

# "VARIABLE SPEED"



## V\_HBX Series

### Variable Speed

1.5 - 5.0 Tons Cooling and Heat Pump

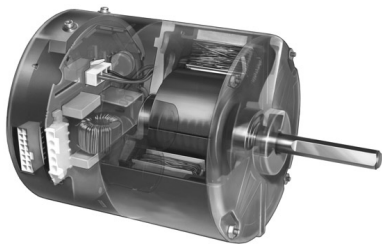
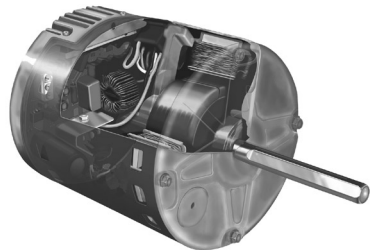
0 - 25kW Electric Heat

Upflow / Horizontal



**VOHBX Model** - Reversing valve energizes in cooling mode

**VBHBX Model** - Reversing valve energizes in heating mode



Variable Speed Motor

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

**High Efficiency** - At full load conditions the **V\_HBX** motor is 20% more efficient than an induction motor and at constant fan speed it consumes only 60-80 watts of power compared to 400 watts for a standard induction motor. In addition, the **V\_HBX** includes a high efficiency "A" coil with factory installed TXV for precise refrigerant control in either cooling or heat pump mode.

**(1) First Co's customer is ultimately responsible for confirming which fan coil models are compatible with selected outdoor unit(s) and which expansion valves are required. To determine approved indoor/outdoor matches, go to [www.firstco.com](http://www.firstco.com) or contact the factory.**

**Quiet Operation** - The versatile **V\_HBX** motor quietly "ramps up" when the unit is turned on and "ramps down" when the thermostat is satisfied, eliminating the annoying sounds of changing airflow.

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

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

#### Additional Standard Features

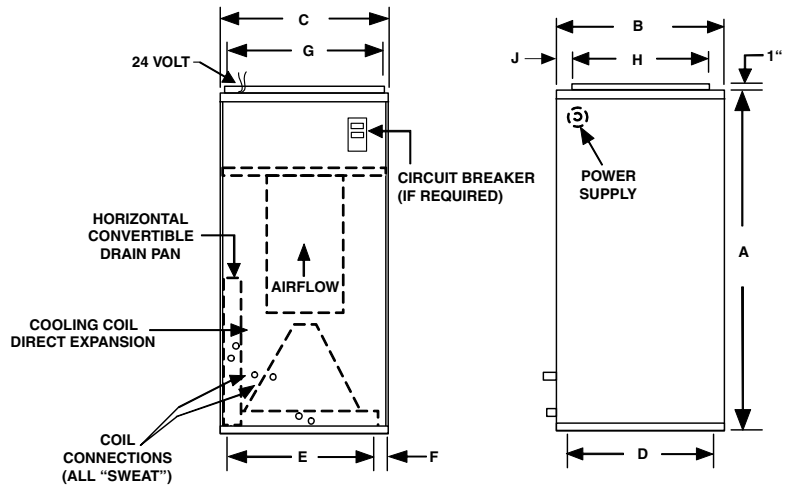
- Factory installed R22 or R410a TXV (cooling or heat pump operation)
- Factory installed electric heat (0-25kW)
- 208/240V motor
- Upflow / horizontal drain pans
- Higher efficiency pleated filter
- Factory installed disconnect switch (over 10kW)
- Compatible with major brands of split condensing units or heat pumps
- Primary and secondary drain connections on cooling coil
- Insulated cabinet with baked-on powder coat finish
- Compatible with most properly sized and installed zone control systems. Contact the zone control manufacturer.

# V\_HBX Series

## Cooling with Electric Heat



(See P.4 for Model Numbers)



PHYSICAL DIMENSIONS										
UNIT MODEL	A	B	C	D	E	F	G	H	J	FILTER SIZE
24V_HBX	40	20	20	18-1/2	16	2	18	16	3	18 X 20 X 1
36V_HBX	42	23	20	21-1/2	16	2	18	17	5	20 X 22 X 1
48/60V_HBX	48	28	21-1/4	26-1/4	17	2	19-1/4	18-1/4	8-7/8	20 X 25 X 1

AIR FLOW DATA (see "heating select taps" below each table for proper field set-up)													
MODEL	OPERATING MODE	THERMOSTAT TERMINALS				CONTROL BOARD SELECT TAPS							
		"X" ENERGIZED TERMINALS				COOL TAP				HEAT TAP			
		Y1	G	O	W1	A	B	C	D	A	B	C	D
24V_HBX	COOLING	X	X	X		800	720	600	525				
	CONTINUOUS BLOWER		X			400	360	300	265				
	HEAT PUMP HEATING	X	X			720	650	600	550				
	ELECTRIC HEAT				X					790	730	660	600
<b>Heating Select Taps</b> A 2 ton outdoor unit with 0 - 10 kW electric heat B 2 ton outdoor unit with 0 - 5 kW max. electric heat C 1-1/2 ton outdoor unit with 0 - 10 kW electric heat D 1-1/2 ton outdoor unit with 0 - 5 kW max. electric heat													
36V_HBX	COOLING	X	X	X		1200	1050	950	850				
	CONTINUOUS BLOWER		X			600	525	475	425				
	HEAT PUMP HEATING	X	X			1080	950	850	760				
	ELECTRIC HEAT				X					1130	1000	875	790
<b>Heating Select Taps</b> A 3 or 2-1/2 ton outdoor unit with 0 - 15 kW electric heat B 3 or 2-1/2 ton outdoor unit with 0 - 10 kW max. electric heat C 2-1/2 ton outdoor unit with 0 - 10 kW electric heat D 2-1/2 ton outdoor unit with 0 - 5 kW max. electric heat													
48V_HBX	COOLING	X	X	X		1600	1400	1250	1100				
	CONTINUOUS BLOWER		X			800	700	625	550				
	HEAT PUMP HEATING	X	X			1440	1260	1125	990				
	ELECTRIC HEAT				X					1500	1360	1190	1060
<b>Heating Select Taps</b> A+10% 4 or 3-1/2 ton outdoor unit with 20 - 25 kW electric heat A 4 or 3-1/2 ton outdoor unit with 10 - 20 kW max. electric heat B 4 or 3-1/2 ton outdoor unit with 0 - 10 kW max. electric heat C 3-1/2 ton outdoor unit with 10 - 15 kW electric heat D 3-1/2 ton outdoor unit with 0 - 10 kW max. electric heat													
60V_HBX	COOLING	X	X	X		2000	1800	1600	1400				
	CONTINUOUS BLOWER		X			1000	900	800	700				
	HEAT PUMP HEATING	X	X			1800	1625	1450	1250				
	ELECTRIC HEAT				X					1875	1700	1500	1300
<b>Heating Select Taps</b> A 5 or 4 ton outdoor unit with 15 - 25 kW electric heat B 5 or 4 ton outdoor unit with 0 - 15 kW max. electric heat C 4 ton outdoor unit with 10 - 20 kW electric heat D 4 ton outdoor unit with 0 - 10 kW max. electric heat													

COIL CONNECTIONS		
UNIT SIZE	LIQUID	SUCTION
24	3/8	5/8
36	3/8	3/4
46/60	1/2	7/8

ACCESSORIES:		
Programmable Thermostat		
Part Number	Description	For
T832	Touchscreen, 7-day programmable, with humidity control	All Models

**NOTE:** Contact factory for brochure



**T832**

For additional sales and technical information on variable speed motors, visit [www.thedealertools.com](http://www.thedealertools.com)

Airflow shown are at standard air conditions, dry coil at 240 volts.  
Max. ext. static pressure is 0.50" wtr

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

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

# V\_HBX Series

## Cooling with Electric Heat

(See P.4 for Model Numbers)

PERFORMANCE DATA - 240V												
UNIT MODEL	kW (@ 240V)	MOTOR AMPS	MOTOR HP	L1 - L2 TOTAL AMPS 240V/208V	L1 - L2 MIN. CIR. AMPACITY 240V/208V	L1 - L2 MAX. CIR. PROTECTION 240V/208V	L3 - L4 TOTAL AMPS 240V/208V	L3 - L4 MIN. CIR. AMPACITY 240V/208V	L3 - L4 MAX. CIR. PROTECTION 240V/208V	L5 - L6 TOTAL AMPS 240V/208V	L5 - L6 MIN. CIR. AMPACITY 240V/208V	L5 - L6 MAX. CIR. PROTECTION 240V/208V
24V_HBX0	0	1.9	1/3	1.9	3/3	15/15	---	---	---	---	---	---
24V_HBX3	3	1.9	1/3	15/13	18/16	20/20	---	---	---	---	---	---
24V_HBX4	4	1.9	1/3	17/15	24/20	25/20	---	---	---	---	---	---
24V_HBX5	5	1.9	1/3	21/18	29/25	30/25	---	---	---	---	---	---
24V_HBX6	6	1.9	1/3	25/22	36/30	40/30	---	---	---	---	---	---
24V_HBX8	8	1.9	1/3	33/29	46/39	50/40	---	---	---	---	---	---
24V_HBX10	10	1.9	1/3	42/36	55/48	60/50	---	---	---	---	---	---
36V_HBX0	0	2.8	1/2	2.8	4/4	15/15	---	---	---	---	---	---
36V_HBX5	5	2.8	1/2	24/21	30/26	30/30	---	---	---	---	---	---
36V_HBX8	8	2.8	1/2	36/32	46/40	50/40	---	---	---	---	---	---
36V_HBX10	10	2.8	1/2	45/39	56/49	60/50	---	---	---	---	---	---
36V_HBX15	15	2.8	1/2	45/39	56/49	60/50	21/18	27/23	30/25	---	---	---
48V_HBX0	0	4.7	3/4	4.7	6/6	15/15	---	---	---	---	---	---
48V_HBX5	5	4.7	3/4	26/23	32/29	35/30	---	---	---	---	---	---
48V_HBX8	8	4.7	3/4	33/29	48/42	50/45	---	---	---	---	---	---
48V_HBX10	10	4.7	3/4	46/41	58/50	60/50	---	---	---	---	---	---
48V_HBX15	15	4.7	3/4	46/41	58/50	60/50	42/36	53/46	60/50	---	---	---
48V_HBX20	20	4.7	3/4	46/41	58/50	60/50	42/36	53/46	60/50	---	---	---
48V_HBX25	25	4.7	3/4	46/41	58/50	60/50	42/36	53/46	60/50	21/18	27/23	30/25
60V_HBX0	0	7.1	1	7.1	9/9	15/15	---	---	---	---	---	---
60V_HBX5	5	7.1	1	28/26	36/32	40/35	---	---	---	---	---	---
60V_HBX8	8	7.1	1	41/36	52/46	60/50	---	---	---	---	---	---
60V_HBX10	10	7.1	1	47/42	59/53	60/50	---	---	---	---	---	---
60V_HBX15	15	7.1	1	47/42	59/53	60/50	42/36	53/46	60/50	---	---	---
60V_HBX20	20	7.1	1	47/42	59/53	60/50	42/36	53/46	60/50	---	---	---
60V_HBX25	25	7.1	1	47/42	59/53	60/50	42/36	53/46	60/50	21/18	27/23	30/25

### NOTES:

1. Nom. cooling at 45°F suction temp. 80°F DB / 67°F WB air on.
2. 15kW and 20kW models require 2 supply circuits. 25kW models require 3 supply circuits.
3. Units suitable for installation with 0" clearance to combustible material.

PERFORMANCE DATA - 120V MODELS				
UNIT MODEL	MOTOR AMPS	MOTOR HP	MIN. CIR. AMAPACITY 120V	MAX. CIR. PROTECTION 120V
24V_HBX0-120	3.6	1/3	5	15
36V_HBX0-120	5.2	1/2	7	15
48V_HBX0-120	8.8	3/4	11	15
60V_HBX0-120	12.1	1	15	15

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

## Model Numbers:

MODEL SIZE (CLG. BTU)	FACTORY INSTALLED TXV'S	
	MODEL (R22 TXV)	MODEL (R410a TXV)
18,000 / 24,000	24V(1)HBX(kW) w/R22 TXV	24V(1)HBX(kW) w/R410a TXV
30,000 / 36,000	36V(1)HBX(kW) w/R22 TXV	36V(1)HBX(kW) w/R410a TXV
42,000 / 48,000	48V(1)HBX(kW) w/R22 TXV	48V(1)HBX(kW) w/R410a TXV
48,000 / 60,000	60V(1)HBX(kW) w/R22 TXV	60V(1)HBX(kW) w/R410a TXV

**IMPORTANT:**

- (1) For models that energize the reversing valve in the cooling mode: Insert "O" in model number  
For models that energize the reversing valve in the heating mode: Insert "B" in model number
- (2) For 0kW, 120V models, add "-120" after the kW in the model number

**All TXV's are approved for cooling only or heat pump operation.**

**NOTE:**

Expansion valve requirement depends on the selected outdoor unit. Go to [www.firstco.com](http://www.firstco.com) or contact the factory for assistance.

### 3-WAY AIRFLOW

