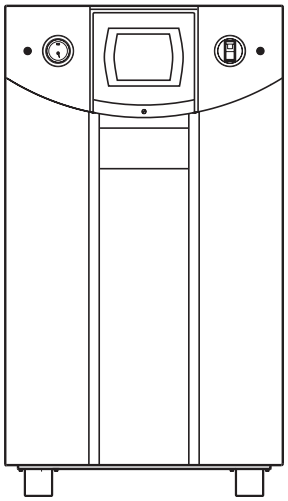
Brute

Hydronic Boiler

Indoor/Outdoor, Models BNTH 1000 & 1200



Date:

Project #:

Engineer:

Prepared By:

Bid Date:

BRADFORD WHITE

Submittal Data

Project Name:

Location:

Contractor:

Standard Equipment

- High condensing efficiency
- Modulation down to 10% of full fire (10:1 turndown)
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Low NOx system exceeds the most stringent regulations for air quality - 10 ppm NOx
- Horizontal or vertical direct vent
- Vent and air pipe lengths of up to 100 equivalent feet (each)
- Direct spark ignition system
- Electronic PID modulating control with large touchscreen and color display
- Controller cascades with up to four other Brutes (models 1000 and 1200)
- Accepts external 4-20mA modulation control (0-10V with optional converter)
- Multiple pump control for boiler pump, system pump and indirect domestic water pump, each with delay
- Alarm output
- Indirect water heater priority
- Sensor for indirect domestic water tank
- Outdoor reset
- Outdoor air temperature sensor
- Manual reset high limit
- On/off toggle switch
- Vent temperature cutoff feature
- Built-in condensate trap
- 160 psi maximum working pressure
- Stainless steel heat exchanger with welded construction (no gaskets)
- ASME "H" stamp
- 75 psi (517 kPa) ASME rated pressure relief valve
- Water flow switch
- Temperature & pressure gauge
- Burner site glass
- 10-Year limited warranty

Boiler Data

Number of Units:

Fuel

- ☐ Natural
- ☐ Propane

Factory Mounted Options

- ☐ CSD-1 (covers FM & GAP)
- ☐ Low water cutoff
- ☐ High & Low gas pressure switches
- ☐ Variable speed boiler pump control
- ☐ Additional auto reset high limit*
- ☐ Additional manual reset high limit*
- ☐ Bell for ignition failure
- ☐ Air filter
- ☐ 30 psi pressure relief valve
- ☐ 50 psi pressure relief valve
- ☐ 60 psi pressure relief valve
- ☐ 125 psi pressure relief valve
- ☐ 150 psi pressure relief valve

* Auto reset high limit and manual reset high limit cannot be ordered together.

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Accessories for Field Mounting

- ☐ Low water cutoff
- ☐ High & low gas pressure switches
- ☐ Air filter
- ☐ Additional auto reset high limit*
- ☐ Additional manual reset high limit*
- ☐ Variable speed pump frequency drive
- ☐ Horizontal vent terminal for PVC / CPVC
- ☐ Horizontal vent terminal for stainless steel
- ☐ Horizontal air terminal for PVC / CPVC
- ☐ Horizontal air terminal for stainless steel or polypropylene
- ☐ Vertical air terminal for PVC / CPVC
- ☐ Screen kit for stainless steel or polypropylene vertical air or vent pipe
- ☐ Outdoor vent terminal
- ☐ Outdoor air terminal
- ☐ BACnet gateway
- ☐ LON gateway
- ☐ Condensate neutralizer kit
- ☐ Condensate neutralizer kit with pump
- ☐ 0-10V converter for modulation control
- ☐ Conversion kit, Nat to LP

Sizing Data

Model	Input		Output		Indoor Efficiencies		Outdoor Efficiencies		Gas Conn. size	Water Conn. size	Product Weight		Shipping Weight	
	BTU/h	*kW*	**BTU/h**	*kW*	Thermal	Combustion	Thermal	Combustion	inches	inches	lbs	kg	lbs	kg
☐ BNTH 1000	**999,000**	*293*	**942,000**	*276*	94.2%	94.2%	94.2%	94.2%	1½	2	518	235	620	281
☐ BNTH 1200	**1,200,000**	*351*	**1,120,000**	*328*	94.8%	95.1%	94.7%	95.1%	1½	2	538	244	640	290

NOTES:
For other boiler ratings:
Boiler Horsepower: HP = $\frac{\text{Output}}{33{,}475}$ Radiation Surface: EDR sq. ft. = $\frac{\text{Output}}{150}$

Clearances

Appliance Surface	Suggested Service Access Clearance		Clearance to Combustibles	
	inches	*cm*	**inches**	*cm*
Front	**24**	*61*	**2**	*5.1*
Left Side	**12**	*30*	**0**	*0*
Right Side	**18**	*46*	**0**	*0*
Top	**24**	*61*	**8**	*20*
Back	**24**	*61*	**0**	*0*
Vent	—	—	**1**	*2.5*

Electrical Data

Size	Volts	Phase	Amps FLA	Pump Connections Ratings (Boiler, System, and DHW Pumps)
1000	120	Single	10	max 7.4 FLA
1200	120	Single	12	max 7.4 FLA

Vent System

Size	Intake (Air) Pipe	Exhaust (Vent) Pipe	Maximum Allowable Equivalent Length*	
1000	6"	6"	100 ft	*30 m*
1200	6"	6"	100 ft	*30 m*

Installations in the U.S. require exhaust vent pipe that is a combination of PVC and CPVC complying with ANSI/ASTM D1785 F441, polypropylene pipe that complies with ULC S636, or stainless steel complying with UL 1738. Installations in Canada require exhaust vent pipe that is certified to ULC S636.
NOTE: The first 12" *(30cm)* of vent must be CPVC if using a PCV vent system.

Intake (air) pipe may be ABS, PVC, CPVC or galvanized material.

Closet and alcove installations do not allow the use of PVC under any circumstances

*To calculate max equivalent length, measure the linear feet of the pipe, and add 5 feet *(1.5m)* for each elbow used.

Water Flow Requirements

Temperature Rise in °F

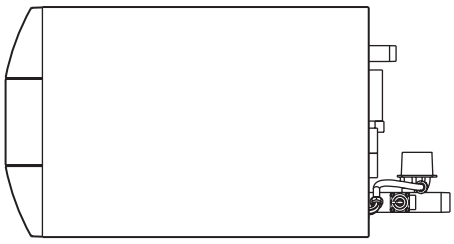
	20°F		**25°F**		**30°F**		**35°F**		**40°F**		**45°F**	
	Flow	**H/L**	**Flow**	**H/L**	**Flow**	**H/L**	**Flow**	**H/L**	**Flow**	**H/L**	**Flow**	**H/L**
Size	**gpm**	**feet**	**gpm**	**feet**	**gpm**	**feet**	**gpm**	**feet**	**gpm**	**feet**	**gpm**	**feet**
1000	**95**	**30**	**75**	**20**	**62**	**15**	**54**	**11**	**48**	**9**	**42**	**7**
1200	**114**	**37**	**91**	**26**	**76**	**18**	**65**	**13**	**57**	**10**	**51**	**8**

Temperature Rise in °C

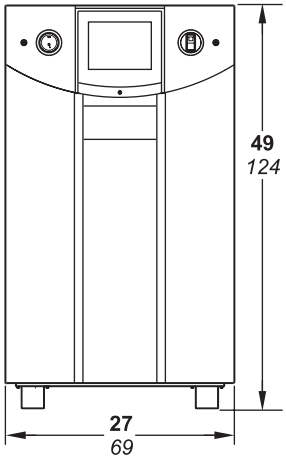
	11°C		***14°C***		***17°C***		***19°C***		***22°C***		***25°C***	
	Flow	***H/L***	***Flow***	***H/L***	***Flow***	***H/L***	***Flow***	***H/L***	***Flow***	***H/L***	***Flow***	***H/L***
Size	***lpm***	***m***	***lpm***	***m***	***lpm***	***m***	***lpm***	***m***	***lpm***	***m***	***lpm***	***m***
1000	*359*	*9.0*	*283*	*6.0*	*234*	*4.5*	*204*	*3.3*	*182*	*2.7*	*159*	*2.1*
1200	*432*	*11.3*	*344*	*7.9*	*288*	*5.5*	*246*	*4.0*	*216*	*3.0*	*193*	*2.4*

Dimensional Data

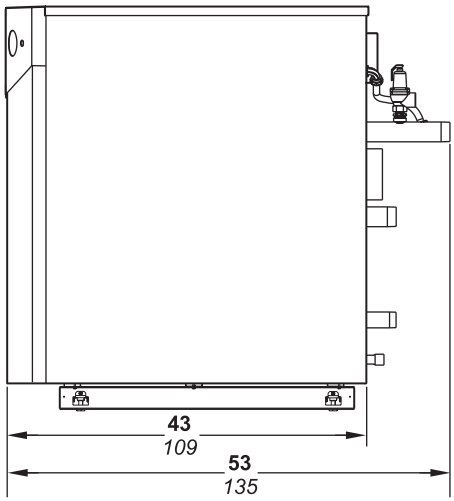
BRUTE 1000 AND BRUTE 1200



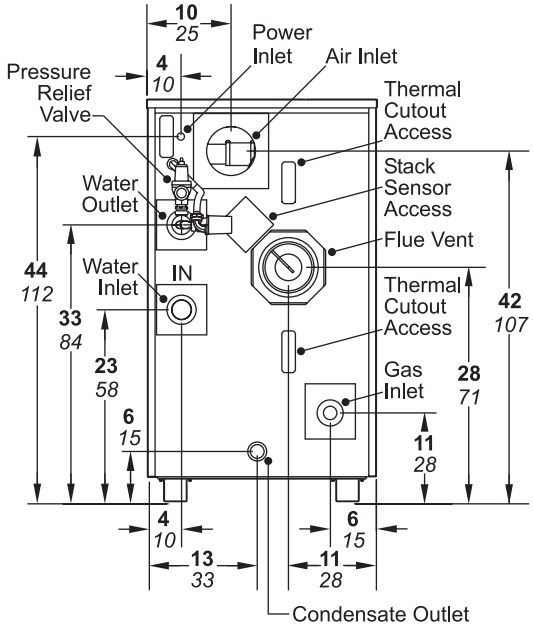
TOP



FRONT



RIGHT



BACK

BRADFORD WHITE®

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www.BradfordWhite.com