# VERTICAL FLOOR/SILL MOUNT FAN COIL UNITS • IN ROOM – 41V SERIES

1. General

Furnish and install Engineered Comfort® Vertical Floor Direct Drive Fan Coil Units where indicated on the plans and in the specifications. All units shall be capable of meeting or exceeding the scheduled capacities for cooling, heating and air delivery. Units shall be ETL listed in compliance with UL/ANSI Standard 1995, and be certified as complying with ARI Standard 440.

2. Construction

a. All unit chassis shall be fabricated of heavy gauge galvanized steel panels able to meet 125-hour salt spray test per ASTM B-117. All unit chassis panels shall be insulated with 2 Ib/cu.ft water repellent fiberglass insulation. Insulation shall conform to UL 181 for erosion and NFPA 90A for fire, smoke and melting, and comply with a 25/50 Flame Spread and Smoke Developed Index per ASTM E-84 or UL 723. Additionally, insulation shall comply with Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21.

b. All exposed units shall have exterior panels fabricated of not less than 20-gauge galvanized steel. Optional: 16-gauge front panel on exposed units.

The front panel shall be attached with quarter turn quick open fasteners to allow for easy removal and access for service.

Optional: The front panel shall be attached with tamper proof fasteners.

c. Top panel shall be removable from fan coil without the need to disconnect piping or electrical wiring. The top panel shall be removed through no more than 8 screws.

d. Model 41VX exposed units shall include a recessed stamped louver discharge grille.

Model 41VS exposed sloped top units include an architectural grade linear bar discharge grille with a powder coated paint finish to match cabinet color. Optional on 41VX exposed units.

e. All concealed units shall have a minimum 1" (25) duct collar on the discharge.

3. Painted Finish

All painted cabinet exterior panels shall be finished with a TGIC Polyester powder paint of the standard factory color.

Optional

* Models 41VX and 41VS vertical floor fan coil units are available in a variety of woodgrain finishes.

4. Sound

Units shall have published sound power level data tested in accordance with AHRI Standard 350.

5. Power

Units shall not exceed scheduled power consumption.

6. Fan & Motor

a. Unit fan shall be dynamically balanced, forward curved, DWDI centrifugal type constructed of galvanized steel for corrosion resistance. Motors shall be high efficiency, permanently lubricated sleeve bearing, permanent split-capacitor type with UL and CSA listed automatic reset thermal overload protection and three separate speed taps. Shaded pole motors are not acceptable. Single speed motors are not acceptable.

b. The fan/motor assembly shall be removable and serviceable through the front panel. Each fan/motor assembly shall be fastened by no more than 2 screws. The motors shall have quick connectors to allow service and removal without the need for tools.

7. Drain Pan

a. Primary condensate drain pans shall be single wall, heavy gauge galvanized steel for corrosion resistance, and extend under the entire coil section. Drain pans shall be of one-piece construction and be positively sloped for condensate removal. Drain pan access that requires removal of coils is not acceptable.

b. The primary drain pan shall be externally insulated with a fire retardant, elastomeric closed cell foam insulation. The insulation shall carry no more than a 25/50 Flame Spread and Smoke Developed Rating per ASTM E-84 and UL 723 and an Antimicrobial Performance Rating of 0, no observed growth, per ASTM G-21.

Optional

* Provide a primary drain pan constructed entirely of heavy gauge stainless steel for superior corrosion resistance.

8. Coils

a. All cooling and heating coils shall optimize rows to meet the specified capacity. Coils shall have seamless copper tubes and shall be mechanically expanded to provide an efficient, permanent bond between the tube and fin. Minimum copper tube thickness shall be 0.016". Optional: 0.025".

High efficiency aluminum fins optimized for efficient heat transfer, air pressure drop and carryover. Lanced fins shall not be acceptable. Optional: Copper fins.

b. All coils shall be tested at 325 PSIG air pressure under water, and rated for a maximum 300 PSIG working pressure at 200°F (93°C). Coils shall be circuited for counter flow to maximize unit efficiency.

All water coils shall be designed to connect with 1/2" (13) nominal pipe connections.

c. Coil Casing shall be fabricated from galvanized steel.

Optional: Stainless steel.

d. Heating coils shall be furnished in the re-heat. Optional: Pre-heat position.

e. All water coils shall be provided with a manual air vent to allow for coil venting.

9. Filters

All units shall be furnished with a minimum 1" (25) fiberglass throwaway. Optional: 1" (25) pleated MERV 8 filter.

Filters shall be tight fitting to prevent air bypass. Filters shall be easily removable from the return air opening without the need for tools.

10. Electrical Units shall be furnished with single point power connection. Provide an electrical control box for motor and other electrical terminations.

11. Electric Heat:

a. Furnish an electric resistance heating assembly as an integral part of the fan coil unit, with the heating capacity, voltage and kilowatts scheduled. The heater assembly shall be rated for installation on the fan coil unit and be located so as not to expose the fan assembly to excessive leaving air temperatures that could affect motor performance.

b. The heater and unit assembly shall be listed for zero clearance and meet all NEC requirements, and be ETL listed with the unit as an assembly in compliance with UL/ANSI Standard 1995.

c. All heating elements shall be open coil type high grade Class A 80/20 Ni-Chrome wire mounted in ceramic insulators. All internal wiring shall be rated for 221°F (105°C) minimum.

d. All heaters shall include over temperature protection consisting of an automatic reset primary thermal limit. All heaters shall be single stage.

12. Piping Packages:

a. Provide a standard factory assembled valve piping package to consist of a 2 or 3-way, on/off, motorized electric control valve and two isolation ball valves.

b. Control valves shall be piped normally closed to the coil. Maximum entering water temperature on the control valve shall be 200°F (93°C) and maximum operating pressure shall be 190 PSIG.

c. Unions shall be provided to allow removal of piping package from unit without the need for brazing or cutting pipe.

Optional

* Provide modulating control valve (fail-in-place), in lieu of standard 2-position control valve with factory assembled valve piping package.
* Provide either a fixed or adjustable flow control device for each piping package.
* Provide pressure/temperature ports (P/T) for each piping package to allow measurement across the coil.

Piping packages shall be completely factory assembled, including interconnecting pipe and shipped loose for field installation.