VARIABLE SPEED
MODEL NOW AVAILABLE

Aquatherm®

COMBO HEATERS

Gas Heat . . . without a Gas Furnace !

First Co.®

FIRST CO. - P.O. Box 270969 - Dallas, Texas 75227 - Ph. (214) 388-5751 - Fax (214) 388-2255 - www.firstco.com

Aquatherm® Combo Heaters!

Now you can choose comfortable, efficient gas heat...
without paying a premium or compromising valuable floor space!

Combo Heaters Provide Solutions, Not Problems!

Problem:
Gas heat costs more to install than electric systems.

Solution:
Combo Heaters reduce the installation cost of gas by more than $250 [1]

[1] "Why Build with Gas Heat in Multi-Family Construction" - Gas Research Institute (GRI)

Problem:
Gas furnaces require flue venting and combustion air.

Solution:
Combo Heaters don't require furnace flue venting, combustion air, OR gas piping!

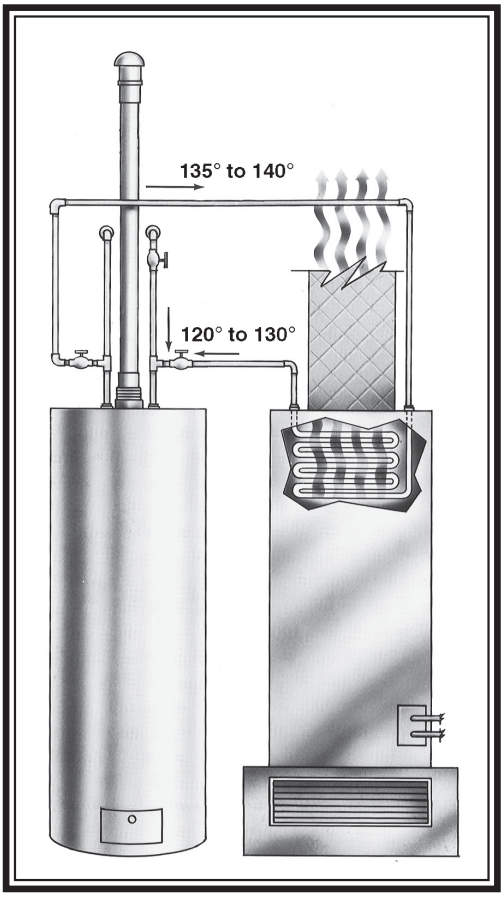
Problem:
In multi-family applications, gas furnaces take up more valuable floor space than electric systems.

Solution:
First Co. *Aquatherm*® Combo Heaters can be used in any floor plan...and some models don't take up any floor space!

When a First Co. *Aquatherm*® "Combo Heater" (air handler) is connected to an adequately sized natural gas, LP, or oil fired water heater, the water heater becomes a dual function appliance that can provide comfortable, efficient space heating as well as hot water for domestic use. And it doesn't matter where you live!
First installed in California in 1974, there are now over a million Combo systems in operation from Canada to Florida and in both single and multi-family applications.

Sequence of Operation (heating mode):

When space heating is needed, the wall thermostat energizes a small pump which circulates hot water from the water heater to the hot water coil in the Combo Heater. As the fan motor forces cool return air from the home over the hot water coil, the air absorbs heat from the hot water and this warm air (105 to 110 degrees) is then circulated throughout the duct system and into the home. While circulating through the Combo Heater coil, the hot water loses only 15 to 25 degrees in temperature and then returns to the water heater to be re-heated.



Water Heater Requirement

Any water heater sized large enough to accomplish both functions (space and water heating) will work...no special water heater is needed! Water heaters used for space heating will generally require extra gallon capacity and higher BTUH input. (See "Equipment Sizing", next page)

Benefits:

High Efficiency

The recovery efficiency of today's natural gas water heaters ranges from 76 to 94%. As a general rule of thumb, the space heating efficiency of any water heater can be approximated by adding several percentage points to the water heater's recovery efficiency. The efficiency gained by these systems comes from the fact that:

1. Eliminating the gas furnace saves the energy that would normally be lost due to the furnace vent, gas pilot, and furnace cabinet.
2. Laboratory and field tests have proven that water heater standby losses are reduced when the water heater is operated more frequently.

Low Maintenance

Combo Heaters are simple and uncomplicated compared to heat pumps and high efficiency gas furnaces. The heating system has only five moving parts!

Compatible Cooling Coils

Cooling coils installed in First Co. Combo Heaters are completely compatible with major brands of condensing units. Maximum Efficiencies 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 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.**

Consistent, Comfortable Heat

As long as hot water is available, Combo Heaters will provide warm air no matter what the temperature is outside. Homeowners report being much more comfortable with hydronic heat than with other space heating systems, such as heat pumps.

Longer Water Heater Tank Life

By circulating water through the water heater more frequently, sediment build-up is reduced, corrosion is minimized, and the life of the water heater tank is extended.

Installation Flexibility

First Co. offers fifteen models of *Aquatherm*® Combo Heaters. Models are available to recess in a wall, install above the ceiling, in a closet, or in an attic. You can choose models for heating only or with cooling coils up to five tons. There's even an add-on heating coil.

Equipment Sizing

1. Air Handler Selection:

Select an air handler with a heating output that exceeds the space heating loss of the structure and that has a cooling coil sized to match the outdoor condensing unit. Special note...the heating output of the air handler or hot water coil will not be greater than the output of the selected hot water heater. Therefore, if the water heater is undersized the heating BTUH of the air handler will be LESS than it's rated output.

2. Water Heater Selection:

The following sizing information should only be used as a basic guide to adequate water heater sizing because of variations in each family's domestic hot water requirements. For additional assistance in water heater sizing contact a qualified professional engineer.

Proper water heater sizing should consider both the gallon capacity AND the BTU input of the water heater.

a. To determine water heater GALLON CAPACITY:

A minimum 40 gallon high recovery and/or high efficiency gas or oil-fired water heater is recommended. The following volume sizing guide is satisfactory in most areas of the country:

600-800 CFM air handlers - Minimum 40 gallon water heater

1000-1200 CFM air handlers - Minimum 50 gallon water heater

1400-1600 CFM air handlers - Either two 40 gallon water heaters piped together, one high input 50 gallon (63,000 to 75,000 BTU input), or one 72 to 75 gallon.

2000 CFM air handler - Any combination of water heaters having at least 105,000 BTU OUTPUT.

b. To determine minimum water heater BTU INPUT: (Assumes a water heater recovery efficiency of 76%)

For mild climates - BTU INPUT = structure's heat loss x 1.51

For colder climates - BTU INPUT = structure's heat loss x 1.58

3. Condensing unit:

Selection of the condensing unit size should be determined by the "Manual J" method or other approved heat load/heat gain calculation procedure. Certified cooling capacities and efficiency information are available upon request from First Co.

Technical Specifications:

Air Handlers

All air handlers having "Q" in the model number come with factory installed circulating pump, hot water check valve, and purge valve. The VHBQB air handler includes a high efficiency variable speed fan motor.

Water Piping

Water piping between the water heater and air handler should be 3/4" (1" on 5 ton models) nominal copper or other code approved material.

When installed in an area subjected to freezing temperatures, the water piping should be completely insulated and a "freeze protector" should be installed on the hot water coil (contact factory). Anti-scald valves may be required by local codes, and they are available from local plumbing distributors.

To prevent air lock of the circulating pump, the piping connections to and from the air handler MUST come from the horizontal connections of the "T" fittings in the vertical hot and cold water supply lines at the water heater (see diagram on page 2).

Maximum distance between the water heater and air handler should not exceed 100 feet (one way).

Thermostats

All air handlers are compatible with standard 24V wall thermostats.

Additional Literature Available (Contact First Co.)

1. Catalog #IAM - Installation manual.
2. Individual Specification Sheets for each air handler series are available on-line at: www.firstco.com

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.

VHBQB Series Variable Speed

Upflow / Horizontal - Left / Horizontal - Right

Features:

1. Quiet, high efficiency **variable speed fan motor.**
2. **Multi-function microprocessor** with pump timer and blower delays.
3. **Extra large high efficiency cooling coil** for proper matching with today's higher efficiency condensing units.
4. **Factory installed R22 or R410A TXV's** for more efficient cooling performance.
5. Factory installed **convertible horizontal drain pan** (right-to-left or left-to-right air flow).
6. **Slide out hot water coil** assembly for easier service.
7. Blower door safety switch.

MODEL	HEATING BTUH (1)	NOM. CLG. (TONS)	DIMENSIONS (H-W-D)
24VHBQB	35,300	1.5/2.0	40" X 20" X 20"
36VHBQB	49,500	2.5/3.0	42" X 20" X 23"
48VHBQB	68,800	3.5/4.0	48" X 21-1/4" X 28"
60VHBQB	91,000	5.0	52" X 25-1/4" X 28"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.
2. Accessories: (Field installed)
   1. **Freeze Protector** - #941-1 brings on pump below 38°.

HIGHEST COOLING EFFICIENCY!

HBQB Series Four Way

Upflow / Downflow / Horizontal - Left / Horizontal - Right

Factory or field installed cooling/heat pump TXV's

HIGHEST COOLING EFFICIENCY!

Features:

1. **Multi-function microprocessor** with pump timer and blower delays.
2. **Extra large high efficiency cooling coil** for proper matching with today's higher efficiency condensing units.
3. Factory installed **convertible horizontal drain pan** (right-to-left or left-to-right air flow).
4. **Slide out hot water coil** assembly for easier service.
5. Blower door safety switch.

Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
18HBQB	33,900	1.5	40" X 20" X 20"
24HBQB	35,300	2.0	40" X 20" X 20"
30HBQB	43,600	2.5	42" X 20' X 23"
36HBQB	49,500	3.0	42" X 20" X 23"
48HBQB	68,800	3.5 - 4.0	48" X 21-1/4" X 28"
60HBQB	91,000	5.0	52" X 25-1/4" X 28"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.
2. Accessories: (Field installed)
   1. **Freeze Protector** - #941-1 brings on pump below 38°.
   2. **Downflow conversion kits -** (**Note:** Downflow not recommended when air handler is installed above a finished ceiling). (Not available for 60HBQB) (Also see note #4)
      Kit #919-11 - For 18 - 24HBQB
      Kit #919-12 - For 30 - 36HBQB
      Kit #919-13 - For 48HBQB
3. Air handlers should be "up-sized" for downflow applications. Contact the factory.

UCQB Series Wall or Closet Upflow

Factory or field installed cooling/heat pump TXV's

Features:

1. **Multi-function** microprocessor with pump timer and blower delays.
2. **Installed circulating pump and easy access check valve.**
3. **Slide out hot water coil** assembly for easier service.
4. Blower door safety switch.
5. Piston type metering on cooling coil.
6. High efficiency copper tube/aluminum fin heating and cooling coils.
7. Optional wall panel for recessed wall mounting.
8. Factory installed filter.
9. Non-corrosive thermo-plastic drain pan.
10. Completely serviceable from the front.
11. Large air purge valve.

Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
18UCQB 19UCQB	27,100	1.5	43" X 22-1/8" X 18"
24UCQB 25UCQB	32,400	1.5, 2.0	43" X 22-1/8" X 18"
30UCQB 31UCQB	36,900	2.0 , 2.5	43" X 22-1/8" X 18"
36UCQB 37UCQB	43,900	2.5 , 3.0	43" X 22-1/8" X 21"

Notes:
1. BTUH capacities are based on 140° EWT, 70° EAT.
2. Wall Panel #9PWUC03L (Required for recessed wall mounting).
3. Hanger Bracket - attaches to inside closet for air handler hanging - **#90PK3**. (Not required for wall mounting).
4. Freeze Protector - #941-1 brings on pump below 38°.

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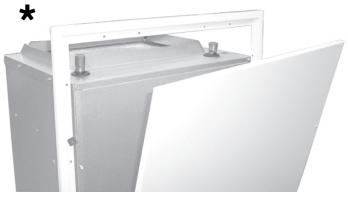


Unit shown with optional louvered wall panel
(Recessed wall application)

* **Accessible HW Connections**

*

MBQ-F Series Closet Upflow

Factory or field installed cooling/heat pump TXV's

Features:

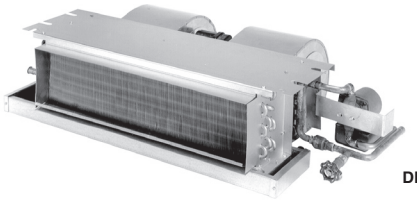
1. **Installed circulating pump and easy access check valve.**
2. Large air purge valve.
3. Copper tube/aluminum fin heating and cooling coils.
4. Factory installed filter.
5. Primary and secondary drain connections.
6. Blower door safety switch.
7. **Slide out hot water coil** assembly for easier service.

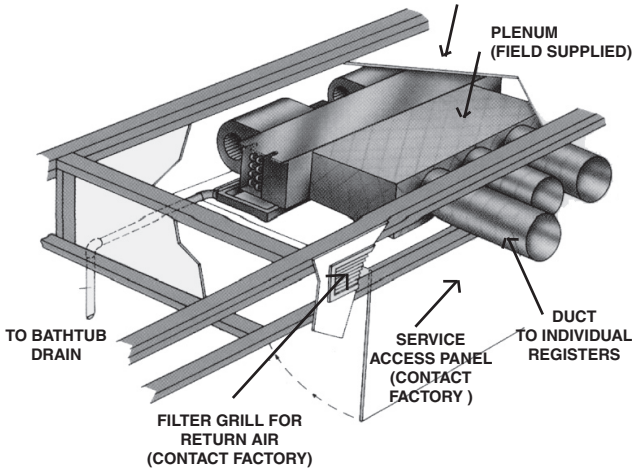
Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
18MBQ3-F	33,900	1.5	40" X 20" X 20"
24MBQ3-F	35,300	2.0	40" X 20" X 20"
30MBQ3-F	43,600	2.5	42" X 20" X 23"
36MBQ3-F	49,500	3.0	42" X 20" X 23"
48MBQ4-F	68,800	3.5, 4.0	48" X 21-1/4" X 28"
60MBQ4-F	91,000	5.0	52" X 25-1/4" X 28"

Notes:
1. BTUH capacities are based on 140° EWT, 70° EAT.
2. Accessories: (Field Installed)
1. **Freeze Protector** - #941-1 brings on pump below 38°.

CDXQ Series Uncased Horizontal

Factory or field installed cooling/heat pump TXV's





Features:

1. **Installed circulating pump, easy access check valve, and air purge valve.**
2. **Installed freeze protector**.
3. **Installed service switch.**
4. Compact size - only 10" high.
5. Two speed fan operation.
6. Insulated and coated drain pan.
7. Primary and secondary drain connections.
8. Copper tube / aluminum fin heating and cooling coils.

Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
18/19CDXQ	18,400	1.5	10" X 45-1/8" X 21"
24/25CDXQ	23,000	2.0	10" X 51-1/8" X 21"
30/31CDXQ	27,300	2.5	10" X 57-1/8" X 21"
36/37CDXQ	31,600	3.0	10" X 64-1/8" X 21"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.
2. Optional louvered or non-louvered access panels available. Contact the factory
3. Unit can be ordered with separate enclosure and access panel. Contact the factory.

CDXQ-C Series Cased Horizontal

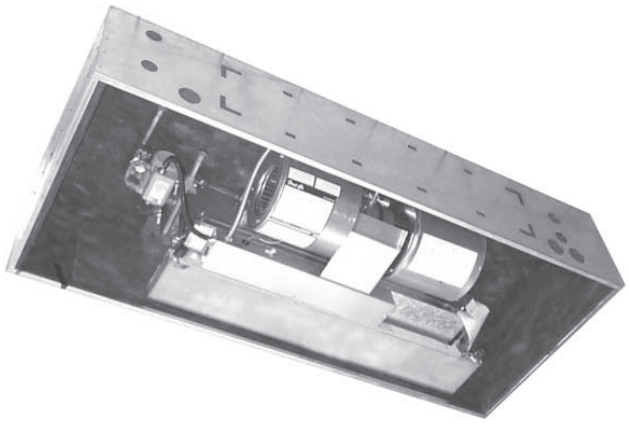
Factory or field installed cooling/heat pump TXV's

Features:

1. **Installed circulating pump, easy access check valve, and air purge valve.**
2. **Installed freeze protector**.
3. Completely cased.
4. **Installed service switch.**
5. Compact size - only 11" high.
6. Two speed fan operation.
7. Insulated and coated drain pan.
8. Primary and secondary drain connections.
9. Copper tube / aluminum fin heating and cooling coils.
10. Includes louvered or non-louvered access panel.

Enclosure Access Panel

(non-louvered shown)



Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
18/19CDXQ-C	18,400	1.5	10" X 45-1/8" X 21"
24/25CDXQ-C	23,000	2.0	10" X 51-1/8" X 21"
30/31CDXQ-C	27,300	2.5	10" X 57-1/8" X 21"
36/37CDXQ-C	31,600	3.0	10" X 64-1/8" X 21"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.

FWA-AQ Series Upflow, Downflow, Horizontal Heating Only

Features:

1. **Installed circulating pump and easy access check valve.**
2. Large air purge valve.
3. Copper tube/aluminum fin coil.
4. Compact size - **only 27-1/2" tall**.
5. Manual air vent on coil.
6. Blower door safety switch.
7. Factory installed filter.

Model	Heating BTUH (1)	CFM (@ .15 ESP)	Dimensions (H-W-D)
FWA30-AQ	37,100	930	27-1/2" X 20" X 20"
FWA50-AQ	52,800	1500	27-1/2" X 20" X 23"
FWA60-AQ	62,600	1385	27-1/2" X 20" X 23"

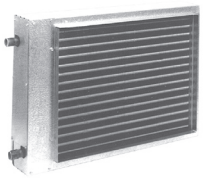
Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT, and 3 or 3.5 GPM.

HWC Series Add-on Heating Coil for Duct Mounting

Features:

1. Copper tube/aluminum fin heating coil.
2. Can be mounted in new or existing duct.
3. Vertical or horizontal mounting.
4. Completely insulated cabinet.
5. Manual air vent on hot water coil.
6. Optional "Flow Control Module" available.



Model	CFM Range	Heating BTUH (1)	Face Area	Dimensions (H-W-D)
HWC 1520	800-1200	38,300	15" x 20"	17" X 3-7/8" X 24-1/2"
HWC 2025	1400-1800	56,000	20" x 25"	22" X 3-7/8" X 29-1/4"
HWC 2030	1800-2200	64,000	20" x 30"	22" X 3-7/8" X 34-1/4"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT., and First Co. Flow Control Module, with nominal air flows.
2. Consult factory for boiler applications.

CDXQ-HO Series - Uncased Horizontal Heating Only

Features:

1. **Installed circulating pump and easy access check valve.**
2. Large air purge valve.
3. Service switch.
4. Copper tube/aluminum fin heating coil.
5. Compact size - only 10" high.

(CDXQ SHOWN)

Model	Heating BTUH (1)	CFM (@ .1 ESP)	Dimensions (H-W-D)
18CDXQ-HO	18,400	690	10" X 44-1/4" X 21"
24CDXQ-HO	23,000	840	10" X 50-1/4" X 21"
30CDXQ-HO	27,300	1025	10" X 56-1/4" X 21"
36CDXQ-HO	31,600	1300	10" X 64-1/8" X 21"

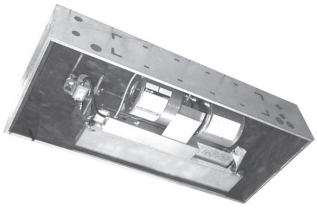
Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.

CDXQ-HO-C Series - Cased Horizontal Heating Only

Features:

1. **Installed circulating pump and easy access check valve.**
2. Large air purge valve.
3. Service switch.
4. Copper tube/aluminum fin heating coil.
5. Compact size - only 11" high.
6. Completly cased.
7. Includes louvered or non-louvered access panel.



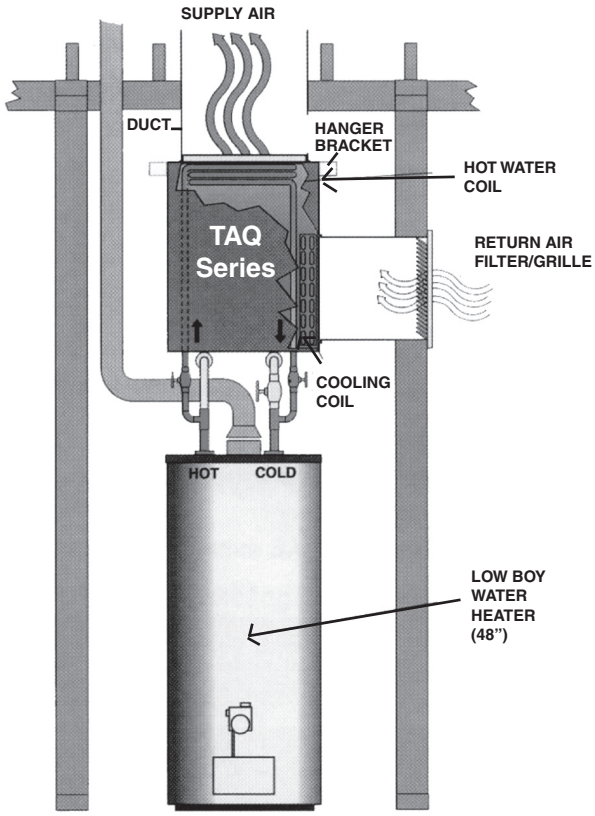
(CDXQ-C SHOWN)

Model	Heating BTUH (1)	CFM (@ .1 ESP)	Dimensions (H-W-D)
18CDXQ-HO-C	18,400	690	11" X 45-3/4" X 23-7/8"
24CDXQ-HO-C	23,000	840	11" X 51-3/4" X 23-7/8"
30CDXQ-HO-C	27,300	1025	11" X 58-1/2" X 23-7/8"
36CDXQ-HO-C	31,600	1300	11" X 66-1/2" X 23-7/8"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.

TAQ Series Over-the-Water Heater



Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
24TAQ3	29,000	1.0 - 2.0	24-1/4" X 22-1/4" X 24-1/4"
24TAQ4	36,000	2.0	24-1/4" X 22-1/4" X 24-1/4"
36TAQ4	55,000	2.5 - 3.0	29-1/4" X 26-1/4" X 26-1/4"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT. and nominal CFM.
2. **Cooling Coil** (Field installed)
   Part #996-24THP (For 24TAQ), (1.0, 1.5, or 2.0 Tons)
   Part #996-36THP (For 36TAQ), (2.5 or 3.0 Tons)

Features:

1. Mounts on a closet wall over a standard low boy gas water heater ...
   Both appliances in ONE CLOSET!
2. **Installed circulating pump and easy access check valve.**
3. Air purge valve.
4. Blower door safety switch.
5. Piston type metering on cooling coil.
6. Left or right side return air capability.
7. "T" fittings provided for easy water heater connection.
8. Hanger bracket provided to facilitate wall mounting of the air handler.

For <u>replacement</u> only. <u>Not</u> for new construction.

VAQ / RAQ Series Upflow

Features:

1. **Installed circulating pump and easy access check valve.**
2. Large air purge valve.
3. Copper tube/aluminum fin heating and cooling coils.
4. Piston type metering on cooling coils.
5. Factory installed filter.
6. Primary and secondary drain connections.
7. Blower door safety switch.

VAQ

Model	Heating BTUH (1)	Nom. Clg. (Tons)	Dimensions (H-W-D)
24VAQ-3	30,000	1.5, 2.0	40" X 14" X 20"
36VAQ-3	43,200	2.5, 3.0	40" X 20" X 20"
24RAQ-3	29,000	1.5, 2.0	39-1/4" X 20-1/8" X 16-1/8"
36RAQ-3	45,000	2.5, 3.0	44-1/4" X 24-1/8" X 21-1/8"

Notes:

1. BTUH capacities are based on 140° EWT, 70° EAT.

2. Accessories: (Field installed)
   1. **Horizontal Drain Pans (**Air flow right to left)
      #935-1 fits 24 through 36VAQ.
   2. **Freeze Protector** - #941-1 brings on pump below 38°.

RAQ
(Recessed wall mount)
(Shown with wall panel)

Cat. No. ATC-BW209 (Replaces ATC-BW407)