

Residential Space Heating Using Domestic Hot Water

Description:

The AQUECOIL Hydronic Heating Unit works in conjunction with an Air Conditioning Air Handler and a conventional domestic water heater to provide residential space heating by extracting BTU's from the hot water and using the Air Conditioning Air Handler to distribute the heated air throughout the conditioned space. The AQUECOIL is designed to fit over the Air Handler's discharge or return air side in either horizontal or upflow system applications. The AQUECOIL offers a low cost alternative to conventional space heating equipment; and, when used in conjunction with a gas-fired water heater, it provides substantial heating capacity at an attractively low fuel cost.



Featured Highlights

- Designed to fit with specific Trane AirHandler Models. TWE-C/D, P, E
- Fully insulated with rigid foam.
- Optional water lubricated, low wattage, circulation pump requires no maintenance.
- Optional fused and grounded 230V pump circuit for easy direct connection to air handler.
- Sturdy Aluminum cabinet with heavy baked enamel finish.
- Optional valve kit with hand valves & check valves.
- Optional fan relay kit for air handlers without strip heat.
- 3 year parts warranty.
- ARL Listed Appliance, with UL approved components.

Application:

The AQUECOIL Hydronic Heating Unit is mounted to the discharge or return air side of the system air handler, which may be oriented in either horizontal or upflow configuration. Power for the circulator pump is derived by connection to the air handler. Specific wiring requirements will change with different models of air handler; depending on whether the particular model includes strip heat, and whether it is sequenced.

The AQUECOIL circulator pump will start on a call for heat from the wall thermostat. Hot water is drawn from the domestic water heater and supplied to the AQUECOIL. Once the coil is heated and the blower time delay is satisfied, the Air Handler will distribute the heated air to the conditioned space. When the wall thermostat is satisfied, both the AQUECOIL circulator pump and the Air Handler blower will shut down.

Specifications and Information

These Specifications Subject to Change Without Notice

Model HHU TE (A) Series

Circulator Pump

AQUECOIL Hydronic Heating Units contain a low wattage, wet rotor, in-line, single stage circulator. All models use Grundfos UPS15-42B7 multispeed circulators. The water cooled pumps are rated at 95 watts, 230 volts, and 0.4 amps max. They are designed for working pressures up to 145 psi, and fluid temperatures up to 230F. 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. They are sized to provide sufficient heat exchange fin surface to avoid using a 3 row coil, with its inherently higher static pressure drop. All water bearing surfaces are copper.

Controls

AQUECOIL Hydronic Heating Units are designed to utilize the Air Handler controls, including the wall thermostat. Interconnection with the Air Handler's operating controls may vary, depending on the model

and back-up heat configuration. Consult the wiring diagram in the Installation Instructions for specific interconnection details. Air handlers without strip heat will require a heating fan relay.

Mounting/Location

AQUECOIL Hydronic Heating Units are designed to mount on the return air side of the Air Handler. Mounting straps are provided with each AQUECOIL Unit to fasten the unit onto the Air Handler. Since the AQUECOIL interconnects the Air Handler and the Domestic Water Heater, some consideration must be given to the distance between these system components. Models TE2 and TE3 can accommodate approximately 200 equivalent feet of 3/4" water pipe (round trip); however, to get full capacity from Model TE4, the pipe loop cannot exceed 25 equivalent feet of 3/4" water pipe. Longer runs will require larger pipe size in the plumbing loop, or a reduction in flow rate; thereby causing a reduction in heat output.

Note: Installations with substantial cooling loads will require check valves to prevent cooling season thermosyphoning.

Nominal Product Performance

Model	AirFlow (scfm)	Static ("wg)	Wtr. Flow (gpm)	PumpHead (ft.)	140° F E.W.T.			180° F E.W.T.		
					Temp.Fall Water (F)	Temp.Rise Air (F)	Heat BTUH	Temp.Fall Water (F)	Temp.Rise Air (F)	Heat BTUH
TE2 (A)	1000	.13	4	2.5	18	33	35,000	28	52	56,000
	1200	.17	6	5.2	14	31	41,000	22	50	65,000
TE3 (A)	1400	.22	6	5.2	15	29	44,500	24	46	70,000
TE4 (A)	1800	.23	9	4.1	14	31	62,000	22	50	97,500
	2000	.28	10	4.9	15	30	65,000	24	47	102,000

Product Selection Guide

By System Size (ton)			
	C/D	P	E
TE2 (A)	1 1/2, 2, 2 1/3, 3	1 1/2, 2, 2 1/2, 3	1 1/2, 2, 2 1/3, 3
TE3 (A)	3 1/4, 4, 5	3 1/2	3 1/2
TE4 (A)	—	4, 5	5

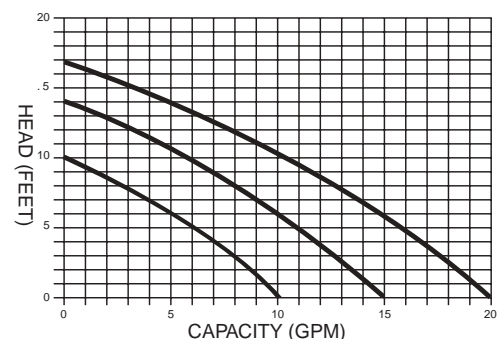
By Air Handler Model			
	C/D	P	E
TE2 (A)	018, 024, 030, 036	018, 024, 030, 036	031
TE3 (A)	042, 048, 060	042	037
TE4 (A)	—	048, 060, 063	040, 065

Air Handler Performance (TWE-C/D, P, E-)
(High speed CFM 0.5"wg static)

Capacity	C/D	P	E
1 1/2T	550	800	685
2T	1000	750	930/900/875
2 1/2T	1075	950	1130/1125/1100
3T	1200	1150	1295/1260/1375/1370
3 1/2T	1350	1425	1300/1425/1645
4T	1625	1750	1860
5T	2110	2100	2035

AQUECOIL Hydronic Heating Units		
Model	Unit Dimensions	Discharge Openings
TE2 (A)	21 1/2 x 21 x 8	20 x 20
TE3 (A)	23 1/2 x 21 x 8	22 x 20
TE4 (A)	26 x 21 x 8	25 x 20

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



Optional Accessories

(-V/K)	2 Check valves & 2 shut-off valves
(-R/K)	24V Relay for pump
(-F)	Freezestat
(-115)	115V Pump

Warranty: AQUECOIL Hydronic Heating Units offer a limited 3 year warranty.

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