



VERTICAL SINGLE AND DOUBLE WALL ECM DIRECT DRIVE AIR HANDLER ECV UNITS

*DX OR CHILLED WATER COOLING
WITH HOT WATER OR ELECTRIC
HEAT*



MADE IN USA 



**SIZES FROM 600 CFM TO 4,000
CFM**

*All Technical Specifications are Subject to
Change without Notice. For more
information contact Customer Service
Phone (817)624.0820 Fax (817)624.8581*

STANDARD FEATURES

CONSTRUCTION

- Single and Double wall post and panel construction from heavy gauge galvanized steel.
- 1" Insulation sandwiched between double wall galvanized panels.
- 1" foil faced insulation on single wall units.
- IAQ drain pan sloped 3-ways.
- Drain pans made out of 304 stainless steel.
- Integral auxiliary drain pan.
- All cabinet parts are assembled with stainless steel hardware.
- Having our Belt Drive construction grade combined with direct drive fans for applications that work for some facilities that cannot use belt driven units.

BLOWER ASSEMBLY

- High efficiency ECM motors with forward curved DWDI fans provide up to 40% energy savings over PSC motors.
- All blowers are mounted to 12-gauge support channels on rubber isolators.
- Blower exits cabinet through flexible rubber isolators.
- A discharge duct flange is provided.

FILTER SECTION

- 2" TA flat filters are single wall standard.
- Filter access from front only.

COIL SECTION

- "A" type coils on all models
- 3/8" O.D. seamless copper tube on sizes 24 and 36.
- 1/2" O.D. seamless copper tube on sizes 48 to 120.
- Units can accept up to 6 rows of coil without modification.

STANDARD MOTORS

- Direct drive ECM fans start and stop with a ramp-up, reducing start-up sounds, and can be tuned to operate at just the right speed for less noise. Without belt losses, they are 5% or more efficient than belt drive systems.
- 115/230v 1ph, 277v 1ph, 208/230/460v 3ph.
- All units are ETL listed.
- Consult factory for single phase motors mounting options.

OPTIONAL FEATURES

CONSTRUCTION

- Liner options include stainless steel, aluminum, or Anti-microbial Coating. (Double wall only)
- Stainless steel integral overflow pan.
- Powder coated cabinet.
- Pre-painted steel cabinet

-MIXING BOXES

- *MB3-** Mixing Box with 3 position Manual Control (None filtered)
- *MBM-** Mixing Box with Modulating Actuator Control (Non Filtered)
- *FMB3-** Filtered Mixing Box w/3position Manual Control (2" TA Filter)
- *FMBM-** Filtered Mixing Box w/ Mod. Act. Control (2" TA Filter)
- *MSS-** Motor Stop/Start Station
- VDP** Vertical Discharge Plenum
- VRG** Return Grill for Vertical Unit

ELECTRIC HEAT SECTION

- Factory Supplied for Field Mounting
- Reheat Configurations.
- Single point power connection.
- Custom staging and controls.
- Available Voltages: Single phase (115v, 230v, 277v)
Three phase (208v, 230v, 460v, 575v)

VFD'S - Variable Frequency Drives

Available for Field installation for motors bigger than 1 hp

COIL SECTION

- 2, 4, 6, row coil options
- Heating coils are factory installed in reheat positions.
- Steam coils-Low Pressure, less than 5 PSI.
- Optional tube diameters.
- Optional stainless steel end plates.
- Face split, row split, intertwined circuiting available.
- Automatic air vents.

MOTOR OPTIONS

- TEFC
- High efficient.
- 2-speed 2-winding.
- 575 volt

GUIDE SPECIFICATIONS

Unit Description:

Vertical belt drive with optional chilled water, hot water, steam or DX coils. Galvanized steel cabinet can be double or single wall construction. Unit designated to be installed on the floor in vertical position. Units have full service access from the front of the cabinet.

Quality Assurance:

Coils are factory tested under water at 500 psig for operating pressures to 400 psig. Insulation and adhesive shall meet the NFPA-90A standard for smoke and flame spread.

Delivery, Handling and Storage:

Units have to be stored and handled in accordance with equipment manufacturer's recommendations.

PRODUCTS

Equipment:

- A. Factory assembled, vertical, draw-thru blower coil units, for installation on the floor in vertical position. Units shall be complete with chilled or hot water, steam or DX coils, fans and motor, belt and drives, drain pan and filter rack to accept 2" TA filters.

Cabinet, Single wall:

- B. Post and panel construction shall be from heavy gauge galvanize steel, lined with 1" 1.5 lb density and 0.5" as an option fiber glass Thermal acoustical insulation 7/8" closed cell is offered as an option too. Units will mount on the floor with an optional stand factory or contractor manufactured. Supply and return flanges to be 1" long. Large removable access panels shall be on front of unit.

Cabinet, Double wall:

- C. Post and panel construction shall be from heavy gauge galvanize steel, lined with 1" 1.5 lb density fiber glass Thermal acoustical insulation, lined with smooth galvanized steel. Units will mount on the floor with an optional stand factory or contractor manufactured. Supply and return flanges to be 1" long. Large removable access panels shall be on front of unit. **Drain Pan:**
- D. The primary shall be stainless steel and include a built in overflow pan with a 1" MPT secondary and a 1" MPT primary drain connection. Secondary drain shall be galvanized or stainless steel to prevent corrosion should an overflow occur.

Coil Section:

- E. All coils are "A" type coils on vertical units. Coils can have heating and cooling combinations up to 6 rows. Entire coil section cabinet shall be double wall lined with smooth galvanized steel for easy cleaning and coil removal.

Blowers:

- F. Belt Drive DWDI (double with, Double Inlet) fan wheel shall be forward curved blades and be factory statically and dynamically balanced. Blower's drives shall consist of cast iron variable pitch motor pulley and V-belt. Blowers and scrolls shall be manufactured from galvanized steel.

Coils:

- G. "A" Type coil tube diameters shall be 0.375", 0.50" or 0.625" OD copper tubes, aluminum fins mechanically bonded to the tubes and have a working pressure of 250 psig at 200 °F. Each water coil shall have manual air vents and sweat connections, which have to be accessible from the exterior of cabinet.

Motors:

- H. Motors shall be Open Type, Drip Proof, single or 2 speed, 60 Hz 1750 RPM, 1 or 3 phases, suitable for continuous duty at 130 °F; single phase motors are capacitor start, include automatic reset thermal over-load protection and are available in 115, 208, 230 and 277 volts. Three phase motors are available in 208, 230, 460 or 575 volts. Motors shall be resilient base mounted up to 2 hp. From 3 hp and up shall be rigid base mounted.

Electric Heat:

- I. Electric heat shall be designed to mount at the discharge air openings of the unit. Electric heat is factory supplied for field installation and shall include a de-energizing magnetic control contactor per stage with a capacity of 48 Amps per circuit and include a secondary over-temperature switch. Heaters shall include fan-interlocking, power and control terminal boards with grounding lugs. An automatic limit switch shall provide aver-temperature protection and a manual reset limit switch shall provide secondary over-temperature protection. Electric heat is factory supplied for field mounting.

Filters:

- J. Standard filter rack shall include 2" TA filters, with option for 2" pleated filters. Filter racks have to be accessible from the front of unit.

VERTICAL DIRECT DRIVE AHU CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #1

| HP | H | W | E | D | A | 0 | 9 | 0 | B | 3 | 2 | 2 | 5 | 1 | . | 2 | 5 | 2 | 4 | 2 | A | R | H | 6 |
|---|-------|---|---|---|----|------|---|---|----|-----|---|---|---|-----|---|-----------|---|---|----|----|-------|---|---|---|
| TYPE | MODEL | | | | CM | SIZE | | | BS | CFM | | | | ESP | | COIL ROWS | | | RF | CN | MOTOR | | | |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>UNIT TYPE</p> <p>HP HIGH PERF EC ECM MOTOR BD BELT DRIVE</p> <p>UNIT CONFIGURATION</p> <p>H HORIZONTAL V VERTICAL M MODULAR R ROOFTOP</p> <p>COOLING OPTIONS</p> <p>W CHILLED WATER X DIRECT EXPANSION 0 NO COOLING</p> <p>HEATING OPTIONS</p> <p>H HOT WATER S STEAM E ELECTRIC O NO HEAT</p> <p>UNIT INSULATION</p> <p>S SINGLE WALL 1" F F FIBERGLAS D DOUBLE WALL U SINGLE WAL 7/8" CLOSED CELL X SPECIAL</p> <p>CABINET MATERIAL</p> <p>A GALVANIZED STEEL B PRE-PAINTED STEEL C POWDER PAINTED</p> <p>UNIT SIZE</p> <p>024 24000 036 36000 048 48000 060 60000 090 90000 120 120000 180 180000 240 240000</p> <p>BLOWER SIZE OPTIONS</p> <p>1 9 X 4 2 9 X 6 3 9 X 9 4 10 X 10 5 12 X 12 6 15 X 11 7 15 X 15 8 18 X 18</p> </div> <div style="width: 45%;"> <p>PRE-HEAT</p> <p>0 NO PH 1 1- ROW 2 2-ROW</p> <p>COOLING</p> <p>0 NO COOLING 2 2-ROWS 4 4-ROWS 6 6-ROWS 8 8-ROWS</p> <p>RE-HEAT</p> <p>0 NO RH 1 1- ROW 2 2-ROW</p> <p>REFRIGERANT</p> <p>A R-410A B R-22 C R-NU22 D R-134A 0 NONE</p> <p>PIPING CONNECTIONS</p> <p>R RIGHT HAND L LEFT HAND ALL CONNECTIONS ARE SET LOOKING THE UNIT IN THE AIR FLOW DIRECTION</p> <p>MOTOR SIZE AND VOLTAGE OPTIONS</p> <p>1ST DIGIT</p> <p>A 0.25 HP B 0.33 HP C 0.50 HP D 0.75 HP E 1.00 HP F 1.50 HP G 2.00 HP H 3.00 HP I 5.00 HP J 7.50 HP K 10.0 HP</p> <p>2ND DIGIT</p> <p>1 115/1 ODP/HE 2 208/1 ODP/HE 3 230/1 ODP/HE 4 277/1 ODP 5 208/3/60/ODP/HE 6 230/3/60/ODP/HE 7 460/3/60/ODP/HE 8 575 /3/60/ ODP/HE</p> </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | |

VERTICAL DIRECT DRIVE AHU

CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #2

| | | | | | | | | | | | | | | | | | |
|---|--------------|---|---|---|-------|---|---|---|---|-------------|---|---|---|-----------------|---|------|------|
| B | B | C | O | E | 1 | 0 | 0 | . | 0 | C | 0 | 0 | C | F | 0 | 1 | 1 |
| | UNIT ACCS | | | V | EH KW | | | | | HTR ACCS | | | V | VFD ACC S | | REV. | REV. |

| | | |
|-------------|--|--|
| FACTORY USE | | |
|-------------|--|--|

OUTSIDE AIR OPTIONS

- O NONE
- A MIXING BOX W/ PLEATED FILTER 2"
- B MB W/ 3 POSITION CONTROL PACKAGE
- C MB W/MODULATING CONTROL PACKAGE
- E FACE & BYPASS DAMPER W/FILTER SEC.
- F 100% OUTSIDE AIR HOOD W/DAMPER
- G 30% OUTSIDE AIR HOOD W/DAMPER
- X SPECIAL

UNIT ACCESSORIES

- O NONE
- A PLEATED FILTER 2"
- B DISCHARGE GRILL PLENUM
- C RETURN GRILL AIR PLENUM
- E MOTOR START STOP STATION
- F ROOF CURB 12"
- G ROOF CURB 14"
- X SPECIAL

HEATER VOLTAGE

- O NO HEATERS
- A 115/1
- B 208/1
- C 230/1
- E 277/1
- F 208/3
- G 230/3
- H 460/3
- J 575/3

HEATER CAPACITY

- 1.0 to 100.0 KW IN .1 Kw increments
- O NO HEATERS

HEATER ACCESSORIES

- O NO ACCESSORIES
- A Single point line Conn.
- B SCR Controls
- C Start Stop Control St
- D None

VFD ACCESSORIES

- O NO ACCESSORIES
- A REM MTG KIT
- B LCP11 CONT PANEL
- C LCP12 CONT PANEL
- D NE/UL TY1 K FOR M1 FR
- E NE/UL TY1 K FOR M2 FR
- F NE/UL TY1 K FOR M3 FR
- G DECOUPLING PLT KIT FOR M1&M2 FRAME
- H DECOUPLING PLT KIT FOR M3 FRAME
- I IP21 FOR M1 FRAME
- J IP21 FOR M2 FRAME
- K IP21 FOR M3 FRAME
- L DIN RAIL MTG KIT

VFD SIZE

- O NO VFD
- A 0.25 HP 230/1
- B 0.50 HP 230/1
- C 1.00 HP 230/1
- D 2.00 HP 230/1
- E 3.00 HP 230/1
- F 0.33 HP 230/3
- G 0.50 HP230/3
- H 1.00 HP 230/3
- I 2.00 HP 230/3
- J 3.00 HP 230/3
- K 5.00 HP 230/3
- L 0.50 HP 460/3
- M 1.00 HP 460/3
- N 2.00 HP 460/3
- P 3.00 HP 460/3
- Q 5.00 HP 460/3
- R 7.50 HP 460/3
- S 10.0 HP 460/3

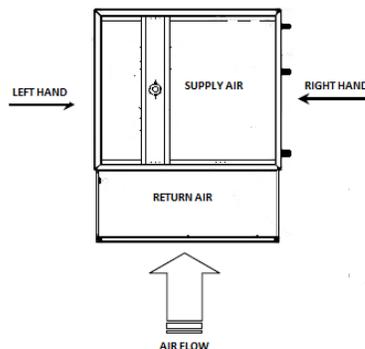
For more information contact Customer Service

Phone: 817-624-0820 Fax: 817-624-8581

| VERTICAL UNITS COIL DATA | | | | | | | | |
|--------------------------|--------------------|--------------|--------------|------|-------|---------------|---------|-----|
| MODEL | FIN BLOCK H X W | COIL TYPE | FACE AREA | ROWS | FPI | WATER CONN | DX CONN | |
| | | | | | | | SUCT | LIQ |
| 24 | 14 X 20 | HW | 1.94 | 1 | 10 | 5/8 | N/A | N/A |
| | 14 X 20 | HW | 1.94 | 2 | | 5/8 | N/A | N/A |
| | (2) 12 X 16 | CW/DX | 2.66 | 4 | | 7/8 | 7/8 | 3/8 |
| | (2) 12 X 16 | CW/DX | 2.66 | 6 | | 7/8 | 7/8 | 3/8 |
| 36 | 14 X 20 | HW | 1.94 | 1 | | 7/8 | N/A | N/A |
| | 14 X 20 | HW | 1.94 | 2 | | 7/8 | N/A | N/A |
| | (2) 14 X 16 | CW/DX | 3.11 | 4 | | 7/8 | 7/8 | 3/8 |
| | (2) 14 X 16 | CW/DX | 3.11 | 6 | | 7/8 | 7/8 | 3/8 |
| 48 | 18 X 20 | HW | 2.5 | 1 | | 7/8 | N/A | N/A |
| | 18 X 20 | HW | 2.5 | 2 | | 7/8 | N/A | N/A |
| | (2) 15 X 18 | CW/DX | 3.75 | 4 | | 1 1/8 | 7/8 | 1/2 |
| | (2) 15 X 18 | CW/DX | 3.75 | 6 | | 1 1/8 | 7/8 | 1/2 |
| 60 | 22.5 X 20 | HW | 3.47 | 1 | | 7/8 | N/A | N/A |
| | 22.5 X 20 | HW | 3.47 | 2 | | 7/8 | N/A | N/A |
| | (2) 15 X 23 | CW/DX | 4.79 | 4 | | 7/8 | 7/8 | 1/2 |
| | (2) 15 X 23 | CW/DX | 4.79 | 6 | | 7/8 | 7/8 | 1/2 |
| 90 | 39 X 22 | HW | 5.95 | 2 | 1 3/8 | N/A | N/A | |
| | (2) 15 X 33 | CW/DX | 6.88 | 4 | 1 3/8 | 1 1/8 | 1/2 | |
| | (2) 15 X 33 | CW/DX | 6.88 | 6 | 1 3/8 | 1 1/8 | 1/2 | |
| 120 | 43.5 X 22 | HW | 6.65 | 2 | 1 3/8 | N/A | N/A | |
| | (2) 15 X 45 | CW/DX | 9.38 | 4 | 1 3/8 | 1 1/8 | 5/8 | |
| | (2) 15 X 45 | CW/DX | 9.38 | 6 | 1 3/8 | 1 1/8 | 5/8 | |

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VERTICAL ECM MOTORS DIRECT DRIVE VERTICAL UNITS

FILTER ARRANGEMENTS

SIZE 24 & 36 (2) **12 X 24 X 2**

SIZE 48 & 60 (2) **16 X 24 X 2**

SIZE 90 & 120 (4) **20X25X2**



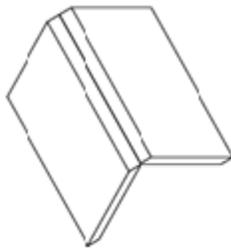
SIZE 24 & 36



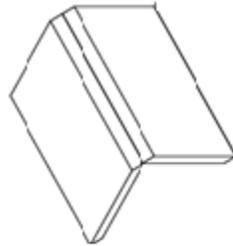
SIZE 48 & 60



SIZE 90 & 120



SIZE 24 & 36



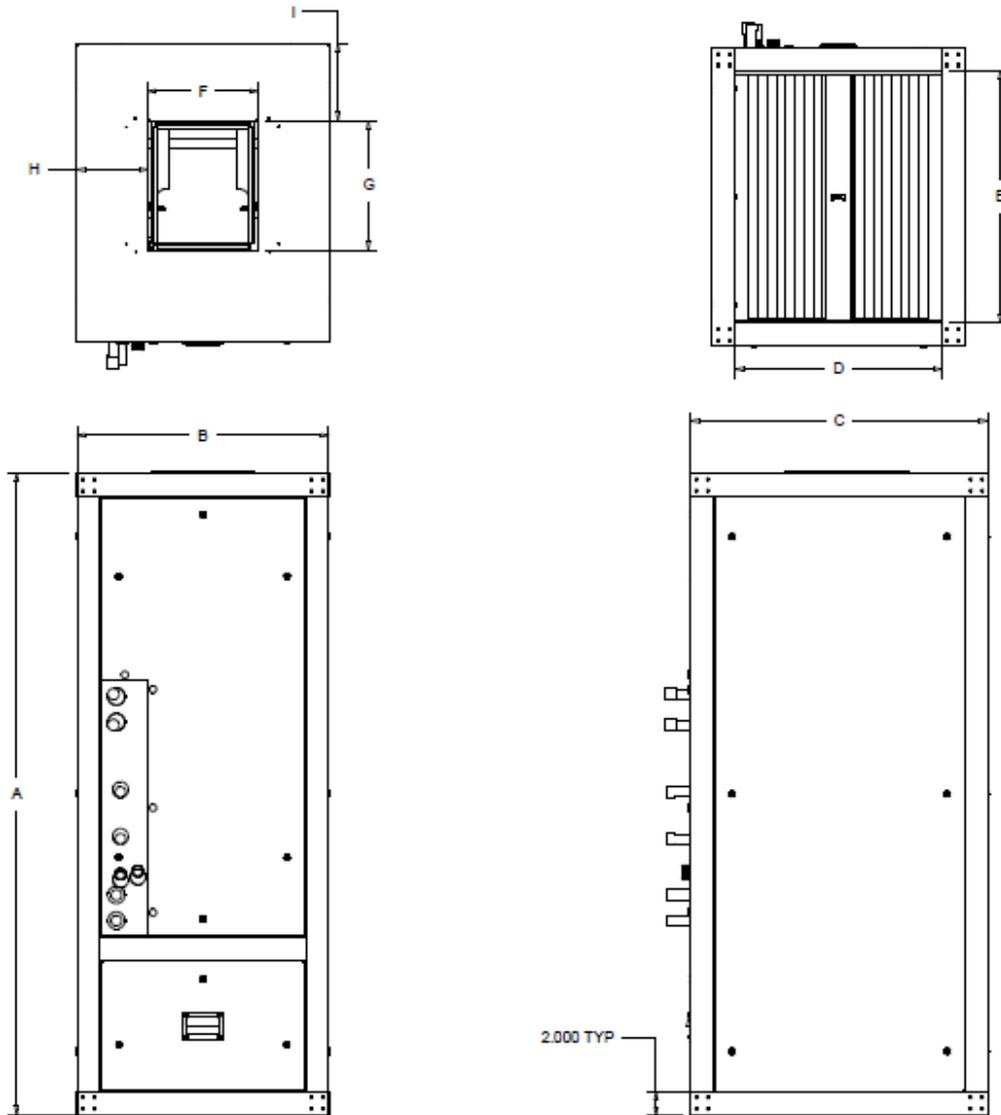
SIZE 48 & 60



SIZE 90 & 120

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UNIT DIMENSIONS SINGLE AND DOUBLE WALL



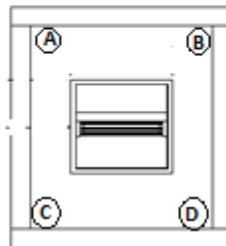
VERTICAL UNITS DIMENSIONS

| Unit Model | A | B | C | D | E | F | G | H | I |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| V***A - 024 | 56.00 | 22.00 | 26.00 | 18.00 | 22.00 | 9.13 | 11.13 | 5.88 | 7.88 |
| V***A - 036 | 56.00 | 22.00 | 26.00 | 18.00 | 22.00 | 12.69 | 11.13 | 5.88 | 7.88 |
| V***A - 048 | 66.00 | 30.00 | 26.00 | 26.00 | 22.00 | 14.00 | 12.25 | 9.50 | 7.50 |
| V***A - 060 | 66.00 | 30.00 | 26.00 | 26.00 | 22.00 | 16.50 | 14.50 | 7.50 | 5.50 |
| V***A - 090 | 75.00 | 52.00 | 30.00 | 48.00 | 26.00 | 19.50 | 16.75 | 18.00 | 7.00 |
| V***A - 120 | 75.00 | 52.00 | 30.00 | 48.00 | 26.00 | 19.50 | 16.75 | 18.00 | 7.00 |

| VERTICAL UNITS WEIGHT AND DISTRIBUTION BASED ON 6 ROW "A" TYPE COIL | | | | | | | | | |
|---|------------------------------------|-----|-----|-----|--------------|---|------|-------------|--|
| Unit Model | Corner weights 6 Row "A" Type Coil | | | | Total Weight | Correction Factors for Rows and Single Wall | | | |
| | A | B | C | D | | 4R | 2R | Single Wall | |
| V***A - 024 | 55 | 58 | 54 | 52 | 219 | -20 | -28 | -35 | |
| V***A - 036 | 58 | 61 | 56 | 54 | 229 | -27 | -39 | -35 | |
| V***A - 048 | 72 | 83 | 67 | 74 | 296 | -35 | -50 | -40 | |
| V***A - 060 | 77 | 85 | 69 | 76 | 307 | -45 | -65 | -40 | |
| V***A - 090 | 98 | 108 | 102 | 101 | 409 | -72 | -103 | -65 | |
| V***A - 120 | 107 | 113 | 105 | 102 | 427 | -95 | -140 | -65 | |

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TOP VIEW





SUPPLY AIR PLENUM WITH ADJUSTABLE FOUR WAY GRILL

Notes:

The drawings and dimensions on this page are for illustration purpose

Consult factory for final drawings for construction

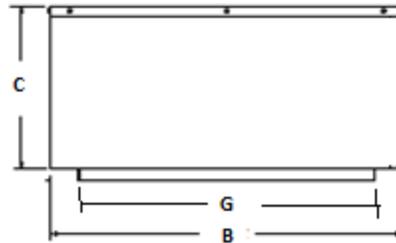
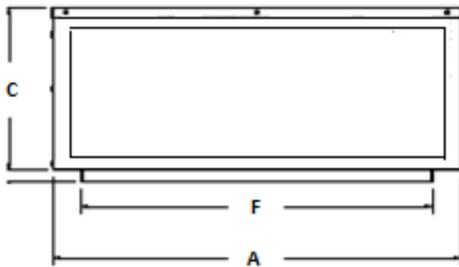
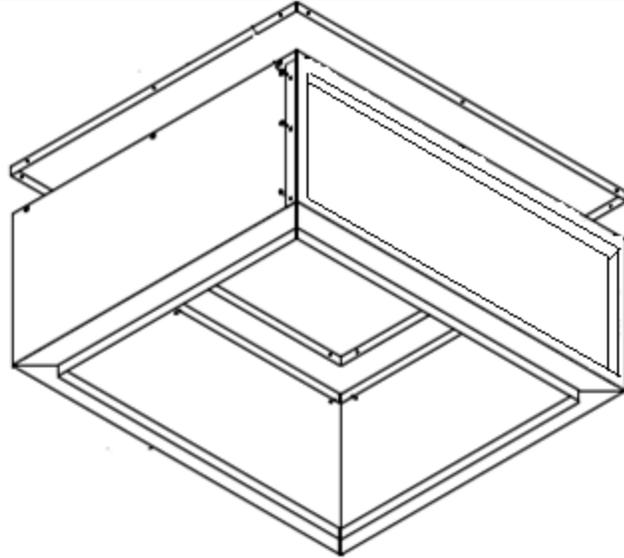
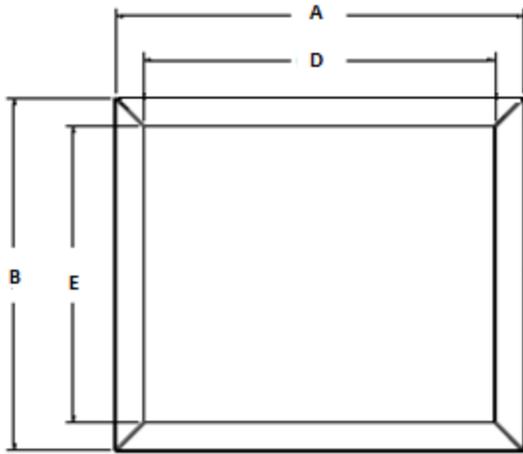
Units with supply air plenum cannot have electric heat

Units with return air plenum cannot have mixing box, no face & by pass dampers

Supply and return air plenums are made with heavy gauge galvanized steel

| MODEL | A | B | C | D | E | F | G | GRILL |
|-------|---|---|---|---|---|---|---|-------|
|-------|---|---|---|---|---|---|---|-------|

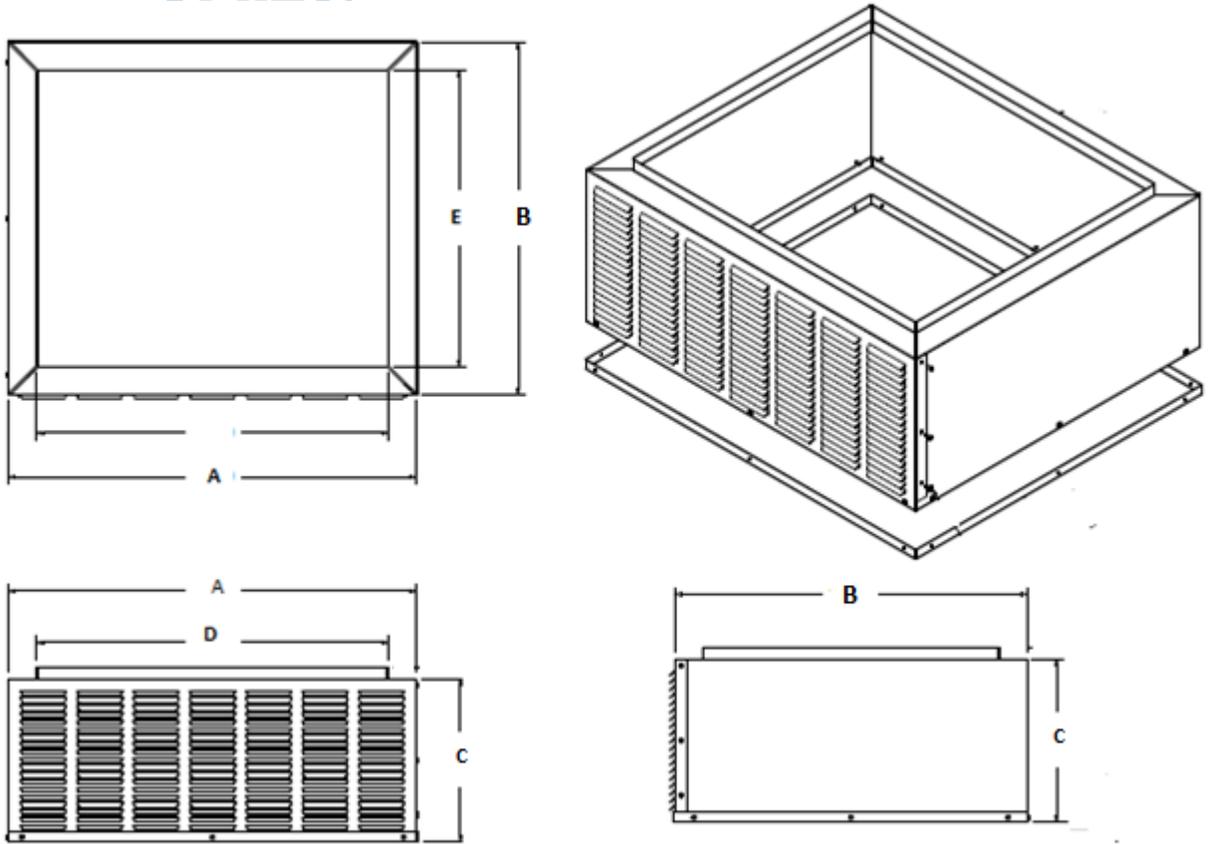
| | | | | | | | | |
|--|------|------|----|----|----|-------|-------|----------|
| VSP - 024/036 | 22.0 | 26.0 | 14 | 18 | 22 | 12.69 | 11.13 | 12X18 4W |
| VSP - 048/060 | 30.0 | 26.0 | 18 | 26 | 22 | 16.5 | 14.5 | 16X26 4W |
| VSP - 090/120 | 52.0 | 30.0 | 20 | 48 | 26 | 19.5 | 16.75 | 18X48 4W |
| ALL DIMENSIONS SHOWN ARE APPROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE | | | | | | | | |



RETURN AIR PLENUM UNITS WITH FIX RETURN GRILL

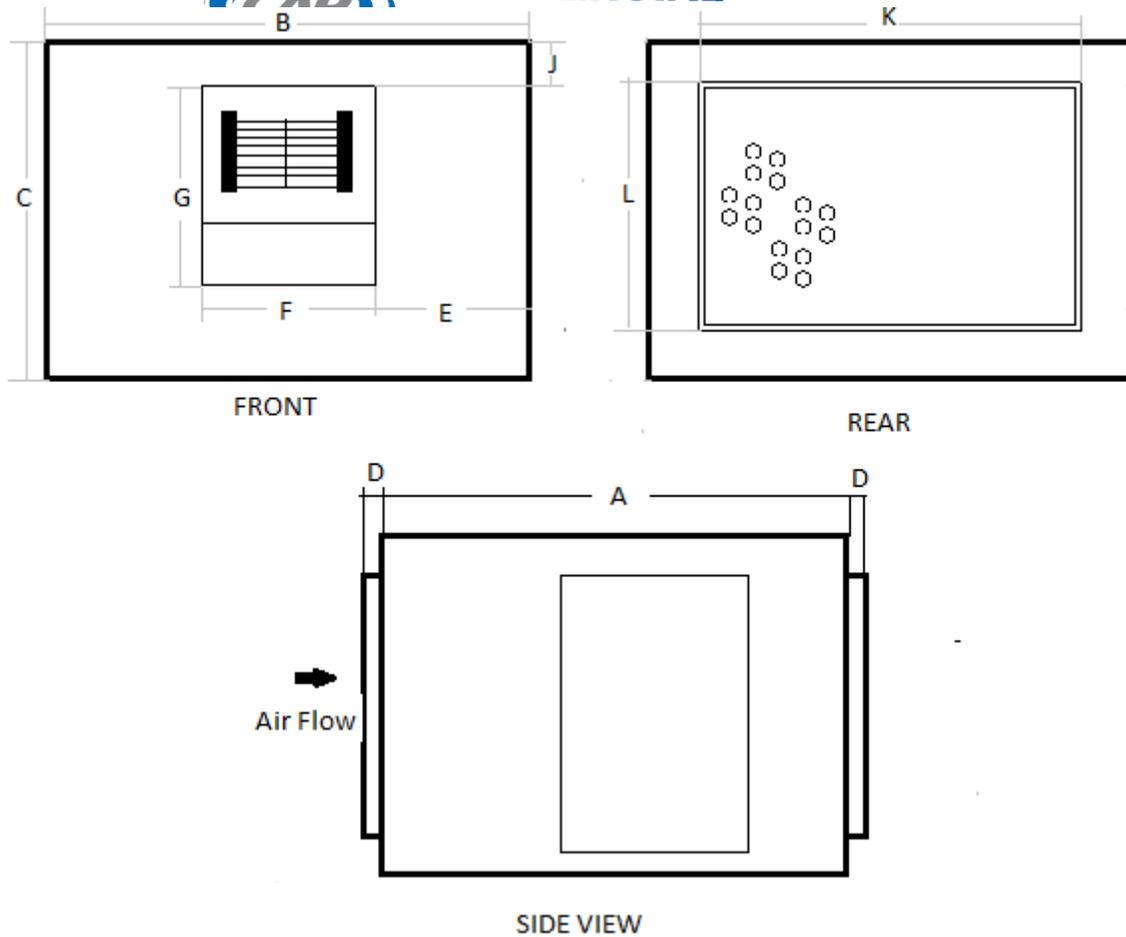
Notes:

- The drawings and dimensions on this page are for illustration purpose
- Consult factory for final drawings for construction
- Units with supply air plenum cannot have electric heat
- Units with return air plenum cannot have mixing box, no face & by pass dampers
- Supply and return air plenums are made with heavy gauge galvanized steel



| MODEL | A | B | C | D | E |
|--|------|------|----|----|----|
| VRTP - 024/036 | 22.0 | 26.0 | 12 | 18 | 22 |
| VRTP - 048/060 | 30.0 | 26.0 | 12 | 26 | 22 |
| VRTP - 090/120 | 52.0 | 30.0 | 12 | 48 | 26 |
| ALL DIMENSIONS SHOWN ARE APPROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE | | | | | |

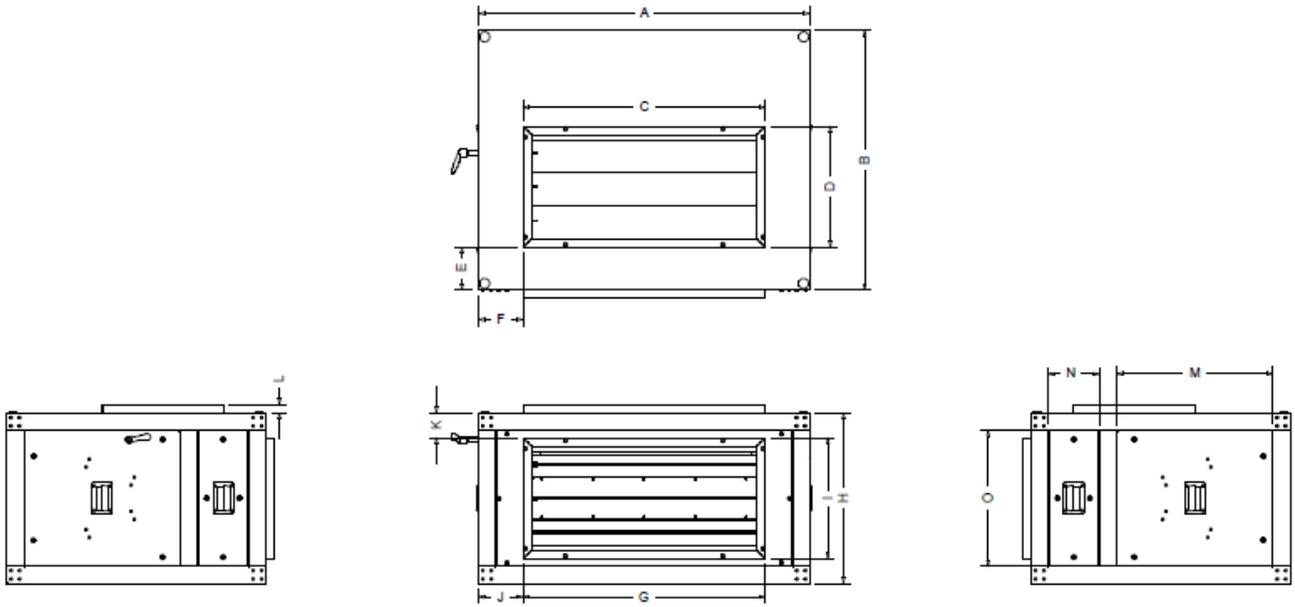
FACE & BY-PASS DAMPER FOR SIZE 024 TO 120



DIMENSIONS

| MODEL | | | A | B | C | D | E | F | G | J | K | L |
|--|---|---------|-------|-------|-------|------|------|-------|-------|------|-------|-------|
| VFBDP | - | 024/036 | 26.00 | 22.00 | 25.00 | 0.75 | 6.50 | 18.00 | 15.25 | 3.00 | 15.00 | 16.50 |
| VFBDP | - | 048/060 | 26.00 | 30.00 | 30.00 | 0.75 | 6.50 | 18.00 | 15.25 | 3.00 | 23.00 | 22.50 |
| VFBDP | - | 090/120 | 30.00 | 52.00 | 35.00 | 0.75 | 6.50 | 18.00 | 15.25 | 3.00 | 45.00 | 26.50 |
| ALL DIMENSIONS SHOWN ARE APPROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE | | | | | | | | | | | | |

MIXING BOX FOR SIZE 024 TO 120



DIMENSIONS

| UNIT | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|-------------|------|------|------|------|-----|------|------|------|------|------|------|-----|------|-----|------|
| V*MB3 - 024 | 22.0 | 26.0 | 16.5 | 15.0 | 5.0 | 2.25 | 19.5 | 25.0 | 14.5 | 3.25 | 5.25 | 1.0 | 12.5 | 6.0 | 20.0 |
| V*MB3 - 036 | 22.0 | 26.0 | 16.5 | 15.0 | 5.0 | 2.25 | 19.5 | 25.0 | 14.5 | 3.25 | 5.25 | 1.0 | 12.5 | 6.0 | 20.0 |
| V*MB3 - 048 | 30.0 | 34.0 | 22.5 | 23.0 | 5.0 | 3.75 | 27.5 | 30.0 | 17.5 | 3.25 | 6.25 | 1.0 | 12.5 | 6.0 | 25.0 |
| V*MB3 - 060 | 30.0 | 34.0 | 22.5 | 23.0 | 5.0 | 3.75 | 27.5 | 30.0 | 17.5 | 3.25 | 6.25 | 1.0 | 12.5 | 6.0 | 25.0 |
| V*MB3 - 090 | 52.0 | 52.0 | 39.5 | 45.0 | 5.0 | 6.25 | 45.5 | 35.0 | 22.5 | 3.25 | 6.25 | 1.0 | 16.5 | 6.0 | 30.0 |
| V*MB3 - 120 | 52.0 | 52.0 | 39.5 | 45.0 | 5.0 | 6.25 | 45.5 | 35.0 | 22.5 | 3.25 | 6.25 | 1.0 | 16.5 | 6.0 | 30.0 |