



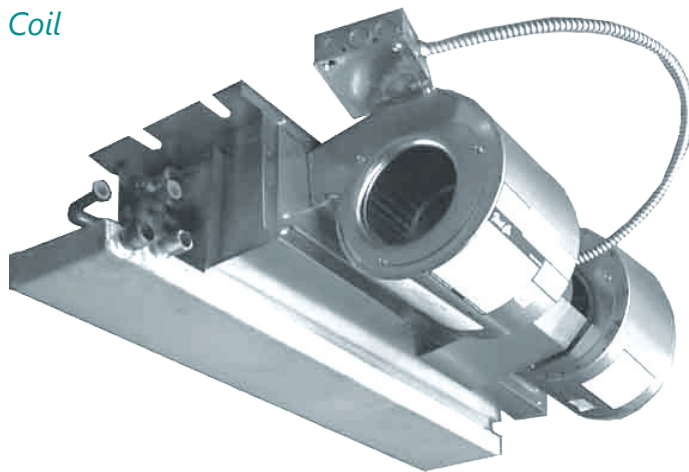
# HBC(X)

*Commercial Chilled Water Ceiling Fan Coil*

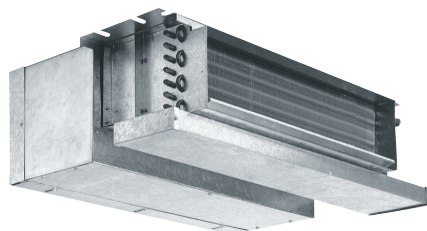
Horizontal 300-1200 CFM

HBC - PSC Motor

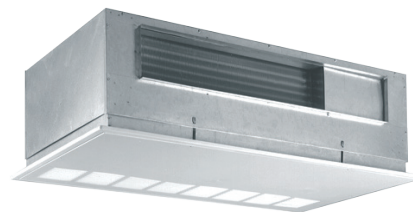
HBCX - ECM Motor



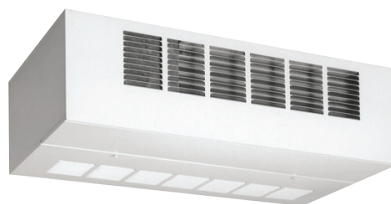
**HBC(X)**  
Ceiling Concealed



**PHBC(X)**  
Ceiling Concealed with Plenum



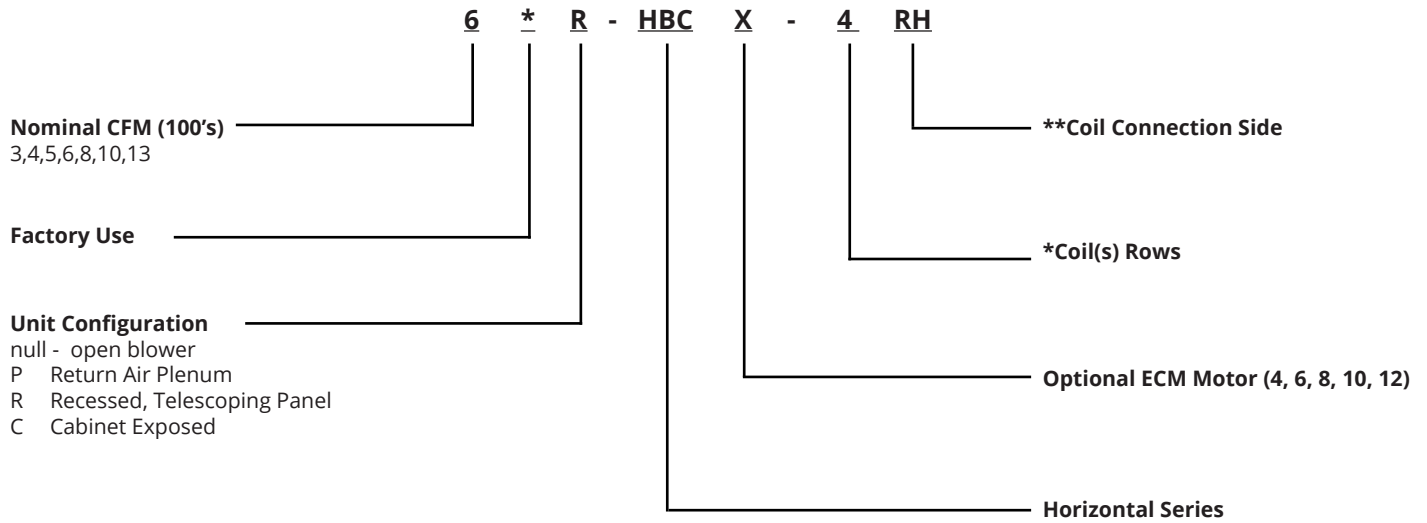
**RHBC(X)**  
Ceiling Recessed



**CHBC(X)**  
Ceiling Exposed



# NOMENCLATURE



## \*Coil Configurations

Rows	Description
3	2-Pipe 3 Row
4	2-Pipe 4 Row
31	4-Pipe 3 Row Cooling, 1-Row Hot Water
32	4-Pipe 3 Row Cooling, 2-Row Hot Water
41	4-Pipe 4 Row Cooling, 1-Row Hot Water

## \*\*Coil Connection Side

- RH Right Hand (default)
- LH Left Hand

Hand connection is determined by looking with airflow

## Available Voltage (PSC Motors)

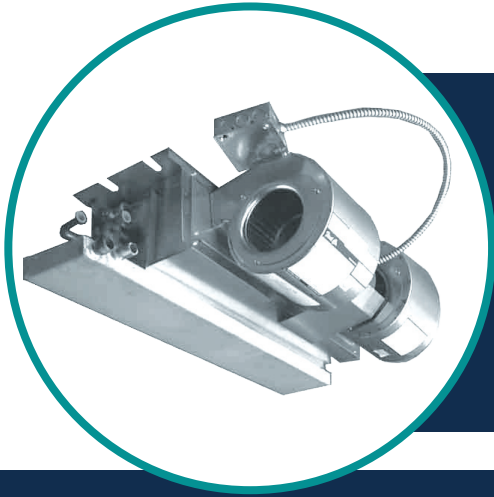
- 120V/1/60
- 208-230V/1/60
- 277V/1/60

## Available Voltage (ECM Motors)

- 120V/1/60
- 277V/1/60

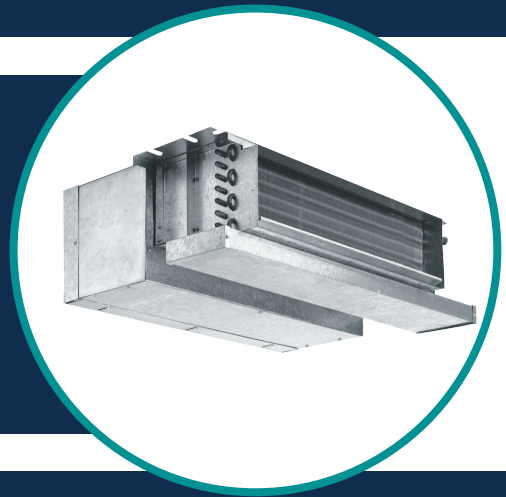
# ECM MOTOR OPTION

This ECM motor option includes 24V controls, a constant torque, permanent magnet, brushless DC motor, with four discrete speed taps that allow for precise air balancing.



## HBC(X) SERIES CEILING CONCEALED

The \*HBC series is designed for fully concealed applications. This 10" high space saving unit provides easy access for service and maintenance.



## PHBC(X) SERIES CEILING CONCEALED WITH PLENUM

The \*HBC series is designed for fully concealed applications. This 10" high space saving unit provides easy access for service and maintenance.



## RHBC(X) SERIES CEILING RECESSED

Includes adjustable hinged access/return panel with 1" TA fiberglass filter. The cabinet allows for a field mounted rear return duct connection by using a solid access panel.



## CHBC(X) SERIES CEILING EXPOSED

Cabinet with an attractive baked powder finish. Cabinet includes stamped discharge opening and hinged bottom panel with 1" TA fiber glass filter.

# STANDARD FEATURES

## Basic Unit

All fan coils are manufactured with heavy gauge galvanized steel to resist corrosion. All models are approved for installation with "0" clearance to combustible material.

## Insulation

Plenums and cabinets are insulated with Tuf-Skin dual density fiber glass blanket insulation with an anti-microbial agent.

## Ceiling Panels

Hinged access/return panels are manufactured with heavy gauge galvanized steel with captive mounting screws and an attractive white baked powder finish.

## Condensate Pans

Positive sloped drain pans are galvanized steel, coated on the inside surface with insulation. Pan includes both primary and secondary drain connections.

## Return Air Plenums

Return air plenums are manufactured from galvanized steel insulated with dual density fiber glass blanket insulation and a 1" TA fiber glass filter.

## Coils

Constructed with seamless copper tubes and headers. The tubes are mechanically expanded into corrugated aluminum fin material for a permanent primary to secondary surface bond. Coils are tested under water at 450 PSI for operation at 300 PSI. Coils include manual air vents.

## Fan Wheels-Housing

The fan wheels are double width, double inlet (DWDI) forward curved, centrifugal type. Wheels are statically and dynamically balanced for smooth, quiet operation. The housing is constructed from heavy gauge galvanized steel with die-formed inlet cones.

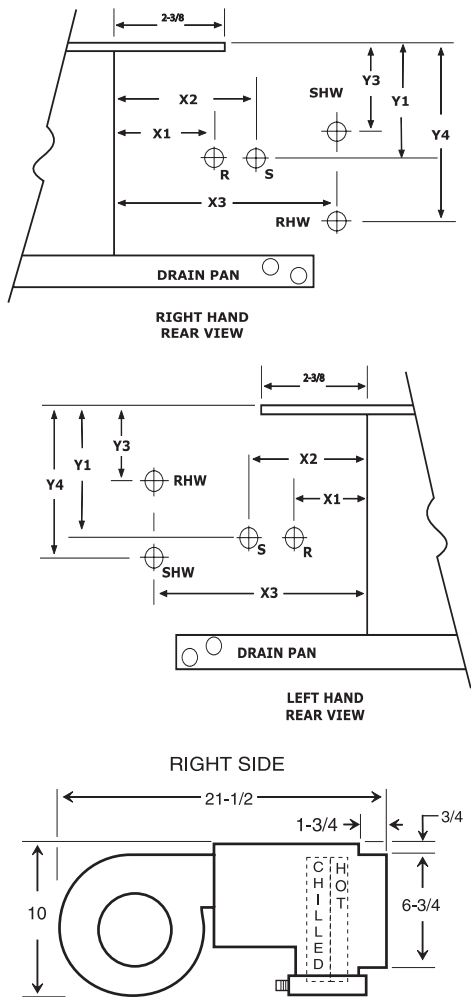
## Motors

Standard motors are PSC, permanently lubricated type with internal thermal overload protection.

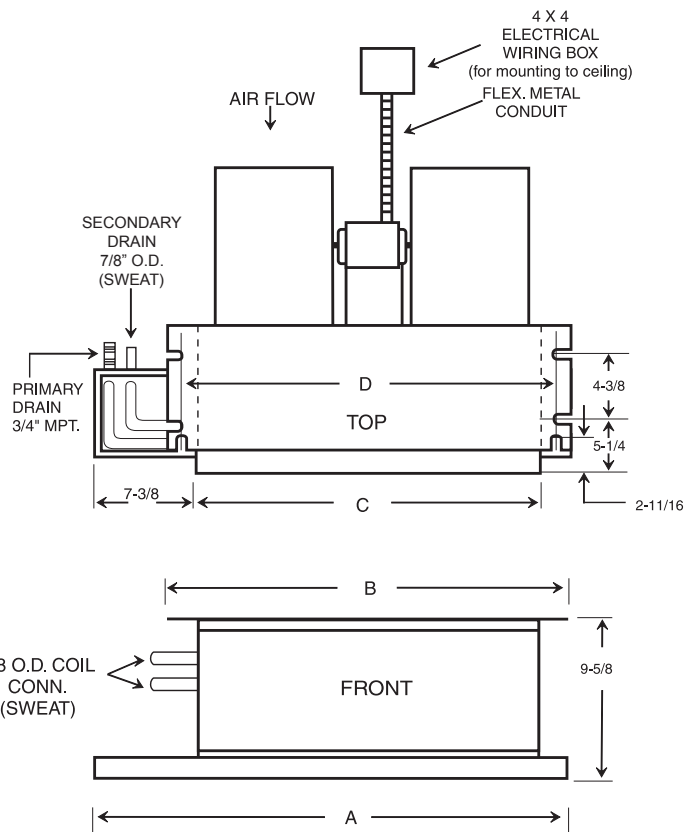
## Options

Factory mounted options include ECM motors stainless steel drain pans, foil faced cabinet insulation, Multi-24 3-speed 24V control, valve packages, thermostats, aqua stats, service switches. 120V, 208V/230V, 277V, 60hz

# HBC(X) PHYSICAL DATA



4 - PIPE UNIT SHOWN



NOTE: RIGHT HAND MODEL SHOWN - LEFT HAND MODEL HAS DRAIN AND PIPING CONNECTIONS ON OPPOSITE SIDE OF FAN COIL.

GENERAL DIMENSIONS				
MODEL	A	B	C	D
3*HBC	30-1/8	27-1/4	20-1/8	25-1/4
4*HBC(X)	36-1/8	33-1/4	26-1/8	31-1/4
5*HBC	40-1/8	37-1/4	30-1/8	35-1/4
6*HBC(X)	40-1/8	37-1/4	30-1/8	35-1/4
8*HBC(X)	46-1/8	43-1/4	36-1/8	41-1/4
10*HBC(X)	52-1/8	49-1/4	42-1/8	47-1/4
12*HBC(X)	59-1/8	56-1/4	49-1/8	54-1/4
13*HBC	59-1/8	56-1/4	49-1/8	54-1/4

**NOTES:**

1. ALL DIMENSIONS IN INCHES.
2. COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
3. RIGHT HAND UNIT SHOWN - LEFT HAND MODEL HAS DRAIN AND PIPING CONNECTIONS ON OPPOSITE SIDE OF THE FAN COIL. (HAND IS DETERMINED BY FACING THE BLOWER END)

OPTIONAL FIELD MOUNTED RETURN AIR PLENUM KITS			
PART NO	FOR MODEL NO.	DIMENSIONS (H X W X D)	SHIP WT.
916-1-STK	3*HBC	10 X 24 X 12-1/2	18
916-2-STK	4*HBC(X)	10 X 30 X 12-1/2	22
916-3-STK	5*HBC	10 X 34 X 12-1/2	22
916-3-STK	6*HBC(X)	10 X 34 X 12-1/2	22
916-4-STK	8*HBC(X)	10 X 40 X 12-1/2	24
916-5-STK	10*HBC(X)	10 X 46 X 12-1/2	27
916-6-STK	13*HBC	10 X 53 X 12-1/2	30

HBC HEADER LOCATIONS							
RIGHT HAND	X1	Y1	X2	Y2	X3	Y3	Y4
3 ROW	3	4-1/4	5	4	---	---	---
3/1 Split	3	4-1/4	5	4	8	3-1/2	5-1/2
3/2 Split	3	4-1/4	5	4	8	3-1/2	5-1/2
4 ROW	3	4-1/4	5	4	---	---	---
4/1 Split	3	4-1/4	5	4	8	4	6

HBC HEADER LOCATIONS							
LEFT HAND	X1	Y1	X2	Y2	X3	Y3	Y4
3 ROW	3	3-3/4	5	4	---	---	---
3/1 Split	3	3-3/4	5	4	8	2-1/2	4-1/2
3/2 Split	3	3-3/4	5	4	8	2-1/2	4-1/2
4 ROW	3	3-3/4	5	4	---	---	---
4/1 Split	3	3-3/4	5	4	8	2	4

# HEATING CAPACITIES

## HBC-3 3-Row Coil

PSC MOTOR	HEATING CAPACITY (1000 BTUH)								
	MODEL	NOMINAL CFM	GPM	P.D. (F. WTR)	ENTERING WATER TEMP.				
					180°F	160°F	140°F	120°F	
3*HBC-3	300	3.0	12.6	26.9	22.0	17.1	12.2		
				2.0	3.0	26.0	21.2	16.5	11.8
				1.0	1.7	23.4	19.1	14.9	10.6
4*HBC-3	400	3.5	19.3	35.8	29.3	22.8	16.3		
				2.5	10.7	34.6	28.3	22.0	15.7
				1.5	4.4	32.1	26.3	20.4	14.6
5*HBC-3	500	5.0	9.8	43.7	35.7	27.8	19.8		
				3.5	5.1	42.2	34.5	26.8	19.2
				2.0	1.8	38.6	31.6	24.6	17.5
6*HBC-3	600	5.0	9.8	49.7	40.6	31.6	22.6		
				3.5	5.1	47.8	39.1	30.4	21.7
				2.0	1.8	43.5	35.6	27.7	19.8
8*HBC-3	800	7.0	15.7	65.0	53.2	41.4	29.6		
				5.0	8.4	62.7	51.3	39.9	28.5
				3.0	3.2	57.7	47.2	39.7	26.2
10*HBC-3	1000	8.0	17.9	79.2	64.8	50.4	36.0		
				6.0	10.1	76.6	62.7	48.8	34.8
				4.0	4.5	71.9	58.8	45.7	32.7
13*HBC-3	1300	8.0	18.2	93.3	76.4	59.4	42.4		
				6.0	10.5	90.0	73.6	57.2	40.9
				4.0	4.9	83.8	68.6	53.3	38.1

## HBC-31 1-Row Coil

PSC MOTOR	HEATING CAPACITY (1000 BTUH)								
	MODEL	NOMINAL CFM	GPM	P.D. (F. WTR)	ENTERING WATER TEMP.				
					180°F	160°F	140°F	120°F	
3*HBC-31	300	2.0	11.3	15.2	12.4	9.6	6.9		
				1.5	6.7	14.7	12.0	9.4	6.7
				1.0	3.2	13.9	11.4	8.8	6.3
4*HBC-31	400	2.0	14.4	19.6	16.1	12.5	8.9		
				1.5	8.9	18.9	15.5	12.0	8.6
				1.0	4.5	17.5	14.4	11.2	8.0
5*HBC-31	500	2.0	15.0	23.3	19.1	14.8	10.6		
				1.5	9.0	22.3	18.2	14.2	10.1
				1.0	4.4	20.4	16.7	13.0	9.3
6*HBC-31	600	2.0	15.0	25.7	21.0	16.4	11.7		
				1.5	9.0	24.5	20.0	15.6	11.1
				1.0	4.4	22.4	18.3	14.2	10.2
8*HBC-31	800	2.0	18.8	31.6	25.9	20.1	14.4		
				1.5	11.3	29.8	24.4	19.0	13.6
				1.0	5.5	26.8	21.9	17.0	12.2
10*HBC-31	1000	2.0	19.9	37.0	30.3	23.5	16.8		
				1.5	12.3	34.6	28.3	22.0	15.7
				1.0	6.2	30.8	25.2	19.6	14.0
13A*HBC-31	1300	2.0	23.4	42.3	34.6	26.9	19.2		
				1.5	14.0	39.4	32.2	25.1	17.9
				1.0	6.8	35.2	28.8	22.4	16.0

## HBC-4 4-Row Coil

PSC MOTOR	HEATING CAPACITY (1000 BTUH)								
	MODEL	NOMINAL CFM	GPM	P.D. (F. WTR)	ENTERING WATER TEMP.				
					180°F	160°F	140°F	120°F	
3*HBC-4	300	3.0	15.9	28.6	23.4	18.2	13.0		
				2.0	7.6	27.6	22.6	17.6	12.6
				1.0	2.2	14.9	20.3	15.8	11.3
4*HBC-4	400	3.0	18.2	37.6	30.7	23.9	17.1		
				2.0	8.9	35.8	29.3	22.8	16.3
				1.0	2.6	31.3	25.6	19.9	14.2
5*HBC-4	500	4.0	8.3	45.6	37.3	29.0	20.7		
				3.0	4.9	44.0	36.0	28.0	20.0
				2.0	2.3	41.2	33.7	26.2	18.7
6*HBC-4	600	5.0	12.6	53.2	43.5	33.9	24.2		
				4.0	8.3	52.0	42.6	33.1	23.6
				3.0	4.9	50.1	41.0	31.9	22.8
8*HBC-4	800	6.0	14.7	68.8	56.3	43.8	31.3		
				4.5	8.9	66.4	54.3	42.3	30.2
				3.0	4.4	62.0	50.7	39.4	28.2
10*HBC-4	1000	7.5	16.1	84.7	69.3	53.9	38.5		
				6.0	10.5	82.5	67.5	52.5	37.5
				4.5	4.5	79.0	64.6	50.3	35.9
13*HBC-4	1300	8.0	20.8	100.5	92.2	63.9	45.7		
				6.5	14.0	97.9	80.1	62.3	44.5
				5.0	8.5	94.1	77.0	69.9	42.8

## HBC-32 2-Row Coil

PSC MOTOR	HEATING CAPACITY (1000 BTUH)								
	MODEL	NOMINAL CFM	GPM	P.D. (F. WTR)	ENTERING WATER TEMP.				
					180°F	160°F	140°F	120°F	
3*HBC-32	300	3.0	10.5	18.3	15.0	11.7	8.3		
				2.0	5.1	17.7	14.5	11.2	8.0
				1.0	1.5	15.9	13.0	10.1	7.2
4*HBC-32	400	3.0	11.2	24.0	19.6	15.2	10.9		
				2.0	5.4	22.8	18.7	14.5	10.4
				1.0	1.6	20.0	16.4	12.7	9.1
5*HBC-32	500	3.0	13.4	28.8	23.5	18.3	13.1		
				2.0	6.4	27.2	22.3	17.3	12.4
				1.0	1.9	23.4	19.1	14.9	10.6
6*HBC-32	600	3.0	13.4	32.1	26.2	20.4	14.6		
				2.0	6.4	30.3	24.8	19.3	13.8
				1.0	1.9	25.8	21.1	16.4	11.7
8*HBC-32	800	4.0	8.4	40.5	33.1	25.8	18.4		
				3.0	4.8	38.6	31.6	24.6	17.5
				2.0	2.2	35.4	28.9	22.5	16.1
10*HBC-32	1000	4.0	8.1	48.2	39.5	30.7	21.9		
				3.0	4.7	45.7	37.4	29.1	20.8
				2.0	2.2	41.3	33.8	26.3	18.8
13*HBC-32	1300	4.0	7.8	56.1	45.9	35.7	25.5		
				3.0	4.3	52.8	43.2	33.6	24.0
				2.0	1.9	47.3	38.7	30.1	21.5

## HBC-41 1-Row Coil

PSC MOTOR	HEATING CAPACITY (1000 BTUH)								
	MODEL	NOMINAL CFM	GPM	P.D. (F. WTR)	ENTERING WATER TEMP.				
					180°F	160°F	140°F	120°F	
3*HBC-41	300	2.0	11.3	14.1	11.6	9.0	6.4		
				1.5	6.7	13.7	11.2	8.7	6.2
				1.0	3.2	13.0	10.6	8.2	5.9
4*HBC-341	400	2.0	14.4	18.2	14.9	11.6	8.3		
				1.5	8.9	17.6	14.4	11.2	8.0
				1.0	4.5	16.3	13.36	10.4	7.4
5*HBC-41	500	2.0	15.0	21.4	17.5	13.6	9.7		
				1.5	9.0	20.5	16.8	13.0	9.3
				1.0	4.4	18.8	15.3	11.9	8.5
6*HBC-41	600	2.0	15.0	23.2	19.0	14.8	10.5		
				1.5	9.0	22.1	18.1	14.1	10.0
				1.0	4.4	20.2	16.5	12.8	9.2
8*HBC-41	800	2.0	18.8	28.4	23.2	18.1	12.9		
				1.5	11.3	26.8	21.9	17.1	12.2
				1.0	5.5	24.1	19.7	15.3	10.9
10*HBC-41	1000	2.0	19.9	33.3	27.2	21.2	15.1		
				1.5	12.3	31.1	25.5	19.8	14.1
				1.0	6.2	27.7	22.7	17.6	12.6
13*HBC-41	1300	2.0	23.4	38.1	31.2	24.2	17.3		
				1.5	14.0	35.4	29.0	22.5	16.1
				1.0	6.8	31.6	25.9	20.1	14.4

### NOTES:

1. Ratings at 70 degree entering air temp.
2. Contact factory for capacities at other conditions

- \* -null - open blower
- P - with insulated return plenum
- R - recessed with telescoping panel
- C - cabinet exposed

# CORRECTION FACTORS

COOLING CAPACITY CORRECTION FACTORS														
MODEL	3HBC		4HBC		5HBC		6HBC		8HBC		10HBC		13HBC	
CFM	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH	TH	SH
150	.70	.64												
175	.75	.70												
200	.80	.76												
225	.85	.82												
250	0.9	.88	.70	.64										
300	1.00	1.00	.76	.71	.70	.64								
325	1.04	1.06	.79	.75	.72	.67								
350	1.10	1.12	.82	.78	.75	.70	.69	.63						
400			.88	.86	.80	.76	.73	.68						
450			.94	.93	.85	.82	.77	.73	.71	.66				
500			1.00	1.00	.90	.88	.81	.77	.74	.69				
550			1.06	1.07	.95	.94	.85	.82	.78	.73	.71	.65		
600			1.12	1.14	1.00	1.00	.89	.87	.81	.78	.74	.68		
700					1.10	1.12	.98	.98	.88	.85	.79	.75	.70	.64
800							1.05	1.06	.95	.94	.85	.82	.74	.69
900							1.14	1.16	1.02	1.02	.90	.88	.78	.74
1000									1.09	1.11	.96	.95	.83	.79
1100									1.15	1.18	1.02	1.02	.87	.85
1200											1.07	1.09	.92	.90
1300											1.12	1.14	1.06	1.05
1400													1.00	1.00
1500													1.04	1.05

TH - Total Heat      SH - Sensible Heat

ARI APPROVED STANDARD RATINGS							
	MODEL	COIL	CFM	PRESS DROP (FT.WTR.)	COOLING (1000 BTUH)		POWER INPUT (WATTS)
					TH	SH	
PSC MOTOR	3*HBC-3	3-ROW	310	8.0	9.8	6.7	120
	4*HBC-3		510	12.5	13.4	9.5	120
	5*HBC-3		600	8.0	16.3	11.0	130
	6*HBC-3		730	10.5	20.0	14.0	230
	8*HBC-3		870	8.0	22.5	17.0	340
	10*HBC-3		1070	8.0	27.8	20.8	450
	13*HBC-3		1400	14.0	35.5	26.5	530
	3*HBC-4	4-ROW	310	12.0	10.8	7.0	120
	4*HBC-4		510	23.2	16.0	10.6	120
	5*HBC-4		600	12.0	18.0	11.8	130
	6*HBC-4		730	18.0	23.0	15.6	230
	8*HBC-4		870	14.0	26.9	18.9	340
	10*HBC-4		1070	14.0	32.2	23	450
	13*HBC-4		1400	24.0	41.5	29.5	530

Rated in accordance with ARI Standard 440.

# HBCX 120V ECM

## BLOWER PERFORMANCE

120V/1/60 ECM MOTOR HBCX SERIES (CONCEALED) - CFM vs ESP (3-ROW)											
MODEL	HP	AMPS/120V	SPEED TAP	EXTERNAL STATIC PRESSURE (inches of water)							
				0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.5
4*HBCX-3	1/7	2	White	480	455	430	405	380	355	330	---
			Green	400	365	330	305	280	250	220	---
			Orange	350	315	280	250	220	195	170	---
			Yellow	280	235	190	155	120	---	---	---
6*HBCX-3	1/7	2	White	690	670	650	635	620	600	580	---
			Green	660	635	610	580	550	540	530	---
			Orange	570	545	520	500	480	455	430	---
			Yellow	480	455	430	410	390	365	340	---
8*HBCX-3	1/2	7	Green	980	945	910	890	870	845	820	720
			Orange	800	780	760	745	730	715	700	660
			Yellow	680	660	640	620	600	580	560	530
			Red	530	510	490	470	450	430	410	360
10*HBCX-3	1/2	7	White	1120	1105	1090	1075	1060	1040	1020	960
			Green	1010	995	980	960	940	925	910	880
			Orange	830	810	790	765	740	720	700	660
			Yellow	690	665	640	620	600	575	550	510
12*HBCX-3	1/2	7	White	1380	1365	1350	1325	1300	1285	1270	1230
			Orange	1180	1165	1150	1130	1110	1090	1070	1030
			Yellow	1080	1070	1060	1045	1030	1010	990	960
			Red	1020	1000	980	960	940	925	910	880
120V/1/60 ECM MOTOR HBCX SERIES (CONCEALED) - CFM vs ESP (4-ROW or 3/1 SPLIT)											
4*HBCX-4-31	1/7	2	White	480	455	430	405	380	355	330	---
			Green	400	365	330	305	280	250	220	---
			Orange	350	315	280	250	220	195	170	---
			Yellow	280	235	190	155	120	---	---	---
6*HBCX-4-31	1/7	2	White	690	670	650	635	620	600	580	---
			Green	660	635	610	580	550	540	530	---
			Orange	570	545	520	500	480	455	430	---
			Yellow	480	455	430	410	390	365	340	---
8*HBCX-4-31	1/2	7	Green	980	945	910	890	870	845	820	720
			Orange	800	780	760	745	730	715	700	660
			Yellow	680	660	640	620	600	580	560	530
			Red	530	510	490	470	450	430	410	360
10*HBCX-4-31	1/2	7	White	1120	1105	1090	1075	1060	1040	1020	960
			Green	1010	995	980	960	940	925	910	880
			Orange	830	810	790	765	740	720	700	660
			Yellow	690	665	640	620	600	575	550	510
12*HBCX-4-31	1/2	7	White	1380	1365	1350	1325	1300	1285	1270	1230
			Orange	1180	1165	1150	1130	1110	1090	1070	1030
			Yellow	1080	1070	1060	1045	1030	1010	990	960
			Red	1020	1000	980	960	940	925	910	880
120V/1/60 ECM MOTOR HBCX SERIES (CONCEALED) - CFM vs ESP (3/2 or 4/1 SPLIT)											
4*HBCX-32-41	1/7	2	White	480	455	430	405	380	355	330	---
			Green	400	365	330	305	280	250	220	---
			Orange	350	315	280	250	220	195	170	---
			Yellow	280	235	190	155	120	---	---	---
6*HBCX-32-41	1/7	2	White	690	670	650	635	620	600	580	---
			Green	660	635	610	580	550	540	530	---
			Orange	570	545	520	500	480	455	430	---
			Yellow	480	455	430	410	390	365	340	---
8*HBCX-32-41	1/2	7	Green	980	945	910	890	870	845	820	720
			Orange	800	780	760	745	730	715	700	660
			Yellow	680	660	640	620	600	580	560	530
			Red	530	510	490	470	450	430	410	360
10*HBCX-32-41	1/2	7	White	1120	1105	1090	1075	1060	1040	1020	960
			Green	1010	995	980	960	940	925	910	880
			Orange	830	810	790	765	740	720	700	660
			Yellow	690	665	640	620	600	575	550	510
12*HBCX-32-41	1/2	7	White	1380	1365	1350	1325	1300	1285	1270	1230
			Orange	1180	1165	1150	1130	1110	1090	1070	1030
			Yellow	1080	1070	1060	1045	1030	1010	990	960
			Red	1020	1000	980	960	940	925	910	880

In attempt to maintain CFM consistency, fins per inch (FPI) vary depending on coil rows and is reflected in CFM and capacity calculations.

**INCLUDES:** 24V TRANSFORMER, LINE VOLTAGE TERMINAL BLOCK, LOW VOLTAGE TERMINAL STRIP, IN FACTORY MOUNTED CONTROL BOX

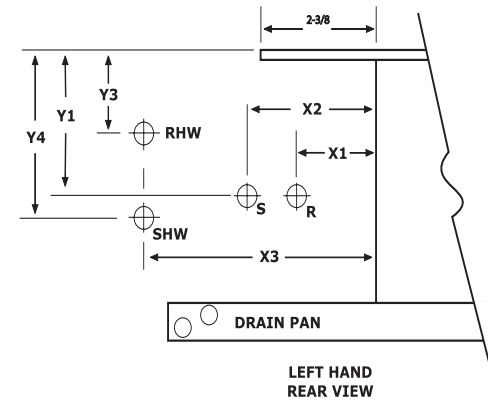
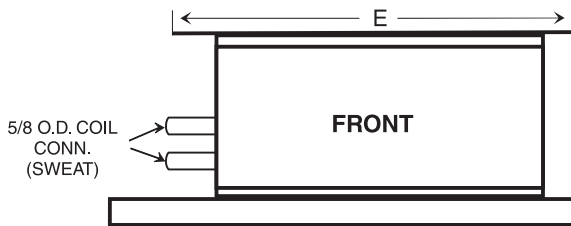
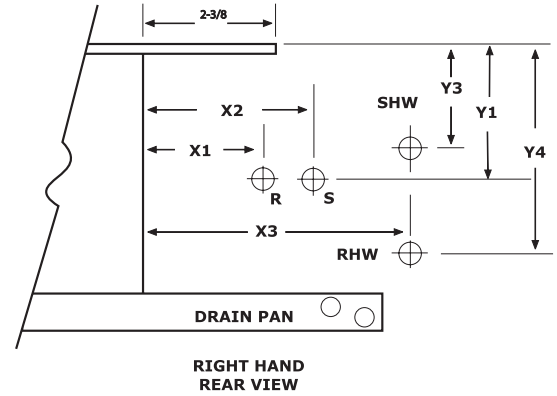
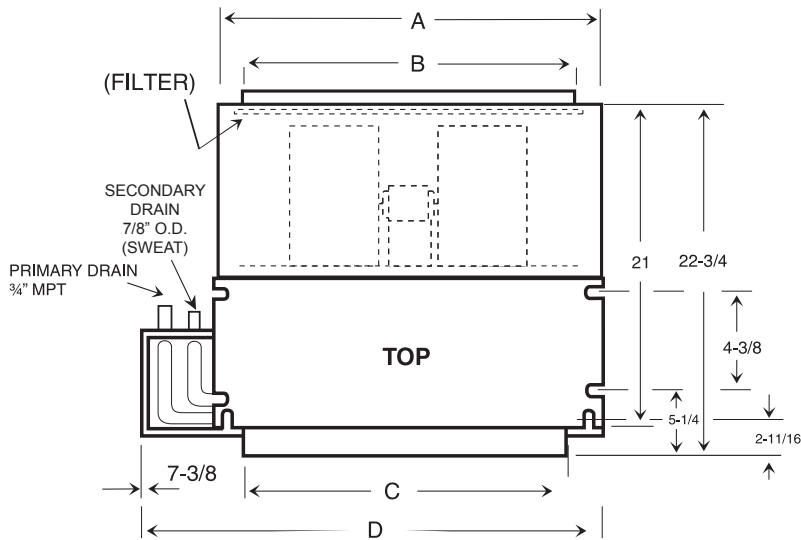


# HBCX 277V ECM

## BLOWER PERFORMANCE

277V/1/60 ECM MOTOR		HBCX SERIES (CONCEALED) - CFM vs ESP (4-ROW or 3/1 SPLIT)									
MODEL	HP	AMPS/277V	SPEED TAP	EXTERNAL STATIC PRESSURE (inches of water)							
				0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.5
4*HBCX-4-31	1/7	1.4	White	500	480	460	405	410	390	370	---
			Green	420	390	360	305	320	290	260	---
			Orange	370	340	310	250	250	220	190	---
			Yellow	290	260	230	155	140	---	---	---
6*HBCX-4-31	1/7	1.4	White	690	670	650	635	610	585	560	---
			Green	640	620	600	580	560	540	520	---
			Orange	540	520	500	500	460	440	420	---
			Yellow	440	420	400	410	360	335	310	---
8*HBCX-4-31	1/2	3.6	Green	990	960	930	890	860	825	790	720
			Orange	840	825	810	745	780	760	740	700
			Yellow	680	660	640	620	600	585	570	540
			Red	500	480	460	470	420	400	380	---
10*HBCX-4-31	1/2	3.6	White	1140	1120	1100	1080	1060	1040	1020	980
			Green	1040	1020	1000	980	960	940	920	880
			Orange	860	840	820	800	780	760	740	700
			Yellow	710	690	670	650	630	610	590	---
12*HBCX-4-31	1/2	3.6	White	1340	1320	1300	1275	1250	1225	1200	1150
			Orange	1230	1220	1200	1175	1150	1125	1100	1050
			Yellow	1130	1110	1090	1070	1050	1020	1000	950
			Red	1040	1020	1000	970	940	920	900	---

# PHBC(X) PHYSICAL DATA

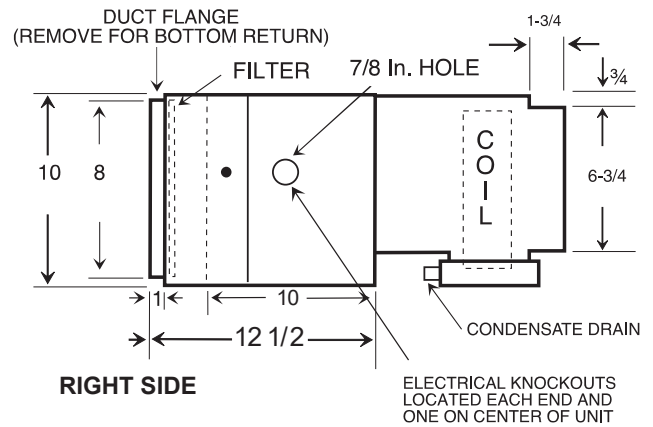


GENERAL DIMENSIONS							
MODEL	A	B	C	D	E	FILTER SIZE (INCL.)	CONNECTIONS PRIMARY O.D.
3*PHBC	24	22	20-1/8	30-1/8	27-1/4	10 X 24	5/8"
4*PHBC(X)	30	28	26-1/8	36-1/8	33-1/4	10 X 30	
5*PHBC	34	32	30-1/8	40-1/8	37-1/4	10 X 34	
6*PHBC(X)	34	32	30-1/8	40-1/8	37-1/4	10 X 34	
8*PHBC(X)	40	38	36-1/8	46-1/8	43-1/4	10 X 40	
10*PHBC(X)	46	44	42-1/8	52-1/8	49-1/4	10 X 46	
12*PHBX(X)	53	51	49-1/8	59-1/8	56-1/4	10 x 53	
13*PHBC	53	51	49-1/8	59-1/8	56-1/4	10 X 53	

(X) - Available with ECM motor

**NOTES:**

1. ALL DIMENSIONS IN INCHES.
2. COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
3. RIGHT HAND UNIT SHOWN - LEFT HAND MODEL HAS DRAIN AND PIPING CONNECTIONS ON OPPOSITE SIDE OF THE FAN COIL. (HAND IS DETERMINED BY FACING THE BLOWER END)



PHBC HEADER LOCATIONS							
RIGHT HAND	X1	Y1	X2	Y2	X3	Y3	Y4
3 ROW	3	4-1/4	5	4	---	---	---
3/1 Split	3	4-1/4	5	4	8	3-1/2	5-1/2
3/2 Split	3	4-1/4	5	4	8	3-1/2	5-1/2
4 ROW	3	4-1/4	5	4	---	---	---
4/1 Split	3	4-1/4	5	4	8	4	6

**NOTES:**

1. Return plenums are insulated.
2. All plenums include throw-away filter.
3. Standard plenums are end return and can be field converted to bottom return.
4. Filter has separate access panel.

PHBC HEADER LOCATIONS							
LEFT HAND	X1	Y1	X2	Y2	X3	Y3	Y4
3 ROW	3	3-3/4	5	4	---	---	---
3/1 Split	3	3-3/4	5	4	8	2-1/2	4-1/2
3/2 Split	3	3-3/4	5	4	8	2-1/2	4-1/2
4 ROW	3	3-3/4	5	4	---	---	---
4/1 Split	3	3-3/4	5	4	8	2	4

# PHBCX 120V ECM

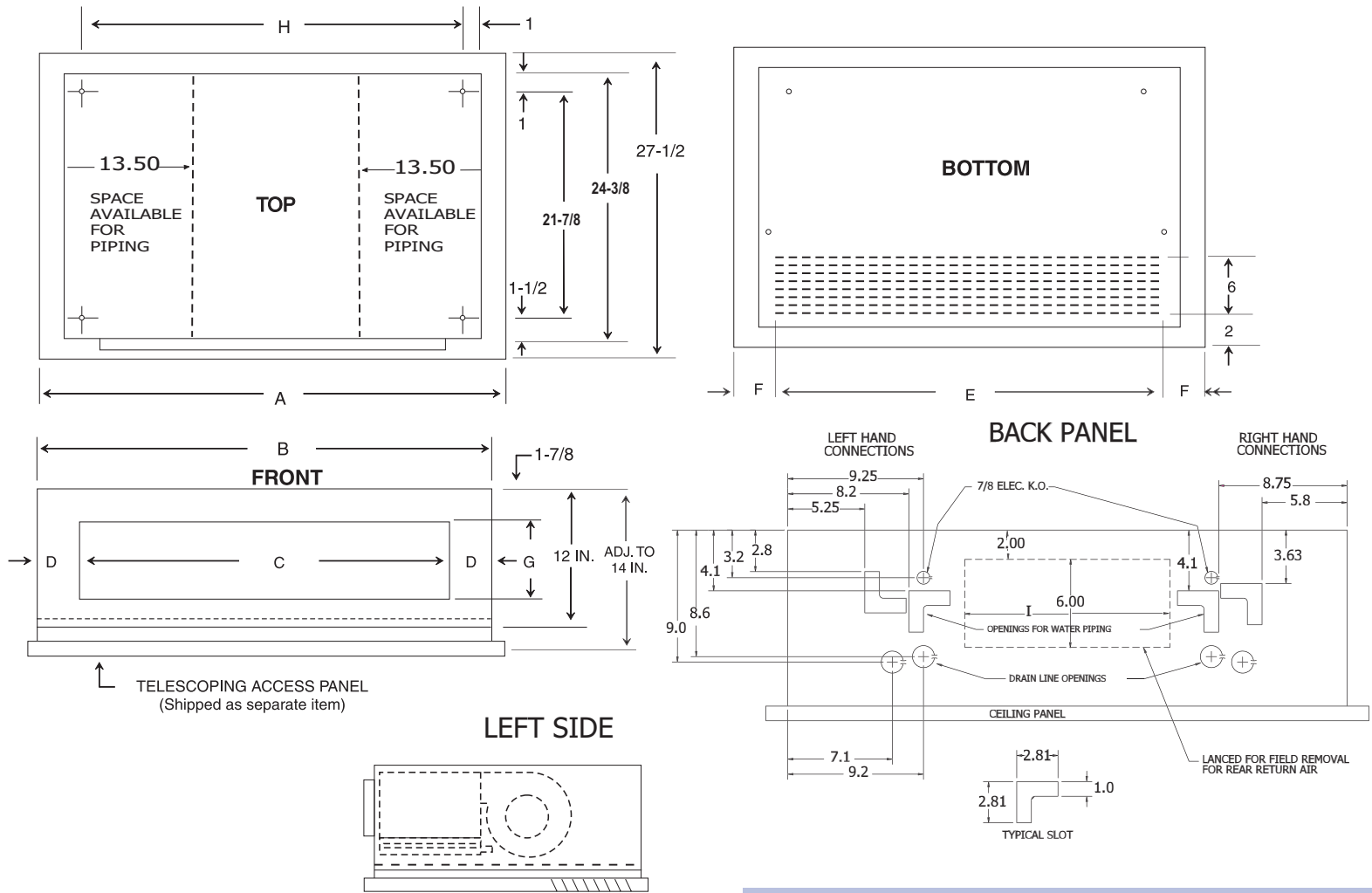
## BLOWER PERFORMANCE

120V/1/60 ECM MOTOR		PHBCX SERIES (PLENUM)- CFM vs ESP (3-ROW)									
MODEL	HP	AMPS/120V	SPEED TAP	EXTERNAL STATIC PRESSURE (inches of water)							
				0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.5
4*PHBCX-3	1/7	2	White	455	430	405	380	355	330	---	---
			Green	365	330	305	280	250	220	---	---
			Orange	315	280	250	220	195	170	---	---
			Yellow	235	190	155	120	---	---	---	---
6*PHBCX-3	1/7	2	White	670	650	635	620	600	580	---	---
			Green	635	610	580	550	540	530	---	---
			Orange	545	520	500	480	455	430	---	---
			Yellow	455	430	410	390	365	340	---	---
8*PHBCX-3	1/2	7	Green	945	910	890	870	845	820	720	---
			Orange	780	760	745	730	715	700	660	---
			Yellow	660	640	620	600	580	560	530	---
			Red	510	490	470	450	430	410	360	---
10*PHBCX-3	1/2	7	White	1105	1090	1075	1060	1040	1020	960	---
			Green	995	980	960	940	925	910	880	---
			Orange	810	790	765	740	720	700	660	---
			Yellow	665	640	620	600	575	550	510	---
12*PHBCX-3	1/2	7	White	1365	1350	1325	1300	1285	1270	1230	---
			Orange	1165	1150	1130	1110	1090	1070	1030	---
			Yellow	1070	1060	1045	1030	1010	990	960	---
			Red	1000	980	960	940	925	910	880	---
120V/1/60 ECM MOTOR		PHBCX SERIES (PLENUM)- CFM vs ESP (4-ROW or 3/1 SPLIT)									
4*PHBCX-4	1/7	2	White	455	430	405	380	355	330	---	---
			Green	365	330	305	280	250	220	---	---
			Orange	315	280	250	220	195	170	---	---
			Yellow	235	190	155	120	---	---	---	---
6*PHBCX-4	1/7	2	White	670	650	635	620	600	580	---	---
			Green	635	610	580	550	540	530	---	---
			Orange	545	520	500	480	455	430	---	---
			Yellow	455	430	410	390	365	340	---	---
8*PHBCX-4	1/2	7	Green	945	910	890	870	845	820	720	---
			Orange	780	760	745	730	715	700	660	---
			Yellow	660	640	620	600	580	560	530	---
			Red	510	490	470	450	430	410	360	---
10*PHBCX-4	1/2	7	White	1105	1090	1075	1060	1040	1020	960	---
			Green	995	980	960	940	925	910	880	---
			Orange	810	790	765	740	720	700	660	---
			Yellow	665	640	620	600	575	550	510	---
12*PHBCX-4	1/2	7	White	1365	1350	1325	1300	1285	1270	1230	---
			Orange	1165	1150	1130	1110	1090	1070	1030	---
			Yellow	1070	1060	1045	1030	1010	990	960	---
			Red	1000	980	960	940	925	910	880	---
120V/1/60 ECM MOTOR		PHBCX SERIES (PLENUM)- CFM vs ESP (3/2 SPLIT)									
4*PHBCX-32	1/7	2	White	455	430	405	380	355	330	---	---
			Green	365	330	305	280	250	220	---	---
			Orange	315	280	250	220	195	170	---	---
			Yellow	235	190	155	120	---	---	---	---
6*PHBCX-32	1/7	2	White	670	650	635	620	600	580	---	---
			Green	635	610	580	550	540	530	---	---
			Orange	545	520	500	480	455	430	---	---
			Yellow	455	430	410	390	365	340	---	---
8*PHBCX-32	1/2	7	Green	945	910	890	870	845	820	720	---
			Orange	780	760	745	730	715	700	660	---
			Yellow	660	640	620	600	580	560	530	---
			Red	510	490	470	450	430	410	360	---
10*PHBCX-32	1/2	7	White	1105	1090	1075	1060	1040	1020	960	---
			Green	995	980	960	940	925	910	880	---
			Orange	810	790	765	740	720	700	660	---
			Yellow	665	640	620	600	575	550	510	---
12*PHBCX-32	1/2	7	White	1365	1350	1325	1300	1285	1270	1230	---
			Orange	1165	1150	1130	1110	1090	1070	1030	---
			Yellow	1070	1060	1045	1030	1010	990	960	---
			Red	1000	980	960	940	925	910	880	---

In attempt to maintain CFM consistency, fins per inch (FPI) vary depending on coil rows and is reflected in CFM and capacity calculations

**INCLUDES:** 24V TRANSFORMER, LINE VOLTAGE TERMINAL BLOCK, LOW VOLTAGE TERMINAL STRIP, IN FACTORY MOUNTED CONTROL BOX

# RHBC(X) PHYSICAL DATA



## NOTES:

1. ALL DIMENSIONS IN INCHES.
2. COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
3. LEFT HAND UNIT SHOWN, RIGHT HAND MIRROR IMAGE.  
(HAND IS DETERMINED BY FACING THE BLOWER END)

## NOTES:

1. Telescoping panel allows the cabinet to be installed to within 2 inches of the ceiling line. The adjustable panel frame ensures a flush installation.
2. Louvered access panel (bottom return) is standard. Specify solid panel if ducted rear return air is required.

GENERAL DIMENSIONS												
MODEL	A	B	C	D	E	F	G	H	I	TELESCOPING LOUVERED ACCESS PANEL	TELESCOPING SOLID ACCESS PANEL	FILTER SIZE (INCL)
3*RHBC	41	38-1/8	29	4-1/2	36-5/8	2-3/16	5-1/2	36	14	968-1	968-1S	10 X 37
4*RHBC(X)	47	44-1/8	35	4-1/2	42	2-1/2	5-1/2	42	20	968-2	968-2S	10 X 43
5*RHBC	51	48-1/8	39	4-1/2	47-1/4	1-7/8	5-1/2	46	24	968-3	968-3S	10 X 47.5
6*RHBC(X)	51	48-1/8	39	4-1/2	47-1/4	1-7/8	5-1/2	46	24	968-3	968-3S	10 X 47.5
8*RHBC(X)	57	54-1/8	45	4-1/2	52-1/2	2-1/4	5-1/2	52	30	968-4	968-4S	10 X 53
10*RHBC(X)	63	60-1/8	51	4-1/2	57-7/8	2-9/16	5-1/2	58	36	968-5	968-5S	10 X 59
12*RHBC(X)	70	67-1/8	58	4-1/2	63-1/8	3-7/16	5-1/2	65	42	968-6	968-6S	10 x 65
13*RHBC	70	67-1/8	58	4-1/2	63-1/8	3-7/16	5-1/2	65	42	968-6	968-6S	10 X 65

(X) - Available with ECM motor

# RHBCX 120V ECM

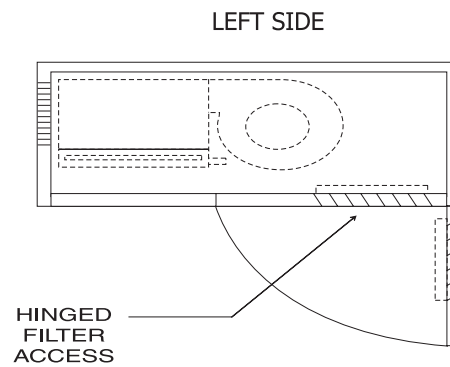
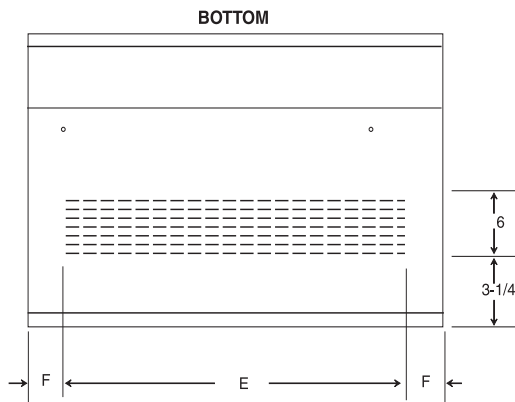
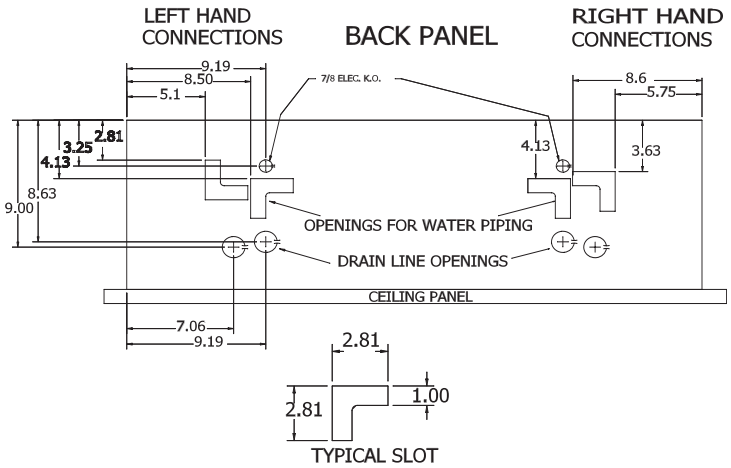
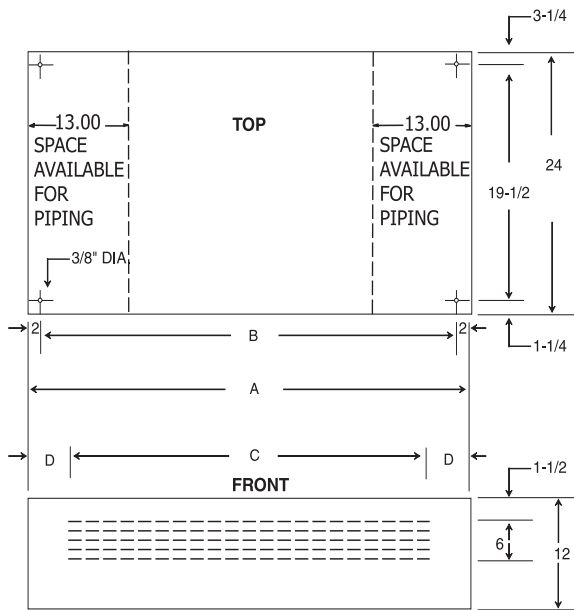
## BLOWER PERFORMANCE

120V/1/60 ECM MOTOR			RHBCX SERIES (RECESSED) - CFM vs ESP (3-ROW)								
MODEL	HP	AMPS/120V	SPEED TAP	EXTERNAL STATIC PRESSURE (inches of water)							
				0.1	0.15	0.2	0.25	0.3	0.35	0.4	0.5
4RHBCX-3	1/7	2	White	430	405	380	355	330	---	---	---
			Green	330	305	280	250	220	---	---	---
			Orange	280	250	220	195	170	---	---	---
			Yellow	190	155	120	---	---	---	---	---
6RHBCX-3	1/7	2	White	650	635	620	600	580	---	---	---
			Green	610	580	550	540	530	---	---	---
			Orange	520	500	480	455	430	---	---	---
			Yellow	430	410	390	365	340	---	---	---
8RHBCX-3	1/2	7	Green	910	890	870	845	820	720	---	---
			Orange	760	745	730	715	700	660	---	---
			Yellow	640	620	600	580	560	530	---	---
			Red	490	470	450	430	410	360	---	---
10RHBCX-3	1/2	7	White	1090	1075	1060	1040	1020	960	---	---
			Green	980	960	940	925	910	880	---	---
			Orange	790	765	740	720	700	660	---	---
			Yellow	640	620	600	575	550	510	---	---
12RHBCX-3	1/2	7	White	1350	1325	1300	1285	1270	1230	---	---
			Orange	1150	1130	1110	1090	1070	1030	---	---
			Yellow	1060	1045	1030	1010	990	960	---	---
			Red	980	960	940	925	910	880	---	---
120V/1/60 ECM MOTOR			RHBCX SERIES (RECESSED) - CFM vs ESP (4-ROW or 3/1 SPLIT)								
4*RHBCX-4	1/7	2	White	430	405	380	355	330	---	---	---
			Green	330	305	280	250	220	---	---	---
			Orange	280	250	220	195	170	---	---	---
			Yellow	190	155	120	---	---	---	---	---
6*RHBCX-4	1/7	2	White	650	635	620	600	580	---	---	---
			Green	610	580	550	540	530	---	---	---
			Orange	520	500	480	455	430	---	---	---
			Yellow	430	410	390	365	340	---	---	---
8*RHBCX-4	1/2	7	Green	910	890	870	845	820	720	---	---
			Orange	760	745	730	715	700	660	---	---
			Yellow	640	620	600	580	560	530	---	---
			Red	490	470	450	430	410	360	---	---
10*RHBCX-4	1/2	7	White	1090	1075	1060	1040	1020	960	---	---
			Green	980	960	940	925	910	880	---	---
			Orange	790	765	740	720	700	660	---	---
			Yellow	640	620	600	575	550	510	---	---
12*RHBCX-4	1/2	7	White	1350	1325	1300	1285	1270	1230	---	---
			Orange	1150	1130	1110	1090	1070	1030	---	---
			Yellow	1060	1045	1030	1010	990	960	---	---
			Red	980	960	940	925	910	880	---	---
120V/1/60 ECM MOTOR			RHBCX SERIES (RECESSED) - CFM vs ESP (3/2 SPLIT)								
4*RHBCX-32	1/7	2	White	430	405	380	355	330	---	---	---
			Green	330	305	280	250	220	---	---	---
			Orange	280	250	220	195	170	---	---	---
			Yellow	190	155	120	---	---	---	---	---
6*RHBCX-32	1/7	2	White	650	635	620	600	580	---	---	---
			Green	610	580	550	540	530	---	---	---
			Orange	520	500	480	455	430	---	---	---
			Yellow	430	410	390	365	340	---	---	---
8*RHBCX-32	1/2	7	Green	910	890	870	845	820	720	---	---
			Orange	760	745	730	715	700	660	---	---
			Yellow	640	620	600	580	560	530	---	---
			Red	490	470	450	430	410	360	---	---
10*RHBCX-32	1/2	7	White	1090	1075	1060	1040	1020	960	---	---
			Green	980	960	940	925	910	880	---	---
			Orange	790	765	740	720	700	660	---	---
			Yellow	640	620	600	575	550	510	---	---
12*RHBCX-32	1/2	7	White	1350	1325	1300	1285	1270	1230	---	---
			Orange	1150	1130	1110	1090	1070	1030	---	---
			Yellow	1060	1045	1030	1010	990	960	---	---
			Red	980	960	940	925	910	880	---	---

In attempt to maintain CFM consistency, fins per inch (FPI) vary depending on coil rows and is reflected in CFM and capacity calculations

**INCLUDES:** 24V TRANSFORMER, LINE VOLTAGE TERMINAL BLOCK, LOW VOLTAGE TERMINAL STRIP, IN FACTORY MOUNTED CONTROL BOX

# CHBC(X) PHYSICAL DATA



## NOTES

1. ALL DIMENSIONS IN INCHES.
2. COIL CONNECTION TOLERANCE  $\pm 1/4"$ .
3. LEFT HAND UNIT SHOWN, RIGHT HAND MIRROR IMAGE.  
(HAND IS DETERMINED BY FACING THE BLOWER END)

## NOTES

1. Side panels are removable for easier valve access.

GENERAL DIMENSIONS								
MODEL	A	B	C	D	E	F	FILTER SIZE (INCL)	CONNECTIONS PRIMARY O.D.
3*CHBC	38	34	26	6	31-1/2	3-1/2	10 X 37	5/8"
4*CHBC(X)	44	40	31-1/2	6	37	3-1/2	10 X 43	
5*CHBC	48	44	37	5-1/2	42-1/2	3	10 X 46	
6*CHBC(X)	48	44	37	5-1/2	42-1/2	3	10 X 46	
8*CHBC(X)	54	50	42-1/2	6	48	3	10 X 53	
10*CHBC(X)	60	56	48	6	53	3-1/2	10 X 59	
12*CHBC(X)	67	63	53	7	58-1/2	4	10 X 65	
13*CHBC	67	63	53	7	58-1/2	4	10 X 65	

(X) - Available with ECM motor

# CHBCX 120V ECM

## BLOWER PERFORMANCE

120V/1/60 ECM MOTOR		CHBCX SERIES (EXPOSED) - CFM (3-ROW)		
MODEL	HP	AMPS/120V	SPEED TAP	CFM
4*CHBCX-3	1/7	2	White	480
			Green	400
			Orange	350
			Yellow	280
6*CHBCX-3	1/7	2	White	690
			Green	660
			Orange	570
			Yellow	480
8*CHBCX-3	1/2	7	Green	980
			Orange	800
			Yellow	680
			Red	530
10*CHBCX-3	1/2	7	White	1120
			Green	1010
			Orange	830
			Yellow	690
12*CHBCX-3	1/2	7	White	1380
			Orange	1180
			Yellow	1080
			Red	1020
120V/1/60 ECM MOTOR		CHBCX SERIES (EXPOSED) - CFM (4-ROW or 3/1 SPLIT)		
MODEL	HP	AMPS/120V	SPEED TAP	CFM
4*CHBCX-4	1/7	2	White	480
			Green	400
			Orange	350
			Yellow	280
6*CHBCX-4	1/7	2	White	690
			Green	660
			Orange	570
			Yellow	480
8*CHBCX-4	1/2	7	Green	980
			Orange	800
			Yellow	680
			Red	530
10*CHBCX-4	1/2	7	White	1120
			Green	1010
			Orange	830
			Yellow	690
12*CHBCX-4	1/2	7	White	1380
			Orange	1180
			Yellow	1080
			Red	1020
120V/1/60 ECM MOTOR		CHBCX SERIES (EXPOSED) - CFM (3/2 SPLIT)		
MODEL	HP	AMPS/120V	SPEED TAP	CFM
4*CHBCX-32	1/7	2	White	480
			Green	400
			Orange	350
			Yellow	280
6*CHBCX-32	1/7	2	White	690
			Green	660
			Orange	570
			Yellow	480
8*CHBCX-32	1/2	7	Green	980
			Orange	800
			Yellow	680
			Red	530
10*CHBCX-32	1/2	7	White	1120
			Green	1010
			Orange	830
			Yellow	690
12*CHBCX-32	1/2	7	White	1380
			Orange	1180
			Yellow	1080
			Red	1020

In attempt to maintain CFM consistency, fins per inch (FPI) vary depending on coil rows and is reflected in CFM and capacity calculations

**INCLUDES:** 24V TRANSFORMER, LINE VOLTAGE TERMINAL BLOCK, LOW VOLTAGE TERMINAL STRIP, IN FACTORY MOUNTED CONTROL BOX

# ACCESS PANELS /FILTER



*STANDARD PANEL OPTIONS FOR HBC SERIES					*IAQ MERV 8 PANEL OPTIONS FOR HBC SERIES				
PART #	UNIT SIZE	PANEL TYPE	FRAME DIMENSIONS	*FILTER SIZE	PART #	UNIT SIZE	PANEL TYPE	FRAME DIMENSIONS	*FILTER SIZE
965	3,4,5,6	LOUVERED	27-1/2 X 43	20X20X1 (1)	965-M8	3,4,5,6	LOUVERED	27-1/2 X 43	20X30X1 (1)
965-1		SOLID							
966	8	LOUVERED	27-1/2 X 49	20X20X1 (1)	966-M8	8	LOUVERED	27-1/2 X 49	20X20X1 (2)
966-1		SOLID							
967	10	LOUVERED	27-1/2 X 55-1/2	20X20X1 (1)	967-M8	10	LOUVERED	27-1/2 X 55-1/2	20X20X1 (2)
967-1		SOLID							
967-4	12/13	LOUVERED	27-5/8 X 70-1/8	10X65X1 (1)	967-8M8	12/13	LOUVERED	27-5/8 X 70-1/8	20X30X1 (2)
967-5		SOLID							

NOTE: \* Filters not included

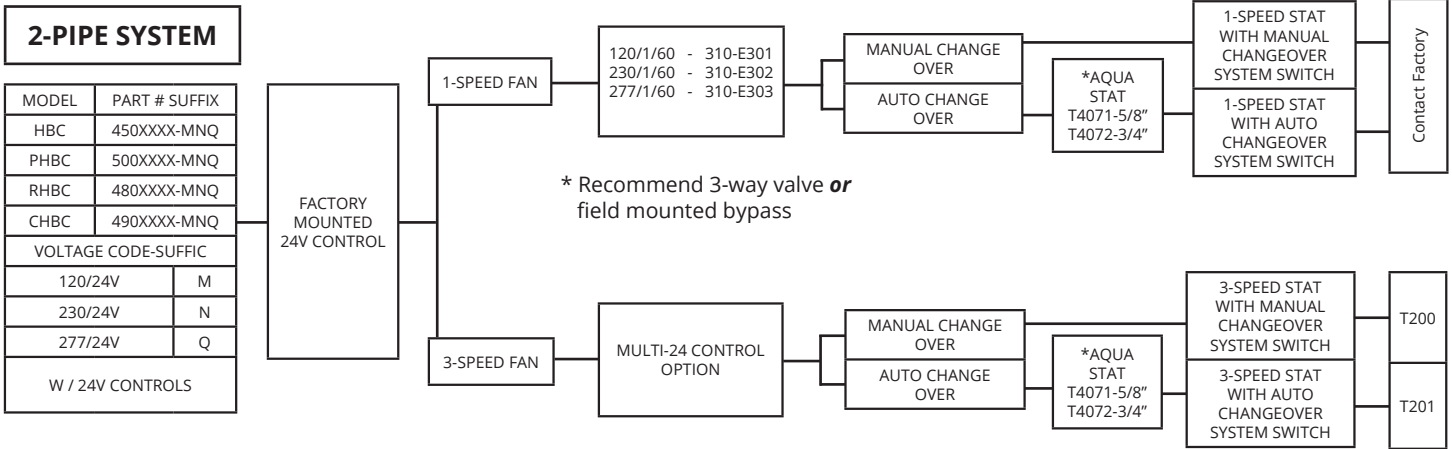
IAQ PANEL PERFORMANCE DATA (4) (Clean Filter)											
	CFM										
	500	600	700	800	900	1000	1100	1200	1300	1500	
965-M8 with AF20301HV (20x030, Merv 8) Filters (2)	0.04	0.06	0.06	0.08	0.09	0.10	---	---	---	---	
966-M8 with AF20201HV (20x020, Merv 8) Filters (2)	0.04	0.06	0.06	0.08	0.09	0.10	---	---	---	---	
967-M8 with AF20201HV (20x020, Merv 8) Filters (2)	---	0.05	0.05	0.07	0.08	0.10	---	---	---	---	
967-6-M8 with AF20251HV (20x025, Merv 8) Filters (2)	---	---	---	0.05	0.06	0.07	0.08	0.09	---	---	
967-8-M8 with AF20301HV (20x30, Merv 8) Filters (2)	---	---	---	---	---	0.06	0.06	0.08	0.08	0.10	

**NOTES:**

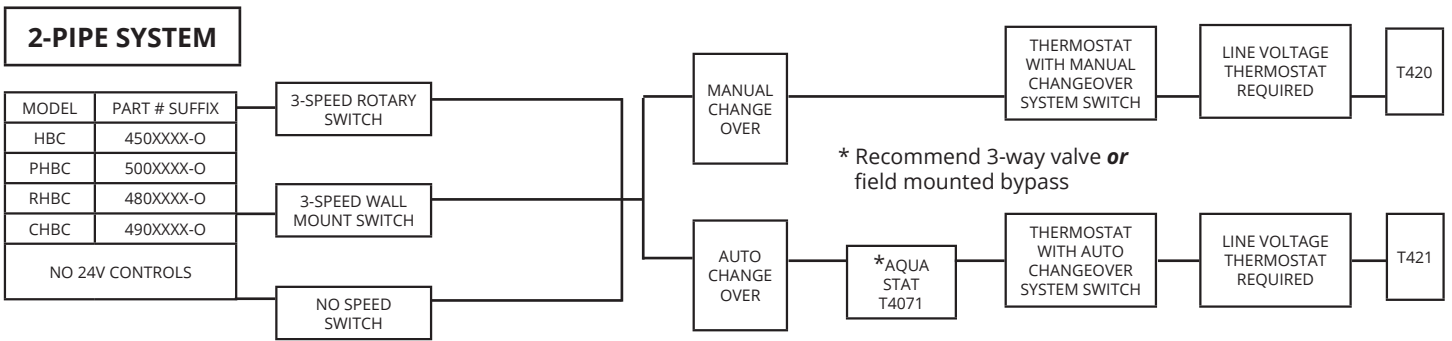
1. The above is the actual laboratory test data on these panels.
2. Glassfloss® Industries HV series Merv 8 filters were used to generate above data (**filters must be field supplied**)
3. Alternate Merv 8 filters would be acceptable provided they have equal or less resistance.
4. Refer to fan coil specification sheets for fan coil blower data.



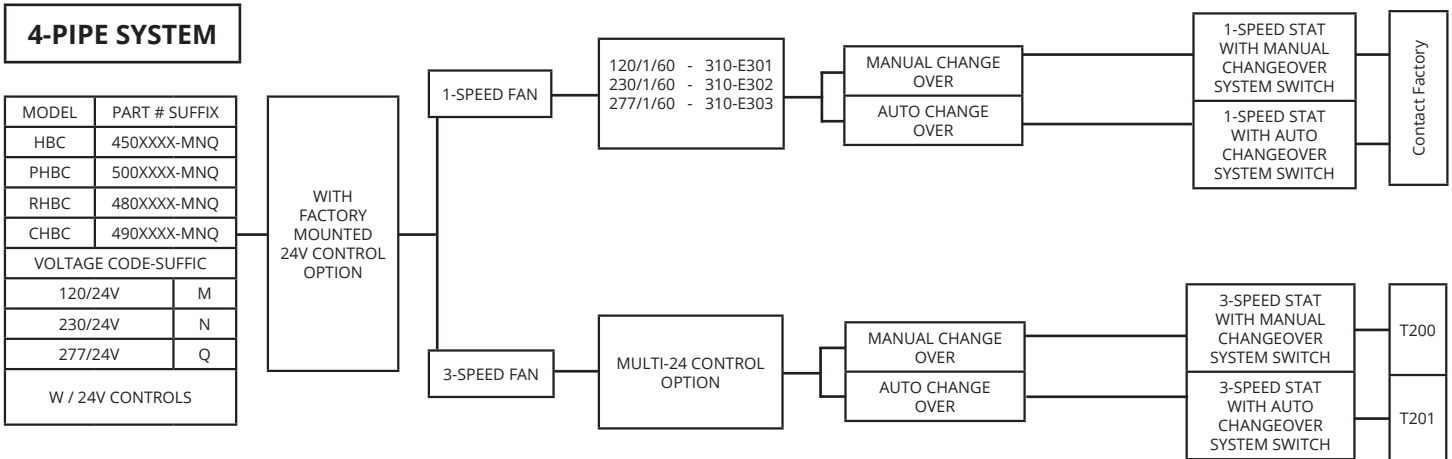
## LOW VOLTAGE 24V CONTROLS



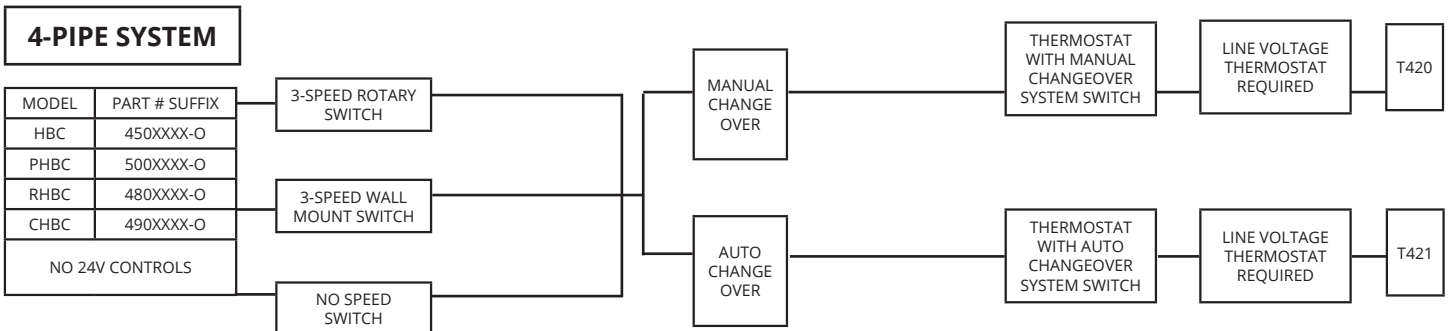
## LINE VOLTAGE 120/230/277V CONTROLS



## LOW VOLTAGE 24V CONTROLS


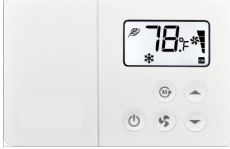


## LINE VOLTAGE 120/230/277V CONTROLS






# ACCESSORIES

## THERMOSTATS

<p>T420 - Manual Changeover with 3 speed fan switch</p> <p>T421 - Auto Changeover with 3 speed fan switch</p>	<p>3-Speed Fan Switching</p> 	<p>HEAT-OFF-COOL System Switch          Accepts 24 to 277 VAC., 50 or 60 Hz          Maximum Ambient: 130°F          Optional Remote Thermistor Probe          Set Point Range: 50-90°F          Agency Approvals: ETL, UL Canada CE          Mounting: Installs to a standard 2" x 4" devise box</p>
<p>T200 - Manual Changeover with Digital Display with Auto Speed Fan Switch</p> <p>T201 - **Auto Changeover with Digital Display with Auto Speed Fan Switch</p>	<p>3-Speed Fan Switching</p> 	<p>HEAT/COOL System Switch, Manual or Auto          3-Speed Fan switch with Auto Speed Feature          Separate On-Off Switch          18-30 VAC, 50/60 Hz          Temperature Accuracy: <math>\pm 1.8^\circ\text{F}</math>          Ambient Temperature: 50-122°F          Set Point Range: 64-88°F</p>

## SINGLE SPEED THERMOSTATS


<p>T630 - Manual Changeover Digital Display, Single Speed Fan</p>	<p>1-Speed Fan (on-Auto)</p> 	<p>HEAT-OFF-COOL System Switch Manual Changeover          18-30 VAC, 50/60 Hz          Temperature Accuracy: <math>\pm 1.0^\circ\text{F}</math>          Ambient Temperature: 14-140°F          Set Point Range: 45-90°F          DC Power: 3.0 Volt DC          (2 AA Alkaline batteries included)</p>
<p>T832          7-Day Programmable          1 heat, 1 cool,          Single Speed,          Touch Screen display,          C7189 Remote sensor available</p>	<p>1-Speed Fan (On-Auto)</p> 	<p>HEAT-OFF-COOL-AUTO          Fan Options: Auto-on Circ          20 - 30 Vac, 50/60 Hz          Ambient Temperature: 0-120o F          Set Point Range: Clg. 50-99°F Htg. 40-90°F          Powering methods:              Battery only              Common wire only              Common wire with battery backup</p>
<p>T4071 5/8          T4072 7/8          Auto Changeover Requires Aquastat          (2-pipe applications)</p>		<p>Strap-on Aquastat 5/8" O.D. Tubing          10 amps induction          60 amps locked rotor          25 amps resistive          Temperature Changes at 95°F + 10°F          Resets at 65°F + 5°F</p>

# ACCESSORIES


## 3-SPEED ROTARY SWITCH

W/OFF POSITION	E332		<p><b>Resistive Load (Switching Capacity) Rating</b>            10 Amps at 125 VAC            5 Amps at 250/277 VAC</p> <p><b>Inductive (Motorload) Ratings</b>            1/4 HP at 125/277 VAC            1/2 HP at 250 VAC</p> <p><b>Standard Switch and Shaft Dimensions</b>            2" x 1-1/2" x 11/16"            3/16" Square Shaft with 13/32" Extension            15/32" Double D 32 Threaded Bushing with 1/4" Extension            6-1/2" Long Leads</p>
NO OFF POSITION	E332-1		


## WALL MOUNT 3-SPEED SWITCH

3-SPEED SWITCH ON/OFF WALL MOUNT	T422		<p><b>Resistive Load (Switching Capacity) Rating</b>            6 Amps at 125 VAC            5 Amps at 230 VAC            4.2 Amps at 277 VAC</p> <p><b>Inductive (Motorload) Ratings</b>            1/4 HP at 125/277 VAC            1/2 HP at 250 VAC</p> <p>Horizontal mount with manual on/off switch and manual three speed fan switch.            Operation with system switch in on position, fan operation is continuous, can be set at one of three speeds.            With system switch in off position, all outputs are off.</p>
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## OPTIONAL SERVICE SWITCH (15 AMP)

<b>Voltage</b>	<b>Part #</b>		<p>2 x 4 Service Switch            Toggle Switch 15 Amp            Single Pole            2 X 4 J-Box            2 X 4 Switch Cover - Galvanized Steel</p>
120/1/60	945-6		
230/1/60	945-7		
277/1/60	945-7		
220/1/50	945-7		

## SINGLE SPEED FAN (24V Control Circuit)

<b>Voltage</b>	<b>Part #</b>		<p>Relay Transformer Assembly            30 Amp, single pole, normally open, 24v coil            18 GA. 4.25 X 4.25 mounting plate            Factory assembled and wired</p>
120/1/60	310-E301		
230/1/60	310-E302		
277/1/60	310-E303		

## THREE SPEED FAN (24V Control Circuit)

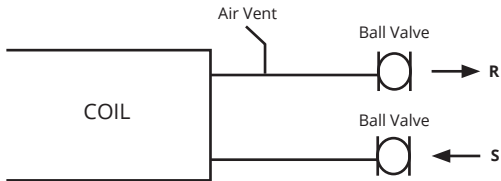
Multi-24		<p>3-SPEED CONTROL OPTION FOR HBC SERIES FAN COILS            FACTORY MOUNTED CONTROLS INCLUDE CB500 RELAY BOARD, 24V TRANSFORMER, (15 AMP) SERVICE SWITCH</p>
FACTORY MOUNTED OPTION ONLY		

# PIPING PACKAGE OPTIONS

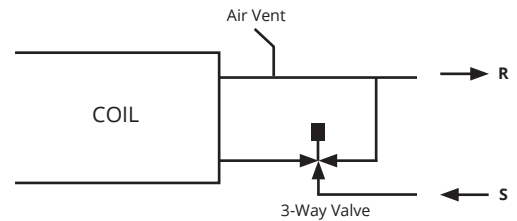
## TWO POSITION OR MODULATING

Manual air vents are standard and are factory mounted on all chilled water and hot water coils. All pre-piped on/off or modulating valve packages are factory assembled with sweat connections.

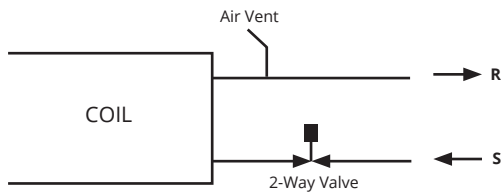
**Ball Valves only, No Control Valve**



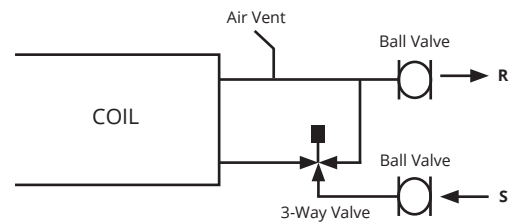
**3-Way Valve, No Ball Valves**



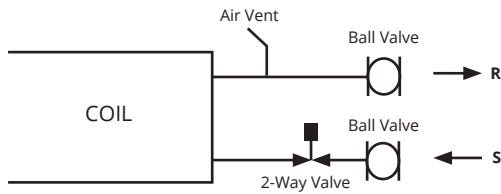
**2-Way Valve, No Ball Valves**



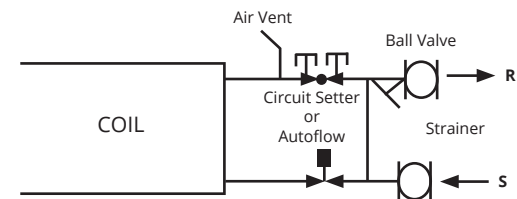
**3-Way Valve, with 2-Ball Valves**



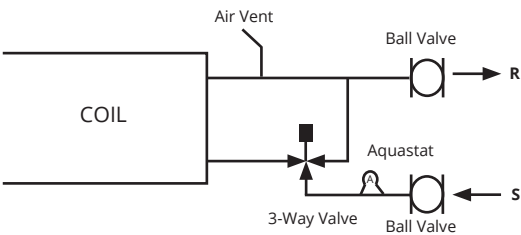
**2-Way Valve with 2-Ball Valves**



**3-Way Valve, with 2-Ball valve and Manual Circuit Setter or Automatic Flow Control, Y-Strainer, PT's**



**3-Way Valve with 2-Ball Valves and Aquastat**




### Add Options:



Y-Strainers, Pete's Plugs, Cleanout Blow-down, SS hose kits, Aquastats

**Additional options and configurations may be available. Contact factory for availability.**

**Valve packages are available as kits or factory mounted on certain products. Contact factory for availability.**

# VALVE PACKAGES & ACCESSORIES







ACTUATOR		
<b>2-POSITION (ON-OFF) 50/60HZ</b>		 <p>2-Way Valve and Actuator</p>
VOLTAGE	PART #	
24V	E50131180	
120/1/60	E50132180	
230/1/60	E50138180	
277/1/60	E50137180	

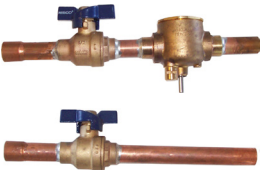
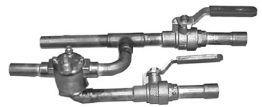
VALVE BODIES (2-POSITION)	
E43XXXX 3-WAY	E42XXXX 2-WAY
	

ACTUATOR MATERIALS		
BASE	POLYCARBONATE	<b>APPROVALS</b> ETL Cul CE
COVER	POLYCARBONATE	
BASE PLATE	ALUMINUM	
LEAD LENGTH	6" - (24V 18")	
POWER REQUIREMENTS	6.5W, 7 VA	
AMBIENT TEMPERATURE RANGE	32 TO 170 F	
MICRO SWITCH	5 A, 250 V	
HUMIDITY	95% NON-CONDENSING	

VALVE BODY MATERIALS	
BODY	BRASS
STEM	STAINLESS STEEL
TWO O-RINGS SEALS	EPDM
PADDLE	EPDM
FLUID	WATER/GLYCOL
MAXIMUM % OF GLYCOL	50%
TEMPERATURE RANGE	32 TO 230
MAXIMUM STATIC PRESSURE	300 PSI
SWEAT CONNECTION	1/2", 3/4", 1"

FLOW CHARACTERISTICS		
Connection Size	Flow Coefficient	Maximum Close-Off Pressure AP
1/2"	1.0 Cv	75
1/2"	2.5 Cv	50
3/4"		
1/2"	3.5 Cv	30
3/4"		
3/4"	5 Cv	25
1"		
3/4"	7.5 Cv	20
1"		
1"	8 Cv	20

VALVE PACKAGE ACCESSORIES				
Automatic Fixed Flow Control			Manual Adj. Flow Setter	
1/2"	3/4"		1/2"	3/4"
CP654XXXXX	CP655XXXXX		CP601	CP6011
PETE'S PLUG	Requires CP6025 CP61712			
Ball Valves (Sweat) Full Port (T-Handle)			Y-Strainer (Sweat)	
1/2"	3/4"	1"	1/2"	3/4"
CP-9	CP-90	CP-905	CP603	CP6031
				
EXTENDED DRIP LIPS	919-1 15"			
	919-1X1ss 15"			
	919-1EXT 19"			

STANDARD VALVE PACKAGE FACTORY MOUNTED 2-POSITION (ON-OFF)	
2-WAY 9VH*22BM WITH 2-BV'S	
3-WAY 9VH*23BM WITH 2-BV'S	

# GUIDE SPECIFICATIONS

## Part 1 — General

### 1.01 SECTION INCLUDES

A. Fan Coil Units

### 1.02 REFERENCES

AMCA 99 – Standards Handbook

AMCA 210 -- Laboratory Methods for Testing Fans for Rating Purposes

AMCA 300 – Test Code for Sound Rating Air Moving Devices

ARI 440 – Room Fan-Coil Unit

ASTMB117 – Standard Practice for Operating Salt Spray Apparatus

NEMA MGI – Motors and Generators

NFPA 70 – National Electric Code

SMACNA – HVAC Duct Construction Standards – Metal and Flexible

UL 723 – Test for Surface Burning Characteristics of Building Materials

UL 900 – Test Performance of Air Filter Units

UL 1995 – Standard for Heating and Cooling Equipment

UL 94 – Test for Flammability of Plastic Materials for Parts in Devices and Appliances

### 1.03 SUBMITTALS

A. Shop drawings: Indicate assembly, unit dimensions, weight loading, required clearances, construction details, field connection details, and electrical characteristics and connection requirements. A computer generated capacity selection shall be submitted for each cooling coil with design points and final operating point clearly noted.

B. Product Data:

1. Provide literature that indicates dimensions, weights, capacities, ratings, fan performance, finishes of materials, and electrical characteristics and connection requirements.

2. Provide data of filter media, filter performance data.

3. Manufacturer's installation instructions.

### 1.04 OPERATION AND MAINTENANCE DATA

A. Maintenance Data: Include instructions for lubrication, filter replacement and motor and drive replacement.

### 1.05 QUALIFICATIONS

A. Maintenance Data: Include instructions for lubrication, filter replacement and motor and drive replacement.

### 1.06 DELIVERY, STORAGE, AND HANDLING

A. Accept products on site on factory-installed shipping skids. Inspect for damage.

B. Store in clean dry place and protect from weather and construction traffic. Handle carefully to avoid damage to components, enclosures, and finish.

### 1.07 ENVIRONMENTAL REQUIREMENTS

A. Do not operate units for any purpose, temporary or permanent, until ductwork is clean, filters are in place, and fan has been test run under observation.

# GUIDE SPECIFICATIONS (CONT.)

## Part 2 — Products

### 2.01 MANUFACTURERS

- A. The following manufacturers are approved for use. No substitutions will be permitted.
1. First Company, Dallas TX

### 2.02 CASING

- A. Unit shall have corrosion resistant casing consisting of galvanized steel panels. Unit panels shall be fully insulated with 1.5lb fiberglass insulation with anti-microbial agent. Removable panels shall provide full access to unit components..
- B. Drain pans shall be heavy gauge galvanized steel with an insulating coating. Optional stainless steel drain pan shall include an insulating coating. Drain pans shall be removable for cleaning or replacement without removing coils or disturbing coil connections.

### 2.03 SUPPLY FAN

- A. Provide DWDI forward-curved supply fans. Fan assemblies shall be statically and dynamically balanced by manufacturer. The housings are constructed from heavy gauge galvanized steel with die-formed inlet cones.
- B. Fan and motor mounting platform shall be a minimum of 12 gauge LFQ galvanized steel.

### 2.04 MOTORS

- A. Direct drive motors to be PSC or ECM type, permanently lubricated type with internal thermal overload protection and mounted with rubber isolation bushings.

### 2.05 ELECTRICAL

- A. Provide units with 115, 208-230, or 277V, 3-speed with 24v control transformer, and 15 amp service switch or optional ECM motor with 120/24V control transformer, 15 amp service switch, 4 speed taps. Controls to be factory mounted and tested.

### 2.07 COOLING AND HEATING COIL SECTIONS

- A. Provide access to coils for service and cleaning..
- B. Water Coils: fins shall have full drawn collars to provide a continuous surface cover over the entire tube for maximum heat transfer. Tubes shall be mechanically expanded into the fins to provide a continuous primary-to-secondary compression bond over the entire finned length for maximum heat transfer rates. Bare copper tube shall not be visible between fins. Coil tubes shall be seamless copper, expanded into fins, and brazed at joints. Coil connections shall be copper with sweat connection size to be determined by manufacturer based upon the most efficient coil circuiting. Manual air vent connections shall be provided at the highest point to assure proper venting. Coils shall be tested with 350 pounds air pressure and suitable for 300 psig working pressure. Coil casings shall be a formed channel frame of galvanized steel.

### 2.08 FILTERS

- A. Filter to be disposable type and media shall be UL 900 listed, Class I or Class II.

## Part 3 — Execution

### 3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.





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