NEMA 4 Disconnect Switch

NEMA 4 Disconnect Switch

A NEMA 4, water and dust tight, disconnect is available shipped loose for field mounting and wiring or factory mounted and wired externally.



TCPE

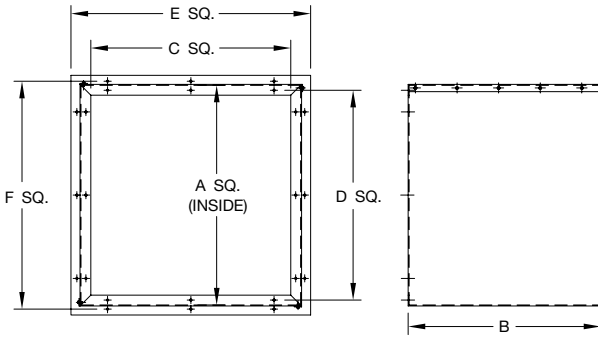


SIZE	A (IN.)	B I.D. (IN.)	C (IN.)	D QTY.	F	R RAD.	X MAX.	Y MAX.	DAMPER SIZE	PROP DIA.	MIN. WALL OPENING SQ	AVG. SHIP WT. (LB)
080A, 081A, 082A, 082AE	13.25	8.38	1.25	8	4.00	0.75	10.25	12.25	10 x 10	8.00	13.75	15
100A, 101A, 102A, 102AE	15.25	10.38	1.50		5.00	0.75	11.25	13.25	12 x 12	10.00	15.75	20
120A, 121A, 122A, 122AE	18.25	12.38	2.00		6.50	0.875	11.50	13.50	15 x 15	12.00	18.75	26
140A, 141A, 142A, 142AE	21.25	14.50	2.75	12	8.00	1.00	19.00	21.00	18 x 18	14.00	21.75	29
160A, 161A, 162A, 162AE	23.25	16.50	3.00		9.00	1.13	19.00	21.00	20 x 20	16.00	23.75	37
180A, 181A, 182A, 182AE	25.25	18.50	3.00		10.00	1.25	19.00	21.00	22 x 22	18.00	25.75	47
200A, 201A, 202A, 202AE	27.25	20.63	3.00		11.00	1.50	20.50	22.50	24 x 24	20.00	27.75	51
240A, 241A, 242A, 242AE	30.25	24.63	3.00	12.00	1.50	22.00	24.00	27 x 27	24.00	30.75	62	

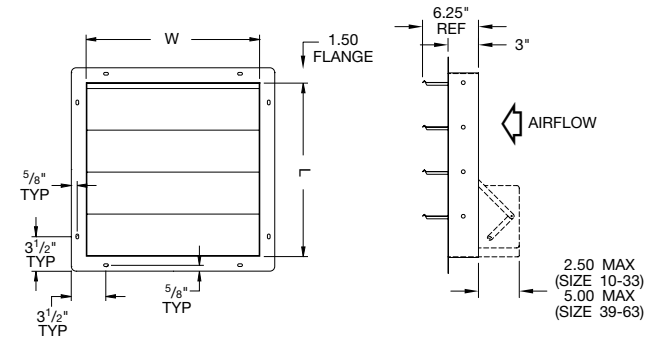
Dimensions are not to be used for construction.

D4800E
D4805B

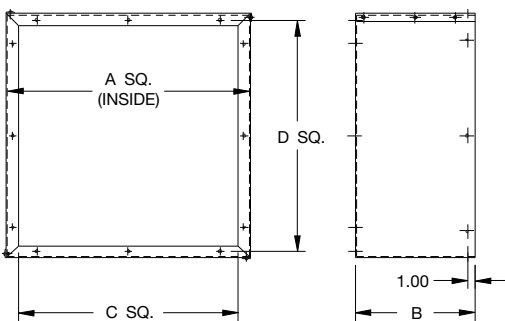
Wall Box with Removable Screen



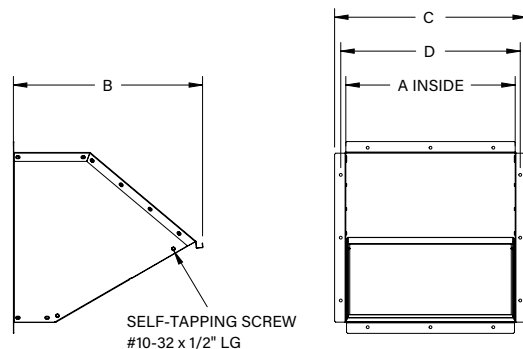
Backdraft Damper



Wall Collar



Weather Hood with Bird Screen



SIZE	WALL BOX						WALL COLLAR				BACKDRAFT DAMPER	WEATHER HOOD			
	A	B	C	D	E	F	A	B	C	D	W x L	A	B	C	D
080A, 081A, 082A, 082AE	13.50	24.54	10.60	11.75	16.62	15.50	13.50	14.00	10.63	12.00	10.00 x 10.00	10.88	14.56	13.38	12.00
100A, 101A, 102A, 102AE	15.50	24.54	12.60	13.75	18.62	17.50	15.50	14.00	12.63	14.00	12.00 x 12.00	12.88	16.31	15.38	14.00
120A, 121A, 122A, 122AE	18.50	24.54	15.60	16.75	21.62	20.50	18.50	14.00	15.63	17.00	15.00 x 15.00	15.88	18.51	18.38	17.00
140A, 141A, 142A, 142AE	21.50	34.54	18.60	19.75	24.62	23.50	21.50	14.00	18.63	20.00	18.00 x 18.00	18.88	21.12	21.38	20.00
160A, 161A, 162A, 162AE	23.50	34.54	20.60	21.75	26.62	25.50	23.50	14.00	20.63	22.00	20.00 x 20.00	20.88	22.51	23.38	22.00
180A, 181A, 182A, 182AE	25.50	34.54	22.60	23.75	28.62	27.50	25.50	14.00	22.63	24.00	22.00 x 22.00	22.88	24.27	25.38	24.00
200A, 201A, 202A, 202AE	27.50	39.54	24.60	25.75	30.62	29.50	27.50	14.00	24.63	26.00	24.00 x 24.00	24.88	26.02	27.38	26.00
240A, 241A, 242A, 242AE	30.50	39.54	27.60	28.75	33.62	32.50	30.50	14.00	27.63	29.00	27.00 x 27.00	27.88	28.62	30.38	29.00

D4800-6 - Wall Box

E-DMPR-E - Damper

D4800-5 - Collar

200150 - Hood

TYPICAL SPECIFICATIONS



Model TCPE



Wall exhaust fans shall be of the impeller direct drive Model TCPE, as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 208 (fan energy index), 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 energy index (FEI). Sound certification shall apply to both inlet and outlet sound power levels.

Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

CONSTRUCTION — Panels shall be constructed of 16-gauge G90 galvanized steel for durability and appearance. Panels shall have a deep spun inlet venturi and prepunched holes for easy mounting.

IMPELLERS — Impellers shall be of fixed pitch design and constructed with fabricated aluminum blades fastened to a steel hub. The impeller assembly 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.

MOTORS — All motors shall be electronically commutated (EC), permanent split capacitor (PSC) single phase or three phase induction, permanently lubricated, heavy-duty, ball bearing type, with thermal overload protection, closely matched to the fan load and provided at the voltage, phase, hertz and enclosure as specified on the fan schedule. Motors for use with variable speed control shall be closely matched to the fan load and provide good speed controllability without any objectionable noise.

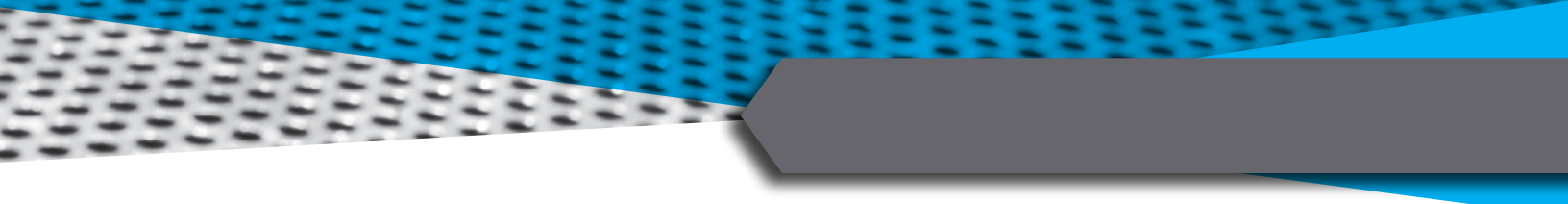
MOTOR MOUNT/GUARD ASSEMBLY — Motor mount/guard assembly shall be of zinc plated construction and secured to the fan panel with captivated nut inserts for easy servicing without the removal of the full panel. Impeller blades shall be protected on the air intake with a guard that is compliant to OSHA Standard 1910.212 (Machine Guarding, Exposure of Blades).

FINISH AND COATING — Fans shall have galvanized steel orifice panels.

ACCESSORIES — Fans shall be provided with wall collar, backdraft damper, damper guard screen, weather hood with screen, variable speed controller and disconnect switch where required.

FACTORY RUN TEST — All fans prior to shipment shall be completely assembled and test run as a unit at operating speed or maximum RPM allowed for the particular construction type. Each impeller 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.





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