

## SPECIFYING ENGINEER QUICK REFERENCE GUIDE



### THE LARGEST COMMERCIAL PRODUCT SELECTION AVAILABLE, INCLUDING THE MOST SPECIFIED UNIT IN THE U.S.

A. O. Smith's reputation for innovation continues to soar 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 fit for spec jobs requiring everything from the smallest commercial installation up to the largest multi-structure complex.

We offer more than 500 different commercial models, including gas fired, oil-fired and electric configurations, ranging in capacities from 5 to 10,000 gallons, with input range from 50,000 BTU to the equivalent of 2,500,000 BTU. Through an inspired blend of innovation, efficiency and years of expertise, A. O. Smith continues to set the industry standard for performance and quality of water heaters, specialty heaters and storage tanks.



**COMMERCIAL FEATURES** 

## Why Trust A. O. Smith With Your Spec?

#### **COMPANY HIGHLIGHTS**

- A. O. Smith celebrates more than 140 years of innovation, integrity and customer satisfaction
- Multi-generational, familyowned company based in Ashland City, Tennessee directly contributes more than 3,500 jobs in the U.S.
- Through dedicated engineering and technology efforts A. O. Smith has been granted hundreds of patents related to our water heaters





#### **PRODUCT HIGHLIGHTS**

#### Complete product offering Commercial or residential, standard models, high efficiency models and even hybrid models

#### Best components in the industry

APCOM, a division of A. O. Smith, is the industry's largest manufacturer of thermostats, electric heating elements, gas manifolds and burners, pipe nipples and other water heater components

### THE #1 SPECIFIED WATER HEATER

A. O. SMITH'S FLAGSHIP PRODUCT: THE CYCLONE<sup>®</sup> Mxi

🧟 Smil

2

## **Quality Components...Key to Well Engineered Products**

When it comes to building a tough water heater, there are three crucial components: glass lining, a self-cleaning system and the anode. These work together within A. O. Smith units to provide the ultimate advantage.

### **Anode Protection**

### CoreGard<sup>™</sup> Anodes

Our CoreGard<sup>™</sup> anode rods have a stainless steel core that causes the anode to securely adhere, extending the life of the rod for even longer protection.

### **High-Tech Powered Anodes**

Nearly ten years ago, we launched our first commercial product with powered anodes. We've since added even more products using this technology. Powered anodes are so tough that they provide "forever" tank protection against corrosion. Additionally, while providing this superior tank protection they are not sacrificial like a standard anode, and powered anodes never need to be replaced.



### **Glass Lining**

Our PermaGlas<sup>®</sup> Ultra Coat<sup>™</sup> glass lining provides the best protective barrier in the industry and was developed by our own advanced engineering team. PermaGlas Ultra Coat is a precise glass formula and provides tough protection for our tank steel. With our industry leading ULTRACOAT<sup>™</sup> process, all glass lining is completed AFTER the tank welding is finished. Corrosion is nearly eliminated through the combination of dual anodes for additional tank protection and our patented ceramic glass lining.

### Self-Cleaning System

Our Hydro Cannon<sup>™</sup> self-cleaning dip tubes (Available on many models) lead the pack when it comes to keeping the tank free from sediment and mineral accumulation.

### Premium Electrical Element Options

- Industrial Strength Incoloy Elements (DSE model only) are hard-wired for solid electrical connections. Low watt density for longer life with optional Y (3PH) configuration.
- The Goldenrod<sup>®</sup> Element is a standard feature in the Gold Series. The value of gold is its unparalleled ability to resist corrosion and provide longer life. With its excellent electrical and thermal conductivity, you are ensured long-lasting performance from your water heater.
- Staggered Elements allow maximum heat transfer and larger surface area coverage.

### A. O. SMITH IS DEDICATED TO THE SPECIFYING ENGINEER.

### VISIT WWW.HOTWATER.COM/SPEC

TO FIND ALL THE TOOLS TO MAKE SPECIFYING WATER HEATERS EASIER.





### The Best Glass Lining Process in the Business

Almost every commercial water heater made has a glasslined tank to protect against corrosion and leaks. A. O. Smith takes that protection to a new level with our exclusive PermaGlas<sup>®</sup> Ultra Coat<sup>™</sup>, available on all of our Cyclone and multi-flue models.

The process starts when the bare tank components (including the tank shell, heads and bottoms, and flue tubes) are welded together **before** application of PermaGlas Ultra Coat.

PermaGlas Ultra Coat in "slush" form is then poured into the completed tank. The tank is then sealed and rotated in several directions to allow the coating to precisely cover all water side inner tank surfaces.

Excess PermaGlas slush-coating material is then drained from the tank.

4

The slush-coated tank is then run through a 1,600°F enameling furnace, which permanently heat bonds PermaGlas Ultra Coat to the steel.



Because A. O. Smith applies PermaGlas Ultra Coat after the tank is welded, there is no chance of "weld burn" that can burn away normal glass lining and expose bare steel to water.

PermaGlas Ultra Coat provides superior protection for every part of the tank that's vulnerable to corrosion, including the top, bottom, sides, flue tubes and every weld seam!











# Why is self-cleaning a key feature for water heaters?

When water is heated, it begins to shed its minerals. As these mineral deposits such as lime and other sediments accumulate inside the tank, they form a barrier between the burner and the water and concentrate excessive heat around the critical weld areas. The result is reduced energy efficiency, higher operating costs and a greater risk of premature tank leaks. Depending on the water conditions, this mineral and sediment accumulation can begin to occur in just a few months. With our patented self-cleaning systems, our customers should never have to worry about any of these issues. Even our base commercial models come standard with this feature. Many of our more advanced commercial models come with the even more advanced Eliminator<sup>™</sup> system, ensuring that virtually no sediment will accumulate in the tank.



### The Eliminator<sup>®</sup> Self-Cleaning System



The rotating turbulence created by the Eliminator<sup>™</sup> helps keep sediment particles moving, so they can be carried out with the next hot water draw instead of collecting on the bottom of the tank.

With reduced sediment buildup, every Master-Fit<sup>®</sup> "BTR" and Master-Fit<sup>®</sup> Plus "BTL" water heater can be expected to maintain its rated 80% thermal efficiency longer and deliver year after year of reliable service.

## **Cyclone®** Mxi Commercial Gas Water Heaters





### **Fully Modulating Combustion Control**

- Modulates the firing rate as the demand changes
- Modulating the burner results in higher overall operating efficiencies and longer service life
- Intelligent control system with LCD display
- Venting flexibility for versatility and easy serviceability
- iCOMM<sup>™</sup> compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information. iCOMM system available for BTX-100, BTXL-100 and BTH-120 - BTH-500 models.
- Models ranging from 50-gallon/76,000 BTU to 119-gallon/500,000 BTU with up to 98% thermal efficiency and all models are ENERGY STAR® Qualified except the BTX-80
- Industry-first powered anodes for superior tank protection
- Exclusive PermaGlas<sup>®</sup> Ultra Coat<sup>™</sup> glass lining







### TC Total Control: Cyclone Mxi LCD

The intelligent control system, with easy to navigate menu, provides precise temperature control and unit operating information.

- Detailed heater status information: blower, igniter, gas valve, flame detection, air inlet restrictions, exhaust vent restrictions, acceptable gas supply pressure
- Precise temperature setting with actual tank temperature at upper and lower probes
- Alerts the user to any potential corrosion-related leak
- Maintains constant log of the number of cycles and burner operating time



- Communicates fault details and gives diagnostic information
- Maintains a log of any fault occurrence and the time a fault occurred



### Powered Anodes\*

The A. O. Smith powered anode system provides the most modern and innovative technology available to provide long-lasting tank protection.

- Non-sacrificial anode does not require maintenance or inspection
- Provides superior tank protection to traditional aluminum or magnesium anodes

\*Not on 76,000 and 100,000 BTU models

- Power level adjusts to changes in water conditions for optimum protection
- Offers superior protection in various water conditions
  Better protection in water with low conductivity
  - Eliminates the occurrence of hydrogen sulfide gas production (rotten egg odor)

6

### The Innovation That Started It All

### REVOLUTIONARY HEAT EXCHANGER AND BURNER SYSTEMS

The helical internal heat exchanger in all Cyclone models swirls the hot gases, like a cyclone, against the heat exchanger walls. This cyclonic action produces an increased rate of heat transfer, resulting in extra-high thermal efficiency. All Cyclone Mxi models employ an ingenious top-mounted down-fire pre-mix burner, resulting in even higher efficiencies.

This exclusive design delivers rated thermal efficiencies of up to 98% with actual efficiencies up to 99.9% when in modulating firing mode.

## Cyclone Mxi models use the latest in burner technology

- A. The pre-mixed burner design delivers maximum efficiency.
- **B.** Once the pre-mixed fuel is ignited, the flame travels into the submerged central combustion chamber.
- **C.** The resulting hot flue gases are then forced at high velocity through a helical heat exchanger coil.
- D. The spiral shape of the coil keeps the hot gases swirling against the heat exchanger walls, resulting in extra-high thermal efficiency.



### **Cyclone HE**

For medium duty applications choose one of the Cyclone BTX or BTXL models. These models deliver high efficiency and performance in a compact footprint. Like the Mxi these models feature the helical coil heat exchanger design that maximizes heat transfer. The BTX-80 is configured for single pipe power venting. The larger capacity BTX-100 and BTXL-100 models deliver more hot water and have the flexibility for either power vent or power direct vent installation.



### **Unrivaled Venting Versatility**

The Cyclone features power-vent and power direct vent design, allowing combustion air to be drawn from the equipment room conventionally or directly from the outdoor atmosphere through a sealed intake air pipe. Vent systems can be terminated vertically through the ceiling or horizontally through a sidewall. Front located exhaust and condensate connections allow for easy installation and serviceability. **Common vent kits are now available.** 



### **Easier to install**

Because installation space today is almost always at a premium, we've designed the Cyclone to install in an absolute minimum of space. The exhaust outlet and fresh air intakes are positioned so the water heater can be placed either in a corner or against a wall.

### Advanced glass lining technology

Exclusive PermaGlas<sup>®</sup> Ultra Coat<sup>™</sup> glass lining protects all Cyclone water heaters. PermaGlas Ultra Coat provides superior protection for all inner tank surfaces as well as for the inside of the heat exchanger, which would otherwise be vulnerable to corrosion from flue gas condensate. The innovative helical coil minimizes weld points to extend tank life.

### Strength in numbers

Cyclone Mxi water heaters can be installed in manifolded multiples to serve the highest demand applications in place of boiler systems. For example, four BTH-500s can be manifolded to provide total storage of 476 gallons with an input of 2,000,000 BTU.

### **Common vent capable**

The Cyclone Mxi Common Venting Kit is certified for use with 120, 150, 199, 250, 300, 400, and 500 Cyclone models. These low-maintenance, non-powered kits will save on time and installation costs, because they include all of the necessary fittings such as a backflow preventer, intake and exhaust adapters. One kit per water heater is required.

### FOR MORE DETAILED SPECS, VISIT

WWW.HOTWATER.COM/SPEC



#### All dimensions in inches

MODEL NO.	GALLON CAPACITY	RECOVERY CAPACITY GPH 100°F RISE	VENT SIZE	INPUT BTU/HR NATURAL GAS
BTH-120	60	138	3	120,000
BTH-150	100	178	3	150,000
BTH-199	100	235	3	199,000
BTH-250	100	291	3	250,000
BTH-300	119	349	4	300,000
BTH-400	119	465	4	399,900
BTH-500	119	576	4	499,900
BTH-120A	60	138	3	120,000
BTH-150A	100	178	3	150,000
BTH-199A	100	235	3	199,000
BTH-250A	100	291	3	250,000
BTH-300A	119	349	4	300,000
BTH-400A	119	465	4	399,900
BTH-500A	119	576	4	499,900
BTX-100	50	116	4	100,000
BTXL-100	75	116	2 or 3	100,000

### Master-Fit® Commercial Gas Water Heaters





## **Designed to Fit Where Others Can't!**

### **Small Footprint, Low Profiles.**

27-3/4". That's the diameter of most Master-Fit<sup>®</sup> commercial gas water heaters. So, regardless of tank size or BTU input a Master-Fit model will take up the same amount of floor space. In many cases, you'll be able to put in a Master-Fit<sup>®</sup> with a smaller footprint but a higher input than the water heater it's replacing.

And, Master-Fit is designed to be shorter...up to a foot shorter than comparable models it may replace. And with 1 to 3 inches of clearance on most models\* to combustibles on the sides and rear, plus approval for placement on combustible flooring with our NSF approved leg kit, you shouldn't have any problem putting a Master-Fit just about anywhere you need it!

\*Up to 6" on some larger models



## Three sets of water connections.

In replacement situations, you'll find plenty of variations in hot and cold water piping configurations. However the old unit is plumbed, you can make it work with Master-Fit, which allows you to make hot and cold water connections through the front, rear or top of the unit.\*

\*The Eliminator<sup>™</sup> self-cleaning device functions only when front cold water connection is used.



**BTR Models** 



**BTL Models** 





# Master-Fit

### **BTR Gas Models**

The Master-Fit<sup>®</sup> BTR series provides outstanding performance and maximum installation flexibility for both new construction and replacement applications. Each unit is designed to be as much as a foot shorter than the models they usually replace, and multiple options for placement of water connections and low installation clearances are additional installer-friendly features.

### The Eliminator<sup>™</sup> Self-Cleaning System

As deposits of lime and other sediments accumulate inside the tank, they form a barrier between the burner and the water, concentrating heat around the critical weld areas. The result is reduced energy efficiency, higher operating costs, and a greater risk of premature tank leaks. The Eliminator<sup>™</sup> directs incoming cold water under pressure to sweep the bottom of the tank to keep sediment moving so it doesn't accumulate. Reduced sediment build-up helps maintain rated thermal efficiency and reduce water heating costs. The self-cleaning system also helps prolong tank life to ensure year after year of reliable service.

### Factory-Installed Draft Diverter And Flue Damper

- Low-profile draft diverter helps for installation in tight spaces
- Automatic motorized flue damper helps minimize standby heat loss
- BTR 500 uses built-in Draft Blower. Requires no draft hood or Barometric damper.

### **Three Water Connection Options**

- Hot and cold water connections can be made through front, top or rear of unit
- The Eliminator<sup>™</sup> system operates when cold water is connected through front

#### PermaGlas® Ultra Coat™ Glass lining

- Exclusive process provides superior protection against corrosion
- CoreGard<sup>™</sup> anode rods with stainless steel core provide additional corrosion protection

### **Optional Power Vent Kit Systems**

- BTR 120-200 p/n 9005381205
- BTR 250-500 p/n 9003434205

### **Intermittent Electronic Ignition**

- Eliminates standing pilot, saves energy
- Includes power ON/OFF switch
- Provides flame failure response in less than one second

Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/ IESNA90.1

CSA Certified and ASME Rated T&P Relief Valve, Factory-Installed

Maximum Hydrostatic Working Pressure: 160 PSI

### **Fully Automatic Control System**

- Manual-reset gas shutoff device prevents excessive water temperature
- Electric temperature control for precise temperature regulation adjustable 120°F–180°F
- Gas pressure regulator and pilot filter

#### **Handhole Clean Out**

- Allows easy access to tank interior for cleaning
- **3-Year Limited Tank Warranty**

5-Year Limited Tank Warranty Optional

### Induced Draft BTL Gas Models



### 80% thermal efficiency, low NOx

The Master-Fit<sup>®</sup> Plus BTL series meets Southern California Energy Commission (CEC) and Texas low NOx requirements of less than 14 ng/J and features an induced-draft design. This provides more efficient control of heat through the flue collector. Like all Master-Fit water heaters, the BTL series provides outstanding performance and maximum installation flexibility for both new construction and replacement applications. Each unit is designed to be as much as a foot shorter than the models they usually replace, and multiple options for placement of water connections and low installation clearances are additional installer-friendly features.

### The Eliminator<sup>™</sup> Self-Cleaning System

As deposits of lime and other sediments accumulate inside the tank, they form a barrier between the burner and the water, concentrating heat around the critical weld areas. The result is reduced energy efficiency, higher operating costs, and a greater risk of premature tank leaks.

The Eliminator<sup>™</sup> directs incoming cold water under pressure to sweep the bottom of the tank to keep sediment moving so it doesn't accumulate. Reduced sediment build-up helps maintain rated thermal efficiency and reduce water heating costs. The self-cleaning system also helps prolong tank life to ensure year after year of reliable service.



## SP°





### **Built-In Induced Draft Blower**

- Factory-mounted on top of unit and pre-wired for easy installation
- Provides power-induced draft of combustion make-up air prior to burner ignition
- Requires no draft hood or barometric damper

### **Rated As Category 1 Appliance**

- An excellent option for retrofit and upgrade installations
- Uses standard metal single-wall type "B" vent, can be commonly vented with other Category 1 appliances
- Vent connects directly to blower outlet

### **Three Water Connection Options**

- Hot and cold water connections can be made through front, top or rear of unit
- The Eliminator<sup>™</sup> system operates when cold water is connected through front

#### PermaGlas<sup>®</sup> Ultra Coat<sup>™</sup> Glass Lining

- Exclusive process provides superior protection against corrosion
- CoreGard<sup>™</sup> anode rods with stainless steel core provide additional corrosion protection

#### Compliance

- Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA90.1
- Models comply with California's SCAQMD rule 1146.2 and Texas low NOx and other Air Quality Management Districts with NOx emission requirements of less than 14 ng/J



### **Master-Fit® Commercial Gas Water Heaters**

With minimum 80% thermal efficiency, all Master-Fit<sup>®</sup> and Master-Fit<sup>®</sup> Plus commercial water heaters meet the thermal efficiency and standby loss requirements of the U. S. Department of Energy and current edition of ASHRAE/IESNA 90.1.

We're the ONLY manufacturer that designs, builds, distributes and field supports an entire line of residential and commercial water heaters and boilers.

Master-Fit® Plus "BTL" models comply with California's SCAQMD rule 1146.2 and Texas Low NOx and other Air Quality Management Districts with NOx emission requirements of less than 14 ng/J.

#### MASTER-FIT® "BTR" MODELS

MODEL		GALLON	BTU/HR. INPUT NATURAL/	RECOVERY GPH		
	NUMBER	CAPACITY	PROPANE	80°F RISE	100°F RISE	
	BTR 120	71	120,000	145	116	
	BTR 151*	32	150,000		145	
	BTR 154	81	154,000	187	149	
	BTR 180	81	180,000	218	175	
	BTR 197	100	199,000	241	193	
	BTR 198	100	199,000	241	193	
	BTR 199	81	199,000	241	193	
	BTR 200*	100	199,000	241	193	
	BTR 201*	32	199,000	—	194	
	BTR 250*	100	250,000	303	242	
	BTR 251*	65	251,000	304	243	
	BTR 275*	100	275,000	333	267	
	BTR 305*	65	305,000	370	296	
	BTR 365*	85	365,000	442	354	
	BTR 400*	100	390,000	485	378	
	BTR 500*+	85	500,000	606	485	

BTR 120-400 Models feature a factory-installed draft diverter and automatic flue damper which helps in tight installations and to minimize standby heat loss. BTR-500 Model features induced draft design and no damper.

\*Available with ASME tank construction. To order ASME construction, add "A" to model number (BTR 200 A).

BTR 151/201 are designed for installation in "booster" applications. +Induced draft, Category I venting

### MASTER-FIT® PLUS "BTL" LOW NOX MODELS WITH INDUCED DRAFT DESIGN

MODEL NUMBER	GALLON CAPACITY	Recovery Capacity GPH 100°F Rise	Input BTU/HR Natural Gas
BTL-120	81	115	120,000
BTL-154	81	148	154,000
BTL-180	81	173	180,000
BTL-198	81	191	199,000
BTL-199	100	191	199,000
BTL-250	100	240	250,000
BTL-275	100	264	275,000
BTL-310	86	298	310,000
BTL-366	86	352	366,000
BTL-400	86	375	390,000
BTL-250A	100	240	250,000
BTL-275A	100	264	275,000
BTL-310A	86	298	310,000
BTL-366A	86	352	366,000
BTL-400A	86	375	390,000

Electrical characteristics—120V-60 Hz A. C., 5.0A.

(A) after model number designates ASME construction.

LÉG KITS FOR UL SANITATION TO MEET NSF-5 (increases overall height by 4"). BTL models not available in LP gas.

## Commercial Electric Water Heaters





### **Custom Xi (DSE) Industrial Strength Commercial Electric Water Heaters**

The Custom Xi Series with advanced electronic control is available with storage capacities from 5 to 119 gallons. All tanks feature ASME tank construction. With various input options from as low as 3 kW to as high as 90 kW (on 50- through 119-gallon models), the Custom Xi Series is built with high-demand industrial applications in mind. In fact, the Custom Xi DSE models are a favorite spec of the specifying engineer. With a multitude of options, the DSE can be custom built/designed to meet any special needs or design specification.

- Advanced electronic control with large LCD display.
- The DSE models use a unique combination of a conventional magnesium anode and a European-style powered anode. The powered anode is self-adjusting to water conditions, does not require maintenance or inspection, and provides longer-lasting tank protection in hard-to-reach areas. This multi-anode system provides superior anodic protection to hidden surfaces of the tank.
- Industrial-grade, bolt on, immersion Incoloy sheathed heating elements are designed for rugged, long-lasting commercial service (gold elements optional).
- Ten tank sizes available from 5 gallons to 120 gallons, plus various voltages and kilowatts to meet any specifications you may require.

- Low Water Cutoff—Factory standard onboard low water cutoff 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.
- Sequencing Factory Standard—Heating elements are energized according to adjustable (1° to 20°) differential set points for each. Helps reduce operating costs during low/moderate loads.
- Power-circuit fusing for system protection.
- A. O. Smith PermaGlas® coating provides truly superior protection against corrosion and is permanently bonded to all inner tank surfaces at 1600° F. All DSE tank sizes are ASME construction.
- Options include: stainless steel tank for deionized water, alarm horn, international voltages, modulating control.







13

### The heavy-duty Custom

**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.





Optional Goldenrod® 24-carat gold-plated elements resist lime scale adhesion and sheath temperatures up to 1500°F.

### Incoloy Sheathed 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
- Prewired 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

- Single-phase and 3-phase
- Single-phase 208V and 240V are field-convertible to 3-phase
- All 208V and 240V at 24 kW and below are supplied as phase-convertible units (single- to 3-phase and vice versa)
- 277V single-phase also available (Contact A. O. Smith for 120V circuit availability)
- International voltages also available (check with factory)

#### Factory-Installed Terminal Block (units with more than one contactor)

### **Advanced Electronic Controls**

- iCOMM<sup>™</sup> Compatible and can be monitored from remote locations. Call 1.888.WATER02 for more information.
- 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

### **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

### **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

- Operating Set Point adjustable 90° to 190°F.
- Sequencing—Units with multiple element contactors are sequenced on with one second delay between stages. Adjustable modulating mode is optional.
- Helps reduce current surge/spikes and avoid peak demand charges.
- Manual reset high temperature cutoff.

#### Heavy-Duty Magnetic Contactors Power Circuit Fusing For System Protection

### Glasslined Tank, with ASME Construction

### CSA Certified and ASME Rated T&P Relief Valve Compliance

 Meets the standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA90.1

### **Brass Drain Valve**

### 3-Year Limited Tank Warranty

5-year limited tank warranty optional

#### All dimensions in inches



					All ullite	insions in inche:	
MODEL GAL. NO. CAP.		MAXI	мим	HEIGHT	DIA.	APPROX. SHIP	
			KILOWATTS	IMMERSION HEATERS			WEIGHT (LBS)
	DSE-5	5	3	1	20-1/2	16-1/4	100
	DSE-10	10	6	1	26-1/2	18-3/4	116
	DSE-20	20	18	2	27-1/4	20-1/2	145
	DSE-30	30	24	2	35-3/4	20-1/2	168
	DSE-40	40	36	2	45-3/4	20-1/2	206
	DSE-50	50	90	5	54-3/4	20-1/2	235
	DSE-65	65	90	5	50-1/2	26-1/2	280
	DSE-80	80	90	5	49-1/4	28	300
[	OSE-100	100	90	5	58-1/4	28	354
0	OSE-120	119	90	5	63-1/4	30	430





### Setting The Gold Standard: Gold Xi Series (DVE) and Gold Series (DRE) Models

The Gold Xi Series, featuring advanced electronic control and gold elements, is available with 50-, 80-, and 119-gallon storage tanks, with inputs ranging from 6 kW to 54 kW. They can be used as recovery heaters or as boosters for supplying sanitizing rinse water for dishwashing.

The Gold Series, now standard with Goldenrod<sup>®</sup> elements, is the industry's most popular line of commercial electric heaters. Also available in 50-, 80-, and 119-gallon tanks as well as various electrical configurations, they will provide hot water where and when you need it.

- Goldenrod<sup>®</sup> 24-carat gold-plated elements resist corrosion, resulting in long-term efficiency and damage protection
- LCD advanced electronic control panel for ease of service should a fault occur (on Gold Xi models only)
- Power-circuit fusing for system protection
- Glass-lined tank provides long-lasting protection against corrosion
- Optional manifold kits with isolation valves for easy multiple-unit installations
- Available with 3, 6, or 9 Goldenrod elements
- Dual anode rods
- Ceramic glass lining
- Optional UL approved conversion kits available, allowing for various electric configurations to meet every possible need



C Smith



Versatile and dependable to provide gallons of hot water when and where your business needs it.

### Good As Gold

Want to make sure your water heater lasts longer? Both our DRE and DVE models come with gold-plated elements that resist lime scale and calcium adhesion as well as sheath temperatures up to 1500° F.

Staggered elements allow maximum heat transfer and larger surface area coverage. 24-carat gold elements are standard with the Gold and Gold Xi models. Corrosion is nearly eliminated through the combination of dual anodes for additional tank protection and A. O. Smith's patented ceramic glass lining.

The Goldenrod<sup>®</sup> element was chosen by A. O. Smith to be a standard feature in the Gold Xi and Gold Series. The value of gold is its unparalleled ability to resist corrosion. And with its excellent electrical and thermal conductivity, you are ensured lifelong stability in your water heater.

Industrial strength Incoloy elements (DSE model only) are hard-wired for solid electrical connections. Low watt density for longer life with optional Y (3PH) configuration.



The intelligent control system, with easy-to-navigate menu, provides precise temperature control and unit operating information displayed on an LCD screen.

- Detailed heater status information
- Precise temperature setting with actual tank temperature at upper and lower probes
- Detailed diagnostics including fault messages and run time history
- Economy Mode option allows the user to lower the operating set points during non-peak demand periods
- Linear Sequencing—Elements are energized according to adjustable (1° to 20°) differential set points, which helps reduce operating costs during moderate to low loads



 Alert Messages—Displays a list of possible causes for a fault and aids in servicing; displays sequence of operation in real time

### The Highest Standards, The Best Performance

The innovative streak that runs through all A. O. Smith products is also proudly on display in our commercial electric line. Thanks to the new advanced electronic control, our complete line of commercial electric water heaters now far surpasses the competition. And when equipped with optional gold elements, our water heaters can sustain that performance even in the harshest water conditions.

Dura-Power™ commercial electric water heaters are built to the same high quality standards as our gas models. These are the largest commercial electric's 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.

#### Dura-Power<sup>™</sup> Large Volume DVE and DHE Models

- Available in vertical and horizontal baked enamel cabinets (DVE/DHE models)
- Sizing available from 140 gallons to 10,000 gallons
- Inputs range from 15 kW to 3,000 kW
- Standard voltages include 208V, 240V, 480V, and 600V
- Standard glass-lined tank with optional tank linings in cement or epoxy
- Incoloy immersion elements standard
- Available with optional Goldenrod<sup>®</sup> elements





Ideal for schools or business where there is a high demand for hot water.



### DEN/DEL Electric Dura-Power™ Models



The Dura-Power<sup>™</sup> DEN (standard upright) and DEL (lowboy) series is 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).

### Zinc-Plated Copper Sheath Heating Elements Standard

Slement options from 1.5 kW to 6 kW (non-simultaneous or simultaneous operation), recoveries 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 3-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

 Provide electrical service to heater and connect to block (not supplied on 120V and 277V models)

### **Factory-Wired Controls**

- Temperature control (adjustable from 110°F to 170°F on single element; 120°F to 180°F on dual-element models)
- Factory-wired for non-simultaneous operation; easily converted to simultaneous operation (3-phase models only)

#### **Glasslined Tank**

- Provides long-lasting protection against corrosion
- Equipped with anode rod for additional protection against corrosion

### Compliance

 Meets U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1 standards.

#### Maximum Hydrostatic Working Pressure: 150 PSI

### 3-Year Limited Tank Warranty

 5-year limited tank warranty optional



CERTIFIED.

				All	dimensions in inches
MODEL NO	GAL . CAP.	KILOWATTS MAXIMUM			APPROX SHIP WEIGHT
DEL MODELS					
DEL-6S	6	3	15-1/2	14-1/4	35
DEL-10S	10	6	18-1/4	18	54
DEL-15S	15	6	26	18	58
DEL-20S	20	6	22-1/4	21-3/4	73
DEL-30D	30	12	30-7/8	21-3/4	100
DEL-40D	40	12	32-1/4	24	125
DEL-50D	50	12	32-1/4	26-1/2	166
DEN MODELS					
DEN-30D	30	12	34-1/2	20-1/2	98
DEN-40D	40	12	45-1/8	20-1/2	113
DEN-52D	50	12	54-7/8	20-1/2	131
DEN-66D	66	12	60-3/4	21-3/4	176
DEN-80D	80	12	59-3/8	24	211
DEN-120D	119	12	62-7/16	29-3/8	326

S denotes single element. D denotes dual element.



## **Tankless** Commercial Gas Water Heaters





### **Durable Parts Make A Durable Product**

### Commercial-grade heat exchanger

Only A. O. Smith incorporates true commercial-grade heat exchangers in our tankless heaters. All aspects of the heat exchanger are designed to add to the durability and reliability that is vital to any successful commercial organization or business.



## Commercial-grade copper alloy

Our commercial-grade copper is a heat-resistant copper alloy, with additive elements that make it much stronger and harder than the standard C1220 copper used in most other heat exchangers. Our commercial-grade copper has 8 times the tensile strength of regular copper. Even at high temperatures, our commercial-grade copper maintains a fine grain and high strength. Commercial-grade copper provides resistance to the damaging effects of erosion that can cause heat exchangers to leak.

Commercial-Grade Copper Tubing



### **Drum thickness**

During every ignition cycle, thermal expansion causes all heat exchangers to undergo heat stress. After the thousands of ON/OFF cycles typically seen in a commercial application, this heat stress can prove damaging. This is why the heat exchangers in our commercial and light commercial products utilize drums that are 25% thicker. A thicker drum creates less strain on the heat exchanger, ensuring the longevity of our products. A thinner drum strains more under heat stress



A thicker drum creates less strain on the heat exchanger



Making true commercial-grade water heaters involves more than just redesigning our heat exchangers every internal component has to measure up to A. O. Smith's commercial standards. Just like our advanced heat exchangers, the longevity and functionality of components such as our water valves and flow sensors are also of great importance.





From salons and quick serve restaurants to heavy duty jobs like space heating and hotels, A. O. Smith's line of commercial tankless water heaters promises endless hot water with versatile installation options to fit your application.

-----

----

	Height	Width	Depth	Weight (lbs)	Electric	Noise Level (Max Output)	Gas Consumption (Max Output)	Efficiency	Max Flow Rate	Hot/Cold Gas Connections	Multiple Unit Installation	Temperature Settings
ATI-510C	20 <sup>1</sup> /2″	13 <sup>3</sup> /4″	10 <sup>1</sup> /2″	51	120V	55 dB	199,000 BTU/h	0.82 Energy Factor	10 GPM	³⁄₄″ NPT	Easy Link System (up to four units) Multi-Unit System (up to 20 units)	100°F to 160°F 120°F Factory Default
ATI/O-510/U	20 1/4″	13 ³/4″	9 <sup>1</sup> / <sub>2</sub> ″	39	120V	58 dB	199,000 BTU/h	0.82 Energy Factor	10 GPM	³⁄₄″ NPT	Easy Link System (up to four units) Multi-Unit System (U Models only, up to 20 units)	100°F to 176°F, 120°F Factory Default (U models go up to 160°F)
ATI/O-540H	23 <sup>5</sup> /8″	17 ³/4″	11 <sup>1</sup> /4″	59	120V	56 dB	199,000 BTU/h	0.95 Energy Factor	10 GPM	³⁄₄″ NPT	Easy Link System (up to four units) Multi-Unit System (up to 20 units)	100°F to 160°F 120°F Factory Default
ATI/O-910	24 <sup>7</sup> /8″	25 <sup>1</sup> /4″	12 1/4″	112	120V	61 dB	380,000 BTU/h	80.2% Thermal Efficiency	14.5GPM	1″ NPT	Easy Link System (up to four units) Multi-Unit System (up to 10 units)	100°F to 175°F 120°F Factory Default

#### A. O. SMITH COMMERCIAL TANKLESS PRODUCTS



### **Multiple Unit Installations**



### **Easy-Link System**

For larger applications that require multiple water heaters to work in conjunction, the 510, 510U/C, 540H, and 910 Series feature the Easy-Link System. This allows installers to easily field manifold up to 4 units without the need for a system controller. The controls are already built into each model's internal computer.

### **Multi-Unit System**

For even larger applications, the 510U/C, 540H and 910 Series models also feature the Multi-Unit System, allowing a greater number of units to manifold together in the field. The Multi-Unit System Controller is necessary to enable the Multi-Unit System. The Multi-Unit System can control up to twenty 510Us, 540Hs, and ten 910s.



UNIT COMPARISON	510 Series	510U/C* Series	540H* Series	910 Series**
EASY-LINK (No Controller Necessary)	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units
Maximum input (BTU/h)	796,000	796,000 796,000		1,520,000
MULTI-UNIT	N/A	Up to 20 units	Up to 20 units	Up to 10 units
Maximum input (BTU/h)	N/A	3,980,000	3,980,000	3,800,000

\*510U/C and 540H models use 9008300005 controller for multi-link capabilities \*\*With 9007675005 controller

### **Factory Commercial Rack System**

For the easiest multi-unit applications, consider our factory built tankless rack system. Available in wall mount and free-standing configurations of up to 8 units. Rack systems come factory manifolded and wired for ease of installation. BTU inputs of up to 796,000 for wall mount and single row free-standing configurations and inputs of up to 1,592,000 for "back-to-back" free-standing configurations. If necessary multiple racks can be combined for up to 20 unit combinations.



### Specific Benefits of Factory Rack Systems Include:

High Hot Water Flow Rates and BTU Inputs as High as 1,592,000

#### **Easy Field Installations**

- Fewer Field Connections Because this system has many of the connections done at the factory, on-site installation time and costs are minimized as the installer only needs to complete 3 simple connections (cold water, hot water, and gas)
- Light weight Because our rack systems utilize the industry's lightest 199,000 BTU tankless units as the "engines" installers will benefit from the overall light weight nature of our rack systems

#### System Redundancy

- Because our rack system utilizes multiple tankless units even if one or several of the individual units experience issues the ability of the other combined units provide peace of mind.
- Plus when performing field maintenance this system allows technician to easily isolate single units for service or replacement.



## **Circulating Water Heaters** Commercial Gas Water Heaters





### High Efficiency, High Input Commercial XP Models

### **Designed For A Great Range Of Applications**

XP models are designed to be used in potable hot water applications, including large-volume, full-service hotels and high-rise apartment complexes to casinos, resorts, government buildings, schools, hospitals and more.



#### **XP At A Glance**

- Top-of-the-line control with touchscreen
- Thermal efficiencies up to 99% in low-temperature applications
- High output models ranging from 920,000 to 3.4 Million Btu/Hr
- Vents in inexpensive PVC/CPVC pipe (can also be vented in AL29-4C<sup>®</sup> when specified or required by local codes)
- Models are CSA certified to the ANSI Z21.10.3-CSA 4.3 water heater standard and are AHRI listed with thermal efficiency ratings of up to 96% @ 100% fire and 140°F outlet temperature
- Fully modulating with turndown rates up to 20:1 (See spec sheet for further details)

- Ready for immediate connection to existing building management using MODBUS protocol
- Built-in redundancy helps to improve overall performance
- ENERGY STAR<sup>®</sup> Qualified



### **The Heat Exchanger**

Thanks to its leading-edge technology, the XP features a multi-pass/multi-burner stainless steel heat exchanger designed to optimize efficiency while delivering long and trouble-free service. Simply put, the XP is both fuel efficient and capable of minimizing operating costs with every heating cycle.

- Washable intake air filter.
- Rugged welded and extruded aluminum alloy frame with removable heavy gauge steel jacket panels that allow easy access and service.
- Multiple modulating burners capable of modulating between 20% and 100% fire while providing smooth starts and clean combustion. Each burner is a pre-mix design, constructed of high temperature stainless steel and utilizing a woven metal fiber mesh covering. Each burner is also warranted for 5 years and fires in a radial 360-degree flame pattern. Burner ignition is direct spark with flame monitoring via a flame sensor.

#### **Double Heat Exchanger Model**

Single Heat Exchanger Model





- The stainless steel construction of the XP's water tube heat exchangers allows it to operate in a continuous condensing mode while maximizing longevity and delivering exceptional energysaving performance.
- All XP models have factoryinstalled flow switches and low water cutoffs as standard features, providing redundant flow and low water protection.
- Factory-sized and mounted allbronze pump(s) are integrally mounted, wired, and managed by the heater's control.
- Redundant ignition controls (one per burner) allow individual burner operation.

### Direct Venting up to 100 Equivalent Feet of Piping (CPVC/PVC venting material)

With their combination of innovative control features and modulating capabilities, XP Water Heater models are the latest in high efficiency fully condensing products from A. O. Smith, offering high outputs for demanding, large-volume commercial applications. Thanks to a state-of-the-art stainless steel heat exchanger, the XP models can achieve thermal efficiencies up to 99% when used in low-temperature water heating applications.

### Direct Venting Up to 100 Equivalent Feet of Piping (CPVC/PVC venting material)



**DIRECT VENT** 

VERTICAL



**HORIZONTAL INTAKE** 



HORIZONTAL



**VERTICAL VENTING** 



**HORIZONTAL VENTING** 

The XP Water Heater models provide flexible and lower cost installation because they permit direct-vent air intake and exhaust runs up to 100 equivalent feet using CPVC/PVC venting material. Vent runs use CPVC for the first 10 feet and PVC thereafter. The XP's (Category IV) venting system's intake and exhaust runs can terminate horizontally through a sidewall or vertically through the roof. Please consult the latest edition of the Installation Manual for detailed venting information and maximum/minimum venting distances.



### **The Art Of Flexibility**

The VF<sup>™</sup> Series variable fire copper water heaters are designed with one thing in mind: to provide the best value to the customer. As a result, we're proud to introduce a more installation-friendly line that works well in more applications and requires less maintenance.

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 ouput 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.



### The Anatomy of Great Performance

- Combustion air intake is self-adjusting no air shutter required.
- Modulating Control with 4:1 turndown ratio. The VF's ouput is based strictly on the current system demand and the required BTUs needed to maintain the desired system set point temperature. The VF's modulating capability is virtually limitless between 25% and 100% fire.
- C Advanced pre-mix burner design precisely mixes air and gas prior to ignition for optimum performance, with low-NOx emissions (complies with SCAQMD Rule 1146.2).
- Venturi-mixing gas/air ratio system works with variable speed blower to precisely mix gas and air throughout firing range, provides good operation with supply gas pressures down to 4" WC, and is selfadjusting for altitudes up to 6,000 feet, all while providing low NOx emissions that meet or exceed the most stringent standards.
- Heavy-duty ASME 160 psi copper finned tube heat exchanger—vertical, straight tube, multi-pass design surrounds the burner with a 360° wall of copper finned tubing, making the entire heat exchanger resistant to thermal shock.
- The sealed heat exchanger flue collection system is constructed of stainless steel that resists corrosive flue gases.





- Multiple Water Heater systems provide increased turndown and even smoother, more efficient system operation
- 4 Water Heaters w/4:1 Turndown = 16:1 total system turndown



### Up To 87% Efficient Hot Water Heater with Modulating Fire 4:1 Turndown

### Hot Water Applications:

With 5 models to choose from and BTU inputs from 500,000 BTUHs to 2 million BTUH there is a VF Water Heater or a combination of VF Water Heaters ideal for almost any large water heating application.

#### **CATEGORY IV LISTED**

#### PROFESSIONAL START-UP SERVICE FURNISHED

#### THERMAL EFFICIENCY

Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1

#### LOW NOx OPERATION

 Complies with SCAQMD Rule 1146.2 and other Air Quality Management districts with similar requirements for low NOx emissions

#### **OTHER VF<sup>™</sup> FEATURES:**

- ASME Pressure Relief Valve 125#
- Contacts for 0-10 VDC BMS External Control
- Contacts for Alarm or Any Failure
- Factory-Mounted Flow Switch
- Low Gas Pressure Switch

#### Features: (cont'd)

- All Bronze Factory Sized Pump Included (Shipped Loose)
- Digital Inlet/Outlet Temperature Read Out
- Manual Reset Hi-Limit

#### **VF OPTIONS:**

- Sequence Panel Can manage 1 to 4 modulating units (Includes remote Tank sensor and sensor well)
- Alarm Bell
- Low Water Cutoff w/Manual Reset and Test
- LP Gas
- Vent Kits:
  - Horizontal Exhaust Cap
  - Horizontal Air Intake Cap
  - Horizontal Direct Vent Kit
  - Category IV to Category II Conversion Kit

#### Warranty:

 5-Year Limited Heat Exchanger Warranty

### **Venting Solutions**

All VF models feature flexible direct vent and sidewall Category IV venting. In addition, the VF units may be installed as Category II appliances, allowing multiple units to be manifolded together into a common vent stack–giving you even more design options! (Both Category II and IV venting systems require corrosion-resistant, AL29-4C stainless steel sealed venting material.)

Vertical Venting Using Category IV vent materials.



Sidewall Venting\* Horizontal venting up to 50 equivalent feet using Category IV vent materials.



Direct Venting★ Horizontal or vertical venting up to 50 equivalent feet. Draws combustion air up to 50 feet from the same pressure zone using Category IV vent materials.



Ducted Air Vertical\* Vertical venting up to 50 equivalent feet. Draws combustion air up to 50 feet from a different pressure zone using Category IV vent materials.



Ducted Air Horizontal\* Vents horizontally up to 50 equivalent feet and draws combustion air up to 50 feet from a different pressure zone using Category IV vent materials.



Common Venting\* Vents multiple units horizontally through one vent termination and draws combustion air from the room, roof or sidewall. Category IV to II conversion kit required.

\*Requires optional factory-supplied vent and combustion air intakes terminals be used. Note: For the most current VF venting distances / information consult the VF Instruction Manual, available through your local A. O. Smith representative or online at www.hotwater.com.



## Commercial Storage Tanks







### A. O. Smith is the best choice for complete commercial water heating and storage systems

No other manufacturer gives plumbing professionals a broader choice of innovative commercial water heaters and boilers. So, it makes sense that when you need supplemental storage of hot water, you can turn to A. O. Smith for a nearly unlimited selection of storage tanks.

A. O. Smith is the market leading manufacturer of domestic hot water storage tanks in the United States and maintains an inventory of both bare and factory jacketed and insulated stock tanks from 80 gallons up to 1,000 gallons for immediate shipping. For special applications or where non-standard openings or special linings are required, A. O. Smith offers custom-built tanks built to your specifications from 80 gallons all the way up to 12,500 gallons.

### 80% Tank Draw Guaranteed and Gimmick Free

To achieve tank draw efficiency, some manufacturers rely on baffles and other components that can corrode or break off. Not A. O. Smith. When installed with an A. O. Smith commercial boiler or water heater using the A. O. Smith "Cer-Temp 80" piping method, our storage tanks will deliver 80% of total tank capacity as usable hot water. And we do it with a proven tank design that depends entirely on the foolproof laws of physics.



When heat is required, warm / mixed water is pumped from the bottom of the tank through the boiler and heated.

Hot water from boiler is re-circulated back to the tank and restarts the heating cycle.

### TANKS IN STOCK, READY TO SHIP

A. O. SMITH STANDARD STOCK BARE TANKS							
MODEL	U.S. GALLON	APPROXIMATE OVERALL DIMENSIONS (INCHES)		WORKING	APPROXIMATE SHIPPING		
NUMBER	CAPACITY	DIAMETER	LENGTH	PRESSURE (PSI)	WEIGHT (LBS)		
T-80 STD	80	20	62-1/8	150	170		
T-120 STD	120	24-1/4	65	150	287		
T-140 ASME	140	24	76-1/4	125	400		
T-200 STD	200	30	72	150	460		
T-200 ASME	200	30	72	125	460		
T-250 ASME	250	30	84	125	505		
T-325 ASME	325	34	84	125	600		
T-350 STD	350	36	88	125	670		
T-350 ASME	350	36	88	125	670		
T-400 ASME	400	36	97	125	775		
TL-500 ASME	500	36	122	125	950		
TN-500 ASME	500	42	89	125	815		
T-500 ASME	500	48	74	125	950		
T-750 ASME	750	48	106	125	1290		
T-1000 ASME	1000	48	138	125	1655		

### HORIZONTAL OR VERTICAL TANK MOUNTING

A. O. Smith Standard Stock Bare Tanks (with the exception of T-80 STD models, T-120 STD models) are shipped factory standard with leg sockets for vertical installation, but are also designed with inlet and outlet openings to permit both vertical and horizontal installation. For horizontal installation, optional tank saddles are required. The TL-500 ASME is designed for horizontal installation only.

A. O. SMITH STANDARD STOCK FACTORY JACKETED AND INSULATED TANKS (Vertical)								
MODEL	U.S. GALLON	APPROXIMATE OVERALL DIMENSIONS (INCHES)		APPROXIMATE SHIPPING				
NUMBER	CAPACITY	HEIGHT	WIDTH	WEIGHT (LBS)				
TJ-80 STD	80	63	25-1/4	236				
TJ-80 ASME	80	54-7/8	26-1/2	369				
TJV-120M STD	119	62	29-3/8	320				
TJV-120 ASME	119	61-3/4	28	411				
TJV-140 ASME	140	87	30	516				
TJV-200 ASME	200	83	36	612				
TJV-200M ASME	200	77	32	560				
TJV-250 ASME	250	93	36	900				
TJV-350 ASME	350	100	42	1080				
TJV-400 ASME	400	105	42	1282				
TJVT-500 ASME	500	100	48	1369				
TJV-500 ASME	500	84	54	1526				
TJV-750 ASME	750	116	54	2395				
TJV-1000 ASME	1000	150	54	3320				

Α. (	A. O. SMITH STANDARD HORIZONTAL JACKETED AND INSULATED TANKS (Build to Order)								
MODEL NUMBER	U.S. GALLON CAPACITY	HEIGHT/ LENGTH (INCHES)	SHIPPING WEIGHT (LBS)						
TJH-200A	200	36 x 41 x 77	790						
TJH-250A	250	36 x 41 x 90	1000						
TJH-350A	350	42 x 47 x 93	1370						
TJH-400A	400	42 x 47 x 99	1476						
TJHT-500A	500	40 x 53 x 94	1448						
TJH-500A	500	54 x 59 x 79	1540						
TJH-750A	750	54 x 59 x 110	2575						
TJH-1000A	1000	54 x 59 x 143	3260						









### iCOMM<sup>™</sup> Remote Monitoring System



A neccesity for businesses who depend on hot water.

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





### Hardware

MODEL NO.	ITEM	DESCRIPTION	
ICMA	iCOMM Communications Module	Main communications board required for any iCOMM installation.	@Smith
IMDA	iCOMM Multi-Device Adapter	Needed if more than one water heater will be connected to the control module. Order one (1) MDA for each water installed.	icomm
IABA	iCOMM Alarm Box	Accessory alarm box that includes an audible alarm and alarm light.	

**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.



### **iCOMM** Features

- Provides remote monitoring via www.aosmithconnect.com
- Email 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
- Annual iCOMM subscription

### **Compatible Units Include:**

- Cyclone® Mxi (BTH models)
- Cyclone<sup>®</sup> Xi (BTX and BTXL models)
- Custom Xi (DSE models)
- Gold Xi (DVE models)
- Genesis® Domestic Water Heaters and Boilers manufactured between July 2009 and January 2014 (GB/GW Models)
- VF<sup>™</sup> Variable Fire Domestic Water Heaters and Boilers manufactured between July 2009 and January 2014 (VB/VW Models)

## iCOMM<sup>™</sup> *Clite* Monitoring Service

### **Complete Coverage, Total Peace of Mind**

### What is iCOMM<sup>™</sup> Elite?

iCOMM Elite utilizes the latest technology in commercial water heating to allow us to interact with, pro-actively manage and monitor your A. O. Smith water heaters from anywhere in the world via the Internet. With this newly redesigned industry-exclusive service, A. O. Smith can monitor your water heaters around the clock, alert you instantly in case of a problem, and begin fixing any potential problems immediately. How is that for ultimate peace of mind?

### Who is iCOMM Elite Designed For?

Any commercial water heater customers, ranging from small businesses with one water heater to national chain operations with thousands of locations.

### **Elite Compatible Units Include:**

- Cyclone® Xi (BTH models)
- Custom Xi (DSE models)
- Gold Xi (DVE models)

### Valet Service on Any Warranty Claim!

Should you experience problems with any products that are still under warranty, it's time for the VIP treatment. We will do everything to get you back on track, and we mean everything. Our complete valet service includes a call before the service, handling all the logistics, repairing the product and, of course, superior service throughout the process.

Easy Steps

Get iCOMM<sup>™</sup> Elite in



Confirm you have a compatible unit.

Verify that you have an Internet connection in the same room as the water heater(s).

Call 1-888-WATER02 to purchase and arrange installation.

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

### iCOMM<sup>™</sup> Subscription (required) per iCOMM Communication Module for Elite services

**Note:** iCOMM subscription is required to use the "iCOMM Elite service." End user responsible for paying and maintaining annual subscription. Installation and subscription service fees are net prices paid directly by the end user. No distributor discounts are applicable.



### **Building Management** System BACnet and **MODBUS** Interface

Introducing the BMS gateway for control of A. O. Smith Water Heaters



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 150kW 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



	ICC ENERGY MANAGEMENT INTERFACE5								
PROTOCOL	PART #	CONNECTION TYPE	APPLICATION						
	9910093000	Serial	Commercial Gas - Cyclone <sup>®</sup> BTH and BTX(L)-100						
RACnot	9910094000	(RS485)	Commercial Electric - DSE, DVE, DHE 150kW or less						
BACHEL	9910099000	Ethernet	Commercial Gas - Cyclone® BTH and BTX(L)-100						
	9910100000	(IP)	Commercial Electric - DSE, DVE, DHE 150kW or less						
	9910096000	Serial	Commercial Gas - Cyclone® BTH and BTX(L)-100						
N 4 a alla u a	9910097000	(RS485)	Commercial Electric - DSE, DVE, DHE 150kW or less						
wodbus	9910102000	Ethernet	Commercial Gas - Cyclone® BTH and BTX(L)-100						
	9910103000	(IP)	Commercial Electric - DSE, DVE, DHE 150kW or less						

- Heater connection wiring supplied with unit
- For guestions on this product call 888-928-3702 Opt 1
- RTU and serial connect via RS-485
- Ethernet and IP connect via RJ-45





500 Tennessee Waltz Parkway • Ashland City, TN 37015 PH 800.527.1953 • www.hotwater.com

A. O. Smith reserves the right to make product changes or improvements at any time without notice.