MIINC
MECHANICAL CONTRACTORS

September 18, 2024

Danny Harbour

Ferris High School
1001 E. Eighth Street
Ferris High School

Re: Longino Elementary & Ferris HS Boilers

Mr. Harbour,
We are pleased to present to you this proposal for the demolition and installation of a volume water heater at Ferris High School and a pump mounted heater with storage tank at Longino Elementary School. The scope of work for this project will be as follows:

1. Disconnect all existing piping & electrical wiring to eat water boiler.
2. Demo existing piping to the nearest isolation ball valve
3. Install new water boilers on existing pads
4. Install new supply and drain piping to each boiler.
5. Reconnect power to the new boilers.
6. Re-insulate piping to the water boilers.

Lump Sum Total (Excluding Taxes).....$ 79,736.00

Clarifications:
1. All workmanship performed by MIINC shall be warranted for a period of one year after completion.
2. This proposal is exclusively for the water heaters that were shown to MIINC on the walkthrough with Mr. Harbour and does not include any other piping or equipment.

Exclusions:
1. Taxes
2. Warranty of any existing services
3. Overtime or after-hours work
4. Fire protection
5. Integration with Building Monitoring Systems
6. Painting
7. Engineering services
8. Permits of permit fees

This proposal shall remain valid for a period of (30) days. After that time, MIINC reserves the right to modify the proposal in part or its entirety to accommodate any changes in material pricing and subcontract charges. This proposal covers the direct costs only and we reserve the right to claim for impact and consequential costs if impacted. This proposal includes costs as shown for the stated scope of work and further defined by the clarifications, exclusions, and attached documents. MIINC reserves the right to correct this proposal for hidden or undetected errors, omissions, and/or discrepancies by others. The proposal pricing and any shown time/schedule impacts are based on a written notice to proceed being issued to MIINC within thirty (30) calendar days from the date of this proposal. MIINC and its subordinates will not proceed with the defined scope of work until a written acceptance of this proposal has been issued. This proposal is valid for the issuance of a change

MIINC
MECHANICAL CONTRACTORS

order in the amount proposed if a written notice to proceed is issued withing the stated period. Should you have any questions or require additional information pertaining to this proposal, please do not hesitate to contact us.

Thank you,

Zach Beshires
Industrial Group Project Engineer
MIINC Mechanical

MIINC, L.P.
1960 W Northwest Hwy., Ste A
Dallas, TX 75220

www.miinclp.net

(Office)214-575-9600
(Fax)972-506-9111

BRADFORD WHITE®
WATER HEATERS

Commercial Jacketed Storage Tanks

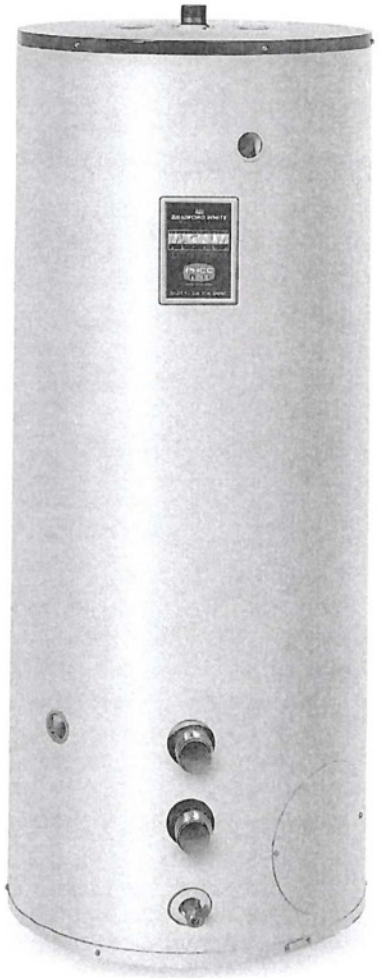


Photo is of M-3-ST80R5

FEATURING:

VITRAGLAS® SUPERIOR PROTECTION SINCE 1991

MICROBAN®

The Commercial Jacketed Storage Tank Models Feature:

- **Applications**—Designed for use with boilers, hot water circulation systems and large dump volume applications.
- **Vitraglas® Lining with Microban®**—An exclusively engineered enamel formula that provides superior tank protection from the corrosive effects of water; and with Microban® antimicrobial product protection to help prevent the growth of bacteria, mold and mildew on the surface of the tank lining.
- **Optional ASME Construction Available**—M-3-ST200R5A comes standard with ASME construction.
- **Insulation System**—2" (51mm) Non-CFC foam covers the sides and top of the tank, reducing heat loss. This results in less energy consumption, improved efficiencies, and jacket rigidity.
- **Water Connections**—2" (51mm) NPT factory-installed true dielectric fittings extend water heater life and simplify water line connections (M-3-ST120R5A and M-3-ST200R5A have 2½" (64mm) connections).
- **Rear Connection**—2" (51mm) NPT spud allows for a rear water connection (M-3-ST120R5 and M-3-ST120R5A only).
- **Hand Hole Cleanout**—For removal of accumulated lime and sediment (M-3-ST-120R5 has optional hand hole cleanout).
- **Two Protective Anode Rods**—Provide added protection against corrosion for long-term, trouble-free service.
- **Steel Tank**—Heavy gauge steel automatically formed, rolled, and welded.
- **T&P Relief Valve Opening (T&P Not Supplied)**—All models have special tapping on side of tank.
- **3/4" (19mm) NPT Aquastat Fitting.**
- **Designed for Storage of Potable Water up to 180°F (82°C).**
- **Low Restrictive Brass Drain Valve**—Durable tamper proof design.

ASME HLW

UL LISTED c UL us LISTED

SA LLC - Low Lead Content

5-Year Limited Tank Warranties / 1-Year Limited Warranty on Component Parts.

For more information on warranty, please visit www.bradfordwhite.com

For products installed in USA, Canada and Puerto Rico. Some states do not allow limitations on warranties. See complete copy of the warranty included with the heater.

Microban® antimicrobial product protection helps prevent the growth of bacteria, mold and mildew that may affect the product. The built-in antimicrobial properties do not protect users or others from disease-causing organisms. Microban® is a registered trademark of Microban Products Company.

Jacketed Small Volume Models

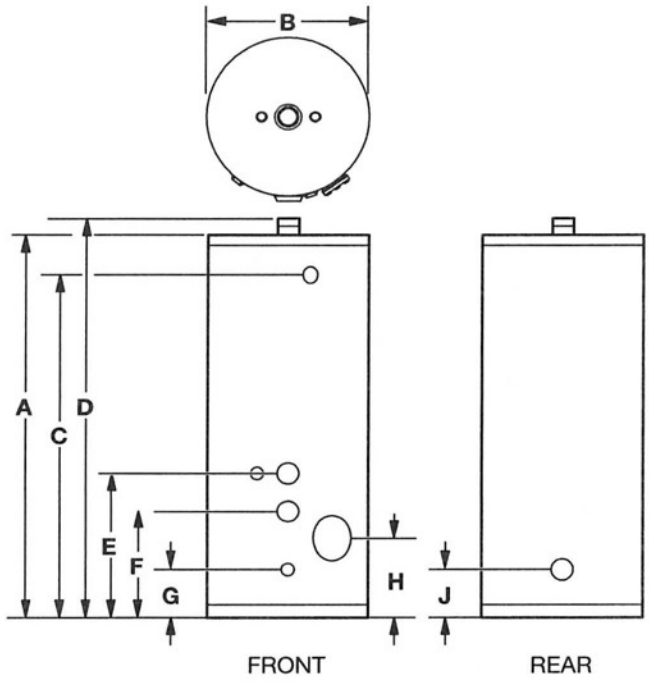
Meet or exceed ASHRAE 90.1 (latest edition)

Model Number	Capacity U.S. Gal.	Capacity Imp. Gal.	A Floor to Heater Top in.	B Jacket Dia. in.	C Floor to T&P Conn. in.	D Floor to Hot Water Conn. in.	E Floor to Aquastat & Top Circ. Conn. in.	F Floor to Bottom Circ. Conn. in.	G Floor to Drain in.	H Floor to Hand Hole Cleanout in.	J Floor to Rear Water Conn. in.	Water Conn. Size.† in.	Approx. Shipping Weight lbs.
M-3-ST80R5	80	67	58 3/4	24	52 1/2	59 3/4	14 1/4	9 1/4	4 3/4	7 1/4	—	2(F&T)	192
M-3-ST80R5A*	80	67	58 3/4	24	52 1/2	59 3/4	14 1/4	9 1/4	4 3/4	7 1/4	—	2(F&T)	278
M-3-ST120R5	119	100	62 1/2	28	55 3/4	63 1/2	14 1/2	9 1/2	5	—	9 1/2	2(F&T), 2(R)	312
M-3-ST120R5A*	119	100	62 1/2	28	55 3/4	63 1/2	14 1/2	9 1/2	5	7 1/2	9 1/2	2 1/2(F&T), 2(R)	366
M-3-ST200R5A*	200	167	77	32	66	78	16 1/4	11 1/4	6 3/4	9 1/4	—	2 1/2(F&T)	633

Model Number	Capacity Liters	A Floor to Heater Top mm.	B Jacket Dia. mm.	C Floor to T&P Conn. mm.	D Floor to Hot Water Conn. mm.	E Floor to Aquastat & Top Circ. Conn. mm.	F Floor to Bottom Circ. Conn. mm.	G Floor to Drain mm.	H Floor to Hand Hole Cleanout mm.	J Floor to Rear Water Conn. mm.	Water Conn. Size.† mm.	Approx. Shipping Weight kg.
M-3-ST80R5	303	1492	610	1334	1518	362	235	121	184	—	51(F&T)	87
M-3-ST80R5A*	303	1492	610	1334	1518	362	235	121	184	—	51(F&T)	126
M-3-ST120R5	450	1588	711	1416	1613	368	241	127	—	241	51(F&T), 51(R)	142
M-3-ST120R5A*	450	1588	711	1416	1613	368	241	127	191	241	64(F&T), 51(R)	166
M-3-ST200R5A*	751	1956	813	1676	1981	413	286	171	235	—	64(F&T)	287

* Meets American Society of Mechanical Engineers (ASME) Code.

† F=Front Water Connections. R= Rear Water Connections.



General

Water connections 2" (51mm) NPT (except where noted). T&P tapping 1" (25mm) NPT. Aquastat tapping 3/4" (19mm) NPT.
All models certified at 300 psi test pressure (2068 kPa) and 150 psi working pressure (1034 kPa).

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

Sales: 800-523-2931 ■ *Fax 215-641-1612*
24/7 Technical Support: 800-334-3393 ■ *Email techserv@bradfordwhite.com*

Products made by Bradford White are manufactured in the United States using the finest raw materials and components from around the world.

Built to be the Best

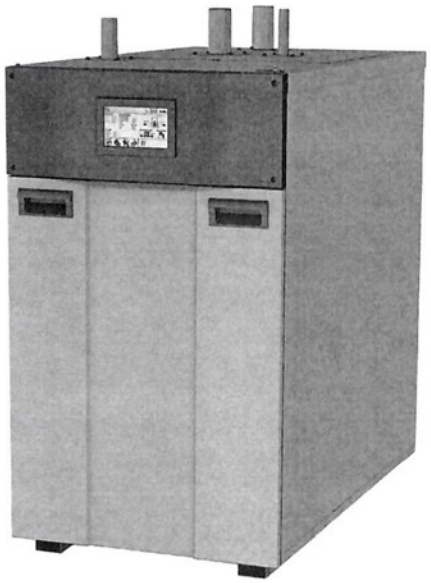
Printed in U.S.A.

Brute® XTR

Volume Water Heater

BNT2V	Volume Water Heater

Indoor Sizes 399-1500



Date:

Project #:

Engineer:

Prepared By:

Bid Date:

BRADFORD WHITE

Submittal Data

Project Name:

Location:

Contractor:

Standard Features

- High condensing efficiency
- Stainless steel heat exchanger with welded construction
- ASME 160psi (1104Pa) working pressure heat exchanger
- ASME "HLW" stamp
- 125psi (862kPa) ASME rated pressure relief valve
- Modulation down to 10% of full fire (10:1 turndown)
- Low NOx system exceeds the most stringent regulations for air quality
  Meets NSF/ANSI-372 Low Lead Content Certification
- Indoor construction with optional outdoor kit
- Optional pump (sized to model) included for field installation
- Top water and gas connections
- Sealed combustion chamber
- Pre-mix stainless steel burner
- Sophisticated air/gas system allows for consistent combustion control
- Horizontal or vertical direct vent
- Certified for Category II & IV vent
- Category IV vent & air pipe lengths of up to 150 equivalent feet (each)
- Electronic PID modulating control with large touch screen user interface and color display
- Controller cascades with up to eight Brute XTR units
- Modbus RTU & BACnet MSTP on board
- DHW pump control, with delay
- Direct spark ignition
- Indirect water heater priority
- DHW sensor
- Alarm output
- Accepts external (4-20mA or 0-10VDC) modulation signal
- On/Off toggle switch
- Top and rear service panels
- Built-in condensate trap
- Water flow switch
- Vent temperature cutoff
- Air filter
- Temperature & pressure gauge
- Drain valve
- Auto reset high limit
- Manual reset high limit
- Burner sight glass
- Zero clearance to combustibles
- 5-year limited hx warranty

Boiler Data

Number of Units

Fuel

☐ Natural Gas

Construction

☐ Standard

☐ ASME CSD-1

Options

☐ Pump (5-12 gpg)

☐ Pump (12-15 gpg)

☐ Low Water Cutoff

Alternate PRVs

☐ 125 psi pressure relief valve (std)

☐ 60 psi pressure relief valve

☐ 150 psi pressure relief valve

HLW

Low Lead Content NSF/ANSI 372

AHRI CERTIFIED

Ask About Our Certified Products

Accessories for Field Mounting

- ☐ Outdoor kit
- ☐ Outdoor pump housing kit
- ☐ CSD-1 kit (includes LWCO, gas pressure switches, display, control
- ☐ Pump (5-12 gpg)
- ☐ Pump (12-15 gpg)
- ☐ Pump contactor
- ☐ Low water cut-off
- ☐ High & low gas pressure switches
- ☐ Additional auto & manual reset high limits
- ☐ Gateway for BACnet IP
- ☐ Gateway for LonWorks
- ☐ Alarm bell with silence switch
- ☐ Condensate neutralizer
- ☐ Condensate neutralizer with pump

For 399-500 models:

- ☐ Flush-mount vent terminal, 4"
- ☐ PVC concentric termination kit
- ☐ CPVC concentric termination kit

Sizing Data

	Model	Min Input Rate		Max Input Rate		Min Output Rate		Max Ouput Rate		AHRI Certified Thermal Efficiency
		MBH	*kW*	MBH	*kW*	MBH	*kW*	MBH	*kW*	%
☐	**399**	39.9	*11.7*	399	*117*	39.1	*11.5*	391	*115*	98%
☐	**500**	50.0	*14.7*	500	*147*	49.0	*14.4*	490	*144*	98%
☐	**650**	65.0	*19.0*	650	*191*	63.1	*18.5*	631	*185*	97%
☐	**800**	80.0	*23.4*	800	*235*	77.6	*22.7*	776	*227*	97%
☐	**999**	99.9	*29.3*	999	*293*	96.9	*28.4*	969	*284*	97%
☐	**1500**	150.0	*44.0*	1500	*440*	148.5	*43.5*	1485	*435*	99%

Model	Product Weight		Operating Weight		Shipping Weight		Water Content	
	lbs	*kg*	lbs	*kg*	lbs	*kg*	gal	*l*
399	391	*178*	427	*194*	508	*231*	4.4	*16.5*
500	401	*182*	441	*200*	518	*235*	4.8	*18.1*
650	471	*214*	525	*238*	597	*271*	6.4	*24.4*
800	492	*224*	554	*252*	618	*281*	7.4	*28.2*
999	542	*246*	616	*280*	679	*309*	8.9	*33.9*
1500	620	*282*	714	*325*	757	*344*	11.3	*43.0*

Clearances

	Clearance to Combustibles		Suggested Service Clearance	
	Inches	cm	Inches	cm
Front	0	*0*	24	*61*
Back	0	*0*	24	*61*
Left	0	*0*	0	*0*
Right	0	*0*	0	*0*
Top	0	*0*	24	*61*

Water Flow Requirements

Model	Water Hardness 5 - 12 gpg			Water Hardness 12 - 15 gpg		
	Flow	H/L	Delta-T	Flow	H/L	Delta-T
	gpm	ft	°F	gpm	ft	°F
399	31	7.0	25	41	12.3	20
500	37	7.0	25	49	12.6	20
650	49	7.5	25	66	13.4	20
800	61	8.5	25	82	15.1	20
999	74	8.9	25	98	15.7	20
1500	80	10.8	36	106	19.2	27

Model	Water Hardness 5 - 12 gpg			Water Hardness 12 - 15 gpg		
	Flow	H/L	Delta-T	Flow	H/L	Delta-T
	lpm	m	°C	lpm	m	°C
399	116	2.1	14	155	3.7	11
500	139	2.1	14	186	3.8	11
650	186	2.3	14	248	4.1	11
800	232	2.6	14	310	4.6	11
999	279	2.7	14	372	4.8	11
1500	302	3.3	20	403	5.9	15

Venting System

Model	Air Intake			Vent			
	Diameter (in)	Min. Equivalent* Length (ft)	Max. Equivalent* Length (ft)	Category IV Diameter (in)	Category IV Min. Equivalent* Length (ft)	Category IV Max. Equivalent* Length (ft)	Typical** Category II Diameter (in)
399	4	0	150	4	10	150	12
500	4	0	150	4	10	150	12
650	6	0	150	6	10	150	12
800	6	0	150	6	10	150	12
999	6	0	150	6	10	150	12
1500	8	0	150	8	10	150	12

*Equivalent Length: Add 5 feet for each 90° elbow up to the first 6. If more than 6 are needed in either the vent or air intake, or any 45° elbows are required, see the table below for the additional length to be added.

**Category II vent pipe size may vary. Draft must remain between -0.10" and -0.001" w.c.

Diameter (in)	Elbow Equivalent Lengths (ft)					
	Air Intake			Vent		
	90° Elbows (up to 6)	90° Elbows (after first 6)	45° Elbows	90° Elbows (up to 6)	90° Elbows (after first 6)	45° Elbows
4	5	5	3	5	5	3
6	5	10	5	5	10	5
8	5	15	8	5	15	8

Recovery

Model	Required Water Temperature Rise (°F)								
	40	50	60	70	80	90	100	120	140
	gph	gph	gph	gph	gph	gph	gph	gph	gph
399	1149	919	766	657	575	511	460	383	328
500	1440	1152	960	823	720	640	576	480	411
650	1872	1498	1248	1070	936	832	749	624	535
800	2304	1843	1536	1317	1152	1024	922	768	658
999	2877	2302	1918	1644	1439	1279	1151	959	822
1500	4320	3456	2880	2469	2160	1920	1728	1440	1234

Model	Required Water Temperature Rise (°C)								
	22	28	33	39	44	50	56	67	78
	lph	lph	lph	lph	lph	lph	lph	lph	lph
399	4350	3480	2900	2486	2175	1933	1740	1450	1243
500	5451	4361	3634	3115	2725	2423	2180	1817	1557
650	7086	5669	4724	4049	3543	3149	2835	2362	2025
800	8722	6977	5814	4984	4361	3876	3489	2907	2492
999	10891	8713	7261	6223	5446	4840	4356	3630	3112
1500	16353	13082	10902	9345	8176	7268	6541	5451	4672

Electrical Data

Water Heater Only				
Model	Voltage	FLA	MCA	MOP
399	120	2.8	3.5	15
500	120	3.1	3.9	15
650	120	3.1	3.9	15
800	120	3.2	4.0	15
999	120	4.2	5.3	15
1500	120	5.4	6.8	15

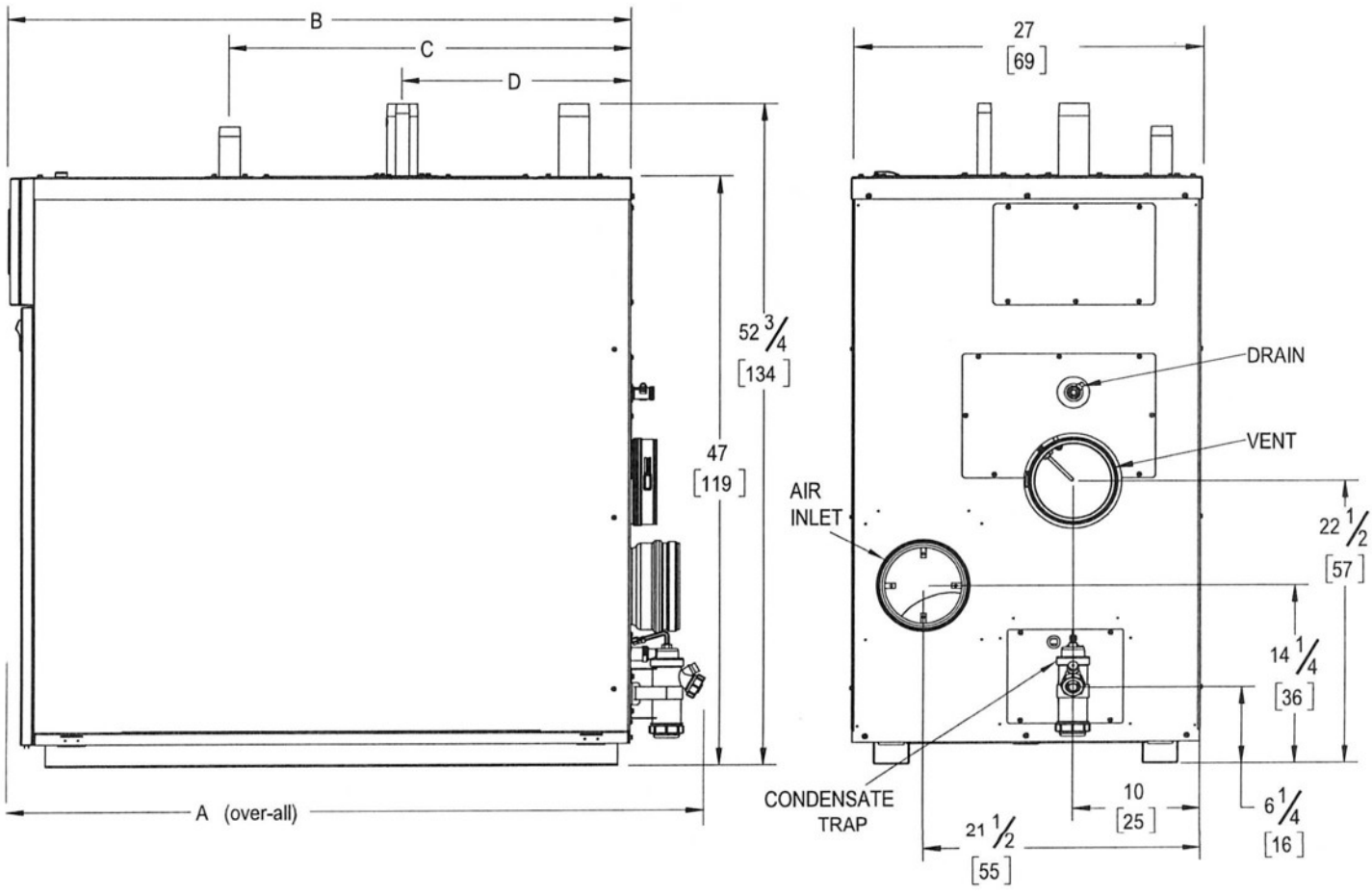
Water Heater and Pump								
Model	5 - 12 gpg Pump				12 - 15 gpg Pump			
	Voltage	FLA	MCA	MOP	Voltage	FLA	MCA	MOP
399	120	4.7	5.9	15	120	6.4	8.0	15
500	120	5.0	6.3	15	120	8.0	10.0	15
650	120	6.7	8.4	15	120	8.0	10.0	15
800	120	6.8	8.5	15	120	12.0	15.0	20
999	120	10.3	12.9	20	120	-	-	-
1500*	120	-	-	-	120	-	-	-

Pump Only								
Model	5 - 12 gpg Pump				12 - 15 gpg Pump			
	Voltage	FLA	MCA	MOP	Voltage	FLA	MCA	MOP
399	120	1.9	2.4	15	120	3.6	4.5	15
500	120	1.9	2.4	15	120	4.9	6.1	15
650	120	3.6	4.5	15	120	4.9	6.1	15
800	120	3.6	4.5	15	120	8.8	11.0	15
999	120	6.1	7.6	15	120	12.4	15.5	20
1500	120	8.8	11.0	15	120	12.4	15.5	20

Dimensional Data

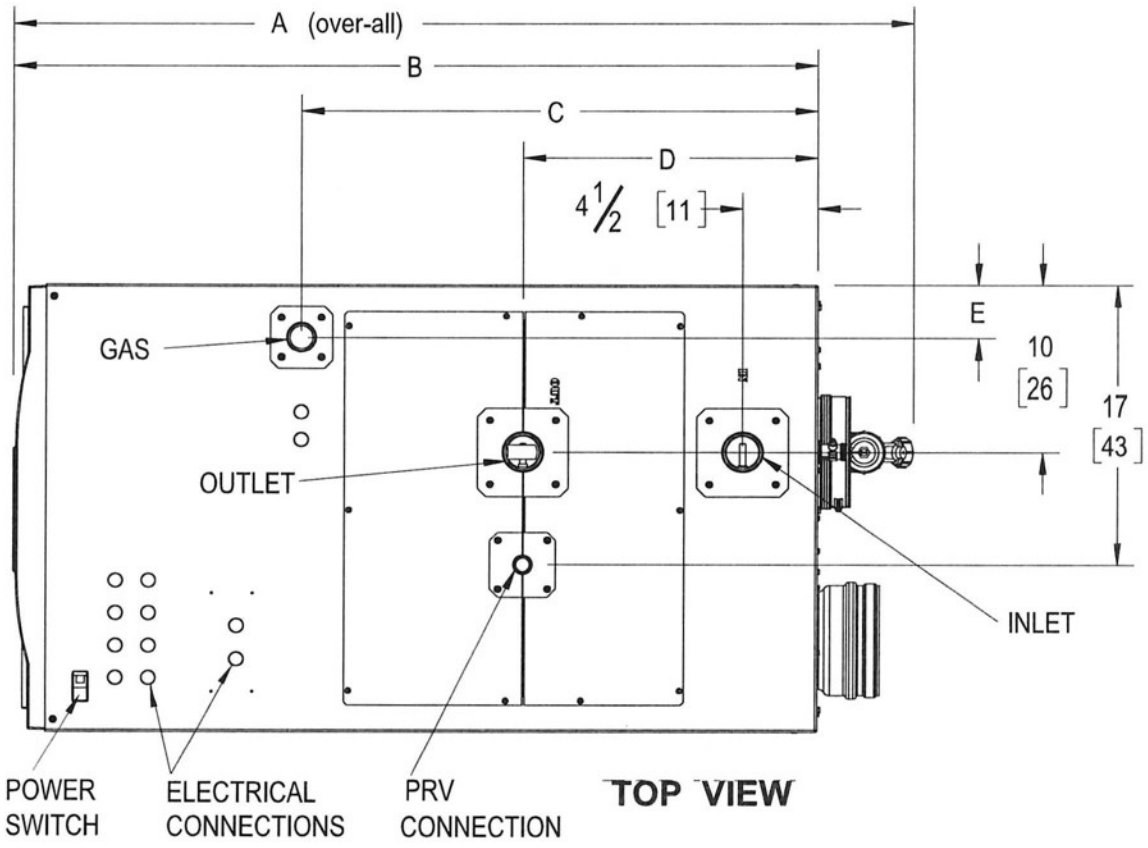
Model	Dimensions (Inches)								
	A	B	C	D	E	Gas Conn.	Water Conn.	Air Inlet	Vent
399	47-1/4	41-1/2	23-1/4	12	5	1	2	4	4
500	47-1/4	41-1/2	24-1/2	13-1/2	5	1	2	4	4
650	54-1/4	48-1/2	31-1/4	17-3/4	3-1/4	1-1/4	2	6	6
800	54-1/4	48-1/2	34	20-3/4	3-1/4	1-1/4	2	6	6
999	57-3/4	52	35	25-1/2	4	1-1/2	2-1/2	6	6
1500	66-3/4	61	42-1/2	33	4	1-1/2	2-1/2	8	8

Model	Dimensions (cm)				
	A	B	C	D	E
399	120	105	59	31	13
500	120	105	62	34	13
650	138	123	79	45	8
800	138	123	86	53	8
999	147	132	89	65	10
1500	169	155	108	84	10



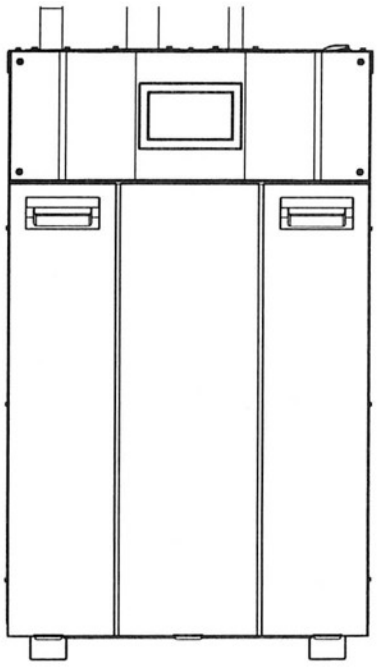
RIGHT SIDE VIEW **BACK VIEW**

Dimensional Data (continued)



FLA = Full Load Amperage
MCA = Minimum Circuit Ampacity
MOP = Maximum Over-current Protection

*On 1500 models with factory supplied pumps, it is necessary to use two circuits; one to supply power for the boiler or water heater and another to power the pump.



FRONT VIEW

Bradford White Corporation reserves the right to change specifications, components, features, or to discontinue products without notice.

BRADFORD WHITE®

200 Lafayette St.
Middleville, MI 49333
Warranty: (800) 531-2111

www.BradfordWhite.com

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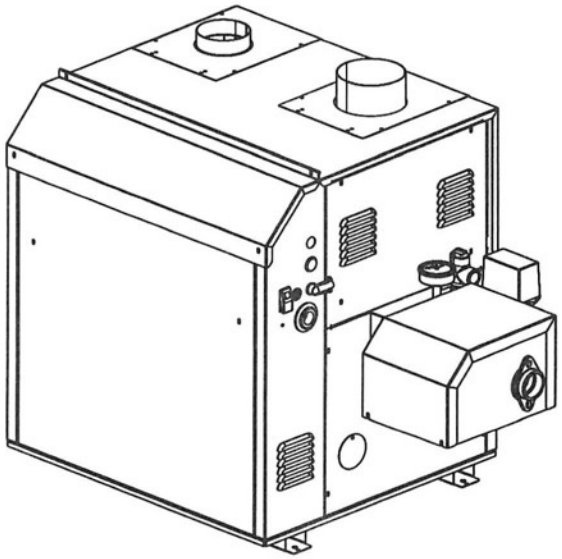
Brute® Deluxe

Pump Mounted Boiler & Water Heater

BMT2H	400 Hydronic Heater
BMT2V	200 - 400 Volume Water Heater

Indoor/Outdoor Sizes

Submittal Data



BRADFORD WHITE CORPORATION

Date:

Project #:

Engineer:

Project Name:

Prepared By:

Location:

Bid Date:

Contractor:

Standard Equipment

- Certified for indoor or outdoor use
- Low NOX emissions
- ASME 160 psi working pressure heat exchanger
- ASME "H" stamp
- Opt. ASME "HLW" stamp (BMT2V only)
- Meets NSF/ANSI-372 Low Lead Content Certification (BMT2V)
- Pump, mounted and wired
- Flanged water connections
- Glass-lined headers
- External header gaskets
- 75psi (517kPa) ASME rated pressure relief valve (BMT2H)
- 125psi (861kPa) ASME rated pressure relief valve (BMT2V)
- Temperature pressure gauge
- Water flow switch
- 24V control system
- 115/24V transformer
- Temperature controller
- Manual reset high limit
- On-off firing (2-stage opt.)
- Hot surface ignition
- On/off toggle switch
- CSD-1 compliant
- Removable burner tray(s)
- Multiple operating gas valve/press regs
- Manual "A" gas valve
- Burner site glass
- Fusible link (model 200)
- Intake air filter
- Built-in fan for Category I or III vent systems
- Blower pre- & post-purge
- Air pressure switch
- Blocked vent switch

Controller Features

BMT2H Boiler

- PI temperature controller
- Outdoor reset with ratios of 0.4 to 3.6
- Warm weather shutdown
- Indicator lights for power, heat call, DHW call & WWSD
- Indirect DHW operation
- Automatic boiler differential
- Pump pre-purge, post-purge and exercise
- Outdoor air sensor
- Codes for sensor errors

BMT2V Water Heater

- Bulb & capillary adjustable temperature controller
- On/off control has fixed 5°F differential
- Opt. 2-stage control is adjustable with fixed 3.5°F switch differential and adjustable interstage differential
- Pump time delay, adjustable from 0-10 minutes

Boiler Data

Model:
- ☐ Boiler BMT2H
- ☐ Water Heater BMT2V

Configuration
- ☐ On/Off (standard)
- ☐ Two-Stage (optional)

Water Trim
- ☐ Glass-Lined Cast Iron
- ☐ Bronze Trim (std. on BMT2V)

☐ **Number of Units:**

Fuel
- ☐ Natural
- ☐ Propane

Pump
- ☐ Normal Water
- ☐ Soft Water (BMT2V only)

Heat Exchanger
- ☐ Copper
- ☐ Cupro-Nickel
- ☐ Copper, Reversed
- ☐ Cupro-Nickel, Reversed

Options
- ☐ 200°F Max Controls (std. on BMT2V)
- ☐ Low Water Cutoff
- ☐ ASME "HLW" Stamp (BMT2V only)

ASME HLW ASME H CSA C US Low Lead Content NSF/ANSI 372 AHRI MEMBER

Sizing Data

Model	Input		Output		Gas Conn Size	Water Conn. Size	Shipping Weight	
	BTU/h	*kW*	**BTU/h**	*kW*	NPT	NPT	**lbs**	*kg*
☐ BMT2H0400	**399,000**	*116.9*	**340,000**	*99.6*	3/4	1-1/2	**350**	*159*
☐ BMT2V0200	**199,900**	*58.6*	**169,915**	*49.8*	3/4	1-1/2	**290**	*132*
☐ BMT2V0300	**300,000**	*87.9*	**255,000**	*74.7*	3/4	1-1/2	**320**	*145*
☐ BMT2V0400	**400,000**	*117.2*	**339,915**	*99.6*	3/4	1-1/2	**350**	*159*

NOTES:

1. Input and output must be de-rated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
2. Dimensions are nominal.
3. For other boiler ratings:
   Boiler Horsepower: HP = $\frac{\text{Output}}{33{,}475}$ Radiation Surface: EDR sq. ft. = $\frac{\text{Output}}{150}$

Accessories

☐ Side-wall vent terminal for indoor installation (required for side-wall venting)
☐ Side-wall combustion air terminal for indoor installation (required only for ducted combustion air)
☐ Outdoor vent terminal and combustion air terminal

Water Flow Data

BMT2H (Boiler)
TEMPERATURE RISE

Size	**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*
400	**34**	*129*	**27**	*102*	**23**	*87*	**19**	*72*

BMT2V (Water Heater)

	HARD WATER				NORMAL WATER				SOFT WATER			
Size	**Flow gpm**	**Temp Rise °F**	*Flow lpm*	*Temp Rise °C*	**Flow gpm**	**Temp Rise °F**	*Flow lpm*	*Temp Rise °C*	**Flow gpm**	**Temp Rise °F**	*Flow lpm*	*Temp Rise °C*
200	**45**	**8**	*170*	*4*	**35**	**10**	*133*	*6*	**23**	**15**	*87*	*8*
300	**45**	**11**	*170*	*6*	**35**	**15**	*133*	*8*	**23**	**22**	*87*	*12*
400	**45**	**15**	*170*	*8*	**35**	**19**	*133*	*11*	**23**	**30**	*87*	*17*

Recovery Data

	WATER TEMPERATURE RISE IN °F								
Size	40°F GPH	50°F GPH	60°F GPH	70°F GPH	80°F GPH	90°F GPH	100°F GPH	120°F GPH	140°F GPH
200	**510**	**408**	**340**	**291**	**255**	**227**	**204**	**170**	**146**
300	**765**	**612**	**510**	**437**	**383**	**340**	**306**	**255**	**219**
400	**1020**	**816**	**680**	**583**	**510**	**453**	**408**	**340**	**291**

NOTE: GPH = gallons per hour.

	WATER TEMPERATURE RISE IN °C								
Size	*22°C L/h*	*28°C L/h*	*33°C L/h*	*39°C L/h*	*44°C L/h*	*50°C L/h*	*56°C L/h*	*67°C L/h*	*78°C L/h*
200	*1928*	*1542*	*1285*	*1100*	*964*	*858*	*771*	*643*	*552*
300	*2892*	*2313*	*1928*	*1652*	*1448*	*1285*	*1157*	*964*	*828*
400	*3856*	*3084*	*2570*	*2204*	*1928*	*1712*	*1542*	*1285*	*1100*

NOTE: *L/h = Liters per hour.*

Clearances

Appliance Surface	Required Clearance from Combustible Material		Suggested Service Access Clearance	
	inches	*cm*	**inches**	*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 UL1738 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.

Electrical Data

BMT2H & BMT2V (pump mounted) Size	Boiler / Heater Circuit Size			Pump	Blower
	Volts	Phase	Amps		
200–400	120	Single	15	Included in Boiler Connection	Included in Boiler Connection

Pump Data

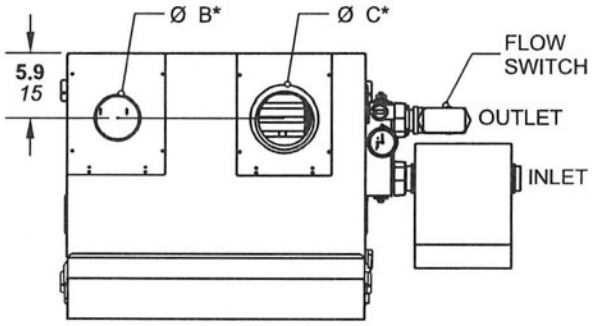
BMT2V Water Heaters

Size	Water Category			
	SOFT		NORMAL	
	HP	**Amps**	**HP**	**Amps**
200	**1/10**	**1.5**	**1/6**	**2.0**
300	**1/10**	**1.5**	**1/6**	**2.0**
400	**1/10**	**1.5**	**1/6**	**2.0**

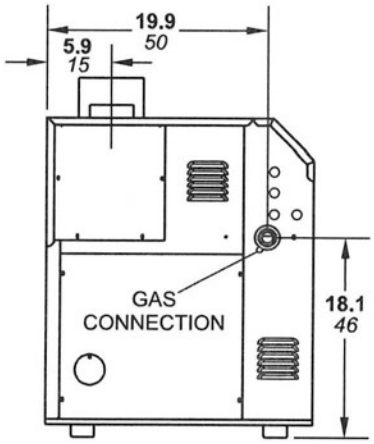
BMT2H Boilers

Size	HP	Amps
400	**1/6**	**2.0**

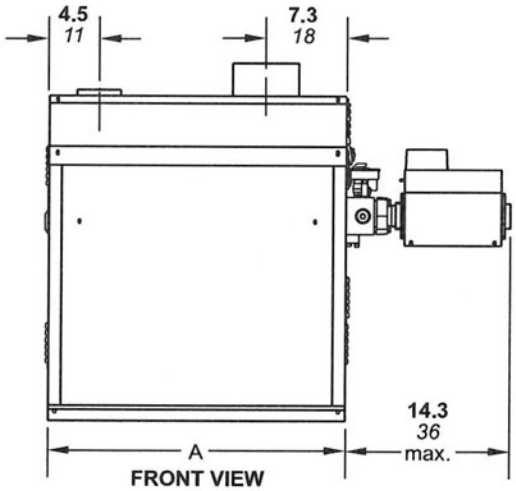
Dimensional Data



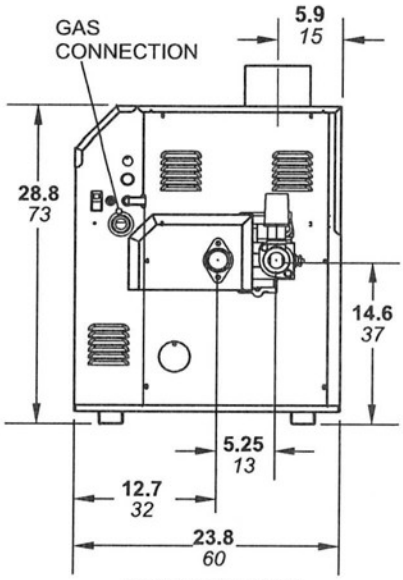
TOP VIEW



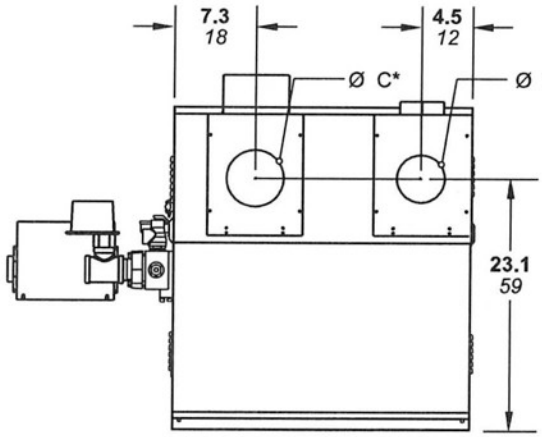
LEFT SIDE VIEW



FRONT VIEW



RIGHT SIDE VIEW



REAR VIEW

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

Size	A		Air Conn. B*		Vent Conn. C*		Horiz Vent Pipe	
	in	cm	in	cm	in	cm	in	cm
200	**20½**	*52*	**4**	*10*	**5**	*13*	**4**	*10*
300	**26½**	*67*	**4**	*10*	**6**	*15*	**5**	*13*
400	**33½**	*85*	**6**	*15*	**7**	*18*	**6**	*15*

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

Bradford White Corporation reserves the right to change specifications, components, features, or to discontinue products without notice.

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