

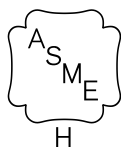
# HW BURKAY HOT WATER SUPPLY BOILER

HW - 300/399/420/520/670

Floor standing, gas fired.



- All castings are made of Bronze or Brass
- All water tubes are made from copper
- Brazed joints or flare union construction make the boiler immune to the effects of thermal shock and thermal cycling
- A great boiler for domestic hot water supply
- The efficient copper coil combustion chamber is a heat exchanger formed from a two passage coil of tightly wound continuous copper tube
- Water circulating through this coil surrounds the main burner and captures the radiant heat
- A wrap of insulation on the outside of the coil retains the heat captured by the circulating water
- Directly above the coil and the main burner is a compact, horizontal, copper fin tube heat exchanger
- The flue gases must pass through this efficient heat exchanger before leaving the boiler
- This unique Burkay coil and heat exchanger design provide maximum heat transfer and proven field durability
- The patented Burkay burner uses primary air injection at up to 72 individual orifices plus secondary entrainment of air
- Approved for installation on combustible floors as shipped from factory.
- Slow opening redundant gas valves ensure smooth light-off without flame roll-out or pilot outage
- Patented pump delay system that allows boiler and pump to run simultaneously but delays pump shut off at end of heating cycle to remove usable heat from the heat exchanger and reduce the scale forming tendencies of motionless hot water
- Proven pilot ignition system provides flame failure response in under one (1) second
- Redundant high limit controls and gas valves assure safe shutoff in the event of overheating or flame failure
- Requires 120V 60Hz, maximum inlet gas pressure of 14" WC and activation of boiler by external temperature control
- ASME approved, hydrostatically tested and certified for 160 psi
- Ships with ASME 125 psi relief valve
- These models meet the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition ASHRAE/IESNA 90.1.



## SAMPLE SPECIFICATION

*Hot Water Supply Boiler for domestic hot water purposes shall be Model(s) No. \_\_\_\_\_ as manufactured by A. O. Smith or an approved equal. Boiler(s) shall be gas-fired, and design certified by an ANSI approved/accredited independent rating laboratory, capable of supplying \_\_\_\_\_ gph at 100°F temperature rise equipped to burn \_\_\_\_\_ gas, with input rating of \_\_\_\_\_ BTU/hr. and bearing the ASME code symbol. Boiler(s) shall be up flow type having all nonferrous waterways, and employing a copper finned heat exchanger and a tightly wound copper coil combustion chamber with 160 psi working pressure rating. Boiler(s) shall be equipped with an electric gas valve of the step-opening type, an adjustable limit control which will break the electric circuit on temperature rise, intermittent ignition with one (1) second shutdown in the event of pilot flame failure, a gas pressure regulator properly set for the gas to be supplied, and a coil limit switch for shut off in event of excessive water temperature, a certified draft diverter and a fully illustrated instruction manual. Certified for installation on combustible flooring. Outer jacket shall be of baked enamel finish. The coil, heat exchanger and burner shall have a five year limited warranty as outlined in the written warranty.*

Dimensions in inches		Models				
		HW-300	HW-399	HW-420	HW-520	HW-670
A	Overall height	65 (1651)	57-1/8 (1451)	57-1/8 (1451)	68-5/16 (1735)	68-5/16 (1735)
B	Height on Top of Jacket	43-1/4 (1099)	45-1/8 (1146)	45-1/8 (1146)	56-1/4 (1429)	56-1/4 (1429)
C	Floor to Center Line Water Outlet	36 (914)	38-3/4 (984)	38-3/4 (984)	46 (1168)	46 (1168)
D	Diameter of Jacket	25-1/4 (641)	27 (686)	27 (686)	27 (686)	27 (686)
E	Floor to Center Line Gas Inlet	12 (305)	12 (305)	12 (305) 1	2 (305)	12 (305)
F	Draft Diverter Outlet Diameter	8 (203)	10 (254)	10 (254)	10 (254)	12 (305)
G	Floor to Center Line Gas Inlet	16-1/2 (419)	16-3/4 (425)	16-3/4 (425)	8 (457)	18 (457)
H	Overall Depth	29-5/8 (753)	31-1/2 (800)	31-1/2 (800)	36-1/2 (927)	36-1/2 (927)
J	Support Height	9 (229)	9 (229)	9 (229)	9 (229)	9 (229)
K	Width of Control String (approx.)	14 (356)	14 (356)	14 (356)	11 (279)	11 (279)
L	Pipe Size of Water Inlet (NPT)	1-1/4	1-1/2	1-1/2	2	2
M	Pipe Size of Water Outlet (NPT)	1-1/4	1-1/2	1-1/2	2	2
N	Pipe Size of Gas Inlet (NPT)	3/4	3/4	1	1	1
P	Control String Plus 1/2 Jacket Diameter (approx.)	26-5/8 (676)	27-1/2 (699)	27-1/2 (699)	24-1/2 (622)	24-1/2 (622)
S	Horizontal Length between Water Inlet & Outlet	5-3/8 (137)	5-1/2 (140)	5-1/2 (140)	5-3/4 (146)	5-3/4 (146)
T	Control string from Jacket	5 (127)	5 (127)	5 (127)	7 (178)	7 (178)
Approx. shipping weight lbs. (kg)		250 (113)	301 (137)	301 (137)	381 (173)	381 (173)

BTU input/output			Temperature rise and pressure drop					
			20°F rise		30°F rise		40°F rise	
Models	Input rating BTU/hr Nat & Prop. (LP) gas	Output rating BTU/hr Nat & Prop. (LP) gas	GPM	PD-FT head	GPM	PD-FT head	GPM	PD-FT head
HW 300	300,000	240,000	24	8	16	3	12	2
HW 399	399,000	319,200	32	16	21	7	16	5
HW 420	420,000	336,000	34	18	22	8	21	5.5
HW 520	520,000	416,000	42	12	28	5	26	4
HW 670 Nat	660,000	528,000	53	22	35	10	26	5.5
HW 670 Prop.	670,000	536,000	54	22	36	10	27	5.5

Models	Type of gas	Input		°F °C	20	40	50	60	70	80
		BTU/hr	kW		(11)	(22)	(28)	(33)	(39)	(44)
HW 300	Natural	300,000	88	GPH	1,455	727	582	485	416	364
	Propane			LPH	5,506	2,753	2,202	1,835	1,573	1,377
HW 399	Natural	399,000	117	GPH	1,935	967	744	645	553	484
	Propane			LPH	7,323	3,662	2,929	2,441	2,092	1,831
HW 420	Natural	420,000	123	GPH	2,036	1,018	815	679	582	509
	Propane			LPH	7,708	3,854	3,083	2,569	2,202	1,927
HW 520	Natural	520,000	152	GPH	2,521	1,261	1,008	840	720	630
	Propane			LPH	9,544	4,772	3,818	3,181	2,727	2,386
HW 670	Natural	660,000	193	GPH	3,200	1,600	1,280	1,067	914	800
				LPH	12,113	6,057	4,845	4,038	3,461	3,028
HW 670	Propane	670,000	196	GPH	3,248	1,624	1,299	1,083	928	812
				LPH	12,297	6,148	4,919	4,099	3,513	3,074

**FIGURE 1. DIMENSIONS**
