

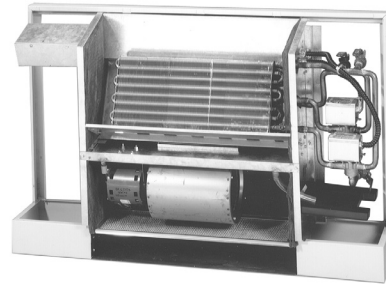
Product Specifications
Vertical Floor Consoles
Chilled Water / Hot Water

AVFB (flat top)
AVSB (slope top)
AVCB (concealed)

300 THROUGH 1200 CFM



AVSB Series
(slope top)



AVSB Series
with valve package
(front panel removed)

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Model Number Nomenclature

12 A VC B 0 - 126 - 31 R - 2B - N1

CFM (100'S)

3,4,6,8,10,12

Series

Unit Style

VC(X) - Concealed
VS(X) - Cabinet slope top
VF(X) - Cabinet flat top
WC(X) - Recessed wall
(X) - ECM motor

Vintage

Electric Heat (KW)

Unit Voltage

126 - 120V-1PH-60Hz
246 - 208/240V-1PH-60Hz
276 - 277V-1PH-60Hz

Control Options(see below)

NC = No Controls

Valve Package

See page 7 & 8

Coil Connection

R - Right Hand
L - Left Hand

Coil Type

3 - 3 row
4 - 4 row
31 - 3 row cool, 1 row heat
41 - 4 row cool, 1 row heat

THERMOSTAT OPTIONS FOR ELECTRIC VALVE PACKAGES

2 Pipe-Valve Cycle					
SYSTEM	THERMOSTAT CONTROLS	CONTROL VALVE TYPE	CHANGEOVER CONTROL and LOCATION	THERMOSTAT TYPE	ORDER OPTION NUMBER
Heating and Cooling	Heat-Off-Cool Constant Fan Hi-Med-Low	Motorized 2-way or 3-way Normally closed	Manual Heat-Cool Switch on Thermostat	Unit Mount	A1
				Wall Mount	A2
				Unit Tamperproof	A3
	On-Off Constant Fan Hi-Med-Low	Motorized 3-way Normally closed	Automatic (1) Aqstat - Factory Mounted on Supply Line	Unit Mount	B1 (2)
				Wall Mount	B2
				Unit Tamperproof	B3
Cooling Only	On-Off Constant Fan Hi-Med-Low	Motorized 2-way or 3-way Normally closed	Manual Summer-Winter Switch (switch must be field supplied)	Unit Mount	C1
				Wall Mount	C2
				Unit Tamperproof	C3
Heating Only	On-Off Constant Fan Hi-Med-Low	Motorized 2-way or 3-way Normally closed	None	Unit Mount	D1
				Wall Mount	D2
				Unit Tamperproof	D3
4 Pipe-Valve Cycle					
	Heat-Off-Cool Constant Fan Hi-Med-Low	Motorized 2-way or 3-way Normally closed	Manual Heat-Cool Switch on Thermostat	Unit Mount	M1
				Wall Mount	M2
				Unit Tamperproof	M3
	On-Off Constant Fan Hi-Med-Low	Motorized 2-way or 3-way Normally closed	Automatic 4 deg. Neutral Deab Band for sequenced heating & cooling, DPT	Unit Mount	N1
				Wall Mount	N2
				Unit Tamperproof	N3
3-SPEED FAN SWITCH ONLY (no thermostat)					
				Unit Mount	L1
				Wall Mount	L2
				Unit Tamperproof	L3

NOTES:

1. B1 option includes factory installed aquastat.
2. If valve package is desired with "B" options, select valve package number "3D".
3. Use "NC" for no controls.

Vertical Floor Consoles . . . By Applied Environmental Quiet, Attractive, Versatile

AE-Air's "AV" series vertical floor consoles are slim and extremely attractive. Their pleasing appearance allows them to blend with any decor. These products are engineered to be quiet and designed to be easy to install and service.

These units are ideal for perimeter heating and cooling in hotels, apartments, hospitals, public office buildings, offices, corridors, and other multi-room buildings.

Three models are available to meet any application: recessed, flat top console, and slope top console. They are available in 6 sizes with airflow from 300 through 1200 CFM to supply just the right amount of air. Available coils include 3 and 4 rows for 2-pipe systems, and 31, 41 (300-800 CFM only) split coils for 4-pipe systems.

Features / Benefits

Contractor shall furnish and install high quality air handling units as indicated on plans. Sizes and capacities shall be shown in the Unit Schedule included on the drawings. All units shall be the products of Applied Environmental Air (AE-Air) series fan coils and listed by UL or ETLC (listed in accordance with UL 1995.) Units shall be designed, tested and manufactured in accordance with ARI-410, 430, 440 and 350.

Cabinets shall be fabricated of lock forming quality (min) steel. External and internal parts are to be made with heavy gauge galvanized steel. Large access panels shall be provided to permit full access to internal components. The structural integrity of the cabinets shall remain unaffected by the removal of any or all access panels.

Insulation shall be blanket-type made from glass fibers bonded with a thermosetting resin. Insulation shall be one and-one-half pound density providing effective acoustical and thermal control, fire safety, and resistance to air erosion. This insulation must meet the requirements of ASTM C 1071, ASTM G 21, ASTM G22, NFPA 90A and UL-181.

Coils shall be of the staggered tube type constructed with seamless copper tubes and headers, and deep corrugated aluminum fins with straight edges. Manufacturer shall supply full depth collars, drawn in the fin stock to provide accurate control of fin spacing and completely cover the copper tubes to lengthen coil life. The tubes are to be mechanically expanded into the fins for a permanent primary to secondary surface bond, assuring maximum heat transfer efficiency. The coils are to be tested at 350 PSI for operation at 300 PSI gauge. The

coils provided shall be suitable for the application and comply with the required performance as described in the Unit Schedule.

Drain pans shall be positive drainage and shall be fabricated of heavy gauge galvanized steel or optional 304 stainless steel and coated for corrosion protection.

Fan Wheels shall be double width, double inlet, forward curved, centrifugal type. They shall be statically and dynamically balanced for smooth, quiet operation. The housing shall be constructed of heavy gauge steel with die-formed inlet cones.

Motors (Direct Drive)

Standard motors are PSC or ECM, permanently lubricated type with internal thermal overload protection and are mounted with rubber isolation bushings. Blower wheels are DWDI (double width, double inlet) centrifugal, forward curved, and dynamically balanced.

The size 3 motor (model 3AVFB/AVSB/AVCB) may not start on low speed due to low starting torque. These units must be wired to start on either Medium or High speed.

Filters are to be disposable type. They shall be center loading with an 85% arrestance efficiency. The filters shall be included in the units as an integral part of the cabinet with easy access provided by the manufacturer.

Product Specifications

Vertical Floor Consoles
Chilled Water / Hot Water

**MOTOR / BLOWER
PERFORMANCE**

Air Volume Capacity / AVCB, AVFB, AVSB for PSC Motor

UNIT		CGM @ 0.0 E.S.P. FOR FAN SPEED INDICATED			HIGH SPEED CFM @ E.S.P. INDICATED			
MODEL	SIZE	HIGH	MED	LOW	0.05	0.10	0.15	0.20
AVC	3	280	245	210	255	230	205	175
	4	400	320	220	370	330	290	230
AVF	6	600	430	320	570	540	510	480
	8	800	680	580	760	730	700	660
AVS	10	1000	880	670	970	920	880	830
	12	1220	1030	780	1170	1120	1070	1020

Notes:

1. Values are standard CFM at sea level, 70 degree EAT. with dry coil.
2. E.S.P. - inches water.
3. Values include filter and / or grille where applicable.

Air Volume Capacity / AVCB, AVFB, AVSB for ECM Motor

MODEL	HP	AMPS / 120V	SPEED TAPS	External Static Pressure (inches of water)				
				0.0	0.05	0.10	0.15	0.20
3AVCX	1/20	0.66	HIGH	280	260	250	240	230
		0.49	MEDIUM	240	230	220	200	190
		0.37	LOW	210	190	170	150	140
4AVCX	1/10	0.8	HIGH	400	370	350	330	310
		0.4	MEDIUM	320	290	250	230	200
		0.2	LOW	220	180	150	110	90
6AVCX	1/10	1.4	HIGH	600	570	550	530	510
		0.6	MEDIUM	430	410	390	370	340
		0.4	LOW	320	300	270	220	190
8AVCX	1/4	2.5	HIGH	800	780	750	730	710
		1.7	MEDIUM	680	660	630	600	580
		1.1	LOW	580	560	530	500	480
10AVCX	1/7 (2)	2.9	HIGH	1000	980	950	920	900
		2.1	MEDIUM	880	850	820	780	750
		1.1	LOW	670	630	590	550	500
12AVCX	1/7 (2)	4.2	HIGH	1210	1200	1190	1170	1150
		2.9	MEDIUM	1050	1050	1020	1000	980
		1.6	LOW	810	790	750	710	670

Notes:

1. Values are standard CFM at sea level, 70 degree EAT. with dry coil.
2. E.S.P. - inches water.
3. Values include filter and / or grille where applicable.

Motor Data / AVC, AVF, AVS PSC

MOTOR SPEED	UNIT SIZE											
	3		4		6		8		10*		12*	
	NOMINAL HP 1/20		NOMINAL HP 1/12		NOMINAL HP 1/8		NOMINAL HP 1/6		NOMINAL HP 1/8 (2)		NOMINAL HP 1/6 (2)	
	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts

120 VOLT - 1 PH - 60 Hz PSC MOTOR

HIGH	.80	.95	1.0	1.05	1.8	200	2.2	250	3.0	350	4.6	520
MEDIUM	.45	60	.60	70	1.1	140	2.0	210	2.4	275	3.0	330
LOW	.40	50	.45	55	.80	90	1.6	170	1.8	210	2.1	230

Notes:

* Total unit motor amps and watts shown for 2 motors. (Unit size 10 and 12)

Motor Data / AVCX, AVFX, AVSX ECM

MOTOR SPEED	UNIT SIZE											
	3		4		6		8		10		12	
	NOMINAL HP 1/20		NOMINAL HP 1/10		NOMINAL HP 1/10		NOMINAL HP 1/4		NOMINAL HP 1/7 (2)		NOMINAL HP 1/7 (2)	
	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS	AMPS	WATTS

120V 1PH 60 Hz EC MOTOR

HIGH	0.66	43	0.8	63	1.4	105	2.5	200	2.9	234	4.2	360
MEDIUM	0.49	30	0.4	33	0.6	95	1.7	126	2.1	166	2.9	243
LOW	0.37	22	0.2	14	0.4	90	1.1	82	1.1	85	1.6	122

Notes:

* Total unit motor amps and watts shown for 2 motors. (Unit size 10 and 12)

Cooling Coil Ratings

Standard Coil - Water Cooling Capacity
 Ratings - AVCB, AVFB, AVSB (3 row)

UNIT SIZE	COOLING CAPACITY		GPM	WATER P.D. (Ft. Wtr.)
	TOTAL BTUH	SENSIBLE BTUH		
3	8,000	6,100	1.6	4.5
4	12,000	9,000	2.4	9.3
6	17,000	12,900	3.4	8.3
8	21,900	16,800	4.4	8.6
10	27,600	22,500	5.5	9.3
12	34,500	27,500	6.9	15.1

High Capacity Coil - Water Cooling Capacity
 Ratings - AVCB, AVFB, AVSB (4 row)

UNIT SIZE	COOLING CAPACITY		GPM	WATER P.D. (Ft. Wtr.)
	TOTAL BTUH	SENSIBLE BTUH		
3	9,200	6,700	1.8	5.4
4	13,900	9,900	2.8	14.9
6	19,000	14,000	3.8	11.8
8	25,400	18,700	5.1	13.8
10	30,400	23,700	6.1	9.5
12	38,200	29,100	7.6	14.1

Notes:

1. Rated in accordance with ARI Standard 440. Cooling capacities based on 80 deg. DB / 67 deg. WB entering air, 45 deg. entering water, 10 deg. water temperature rise and high fan speed with standard 120V/1PH/60Hz motor.
2. For cooling coil capacities at conditions other than listed, refer to application guide or consult your AE-Air Representative.

Heating Coil Ratings

Standard Coil - Water Heating Capacity
 Ratings - AVCB, AVFB, AVSB (3 row)

UNIT SIZE	HEATING CAPACITY BTUH	GPM	WATER P.D. (Ft. Wtr.)
3	23,500	1.6	4.5
4	34,200	2.3	8.6
6	49,400	3.3	7.8
8	64,500	4.3	8.2
10	87,000	5.8	10.4
12	106,300	7.1	15.9

High Capacity Coil - Water Heating Capacity
 Ratings - AVCB, AVFB, AVSB (4 row)

UNIT SIZE	HEATING CAPACITY BTUH	GPM	WATER P.D. (Ft. Wtr.)
3	25,200	1.7	4.8
4	36,600	2.4	11.3
6	52,500	3.5	10.2
8	69,500	4.6	11.5
10	92,200	6.1	9.5
12	113,000	7.5	13.7

1-Row Coil - Water Heating Capacity
 Ratings - AVCB, AVFB, AVSB

UNIT SIZE	HEATING CAPACITY BTUH	GPM	WATER P.D. (Ft. Wtr.)
3	12,400	0.8	2.4
4	18,200	1.2	6.1
6	26,000	1.7	12.7
8	33,700	2.2	22.7
10	33,600	2.2	5.9
12	41,200	2.7	8.8

Notes:

1. Heating coils rated at 70 deg. DB entering air, 180 deg. entering water, 30 deg. water temperature drop and high fan speed with standard 120V/1PH/60Hz motor.
2. For heating capacities at conditions other than listed, consult your AE-Air Representative or the factory.

Shipping Weights

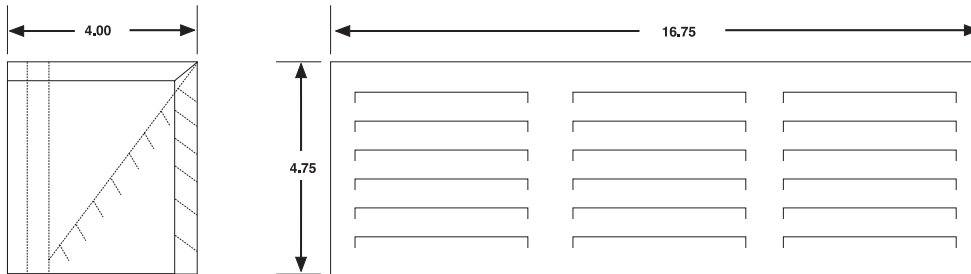
Approximate shipping weights (lbs.)

UNIT TYPE	UNIT SIZE					
	3	4	6	8	10	12
AVCB	55	70	80	95	115	130
AVFB/AVSB	85	97	110	125	145	165

Note:

1. Approximate shipping weights do not include valve packages, hot water coils, electric heaters, or other options.

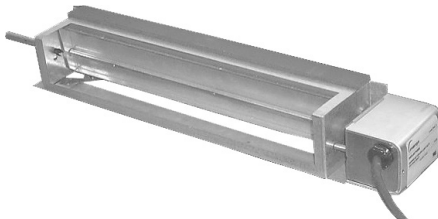
Fresh Air Wall Box



UNIT SIZES 10 & 12
 Require two fresh air wall boxes.

NOTE: Outside fresh air must be tempered before entering the unit if freezing conditions are expected.

Motorized Air Damper



919-9
 For sizes 3 through 8
919-10
 For sizes 10 and 12

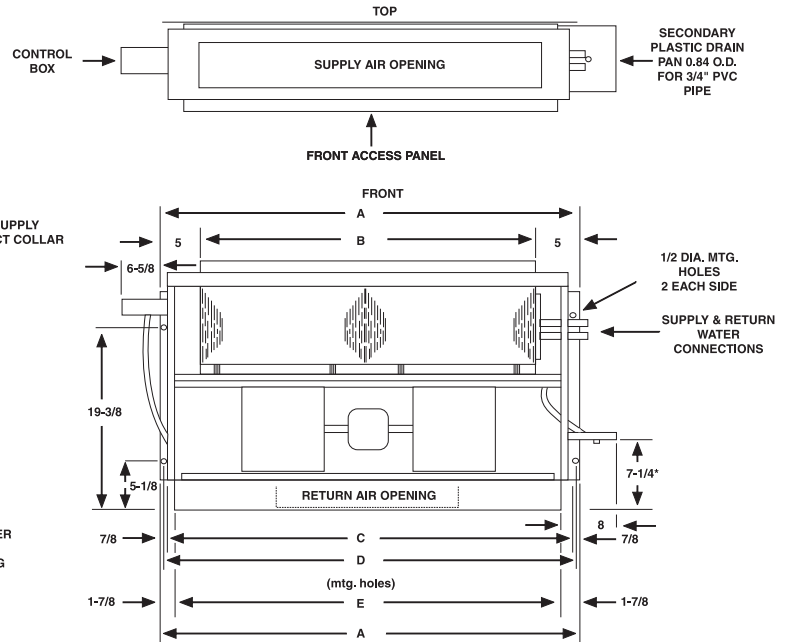
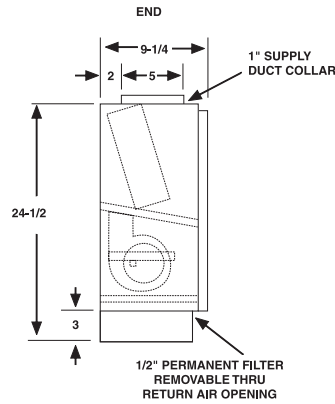
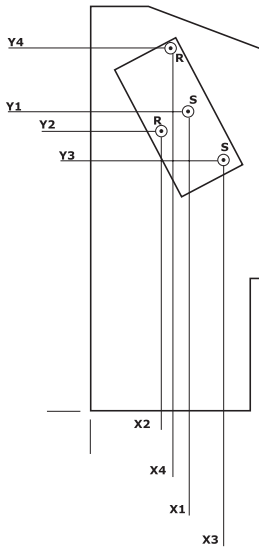
NOTES:

- 1) ALL DIMENSIONS IN INCHES.
- 2) COIL CONNECTION TOLERANCE $\pm 1/4"$
- 3) HAND OF UNIT DETERMINED BY COOLING COIL CONNECTION WHEN FACING THE FRONT OF UNIT.

GENERAL DIMENSIONS						COIL CONN SIZE	
MODEL	A	B	C	D	E	COOLING	HEATING
3AVCB	27-1/2	18	25-1/2	26-1/2	23-3/4	5/8 O.D. SWEAT	5/8 O.D. SWEAT
4AVCB	35-1/2	26	33-1/2	34-1/2	31-3/4		
6AVCB	43-1/2	34	41-1/2	42-1/2	39-3/4		
8AVCB	51-1/2	42	49-1/2	50-1/2	47-3/4		
10AVCB	59-1/2	50	57-1/2	58-1/2	55-3/4		
12AVCB	67-1/2	58	65-1/2	66-1/2	63-3/4		



(LEFT HAND UNIT SHOWN)



* DIMENSIONS VARY FOR UNITS WITH NON-STANDARD VALVE PACKAGES.

		AVCB HEADER LOCATIONS								
		LEFT HAND	X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW		4.75	18.13	3.00	17.50	---	---	---	---
	4 ROW		5.50	18.50	3.00	17.50	---	---	---	---
	3/1 ROW		4.63	18.13	3.13	17.50	7.00	15.13	4.13	21.50
	3/2 ROW		4.63	18.13	3.13	17.50	7.00	15.13	4.88	21.88
10-12V	4/1 ROW		5.50	18.50	3.13	17.50	7.63	16.00	4.63	22.25
	3 ROW		5.25	18.13	3.25	17.25	---	---	---	---
	4 ROW		6.25	18.50	3.25	17.25	---	---	---	---
	3/1 ROW		5.38	18.13	3.25	17.25	7.63	15.50	5.00	21.13

		AVCB HEADER LOCATIONS								
		RIGHT HAND	X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW		4.75	18.13	3.00	17.50	---	---	---	---
	4 ROW		5.5	18.50	3.00	17.50	---	---	---	---
	3/1 ROW		4.63	18.13	3.13	17.50	6.88	15.50	3.88	21.50
	3/2 ROW		4.63	18.13	3.13	17.50	7.63	15.88	3.88	21.88
10-12V	4/1 ROW		5.50	18.50	3.13	17.50	7.75	15.50	4.88	21.88
	3 ROW		5.25	18.13	3.25	17.25	---	---	---	---
	4 ROW		6.25	18.50	3.25	17.25	---	---	---	---
	3/1 ROW		5.38	18.13	3.25	17.25	7.38	16.00	4.75	21.75

Product Specifications

Vertical Floor Consoles
Chilled Water / Hot Water

AVSB SPECIFICATIONS

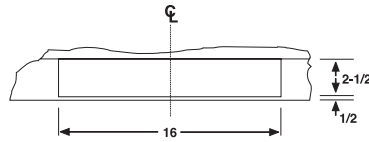
NOTES:

- 1) ALL DIMENSIONS IN INCHES.
- 2) ALL DIMENSIONS ± 1/4".
- 3) CABINET TOLERANCE ± 1/16".
- 4) 24" CLEARANCE IN FRONT OF THE UNIT IS REQUIRED FOR SERVICE.
- 5) HAND OF UNIT DETERMINED BY COOLING COIL CONNECTION WHEN FACING THE FRONT OF UNIT.
- 6) COIL CONNECTION TOLERANCE ± 1/4".

GENERAL DIMENSIONS

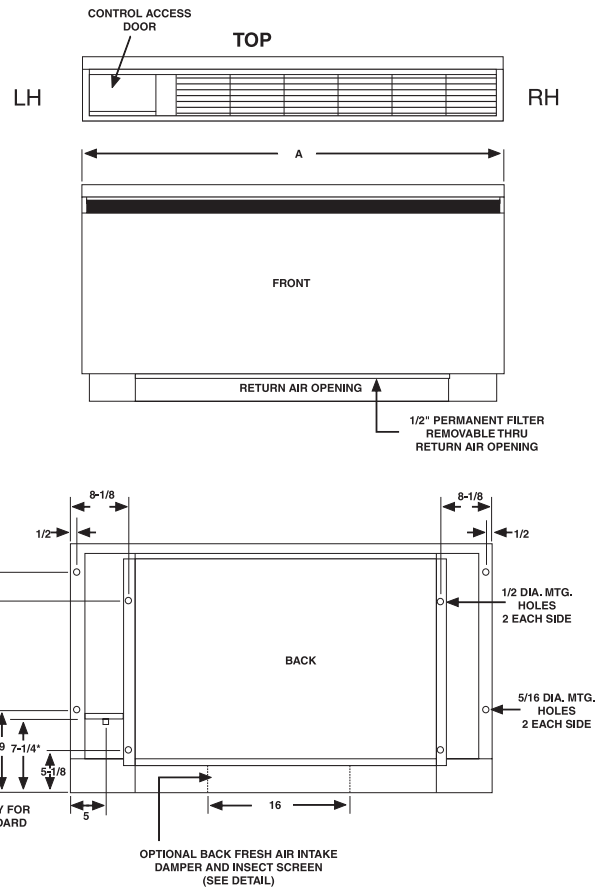
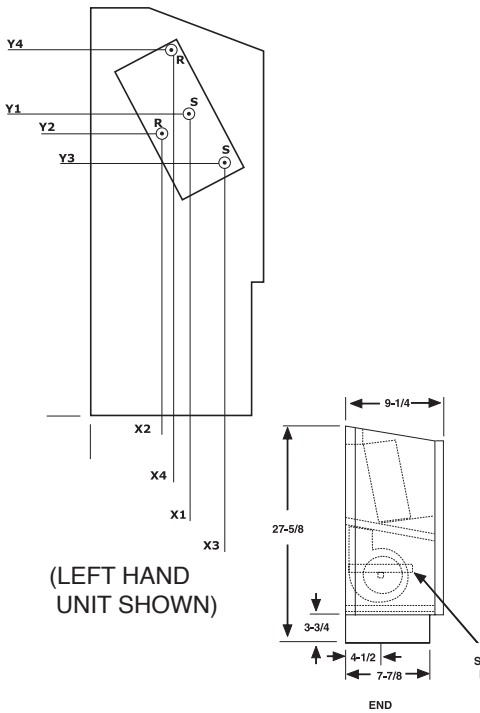
SIZE MODEL	A		
		COOLING	HEATING
3AVSB	43	5/8" O.D. SWEAT	5/8" O.D. SWEAT
4AVSB	51		
6AVSB	59		
8AVSB	67		
10AVSB	75		
12AVSB	83		

FRESH AIR INTAKE



UNIT SIZES 10 & 12
Have two openings 2" apart
centered on center line.

NOTE: Outside fresh air must be tempered before entering the unit if freezing conditions are expected.



		AVSB HEADER LOCATIONS							
LEFT HAND		X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW	4.75	18.13	3.00	17.50	N/A	N/A	N/A	N/A
	4 ROW	5.50	18.50	3.00	17.50	N/A	N/A	N/A	N/A
	3/1 ROW	4.63	18.13	3.13	17.50	7.00	15.13	4.13	21.50
	3/2 ROW	4.63	18.13	3.13	17.50	7.00	15.13	4.88	21.88
	4/1 ROW	5.50	18.50	3.13	17.50	7.63	16.00	4.63	22.25
10-12V	3 ROW	5.25	18.13	3.25	17.25	N/A	N/A	N/A	N/A
	4 ROW	6.25	18.50	3.25	17.25	N/A	N/A	N/A	N/A
	3/1 ROW	5.38	18.13	3.25	17.25	7.63	15.50	5.00	21.13

		AVSB HEADER LOCATIONS							
RIGHT HAND		X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW	4.75	18.13	3.00	17.50	N/A	N/A	N/A	N/A
	4 ROW	5.50	18.50	3.00	17.50	N/A	N/A	N/A	N/A
	3/1 ROW	4.63	18.13	3.13	17.50	6.88	15.50	3.88	21.50
	3/2 ROW	4.75	18.13	3.13	17.50	7.63	15.88	3.88	21.88
	4/1 ROW	5.50	18.50	3.13	17.50	7.75	15.50	4.88	21.88
10-12V	3 ROW	5.25	18.13	3.25	17.25	N/A	N/A	N/A	N/A
	4 ROW	6.25	18.50	3.25	17.25	N/A	N/A	N/A	N/A
	3/1 ROW	5.25	18.13	3.25	17.25	7.38	16.00	4.75	21.75

Product Specifications

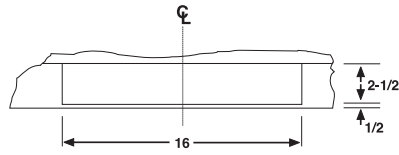
Vertical Floor Consoles
Chilled Water / Hot Water

AVFB SPECIFICATIONS

NOTES:

- 1) ALL DIMENSIONS IN INCHES.
- 2) ALL DIMENSIONS $\pm 1/4"$.
- 3) CABINET TOLERANCE $\pm 1/16"$.
- 4) 24" CLEARANCE IN FRONT OF THE UNIT IS REQUIRED FOR SERVICE.
- 5) HAND OF UNIT DETERMINED BY COOLING COIL CONNECTION WHEN FACING THE FRONT OF UNIT.
- 6) COIL CONNECTION TOLERANCE $\pm 1/4"$.

FRESH AIR INTAKE

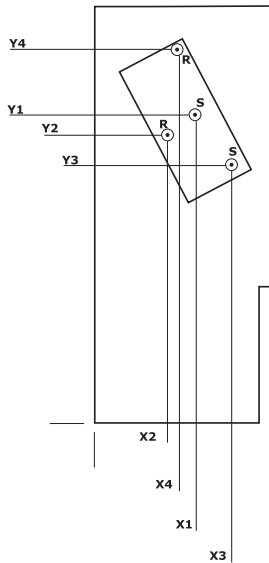
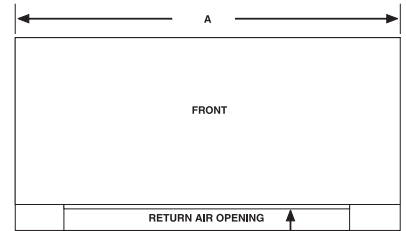
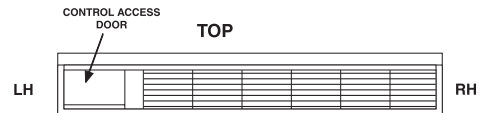


UNIT SIZES 10 & 12
Have two openings 2" apart centered on center line.

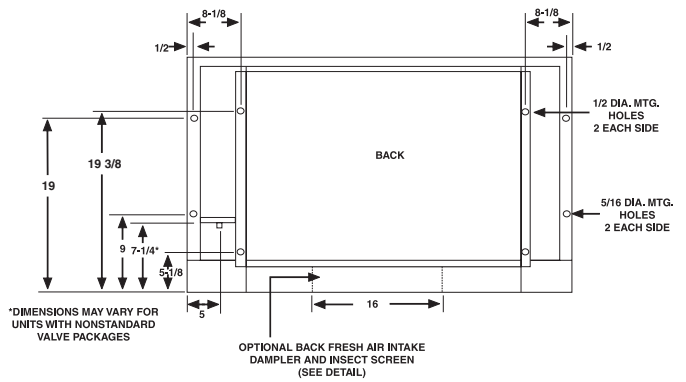
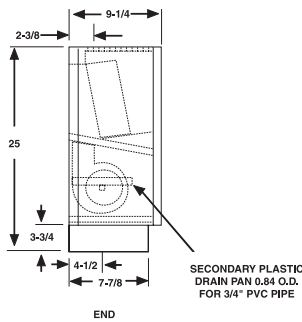


NOTE: Outside fresh air must be tempered before entering the unit if freezing conditions are expected.

GENERAL DIMENSIONS			
SIZE MODEL	A	COOLING	HEATING
		3AVFB	43
4AVFB	51		
6AVFB	59		
8AVFB	67		
10AVFB	75		
12AVFB	83		



(LEFT HAND UNIT SHOWN)



		AVFB HEADER LOCATIONS								
		LEFT HAND	X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW		4.75	18.13	3.00	17.50	N/A	N/A	N/A	N/A
	4 ROW		5.50	18.50	3.00	17.50	N/A	N/A	N/A	N/A
	3/1 ROW		4.63	18.13	3.13	17.50	7.00	15.13	4.13	21.50
	3/2 ROW		4.63	18.13	3.13	17.50	7.00	15.13	4.88	21.88
	4/1 ROW		5.50	18.50	3.13	17.50	7.63	16.00	4.63	22.25
10-12V	3 ROW		5.25	18.13	3.25	17.25	N/A	N/A	N/A	N/A
	4 ROW		6.25	18.50	3.25	17.25	N/A	N/A	N/A	N/A
	3/1 ROW		5.38	18.13	3.25	17.25	7.63	15.50	5.00	21.13

		AVFB HEADER LOCATIONS								
		RIGHT HAND	X1	Y1	X2	Y2	X3	Y3	X4	Y4
3-8V	3 ROW		4.75	18.13	3.00	17.50	N/A	N/A	N/A	N/A
	4 ROW		5.50	18.50	3.00	17.50	N/A	N/A	N/A	N/A
	3/1 ROW		4.63	18.13	3.13	17.50	6.88	15.50	3.88	21.50
	3/2 ROW		4.75	18.13	3.13	17.50	7.63	15.88	3.88	21.88
	4/1 ROW		5.50	18.50	3.13	17.50	7.75	15.50	4.88	21.88
10-12V	3 ROW		5.25	18.13	3.25	17.25	N/A	N/A	N/A	N/A
	4 ROW		6.25	18.50	3.25	17.25	N/A	N/A	N/A	N/A
	3/1 ROW		5.25	18.13	3.25	17.25	7.38	16.00	4.75	21.75

Furnish and install Applied Environmental Air vertical floor consoles as indicated on the plans and specifications. Types, sizes, and performance shall be as indicated in the schedule.

Casings and Cabinets

Flat Top Floor Model (**AVFB**) and Slope Top Floor Model (**AVSB**) - Cabinet shall be a vertical console type enclosure fabricated of heavy 18 gauge galvanized steel and finished with an electrostatically applied, baked-on light gray paint. Cabinet shall include a discharge grille angled to provide optimal air discharge and full width electrical and piping compartments. The discharge grille shall be made of heavy-duty, 18 gauge stamped steel and painted to match unit color. Units provided with unit mounted controls shall have a single access door. Cabinet shall be easily removed without tools for service.

Basic Unit (**AVCB**) - Basic unit shall consist of base casing and removable front panel fabricated of heavy gauge galvanized steel with top duct discharge opening for installation in custom enclosure furnished by contractor.

Electrical

Unit shall have an electrical box providing a single location for all field wiring connections and a factory installed electrical Service Switch.

Coils

Coils shall have high efficiency aluminum fins with mechanically expanded copper tubes. All water coils shall have a manual air vent. Coil performance shall be as indicated in the schedule.

Fan Assembly

Fans shall be centrifugal, forward curved, and dynamically balanced for smooth, quiet operation. Fan housing shall be fabricated of heavy gauge galvanized steel and be easily removed, thus allowing complete service access to the fans and motors.

Motors

All units shall have (120/1/60) (208-240/1/60) (277/1/60) three speed motors (1) with permanently lubricated sleeve bearings, permanent split capacitor or ECM, inherent thermal overload protection with automatic reset, and resilient rubber motor mounts.

(1) The size 3 motor (model 3AVFB/AVSB/AVCB) may not start on low speed due to low starting torque. These units must be wired to start on either Medium or High speed.

Speed Control (optional)

Units shall have a (unit) (wall) mounted three speed switch with integral on/off switch which shall provide high / medium / low fan speed control.

Drain Pan

Primary drain pan shall be constructed of galvanized steel and coated to resist corrosion. Secondary drain pan shall be constructed of injection molded plastic. Secondary drain pan shall be capable of rotating 180 degrees to allow field piping to enter the unit from different locations.

Insulation

Cabinet insulation shall be 1/2" multi-density glass fiber.

Filter

Filter shall be permanent type and cleanable.

Options

Valve Packages - Valve packages shall consist of various combinations of 2-way or 3-way motorized valves and/or combination balance/shut-off valves on the supply and return piping.

Fresh Air Kit - A manual or motorized fresh air damper shall be provided by the manufacturer for field installation. Tamperproof Access Door - Units shall be provided with tamperproof access door on the thermostat/fan control compartment.

Product Specifications
Vertical Floor Consoles
Chilled Water / Hot Water

COOLING CAPACITIES

CHILLED WATER COOLING CAPACITY															
3-ROW															
UNIT SIZE (ALL MODELS)	CFM	GPM	P.D. (FT. WATER)	45°F ENTERING WATER						42°F ENTERING WATER					
				80°F DB/67°F WB ENTERING AIR			75°F DB/63°F WB ENTERING AIR			80°F DB/67°F WB ENTERING AIR			75°F DB/63°F WB ENTERING 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
3	280 (HIGH)	1.0	2.1	6.7	5.6	13.4	5.6	5.6	11.2	7.3	5.9	14.7	5.6	5.2	11.2
		2.0	6.3	8.9	6.5	9.0	6.8	5.7	6.8	9.8	6.8	9.8	7.4	5.9	7.5
		3.0	12.0	9.8	6.8	6.5	7.5	5.9	5.0	10.7	7.1	7.1	8.2	6.2	5.5
3	240 (HIGH)	1.0	2.1	6.5	5.2	13.1	5.0	4.6	10.0	7.1	5.4	14.2	5.4	4.7	10.9
		2.0	6.3	8.3	5.9	8.3	6.4	5.1	6.4	9.1	6.1	9.1	6.9	5.3	6.9
		3.0	12.0	9.1	6.1	6.0	6.9	5.3	4.6	9.9	6.5	6.6	7.6	5.6	5.0
4	400 (HIGH)	1.5	3.9	10.5	8.4	14.0	9.0	7.4	10.7	11.4	8.8	15.2	8.7	7.7	11.6
		2.2	7.9	12.3	9.0	11.1	9.4	7.9	8.5	13.4	9.5	12.1	10.2	8.3	9.3
		3.0	14.1	13.4	9.5	8.9	10.2	8.3	6.8	14.6	9.9	9.7	11.1	8.6	7.4
4	320 (MED)	1.5	3.9	9.8	7.3	13.1	7.5	6.4	10.0	10.7	7.7	14.3	8.2	6.7	10.9
		2.2	7.9	11.1	7.8	10.1	8.5	6.8	7.7	12.1	8.2	11.0	9.2	7.1	8.4
		3.0	14.1	12.0	8.2	8.0	9.1	7.1	6.1	13.0	8.6	8.7	10.0	7.4	6.6
6	600 (HIGH)	3.0	6.5	17.0	12.9	11.4	13.0	11.4	8.7	18.6	13.5	12.4	14.2	11.9	9.5
		4.0	11.3	18.6	13.5	9.3	14.2	11.9	7.1	20.3	14.2	10.1	15.5	12.4	7.7
		5.0	17.4	19.6	13.9	7.9	15.0	12.2	6.0	21.4	14.6	8.6	16.4	12.7	6.6
6	430 (MED)	3.0	6.5	14.7	10.4	9.8	11.2	9.1	7.5	16.1	11.0	10.7	12.3	9.5	8.2
		4.0	11.3	15.8	10.9	7.9	12.1	9.4	6.0	17.2	11.4	8.6	13.2	9.9	6.6
		5.0	17.4	16.5	11.1	6.6	12.6	9.7	5.1	18.0	11.7	7.2	13.8	10.1	5.5
8	800 (HIGH)	4.0	7.2	22.1	16.9	11.1	16.9	14.9	8.4	24.1	17.7	12.1	18.4	15.5	9.2
		5.0	10.9	23.8	17.6	9.5	18.2	15.4	7.3	26.0	18.4	10.4	19.8	16.1	7.9
		6.0	15.3	25.1	18.0	8.4	19.1	15.8	6.4	27.3	18.9	9.1	20.8	16.5	7.0
8	680 (MED)	4.0	7.2	20.7	15.3	10.3	15.8	13.4	7.9	22.5	16.0	11.3	17.2	13.9	8.6
		5.0	10.9	22.0	15.8	8.8	16.8	13.8	6.7	24.0	16.5	9.6	18.3	14.4	7.3
		6.0	15.3	22.9	16.1	7.6	17.5	14.1	5.8	25.0	16.9	8.3	19.1	14.7	6.4
10	1000 (HIGH)	6.0	9.0	29.7	23.2	9.9	22.7	20.5	7.6	32.4	24.2	10.8	24.7	21.3	8.2
		7.0	11.9	31.0	23.7	8.9	23.7	20.8	6.8	33.8	24.8	9.7	25.8	21.7	7.4
		8.0	15.3	32.1	24.1	8.0	24.5	21.2	6.1	34.9	25.2	8.7	26.7	22.0	6.7
10	880 (MED)	6.0	9.0	27.6	21.1	9.2	21.1	18.5	7.0	30.1	22.0	10.0	23.0	19.3	7.7
		7.0	11.9	28.8	21.5	8.2	22.0	18.9	6.3	31.4	22.5	9.0	24.0	19.6	6.8
		8.0	15.3	29.7	21.9	7.4	22.7	19.2	5.7	32.4	22.9	8.1	24.8	20.0	6.2
12	1200 (HIGH)	6.5	10.4	34.8	27.6	10.7	26.6	24.3	8.2	38.0	28.7	11.7	29.0	25.2	8.9
		7.5	13.6	36.3	28.1	9.7	27.8	24.7	7.4	39.6	29.3	10.6	30.2	25.7	8.1
		8.5	17.1	37.6	28.6	8.8	28.7	25.1	6.8	41.0	29.9	9.6	31.3	26.1	7.4
12	1030 (MED)	6.5	10.4	23.0	24.6	9.8	24.4	21.6	7.5	34.9	25.6	10.7	16.6	22.4	8.2
		7.5	13.6	33.3	25.1	8.9	25.4	22.0	6.8	36.3	26.2	9.7	17.8	22.9	7.4
		8.5	17.1	34.4	25.5	8.1	26.3	22.3	6.2	37.5	26.6	8.8	28.7	23.2	6.7
4-ROW															
3	280 (HIGH)	1.0	1.8	6.7	6.1	14.8	5.7	5.4	11.3	8.1	6.3	16.2	6.2	5.5	12.3
		2.0	6.5	8.9	7.0	9.9	7.5	6.1	7.5	10.8	7.3	10.8	8.2	6.4	8.2
		3.0	13.9	9.8	7.3	7.2	8.3	6.4	5.5	11.8	7.7	7.9	9.0	6.7	6.0
3	240 (MED)	1.0	1.8	6.5	5.5	14.4	5.5	4.9	11.0	7.8	5.8	15.6	6.0	5.1	12.0
		2.0	6.5	8.3	6.3	9.2	7.0	5.5	7.0	10.0	6.6	10.0	7.6	5.7	7.6
		3.0	13.9	9.1	6.6	6.7	7.6	5.7	5.1	10.9	7.0	7.2	8.3	6.0	5.5
4	400 (HIGH)	1.0	2.4	10.5	8.1	18.1	8.1	8.1	16.1	9.9	8.4	19.7	8.9	8.4	17.8
		2.0	8.2	12.3	9.6	13.1	10.0	8.4	10.0	14.3	10.0	14.3	10.9	8.7	10.9
		3.0	16.8	13.4	10.2	9.8	11.3	8.9	7.5	16.1	10.7	10.7	12.3	9.3	8.2
4	320 (MED)	1.0	2.4	9.8	7.1	17.5	6.7	6.3	13.4	9.5	7.4	19.1	7.3	6.5	14.6
		2.0	8.2	11.1	8.3	11.9	9.1	7.2	9.1	12.9	8.7	12.9	9.9	7.5	9.9
		3.0	16.8	12.0	8.8	8.8	10.0	7.6	6.7	14.3	9.2	9.6	10.9	7.9	7.3
6	600 (HIGH)	2.5	5.6	17.0	13.2	13.4	12.8	11.6	10.2	18.2	13.7	14.6	13.9	12.1	11.1
		3.5	10.2	18.6	14.1	11.0	14.7	12.4	8.4	21.0	14.8	12.0	16.1	12.9	9.2
		4.5	16.0	19.6	14.7	9.2	15.8	12.8	7.0	22.6	15.4	10.0	17.3	13.4	7.7
6	430 (MED)	2.5	5.6	14.7	10.7	11.9	11.3	9.3	9.1	16.2	11.2	13.0	12.4	9.7	9.9
		3.5	10.2	15.8	11.3	9.4	12.6	9.8	7.2	18.0	11.9	10.3	13.7	10.3	7.8
		4.5	16.0	16.5	11.7	7.7	13.3	10.1	5.9	19.0	12.3	8.4	14.5	10.6	6.4
8	800 (HIGH)	4.0	8.9	22.1	18.3	12.3	18.7	16.1	9.4	26.7	19.2	13.4	20.4	16.7	10.2
		5.0	13.3	23.8	19.0	10.6	20.2	16.6	8.1	28.8	19.9	11.5	22.0	17.4	8.8
		6.0	18.4	25.1	19.6	9.3	21.2	17.1	7.1	30.3	20.5	10.1	23.1	17.8	7.7
8	680 (MED)	4.0	8.9	20.7	16.5	11.4	17.4	14.4	8.7	24.8	17.2	12.4	19.0	15.0	9.5
		5.0	13.3	22.0	17.0	9.7	18.5	14.8	7.4	26.4	17.9	10.6	20.2	15.5	8.1
		6.0	18.4	22.9	17.4	8.4	19.3	15.2	6.4	27.6	18.3	9.2	21.1	15.8	7.0
10	1000 (HIGH)	5.5	5.9	29.7	23.8	11.1	23.4	20.9	8.5	33.3	24.8	12.1	15.5	21.7	9.3
		7.5	10.2	31.0	25.0	9.0	25.9	21.9	6.9	37.0	26.2	9.9	28.2	22.9	7.5
		9.5	15.4	32.1	25.8	7.6	27.4	22.5	5.8	39.1	27.0	8.2	29.9	23.5	6.3
10	880 (MED)	5.5	5.9	27.6	21.6	10.4	21.7	18.9	7.9	31.0	22.6	11.3	23.7	19.7	8.6
		7.5	10.2	28.8	22.7	8.4	24.0	19.8	6.4	34.3	23.8	9.1	26.2	20.7	7.0
		9.5	15.4	29.7	23.4	7.0	25.4	20.4	5.3	36.2	24.6	7.6	27.7	21.3	5.8
12	1200 (HIGH)	7.5	10.7	34.8	29.4	10.4	29.9	25.8	8.0	42.6	30.8	11.4	32.6	26.9	8.7
		9.5	13.7	36.3	29.9	9.5	30.9	26.2	7.3	44.1	31.3	10.4	33.7	27.3	7.9
		9.5	17.0	37.6	30.4	8.8	31.8	26.6	6.7	45.4	31.8	9.6	34.7	27.7	7.3
12	1030 (MED)	7.5	10.7	35.8	26.2	9.5	27.4	22.9	7.3	39.0	27.4	10.4	29.8	23.9	7.9
		9.5	13.7	37.0	26.7	8.7	28.3	23.3	6.7	40.3	27.9	9.5	30.8	24.3	7.2
		9.5	17.0	38.0	27.0	8.0	29.0	23.6	6.1	41.4	28.4	8.7	31.7	24.6	6.7

Product Specifications

Vertical Floor Consoles
Chilled Water / Hot Water

HEATING CAPACITIES

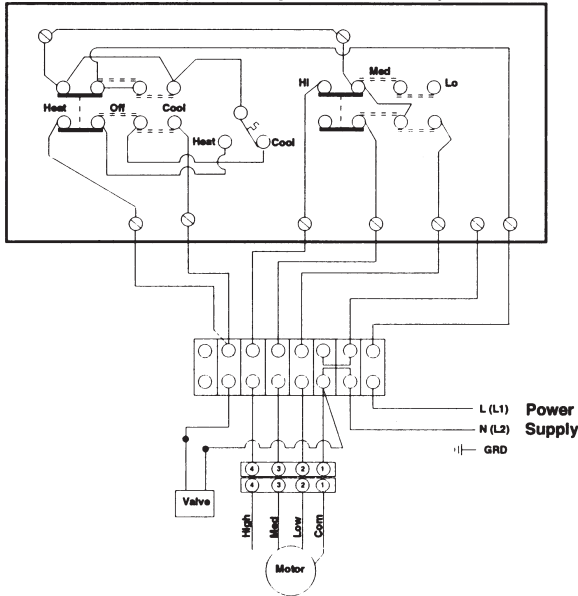
HOT WATER HEATING CAPACITY

3-ROW						
UNIT SIZE (ALL MODELS)	CFM	GPM	P.D. (FT. WATER)	HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE		
				140°F	160°F	180°F
3	280 (HIGH)	1.5	4.0	14.8	19.0	23.3
		2.5	9.0	15.7	20.2	24.7
		3.5	15.3	16.2	20.7	25.4
	240 (HIGH)	1.5	4.0	13.4	17.2	21.0
		2.5	9.0	14.0	18.0	22.1
		3.5	15.3	14.4	18.5	22.6
4	400 (HIGH)	1.5	3.9	20.4	26.3	32.1
		2.5	10.0	22.0	28.3	34.6
		3.5	18.7	22.8	29.3	35.8
	320 (MED)	1.5	3.9	17.7	22.8	27.8
		2.5	10.0	18.8	24.1	29.5
		3.5	18.7	19.3	24.8	30.3
6	600 (HIGH)	3.0	6.5	31.1	39.9	48.8
		4.0	11.3	32.2	41.4	50.6
		5.0	17.4	32.9	42.3	51.7
	430 (MED)	3.0	6.5	24.7	31.8	38.9
		4.0	11.3	25.4	32.6	39.9
		5.0	17.4	25.8	33.2	40.6
8	800 (HIGH)	4.0	7.2	40.6	52.3	63.9
		5.0	10.9	41.8	53.8	65.7
		6.0	15.3	52.6	54.8	67.0
	680 (MED)	4.0	7.2	36.5	46.9	57.3
		5.0	10.9	37.4	48.1	58.8
		6.0	15.3	38.1	48.9	59.8
10	1000 (HIGH)	5.0	6.4	54.3	69.7	85.3
		6.5	10.4	56.1	72.2	88.2
		8.0	15.3	57.4	73.8	90.2
	880 (MED)	5.0	6.4	49.7	63.9	78.1
		6.5	10.4	51.4	66.0	80.7
		8.0	15.3	52.4	67.4	82.4
12	1200 (HIGH)	5.5	7.7	64.4	82.8	101.2
		7.0	12.0	66.5	85.5	104.5
		8.5	17.1	67.9	87.3	106.8
	1030 (MED)	5.5	7.7	58.1	74.8	91.4
		7.5	12.0	59.8	76.9	94.0
		8.5	17.1	61.0	78.5	95.9

4-ROW						
UNIT SIZE (ALL MODELS)	CFM	GPM	P.D. (FT. WATER)	HEATING BTUH (1000) AT ENTERING WATER TEMPERATURE		
				140°F	160°F	180°F
3	280 (HIGH)	1.5	3.8	15.8	20.3	24.8
		2.5	9.9	16.7	21.5	26.3
		3.5	18.5	17.2	22.1	27.0
	240 (MED)	1.5	3.8	14.2	18.2	22.3
		2.5	9.9	14.9	19.1	23.4
		3.5	18.5	15.2	19.6	24.0
4	400 (HIGH)	1.0	2.4	19.9	25.6	31.3
		2.0	8.2	22.8	29.3	35.8
		3.0	16.8	23.9	30.7	37.6
	320 (MED)	1.0	2.4	17.4	22.4	27.4
		2.0	8.2	19.5	25.0	30.6
		3.0	16.8	20.2	26.0	31.8
6	600 (HIGH)	2.5	5.6	31.7	40.7	49.8
		3.5	10.2	33.4	43.0	52.5
		4.5	16.0	34.4	44.2	54.0
	430 (MED)	2.5	5.6	25.3	32.5	39.8
		3.5	10.2	26.3	33.8	41.4
		4.5	16.0	26.9	34.6	42.3
8	800 (HIGH)	3.0	5.4	41.5	53.3	65.2
		4.5	11.0	44.2	56.8	68.4
		6.0	18.4	45.6	58.6	71.7
	680 (MED)	3.0	5.4	37.3	47.9	48.6
		4.5	11.0	39.4	50.7	61.9
		6.0	18.4	40.6	52.2	63.7
10	1000 (HIGH)	6.0	6.9	58.6	75.3	92.0
		8.0	11.4	60.7	78.0	95.3
		10.0	16.9	62.0	79.8	97.4
	880 (MED)	6.0	6.9	53.5	68.8	84.1
		8.0	11.4	55.3	71.1	86.9
		10.0	16.9	56.4	72.5	88.6
12	1200 (HIGH)	6.0	7.0	68.7	88.3	108.0
		8.0	12.2	71.4	91.8	112.2
		10.0	18.7	73.1	94.0	114.9
	1030 (MED)	6.0	7.0	61.8	79.5	97.2
		8.0	12.2	64.0	82.3	100.3
		10.0	18.7	65.4	84.1	102.8

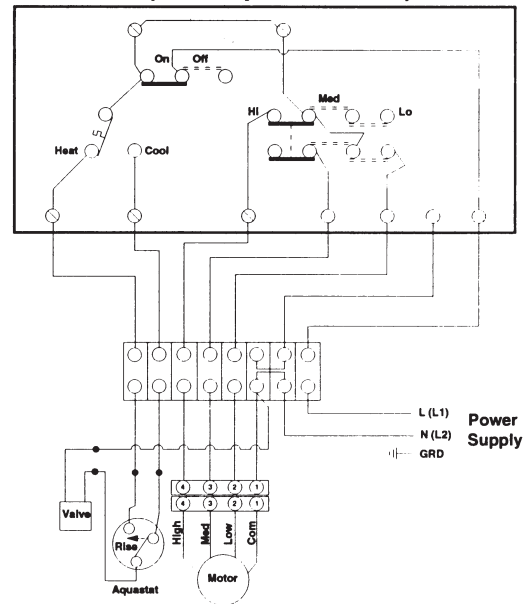
Typical Connection Diagrams

**2-Pipe Heat / Cool
Manual Changeover - Continuous Fan
(T/stat option No. A__)**

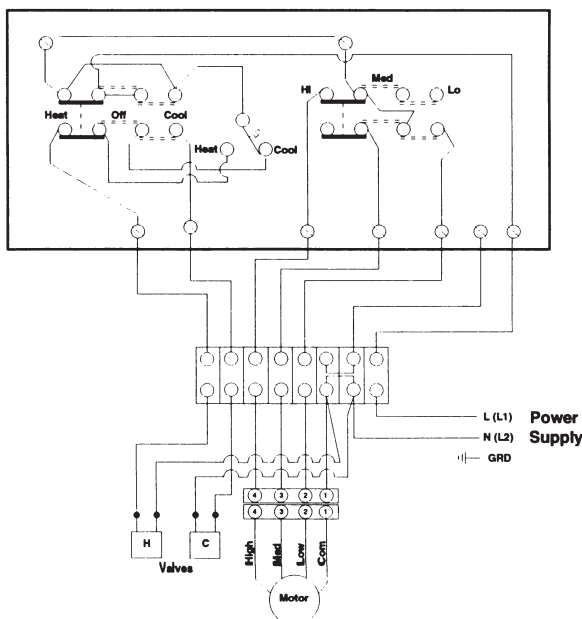


* No aquastat lockout

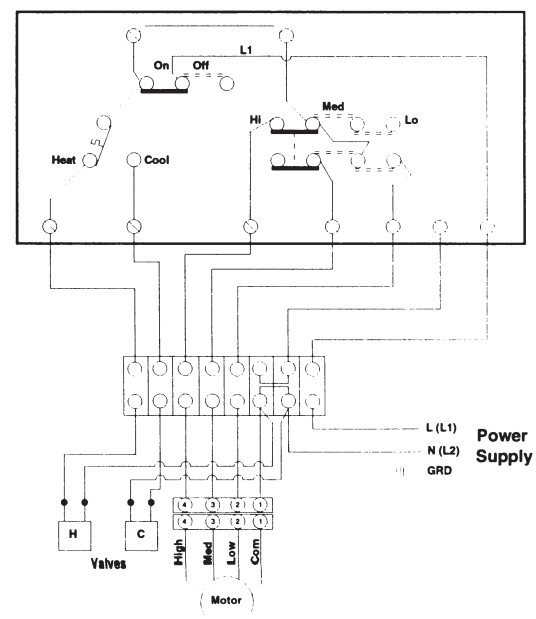
**2-Pipe Heat / Cool
Auto Changeover - Continuous Fan
(T/stat option No. B__)**



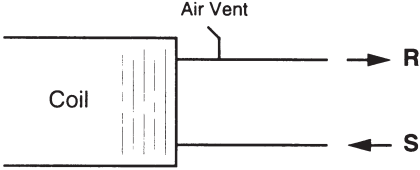
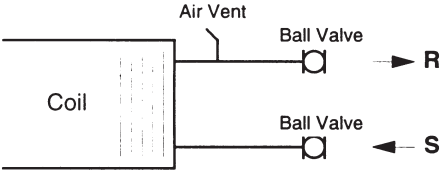
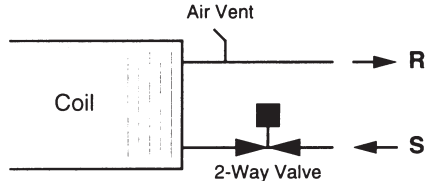
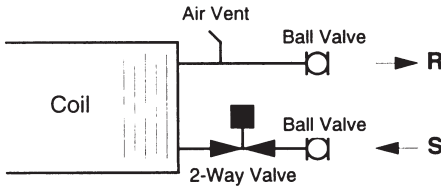
**4-Pipe Heat / Cool
Manual Changeover - Continuous Fan
(T/stat option No. M__)**



**4-Pipe Heat / Cool
Auto Changeover - Continuous Fan
(T/stat option No. N__)**



Valve / Piping Packages

Configuration	Valve Package Code	Basic Application
<p>Standard Coil - No Valves</p> 	<p>- NV -</p>	<p>2 pipe or 4 pipe: For field added valve packages</p>
<p>Ball Valves Only</p> 	<p>- BV -</p>	<p>2 pipe or 4 pipe: Coil with ball valves for field added valve packages</p>
<p>2-Way Valve Only</p> 	<p>- 2 -</p>	<p>2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling</p>
<p>2-Way Valve with Ball Valves</p> 	<p>- 2B -</p>	<p>2 pipe or 4 pipe: - 2 pipe Hydronic Heating only - 2 pipe Hydronic Cooling only - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout) - 2 pipe Hydronic cooling with total electric heat - 4 pipe Hydronic Heating & Cooling</p>

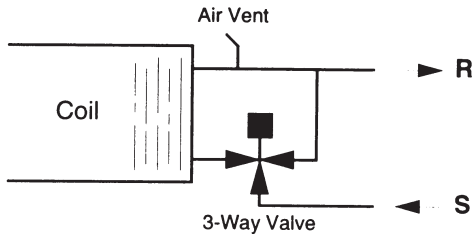
Valve / Piping Packages (con't)

Configuration

Valve Package Code

Basic Application

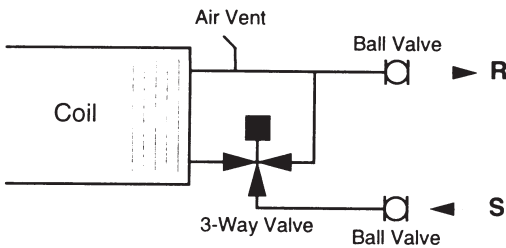
3-Way Valve Only



- 3 -

- 2 pipe or 4 pipe:
- 2 pipe Hydronic Heating only
 - 2 pipe Hydronic Cooling only
 - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout)
 - 2 pipe Hydronic cooling with total electric heat
 - 4 pipe Hydronic Heating & Cooling

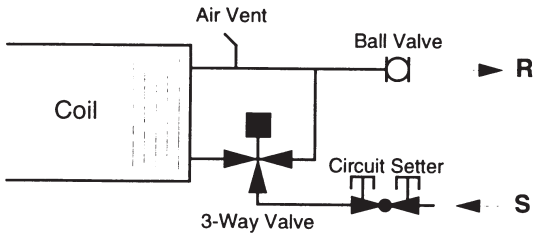
3-Way Valve with Ball Valves



- 3B -

- 2 pipe or 4 pipe:
- 2 pipe Hydronic Heating only
 - 2 pipe Hydronic Cooling only
 - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout)
 - 2 pipe Hydronic cooling with total electric heat
 - 4 pipe Hydronic Heating & Cooling

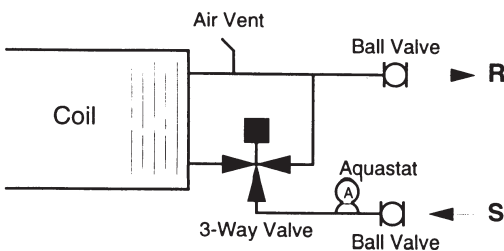
3-Way Valve with Ball Valve & Circuit Setter



- 3C -

- 2 pipe or 4 pipe:
- 2 pipe Hydronic Heating only
 - 2 pipe Hydronic Cooling only
 - 2 pipe Hydronic Heating & Cooling manual changeover (no aquastat lockout)
 - 2 pipe Hydronic cooling with total electric heat
 - 4 pipe Hydronic Heating & Cooling

3-Way Valve with Ball Valves & Aquastat



- 3D -

- 2 pipe:
- 2 pipe Hydronic Heating & Cooling manual changeover
 - 2 pipe Hydronic Heating & Cooling Automatic changeover

Product Specifications
Vertical Floor Consoles
Chilled Water / Hot Water

AVFB (flat top)
AVSB (slope top)
AVCB (concealed)