

MEETS 2006
DOE REQUIREMENTS (1)

MBQ-F Series

Vertical Only Combo Air Handler

Cooling or Heat Pump / Hot Water Heating

1-1/2 through 5 tons, up to 91,000 BTUH Heating



Description :

This "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 domestic hot water. Combo space heating is quickly becoming the most popular heating system for today's educated consumer. Compared to other heating systems, combo heaters offer **higher efficiency, greater installation flexibility, cost less to install** and are **much simpler to service**.

(1) First Co's customer is ultimately responsible for confirming which fan coil models are compatible with selected outdoor units(s) and which expansion valves (if any) are required. To determine approved indoor/outdoor matches, go to www.firstco.com or contact the factory. Proper water heater sizing is required to insure adequate hot water supply and space heating. Contact the factory for sizing information.

Note: State of MA, .248 CMR code of the state of MA requires a pump timer. (60 seconds every 6 hours)

Now with 2 - speed Fan Operation!!

(High Speed - Cool, Medium Speed - Heat)

FEATURES:

1. Built-in **circulating pump, air purge valve,** and anti-thermosiphon **check valve**
2. Compatible with most major brands of **split condensing units** and **heat pumps**
3. Compatible with all properly sized gas or oil-fired **water heaters**
4. **Slide out hot water coil** assembly for easier service
5. **Blower door safety switch** (except 60MBQ-F)
6. **Piston-type** metering device or factory installed R22 or R410A TXV's on cooling coil
7. Factory installed **filter**
8. Fully **insulated and painted** galvanized steel cabinet
9. **Copper tube** heating and cooling coils
10. Primary and secondary **drain connections** on cooling coil



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MBQ-F Series

COOLING or HEAT PUMP

HOT WATER HEATING

Efficiency:

The **MBQ-F** 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 13 SEER. Cooling coils have either piston type metering devices or R22 or R410A TXV's and are circuited for cooling or heat pump operation. Contact the factory for compatible outdoor units.

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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 60MBQ-F), 120V fan motor, throw-away filter, and 24V transformer.

Cabinets:

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

Installation:

MBQ-F models are only approved for vertical (upflow) installations.

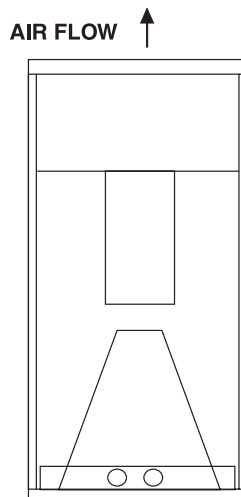
Operation:

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 fan 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.

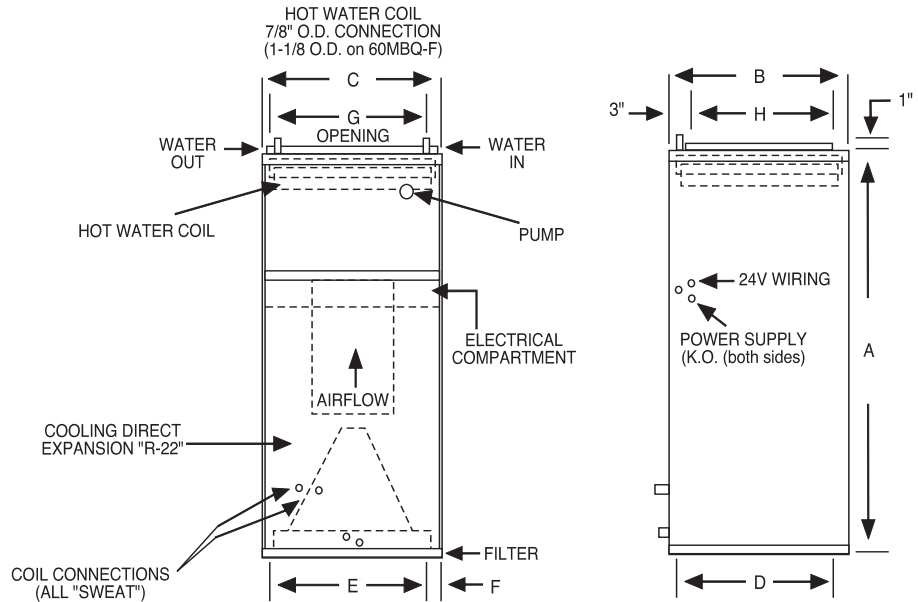
Accessories:

Accessories include cooling / heat pump TXV kits, pump timer, and freeze protector (see P. 4 for accessories).

AIRFLOW



MBQ-F 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

(See P.4 for Model Numbers)

PHYSICAL DIMENSIONS									
UNIT MODEL	A	B	C	D	E	F	G	H	FILTER SIZE
18MBQ3-F 24MBQ3-F	40	20	20	18-1/2	16	2	18	16	18X20X1
30MBQ3-F 36MBQ3-F	42	23	20	21-1/2	16	2	18	19	20x22x1
48MBQ4-F	48	28	21-1/4	26-1/4	17-1/4	2	18	24	20x25x1
60MBQ4-F	52	28	25-1/4	26-1/2	21-1/4	2	22	24	20x24x1 (2 required)

BLOWER DATA									
UNIT MODEL	MOTOR HP-AMPS (120V)	MOTOR SPEED CONN.	CFM vs. EXTERNAL STATIC PRESSURE						
			0.05	0.10	0.20	0.30	0.40	0.50	
18MBQ3-F	1/5-2.8	HIGH MED. MED. LOW LOW	810	780	715	650	580	500	
			680	655	600	545	490	420	
			530	505	460	415	360	295	
			350	325	270	220	160	---	
24MBQ3-F	1/5-5.1	HIGH MED. LOW	950	920	855	790	720	645	
			960	835	785	720	650	580	
			780	755	705	650	590	510	
			---	---	---	---	---	---	
30MBQ3-F	1/5-5.1	HIGH MED. LOW	1120	1095	1045	995	940	880	
			850	840	810	780	740	690	
			680	670	655	625	585	510	
			---	---	---	---	---	---	
36MBQ3-F	1/2-8.5	HIGH MED. LOW	1340	1310	1250	1190	1120	1050	
			1290	1260	1200	1140	1080	1000	
			1200	1170	1120	1070	1010	940	
			---	---	---	---	---	---	
48MBQ4-F	3/4-10.7	HIGH MED. LOW	1810	1780	1720	1660	1590	1530	
			1570	1550	1510	1460	1400	1340	
			1280	1260	1220	1180	1130	1050	
			---	---	---	---	---	---	
60MBQ4-F	1-11.5	HIGH MED. LOW	2160	2125	2055	1980	1895	1810	
			1865	1840	1785	1710	1620	1525	
			1560	1540	1490	1435	1365	1260	
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NOTE:

- All models are factory wired for high speed (cool) and medium speed (heat) operation.

PERFORMANCE DATA						
UNIT MODEL	NOMINAL COOLING BTUH	GPM (HTG.)	P.D. (FT. WTR.)	BTUH (1000) AT ENTERING WATER TEMPERATURE		
				120°F	130°F	140°F
18MBQ3-F	18,000	3-1/2	4.3	24.2	29.1	33.9
24MBQ3-F	24,000	3-1/2	4.3	25.2	30.3	35.3
30MBQ3-F	30,000	3-1/2	5.0	31.1	37.4	43.6
36MBQ3-F	36,000	3-1/2	5.0	35.4	42.4	49.5
48MBQ4-F (1)	42,000/ 48,000	3-1/2	3.4	45.9 49.1	55.0 59.0	64.2 68.8
60MBQ4-F	60,000	7	8.8	65.0	78.0	91.0

(1) Use 48MBQ for 3.5 ton applications and field-convert fan motor to low speed.

NOTES:

- Heating output of fan coil will not exceed net output of water heater.
- Approved for installation with 0" clearance to combustible materials.
- Heat BTUH is at 70 degree entering air temperature.

ELECTRICAL DATA					
UNIT MODEL	MOTOR HP (120V)	AMPS		MIN. CIR. AMPACITY	MAX HACR BREAKER
		MOTOR	PUMP		
18MBQ3-F	1/5	2.8	0.57	5	15
24MBQ3-F	1/5	5.1	0.57	7	15
30MBQ3-F	1/5	5.1	0.57	7	15
36MBQ3-F	1/2	8.5	0.57	12	15
48MBQ4-F	3/4	10.7	0.57	14	15
60MBQ4-F	1	11.5	0.75	16	20



Model Numbers:

FACTORY INSTALLED TXV'S			
MODEL SIZE (BTU)	MODEL (PISTON)	MODEL (R22 TXV)	MODEL (R410A TXV)
18,000	18MBQ3-F	18MBQ3-F w/R22 TXV	18MBQ3-F w/R410A TXV
24,000	24MBQ3-F	24MBQ3-F w/R22 TXV	24MBQ3-F w/R410A TXV
30,000	30MBQ3-F	30MBQ3-F w/R22 TXV	30MBQ3-F w/R410A TXV
36,000	36MBQ3-F	36MBQ3-F w/R22 TXV	36MBQ3-F w/R410A TXV
42,000/48,000	48MBQ4-F	48MBQ4-F w/R22 TXV	48MBQ4-F w/R410A TXV
60,000	60MBQ4-F	60MBQ4-F w/R22 TXV	60MBQ4-F w/R410A TXV

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 or contact the factory for assistance.

ACCESSORIES - (all field installed)

EXPANSION VALVE KITS (Field installed) (cooling only or heat pump)	
PART NUMBER	FITS
R22	
9EVR22-4	18/24MBQ-F
9EVR22-5	30/36MBQ-F
9EVR22-6	48/60MBQ-F
R410A	
9EVR410-3	18/24MBQ-F
9EVR410-4	30/36MBQ-F
9EVR410-5	48/60MBQ-F

NOTES:

- Above expansion valve kits are approved for both cooling only (non heat pump) and heat pump applications.
- Valves are external equalizing, internal bleed.
- Valves have screw-on connections.

MISCELLANEOUS		
COMPONENT	DESCRIPTION	PART NUMBER
Freeze Protector	Energizes pump when coil temperature falls below 38°F	941-1
Pump Timer	Energizes pump for 30 seconds every 6 hours	941-2
Thermostat	24V Heat/Cool	T334

Notes:

- Freeze protector attaches to hot water coil and wires to low voltage (24V) circuit.
- Pump timer is low voltage (24V).

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.