



FIRST CO.  
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# HBQBX Series



## Hydronic Air Handler, with Pump

Cooling or Heat Pump / HW Heat  
1.5 - 5 Tons, up to 91,000

BTUH Heating



# HBQBX Series

The **HBQBX** air handler is designed for use with today's high efficiency split-system condensing units and heat pumps. All **HBQBX** air handlers include a standard ECM motor. These motors offer the efficiency of variable speed type ECM motors, but at a considerably lower cost.

The **HBQBX** is a "Combo" air handler that converts a properly sized natural gas or oil fired water heater into a highly efficient space heating appliance that can heat your home in addition to providing domestic hot water. Compared to other heating systems, the **HBQBX** offers greater installation flexibility, costs less to install, and is less complicated and easier to service.

The **HBQBX** incorporates a multi-function micro-processor that not only reduces the number of components, but includes several system functions not found in other products, such as an automatic pump timer and various blower delays.

Cooling efficiencies are up to 16 SEER, depending on the outdoor unit. **First Co's customer is ultimately responsible for confirming which fan coil models are compatible with selected outdoor unit(s) and which expansion valves (if any) are required. To determine certified indoor/outdoor combinations, go to [www.ahridirectory.org](http://www.ahridirectory.org), [www.firstco.com](http://www.firstco.com) or contact the factory.** Contact the factory for sizing information.

These fan coils are compatible with any source of hot water that doesn't exceed 180° and is NSF/ANSI certified for use with domestic water.



# HBQBX Series

## STANDARD FEATURES:

**Multi-function micro-processor circuit board** with these standard features:

- **Automatic pump timer** - The pump operates for sixty seconds every six hours in order to purge the water from the hot water coil and piping (the pump timer cycle is skipped while the compressor is operating).
- **Blower-on fan delay** - (heating mode) - preheats the HW coil for 45 seconds.
- **Blower-off fan delay** - (heating and cooling modes) - blower continues to operate for 45 seconds after thermostat is satisfied, for increased efficiency.

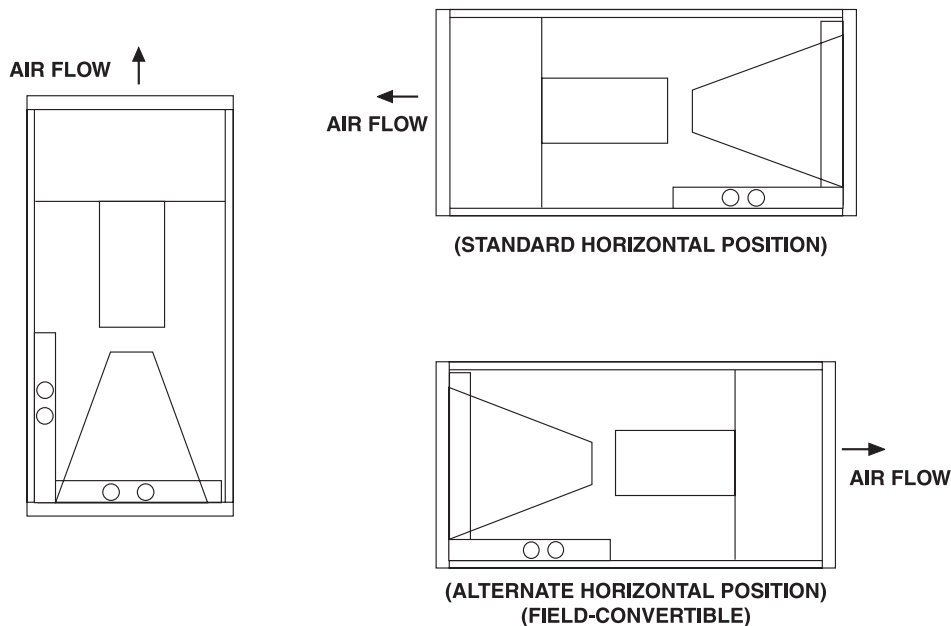
## OPTIONAL FEATURES:

- **High efficiency standard ECM motor**
- 120V motor, 24V controls
- Factory or field installed R-410A TXV (cooling or heat pump operation) (non-bleed type)
- Blower door shut-off switch (except 60HBQBX)
- Hot water coil assembly includes a circulating pump, easy access anti-siphon check valve, and air purge valve
- Easily accessible 1" throwaway filter
- Optional Freeze Protector - Reduces the possibility of the water coil freezing by switching the unit to the heating mode if the water temperature is nearing a freezing condition

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### 3-WAY AIRFLOW



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COOLING or HEAT PUMP  
HOT WATER HEATING

## Efficiency:

The **HBQBX** series air handler is the latest state-of-the-art air handler for hot water heating. Depending on the water heater efficiency and the condensing unit used, heating efficiency can exceed 90% and cooling efficiency can be up to 16 SEER (depending on the selected outdoor unit). Cooling coils have either piston type metering devices or R-410A TXV's and are circuited for cooling or heat pump operation.

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## Components:

Each air handler includes a high efficiency cooling coil, a separate hot water coil, circulating pump, air purge valve, anti-thermosyphon check valve, blower door safety switch (except **60HBQBX**), 120V ECM blower motor, throw away filter, and 24V transformer.

## Cabinets:

Cabinets are fully insulated and painted with an attractive, baked-on powder coating (light gray).

## Installation:

No modification is required for vertical or horizontal (right-to-left) airflow. A horizontal drain pan is factory installed for right-to-left airflow and can be re-positioned within the cabinet to offer left-to-right airflow.

## Operation:

When space heating is needed, the wall thermostat energizes the circulating pump which circulates hot water from the water heater to the hot water coil in the air handler. As the blower motor forces cool return air from the home over the hot water coil, the air absorbs heat from the hot water. This warm air (105 to 110 degrees) is then circulated throughout the duct system and into the home. The water loses only about 15 degrees of temperature while it circulates through the coil and is then returned to the water heater to be reheated.

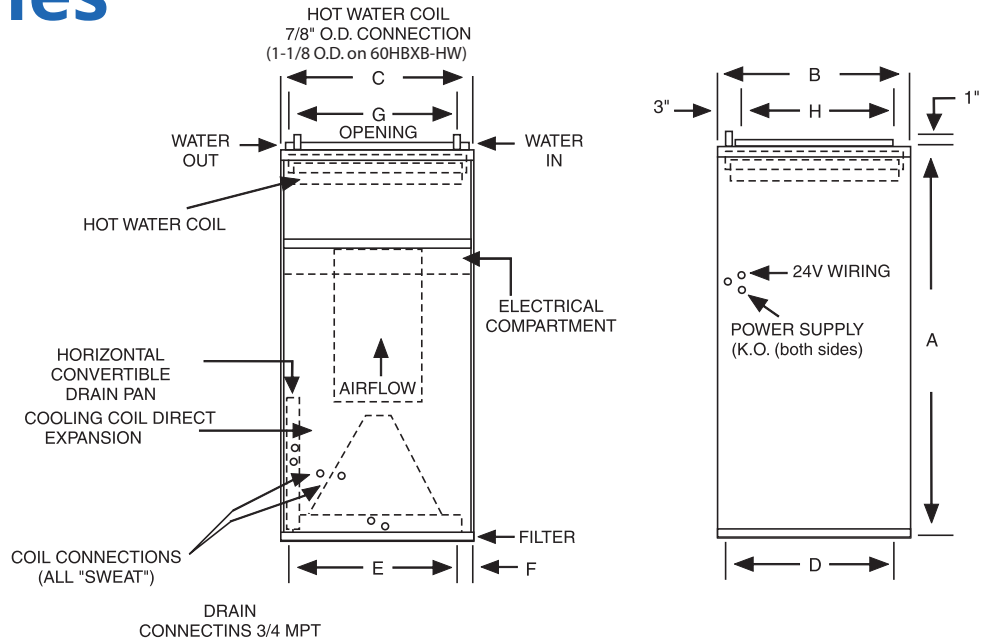
## Accessories:

Accessories include TXV expansion valve kits and freeze protector.

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COOLING or HEAT PUMP  
HOT WATER HEATING

COIL CONNECTIONS		
UNIT SIZE	LIQUID	SUCTION
18/24	3/8	5/8
30/36	3/8	3/4
48/60	1/2	7/8



PHYSICAL DIMENSIONS									
UNIT MODEL	A	B	C	D	E	F	G	H	FILTER SIZE
18HBQBX 24HBQBX	40	20	20	18-1/2	16	2	18	16	18 X 20 X 1
30HBQBX 36HBQBX	42	23	20	21-1/2	16	2	18	19	20 X 22 X 1
48HBQBX	48	28	21-1/4	26-1/4	17-1/4	2	18	24	20 X 25 X 1
60HBQBX	52	28	25-1/4	26-1/2	21-1/4	2	22	24	14 X 24 X 1 (2 required)

PERFORMANCE DATA												
UNIT MODEL	NOMINAL COOLING BTUH	COIL # (2)	P.D. (FT. WTR.)	BTUH (1000) AT ENTERING WATER TEMPERATURE Delta-T 20°F & GPM								
				120°F	GPM	140°F	GPM	160°F	GPM	180°F	GPM	
18HBQBX	18,000	USM318AP	4.3	23.8	2.4	33.4	3.3	42.9	4.3	52.5	5.3	
24HBQBX	24,000	USM424AP	4.3	25.5	2.6	35.8	3.6	46.0	4.6	56.2	5.6	
30HBQBX	30,000	USM330AP	5.0	30.7	3.1	43.0	4.3	55.3	5.5	67.6	6.8	
36HBQBX	36,000	USM436A	5.0	35.0	3.5	49.0	4.9	63.0	6.3	76.9	7.7	
48HBQBX	42,000/ 48,000	USM348AP	3.4	45.9	4.6	64.3	6.4	82.6	8.3	101.0	10.1	
				48.6	4.9	68.1	6.8	87.5	8.8	107.0	10.7	
60HBQBX	60,000	USM460BP	8.8	64.4	6.4	90.2	9.0	116.0	11.6	141.8	14.2	

- (1) Use 48HBQBX for 3.5 ton applications and field-convert fan motor to low speed.
- (2) See "USM" data sheet for additional coil information.

**NOTES:**

- 1. Heating output of fan coil will not exceed net output of water heater.
- 2. Approved for installation with 0" clearance to combustible materials.
- 3. Heat BTUH is at 65°F entering air temperature.
- 4. Based on 20°F Delta-T. Velocity not to exceed 4ft./sec.



NSF/ANSI  
169:2016



# HBQBX Series

COOLING or HEAT PUMP  
HOT WATER HEATING

ELECTRICAL DATA					
UNIT MODEL	MOTOR HP (120V)	AMPS		MIN. CIR. AMPACITY	MAX. HACR BREAKER
		MOTOR	PUMP		
18HBQBX	1/3	4.8	0.57	7	15
24HBQBX	1/3	4.8	0.57	7	15
30HBQBX	1/2	6.8	0.57	10	15
36HBQBX	1/2	6.8	0.57	10	15
48HBQBX	1	10.9	0.57	15	15
60HBQBX	1	10.9	0.75	15	15

BLOWER DATA					UPFLOW / HORIZONTAL ONLY					
UNIT MODEL	MOTOR HP-AMP (120V)	BHP	NOMINAL AMPS	SPEED TAPS	CFM vs. EXTERNAL STATIC PRESSURE					
					0.05	0.10	0.20	0.30	0.40	0.50
18HBQBX	1/3-4.8	0.33	3.2	3	970	940	870	800	730	630
		0.18	2.1	2	770	750	700	660	620	580
		0.13	1.4	1	640	620	580	530	480	430
24HBQBX	1/3-4.8	0.33	3.2	3	930	900	830	760	690	600
		0.18	2.1	2	740	720	690	650	610	560
		0.13	1.4	1	620	600	560	520	480	430
30HBQBX	1/2-6.8	0.50	4.8	3	1250	1230	1170	1110	1050	990
		0.34	3.5	2	1090	1070	1040	1010	980	950
		0.27	2.5	1	960	940	900	860	820	780
36HBQBX	1/2-6.8	0.50	4.8	3	1280	1250	1190	1130	1070	1010
		0.34	3.5	2	1110	1090	1050	1010	970	930
		0.27	2.5	1	970	950	900	850	800	760
48HBQBX	1-10.9	1.00	8.5	3	1900	1870	1800	1730	1660	1590
		0.66	6.8	2	1560	1540	1500	1460	1420	1380
		0.47	4.1	1	1300	1270	1220	1170	1120	1070
60HBQBX	1-10.9	1.00	8.7	3	---	2190	2130	2070	2010	1950
		0.67	6.7	2	---	1780	1740	1700	1650	1590
		0.52	4.7	1	---	1550	1490	1430	1370	1310

## MODEL NUMBERS

MODEL SIZE (BTU)	MODEL (PISTON)	FACTORY INSTALLED TXV'S
		MODEL (R-410A TXV)
18,000	18HBQBX	18HBQBX R410 TXV
24,000	24HBQBX	24HBQBX R410 TXV
30,000	30HBQBX	30HBQBX R410 TXV
36,000	36HBQBX	36HBQBX R410 TXV
42,000/48,000	48HBQBX	48HBQBX R410 TXV
60,000	60HBQBX	60HBQBX R410 TXV

All TXV's are approved for cooling only or heat pump operation (non-bleed type).

**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.

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## ACCESSORIES - (all field installed)

EXPANSION VALVE KITS (Field installed) (cooling only or heat pump)	
PART NUMBER	
R-410A	FITS
9EVR410-3	18/24HBQBX
9EVR410-4	30/36HBQBX
9EVR410-5	48-60HBQBX

### NOTES:

1. Above expansion valve kits are approved for both cooling only (non heat pump) and heat pump applications.
2. Valves are non-bleed type. Field added. Hard start kit may be required.
3. Valves have screw-on connections.

MISCELLANEOUS (Field installed)		
COMPONENT	DESCRIPTION	PART NUMBER
Freeze Protector	Energizes pump when coil temperature falls below 38°F	941-1

### Notes:

1. Freeze protector attaches to hot water coil and wires to low voltage (24V) circuit.

In keeping with its policy of continuous progress and product improvement, First Co. 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).