

GENERAL DESCRIPTION – BELT DRIVE FAN COIL UNITS

HBD – Horizontal Belt Drive

VBA – Vertical Belt Drive

PART 1

1.1 SUMMARY

This section includes fan coil units and accessories.

1.2 SYSTEM DESCRIPTION

Belt Drive Fan Coil Units, 2-pipe, 4-pipe, or 2-pipe with electric heat, steam heat (consult factory). Horizontal or vertical cabinets.

1.3 QUALITY ASSURANCE

Coils shall be tested in accordance with AHRI Standard 410. Each coil shall be factory tested for leakage at 300 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation.

Base or "standard" units shall be ETL listed.

1.4 DELIVERY, STORAGE AND HANDLING

Unit shall be handled and stored in accordance with the manufacturer's instructions.

PART 2 - Products

2.1 Manufacturers

- A. Basis of design International Environment HBD/VBA Fan Coils. Contact 405-605-5000 for a Representative in your area, or visit www.iec-okc.com.
- B. Alternates that are subject to ten day prior approval must include rated package with details of accessories to ensure proper performance.

2.2 Configuration

- A. **VBA-Vertical Units:** Cabinet style floor mounted units complete with galvanized cabinet, including coils, blower section, double-sloped stainless steel drain pan, insulation, with (2, 4)-pipe unit configuration. Heating to be (hydronic, steam, electric).
- B. **HBD-Horizontal Units:** Ceiling mounted units complete with galvanized cabinet, including coils, blower section, sloped stainless steel drain pan, insulation, with 2- to 4-pipe unit configuration. Heating to be (hydronic, steam, total electric).

2.3 Certification

Units are listed by Intertek Testing Services (ITS). Units comply with the minimum requirements of the U.S. and Canadian national product safety standard, UL 1995/CSA C22.2 No. 236.

2.4 Materials

- A. General: Except as otherwise indicated shall be a standard by International Environmental Corporation.
- B. Coils:
 1. Copper tube, aluminum fin (copper fin), 1/2" staggered tube design, rated at 250 psig at 200°F, and leak tested at 300 psig.
 2. Provide [manual, automatic] air vent.

3. Provide end sheets and bottom coil baffles fabricated with galvanized (stainless) steel.
4. Optional DX (R-410A or R-22) coil configurations available.

C. Blowers:

1. Statically and dynamically balanced, and of indicated capacity.
2. Provide centrifugal, forward curved wheel.
3. Bearings shall be ball bearing type (no sleeve bearings allowed), permanently lubricated and sealed for life.
4. Bearings isolated from blower housing by rubber mounts set into heavy gauge metal support system.
5. Blower housing isolated from cabinet and motor.

D. Fan Drive:

1. Variable pitch motor pulley, fixed diameter blower sheave with keyed shaft.
2. Drive shall be designed for 120% of rated fan horsepower.

E. Motors:

1. Provide [single-phase, 3-phase] open drip proof, [resilient mounted (1/4 to 2 HP), rigid base mounted (3 and 5 HP)], NEMA Frame motors.
2. Motors shall be single speed, UL recognized or equivalent, Class B, continuous duty rated.
3. Factory wired to unit junction or control box.
4. Motor protected with internal thermal overload.
5. Motor bearings shall be provided pre-greased (permanently lubricated).
6. Motor mounted on adjustable base for belt tensioning and alignment.
7. Motor and drive installed on same end as coil connections for ease of service.

F. Electric Heaters:

1. When indicated in the schedule shall perform at indicated voltage, phase, and wattage in the specified number of stages.
2. Protect by automatic reset cutout and manual reset backup.

G. Cabinets:

1. Fabricate from heavy gauge galvanized steel (single wall construction).
2. Insulation to be 1" fiberglass, 1" premium IAQ fiberglass, 1" Foil Face, or 1" Closed Cell insulation to prevent sweating.
3. Furnish with access panels on both sides of unit, easily removable with hex key tool (without tools on HBD).
4. Holes for through-hanger rods are located at top and bottom 4 corners of cabinet on HBD unit.
5. Optional double wall construction with choice of 1" fiberglass or 1" closed cell insulation with solid or perforated inner liners. An antimicrobial coating can also be added.
6. Optional seismic structural upgrade to meet IBC-2009 and OSHPD seismic certification in accordance with ICC-ES-AS-156.

H. Drain Pans:

1. Fabricated from stainless steel.
2. Double-sloped toward outlets.
3. Inside is smooth for easy cleaning.
4. Externally foam insulated to prevent sweating.
5. Furnished with primary 3/4" male NPT and "tell-tale" 1/2" male NPT secondary drain connections on same end with coil connections. Secondary drain connection must be capped by installer if not used.
6. Drain pan is removable from cabinet from same end as coil connections for ease of cleaning.

I. Filters:

1. 2" pleated filters are standard (Filter options: 1" pleated, 2" nonwoven synthetic throwaway, 2" prefilter with 2" MERV 11 filter).
2. Removable from either side of filter rack (HBD: bottom filter access; VBA: top filter access).

2.5 Control Schemes

- A. Unit mounted, factory installed and wired motor contactor, and staged electric heat contactor(s) and fuse(s).
- B. Single-phase or 3-phase motors, single speed control, internal motor thermal protection.
- C. Equipped with door interlocking disconnect switch with lock-out tag-out compatibility.
- D. Electric heat controls include transformer, motor and electric heat contactors, motor and electric heat fuses and terminal strip.
- E. Electric heat available in single and 3-phase, and controlled in [single, 2, 3] stages of operation.
- F. Fuses must comply with NFPA 70E/IP20.