



INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

PANEL FANS

TCWPX | TCWPZ





TCWPZ (Fixed Pitch "Z" Impeller)
Arrangement 4, Direct Drive Fan

Overview

TCWPX | TCWPZ

Twin City Fan's Panel Fans are designed for high efficiency, low noise/low speed operation and are used for low pressure, high volume air moving applications such as air circulation and ventilation through a wall without attachment to duct work. All models shown in this catalog are an ideal fit for a variety of industrial processes as well as general ventilation.

Configurations

Direct Drive and Belt Driven configurations available

Impeller Types

TCWPX: Cast Aluminum, Adjustable Pitch "E" or "C" Impellers

TCWPZ: Welded Steel, Fixed Pitch "Z" Impeller

Optional Construction

All Aluminum and Stainless Steel (includes motor base, supports and panel)*

**consult factory for wall collar, weather hood and guards in these special materials.*

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.

Fixed Pitch Panel Fans

Model TCWPZ fixed pitch panel fans are constructed of heavy-gauge steel panels with square flanged edges to provide a firm base for the structure of the fan. Sizes 24" through 60" include a deep throated orifice for smooth efficient airflow.

Model TCWPZ (Fixed Pitch "Z" Impeller)

The "Z" impeller is manufactured of heavy-gauge welded carbon steel and is designed to provide low pressure, high volume air moving solutions.

- Direct Drive available in 24" to 48" impeller diameters
- Belt Driven available in 42" to 60" impeller diameters
- Airflow to 85,000 CFM
- Static pressure to 1.5 inches w.g.
- See Fan Selector software for performance and other pertinent information



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

Overview

TCWPX | TCWPZ

Adjustable Pitch Panel Fans

Model TCWPX units are constructed of heavy-duty carbon steel, with aluminum or stainless steel panels available as an option. A heavy-gauge frame design is used for extra strength. The deep spun orifice and tight impeller tip clearance provide the highest efficiency.

Model TCWPX impellers are positively attached to the shaft via a taper lock bushing, which reduces the chance of overstressing or cracking the hub. This offers easy axial adjustments to perfectly align the impeller in the orifice.

Model TCWPX (Adjustable Pitch "E" Impeller)

Both hub and blades are cast using quality aluminum. Each blade shank is machined round and is easily inserted into the hub socket and retained with a machined retaining ring and two bolts. This positive locking design provides accurate assembly and easy setting of the blade angle. The cast aluminum hub is designed to use taper lock bushings to make mounting to the shaft simple and robust.

- Direct Drive available in 24" to 48" impeller diameters
- Belt Driven available in 42" to 48" impeller diameters
- Airflow to 41,000 CFM
- Static pressure to 1.5" w.g.

Adjustable Pitch "E" Impeller Angle Adjustment

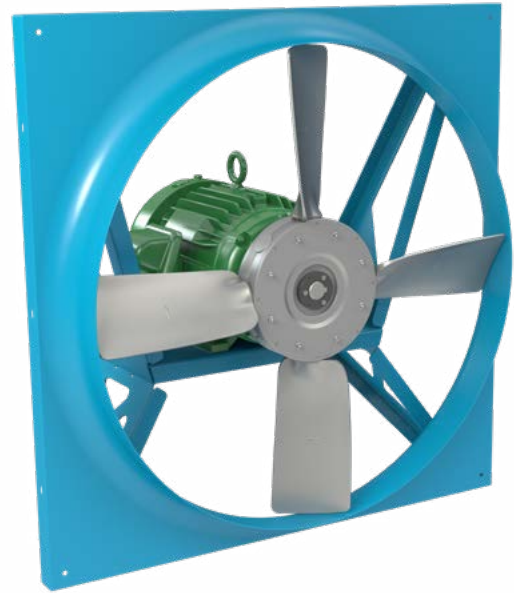
Each "E" type blade has an index mark on the blade shank, which can be matched with an angle setting scale on the hub socket, providing a method for adjusting blade angle through a 20-degree range.



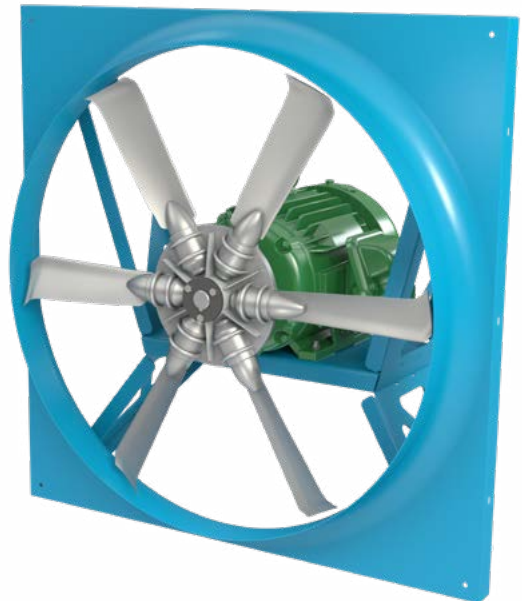
Model TCWPX (Adjustable Pitch "C" Impeller)

Simple blade adjustments provide quick and easy changes in volume/pressure requirements without removing the impeller. The adjustable pitch cast aluminum impeller offers the widest performance range and is commonly used in a wide range of OEM applications.

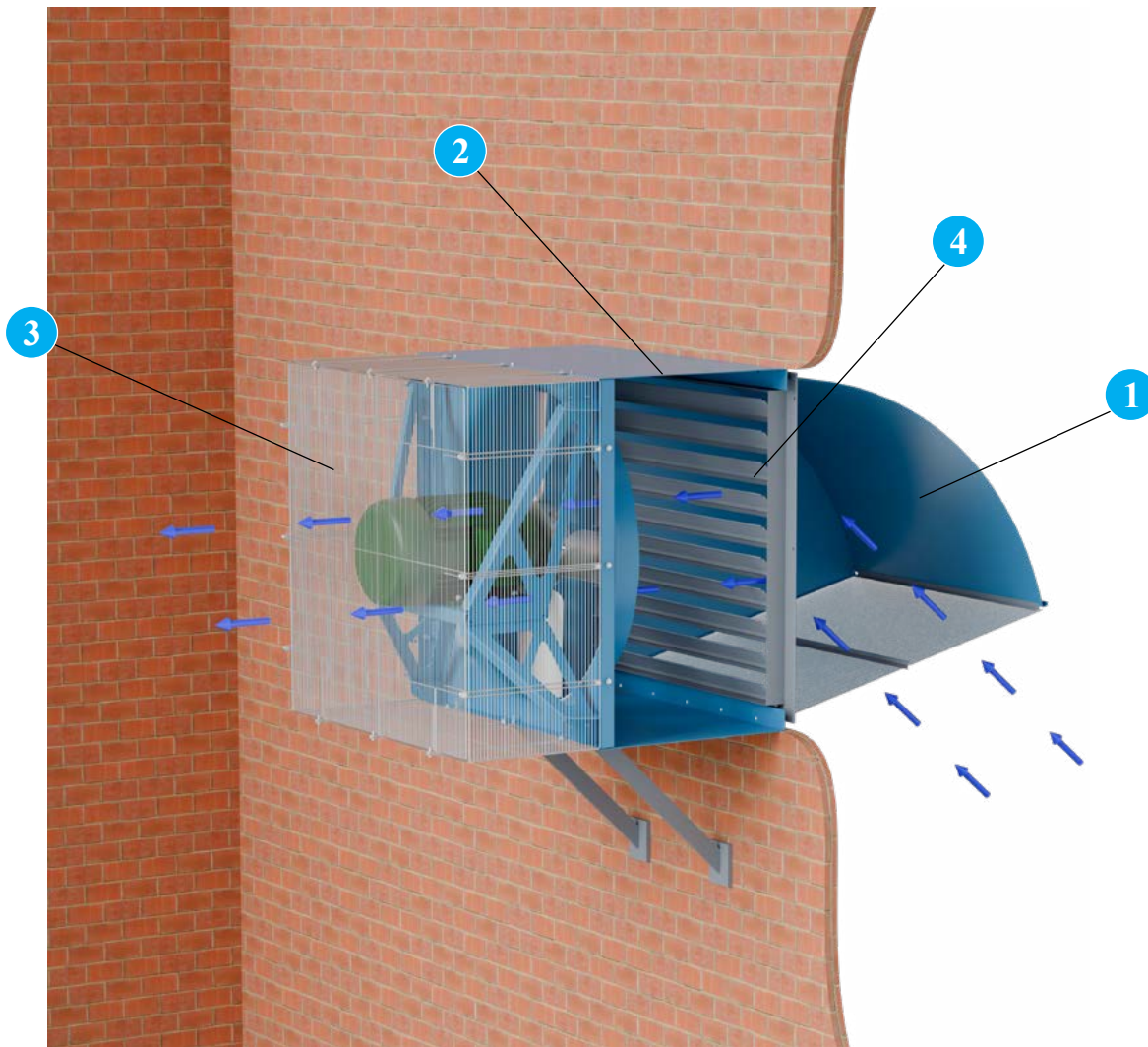
- Direct Drive available in 54" to 60" impeller diameters
- Belt Driven available in 54" to 72" impeller diameters
- Airflow to 80,000 CFM
- Static pressure to 1.5" w.g.



TCWPX (Adjustable "E" Impeller)
Arrangement 4, Direct Drive Fan



TCWPX (Adjustable "C" Impeller)
Arrangement 4, Direct Drive Fan



1 Weather Hood w/ Bird 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 painted carbon steel and comes standard with a removable bird screen.

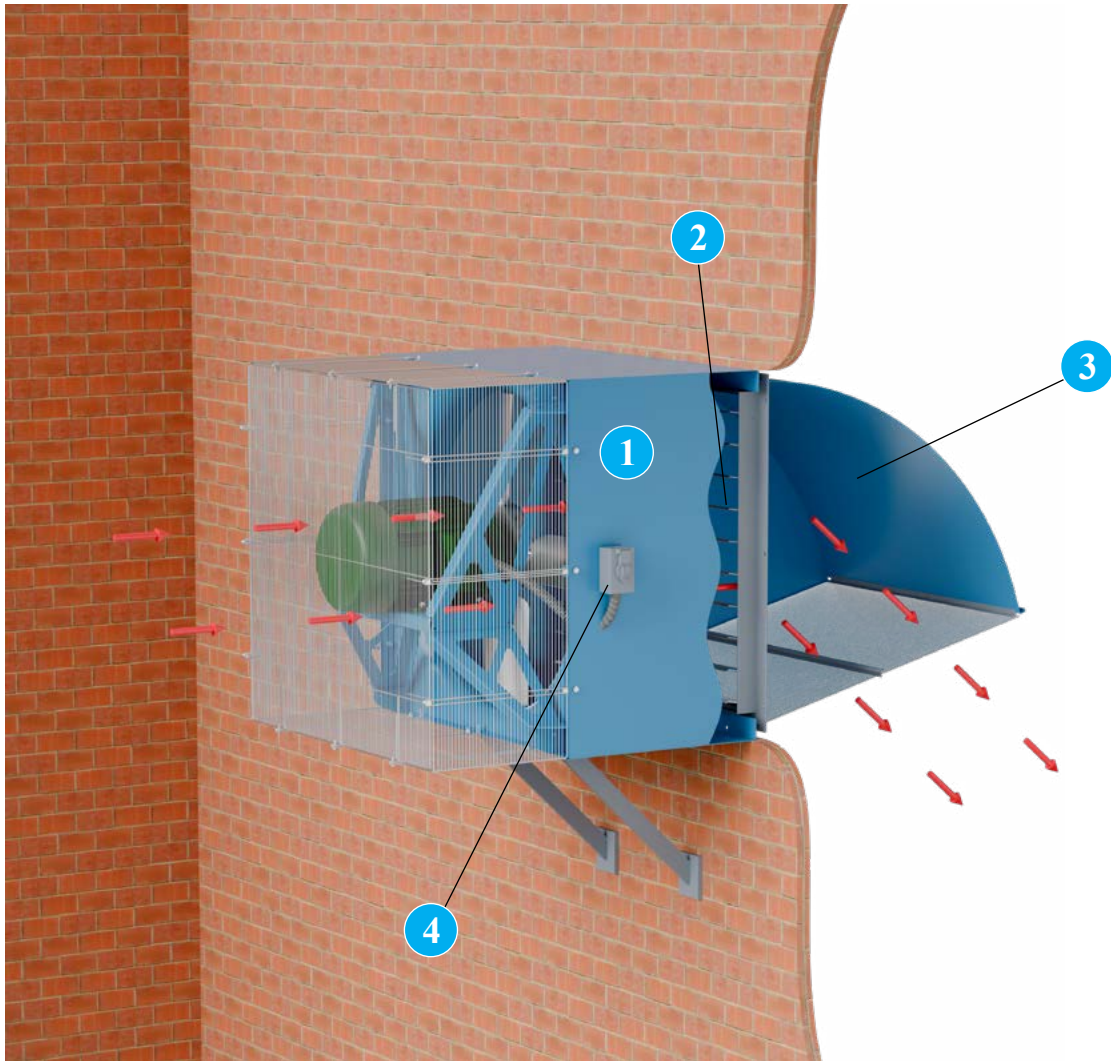
2 Wall Collar The wall collar is used to mount the fan and accessories cleanly into a wall. The collar will give the fan package a finished look when fully installed. It is constructed of painted carbon steel.

3 Wire Guard, Motor Side Provided to completely enclose the motor, drives and support assembly, the motor side wire guard is a square basket type guard.

4 Gravity Damper, Supply Flange mounted damper is available for supply (shown above) or exhaust applications. If inlet velocity of the fan is less than 600 fpm, a spring kit must be specified.

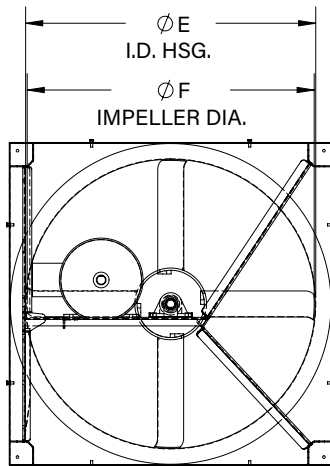
Other Accessories Include:

- Motorized Gravity Damper
- Protective Coatings
- BBQ Safety Guard Fan Side
- Stainless steel or aluminum wire mesh motor side guards
- Stainless steel or aluminum wire mesh impeller side guards

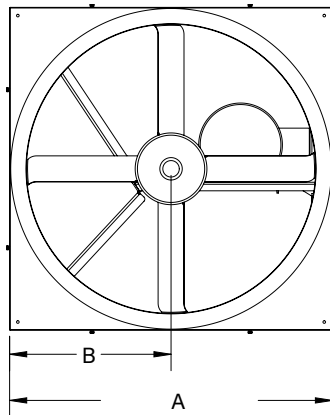


- 1 Wall Box** The wall box is used to completely enclose the fan and accessories. Constructed of heavy-gauge carbon steel.
- 2 Gravity Damper, Exhaust** Flange mounted damper is available for exhaust (shown above) or supply applications. If outlet velocity of the fan is less than 600 fpm, a spring kit must be specified.
- 3 Weather Hood w/ Bird 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 painted carbon steel and comes standard with a removable bird screen.
- 4 NEMA 3R Disconnect Switch** is rain proof, disconnects are available shipped loose for field mounting and wiring or factory mounted and wired externally. Disconnect switches provide positive electrical shutoff during fan cleaning or maintenance.

TCWPX and TCWPZ, Belt Driven – Arrangement 9

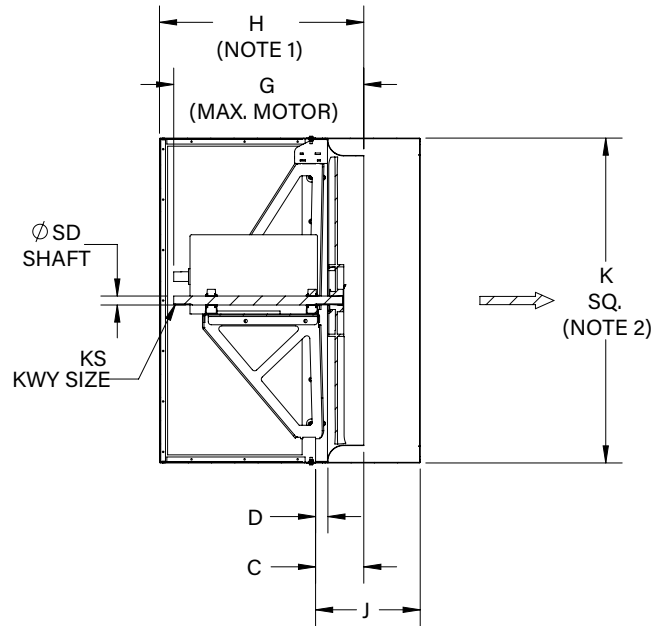


MOTOR SIDE



SQ. O.S. PANEL

OUTLET SIDE



Notes:

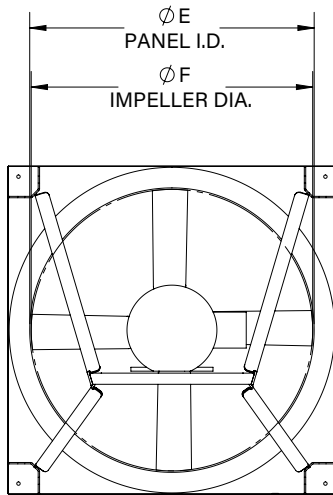
1. "H" dimension for optional motor side wire guard.
2. "J" and "K" dimension for optional wall box.
3. Four (4) blades shown. The actual number may vary.

FAN SIZE	A	B	C	D	E	F	FR	G	H	J	K	KS	SD
42	48.00	24.00	7.56	2.06	42.38	42.00	215T	28.06	32.25	28.75	48.34	.25 x .13	1.19
48	54.00	27.00	8.75	2.75	48.38	48.00	256T	34.50	38.25	32.50	54.34	.38 x .19	1.50
54	68.00	34.00	8.00	2.00	54.38	54.00	286T	36.88	40.50	37.13	68.34	.38 x .19	1.50
60	75.00	37.50	10.00	4.00	60.38	60.00	286T	38.88	41.00	38.75	75.34	.38 x .19	1.50
66	72.00	36.00	9.00	2.75	66.75	66.00	286T	35.50	41.75	34.00	72.34	.50 x .25	1.94
72	79.00	39.50	7.50	2.00	72.38	72.00	286T	35.50	41.75	34.00	79.34	.50 x .25	1.94

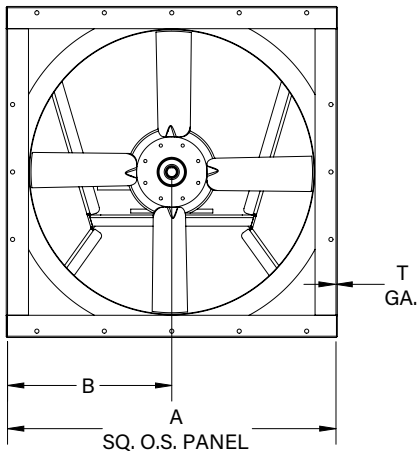
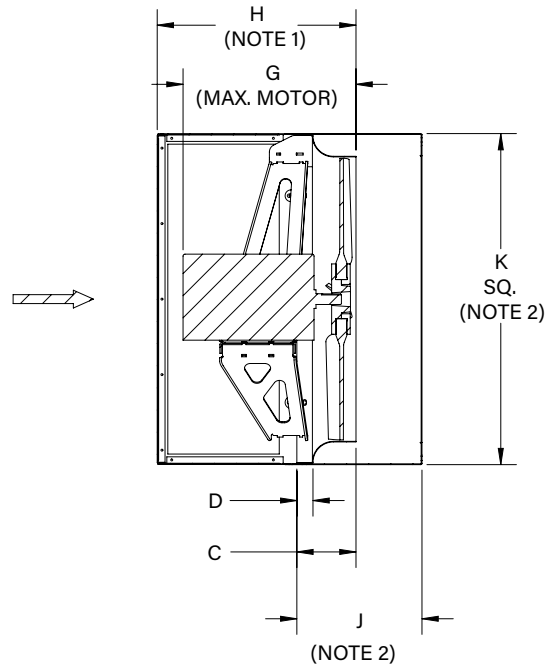
AC13643J
AC14379D

DIMENSIONS ARE SUBJECT TO CHANGE. CERTIFIED DRAWINGS AVAILABLE ON REQUEST.

TCWPX and TCWPZ, Direct Drive – Arrangement 4



MOTOR SIDE



OUTLET SIDE

Notes:

1. "H" dimension for optional motor side wire guard.
2. "J" & "K" dimension for optional wall box.
3. Four (4) blades shown. The actual number may vary.
4. Direct Drive TCWPX size 24-48" uses Type "E" impeller, size 54-60" uses Type "C" impeller.
Direct Drive TCWPZ size 24-48" uses Type "Z" impeller, not available in Arrg. 4 beyond size 48".

FAN SIZE ⁴	A	B	C	D	E	F	FR	G	H	J	K
24	28.00	14.00	6.50	1.50	24.25	24.00	215T	18.06	27.50	23.50	28.28
30	36.00	18.00	7.63	2.00	30.38	30.00	215T	24.77	30.25	25.00	36.34
36	42.00	21.00	7.56	2.06	36.38	36.00	215T	25.31	29.63	28.75	42.34
42	48.00	24.00	7.56	2.06	42.38	42.00	256T	23.31	33.88	28.75	48.34
48	54.00	27.00	8.75	2.75	48.38	48.00	286T	28.56	37.63	32.50	54.34
54	68.00	34.00	8.00	2.00	54.38	54.00	326T	30.63	37.50	37.13	68.34
60	75.00	37.50	10.00	4.00	60.38	60.00	326T	30.63	37.25	38.75	75.34

AC15316D
AC14460D

DIMENSIONS ARE SUBJECT TO CHANGE. CERTIFIED DRAWINGS AVAILABLE ON REQUEST.



Model TCWPX, Arrg. 9

Fans shall be Model TCWPX Adjustable Panel Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

IMPELLERS — Impellers shall be cast aluminum alloy construction positively attached to the shaft via a taper lock bushing to assure positive rotation. Impellers shall be machined to the proper diameter and statically balanced.

PANEL — Panel shall be constructed of heavy-gauge steel with square flanged edges. A deep-throated orifice shall be provided for smooth, efficient airflow. Heavy-gauge steel tubing shall support the motor and the shaft and bearing assembly.

BEARINGS — The rotating assembly shall be supported by two heavy-duty pillow block ball or roller type bearings. The bearings shall be of a self-aligning type and designed for a minimum average life of 200,000 hours based on AFBMA rating designations.

SHAFT — The fan shaft shall be ground and polished, hot-rolled steel precisely turned and ring gauged for accuracy. The entire rotating assembly shall be designed to limits that insure the critical speed of at least 42% greater than the fan operating speed.

DRIVES — The fan shall be equipped with (fixed, adjustable) pitch V-belt drive for operation at the required RPM. V-belt drive is to be selected with a (1.2, 1.5) safety factor based on the fan brake horsepower.

MOTORS — Fan motors shall be standard NEMA design in an (ODP, TEFC, explosion-proof, etc.) type enclosure. If a fan cooled motor is utilized, the motor's fan must create airflow in the same direction as the impeller fan in order to avoid hot spotting on the motor and premature motor failure.

Motor horsepower rating shall be greater than the fan brake horsepower rating as motor service factor cannot be utilized to achieve horsepower requirements. V-belt drive losses must be taken into account in the sizing of motor horsepower.

ACCESSORIES — Accessories such as wire guards, wall box enclosures, power roof vent construction, etc., shall be provided by the fan manufacturer, maintaining proper sizing and fit-up along with one-source responsibility.

COMPLETED FAN UNITS — All fans prior to shipment shall be completely assembled and test run as a unit at the operating speed. Final balance of the completed fan assembly shall be taken by electronic type equipment and records maintained of the vibration readings in the axial, vertical and horizontal planes on each of the bearings. A written copy of this record shall be available upon request.





Model TCWPX, Arrg. 4

Fans shall be Model TCWPX Adjustable Panel Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

IMPELLERS — Impellers shall be cast aluminum alloy construction positively attached to the shaft via a taper lock bushing to assure positive rotation. Impellers shall be machined to the proper diameter and statically balanced.

PANEL — The panel shall be constructed of heavy-gauge steel with square flanged edges. A deep-throated orifice shall be provided for smooth, efficient airflow. Heavy-gauge steel tubing shall support the motor.

MOTORS — Fan motors shall be standard NEMA design in an (ODP, TEFC, explosion-proof, etc.) type enclosure. If a fan cooled motor is utilized, the motor's fan must create airflow in the same direction as the impeller fan in order to avoid hot spotting on the motor and premature motor failure.

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Model TCWPZ, Arrg. 9

Fans shall be Model TCWPZ Fabricated Steel Panel Fans as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

IMPELLERS — Impeller shall be constructed of fabricated steel and positively attached to the shaft via a taper lock bushing to assure positive rotation. Impellers are to be machined to the proper diameter and balanced both statically and dynamically.

PANEL — Panel shall be constructed of heavy-gauge steel with square flanged edges. A deep-throated orifice shall be provided for smooth, efficient airflow. Heavy-gauge steel tubing shall support the motor and the shaft and bearing assembly.

BEARINGS — The rotating assembly shall be supported by two heavy-duty pillow block ball or roller type bearings. The bearings shall be of a self-aligning type and designed for a minimum average life of 200,000 hours based on AFBMA rating designations.

SHAFT — The fan shaft shall be ground and polished, hot-rolled steel precisely turned and ring gauged for accuracy. The entire rotating assembly shall be designed to limits that insure the critical speed of at least 42% greater than the fan operating speed.

DRIVES — The fan shall be equipped with (fixed, adjustable) pitch V-belt drive for operation at the required RPM. V-belt drive is to be selected with a (1.2, 1.5) safety factor based on the fan brake horsepower.

MOTORS — Fan motors shall be standard NEMA design in an (ODP, TEFC, explosion-proof, etc.) type enclosure. If a fan cooled motor is utilized, the motor's fan must create airflow in the same direction as the impeller fan in order to avoid hot spotting on the motor and premature motor failure.

Motor horsepower rating shall be greater than the fan brake horsepower rating as motor service factor cannot be utilized to achieve horsepower requirements. V-belt drive losses must be taken into account in the sizing of motor horsepower.

ACCESSORIES — Accessories such as wire guards, wall box enclosures, power roof vent construction, etc., shall be provided by the fan manufacturer, maintaining proper sizing and fit-up along with one-source responsibility.

COMPLETED FAN UNITS — All fans prior to shipment shall be completely assembled and test run as a unit at the operating speed. Final balance of the completed fan assembly shall be taken by electronic type equipment and records maintained of the vibration readings in the axial, vertical and horizontal planes on each of the bearings. A written copy of this record shall be available upon request.





Model TCWPZ, Arrg. 4

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IMPELLERS — Impeller shall be constructed of fabricated steel and positively attached to the shaft via a taper lock bushing to assure positive rotation. Impellers are to be machined to the proper diameter and balanced both statically and dynamically.

PANEL — The panel shall be constructed of heavy-gauge steel with square flanged edges. A deep-throated orifice shall be provided for smooth, efficient airflow. Heavy-gauge steel tubing shall support the motor.

MOTORS — Fan motors shall be standard NEMA design in an (ODP, TEFC, explosion-proof, etc.) type enclosure. If a fan cooled motor is utilized, the motor's fan must create airflow in the same direction as the impeller fan in order to avoid hot spotting on the motor and premature motor failure.

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INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

CENTRIFUGAL FANS | UTILITY SETS | PLENUM & PLUG FANS | INLINE CENTRIFUGAL FANS

MIXED FLOW FANS | TUBEAXIAL & VANEAXIAL FANS | WALL MOUNTED FANS | ROOF VENTILATORS

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