

## COMMERCIAL STEAM FIRED WATER HEATER

The AERCO B+II WaterWizard domestic water heating package is designed to address the requirements of commercial, potable water heating systems. A responsive, load tracking control system maintains accurate hot water temperatures under the diversified load patterns of commercial applications. The unique AERCO heat exchanger design produces sub-cooled condensate for high unit and system thermal efficiencies.

AERCO's integral load monitoring system and high turn down steam control valve maintain  $\pm 4^\circ$  accuracy without the need for storage tanks, blending valves, pumps or other temperature averaging components.

A parallel stack of helically wound coils plus an additional SUB-COOLING COIL form a cross-counterflow, 2-pass heat exchanger constituting the most efficient heat exchanger design available for domestic water heating. Wasteful flash losses are virtually eliminated, as well the Heat of Condensation and much of the Heat of the Liquid are transferred from the steam. A simple union orifice eliminates the need for a trap. Condensate outlet temperatures of  $160^\circ\text{F}$  or less can be expected for most domestic applications.

These baffle-free, flexible coils continuously expand and contract with changing water and steam temperatures. This action provides for automatic self-descaling, minimizing the need for messy, routine acid cleaning or tube scraping. All water wetted parts are copper or copper alloy materials the best selection for longevity in even the most aggressive or potable water supplies.

With steam in the tubes and water in the shell, this Semi-Instantaneous design is compatible with low or high steam pressures. A footprint of less than  $4\text{ ft}^2$  and doorway size provide broad installation flexibility. Tight temperature control, high thermal efficiency, reliability, low maintenance and longevity make the AERCO B+II WaterWizard a most logical choice for all commercial, domestic water heating installations.



### FEATURES

- Accurate Temperature Control  $\pm 4^\circ\text{F}$
- Compact, space Efficient
- Automatic Self Descaling
- Applicable for 5 to 150 PSIG Steam Supply
- Automatic Condensate Subcooling
- No Trap Required
- Low Surface Temperatures
- 10-Year Warranty on Complete Heat Exchanger, Pressure Vessel and Integral Demand Anticipator\*\*
- Single or Multiple Installation
- Fully Modulating Variable Steam Input
- Ideal for New or Retrofit
- ASME B&PV Code Sec. VII, Div. 1 Stamped
- Water Flow Rates up to 250 GPM
- 235 PSIG ASME Working Pressure Certified
- Set Point Range  $50^\circ - 230^\circ$
- All Copper or Copper Alloy Wetted Surfaces

### APPLICATIONS

- Hospitals
- Hotels
- Airports
- Nursing Homes
- Apartment Buildings
- Grade Schools
- High Schools
- Universities
- Scientific Laboratories
- Restaurants
- Correctional Facilities
- Facility Washdown\*
- Laundries\*
- Industrial Safety Shower/Eyewash\*
- Gang Shower in Ind'l Plants or Athletic Centers\*

\* May require alternate product configuration and/or application consult local representative for details.  
\*\* See Engineering Manual page A102.0 for complete warranty details.

# DIMENSIONS

## WATERWIZARD MODEL B+ / /

(# COILS) (VALVE SIZE) (P OR S)

**NOTE:**  
FOR AIR OPERATED (PNEUMATIC) CONTROL VALVE, 25 PSIG REGULATED AIR SUPPLY IS REQUIRED.

**NOTE:**  
120V, 1A, 60HZ ELECTRICAL POWER SUPPLY REQUIRED

**NOTE:** CENTER OF GRAVITY IS WITHOUT VALVE LINE.

DIMENSIONS SHOWN ARE IN INCHES.  
DIMENSIONS IN ( ) ARE IN CENTIMETERS.

HEATER MODEL	NO. OF COILS	HEATING SURF. SQ.FT.(SQ.M.)	DIM. IN.(CM)			WT. LBS.(KG.)	
			"A"	"B"	"C"	DRY	WET
B+03	3	15	41.38 (106.11)	55.00 (139.70)	27.38 (69.55)	460 (209)	600 (272)
B+04	4	20	50.38 (128.00)	64.00 (162.56)	31.88 (80.98)	535 (242)	700 (318)
B+05	5	25	58.38 (148.30)	72.00 (182.88)	36.88 (93.60)	610 (277)	800 (363)
B+06	6	30	66.38 (168.60)	80.00 (203.20)	41.88 (106.80)	685 (311)	900 (408)
B+07	7	35	74.38 (188.90)	88.00 (223.60)	46.88 (119.10)	760 (345)	1000 (454)
B+08	8	40	82.38 (208.20)	96.00 (243.84)	51.88 (132.10)	835 (379)	1100 (500)
B+09	9	45	90.38 (228.50)	104.00 (264.16)	56.88 (144.10)	910 (413)	1200 (544)
B+10	10	50	98.38 (250.00)	112.00 (284.48)	61.88 (157.10)	985 (447)	1300 (590)
B+11	11	55	106.38 (270.30)	120.00 (304.80)	66.88 (169.10)	1060 (481)	1400 (635)
B+12	12	60	114.38 (290.60)	128.00 (325.12)	71.88 (181.10)	1135 (515)	1500 (680)
B+13	13	65	122.38 (310.90)	136.00 (345.44)	76.88 (194.10)	1210 (549)	1600 (725)
B+14	14	70	130.38 (331.20)	144.00 (365.76)	81.88 (206.10)	1285 (583)	1700 (770)
B+15	15	75	138.38 (351.50)	152.00 (386.08)	86.88 (218.10)	1360 (617)	1800 (815)

OPERATING CONDITIONS			
WATER	CAPACITY, GPM(L/S)	IN/OUT TEMP., F(C)	
		IN	OUT
STEAM	FLOW LB/HR (KG/S)	PRESSURE TO VALVE PSIG(KPa)	
		IN	OUT

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)

CONTROL VALVE SIZE		"C" DIMENSION
		IN. (CM)
1"(2.54) SCREWED END		26.00(66.00)
1-1/2"(3.81) SCREWED END		28.00(71.12)
1-1/2"(3.81) SCREWED END		28.00(71.12)
2"(5.08) SCREWED END		28.00(71.12)
2-1/2"(6.35) 150# ANSI FLANGED END		31.00(78.74)
3"(7.62) 150# ANSI FLANGED END		31.00(78.74)
4"(10.16) 150# ANSI FLANGED END		31.00(78.74)

MATERIALS OF CONSTRUCTION	
SHELL	3/16"(0.48) SA-313 GR(B) (ERW) CARB. ST.
LINER	COPPER, ASTM B-370 ALLOY 122
HEADS	BRONZE, SB-62
COILS	COPPER, 0.049"(0.12) WALL, SB-111 ALLOY 122
LIGHT DRAWN	
RISER	RED BRASS, SB-43

## SPECIFICATIONS

Shell Side Pressure Drop.....	4 PSIG @ Max. rated flow
Electrical Requirements.....	120/1/60 1 Amp
Standby Amperage Draw.....	0.1 Amp
High Limit "Tripped" Amperage Draw.....	0.5 Amp
Max. Continuous Water Flow Rate.....	125 GPM
Max. Intermittent Flow Rate.....	250 GPM
Max. Steam Supply Pressure	
with Pneumatic Control Valve.....	150 PSIG
with Self-Operated Steam Control Valve.....	125 PSIG
Max. Shell Side Operating Pressure.....	225 PSIG*
Adjustable Temperature Control.....	up to 230°F
Adjustable High Limit Control.....	up to 250°F
Air Supply Requirements (for Pneumatic Controls).....	25 PSIG min., 30 PSIG max.
Air Consumption.....	0.10 scfm @ 25 PSIG
Water Inlet and Outlet Connections.....	3.00" FNPT

\*Standard 150 PSIG, 212°F P&T relief valve supplied; consult AERCO representative for higher settings.

## AVAILABLE OPTIONS

- Less Temperature Limit System for non-electric installation (in non-personnel related applications)
- 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 Tripped Status" indication
- Pressure Gradient Monitoring System in lieu of Double Wall Construction (where codes allow)
- Pressure Relief Valves set up to 230 PSIG for high resistance applications

Specifications and dimensions are subject to change.  
Certified Drawings are available.

**Represented by:**

**Industrial Heater**

8400 Wolf Lake Dr.  
Suite 116  
Bartlett, Tennessee  
38133

Tel (888) 451-4328  
Fax (901) 382-4766

**AERCO INTERNATIONAL, INC.**  
159 PARIS AVENUE • P.O. BOX 128  
NORTHVALE, NJ 07647-0128