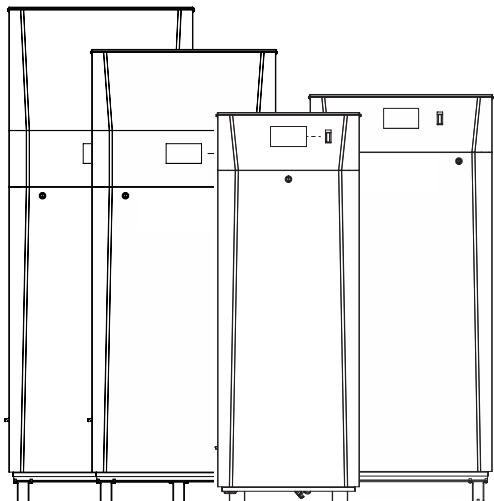


# Brute OmniTech®



## Volume Water Heater

BOCV | Volume Water Heater, CAT II / IV

Indoor / Outdoor, Sizes 1250 - 3000



### Submittal Data

Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Project Name:

Location:

Contractor:

### Standard Features

- ASME "HLW" stamp
- 160 psi maximum working pressure
- Meets NSF/ANSI-372 Low Lead Content certification
- Certified for Category II & IV vent
- Indoor / outdoor
- Low NOx system exceeds the most stringent NOx regulations
- Sophisticated gas/air valve allows for constant control of combustion
- Sealed combustion chamber
- Stainless steel heat exchanger with welded construction
- Pre-mix stainless steel burner
- Electronic PID modulating control with large touchscreen and color display
- Multiple independent heat demands
- Controller cascades with up to eight OmniTech BOCV heaters
- Accepts 4-20ma or 0-10VDC external modulation or external set point control
- Modbus RTU & BACnet MSTP on board
- Domestic water pump control with time delay
- Sensor for DHW tank
- Cat IV vent & air pipe lengths of up to 100 equivalent feet (each)
- High and low gas pressure switches
- Vent temperature cutoff
- Normally open alarm contact
- Air filter
- Water flow switch
- Temperature & pressure gauge
- Low water cutoff
- 125 psi (861kPa) ASME rated pressure relief valve
- Groove lock fittings (optional flange adapter)
- Burner site glass
- 10-Year limited warranty

### Heater Data

Number of Units

Fuel

☐ Natural

Voltage

- ☐ 120V, single ph (1250-2000)  
☐ 208V, single ph (1500-2500)  
☐ 220/240V, single ph (1500-2500)

- ☐ 208V, three ph (2500-3000)  
☐ 480V, three ph (2500-3000)  
☐ 600V, three ph (2500-3000)

### Factory Mounted Options

- ☐ ASME CSD-1  
☐ ASME "H" Stamp (instead of standard "HLW" Stamp)  
☐ BACnet IP gateway  
☐ LonWorks gateway
- ☐ Additional auto & manual reset high limit switches  
☐ Alarm bell with silence switch  
☐ Groove lock to flange connections
- ☐ 125 psi pressure relief valve (std)  
☐ 30 psi pressure relief valve  
☐ 50 psi pressure relief valve  
☐ 60 psi pressure relief valve  
☐ 75 psi pressure relief valve  
☐ 150 psi pressure relief valve



## Accessories for Field Mounting

- ☐ Gateway for BACnet IP  
☐ Gateway for LonWorks

- ☐ Cat IV horizontal vent terminal  
☐ Screen for air terminal  
☐ Vent terminal for outdoor unit  
☐ Air pipe screen for outdoor unit

- ☐ Condensate neutralizer  
☐ Condensate neutralizer with pump

## Sizing Data

| Model                         | Input Rate |     | Output Rate |     | Thermal Efficiency | Turndown | Product Weight |     | Operating Weight |     | Shipping Weight |     | Water Content |    |
|-------------------------------|------------|-----|-------------|-----|--------------------|----------|----------------|-----|------------------|-----|-----------------|-----|---------------|----|
|                               | MBH        | kw  | MBH         | kw  | %                  | Ratio    | lbs            | kg  | lbs              | kg  | lbs             | kg  | gal           | l  |
| <input type="checkbox"/> 1250 | 1250       | 366 | 1125        | 330 | 90                 | 5:1      | 541            | 246 | 575              | 261 | 741             | 336 | 3.8           | 14 |
| <input type="checkbox"/> 1500 | 1500       | 440 | 1335        | 391 | 89                 | 7:1      | 541            | 246 | 575              | 261 | 741             | 336 | 3.8           | 14 |
| <input type="checkbox"/> 1750 | 1750       | 513 | 1540        | 451 | 88                 | 7:1      | 947            | 430 | 1025             | 465 | 1197            | 543 | 8.9           | 34 |
| <input type="checkbox"/> 2000 | 1999.9     | 586 | 1800        | 527 | 90                 | 5:1      | 1030           | 468 | 1125             | 511 | 1280            | 581 | 10.8          | 41 |
| <input type="checkbox"/> 2500 | 2499.9     | 733 | 2250        | 659 | 90                 | 7:1      | 1030           | 468 | 1125             | 511 | 1280            | 581 | 10.8          | 41 |
| <input type="checkbox"/> 3000 | 3000       | 879 | 2610        | 765 | 87                 | 7:1      | 1085           | 493 | 1190             | 540 | 1335            | 606 | 11.6          | 44 |

## Clearances

| Model     | Certified Clearances to Combustibles |    |        |    |        |    |        |    |        |    |
|-----------|--------------------------------------|----|--------|----|--------|----|--------|----|--------|----|
|           | Front                                |    | Back   |    | Left   |    | Right  |    | Top    |    |
|           | inches                               | cm | inches | cm | inches | cm | inches | cm | inches | cm |
| 1250-3000 | closet*                              | -  | 0      | 0  | 0      | 0  | 0      | 0  | 0      | 0  |

\*With required openings

| Model     | Suggested Service Clearances |    |        |    |        |    |        |    |        |    |
|-----------|------------------------------|----|--------|----|--------|----|--------|----|--------|----|
|           | Front                        |    | Back   |    | Left   |    | Right  |    | Top    |    |
|           | inches                       | cm | inches | cm | inches | cm | inches | cm | inches | cm |
| 1250-1500 | 24                           | 61 | 24     | 61 | 8      | 20 | 8      | 20 | 18     | 46 |
| 1750-3000 | 24                           | 61 | 24     | 61 | 8      | 20 | 8      | 20 | 17     | 43 |

## Electrical Data

| Voltage        | 1250<br>Current |      |     | 1500<br>Current |      |     | 1750<br>Current |      |     | 2000<br>Current |      |     | 2500<br>Current |     |     | 3000<br>Current |     |     |
|----------------|-----------------|------|-----|-----------------|------|-----|-----------------|------|-----|-----------------|------|-----|-----------------|-----|-----|-----------------|-----|-----|
|                | FLA             | MCA  | MOP | FLA             | MCA  | MOP | FLA             | MCA  | MOP | FLA             | MCA  | MOP | FLA             | MCA | MOP | FLA             | MCA | MOP |
| 120V, 1 phase  | 9.4             | 11.8 | 20  | 9.4             | 11.8 | 20  | 9.2             | 11.5 | 20  | 9.2             | 11.5 | 20  | N/A             | N/A | N/A | N/A             | N/A | N/A |
| 208V, 1 phase  | N/A             | N/A  | N/A | 4.8             | 6.0  | 15  | 5.0             | 6.3  | 15  | 5.0             | 6.3  | 15  | 5.0             | 6.3 | 15  | N/A             | N/A | N/A |
| 220/240V, 1 ph | N/A             | N/A  | N/A | 4.8             | 6.0  | 15  | 4.8             | 6.0  | 15  | 4.8             | 6.0  | 15  | 4.8             | 6.0 | 15  | N/A             | N/A | N/A |
| 208V, 3 phase  | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | 5.2             | 6.5 | 15  | 6.2             | 7.8 | 15  |
| 480V, 3 phase  | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | 2.2             | 2.8 | 15  | 2.7             | 3.4 | 15  |
| 600V, 3 phase  | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | N/A             | N/A  | N/A | 1.8             | 2.3 | 15  | 2.2             | 2.8 | 15  |

## Vent System

| Model | Air Collar<br>Size |    | Ducted Air<br>Pipe Size |    | Maximum<br>Ducted Air Pipe<br>Length |      | Vent Collar<br>Size |    | Category IV<br>Vent Pipe<br>Size |    | Maximum<br>Category IV<br>Vent Pipe<br>Length |      | Typical**<br>Category II<br>Vent Pipe<br>Size |    |
|-------|--------------------|----|-------------------------|----|--------------------------------------|------|---------------------|----|----------------------------------|----|-----------------------------------------------|------|-----------------------------------------------|----|
|       | inches             | cm | inches                  | cm | ft*                                  | m    | inches              | cm | inches                           | cm | ft*                                           | m    | inches                                        | cm |
| 1250  | 6                  | 15 | 6                       | 15 | 100                                  | 30.5 | 6                   | 15 | 6                                | 15 | 100                                           | 30.5 | 12                                            | 30 |
| 1500  | 6                  | 15 | 6                       | 15 | 100                                  | 30.5 | 6                   | 15 | 6                                | 15 | 100                                           | 30.5 | 12                                            | 30 |
| 1750  | 8                  | 20 | 8                       | 20 | 100                                  | 30.5 | 8                   | 20 | 8                                | 20 | 100                                           | 30.5 | 14                                            | 36 |
| 2000  | 8                  | 20 | 8                       | 20 | 100                                  | 30.5 | 8                   | 20 | 8                                | 20 | 100                                           | 30.5 | 14                                            | 36 |
| 2500  | 8                  | 20 | 8                       | 20 | 100                                  | 30.5 | 8                   | 20 | 8                                | 20 | 100                                           | 30.5 | 16                                            | 41 |
| 3000  | 10                 | 25 | 10                      | 25 | 100                                  | 30.5 | 10                  | 25 | 10                               | 25 | 100                                           | 30.5 | 16                                            | 41 |

\*Equivalent Feet: To calculate, measure the linear feet of the pipe and add 5 ft (1.5m) for each elbow used.

\*\*Category II vent pipe size must be engineered for vent system configuration, and may differ from what is shown.

Notes:

1. Installations in the U.S. require exhaust vent pipe that is stainless steel complying with UL1738.
2. Intake air pipe may be single-wall galvanized steel pipe, polypropylene, ABS, PVC, or CPVC, properly sealed.

## Water Flow Requirements

| Model | 1-10 Grains Per Gallon Hardness |                   |                   | 11-15 Grains Per Gallon Hardness |                   |                   |
|-------|---------------------------------|-------------------|-------------------|----------------------------------|-------------------|-------------------|
|       | Flow Rate<br>(gpm)              | Headloss*<br>(ft) | Temp Rise<br>(°F) | Flow Rate<br>(gpm)               | Headloss*<br>(ft) | Temp Rise<br>(°F) |
| 1250  | 85                              | 16.1              | 26                | 104                              | 23.6              | 21                |
| 1500  | 90                              | 17.9              | 29                | 110                              | 26.3              | 24                |
| 1750  | 120                             | 12.9              | 25                | 150                              | 19.6              | 20                |
| 2000  | 135                             | 16.1              | 26                | 170                              | 24.4              | 21                |
| 2500  | 140                             | 17.2              | 31                | 170                              | 24.4              | 26                |
| 3000  | 150                             | 21                | 35                | 183                              | 31.5              | 28                |
| Model | 1-10 Grains Per Gallon Hardness |                   |                   | 11-15 Grains Per Gallon Hardness |                   |                   |
|       | Flow Rate<br>(l/m)              | Headloss*<br>(m)  | Temp Rise<br>(°C) | Flow Rate<br>(l/m)               | Headloss*<br>(m)  | Temp Rise<br>(°C) |
| 1250  | 322                             | 4.9               | 14                | 394                              | 7.2               | 12                |
| 1500  | 341                             | 5.5               | 16                | 416                              | 8.0               | 13                |
| 1750  | 454                             | 3.9               | 14                | 568                              | 6.0               | 11                |
| 2000  | 511                             | 4.9               | 14                | 644                              | 7.4               | 11                |
| 2500  | 530                             | 5.2               | 17                | 644                              | 7.4               | 14                |
| 3000  | 568                             | 6.4               | 19                | 693                              | 9.6               | 16                |

\*Headloss is for the heater only (no piping)

Allowable pH is 6.5 to 9.5

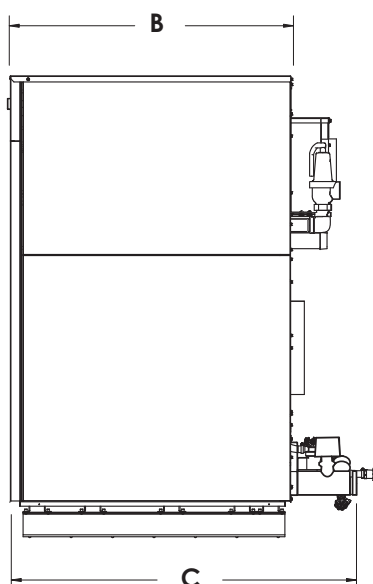
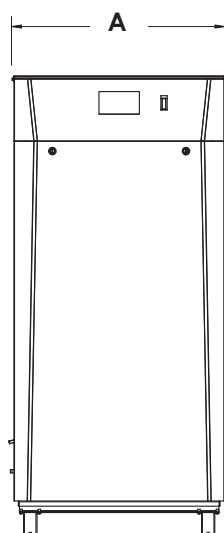
## Recovery

| Model | Temperature Rise |      |      |      |      |      |       |
|-------|------------------|------|------|------|------|------|-------|
|       | 40°F             | 50°F | 60°F | 70°F | 80°F | 90°F | 100°F |
|       | gph              | gph  | gph  | gph  | gph  | gph  | gph   |
| 1250  | 3293             | 2634 | 2195 | 1881 | 1646 | 1463 | 1317  |
| 1500  | 3920             | 3136 | 2613 | 2240 | 1960 | 1742 | 1568  |
| 1750  | 4568             | 3654 | 3045 | 2610 | 2284 | 2030 | 1827  |
| 2000  | 5268             | 4214 | 3512 | 3010 | 2634 | 2341 | 2107  |
| 2500  | 6578             | 5262 | 4385 | 3759 | 3289 | 2923 | 2631  |
| 3000  | 7767             | 6214 | 5178 | 4438 | 3884 | 3452 | 3107  |

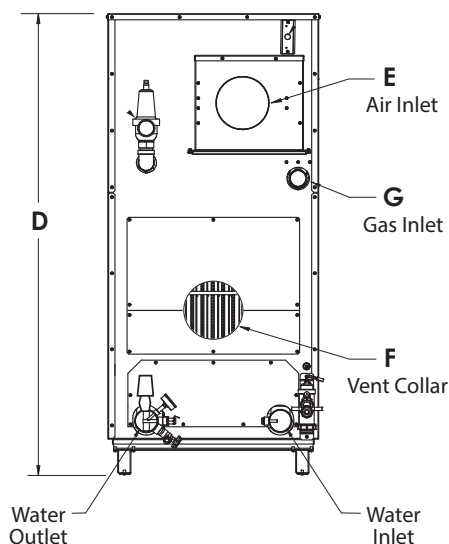
| Model | Temperature Rise |       |       |       |       |       |       |
|-------|------------------|-------|-------|-------|-------|-------|-------|
|       | 22°C             | 28°C  | 33°C  | 39°C  | 44°C  | 50°C  | 56°C  |
|       | L/h              | L/h   | L/h   | L/h   | L/h   | L/h   | L/h   |
| 1250  | 12463            | 9971  | 8309  | 7122  | 6232  | 5539  | 4985  |
| 1500  | 14837            | 11870 | 9891  | 8478  | 7418  | 6594  | 5935  |
| 1750  | 17290            | 13832 | 11527 | 9880  | 8645  | 7684  | 6916  |
| 2000  | 19942            | 15953 | 13294 | 11395 | 9971  | 8863  | 7977  |
| 2500  | 24899            | 19919 | 16599 | 14228 | 12449 | 11066 | 9959  |
| 3000  | 29401            | 23521 | 19601 | 16801 | 14701 | 13067 | 11761 |

## Dimensional Data

| Model | "A"      | "B"      | "C"      | "D"      | "E"                         | "F"                           | "G"           | Water Inlet & Outlet |
|-------|----------|----------|----------|----------|-----------------------------|-------------------------------|---------------|----------------------|
|       | in. (cm) | in. (cm) | in. (cm) | in. (cm) | Air Inlet Diameter in. (cm) | Vent Collar Diameter in. (cm) | Gas Conn. NPT |                      |
| 1250  | 24½ (62) | 27 (69)  | 39 (99)  | 66 (168) | 6 (15)                      | 6 (15)                        | 2"            | 2½"                  |
| 1500  | 24½ (62) | 27 (69)  | 39 (99)  | 66 (168) | 6 (15)                      | 6 (15)                        | 2"            | 2½"                  |
| 1750  | 32 (81)  | 43 (109) | 53 (135) | 69 (175) | 8 (20)                      | 8 (20)                        | 2"            | 3"                   |
| 2000  | 32 (81)  | 43 (109) | 53 (135) | 78 (198) | 8 (20)                      | 8 (20)                        | 2"            | 3"                   |
| 2500  | 32 (81)  | 43 (109) | 53 (135) | 78 (198) | 8 (20)                      | 8 (20)                        | 2"            | 3"                   |
| 3000  | 32 (81)  | 43 (109) | 53 (135) | 85 (216) | 10 (25)                     | 10 (25)                       | 2"            | 3"                   |



## Brute OmniTech®



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