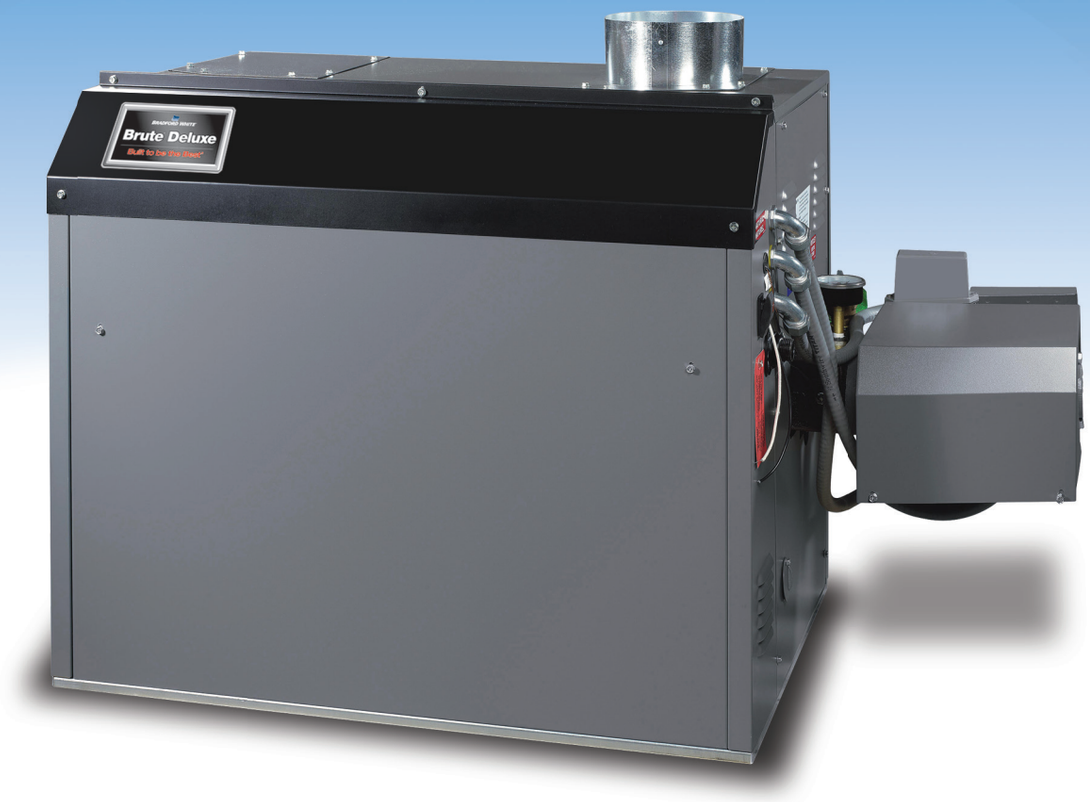
The Brute® Deluxe
200-400 Series



Residential and Light Duty Commercial
Boilers and Volume Water Heaters

BRADFORD WHITE®
WATER HEATERS

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The Brute® Deluxe 200-400 Series Boilers and Volume Water Heaters

Available with inputs of 199,900, 300,000 and 399,900 BTU/Hr. and efficiencies of 85%, the Brute® Deluxe 200-400 Series offers an efficient, economical solution for residential and light commercial space heating and volume water heating applications.

Highlights

- ***199,900 - 399,900 BTU/Hr.***
- ***85% Efficiency***
- ***Installation Flexibility – New and Existing Systems***
- ***Simple Wiring and Controls***
- ***Fan Assisted Combustion***
- ***Ease of Use & Maintenance***
- ***Low NOx Emissions***

Finned-Copper Heat Exchanger

The finned-copper heat exchanger offers a high quality, cost effective feature that quickly and reliably responds to the heating demands of a wide variety of applications.

Installation Flexibility

The design of the Brute® Deluxe 200-400 Series includes simple wiring and controls along with fan assisted combustion to simplify installation in new and existing heating systems. It also comes standard with an indoor/outdoor cabinet and can be configured for category I, category III, or outdoor venting. These models also comply with DOE 2012 minimum efficiency requirements for boilers, and they are factory-equipped with a user-friendly boiler reset control system.

Low NOx Emissions

The Brute® Deluxe 200-400 Series also features low NOx emissions. NOx, Nitrogen Oxide, is a group of gases that form when fuel is burned at high temperatures, and it can react with other volatile compounds (VOC) to form air pollution known as smog. Brute® Deluxe models exceeds the most stringent regulations for air quality, so they provide efficient heat while minimizing the impact on the environment.

Efficient & Economical Heating Solutions

Standard Features

- *ASME 160 psi working pressure heat exchanger*
- *ASME “H” stamp*
- *Pump, mounted, and wired*
- *Flanged water connections*
- *Glass-lined headers*
- *External header gaskets*
- *75 psi (517 kPa) ASME rated pressure relief valve (Boiler)*
- *125 psi (861 kPa) ASME rated pressure relief valve (Water Heater)*
- *Low lead construction (Water Heater)*
- *Temperature pressure gauge*
- *Multiple operating gas valve/ pressure regulators*
- *Manual “A” gas valve*
- *Intake air filter*
- *Removable burner tray(s)*
- *Stainless steel burners*
- *Built-in fan for Category I or III vent systems*
- *Air pressure switch*
- *Blocked vent switch*
- *Burner site glass*
- *PI controller*
- *Outdoor reset with ratios of 0.4 to 3.6 (Boiler)*
- *Warm weather shutdown (Boiler)*
- *Indicator lights for power, heat call, DHW call, and WWSD*
- *DHW operation*
- *Automatic boiler differential*
- *Pump pre-purge, post-purge, and exercise*
- *Blower pre-purge and post-purge*
- *Inlet, outlet, outdoor, and supply sensors*
- *Codes for sensor errors*
- *24V control system*
- *115/24V transformer*
- *Flow switch*
- *Manual reset high limit*
- *Fusible link (size 200)*
- *On/Off firing*
- *Certified for indoor or outdoor use*
- *Hot surface ignition*
- *On/Off toggle switch*
- *Pump time delay*
- *CSD-1 compliant*
- *Less than 10 ppm NOx*

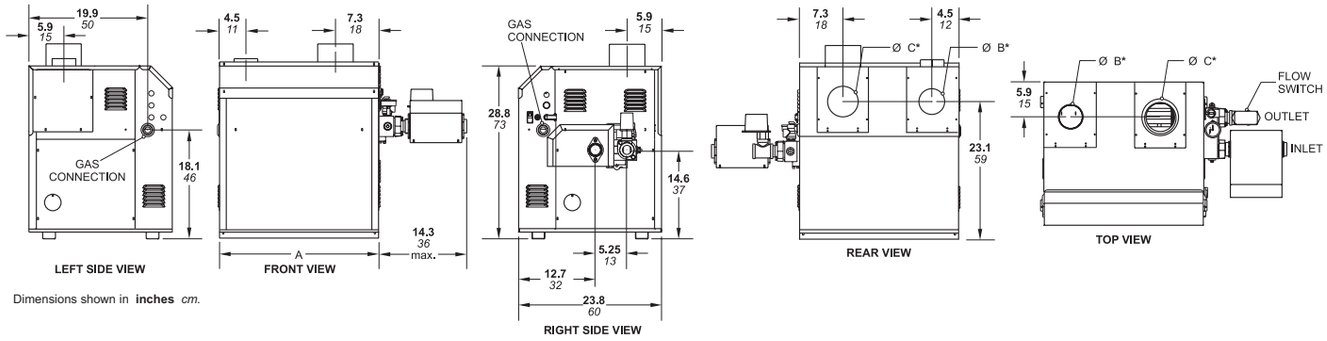
Factory-Mounted Options

- *Glass-lined cast-iron headers, cupronickel tubes, bronze trim – HLW Stamp*
- *Glass-lined cast-iron headers, copper tubes, bronze trim – HLW Stamp*
- *Soft water pump*
- *Reversed heat exchanger*
- *Low water cutoff*

Field Installed Accessories

- *Side-wall vent terminal for indoor unit with horizontal venting*
- *Side-wall combustion air terminal for indoor unit with horizontal ducted air*
- *Air terminal for outdoor unit*
- *Vent terminal for outdoor unit*

Specs at a Glance



Dimensions shown in **inches** *cm.*

Dimensional Data — Common to both Boilers and Volume Water Heaters

Model Size (MBTU/Hr.)	A in.	A *cm*	B* Air Inlet Conn. in.	B* *cm*	C* Vent Conn. in.	C* *cm*	Horiz. Vent Pipe in.	Horiz. Vent Pipe *cm*	Connections Water in.	Connections Gas in.
200	20 1/2	*52*	4	*10*	5	*13*	4	*10*	1 1/2 NPT	3/4 NPT
300	26 1/2	*67*	4	*10*	6	*15*	5	*13*	1 1/2 NPT	3/4 NPT
400	33 1/2	*85*	6	*15*	7	*18*	6	*15*	1 1/2 NPT	3/4 NPT

*Air and vent connections may be on top or back of the Brute® Deluxe and are field convertible.

Recovery Data — Common to both Boilers and Volume Water Heaters

Model Size (MBTU/Hr.)	GPH Recovery at Degree Rise 40°F	50°F	60°F	70°F	80°F	90°F	100°F	120°F	140°F
200	510	408	340	291	255	227	204	170	146
300	765	612	510	437	383	340	306	255	219
400	1,020	816	680	583	510	453	408	340	291

Model Size (MBTU/Hr.)	LPH Recovery at Degree Rise 22°C	28°C	33°C	39°C	44°C	50°C	56°C	67°C	78°C
200	1,928	1,542	1,285	1,100	964	858	771	643	552
300	2,892	2,313	1,928	1,652	1,448	1,285	1,157	964	828
400	3,856	3,084	2,570	2,204	1,928	1,712	1,542	1,285	1,100

Electrical Data — Common to both Boilers and Volume Water Heaters

Model Size (MBTU/Hr.)	Boiler / Heater Circuit Size Volts	Phase	Amps	Pump Circuit Size Volts	Phase	Amps	Blower Circuit
200 - 400	120	Single	15	Included in Heater Connection			Included in Heater Circuit

Sizing Data

Model Number	Input [1] BTU/Hr.	kW	Output [1] BTU/Hr.	kW	Shipping Weight lbs.	kg.
BMT2H0200	200,000	58.6	170,000	50.4	290	*132*
BMT2H0300	299,000	87.6	255,000	74.7	320	*145*
BMT2H0400	399,000	116.9	340,000	99.6	350	*159*
BMT2V0200	199,900	58.6	169,915	49.8	290	*132*
BMT2V0300	300,000	87.9	255,000	74.7	320	*145*
BMT2V0400	399,900	117.2	339,915	99.6	350	*159*

Note: Input and output must be derated 4% per 1,000 feet above sea level when installed above 2,000 feet altitude.

Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.

Pump Data

Model Number	HP	Amps
BMT2H0200	1/8	1.8
BMT2H0300	1/8	2.0
BMT2H0400	1/8	2.0

Model Number	Soft Water HP	Soft Water Amps	Normal Water HP	Normal Water Amps
BMT2V0200	1/10	1.5	1/6	2.0
BMT2V0300	1/10	1.5	1/6	2.0
BMT2V0400	1/10	1.5	1/6	2.0

Clearance Data — Common to both Boilers and Volume Water Heaters

Appliance Surface	Required Clearance from Combustible Material in.	cm	Suggested Service Access Clearance in.	cm
Left Side	1	*2.5*	24	*61.0*
Right Side	1	*2.5*	24	*61.0*
Top	1	*2.5*	12	*30.5*
Back*	1	*2.5*	12	*30.5*
Front	1	*2.5*	36	*91.4*
Vertical Vent** (Category 1)	6	*15.2*		
Horizontal Vent (Category 3)	Per UL 1738 venting system supplier's instructions			

* When vent and/or combustion air connects to the back, recommended clearance is 36" (91cm).
** 1" when b-vent is used.

Water Flow Data

Model Number	Temperature Rise 20°F Flow GPM	11°C Flow LPM	25°F Flow GPM	14°C Flow LPM	30°F Flow GPM	17°C Flow LPM	35°F Flow GPM	19°C Flow LPM
BMT2H0200	17	*64*	14	*53*	11	*42*	10	*38*
BMT2H0300	26	*97*	20	*76*	17	*64*	15	*57*
BMT2H0400	34	*129*	27	*102*	23	*87*	19	*72*

Model Number	Hard Water Flow GPM	Hard Water Temp. Rise °F	Normal Water Flow GPM	Normal Water Temp. Rise °F	Soft Water Flow GPM	Soft Water Temp. Rise °F
BMT2V0200	45	8	35	10	23	15
BMT2V0300	45	11	35	15	23	22
BMT2V0400	45	15	35	19	23	30

Model Number	Hard Water Flow LPM	Hard Water Temp. Rise °C	Normal Water Flow LPM	Normal Water Temp. Rise °C	Soft Water Flow LPM	Soft Water Temp. Rise °C
BMT2V0200	170	4	133	6	87	8
BMT2V0300	170	6	133	8	87	12
BMT2V0400	170	8	133	11	87	17

Note: Soft water: 1 to 7.5 grains per gallon. Normal water: 7.6 to 17 grains per gallon. Hard water: More than 17 grains per gallon.

Committed to the Professional.

BDS-200-400-0620

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