



SEV & SEH COMMERCIAL ELECTRIC WATER HEATERS

SEV - 150A through 2500A

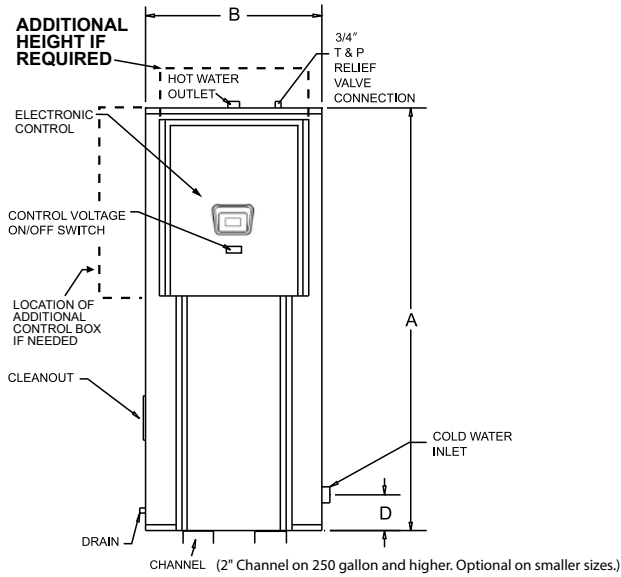
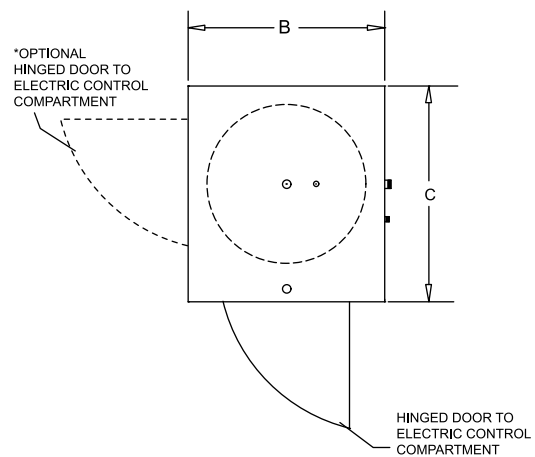
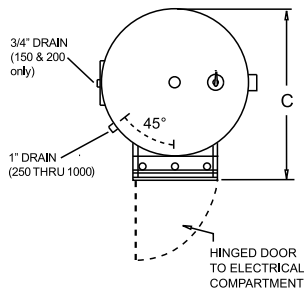
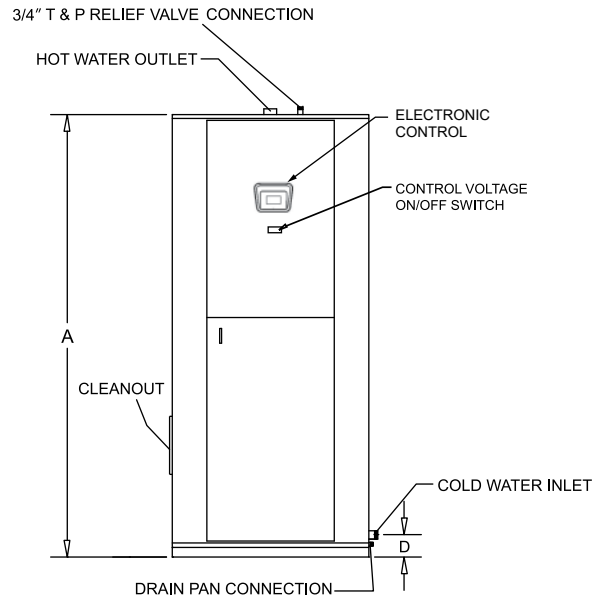
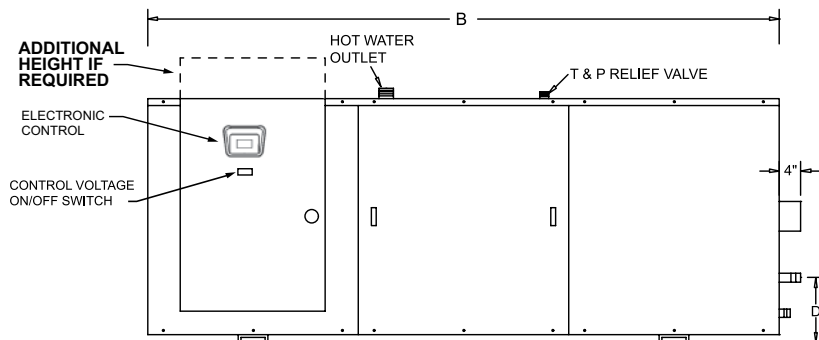
SEH - 150A through 2500A

- State's new propriety advanced electronic water heater control, provides precise + or - 1°F temperature control, that is ideal for industrial and food service applications where accurate hot water temperatures are needed.
- Animated icons display detailed operational and diagnostic information. Fault or alert messages appear if an operational issue occurs.
- Factory standard low water cut-off uses a remote electronic immersion type probe to prevent energizing of the elements in the event of low water condition and eliminates accidental dry firing.
- Progressive modulating matches number of elements to current load conditions. Rotates and lead lags stage control element loads to provide long life and equal wear.
- Control system automatically lowers the operating set point by a programmed value during user defined time periods. Seven-day clock may be programmed for night set back and or weekend shutdown to reduce operating cost and save money.
- Modbus/BACnet compatible with optional Gateway interface.
- Exclusive glass lining process provides superior protection against corrosion in varying water conditions.
- All models are constructed to the requirements of ASME and are available in 125, 150 and 160 psi working pressures (125 psi working pressure - standard).
- inspection/clean out opening of 3 x 4 inch is standard on vertical tanks, 4 x 6 inch is standard on horizontal tanks. Man hole is optional on tanks above 200 gallons
- Heavy-duty elements have incoloy sheathing: provide excellent protection against oxidation and scaling. The input ranges from 15kW to 900kW (see accompanying chart).
- Control and power circuit fusing meets N.E.C.
- Meets the standby loss requirements of the U.S. Department of Energy, NRC and current edition of ASHRAE/IES 90.1.
- Contactors: heavy duty UL rated for 100,000 cycles.
- Color-coded circuitry for easier servicing
- Magnesium anode rods for corrosion protection
- Standard voltages include 208, 240, 380, 400, 415, 480, 600 volt single or three phase
- Standard factory installed terminal block. High performance heaters (above 180 kW) will have two or more terminal blocks suitable for 500 MCM power supply cables.
- Temperature and pressure relief valve, supplied but not installed
- Can be specified with optional water to water or steam to water heat exchangers. Both single and double-wall heat exchangers are available. Complete control packages can be factory-installed for hook-up and run capability.

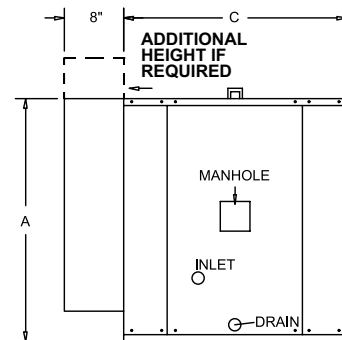


SAMPLE SPECIFICATION

The heater(s) shall be State Commercial Electric Model Number _____ or an approved equal. Heater(s) shall be rated at _____ kW, _____ V, _____ phase, 60 cycle AC. The heater shall be for (vertical/horizontal) installation with lifting lug access and channel skid base not on every tank. Vessel shall be constructed to Section IV of the ASME Code for 125 psi working pressure. Vessel shall be glass-lined with anodic protection. Entire vessel and electrical controls are to be encased in a sheet metal enclosure with baked enamel finish. Tank to be insulated with foam or 3 inch fiberglass blanket meeting or exceeding current ASHRAE standard for energy efficiency. Enclosure to have hinged locking door over electric controls. There shall be _____ individually replaceable heavy duty Incoloy sheathed heating elements each complete with prewired terminal leads. These elements will be switched by magnetic contactors which are operated by a 120V fused control circuit protected by manual reset high limit. Control circuit is activated by a master pilot switch and electronic low water cutoff. This control shall prevent the entire electrical load from being switched on instantaneously. The control shall have even load progressive sequencing which utilizes the "first on, first off" principle thereby equalizing the operating time of heating elements and contactors. Each magnetic contactor and heating element circuit will be protected by a maximum of 60 amp cartridge type fuses with a minimum of 100,000 amp interrupting capacity. The entire water heating package shall be prewired to solderless terminal lugs, factory tested, complete with a CSA Certified and ASME Rated T&P relief valve and bear the Underwriters' Laboratories label. Heater(s) shall have a 3-year limited warranty as outlined in the written warranty. Fully illustrated instruction manual included. Water heater unit(s) shall be compatible with building management systems using Modbus or BACnet with factory supplied gateway.

Vertical round models 150-1000

Vertical square models 1250-2500

Horizontal models


A & D ELEVATION FROM FINISHED FLOOR



END VIEW

EXTRA PANEL BOX MAY BE NECESSARY FOR INPUTS HIGHER THAN 72KW. CONSULT FACTORY

Model number	Max. kW	Gallon capacity	Dimensions in inches				Water connection		Shipping weight (lbs)
			A	B	C	D	Inlet openings	Outlet openings	
Vertical round electric storage heater									
SEV-150A	144	150	65-1/2	32	38-3/4	11-3/4	1-1/2	1-1/2	650
SEV-200A	180	200	78	32	38-3/4	11-3/4	1-1/2	1-1/2	750
SEV-250A	216	250	92	34	40-3/4	19-1/4	1-1/2	1-1/2	1,165
SEV-300A	270	300	80	40	46-3/4	20-3/4	2	2	1,350
SEV-400A	324	400	80	46	52-3/4	22-1/4	2	2	1,590
SEV-500A	396	500	92	46	52-3/4	22-1/4	2	2	1,700
SEV-530A	396	530	90	52	60-3/4	24-1/4	2	2	1,900
SEV-600A	396	600	92	52	60-3/4	24-1/4	2-1/2	2-1/2	2,010
SEV-800A	396	750	104	52	60-3/4	24-1/4	2-1/2	2-1/2	2,450
SEV-1000A	432	950	128	52	60-3/4	24-1/4	2-1/2	2-1/2	3,160
Vertical square electric storage heater									
SEV-1250A	900	1,250	132-1/2	52	61-1/2	23-1/4	3	3	3,560
SEV-1500A	900	1,500	128-1/2	70-1/2	70-1/2	25-1/4	3	3	4,120
SEV-2000A	900	2,000	124-1/2	78-1/2	78-1/2	27	3	3	4,350
SEV-2500A	900	2,500	146-1/2	82-1/2	82-1/2	29	3	3	5,750
Horizontal square electric storage heater									
SEH-150A	144	150	37	68-1/2	34-1/4	12	2	2	1,180
SEH-200A	180	200	37	78	34-1/4	12	2	2	1,370
SEH-250A	225	250	39	90-1/4	36-1/4	13	2	2	1,450
SEH-300A	270	300	45	78-1/4	42-1/4	14-3/4	2	2	1,530
SEH-400A	324	400	52	78-1/4	48-1/4	16	2	2	1,750
SEH-500A	450	500	52	90-3/4	48-1/4	16	2	2	1,860
SEH-600A	540	600	58	90-3/4	54-1/4	13-1/2	2-1/2	2	2,340
SEH-800A	720	750	58	102-1/4	54-1/4	13-1/2	2-1/2	2	2,850
SEH-1000A	900	950	58	126-1/4	54-1/4	13-1/2	2-1/2	2	3,040
SEH-1250A	900	1,250	64	130-1/4	60-1/4	15	3	3	3,750
SEH-1500A	900	1,500	70	126-1/4	66-1/4	16	3	3	4,340
SEH-2000A	900	2,000	82	123-1/4	78-1/4	14	3	3	4,580
SEH-2500A	900	2,500	82	144-1/4	78-1/4	16-1/2	3	3	6,060

Tank lining options

- Cement: a special formulation of cement providing excellent corrosion protection. Available on 250 and 300 gallon tanks.
- Epoxy: a solventless two component epoxy lining available on 250 gallon and larger tanks.

Special construction options

- "12 X 16" manhole – available on 250 gallon and above
- 150 or 160 PSI working pressure (Must be specified at time of order).

Other optional features

- Circulating pump and piping sized to turn over entire storage capacity of tank once each hour. Recommended to optimize available water at temperature in horizontal tanks particularly where low draw conditions are anticipated.
- Factory-installed dial-type pressure gauge
- BACnet or MODBUS interface for remote monitoring of status, faults and temperatures. Available for ethernet or serial connection.

Control options

- Hot water generating tube heat exchangers. Custom dual energy source units with heating units and control trim and can be built to design specifications on a special order basis for steam or boiler water applications. Consult factory or Hot Water Generator specification sheets for tube bundle sizing information and control options. Allows for remote connection to building demand limiter or other functions.
- Pilot lights and switches. Denotes heating stage(s) in operation. Up to one light per contactor is available. A simple means of load control allows all or part of unit input to be controlled manually. Up to one switch per contactor is available.
- Safety door interlock. Prevents opening of control panel door when heater power supply is on.

kW input	LPH 50°C rise	GPH 90°F rise	Max. no. of elements	No. of control steps	No. of contractors	Amperage draw				
						240V/3ph	380V/3 ph	400V/3 ph	415 V/3 ph	480V/3ph
15	258	69	1	1	1	36	23	22	21	18
18	310	83	1	1	1	43	27	26	25	22
30	517	138	2	1	1	72	46	43	42	36
36	620	166	2	2	2	87	55	52	50	43
45	775	207	3	2	2	108	68	65	63	54
54	930	248	3	2	2	130	82	78	75	65
60	1.033	276	4	2	2	144	91	87	83	72
72	1.240	331	4	3	3		109	104	100	87
90	1.550	414	5	3	3		137	130	125	108
108	1.860	497	6	4	4		164	156	150	130
120	2.066	552	8	4	4		182	173	167	144
135	2.325	621	9	5	5		205	195	188	162
144	2.480	662	8	5	5		219	208	200	173
162	2.790	745	9	6	6		246	234	225	195
180	3.100	828	10	6	6		273	260	250	217
216	3.720	994	12	8	8		328	312	301	260
234	4.029	1.076	13	8	8		356	338	326	281
252	4.339	1.159	14	9	9		383	364	351	303
270	4.649	1.242	15	9	9		410	390	376	325
288	4.959	1.325	16	10	10		438	416	401	346
306	5.269	1.408	17	11	11		465	442	426	368
324	5.579	1.490	18	11	11		492	468	451	390
342	5.889	1.573	19	12	12		520	494	476	411
360	6.199	1.656	20	12	12		547	520	501	433
378	6.509	1.739	21	13	13		574	546	526	455
396	6.819	1.822	22	14	14		602	572	551	476
414	7.129	1.904	23	14	14		629	598	576	498
432	7.439	1.987	24	15	15		656	624	601	520

Note: for kW above 198 kW, multiple terminal blocks will be factory installed.
For kW above 432, please contact factory