Master-Fit®

Commercial Gas Water Heaters

It's better.
Inside and out.

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 feature – The Eliminator™ – that delivers automatic self-cleaning protection against build-up of lime and other sediments.

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

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 buildup, every Master-Fit® "BTR" and Master-Fit® Plus "BTN" water heater can be expected to maintain its rated 80% thermal efficiency longer and deliver year after year of reliable service.

Master-Fit® Plus low-NOx "BTN" models feature an induced-draft design.

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 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, size 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 Design Advantages of the Master-Fit Plus!

Master-Fit® Plus "BTN" models are equipped with a blower that produces a power induced draft of makeup 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 comply with Texas and other areas requiring Low NOx emissions of less than 40 ng/j.

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.
- Thermostat dual controller limits thermal "stacking" inside tank.
- Can be installed as individual water heaters, or manifolded together with or without storage tanks for very high-demand applications.
- Intermittent electronic ignition eliminates standard pilot.
- Meets NSF requirements when equipped with optional leg kit.
- Handhold cleanout for access to tank interior.
- CSA Certified and ASME rated T&P relief valve.
- Three-year limited tank warranty.

PERMAGLAS® Ultra Coat inside!

With the Best Glass Lining in the Business.

Almost every commercial water heater made has a glasslined 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 the thermal efficiency and standby loss requirements of the U. S. Department of Energy and current edition of ASHRAE/IESNA 90.1. Master-Fit® Plus "BTN" models also comply with Texas and other areas requiring Low NOx emissions of less han 40 ng/j

Master-Fit® "BTR" Models

MODEL NUMBER	GALLON CAPACITY	BTU/HR. INPUT NATURAL/ PROPANE	RECOVERY GPH		HEIGHT** (INCHES)	DIAMETER (INCHES)	APPROXIMATE SHIPPING WEIGHT (LBS)	
			80°F RISE	100°F RISE			STANDARD	ASME
BTR 120	71	120,000	145	116	69-3/4	27-3/4	400	—
BTR 151	32	150,000	—	145	40	27-3/4	470	—
BTR 154	81	154,000	187	149	73	27-3/4	470	—
BTR 180	81	180,000	218	175	67-1/2	27-3/4	470	—
BTR 197	100	199,000	241	193	75	27-3/4	603	—
BTR 198	100	199,000	241	193	75	27-3/4	603	—
BTR 199	81	199,000	241	193	67-1/2	27-3/4	470	—
BTR 200*	100	199,000	241	193	72	30-1/4	630	725
BTR 201*	32	199,000	—	194	40	27-3/4	603	686
BTR 250*	100	250,000	303	242	75	30-1/4	630	725
BTR 251*	65	251,000	304	243	72	27-3/4	750	862
BTR 275*	100	275,000	333	267	75	30-1/4	630	725
BTR 305*	65	305,000	370	296	75	27-3/4	750	862
BTR 365*	85	365,000	442	354	79-1/2	27-3/4	725	833
BTR 400*	100	390,000	485	378	75-1/2	30-1/4	760	874
BTR 500*+	85	500,000	606	485	81-1/2	27-3/4	812	857

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.
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 vent connector
BTR151/201 are designed for installation in "booster" applications.
+Induced draft, Category I venting.

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 "BTN" Models with Induced Draft Design

MODEL NUMBER	GALLON CAPACITY	BTU/HR. INPUT NATURAL/ PROPANE	RECOVERY GPH		HEIGHT** (INCHES)	DIAMETER (INCHES)	APPROXIMATE SHIPPING WEIGHT (LBS)	
			80°F RISE	100°F RISE			STANDARD	ASME
BTN 120	71	120,000	145	116	63	27-3/4	520	—
BTN 154	81	154,000	187	149	68	27-3/4	550	—
BTN 180	100	180,000	218	125	72	27-3/4	550	—
BTN 199	100	199,000	241	193	72	27-3/4	550	—
BTN 200*	100	200,000	241	193	72	27-3/4	660	710
BTN 250*	100	250,000	303	242	72	27-3/4	660	710
BTN 275*	100	175,000	333	267	72	27-3/4	660	710
BTN 310*	85	310,000	376	300	73	27-3/4	720	770
BTN 366*	85	366,000	444	355	73	27-3/4	830	880
BTN 400*	85	390,000	473	378	73	27-3/4	830	880

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 vent connector. Add additional 3" for blower
Model Numbers shown above are for "BTN" low-NOx models.

AO Smith
Innovation has a name.

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

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