

*Commercial*

Gas Tank Type  
Water Heaters

# Master-Fit<sup>®</sup>

It's better. Inside and out.



Now with  
The Eliminator<sup>™</sup>  
self-cleaning system

**AOSmith**





# Commercial

## A New A. O. Smith Innovation... The Eliminator™ Self-Cleaning System

A. O. Smith Master-Fit® commercial gas water heaters have always provided maximum installation flexibility for both new construction and replacement applications. Now, Master-Fit® offers an exciting new feature – The Eliminator™ – that delivers automatic self-cleaning protection against build-up of lime and other sediments.

As deposits of 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. Now Master-Fit® takes a bite out of sediment with the ultimate lime tamer... The Eliminator.™



*The Eliminator™ is engineered to direct incoming cold water under pressure to sweep the bottom of the tank, including critical flue weld areas.*

The rotating turbulence created by The Eliminator™ 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 build-up, every Master-Fit® "BTR" and "BTN" water heater can be expected to maintain its rated 80% thermal efficiency longer and deliver year after year of reliable service.



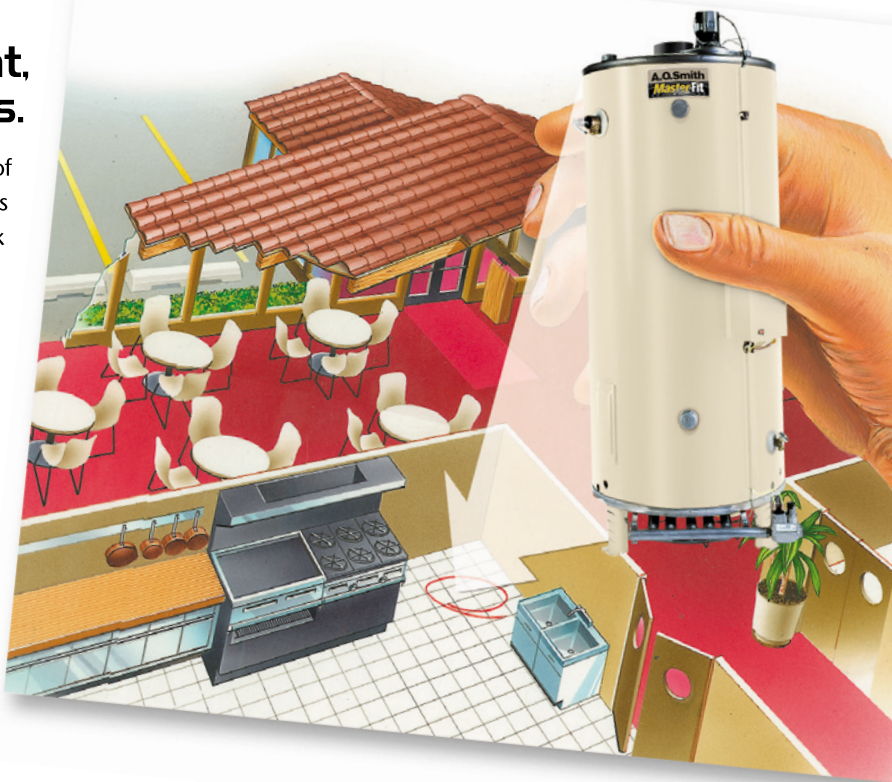
*Master-Fit® "BTR" model, equipped with automatic flue damper with 360° rotation.*

# Designed to Fit Where Others Can't!

## Small footprint, low profiles.

27-3/4". That's the diameter of most Master-Fit® commercial gas water heaters. So, regardless of tank size or BTU input, our 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® 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 "zero clearance" to combustibles on the front, side and rear, plus approval for placement on combustible flooring, you shouldn't have any problem putting a Master-Fit® just about anywhere you need it!



## 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.\*

*Master-Fit® Plus low-NOx  
"BTN" model, with  
induced-draft design.*



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



## Add The Advantages of Induced-Draft Design with Master-Fit® Plus!

The Master-Fit® Plus "BTN" model is equipped with a blower that produces a power-induced draft of make-up air prior to ignition. This provides more precise and efficient control of heat through the flue collector, and makes Master-Fit® Plus an excellent choice for installations where negative air pressure is a problem. "BTN" models are equipped with a low-NOx burner and meet SCAQMD Rule 1146.2.

All Master-Fit® Plus models are rated as Category 1 appliances. Using standard metal single-wall or double-wall type "B" vent pipe, they can be commonly vented with other Category 1 appliances. The blower outlet connects directly to the vent.



### Other Master-Fit® "BTR" and "BTN" features.

- Longer-lasting A. O. Smith CoreGard™ anode rods, with stainless steel core.
- On/Off power switch eliminates need to wire a separate electrical connection box.
- Can be installed as individual water heaters, or manifolded together with or without storage tanks for very high-demand applications.
- Thermostat dual controller limits thermal "stacking" inside tank.
- Intermittent electronic ignition eliminates standard pilot.
- Meets NSF requirements when equipped with optional leg kit.
- Handhold cleanout for access to tank interior.
- Factory-installed T&P valve.
- Three-year limited tank warranty.

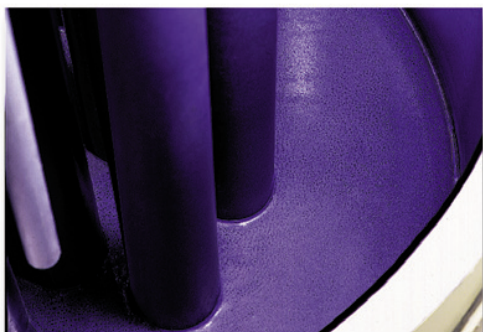




## With the Best Glass Lining in the Business.

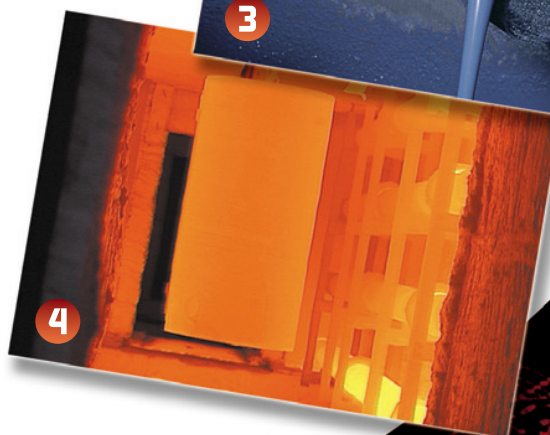
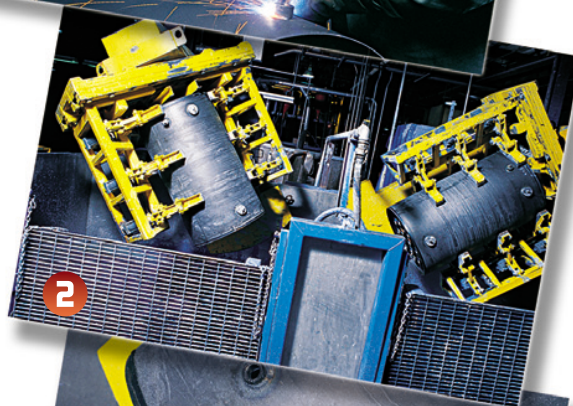
Almost every commercial water heater has a glass-lined tank to protect against corrosion and leaks. But only A. O. Smith can protect Master-Fit® water heaters with exclusive PermaGlas® Ultra Coat™.

- 1** 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™.
- 2** 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.
- 3** 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!



# Master-Fit Commercial Gas Water Heaters

With minimum 80% thermal efficiency, all Master-Fit® and Master-Fit® Plus commercial water heaters meet or exceed ASHRAE/IESNA 90.1b (current standard) Master-Fit® Plus “BTN” models also meet SCAQMD Rule 1146.2 for low-NOx emissions.

### Master-Fit® “BTR” Models With Automatic Flue Damper

Model Number	Gal. Cap.	BTU/Hr. Input Natural/Propane	Recovery GPH		Height**	Diameter	Approx. Ship Weight (lbs.)	
			80° Rise	100° Rise			Std.	ASME
BTR 120	71	120,000	145	116	69-3/4	27 3/4	520	–
BTR 151	32	150,000	–	145	40	27 3/4	400	–
BTR 154	81	154,000	187	149	70	27 3/4	560	–
BTR 180	81	180,000	218	175	67-1/2	27 3/4	590	–
BTR 197	100	199,000	241	193	74	27 3/4	650	–
BTR 198	100	199,000	241	193	75	27 3/4	650	–
BTR 199	81	199,000	241	193	67-1/2	27 3/4	600	–
BTR 200*	100	199,000	241	193	72	30 1/4	720	780
BTR 201*	32	199,000	–	194	40	27 3/4	400	–
BTR 250*	100	250,000	303	242	72	30 1/4	720	780
BTR 251*	65	251,000	304	243	72	27 3/4	690	700
BTR 275*	100	275,000	333	267	72	27 3/4	720	780
BTR 305*	65	305,000	370	296	75	27 3/4	690	700
BTR 365*	85	365,000	442	354	79-1/2	27 3/4	820	860
BTR 400*	100	390,000	485	378	72-1/2	30 1/4	875	900
BTR 500*	85	500,000	606	485	82-1/4	27 3/4	820	860

All dimensions in inches.

\* Available with ASME tank construction.

To order ASME construction, add “A” to model number (BTR 200 A).

\*\* Height shown is to top of draft hood.

BTR151/201 are designed for installation in “booster” applications.

### Master-Fit® Plus “BTN” Models With Induced Draft Design

Model Number	Gal. Cap.	BTU/Hr. Input Natural/Propane	Recovery GPH		Height**	Diameter	Approx. Ship Weight (lbs.)	
			80° Rise	100° Rise			Std.	ASME
BTN 120	71	120,000	145	116	63	27 3/4	400	–
BTN 154	81	154,000	187	149	70	27 3/4	470	–
BTN 180	99	180,000	218	125	70	27 3/4	470	–
BTN 199	99	199,000	241	193	67	27 3/4	470	–
BTN 200*	100	200,000	241	193	72	27 3/4	603	686
BTN 250*	100	250,000	303	242	72	27 3/4	603	686
BTN 275*	100	175,000	333	267	72	27 3/4	603	686
BTN 310*	85	310,000	376	300	73	27 3/4	603	686
BTN 366*	85	366,000	444	355	73	27 3/4	725	833
BTN 400*	85	390,000	473	378	73	27 3/4	725	833

All dimensions in inches.

\* Available with ASME tank construction. To order ASME construction, add “A” to model number (BTN 200 A).

\*\* Height shown is to top of blower outlet.

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



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

To view or download complete technical specifications, visit [www.hotwater.com](http://www.hotwater.com).