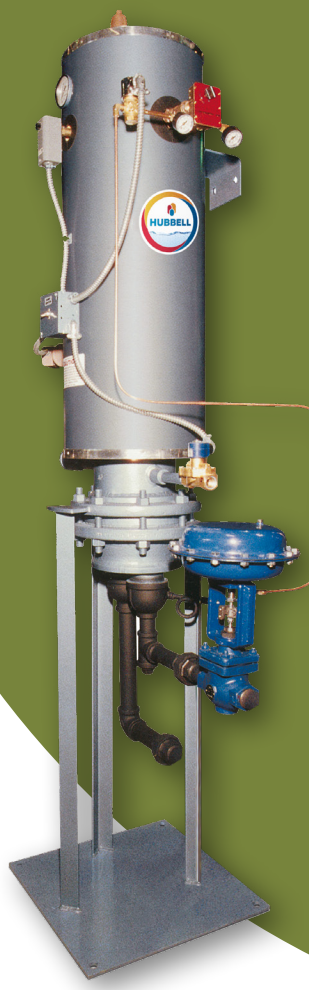
HUBBELL
a **nudyne** company

SYNERGY HYDRO SERIES

BWX



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.

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.

ASME U

ISO 9001:2015

MADE in the USA
Buy American Act Compliant
Contains Imported Components

Standard Equipment

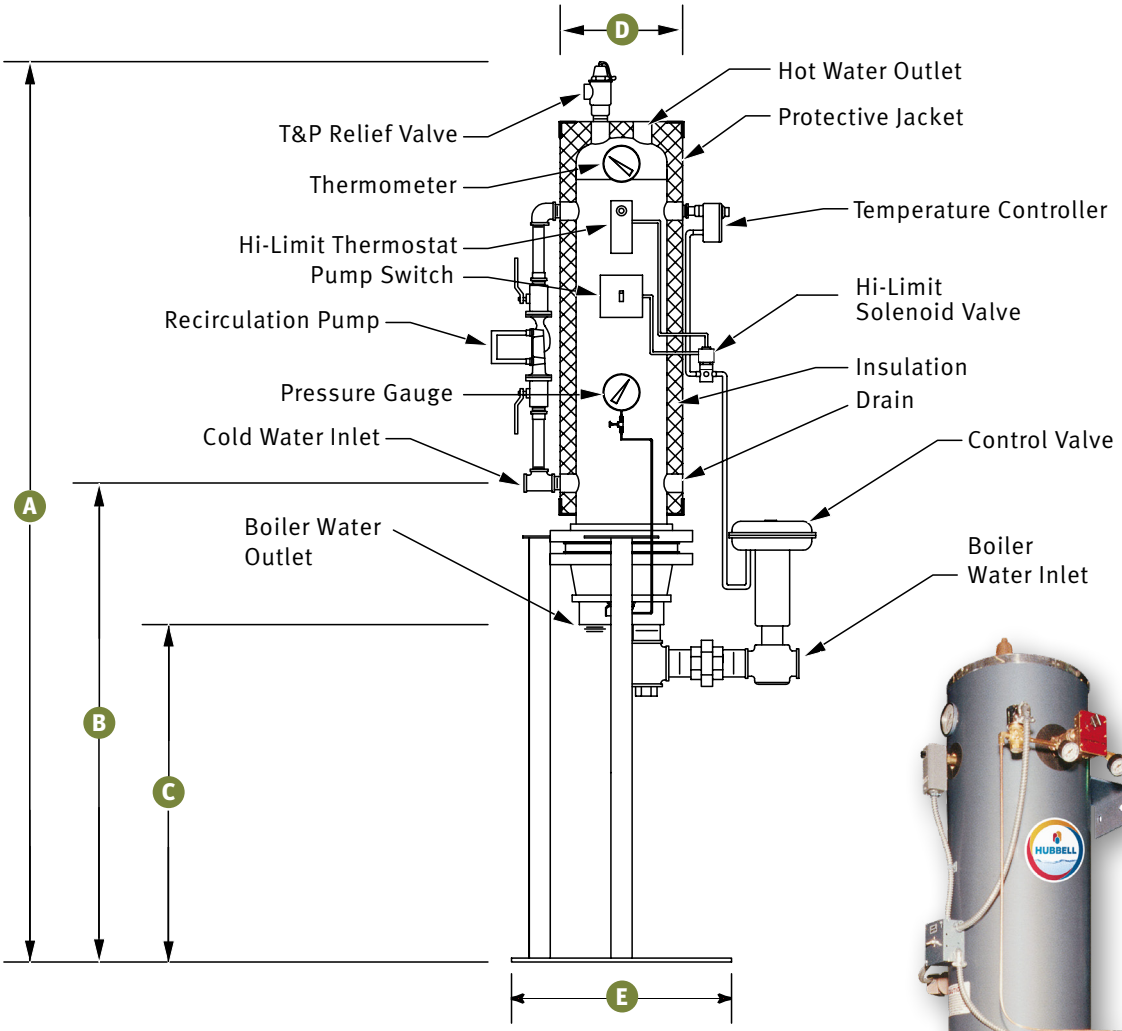
VESSEL CONSTRUCTION
Designed and built in strict accordance with the ASME Code Section VIII and stamped, certified, and registered with the National Board of Boiler and Pressure Vessel Inspectors
Designed for 150 psi working pressure and hydrostatically tested

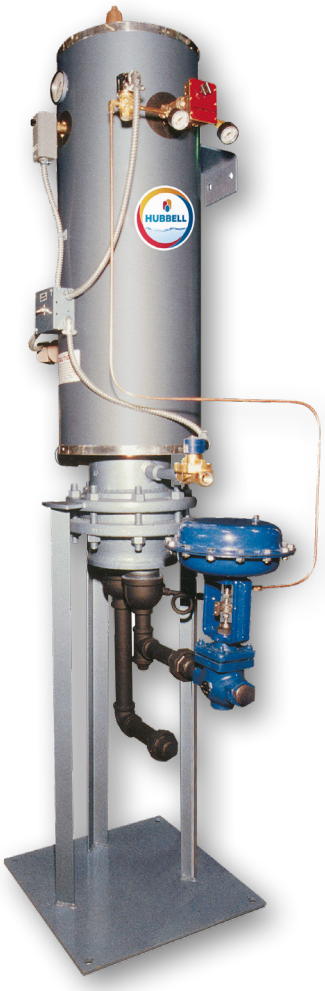
BOILER OPERATING CONTROLS
Operating controls are factory selected, sized, piped, and tested to ensure reliable operation
All components are factory piped and ready for boiler water in and out connections
Modulating control valve (2-way standard, 3-way optional) to regulate the flow of heating water through 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 210oF

Vertical Dimensions (inches)





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

Vertical Dimensions

Base Model	Vertical Model BWX Overall Dimensions (inches)										Weight (Lbs)
	Single Wall					Double Wall					
	A	B	C	D	E	A	B	C	D	E	
BWX-600	88	41	28	15	21	101	47	34	17	23	810
	88	40	29	13	19	100	47	34	15	21	655
BWX-900	100	47	34	15	21	90	42	27	19	25	850
	76	35	22	15	21	89	41	28	17	23	770
BWX-1200	100	47	34	15	21	102	48	33	19	25	850
	88	41	28	15	21	89	41	28	17	23	810
BWX-1500	89	41	28	17	23	102	48	33	19	25	1035
	88	41	28	15	21	101	47	34	17	23	810
BWX-1800	89	41	28	17	23	108	49	39	20	27	1035
	77	35	22	17	23	101	47	34	17	23	985
BWX-2400	101	47	34	17	23	108	49	39	20	27	1090
	77	35	22	17	23	90	42	27	19	25	985
BWX-3000	90	42	27	19	25	111	30	39	22	31	1195
	78	36	21	19	25	102	48	33	19	25	1130
BWX-3600	90	42	27	19	25	111	50	39	22	31	1195
	78	36	21	19	25	96	43	33	20	27	1130
BWX-4200	90	42	27	19	25	—	—	—	—	—	—
	78	36	21	19	25	108	49	39	20	27	1130
BWX-4800	96	43	33	20	27	—	—	—	—	—	—
	84	37	27	20	27	99	44	33	22	31	1480
BWX-6000	99	44	33	22	31	—	—	—	—	—	—
	99	44	33	22	31	—	—	—	—	—	—

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Recovery Rating

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

Base Model	Recovery Rating (GPH) 40–120°F	BTU / Hour	Boiler Water Entering Temperatures (°F)	Boiler Water Exiting Temperatures (°F)
BWX-600	600	500,000	180–160	200–180
BWX-900	900	750,000	180–160	200–180
BWX-1200	1,200	1,000,000	180–160	200–180
BWX-1500	1,500	1,250,000	180–160	200–180
BWX-1800	1,800	1,500,000	180–160	200–180
BWX-2400	2,400	2,000,000	180–160	200–180
BWX-3000	3,000	2,500,000	180–160	200–180
BWX-3600	3,600	3,000,000	180–160	200–180
BWX-4200	4,200	3,500,000	180–160	200–180
BWX-4800	4,800	4,000,000	180–160	200–180
BWX-6000	6,000	5,000,000	180–160	200–180

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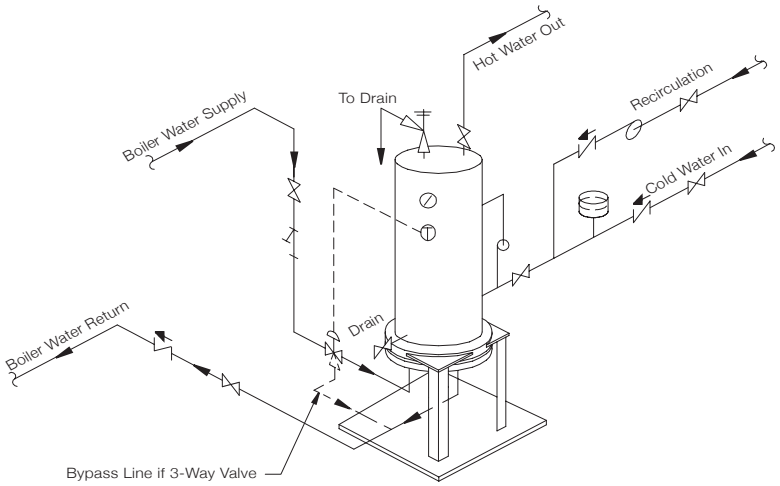
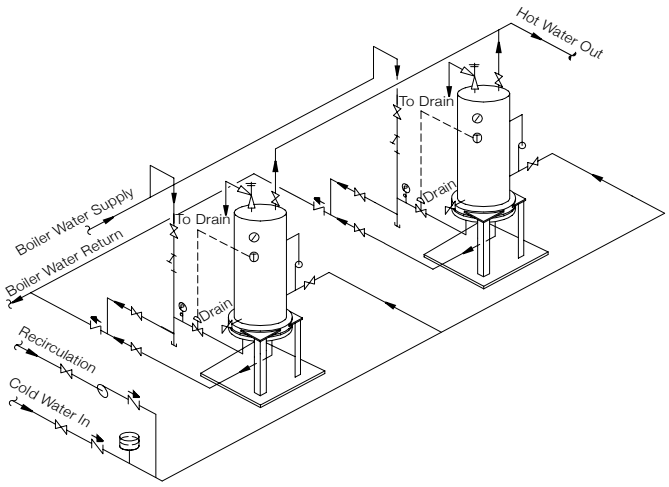
Piping Layouts

Single Unit



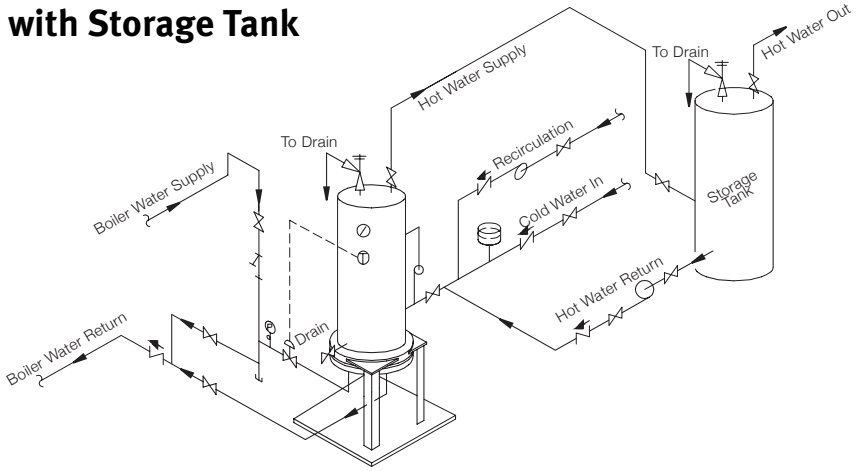
Dual Unit



Legend

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

Single Unit with Storage Tank



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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. For detailed information regarding the heating coil, please reference the Hubbell brochure titled “Hubbell Heating Coils”.

Examples

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?

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

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?

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

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

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

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

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 #**

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