



**#6J**

**Vertical Fan/Coils**  
**200 thru 1200 CFM**

**1-800-USA-COIL**  
(1-800-872-2645)

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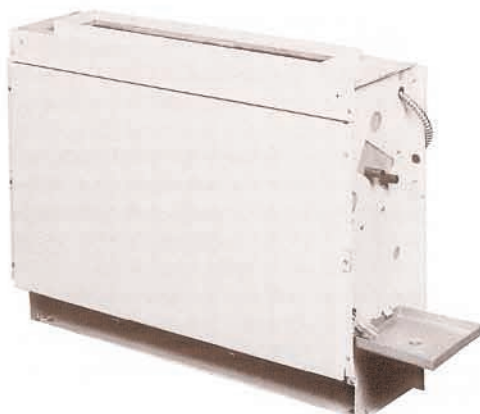
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# 1 Descriptive Information

*Unit Types*

## MODEL VFB - VERTICAL FLOOR BASIC (HIDEAWAY) - 200 CFM THRU 1200 CFM

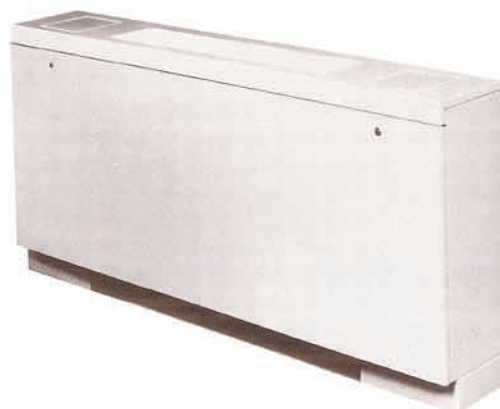


The model VFB Vertical Unit is designed for concealed applications and is also ideal for perimeter heating and cooling. The slim design makes this unit ideal for typical applications in public buildings, offices, hospitals, and hotels.

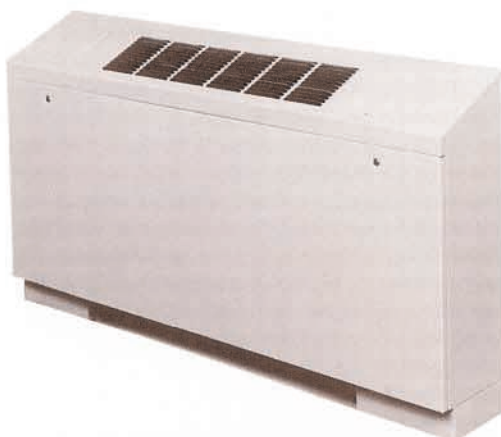
The coil section is completely lined with glass fiber insulation to provide positive protection against sweating and maximum dampening of air noise. VFB units are provided standard with a galvanized finish.

## MODEL VFC - VERTICAL CABINET (EXPOSED) - 200 CFM THRU 1200 CFM

This slim, attractively styled, floor cabinet model is ideal for the perimeter heating and cooling requirements in public buildings, offices, hospitals, and hotels. The clean, straight-line modern styling blends with any decor. The entire cabinet is fabricated of heavy gauge steel and the overlapping top panel design adds rigidity and ruggedness, essential in the exposed unit. The VFC models have a removable, one-piece front panel providing complete access to the basic unit. The standard finish is an attractive oven baked paint.



## MODEL VFCS - FLOOR EXPOSED WITH SLOPED TOP - 200 CFM THRU 1200 CFM



The VFCS Series has an attractively styled cabinet, designed for applications in schools, hospitals, and public buildings, where it is likely books and other items would be placed over the discharge grills of a flat-top design. The entire cabinet is fabricated of heavy gauge steel and the overlapping top panel design adds rigidity and ruggedness, essential in the exposed unit. The VFCS models have a removable one-piece front panel providing complete access to the basic unit. The standard finish is an attractive oven baked paint.

## HOW TO SELECT USA UNITS

It's easy to select USA Fan/Coil Units. The basic internal parts to include fan assemblies, coils, etc., are all the same for every size unit. We just change the cabinet around the unit, so that you choose the type that meets your requirements. You'll find that USA has the easiest selection procedure in the industry.

EXAMPLE: Model #VFB-04, VFC-04, VFCS-04 all have the same fan assembly, coil, filter, etc. Only the cabinet around the unit changes.



**MODEL VFBL - LOWBOY HIDEAWAY - 200 CFM THRU 600 CFM**

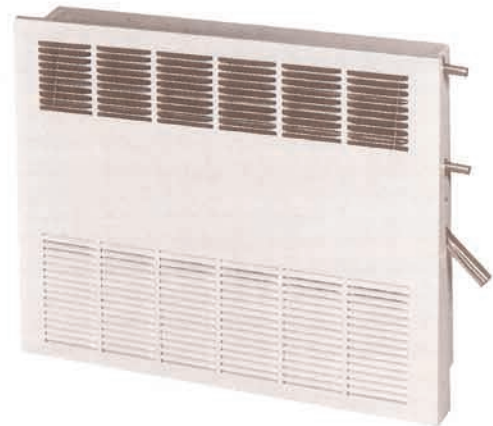
The Model VFBL Lowboy Vertical Unit is designed for concealed under window applications. The low design makes this unit ideal for applications in public buildings, offices, hospitals, and hotels. Due to the low silhouette, it does not interfere with vision through the window, obstruct light, or detract from the motif in the room. VFBL units are provided standard with a galvanized finish. "Tall" cabinet models are required for use with electric heat.

**MODEL VFCL - LOWBOY EXPOSED - 200 CFM THRU 600 CFM**

The Model VFCL Lowboy Vertical Unit is designed for exposed under window applications. The standard VFCL unit has two flush die-formed doors for access to three-speed fan control and optional thermostats. The standard finish is an attractive oven baked paint. "Tall" cabinet models are required for use with electric heat.

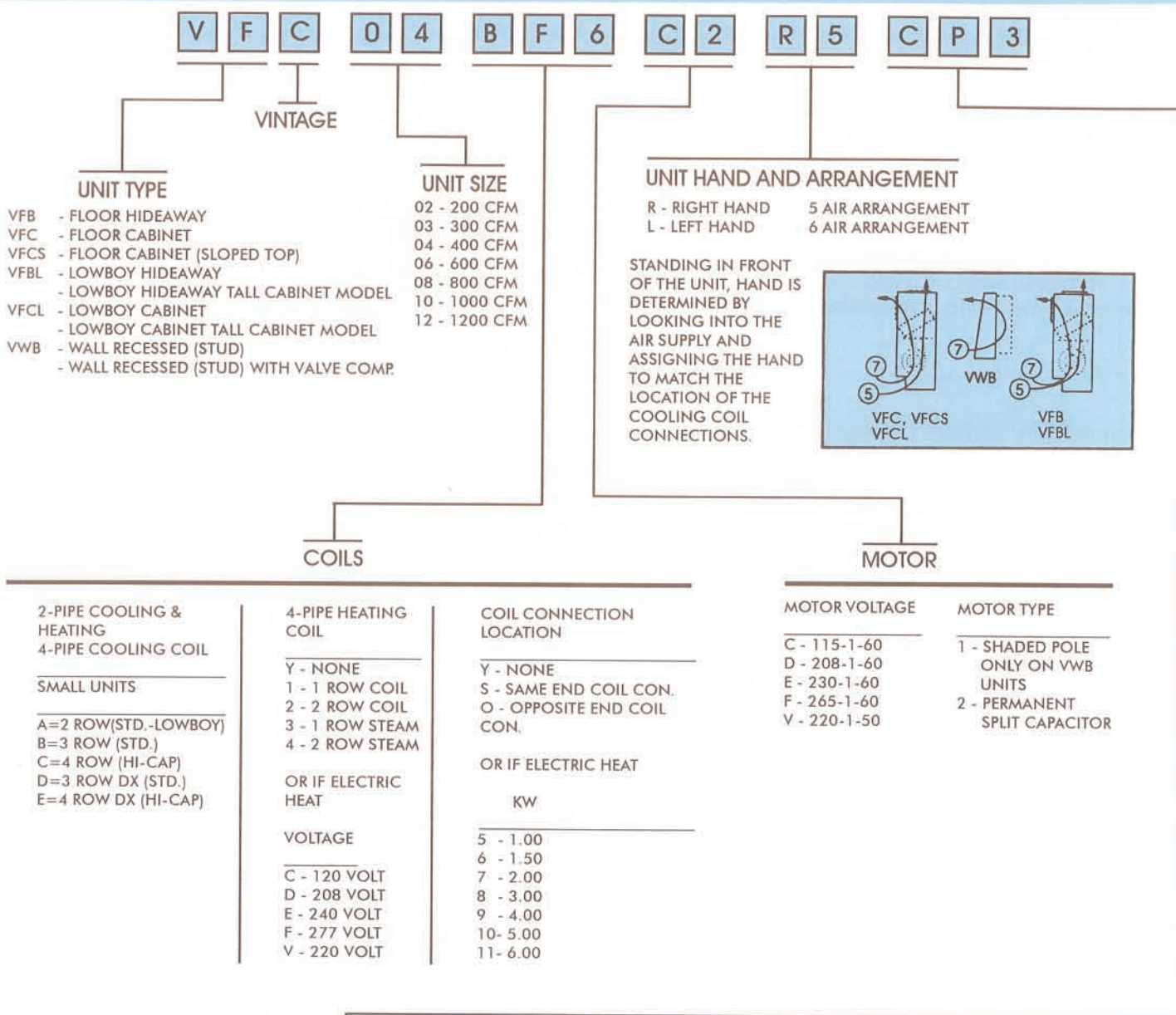
**MODEL VWB - WALL RECESSED - 150 CFM THRU 300 CFM**

The VWB Unit is designed for recessed wall installation where space is at a premium. The VWB unit was specifically designed to be installed between the studs, thus simplifying installation. The VWB unit is ideal for foyers, bathrooms and other small areas. The access panel is finished in an attractive oven baked paint. When using any kind of valve package, an extended cabinet VWB is required.



# 1 Descriptive Information

Model Number Codes



## UNIT CONTROL PACKAGE

### CONTROL VOLTAGE

C - 120 VOLT  
D - 208 VOLT  
E - 240 VOLT  
F - 277 VOLT  
V - 220 VOLT

### SYSTEM TYPE

#### FAN CYCLE CONTROL

A - MANUAL FAN OPERATION  
B - 2 PIPE HEAT ONLY  
C - 2 PIPE HEAT & COOL - (AUTO. c/o) ALTERNATE

#### VALVE CYCLE CONTROL

G - 2 PIPE HEAT ONLY  
H - 2 PIPE COOL ONLY  
J - 2 PIPE HEAT & COOL - (MANUAL c/o)  
K - 2 PIPE HEAT & COOL - (AUTO. c/o)  
L - 2 PIPE HEAT & COOL W/AUX. ELEC. HEAT (MANUAL c/o)  
M - 2 PIPE HEAT & COOL W/AUX. ELEC. HEAT (AUTO. c/o)  
N - 2 PIPE HEAT & COOL W/TOTAL ELEC. HEAT (MANUAL c/o)  
P - 2 PIPE HEAT & COOL W/TOTAL ELEC. HEAT (AUTO. c/o)  
Q - 4 PIPE HEAT & COOL - (MANUAL c/o)  
R - 4 PIPE HEAT & COOL - (AUTO. c/o)

### THERMOSTAT

1 - STANDARD UNIT MOUNT  
2 - STANDARD WALL MOUNT  
3 - C-3 WALL MOUNT  
4 - WALL SERIES 4039  
5 - WALL SERIES 154



**PERFORMANCE DATA (ALL MODELS)**

**CAPACITIES** - Unit capacities are certified in compliance with Air Conditioning and Refrigeration Institute (ARI) Standard 440-84.

**SAFETY** - Units listed with Underwriters Laboratory (UL) Standard 883 and Canadian Standards Association (CSA) Standard C22.2 No. 236-M90.

**BASIC FLOOR MODELS (VFB, VFC, VFCS)**

The basic unit is fabricated of galvanized steel with glass fiber lining throughout the coil section. The combination condensate pan and fan deck is fabricated of galvanized steel and insulated with fire retardant, closed cell foam insulation. Removal of the unit front access panel exposes this pan for easy cleaning. The entire pan and blower assembly is readily removed from the unit for servicing.

**CABINET**

The decorative cabinet of the model VFC and VFCS units are fabricated of heavy gauge steel, bonderized and finished with an attractive, oven-baked paint. Several baked enamel colors are available as optional selections. (See color chart) The removable front panel is lined with 1/2" woven glass fiber for thermal insulation and acoustic treatment. This panel is readily removed and provides complete access to the basic unit, controls compartment and piping compartment. Die formed discharge grilles and flush access doors are provided in the top panel. Several other types of discharge grilles are available as optional selections. On VFC and VFCS models, the filter is completely concealed above the return air toe space and can be removed for servicing without removal of the front panel.

**COILS**

Coils are constructed with 1/2" O.D. copper tubes with aluminum fins mechanically bonded to the tubes. All coils are leak tested with an air under water test and are suitable for design working pressures of 250 psig @ 200 F. A variety of coil selections are available. The standard coil provides adequate capacity for most cooling applications with an eight to ten degree design water temperature rise. A high capacity coil is offered for those applications requiring higher latent heat capabilities or those designed for higher water temperature rises. Coils are available for both two-pipe and four-pipe applications. Optional steam coils are available and are suitable for working pressures up to 5 psig.

**FILTERS**

Standard filters are one inch throwaway glass fiber. Optional cleanable filters are available.

**FANS**

The fans are centrifugal, forward-curved, double-width wheels. Blower housings are galvanized steel with special rolled perimeter seams to provide added rigidity.

**MOTORS**

All motors are resilient-mounted, three speed, with UNDERWRITERS listed thermal overload protection. Motor bearings are of the sleeve type or ball bearing type with oversized oil reservoirs provided to assure positive lubrication with minimum servicing required. Positive speed reduction is assured through careful matching of motor torque to blower loading. Standard motors are permanent split capacitor.

**LOWBOY MODELS (VFBL, VFCL)**

The basic unit is fabricated of galvanized steel with glass fiber lining throughout the coil section. The combination condensate pan and fan deck is fabricated of galvanized steel and insulated with fire retardant, closed cell foam insulation. Removal of the unit front access panel exposes this pan for easy cleaning. The entire pan and blower assembly is readily removed from the unit for servicing.

**CABINET**

The decorative cabinet of the model VFCL unit are fabricated of heavy gauge steel, bonderized and finished with an attractive, oven-baked paint. Several baked enamel colors are available as optional selections. (See color chart) The removable front panel is lined with 1/2" woven glass fiber for thermal insulation and acoustic treatment. This panel is readily removed and provides complete access to the basic unit, controls compartment and piping compartment. Die formed discharge grilles and flush access doors are provided in the top panel. Several other types of discharge grilles are available as optional selections. On VFCL models, the filter is completely concealed above the return air toe space and can be removed for servicing without removal of the front panel.



# 1 Descriptive Information

## *Suggested Specifications*

### COILS

Coils are constructed with 1/2" O.D. copper tubes with aluminum fins mechanically bonded to the tubes. All coils are leak tested with an air under water test and are suitable for design working pressures of 250 psig @ 200 F. A variety of coil selections are available. The standard coil provides adequate capacity for most cooling applications with an eight to ten degree design water temperature rise. A high capacity coil is offered for those applications requiring higher latent heat capabilities or those designed for higher water temperature rises. Coils are available for both two-pipe and four-pipe applications. Optional steam coils are available and are suitable for working pressures up to 5 psig.

### FILTERS

Standard filters are one inch throwaway glass fiber. Optional cleanable filters are available.

### FANS

The fans are centrifugal, forward-curved, double-width wheels. Blower housings are galvanized steel with special rolled perimeter seams to provide added rigidity.

### MOTORS

All motors are resilient-mounted, three speed, with UNDERWRITERS listed thermal overload protection. Motor bearings are of the sleeve type or ball bearing type with oversized oil reservoirs provided to assure positive lubrication with minimum servicing required. Positive speed reduction is assured through careful matching of motor torque to blower loading. Standard motors are permanent split capacitor.

### WALL RECESSED MODELS (VWB)

The basic unit is fabricated of galvanized steel with glass fiber lining throughout the coil section. The combination condensate pan and fan deck is fabricated of galvanized steel and insulated with fire retardant, closed cell foam insulation. Removal of the unit front access panel exposes the coil, drain pan, motor/blower, controls and valve package for easy servicing.

### CABINET

The decorative cabinet of the model VWB unit is fabricated of heavy gauge steel, bonderized and finished with an attractive, oven-baked paint. Several baked enamel colors are available as optional selections. (See color chart) The removable front panel is lined with 1/2" woven glass fiber for thermal insulation and acoustic treatment. This panel is readily removed and provides complete access to the basic unit, controls compartment and piping compartment. Die formed discharge grilles and flush access doors are provided in the top panel.

### COILS

Coils are constructed with 1/2" O.D. copper tubes with aluminum fins mechanically bonded to the tubes. All coils are leak tested with an air under water test and are suitable for design working pressures of 250 psig @ 200F. The standard coil is a two-row coil available for 2-pipe heating or cooling applications.

### FILTERS

Standard filters are one inch throwaway glass fiber.

### FANS

The fans are centrifugal, forward-curved, double-width wheels. Blower housings are galvanized steel with special rolled perimeter seams to provide added rigidity.

### MOTORS

All motors are resilient-mounted, three speed, with UNDERWRITERS listed thermal overload protection. Motor bearings are of the sleeve type or ball bearing type with oversized oil reservoirs provided to assure positive lubrication with minimum servicing required. Positive speed reduction is assured through careful matching of motor torque to blower loading. Standard motors are shaded pole type.



## ARI CERTIFICATION

The Vertical Series Units are certified in compliance with the Air Conditioning and Refrigeration Institute (ARI). Industry Standard 440-89 for room fan coil units. Approved standard ratings are tabulated below.

## UL APPROVAL

All vertical units in USA COIL & AIR's Product Line are listed by UNDERWRITERS' LABORATORIES, INC. This listing signifies that USA COIL & AIR's fan coil units have been examined by UL and found to be in complete compliance with applicable standards. The re-examination service also includes periodic visits by UL inspectors at USA COIL & AIR's factory to assure continuing compliance by all listed products.



TABLE #1

### ARI APPROVED STANDARD RATINGS<sup>1</sup>

UNIT TYPE	UNIT SIZE-COIL	NOM. CFM	GPM	COOLING CAPACITY		POWER INPUT WATTS
				TOTAL BTUH	SENSIBLE BTUH	
VFB VFC VFCS (SLOPE)	02 - 3 ROW	200	1.1	4,800	3,500	50
	03 - 3 ROW	300	1.5	7,200	5,300	80
	04 - 3 ROW	400	2.4	11,200	7,900	130
	06 - 3 ROW	600	3.0	13,900	10,400	180
	08 - 3 ROW	800	4.0	19,100	13,500	210
	10 - 3 ROW	1000	4.8	22,000	16,800	240
	12 - 3 ROW	1200	5.3	26,300	20,000	370
VFB VFC VFCS (SLOPE)	02 - 4 ROW	200	1.4	6,600	4,100	50
	03 - 4 ROW	300	2.0	9,900	7,000	80
	04 - 4 ROW	400	2.7	13,100	8,600	130
	06 - 4 ROW	600	3.8	18,600	13,600	170
	08 - 4 ROW	800	4.2	20,600	14,100	195
	10 - 4 ROW	1000	5.9	29,500	19,600	240
	12 - 4 ROW	1200	7.8	35,300	26,300	370
VWB SHADED POLE MOTOR	01 - 2 ROW	150	0.6	3,000	2,500	*50
	03 - 2 ROW	300	1.5	7,800	6,600	*100
VFBL VFCL	02 - 2 ROW	200	1.2	5,100	3,600	68
	03 - 2 ROW	300	2.0	8,600	6,700	135
	04 - 2 ROW	400	2.6	12,300	8,300	150
	06 - 2 ROW	600	3.6	18,300	13,200	260
VFBL VFCL	02 - 3 ROW	200	1.3	5,500	3,800	68
	03 - 3 ROW	300	2.4	10,900	7,100	130
	04 - 3 ROW	400	3.0	13,400	8,800	145
	06 - 3 ROW	600	4.1	21,100	14,600	250

1. Based on 80 degrees and 67 degrees WB EAT, 45 degrees F EWT, 10 degrees F temperature rise, high fan speed. Motor voltage 115/1/60. Air flow under dry coil conditions. Ducted models tested @ 0.05 ext. static pressure.
2. For all application ratings use the USA Coil & Air computer selection program, the quick-selection ratings in this catalog or contact your local USA Coil & Air representative.



**TABLE #3 ACTUAL CFM OUTPUT**

UNIT			CFM @ 0.0E.S.P. FOR FAN SPEED INDICATED			HIGH SPEED CFM @ E.S.P. INDICATED			
MODEL	SIZE	COIL	HI	MED	LOW	0.05	0.10	0.15	0.20
VFC VFB VFCS	02	3 ROW	240	210	185	195	150	105	-
	03		295	250	205	260	220	185	155
	04		410	295	225	370	335	310	290
	06		620	460	310	565	515	475	440
	08		700	575	360	640	600	545	500
	10		915	675	490	850	780	725	655
	12		1100	935	580	1025	970	920	865
	02	4 ROW	215	130	165	170	135	95	-
	03		285	240	200	245	205	170	140
	04		395	280	220	355	325	300	260
	06		605	450	305	550	505	465	430
	08		690	570	350	630	590	540	490
	10		885	650	475	820	755	700	635
	12		1070	910	565	995	945	895	840
VFBL VFCL	02	2 ROW	250	170	125	225	190	150	120
	03		370	285	195	345	305	275	235
	04		480	350	240	440	400	360	320
	06		750	575	395	700	660	600	560
	02	3 ROW	230	155	115	210	180	145	115
	03		345	265	185	315	285	255	230
	04		460	335	230	420	385	345	310
	06		670	510	355	625	580	540	495

Note: Tabled values are standard CFM at sea level, 70°F with dry coil for 60 Hz motors only.  
The ratings above include filter and/or grille static pressure losses where applicable.

**COIL SIZE - VFC, VFB, VFCL**

UNIT SIZE	HEIGHT X LENGTH
2	7.5 X 16
3	7.5 X 20
4	7.5 X 26
6	7.5 X 36
8	8.75 X 38
10	8.75 X 52
12	8.75 X 60

**COIL SIZE - VFBL, VFCL**

UNIT SIZE	HEIGHT X LENGTH
2	10 X 17
3	10 X 22
4	10 X 30
6	10 X 44

**TABLE #4**
**BASE COOLING & HEATING CAPACITIES (VWB) - BTUH**

UNIT SIZE	UNIT CFM	GPM	PD Ft. of H2O	COOLING			HEATING	
				EWT			EWT	
				40°F	45°F	50°F	160°F	180°F
VWB-01	150	1.0	0.8	4240	3450	2750	8200	10000
		1.5	1.6	4950	4080	3270	8750	10850
		2.0	2.7	5320	4500	3500	9220	11300
		2.5	3.6	5500	4650	3620	9450	11700
		3.0	5.5	5590	4850	3770	9700	12300
VWB-03	300	1.0	1.5	7850	6400	5100	15500	18900
		1.5	2.9	8850	7800	6250	16700	20400
		2.0	4.8	10200	8660	6730	17300	21100
		2.5	6.4	10800	9100	7130	17600	21500
		3.0	9.7	11100	9650	7500	18000	22000

NOTES: Cooling capacity based on standard conditions of 80°F DB, 67°F WB entering air temperature. To approximate sensible use S.H.R. of .84 to above BTUH.

**UNIT DATA**

UNIT SIZE	COIL ROWS	COIL SIZE	COIL CONN. SIZE	DRAIN CONN. SIZE	FILTER SIZE
VWB-01	TWO	10 X 7 1/2	5/8" O.D.	3/4"	10 X 14 1/2 X 1
VWB-03	TWO	24 X 7 1/2	5/8" O.D.	3/4"	10 X 28 X 1

**MOTOR DATA (115/1/60 SHADED POLE)**

UNIT SIZE	HIGH SPEED			MEDIUM SPEED			LOW SPEED		
	AMPS	WATTS	RPM	AMPS	WATTS	RPM	AMPS	WATTS	RPM
VWB-01	1.0	50	1200	0.50	39	980	0.30	30	790
VWB-03	2.0	100	1200	1.00	78	980	0.60	60	790



# 2 Performance Information

Direct Expansion  
(DX) Cooling

TABLE #6

## DX COOLING CAPACITIES (VFB, VFC, VFCS)

UNIT SIZE	R-22 SUCT TEMP	ENTERING AIR (°F) DB/WB															
		3 ROW (STANDARD)								4 ROW (HI-CAPACITY)							
		76/63		78/65		80/67		82/69		76/63		78/65		80/67		82/69	
		TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS MBH	TOT MBH	SENS M6.0BH	TOT MBH	SENS MBH	TOT MBH	SENS MBH
02	35°	6.7	4.9	7.4	5.1	8.2	5.3	9.1	5.6	8.2	5.8	9.1		10.1	6.3	11.1	6.5
	40°	5.3	4.2	6.0	4.4	6.8	4.7	7.6	4.9	6.7	5.0	7.5	5.3	8.4	5.5	9.4	5.8
	45°	3.9	3.6	4.5	3.8	5.3	4.0	6.1	4.3	5.1	4.3	5.9	4.5	6.8	4.8	7.7	5.1
	50°	2.8	2.8	3.3	3.2	3.8	3.4	4.5	3.6	3.7	3.6	4.3	3.8	5.0	4.1	5.9	4.3
03	35°	9.7	7.1	10.7	7.4	11.8	7.7	12.9	8.0	11.6	8.2	12.8	8.6	14.0	8.9	15.3	9.2
	40°	7.8	6.2	8.8	6.5	9.9	6.8	11.0	7.1	9.6	7.2	10.8	7.6	12.0	8.0	13.3	8.3
	45°	5.8	5.3	6.7	5.6	7.8	5.9	8.9	6.2	7.4	6.2	8.5	6.6	9.8	7.0	11.0	7.3
	50°	4.2	4.2	4.9	4.7	5.7	5.0	6.7	5.3	5.4	5.3	6.3	5.6	7.4	6.0	8.6	6.3
04	35°	13.0	9.5	14.3	9.8	15.7	10.2	17.1	10.5	15.1	10.8	16.5	11.2	18.0	11.5	19.4	11.9
	40°	10.7	8.4	12.0	8.8	13.4	9.1	14.8	9.5	12.7	9.6	14.2	10.0	15.7	10.5	17.2	10.8
	45°	8.2	7.2	9.5	7.6	10.8	8.0	12.3	8.4	10.0	8.4	11.5	8.8	13.0	9.3	14.6	9.7
	50°	6.0	6.0	6.9	6.5	8.1	6.9	9.5	7.3	7.4	7.2	8.6	7.6	10.1	8.1	11.7	8.5
06	35°	17.5	13.1	19.5	13.7	21.4	14.2	23.4	14.7	21.4	15.5	23.6	16.1	25.7	16.6	28.0	17.2
	40°	14.0	11.5	15.9	12.1	17.9	12.6	20.0	13.2	17.7	13.7	19.9	14.3	22.1	15.0	24.4	15.6
	45°	10.6	9.9	12.2	10.5	14.1	11.0	16.1	11.6	13.7	11.9	15.7	12.5	18.0	13.2	20.3	13.8
	50°	7.9	7.9	9.0	8.9	10.3	9.4	12.0	10.0	10.1	10.0	11.6	10.7	13.5	11.3	15.7	12.0
08	35°	22.8	17.1	25.1	17.7	27.4	18.3	29.8	18.8	27.0	19.8	29.4	20.4	31.9	21.0	34.5	21.6
	40°	18.6	15.2	21.0	15.9	23.4	16.5	25.8	17.1	22.7	17.8	25.3	18.5	27.9	19.2	30.6	19.8
	45°	14.4	13.2	16.4	13.9	18.8	14.6	21.3	15.3	18.0	15.6	20.5	16.4	23.2	17.2	26.0	17.9
	50°	10.7	10.7	12.3	11.9	14.1	12.7	16.3	13.3	13.5	13.3	15.5	14.2	17.9	15.0	20.7	15.8
10	35°	28.0	21.3	30.7	22.0	33.4	22.7	36.2	23.3	32.9	25.5	35.8	25.2	38.8	25.9	41.7	26.5
	40°	23.0	19.1	25.8	19.9	28.7	20.6	31.7	21.3	27.9	22.2	31.0	23.0	34.2	23.8	37.4	24.5
	45°	17.9	16.6	20.4	17.5	23.3	18.3	26.3	19.2	22.3	19.6	25.3	20.5	28.6	21.4	32.0	22.3
	50°	13.5	13.5	15.4	15.0	17.6	16.0	20.2	16.8	16.9	16.8	19.3	17.8	22.3	18.8	25.6	19.8
12	35°	37.1	27.2	41.0	28.3	45.0	29.3	49.1	30.4	44.2	31.6	48.5	32.8	52.8	33.4	57.3	35.0
	40°	30.1	23.9	34.0	25.1	38.0	26.2	42.2	27.3	36.8	28.0	41.2	29.3	45.7	30.6	50.3	31.8
	45°	22.9	20.6	26.4	21.8	30.4	22.9	35.5	24.1	28.7	24.3	33.0	25.7	37.6	27.0	42.3	28.3
	50°	16.8	16.8	19.4	18.5	22.5	19.7	26.3	20.8	21.1	20.7	24.5	22.0	28.6	23.3	33.3	24.7

NOTE: For refrigerants other than R-22 consult factory. Ratings at nominal CFM. All DX units to operate at high speed only.

## DX - CFM CORRECTION FACTORS

DX Total Capacity (MBH) =  
Base TH X Total Correction Factor

DX Sensible Capacity (MBH) =  
Base SH X Sensible Correction Factor

% of Nominal CFM =  
Actual CFM (from Air Delivery tables) ÷  
Nominal CFM

% OF NOMINAL CFM	CORRECTION FACTOR	
	TOTAL	SENSIBLE
80	0.95	0.93
90	0.97	0.96
100	1.00	1.00
110	1.02	1.04
120	1.05	1.08

Consult factory for values outside of table.



**TABLE #7**

To determine the hot water heating capacity of the VFB, VFC, VFCS, VFBL, VFCL models, use the following formula and tables  
 Hot Water Heating Capacity (MBH) = Base Capacity x Hot Water Temperature Correction Factor x Correction Factor Sensible (Page 10)

**BASE HEATING CAPACITIES - MBH (VFB, VFC, VFCS)**

ROWS	UNIT SIZE	GPM											
		0.5	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.0	8.0	10.0	12.0
1	02	7.6	8.8	9.2	9.4	9.6	9.8	-	-	-	-	-	-
	03	9.3	11.2	12.0	12.5	12.8	13.0	-	-	-	-	-	-
	04	12.0	14.0	15.3	16.2	16.8	17.1	-	-	-	-	-	-
	06	13.5	18.0	20.4	21.8	24.0	24.4	-	-	-	-	-	-
	08	-	21.3	24.8	26.5	28.8	30.0	-	-	-	-	-	-
	10	-	24.0	30.5	33.5	36.2	37.5	-	-	-	-	-	-
	12	-	26.5	35.8	38.8	42.3	44.0	-	-	-	-	-	-
2	02	12.1	14.1	15.0	15.7	16.4	16.8	-	-	-	-	-	-
	03	16.6	19.4	20.6	21.8	23.0	23.5	-	-	-	-	-	-
	04	18.5	23.4	25.5	26.7	28.6	29.4	-	-	-	-	-	-
	06	-	29.0	33.0	34.8	37.2	38.8	39.8	40.5	41.1	42.0	-	-
	08	-	32.8	37.7	40.8	45.0	46.9	47.5	49.7	50.6	51.4	-	-
	10	-	40.5	47.5	51.4	56.5	59.5	61.5	63.5	65.0	66.0	-	-
	12	-	49.0	55.5	59.5	64.7	68.0	70.7	72.7	74.0	75.3	-	-
3	02	15.0	17.4	18.6	19.4	20.3	20.8	-	-	-	-	-	-
	03	20.0	24.0	25.5	26.9	28.5	29.6	-	-	-	-	-	-
	04	22.5	29.0	31.6	33.0	35.2	36.4	-	-	-	-	-	-
	06	-	-	40.5	43.0	46.0	47.8	49.0	50.0	50.6	51.1	-	-
	08	-	-	47.0	51.2	55.5	58.0	60.0	61.5	62.6	63.5	-	-
	10	-	-	-	63.5	69.5	73.5	76.0	78.4	80.0	81.5	82.8	84.5
	12	-	-	-	70.0	79.4	84.2	87.5	90.0	92.0	93.4	96.0	-
4	02	17.2	20.0	21.2	21.8	22.5	23.0	-	-	-	-	-	-
	03	21.5	27.0	29.1	30.0	31.8	32.6	-	-	-	-	-	-
	04	25.0	33.0	35.6	37.0	38.5	39.6	-	-	-	-	-	-
	06	-	-	46.0	50.0	53.5	55.0	56.0	57.0	57.8	58.7	-	-
	08	-	-	51.3	55.0	60.0	63.0	65.0	66.4	67.4	68.3	-	-
	10	-	-	-	70.5	77.7	81.5	84.1	86.3	88.0	89.5	91.3	92.5
	12	-	-	-	82.5	92.5	97.5	101.1	104.0	106.5	108.5	110.5	112.0

NOTE: Ratings based on nominal CFM, 70°F EDB, 180°F EWT.

**BASE HEATING CAPACITIES - MBH (VFBL, VFCL)**

ROWS	UNIT SIZE	GPM							
		0.5 MBH	1.0 MBH	1.5 MBH	2.0 MBH	2.5 MBH	3.0 MBH	4.0 MBH	
1	02	7.2	9.7	10.4	10.7	10.8	-	-	
	03	9.5	12.4	14.1	15.1	15.5	-	-	
	04	10.1	14.5	17.4	19.4	20.8	21.5	22.2	
	06	14.6	20.2	23.5	26.0	27.5	28.7	29.7	
2	02	11.2	14.3	15.6	16.5	17.2	17.7	-	
	03	14.3	19.1	21.8	23.4	24.3	24.6	-	
	04	-	22.6	27.1	30.0	32.0	33.2	34.1	
	06	-	31.1	36.6	39.7	42.0	44.1	46.8	
3	02	12.8	16.5	18.4	19.7	20.7	21.4	-	
	03	18.0	22.8	25.9	27.7	28.8	29.4	-	
	04	-	25.5	31.8	33.6	35.2	36.2	36.8	
	06	-	37.0	40.9	43.7	46.0	47.8	51.0	

NOTE: Capacity in MBH at Nominal CFM. Based on 180°F Entering Water Temperature - 70°F Entering Air Temperature.

**HOT WATER TEMPERATURE CORRECTION FACTORS**

ENT. AIR	EWT									
	100°	110°	120°	130°	140°	150°	160°	170°	180°	190°
50°	.455	.545	.636	.727	.818	.909	1.00	1.091	1.182	1.273
55°	.409	.500	.591	.682	.773	.864	.955	1.045	1.136	1.227
60°	.363	.455	.545	.636	.727	.818	.909	1.000	1.091	1.182
65°	.318	.409	.500	.591	.682	.773	.864	.955	1.045	1.136
70°	.272	.363	.455	.545	.636	.727	.818	.909	1.000	1.091
75°	.227	.318	.409	.500	.591	.682	.773	.864	.955	1.045
80°	.182	.272	.363	.455	.545	.636	.727	.818	.909	1.000



# 2 Performance Information

*Elec. Heat Options  
Steam Heating Options*

## APPLICATION

Electric heaters are available for installation on USA Coil & Air fan coil units for the following applications.

### TOTAL ELECTRIC HEAT

Complete heating during heating season: No boiler is required. Heating and/or cooling may be available on an individual basis the year round with only a two-pipe system. Chilled water is used for cooling, and the electric heater is used for heating. Individual room controls can be supplied to give manual or automatic changeover.

### AUXILIARY ELECTRIC HEAT

Heating between seasons or during cooling season when chilled water is being circulated. Individual room controls can be supplied to provide electric heat only when chilled water is being circulated. During regular heating season, heating is provided by hot water being circulated in the system.

## CONSTRUCTION

The heater consists of coils of high grade resistance wire which are insulated by incorporating ceramic insulators in plated steel brackets.

High limit thermal cutouts to protect the heater in the event of air failure are provided as standard equipment.

There are many special applications and control sequences for electric heat. Consult factory for special applications.

Electric Heating Capacities (BTUH) = Heater KW x 3415

Electric Heater Amperage =  $\frac{\text{Heater KW} \times 1000}{\text{Applied Voltage}}$

TABLE #8

### ELECTRIC HEATER SELECTION GUIDE

VOLTAGE	KW	UNIT SIZE							
		02	03	04	06	08	10	12	
120V	0.5	F							
	1.0	L	F/L	F/L	F/L				
	1.5		F/L	F/L	F/L				
	2.0			F/L	F/L	F			
	3.0				F/L	F	F	F	
240V 277V	0.5	F							
	1.0	L	F/L	F/L	F/L				
	1.5		F/L	F/L	F/L				
	2.0			F/L	F/L	F			
	3.0				F/L	F	F	F	
	4.0					F	F	F	
	5.0						F	F	
208V	0.5	F							
	1.0	L	F/L	F/L	F/L				
	1.5		F/L	F/L	F/L				
	2.0			F/L	F/L	F			
	3.0				F/L	F	F	F	
	4.0					F	F	F	
	5.0						F	F	

NOTE: All heaters are single stage and single phase.  
Available KW for VFB, VFC, VFCS are indicated F (floor).  
Available KW for VFBL, VFCL are indicated L (lowboy).

TABLE #9

### STEAM HEATING (VFB, VFC, VFCS ONLY)

#### BASE STEAM CAPACITIES - BTUH

UNIT SIZE	1 ROW COIL	2 ROW COIL
02	12270	19920
03	16890	28580
04	21940	37530
06	31610	54995(2)
08	40415	71250(2)
10	52685(2)	91655(2)
12	62355(2)	109120(2)

1. Rating based on Nominal CFM, 70 degrees EDB, 2 Psig
2. All capacities above 50,000 BTUH rating are beyond the capacity of the standard control valve. Consult factory for these specifications.

#### STEAM PRESSURE CORRECTION FACTORS

EAT °F	STEAM PRESSURE (PSIG)		
	2	5	10
40	1.202	1.265	1.353
50	1.134	1.196	1.279
60	1.067	1.125	1.208
70	1.000	1.054	1.128

Heating Applications MBH - Base Heating MBH (at Nominal CFM) x Capacity Correction Factor.



**THERMAL OVERLOAD PROTECTION  
AND UL LISTING**

All split capacitor motors furnished by USA Coil & Air contain an internal thermal overload protector which is calibrated to tripout when the winding reaches a predetermined temperature. This protector will automatically reset when the temperature returns to a safe limit.

Underwriters Laboratories, Inc. approves the motor and thermal overload combination at locked rotor conditions only. These combinations are "yellow card listed," and evidence of such protection is stamped directly on the motor.

**EFFICIENCY AND POWER FACTOR**

The efficiency and power factor of a permanent split capacitor motor are higher than that of a shaded pole motor. Permanent split capacitor motors have an efficiency in the range of 35% to 55% as compared to 20% to 35% for shaded pole motors. The power factor of a shaded pole motor may be in the range of 0.50 to 0.65 while the power factor of a permanent split capacitor motor approaches 0.89 - 1.00.

When current input is critical, the motor selection should be made on the basis of efficiency. This is one reason for the increasing use of permanent split capacitor motors in fan coil units. In many installations the total power factor must be maintained above a set minimum value. If other components of the system have a high power factor, then it may not be objectionable to use a low power factor motor.

**TABLE #10****MODELS - VFBL, VFCL**

VOLTAGE	DATA	UNIT SIZE			
		02	03	04	06*
115 V 60 HZ 1 PHASE	NOM'L HP	1/20	1/12	1/12	1/12(2)
	H	AMPS	0.34	1.35	1.45
		WATTS	68	135	450
	M	AMPS	45	65	65
		WATTS	0.30	0.60	0.60
	L	AMPS	0.20	0.30	0.30
		WATTS	25	40	40
					85
208 V 60 HZ 1 PHASE **	NOM'L HP	1/20	1/12	1/12	1/12(2)
	H	AMPS	0.46	0.56	0.60
		WATTS	56	109	116
	L	AMPS	0.20	0.30	0.30
		WATTS	35	55	58
					103
230 V 60 HZ 1 PHASE **	NOM'L HP	1/20	1/12	1/12	1/12(2)
	H	AMPS	0.50	0.60	0.64
		WATTS	64	128	138
	L	AMPS	0.22	0.28	0.30
		WATTS	42	65	67
					120
265 HZ 60 HZ 1 PHASE	NOM'L HP	1/20	1/12	1/12	1/12(2)
	H	AMPS	0.35	0.58	0.58
		WATTS	85	135	140
	M	AMPS	0.12	0.33	0.34
		WATTS	45	85	88
	L	AMPS	0.07	0.22	0.22
		WATTS	35	55	57
					100
220 V / 240 V 50 HZ 1 PHASE	NOM'L HP	1/20	1/12	1/12	1/12(2)
	H	AMPS	0.36	0.38	0.39
		WATTS	80	145	150
	M	AMPS	0.15	0.30	0.30
		WATTS	40	70	70
	L	AMPS	0.11	0.17	0.17
		WATTS	30	40	40
					80

\*NOTE: Total Unit Motor Amps & Watts Shown For 2 Motor Units (Size 6).

\*\*Motors are two-speed

All motors PSC type. Motor Nameplate Amps May Vary.



# 2 Performance Information

Motor Information

TABLE #

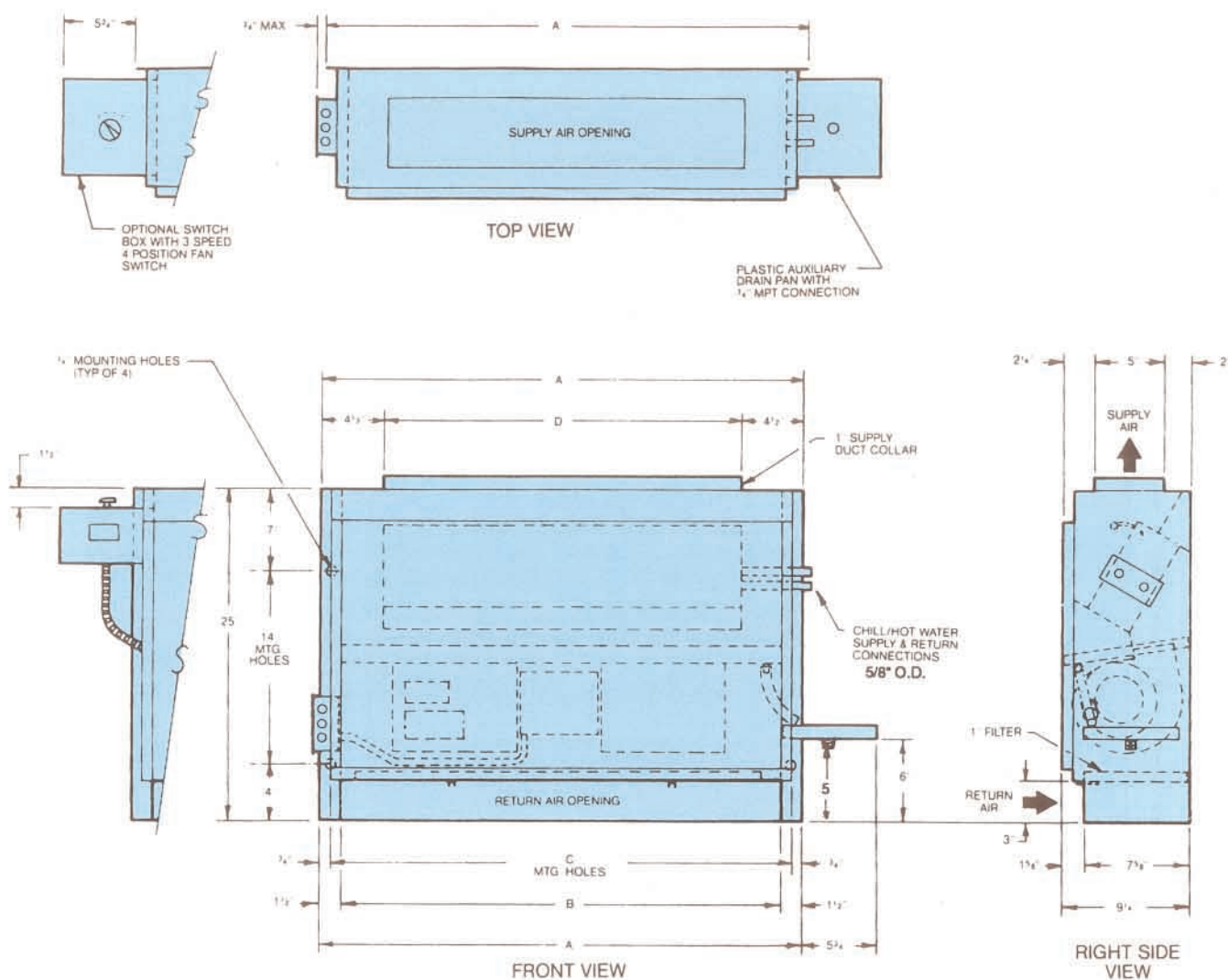
## MODELS VFB, VFC, VFCS

VOLTAGE	DATA		UNIT SIZE						
			02	03	04	06	08	10*	12*
115V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.53	0.83	1.25	2.00	2.10	2.20	4.00
		WATTS	50	80	130	180	210	240	370
	M	AMPS	0.31	0.48	0.70	1.30	1.30	1.30	2.50
		WATTS	35	50	75	140	140	145	265
	L	AMPS	0.27	0.33	0.47	0.57	0.61	0.90	1.25
WATTS		28	35	50	60	65	100	125	
208V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.45	0.46	0.64	1.00	1.00	1.20	2.00
		WATTS	85	85	110	190	195	210	340
	M	AMPS	0.29	0.29	0.40	0.59	0.69	0.80	1.15
		WATTS	60	60	89	130	135	160	220
	L	AMPS	0.14	0.14	0.22	0.47	0.47	0.45	0.84
WATTS		28	28	45	90	90	90	170	
230V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.45	0.46	0.64	1.00	1.00	1.20	2.00
		WATTS	100	102	120	205	215	235	370
	M	AMPS	0.31	0.31	0.43	0.71	0.71	0.85	1.40
		WATTS	70	70	100	150	155	190	285
	L	AMPS	0.15	0.15	0.24	0.50	0.50	0.50	1.00
WATTS		33	33	55	105	110	115	200	
265V 60HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.33	0.34	0.63	0.92	0.92	1.26	1.84
		WATTS	80	82	140	205	210	270	370
	M	AMPS	0.26	0.26	0.44	0.57	0.58	0.82	1.10
		WATTS	65	67	110	140	140	200	255
	L	AMPS	0.16	0.17	0.25	0.34	0.35	0.45	0.65
WATTS		40	43	65	80	85	125	145	
220V 50HZ 1 PHASE	NOMINAL HP		1/30	1/30	1/12	1/6	1/6	(2) 1/12	(2) 1/6
	H	AMPS	0.37	0.39	0.52	1.00	1.10	1.00	2.00
		WATTS	80	85	105	165	170	210	320
	M	AMPS	0.27	0.27	0.39	0.60	0.60	0.80	1.15
		WATTS	60	60	82	115	120	160	220
	L	AMPS	0.15	0.15	0.25	0.46	0.47	0.50	0.90
WATTS		30	30	50	90	95	100	170	

\*NOTE: Total Unit Motor Amps & Watts Shown For 2 Motor Units (10 & 12).

All motors PSC type.

Motor Nameplate Amps May Vary.

**VFB - VERTICAL FLOOR BASIC (HIDEAWAY) - 200 CFM THRU 1200 CFM**

MODEL	DIMENSIONS - INCHES			
	A	B	C	D
VFB02	25	22	23 1/2	16
VFB03	29	26	27 1/2	20
VFB04	35	32	33 1/2	26
VFB06	45	42	43 1/2	36
VFB08	47	45	46 1/2	38
VFB10	61	58	59 1/2	52
VFB12	69	66	67 1/2	60

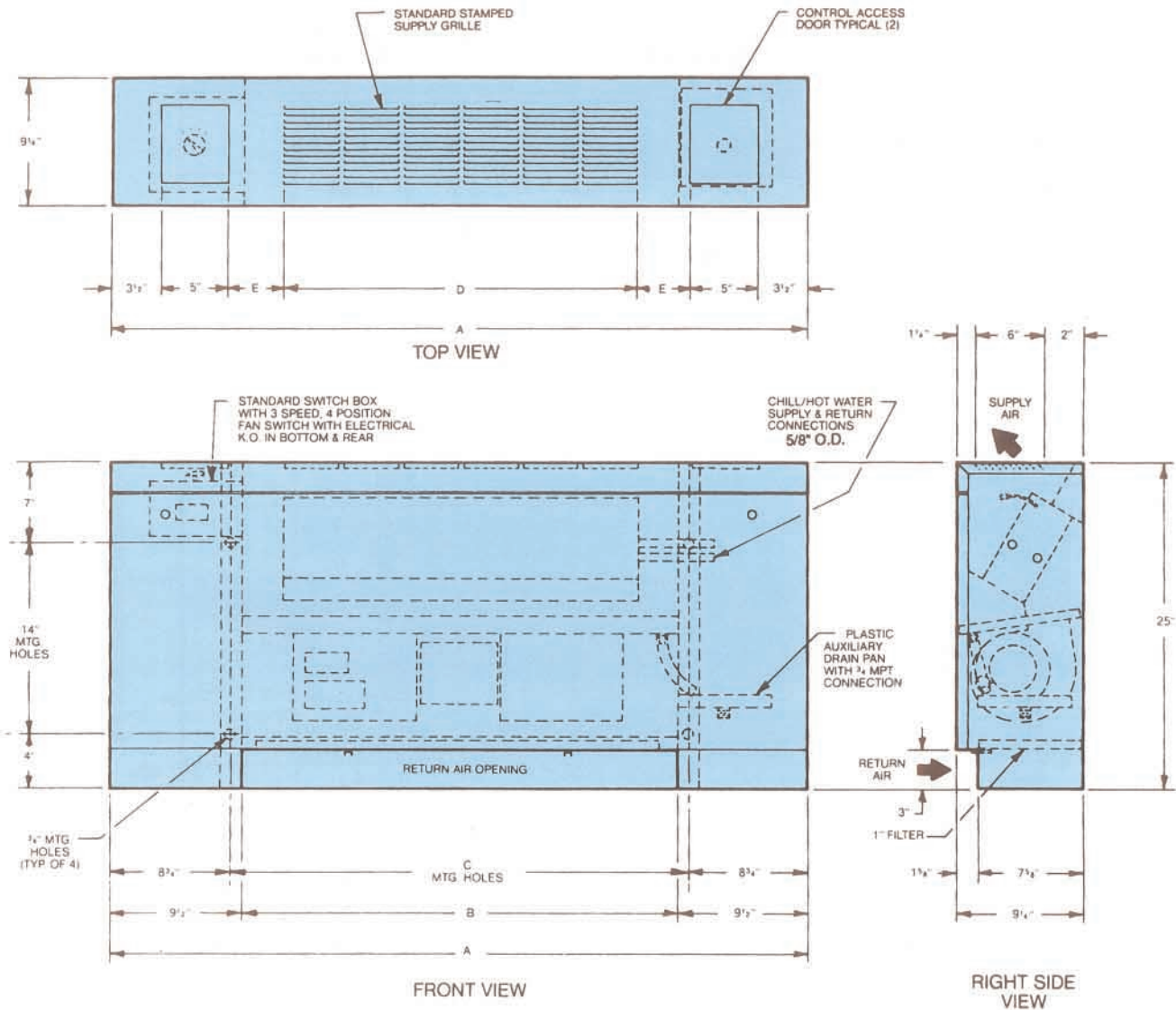
- NOTES: 1. R.H. shown, L.H. opposite.  
 2. All dimensions +/- 1/4".  
 3. Junction box may vary.



# 3 Dimensions

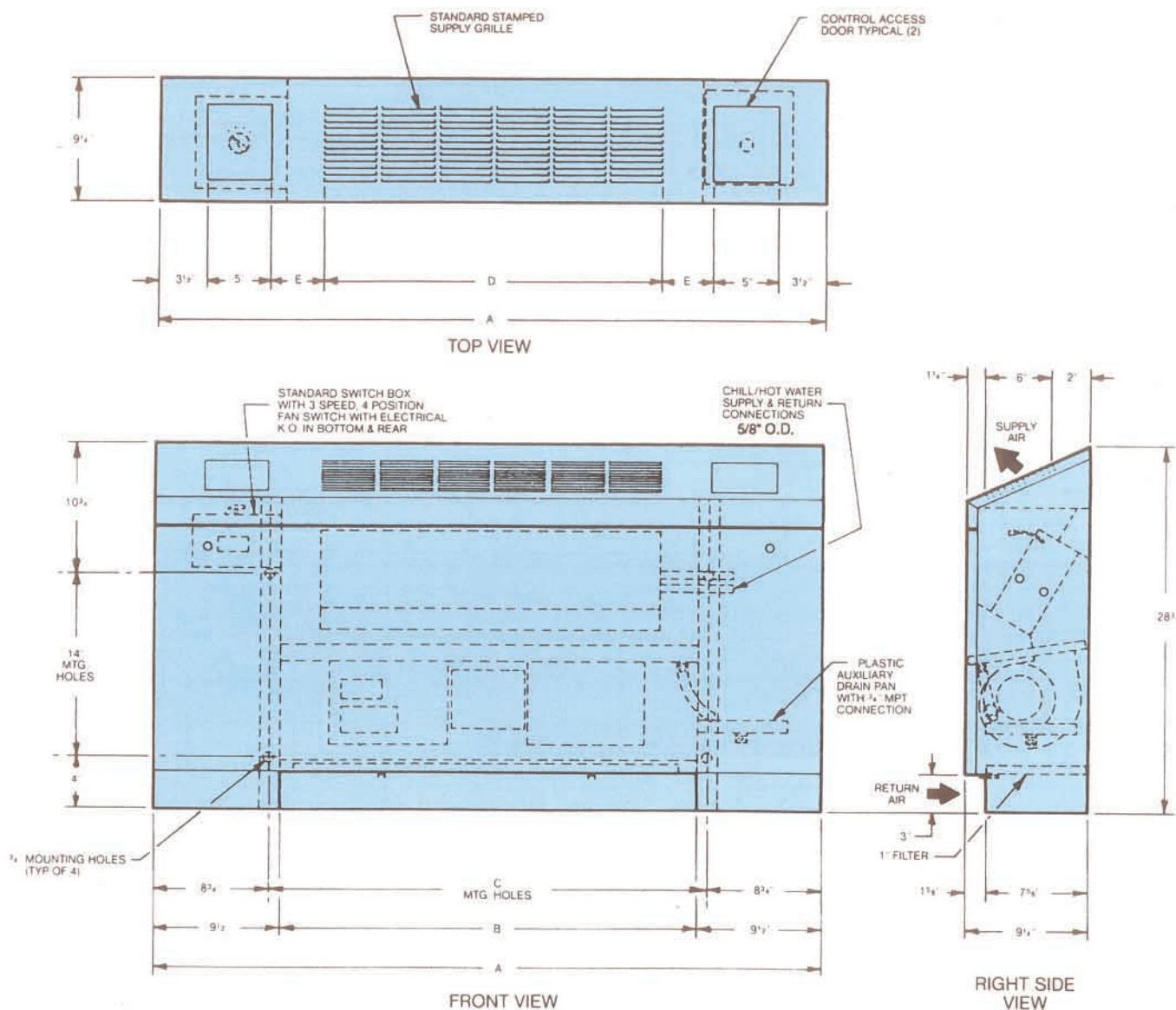
## VFC - Vertical Floor Cabinet

### VFC - VERTICAL FLOOR CABINET (EXPOSED) - 200CFM THRU 1200 CFM



MODEL	DIMENSIONS - INCHES				
	A	B	C	D	E
VFC02	41	22	23 1/2	17 1/8	3 7/16
VFC03	45	26	27 1/2	21 1/2	3 1/4
VFC04	51	32	33 1/2	25 7/8	4 1/6
VFC06	61	42	43 1/2	39	2 1/2
VFC08	63	44	45 1/2	39	3 1/2
VFC10	77	58	59 1/2	52 1/8	3 15/16
VFC12	85	66	67 1/2	60 1/8	3 9/16

NOTES: 1. R.H. shown, L.H. opposite.  
2. All dimensions +/- 1/4".

**VFCS - VERTICAL FLOOR CABINET (EXPOSED SLOPE TOP) - 200CFM THRU 1200 CFM**

MODEL	DIMENSIONS - INCHES				
	A	B	C	D	E
VFCS02	41	22	23 1/2	17 1/8	3 7/16
VFCS03	45	26	27 1/2	21 1/2	3 1/4
VFCS04	51	32	33 1/2	25 7/8	4 1/6
VFCS06	61	42	43 1/2	39	2 1/2
VFCS08	63	44	45 1/2	39	3 1/2
VFCS10	77	58	59 1/2	52 1/8	3 15/16
VFCS12	85	66	67 1/2	60 1/8	3 9/16

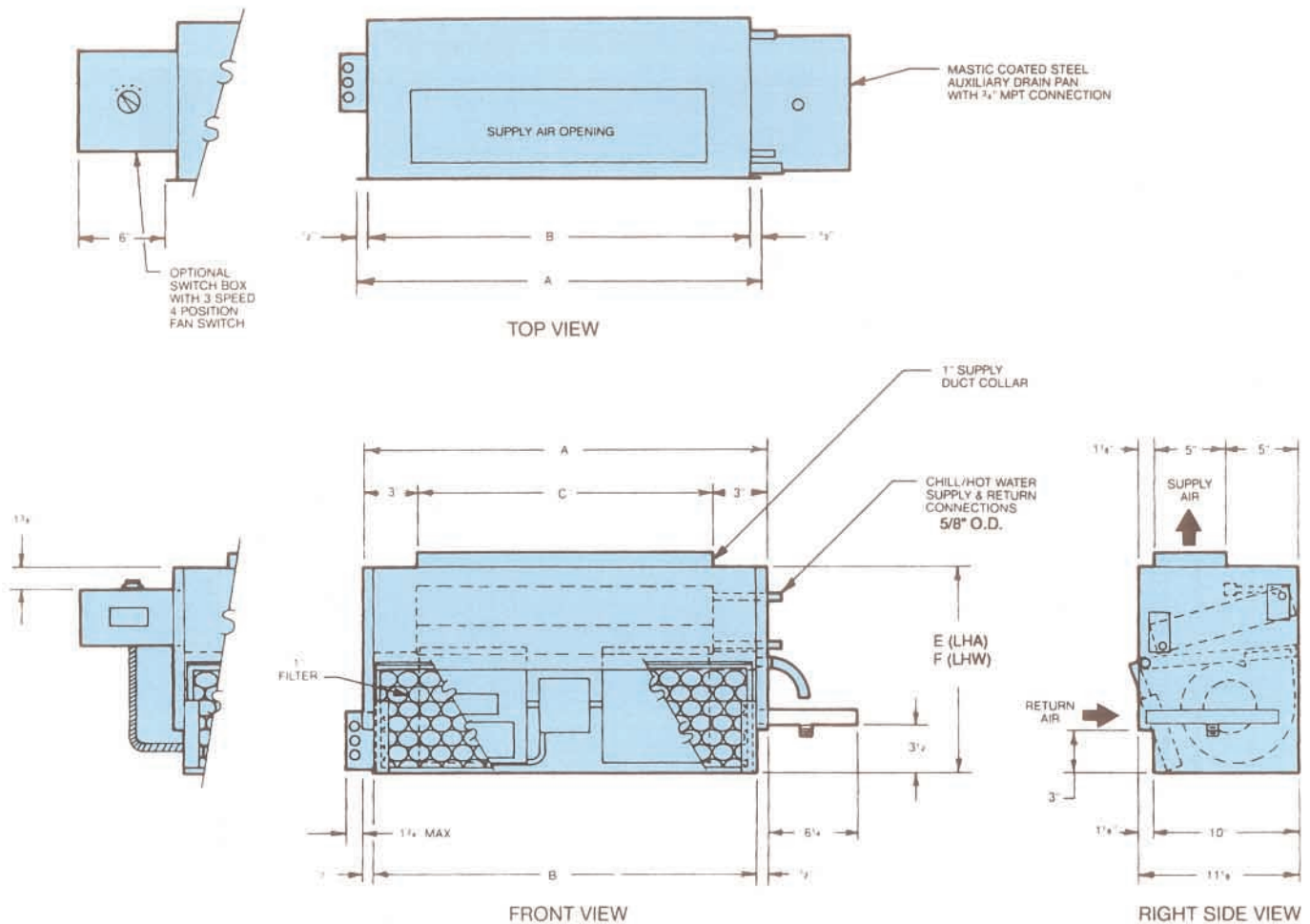
NOTES: 1. R.H. shown, L.H. opposite.  
2. All dimensions +/- 1/4".



# 3 Dimensions

VFBL - Vertical Floor Basic Lowboy

## VFBL - VERTICAL FLOOR BASIC LOWBOY (HIDEAWAY) - 200CFM THRU 600 CFM

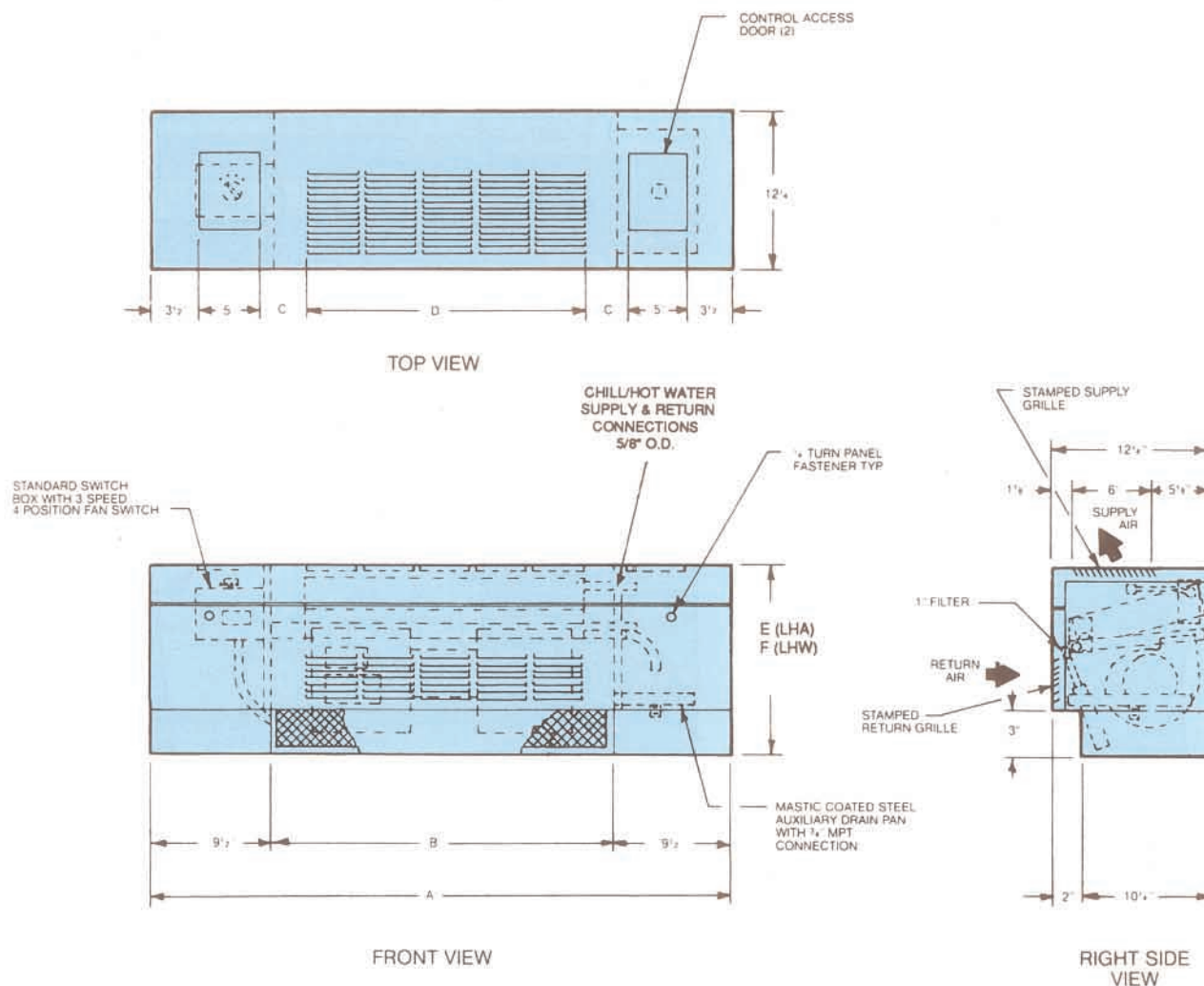


"Tall" Cabinet is used for applications w/electric heat. Cabinet is 2" taller than standard cabinet. Contact Factory for specific dimensions and drawing.

MODEL	DIMENSIONS - INCHES				
	A	B	C	D	E
VFBL02	23	22	17	14 3/8	16 3/8
VFBL03	28	27	22	14 3/8	16 3/8
VFBL04	36	35	30	14 3/8	16 3/8
VFBL06	50	49	44	14 3/8	16 3/8

NOTES: 1. R.H. shown, L.H. opposite.  
 2. All dimensions +/- 1/4".  
 3. For applications using electric heat or double deflection grille assemblies, consult factory for specific unit dimensions.

**VFCL - VERTICAL FLOOR CABINET LOWBOY (EXPOSED) - 200CFM THRU 600 CFM**



"Tall" Cabinet is used for applications w/electric heat. Cabinet is 2" taller than standard cabinet. Contact Factory for specific dimensions and drawing.

MODEL	DIMENSIONS - INCHES					
	A	B	C	D	E	F
VFCL02	41	22	3 7/13	17 1/8	14 1/2	16 1/2
VFCL03	46	27	3 3/4	21 1/2	14 1/2	16 1/2
VFCL04	54	35	3 3/8	30 1/4	14 1/2	16 1/2
VFCL06	68	49	3 13/16	43 3/8	14 1/2	16 1/2

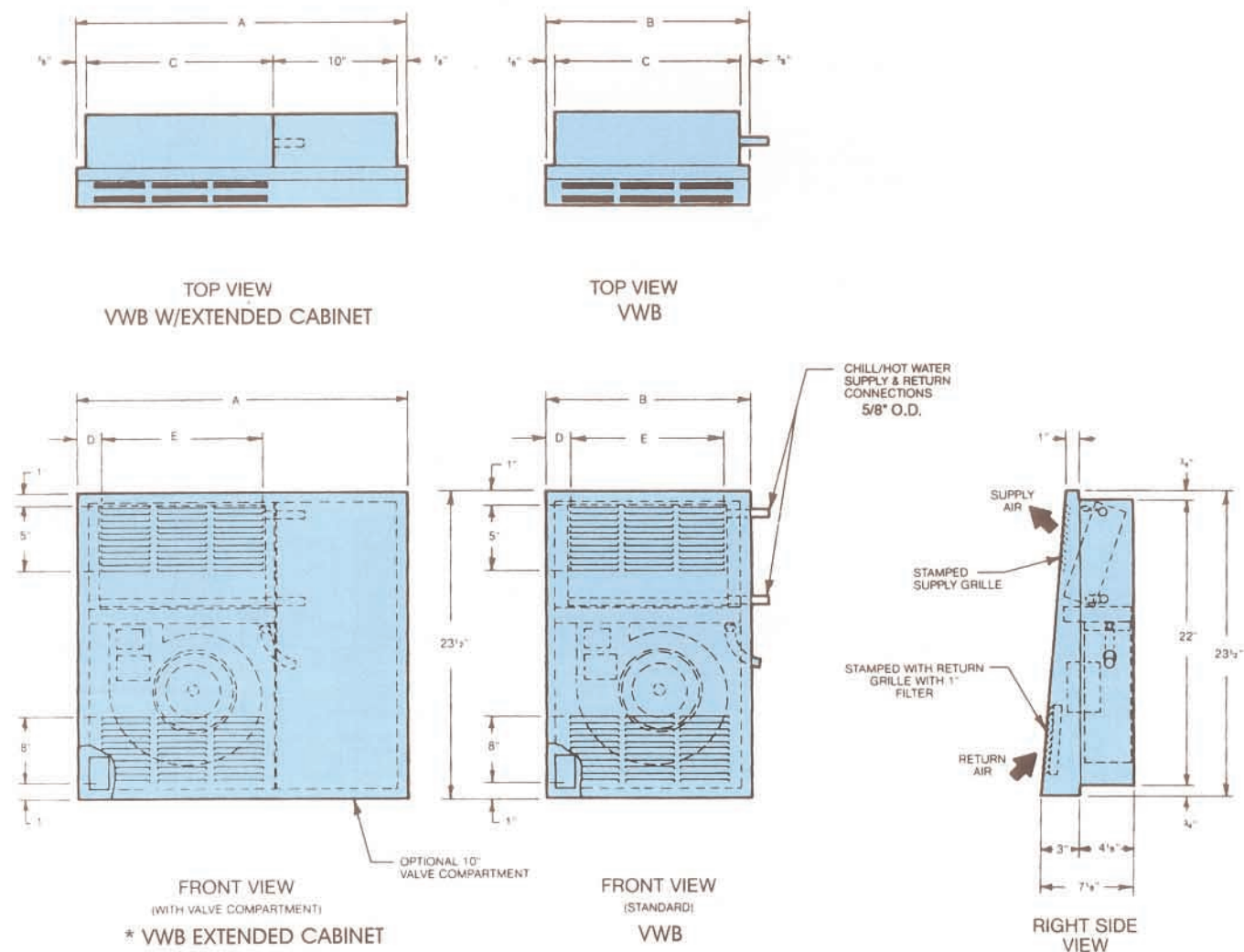
NOTES: 1. R.H. shown, L.H. opposite.  
2. All dimensions +/- 1/4".  
3. For applications using electric heat or double deflection grille assemblies, consult factory for specific unit dimensions.



# 3 Dimensions

## VWB - Vertical Wall Basic Recessed

### VWB - VERTICAL WALL BASIC (RECESSED) - 150 CFM THRU 300 CFM



MODEL	DIMENSIONS - INCHES					
	A	B	C	D	E	F
VWB01	25 3/4	15 3/4	14	1 1/2	12 3/4	1 1/2
VWB03	39 3/4	29 3/4	28	1 15/16	25 7/8	1 15/16

NOTES: 1. R.H. shown, L.H. opposite.

2. Junction box size may vary.

\*3. Use extended cabinet model whenever any valve package components are scheduled.

**SUPPLY GRILLES****(STYLE F & G) MODELS VFC, VFCS, VFCL**

SUPPLY GRILLE SIZES			
UNIT SIZE	NOMINAL CFM	VFC, VFCS GRILLE SIZES	VFCL GRILLE SIZES
02	200	16" X 6"	16" X 6"
03	300	20" X 6"	22" X 6"
04	400	26" X 6"	30" X 6"
06	600	36" X 6"	44" X 6"
08	800	38" X 6"	-
10	1000	52" X 6"	-
12	1200	60" X 6"	-

NOTE: 1. Grille dimensions are nominal for standard top supply air.  
 2. Maximum total rows of coil for D.D. supply grille application:  
     VFB, VFCS - 5 rows  
     VFC - 4 rows  
     VFB, VFCL - 2 rows  
     VFB, VFCL (Tall Cabinet) - 3 rows

**(STYLE J) MODELS VFB, VFBL**

SUPPLY GRILLE SIZES			
UNIT SIZE	NOMINAL CFM	VFB GRILLE SIZES	VFBL GRILLE SIZES
02	200	16" X 5"	16" X 5"
03	300	20" X 5"	22" X 5"
04	400	26" X 5"	30" X 5"
06	600	36" X 5"	44" X 5"
08	800	38" X 5"	-
10	1000	52" X 5"	-
12	1200	60" X 5"	-

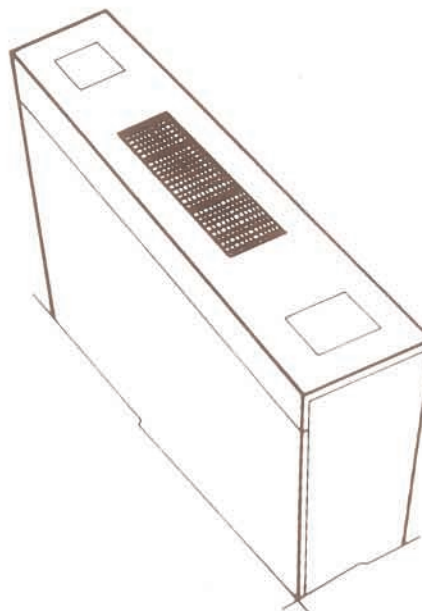
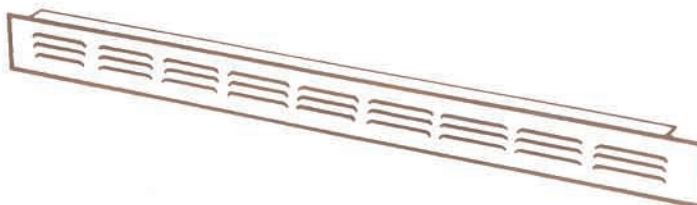
ACTUAL FILTER DIMENSIONS (INCHES)		
UNIT SIZE	VFB, VFC, VFCS	VFBL, VFCL
02	7 3/4" X 21 3/4"	16" X 5"
03	7 3/4" X 25 3/4"	22" X 5"
04	7 3/4" X 31 3/4"	30" X 5"
06	7 3/4" X 41 3/4"	44" X 5"
08	7 3/4" X 43 3/4"	-
10	7 3/4" X 57 3/4"	-
12	7 3/4" X 65 3/4"	-

**STYLE F & J - DOUBLE DEFLECTION**

Full aluminum framed grille, factory installed (Style F) on models VFC, VFCS and VFCL or shipped loose (Style J) on models VFB and VFBL.

**STYLE G - DOUBLE DEFLECTION**

Integral hidden steel frame, aluminum blade grille factory installed and painted to match the unit cabinet. Models VFC, VFCS and VFCL only.

**RETURN AIR GRILLE**

STYLE C - VFC, VFCS OPTIONAL STAMPED RETURN AIR GRILLE



# 4 Options & Accessories

## Dampers & Wall Boxes

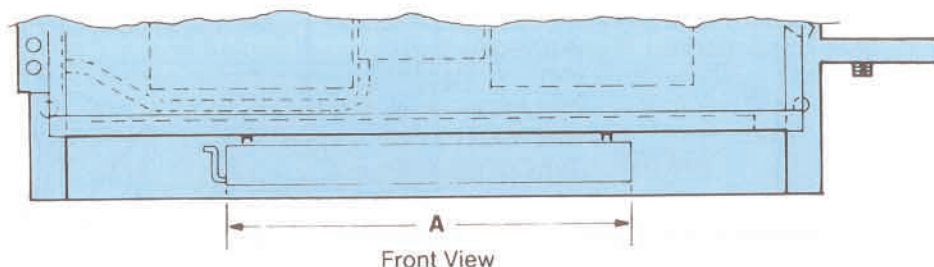
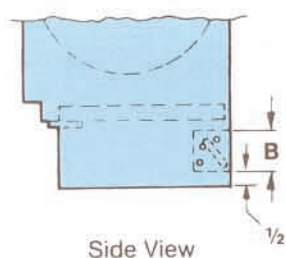
### OUTSIDE AIR DAMPERS

VFB, VFC, VFCS, VFBL AND VFCL models may be supplied with an outside air inlet connection. A damper for control of the outside air is provided. Several styles of outside air damper control are available.

**Style A** - Control of the damper is by manual operation of the damper itself in the unit return air toe space. Models VFB, VFC and VFCS are provided with a lever arm on the damper. Models VFBL and VFCL are provided with a sliding damper blade.

**Style B** - A remote damper operator is provided which allows control of the damper from under one of the control access doors. Models VFB, VFC and VFCS only.

**Style C** - Control of the damper is achieved by a motorized operator installed in the left hand access compartment. Models VFB, VFC and VFCS only. (Consult factory for application restrictions).



### OUTSIDE AIR OPENING DIMENSIONS (INCHES) DAMPERS

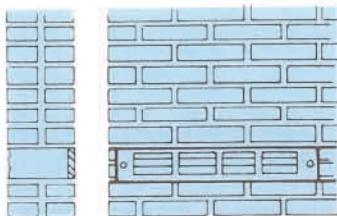
UNIT SIZE	NOMINAL CFM	VFB, VFC, VFCS		VFBL, VFCL	
		A	B	A	B
02	200	8	2	6	2
03	300	10	2	6	2
04	400	12	2	6	2
06	600	14	2	6	2 (2)
08	800	18	2	-	-
10	1000	27	2	-	-
12	1200	27	2	-	-

\*The wall panel provides the air seal for the front of the unit. Therefore the alignment to the unit is critical.

### OUTSIDE AIR WALL BOXES (VFB, VFC, VFCS ONLY)

Optional outside air wall boxes are constructed of aluminum to minimize corrosion. A louvered grille caps the wall box on the exterior side. A fine mesh insect screen is installed on the inside of the box.

Standard wall box depth is (6") with the width and length dimensions established to be used with the outside air openings shown above.

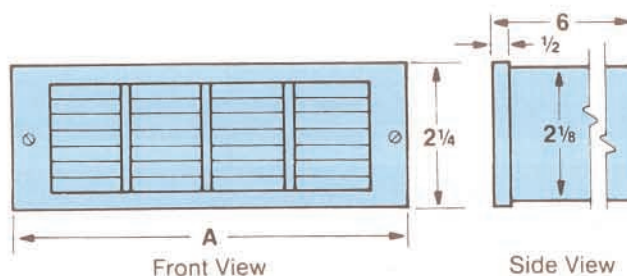
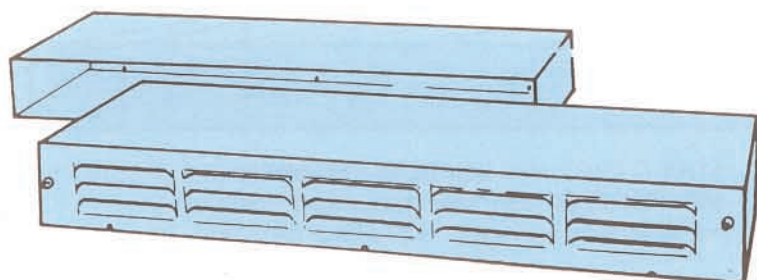


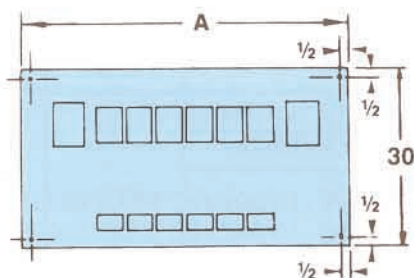
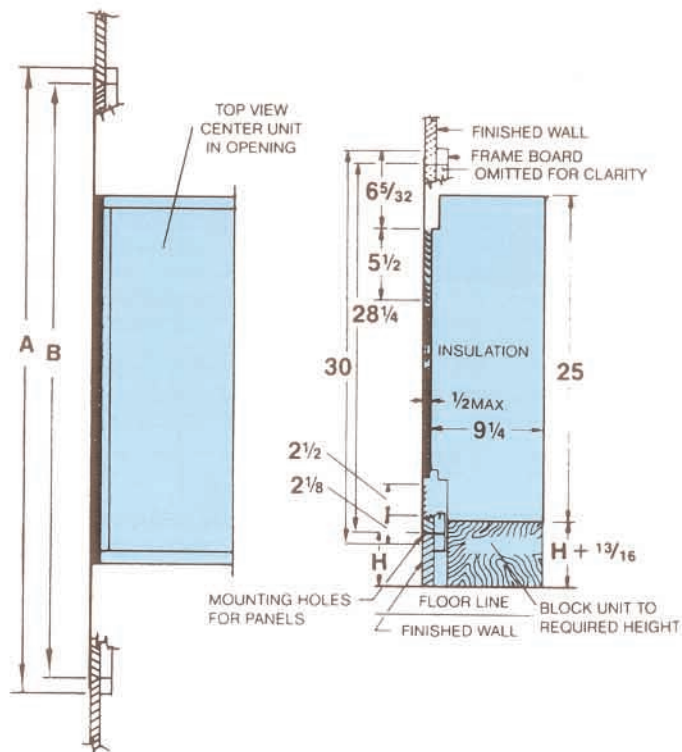
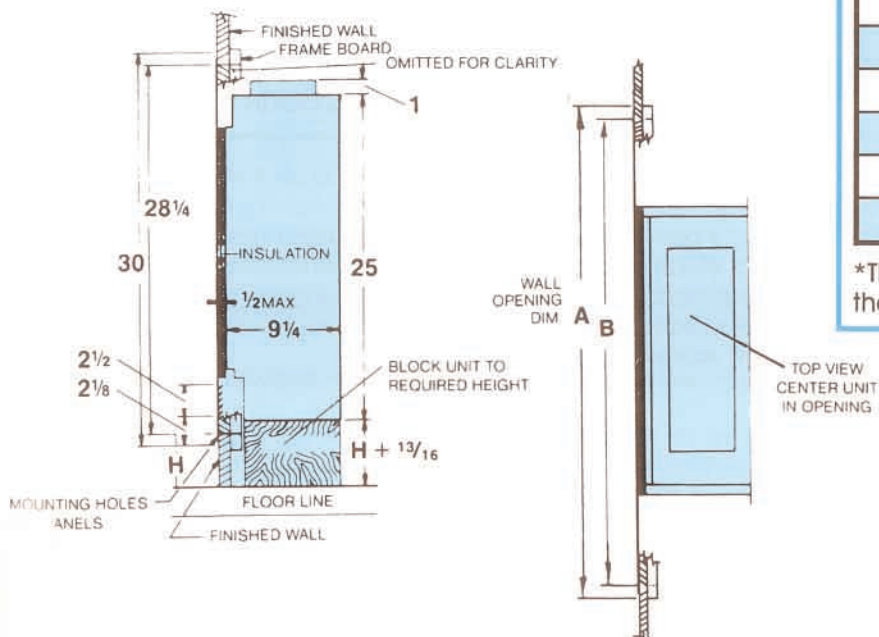
Typical Wall Installation

### OUTSIDE AIR OPENING DIMENSIONS (INCHES) WALL BOX

UNIT SIZE	NOMINAL CFM	VFB, VFC, VFCS	
		A	B
02	200	8 1/4	2 1/8
03	300	10 1/4	2 1/8
04	400	12 1/4	2 1/8
06	600	14 1/4	2 1/8
08	800	18 1/4	2 1/8
10	1000	27 1/4	2 1/8
12	1200	27 1/4	2 1/8

\*The wall panel provides the air seal for the front of the unit. Therefore the alignment to the unit is critical.



**STYLE 1\*****STYLE 2\*****FOR FULLY RECESSED UNIT**

The Floor Hideaway Series, Model VFB are fully recessed and built into the wall of the conditioned area. They cover the recess opening on all sides, and are easily removed for access to the unit. The hinged access door to the three speed switch, as shown on Style 1, is available on all panels. Standard wall panel arrangements are shown. Consult factory for various combination arrangements of access doors and supply grilles.

**STYLE 1**

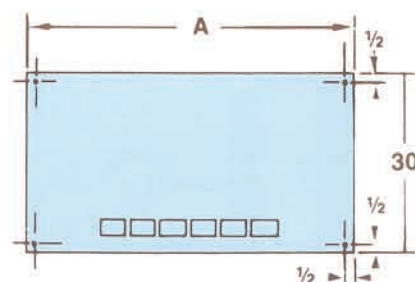
CFM	A	B
	PANEL WIDTH	WALL OPENING DIMENSION
200	40	38 1/4
300	44	42 1/4
400	50	48 1/4
600	60	58 1/4
800	62	60 1/4
1000	76	74 1/4
1200	84	82 1/4

\*The wall panel provides the air seal for the front of the unit. Therefore the alignment to the unit is critical.

**STYLE 2**

CFM	A	B
	PANEL WIDTH	WALL OPENING DIMENSION
200	40	38 1/4
300	44	42 1/4
400	50	48 1/4
600	60	58 1/4
800	62	60 1/4
1000	76	74 1/4
1200	84	82 1/4

\*The wall panel provides the air seal for the front of the unit. Therefore the alignment to the unit is critical.

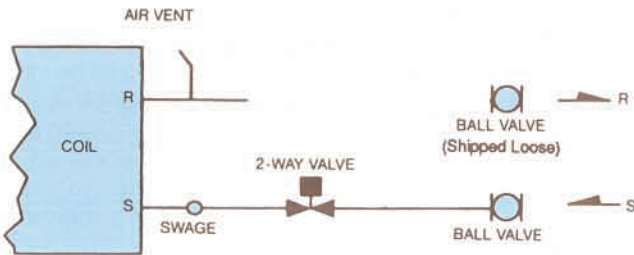




# 4 Options & Accessories

Piping Packages

## 2-WAY MOTORIZED CONTROL VALVE



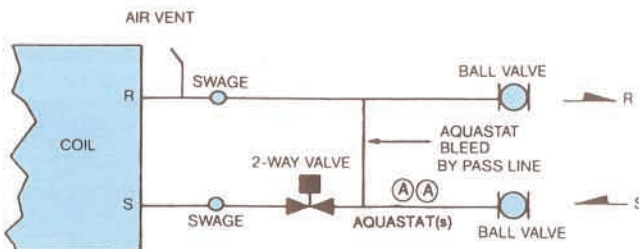
### CODE

G.  
H.  
N, P.  
Q, R.

### APPLICATION

2-PIPE - HYDRONIC HEATING ONLY  
2-PIPE - HYDRONIC COOLING ONLY  
2-PIPE - HYDRONIC COOLING WITH  
TOTAL ELECTRIC HEAT  
4-PIPE - HYDRONIC COOLING AND  
HEATING

## 2-WAY MOTORIZED CONTROL VALVE (W/BY-PASS)



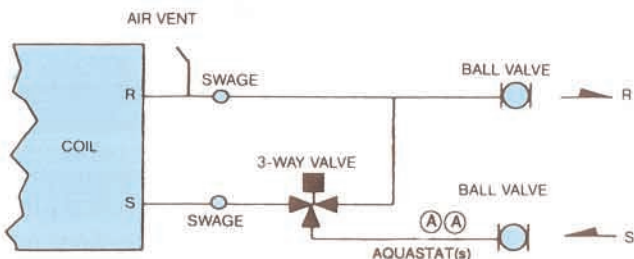
### CODE

J, K.  
L, M.

### APPLICATION

2-PIPE - COOLING AND HEATING  
2-PIPE - HYDRONIC COOLING AND  
HEATING WITH AUXILIARY  
ELECTRIC HEAT

## 3-WAY MOTORIZED CONTROL VALVE



### CODE

G.  
H.  
J, K.  
L, M.

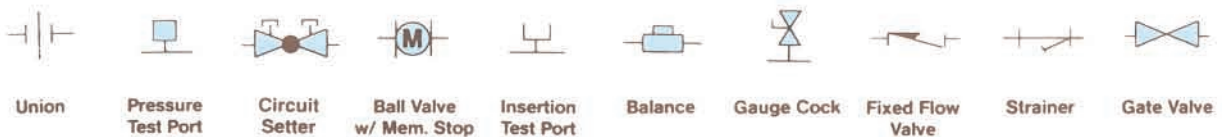
### APPLICATION

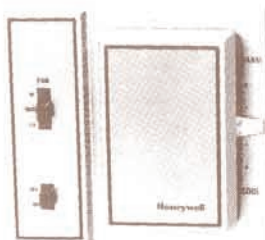
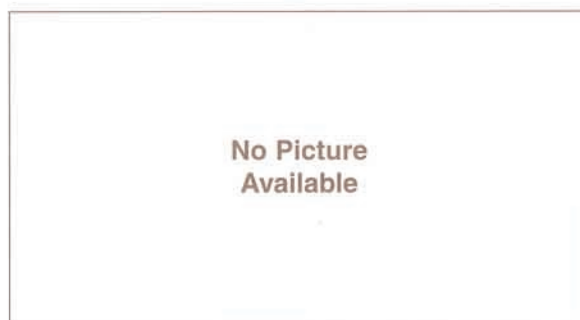
N, P.  
Q, R.

2-PIPE - HYDRONIC HEATING ONLY  
2-PIPE - HYDRONIC COOLING ONLY  
2-PIPE - COOLING AND HEATING  
2-PIPE - HYDRONIC COOLING AND  
HEATING WITH AUXILIARY  
ELECTRIC HEAT  
2-PIPE - HYDRONIC COOLING WITH  
TOTAL ELECTRIC HEAT  
4-PIPE - HYDRONIC COOLING AND  
HEATING

Factory provided valve packages are assembled, brazed, wired electrically and fit to the coil connections before preparing for shipment. Field brazing to the coil completes the installation. Some applications dictate ship loose isolation valves.

## OTHER PIPING OPTIONS



**155-A****155-B****Wall Series 4039****Wall Mount Switch**

UNIT TYPE	CONTROL OPTION	SYSTEM TYPE	CHANGEOVER	UNIT MOUNTED C-12/C-17	1. SERIES 155-A Horiz./Vert.	2. SERIES 155-B Horiz./Vert.	WALL SERIES #4039	OPTIONAL UNIT MOUNT SWITCH ONLY	OPTIONAL WALL MOUNT SWITCH ONLY
2 PIPE	Valve Cycle	Heat Only	None	X		X	X	X	X
		Cool Only	None	X		X	X	X	X
		Heat/Cool	Manual		X		X		
			Auto	X		X	X	X	X
	Continuous Fan Operation	Heat/Cool w/Aux. Electric Heat	Manual		X		X		
			Auto	X		X	X	X	X
		Cool w/Total Electric Heat	Manual		X		X		
			Auto	X		X	X	X	X
4 PIPE	Valve Cycle Continuous Fan Operation	Heat/Cool	Manual		X		X		
			Auto	X		X	X	X	X

1. Use 155-A in Horiz. or Vertical for 2 Pipe or 4 Pipe - Manual c/o only
2. Use 155-B in Horiz. or Vertical for Heat only/Cool only or Automatic c/o only

#### OTHER CONTROL OPTIONS (Consult Factory)

- Control packages with valve cycle control are continuous fan operation only.
- All wall mount control packages shipped loose for field installation.
- Aquastats included in pricing of package (as required).
- Use optional switch only when thermostats are to be field furnished and installed. Factory will provide fan switch, aquastat (if required) and a U.L. wiring diagram to match the application.
- Low voltage - 24V. control application - consult factory
- Single power source wiring - consult factory
- Unit mounted speed switch and remote mounted t'stat - consult factory

#### UNIT MTD CONTROLS C/12 C/17

