



HCXQ Series

Verticle / Horizontal Combo Air Handler



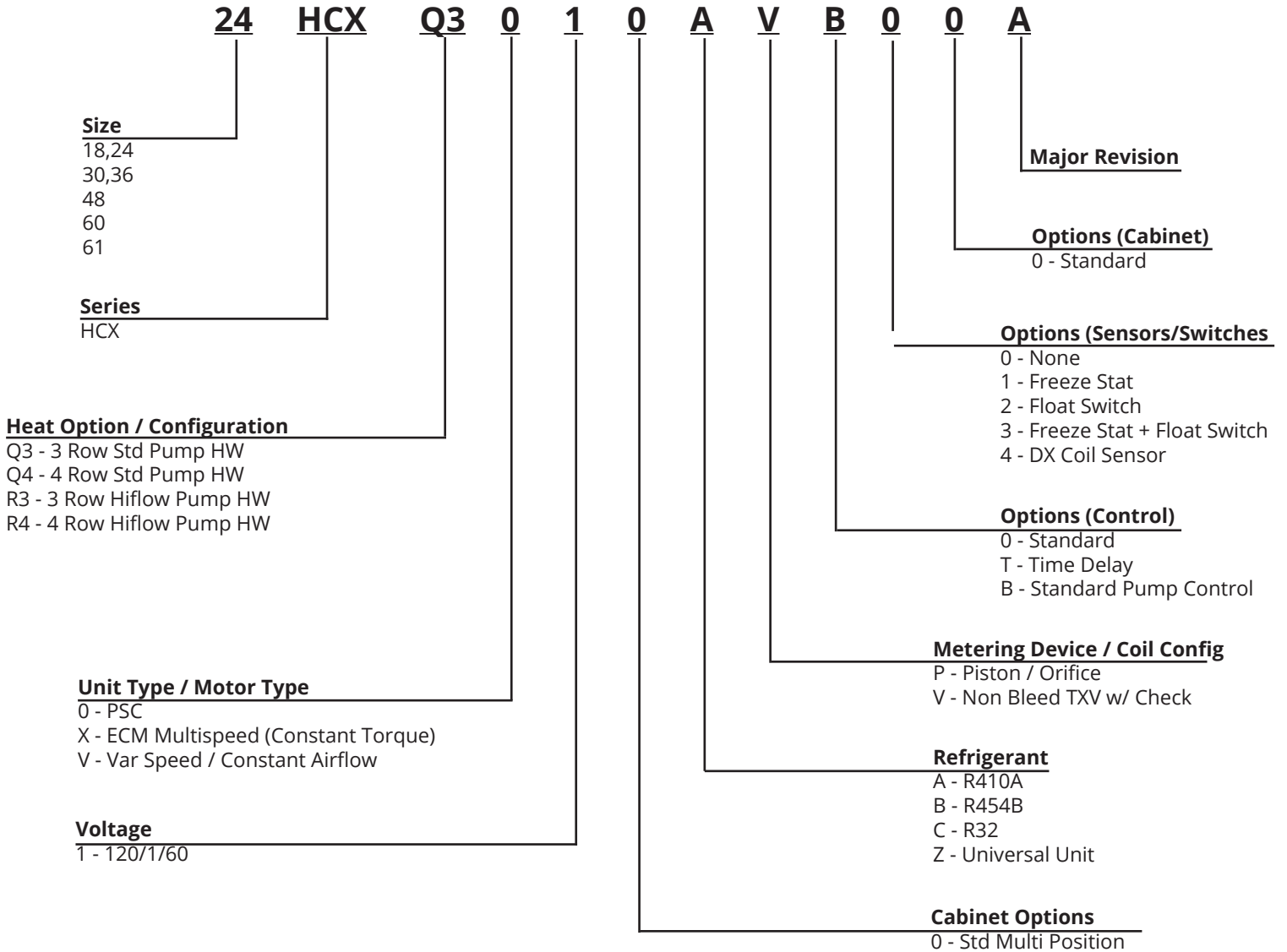
Cooling or Heat Pump
Hot Water Heating

1-1/2 through 5 tons, up to
143,000

BTUH Heating



Nomenclature



HCXQ 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 HCXQ 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 HCXQ air handler is the only product available with these high quality features! Cooling efficiencies up to 15 SEER2, 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 matches, go to: www.ahridirectory.org, 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.



HCXQ 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 does not 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 (except 60HCXQ)
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

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HCXQ Series

COOLING or HEAT PUMP
HOT WATER HEATING

Efficiency:

The HCXQ 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 14.3 SEER2 (depending on the selected outdoor unit). Cooling coils have either piston type metering devices or R410A TXVs and are circuited for cooling or heat pump operation.

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 60HCXQ), 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:

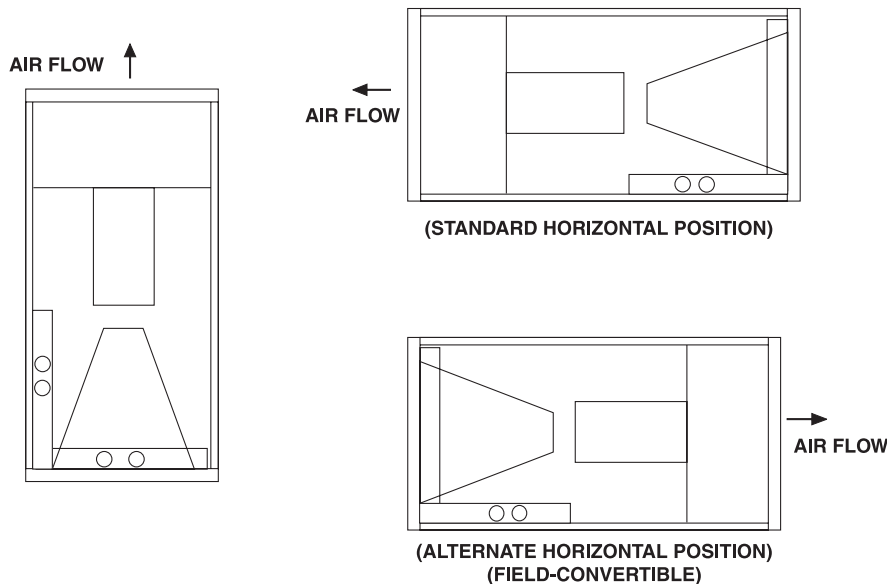
No modification is required for vertical or horizontal (right-to-left) airflow. A horizontal drain pan is factory installed for right-to-left airflow and can be re-positioned within the cabinet to offer left-to-right airflow.

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:

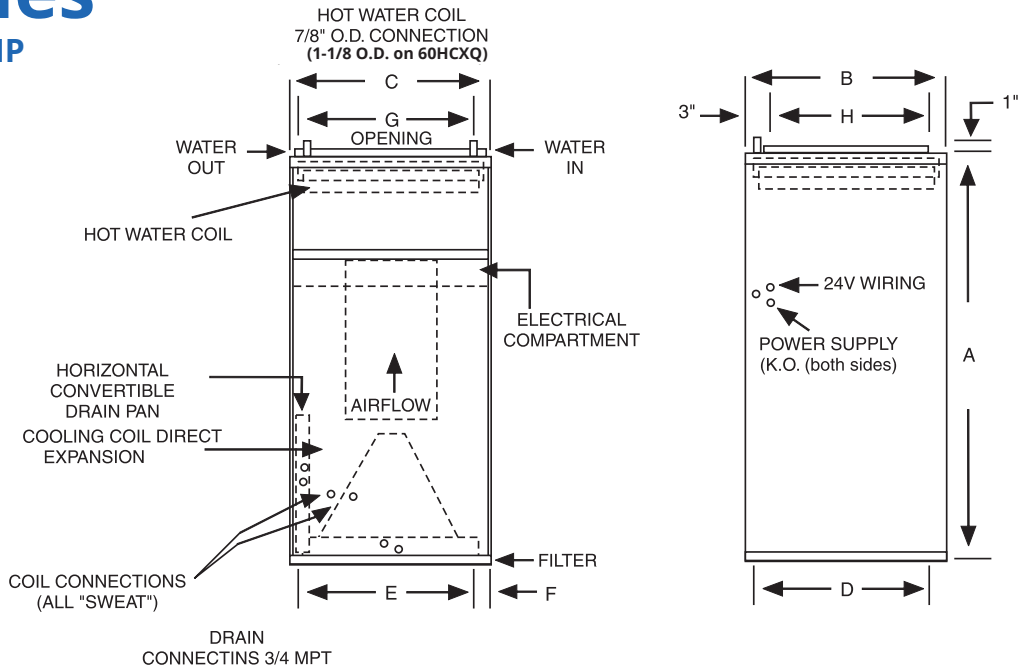
Accessories include TXV expansion valve kits, and freeze protector.



HCXQ 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 |
| 18HCXQ*0 24HCXQ*0 | 40 | 20 | 20 | 18-1/2 | 16 | 2 | 18 | 16 | 18 X 20 X 1 |
| 30HCXQ*0 36HCXQ*0 | 42 | 23 | 20 | 21-1/2 | 16 | 2 | 18 | 19 | 20 X 22 X 1 |
| 48HCXQ*0 | 48 | 28 | 21-1/4 | 26-1/4 | 17-1/4 | 2 | 18 | 24 | 20 X 25 X 1 |
| 60HCXQ*0 | 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 | |
| 18HCXQ*0 | 18,000 | USM318AP | 4.3 | 23.8 | 2.4 | 33.4 | 3.3 | 42.9 | 4.3 | 52.5 | 5.3 | |
| 24HCXQ*0 | 24,000 | USM424AP | 4.3 | 25.5 | 2.6 | 35.8 | 3.6 | 46.0 | 4.6 | 56.2 | 5.6 | |
| 30HCXQ*0 | 30,000 | USM330AP | 5.0 | 30.7 | 3.1 | 43.0 | 4.3 | 55.3 | 5.5 | 67.6 | 6.8 | |
| 36HCXQ*0 | 36,000 | USM436A | 5.0 | 35.0 | 3.5 | 49.0 | 4.9 | 63.0 | 6.3 | 76.9 | 7.7 | |
| 48HCXQ*0 | 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 | |
| 60HCXQ*0 | 60,000 | USM460BP | 8.8 | 64.4 | 6.4 | 90.2 | 9.0 | 116.0 | 11.6 | 141.8 | 14.2 | |

- (1) Use 48HCXQ*0 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.

Data is subject to change. Please verify most current information on www.firstco.com website.



HCXQ Series

| ELECTRICAL DATA | | | | | |
|-----------------|-----------------|-------|------|--------------------|-------------------|
| UNIT MODEL | MOTOR HP (120V) | AMPS | | MIN. CIR. AMPACITY | MAX. HACR BREAKER |
| | | MOTOR | PUMP | | |
| 18HCXQ*0 | 1/5 | 2.8 | 0.57 | 5 | 15 |
| 24HCXQ*0 | 1/5 | 5.1 | 0.57 | 7 | 15 |
| 30HCXQ*0 | 1/5 | 5.1 | 0.57 | 7 | 15 |
| 36HCXQ*0 | 1/2 | 8.5 | 0.57 | 12 | 15 |
| 48HCXQ*0 | 3/4 | 10.7 | 0.57 | 14 | 15 |
| 60HCXQ*0 | 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 |
| 18HCXQ*0 | 1/5-2.8 | HIGH MED. HIGH MED. LOW LOW | 810 | 780 | 715 | 650 | 580 | 500 |
| | | | 680 | 655 | 600 | 545 | 490 | 420 |
| | | | 530 | 505 | 460 | 415 | 360 | 295 |
| | | | 350 | 325 | 325 | 220 | 160 | --- |
| 24HCXQ*0 | 1/5-5.1 | HIGH MED LOW | 950 | 920 | 855 | 790 | 720 | 645 |
| | | | 860 | 835 | 785 | 720 | 650 | 580 |
| | | | 780 | 755 | 705 | 650 | 590 | 510 |
| 30HCXQ*0 | 1/5-5.1 | HIGH MED LOW | 1120 | 1095 | 1045 | 995 | 940 | 880 |
| | | | 850 | 840 | 810 | 780 | 740 | 590 |
| | | | 680 | 670 | 655 | 625 | 585 | 510 |
| 36HCXQ*0 | 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 |
| 48HCXQ*0 | 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 |
| 60HCXQ*0 | 1-11.5 | HIGH MED LOW | 2160 | 2125 | 2055 | 1980 | 1895 | 1810 |
| | | | 1865 | 1840 | 1785 | 1710 | 1620 | 1525 |
| | | | 1560 | 1540 | 1490 | 1435 | 1365 | 1260 |

MODEL NUMBERS

| MODEL SIZE (BTU) | MODEL (PISTON) | FACTORY INSTALLED TXV'S |
|------------------|----------------|-------------------------|
| | | MODEL (R410A TXV) |
| 18,000 | 18HCXQ*0 | 18HCXQ*0 w/R410A TXV |
| 24,000 | 24HCXQ*0 | 24HCXQ*0 w/R410A TXV |
| 30,000 | 30HCXQ*0 | 30HCXQ*0 w/R410A TXV |
| 36,000 | 36HCXQ*0 | 36HCXQ*0 w/R410A TXV |
| 42,000/48,000 | 48HCXQ*0 | 48HCXQ*0 w/R410A TXV |
| 60,000 | 60HCXQ*0 | 60HCXQ*0 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.

HCXQ Series

ACCESSORIES - (all field installed)

| R410A EXPANSION VALVE KITS (Field installed) (cooling only or heat pump) | |
|---|-------------|
| PART NUMBER | FITS |
| 9EVR410-3 | 18/24HCXQ*0 |
| 9EVR410-4 | 30/36HCXQ*0 |
| 9EVR410-5 | 42-60HCXQ*0 |

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 ^o 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.



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