

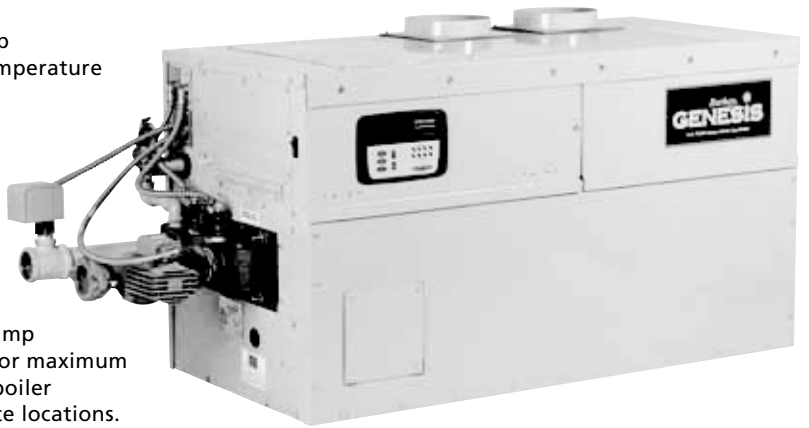
Burkay GENESIS®

84% EFFICIENT, LOW-NO_x HYDRONIC HEATING BOILERS

A. O. Smith Genesis® boilers offer everything you could ask for in a non-condensing boiler. They provide the highest possible 84% thermal efficiency, outstanding venting flexibility, space-saving stackable design and a new, advanced Energy Management Control (EMC) system. Genesis models are available for installation indoors (GB Series) or outdoors (GBO Series).

ADVANCED ELECTRONIC CONTROL

- Controls every electrical boiler function, including pump operation and main burner ignition, delivers precise temperature management, with $\pm 1^\circ$ accuracy
- Display panel shows current operating status and fault readings in easy-to-understand English instead of confusing numeric codes
- Display also shows temperature setpoints, outlet temperature, current inlet/outlet differential (ΔT) and tank temperature
- Help screens assist in boiler setup and explain control options
- Includes 120V terminals for installation of secondary pump up to 1/3 HP – allows control to cycle secondary pump for maximum efficiency, virtually eliminates standby heat loss at the boiler
- iCOMM™ Compatible and can be monitored from remote locations. CALL 1.888.WATER02 for more information



TWO-STAGE GAS FIRING SYSTEM

- Twin gas valve firing system ensures smooth operation, saves fuel and extends boiler life
- Prevents short cycling during low demand periods, delivers maximum output when demand is high

LOW-NO_x OPERATION

COPPER FINNED-TUBE HEAT EXCHANGER

- Designed for maximum durability and serviceability
- Copper is lightweight for easier handling and immune to thermal shock
- Removable headers allow easy inspection of waterways

SPACE-SAVING DESIGN

- Smaller footprint versus other horizontal copper fin-tube boilers
- One unit can be stacked on top of another, doubling output with no increase in floor footprint with optional stack rack

COMPLIANCE

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

TEN-YEAR HEAT EXCHANGER LIMITED WARRANTY

- For complete information, consult written warranty or contact A. O. Smith

**GB/GBO-300
THROUGH
GB/GBO-750**



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OTHER GENESIS® FEATURES

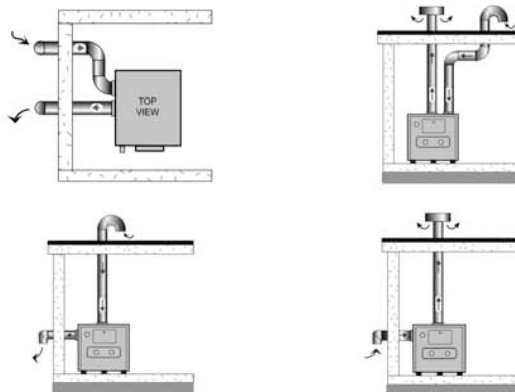
ASME Pressure Relief Valve 50#
 Factory Installed Flow Switch
 Alternate Thermostat Terminals (24v)
 Manual Reset High Limit
 Blocked Flue Switch
 Fan Proving Switch
 Adjustable Secondary Pump Delay

GENESIS® OPTIONS

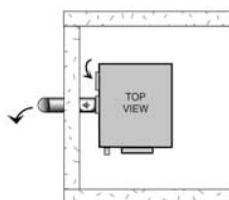
- ☐ Factory Mounted And Wired
- ☐ Secondary Boiler Pump For Primary
- ☐ Secondary Piping Systems
- ☐ I.R.I. Code (500,000,650,000, 750,000BTU)
- ☐ CSD-1 Code
- ☐ New York Code
- ☐ California Code
- ☐ Alarm Bell
- ☐ Dry Contacts For Any Boiler Failure
- ☐ E.M.S. Stage Control Adapter
- ☐ Stack Rack
- ☐ Low Water Cut-Off
- ☐ Sequencing Control Panel with
- ☐ Outdoor Reset (For 1-8 Boilers)
- ☐ Combustible Floor Shield
- ☐ Cupro-Nickel Heat Exchanger
- ☐ Extended Venting Kit
- ☐ CSA Certified Vent Kit

GENESIS® VENTING VERSATILITY

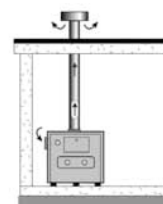
DIRECT-VENTING



SIDEWALL VENTING



CONVENTIONAL VENTING



VENTING DISTANCES - EQUIVALENT FEET OF PIPE

MODEL	DIRECT VENTING		SIDEWALL VENTING*
	INTAKE*	EXHAUST*	
GB-300	60'	60'	110'
GB-400 thru GB-750	35'	35'	50'

*90 degree elbow is equivalent to 5 feet of straight pipe.

*45 degree elbow is equivalent to 3 feet of straight pipe.

For the most current Genesis venting distances/information, consult the Genesis Product Manual, available through your local A.O. Smith representative, or online at www.aosmithwaterheaters.com.

MODEL NUMBER	NATURAL & PROPANE GAS		TEMPERATURE RISE AND PRESSURE DROP					
	BTU INPUT PER HOUR	BTU OUTPUT PER HOUR	20°F RISE		30°F RISE		40°F RISE	
			FLOW GPM	PD-FT. HEAD	FLOW GPM	PD-FT. HEAD	FLOW GPM	PD-FT. HEAD
GB/GB0-300	300,000	251,100	25	1.3	17	0.6	13	0.4
GB/GB0-400	399,900	334,716	34	2.2	23	0.9	17	0.6
GB/GB0-500	500,000	418,500	42	3.4	28	1.8	21	0.9
GB/GB0-650	650,000	554,050	55	3.5	37	2.0	27	1.8
GB/GB0-750	750,000	627,750	63	8.3	42	4.3	32	2.1

Gas Supply Pressure: 13.8" in. W.C. maximum natural and propane; 4.5" W.C. minimum natural; 11.0" W.C. minimum propane.

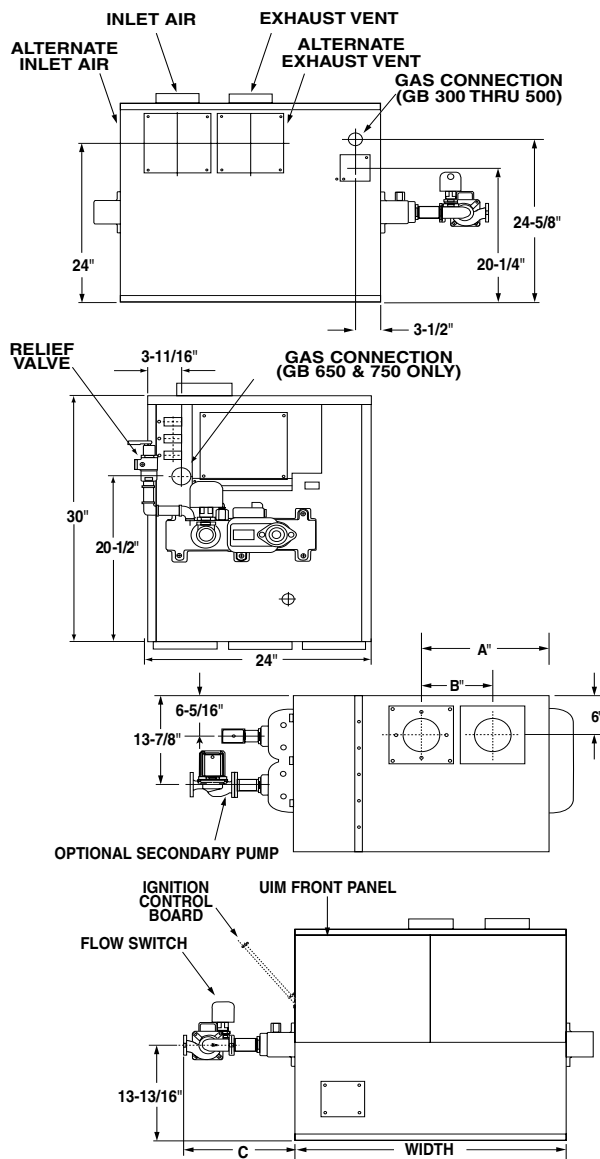
Genesis boilers are approved for installation on noncombustible flooring in an alcove with minimum clearance to combustibles of:

3 inches sides, and back; 3 inches top, front alcove; 6 inches vent.

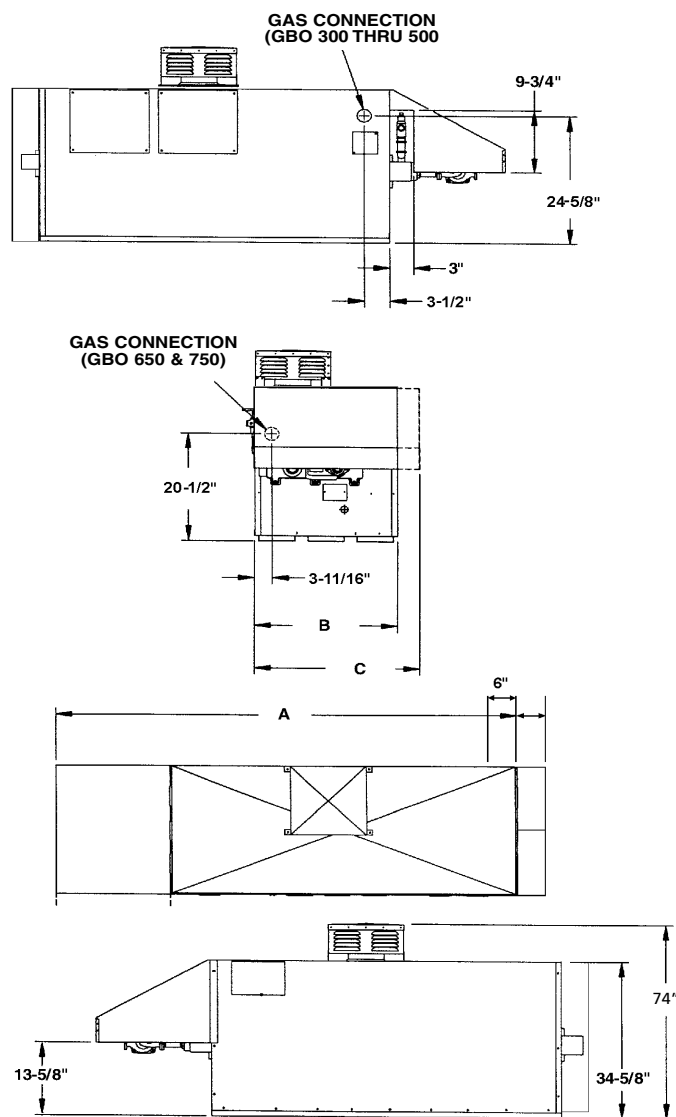
For installation on combustible flooring use the optional Combustible Floor Kit.

Genesis boilers must be connected to a single phase dedicated line source that is: 120 volts, 60 hertz and 20 amps.

GB SERIES INDOOR MODELS



GBO SERIES OUTDOOR MODELS



MODEL NUMBER	BTU INPUT PER HOUR	DIMENSIONS IN INCHES							
		EXHAUST VENT	AIR INLET	WATER CONN.	GAS PIPE	(See Drawings Above)			
						WIDTH	A	B	C
GB SERIES INDOOR MODELS									
GB-300	300,000	5	5	1-1/2	3/4	29-1/2	14-13/16	9	12
GB-400	400,000	6	6	1-1/2	1	35-3/4	17-15/16	9	14-3/4
GB-500	500,000	6	6	2	1	42	21-1/16	9	14-3/4
GB-650	650,000	8	8	2	1-1/4	51-3/8	25-3/4	9	14-3/4
GB-750	750,000	8	8	2	1-1/4	57-3/8	28-7/8	9	17-1/4
GBO SERIES OUTDOOR MODELS									
GBO-300	300,000	-	-	1-1/2	3/4	-	49	24-3/16	-
GBO-400	400,000	-	-	1-1/2	1	-	55-1/4	24-3/16	-
GBO-500	500,000	-	-	2	1	-	61-1/2	24-3/16	-
GBO-650	650,000	-	-	2	1-1/4	-	70-7/8	-	27-11/16
GBO-750	750,000	-	-	2	1-1/4	-	77-1/8	-	27-11/16



Hydronic Heating Boilers



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GENESIS® HYDRONIC HEATING BOILER SUGGESTED SPECIFICATION

The hydronic heating boiler(s) shall be an A. O. Smith Genesis ® Model _____ having an input rating of _____ BTU/hr. and an output rating of _____ BTU/hr. on natural or propane gas. The boiler shall bear the ASME "H" stamp and shall be National Board registered for 160 PSI working pressure. The boiler shall be test certified at 84% thermal efficiency by CSA of ANSI Z21.13-CSA 4.9 Harmonized Standard Latest Addenda. The boiler's copper fin tube heat exchanger shall be a horizontal, single row, two pass design. The solid copper tubes shall have integral extruded copper fins spaced at "7" fins per inch, and be rolled into heavy steel tube sheets. High temperature silicone "O" rings shall provide a watertight seal between each tube and the ASME code Bronze/Cast Iron headers. Headers must be field removable to allow complete inspection of all waterways. Non-removable headers, with tubes rolled directly into the headers, shall not be acceptable. The low mass, low water volume heat exchanger shall be explosion-proof and immune to thermal shock.

The combustion chamber shall be fully lined with high temperature ceramic fiber insulation, rated to 2,300°F. The jacket panels shall be coated with a baked-on powder-coat finish, suitable for outdoor service. The jacket shall be of tight construction, and weather- and water-resistant.

The boiler shall employ a fan induced premixed multi-burner system firing into a pressurized combustion chamber. Atmospheric or power burners will not be acceptable. Only stainless steel/titanium alloy burners will be acceptable.

All boiler functions shall be controlled, operated, and monitored by a microprocessor-based control. The microprocessor shall control the boiler temperature and be accurate to within plus or minus 1°F. The hot surface ignition system shall employ a separate flame sensor for maximum reliability.

Provisions for connecting a remote thermistor, alarm bell, pump, and alternate temperature controller must be provided.

Factory mounted and wired flow, blower prover, and blocked flue switches shall be provided. The gas train shall meet or exceed the requirements of ANSI Z21.13-CSA 4.9 and include gas pressure regulator, manual gas cock, redundant safety gas valve, operating control valve, and plugged pressure test tapings. The ASME rated pressure relief valve shall be factory-installed.

The boiler shall be certified for direct horizontal through-the-wall venting, or direct vertical venting; in addition to sidewall or conventional vertical venting. The boiler must be field convertible from top mounted venting to rear mounted venting. The boiler shall be capable of horizontal sidewall or direct venting up to 35 equivalent feet without the aid of any optional sidewall vent fans or blowers.

Water heater should incorporate the iCOMM™ system for remote monitoring, leak detection and fault alert.