Bindus Manufacturing, LLC

AQUECOIL®

HYDRONIC HEATING UNITS

MODEL HHU

CM Series

SPECIFICATION SHEET

RESIDENTIAL SPACE HEATING USING DOMESTIC HOT WATER

DESCRIPTION

The AQUECOIL® Hydronic Heating Unit works in conjunction with your preferred brand of Air Handler, and a hot water source, to provide residential space heating. It extracts BTUs from the hot water and uses the Air Conditioning Air Handler to distribute the heated air throughout the conditioned space. The AQUECOIL unit is designed to fit over the Air Handler's discharge or return in either horizontal or vertical applications. The AQUECOIL unit eliminates the need for a furnace or heat pump to provide space heating. Not only does the AQUECOIL unit offer a low-cost alternative to conventional space heating equipment, it also provides substantial heating capacity, at an attractively low fuel cost, when used with a gas-fired water heater or boiler.



FEATURED HIGHLIGHTS

- ✓ Designed to fit directly onto your Air Handler
- ✓ Heavy duty cabinet made of rust-proof aluminum
- ✓ Baked enamel finish for a polished look
- ✓ Fully insulated with high “R” rigid foam
- ✓ Uses any hot water source with sufficient BTUH
- ✓ Heat output easily adjusted to meet requirements
- ✓ Optional 230-volt or 115-volt circulation pump for easy connection to air handler wiring/controls
- ✓ Optional water lubricated, low wattage circulation pump requires no maintenance
- ✓ Optional “No Lead” valve kit with full-port ball valves, bleed ports and swing check valves
- ✓ Optional Air Handler return-side configuration
- ✓ Design Certified and Listed to meet UL and CSA Standards
- ✓ Tested to comply with ANSI/NSF 61-2012
- ✓ 3-Year Limited Warranty

APPLICATION

The AQUECOIL Hydronic Heating Unit is made to be mounted to the discharge or return opening of the system air handler. It may be used in horizontal, up-flow, or down-flow configurations. Hot water is drawn from, and returned to, your boiler or water heater. Power for the optional circulator pump is derived by connection to the air handler. Specific wiring requirements will change with different models of air handlers; depending on whether the particular model includes strip heat and whether it is sequenced.

The AQUECOIL circulator pump, or boiler zone valve and pump, will operate on a call for heat from the thermostat. Hot water is drawn from the domestic water heater or boiler and supplied to the AQUECOIL unit. Once the coil is heated and the blower delay is satisfied, the Air Handler will distribute the heated air to the conditioned space. When the thermostat is satisfied, the AQUECOIL circulator, or boiler zone valve and pump, and the Air Handler blower will shut down.

SPECIFICATIONS AND PERFORMANCE INFORMATION

Model HHU
CM Series

Due to continuous product improvement, these specifications may change without notice.

CIRCULATOR PUMP

AQUECOIL Hydronic Heating Units may contain a wet rotor, in-line, single-stage circulator. All pump models use Grundfos UPS15-42B three-speed circulators. The water-cooled pumps are rated at 230 volts or 115 volts, 0.15 to 0.74 amps and 35 to 95 watts depending on the speed setting. They are designed for working pressures up to 145 psi and fluid temperatures up to 220°F. The pump volute is bronze and the bearings are ceramic.

HEAT EXCHANGER

AQUECOIL Hydronic Heating Units contain a high performance, 2-row fin/tube water-to-air heat exchanger. Lanced aluminum fins provide sufficient heat exchange fin surface to avoid using a 3-row coil, with its inherently higher static air pressure drop. All water-bearing surfaces are copper.

CONTROLS

AQUECOIL Hydronic Heating Units are designed to utilize the Air Handler controls, including the system thermostat. Interconnection with the Air Handler's operating controls may vary, depending on the air handler model and back-up heat configuration. Consult the wiring diagram in the Installation Instructions for specific interconnection details. Air Handlers without strip heat connections will require a 24V heating fan relay.

MOUNTING / LOCATION

AQUECOIL Units are designed to mount over the discharge (return with -R option) of your preferred Air Handler. Since the AQUECOIL interconnects the Air Handler and the Hot Water Source, some consideration must be given to the distance between these system components. Sizes CM-1, CM-2 and CM-3 can accommodate approximately 200 equivalent feet of 3/4" I.D. water pipe round trip. To get the full effect from size CM-4, the pipe loop cannot exceed 25 equivalent feet of 3/4" I.D. water pipe at 9 gpm with the optional circulator. Longer runs will require larger pipe size in the plumbing loop, or a reduction in flow rate causing a reduction in heat output.

NOTE: Most installations with water heaters require swing check valves to prevent thermosyphoning during the cooling season.

NOMINAL PRODUCT PERFORMANCE

					♦—— 140°F Entering Water [EWT] ——♦			♦—— 180°F Entering Water [EWT] ——♦		
HHU MODEL	Air Flow (scfm)	Static Pres. [APD] ("wg)	Water Flow (gpm)	Pump Head [WPD] (ft)	Leaving Water [LWT] (°F)	Leaving Air [LAT] (DB) (°F)	Heat (BTUH)	Leaving Water [LWT] (°F)	Leaving Air [LAT] (DB) (°F)	Heat (BTUH)
HHU-CM-1	800	.17	4	2.3	124	104	30,750	155	124	48,500
HHU-CM-2	600	.09	4	2.6	126	112	28,250	157	136	44,500
	800	.13	4	2.6	123	105	32,750	154	128	51,500
	1000	.19	4	2.6	121	102	36,250	151	121	57,000
HHU-CM-3	1000	.14	6	6.2	126	107	42,000	157	129	66,000
	1400	.24	6	6.2	123	101	49,250	153	119	77,500
	1600	.30	6	6.2	122	98	52,000	152	115	82,000
HHU-CM-4	1200	.14	9	5.1	128	108	51,750	161	131	81,250
	1600	.22	9	5.1	126	102	59,500	159	122	93,750
	2000	.31	9	5.1	125	98	65,750	156	116	103,500

(Chart shows sample data points, not requirements/limits)

**** 68°F Entering Air is used for all calculations ****

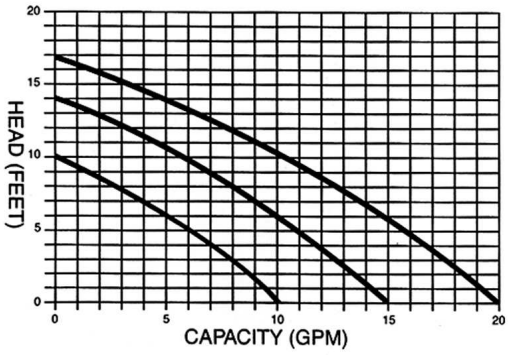
PRODUCT SELECTION GUIDE

PRODUCTS SIZES

HHU MODEL	Fits Air Handler Size (width x depth)	Actual Unit Size (width x depth)	Kick-plate	Unit Height	Unit Discharge (width x depth)
HHU-CM-1	14 1/2" x 20 1/4"	14 1/2" x 21 1/2"	1 1/4"	7"	12 1/2" x 18"
HHU-CM-2	17 1/2" x 20 1/4"	17 1/2" x 21 1/2"	1 1/4"	7"	15 1/2" x 18"
HHU-CM-3	21" x 20 1/4"	21" x 21 1/2"	1 1/4"	7"	19" x 18"
HHU-CM-4	24 1/2" x 20 1/4"	24 1/2" x 21 1/2"	1 1/4"	7"	22 1/2" x 18"

NOTE: AQUECOIL HHU models are designed to match the exact width of your air handler. If there is no kickplate listed above, it will also match the exact depth of the air handler. If there is a kickplate listed, the unit will hang off the back of the air handler by that amount and the factory-installed kickplate is designed to close off the overhang and prevent air from escaping.

Circulator Performance
GRUNDFOS Pumps Corporation
UPS 15-42 B7 230V 60Hz



MODEL SELECTION

Choosing the right AQUECOIL Hydronic Heating Unit is as simple as matching the cabinet size to that of the Air Handler. Although there are hundreds or thousands of Air Handler model numbers that change all the time, the cabinet sizes remain the same.
As long as the physical fit is correct, the AQUECOIL Unit's performance can be tweaked by adjusting the air flow, water flow and water temperature to achieve the desired heat output level.

OPTIONAL CONFIGURATIONS

-WP	With Pump (Factory Installed, 230v Default)
-WV	With "No Lead" Valves (Included in Box)
-R	Configured for Return Side of Air Handler to Reduce Air Pressure Drop by 10% (no flanges, no air spreader)

WARRANTY: All AQUECOIL Hydronic Heating Units offer a limited 3-year parts warranty.

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