



FIRST CO.
P.O. BOX 270969 - DALLAS, TEXAS 75227
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WWW.FIRSTCO.COM

VMBE-277 SERIES

Variable Speed

Factory installed electric heat
(0-10kW)

Upflow / horizontal drain pans

Higher efficiency pleated filter

Primary and secondary drain
connections on cooling coil

Fully Insulated cabinet

277V motor, 24V controls

High capacity 4-row cooling
coil



*The **VMBE-277** Series includes a programmable, high efficiency motor that redefines comfort and energy savings.*

VMBE-277 SERIES

The **VMBE-277** Series includes a programmable, high efficiency motor that redefines comfort and energy savings. The **VMBE-277** motor automatically adjusts its torque and speed to maintain a preprogrammed level of constant airflow over a wide range of external static pressures. This variable speed technology offers better indoor air quality, more precise humidity control, quieter operation, consistent indoor air temperature, and lower utility bills.

High Efficiency - At full load conditions the **VMBE-277** motor is 20% more efficient than an induction motor and at constant fan speed it consumes only 60-80 watts of power compared to 400 watts for a standard induction motor.

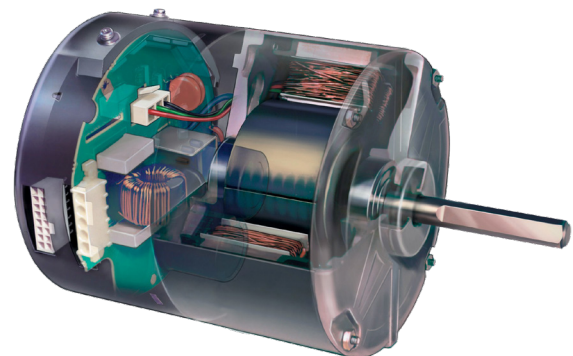
Quiet Operation - The versatile **VMBE-277** motor quietly “ramps up” when the unit is turned on and “ramps down” when the thermostat is satisfied, eliminating the annoying sounds of changing airflow.

Self-Regulating Constant Airflow - The **VMBE-277** motor is factory programmed to maintain a predetermined level of airflow over a wide range of external static pressures, ensuring optimum system performance and whole-house comfort. The benefits of constant fan operation are:

- **Consistent air distribution** (and temperature) throughout the home
- **Better indoor air quality** (further improved with the addition of high efficiency filter) - This allows the air to be filtered without excessive drafts and without sacrificing efficiency.
- **Better humidity control** - The **VMBE-277** is designed to extract much more moisture from the air than a conventional system by slowing the airflow over the cooling coil. The result is an improved summer comfort level at higher indoor temperatures.

Additional Standard Features:

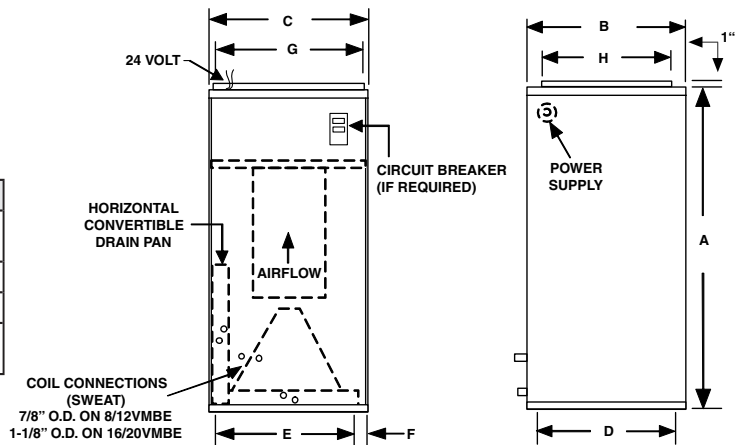
- Factory installed electric heat (0-10kW)
- Upflow / horizontal drain pans
- Higher efficiency pleated filter
- Primary and secondary drain connections on cooling coil
- Fully Insulated cabinet
- Compatible with most properly sized and installed zone control systems. Contact the zone control manufacturer.
- 277V motor, 24V controls
- High capacity 4-row cooling coil



Variable Speed ECM Motor

VMBE-277 SERIES

PHYSICAL DIMENSIONS									
UNIT MODEL	A	B	C	D	E	F	G	H	FILTER SIZE
8VMBE-277	40	20	20	18-1/2	16	2	18	16	18 X 20 X 1
12VMBE-277	42	23	20	21-1/2	16	2	18	17	20 X 22 X 1
16/20VMBE-277	48	28	21-1/4	26-1/4	17-1/4	2	19-1/4	18	20 X 25 X 1



AIR FLOW DATA (see "heating select taps" below each table for proper field set-up)												
MODEL	OPERATING MODE	THERMOSTAT TERMINALS			CONTROL BOARD SELECT TAPS							
		"X" ENERGIZED TERMINALS			COOL TAP				HEAT TAP			
		Y1	G	W1	A	B	C	D	A	B	C	D
8VMBE-277	COOLING	X	X		800	720	600	525				
	CONTINUOUS BLOW-ER		X		400	360	300	265				
	ELECTRIC HEAT			X					790	730	660	600
Heating Select Taps A 800 CFM unit with 0 - 15kW electric heat B 800 CFM unit with 0 - 5kW max. electric heat C 600 CFM unit with 0 - 10kW electric heat D 600 CFM unit with 0 - 5kW max. electric heat												
12VMBE-277	COOLING	X	X		1200	1050	950	850				
	CONTINUOUS BLOW-ER		X		600	525	475	425				
	ELECTRIC HEAT			X					1130	1000	875	790
Heating Select Taps A 1200 CFM unit with 0 - 15kW electric heat B 1200 CFM unit with 0 - 10kW max. electric heat C 950 CFM unit with 0 - 10kW electric heat D 950 CFM unit with 0 - 5kW max. electric heat												
16VMBE-277	COOLING	X	X		1600	1400	1250	1100				
	CONTINUOUS BLOW-ER		X		800	700	625	550				
	ELECTRIC HEAT			X					1500	1360	1190	1060
Heating Select Taps A+10% 1600 CFM unit with 20kW electric heat A 1600 CFM unit with 10 - 20kW max. electric heat B 1600 CFM unit with 0 - 10kW max. electric heat C 1250 CFM unit with 10 - 15kW electric heat D 1250 CFM unit with 0 - 10kW max. electric heat												
20VMBE-277	COOLING	X	X		1825	1700	1600	1400				
	CONTINUOUS BLOW-ER		X		900	850	800	700				
	ELECTRIC HEAT			X					1825	1700	1500	1300
Heating Select Taps A 2000 CFM unit with 15 - 20kW electric heat B 2000 CFM unit with 0 - 15kW max. electric heat C 1600 CFM unit with 10 - 20kW electric heat D 1600 CFM unit with 0 - 10kW max. electric heat												

Airflow shown are dry coil at 277 volts.
Max. ext. static pressure is 0.50" wtr

Notes: The cooling and heating speed taps are factory set on "A".
The delay profile is factory set on "A" (Arid setting).
The adjust profile is factory set on Normal.
If humidistat function is activated the cooling CFM will be reduced by 20%.
Adjust profile (+) will increase airflow by 10%, while tap (-) will decrease airflow by 10%.

For additional sales and technical information on variable speed motors visit:
www.thedealertools.com

Digital thermostats for these units must have a "C" terminal.



In keeping with its policy of continuous progress and product improvement, First Operations reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at www.firstco.com.

VMBE-277 SERIES

PERFORMANCE DATA - 277V						
UNIT MODEL	kW (@ 277V)	MOTOR AMPS	MOTOR HP	TOTAL AMPS	MIN. CIR. AMPACITY	MAX. CIR. PROTECTION
8VMBE0-277	0	1.9	1/3	1.9	3	15
8VMBE3-277	3	1.9	1/3	12.7	16	20
8VMBE4-277	4	1.9	1/3	16.3	21	25
8VMBE5-277	5	1.9	1/3	20.0	25	25
8VMBE6-277	6	1.9	1/3	23.6	30	30
8VMBE8-277	8	1.9	1/3	30.8	39	40
8VMBE10-277	10	1.9	1/3	38.0	48	50
12VMBE0-277	0	3.2	1/2	3.2	4	15
12VMBE5-277	5	3.2	1/2	21.3	27	30
12VMBE8-277	8	3.2	1/2	32.0	40	40
12VMBE10-277	10	3.2	1/2	39.3	50	50
16VMBE0-277	0	4.8	3/4	4.8	6	15
16VMBE5-277	5	4.8	3/4	22.9	29	30
16VMBE8-277	8	4.8	3/4	33.7	43	45
16VMBE10-277	10	4.8	3/4	40.9	52	60
20VMBE0-277	0	6.4	1	6.4	8	15
20VMBE5-277	5	6.4	1	24.5	31	35
20VMBE8-277	8	6.4	1	35.3	45	45
20VMBE10-277	10	6.4	1	42.5	54	60

NOTES:

- Units suitable for installation with 0" clearance to combustible material.

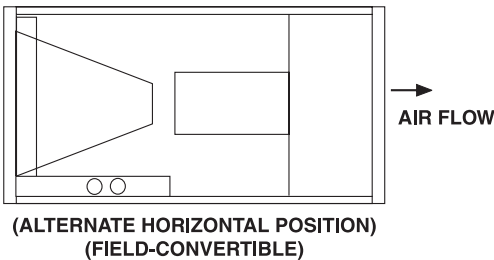
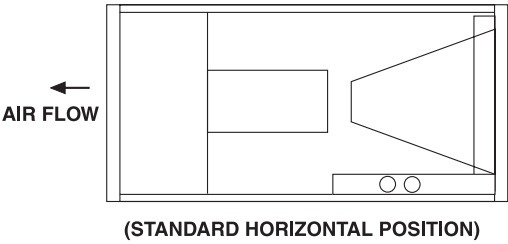
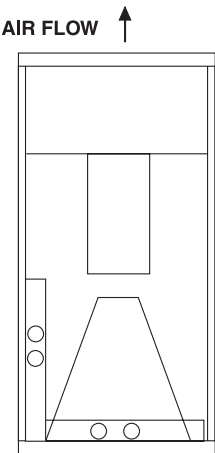
CHILLED WATER COOLING CAPACITY - 4 ROW															
UNIT MODEL	CFM	GPM	P.D. (FT. WTR.)	45°F ENTERING WATER						42°F ENTERING WATER					
				80°F DB/67°F WB ENT. AIR			75°F DB/63°F WB ENT. AIR			80°F DB/67°F WB ENT. AIR			75°F DB/63°F WB ENT. AIR		
				TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE	TOTAL MBH	SENS. MBH	TEMP. RISE
8VMBE-277	600	3.0	2.5	19.0	13.8	12.7	14.5	12.1	9.7	20.7	14.4	13.8	15.8	12.6	10.5
		4.5	5.5	22.4	15.1	9.9	17.1	13.1	7.6	24.4	15.9	10.8	18.6	13.7	8.3
		6.0	9.5	24.4	15.9	8.2	18.7	13.7	6.2	26.6	16.8	8.9	20.3	14.4	6.8
12VMBE-277	800	3.5	3.4	23.1	17.3	13.2	17.6	15.2	10.1	25.2	18.1	14.4	19.2	15.8	11.0
		5.0	6.7	26.9	18.7	10.7	20.5	16.3	8.2	29.3	19.6	11.7	22.4	17.1	8.9
		6.5	11.0	29.2	19.6	9.0	22.3	17.0	6.9	31.8	20.6	9.8	24.3	17.8	7.5
16VMBE-277	1000	4.0	2.4	28.3	21.6	14.1	21.6	19.0	10.8	30.8	22.5	15.4	23.6	19.7	11.8
		6.0	4.8	33.9	23.7	11.3	25.9	20.6	8.6	36.9	24.8	12.3	28.2	21.6	9.4
		8.0	7.9	37.3	25.0	9.3	28.5	21.7	7.1	40.6	26.3	10.2	31.0	22.7	7.8
20VMBE-277	1200	5.0	3.5	33.7	25.5	13.5	25.8	22.4	10.3	36.8	26.6	14.7	28.1	23.3	11.3
		6.5	5.5	38.0	27.1	11.7	29.1	23.7	8.9	41.5	28.4	12.8	31.7	24.7	9.7
		8.0	7.9	41.0	28.2	10.3	31.3	24.6	7.8	44.7	29.6	11.2	34.1	25.7	8.5
16VMBE-277	1400	4.5	2.0	36.2	29.2	16.1	27.7	25.8	12.3	39.5	30.3	17.5	30.1	26.7	13.4
		6.0	3.3	42.4	31.4	14.1	32.4	27.6	10.8	46.2	32.8	15.4	35.3	28.7	11.8
		7.5	4.8	46.9	33.1	12.5	35.8	28.9	9.6	51.1	34.7	13.6	39.0	30.2	10.4
20VMBE-277	1600	6.0	3.3	44.2	34.1	14.7	33.8	30.0	11.3	48.2	35.5	16.1	36.8	31.2	12.3
		8.0	5.4	51.0	36.6	12.7	38.9	32.0	9.7	55.5	38.3	13.9	42.4	33.4	10.6
		10.0	7.9	55.7	38.4	11.1	42.5	33.4	8.5	60.7	40.3	12.1	46.3	34.9	9.3
20VMBE-277	2000	6.5	3.8	46.1	34.8	14.2	35.2	30.6	10.8	50.3	36.3	15.5	38.4	31.8	11.8
		8.5	6.0	52.3	37.1	12.3	39.9	32.4	9.4	57.0	38.8	13.4	43.5	33.8	10.2
		10.5	8.6	46.6	38.7	10.8	43.2	33.7	8.2	61.7	40.7	11.8	47.1	35.2	9.0
20VMBE-277	2000	7.0	4.3	52.4	40.9	15.0	40.0	36.1	11.4	57.1	42.6	16.3	43.6	37.4	12.5
		10.0	7.9	61.7	44.3	12.3	47.1	38.8	9.4	67.3	46.4	13.5	51.4	40.5	10.3
		13.0	12.5	67.5	46.5	10.4	51.6	40.5	7.9	73.6	48.8	11.3	56.2	42.4	8.6

NOTE:

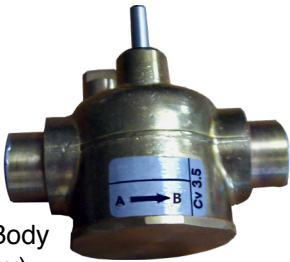
- All cooling coils have four rows.
- Contact factory for capacities at other conditions.

VMBE-277 SERIES

3-WAY AIRFLOW



Power Head



Valve Body
(2-way)



CP905

ACCESSORIES: (for chilled water coil)	
Power Heads:	
E50131180	24V
Separate Valve Bodies: (order power heads separately) (mount outside cabinet)	
E421317	3/4" 2-way - For 8-12VMBE-277
E431317	3/4" 3-way - For 8-12VMBE-277
E421417	1" 2-way - For 16-20VMBE-277
E431417	1" 3-way - For 16-20VMBE-277
Hand Valves: (Combination balance / shut-off) (2 usually req'd per coil)	
CP90	For 8-12VMBE-277
CP905	For 16-20VMBE-277

NOTE:

1. Power head leads are 18".





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