

On-Demand
Gas Water Heaters



Innovation On-Demand



ENERGY STAR® QUALIFIED
MODELS AVAILABLE.

A. O. Smith's complete line of tankless gas water heaters

A. O. Smith On-Demand Gas Water Heaters

Endless Hot Water.* Endless Innovation.

Trust the innovation leader to give you more choices in on-demand water heating. The comprehensive line of A. O. Smith tankless water heaters supplies endless hot water at preset temperatures. All residential models are ENERGY STAR® qualified and feature improved flow rates. New condensing models provide the highest energy efficiency, saving money in both residential and commercial applications. All commercial models feature HRS35 copper heat exchangers, providing extra protection against corrosion.



Product Features:

Innovative Technology

- Condensing models feature 316L stainless steel secondary heat exchanger, providing additional protection against corrosion
- Increased flow rates provide continuous hot water (up to 14.5 GPM)
- Improved scale-reduction software
- Whole house water heating solution
- All models include internal freeze protection and multiple safety features
- Direct vent conversion kits available for indoor installations
- Applicable for residential hydronic heating applications

* A. O. Smith tankless water heaters provide endless hot water when sized appropriately for your home's needs.

Excellent Performance

- Complete range of models from 140,000 to 380,000 BTU to cover every application
- Residential warranty: 12-year limited warranty on heat exchanger/5-year parts
- Commercial warranty: 5-year limited warranty on heat exchanger/5-year parts

Energy Efficiency

- All residential models are ENERGY STAR® qualified
- Condensing models provide the highest energy efficiency with 0.91 EF (Energy Factor)
- Commercial models provide up to 84% thermal efficiency
- Models are eligible for Federal Tax Credit. Visit www.hotwater.com for more information.

Commercial Application Features:

- ASME Certified models available
- Hot water capacity up to 14.5 GPM
- Easily connect up to 4 units together with no additional parts or accessories
- Connect up to 20 units together for high-demand applications
- Well suited for small restaurants, multi-family housing, hair salons and spas, laundromats, car washes and other commercial needs



All residential models:
110, 310, 510 and 520

Temperature Controller

Optional remote temperature controller can set the temperature of the water within a specific range (included with 510 models)

Error Codes

When a fault is detected an error code flashes at the temperature display

Information Mode

Displays diagnostic information such as inlet and outlet water temperature and flow rate

Buzzer

Audible alert in addition to the error code displayed



Temperature Display

Shows the current temperature setting

Thermostat

Increases/decreases temperature setting

On/Off Button

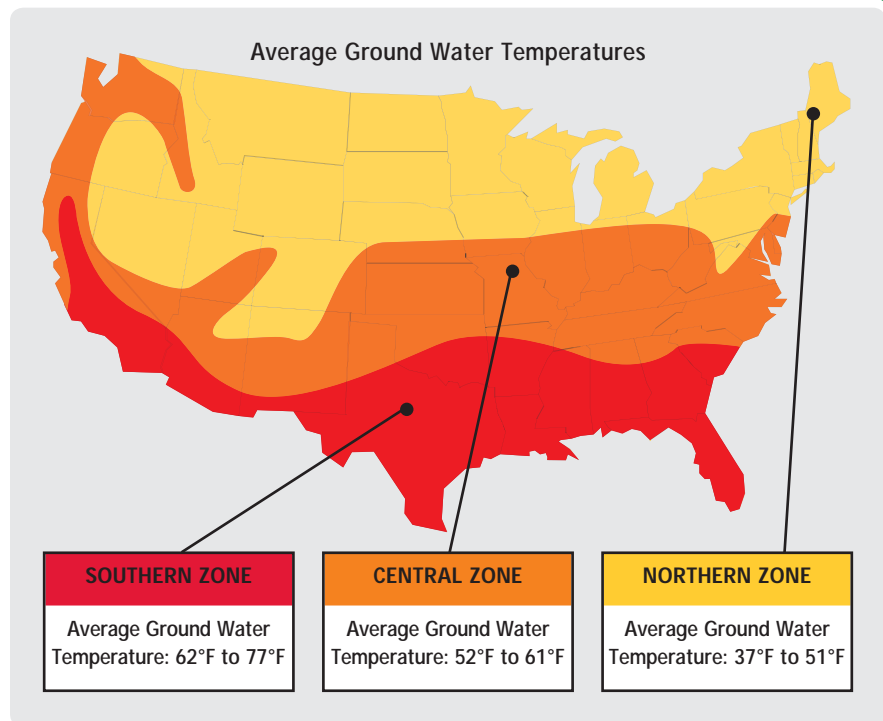
Turns the water heater on/off

Model Selection Guide

Ground water temperature factor.

The temperature of incoming ground water (cold water inlet temperature) varies greatly throughout the U.S. and also fluctuates with the changing of the seasons. The temperature of water as it enters the water heater will determine the amount of "temperature rise" required to achieve the desired hot water outlet temperature (120°F is recommended).

The best way to measure your incoming ground water temperature is to use a thermometer to measure cold water temperature during the coldest season of the year. To simplify the process, use this map to determine whether your installation location is in the Southern Zone, Central Zone or Northern Zone.



MATCH THE UNIT TO YOUR NEEDS

Number of showers each A. O. Smith unit can handle, depending on ground water temperature

Warmer Climates 70°F Incoming Groundwater Temperature		Cooler Climates 40°F Incoming Groundwater Temperature	
Capacity - Number of Shower Heads			
110	3 Showers	3 Showerheads	2 Shower
310	3 Showers	3 Showerheads	2 Showers
510	4 Showers	4 Showerheads	2 Showers
520H	4 Showers	4 Showerheads	3 Showers
710	4 Showers	4 Showerheads	3 Showers
910	6 Showers	6 Showerheads	4 Showers

Assuming the outgoing temperature is 105°F - Assuming a standard showerhead of 2.5 GPM

Peak hot water demand.

The next step is to determine how much hot water will be required during the busiest usage period ("peak demand"). Consider all appliances and fixtures that use hot water, including lavatory faucets, kitchen faucets, washing machines, dishwashers, showers and bathtubs. Be sure to determine how many appliances and fixtures will be used at the same time ("peak demand").

A. O. Smith On-Demand Gas Water Heaters

Each A. O. Smith on-demand water heater is designed for a specific application. Consult your sales representative or contact A. O. Smith for specifications and recommendations on which model is right for your specific requirements.

Model Specifications

Model Number*	Type	BTU Input Natural/Propane		Energy Factor (EF)	Hot Water Output (GPM)		
		Minimum	Maximum		Maximum	45°F Rise	70°F Rise
RESIDENTIAL/LIGHT COMMERCIAL NON-CONDENSING MODELS							
ATI-110-N	Indoor	19,500	140,000	0.82	6.6	5.1	3.3
ATI-310-N	Indoor	11,000	190,000	0.82	8.0	6.9	4.4
ATI-510-N**	Indoor	11,000	199,000	0.82	10.0	7.2	4.7
ATO-110-N	Outdoor	19,500	140,000	0.82	6.6	5.1	3.3
ATO-310-N	Outdoor	11,000	190,000	0.82	8.0	6.9	4.4
ATO-510-N**	Outdoor	11,000	199,000	0.82	10.0	7.2	4.7
RESIDENTIAL/LIGHT COMMERCIAL CONDENSING MODELS							
ATI-520H-N	Indoor	13,000	199,000	0.91	9.0	8.1	5.2
ATO-520H-N	Outdoor	13,000	199,000	0.91	9.0	8.1	5.2

Model Number*	Type	BTU Input Natural/Propane		Thermal Efficiency NG/LP	Hot Water Output (GPM)		
		Minimum	Maximum		Maximum	45°F Rise	70°F Rise
HEAVY-DUTY/COMMERCIAL MODELS							
ATIO-710-N	Indoor/Outdoor	24,000	240,000	82%/84%	9.0	8.5	5.5
ATIO-710-AN (ASME)	Indoor/Outdoor	24,000	240,000	82%/84%	9.0	8.5	5.5
ATIO-910-N	Indoor/Outdoor	15,000	380,000	80%/82%	14.5	13.5	8.7
ATIO-910-AN (ASME)	Indoor/Outdoor	15,000	380,000	80%/82%	14.5	13.5	8.7

*For propane, change N to P in the model number when ordering. Example: ATO-520H-P.

**Can be installed in light duty commercial applications. Includes remote control and can easy-link up to 4 units.

FLOW RATE GUIDE

Temperature Rise vs. Gallons Per Minute

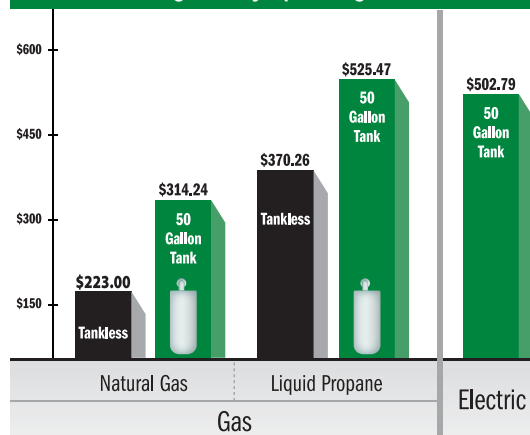
Temp Rise	110	310	510	520H	710	910
30	6.6	8.0	10.0	9.0	9.0	14.5
35	6.6	8.0	9.3	9.0	9.0	14.5
40	5.7	7.8	8.1	9.0	9.0	14.5
45	5.1	6.9	7.2	8.1	8.5	13.5
50	4.6	6.2	6.5	7.3	7.7	12.1
55	4.2	5.7	5.9	6.7	7.0	11.0
60	3.8	5.2	5.4	6.1	6.4	10.1
65	3.5	4.8	5.0	5.6	5.9	9.3
70	3.3	4.4	4.7	5.2	5.5	8.7
75	3.1	4.1	4.3	4.9	5.1	8.1
80	2.9	3.9	4.1	4.6	4.8	7.6
85	2.7	3.7	3.8	4.3	4.5	7.1

Flow rate is determined by temperature rise. To determine your temperature rise, subtract the incoming water temperature from the set output temperature.

All units are factory set to 120°F or 122°F but can be changed.

SAVE MONEY

Average Yearly Operating Costs



Yearly Cost = (Therms or gallons or kWh per year) x (cost per Therm or gallon or kWh)

Energy consumption estimated using the DOE test procedure, found on ENERGY STAR® 2007 report.

Annual costs for NG, LP and electricity from 2007 U.S. Gov. national averages.



A. O. Smith Water Products Company

500 Tennessee Waltz Pkwy Ashland City, TN 37015

www.hotwater.com