

## STEAM / HOT WATER MODELS HWG

### FEATURES

A. O. Smith hot water generators are available for operation with steam or boiler water as the energy source. They are completely assembled with components sized, piped and checked at the factory before shipment. Generators are available in space saving vertical or horizontal models.

**CUSTOM UNIT AVAILABILITY** - Custom units built to order, with tank capacities up to 12,000 gallons, with special control trim, and with special heating units can be built to design specifications on special order basis. Standard units listed in this brochure cover most standard orders.

**INSULATION AND JACKETING** - The HWG systems meet or exceed the thermal efficiency and or standby loss requirements of the U.S. Department of Energy and current edition ASHRAE/IESNA 90.1.

**CODE LISTING** - The standard system will employ an ASME "HLW" code glass-lined storage tank fitted with an ASME "U" code 3/4" diameter copper tube heat exchanger.

**INTEGRAL PUMP** - The standard HWG system will employ an integral bronze circulator pump. The standard heat exchanger sizing tables are also based on using integral circulators.

**HWG OPTIONS (STEAM OR WATER BOILER UNITS)** - Low water cutoff, alarm horn, 11x15 vessel manway, 4x6 vessel hand hole.

**STEAM UNITS** - Standard steam trim consists of temperature control valve, inlet and auxiliary steam traps, inlet and auxiliary strainers, steam pressure gauge with siphon, vacuum breaker and air vent.

**OPTIONAL STEAM TRIM** - Includes steam pressure reducing valve, electric high limit safety system, pilot operated controls, pneumatic controls.

**BOILER UNITS** - Standard boiler water trim include temperature control valve and boiler water temperature gauge.

**OPTIONAL BOILER TRIM** - Electric high limit safety system, three-way controls with bypass and boiler water pump. **ASME RATING** - Standard HWG consists of ASME HLW Code storage tank rated 125 psig working pressure with U Code heat exchanger, temperature & pressure relief valve, temperature & pressure gauge in tank, drain valve and lifting lugs.

**CATHODIC PROTECTION** - Standard HWG systems employing glass, cement or epoxy lined tanks are fitted with magnesium anodes as cathodic protection.

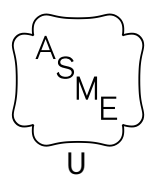
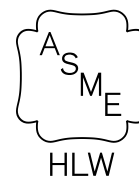
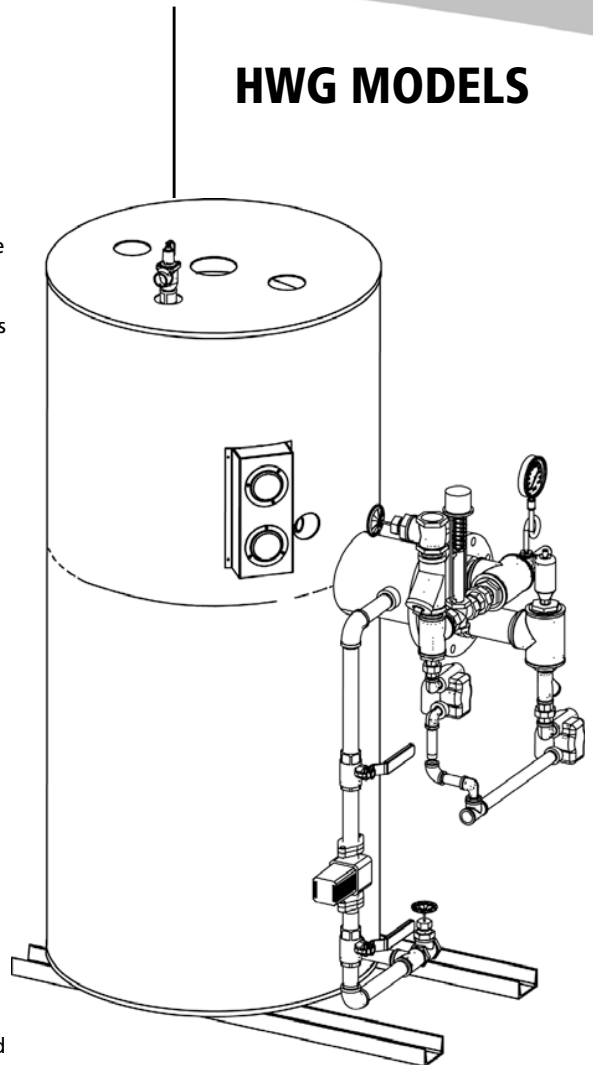
### LIMITED WARRANTY OUTLINES

**GLASS-LINED, CEMENT, EPOXY:** If the tank should leak any time during the first five years, under the terms of the warranty, A. O. Smith will repair or replace the tank; installation, labor, handling and local delivery extra.

**THE COIL HAS A ONE YEAR LIMITED WARRANTY.**

**NOTE: THIS OUTLINE IS NOT A WARRANTY.** For complete information, consult the written warranty or A. O. Smith Water Products Company.

## HWG MODELS





# Packaged Hot Water Generating Systems - Steam / Hot Water

## TO SPECIFY HWG SERIES PACKAGE WATER HEATER:

1. Calculate storage capacity in gallons required, and determine if vertical or horizontal installation applies.
2. Decide what type of heating medium will be used; steam or boiler water.
  - If STEAM - Determine pressure in coil.
  - If BOILER WATER - Determine available boiler water temperature.
3. From the recovery table, obtain the required GPH capacity and temperature rise. Selecting heating coil size.
4. Decide whether single or double wall coil is required.

## EXAMPLE INSTALLATION REQUIREMENTS:

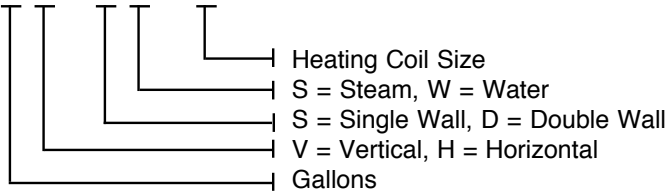
Vertical, 140 gallons, Steam @ 5 PSIG, 80 GPH Recovery, 40 - 140°F temperature rise.

## TO DETERMINE THE HWG SERIES MODEL:

Storage Tank ..... 140 Gallons, Vertical  
 Coil Size ..... 4-18 (from RECOVERY CHART)

## MODEL TO SPECIFY:

HWG - 140 V ES S 4-18



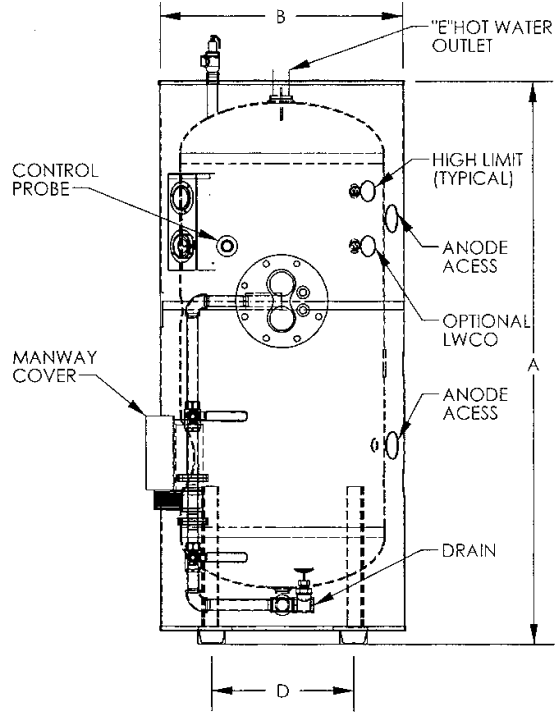
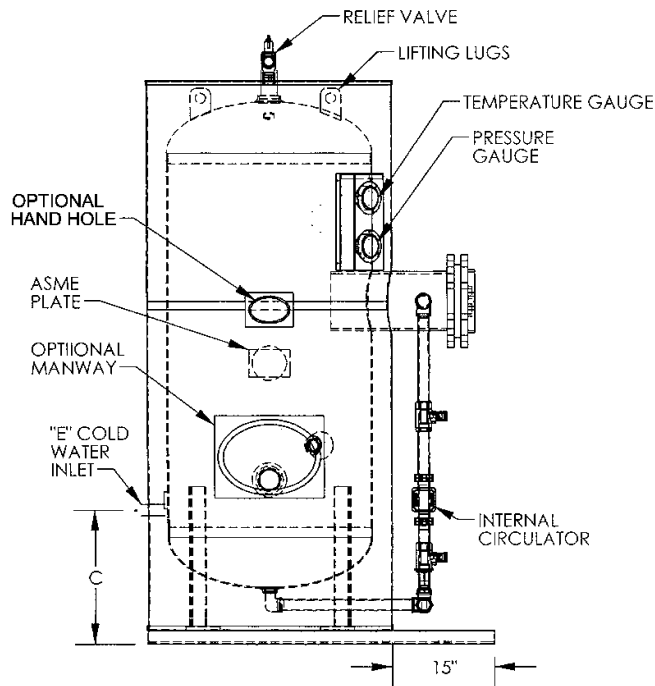
ESS = Single Wall Steam  
 EDS = Double Wall Steam  
 ESW = Single Wall Water  
 EDW = Double Wall Water

	STEAM PRESS IN COIL (PSIG)	COIL SIZES (DIA.-LENGTH)											
		4-18	4-36	6-24	6-36	6-54	8-42	8-60	10-42	10-48	12-36	12-48	14-42
40 - 140°F	0	72	164	320	508	788	1080	1640	1980	2240	2440	3320	4080
	5	83	190	370	588	912	1250	1898	2292	2593	2824	3843	4723
	10	90	205	400	635	985	1350	2050	2475	2800	3050	4150	5100
	15	96	218	425	674	1046	1434	2177	2628	2974	3239	4407	5416
	20	104	236	460	730	1133	1553	2358	2846	3220	3508	4773	5865
50 - 140°F	0	78	179	349	554	859	1177	1178	2158	2442	2660	3619	4447
	5	89	203	395	627	973	1334	2025	2445	2766	3013	4100	5039
	10	97	222	433	687	1066	1461	2218	2678	3030	3300	4490	5518
	15	105	239	466	739	1147	1571	2386	2881	3259	3550	4831	5936
	20	110	251	490	777	1206	1652	2509	3029	3427	3733	5080	6242
60 - 140°F	0	87	198	386	613	952	1304	1980	2391	2705	2946	4009	4927
	5	99	225	438	696	1080	1480	2247	2713	3069	3343	4548	5590
	10	107	243	474	753	1168	1601	2431	2935	3321	3617	4922	6049
	15	115	262	511	812	1259	1725	2620	3163	3578	3898	5304	6518
	20	122	278	543	862	1338	1833	2784	3361	3802	4142	5636	6926

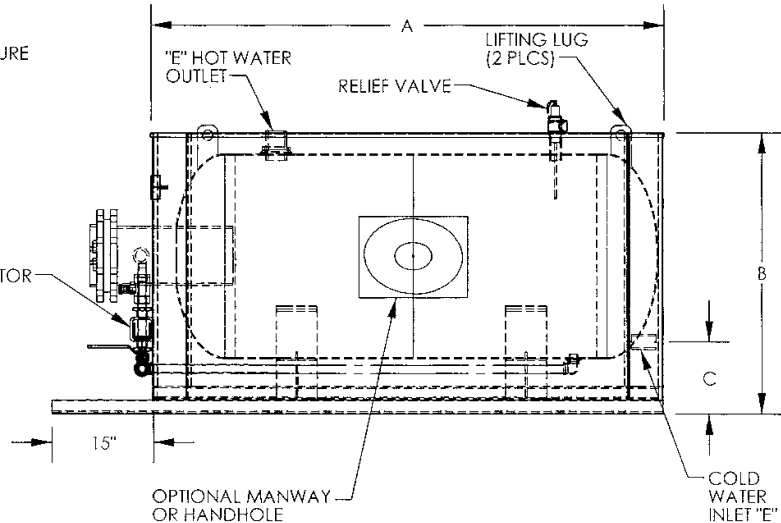
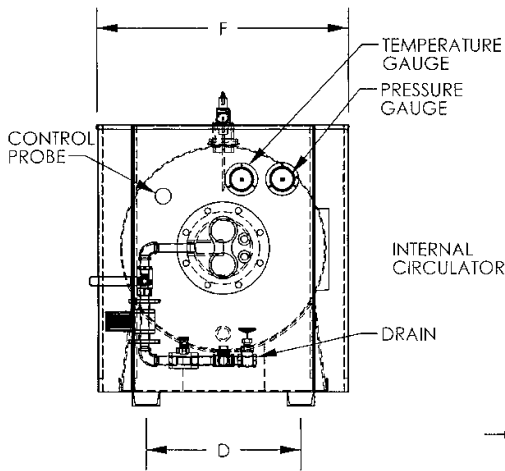
	COIL SIZES (DIA.-LENGTH)											
	4-18	4-36	6-24	6-36	6-54	8-42	8-60	10-42	10-48	12-36	12-48	14-42
180°F BOILER WATER	45	87	149	223	335	502	707	949	1079	1135	1544	1823
MINIMUM GPM REQ'D	4	7	13	19	28	42	59	79	90	95	129	152
212°F BOILER WATER	69	135	230	346	518	778	1094	1469	1670	1757	2390	2822
MINIMUM GPM REQ'D	6	12	20	29	43	65	91	122	140	146	200	235

### NOTES:

1. Other coil sizes available.
2. Consult factory for design parameters outside this chart.



MODEL	GAL	A	B	C	D	E
HWG24-140V	140	89	30	22	11 1/4	2 1/2
HWG30-200V	200	85	36	24	15 1/2	2 1/2
HWG36-350V	350	102	42	25 1/2	19	2 1/2
HWG36-400V	400	107	42	25 1/2	19	2 1/2
HWG48-500V	500	86	54	30	25 1/2	3
HWG48-750V	750	118	54	30	25 1/2	3
HWG48-1000V	1000	150	54	30	25 1/2	3



MODEL	GAL	A	B	C	D	E	F
HWG-200H	200	77	41	16	26	2 1/2	36
HWG-350H	350	93	47	16	30	2 1/2	42
HWG-400H	400	99	47	17	30	2 1/2	42
HWG-500H	500	79	59	23	42	3	54
HWG-750H	750	111	59	23	42	3	54
HWG-1000H	1000	143	59	23	42	3	54



# Packaged Hot Water Generating Systems - Steam / Hot Water

## SUGGESTED SPECIFICATION

The hot water heater generator package shall be A. O. Smith model no. HWG \_\_\_\_\_ (V) or (H), (ESW) or (EDW) with \_\_\_\_\_ heating coil. The jacketed, insulated storage tank shall be constructed and stamped according to ASME specifications for (125) psi working pressure. The unit shall be designed to recover \_\_\_\_\_ GPH for a temperature of \_\_\_\_\_ degrees F to \_\_\_\_\_ degrees F when supplied with \_\_\_\_\_ GPM boiler water entering temperature regulator at \_\_\_\_\_ degrees F. The heating coil shall be constructed and stamped according to section VIII of ASME code. The tube bundles shall be constructed of 3/4" O.D. 20 GA. deoxidized drawn copper tubing. The unit shall be controlled by one of three means: On-Off MoValve \_\_\_\_\_, Three Way Modulating Valve \_\_\_\_\_, Thermostatically Operated Boiler Water Pump \_\_\_\_\_. The unit will be completely factory assembled and furnished with the following standard components.

A storage tank \_\_\_\_\_" dia. x \_\_\_\_\_" long with \_\_\_\_\_ gallon capacity. Tank shall be insulated with 3" fiberglass insulation, R-value > 12.5. Tank shall be jacketed with heavy gauge steel with a baked enamel finish. Tank shall be built to ASME section lined and furnished with an ASME temperature & pressure relief valve. Heating coil built to Section VIII of ASME code. A tempregulator to be self actuated, direct acting. A bronze integral circulator pump with copper soldered recirculation line and (2) valves. A drain valve and assembly. Jacket mounted temperature and pressure gauges, ASME temperature & pressure gauges, a CSA Certified and ASME Rated T&P relief valve and a full length channel base and lifting lugs.

### OPTIONAL EQUIPMENT IS AS FOLLOWS:

#### STORAGE TANK

Tank shall have 150 psi or 160 psi operating pressure, an ASME section VIII construction, a 4"x6" handhole, 11"x15" manhole, a cement or epoxy lining.

#### WATER TO WATER SECTION

Section shall have a self actuated or pneumatic operated temperature regulator and a bypass loop in boiler water line for temperature regulator isolation.

## SPECIFICATIONS - STEAM TO WATER

The hot water heater generator package shall be A. O. Smith model no. HWG \_\_\_\_\_ (V) or (H), (ESW) or (EDW) with \_\_\_\_\_ heating coil. The jacketed, insulated storage tank shall be constructed and stamped according to ASME specifications for (125) psi working pressure. The unit shall be designed to recover \_\_\_\_\_ GPH for a temperature rise of \_\_\_\_\_ degrees F to \_\_\_\_\_ degrees F when supplied with \_\_\_\_\_ psi steam to the temperature regulator. The heating coil shall be constructed and stamped according to section VIII of ASME code. The tube bundles shall be constructed of 3/4" O.D. 20 GA. deoxidized drawn copper tubing. The unit will be completely factory assembled and furnished with the following standard components.

A storage tank \_\_\_\_\_" dia. x \_\_\_\_\_" long with \_\_\_\_\_ gallon capacity. Tank shall be insulated with 3" fiberglass insulation, with an R-value > 12.5. Tank shall be jacketed with heavy gauge steel with a baked enamel finish. Tank shall be built to ASME section IV, glasslined and furnished with an ASME temperature & pressure relief valve. Heating coil built to Section VIII of ASME code. A temperature regulator to be self actuated, direct acting. Main F&T trap, main "Y" strainer and associated black steel pipe. A bronze integral circulator pump with copper soldered recirculation line and (2) bronze ball valves. A drain valve and assembly. Jacket mounted temperature and pressure gauge. A CSA Certified and ASME Rated T&P relief valve and a full length channel base and lifting lugs. Air vent and vacuum breaker.

### OPTIONAL EQUIPMENT IS AS FOLLOWS:

#### STORAGE TANK

Tank shall have 150 psi or 160 psi operating pressure, an ASME section VIII construction, a 4"x6" handhole, 11"x15" manhole, a cement or epoxy lining.

#### STEAM TO WATER SECTION

Section shall have a pilot (spring, air, temperature) operated temperature regulator .