CANADA
Commercial Catalogue
Water Heaters, Hot Water Supply Boilers, Storage Tanks
Tankless and Specialty Products

www.hotwater.com
CONTRACTOR REWARDS™
A REWARDS PROGRAM FOR PEOPLE WHO APPRECIATE QUALITY WORK.

ENROLL FOR FREE NOW AND EARN
250 BONUS ENROLLMENT POINTS

Visit CONTRACTORREWARDS.COM

Over 5,000 rewards to choose from:

Learn more at www.contractorrewards.com

Enroll for FREE at www.contractorrewards.com
it’s EASY to participate.
Innovation Has A Name

It should come as no surprise that a company that has built its reputation on the concept of innovation, continues to lead the industry with the broadest—and, yes, the most innovative selection of water heaters and hot water supply boilers in its long and storied history.

What might come as a surprise to some is the fact that we view this accomplishment as a mere beginning—an indication of even greater things still to come. For everyone here at A. O. Smith, it’s never been just about exceeding what we had achieved in the past—it’s always been about exceeding everyone’s expectations for the future. Which is why you, our customers, can count on us to provide you with the perfect water heater solution for any application—day after day, year after year.

Table of Contents

Innovation Continues to Lead ................................................. 2
Gas Water Heaters .............................................................. 3–10
Tankless ................................................................. 11
Powered Burner Gas Water Heaters ............................... 12–14
Oil-Fired Water Heaters ................................................ 15–17
Electric Water Heaters ..................................................... 18–23
Circulating Water Heaters & Hot Water Supply Boilers .... 24–33
Electric Boilers & Hot Water Generators ......................... 34–35
Storage Tanks ............................................................... 36–37
iCOMM™ Remote Monitoring System ............................. 38
Building Management System BACnet and MODBUS Interface .... 39
Commercial Line Overview and Support Network ............. 40–41
Provides fully modulating combustion to precisely meet demands. Exclusive advanced LCD electronic control, with built-in diagnostics.

Top mounted components include new spark ignition, quiet operation burner and blower combination.

Enhanced PermaGlas® glass lining process that provides superior tank protection against corrosion.

For more information, please visit www.hotwater.com
Conservationist®
Power Vent BTF Model

80% thermal efficient - approved for use in combined appliance applications.

CFC-Free Foam Insulation
- Minimizes radiant heat loss

Dip Tube
- Carries inlet water deep into tank

Hot Surface Ignition
- Solid state ignition surface that does not flutter or blow out
- Provides increased reliability and efficiency over spark ignition systems
- Eliminates the pilot and saves energy

User-Friendly
- State-of-the-art electronic gas control provides more precise temperature control
- LED control light displays operation status and diagnostic information

Blue Diamond® Glass Coating
- Provides superior corrosion resistance compared to the industry standard glass lining

Anode
- Tank-mounted, screw-in magnesium anode for longer tank life

High-Input
- 76,000 BTU input assures plenty of hot water is available by providing faster recovery rates and higher first hour draws

Burner
- High-input, multi-port burner for improved combustion efficiency

Enhanced-Flow Brass Drain Valve
- Solid brass, tamper resistant, enhanced-flow, ball type drain valve
- Uses a standard female hose fitting that allows for fast and easy draining during maintenance
- Designed for easy operation, this valve includes an integral screwdriver slot that features a ¼ turn (open/close) radius, which not only permits full straight-through water flow but also a quick and positive shut off

Powered Venting
- Provides more venting flexibility and savings. A new quiet blower allows exhaust venting through the roof or sidewall with plastic pipe such as ULC S636 PVC, CPVC or polypropylene
- Up to 125 equivalent feet of pipe makes installation easy in any situation
- BTF-80 is a Category 3 (positive pressure non-condensing) appliance

Factory-Installed Temperature and Pressure Relief Valve
- Properly sized for each model (Specify if your local code requires a special T&P)

3-Year Limited Tank/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT BTU/h</th>
<th>MAXIMUM CERTIFIED ALTITUDE FT (M)</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTF-80</td>
<td>75 (284)</td>
<td>76,000</td>
<td>10,100 (3,078)</td>
<td>74 (280)</td>
<td>70 ⅛ (179)</td>
<td>26 (66)</td>
<td>277 (126)</td>
</tr>
</tbody>
</table>
Conservationist® Atmospheric Vent BT Models

80% thermal efficiency, ideal for light-duty applications.

BT models provide reliable, efficient service for light-duty applications such as office buildings and duplex/fourplex apartment homes.

Heavy Gauge Steel Jacket
- Finished with baked enamel over bonderized undercoat

Glass-Lined Tank
- Protects steel tank from corrosion and maximizes tank life

Fully Automatic Controls with Safety Shut Off
- Accurate, dependable control system requires no electric connections
- Fixed automatic gas shut off device for added safety
- Temperature adjustable up to 181°F

Draft Diverter
- Low profile diverter furnished as standard equipment

Hand Hole Clean Out
- Allows for easy tank cleaning

Foam Insulation
- Saves fuel and helps reduce standby heat loss

Maximum Working Pressure
- 150 psi

Maximum Gas Inlet Pressure
- 14” W.C.

Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1
- CSA certified and ASME rated T&P relief valve
- Not recommended for sanitation rinse

3-Year Limited Tank/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT BTU/h</th>
<th>MAXIMUM CERTIFIED ALTITUDE FT (M)</th>
<th>RECOVERY 100°F (50°C) TEMP. RISE GPH (LPH)</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT-80</td>
<td>74 (280)</td>
<td>75,100</td>
<td>7,700 (2,347)</td>
<td>73 (275)</td>
<td>61 1/4 (155)</td>
<td>26 1/8 (67)</td>
<td>275 (125)</td>
</tr>
<tr>
<td>BT-100</td>
<td>98 (371)</td>
<td>75,100</td>
<td>7,700 (2,347)</td>
<td>73 (275)</td>
<td>68 3/4 (174)</td>
<td>27 5/8 (71)</td>
<td>350 (159)</td>
</tr>
</tbody>
</table>
Master-Fit® Atmospheric Vent BTRC Models

80% thermal efficiency, self-cleaning, easy-to-install.

Factory-Installed Draft Diverter and Flue Damper (BTRC 120-400 models)
- Low-profile draft diverter helps for installation in tight spaces
- Automatic motorized flue damper helps minimize standby heat loss
- BTRC 500 model features induced draft design and no damper

Water Connections
- For ease of installation, most models feature water connections on the front, top or rear of unit

PermaGlas® Ultra Coat™ Glass Lining
- Exclusive process provides superior protection against corrosion
- Applied after tank construction, the tank is mechanically maneuvered to ensure the liquid glass covers all surfaces for superior protection

CoreGard™ Anode Rod
- Stainless steel core provides additional corrosion protection

Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

Factory-Installed, CSA Certified and ASME Rated T&P Relief Valve
- Properly sized for each model

Fully Automatic Control System
- Manual reset gas shut off device prevents excessive water temperature
- Adjustable thermostat with 120°F–180°F range
- Gas pressure regulator and pilot filter

Hand Hole Clean Out
- Allows easy access to tank interior for cleaning

Category I Appliance
- Can be commonly vented with other Category I appliances, using standard metal type “B” vent
- Optional power vent kits available to allow sidewall venting up to 100 equivalent feet

Eliminator™ Self Cleaning System
- Directs incoming cold water to sweep the bottom of the tank so sediment does not accumulate
- Reduced sediment build-up maintains rated thermal efficiency and reduces water heating costs

3-Year Limited Tank/1-Year Limited Parts Warranty

### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity USG (L)</th>
<th>Input BTU/h</th>
<th>100°F Recovery (65°C) Temp. Rise GPH (LPH)</th>
<th>Vent Diameter (IN)</th>
<th>Height* (CM)</th>
<th>Diameter (CM)</th>
<th>Approx. Shipping Weight LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTRC-120</td>
<td>71 (268)</td>
<td>120,000</td>
<td>116 (439)</td>
<td>5</td>
<td>69 ½ (177)</td>
<td>27 ¼ (71)</td>
<td>512 (223)</td>
</tr>
<tr>
<td>BTRC-154</td>
<td>81 (307)</td>
<td>154,000</td>
<td>149 (564)</td>
<td>6</td>
<td>73 (185)</td>
<td>27 ¼ (71)</td>
<td>552 (250)</td>
</tr>
<tr>
<td>BTRC-180</td>
<td>76 (288)</td>
<td>180,000</td>
<td>174 (659)</td>
<td>6</td>
<td>67 ½ (171)</td>
<td>27 ¼ (71)</td>
<td>576 (261)</td>
</tr>
<tr>
<td>BTRC-197</td>
<td>95 (360)</td>
<td>199,000</td>
<td>193 (731)</td>
<td>6</td>
<td>75 (191)</td>
<td>27 ¼ (71)</td>
<td>645 (293)</td>
</tr>
<tr>
<td>BTRC-199</td>
<td>76 (288)</td>
<td>199,000</td>
<td>193 (731)</td>
<td>6</td>
<td>67 ½ (171)</td>
<td>27 ¼ (71)</td>
<td>592 (269)</td>
</tr>
<tr>
<td>BTRC-200A</td>
<td>100 (379)</td>
<td>199,000</td>
<td>193 (731)</td>
<td>6</td>
<td>72 (183)</td>
<td>30 ½ (77)</td>
<td>-</td>
</tr>
<tr>
<td>BTRC-250A</td>
<td>100 (379)</td>
<td>250,000</td>
<td>242 (916)</td>
<td>8</td>
<td>72 (183)</td>
<td>30 ½ (77)</td>
<td>715 (324)</td>
</tr>
<tr>
<td>BTRC-251(A)</td>
<td>65 (246)</td>
<td>251,000</td>
<td>243 (920)</td>
<td>8</td>
<td>75 (191)</td>
<td>27 ¼ (71)</td>
<td>660 (299)</td>
</tr>
<tr>
<td>BTRC-275A</td>
<td>100 (379)</td>
<td>275,000</td>
<td>267 (1,011)</td>
<td>8</td>
<td>72 (183)</td>
<td>30 ½ (77)</td>
<td>-</td>
</tr>
<tr>
<td>BTRC-305(A)</td>
<td>65 (246)</td>
<td>305,000</td>
<td>296 (1,120)</td>
<td>8</td>
<td>75 (191)</td>
<td>27 ¼ (71)</td>
<td>659 (299)</td>
</tr>
<tr>
<td>BTRC-365(A)</td>
<td>65 (246)</td>
<td>365,000</td>
<td>349 (1,321)</td>
<td>8</td>
<td>79 ½ (202)</td>
<td>27 ¼ (71)</td>
<td>670 (304)</td>
</tr>
<tr>
<td>BTRC-400A</td>
<td>100 (379)</td>
<td>390,000</td>
<td>387 (1,465)</td>
<td>8</td>
<td>75 ½ (192)</td>
<td>30 ½ (77)</td>
<td>-</td>
</tr>
<tr>
<td>BTRC-500A</td>
<td>85 (322)</td>
<td>500,000</td>
<td>479 (1,813)</td>
<td>8</td>
<td>81 ½ (207)</td>
<td>27 ¼ (71)</td>
<td>-</td>
</tr>
</tbody>
</table>

(A) - Available with ASME tank construction
* Height to top of drafthood
High altitude models also available.

Approved to NSF Standard 5 with Optional Leg Kit
Cyclone® MXi Modulating BTH Gas Models

Modulating burner advances the Cyclone to higher levels of efficiency.

The full line of A. O. Smith Cyclone MXi condensing water heaters have been designed to provide years of dependable service and feature industry leading technology. Models are available from 120,000 to 500,000 BTU/h and all deliver thermal efficiencies of 95% and higher. The unique helical coil heat exchanger limits weld joints for optimal service life while maximizing heat transfer. Cyclone is the industry leader in high efficiency commercial water heating with over a quarter million sold since 1996. The MXi modulating models adjust firing rate to the specific demand further increasing efficiency and money savings.

Submerged Combustion Chamber with Helical Heat Exchanger Coil
- Positioned in center of tank, surrounded by water to virtually eliminate radiant heat loss from chamber
- Direct spark ignition for years of worry free operation
- Spiral heat exchanger keeps hot burner gases swirling and uses centrifugal force to maximize efficiency of heat transfer to water in tank
- Spiral heat exchanger reduces lime scale from forming on water-side surfaces, which maintains energy efficiency over time

Intelligent Control System with LCD Display
- Exclusive A. O. Smith designed control system
- Provides detailed water heater status information
- Precise temperature control adjustable from 90°F to 180°F
- Built-in diagnostics
- Run history information
- iCOMM™ compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information
- Connect to an existing building management system via BACnet or MODBUS with optional ICC gateway

Powered Anodes Standard on All Models
- Provides long-lasting tank protection in varying water conditions
- Powered anodes are non-sacrificial
- Automatically adjusts output needed to properly protect the tank

1.888.WATER02
Mechanical Venting Versatility

- Flexibility of conventional power venting or direct venting vertically or through a sidewall
- For added flexibility, easy install and access, the exhaust and condensate connections are located in the front of the heater
- Installations require ULC S636 PVC, CPVC, polypropylene or AL29-4C® stainless steel pipe for intake and exhaust

PermaGlas® Ultra Coat™ Glass Lining

- Glass coating is applied using a liquid slush coating technique to ensure uniform coating
- Heat exchanger coil is glassed both externally and internally for optimum protection

High Efficiency Modulating Pre-Mix Powered Burner

- Down-fired pre-mix burner provides optimum efficiency and quiet operation
- Top-mounted burner position prevents condensation from affecting burner operation

Space-Saving Design for Installation Flexibility

- Reduced footprint, ease of service, protection from water damage in case of flooding
- Easy to remove top cover for convenient access to serviceable parts
- 0” installation clearances on sides and rear, 1-1/2” installation clearance on top, 4” alcove installation clearance in front hand hole clean out of unit
- Hand hole clean out allows easy access to tank interior for cleaning
- 0” clearance to combustibles, approved for installation on combustible floors

3-Year Limited Tank/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT BTU/h</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>VENT DIAMETER (IN)</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTH-120(A)</td>
<td>60 (227)</td>
<td>120,000</td>
<td>138 (523)</td>
<td>3, 4</td>
<td>55 1/2 (141)</td>
<td>27 4/5 (71)</td>
<td>460 (208) 490 (220)</td>
</tr>
<tr>
<td>BTH-150(A)</td>
<td>100 (379)</td>
<td>150,000</td>
<td>178 (674)</td>
<td>3, 4</td>
<td>76 1/2 (195)</td>
<td>27 4/5 (71)</td>
<td>523 (237) 553 (251)</td>
</tr>
<tr>
<td>BTH-199(A)</td>
<td>100 (379)</td>
<td>199,000</td>
<td>235 (890)</td>
<td>3, 4</td>
<td>76 1/2 (195)</td>
<td>27 4/5 (71)</td>
<td>523 (237) 553 (251)</td>
</tr>
<tr>
<td>BTH-250(A)</td>
<td>100 (379)</td>
<td>250,000</td>
<td>291 (1,101)</td>
<td>3, 4</td>
<td>76 1/2 (195)</td>
<td>27 4/5 (71)</td>
<td>523 (237) 553 (251)</td>
</tr>
<tr>
<td>BTH-300A</td>
<td>119 (451)</td>
<td>300,000</td>
<td>349 (1,321)</td>
<td>4, 6</td>
<td>75 1/2 (192)</td>
<td>33 1/2 (84)</td>
<td>- 855 (387)</td>
</tr>
<tr>
<td>BTH-400A</td>
<td>119 (451)</td>
<td>399,900</td>
<td>460 (1,743)</td>
<td>4, 6</td>
<td>75 1/2 (192)</td>
<td>33 1/2 (84)</td>
<td>- 855 (387)</td>
</tr>
<tr>
<td>BTH-500A</td>
<td>119 (451)</td>
<td>499,900</td>
<td>576 (2,179)</td>
<td>4, 6</td>
<td>75 1/2 (192)</td>
<td>33 1/2 (84)</td>
<td>- 855 (387)</td>
</tr>
</tbody>
</table>

(A) Available with ASME tank construction
**Cyclone® Xi™**
BTX and BTXL Gas Models

Available up to 96% thermal efficiency, venting flexibility, outstanding value.

The Cyclone Xi is a light-duty, power direct vent, fully condensing commercial gas water heater with an internal helical heat exchanger. This helical heat exchanger helps Cyclone Xi achieve 96% thermal efficiency and deliver outstanding hot water output.

---

**ENERGY STAR® Qualified**

**Submerged Combustion Chamber, with Helical Heat Exchanger Coil**
- Positioned in center of tank, surrounded by water to virtually eliminate radiant heat loss from chamber
- Spiral heat exchanger reduces the accumulation of lime scale, to help maintain higher efficiency performance over time

**PermaGlas® Ultra Coat™ Glass Lining**
- Exclusive process provides superior corrosion protection
- Both sides of heat exchanger coil are lined for protection against flue gas condensate inside coil

**Advanced Electronic Control System**
with LCD Display
- iCOMMTM compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information
- Precise temperature control
- Connect to an existing building management system via BACnet or MODBUS with optional ICC gateway
- Built-in diagnostics

**Venting Options**
- Uses inexpensive ULC S636 PVC, CPVC or polypropylene pipe vertically through the roof or horizontally through the wall (see instruction manual for complete venting instructions and allowable vent lengths)
- Optional concentric vent and sidewall termination kits available

**Side-Mounted Hot and Cold Recirculating Taps**
- Allows Cyclone Xi to be installed as part of combination space heating/water heating applications
- Plugs for the recirculating taps are factory installed

**3-Year Limited Tank/1-Year Limited Parts Warranty**

---

**MODEL** | **CAPACITY USG (L)** | **INPUT BTU/h** | **MAXIMUM CERTIFIED ALTITUDE FT (M)** | **RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)** | **VENT DIAMETER (IN)** | **HEIGHT IN (CM)** | **DIAMETER IN (CM)** | **APPROX. SHIPPING WEIGHT LB (KG)**
---|---|---|---|---|---|---|---|---
BTX-100 | 50 (189) | 100,000 | 10,100 (3,078) | 116 (439) | 2, 3 | 66 ¾ (170) | 22 (56) | 255 (116) |
BTXL-100 | 75 (284) | 100,000 | 10,100 (3,078) | 116 (439) | 2, 3 | 65 ¾ (166) | 27 ¾ (71) | 382 (173) |
Cyclone® HE™ BTX-80

The 50-gallon light-duty power vent Cyclone HE is designed to produce more hot water than any commercial gas water heater in its class. Thanks to the internal helical heat exchanger—similar to the design of the industry-leading Cyclone MXi and Xi™ models—the unit achieves 90% thermal efficiency. With its small footprint and easy installation, the Cyclone HE delivers heavy-duty performance for light-duty applications, making it the perfect choice for restaurants, offices and other light-duty applications.

Helical Coil Heat Exchanger
- Submerged heat exchanger provides much greater heat transfer surface than standard straight flue tube
- Produces 90% thermal efficiency, which saves money on operating costs and increases hot water output compared to standard-efficiency water heaters

Versatile Power Vent Design
- System allows combined vertical and horizontal vent runs using ULC S636 PVC or CPVC pipe

Modular Blower
- PVC Vent Attenuation Assembly (VAA) supplied for applications where extra-quiet operation is essential
- Condensate drain supplied

High-Output with Small Footprint
- 22” diameter, combined with 90% efficiency and 76,000 BTU input means the Cyclone HE can be installed in less space than a larger 75-gallon unit with equal or better performance

Blue Diamond® Glass Coating
- Provides superior corrosion resistance compared to industry standard glass lining

Intelli-Vent™ Gas Control
- Equipped with long-lasting silicon nitride hot surface igniter—no standing pilot
- Advanced electronics for more precise control of water temperature and simplified system diagnostics
- 181°F maximum temperature setting

Side-Mounted Hot and Cold Recirculating Taps
- Allows Cyclone HE to be installed as part of combination space heating/water heating applications, or any system requiring a recirculating hot water loop
- Plugs for the recirculating taps are factory-installed

Two Heavy-Duty Anode Rods
- Provide advanced corrosion protection

*Intelli-Vent™ is a trademark of Emerson Electric Company
Superior Heat Transfer

By utilizing the innovative internal heat exchanger coil, the Cyclone® HE™ provides superior heat transfer capabilities, resulting in an unprecedented 90% thermal efficiency, far beyond a standard water heater design. Gallon for gallon, the Cyclone HE will heat water for significantly less, resulting in substantial savings on energy costs.

With as much power as larger water heaters in a standard 50-gallon footprint, the Cyclone HE is the natural choice for upgrading during a renovation. And the versatile power vent design allows combined vertical and horizontal vent runs of up to 128 equivalent feet. Cyclone HE provides superior savings on energy costs.

---

**SUGGESTED SPECIFICATION**

Natural Gas water heater(s) shall be A. O. Smith Cyclone® HE™ model BTX-80, with 90% thermal efficiency, a storage capacity of 50 gallons, an input rating of 76,000 BTU per hour, a recovery rating of 83 gallons per hour at 100°F rise and a maximum hydrostatic working pressure of 150 psi. Water heater(s) shall be of power vent design using 2", 3" or 4" ULC S636 PVC or CPVC pipe for horizontal and/or vertical vent runs.

---

**3-Year Limited Tank/1-Year Limited Parts Warranty**

Tankless Models

A. O. Smith commercial tankless water heaters will provide a steady flow of hot water for as long as your application needs it in the most energy efficient way possible. Because our tankless water heaters only activate when hot water is being used, no standby energy losses are incurred providing efficient heating and conserving gas energy. On top of all this, an A. O. Smith tankless water heater takes up much less space than conventional tank-type water heaters or boilers allowing for additional storage space and flexibility.

**Commercial Grade Copper Heat Exchanger**
- Stronger than regular copper (C1220) and transfers heat faster than stainless steel
- Resilient against erosion

**Energy Efficient**
- Units only heat the water being used so there is no standby energy loss
- 540H condensing model is ENERGY STAR® qualified

**Venting Flexibility (Condensing Only)**
- Metal vent collar for PVC with no gluing or cutting
- Approved with ULCS636 PVC, CPVC, polypropylene or Cat. III/IV stainless steel pipe

**Non-Condensing Concentric Vent**
- Vents with contractor-preferred concentric venting
- Field convertible from natural gas to propane out of the box

**Multiple Unit Installation**
- Easy Link – Up to 4 units with no additional accessories
- Multi Link – Up to 20 540H and 510C units with TM-MC02 system controller (10 units with 910 model)

**Dual Internal Freeze Protection**

10-Year Limited Heat Exchanger/5-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT BTU/h</th>
<th>ENERGY FACTOR/ THERMAL EFFICIENCY</th>
<th>FLOW RATE GPM</th>
<th>HEIGHT IN (CM)</th>
<th>WIDTH IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONDENSING</td>
<td></td>
<td></td>
<td>30°F RISE</td>
<td>70°F RISE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATI-540H</td>
<td>13,000</td>
<td>199,000</td>
<td>0.95</td>
<td>10.0</td>
<td>5.4</td>
<td>22 ¼ (57)</td>
<td>17 ¾ (45)</td>
</tr>
<tr>
<td>NON-CONDENSING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATI-510</td>
<td>11,000</td>
<td>199,000</td>
<td>0.82</td>
<td>10.0</td>
<td>4.7</td>
<td>20 ¼ (52)</td>
<td>13 ¾ (35)</td>
</tr>
<tr>
<td>ATI-510C</td>
<td>15,000</td>
<td>199,000</td>
<td>0.82</td>
<td>10.0</td>
<td>4.7</td>
<td>20 ¼ (52)</td>
<td>13 ¾ (35)</td>
</tr>
<tr>
<td>ATI-910(A)</td>
<td>15,000</td>
<td>380,000</td>
<td>80% (NG) 82% (LP)</td>
<td>14.5</td>
<td>8.7</td>
<td>25 ¾ (64)</td>
<td>24 ¼ (63)</td>
</tr>
</tbody>
</table>

*When sized appropriately.
The high-volume powered burner line includes the largest, most powerful A. O. Smith tank-type gas water heaters. With tank capacities up to 600 gallons and firing capacities up to 2.5 million BTU per hour, these large-volume high-output water heaters are capable of producing over 3,000 gallons of hot water per hour at an 80°F rise. These heavy-duty industrial-grade water heaters are designed and built to handle the most demanding hot water heating requirements of large commercial and industrial users.

**Powered Gas Burner**
- Suitable for natural or propane gas
- Electronic flame safeguard control with intermittent spark ignition
- Main and pilot automatic gas valves with gas pressure regulators
- Diaphragm air switch for proof of blower operation
- Flame inspection port

**Fully Automatic Controls with Safety Shut Off**
- High temperature limit control (manual reset)
- ASME-rated T&P valve
- Hinged door control compartment for easy access
- Upper and lower thermostats for accurate temperature control
- Standard control is for 120°F-180°F water service
- Factory-installed low water cut off

**Blue Diamond® Glass Lining**
- Proprietary A. O. Smith glass lining provides superior coverage and unmatched durability
- Equipped with multiple anode rods for additional corrosion protection

**Heavy-Duty Jacket**
- Heavy gauge steel jacket with baked powder coated finish for durability
- Two 3” hand hole inspection openings

**Maximum Hydrostatic Working Pressure**
- 160 psi for all models

**Professional Start-Up Service**
- Assures proper installation and adjusts burner for clean combustion and most efficient operation

**Codes and Standards**
- Design-certified by UL (Underwriters Laboratories), according to ANSI Z21.10.3 - 4.3 CSA standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1
Other BTP Features
- Two layers of high-temperature ceramic fiber insulation in combustion chamber
- Mounted on rugged channel iron skids
- National board stamping
- Barometric draft regulator
- 120V control circuit
- Drain valve
- 180°F water service thermostats

3-Year Limited Tank/1-Year Limited Parts Warranty
- For complete information, consult written warranty or contact A. O. Smith

BTP Options
- Factory mutual approved control arrangement
- High or low water pressure switch
- Modular graphic burner systems management on heaters with 270,000 BTU/h input and over

All models are approved for use in combined appliance applications.
Small Volume Power Burner
BTP Gas Models

Powered burner models provide thermal efficiencies of 80%.

These gas powered burner models provide an outstanding thermal efficiency of 80% or more and are suitable for small to medium-sized commercial applications.

Small-Volume BTP Quality Features
- UL listed power burner
- ASME construction
- Factory-installed ASME-rated T&P valve properly sized for each model
- Hand hole clean outs for easy maintenance
- Fully automatic controls ensure safe, efficient operation
- Barometric draft damper ensures correct air flow in the vent
- Professional start-up provided
- Mounted on rugged channel iron skids for easy transport during installation
- Multiple anodes for extra protection against tank corrosion
- Flame inspection port opening for visual inspection of flame characteristics during operation
- Spark pilot ignition
- Factory-installed burner for easy installation

Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

3-Year Limited Tank/1-Year Limited Parts Warranty
- Factory start-up is required to validate warranty

Options
- 3 vent options: atmospheric, sidewall and direct-vent (to be specified at time of order)

Shown here is the powered burner combustion chamber used in the BTP(V)-540A, BTP(V)-650A and BTP(V)-740A models. These models can vent through a sidewall up to 100 equivalent feet without an external blower.

1. Exclusive PermaGlas® Ultra Coat™ Glass-Lined Tank protects tank surfaces and all welds from the corrosive effects of hot water.
2. Patented Dome Combustion Chamber ensures optimum flue loading and efficient heat transfer by balancing pressure inside combustion chamber.
3. Pre-mix Combustion System provides super clean low-NOx flame. Helps eliminate hot spots and uneven heat transfer.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT BTU/h</th>
<th>FIRST HOUR RATING GPH (LPH)</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>VENT DIAMETER (IN)</th>
<th>HEIGHT (IN)</th>
<th>DIAMETER (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTP(V)-540A</td>
<td>85 (322)</td>
<td>540,000</td>
<td>583 (2,207)</td>
<td>523 (1,980)</td>
<td>9</td>
<td>80</td>
<td>29 ½ (75)</td>
<td>950 (431)</td>
</tr>
<tr>
<td>BTP(V)-650A</td>
<td>85 (322)</td>
<td>650,000</td>
<td>630 (2,385)</td>
<td>630 (2,385)</td>
<td>9</td>
<td>80 ½ (205)</td>
<td>29 ½ (75)</td>
<td>950 (431)</td>
</tr>
<tr>
<td>BTP(V)-740A</td>
<td>85 (322)</td>
<td>740,000</td>
<td>778 (2,945)</td>
<td>718 (2,718)</td>
<td>9</td>
<td>80 ½ (205)</td>
<td>29 ½ (75)</td>
<td>950 (431)</td>
</tr>
</tbody>
</table>

(V) - Available for Sidewall Vent or Direct Vent
COF models provide thermal efficiencies up to 82%.

Oil-Fired Small-Volume Models

Our COF-199 and larger models have an optional two-stage pump for use with below-grade oil storage tanks. Features include two hand hole clean outs for easy servicing.

Small-Volume COF Quality Features

- For small to medium-sized applications
- UL listed oil burner
- 180°F adjustable thermostat
- Single-stage oil pump for simple, efficient operation
- Solenoid oil valve (standard on COF-455, COF-700)
- 3/4” drain valve
- 1/8 HP motor
- Factory-installed ASME-rated T&P valve properly sized for each model
- Two hand hole clean outs (COF-385 and larger, and ASME models) for easy maintenance
- Barometric draft regulator provided for proper operation, ensures correct flow in the vent
- Foam insulation
- Intermittent ignition
- Anodic protection for longer tank life
- Flame observation port
- Glass-lined tank with 160 psi maximum working pressure
- Professional start-up provided

3-Year Limited Tank/1-Year Limited Parts Warranty

- Factory start-up is required to validate warranty

Options

- Two-stage pump for use with underground oil storage tanks
- Oil solenoid safety valve
- ASME construction available on models COF-315 and larger

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT* BTU/h</th>
<th>MAXIMUM CERTIFIED ALTITUDE FT (M)</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COF-199</td>
<td>86 (326)</td>
<td>199,000</td>
<td>2,000 (610)</td>
<td>191 (723)</td>
<td>74 ½/189</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>553 (251) -</td>
</tr>
<tr>
<td>COF-245</td>
<td>86 (326)</td>
<td>245,000</td>
<td>2,000 (610)</td>
<td>235 (890)</td>
<td>74 ½/189</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>554 (251) -</td>
</tr>
<tr>
<td>COF-315(A)</td>
<td>84 (318)</td>
<td>315,000</td>
<td>2,000 (610)</td>
<td>302 (1,143)</td>
<td>74 ½/189</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>554 (251) 657 (298)</td>
</tr>
<tr>
<td>COF-385(A)</td>
<td>75 (284)</td>
<td>385,000</td>
<td>2,000 (610)</td>
<td>369 (1,397)</td>
<td>73 ¼/187</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>624 (283) 742 (337)</td>
</tr>
<tr>
<td>COF-455(A)</td>
<td>75 (284)</td>
<td>455,000</td>
<td>2,000 (610)</td>
<td>436 (1,650)</td>
<td>73 ¼/187</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>700 (318) 747 (339)</td>
</tr>
<tr>
<td>COF-700(A)</td>
<td>69 (261)</td>
<td>700,000</td>
<td>2,000 (610)</td>
<td>671 (2,540)</td>
<td>73 ¼/187</td>
<td>27 ½/70</td>
<td>36 ½/93</td>
<td>739 (335) 822 (373)</td>
</tr>
</tbody>
</table>

(A) - Available in ASME models
*Based on No. 2 fuel oil
Heavy-Duty Oil-Fired COF/COBT Models

COF models offer oil-fuel burners for use with No. 1 or 2 oil. COBT models feature combination gas/oil powered burners for the versatility of operating with natural gas/propane and No. 1 or 2 oil. COF/COBT models include some of the largest and most powerful A. O. Smith tank-type water heating systems available – with storage/input options up to 600 gallons/2,500,000 BTU/h and recoveries as high as 2,424 gallons/hour at 100°F rise. All models feature fully automatic controls with safety shut off, two thermostats (upper and lower) for accurate temperature control, and ASME tank construction.

COF (Oil-Fired Models)
- Use either No. 1 or 2 fuel oil
- 3,450 rpm motor
- Multi-annular fuel containment combustor head
- Oil ignition transformer
- Integral 2-stage fuel unit and oil safety valve

COBT (Combination Gas/Oil-Fired Models)
- Use either natural gas or propane and No. 1 or 2 fuel oil
- 3,450 rpm motor
- Multi-annular fuel containment combustor head
- Gas/electric pilot and gas ignition transformer
- Pilot and main pressure regulators
- Air safety switch
- Manual fuel selector switch
- Integral 2-stage fuel unit

Fully Automatic Controls with Safety Shut Off
- High temperature limit control (manual reset)
- ASME-rated T&P valve
- Hinged door control (COBT models) compartment for easy access
- Upper and lower thermostats for accurate temperature control

Glass-Lined Tank
- Exclusive corrosion protection with glass-lining on all interior surfaces
- Equipped with multiple anode rods for additional corrosion protection

Heavy-Duty Jacket
- Heavy gauge steel jacket with baked powder-coated finish for durability
- Two 3˝ hand hole inspection openings

Maximum Hydrostatic Working Pressure
- 160 psi for all models

Professional Start-Up Service
- Assures most efficient combustion and safe initial installation
Two Layers of High Temperature Ceramic Fiber Insulation in Combustion Chamber
Flame Inspection Port Opening
Mounted on Rugged Channel Iron Skids
ASME Stamping
Low Water Cut Off
3-Year Limited Tank/1-Year Limited Parts Warranty

- Factory start-up is required to validate warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>INPUT BTU/h</th>
<th>OIL FUEL RATING GPH (LPH)</th>
<th>FIRST HOUR RATING GPH (LPH)</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>COBT MOTOR 1Ø 120V</th>
<th>COF MOTOR 1Ø 120V</th>
<th>VENT DIAMETER (IN)</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPWRIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COF/COBT-500-2250</td>
<td>163 (617)</td>
<td>140,000</td>
<td>1.8 (5.9)</td>
<td>241 (912)</td>
<td>136 (515)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-150-540</td>
<td>151 (572)</td>
<td>400,000</td>
<td>2.8 (10.5)</td>
<td>452 (1,711)</td>
<td>387 (1,465)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-200-300*</td>
<td>221 (837)</td>
<td>300,000</td>
<td>2.1 (7.9)</td>
<td>466 (1,711)</td>
<td>391 (1,465)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-200-600*</td>
<td>221 (837)</td>
<td>600,000</td>
<td>4.2 (15.5)</td>
<td>937 (3,524)</td>
<td>776 (2,937)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-200-800*</td>
<td>221 (837)</td>
<td>800,000</td>
<td>5.7 (21.6)</td>
<td>1,180 (4,467)</td>
<td>970 (3,672)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-300-1250</td>
<td>201 (761)</td>
<td>1,250,000</td>
<td>8.3 (31.3)</td>
<td>1,353 (5,072)</td>
<td>1,212 (4,588)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-400-1250</td>
<td>201 (761)</td>
<td>1,250,000</td>
<td>10.7 (40.5)</td>
<td>1,560 (5,905)</td>
<td>1,455 (5,508)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-500-1750</td>
<td>163 (617)</td>
<td>1,750,000</td>
<td>12.5 (47.3)</td>
<td>1,975 (7,476)</td>
<td>1,697 (6,424)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-600-1750</td>
<td>163 (617)</td>
<td>1,750,000</td>
<td>12.5 (47.3)</td>
<td>2,116 (8,010)</td>
<td>1,697 (6,424)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-700-1750</td>
<td>163 (617)</td>
<td>1,750,000</td>
<td>12.5 (47.3)</td>
<td>2,250 (8,260)</td>
<td>1,697 (6,424)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-500-2500</td>
<td>163 (617)</td>
<td>2,500,000</td>
<td>17.8 (67.4)</td>
<td>2,687 (10,171)</td>
<td>2,424 (9,139)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
<tr>
<td>COF/COBT-600-2500</td>
<td>163 (617)</td>
<td>2,500,000</td>
<td>17.8 (67.4)</td>
<td>2,827 (10,701)</td>
<td>2,424 (9,139)</td>
<td>16 Amp</td>
<td>5 Amp</td>
<td>5 Amp</td>
<td>82 / 209</td>
<td>36 / 139</td>
<td>47 / 119</td>
<td>1,292 (586)</td>
</tr>
</tbody>
</table>

**COBT models are 350,000 BTU**

**Field certification required on all COF/COBT installations in Canada**

### Codes and Standards

- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

### Warranty

- Low Water Cut Off
- Factory start-up is required to validate warranty

## OIL-FIRED WATER HEATERS

- Factory mutual approved control arrangement
- High or low water pressure switch
- 180°F water service thermostats
- ASME-rated T&P valve
- Modular graphic burner systems management on heaters with 270,000 BTU/h input and greater
The Dura-Power DEN (standard upright) and DEL (lowboy) series are available with tank capacities from 6 through 119 gallons. They can be installed for non-simultaneous and single-element operation (maximum input up to 6 kW) or for simultaneous dual-element operation (maximum input up to 12 kW). They are designed for use as recovery heaters for light-duty hot water supply service.

**Zinc-Plated Copper Sheath Heating Elements Standard**
- Medium-watt density design disperses element temperature over larger surface contact area to minimize scale build-up, maximize efficiency and prolong element life
- Element options from 1.5 kW to 6 kW (non-simultaneous or simultaneous operation), recovers from 6 GPH to 49 GPH at 100°F rise

**Standard Voltages for Easy Installation**
- 120V, 277V single-phase, and 208V, 240V and 480V unbalanced three-phase delta
- Easily converted to single-phase at terminal block (except for 208V with 6000W elements)
- Single-element heater, single-phase only (see chart for dual-element options)

**Factory-Installed Terminal Block**
- Supplied on 208V, 240V and 480V models

**Factory-Wired Controls**
- Temperature control adjustable from 110°F to 170°F on single-element or 120°F to 180°F on dual element models
- Manual reset high temperature cut off per element (dual element models)
- Factory-wired for non-simultaneous operation; easily converted to simultaneous operation (three-phase models only)

**Glass-Lined Tank**
- Provides long-lasting protection against corrosion
- Equipped with anode rod for additional corrosion protection

**Maximum Hydrostatic Working Pressure**
- 150 psi for all models

**Codes and Standards**
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

**3-Year Limited Tank/1-Year Limited Parts Warranty**
For complete information on available configurations, consult spec sheet.

---

### Model Availability

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (USG)</th>
<th>Maximum Kilowatts</th>
<th>Height (in cm)</th>
<th>Diameter (in cm)</th>
<th>Approx. Shipping Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SINGLE ELEMENT MODELS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEL-6S</td>
<td>6 (23)</td>
<td>3</td>
<td>15 1/2 (39)</td>
<td>14 5/8 (36)</td>
<td>35 (16)</td>
</tr>
<tr>
<td>DEL-10S</td>
<td>10 (37)</td>
<td>6</td>
<td>18 1/2 (46)</td>
<td>18 (46)</td>
<td>54 (24)</td>
</tr>
<tr>
<td>DEL-15S</td>
<td>13 (49)</td>
<td>6</td>
<td>26 (66)</td>
<td>18 (46)</td>
<td>58 (26)</td>
</tr>
<tr>
<td>DEL-20S</td>
<td>19 (74)</td>
<td>6</td>
<td>22 1/2 (57)</td>
<td>21 1/2 (55)</td>
<td>73 (33)</td>
</tr>
</tbody>
</table>

| **DUAL ELEMENT MODELS** | | | | | |
| DEL-30D | 29 (111) | 12 | 30 1/4 (78) | 21 1/2 (55) | 100 (45) |
| DEL-40D | 38 (145) | 12 | 32 1/4 (82) | 24 (61) | 125 (57) |
| DEL-50D | 46 (175) | 12 | 32 1/4 (82) | 26 1/2 (67) | 166 (75) |
| DEN-30 | 28 (107) | 12 | 34 1/4 (88) | 20 1/4 (52) | 98 (44) |
| DEN-40 | 37 (143) | 12 | 45 1/4 (115) | 20 1/4 (52) | 113 (51) |
| DEN-52 | 46 (175) | 12 | 54 1/4 (139) | 20 1/4 (52) | 131 (59) |
| DEN-66 | 62 (237) | 12 | 60 1/4 (154) | 21 1/2 (55) | 176 (80) |
| DEN-80 | 75 (284) | 12 | 59 1/4 (151) | 24 (61) | 211 (96) |
| DEN-120 | 113 (428) | 12 | 62 1/4 (159) | 29 1/2 (75) | 326 (148) |

*6 gallon model not available above 3kW
*6/10/15/20 gallon models all A6 circuit (2 wire) only
† On dual element models, only available for non-simultaneous operation
‡ On dual element models, only available for 3 phase simultaneous operation
§ Only available on single element models

*Pre-wired for unbalanced three-phase only, non-simultaneous operation of elements standard. Can be re-wired for single phase operation.*
Gold and Gold Xi DRE/DVE series available with 50, 80, and 119 gallon storage tanks, with input choices ranging from 6 kW to 54 kW. They can be used as recovery heaters for hot water supply service or as boosters for supplying sanitizing rinse water for dish washing.

Goldenrod® 24k gold-plated Elements Standard
- Superior scaling resistance, resulting in long term efficiency and damage protection
- Element sizes from 2 kW to 6 kW in 3, 6 or 9 element configurations provide input options from 6 kW to 54 kW, recoveries from 25 GPH to 221 GPH at 100°F rise

Internal Fusing for System Protection
- Safeguards elements and contactors from short circuits, overloading and line surges

Standard 208, 240 and 480V Options for Easy Installation
- Single-phase and three-phase delta
- Field-convertible voltages three-phase to single-phase (and vice versa) except for 208V/54 kW
- 277V single-phase also available

Factory-Installed Terminal Block
- Provide electrical service to heater and connect to block

Heavy-Duty Magnetic Contactors (DVE Models Only)
- UL-rated 100,000 cycles

Other Standard DRE/DVE Features
- Two anode rods for maximum corrosion protection
- Simplified circuitry, colour-coded for ease of service
- Bonderized undercoated baked enamel finished cabinets

Brass drain valve
- CSA Certified and ASME rated temperature and pressure relief valve

DRE Gold Model Controls
- DRE Gold models have surface mounted thermostats with temperature control adjustable 120° to 181°F
- Manual reset high temperature cut off

DVE Gold Xi Model Features

Advanced Electronic Controls
- iCOMM™ compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information
- Connect to an existing building management system via BACnet or MODBUS with optional ICC gateway
- Plain English text and animated icons
- Displays detailed operational and diagnostic information
- Fault or alert messages appear if an operational issue occurs
- Last 9 fault and alert messages saved with time stamp

Economy Mode Operation
- Control system automatically lowers the operating set point by a programmed value during user-defined time periods
- Helps reduce operating costs during unoccupied or low demand periods
- Manual reset high temperature cut off

Precise Temperature Regulation
- Immersion thermostat allows for more accurate temperature adjustment from 90° to 190°F
- Banks of heating elements (3 elements per bank) are energized according to adjustable (1° to 20°F) differential set points for each bank. Helps reduce current surge and provides accurate water temperature control
- Linear sequencing - first bank on is last bank off
- Helps reduce current surges/spikes and avoid peak demand charges
- Helps reduce operating costs during low load conditions

Compliance
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

3-Year Limited Tank/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY (USG)</th>
<th>MAXIMUM KILOWATTS</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVE/DRE-52</td>
<td>50 (189)</td>
<td>54</td>
<td>55 ¼ (142)</td>
<td>21 ½ (55)</td>
<td>265 (120)</td>
</tr>
<tr>
<td>DVE/DRE-80</td>
<td>80 (303)</td>
<td>54</td>
<td>60 ¼ (153)</td>
<td>25 ½ (65)</td>
<td>280 (127)</td>
</tr>
<tr>
<td>DVE/DRE-120</td>
<td>119 (450)</td>
<td>54</td>
<td>62 ¼ (158)</td>
<td>29 ½ (75)</td>
<td>390 (177)</td>
</tr>
</tbody>
</table>
Heavy-Duty Custom Xi™ Series Electric DSE Models

The heavy-duty Custom Xi DSE series is available with storage capacities from 5 to 119 gallons. All tanks feature ASME tank construction. With input choices as high as 90 kW on 50 through 119 gallon models, the DSE Custom Xi series can be used for maximum-demand hot water supply service or as boosters for supplying sanitizing rinse water for dish washing.

Incoloy Sheath Heating Elements Standard
- Industrial-grade incoloy sheathed heating elements are designed for rugged long-lasting commercial service, and can withstand sheath temperatures up to 1500°F.
- Each heating element has three separate heating loops, which provides more heating surface, lower watt density and maximum recovery efficiency.
- Pre-wired leads provide excellent protection against oxidation and scaling.
- Input options from 3 kW to 90 kW, recoveries from 12 GPH to 369 GPH at 100°F rise.

Standard Voltages for Easy Installation
- 208, 240 and 480V single-phase and three-phase.
- Single-phase 208V and 240V are field-convertible to three-phase.
- All 208V and 240V at 24 kW and below are supplied as phase-convertible units (single-to three-phase and vice versa).
- 277V single-phase also available (Contact A. O. Smith for 120V circuit availability).
- 380, 415, 575 and 600 international voltages also available (check with A. O. Smith).

Factory-Installed Terminal Block
- To accept copper or aluminum leads (on units with more than one contactor).

Advanced Electronic Controls
- iCOMM™ compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information.
- Plain English text and animated icons.
- Connect to an existing building management system via BACnet or MODBUS with optional ICC gateway.
- Displays detailed operational and diagnostic information.
- Fault or alert messages appear if an operational issue occurs.
- Last 9 fault and alert messages saved with time stamp.

Progressive Sequencing
- First heating element on is first heating element off.
- First heating element energized is rotated with each successive heating cycle on models with multiple heating elements.
- Evens out wear between heating elements.
- Helps reduce current surges/spikes and avoid peak demand charges.

Economy Mode Operation
- Control system automatically lowers the operating set point by a programmed value during user-defined time periods.
- Helps reduce operating costs during unoccupied or low demand periods.

Precise Temperature Regulation
- Advanced electronic control provides precise ±1°F temperature control that is ideal for industrial and food service applications where exact temperatures of hot water are needed.
- Operating set point is adjustable from 90° to 190°F.
- Manual reset high temperature cut off.

Heavy-Duty Magnetic Contactors

Power Circuit Fusing for System Protection

PermaGlas® Ultra Coat™ Glass Lining with ASME Tank Construction

CSA Certified and ASME Rated

T&P Relief Valve

Compliance
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1.

Brass Drain Valve

3-Year Limited Tank/1-Year Limited Parts Warranty

### Table: DSE-5 to DSE-120 Specifications

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>MAXIMUM Input (kW)</th>
<th>IMMERSION HEATERS</th>
<th>HEIGHT IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSE-5</td>
<td>5 (19)</td>
<td>3</td>
<td>1</td>
<td>20 ¾ (51)</td>
<td>16 ⅞ (41)</td>
<td>82 (37)</td>
</tr>
<tr>
<td>DSE-10</td>
<td>10 (38)</td>
<td>6</td>
<td>1</td>
<td>26 ¾ (67)</td>
<td>18 ⅞ (48)</td>
<td>116 (53)</td>
</tr>
<tr>
<td>DSE-20</td>
<td>20 (76)</td>
<td>18</td>
<td>2</td>
<td>27 ¼ (69)</td>
<td>20 ⅝ (52)</td>
<td>145 (66)</td>
</tr>
<tr>
<td>DSE-30</td>
<td>30 (114)</td>
<td>24</td>
<td>2</td>
<td>35 ¼ (91)</td>
<td>20 ⅝ (52)</td>
<td>150 (68)</td>
</tr>
<tr>
<td>DSE-40</td>
<td>40 (151)</td>
<td>36</td>
<td>2</td>
<td>45 ¼ (116)</td>
<td>20 ⅞ (52)</td>
<td>190 (85)</td>
</tr>
<tr>
<td>DSE-50</td>
<td>50 (189)</td>
<td>90</td>
<td>5</td>
<td>54 ⅞ (139)</td>
<td>20 ⅞ (52)</td>
<td>221 (100)</td>
</tr>
<tr>
<td>DSE-65</td>
<td>65 (226)</td>
<td>90</td>
<td>5</td>
<td>54 ⅞ (137)</td>
<td>26 ⅞ (72)</td>
<td>280 (127)</td>
</tr>
<tr>
<td>DSE-80</td>
<td>80 (303)</td>
<td>90</td>
<td>5</td>
<td>52 ¼ (132)</td>
<td>28 (71)</td>
<td>285 (129)</td>
</tr>
<tr>
<td>DSE-100</td>
<td>100 (379)</td>
<td>90</td>
<td>5</td>
<td>60 ½ (154)</td>
<td>28 (71)</td>
<td>354 (161)</td>
</tr>
<tr>
<td>DSE-120</td>
<td>120 (450)</td>
<td>90</td>
<td>5</td>
<td>65 ½ (166)</td>
<td>30 (76)</td>
<td>420 (191)</td>
</tr>
</tbody>
</table>
Heavy-Duty CMC/SU Booster Electric Dura-Power™ Models

The Dura-Power commercial electric water heaters are designed to boost the water temperatures for applications such as commercial dishwashers, which require very high temperature sanitizing rinse...typically 180°F. Both 5-gallon countermount CMC models and 20-gallon SU models are available with inputs up to 54 kW. All models are also available with an optional stainless steel tank, for use with deionized water.

Incoloy-Sheath Heating Elements Standard
- Industrial-grade incoloy sheathed heating elements are designed for rugged long-lasting commercial service and can withstand sheath temperatures up to 1500°F.
- Each heating element has three separate heating loops, which provides more heating surface, lower watt density and maximum recovery efficiency.
- Pre-wired leads provide excellent protection against oxidation and scaling.
- Input options from 6 kW to 54 kW and recoveries from 25 GPH to 221 GPH at 100°F rise.
- Deionized models equipped with stainless steel standard elements.

A. O. Smith Goldenrod® Elements Optional
- Patent pending 24K gold-plated sheath plus medium watt density ensures even longer element life.
- Higher resistance to scale build up compared to incoloy elements.
- Three-year warranty against failure due to lime scale build-up.
- Not available on deionized models.

Immersion Thermostat for Efficient Control
- Close differential, immersion-type thermostat for superbly accurate temperature control.
- Adjustable from 140°F to 185°F.
- Manual reset high temperature cut off.

Power Circuit Fusing for System Protection
- Safeguards elements and contactors from short circuits, overloading and line surges.

Heavy-Duty Magnetic Contactors
- UL-rated 100,000 cycles.

Factory-Wired 120V Circuit Controls
- 120V control circuit powered by fused transformer.
- Eliminates need for 120V service connection.

Compliance
- All models meet the thermal efficiency and standby loss requirements of NRCAn and current edition of ASHRAE/IESNA 90.1.

3-Year Limited Tank/1-Year Limited Parts Warranty

Standard Voltages for Easy Installation
- Single-phase and three-phase.
- Single-phase 208V and 240V are field-convertible to three-phase.
- CMC models only, 208V and 240V at 24 kW and below are supplied as phase-convertible units (single- to three-phase and vice versa).
- 277V single-phase also available (contact A. O. Smith for 120V circuit availability).

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity USG (L)</th>
<th>No. of Immersion Heaters</th>
<th>Inlet &amp; Outlet (IN)</th>
<th>Height In (CM)</th>
<th>Width In (CM)</th>
<th>Depth In (CM)</th>
<th>Approx. Shipping Weight LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMC-6 through 18</td>
<td>5 (19)</td>
<td>1</td>
<td>¾</td>
<td>13 ¼ (35)</td>
<td>13 (33)</td>
<td>23 ½ (60)</td>
<td>80 (36)</td>
</tr>
<tr>
<td>CMC-20 through 54</td>
<td>5 (19)</td>
<td>2*</td>
<td>¾</td>
<td>12 (31)</td>
<td>18 (46)</td>
<td>23 ½ (60)</td>
<td>96 (44)</td>
</tr>
<tr>
<td>SU-6 through 18</td>
<td>20 (76)</td>
<td>1</td>
<td>¾</td>
<td>25 (64)</td>
<td>22 ½ (57)</td>
<td>23 (58)</td>
<td>200 (91)</td>
</tr>
<tr>
<td>SU-20 through 54</td>
<td>20 (76)</td>
<td>2*</td>
<td>¾</td>
<td>25 (64)</td>
<td>22 ½ (57)</td>
<td>23 (58)</td>
<td>200 (91)</td>
</tr>
</tbody>
</table>

*CMC-54 and SU-54 have three immersion heaters.
Heavy-Duty Premium Electric
DVE/DHE Dura-Power™ Xi Models

Dura-Power commercial electric water heaters are built to the same high quality standards as our gas models. These are the largest commercial electrics we manufacture. Ideal for use as recovery heaters for all types of large commercial and industrial applications or for large process potable hot water requirements. They can be customized to meet any special application with the large selection of available options.

Advanced Electronic Control
- A. O. Smith’s proprietary electronic water heater control provides precise ±1°F temperature control, that is ideal for industrial and food service applications where exact temperatures of hot water are needed.
- Animated icons display detailed operational and diagnostic information, and plain text fault or alert messages appear if an operational issue occurs.
- Low water cut off is factory standard and uses a remote electronic immersion type probe to prevent energizing of the elements in the event of low water condition and eliminates accidental dry firing.
- Progressive modulating sizes the input of available elements to match current load conditions and rotates and lead lags element loads to provide long life and equal wear.
- Economy mode operation automatically lowers the operating set point by a programmed value during user defined time periods using a seven-day clock that may be programmed for night set back and/or weekend shutdown to reduce operating cost and save money.
- iCOMM™ compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information.
- Building management system compatible via BACnet or MODBUS with optional ICC gateway.

Incoloy Immersion Heaters
- Heavy-duty medium watt density elements (three immersion heater) have incoloy sheathing providing excellent protection against oxidation and scaling with input ranges from 15 kW to 3000 kW.

Power Circuit Fusing for System Protection

Compliance
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1.

Magnetic Contactor(s)
- Heavy duty UL rated for 100,000 cycles.

Other Standard Features
- Colour-coded circuitry for easier servicing.
- Anode rods for maximum corrosion protection.
- Standard voltages include 208, 240, 480, 600 volt single or three-phase.
- For other voltages consult A. O. Smith.
- Factory-installed terminal block(s).
- Cabinet has baked enamel finish.
- Pre-wired element terminal leads.
- Temperature and pressure relief valve.
- Tanks have a channel skid base.
- A 4" x 6" hand hole is furnished on 500, 600 and 700 gallon models and a 11" x 15" manhole on 800 gallon and larger sizes.

Optional Dual-Energy Source Capability
- Provides emergency back up energy source or winter/summer boiler operation.
- Can be specified with optional water to water or steam to water heat exchangers.
- Both single and double wall heat exchangers are available.
- Complete control packages can be factory installed for hook up and run capability.

PermaGlas® Ultra Coat™ Glass Lining
- Exclusive process provides superior protection against corrosion in varying water conditions.

ASME Code Construction
- All models are constructed to the requirements of ASME and are available in 100, 125, 150 and 160 psi working pressures (125 psi working pressure is standard).

3-Year Limited Tank/1-Year Limited Parts Warranty.
**Options**
- **TANK LININGS**
  - CEMENT – A special formulation of cement providing excellent corrosion protection. Available on 200-gallon and larger tanks.
  - EPOXY – A solventless two component epoxy lining applied to a minimum ten-mil (0.10”) dry thickness. Available on 200-gallon and larger tanks.
- **GOLDENROD® ELEMENTS** – Available with optional Goldenrod elements - All DVE/DHE models are available with the Goldenrod 24K gold plated elements (patent pending). Goldenrod elements provide long-life and five times the scaling resistance of standard incoloy elements. Goldenrod elements carry a three-year warranty against failure due to scale buildup.
- **STAINLESS STEEL VESSELS** – Are available for deionized water. Built with stainless steel under rules of Section IV of the ASME Boiler and Pressure Vessel Code for operation on deionized water having a minimum specific resistivity of 10 megoohm/cm.
- **150 OR 160 PSI WORKING PRESSURE** – Must be specified at time of order.

**Other Optional Features**
- **TEMPERATURE AND PRESSURE RELIEF VALVES** – For working pressures other than standard consult factory.
- **HORIZONTAL OR VERTICAL** – See specifications, most gallon capacities may be obtained in vertical or horizontal construction.
- **CIRCULATING PUMP PACKAGE** – Circulating pump and piping sized to turn over entire storage capacity of tank once each hour. Recommended to optimize available water at temperature in horizontal tanks particularly where low draw conditions are anticipated.
- **OPTIONAL INTERNATIONAL VOLTAGES** – 380 and 415 volts three-phase.
- **3-1/2” DIAL-TYPE PRESSURE GAUGE** – Factory-installed.

### HORIZONTAL ELECTRIC STORAGE HEATERS

<table>
<thead>
<tr>
<th>MODEL*</th>
<th>CAPACITY USG (L)</th>
<th>MAX INPUT (kW)</th>
<th>HEIGHT IN (CM)</th>
<th>WIDTH IN (CM)</th>
<th>DEPTH IN (CM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHE-200</td>
<td>200 (757)</td>
<td>180</td>
<td>38 ½ (98)</td>
<td>77 (196)</td>
<td>36 (91)</td>
</tr>
<tr>
<td>DHE-250</td>
<td>250 (946)</td>
<td>240</td>
<td>38 ½ (98)</td>
<td>91 (231)</td>
<td>36 (91)</td>
</tr>
<tr>
<td>DHE-300</td>
<td>300 (1,136)</td>
<td>300</td>
<td>44 ½ (113)</td>
<td>81 (206)</td>
<td>42 (107)</td>
</tr>
<tr>
<td>DHE-350</td>
<td>350 (1,325)</td>
<td>330</td>
<td>44 ½ (113)</td>
<td>93 (236)</td>
<td>42 (107)</td>
</tr>
<tr>
<td>DHE-400</td>
<td>400 (1,514)</td>
<td>390</td>
<td>44 ½ (113)</td>
<td>100 (254)</td>
<td>42 (107)</td>
</tr>
<tr>
<td>DHE-500</td>
<td>500 (1,893)</td>
<td>480</td>
<td>51 (130)</td>
<td>94 (239)</td>
<td>48 (122)</td>
</tr>
<tr>
<td>DHE-600</td>
<td>600 (2,271)</td>
<td>600</td>
<td>51 (130)</td>
<td>109 (277)</td>
<td>48 (122)</td>
</tr>
<tr>
<td>DHE-700</td>
<td>700 (2,650)</td>
<td>690</td>
<td>51 (130)</td>
<td>121 (307)</td>
<td>48 (122)</td>
</tr>
<tr>
<td>DHE-800</td>
<td>800 (3,028)</td>
<td>780</td>
<td>57 (145)</td>
<td>111 (282)</td>
<td>54 (137)</td>
</tr>
<tr>
<td>DHE-1000</td>
<td>1,000 (3,785)</td>
<td>990</td>
<td>61 (155)</td>
<td>111 (282)</td>
<td>60 (152)</td>
</tr>
<tr>
<td>DHE-1250</td>
<td>1,250 (4,732)</td>
<td>1,200</td>
<td>61 (155)</td>
<td>138 (351)</td>
<td>60 (152)</td>
</tr>
<tr>
<td>DHE-1500</td>
<td>1,500 (5,678)</td>
<td>1,500</td>
<td>61 (155)</td>
<td>150 (381)</td>
<td>60 (152)</td>
</tr>
<tr>
<td>DHE-2000</td>
<td>2,000 (7,571)</td>
<td>1,980</td>
<td>70 (178)</td>
<td>177 (450)</td>
<td>66 (168)</td>
</tr>
<tr>
<td>DHE-3000</td>
<td>3,000 (11,356)</td>
<td>3,000</td>
<td>76 (193)</td>
<td>211 (536)</td>
<td>72 (183)</td>
</tr>
<tr>
<td>DHE-5000</td>
<td>5,000 (18,927)</td>
<td>3,000</td>
<td>82 (208)</td>
<td>296 (752)</td>
<td>78 (198)</td>
</tr>
<tr>
<td>DHE-7500</td>
<td>7,500 (28,391)</td>
<td>3,000</td>
<td>94 (239)</td>
<td>317 (805)</td>
<td>90 (229)</td>
</tr>
<tr>
<td>DHE-10,000</td>
<td>10,000 (37,854)</td>
<td>3,000</td>
<td>106 (269)</td>
<td>345 (876)</td>
<td>102 (259)</td>
</tr>
</tbody>
</table>

### VERTICAL ELECTRIC STORAGE HEATERS

<table>
<thead>
<tr>
<th>MODEL*</th>
<th>CAPACITY USG (L)</th>
<th>MAX INPUT (kW)</th>
<th>HEIGHT IN (CM)</th>
<th>WIDTH IN (CM)</th>
<th>DEPTH IN (CM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVE-175</td>
<td>175 (652)</td>
<td>150</td>
<td>83 ½ (212)</td>
<td>30 (76)</td>
<td>37 (94)</td>
</tr>
<tr>
<td>DVE-225</td>
<td>225 (824)</td>
<td>150</td>
<td>83 ½ (212)</td>
<td>30 (76)</td>
<td>37 (94)</td>
</tr>
<tr>
<td>DVE-275</td>
<td>275 (990)</td>
<td>150</td>
<td>83 ½ (212)</td>
<td>30 (76)</td>
<td>37 (94)</td>
</tr>
<tr>
<td>DVE-325</td>
<td>325 (1,156)</td>
<td>160</td>
<td>59 ½ (151)</td>
<td>36 (91)</td>
<td>43 (109)</td>
</tr>
<tr>
<td>DVE-375</td>
<td>375 (1,325)</td>
<td>180</td>
<td>79 ½ (202)</td>
<td>36 (91)</td>
<td>43 (109)</td>
</tr>
<tr>
<td>DVE-425</td>
<td>425 (1,514)</td>
<td>240</td>
<td>93 (236)</td>
<td>36 (91)</td>
<td>43 (109)</td>
</tr>
<tr>
<td>DVE-475</td>
<td>475 (1,700)</td>
<td>300</td>
<td>120 (305)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-525</td>
<td>525 (1,893)</td>
<td>350</td>
<td>150 (381)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-575</td>
<td>575 (2,080)</td>
<td>400</td>
<td>190 (483)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-625</td>
<td>625 (2,271)</td>
<td>500</td>
<td>250 (635)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-675</td>
<td>675 (2,460)</td>
<td>600</td>
<td>310 (787)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-725</td>
<td>725 (2,650)</td>
<td>700</td>
<td>370 (935)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-775</td>
<td>775 (2,838)</td>
<td>800</td>
<td>430 (1092)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-825</td>
<td>825 (3,028)</td>
<td>900</td>
<td>500 (1270)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
<tr>
<td>DVE-875</td>
<td>875 (3,217)</td>
<td>1,000</td>
<td>570 (1448)</td>
<td>42 (107)</td>
<td>49 (124)</td>
</tr>
</tbody>
</table>

*Complete model number includes the desired kW at the end.

Minimum installation clearances required: 30” (76 cm) from front, 12” (30 cm) from top and 24” (61 cm) from right side.

Field certification required on all DVE/DHE installations in Canada.

### Controls

- **COPPER TUBE TANK HEATER** – Double wall copper tube tank heaters are designed for heating potable water with both potable or non-potable liquids or steam, and are specifically engineered for installation in models DVE and DHE for dual-energy applications. Tank heaters have a positive fail-safe means of leak detection in the event of either tube failure to prevent mixture of heating medium and potable water. Single wall heat exchangers are also available.

- **TERMINAL BLOCKS** – Allows for remote connection to building demand limiter or other functions.

- **AUTOMATIC RESET HIGH LIMIT** – A control that in the event of high temperature, interrupts power, de-energizing elements, automatic reset. (Standard with modulating step control).

- **INDICATING LIGHTS** – Denotes heating stage(s) in operation. Up to one light per contactor is available.

- **OVERRIDE SWITCHES** – A simple means of load control allows all or part of unit input to be controlled manually. Up to one switch per contactor is available.

- **SAFETY DOOR INTERLOCK** – Prevents opening of control panel door when heater power supply is on. NOTE: Once door is opened heater may be energized if necessary for service diagnosis.

- **SHUNT TRIP CIRCUIT BREAKER** – A safety device (circuit breaker) which disconnects power to heater in the event of over-current, high temperature or low water level, breaker must be manually reset.

- **CIRCUIT BREAKER** – A safety device which disconnects power to the heater in the event of overcurrent.
The ENERGY STAR® qualified A. O. Smith high efficiency condensing XP Water Heater utilizes a state-of-the-art heat exchanger and control technology to provide large volumes of hot water for demanding commercial and industrial potable hot water applications. The all stainless steel water tube heat exchanger construction allows the XP Water Heater to operate in a continuous condensing mode while maximizing longevity and delivering thermal efficiencies as high as 99% when operating in low temperature applications.

A unique multi-burner design is control sequenced and modulated to produce turndown rates of up to 20:1. Precise temperature control and accurate load matching produce smooth system operation and eliminates wasteful short cycling and temperature overshooting.

**Advanced Multi-Burner, Low NOx Combustion Technology**
- Venturi-mixing gas/air ratio system - works with variable speed blower to precisely mix gas and air throughout firing range
- Fully modulating capability prevents energy-stealing short cycling and provides smooth system operation with higher overall system efficiencies

**Advanced Sola Control**
- Large touch screen user interface
- Factory standard with MODBUS protocol connections
- The latest in energy saving algorithms
- Includes remote tank temperature control to adjust tank temperature at the water heater - modulates the water heater to maintain tank set point temperature within ±1°F
- Water heater output control features 20:1 turndown ratio on models 2 million BTU/h and up, 10:1 turndown ratio on models 1.7 million BTU/h and down

**All-Bronze Factory-Mounted Pump(s)**
- Integrally mounted, wired, and controlled by the water heater control
- Factory-sized for proper flow between water heater and storage tank
- Allows 50 equivalent feet of piping between water heater and tank

**Multi-Pass/Multi-Burner Condensing Stainless Steel Heat Exchanger**
- Utilizes leading-edge multi-pass water tube heat exchanger to maximize heat transfer
- Designed for fully condensing operation throughout the heating range
- All heating surfaces are 316L stainless steel to provide a long and trouble-free service life
- Saves both fuel and operating cost with every heating cycle
- Impervious to thermal shock
A unique multi-burner design.

**XWH Model Circulating Water Heaters**

**Direct Vent Flexibility**
- Direct vent up to 100 equivalent feet (30 meters) of pipe
- Sidewall or vertical
- Lower installation cost with ULC S636 approved PVC/CPVC venting material – uses CPVC for first 10 feet (3 meters) and PVC thereafter
- Approved for use with UL approved AL29-4C stainless steel venting materials

**Factory Start-Up Included**
- Required for activating warranty and assuring maximum operating performance. Contact your local sales representative or Authorized Start-Up Agent to arrange a FREE certified start-up

**Codes and Standards**
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

**Up to 96% Thermal Efficiency (AHRI Certified)**

**5-Year Limited Heat Exchanger/1-Year Limited Parts Warranty**
- For complete information, consult written warranty or contact A. O. Smith

**Other XP Features:**
- CSA certified to the ANSI Z21.10.3-CSA 4.3 water heater standard
- Honeywell sola control with colour touch screen LCD display
  - Inlet/outlet and remote tank temperature display
  - Logs faults, run time, cycles
  - Redundant flow and low water protection – factory installed LWCO and flow switch(s)
  - Redundant ignition controls – should one burner fail remaining burners continue to heat
  - Alarm buzzer

- Meets ASME CSD-1/GE gap codes – factory standard
- Direct spark ignition
- Factory-installed electrical disconnect
- ASME 160 psi working pressure
- ASME rated pressure relief valve – 125 psi

**XP Options:**
- ASME HLW stamped heat exchanger(s)
- Condensate neutralization kit
- Vent termination kits
- Skid mounted systems

### RECOVERY CAPACITIES

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT BTU/h</th>
<th>WATER FLOW</th>
<th>TEMPERATURE RISE - °F (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GPH</td>
<td>40</td>
</tr>
<tr>
<td>XWH-1000</td>
<td>920,000</td>
<td></td>
<td>(22)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LPH</td>
<td>2,662</td>
</tr>
<tr>
<td>XWH-1300</td>
<td>1,300,000</td>
<td></td>
<td>10,078</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LPH</td>
<td>3,742</td>
</tr>
<tr>
<td>XWH-1700</td>
<td>1,700,000</td>
<td></td>
<td>14,167</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LPH</td>
<td>4,904</td>
</tr>
<tr>
<td>XWH-2000</td>
<td>1,999,900</td>
<td></td>
<td>5,794</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LPH</td>
<td>7,501</td>
</tr>
<tr>
<td>XWH-2600</td>
<td>2,600,000</td>
<td></td>
<td>28,393</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LPH</td>
<td>9,891</td>
</tr>
<tr>
<td>XWH-3400</td>
<td>3,400,000</td>
<td></td>
<td>37,441</td>
</tr>
</tbody>
</table>
# High Efficiency Condensing Circulating Water Heaters

## Single Heat Exchanger Models

### Rough In Dimensions (Single)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>XWH-1000</th>
<th>XWH-1300</th>
<th>XWH-1700</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUE OUTLET DIA.</td>
<td>6 15</td>
<td>8 15</td>
<td>8 20</td>
</tr>
<tr>
<td>AIR INTAKE DIA.</td>
<td>6 15</td>
<td>6 15</td>
<td>8 20</td>
</tr>
<tr>
<td>WATER INLET</td>
<td>2 inch NPT</td>
<td>2 1/2 inch NPT</td>
<td></td>
</tr>
<tr>
<td>GAS INLET</td>
<td>2 inch NPT</td>
<td>2 inch NPT</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>47 120</td>
<td>49 125</td>
<td>57 145</td>
</tr>
<tr>
<td>B</td>
<td>67 170</td>
<td>68 173</td>
<td>76 193</td>
</tr>
<tr>
<td>C</td>
<td>29 74</td>
<td>29 74</td>
<td>29 74</td>
</tr>
<tr>
<td>D</td>
<td>37 94</td>
<td>38 97</td>
<td>37 94</td>
</tr>
<tr>
<td>E</td>
<td>23 58</td>
<td>23 58</td>
<td>24 61</td>
</tr>
<tr>
<td>F</td>
<td>9 23</td>
<td>9 23</td>
<td>9 23</td>
</tr>
<tr>
<td>G</td>
<td>34 86</td>
<td>34 86</td>
<td>34 86</td>
</tr>
<tr>
<td>H</td>
<td>44 112</td>
<td>45 114</td>
<td>45 114</td>
</tr>
<tr>
<td>J</td>
<td>6 15</td>
<td>6 15</td>
<td>6 15</td>
</tr>
<tr>
<td>K</td>
<td>11 28</td>
<td>11 28</td>
<td>11 28</td>
</tr>
<tr>
<td>L</td>
<td>12 31</td>
<td>11 28</td>
<td>12 31</td>
</tr>
</tbody>
</table>

## Double Heat Exchanger Models

### Rough In Dimensions (Double)

<table>
<thead>
<tr>
<th>MODEL</th>
<th>XWH-2000</th>
<th>XWH-2600</th>
<th>XWH-3400</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUE OUTLET DIA.</td>
<td>8 20</td>
<td>8 20</td>
<td>10 25</td>
</tr>
<tr>
<td>AIR INTAKE DIA.</td>
<td>8 20</td>
<td>8 20</td>
<td>10 25</td>
</tr>
<tr>
<td>WATER INLET</td>
<td>3 inch NPT</td>
<td>4 inch NPT</td>
<td></td>
</tr>
<tr>
<td>WATER OUTLET</td>
<td>3 inch NPT</td>
<td>4 inch NPT</td>
<td></td>
</tr>
<tr>
<td>GAS INLET</td>
<td>2 inch NPT</td>
<td>3 inch NPT</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>47 119</td>
<td>49 125</td>
<td>57 145</td>
</tr>
<tr>
<td>B</td>
<td>78 198</td>
<td>80 203</td>
<td>91 231</td>
</tr>
<tr>
<td>C</td>
<td>36 91</td>
<td>37 94</td>
<td>37 94</td>
</tr>
<tr>
<td>D</td>
<td>22 56</td>
<td>22 56</td>
<td>22 56</td>
</tr>
<tr>
<td>E</td>
<td>40 102</td>
<td>41 104</td>
<td>41 104</td>
</tr>
<tr>
<td>F</td>
<td>7 18</td>
<td>6 15</td>
<td>6 15</td>
</tr>
<tr>
<td>G</td>
<td>10 25</td>
<td>10 25</td>
<td>10 25</td>
</tr>
<tr>
<td>H</td>
<td>4 10</td>
<td>4 10</td>
<td>4 10</td>
</tr>
<tr>
<td>J</td>
<td>20 51</td>
<td>19 48</td>
<td>19 48</td>
</tr>
<tr>
<td>K</td>
<td>12 31</td>
<td>12 31</td>
<td>13 33</td>
</tr>
</tbody>
</table>
VERSA TIL E MULTI-VENTING CONFIGURATION S

Direct or sidewall vent for up to 100 equivalent feet (30 meters) of pipe. Lower installation cost with approved ULC S636 CPVC/PVC venting material – uses CPVC for first 10 feet (3 meters) and PVC thereafter. Also approved for use with UL approved AL29-4C® stainless steel venting materials. For the detailed venting instructions review the XP water heater instruction manual at www.hotwater.com.

ULC S636 APPROVED VENT AND AIR INTAKE FITTINGS

EXHAUST/VENT TERMINATIONS (PVC) PART NUMBERS

<table>
<thead>
<tr>
<th>Models</th>
<th>Pipe Size</th>
<th>Vertical (PVC Rain Cap)</th>
<th>Horizontal (PVC Tee w/Screens)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XWH 1000</td>
<td>6&quot;</td>
<td>320884-000</td>
<td>321765-000</td>
</tr>
<tr>
<td>XWH 1300</td>
<td>8&quot;</td>
<td>320884-001</td>
<td>321765-001</td>
</tr>
<tr>
<td>XWH 1700</td>
<td>10&quot;</td>
<td>320884-002</td>
<td>321765-002</td>
</tr>
<tr>
<td>XWH 2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XWH 2600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XWH 3400</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AIR INTAKE TERMINATION (PVC) PART NUMBERS

<table>
<thead>
<tr>
<th>Models</th>
<th>Pipe Size</th>
<th>Combustion Air Intake (Elbow)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XWH 1000</td>
<td>6&quot;</td>
<td>321764-000</td>
</tr>
<tr>
<td>XWH 1300</td>
<td>8&quot;</td>
<td>321764-001</td>
</tr>
<tr>
<td>XWH 1700</td>
<td>10&quot;</td>
<td>321764-002</td>
</tr>
<tr>
<td>XWH 2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XWH 2600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XWH 3400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please note: When direct or sidewall venting, the water heater’s CSA certification requires that only the above approved vent and combustion air intake terminations be used.

GAS PRESSURE REQUIREMENTS

<table>
<thead>
<tr>
<th>MODELS (XWH)</th>
<th>TYPE OF GAS</th>
<th>MAXIMUM SUPPLY PRESSURE</th>
<th>MINIMUM SUPPLY PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000, 1300, 1700, 2000, 2500, 3400</td>
<td>Natural</td>
<td>14.0</td>
<td>3.49</td>
</tr>
<tr>
<td></td>
<td>Propane</td>
<td>14.0</td>
<td>3.49</td>
</tr>
</tbody>
</table>

ELECTRICAL REQUIREMENTS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>SUPPLY VOLTAGE (VOLTS)</th>
<th>FREQUENCY (HZ)</th>
<th>CURRENT (AMPS)</th>
<th>ELECTRICAL NOTES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>XWH-1000</td>
<td>120V</td>
<td>60</td>
<td>30</td>
<td>A dedicated, single phase, 30/60 amp circuit breaker with a grounded neutral should be provided to supply power to the water heater.</td>
</tr>
<tr>
<td>XWH-1300</td>
<td>120V</td>
<td>60</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>XWH-1700</td>
<td>120V</td>
<td>60</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>XWH-2000</td>
<td>120V</td>
<td>60</td>
<td>60</td>
<td>A dedicated, single phase, 60/60 amp circuit breaker with a grounded neutral should be provided to supply power to the water heater.</td>
</tr>
<tr>
<td>XWH-2600</td>
<td>120V</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>XWH-3400</td>
<td>120V</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

FLOW RATE

<table>
<thead>
<tr>
<th>MODELS</th>
<th>TEMPERATURE RISE (∆T °F)</th>
<th>GPM</th>
<th>PRESSURE LOSS IN FEET OF HEAD (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XWH 1000</td>
<td>25</td>
<td>70</td>
<td>17.5</td>
</tr>
<tr>
<td>XWH 1300</td>
<td>25</td>
<td>99</td>
<td>22</td>
</tr>
<tr>
<td>XWH 1700</td>
<td>25</td>
<td>129</td>
<td>23</td>
</tr>
<tr>
<td>XWH 2000</td>
<td>25</td>
<td>153</td>
<td>17.5</td>
</tr>
<tr>
<td>XWH 2600</td>
<td>25</td>
<td>198</td>
<td>22</td>
</tr>
<tr>
<td>XWH 3400</td>
<td>25</td>
<td>261</td>
<td>23</td>
</tr>
</tbody>
</table>

Notes: For hard water systems with water hardness greater than 12 grains per gallon, A. O. Smith recommends a water softener be installed and maintained.

The factory installed/supplied pump is sized to maintain a ∆T of 25°F through the water heater at 100% fire. In addition to the pressure loss through the water heater, the factory supplied pump is sized for an additional 50 equivalent feet (15 meters) of piping between the water heater and a storage tank. Consult the factory for systems where the piping between the water heater and the tank exceed 50 equivalent feet (15 meters).
Burkay® HW Gas Models

80% thermal efficiency hot water supply boilers.

Famous Burkay reliability. Because of their lightweight and compact design, they may be easily transported on a two-wheel dolly replacing large boilers in a much smaller space. Burkay models are for indoor use in installations requiring higher inputs up to 670,000 BTU. They can be manifolded for unlimited fire power.

### All Non-Ferrous Waterways
- All castings are made of bronze or brass
- All water tubes are made from copper
- Brazed joints or flare union construction make the boiler immune to the effects of thermal shock and thermal cycling

### Efficient Copper Coil Combustion Chamber
- The combustion chamber is a heat exchanger formed from a two passage coil of tightly wound continuous copper tube
- Water circulating through this coil surrounds the main burner and captures the radiant heat
- A wrap of insulation on the outside of the coil retains the heat captured by the circulating water

### Copper Heat Exchanger
- Directly above the coil and the main burner is a compact, horizontal, copper fin tube heat exchanger
- The flue gases must pass through this efficient heat exchanger before leaving the boiler
- This unique design provides maximum heat transfer and proven field durability

### Thermal Balancer
- Patented pump delay system that allows the boiler and pump to run simultaneously but delays pump shot off at end of heating cycle to remove usable heat from the heat exchanger and reduce the scale forming tendencies of motionless hot water

### Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

### 5-Year Limited Heat Exchanger/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT BTU/h</th>
<th>OUTPUT BTU/h</th>
<th>RECOVERY 100°F (56°C) TEMP. RISE GPH (LPH)</th>
<th>VENT DIAMETER (IN)</th>
<th>HEIGHT* IN (CM)</th>
<th>DIAMETER IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW-300</td>
<td>300,000</td>
<td>240,000</td>
<td>297 (1,124)</td>
<td>8</td>
<td>65 (165)</td>
<td>25 ½ (64)</td>
<td>29 5/8 (75)</td>
<td>250 (113)</td>
</tr>
<tr>
<td>HW-399</td>
<td>399,000</td>
<td>319,200</td>
<td>388 (1,465)</td>
<td>10</td>
<td>57 ¼ (145)</td>
<td>27 (69)</td>
<td>31 ½ (80)</td>
<td>301 (137)</td>
</tr>
<tr>
<td>HW-420</td>
<td>420,000</td>
<td>336,000</td>
<td>413 (1,563)</td>
<td>10</td>
<td>57 ¼ (145)</td>
<td>27 (69)</td>
<td>31 ½ (80)</td>
<td>301 (137)</td>
</tr>
<tr>
<td>HW-520</td>
<td>520,000</td>
<td>416,000</td>
<td>515 (1,949)</td>
<td>10</td>
<td>68 ½ (174)</td>
<td>27 (69)</td>
<td>36 ½ (93)</td>
<td>381 (173)</td>
</tr>
<tr>
<td>HW-670</td>
<td>660,000**</td>
<td>528,000**</td>
<td>600 (2,271)</td>
<td>12</td>
<td>68 ½ (174)</td>
<td>27 (69)</td>
<td>36 ½ (93)</td>
<td>381 (173)</td>
</tr>
</tbody>
</table>

*Height to top of diverter
**Propane: 670,000 BTU/h INPUT; 536,000 BTU/h OUTPUT.
Burkay Genesis® Circulating Water Heaters

A. O. Smith Burkay Genesis water heaters offer everything you could ask for in a non-condensing water heater. They provide a near condensing 85% thermal efficiency, outstanding venting flexibility, space-saving stackable design and an advanced electronic control system.

Electronic Control with Precise Temperature Management
- Controls every electrical water heater function, including pump operation and main burner ignition, delivers precise temperature management with ±1°F accuracy
- Display panel shows current operating status and fault readings in easy-to-understand English instead of confusing numeric codes
- Display also shows temperature set points, outlet temperature, current inlet/outlet differential (ΔT) and tank temperature
- Help screens assist in water heater set-up and explain all control options
- When mounted in the storage tank, the included remote temperature sensor allows the tank temperature to be set and monitored at the water heater

Multiple Venting Options
- All Genesis models can vent vertically in Category I with double wall “B” vent or horizontally in Category IV with AL29-4C® stainless steel vent material

Copper Finned-Tube Heat Exchanger
- Gasket-less glass-lined headers and copper finned tubes with extruded integral fins deliver exceptional heat transfer
- ASME certified “HLW” stamped 160 psi working pressure
- Copper is lightweight for easier handling and immune to thermal shock

Stage Gas Firing System
- Prevents short cycling and ensures smooth operation, saves fuel and extends product life
- Delivers maximum output when demand is high, reduced firing rates during off peak times

Factory Start-Up Included
- Required for activating warranty and assuring maximum operating performance. Contact your local sales representative or Authorized Start-Up Agent to arrange a FREE certified start-up

Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1

5-Year Limited Heat Exchanger/1-Year Limited Parts Warranty
**Circulating Water Heaters & Hot Water Supply Boilers**

**Electronic Control** provides remote tank temperature sensing and +/- 1° tank temperature control. Controls the factory furnished pump to assure maximum heat transfer and reduce stand-by heat loss.

**Ceramic Fiber Combustion Chamber** Rated for temperatures up to 2300°F.

**Priceburning Stainless Steel Premix Burners** for smooth ignition and clean combustion.

**Copper Finned Tube Heat Exchanger**
- Copper-finned design delivers superior heat transfer and energy efficiency
- Copper is lightweight, immune to rust and thermal shock

**Combustion Air Blower with Air Shutter** Adjusts to the application for maximum efficiency.

**Pressurized Combustion System** Clean burning Stainless Steel Premix Burners for smooth ignition and clean combustion.

---

**Table:**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT BTU/h</th>
<th>RECOVERY 100°F (50°C) TEMP. RISE GPH (LPH)</th>
<th>WATER CONNECTION (IN)</th>
<th>GAS CONNECTION (IN)</th>
<th>VENT / INTAKE CONNECTION (IN)</th>
<th>HEIGHT IN (CM)</th>
<th>WIDTH IN (CM)</th>
<th>WIDTH WITH PUMP IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWH-400</td>
<td>399,000</td>
<td>412 (1,560)</td>
<td>2</td>
<td>1 1/4</td>
<td>6/6</td>
<td>31 1/8 (80)</td>
<td>37 3/8 (96)</td>
<td>46 1/2 (118)</td>
<td>22 1/8 (57)</td>
<td>454 (206)</td>
</tr>
<tr>
<td>GWH-500</td>
<td>500,000</td>
<td>515 (1,849)</td>
<td>2</td>
<td>1 1/4</td>
<td>6/6</td>
<td>31 1/8 (80)</td>
<td>45 3/8 (115)</td>
<td>54 1/2 (138)</td>
<td>22 1/8 (57)</td>
<td>467 (212)</td>
</tr>
<tr>
<td>GWH-650</td>
<td>650,000</td>
<td>670 (2,356)</td>
<td>2</td>
<td>1 1/4</td>
<td>8/8</td>
<td>31 1/8 (80)</td>
<td>56 1/4 (144)</td>
<td>65 1/2 (167)</td>
<td>22 1/8 (57)</td>
<td>551 (250)</td>
</tr>
<tr>
<td>GWH-750</td>
<td>750,000</td>
<td>773 (2,926)</td>
<td>2</td>
<td>1 1/4</td>
<td>8/8</td>
<td>31 1/8 (80)</td>
<td>64 (163)</td>
<td>72 1/8 (185)</td>
<td>22 1/8 (57)</td>
<td>611 (277)</td>
</tr>
<tr>
<td>GWH-1000</td>
<td>990,000</td>
<td>1,020 (3,861)</td>
<td>2 1/2</td>
<td>2</td>
<td>10/10</td>
<td>36 (91)</td>
<td>48 1/2 (123)</td>
<td>54 1/2 (138)</td>
<td>33 (84)</td>
<td>843 (382)</td>
</tr>
<tr>
<td>GWH-1250</td>
<td>1,260,000</td>
<td>1,298 (4,793)</td>
<td>2 1/2</td>
<td>2</td>
<td>12/12</td>
<td>36 (91)</td>
<td>58 1/8 (149)</td>
<td>64 1/2 (164)</td>
<td>33 (84)</td>
<td>939 (426)</td>
</tr>
<tr>
<td>GWH-1450</td>
<td>1,440,000</td>
<td>1,484 (5,618)</td>
<td>2 1/2</td>
<td>2</td>
<td>12/12</td>
<td>36 (91)</td>
<td>68 1/2 (175)</td>
<td>74 1/2 (190)</td>
<td>33 (84)</td>
<td>1,035 (469)</td>
</tr>
<tr>
<td>GWH-1800</td>
<td>1,800,000</td>
<td>1,855 (7,022)</td>
<td>2 1/2</td>
<td>2</td>
<td>14/12</td>
<td>36 (91)</td>
<td>82 1/8 (209)</td>
<td>88 1/2 (224)</td>
<td>33 (84)</td>
<td>1,168 (530)</td>
</tr>
<tr>
<td>GWH-2100</td>
<td>2,070,000</td>
<td>2,133 (8,074)</td>
<td>2 1/2</td>
<td>2</td>
<td>14/12</td>
<td>36 (91)</td>
<td>92 1/2 (235)</td>
<td>98 1/2 (250)</td>
<td>33 (84)</td>
<td>1,285 (583)</td>
</tr>
</tbody>
</table>
Mechanical Venting Flexibility

Direct-Venting Examples
- Allows clean, uncontaminated air to be drawn directly into the unit
- Flue gas by-products are expelled through the wall to the outside
- The water heater can be vented directly through an outside wall or vertically through the roof

Other Genesis Features
- Stage firing - 2 stages
- Sealed combustion chamber
- Stainless steel burners
- All bronze circulating pump (shipped loose)
- On/Off switch
- Adjustable high limit with manual reset
- Pump delay
- ASME T&P relief valve 125 psi
- Factory mounted flow switch
- BMS terminal strip
- Contacts for air louvers
- Contacts on any failure

Genesis Options
- Cupro-nickel heat exchanger
- High gas pressure switch with manual reset
- Low gas pressure switch with manual reset
- Low water cut off with manual reset and test
- Stack rack
- Combustible floor shield (400 - 750)
- International voltage (230V 50Hz)
- Sequencing control panel with cascade/lead-lag operation for 1-4 water heaters

Conventional Venting Examples

See Installation Manual for detailed venting information and maximum/minimum intake and venting distances.
Variable Fire (VF)  
Circulating Water Heaters

Up to 87% efficient, hot water supply with modulating fire 4:1 turndown.

The VF Series Circulating Water Heaters are designed with one thing in mind: to provide the best value for our customer. These heaters deliver an exceptionally high thermal efficiency by combining an advanced modulating venturi-mixing gas/air ratio system with a vertical multi-pass copper heat exchanger for outstanding efficiency of up to 87%.

The secret to the stunning performance of the VF Series is its flexibility. The VF is capable of firing from 100% to 25% or a 4:1 turndown ratio. The water heater’s output is based strictly on the current system demand and required BTUs needed to maintain the desired system set-point temperature. The VF’s modulating capability is virtually limitless.

The VF Water Heater sets a high-efficiency standard by combining thermal efficiencies up to 87% with a smoother, more energy-efficient overall system operation.

### Advanced High Efficiency Combustion Technology
- Venturi-mixing gas/air ratio system works with variable speed blower to precisely mix gas and air throughout firing range.
- 4:1 turndown fully modulating capability prevents energy stealing short cycling and provides smooth system operation with higher overall system efficiencies.

### Compact, Low-Profile Design
- Zero clearance on sides and lightweight copper heat exchanger makes VF Series easier to move and install in limited spaces — perfect for retrofits.
- Fits in an elevator, ideal for boiler rooms with limited access — only 24” wide.
- Multiple water heater systems provide increased turndown and even smoother, more efficient system operation.
- 4 water heaters with 4:1 turndown = 16:1 total system turndown.

### High Efficiency Copper Fin Tube Heat Exchanger
- Vertical heat exchanger design encircles the burner with a combustion chamber that is a 360° wall of copper fin tubes.
- All internal heat exchanger non-copper surfaces are glass lined with A. O. Smith’s proprietary porcelain glass coating to resist rust.
- Impervious to thermal shock.
- Heavy duty gasket-less heat exchanger design.

### Category II and IV Listed
- Requires AL29-4C® gas tight rust resistant venting material.

### Factory Start-Up Included
- Required for activating warranty and assuring maximum operating performance. Contact your local sales representative or Authorized Start-Up Agent to arrange a FREE certified start-up.

### Codes and Standards
- All models meet the thermal efficiency and standby loss requirements of NRCan and current edition of ASHRAE/IESNA 90.1.

### Other VF Water Heater Features:
- ASME-rated T&P valve.
- Factory mounted flow switch.
- Contacts for 0-10 VDC BMS external control.
- Contacts for alarm or any failure.
- All bronze factory supplied pump.
- Digital inlet and outlet temperature readout.
- Manual reset hi-limit.

### 5-Year Limited Heat Exchanger /1-Year Limited Parts Warranty

### VF Water Heater Approved Options
- For optional equipment, see VF Water Heater spec sheet.

---

### VF Water Heater Specification Sheet

<table>
<thead>
<tr>
<th>MODEL</th>
<th>INPUT BTU/h</th>
<th>RECOVERY 100°F (50°C) TEMP.</th>
<th>HEIGHT IN (CM)</th>
<th>WIDTH IN (CM)</th>
<th>DEPTH WITH PUMP IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VWH-500</td>
<td>500,000</td>
<td>527 (1,995)</td>
<td>44 % (113)</td>
<td>23 ½ (59)</td>
<td>45 ½ (116)</td>
<td>30 ¼ (77)</td>
<td>573 (260)</td>
</tr>
<tr>
<td>VWH-750</td>
<td>750,000</td>
<td>791 (2,994)</td>
<td>52 ½ (132)</td>
<td>23 ½ (59)</td>
<td>45 ½ (116)</td>
<td>30 ¼ (77)</td>
<td>622 (282)</td>
</tr>
<tr>
<td>VWH-1000</td>
<td>999,999</td>
<td>1,054 (3,990)</td>
<td>59 % (150)</td>
<td>23 ½ (59)</td>
<td>45 ½ (116)</td>
<td>30 ¼ (77)</td>
<td>662 (300)</td>
</tr>
<tr>
<td>VWH-1500</td>
<td>1,500,000</td>
<td>1,582 (5,989)</td>
<td>65 % (166)</td>
<td>27 ½ (69)</td>
<td>51 (130)</td>
<td>31 ½ (80)</td>
<td>1,118 (507)</td>
</tr>
<tr>
<td>VWH-2000</td>
<td>2,000,000</td>
<td>2,109 (7,983)</td>
<td>76 % (195)</td>
<td>27 ½ (69)</td>
<td>51 (130)</td>
<td>31 ½ (80)</td>
<td>1,187 (538)</td>
</tr>
</tbody>
</table>
Variable Fire (VF) Circulating Water Heaters

Versatile Multi-Venting Configurations
- Two-pipe direct-venting vertical and/or horizontal sidewall, with all combustion makeup air drawn from outside the building
  - 50 Equivalent Feet (15 Meters) Exhaust
  - 50 Equivalent Feet (15 Meters) Intake
  - 90 Degree Elbows = 5 Feet (2 Meters)
  - 45 Degree Elbows = 2 1/2 Feet (1 Meter)

- Conventional venting, vertical or horizontal sidewall
  - 50 Equivalent Feet Max (15 Meters)
  - 90 Degree Elbows = 5 Feet (2 Meters)
  - 45 Degree Elbows = 2 1/2 Feet (1 Meter)


VF Electronic Control
The VF Electronic Control is designed to operate all the various elements of a domestic hot water heating system. The VF Electronic Control will control temperature, operate the pump and dispense a large amount of operational data.

Electronic Modulating Control
- Modulates the burner to maintain tank temperature within ±1°F
- Infinite burner firing rate that modulates between 25% and 100% fire
- LED display provides current water heater status in easy-to-understand English with help screens to assist should a fault occur
- Controls and monitors every electrical water heater function with onboard diagnostics
- Building Management System (BMS) integration with 0-10 VDC input allows BMS to control water heater firing rate
Heavy-Duty Electric
Dura-Power™
NW Boiler Models

Designed for use as a hot water boiler for space heating applications.

ASME Code Construction
- All vessels manufactured to applicable ASME code
- Vessels with maximum working pressure of 160 psi or less (standard design is for 125 psi) at 240°F maximum temperature bear the “H” symbol per Section IV of ASME Code
- Vessels with greater than 160 psi working pressure or higher than 240°F operating temperature will bear the “S” symbol per Section I of ASME Code

Incoloy Immersion Heaters
- Heavy-duty medium-watt density elements (3 per immersion heater)
- Incoloy sheathing provides excellent protection against oxidation and scaling
- Inputs range from 45 kW to 6,000 kW

Control and Power Circuit Fusing
- 100,000 amp I.C. cartridge-type fuses protect all elements and contactors

Pilot Switch and Light
- Permits manual starting and stopping of heater by interrupting power to the control circuit
- Pilot light indicates when control circuit is energized

Heavy-Duty Magnetic Contactors
- UL-rated for 100,000 cycles

Low Water Cut Off
- Probe type, electric low water cut off prevent energizing of elements in the event of low water condition

120V Control Circuit
- Powered by fused transformer

Modulating Step Control
- Solid-state modulating step control modulates heat input to match load

1-Year Limited Tank/1-Year Limited Parts Warranty

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>MAXIMUM KILOWATTS</th>
<th>HEIGHT** (IN CM)</th>
<th>WIDTH IN (CM)</th>
<th>DEPTH IN (CM)</th>
<th>INLET &amp; OUTLET* (IN)</th>
<th>BOILER DRAIN (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW-37</td>
<td>37 (140)</td>
<td>180</td>
<td>42 (107)</td>
<td>32 (81)</td>
<td>30 (76)</td>
<td>3 1</td>
<td></td>
</tr>
<tr>
<td>NW-60</td>
<td>60 (227)</td>
<td>300</td>
<td>57 (145)</td>
<td>32 (81)</td>
<td>30 (76)</td>
<td>3 1</td>
<td></td>
</tr>
<tr>
<td>NW-96</td>
<td>96 (363)</td>
<td>480</td>
<td>69 ½ (177)</td>
<td>36 (91)</td>
<td>38 (97)</td>
<td>4 1 ½</td>
<td></td>
</tr>
<tr>
<td>NW-150</td>
<td>150 (568)</td>
<td>720</td>
<td>69 ½ (177)</td>
<td>54 (137)</td>
<td>44 (112)</td>
<td>5 1 ½</td>
<td></td>
</tr>
<tr>
<td>NW-220</td>
<td>220 (833)</td>
<td>1,140</td>
<td>71 (180)</td>
<td>60 (152)</td>
<td>50 (127)</td>
<td>5 1 ½</td>
<td></td>
</tr>
<tr>
<td>NW-334</td>
<td>334 (1,264)</td>
<td>1,740</td>
<td>99 (251)</td>
<td>60 (152)</td>
<td>50 (127)</td>
<td>6 2</td>
<td></td>
</tr>
<tr>
<td>NW-400</td>
<td>400 (1,514)</td>
<td>2,100</td>
<td>90 ½ (230)</td>
<td>66 (168)</td>
<td>56 (142)</td>
<td>8 2</td>
<td></td>
</tr>
<tr>
<td>NW-500</td>
<td>500 (1,893)</td>
<td>2,580</td>
<td>90 ½ (230)</td>
<td>72 (183)</td>
<td>62 (157)</td>
<td>8 2</td>
<td></td>
</tr>
<tr>
<td>NW-670</td>
<td>670 (2,271)</td>
<td>3,300</td>
<td>96 ½ (245)</td>
<td>78 (198)</td>
<td>68 (173)</td>
<td>8 2</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: For boilers 3400 kW to 6000 kW, consult factory
*All fittings under 4” will be threaded type. All fittings 4” and larger will be flanged.
**Where overall height is a problem, a larger diameter vessel with a reduced height may be furnished
Field certification required on all NW installations in Canada.
Packaged Hot Water Generating (HWG) Systems - Steam/Hot Water

Designed for utilizing steam or high temperature boiler water as the energy source.

These skid-mounted water heater systems are completely assembled and packaged for use. All components are sized, piped and checked at the factory before shipment. HWG systems are available in space saving vertical or horizontal models.

Custom units built to order, with tank capacities up to 12,000 gallons including special control trim and special heating units can be built to design specifications on a special order basis.

**Insulation**
- Models are insulated with fiberglass to meet or exceed the thermal efficiency and standby loss requirements of NRCan and the most current edition of ASHRAE/IESNA 90.1

**Integral Pump**
- System includes an integral bronze circulator pump

**Steam Units**
- Standard steam trim consists of temperature control valve, inlet and auxiliary steam traps, inlet and auxiliary strainers, steam pressure gauge with siphon, vacuum breaker and air vent

**Boiler Units**
- Standard boiler water trim includes temperature control valve and boiler water temperature gauge

**Cathodic Protection**
- Standard systems employing glass, cement or epoxy-lined tanks are fitted with magnesium anodes to help prevent corrosion

**Gallon Sizes**
- HWG models are available from 140 gallons to 12,000 gallons in both vertical and horizontal configurations

**Additional Features**
- All-copper recirculation with two bronze ball valves
- Flush-mounted T&P gauges
- ASME-rated T&P valve

**5-Year Limited Tank Warranty and 1-Year Limited Coil Warranty**

**Options**
- **Storage Tanks**: 150 through 160 psi working pressure, ASME Section VIII construction, 4” x 6” hand hole, 11” x 15” manhole, cement or epoxy lining
- **Water to Water**: Self actuated or pneumatic operated temperature regulator and a bypass loop in boiler water line for regulator isolation
- **Steam to Water**: Pilot (spring, air, temperature) operated temperature regulator

**Code Listing**
- The standard system will employ an ASME “HLW” code glass-lined storage tank fitted with an ASME “U” code ¼” diameter copper tube heat exchanger

For GPH recoveries, consult spec sheet.
Custom Small and Large Volume Storage Tanks
(T, TL, TN, TJ, TJV, TJVT, TJH, TJHT)

These storage tanks are ideal for use with gas-fired copper heat exchanger equipment and other A. O. Smith hot water systems for storage of any potable water at temperatures of 180°F or lower. Sizes range from 80 to 12,500 gallons and custom models are available with special linings, heating coils (single-or double-wall), and accessories.

Glass-Lined Tank
- Internal surfaces exposed to water are glass-lined per ASME HLW procedures
- Some tanks use an NSF-approved glass-lining compound

Horizontal or Vertical Mounting
- "H" in the model number indicates horizontal only and "V" indicates vertical only
- TJ-80 (vertical only) and TL-500 (horizontal only)

Jacketed Tanks
- Tanks surrounded with high-density fiberglass insulation to meet or exceed the thermal efficiency and standby loss requirements of NRCan and the most current edition of ASHRAE/IESNA 90.1

Anodic Protection
- Magnesium anodes help extend tank life

ASME Construction
- Standard on TJVTJH-jacketed tanks 140 gallons and larger or with an "A" in the model number
- 100, 125, 150 and 160 psi maximum working pressures available

5-Year Limited Tank/1-Year Limited Parts Warranty
(Except T120V & T200V models which have a 3-year limited tank warranty)

Options
- Factory jacketing and insulation
- Manholes/hand holes
- Factory-installed T&P valves
- Angle base
- Ring base
- Horizontal tank saddles
- Lifting lugs
- Military specifications

Other Linings Available
- Cement formulation provides excellent corrosion protection; available on 200-gallon and larger sizes
- Epoxy lining is suitable for cold or hot water storage; available on 200-gallon and larger sizes

Other Constructions
- Black steel, stainless and silicon bronze tanks are available for extreme severe or special applications; ASME is standard
Desired temperatures in A. O. Smith custom-lined hot water storage tanks can be maintained with special copper tube heating elements. Available for use with steam or boiler water, single- or double-wall construction.

**HD Custom Tanks Built to Order for Any Need**
A. O. Smith understands the variety of special needs you may have in designing a complete commercial hot water supply system. We can meet just about any need you specify, with our “HD” heavy duty large volume custom built storage tanks from 80 to 12,500 gallons, all with ASME construction, and with an extensive list of options, including:

- Cement, epoxy or glass linings
- Black steel tanks, stainless-steel tanks, silicon bronze tanks
- Military specifications
- Manholes
- Hand holes
- Lifting lugs
- Steam or hot water tank heaters
- Special and additional tank openings
- Leg and ring bases
- Horizontal tank saddles
- Factory-mounted T&P gauges


### BARE (UNINSULATED) STORAGE TANKS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>APPROX. OVERALL DIMENSIONS DIA. X LENGTH IN (CM)</th>
<th>WORKING PRESSURE (PSI)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-80S</td>
<td>80 (303)</td>
<td>20 x 62 ¾ (51 x 158)</td>
<td>150</td>
<td>170 (77)</td>
</tr>
<tr>
<td>T-120S</td>
<td>119 (450)</td>
<td>24 ½ x 65 (62 x 165)</td>
<td>150</td>
<td>287 (130)</td>
</tr>
<tr>
<td>T-120V</td>
<td>119 (450)</td>
<td>24 x 60 ¾ (61 x 154)</td>
<td>150</td>
<td>270 (122)</td>
</tr>
<tr>
<td>T-140A</td>
<td>140 (530)</td>
<td>24 x 76 ¾ (61 x 194)</td>
<td>125</td>
<td>400 (181)</td>
</tr>
<tr>
<td>T-200V</td>
<td>188 (712)</td>
<td>28 x 75 (71 x 191)</td>
<td>125</td>
<td>402 (182)</td>
</tr>
<tr>
<td>T-200S</td>
<td>200 (757)</td>
<td>30 x 72 (76 x 183)</td>
<td>125</td>
<td>460 (209)</td>
</tr>
<tr>
<td>T-200A</td>
<td>200 (757)</td>
<td>30 x 72 (76 x 183)</td>
<td>125</td>
<td>460 (209)</td>
</tr>
<tr>
<td>T-250A</td>
<td>250 (946)</td>
<td>30 x 84 (80 x 213)</td>
<td>125</td>
<td>505 (229)</td>
</tr>
<tr>
<td>T-350S</td>
<td>350 (1,325)</td>
<td>36 x 88 (91 x 224)</td>
<td>125</td>
<td>670 (304)</td>
</tr>
<tr>
<td>T-350A</td>
<td>350 (1,325)</td>
<td>36 x 88 (91 x 224)</td>
<td>125</td>
<td>670 (304)</td>
</tr>
<tr>
<td>T-400A</td>
<td>400 (1,514)</td>
<td>36 x 97 (91 x 246)</td>
<td>125</td>
<td>775 (352)</td>
</tr>
<tr>
<td>TL-500A</td>
<td>500 (1,893)</td>
<td>36 x 122 (91 x 310)</td>
<td>125</td>
<td>950 (431)</td>
</tr>
<tr>
<td>TN-500A</td>
<td>500 (1,893)</td>
<td>42 x 89 (107 x 226)</td>
<td>125</td>
<td>815 (370)</td>
</tr>
<tr>
<td>T-500A</td>
<td>500 (1,893)</td>
<td>48 x 74 (122 x 188)</td>
<td>125</td>
<td>950 (421)</td>
</tr>
<tr>
<td>T-750A</td>
<td>750 (2,839)</td>
<td>48 x 106 (122 x 269)</td>
<td>125</td>
<td>1,290 (585)</td>
</tr>
<tr>
<td>T-1000A</td>
<td>1,000 (3,785)</td>
<td>48 x 138 (122 x 351)</td>
<td>125</td>
<td>1,655 (751)</td>
</tr>
</tbody>
</table>

### VERTICAL JACKETED (INSULATED) STORAGE TANKS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>APPROX. OVERALL DIMENSIONS DIA. X HEIGHT IN (CM)</th>
<th>WORKING PRESSURE (PSI)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TJ-80S</td>
<td>80 (303)</td>
<td>25 ½ x 63 (64 x 160)</td>
<td>160</td>
<td>236 (107)</td>
</tr>
<tr>
<td>TJ-80A</td>
<td>80 (303)</td>
<td>26 ½ x 54 ¼ (67 x 139)</td>
<td>160</td>
<td>369 (167)</td>
</tr>
<tr>
<td>TJV-120A</td>
<td>119 (450)</td>
<td>28 x 61 ¼ (71 x 157)</td>
<td>160</td>
<td>411 (186)</td>
</tr>
<tr>
<td>TJV-120M</td>
<td>119 (450)</td>
<td>29 x 62 ¼ (75 x 157)</td>
<td>160</td>
<td>320 (145)</td>
</tr>
<tr>
<td>TJV-140A</td>
<td>140 (530)</td>
<td>30 x 87 (76 x 221)</td>
<td>125</td>
<td>516 (234)</td>
</tr>
<tr>
<td>TJV-200A</td>
<td>200 (757)</td>
<td>36 x 83 (91 x 211)</td>
<td>125</td>
<td>612 (278)</td>
</tr>
<tr>
<td>TJV-200M (ASME)</td>
<td>180 (681)</td>
<td>32 x 77 (81 x 196)</td>
<td>160</td>
<td>560 (254)</td>
</tr>
<tr>
<td>TJV-250A</td>
<td>250 (946)</td>
<td>36 x 96 (91 x 244)</td>
<td>125</td>
<td>900 (408)</td>
</tr>
<tr>
<td>TJV-350A</td>
<td>350 (1,325)</td>
<td>42 x 107 (107 x 271)</td>
<td>125</td>
<td>1,080 (490)</td>
</tr>
<tr>
<td>TJV-400A</td>
<td>400 (1,514)</td>
<td>42 x 105 (107 x 267)</td>
<td>125</td>
<td>1,282 (582)</td>
</tr>
<tr>
<td>TJV-500A</td>
<td>500 (1,893)</td>
<td>48 x 100 (122 x 254)</td>
<td>125</td>
<td>1,459 (662)</td>
</tr>
<tr>
<td>TJV-600A</td>
<td>600 (2,274)</td>
<td>54 x 84 (137 x 213)</td>
<td>125</td>
<td>1,616 (733)</td>
</tr>
<tr>
<td>TJV-750A</td>
<td>750 (2,839)</td>
<td>54 x 116 (137 x 295)</td>
<td>125</td>
<td>2,485 (1,127)</td>
</tr>
<tr>
<td>TJV-1000A</td>
<td>1,000 (3,785)</td>
<td>54 x 150 (137 x 376)</td>
<td>125</td>
<td>3,410 (1,547)</td>
</tr>
</tbody>
</table>

### HORIZONTAL JACKETED (INSULATED) STORAGE TANKS

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CAPACITY USG (L)</th>
<th>APPROX. OVERALL DIMENSIONS DIA. X LENGTH IN (CM)</th>
<th>WORKING PRESSURE (PSI)</th>
<th>APPROX. SHIPPING WEIGHT LB (KG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TJH-200A</td>
<td>200 (757)</td>
<td>36 x 77 (91 x 196)</td>
<td>125</td>
<td>790 (358)</td>
</tr>
<tr>
<td>TJH-250A</td>
<td>250 (946)</td>
<td>36 x 90 (91 x 229)</td>
<td>125</td>
<td>1,000 (454)</td>
</tr>
<tr>
<td>TJH-350A</td>
<td>350 (1,325)</td>
<td>42 x 93 (107 x 236)</td>
<td>125</td>
<td>1,370 (621)</td>
</tr>
<tr>
<td>TJH-400A</td>
<td>400 (1,514)</td>
<td>42 x 99 (107 x 251)</td>
<td>125</td>
<td>1,476 (670)</td>
</tr>
<tr>
<td>TJH-500A</td>
<td>500 (1,893)</td>
<td>48 x 94 (122 x 239)</td>
<td>125</td>
<td>1,488 (657)</td>
</tr>
<tr>
<td>TJH-600A</td>
<td>600 (2,274)</td>
<td>54 x 79 (137 x 201)</td>
<td>125</td>
<td>1,541 (699)</td>
</tr>
<tr>
<td>TJH-750A</td>
<td>750 (2,839)</td>
<td>54 x 110 (137 x 279)</td>
<td>125</td>
<td>2,575 (1,160)</td>
</tr>
<tr>
<td>TJH-1000A</td>
<td>1,000 (3,785)</td>
<td>54 x 143 (137 x 363)</td>
<td>125</td>
<td>3,261 (1,479)</td>
</tr>
</tbody>
</table>
iCOMM™ Remote Monitoring System

For information and ordering call 1-888-WATER02 or visit www.aosmithconnect.com.

**iCOMM Features**
- Provides remote monitoring via www.aosmithconnect.com
- E-mail and text messaging of fault conditions
- Leak detection and notification
- Graphs unit performance and operational history
- BACnet compatibility with building management systems

**iCOMM Requirements**
- Facility must have “always on” internet (wired or wireless)
- iCOMM compatible water heater

**Compatible Units Include:**
- Cyclone® MXi (BTH models)
- Cyclone XI™ (BTX and BTXL models)
- Custom XI™ (DSE models)
- Gold Series XI™ (DVE models)
- Heavy Duty Dura-Power™ Xi (DVE/DHE models)
- Genesis™ Domestic Water Heaters and Boilers manufactured between July 2009 and January 2014 (GB/GW models)
- VF™ Variable Fire Domestic Water Heaters and Boilers manufactured between July 2009 and January 2014 (VB/VW models)

**Hardware**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMA</td>
<td>iCOMM Communications Module</td>
<td>Main communications board required for any iCOMM installation.</td>
</tr>
<tr>
<td>IMDA</td>
<td>iCOMM Multi-Device Adapter</td>
<td>Needed if more than one water heater will be connected to the control module. Order 1 MDA for each water heater installed.</td>
</tr>
<tr>
<td>IABA</td>
<td>iCOMM Alarm Box</td>
<td>Accessory alarm box that includes an audible alarm and alarm light.</td>
</tr>
</tbody>
</table>

Note: If using wireless internet an optional wireless adapter is needed to provide wired connection to the communications module. Recommended adapter Linksys WGA600N or equivalent.
Introducing the BMS gateway for control of A. O. Smith Water Heaters.

Building Management System
BACnet and MODBUS Interface

Models:

ETH-1000
Ethernet connection

XLTR-1000
Serial RS-485 connection

Connect your A. O. Smith water heater to your building management system using the new Millennium control from ICC (Industrial Control Communications, Inc.)

- Works with Cyclone®, McBee DVE, Renton DSE/DVE/DHE 150 kW or less
- Use the ICC Control to enable/disable the water heater
- Change temperature set points and differentials
- Two models with four different configurations to connect to BACnet and MODBUS
- Ethernet and Serial RS-485 versions available
- 2 wire or 4 wire RS-485 Network
- Power can be supplied via the USB cable, as a 7-24 VDC input on the main terminal block, or via IEEE 802.3af Power over Ethernet (PoE on ETH-1000 only)
- Configure protocols, network characteristics, and client/server object definitions
- Graphically interact with the internal database in real-time via USB connection
- Automatically discover and configure IP settings Ethernet gateways connected to the current subnet
- Update firmware
- Heater connection wiring supplied with unit
- For questions on this product call 888-928-3702 Opt 1
- RTU and serial connect via RS-485
- Ethernet and IP connect via RJ-45

<table>
<thead>
<tr>
<th>ICC ENERGY MANAGEMENT INTERFACES</th>
<th>PROTOCOL</th>
<th>PART #</th>
<th>CONNECTION TYPE</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BACnet</strong></td>
<td>9910093000</td>
<td>Serial (RS485)</td>
<td>Commercial Gas - Cyclone® BTH and BTX(L)-100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910094000</td>
<td>Serial (RS485)</td>
<td>Commercial Electric - DSE, DVE, DHE 150 kW or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910099000</td>
<td>Ethernet (IP)</td>
<td>Commercial Gas - Cyclone® BTH and BTX(L)-100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910100000</td>
<td>Ethernet (IP)</td>
<td>Commercial Electric - DSE, DVE, DHE 150 kW or less</td>
<td></td>
</tr>
<tr>
<td><strong>MODBUS</strong></td>
<td>9910096000</td>
<td>Serial (RS485)</td>
<td>Commercial Gas - Cyclone® BTH and BTX(L)-100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910097000</td>
<td>Serial (RS485)</td>
<td>Commercial Electric - DSE, DVE, DHE 150 kW or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910102000</td>
<td>Ethernet (IP)</td>
<td>Commercial Gas - Cyclone® BTH and BTX(L)-100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9910103000</td>
<td>Ethernet (IP)</td>
<td>Commercial Electric - DSE, DVE, DHE 150 kW or less</td>
<td></td>
</tr>
</tbody>
</table>
For over 140 years, A. O. Smith has built a reputation for innovation and this continues to lead with our most complete line of products yet. With the trademark blend of innovative technology and energy-efficient solutions, our comprehensive line is the natural source for everything from the smallest light commercial installation all the way up to the largest multi-structure complex.

We offer over 500 different commercial models, including gas-fired, oil-fired and electric configurations, ranging in capacities from 5 gallons to 12,500 gallons, with input range from 50,000 BTU to the equivalent of 2,500,000 BTU.

Through an inspired blend of innovation, efficiency and over 140 years of expertise, A. O. Smith continues to set the industry standard for performance and quality of water heaters and storage tanks.
Knowledgeable People at Your Service
To better serve our customers, A. O. Smith has over 200 manufacturer’s representatives covering Canada and the United States. In addition, we have more than 400 factory-authorized service technicians to provide reliable, immediate warranty services. We also maintain a well-staffed Customer Care and Technical Support facility in Fergus, Ontario that can provide information on A. O. Smith products, sizing, competitive analysis, etc.

A. O. Smith Customer Care Facility
“Our job is to ‘smooth the road’ from proper product selection to installation, and to help customers over the ‘potholes’ of troubleshooting service.”

A. O. Smith has facilities located worldwide.
Plants are located in strategic locations throughout North America, providing timely shipments to wholesalers. In addition, manufacturing plants are also located in Nanjing, China, to supply the ever-increasing demand for water heaters to the expanding Far East. Juarez, Mexico; Fergus and Stratford, Ontario; Veldhoven, The Netherlands and Istanbul, Turkey round out the facilities worldwide and demonstrate A. O. Smith’s global reach!
A. O. Smith reserves the right to make product changes or improvements at any time without notice.