

Magic Aire Fan Coil Unit

HVAC Guide Specifications

Size Range: **400 to 1000 Nominal CFM**

Magic Aire Model DV

Part 1 — General

1.01 SYSTEM DESCRIPTION

Vertical, 2-pipe or 4-pipe (or electric heat), room fan coil unit with painted finish cabinet for exposed or concealed installation.

1.02 QUALITY ASSURANCE

Unit shall be tested in accordance with ARI Standard 440 and ETL listed to US and Canadian safety standards. Each coil shall be factory tested for leakage at 450 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation. All equipment wiring shall comply with NEC requirements.

1.03 DELIVERY, STORAGE AND HANDLING

Each unit shall be individually packaged from point of manufacture. Unit shall be handled and stored in accordance with the manufacturer's instructions.

Part 2 — Product

2.01 EQUIPMENT

General:

Factory-assembled, vertical, draw-thru type fan coil for exposed or ducted installations. Unit shall be complete with water coil(s), fan(s), motor(s), drain pan, and all required wiring, piping, controls and special features.

A. Base Unit:

1. Units shall be fabricated of galvanized or galvanized steel. Casing to consist of heavy gauge steel insulated with 3/4" – 1.5 pound density insulation providing effective acoustical and thermal control, fire safety, and resistance to air erosion. Units shall pass 500 hour salt spray test as described in ASTM B-117. Cabinet shall include a removable front access panel with ducted return air, filter rack and 1-in. fiberglass throwaway filter. Cabinet exterior has a baked on polyurethane powder-coated finish for corrosion and scratch resistance while providing an enhanced appearance.
2. The drain pan shall extend the entire length and width of the coil. The drain connection shall be 3/4" FPT. Drain pan shall have average 3mil thick antimicrobial coating that provides 750hr salt spray rating per ASTM B117.

- i) Standard – 19ga galvanized steel
- ii) Optional - 20ga 304 stainless steel.

B. Fans:

Direct-driven, double-width fan wheels with forward curved blades shall be statically and dynamically balanced. The housing shall be constructed of heavy gauge galvanized steel with die-formed inlet cones. Fan wheels shall be constructed of galvanized steel.

C. Coils:

1. Standard base unit shall be equipped with a 4-row CW or DX coil for installation in a 2 or 4-pipe system.
2. Hot water heating coils in a 4 pipe system shall be two row water coils, field installed, for mounting on the unit discharge opening.
3. Field installed electric resistance heater shall be 1.0 to 10.0kW, depending on unit size and voltage, for mounting on unit discharge opening. Heaters shall include high limit cutout with auto reset and contactor.
4. Cooling coil options include a 4 row DX coil with orifice (R-22 only) or TXV (R-22 or R-410A).
5. All coils shall have 3/8-in. copper tubes and aluminum fins. Coil fins are mechanically bonded to tubes. The copper tubes comply with ASTM B-75. The fin thickness is 0.0045-in and tube thickness is 0.014-in. All coils are tested with air under water.

D. Controls and Safeties:

Unit shall be furnished with an optional 3-speed, 4-position fan switch on a wall plate for field mounting. The fan motor(s) shall be equipped with integral automatic temperature reset for motor protection.

E. Operating Characteristics:

1. A unit with single hydronic coil installed in a 2-pipe system shall be capable of providing heating or cooling as determined by the operating mode of the central water supply system and as determined by field-provided and installed valves and controls.
2. A unit with two hydronic coils installed in a 4-pipe system shall be capable of providing heating and cooling, controlled as determined by field-provided and installed valves and controls.

F. Electrical Requirements:

The unit power supply shall be single phase, 60 Hz. The standard unit is 120V, but 208/240V and 277V options are available.

G. Motor(s):

Fan motors shall be 3-speed; permanent split capacitor type, with sleeve type bearings and factory-sealed oil reservoirs to ensure lubrication; except for 277V motor which may have oil port.