



Semi-Instantaneous Indirect Fired Water Heater

Uses Boiler Water or HTHW To Heat Domestic Water

Heavy duty construction withstands
demanding commercial/industrial use and
ensures long operating life

Factory selected and sized boiler water
control valve simplifies installation and
ensures reliable operation

- Comes equipped with all operating controls,
ready for immediate installation
- Available in vertical and horizontal;
single or double wall
- Compact design requires minimal floor space

Applications

Schools, office buildings, sports venues, hotels,
industrial facilities, nursing homes, hospitals,
and much more.



BWX

SYNERGY HYDRO SERIES

A Heavy Duty Indirect Fired Water Heater

The Hubbell Synergy Hydro BWX is a fully packaged indirect fired water heater that utilizes boiler water or high temperature hot water (HTHW) as the energy source for heating potable water. The entire package is designed to be a reliable and long-lasting source of hot water. Each component is carefully selected to ensure high performance in even the most demanding application. The BWX is a good solution for heating potable water in a commercial building or process water in an industrial application.

Over 100 years of water heating expertise

Hubbell water heaters are the right choice for your commercial and industrial applications. We have water heating solutions for most energy sources with storage capacities from 1–10,000 gallons — all designed, engineered, and manufactured for reliability and longevity coupled with unparalleled support and service.



Standard Equipment

VESSEL CONSTRUCTION

Designed and built in strict accordance with the ASME Code Section VIII and stamped, certified, and registered with the National Board of Boiler and Pressure Vessel Inspectors

Designed for 150 psi working pressure and hydrostatically tested

BOILER OPERATING CONTROLS

Operating controls are factory selected, sized, piped, and tested to ensure reliable operation

All components are factory piped and ready for boiler water in and out connections

Modulating control valve (2-way standard, 3-way optional) to regulate the flow of heating water through the coil. Three types of control valves are offered: Electric, pneumatic and self-contained. The default standard is electric.

All bronze integral circulating pump

Direct mounted boiler water and domestic water temperature and pressure gauges

High limit Single solenoid safety system closes the boiler water supply to the heating coil should the water temperature in the tank reach the hi-limit set point. Requires 120-volt 5 amp electrical service

HEATING COIL

Factory sized and installed copper heating coil with a generously sized heating surface designed to ensure reliable operation

U-tube heating coil available in single or double wall copper tubing (double wall is standard), designed for a maximum working pressure of 150 psi

Heavy duty fabricated steel head with threaded NPT inlet and outlet connections

All bronze integral circulating pump

All wetted parts are non-ferrous for maximum longevity

Non-Ferrous tube sheet

GENERAL

Heavy duty fiberglass insulation for maximum operating efficiency and minimal stand-by heat loss

Heavy gauge painted galvanized steel protective outer jacket

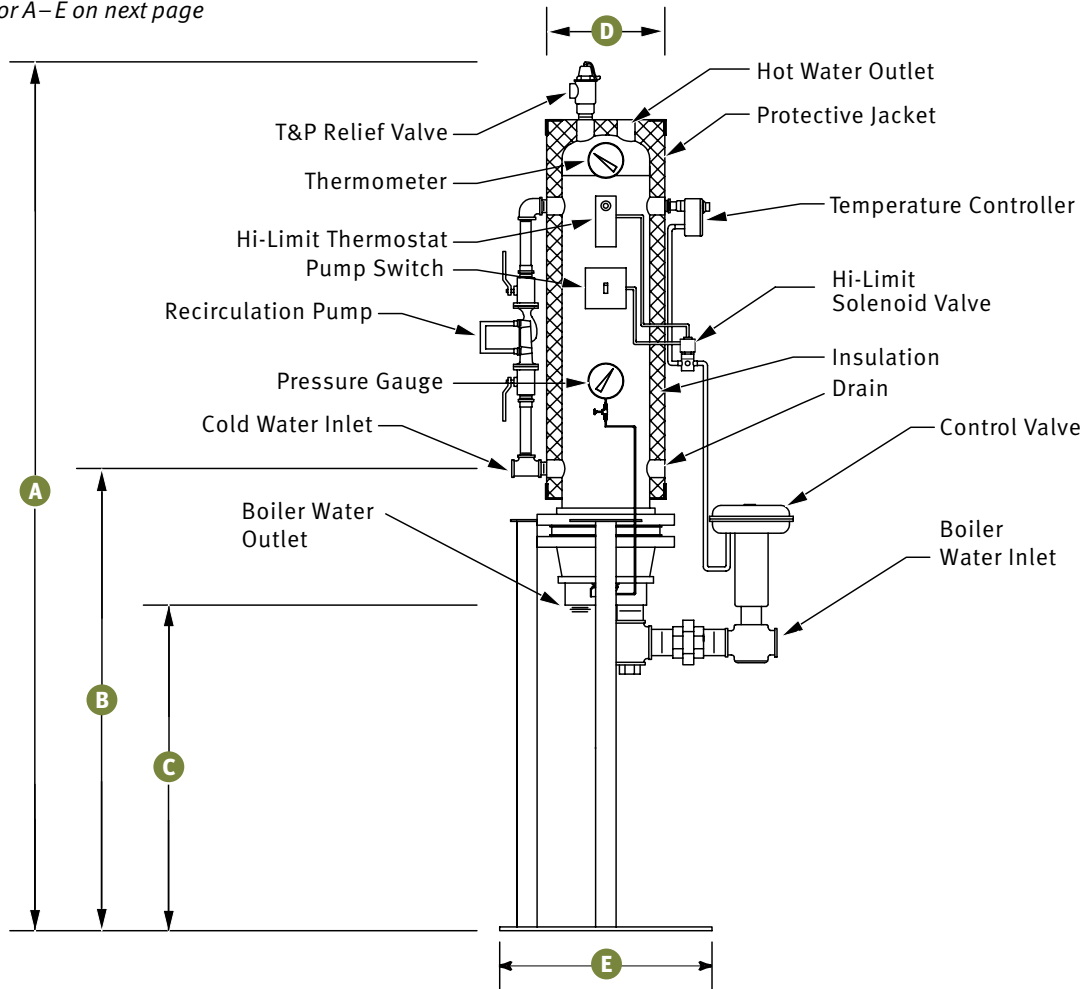
Heavy duty integrally welded steel supports for floor mounting

One (1) year component warranty, Five(5) year pressure vessel warranty.

ASME rated combination T&P relief valve set at the tank working pressure and 2100F

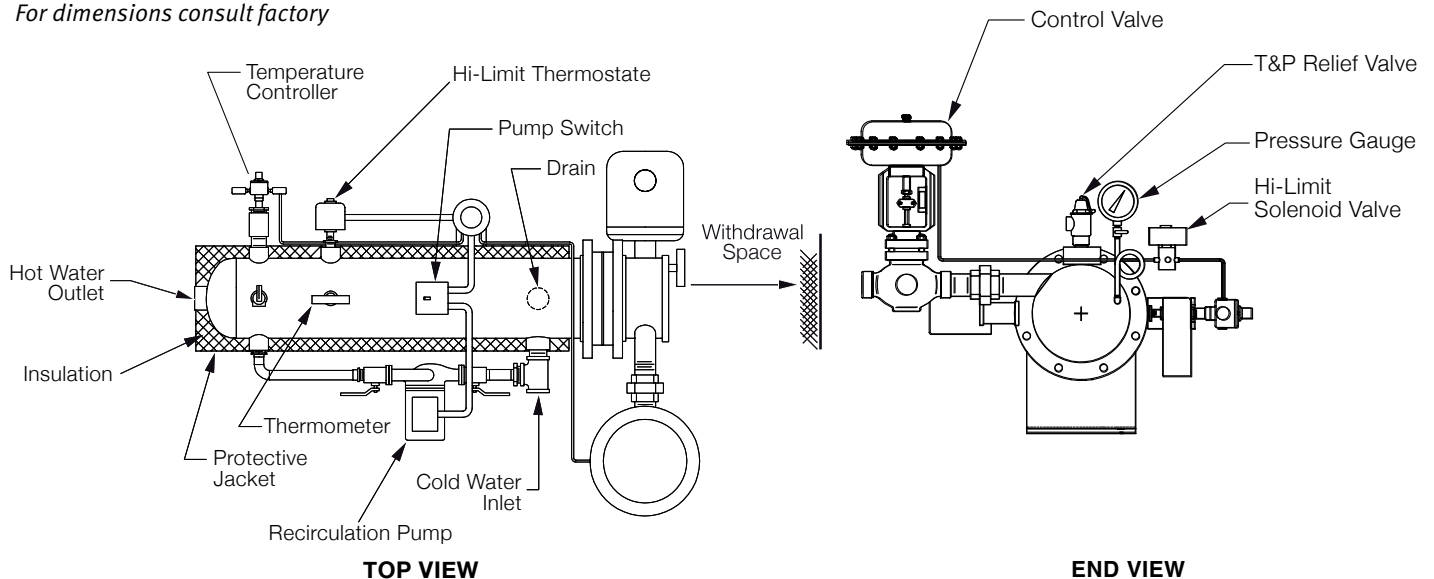
Vertical Configuration

See dimensions for A–E on next page



Horizontal Configuration

For dimensions consult factory



All information is subject to change without notice. Consult factory for submittal drawings.

Recovery Rating

Based on 100°FΔT Recovery Rate (40-140°F)

See dimension references for A–E on previous page

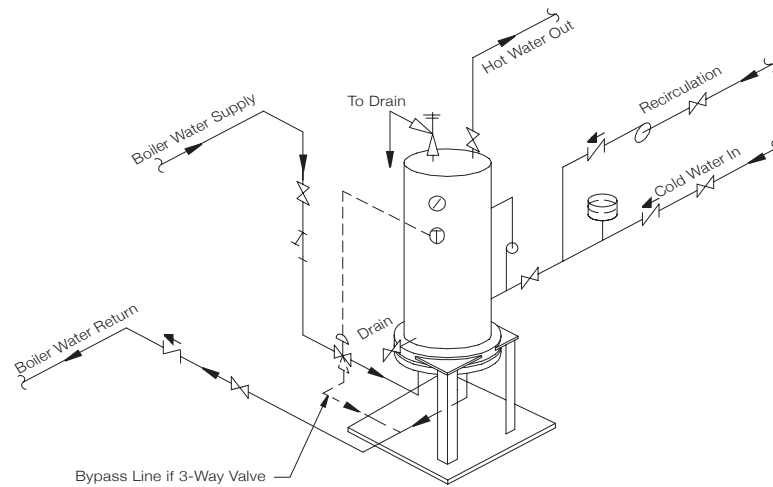
Base Model	Recovery Rating (GPH) 40–140°F	BTU / Hour	Boiler Water Entering & Exiting Temperatures (°F)	Vertical BWX Overall Dimensions (inches)										Weight (Lbs)
				Single Wall					Double Wall					
				A	B	C	D	E	A	B	C	D	E	
BWX-600	600	500,000	180–160°F	88	41	28	15	21	101	47	34	17	23	810
			200–180°F	88	40	29	13	19	100	47	34	15	21	655
BWX-900	900	750,000	180–160°F	100	47	34	15	21	90	42	27	19	25	850
			200–180°F	76	35	22	15	21	89	41	28	17	23	770
BWX-1200	1,200	1,000,000	180–160°F	100	47	34	15	21	102	48	33	19	25	850
			200–180°F	88	41	28	15	21	89	41	28	17	23	810
BWX-1500	1,500	1,250,000	180–160°F	89	41	28	17	23	102	48	33	19	25	1035
			200–180°F	88	41	28	15	21	101	47	34	17	23	810
BWX-1800	1,800	1,500,000	180–160°F	89	41	28	17	23	108	49	39	20	27	1035
			200–180°F	77	35	22	17	23	101	47	34	17	23	985
BWX-2400	2,400	2,000,000	180–160°F	101	47	34	17	23	108	49	39	20	27	1090
			200–180°F	77	35	22	17	23	90	42	27	19	25	985
BWX-3000	3,000	2,500,000	180–160°F	90	42	27	19	25	111	30	39	22	31	1195
			200–180°F	78	36	21	19	25	102	48	33	19	25	1130
BWX-3600	3,600	3,000,000	180–160°F	90	42	27	19	25	111	50	39	22	31	1195
			200–180°F	78	36	21	19	25	96	43	33	20	27	1130
BWX-4200	4,200	3,500,000	180–160°F	90	42	27	19	25	—	—	—	—	—	—
			200–180°F	78	36	21	19	25	108	49	39	20	27	1130
BWX-4800	4,800	4,000,000	180–160°F	96	43	33	20	27	—	—	—	—	—	—
			200–180°F	84	37	27	20	27	99	44	33	22	31	1480
BWX-6000	6,000	5,000,000	180–160°F	99	44	33	22	31	—	—	—	—	—	—
			200–180°F	99	44	33	22	31	—	—	—	—	—	—



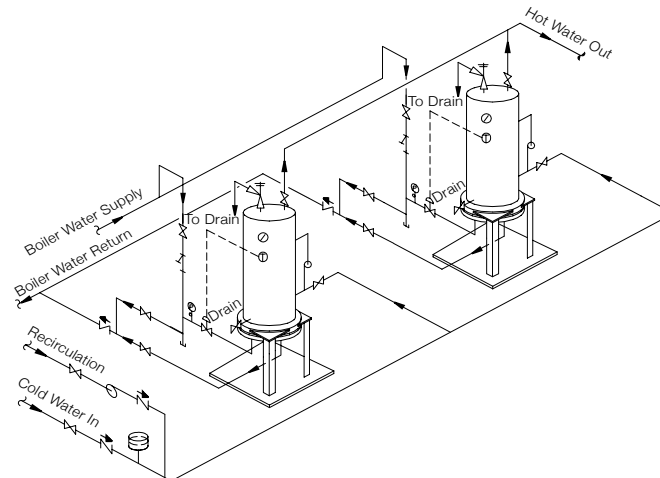
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Piping Layouts

Single Unit



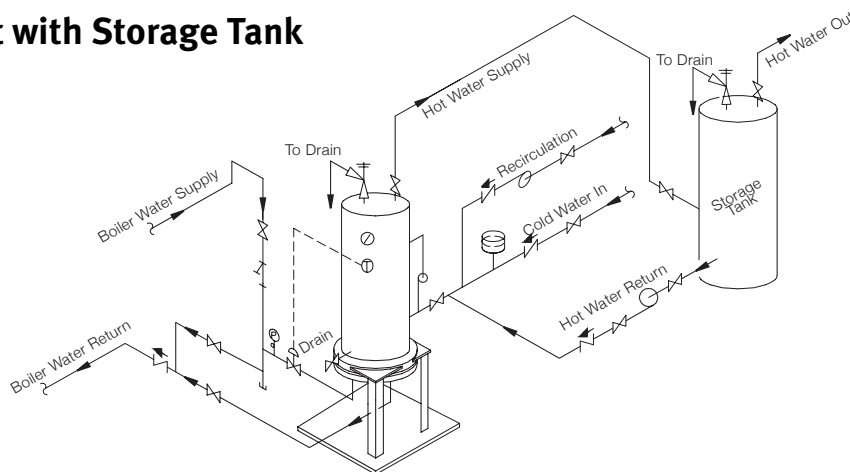
Dual Unit



Legend

	Strainer
	Stop Valve
	Check Valve
	Control Valve
	Relief Valve
	Thermal Element
	Pressure Gauge
	Temperature Gauge
	Circulator
	Expansion Tank

Single Unit with Storage Tank



All information is subject to change without notice. Consult factory for submittal drawings.

Formulas

To Determine the Boiler Water Flow Rate Required

$$\frac{\text{Domestic Water GPH Heated} \times 0.01666 \times \text{Domestic Water } ^\circ\text{F}\Delta\text{T}}{\text{Boiler Water Drop } ^\circ\text{F}\Delta\text{T}} = \text{GPM Boiler Water Required}$$

To Determine Maximum Domestic Water Recovery Rate

$$\frac{\text{Boiler Water GPM} \times 60 \times \text{Boiler Water Drop } ^\circ\text{F}\Delta\text{T}}{\text{Domestic Water Rise } ^\circ\text{F}\Delta\text{T}} = \text{GPH Domestic Water Heated}$$

Note: A minimum 10°F differential (ΔT) between the exiting boiler water temperature and the exiting domestic hot water temperature is required to maintain efficient heat transfer rates.

Examples

A. I want to heat 950 GPH from 40-140°F with 180°F boiler water that I can take down to 160°F.
How much boiler water must I have available?

$$\frac{950 \times 0.01666 \times (140 - 40)}{180 - 160} = \frac{1582.7}{20} = 79 \text{ GPM of Boiler Water}$$

B. I have 30 GPM of 200°F boiler water that I can take down to 160°F.
How many GPH of domestic water can I heat from 40-140°F?

$$\frac{30 \times 60 \times (200 - 160)}{140 - 40} = \frac{72,000}{100} = 720 \text{ GPH of Domestic Water}$$

All information is subject to change without notice. Consult factory for submittal drawings.

Synergy Hydro BWX Model Number Designation

MODEL	VESSEL TYPE	RECOVERY RATING	COIL TYPE	OPTIONAL EQUIPMENT
BWX = Vertical BWXH = Horizontal	CN = 90/10 copper-nickel SS = Stainless steel 316L	In GPH at 100°ΔT	S = Single wall D = Double wall	Write/type optional equipment code in the gray box below in alphabetical order. For multiple options separate codes with a dash (-).

**Higher recovery rates available, consult factory.*

Example: BWXSS-3600S-C36

A vertically installed semi-instantaneous indirect fired water heater with a 316 Stainless Steel pressure vessel and a single wall copper nickel heating coil rated to heat 3600 GPH at a 100 F temperature rise, with optional BACnet Gateway module (C36)

Optional Equipment

Optional equipment must be called out in the written specifications, use the codes below.

Controls

- C20** Enable/Disable Relay (Specify Voltage)
- C21** Dry Contact for Remote Alarm Capability (Specify Condition)
- C36** BACnet Gateway Module
- C37** Lontalk Gateway Module

***Please note:** Optional equipment may impact overall dimensions and weight. Please request submittal drawing from factory.

Electrical

- E2** Indicating Lamps (Specify Color and What it is Indicating)
- E3** Audible alarm (Specify Fault)

General

- G1** Combination T&P gauge: 3.5" dial, 70–250°F, 0–200 PSI, tank mounted
- G22** 316L Stainless Steel Temperature & Pressure Relief Valve

Available Accessories *(Fill out form below to order accessories.)*

10-year Warranty: 10-year non pro-rated tank warranty, specify part number "VESSEL WARRANTY"

Accessories Name

Part