



B+II WATERWIZARD

TECHNICAL DATA SHEET

B+II WATERWIZARD STEAM FIRED WATER HEATER

The AERCO B+II WaterWizard high-efficiency heater is designed to satisfy potable water heating needs in commercial and institutional environments. The packaged, steam fired system incorporates real-time, load tracking and responsive controls to maintain accurate hot water temperatures under diversified loads. And AERCO's unique sub-cooling heat exchanger design increases operating efficiency to deliver more usable heat per pound of steam input than other heaters. As added benefits, the unique design simplifies maintenance and promotes long life.

Packaged with either electronic or pneumatic controls, the B+II heater maintains outstanding temperature control when operated under constant load conditions with variances held to $\pm 4^{\circ}\text{F}$ under normal load changes. An integrated load monitoring system and high-turndown steam control valve deliver accurate temperature control without the need for storage tanks, blending valves or other temperature averaging components. When packaged with the electronic control system, the heater can be remotely monitored and/or fully integrated with BAS software.

A parallel stack of helically wound coils, including a dedicated sub-cooling coil, form a cross counter-flow heat exchanger — one of the most efficient designs available for domestic water heating. This design eliminates wasteful flash losses because all of the Heat of Condensation, and much of the Heat of the Liquid, is transferred from the steam. In most domestic applications, condensate outlet temperatures of $\leq 160^{\circ}\text{F}$ can be expected. A simple union orifice eliminates the need for a trap.

The baffle-free, flexible coils of the heat exchanger continuously expand and contract with changing water and steam temperatures. The self-descaling nature of this automatic action eliminates the need for periodic, acid cleaning or tube scraping. The free floating design eliminates stress so effectively — where water conditions are especially harsh, the B+II can be quickly and easily "thermal shocked" as part of a routine maintenance plan. All water wetted parts are copper or copper alloy materials — the best choice of materials to further ensure longevity.

The unit's semi-instantaneous design (steam in tubes and water in shell) is compatible with low or high steam pressures. And installation is easy because of its small footprint (4 ft²) and doorway size. Outstanding thermal efficiency, tight temperature control, low maintenance, longevity and overall reliability make the AERCO WaterWizard the most logical choice for any commercial or institutional water heating installation.

FEATURES

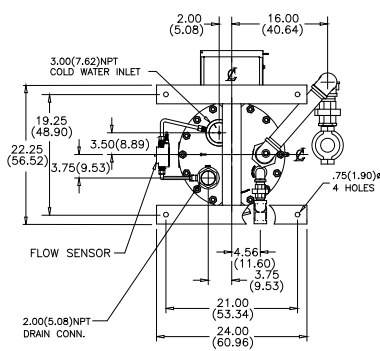
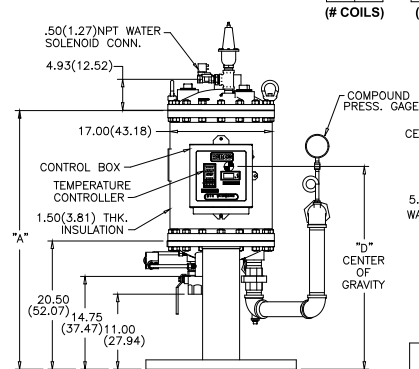
- Accurate Temperature Control $\pm 4^{\circ}\text{F}$
- Choice of Electronic or Pneumatic Controls
- Compact Foot Print <4 ft²
- Automatic Self-Descaling
- Automatic Condensate Subcooling
- Fully Modulating Variable Steam Input
- No Trap or Storage Tanks Required
- Low Surface Temperature
- ASME- B&PV Code Sec. VIII, Div. 1 Stamped
- All Copper or Copper Alloy Wetted Surfaces
- 10-Year Warranty on Complete Hx*
- 20-Year Warranty on Pressure Vessel and Integral Demand Anticipator*
- Supports a Variety of Applications
 - 5 to 150 PSIG Steam Supply
 - Intermittent Water Flow Rates Up to 250 GPM
 - Set Point Range 50°F to 205°F
 - 235 PSIG ASME Working Pressure Certified
 - Single or Multiple Installation
 - Ideal for New or Retrofit

*Consult AERCO website or Engineering Manual for complete warranty details.

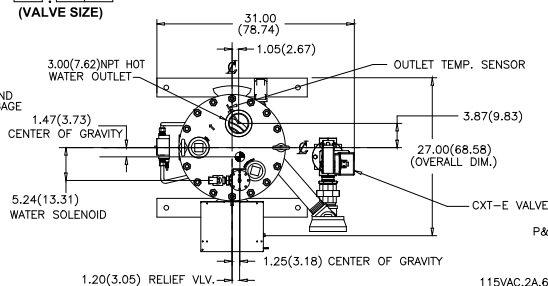


DIMENSIONS

WATERWIZARD MODEL B+ / / EC



OPERATING CONDITIONS		
SHELL	CAPACITY, GPM(L/S)	IN/OUT TEMP., °F(°C)
TUBES	LB/HR (Kg/S)	PRESSURE PSIG (KPa)

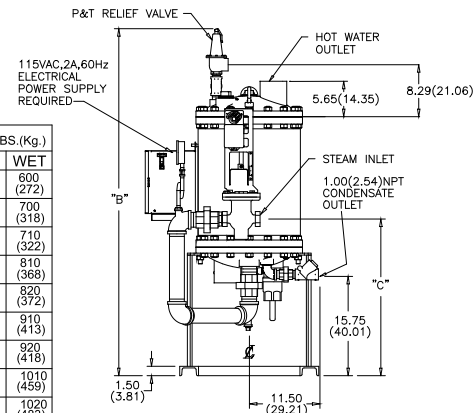


HEATER MODEL	NO. OF COILS	HEATING SURFACE SQ. FT. (SQ. M.)	DIM. IN.(CM)				WT. LBS.(Kg.)	
			"A"	"B"	"D"		DRY	WET
B+03	3	15 (1.39)	41.38 (105.11)	58.00 (147.24)	27.38 (69.55)		460 (209)	600 (272)
B+04	4	20 (1.85)	50.38 (127.97)	65.00 (165.10)	31.88 (80.98)		535 (243)	700 (318)
B+05	5	25 (2.32)	50.38 (127.97)	65.00 (165.10)	31.88 (80.98)		550 (250)	710 (322)
B+06	6	30 (2.78)	59.38 (150.83)	74.00 (187.96)	36.38 (92.41)		595 (270)	810 (368)
B+07	7	35 (3.25)	59.38 (150.83)	74.00 (187.96)	36.38 (92.41)		610 (277)	820 (372)
B+08	8	40 (3.71)	68.38 (173.69)	83.00 (210.82)	40.88 (103.84)		865 (392)	910 (411)
B+09	9	45 (4.18)	68.38 (173.69)	83.00 (210.82)	40.88 (103.84)		890 (403)	920 (418)
B+10	10	50 (4.63)	77.38 (196.55)	92.00 (233.68)	45.38 (115.27)		925 (420)	1010 (459)
B+11	11	55 (5.11)	77.38 (196.55)	92.00 (233.68)	45.38 (115.27)		940 (426)	1020 (463)
B+12	12	60 (5.56)	86.38 (219.41)	101.00 (256.54)	49.88 (126.70)		995 (451)	1110 (504)
B+13	13	65 (6.04)	86.38 (219.41)	101.00 (256.54)	49.88 (126.70)		1010 (459)	1120 (508)
B+14	14	70 (6.49)	95.38 (242.27)	110.00 (279.40)	54.38 (138.13)		1065 (484)	1210 (550)
B+15	15	75 (6.97)	95.38 (242.27)	110.00 (279.40)	54.38 (138.13)		1080 (490)	1220 (554)

NOTE: CENTER OF GRAVITY IS WITHOUT VALVE LINE.

MATERIALS OF CONSTRUCTION	
SHELL	3/16"(0.48) SA53 GRD(B)(ERW) CARB. ST.
LINER	COPPER, ASTM B-370 ALLOY 122
HEADS	BRONZE, SB-62
COILS	COPPER, 0.049"(0.12) WALL, SB-111
RISER	ALLOY 122, LIGHT DRAWN
	RED BRASS, SB-43

HEAT EXCHANGER DESIGN STANDARDS			
	MAX. WORKING PRESS. PSIG(KPa)	MAX. TEMP. °F(°C)	TEST PRESS. PSIG(KPa)
SHELL SIDE	235(1619)	400(204)	355(2446)
TUBE SIDE	250(1723)	400(204)	375(2584)
ASME B&PV CODE SEC. VIII, DIV. 1			STAMP U
RELIEF VALVES SET AT			°F, PSI



DIMENSIONS ARE SHOWN IN INCHES (CENTIMETERS)

CONTROL VALVE SIZE		DIM. "C" IN.(CM)
LINE PRESSURE	PSIG(KPa)	
1"(2.54) SCREWED END	25 (63.50)	
1-1/4"(3.18) SCREWED END	25 (63.50)	
1-1/2"(3.81) SCREWED END	25 (63.50)	
2"(5.08) SCREWED END	25 (63.50)	
2-1/2"(6.35) 150# ANSI FLG'D END	28.5 (72.39)	
3"(7.62) 150# ANSI FLG'D END	31.00(78.84)	
4"(10.16) 150# ANSI FLG'D END	31.00(78.84)	

SPECIFICATIONS

w/ Electronic Controls

w/ Pneumatic Controls

Shell Side Pressure Drop	4PSIG @ max. rated flow	4PSIG @ max. rated flow
Ambient Operating Temperature.....	0°F to 131°F	0°F to 131°F
Electrical Requirements	120/1/60 1 Amp	120/1/60 1 Amp
220/1/50 1 Amp	
Standby Amperage Draw	1 Amp	0.1 Amp
High Limit "Tripped" Amperage Draw	1.5 Amp	0.5 Amp
Max. Continuous Water Flow Rate.....	125 GPM	125 GPM
Max. Intermittent Flow Rate	250 GPM	250 GPM
Max. Steam Supply Pressure.....	150 PSIG	150 PSIG
Max. Shell Side Operating Pressure	225 PSIG*	225 PSIG*
Adjustable Temperature Control	up to 205°F	up to 230°F
Adjustable High Limit Control	up to 250°F	up to 250°F
Water Connection Inlet/Outlet	3" FNPT	3" FNPT
Air Consumption	does not apply	0.10 scfm@25 PSIG
Air Supply Min. Requirements.....	does not apply	25 PSIG
Air Supply Max Requirements.....	does not apply	30 PSIG

* Standard 150 PSIG, 210°F P&T relief valve supplied; consult AERCO representative for higher settings.

AVAILABLE OPTIONS

0.065" thick copper or copper-nickel tubing for increased corrosion resistance

All 316L Stainless Steel wetted parts for heating de-ionized water

(product configuration may vary)

Dry contacts for remote "High Limit Tipped Status" indication

Pressure gradient monitoring system can be provided in lieu of double wall construction where codes allow

Pressure relief valves set up to 230 PSIG for high rise applications

Specifications are subject to change. Consult website or contact AERCO
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