



**MODULAR SINGLE AND DOUBLE WALL BELT DRIVE AIR HANDLER  
DX OR CHILLED WATER  
COOLING HOT WATER OR  
ELECTRIC HEATING**



**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

## 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
- 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

- Blower sections can be mounted in horizontal, up flow or down flow positions.
- Blower sections feature base mounted motors and adjustable motor bases for ease of service mounted on RIS isolators for quite vibration free operation.
- 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.

### COIL SECTION

- 3/8" O.D. seamless copper tube on sizes 24 and 36.
- 1/2" O.D. seamless copper tube on sizes 48 and 60.
- 5/8" O.D. seamless copper tube on sizes 90 and 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

- ODP Motor is mounted to a 12 gauge adjustable base attached to the unit floor with rubber isolators
- 115/230v 1ph, 277v 1ph, 208/230/460v 3ph.
- All units are ETL listed.

## OPTIONAL FEATURES

### CONSTRUCTION

- Liner options include stainless steel, aluminum, or Anti-microbial coating. (double wall only)
- Powder coated cabinet.
- Pre-painted steel cabinet
- 1/2" foil faced and 7/8 closed cell are offered on single wall units.

### FILTER SECTION

- Double wall filter section accepts 2" or 4" flat filters.
- Filter access for (24-240) from sides only.
- 2" pleated (30%), 4" pleated (65%, 85%, 95%).

### MIXING BOXES

- \*MB3-\*\* Mixing Box with 3 position Manual Control (Non 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)
- \*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 for motors bigger than 1 hp

### 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 2 PSI.
- Optional tube diameters.
- Optional stainless steel end plates.
- E-coated coil option
- 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

## GUIDE SPECIFICATIONS

### Unit Description:

Horizontal 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 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:

- 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. 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. 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, 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 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 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.

### 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.



**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			
<p><b>UNIT TYPE</b></p> <p>HP HIGH PERF EC ECM MOTOR BD BELT DRIVE</p> <p><b>UNIT CONFIGURATION</b></p> <p>H HORIZONTAL V VERTICAL M MODULAR R ROOFTOP</p> <p><b>COOLING OPTIONS</b></p> <p>W CHILLED WATER X DIRECT EXPANSION 0 NO COOLING</p> <p><b>HEATING OPTIONS</b></p> <p>H HOT WATER S STEAM E ELECTRIC O NO HEAT</p> <p><b>UNIT INSULATION</b></p> <p>S SINGLE WALL 1" F F FIBERGLAS D DOUBLE WALL U SINGLE WAL 7/8" CLOSED CELL X SPECIAL</p> <p><b>CABINET MATERIAL</b></p> <p>A GALVANIZED STEEL B PRE-PAINTED STEEL C POWDER PAINTED</p> <p><b>UNIT SIZE</b></p> <p>024 24000 036 36000 048 48000 060 60000 090 90000 120 120000 180 180000 240 240000</p> <p><b>BLOWER SIZE OPTIONS</b></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> <p><b>PRE-HEAT</b></p> <p>0 NO PH 1 1- ROW 2 2-ROW</p> <p><b>COOLING</b></p> <p>0 NO COOLING 2 2-ROWS 4 4-ROWS 6 6-ROWS 8 8-ROWS</p> <p><b>RE-HEAT</b></p> <p>0 NO RH 1 1- ROW 2 2-ROW</p> <p><b>REFRIGERANT</b></p> <p>A R-410A B R-22 C R-NU22 D R-134A 0 NONE</p> <p><b>PIPING CONNECTIONS</b></p> <p>R RIGHT HAND L LEFT HAND ALL CONNECTIONS ARE SET LOOKING THE UNIT IN THE AIR FLOW DIRECTION</p> <p><b>MOTOR SIZE AND VOLTAGE OPTIONS</b></p> <p><b>1ST DIGIT</b></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><b>2ND DIGIT</b></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>																								

## BELT DRIVE UNITS

### CAP DESCRIPTION MODEL NUMBER NOMENCLATURE - PAGE #2

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

FACTORY USE		
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**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
- 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**

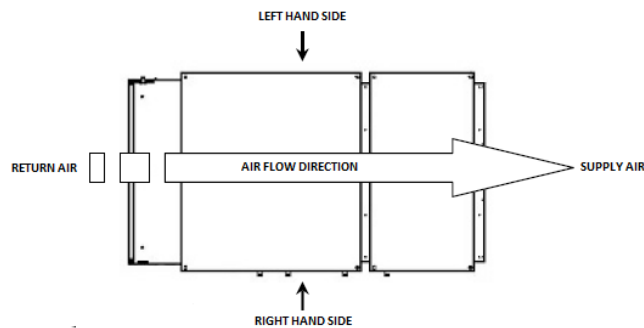
- O NO VFD
- A 0.25 HP 230/1
- B 0.50 HP 230/1
- C 1.00 HP 230/1
- D 2.00 HP 230/1
- E 3.00 HP 230/1
- F 0.33 HP 230/3
- G 0.50 HP230/3
- H 1.00 HP 230/3
- I 2.00 HP 230/3
- J 3.00 HP 230/3
- K 5.00 HP 230/3
- L 0.50 HP 460/3
- M 1.00 HP 460/3
- N 2.00 HP 460/3
- P 3.00 HP 460/3
- Q 5.00 HP 460/3
- R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

**COIL DATA**

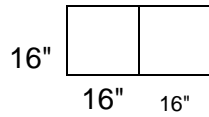
MODEL	FIN BLOCK	FACE	ROWS	FPI	WATER CONN.	DX CONN		MODEL	FIN BLOCK	FACE AREA	ROWS	FPI	WATER CONN.	DX CONN			
	H X W	AREA			HEADER OD	SUCT	LIQ		H X W				HEADER OD	SUCT	LIQ.		
24-R	10 X 31	2.15	1	10	5/8	N/A	N/A	90-R	22.5 X 47	7.34	2	10	7/8	N/A	N/A		
			2			N/A	N/A				4		1-1/8	1-3/8	5/8		
			4			7/8	7/8				3/8		6	1-3/8	1-5/8	5/8	
			6				7/8				3/8		8	1-3/8	1-5/8	5/8	
			8				7/8				3/8		2	7/8	N/A	N/A	
36-R	13 X 31	2.8	1		5/8	N/A	N/A	120-R	31 X 47	10.11	4		1-1/8	1-5/8	1-5/8	5/8	
			2			N/A	N/A				6			1-3/8	1-5/8	5/8	
			4			7/8	7/8				3/8			8	1-5/8	1-5/8	5/8
			6				7/8				3/8			2	1-1/8	N/A	N/A
			8				1-1/8				3/8			4	1-3/8	1-5/8	5/8
48-R	15 X 40	4.17	1		5/8	N/A	N/A	180-R	31.5 X 60	13.13	6		1-5/8	2-1/8	2-1/8	5/8	
			2			N/A	N/A				8			2-1/8	2-1/8	5/8	
			4			7/8	7/8				1/2			2	1-3/8	N/A	N/A
			6				1-1/8				1/2			4	1-5/8	2-1/8	5/8
			8				1-1/8				1-3/8			1/2	6	2-1/8	2-1/8
60-R	17.5 X 40	4.86	1	5/8	N/A	N/A	240-R	42 X 60	17.5	8	2-1/8	2-1/8	2-1/8	5/8			
			2		N/A	N/A				CONTACT THE FACTORY FOR ADDITIONAL COIL INFORMATION							
			4		7/8	1/2											
			6		1-1/8	1-1/8								1/2			
			8		1-3/8	1/2											



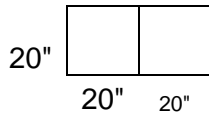
## MODULAR FILTER ARRANGEMENT

	UNIT					FILTER QUANTITY							
	MODEL					24	36	48	60	90	120	180	240
	14"	X	20"	X	2/4"								
STANDARD FILTER RACK  SINGLE & DOUBLE WALL  (HFDA) ACCEPS 2" OR 4" TA OR PLATED FILTERS	14"	X	20"	X	2/4"								
	14"	X	25"	X	2/4"					4	4		
	16"	X	16"	X	2/4"	2	2						
	16"	X	20"	X	2/4"							4	4
	16"	X	20"	X	2/4"							4	4
	20"	X	20"	X	2/4"			2	2				
<b>FILTER TOTAL</b>						2	2	2	2	4	4	8	8

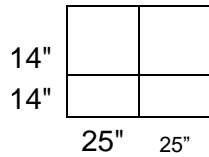
24/36  
2-  
**16"X16"X2/4"**



48/60  
2-  
**20"X20"X2/4"**



90/120  
4-  
**14"X25"X2/4"**



180/240  
4-  
**16"X20"X2/4"**  
4-  
**16"X25"X2/4"**

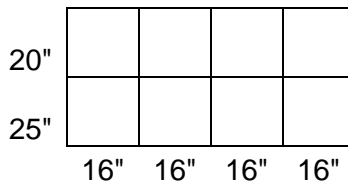
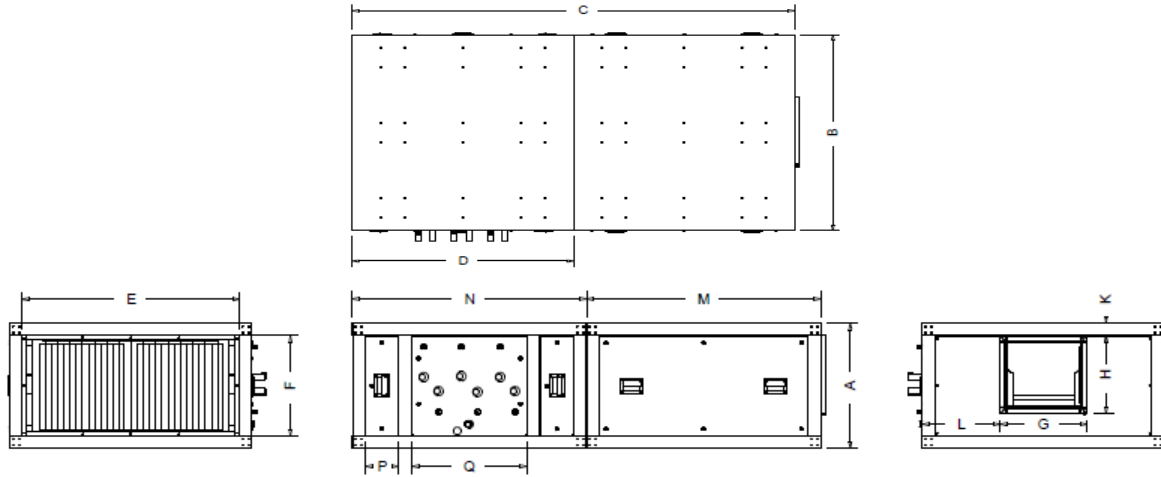


CHART ABOVE SHOWS SPECIFIC FILTER ARRANGEMENTS

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

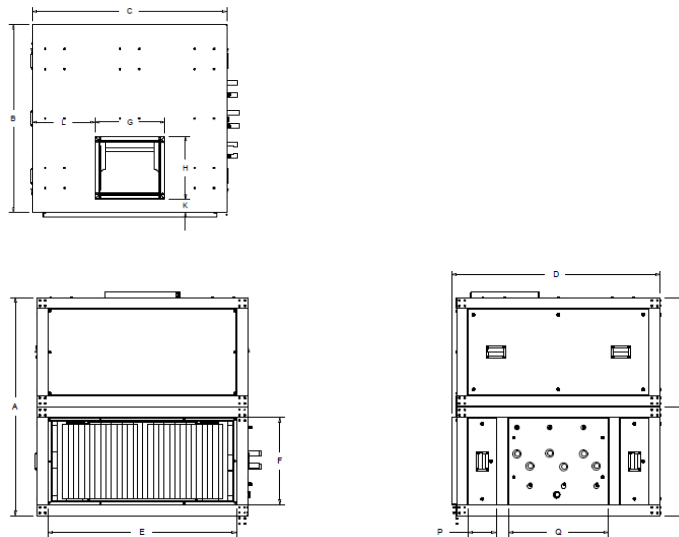
## UNIT DIMENSIONS SINGLE AND DOUBLE WALL 024 to 060 HORIZONTAL CONFIGURATION



HORIZONTAL CONFIGURATION MODULAR BELT DRIVE SINGLE & DOUBLE WALL DIMENSIONS FROM 024 TO 60														
UNIT	A	B	C	D	E	F	G	H	L	K	M	N	P	Q
M***A-024	20.06	39.00	75.37	37.68	34.93	16.06	14.00	12.50	12.52	2.01	37.68	37.68	5.28	18.45
M***A-036	20.06	39.00	75.37	37.68	34.93	16.06	14.00	12.50	12.52	2.01	37.68	37.68	5.28	18.45
M***A-048	24.56	48.06	79.00	39.50	43.93	20.56	16.50	14.43	15.67	3.41	39.50	39.50	5.25	17.75
M***A-060	24.56	48.06	79.00	39.50	43.93	20.56	16.50	14.43	15.67	3.41	39.50	39.50	5.25	17.75

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

## VERTICAL CONFIGURATION

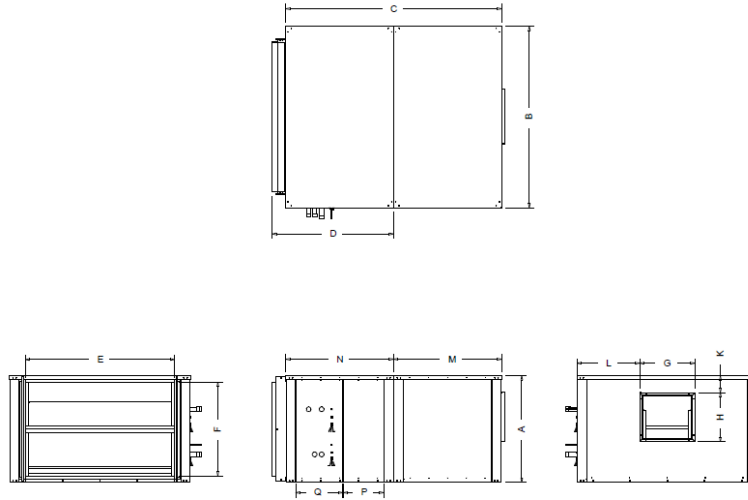


VERTICAL CONFIGURATION MODULAR BELT DRIVE SINGLE & DOUBLE WALL DIMENSIONS FROM 024 TO 060														
UNIT	A	B	C	D	E	F	G	H	L	K	M	N	P	Q
M***A-024	40.20	37.68	39.00	38.56	34.90	16.00	14.00	12.50	12.52	2.70	20.10	20.10	5.28	18.50
M***A-036	40.20	37.68	39.00	38.56	34.90	16.00	14.00	12.50	12.52	2.70	20.10	20.10	5.28	18.50
M***A-048	49.29	39.50	48.06	39.50	43.93	20.69	16.50	14.43	15.79	1.25	24.60	24.65	5.25	17.75
M***A-060	49.29	39.50	48.06	39.50	43.93	20.69	16.50	14.43	15.79	1.25	24.60	24.65	5.25	17.75

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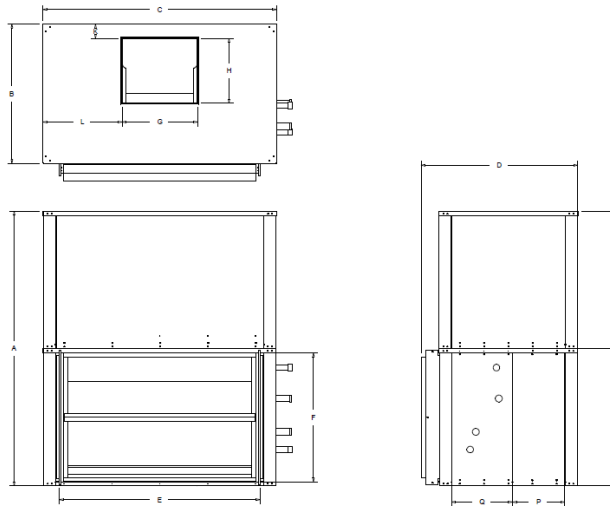
## UNIT DIMENSIONS SINGLE AND DOUBLE WALL 090 to 240 HORIZONTAL CONFIGURATION



HORIZONTAL CONFIGURATION MODULAR BELT DRIVE SINGLE & DOUBLE WALL DIMENSIONS FROM 090 TO 240														
UNIT	A	B	C	D	E	F	G	H	L	K	M	N	P	Q
M***A-090	33.90	57.78	68.88	38.84	47.65	29.84	17.68	15.63	19.94	5.33	34.44	34.44	12.90	15.03
M***A-120	33.90	57.78	68.88	38.84	47.65	29.84	17.68	15.63	19.94	5.33	34.44	34.44	12.90	15.03
M***A-180	47.07	72.31	68.16	38.58	61.77	42.82	24.62	21.61	23.66	4.55	34.08	34.08	9.73	16.00
M***A-240	47.07	72.31	68.16	38.58	61.77	42.82	24.62	21.61	23.66	4.55	34.08	34.08	9.73	16.00

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## VERTICAL CONFIGURATION



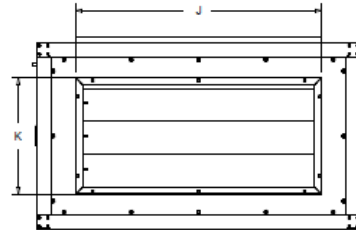
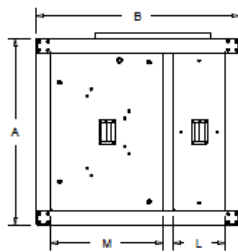
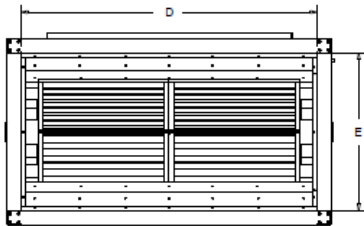
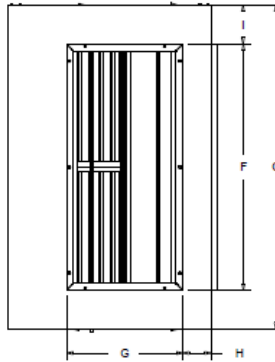
VERTICAL CONFIGURATION MODULAR BELT DRIVE SINGLE & DOUBLE WALL DIMENSIONS FROM 090 TO 240														
UNIT	A	B	C	D	E	F	G	H	L	K	M	N	P	Q
M***A-090	67.81	34.29	57.62	38.77	47.65	29.84	21.06	18.30	18.36	2.38	33.89	33.91	11.90	16.03
M***A-120	67.81	34.29	57.62	38.77	47.65	29.84	21.06	18.30	18.36	2.38	33.89	33.91	11.90	16.03
M***A-180	94.18	34.08	72.31	38.31	61.77	42.82	24.48	21.52	23.91	2.09	47.10	47.08	9.73	16.00
M***A-240	94.18	34.08	72.31	38.31	61.77	42.82	24.48	21.52	23.91	2.09	47.10	47.08	9.73	16.00

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



<b>CAP MODULAR UNITS APPROX WEIGHT</b>								
<b>UNIT SIZE</b>	<b>24</b>	<b>36</b>	<b>48</b>	<b>60</b>	<b>90</b>	<b>120</b>	<b>180</b>	<b>240</b>
<b>S WALL CAB</b>	350	350	402	402	490	490	720	720
<b>D WALL CAB</b>	420	420	482	482	620	620	932	932
<b>1 R DRY COIL</b>	15	21	32	42	64	72	78	89
<b>2 R DRY COIL</b>	28	39	62	82	125	141	148	175
<b>4 R DRY COIL</b>	56	75	120	160	250	280	295	350
<b>6 R DRY COIL</b>	84	115	182	240	375	420	440	525
<b>8 R DRY COIL</b>	102	145	235	320	490	560	590	700
<b>CHILLED WATER COIL APPROX OPERATING WEIGHT</b>								
<b>1 R WET COIL</b>	31	38	24	32	42	47	62	80
<b>2 R WET COIL</b>	80	87	36	49	68	79	105	141
<b>4 R WET COIL</b>	135	145	61	86	121	144	192	263
<b>6 R WET COIL</b>	148	162	86	123	175	208	280	384
<b>8 R WET COIL</b>	165	181	120	170	240	284	383	522
<b>APPROX MIXING BOX WEIGHT</b>								
	68.0	68.0	79.0	79.0	128.0	128.0	198.0	198.0
<b>APPROX MOTOR WEIGHT</b>								
<b>1/2 HP</b>	<b>3/4 HP</b>	<b>1 HP</b>	<b>1.5 HP</b>	<b>2 HP</b>	<b>3 HP</b>	<b>5 HP</b>	<b>7.5 HP</b>	<b>10 HP</b>
25	27	28	37	40	74	83	114	128

### MIXING BOX FOR UNITS FROM 024 TO 240

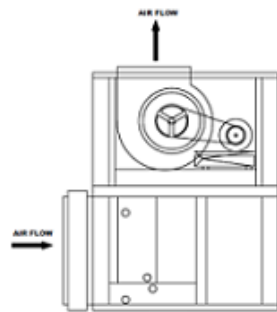


**MODULAR MIXING BOX DIMENSIONS FROM 024 TO 240**

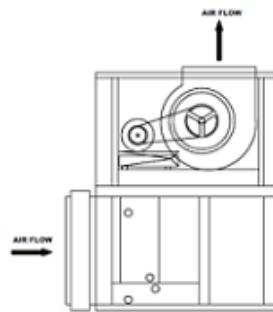
UNIT	A	B	C	D	E	F	G	H	I	J	K	L	M
M***A-024	20.06	30.50	39.00	34.93	16.06	28.50	14.25	5.00	5.25	28.50	14.25	5.84	18.21
M***A-036	20.06	30.50	39.00	34.93	16.06	28.50	14.25	5.00	5.25	28.50	14.25	5.84	18.21
M***A-048	24.56	30.07	48.07	43.86	20.49	36.50	17.25	4.22	5.79	36.50	17.25	7.59	16.66
M***A-060	24.56	30.07	48.07	43.86	20.49	36.50	17.25	4.22	5.79	36.50	17.25	7.59	16.66
M***A-090	33.89	41.49	57.73	53.64	29.60	36.50	22.25	4.59	10.58	36.50	22.25	11.61	23.41
M***A-120	33.89	41.49	57.73	53.64	29.60	36.50	22.25	4.59	10.58	36.50	22.25	11.61	23.41
M***A-180	47.08	40.00	72.00	65.92	45.00	61.91	22.93	7.75	5.05	61.92	22.92	5.75	27.77
M***A-240	47.08	40.00	72.00	65.92	45.00	61.91	22.93	7.75	5.05	61.92	22.92	5.75	27.77

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

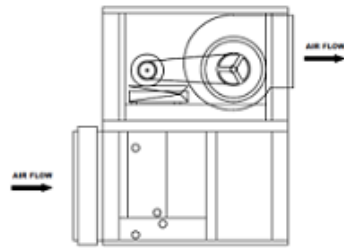
**FAN DISCHARGE CONFIGURATION OPTIONS**



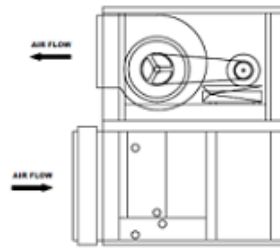
**A**



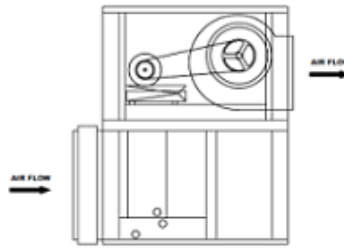
**B**



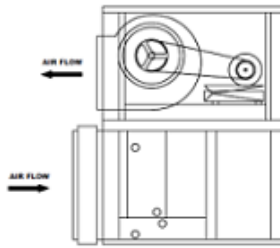
**C**



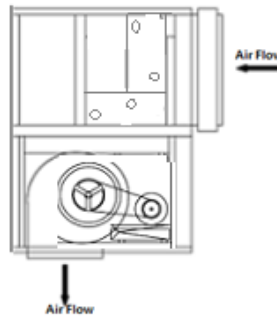
**D**



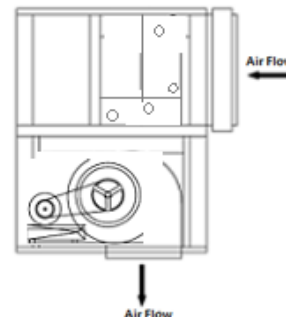
**E**



**F**

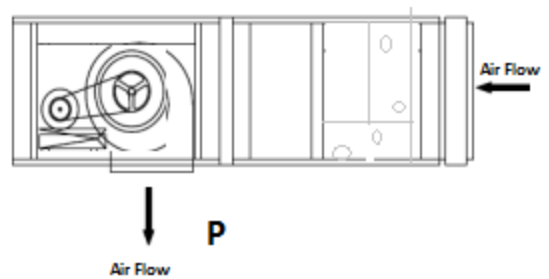
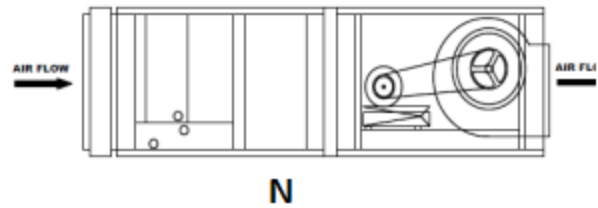
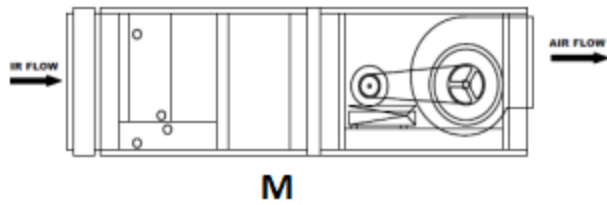
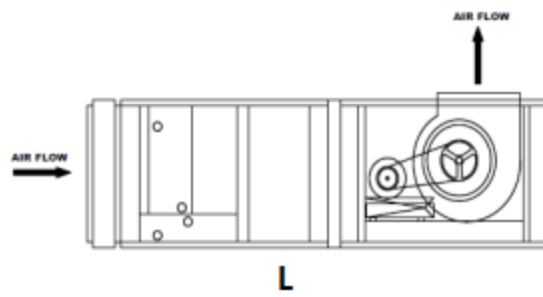
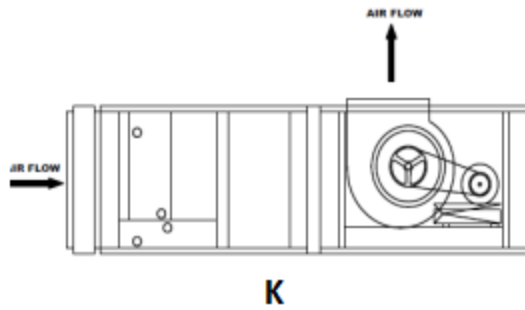


**G**

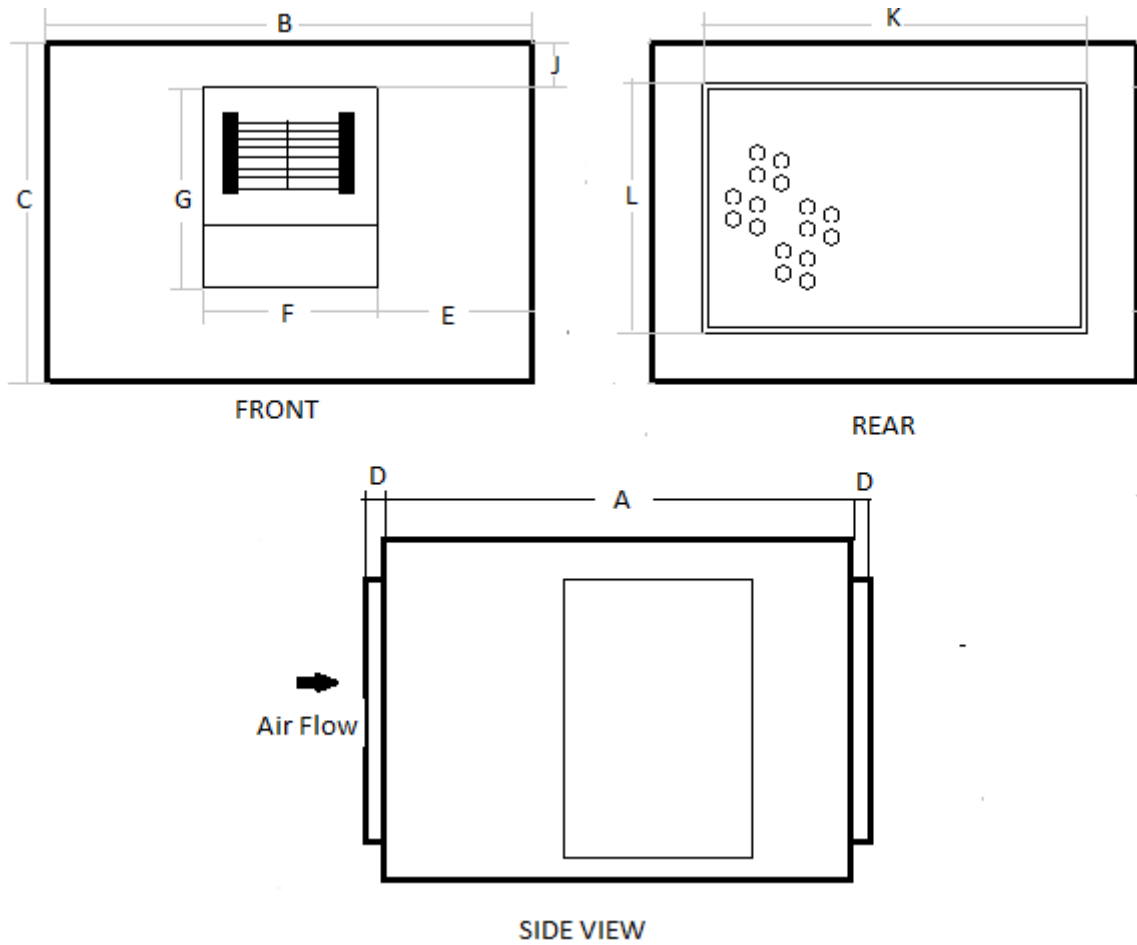


**H**

**FAN DISCHARGE CONFIGURATION OPTIONS**



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

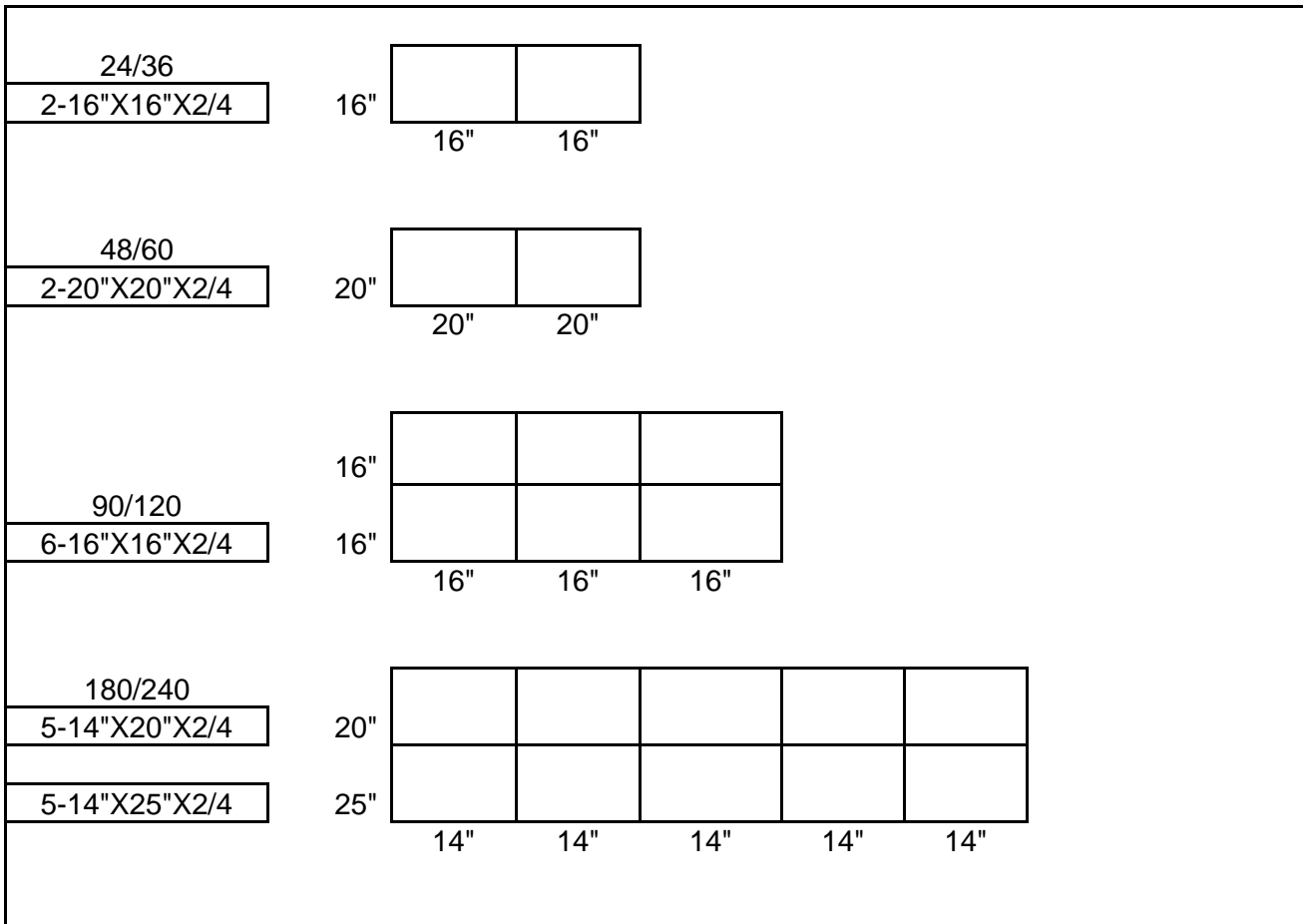


MODEL		A	B	C	D	E	F	G	J	K	L
MFBPD	- 024/036	26.00	22.00	25.00	0.75	6.50	18.00	15.25	3.00	15.00	16.50
MFBPD	- 048/060	26.00	30.00	30.00	0.75	6.50	18.00	15.25	3.00	23.00	22.50
MFBPD	- 090/120	30.00	52.00	35.00	0.75	6.50	18.00	15.25	3.00	45.00	26.50
MFBPD	- 180/240	36.00	36.50	22.25	4.55	36.60	10.28	57.09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

# MODULAR FILTER ARRANGEMENTS

**NOTE:  
ALL OUR  
STANDARD  
FILTER RACKS  
ACCEPT  
2" & 4" TA &  
PLEATED  
FILTERS AND ARE  
SIDE LOADING**

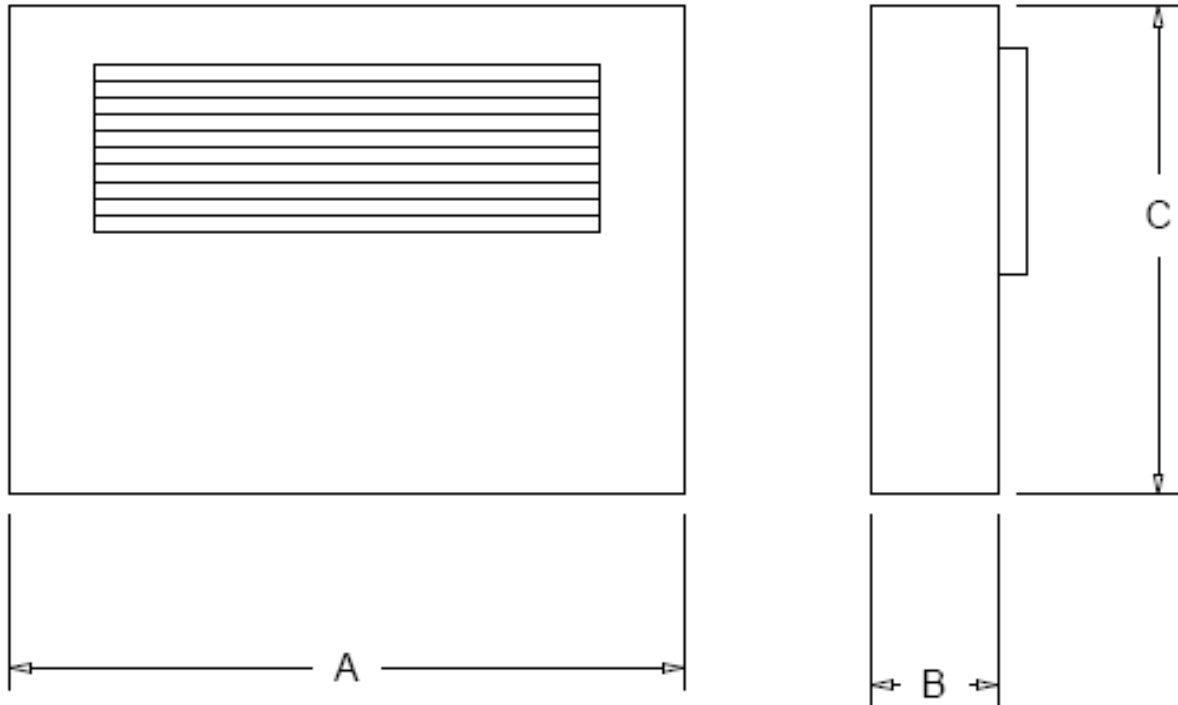
UNIT MODEL					FILTER SIZE & QUANTITY								
					24	36	48	60	90	120	180	240	
14"	X	20"	X	2/4"								5	5
14"	X	25"	X	2/4"								5	5
16"	X	16"	X	2/4"	2	2			6	6			
16"	X	20"	X	2/4"									
20"	X	20"	X	2/4"			2	2					
FILTER TOTAL					2	2	2	2	6	6	10	10	



**CHART ABOVE SHOWS SPECIFIC FILTER ARRANGEMENTS**

**ALL FILTER RACKS ARE SIDE LOADING**

## SUPPLY AIR PLENUM WITH ADJUSTABLE FOUR WAY GRILL



MODEL	A	B	C	GRILL
HWSP - 024/036	39.0	6.0	20.0	12 X 20 4-W
HWSP - 048/060	48.0		24.5	16 X 24 4-W
HSWP - 090/120	57.0		36.6	18 X 48 4-W
HWSP 180/240	72.0		47.0	16 X 24 4-W

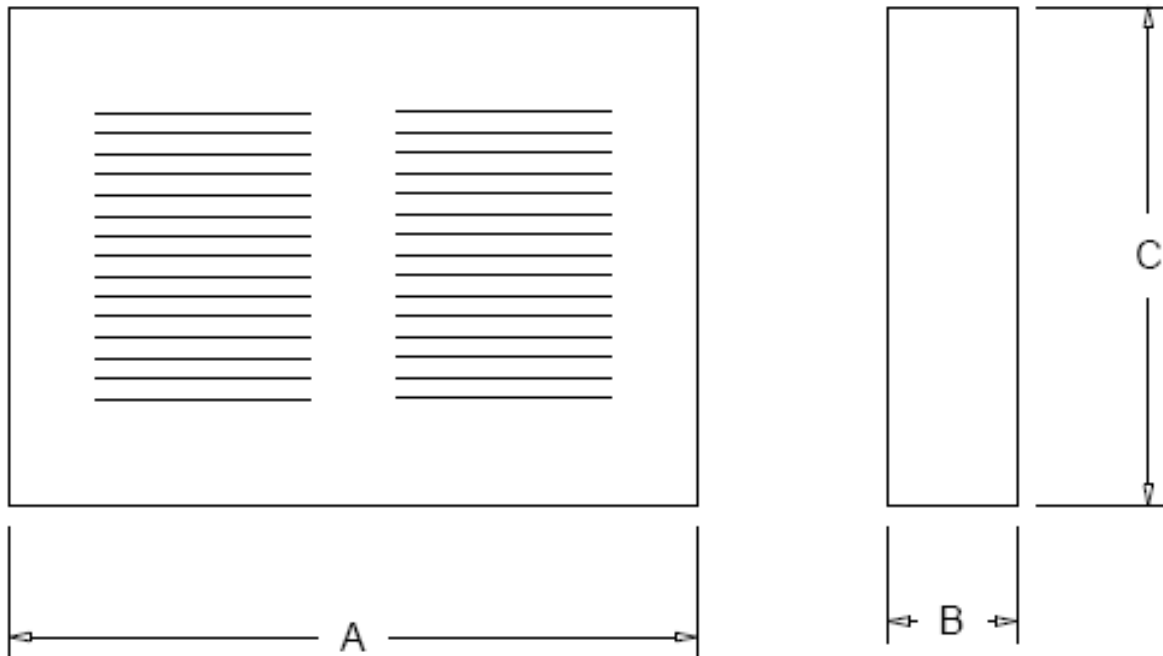
ALL DIMENSIONS SHOWN ARE APPROXIMATE AND ROUNDED, SUBJECT TO CHANGE WITHOUT NOTICE

**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



### RETURN AIR PLENUM UNITS WITH FIX RETURN GRILL



MODEL	A	B	C
HWRT - 024/036	39.0	2.0	20.0
HWRT - 048/060	48.0		24.5
HWRT - 090/120	57.0		36.6
HWRT 180/240	72.0		47.0
ALL DIMENSIONS SHOWN ARE APPROXIMATE 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



INTERNAL STATIC PRESSURES CHILLED AND HOT WATER COIL FOR MODULAR AHU											
SIZE	CFM	COIL FACE VEL	COIL FACE AREA	2" FILTERS		ROWS 10 FPI					TOTAL STATIC PRESS
				TA	PLEAT	1	2	4	6	8	
INTERNAL STATIC PRESSURE											
24	600	279	2.15	0.07	0.07	0.07	0.12	0.27	0.42	0.55	
	700	325		0.08	0.08	0.09	0.18	0.34	0.51	0.67	
	800	372		0.09	0.09	0.11	0.21	0.38	0.57	0.76	
	900	418		0.11	0.11	0.14	0.27	0.45	0.66	0.88	
	1000	465		0.12	0.12	0.16	0.28	0.49	0.73	0.97	
36	900	322	2.80	0.11	0.1	0.09	0.17	0.31	0.44	0.57	
	1050	375		0.12	0.12	0.11	0.19	0.36	0.53	0.71	
	1200	429		0.14	0.14	0.13	0.25	0.43	0.63	0.83	
	1350	482		0.16	0.16	0.16	0.27	0.46	0.67	0.88	
	1400	500		0.17	0.23	0.17	0.28	0.48	0.71	0.93	
48	1200	288	4.17	0.09	0.08	0.08	0.13	0.22	0.32	0.42	
	1400	336		0.11	0.11	0.11	0.16	0.27	0.39	0.51	
	1600	384		0.12	0.13	0.12	0.19	0.32	0.47	0.62	
	1800	432		0.14	0.15	0.13	0.22	0.38	0.56	0.73	
	2000	480		0.15	0.16	0.15	0.26	0.45	0.65	0.86	
60	1500	309	4.86	0.11	0.12	0.04	0.07	0.21	0.29	0.38	
	1750	360		0.13	0.14	0.05	0.08	0.26	0.38	0.49	
	2000	411		0.15	0.16	0.06	0.11	0.31	0.45	0.58	
	2250	463		0.17	0.18	0.07	0.12	0.35	0.52	0.67	
	2400	494		0.19	0.21	0.08	0.14	0.38	0.56	0.73	
90	2250	306	7.34	0.06	0.06	0.04	0.07	0.21	0.31	0.41	
	2625	357		0.11	0.11	0.05	0.08	0.25	0.37	0.48	
	3000	409		0.14	0.15	0.06	0.11	0.31	0.43	0.57	
	3375	460		0.17	0.18	0.07	0.12	0.34	0.51	0.66	
	3650	498		0.21	0.21	0.08	0.14	0.38	0.55	0.73	
120	3000	294	10.2	0.11	0.11	0.03	0.06	0.19	0.27	0.35	
	3500	343		0.12	0.13	0.04	0.08	0.23	0.32	0.43	
	4000	392		0.14	0.15	0.05	0.11	0.27	0.38	0.52	
	4500	441		0.18	0.18	0.07	0.12	0.31	0.44	0.58	
	5000	490		0.21	0.21	0.08	0.14	0.35	0.51	0.66	
180	5000	384	13.02	0.13	0.13	0.05	0.09	0.24	0.35	0.46	
	5500	423		0.15	0.16	0.06	0.11	0.27	0.39	0.51	
	6000	461		0.16	0.17	0.07	0.12	0.31	0.44	0.57	
	6500	499		0.17	0.18	0.08	0.14	0.34	0.48	0.63	
	6600	507		0.19	0.19	0.09	0.15	0.35	0.49	0.64	
240	7000	395	17.71	0.12	0.13	0.05	0.11	0.23	0.33	0.51	
	7500	424		0.15	0.16	0.06	0.12	0.29	0.42	0.55	
	8000	452		0.16	0.17	0.07	0.13	0.31	0.45	0.59	
	8500	480		0.17	0.18	0.08	0.14	0.34	0.49	0.64	
	8750	494		0.18	0.19	0.09	0.15	0.35	0.51	0.66	

**TOTAL STATIC PRESSURE CALCULATION**

Select the unit size and the approximate CFM from the two left columns. Select the total rows and filter type. Add filter SP to coil SP to obtain the ISP of the unit, add the given ESP to obtain the TSP of the system.

### BLOWER PERFORMANCE TABLES

Air Volume Capacity - 2-Pipe, 4-Row Coil														
Model	Internal SP	cfm	0.25" ESP		0.50" ESP		0.75" ESP		1.00" ESP		1.25" ESP		1.50" ESP	
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
RWH24	.17	600	864	0.12	998	0.17	1144	0.24	1288	0.32	1424	0.41	1549	0.49
	.22	700	966	0.18	1073	0.22	1193	0.29	1318	0.37	1443	0.46	1564	0.56
	.27	800	866	0.17	1025	0.22	1152	0.28	1267	0.34	1374	0.41	1475	0.47
	.33	900	955	0.22	1084	0.28	1202	0.35	1312	0.41	1415	0.48	1511	0.55
	.39	1000	1050	0.29	1143	0.35	1255	0.42	1359	0.49	1457	0.57	1550	0.64
RWH36	.17	900	865	0.19	1002	0.24	1416	0.48	1243	0.37	1350	0.44	1450	0.51
	.22	1050	958	0.27	N/A	N/A	1195	0.40	1494	0.63	1403	0.55	1498	0.63
	.27	1200	905	0.25	1041	0.33	1165	0.41	1281	0.50	1391	0.59	N/A	N/A
	.33	1350	978	0.33	1103	0.42	1219	0.50	1328	0.60	1431	0.69	1529	0.80
	.39	1500	1051	0.43	1166	0.52	1274	0.61	1377	0.71	1474	0.82	1568	0.93
RWH48	.14	1200	829	0.21	988	0.30	1102	0.37	1222	0.45	1335	0.54	1441	0.63
	.19	1400	919	0.31	1047	0.39	1165	0.48	1276	0.55	1381	0.67	1480	0.77
	.24	1600	1010	0.44	1126	0.53	1235	0.62	1337	0.72	1434	0.83	1527	0.94
	.29	1800	842	0.44	952	0.54	1054	0.65	1151	0.76	1244	0.88	1333	1.01
	.36	2000	912	0.58	1013	0.69	1108	0.80	1198	0.92	1285	1.05	1369	1.19
RWH60	.16	1500	721	0.26	848	0.35	966	0.45	1076	0.55	1181	0.66	1281	0.78
	.20	1750	790	0.38	905	0.48	1011	0.58	1112	0.69	1207	0.81	1299	0.93
	.26	2000	869	0.53	973	0.64	1070	0.76	1162	0.87	1126	1.01	1335	1.13
	.32	2250	949	0.72	1044	0.84	1133	0.97	1218	1.10	1300	1.23	1379	1.37
	.38	2500	1028	0.95	1115	1.08	1198	1.22	1277	1.36	1354	1.51	1427	1.65
RWH90	.15	2250	693	0.51	801	0.64	910	0.79	1011	0.95	1103	1.11	1187	1.27
	.19	2625	772	0.76	862	0.90	956	1.06	1049	1.23	1137	1.41	1220	1.60
	.24	3000	857	1.08	933	1.24	1014	1.41	1096	1.59	1178	1.79	1257	1.99
	.30	3375	947	1.50	1012	1.66	1082	1.84	1154	2.04	1228	2.25	1300	2.47
	.36	3750	1036	2.01	1094	2.18	1155	2.38	1218	2.58	1284	2.80	1350	3.03
RWH120	.16	3000	635	0.80	646	0.76	718	0.90	785	1.05	849	1.20	910	1.36
	.21	3500	635	0.93	705	1.09	769	1.25	831	1.41	889	1.58	945	1.76
	.26	4000	703	1.32	765	1.50	824	1.68	881	1.87	934	2.05	986	2.25
	.32	4500	773	1.81	830	2.02	884	2.22	936	2.43	986	2.64	1034	2.85
	.39	5000	846	2.43	898	2.66	948	2.89	995	3.11	1042	3.34	1087	3.57
RWH180	.21	5000	670	1.57	733	1.80	793	2.03	850	2.26	905	2.49	959	2.73
	.25	5500	723	2.03	782	2.28	837	2.53	891	2.79	942	3.04	992	3.30
	.29	6000	776	2.58	831	2.85	883	3.12	933	3.40	982	3.67	1029	3.95
	.33	6500	829	3.21	881	3.51	930	3.81	977	4.10	1023	4.40	1068	4.70
	.38	7000	869	3.86	933	4.28	980	4.60	1024	4.92	1068	5.23	1110	5.56
RWH240	.24	7000	856	3.78	906	4.10	954	4.42	1000	4.74	1044	5.06	1086	5.38
	.27	7500	909	4.59	957	4.93	1002	5.28	1045	5.62	1087	5.96	1128	6.30
	.30	8000	962	5.51	1007	5.88	1050	6.24	1091	6.61	1131	6.97	1170	7.33
	.34	8500	1017	6.55	1060	6.95	1100	7.34	1140	7.73	1178	8.11	1215	8.50
	.37	9000	1070	7.71	1111	8.13	1150	8.55	1187	8.96	1224	9.37	1260	9.78



## BLOWER PERFORMANCE TABLES

Air Volume Capacity - 4-Pipe, 4-Row Cooling and 2-Row Heating Coils														
Model	Internal SP	cfm	0.25" ESP		0.50" ESP		0.75" ESP		1.00" ESP		1.25" ESP		1.50" ESP	
			RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
RWH24	.25	600	906	0.14	1046	0.19	1191	0.26	1333	0.35	1464	0.43	1584	0.52
	.33	700	1012	0.19	1125	0.25	1247	0.32	1374	0.41	1497	0.50	1615	0.60
	.40	800	1117	0.27	1211	0.32	1313	0.39	1421	0.48	1531	0.57	1641	0.68
	.49	900	1039	0.26	1161	0.32	1274	0.39	1379	0.46	1477	0.53	1570	0.60
	.58	1000	1115	0.34	1229	0.40	1335	0.47	1434	0.06	1528	0.62	1618	0.70
RWH36	.25	900	826	0.15	1044	0.26	1165	0.33	1278	0.39	1383	0.46	1481	0.53
	.33	1050	905	0.22	1132	0.37	1243	0.44	1347	0.51	1445	0.58	1538	0.66
	.40	1200	977	0.29	1107	0.37	1320	0.57	1414	0.65	1509	0.73	1596	0.81
	.49	1350	1059	0.39	1178	0.47	1289	0.56	1394	0.66	1494	0.76	1590	0.87
	.58	1500	1139	0.50	1249	0.59	1353	0.69	1451	0.79	1546	0.90	1636	1.01
RWH48	.21	1200	870	0.23	1009	0.31	1136	0.39	1254	0.47	1365	0.57	N/A	N/A
	.29	1400	972	0.34	1096	0.43	1211	0.52	1319	0.61	1421	0.71	1519	0.81
	.36	1600	1222	0.61	1179	0.57	1284	0.67	1384	0.77	1479	0.88	1570	0.99
	.44	1800	909	0.50	1014	0.60	1113	0.71	1207	0.83	1298	0.96	1386	1.09
	.54	2000	985	0.66	1082	0.77	1173	0.89	1261	1.02	1345	1.15	1427	1.29
RWH60	.24	1500	763	0.29	887	0.38	1002	0.48	1110	0.58	1213	0.70	1312	0.82
	.31	1750	842	0.42	952	0.52	1056	0.63	1154	0.74	1248	0.86	1339	0.99
	.39	2000	925	0.59	1025	0.70	1119	0.82	1209	0.94	1295	1.07	1379	1.20
	.48	2250	1010	0.80	1102	0.92	1188	1.05	1271	1.18	1351	1.34	1428	1.46
	.58	2500	1098	1.06	1182	1.19	1262	1.34	1339	1.48	1413	1.62	1485	1.78
RWH90	.23	2250	727	0.55	836	0.69	943	0.84	1041	1.00	1131	1.16	1212	1.32
	.29	2625	807	0.81	899	0.96	993	1.13	1085	1.30	1171	1.48	1252	1.67
	.37	3000	896	1.16	975	1.32	1057	1.50	1139	1.69	1219	1.89	1296	2.10
	.46	3375	988	1.60	1056	1.78	1128	1.97	1201	2.17	1274	2.39	1346	2.61
	.55	3750	1080	2.14	1140	2.33	1203	2.53	1268	3.68	1334	2.98	1400	3.21
RWH120	.24	3000	635	0.78	670	0.81	740	0.95	806	1.10	869	1.25	929	1.41
	.32	3500	666	1.00	734	1.16	797	1.32	857	1.49	914	1.66	974	1.66
	.39	4000	736	1.41	796	1.59	854	1.78	909	1.96	962	2.15	1013	2.35
	.49	4500	761	1.49	820	1.67	876	1.85	930	2.04	982	2.23	1033	2.43
	.59	5000	888	2.61	938	2.84	986	3.07	1033	3.30	1078	3.53	1122	3.76
RWH180	.32	5000	698	1.67	760	1.90	818	2.13	875	2.36	929	2.60	982	2.84
	.38	5500	754	2.16	811	2.41	865	2.66	918	2.92	969	3.18	1018	3.44
	.44	6000	810	2.74	863	3.02	914	3.29	963	3.56	1010	3.84	1057	4.12
	.50	6500	865	3.42	915	3.71	962	4.01	1009	4.30	1053	4.60	1097	4.90
	.58	7000	924	4.22	971	4.53	1016	4.85	1059	5.17	1101	5.49	1143	5.81
RWH240	.36	7000	881	3.93	930	4.25	976	4.57	1021	4.89	1064	5.21	1106	5.53
	.41	7500	936	4.78	982	5.13	1026	5.47	1069	5.81	1110	6.15	1150	6.49
	.46	8000	991	5.74	1035	6.11	1077	6.48	1117	6.84	1156	7.20	1195	7.57
	.51	8500	1046	6.82	1088	7.22	1127	7.60	1166	7.99	1204	8.38	1240	8.76
	.56	9000	1101	8.03	1140	8.45	1178	8.86	1215	9.27	1251	9.68	1287	10.09