

Master-Fit® Ultra-Low NOx Commercial Gas Tank-Type Water Heaters

FEATURES

80% THERMAL EFFICIENCY MEANS LOWER OPERATING COSTS

FAN ASSISTED COMBUSTION - The blower is built into the low NOx burner assembly. Complies with California SCAQMD Rule 1146.2 and other air quality management districts with similar NOx emission requirements of 14 ng/J or 20 ppm.

AIR-FLAPPER - A stainless steel air flapper is used inside the premix system to replace externally mounted flue damper to minimize the standby heat loss and to minimize the overall heater height.

METAL VENTING - Rated Category I Appliance. Uses standard double wall type "B" vent. Can be commonly vented with other Category I appliances. Vent connects directly to the vent connector outlet. An excellent choice for retrofit and upgrade installations.

WATER CONNECTIONS - For ease of installation, all BTL's feature water connections on the top, front, and rear. "The Eliminator" inlet water connection eliminates harmful scale buildup, extending the life of the product. The front inlet connection must be used for the Eliminator benefits.

GLASSLINED TANK - Permaglas® Ultracoat is the proprietary ceramic coating developed by A. O. Smith's ceramic engineers specifically for the heater. It is applied after the complete tank has been assembled to give a seamless barrier against hot water corrosion.

INSTALLED COST SAVINGS - When multiple BTL units are exclusively used in a vent manifold, use the National Fuel Gas Code Table 13 Fan Sizing Charts to determine vent diameter and specifications. The BTL uses a smaller vent diameter than a natural draft water heater which saves on installation cost.

FULLY AUTOMATIC DIGITAL CONTROLS WITH SAFETY SHUTOFF - Accurate, dependable control system. Manual reset gas shutoff device for added safety. Maximum inlet gas pressure is 14" W.C. Minimum gas pressure is 3.5" W.C. natural gas.

FOAM INSULATION - Saves fuel, helps reduce standby heat loss.

JACKET - Heavy gauge steel finished with a baked enamel finish over a bonderized undercoat.

EASY CLEANING - Handhole cleanout allows access for easy cleaning.

FULLY TESTED FOR SAFETY AND PERFORMANCE - Design certified by the Underwriters Laboratory for 180°F hot water service. Meets rigid requirements of the National Sanitation Foundation when equipped with optional leg kit. Certified for use on combustible flooring.

INTERMITTENT IGNITION DEVICE - Eliminates standing pilot. Provides flame failure response in less than one second. Spark ignitor and power ON/OFF switch.

EASY TO INSTALL - Completely factory-assembled. Only gas, water, vent and electric connections need to be made. Provided with drain valve.

ANODES - CoreGuard™ long-life, stainless steel core anode rods.

PLUG KITS - Pipe nipples and caps are included to plug unused water connections.

APPROVAL RATINGS AND CERTIFICATION - All models meet ANSI Z21.10.3 - CSA 4.3 standards and the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1.

OTHER FEATURES

- Integral automatic gas shutoff system prevents excessive water temperature.
- CSA Certified and ASME Rated T&P Relief valve are factory-installed.
- Maximum working pressure is 160 psi standard.
- Adjustable thermostat with a 120-180°F range.

THREE YEAR LIMITED TANK / ONE YEAR LIMITED PARTS WARRANTY

- For complete warranty information, consult written warranty.

NSF LEG KIT

- Meets NSF Standard 5 with optional leg kit - Part #9008883005

MODELS BTL-198 & BTL-199 SERIES 200



GAS-FIRED



LISTED

CLASSIFIED

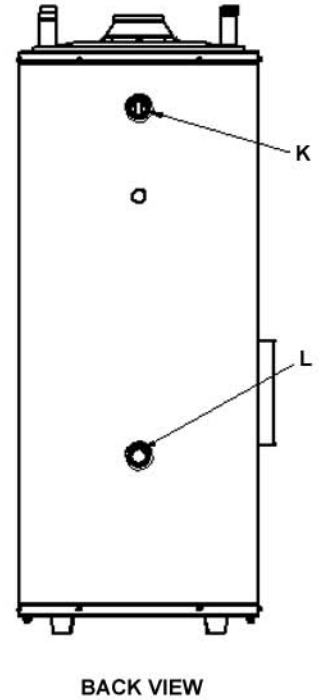
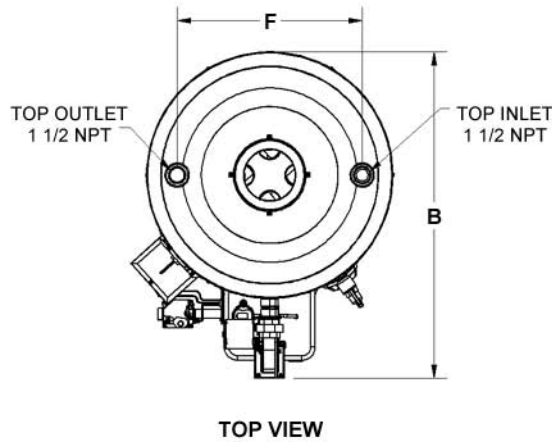
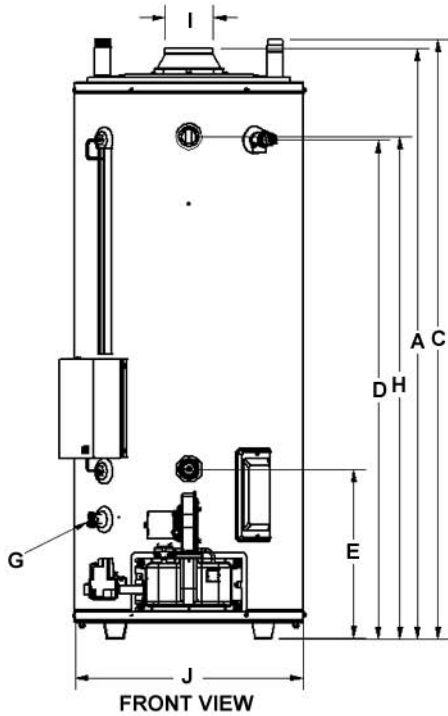


WATER QUALITY



Low Lead Content

ROUGH-IN DIMENSIONS BTL-198 & BTL-199 SERIES 200



ROUGH-IN DIMENSIONS

| MODEL DIMENSION | BTL-198 | | BTL-199 | |
|-----------------|-----------|--------|-----------|--------|
| | inches | cm | inches | cm |
| A | 63 3/4 | 161.93 | 71 3/4 | 182.25 |
| B | 37 | 93.98 | 37 | 93.98 |
| C | 65 | 165.1 | 73 | 185.42 |
| D | 52 3/4 | 133.99 | 60 3/4 | 154.31 |
| E | 20 3/4 | 52.71 | 20 1/2 | 52.07 |
| F | 21 | 53.34 | 21 | 53.34 |
| G | 3/4 NPT | | 3/4 NPT | |
| H | 53 | 134.62 | 61 | 154.94 |
| I | 6 | 15.24 | 6 | 15.24 |
| J | 27 3/4 | 70.49 | 27 3/4 | 70.49 |
| K | 1 1/2 NPT | | 1 1/2 NPT | |
| L | 1 1/2 NPT | | 1 1/2 NPT | |

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

All models rated at 80% thermal efficiency

Models available for sale in California only



Commercial Gas Water Heaters

RECOVERY CAPACITIES, BASED ON 80% EFFICIENCY

| | INPUT BTUH | INPUT kW | U.S. GAL. | LITERS | EFF. % | U. S. GALLONS / HR. AND LITERS / HR. AT TEMPERATURE RISE INDICATED | | | | | | | | | | | | | | | | |
|----------------|---------------|-------------|--------------|--------|-----------|--|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | | Deg. F | 36 | 40 | 50 | 54 | 60 | 70 | 72 | 80 | 90 | 100 | 108 | 110 | 120 | 126 | 130 | 140 |
| | | | | | | Deg. C | 20 | 22 | 28 | 30 | 33 | 39 | 40 | 44 | 50 | 56 | 60 | 61 | 67 | 70 | 72 | 78 |
| BTL-198 | 199000 | | 81 | | 80 | GPH | 531 | 478 | 382 | 354 | 319 | 273 | 265 | 239 | 212 | 191 | 177 | 174 | 159 | 152 | 147 | 137 |
| | | 45 | | 307 | | LPH | 2009 | 1808 | 1447 | 1340 | 1206 | 1033 | 1005 | 904 | 804 | 723 | 670 | 658 | 603 | 574 | 556 | 517 |
| BTL-199 | 199000 | | 100 | | 80 | GPH | 531 | 478 | 382 | 354 | 319 | 273 | 265 | 239 | 212 | 191 | 177 | 174 | 159 | 152 | 147 | 137 |
| | | 45 | | 352 | | LPH | 2009 | 1808 | 1447 | 1340 | 1206 | 1033 | 1005 | 904 | 804 | 723 | 670 | 658 | 603 | 574 | 556 | 517 |

GAS AND ELECTRICAL CHARACTERISTICS

| Models | Gas Type | Gas Supply Pressure | | Volts / Hz | Amperes |
|---------|----------|----------------------|---------------------|------------|---------|
| | | Minimum | Maximum | | |
| BTL-198 | Natural | 3.5" W.C. (0.87 kPa) | 14" W.C. (3.48 kPa) | 120 / 60 | < 5 |
| BTL-199 | Natural | 3.5" W.C. (0.87 kPa) | 14" W.C. (3.48 kPa) | 120 / 60 | < 5 |

| Models | Clearance to Combustibles | | Clearance to Non-Combustibles | |
|---------|---------------------------|-----------|-------------------------------|-----------|
| | Sides & Rear | Top Cover | Sides & Rear | Top Cover |
| BTL-198 | 0" | 12" | 0" | 12" |
| BTL-199 | 0" | 12" | 0" | 12" |

| Water Connections in Inches | | | | | | |
|-----------------------------|-------|-------|-------|--------|-------|-------|
| Models | Inlet | | | Outlet | | |
| | Top | Front | Back | Top | Front | Back |
| BTL-198 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 |
| BTL-199 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 |

| | BTL-198 | | BTL-199 | |
|------------------------------------|----------|---------|----------|---------|
| Approximate Shipping Weight | 650 lbs. | 295 kg. | 750 lbs. | 341 kg. |



Commercial Gas Water Heaters

SUGGESTED SPECIFICATION

Water Heater(s) shall be Model _____ as manufactured by A. O. SMITH, or equal. Water heater(s) shall be of glasslined design, and gas fired, equipped to burn natural gas and design certified by the Underwriter Laboratory under Volume III tests for commercial heaters for delivery of 180°F water, and meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and Current Edition of ASHRAE/IESNA 90.1. Heaters shall have an input rating of _____ and a recovery rating of _____ GPH at a temperature rise of 100°F with a storage capacity of _____ gallons. Heaters shall be equipped with 1 1/2" water inlet and outlet openings, a 2 3/4" x 3 3/4" boiler-type handhole cleanout and shall have a maximum working pressure of 160 psi. Water heater(s) shall be equipped with an integrated control system consisting of a 180°F adjustable thermostat with upper and lower sensing bulbs, which average the water temperatures at the top and bottom of the tank for maximum water temperature control. Heater(s) shall be provided with a manual reset gas shutoff device, anodes for cathodic protection and IID system. CSA Certified and ASME Rated T&P Relief Valve shall be furnished and installed by the factory. The heater shall be insulated with foam insulation or equal. The outer jacket shall have a baked enamel finish over a bonderized undercoating. All internal surfaces of the heater(s) exposed to water shall be glasslined with an alkaline borosilicate composition that has been fused-to-steel by firing at a temperature range of 1400° to 1600°F. Heater tank shall have a 3 year limited warranty against corrosion or sediment buildup as outlined in the written warranty. Fully illustrated instruction manual to be included.

For Technical Information and Automated Fax Service, call 800-527-1953. A. O. Smith Corporation reserves the right to make product changes or improvements without prior notice.