



FIRST CO.
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HBQB Series



Verticle / Horizontal Combo Air Handler

Cooling or Heat Pump / Hot Water Heating
1-1/2 through 5 tons, up to 143,000

BTUH Heating



HBQB Series

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 HBQB 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 **HBQB** air handler is the only product available with these high quality features! Cooling efficiencies up to **15 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 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.



HBQB Series

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^o 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** (except 60HBQB)
- 3.** Compatible with all major brands of **split condensing units** and **heat pumps**
- 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**

HBQB Series

COOLING or HEAT PUMP
HOT WATER HEATING

Efficiency:

The **HBQB** 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 or R22 or 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 (except 60HBQB), 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:

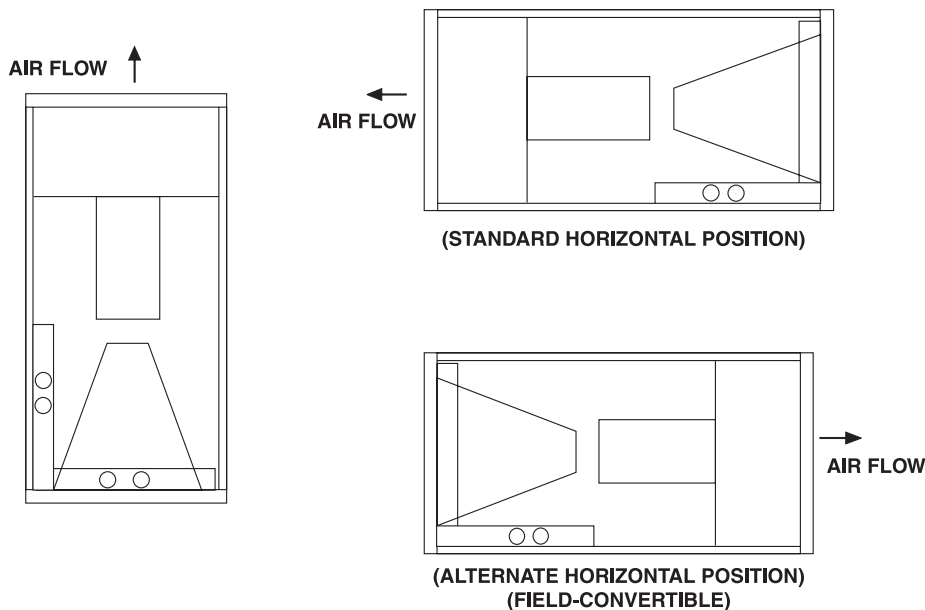
No modification is required for vertical or horizontal (right-to-left) airflow. A horizontal drain pan is factory installed for right-to-left airflow and can be re-positioned within the cabinet to offer left-to-right airflow.

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:

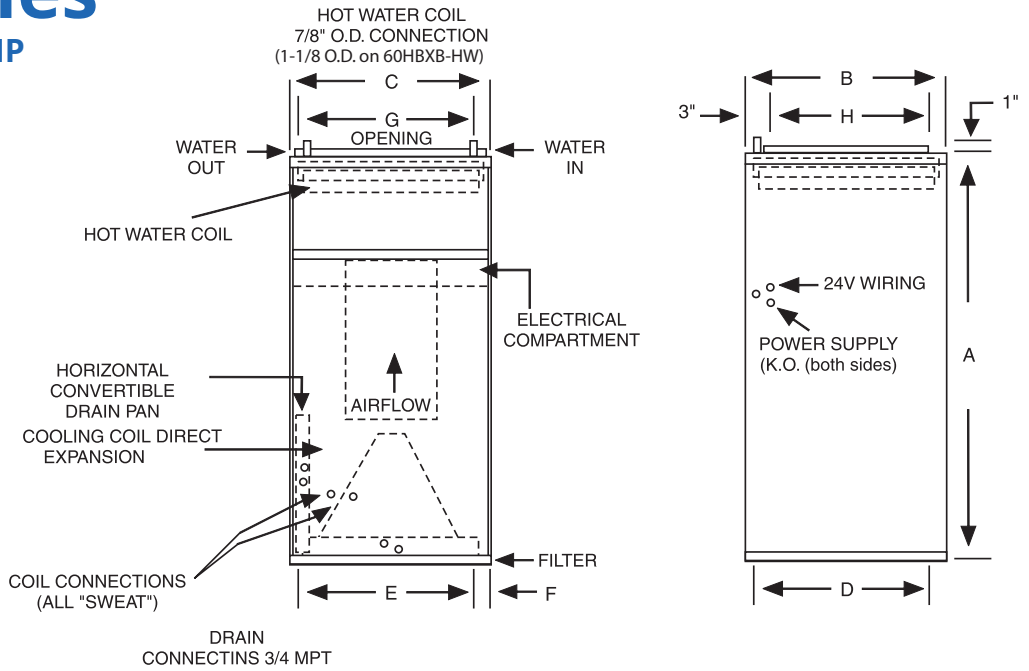
Accessories include TXV expansion valve kits, and freeze protector.



HBQB Series

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
18HBQB 24HBQB	40	20	20	18-1/2	16	2	18	16	18 X 20 X 1
30HBQB 36HBQB	42	23	20	21-1/2	16	2	18	19	20 X 22 X 1
48HBQB	48	28	21-1/4	26-1/4	17-1/4	2	18	24	20 X 25 X 1
60HBQB	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	
18HBQB	18,000	USM318AP	4.3	23.8	2.4	33.4	3.3	42.9	4.3	52.5	5.3	
24HBQB	24,000	USM424AP	4.3	25.5	2.6	35.8	3.6	46.0	4.6	56.2	5.6	
30HBQB	30,000	USM330AP	5.0	30.7	3.1	43.0	4.3	55.3	5.5	67.6	6.8	
36HBQB	36,000	USM436A	5.0	35.0	3.5	49.0	4.9	63.0	6.3	76.9	7.7	
48HBQB	42,000/ 48,000	USM348AP	3.4	45.9 48.6	4.6 4.9	64.3 68.1	6.4 6.8	82.6 87.5	8.3 8.8	101.0 107.0	10.1 10.7	
60HBQB	60,000	USM460BP	8.8	64.4	6.4	90.2	9.0	116.0	11.6	141.8	14.2	

(1) Use 48HBQB 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.



HBQB Series

ELECTRICAL DATA					
UNIT MODEL	MOTOR HP (120V)	AMPS		MIN. CIR. AMPACITY	MAX. HACR BREAKER
		MOTOR	PUMP		
18HBQB	1/5	2.8	0.57	5	15
24HBQB	1/5	5.1	0.57	7	15
30HBQB	1/5	5.1	0.57	7	15
36HBQB	1/2	8.5	0.57	12	15
48HBQB	3/4	10.7	0.57	14	15
60HBQB	1	11.5	0.75	16	20

BLOWER DATA			UPFLOW / HORIZONTAL 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
18HBQB	1/5-2.8	HIGH	810	780	715	650	580	500
		MED. HIGH	680	655	600	545	490	420
		MED. LOW	530	505	460	415	360	295
		LOW	350	325	325	220	160	---
24HBQB	1/5-5.1	HIGH	950	920	855	790	720	645
		MED	860	835	785	720	650	580
		LOW	780	755	705	650	590	510
30HBQB	1/5-5.1	HIGH	1120	1095	1045	995	940	880
		MED	850	840	810	780	740	590
		LOW	680	670	655	625	585	510
36HBQB	1/2-8.5	HIGH	1340	1310	1250	1190	1120	1050
		MED	1290	1260	1200	1140	1080	1000
		LOW	1200	1170	1120	1070	1010	940
48HBQB	3/4-10.7	HIGH	1810	1780	1720	1660	1590	1530
		MED	1570	1550	1510	1460	1400	1340
		LOW	1280	1260	1220	1180	1130	1050
60HBQB	1-11.5	HIGH	2160	2125	2055	1980	1895	1810
		MED	1865	1840	1785	1710	1620	1525
		LOW	1560	1540	1490	1435	1365	1260

MODEL NUMBERS

MODEL SIZE (BTU)	MODEL (PISTON)	FACTORY INSTALLED TXV'S	
		MODEL (R22 TXV)	MODEL (R410A TXV)
18,000	18HBQB	18HBQB w/R22 TXV	18HBQB w/R410A TXV
24,000	24HBQB	24HBQB w/R22 TXV	24HBQB w/R410A TXV
30,000	30HBQB	30HBQB w/R22 TXV	30HBQB w/R410A TXV
36,000	36HBQB	36HBQB w/R22 TXV	36HBQB w/R410A TXV
42,000/48,000	48HBQB	48HBQB w/R22 TXV	48HBQB w/R410A TXV
60,000	60HBQB	60HBQB w/R22 TXV	60HBQB w/R410A 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 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	
R22	FITS
9EVR22-4	18/24HBQB
9EVR22-5	30/36HBQB
9EVR22-6	42-60HBQB
R410A	
9EVR410-3	18/24HBQB
9EVR410-4	30/36HBQB
9EVR410-5	42-60HBQB

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		
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.