

PRODUCT DESCRIPTION | GENERAL INFORMATION

ACOUSTICS

Control of noise within both occupied and unoccupied spaces has become increasingly important to designers and building owners/occupants. Proper consideration must be given to placement of indoor air conditioning units, particularly in the occupied space.

Inherent flexibility of the fan and coil combination in the vertical configuration makes it a great solution for sound sensitive areas. In such instances, a fan running at a low speed with a high capacity coil normally yields satisfactory results. It also may be desirable to select a larger nominal capacity unit and operate it at a less than nominal airflow for further acoustical benefits. Being able to choose between single or dual blower configurations for the size 30 and 40 units allows for greater flexibility when trying to optimize the selection for both sound and performance. Even better, the enhanced control options also allow for a quieter turndown and the direct drive design also eliminates any noise issues caused by squeaky belts. It is also recommended to use 3-phase motors for sound sensitive applications to avoid potential 1-phase motor hum.

INSTALLATION

These floor mounted or ceiling hung units can be installed with external vibration isolation on a base rail (KBHD or KBVD) or hanger rods (KBHD only) at the corner points. This requires flex connections at the corner brackets, ductwork, electrical connections, and piping connections.

One of the most important and basic IAQ issues is condensate management. The first step to trouble-free operation is proper installation. It is very important that the unit be mounted high enough so that the condensate drain from the unit may be properly trapped. Please refer to the IOM manual found at www.krueger-hvac.com for specifics on this issue. As with all HVAC systems, these units should be installed according to all applicable ASHRAE standards, SMACNA, and local code requirements. When selected and installed properly, the units are seismically certified.

OPERATING LIMITATIONS

Krueger direct drive blower coil units offer unmatched performance capabilities across a broad range of airflow and static pressure requirements.

Units must not be operated above maximum fan speed or unit airflow as listed in the Fan Performance section of this catalog. Unit operation at greater than maximum fan speed could drastically reduce bearing life and may result in a catastrophic wheel failure.

Operating at greater than the maximum allowable airflow in the cooling mode may result in unsatisfactory operation due to moisture carryover from the coil. In addition, it is often not economical to operate a unit at its maximum fan speed due to the greater motor power requirements.

Units with electric heat should not be operated with a leaving air temperature greater than 104°F (40°C) to prevent electric heat limit trips and room stratification. To prevent excessive leaving air temperatures and limit trips, a hydronic (or steam) coil and electric heat should not be operated simultaneously. Electric heat units are equipped with a high limit lockout switch that disables the electric heater if the temperature of the hydronic coil is greater than 104°F (40°C).

Water coils must not be operated above a fluid velocity of 8 ft/sec to reduce the possibility of velocity induced erosion and flow noise. Water coils must not be operated below a fluid velocity of 1 ft/sec to prevent degraded coil performance caused by laminar flow. These high or low fluid flow rates may not be included in the AHRI coil certification.

DESIGNED FOR MAXIMUM FLEXIBILITY

Both horizontal and vertical direct drive blower coils are designed to maximize flexibility of selection and installation.

The units will exceed the stringent quality standards of the institutional markets, while remaining cost competitive in the light commercial markets.

COMPONENT OPTIONS

The extensive variety of standard options available on the KBHD and KBVD units are where you find the versatility to fit any HVAC system designer's needs.

Options include mixing boxes with standard low-leak dampers, high-efficiency filter sections for 2" prefilter and 4" final filter, and blow thru electric heat with single point power connection. All electric heat units are listed with ETL as an assembly and carry the cETLus label.

Disconnects and fusing mean easier coordination between mechanical and electrical trades.

Direct drive fans eliminate noise and reduce maintenance time caused by belts.

All KBHD and KBVD direct drive blower coils have the option of foil faced or closed cell foam insulation.

COIL OPTIONS

Coil options allow for 3, 4, or 6-row cooling coils. Water coils have optional circuiting that can be used to reduce water pressure drop, which may also allow for pipe size reductions and lower material cost. Hot water or standard steam coils may be placed in the preheat or reheat positions.

PRODUCT DESCRIPTION | GENERAL INFORMATION (CONTINUED)**QUALITY PRODUCT**

KBHD and KBVD direct drive blower coils are built from 18 gage galvanized steel. This metal surpasses the ASTM 125 hour salt spray test for corrosion and rust.

Standard insulation is 1" thick fiberglass, complying with UL 181 and NFPA 90A.

All units, with or without electric heat, are cETLus listed and labeled. All wiring is in compliance with NEC, assuring safety and quality for the owner.

BEST IN CLASS PERFORMANCE

Krueger direct drive blower coils feature class leading airflow, coil capacity, and pressure capabilities. The single and dual blower configuration options for the size 30 and 40 units also allow for greater flexibility when configuring for sound and performance.

LOWER INSTALLED COST

All KBHD or KBVD direct drive blower coils are shipped completely assembled, reducing field installation time and labor. All units are thoroughly inspected and tested prior to shipment, eliminating potential problems at startup. Standard wiring allows for single point power connection and all wiring is in compliance with NEC, ensuring safety and quality.

A wide variety of fan discharge configurations allow for increased flexibility and easier installation on the jobsite, resulting in cost reductions by eliminating expensive elbows, etc.

PRODUCT DESCRIPTION | FEATURES

STANDARD FEATURES

Construction

- Galvanized steel cabinet construction, minimum 18 gage
- 1" thick fiberglass insulation
- 1" supply duct collars
- Gasketed, removable access panels sized for easy handling
- IAQ galvanized steel drain pan (not included with heating-only units)
- Left and right hand arrangements

Fan Assembly

- Forward curved (double width, double inlet) fans
- Solid steel shafting
- Statically and dynamically balanced

Fan Motor and Drive

- Directly driven motor and blower
- Electronically commutated 1 and 3-phase motors with electronic protection

Electrical Control

- 1-speed motor controls accessible from exterior of control enclosure
- Three different control options to choose from:
 1. Variable 1-speed with manual adjustment
 2. Variable multi-speed with manual adjustment
 3. Proportional speed (2-10VDC, 0-10VDC or 4-20mA remote signal) with external adjustment

Coils

- Coils are designed, manufactured and tested by Krueger
- AHRI 410 certified and labeled
- 1/2" O.D. seamless copper tubes
- High efficiency aluminum surface for optimizing heat transfer, pressure drop, and carryover
- Mechanically expanded copper tubes are leak tested to a minimum 450 PSIG air pressure underwater
- 450 PSIG working pressure at 200°F (93°C)
- Evaporator coils are factory sealed and charged with a minimum of 5 PSIG nitrogen or refrigerated dry air
- Steam coils rated at 15 PSIG maximum operating pressure at about 35°F (2°C)
- 0.016" tube wall thickness (0.025" on steam)

Piping Packages

- Factory assembled, shipped loose
- 1/2", 3/4", 1", 1-1/4" & 1-1/2" piping size

Filters and Filter Rack

- Hinged side access flat filter rack
- Standard size 2" nominal throwaway filters
- Filter rack designed to accept 2" filters

Electrical

- Fan motor wired and terminated to junction box
- All units cETLus listed in compliance with UL/ANSI Standard 1995

OPTIONAL FEATURES

Construction

- IAQ stainless steel drain pan with 1" MPT galvanized pipe outlet
- External rubber-in-shear or spring type vibration isolators, hangers, or floor mount
- Scrim reinforced foil faced insulation
- Closed cell foam insulation
- 1" double wall construction
- Hinged access panels with lift and turn fasteners
- Base rails with rigging slots are factory assembled and installed
- Auxiliary (secondary) drain connections

Fan Motor and Drive

- Directly driven motor and blower
- Electronically commutated 1- and 3-phase motors with electronic protection

Coils

- 3, 4 and 6-row chilled water or DX coils
- 1 and 2-row hot water or standard steam coils
- Heating coil in preheat or reheat position
- Coil connections opposite handing
- Stainless steel coil casings
- Automatic air vents on water coils
- Heat pump compatible cooling coils
- 0.025" tube wall thickness

Filters

- 2" pleated filter
- Spare throwaway or pleated filters
- High efficiency filter rack with 2" and 4" filters

Inlet Damper Section

- Factory assembled and installed
- Heavy gage galvanized steel formed blade dampers
- Low-leak dampers with extruded vinyl blade seals and flexible metal jamb seals
- Parallel blade operation
- Interconnecting damper linkage

Electrical

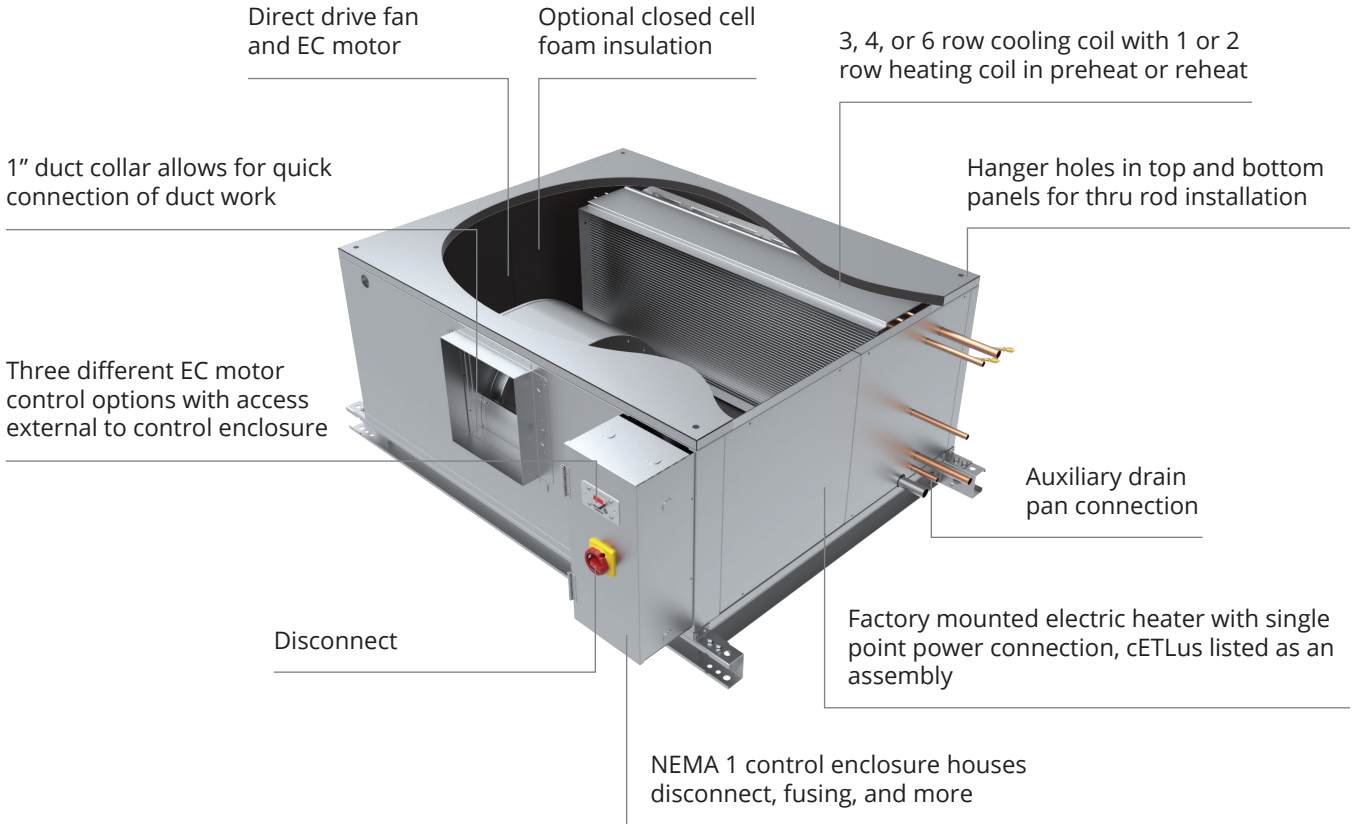
- Door interlocking disconnect switch (non-fused)
- Hand-Off-Auto (HOA) switch
- Main fusing
- Remote mounted digital display and programmable thermostats

Electrical Heat Section

- Factory mounted electric heater with single point power connection, cETLus listed as an assembly

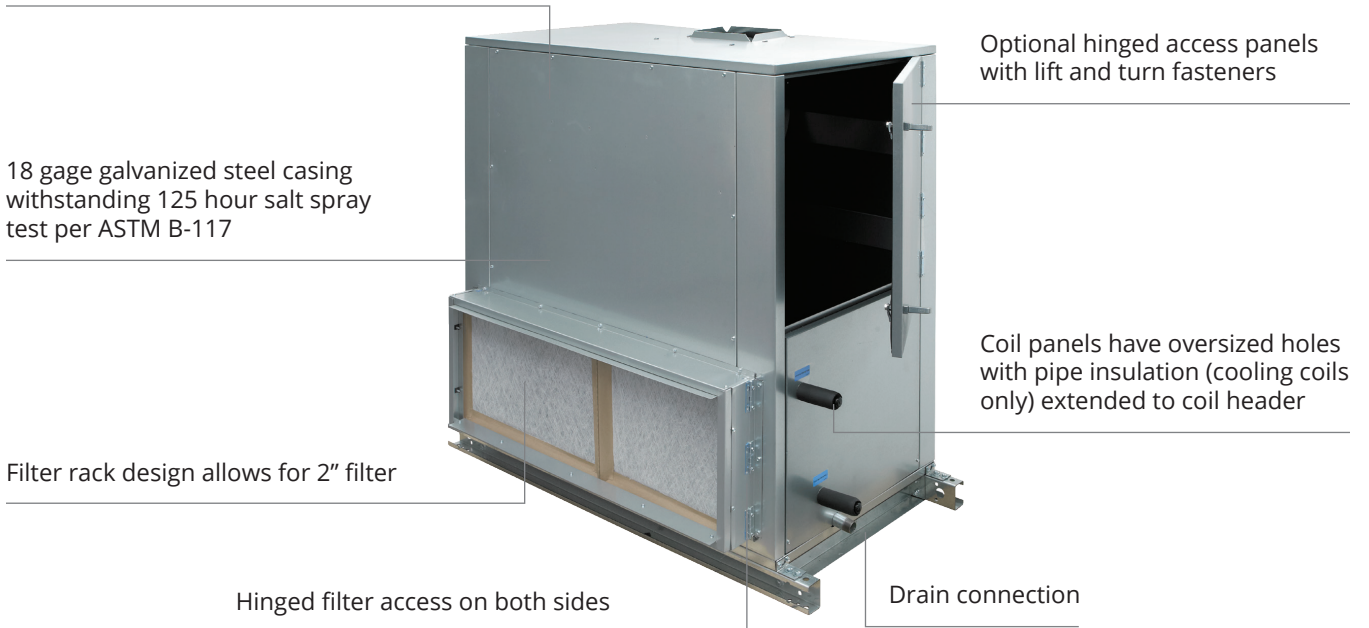
PRODUCT DESCRIPTION | FEATURES DETAIL

MODEL KBHD



MODEL KBVD

Multi-bend construction for optimum strength and rigidity



BLOWER COILS | DIRECT DRIVE
KBHD, KBVD