

**Designed Specifically For Use With Tankless Water Heaters!**

**NOW EQUIPPED WITH MULTI-FUNCTION MICRO-PROCESSOR**

## **HBQBR Series**

Vertical / Horizontal

Combo Air Handler

Cooling Hot Water Heating

1-1/2 through 4 tons, up to 85,000 BTUH Heating



### **Description :**

The "Combo" air handler converts a properly sized gas or oil-fired water heater into a highly efficient space heating appliance that can heat your home as well as provide hot water. Compared to other heating systems, combo heaters offer high efficiency, greater installation flexibility, cost less to install, and are much easier to service.

The HBQBR Series incorporates a **Multi-function Micro-processor** that not only reduces the number of components but adds a number of standard system functions that would not normally be available, such as an automatic pump timer, and blower delay, just to name a few. The HBQBR air handler is the only product available with these high quality features! Cooling efficiencies up to 16 SEER.

**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 matches, go to: [www.firstco.com](http://www.firstco.com) or contact the factory**

Proper water heater sizing is required to ensure adequate hot water supply for both domestic use and space heating. Contact the factory for sizing information.

## **NOW WITH 2-SPEED FAN OPERATION (High Speed-Cool, Medium Speed-Heat)**

### **FEATURES:**

#### **Heating Cycle**

1. **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). 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.
2. **Blower-on delay:** On a call for heat, the hot water coil is preheated for 45 seconds before the blower energizes.
3. **Blower-off delay:** Blower continues to operate for 20 seconds after thermostat is satisfied, extracting more heat from the heating coil and increasing heating performance.

#### **Cooling Cycle**

1. **Blower-off delay:** Blower continues to operate for 45 seconds after thermostat is satisfied, extracting more cooling from the cooling coil and maximizing cooling efficiency.

**Optional features** (logic for the following options is built into the micro-processor circuit board but each option requires an optional field installed switch. (Contact factory)

1. **Freeze protection:** circuit board has terminals for optional freeze protector switch. Freeze protector energizes the circulating pump if water coil temperature falls below 40 degrees.
2. Factory or field installed R410A TXV's (non-bleed type).

#### **Additional features**

1. Built-in circulating pump, air purge valve, and easy access hot water check valve.
2. Blower door safety switch
3. Compatible with all major brands of split condensing units
4. Slide out hot water coil assembly for easier service
5. Fully insulated galvanized steel cabinet
6. High efficiency copper tube/aluminum fin heating and cooling coils
7. Primary and secondary drain connections on cooling coil
8. Factory installed filter



# HBQBR Series

## COOLING

## HOT WATER HEATING

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### Efficiency:

The HBQBR 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 exceed 14 SEER (depending on the selected outdoor unit). Cooling coils have either piston type metering devices R410A 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, 120V 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.

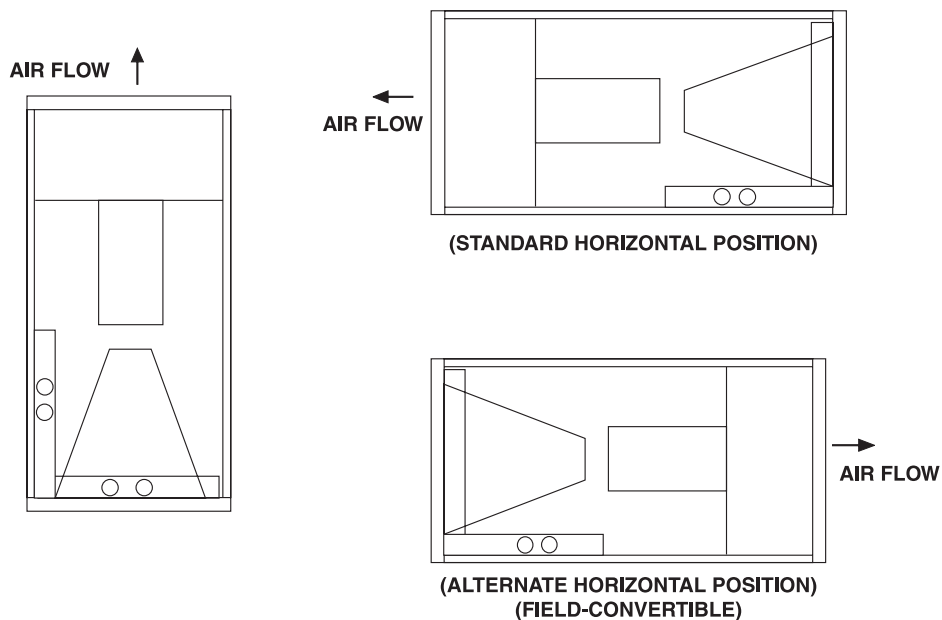
### Accessories:

Accessories include TXV expansion valve kits, and freeze protector.

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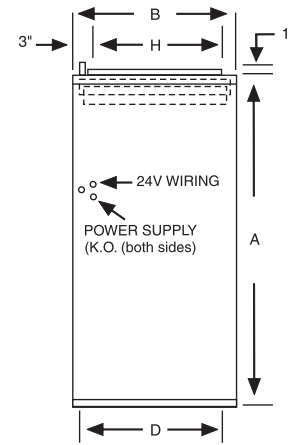
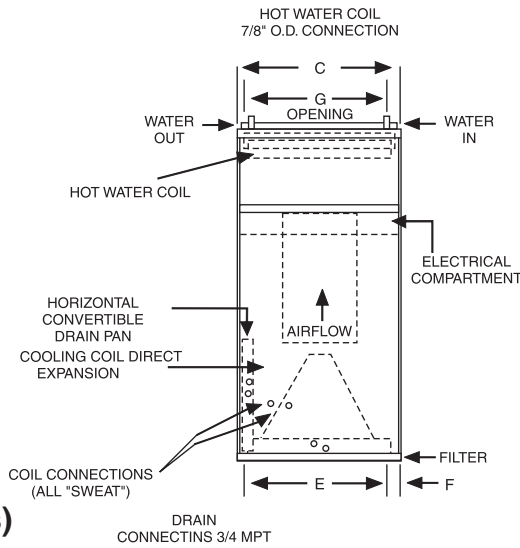
### 3-WAY AIRFLOW



# HBQBR Series

## COOLING HOT WATER HEATING

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



(See P.4 for Model Numbers)

ELECTRICAL DATA					
UNIT MODEL	MOTOR HP (120V)	AMPS		MIN. CIR. AMPACITY	MAX. HACR BREAKER
		MOTOR	PUMP		
18HBQBR	1/5	2.8	0.84	5	15
24HBQBR	1/5	5.1	0.84	8	15
30HBQBR	1/5	5.1	0.84	8	15
36HBQBR	1/2	8.5	0.84	12	15
48HBQBR	3/4	10.7	0.84	15	15

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

PERFORMANCE DATA												
UNIT MODEL	NOMINAL COOLING BTUH	COIL # (2)	P.D. (FT. WTR.)	CFM	BTUH (1000) AT ENTERING WATER TEMPERATURE Delta -T 20°F & GPM							
					120°F	GPM	140°F	GPM	160°F	GPM	180°F	GPM
18HBQBR	18,000	USM318AP	4.0	650	19.7	2.0	27.6	2.8	35.5	3.6	43.4	4.3
24HBQBR	24,000	USM424AP	4.0	800	22.2	2.2	31.1	3.1	40.0	4.0	48.9	4.9
30HBQBR	30,000	USM330AP	4.6	1000	26.4	2.6	37.0	3.7	47.6	4.8	58.1	5.8
36HBQBR	36,000	USM436A	4.6	1200	28.9	2.9	40.5	4.1	52.0	5.2	63.6	6.4
48HBQBR	42,000/ 48,000	USM348AP	4.1	1400 1600	36.1 38.7	3.6 3.9	50.6 54.3	5.1 5.4	65.0 69.8	6.5 7.0	79.5 85.3	8.0 8.5

(1) See "USM" data sheet for additional cooling 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 70°F entering air temperature.
4. Based on 20°F Delta-T. Velocity not to exceed 4ft./sec.

BLOWER DATA			UPFLOW / HORIZONTAL ONLY							DOWNFLOW ONLY				
UNIT MODEL	MOTOR HP-AMP (120V)	MOTOR SPEED CONN.	CFM vs. EXTERNAL STATIC PRESSURE											
			0.05	0.10	0.20	0.30	0.40	0.50	0.05	0.10	0.20	0.30	0.35	
18HBQBR	1/5-2.8	HIGH MED. HIGH MED. LOW LOW	810	780	715	650	580	500	710	690	630	570	540	
			680	655	600	545	490	420	640	620	575	520	490	
			530	505	460	415	360	295	480	460	420	380	350	
			350	325	325	220	160	---	330	310	260	220	200	
24HBQBR	1/5-5.1	HIGH MED LOW	950	920	855	790	720	645	760	730	680	620	590	
			860	835	785	720	650	580	720	690	640	590	550	
			780	755	705	650	590	510	680	655	600	550	525	
			1120	1095	1045	995	940	880	1080	1060	1010	950	920	
30HBQBR	1/5-5.1	HIGH MED LOW	850	840	810	780	740	590	885	860	830	800	770	
			680	670	655	625	585	510	730	720	690	660	640	
			1340	1310	1250	1190	1120	1050	1090	1070	1010	950	925	
			1290	1260	1200	1140	1080	1000	1060	1030	980	920	890	
36HBQBR	1/2-8.5	HIGH MED LOW	1200	1170	1120	1070	1010	940	1020	1000	930	890	860	
			1810	1780	1720	1660	1590	1530	1510	1480	1430	1380	1350	
			1570	1550	1510	1460	1400	1340	1270	1240	1190	1150	1120	
			1280	1260	1220	1180	1130	1050	1005	980	930	890	860	



RECOGNIZED COMPONENT



NSF/ANSI  
169:2016

Intertek

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## Model Numbers:

		FACTORY INSTALLED TXV'S
MODEL SIZE (BTU)	MODEL (PISTON)	MODEL (R410A TXV)
18,000	18HBQBR	18HBQBR w/R410A TXV
24,000	24HBQBR	24HBQBR w/R410A TXV
30,000	30HBQBR	30HBQBR w/R410A TXV
36,000	36HBQBR	36HBQBR w/R410A TXV
48,000	48HBQBR	48HBQBR w/R410A TXV

**All TXV's are approved for cooling only 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.

## ACCESSORIES - (all field installed)

EXPANSION VALVE KITS (Field installed)	
PART NUMBER	
R410A	FITS
9EVR410-3	18/24HBQBR
9EVR410-4	30/36HBQBR
9EVR40-5	48HBQBR

**NOTES:**

- Above expansion valve kits are approved for cooling only applications.
- Valves are non-bleed type. Field added. Hard start kit may be required.
- Valves have screw-on connections.

MISCELLANEOUS		
COMPONENT	DESCRIPTION	PART NUMBER
Freeze Protector	Energizes pump when coil temperature falls below 38°F	941-1
Thermostat	24V Heat/Cool	T334

**Notes:**

- 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).