

MASTER-FIT® BTR

The Master-Fit® BTR series provides outstanding performance and maximum installation flexibility for both new construction and replacement applications. Multiple options for placement of water connections and low installation clearances are additional installer-friendly features.

FACTORY-INSTALLED DRAFT DIVERTER AND AUTOMATIC FLUE DAMPER (BTR-120-400 MODELS)

- Low-profile draft diverter helps for installation in tight spaces
- Automatic motorized flue damper helps minimize standby heat loss
- BTR-500 Model features induced draft design and no damper

THREE WATER CONNECTION OPTIONS FOR ADDED FLEXIBILITY

- Hot and cold water connections can be made through front, top or back of unit
- Eliminator™ system operates when cold water is connected through front

PERMAGLAS® ULTRA COAT™ GLASS LINING

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

INTERMITTENT ELECTRONIC IGNITION

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

FACTORY- INSTALLED, CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

MAXIMUM HYDROSTATIC WORKING PRESSURE: 160 PSI

CODES AND STANDARDS

- Design-certified by UL (Underwriters Laboratories), according to ANSI Z.21.10.3 - CSA 4.3 standards governing storage-type water heaters
- Meets the thermal efficiency and standby loss requirements of the U. S. Department of Energy and current edition of ASHRAE/IESNA 90.1
- Design-certified by Underwriters Laboratories Sanitation to NSF Standard 5 for 180°F (82°C) water
- Optional ASME tank construction available on select models

THE ELIMINATOR™ SELF-CLEANING SYSTEM

- Designed to significantly reduce or eliminate sediment build-up inside the tank
- Reduced sediment build-up maintains rated thermal efficiency and reduces water heating costs
- Self-cleaning system maximizes tank life

3-YEAR LIMITED TANK / 1-YEAR LIMITED PARTS WARRANTY

- For complete warranty information, consult written warranty or go to hotwater.com.



BTR-120 THROUGH BTR-500(A)

THE ELIMINATOR™ SELF-CLEANING SYSTEM



ON SELECT MODELS



OTHER MASTER-FIT® FEATURES

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

HANDHOLE CLEANOUT

- Allows easy access to tank interior for cleaning

PLUG KITS

- Pipe nipples and caps included to plug unused water connections MASTER-FIT® OPTIONS:

MANIFOLD KITS FOR MULTIPLE HEATER INSTALLATIONS

- 2-unit kit, Part Number 100109228
- 3-unit kit, Part Number 100109229
- 4-unit kit, Part Number 100109230

OPTIONAL LEG KIT TO MEET NSF STANDARD 5

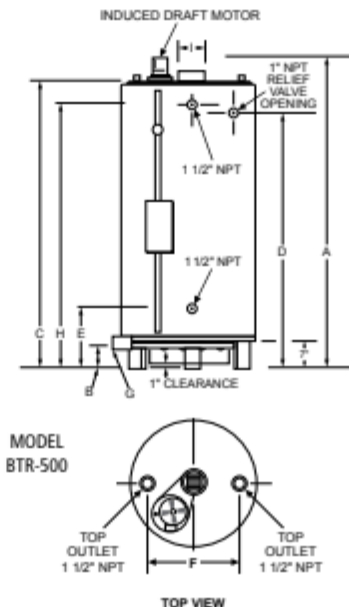
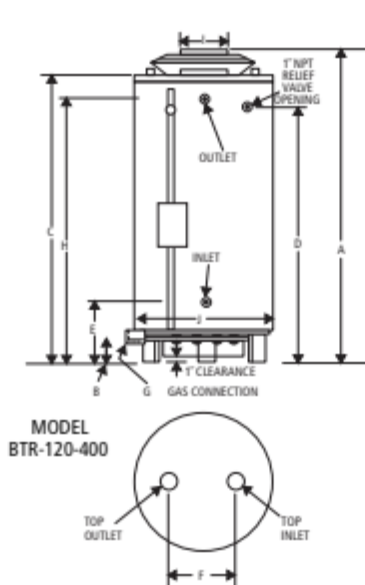
- For all BTR models, Part Number 100109227

MECHANICAL VENTING KITS

- For BTR-120 through BTR-200, Part Number 100110445
- For BTR-250 through BTR-400, Part Number 100109235
- For installation of approved power venter to operate in conjunction with water heater thermostat
- Field wiring should conform to latest version of the National Electric Code ANSI/NFPA No.70
- For more information, consult manual shipped with water heater or contact the A. O. Smith Technical Support Center at 1-800-527-1953

Water Connections in Inches						
Model Number	Inlet			Outlet		
	Top	Front	Back	Top	Front	Back
BTR-120	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-154	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-180	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-197	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-199	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-200(A)	1-1/2	2	2	1-1/2	2	2
BTR-250(A)	1-1/2	2	2	1-1/2	2	2
BTR-251(A)	N/A	1-1/2	1-1/2	N/A	1-1/2	1-1/2
BTR-275(A)	1-1/2	2	2	1-1/2	2	2
BTR-305(A)	N/A	1-1/2	1-1/2	N/A	1-1/2	1-1/2
BTR-365(A)	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2
BTR-400(A)	1-1/2	2	2	1-1/2	2	2
BTR-500(A)	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2

*"A" in model number represents ASME construction.



Dimensions

Model Number	Inches or CM	Dimensions										Approx. Shipping Weight	
		A	B	C	D	E	F	G	H	I	J	Standard	ASME
BTR-120*	Inches	69-3/4"	4-1/4"	59-1/2"	50-7/8"	19-11/16"	19"	1/2"	51-7/8"	6"	27-3/4"	400 lbs.	-
	CM	177	11	151	129	50	48	-	132	15	71	182 Kg	-
BTR-154	Inches	67-1/2"	4-1/2"	62"	53-1/2"	20-1/2"	21"	1/2"	54-5/8"	6"	27-3/4"	470 lbs.	-
	CM	171	12	157	136	52	53	-	139	15	71	213 Kg	-
BTR-180	Inches	67-1/2"	4-1/2"	62"	53-1/2"	20-1/2"	21"	1/2"	54-5/8"	6"	27-3/4"	576 lbs.	-
	CM	171	12	157	136	52	53	-	139	15	71	261 Kg	-
BTR-197	Inches	75"	4-1/2"	70"	61-1/2"	20-1/2"	21"	1/2"	62-5/8"	6"	27-3/4"	603 lbs.	-
	CM	192	12	178	157	52	53	-	159	15	71	273 Kg	-
BTR-199	Inches	67-1/2"	4-1/2"	62"	53-1/2"	20-1/2"	21"	1/2"	54-1/8"	6"	27-3/4"	470 lbs.	-
	CM	171	12	157	136	52	53	-	139	15	71	213 Kg	-
BTR-200(A)	Inches	72"	4-1/2"	65-1/8"	55-7/8"	19-3/4"	23"	1/2"	56-3/8"	6"	30-1/4"	630 lbs.	725 lbs.
	CM	183	12	165	142	50	58	-	143	20	77	286 Kg	329 Kg
BTR-250(A)**	Inches	72"	4-1/2"	65-1/8"	55-7/8"	19-3/4"	23"	1/2"	56-3/8"	8"	30-1/4"	630 lbs.	725 lbs.
	CM	183	12	165	142	50	58	-	143	20	77	286 Kg	329 Kg
BTR-251(A)**	Inches	75"	4-1/2"	65-3/4"	57-1/4"	20"	N/A	1/2"	58-3/4"	8"	27-3/4"	750 lbs.	862 lbs.
	CM	191	12	167	145	51	N/A	-	149	20	70	341 Kg	391 Kg
BTR-275(A)**	Inches	72"	4-1/2"	65-1/8"	55-7/8"	19-3/4"	23"	1/2"	56-3/8"	8"	30-1/4"	630 lbs.	725 lbs.
	CM	183	12	165	142	50	58	-	143	20	77	286 Kg	329 Kg
BTR-305(A)	Inches	75"	4-1/2"	65-3/4"	57-1/4"	20"	N/A	1/2"	58-3/4"	8"	27.75"	750 lbs.	862 lbs.
	CM	191	12	167	145	51	N/A	-	149	20	70	341 Kg	391 Kg
BTR-365(A)	Inches	79-1/2"	4-1/2"	70-1/4"	62-1/2"	22-1/2"	23"	3/4"	63"	8"	27-3/4"	725 lbs.	833 lbs.
	CM	202	12	178	159	57	58	-	160	20	71	329 Kg	379 Kg
BTR-400(A)	Inches	75-1/2"	4-1/2"	67-1/2"	58-1/4"	26-3/4"	23"	3/4"	59"	8"	30-1/4"	760 lbs.	874 lbs.
	CM	192	12	171	148	68	58	-	150	20	77	345 Kg	396 Kg
BTR-500(A)†**	Inches	81-1/2"	17.5"	77-1/4"	67-1/2"	27-1/8"	21"	1"	67-1/2"	8"	27-3/4"	812 lbs.	857 lbs.
	CM	209	44	196	171	69	53	3	171	20	70	368 Kg	389 Kg

Specify when ordering propane (LP) gas.

*Model BTR 120 is shipped with a 6" x 5" flue outlet adapter.

**Models BTR 250, 251, 275 and 500 are shipped with a 8" x 6" flue outlet adapter.

Standard models certified for sea level to 2,000 ft. elevation. Order SMR S54 for elevations up to 8,000 ft.

† BTR-500 model features induced draft design and no damper.

Back side water connections, Inlet and outlet, are represented by "E" and "H" respectively for height dimensions.

"A" in model number represents ASME construction.

CAPACITY, INPUT AND OUTPUT

Model Number	Input BTU/HR	Gallons or Litres	Tank Size	Litres	Recovery - Gallons or Litres Per Hour at Degree Rise		
					40°F	100°F	140°F
					22°C	56°C	78°C
BTR-120*	120,000	U.S. Gallons	71	GPH	291	116	83
		Litres	268	LPH	1102	439	314
BTR-154	154,000	U.S. Gallons	81	GPH	373	149	107
		Litres	307	LPH	1412	564	405
BTR-180	180,000	U.S. Gallons	76	GPH	434	174	124
		Litres	288	LPH	1643	659	469
BTR-197	199,000	U.S. Gallons	100	GPH	482	193	132
		Litres	307	LPH	1825	731	500
BTR-199	199,000	U.S. Gallons	81	GPH	482	193	132
		Litres	307	LPH	1825	731	500
BTR-200(A)	199,000	U.S. Gallons	100	GPH	482	193	132
		Litres	379	LPH	1825	731	500
BTR-250(A)**	250,000	U.S. Gallons	100	GPH	606	242	173
		Litres	379	LPH	2294	918	655
BTR-251(A)**	251,000	U.S. Gallons	65	GPH	608	243	174
		Litres	246	LPH	2303	921	658
BTR-275(A)**	275,000	U.S. Gallons	100	GPH	667	267	190
		Litres	379	LPH	2524	1009	721
BTR-305(A)	305,000	U.S. Gallons	65	GPH	739	296	211
		Litres	246	LPH	2799	1120	800
BTR-365(A)	365,000	U.S. Gallons	85	GPH	885	354	253
		Litres	322	LPH	3349	1340	957
BTR-400(A)	390,000	U.S. Gallons	100	GPH	970	388	277
		Litres	379	LPH	3671	1468	1049
BTR-500(A)†**	500,000	U.S. Gallons	85	GPH	1212	485	346
		Litres	322	LPH	4588	1835	1311

Specify when ordering propane (LP) gas.

*Model BTR 120 is shipped with a 6" x 5" flue outlet adapter.

**Models BTR 250, 251, 275 and 500 are shipped with a 8" x 6" flue outlet adapter.

Standard models certified for sea level to 2,000 ft. elevation. Order SMR 554 for elevations up to 8,000 ft.

† BTR-500 model features induced draft design and no damper.

Recovery based on 80% efficiency.

"A" in model number represents ASME construction.

SPECIFICATION

(Natural or Propane) gas water heater(s) shall be A. O. Smith Master-Fit® model # _____ or equal, with a storage capacity of _____ gallons, an input rating of _____ BTUs per hour, a recovery rating of _____ gallons per hour (gph) at 100°F rise and a maximum hydrostatic working pressure of 160 psi. Water heater(s) shall be protected against overheating caused by the buildup of scale, film and other sediment by a self-cleaning device, positioned inside the tank so that it directs the flow of inlet water to keep precipitated solids in suspension so that they are removed from the water heater on that or successive draws. Glasslined water heater(s) shall also be protected against electrolytic corrosion by multiple factory-installed anode rods. In addition, water heater(s) shall: 1) Be equipped with an integrated control system consisting of a 180°F adjustable thermostat with upper and lower sensing bulbs. 2) Be equipped with intermittent electronic ignition, a manual reset gas shutoff device, a gas pressure regulator, factory-installed, CSA Certified and ASME Rated T&P relief valve and 2-3/4" x 3-3/4" tank inspection port. 3) Be design-certified by UL (Underwriters Laboratories) to current edition of ANSI Z.21.10.3 - CSA 4.3 standards governing storage-type water heaters. 4) Meets the thermal efficiency and standby loss requirements of the U. S. Department of Energy and Current Edition of ASHRAE/ IESNA 90.1. 5) Have a 3-year limited warranty against corrosion as outlined in the written warranty.