

HORIZONTAL SINGLE AND DOUBLE WALL ECM DIRECT DRIVE AIR HANDLER ECH UNITS

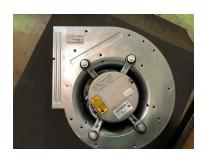
DX OR CHILLED WATER COOLING WITH HOT WATER OR ELECTRIC HEAT



MADE IN USA







SIZES FROM 600 CFM TO 9,000 CFM

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

Tel: 817-624-0820



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 from 304 stainless steel.
- -Integral auxiliary drain pan.
- -Both sides of cabinet include gasket, service access panels.
- -Factory installed mounting rails provided for unit suspension system on units up to 3000 cfm. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners
- -All cabinet parts are assembled with stainless steel hardware.
- -All access panels can be removed while unit is suspended without affecting the unit's structure.

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" or 4" TA flat filters are standard on all units.

COIL SECTION

- -3/8", $\frac{1}{2}$ " & 5/8" O.D. seamless copper tube on sizes 24 to 240
- -Coil and drain pan assembly slides into cabinet from either side of unit for left hand or right hand piping and electrical connections
- -Units can accept up to 10 rows of coil without modification.
- -Manual air vents are accessible

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 or Anti-microbial coating. (double wall only)
- -Powder coated cabinet.
- -Pre-painted steel cabinet on units up to 4000 cfm
- -1/2" foil faced and 7/8 closed cell are offered on single wall units.

FILTER SECTION

-2" pleated (30%), 4" pleated (65%, 85%, 95%).

-MIXING BOXES

- *MB3-** Mixing Box with 3 position Manual Control (Non filtered)
- *MBM-** Mixing Box suitable for Modulating Actuator Control
 - (Non Filtered)
- *FMB3-** Filtered Mixing Box w/3position Manual Control (2" TA Filter)
- *FMBM-** Filtered Mixing Box w/ suitable for modulating Control
 - (2" TA Filter)
- *FS-** Return Filter Sec. w/ MERV-7 30% Pre Filter &
 - MERV-11 65% Fin. Filter
- *DFS-** Discharge Filter Section w/12" MERV-15 & 95% HEPA Filters
- *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.

COIL SECTION

- -2, 4, 6, 8 or 10 row coil options. (8 row max on 180/240)
- -Heating coils are factory installed in preheat or reheat positions.
- -Steam coils-Low Pressure, less than 5 PSI.
- Optional tube diameters.
- -E-coated coil option
- -Optional stainless steel end plates.
- -Face split, row split, intertwined circuiting available.
- -Face and bypass dampers.
- -Automatic air vents.

MOTOR OPTIONS

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

Tel: 817-624-0820



GUIDE SPECIFICATIONS

Unit Description:

Horizontal direct drive ECM motors 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 in above ceiling space. Units have full service access from both sides 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, horizontal, draw-thru blower coil units, for installation above the ceiling. 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" or 4" 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. Unit sizes 024 to 060 include a factory mounted suspension rail mounted to the bottom of the unit. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners. Supply and return flanges to be 1" long. Large removable access panels shall be on both sides 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. Unit sizes 024 to 060 include a factory mounted suspension rail mounted to the bottom of the unit. Capped Knockouts to be provided for units over 3000 cfm and larger to accommodate threaded rods to pass through unit corners. Supply and return flanges to be 1" long. Large removable access panels shall be on both sides of unit.

Drain Pan:

 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. Entire coil section cabinet shall be double wall lined with smooth galvanized steel for easy cleaning and coil removal.

Blowers:

F. Direct 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 ECM Motor coupled directly into the blower. Blowers and scrolls shall be manufactured from galvanized steel.

Coils:

G. 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. Coils shall be circuited so they can be switched from right to left hand piping access while maintaining counter flow water circuiting.

Motors:

H. Motors shall be Open Type, Drip Proof, ECM Variable speed or constant torque motors, suitable for continuous duty at 130 °F; single phase motors are ramp up 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 direct mounted into the blower.

Electric Heat:

I. Electric heat shall be designed to mount at the discharge air openings of the unit. Electric heat are 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 overtemperature switch. Heaters shall include faninterlocking, 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.

Filters:

J. Standard filter rack shall include 2" TA filters but are suitable for 4" TA filters. With options for 2" and 4" pleated filters. Filter racks have to be accessible from both sides.

Tel: 817-624-0820



DIRECT DRIVE ECM MOTOR UNITS

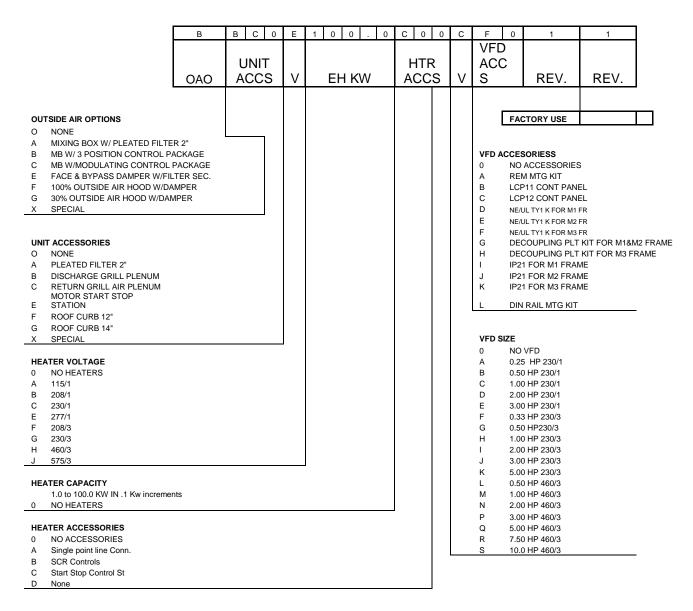
CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #1

MP																	_		
TYPE			HP	H V	V E	D	А	0	9 0	В	3 2 2 5	1 . 2 5	2	4	2	Α	R	Н	6
UNIT TYPE																	.		
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EC EM MOTOR BD SELT DRIVE UNIT CONFIGURATION H HORZOYTAL V VERTICAL N MODULAR R RODUTOP COOLING OPTIONS W CHILLED WATER DIRECT EXPANSION NO COOLING N NO COOLING B B RROWS REATING OPTIONS HEATING OPTIONS H MOT WATER S STEAM E ELECTRIC NO O HART UNIT INSULATION S SINGLE WALL I' F F RIBERGLAS D DURBLE WALL U SINGLE WALL I' F F RIBERGLAS D DURBLE WALL U SINGLE WALL I' F F RIBERGLAS D DURBLE WALL U SINGLE WALL I' F F RIBERGLAS D DURBLE WALL U SINGLE WALL I' F F RIBERGLAS D DOUBLE WALL U SINGLE WALL I' F F RIBER	UNIT T	YPE																	
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HOTWATER SETEM Commonwealth]										
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S																			
D	UNIT IN	ISULATION									RE	FRIGERANT							
C R-NU22	S	SINGLE W	ALL 1" F F FIE	BERGLAS							A	R-410A							
CABINET MATERIAL	D	DOUBLE W	VALL								В	R-22							
CABINET MATERIAL	U	SINGLE W	AL 7/8" CLOS	ED CELL															
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6 15 X 11													57	5 /3/60	/ ODP/	HE			
											_ <u> </u>	10.0 FF							



DIRECT DRIVE ECM MOTOR UNITS

CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #2

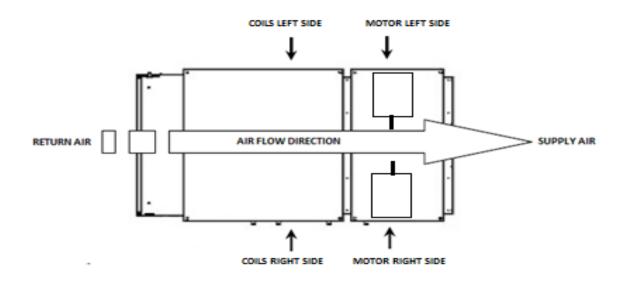


For more information contact Customer Service

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



	COIL DATA FIN FACE WATER DV CONN. FIN WATER CONN. DV CONN.														
MODEL	FIN BLOCK	FACE	ROWS	FPI	WATER CONN.	DX C	ONN	MODEL	FIN BLOCK	FACE	ROWS	FPI	WATER CONN.	DX C	ONN
WIODEL	нхw	AREA	ROWS	FFI	HEADER OD	SUCT	LIQ	WIODEL	нхw	AREA	KOWS	FFI	HEADER OD	SUCT	LIQ.
			1	10	5/8	N/A	N/A				2	10	7/8	N/A	N/A
			2		0/0	N/A	N/A	90-R	22.5 X 47	7.34	4		1-1/8	1-3/8	5/8
24-R	10 X 31	2.15	4			7/8	3/8	90-K	22.5 X 41	7.34	6		1-5/8	1-5/8	5/8
			6		7/8	7/8	3/8				8		1-5/8	1-5/8	5/8
			8			7/8	3/8				2		7/8	N/A	N/A
			1		5/8	N/A	N/A	120-R	28 X 47	9.14	4		1-1/8	1-5/8	5/8
			2		5/6	N/A	N/A	120-K	20 \(\lambda\) 41	9.14	6		1-5/8	1-5/8	5/8
36-R	13 X 31	2.8	4			7/8	3/8				8		1-5/8	1-5/8	5/8
	10 / 01		6		7/8	7/8	3/8				2		1-3/8	N/A	N/A
			8			1-1/8	3/8	180-R	30 X 60	12.5	4		1-5/8	1-5/8	5/8
			1		5/8	N/A	N/A	10U-K	30 / 60	12.5	6		1-5/8	2-1/8	5/8
			2		5/6	N/A	N/A				8		2-1/8	2-1/8	5/8
48-R	15 X 40	4.17	4		1 1/0	7/8	1/2				2		1-3/8	N/A	N/A
			6		1-1/8	1-1/8	1/2	040 D	40.5 V.00	47.70	4		1-5/8	2-1/8	5/8
			8		1-1/8	1-3/8	1/2	240-R	42.5 X 60	17.70	6		2-1/8	2-1/8	5/8
			1			N/A	N/A				8		2-1/8	2-1/8	5/8
]		2		5/8	N/A	N/A		CC	NTACT TH	IE FACTOR'	Y FOR A	DDITONAL COIL INFO	ORMATION	
60-R	17.5 X 40	4.86	4		1-1/8	7/8	1/2								
			6		1-1/8	1-1/8	1/2								
			8			1-3/8	1/2								





HORIZONTAL FILTER ARRANGEMENTS

STA	NIDΔ	RD	FII	TER	RACK

SINGLE & DOUBLE WALL

(HFDA) ACCEPS 2" OR 4" TA OR PLATED FILTERS

			UNIT					FI	LTER (TMAUÇ	TTY		
			MODEL			24	36	48	60	90	120	180	240
	14"	Х	20"	Χ	2/4"								
	14"	Χ	25"	Χ	2/4"					4	4		
FILTER													
SIZE	16"	Χ	16"	X	2/4"	2	2						
	16"	X	20"	Х	2/4"							4	4
	16"	Х	25"	Х	2/4"							4	4
	20"	Х	20"	Х	2/4"			2	2				
		FILT	ER TO	TAL		2	2	2	2	4	4	8	8

24/36 216"X16"X2/4" 16" 16" 16" 16" 220"X20"X2/4" 20"

90/120		20"	20"
90/120			
4-			
14"X25"X2/4"	14"		
	14"		
		25"	25"

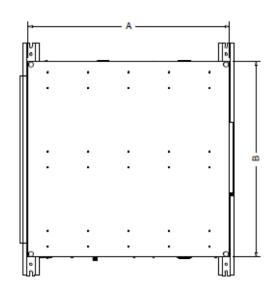
180/240					
4-					
16"X20"X2/4"	20"				
4-					
16"X25"X2/4"	25"				
	•	16"	16"	16"	16"

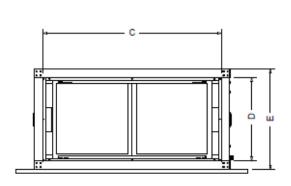
CHART ABOVE SHOWS SPECIFIC FILTER ARRANGEMENTS

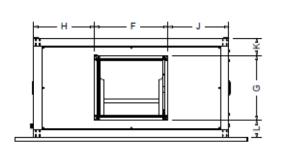
2" & 4" FILTER RACKS FOR UNITS FROM 24 TO 240 ARE SIDE LOADING ONLY

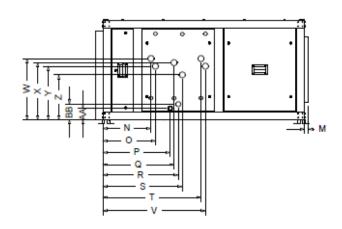


UNIT DIMENSIONS SINGLE & DOUBLE WALL 024 TO 240









	HORIZONTAL SINGLE & DOUBLE WALL DIMENSIONS FROM 024 TO 120														
UNIT															
H***A-024	49.50	39.00	34.93	16.06	20.06	14.00	12.50	12.50	12.50	2.01	5.55	1.00	11.42		
H***A-036	49.50	39.00	34.93	16.06	20.06	14.00	12.50	12.50	12.50	2.01	5.55	1.00	11.42		
H***A-048	49.50	48.00	43.93	20.56	24.56	18.00	16.00	14.98	14.98	4.28	4.28	1.00	11.78		
H***A-060	49.50	48.00	43.93	20.56	24.56	18.00	16.00	14.98	14.98	4.28	4.28	1.00	11.78		
H***A-090	63.00	57.09	53.00	32.41	36.69	19.97	17.53	18.52	18.52	9.53	9.53	1.00	12.75		
H***A-120	63.00	57.09	53.00	32.41	36.69	19.97	17.53	18.52	18.52	9.53	9.53	1.00	12.75		

UNIT	0	Р	Q	R	S	Т	٧	W	X	Υ	Z	AA	BB
H***A-024	13.79	16.80	20.05	34.93	16.06	23.72	26.10	11.43	11.55	9.18	9.05	2.79	3.89
H***A-036	13.79	16.80	20.05	34.93	16.06	23.72	26.10	11.43	11.55	9.18	9.05	2.79	3.89
H***A-048	12.86	16.48	48.00	43.93	19.45	24.03	25.12	13.19	11.07	15.07	14.07	2.82	3.85
H***A-060	12.86	16.48	48.00	43.93	19.45	24.03	25.12	13.19	11.07	15.07	14.07	2.82	3.85

HORIZONTAL DIRECT DRIVE ENGLISH 2018

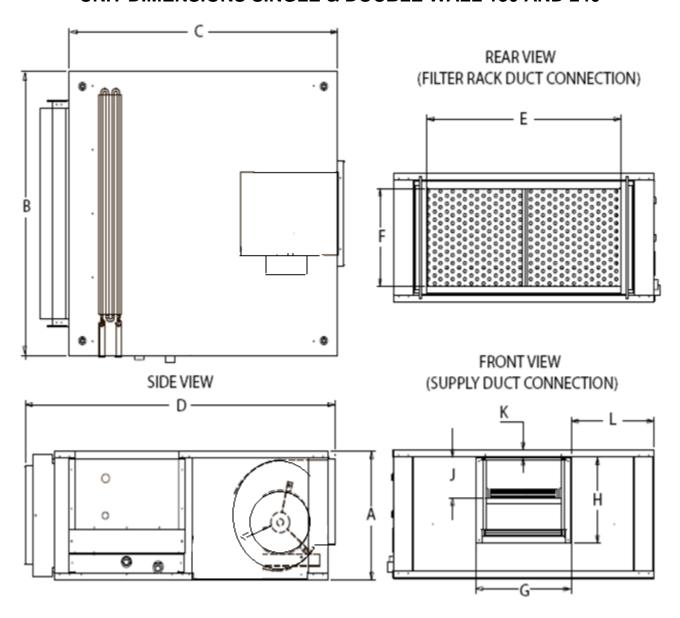
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H***A-090	13.93	18.98	57.09	53.00	22.72	27.62	28.92	18.87	18.41	17.35	17.44	3.27	4.38
H***A-120	13.93	18.98	57.09	53.00	22.72	27.62	28.92	18.87	18.41	17.35	17.44	3.27	4.38

ALL DIMENSIONS SHOWN ARE APROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE

UNIT DIMENSIONS SINGLE & DOUBLE WALL 180 AND 240



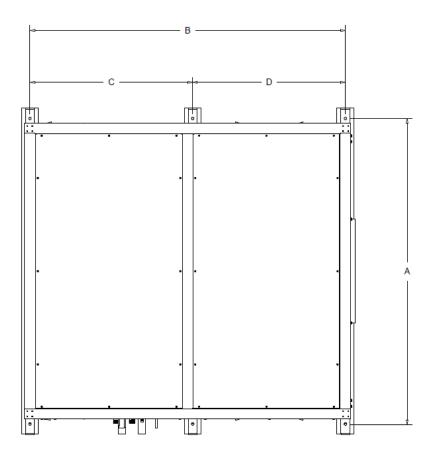
	НОГ	RIZONTA	L SINGLE	& DOUE	LE WALI	L DIMENS	SIONS FO	R 180 AN	ID 240		
UNIT	Α	В	С	D	Е	F	G	Η	J	K	L
H***A-180	47.15	72.00	57.50	76.75	65.92	44.99	24.93	20.65	12.2	4.33	23.49
H***A-240	47.15	72.00	57.50	76.75	65.92	44.99	24.93	20.65	12.2	4.33	23.49

HORIZONTAL DIRECT DRIVE ENGLISH 2018

ALL DIMENSIONS SHOWN ARE APROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE

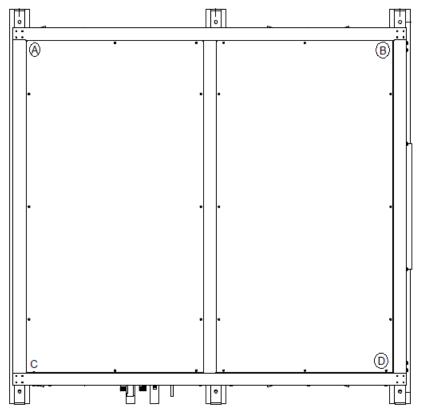
MOUNTING HOLES DISTANCE





UNIT	SIZE	TONS	Α	В	С	D
024	24000	2.0	37.5"	48"	N/A	N/A
036	36000	3.0	37.5"	48"	N/A	N/A
048	48000	4.0	46.5"	48"	N/A	N/A
060	60000	5.0	46.5"	48"	N/A	N/A
090	90000	7.5	59"	60.906"	31.411"	29.495"
120	120000	10.0	59"	60.906"	31.411"	29.495"
180	180000	15.0	75.307"	53.125"	19.453"	33.673"
240	240000	20.0	75.307"	53.125"	19.453"	33.673"





HOR	HORIZONTAL UNITS WEIGHT AND CORNER DISTRIBUTION BASED ON 8 ROW													
						SL	AB COIL							
			Co	rner v	veight	s 8		Co	rrectio	n Facto	rs for Rows			
				Row	Coil		Total		and	nd Single Wall				
Unit	Мо	del	Α	В	С	D	Weight	6R	4R	2R	Single Wall			
H***A	-	024	93	94	83	85	355	-9	-17	-25	-35			
H***A	-	036	91	104	105	106	406	-11	-21	-33	-35			
H***A	-	048	92	122	95	123	432	-20	-39	-59	-40			
H***A	-	060	110	125	98	113	446	-22	-45	-65	-40			
H***A	-	090	137	153	139	137	566	-36	-72	-103	-65			
H***A	-	120	145	156	140	132	574	-47	-95	-140	-65			
H***A	-	180	214	223	202	236	875	-54	-108	-160	-85			
H***A	-	240	280	293	262	270	1105	-55	-110	-162	-85			

SUPPLY AIR PLENUM WITH ADJUSTABLE FOUR WAY GRILL

HORIZONTAL DIRECT DRIVE ENGLISH 2018

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Note:

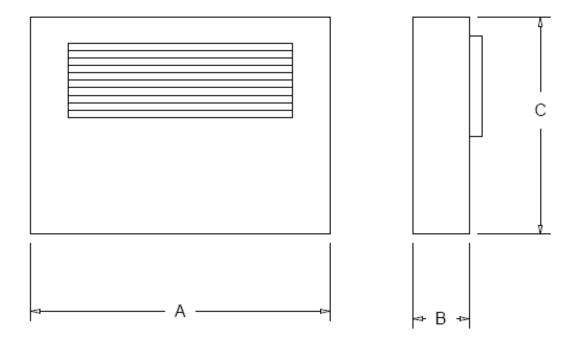
The drawings and dimensions on this page are for illustration purpose

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

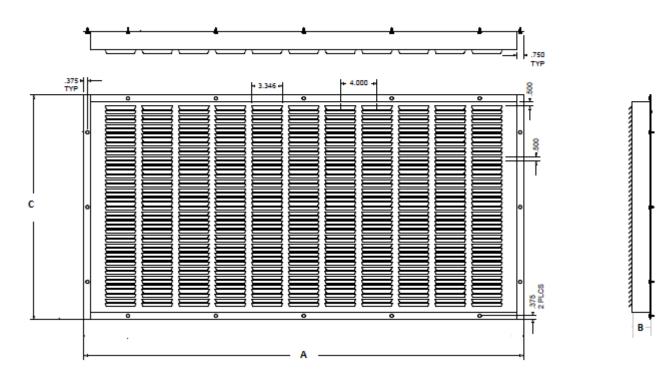
Supply and return air plenums are made with heavy gauge galvanized steel



MODEL	Α	В	С	GRILL						
HWSP - 024/036	39.0		20.0	12 X 20 4-W						
HWSP - 048/060	48.0	6.0	24.5	16 X 24 4-W						
HSWP - 090/120	57.0	0.0	36.6	18 X 48 4-W						
HWSP 180/240	72.0		47.0	16 X 24 4-W						
ALL DIMENSIONS SHOWN ARE APROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE										



RETURN AIR PLENUM UNITS WITH FIX RETURN GRILL



MODEL	Α	В	С					
HWRT - 024/036	024/036 39.0							
HWRT - 048/060	48.0	2.0	24.4					
HWRT - 090/120	57.0	2.0	36.6					
HWRT 180/240								
ALL DIMENSIONS SHOWN ARE APROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE								

Note:

The drawings and dimensions on this page are for illustration purpose

Consult factory for final drawings for construction

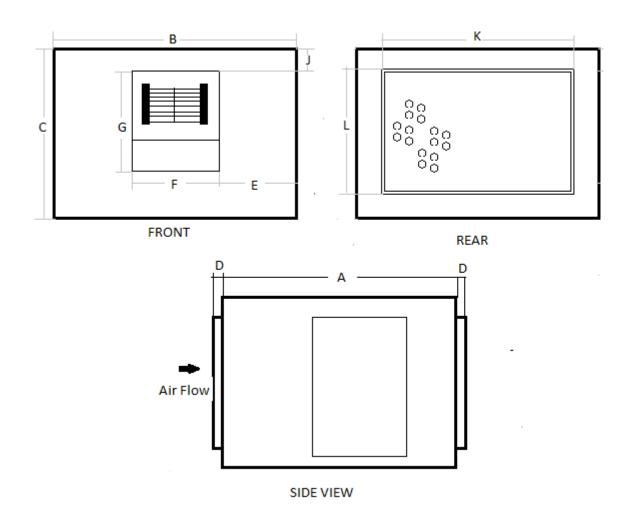
Units with supply air plenum cannot have electric heat

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



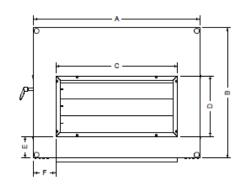
FACE & BY-PASS DAMPER FOR UNITS FROM 024 TO 240

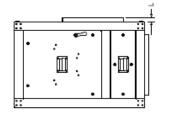


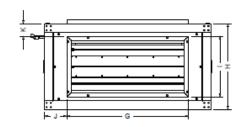
MODEL			Α	В	С	D	Е	F	G	J	K	L
HFBPD	-	024/036	26.00	22.00	25.00	0.75	6.50	18.00	15.25	3.00	15.00	16.50
HFBPD	-	048/060	26.00	30.00	30.00	0.75	6.50	18.00	15.25	3.00	23.00	22.50
HFBPD	-	090/120	30.00	52.00	35.00	0.75	6.50	18.00	15.25	3.00	45.00	26.50
HFBPD	-	180/240	36.00	36.50	22.25	4.55	36.60	10.28	57.09	0.95	22.25	7.21
ALL DIMENSIONS SHOWN ARE APROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE												

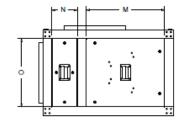


MIXING BOX FOR SIZE 024 TO 240









UNIT		Α	В	С	D	Е	F	G	Н	I	J	K	L	M	N	0	
HMB3	-	024	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3	-	036	39.0	30.5	28.5	14.25	5.0	5.25	28.5	20.0	14.25	5.25	2.9	1.0	18.4	6.0	16.0
HMB3	-	048	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3	-	060	48.0	30.0	36.5	17.25	4.2	5.75	36.5	24.5	17.25	5.75	3.7	1.0	16.75	7.7	20.5
HMB3	-	090	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3	-	120	63.0	41.5	36.5	22.25	4.5	10.25	57.0	36.7	22.25	10.25	7.2	1.0	23.6	11.8	32.7
HMB3	-	180	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	23.6	11.8	42.0
HMB3	-	240	72.0	41.5	51.5	24.5	4.5	10.25	51.5	47.0	32.6	10.25	7.2	1.0	32.6	11.8	42.0

