



INDUSTRIAL PROCESS AND
COMMERCIAL VENTILATION SYSTEMS

UPBLAST ROOF & WALL EXHAUSTERS

VCU | VCUB



ROOF & WALL EXHAUSTERS



Model VCU
With GridSmart™ EC Motor

Now Available with



see page 5



VCU and VCUB models are cULus 705 listed for electrical, File No. E158680.



VCU and VCUB models are cULus 705 Supplement SC (formerly cULus 762) listed for the exhaust of grease-laden air when configured with the optional package, File No. E158680.



Twin City Fan & Blower certifies that the VCU and VCUB models shown herein (except Sizes 177-197) are licensed to bear the AMCA Seal. Certified performance data may be found in Twin City Fan & Blower's Fan Selector software.



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

Overview

Roof & Wall Exhausters

Twin City Fan & Blower's line of quiet, efficient and economical spun aluminum centrifugal power roof and wall exhausters are designed to offer value and long-lasting service in a wide variety of commercial and industrial ventilating applications.

Typical Applications Include

Schools, Office Buildings, Warehouse, Restaurants, General Exhaust

Configurations

Upblast and Wall Mounted, Direct Drive and Belt Driven

Impeller Types

Backward Inclined or Backwardly Curved Centrifugal

Optional Construction

Special Coatings, Spark Resistant, UL 705, UL 705 Supplement SC (formerly UL 762)

Certifications

AMCA Sound/Air and FEI, cULus Listed for Power Ventilators, cULus Listed for Power Ventilators for Restaurant Exhaust Applications

Energy Regulations

Twin City Fan & Blower supports energy efficiency regulations enacted by the Department of Energy (DOE) and energy commissions of specific states. The selection and application of fan products is a significant part of these regulations. Engineers and specifiers must understand how to apply Twin City Fan & Blower products to their specific applications to meet efficiency requirements. Twin City Fan & Blower has made significant investments in product testing to assure users will receive the most efficient products available. Developments in the Fan Selector software are in place to help aide in product selection to meet the efficiency requirements as stipulated in the regulations. Visit tcf.com for the latest on fan energy efficiency regulations.



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

Overview

General Exhaust

Models VCU/VCUB are designed for general exhaust of contaminated or grease-laden air in roof-mounted or wall-mounted (horizontal) configurations in applications where it is desirable to move the exhausted air away from the building.

Model VCU (Direct Drive)

Performance Data

8.52" to 19.7" (220 mm to 500 mm) impeller diameters

Airflow to 4,350 CFM (7,390 m³/hour)

Static pressure to 2.65" w.g. (660 Pa)

- > Available in 15 sizes from size 085 to 197
- > Available as either roof or wall mount configurations
- > All sizes are speed controllable with ODP 115V motors
- > Available with EC Motors
- > AMCA licensed for sound, air and fan energy index (except Sizes 177-197)
- > UL 705 listed
- > Available as UL 705 Supplement SC (formerly UL 762) listed for grease-laden air



Model VCUB (Belt Driven)

Performance Data

12.25" to 19.7" (315 mm to 500 mm) impeller diameters

Airflow to 4,460 CFM (7,590 m³/hour)

Static pressure to 3.7" w.g. (920 Pa)

- > Available in ten sizes from size 122 to 197
- > AMCA licensed for sound, air and fan energy index (except Sizes 177-197)
- > UL 705 listed
- > Available as UL 705 Supplement SC (formerly UL 762) listed for grease-laden air



General HVAC
Roof & Wall Exhaust



Restaurant Exhaust
Roof & Wall Exhaust

CONSTRUCTION FEATURES

Belt Driven



Motor Cover Provides complete protection for the motor and drive assembly, while allowing quick access to these components with standard tools.

Motor Housing Constructed from heavy-gauge aluminum for durability and appearance. Includes vent tube for motor cooling and routing of electrical wiring into the motor compartment.

Motors ODP, TEFC and explosion proof, single and three phase motors are carefully matched to the fan load.

Vibration Isolation (Belt Driven) Motor and drive assembly is completely isolated from the fan supports by rubber isolators to reduce transmission of noise and vibration.

Drive (Belt Driven) Adjustable pitch V-belt drives with cast iron sheaves and heat resistant belts are selected at 150% of the driven motor horsepower. Drives on model BCRUSH are dual groove as standard.

Bearings (Belt Driven) Heavy-duty re-greaseable pillow block ball bearings are specifically designed for air handling applications to provide an average life (L-50) of 500,000 hours or more at maximum cataloged operating speeds.

Shaft (Belt Driven) Precision ground and polished with a first critical speed of at least 125% of the fan's maximum operating speed.

Galvanized Bird Screen Protects the impeller, inlet and internal components from entry of birds.

Impeller Quiet and efficient non-overloading, heavy-gauge impellers with backward inclined or backwardly curved blades are precisely matched to a deep spun venturi. All impellers are statically and dynamically balanced to ensure smooth and quiet operation.

Fan Shroud Heavy-gauge spun aluminum with rolled bead edge provides rigidity. Motor cooling tubes are incorporated into the exterior of shroud to draw outside air into the motor and drive compartment.

Curb Cap One-piece curb cap/inlet venturi assembly provides protection from weather. Pre-punched mounting holes provide easy and accurate attachment to the roof curb.

ELECTRONICALLY COMMUTATED MOTORS

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.



Model VCU
with GridSmart™ EC Motor

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 driven 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

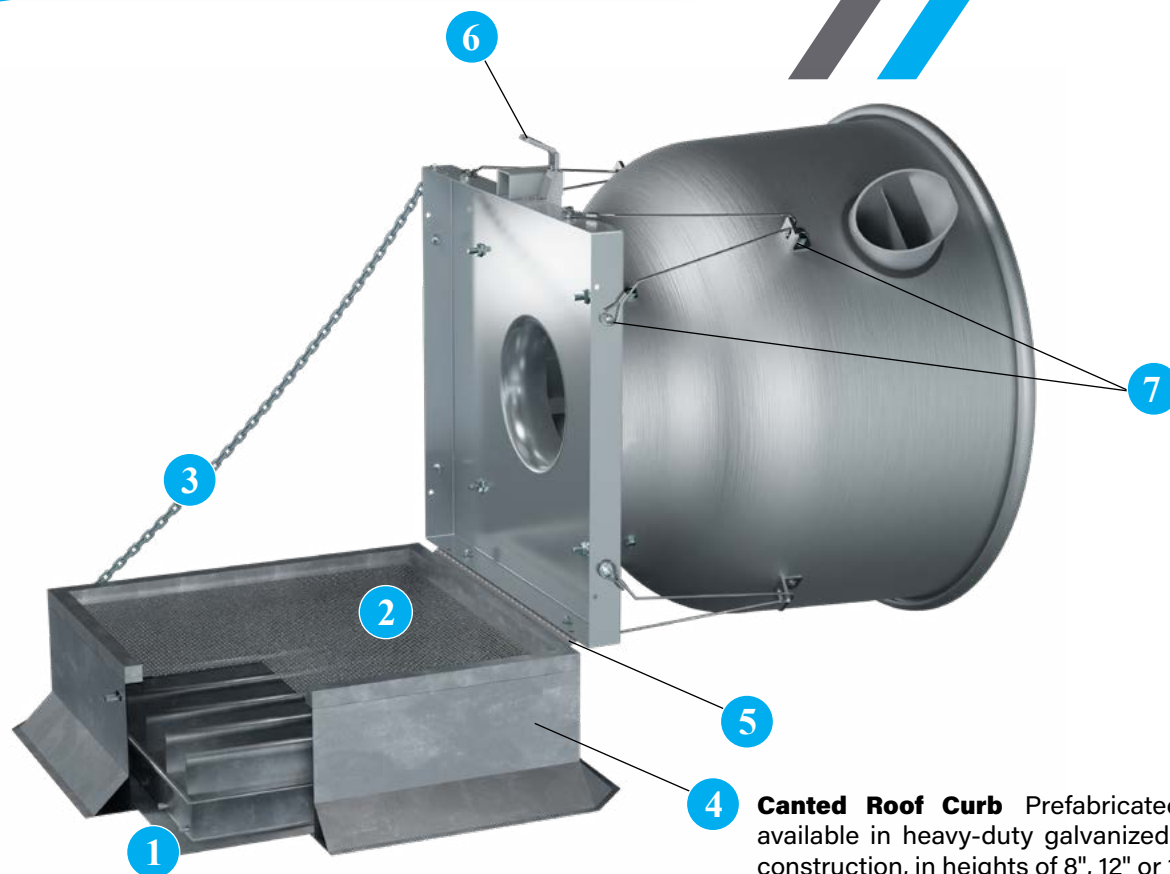


1/8 HP to 1 HP
GridSmart™ EC Motors



GridPoint Controller





1 Backdraft Damper (Roof Configuration) with automatic or motorized operation, feature a felt seal on the edge of the damper blades for quiet operation. Damper frames are constructed of 19-gauge galvanized steel and blades are constructed of 26-gauge aluminum. 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. End switches are available. When a motorized damper option is selected a 12" (or greater) high roof curb is required. Dampers are not available with restaurant construction.

Wall Configuration with automatic or motorized operation, feature a vinyl seal on the edge of the damper blades for quiet operation. Damper frames are constructed of 20-gauge galvanized steel and blades are constructed of 26-gauge aluminum. Motorized dampers are available with 115, 208, 230, 460 or 575 volt service, and have end switches as standard.

2 Insect Screen An aluminum screen, placed between the fan base and the roof curb, provides protection from entry of insects into impeller, inlet and interior of building. Not available on fans configured with the UL listed restaurant construction package.

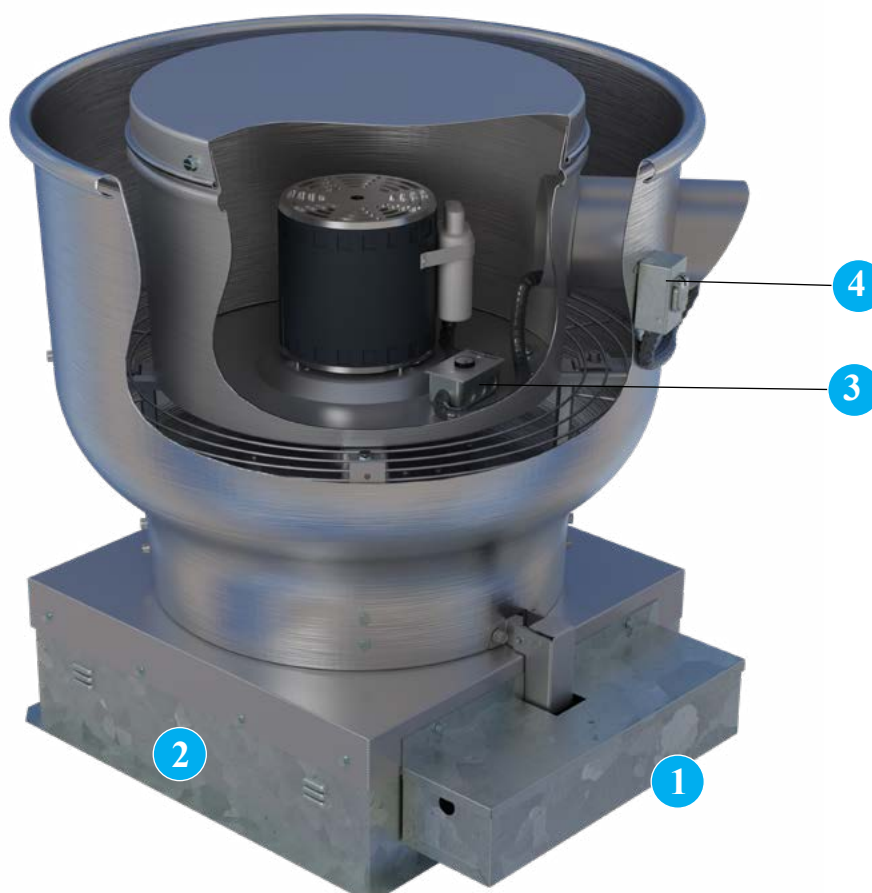
3 Retaining Chain is available in conjunction with the curb hinge arrangement to stabilize the unit and to prevent damage from occurring to the unit while servicing and cleaning.

4 Canted Roof Curb Prefabricated roof curbs are available in heavy-duty galvanized steel or aluminum construction, in heights of 8", 12" or 18". The canted curb is provided with a factory installed wood nailer and damper tray. Curbs are provided with 1.5" of insulation as standard and feature continuously-welded seams for added rigidity and moisture protection. Prefabricated curbs are also available in self-flashing, pitched and peak models. See page 8 for additional information on roof curbs. Minimum 12" high curbs are recommended for use with motorized dampers.

5 Curb Hinge The curb hinge arrangement provides easy access to the exhaust fan, backdraft damper and duct for servicing and cleaning. The curb hinge is of the piano type, running the entire length of the fan's curb cap. The curb hinge option ships loose and is designed for use with a standard canted curb only (1.5" less than fan base). This option cannot be used with self-flashing curbs. Available as an option on roof configurations.

6 Security Hasp is available in conjunction with the curb hinge arrangement to prevent removal of the unit from the roof curb and prevent entrance into the building through the roof's ductwork.

7 Tie-Down Brackets A quantity of four brackets are mounted to the fan shroud to allow the fan to be secured to the roof in areas where high winds are a concern. Guy wires are supplied and installed by others.



1 Grease Box Removable, for disposal of collected grease. Available for fans configured with restaurant package only.

2 Vented Roof Curbs Self-flashing, non-insulated style curbs with ventilation louvers allow ambient air in to cool and dilute grease-laden airstreams. Available for fans configured with UL listed restaurant construction package.

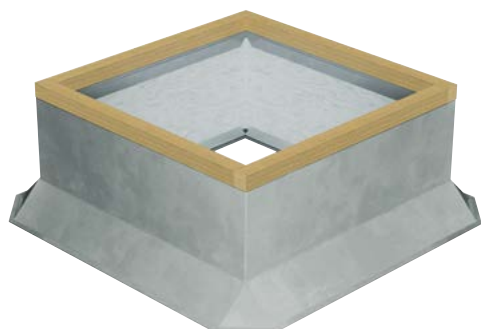
3 Variable Speed Control Variable speed control is an optional accessory on all VCU models with 115 volt, open type speed-controllable motors, to allow the adjustment of airflow for system balancing. Variable speed controllers are solid-state (Tri-ac) design and feature an RFI filter, minimum speed trim adjustment capability and a built-in on/off line switch. The speed controller is designed to start the motor on high speed for better startup characteristics. Variable speed controls have the option of being shipped separately, factory installed or field installed on the unit at a later date.

4 NEMA 3R Disconnect Switch, rain-tight, externally mounted when ODP or TEFC motors are used. NEMA 3R disconnects are available shipped loose for field mounting and wiring or factory mounted and wired.

OTHER ACCESSORIES/OPTIONS:

- Special Coatings
- Straight-Sided Roof Curb (see page 8)
- Firestat (Single-Phase Only)
- AMCA Spark B
- Performance Baffle
- Aluminum Bird Screen
- Stainless Steel Hardware
- Stainless Steel Shaft (VCUB)
- NEMA 3R Disconnect Switch (see page 9)
- NEMA 4 Disconnect Switch (see page 9)





Canted Roof Curbs

- Constructed of 18-gauge galvanized steel with continuously-welded seams
- Large 3" built-in 45° cant to accommodate roofing material to top of curb. Cant is beveled at corners for better support of roofing material
- Wood nailer (1 1/2") secured to top ledge
- Lined with 1 1/2" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single- or double-pitched curbs for sloping roofs



Self-Flashing & Straight-Sided Roof Curbs

- Constructed of 18-gauge galvanized steel with continuously-welded seams
- Wide base plate (flashing) to ensure watertight seal to roof
- Top ledge covered with 3/16" polystyrene gasket (self-flashing) for weather seal and to reduce metal-to-metal conducted noise
- Wood nailer secured to top ledge (straight-sided)
- Lined with 1 1/2" fiberglass fire-resistant, sound-absorbing insulation
- Damper shelf standard
- Straight-sided roof curbs are constructed with the same features as the self-flashing curbs, but are one dimensional to allow for field supplied cants and roofing material to be brought up to the top of the curb
- Options: Aluminum (16-gauge) construction, burglar security bars, metal liner (galvanized or aluminum), special heights up to 24", single- or double-pitched curbs for sloping roofs



Self-Flashing Vented Roof Curbs

For High Temperature Applications

- Completely assembled unit, easier to install and less expensive than a field constructed curb
- Constructed of 18-gauge galvanized steel with continuous welded seams and wide base flashing for watertight seal to roof
- Meets NFPA-96 code requirements
- Top ledge covered with 3/16" polystyrene gasket
- Furnished with ventilation slots



Curb Adapters

- Constructed of heavy-gauge galvanized steel with continuously-welded seams
- Top ledge covered with 3/16" polystyrene gasket to reduce metal-to-metal conducted noise and act as a weather seal
- Available in enlarger or reducer (shown) models

NEMA 1 Disconnect Switch

A NEMA 1 disconnect switch provides positive electrical shutoff during fan cleaning or maintenance of fan. VCU and VCUB fans are provided with a NEMA 1 type disconnect switch in the motor compartment when ODP or TEFC motors are used.

NEMA 3R Disconnect Switch

A NEMA 3R rain-tight disconnect switch, externally mounted, is available when ODP or TEFC motors are used. The switch is available shipped loose for field mounting and wiring or factory mounted and wired.

NEMA 4 Disconnect Switch

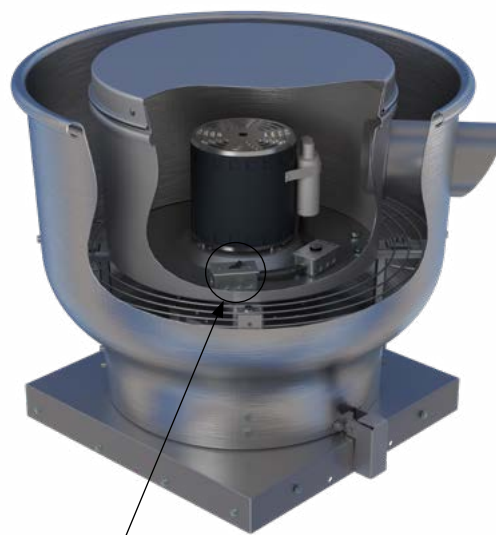
A NEMA 4 disconnect switch (optional) is mounted externally and is water- and dust-tight. Switch is available shipped loose for field mounting and wiring or factory mounted and wired.

NEMA 7/9 Disconnect Switch

NEMA 7/9 disconnect switches are provided as standard on fan packages with explosion proof motors. The NEMA 7/9 switch is designed for use with fans operating in hazardous environments. When explosion proof motors are specified, NEMA 7/9 disconnects will be shipped loose for field mounting and wiring. (Not shown.)

MODEL / CONFIGURATION		STANDARD DISCONNECT SWITCH			
		NEMA 1	NEMA 3R	NEMA 4	NEMA 7/9
VCU	Standard Roof / Wall	Standard	Optional	Optional	Standard, w/ EXP motor*
	Roof / Wall with Restaurant Package	Not Available	Standard	Optional	Standard, w/ EXP motor*
VCUB	Standard Roof / Wall	Standard	Optional	Optional	Standard, w/ EXP motor*
	Roof / Wall with Restaurant Package	Not Available	Standard	Optional	Standard, w/ EXP motor*

* Always ships loose



NEMA 1 Disconnect Switch

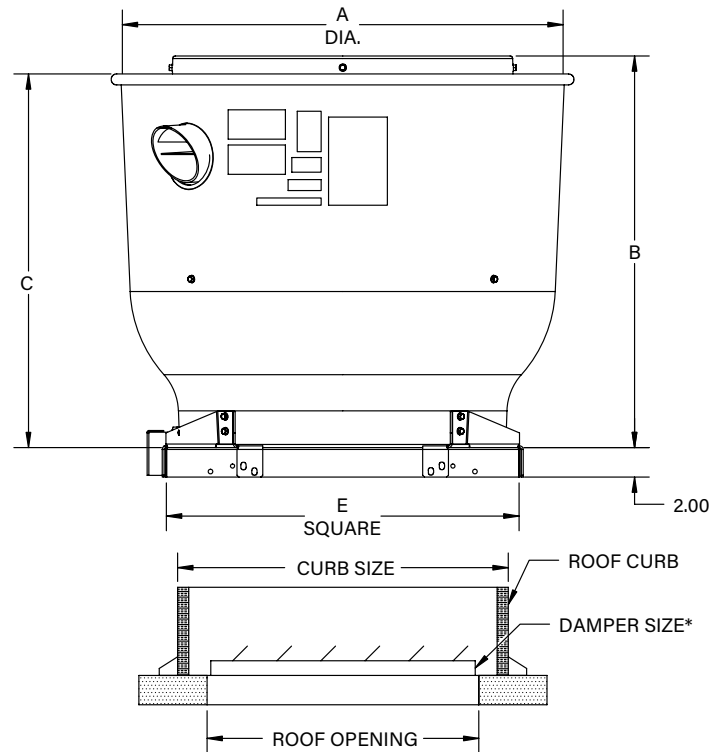


NEMA 3R Disconnect Switch



NEMA 4 Disconnect Switch

Model VCU (Roof Configuration)



* Damper not available on restaurant construction.

Dimensional Data and Weights

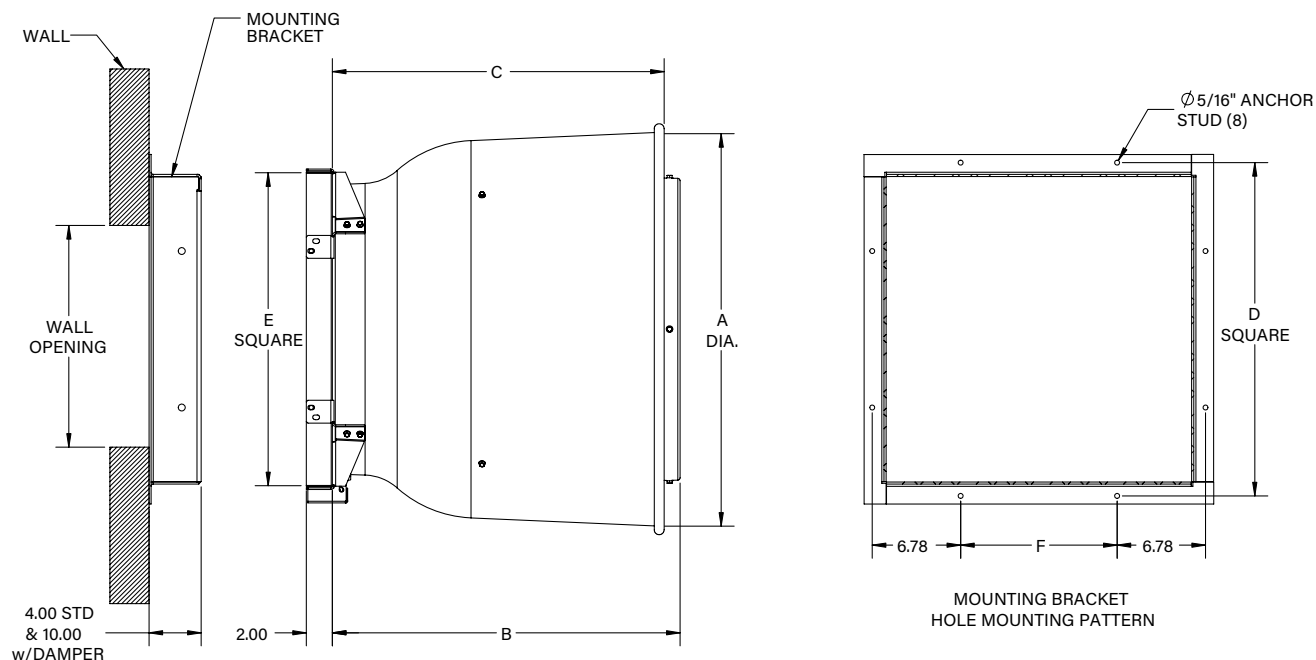
SIZE	A	B	C	E	DAMPER SIZE ¹	STANDARD CURB SIZE	SELF-FLASH CURB SIZE	ROOF OPENING	AVG. UNIT WT. (LB.) ⁷
085	23.50	18.20	18.00	17.00	10 x 10	15.50 x 15.50	16.50 x 16.50	10.50 x 10.50	60
089	23.50	18.20	18.00	20.00	14 x 14	18.50 x 18.50	19.50 x 19.50	14.50 x 14.50	65
098	23.50	18.20	18.00	20.00	14 x 14	18.50 x 18.50	19.50 x 19.50	14.50 x 14.50	65
110	23.50	18.20	18.00	20.00	14 x 14	18.50 x 18.50	19.50 x 19.50	14.50 x 14.50	65
112	23.50	18.20	18.00	20.00	14 x 14	18.50 x 18.50	19.50 x 19.50	14.50 x 14.50	65
122	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	95
124	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	95
135	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	95
140	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	100
150	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	100
157	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	100
165	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	100
177	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	135
182	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	135
197	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	135

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Notes:

1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Damper sizes are nominal.
4. Dampers not available with Restaurant Package.
5. Outside dimensions of roof curb should be 1" to 1.50" less than inside curb cap dimension 'E', depending on thickness of flashing material used. If curb hinges are used, specify 1.50" difference.
6. Restaurant construction available with self-flashing, vented, 12" high curb, built to 'standard' curb size dimensions above.
7. Unit weight includes an estimated motor weight.

Model VCU (Wall Configuration)



* Damper not available on restaurant construction.

Dimensional Data and Weights

SIZE	A	B	C	D	E	F	DAMPER SIZE ⁴	WALL MTG. BRACKET	WALL OPENING	AVG. UNIT WT. (LB.) ⁵
085	23.50	18.20	18.00	18.56	17.00	5.00	10 x 10	16.75 x 16.75	10.50 x 10.50	60
089	23.50	18.20	18.00	21.56	20.00	8.00	14 x 14	19.75 x 19.75	14.50 x 14.50	65
098	23.50	18.20	18.00	21.56	20.00	8.00	14 x 14	19.75 x 19.75	14.50 x 14.50	65
110	23.50	18.20	18.00	21.56	20.00	8.00	14 x 14	19.75 x 19.75	14.50 x 14.50	65
112	23.50	18.20	18.00	21.56	20.00	8.00	14 x 14	19.75 x 19.75	14.50 x 14.50	65
122	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
124	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
135	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
140	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
150	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
157	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
165	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	100
177	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	135
182	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	135
197	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	135

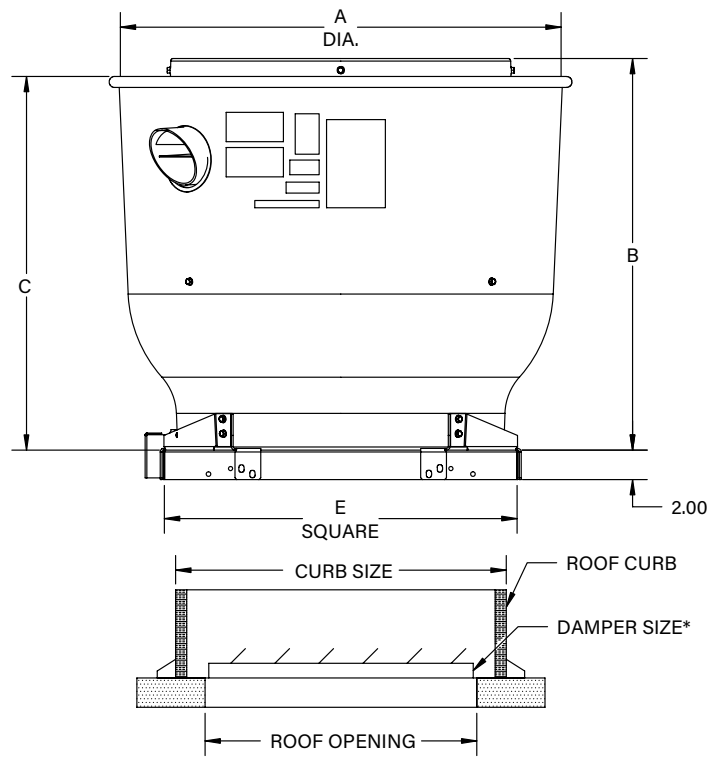
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Notes:

1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Damper sizes are nominal.
4. Dampers not available with Restaurant Package.
5. Unit weight includes an estimated motor weight.



Model VCUB (Roof Configuration)



* Damper not available on restaurant construction.

Dimensional Data and Weights

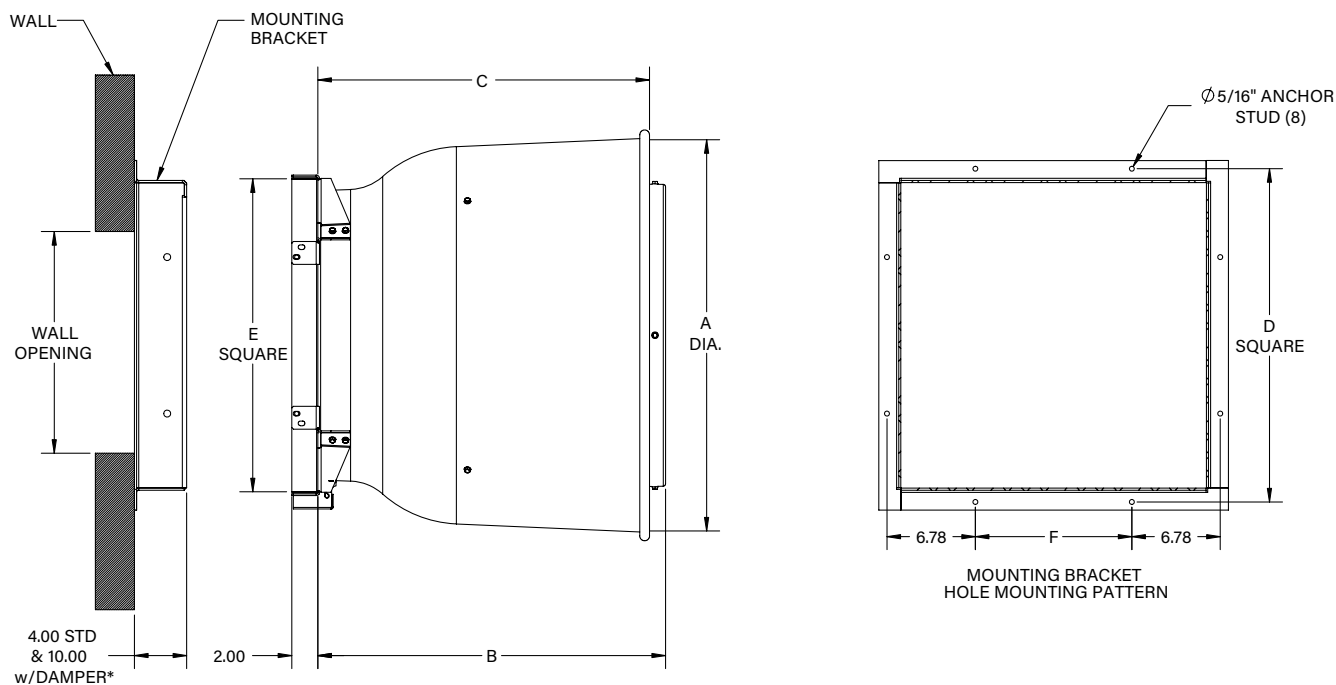
SIZE	A	B	C	E	DAMPER SIZE*	STANDARD CURB SIZE	SELF-FLASH CURB SIZE	ROOF OPENING	AVG. UNIT WT. (LB.) ⁶
122	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
124	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
135	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
140	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
150	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
157	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
165	30.00	26.66	25.44	24.00	18 x 18	22.50 x 22.50	23.50 x 23.50	18.50 x 18.50	135
177	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	180
182	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	180
197	36.13	33.30	30.00	30.00	24 x 24	28.50 x 28.50	29.50 x 29.50	24.50 x 24.50	180

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Notes:

1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Damper sizes are nominal.
4. Dampers not available with Restaurant Package.
5. Restaurant construction available with self-flashing, vented, 12" high curb, built to 'standard' curb size dimensions above.
6. Unit weight includes an estimated motor weight.

Model VCUB (Wall Configuration)



* Damper not available on restaurant construction.

Dimensional Data and Weights

SIZE	A	B	C	D	E	F	DAMPER SIZE ⁴	WALL MTG. BRACKET	WALL OPENING	AVG. UNIT WT. (LB.) ⁵
122	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
124	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
135	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
140	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
150	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
157	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
165	30.00	26.66	25.44	25.56	24.00	12.00	17 x 17	23.75 x 23.75	17.50 x 17.50	135
177	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	180
182	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	180
197	36.13	33.30	30.00	31.56	30.00	18.00	24 x 24	29.75 x 29.75	24.50 x 24.50	180

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Notes:

1. All dimensions are in inches unless otherwise noted.
2. Dimensions are not to be used for construction.
3. Damper sizes are nominal.
4. Dampers not available with Restaurant Package.
5. Unit weight includes an estimated motor weight.

TYPICAL SPECIFICATIONS



Model VCU

Roof and wall mounted exhaust fans shall be of the direct drive centrifugal type and shall be VCU as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 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. Model VCU shall be cULus 705 listed.

CONSTRUCTION — Fans shall be constructed of aluminum for durability and appearance. Fan spinnings shall have a rolled bead edge for rigidity. Units shall have a deep venturi inlet to prevent snow and rain entry into the building. The curb cap shall include prepunched mounting holes for ease of installation. An electrical chase shall be provided to the motor compartment. Lifting lugs shall be provided inside the motor compartment for ease of handling and installation. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

MOTOR ASSEMBLY — Motor assembly shall be mounted in a rigid housing to minimize vibration and noise transmission into the ductwork. Motors shall be mounted out of the exhaust airstream and shall have a cooling tube that provides air separate from the exhaust.

IMPELLER — Fan impellers shall be of the centrifugal backward inclined or curved type, constructed of aluminum and containing a matching inlet venturi for optimum unit performance. Impellers shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Balance Grade Quality G6.3.

MOTOR — Motors shall be heavy-duty ball bearing type, closely matched to the fan load. All single-phase ODP motors shall contain protection. All motors shall be UL and/or CSA recognized. Motors for use with speed control shall provide good speed controllability without any objectionable noise.

DISCONNECT SWITCH — A NEMA 1 disconnect switch shall be supplied with wiring leading from the motor to the junction box on models VCU with standard construction. A NEMA 3R disconnect switch shall be supplied with wiring leading from the motor to a junction box located outside of the motor compartment on models with the optional restaurant construction.

FINISH AND COATING — Fans shall be constructed of aluminum. The entire fan assembly, excluding the shaft, shall be properly washed and pretreated before application of a rust-preventative primer, if called out on the order. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly, if called out on the order. The fan shaft shall be coated with a petroleum-based rust protectant.

ACCESSORIES — When specified, accessories such as backdraft damper, roof curb, curb hinge, retaining chain, security hasp, variable speed controller, NEMA 3R disconnect switch, NEMA 4 disconnect switch, firestat, aluminum bird screen, aluminum insect screen, restaurant construction and special coatings shall be provided by Twin City Fan & Blower to maintain one source responsibility.

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.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its roof and wall mounted centrifugal exhaust fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first.



Model VCUB

Roof and wall mounted exhaust fans shall be of the belt driven centrifugal type and shall be VCUB as manufactured by Twin City Fan & Blower, Minneapolis, Minnesota.

PERFORMANCE — Performance ratings shall conform to AMCA Standard 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. Model VCUB shall be cULus 705 listed.

CONSTRUCTION — Fans shall be constructed of aluminum for durability and appearance. Fan spinings shall have a rolled bead edge for rigidity. Units shall have a deep venturi inlet to prevent snow and rain entry into the building. The curb cap shall include prepunched mounting holes for ease of installation. An electrical chase shall be provided to the motor compartment. Lifting lugs shall be provided inside the motor compartment for ease of handling and installation. Fans shall bear a permanently attached nameplate displaying model and serial number of the unit for future identification.

MOTOR AND DRIVE ASSEMBLY — Motor and drive assembly shall be mounted on a rigid structure to eliminate vibration and noise transmission into the ductwork. Motors and drives shall be mounted out of the exhaust airstream and shall have a cooling tube that provides air separate from the exhaust.

IMPELLER — Fan impellers shall be of the centrifugal backward inclined or curved type, constructed of aluminum and containing a matching inlet venturi for optimum unit performance. Impellers shall be statically and dynamically balanced in accordance with ANSI/AMCA 204-96 "Balance Quality and Vibration Levels for Fans" to Balance Grade Quality G6.3.

SHAFT — Fan shafts shall be precision-ground and polished. Shafts shall have a first critical speed of at least 125% of the fan's maximum operating speed.

BEARINGS — Bearings shall be of the one-piece, pillow block type with relubricable zerk fittings. Bearings shall be designed for air handling service with a minimum L-10 life in excess of 100,000 hours; L-50 500,000 hours at the maximum cataloged operating speed.

DRIVE — Drive assembly shall be constructed of heavy-gauge galvanized steel. Drives shall be sized for a minimum of 150% of driven horsepower. Machined, cast iron motor sheaves shall be adjustable for final system balance.

MOTOR — Motors shall be heavy-duty ball bearing type, closely matched to the fan load. All motors shall be UL and/or CSA recognized. Motor adjustment shall allow precise belt tensioning for optimum belt life and one-person adjustment and servicing.

DISCONNECT SWITCH — A NEMA 1 disconnect switch shall be supplied with wiring leading from the motor to the junction box on models VCUB with standard construction. A NEMA 3R disconnect switch shall be supplied with wiring leading from the motor to a junction box located outside of the motor compartment on models with the optional restaurant construction.

FINISH AND COATING — Fans shall be constructed of aluminum. The entire fan assembly, excluding the shaft, shall be properly washed and pretreated before application of a rust-preventative primer, if called out on the order. After the fan is completely assembled, a finish coat of paint shall be applied to the entire assembly, if called out on the order. The fan shaft shall be coated with a petroleum-based rust protectant.

ACCESSORIES — When specified, accessories such as backdraft damper, roof curb, curb hinge, retaining chain, security hasp, variable speed controller, NEMA 3R disconnect switch, NEMA 4 disconnect switch, firestat, aluminum bird screen, aluminum insect screen, restaurant construction and special coatings shall be provided by Twin City Fan & Blower to maintain one source responsibility.

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.

GUARANTEE — The manufacturer shall guarantee the workmanship and materials for its roof and wall mounted centrifugal exhaust fans for at least one (1) year from startup or eighteen (18) months from shipment, whichever occurs first

INDUSTRIAL PROCESS AND COMMERCIAL VENTILATION SYSTEMS

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CENTRIFUGAL ROOF & WALL EXHAUSTERS | CEILING VENTILATORS | GRAVITY VENTILATORS | DUCT BLOWERS

RADIAL BLADED FANS | RADIAL TIP FANS | HIGH EFFICIENCY INDUSTRIAL FANS | PRESSURE BLOWERS

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