

Dura-Power

Commercial Electric Water Heaters

DVE-125 THRU 10,000
DHE-200 THRU 10,000

Storage Capacity

DVE - 475 - 37,850 Litres
DHE - 760 - 37,850 Litres

Range of Input

Input 15 Kw - 3000 Kw



STANDARD FEATURES

GLASS-LINED TANK	Tank interior is coated with glass specially developed for use in water heaters. Tanks rated at 8.62 bar working pressure; 10.34 bar or 11 bar working pressure is optional. Vermin proof fiber glass insulation reduces costly heat loss. Constructed to Section IV of ASME code, and UL standards. Tanks have channel skid base. 100 mm x 150 mm handhole is furnished on 1,893, 2,271 and 2,650 Litres models; 280 mm x 380 mm manhole is furnished on 3,028 Litres and larger sizes.
INCOLOY IMMERSION HEATERS	Heavy-duty medium watt density elements (three/immersion heater) have incoloy sheathing: provide excellent protection against oxidation and scaling. The input ranges from 15KW to 3000KW (see accompanying chart).
AVAILABLE WITH OPTIONAL GOLDENROD ELEMENTS	All models are available with the Goldenrod 24K gold plated elements (patent pending). Goldenrod Elements provide long-life and five times the scaling resistance of standard incoloy elements. Goldenrod Elements carry a three-year warranty against failure due to scale.
FUSING	Control and power circuit fusing to meet N.E.C.
PILOT SWITCH AND LIGHT	Provided on front of heater; permits manual starting and stopping of heater by interrupting power to control circuit.
MAGNETIC CONTACTOR(S)	Heavy duty UL rated for 100,000 cycles.
LOW WATER CUTOFF	Probe type electric low water cutoff prevents energizing of elements in the event of low water condition.
120 VOLT CONTROL CIRCUIT	120 volt control circuit is powered by fused transformer.
IMMERSION THERMOSTAT	Immersion temperature control (one per 60KW) is adjustable to 82°C; high temperature cutoff is manual reset, adjustable type.

OTHER STANDARD FEATURES

- Color coded circuitry for easier servicing
- Anode rods for maximum corrosion protection
- Standard voltages include 220, 240 volt single phase and 415 volt three-phase. For other voltages consult factory
- Factory installed terminal block(s)
- Cabinet has baked enamel finish
- Prewired element terminal leads
- Temperature and pressure relief valve
- 50 mm dial temperature gauge
- Immersion type thermostat and high limit for faster response.

OPTIONAL DUAL ENERGY SOURCE CAPABILITY PROVIDES EMERGENCY BACK UP ENERGY SOURCE OR WINTER/SUMMER BOILER OPERATION.

Can be specified with optional water to water or steam to water heat exchangers. Both single and doublewall heat exchangers are available. Complete control packages can be factory installed for hook-up and run capability.

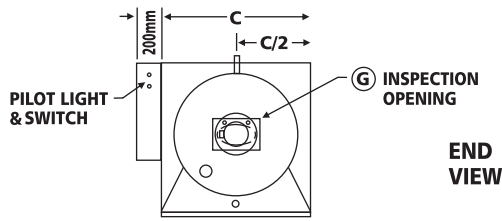
MEETS OR EXCEEDS THE REQUIREMENTS OF ASHRAE 90.1b-1990 STANDARD FOR ENERGY EFFICIENCIES.



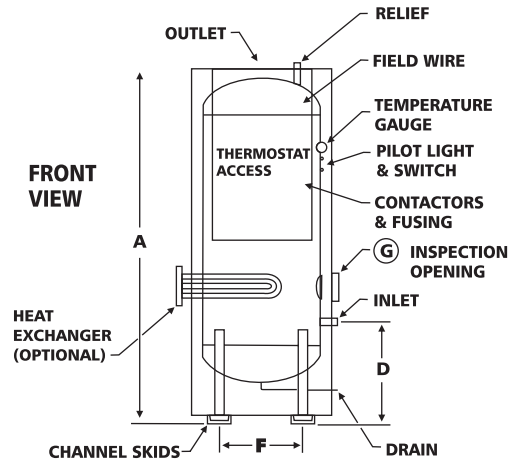
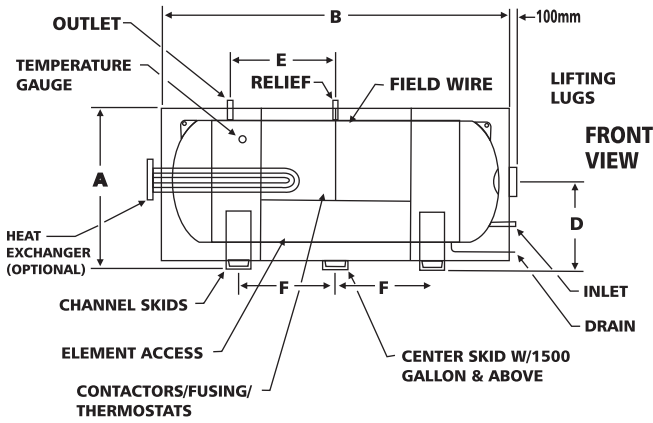
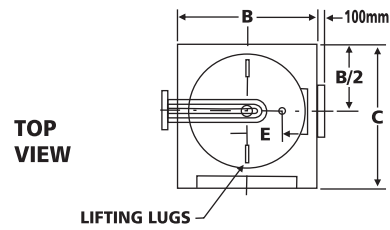
ASME



HORIZONTAL MODELS



VERTICAL MODELS



Dimensions in mm

A. O. Smith Model*	Nominal Litre Capacity	Maximum KW Input	Height A mm	Width (Length) B mm	Depth C mm	D mm	E mm	Skid Spacing F mm	Inspection Opening G mm	Inlet Outlet Opening mm	Drain Opening mm	Relief Valve Opening** mm
HORIZONTAL ELECTRIC STORAGE HEATER												
DHE-200	757	180	978	1,956	914	267	445	457	Optional	38	19.1	19.1
DHE-250	946	240	978	2,311	914	267	610	610		38	19.1	25.4
DHE-300	1,136	300	1,130	2,057	1,067	210	432	457		51	19.1	25.4
DHE-350	1,325	330	1,130	2,362	1,067	210	584	610		51	19.1	25.4
DHE-400	1,514	390	1,130	2,540	1,067	210	673	699	51	19.1	25.4	
DHE-500	1,893	480	1,295	2,388	1,219	356	610	610	100 x 150	51	31.8	25.4
DHE-600	2,271	600	1,295	2,769	1,219	356	813	813		51	31.8	25.4
DHE-700	2,650	690	1,295	3,073	1,219	356	965	965		51	31.8	25.4
DHE-800	3,028	780	1,448	2,819	1,372	419	813	813	280 x 380	51	38.1	25.4
DHE-1000	3,785	990	1,549	2,819	1,524	419	749	749		76	38.1	25.4
DHE-1250	4,731	1200	1,549	3,505	1,524	419	1,092	1,092		76	38.1	25.4
DHE-1500	5,678	1500	1,549	3,810	1,524	419	1,270	1,245		76	38.1	25.4
DHE-2000	7,570	1980	1,778	4,496	1,676	508	1,524	1,524	280 x 380	76	50.8	31.8
DHE-3000	11,355	3000	1,930	5,359	1,829	508	1,842	1,880		76	50.8	38.1
DHE-5000	18,925	3000	2,083	7,518	1,981	521	2,883	2,921		76	50.8	38.1
DHE-7500	28,388	3000	2,692	8,763	2,591	559	3,353	3,302		102	50.8	38.1
VERTICAL ELECTRIC STORAGE HEATER												
DVE-125	473	120	1,791	762	940	406	152	432	Optional	32	19.1	19.1
DVE-150	568	150	2,121	762	940	406	152	432		32	19.1	19.1
DVE-150L	568	150	1,511	914	1,092	445	152	533		32	19.1	19.1
DVE-200	757	180	1,791	914	1,092	445	152	533		38	19.1	19.1
DVE-250	946	240	2,362	914	1,092	445	152	533	Optional	38	19.1	25.4
DVE-300	1,136	300	2,121	1,067	1,245	483	152	648		51	19.1	25.4
DVE-350	1,325	330	2,426	1,067	1,245	483	152	648		51	19.1	25.4
DVE-400	1,514	390	2,604	1,067	1,245	483	152	648		51	19.1	25.4
DVE-500	1,893	480	2,464	1,219	1,397	533	152	762	100 x 150	51	31.8	25.4
DVE-600	2,271	600	2,845	1,219	1,397	533	152	762		51	31.8	25.4
DVE-700	2,650	690	3,150	1,219	1,397	533	152	762		51	31.8	25.4
DVE-800	3,028	780	2,946	1,372	1,549	584	203	864	280 x 380	51	38.1	25.4
DVE-1000	3,785	990	2,946	1,524	1,702	622	254	965		76	38.1	25.4
DVE-1250	4,731	1200	3,632	1,524	1,702	622	254	965		76	38.1	25.4
DVE-1500	5,678	1500	3,937	1,524	1,702	622	254	965		76	38.1	25.4
DVE-2000	7,570	1980	4,648	1,676	1,854	635	305	1,080	280 x 380	76	50.8	25.4
DVE-3000	11,355	3000	5,512	1,829	2,007	699	356	1,194		76	50.8	38.1
DVE-5000	18,925	3000	7,849	1,981	2,159	762	356	1,295		76	50.8	38.1
DVE-7500	28,388	3000	8,382	2,286	2,464	762	356	1,511		102	50.8	38.1
DVE-10,000	37,850	3000	9,093	2,591	2,769	762	356	1,727	102	50.8	38.1	

* Complete Model Number includes the desired KW at end, e.g.: DVE-500-120 when KW = 120.

**Size may vary according to KW input.

Minimum installation clearances required: 1524 mm from front, 305 mm from top, and 610 mm from right side.

STANDARD KW INPUTS

Standard KW Ratings	Number of Immersion Heaters	Kcal/hr Input & Output	LPH Recovery 56°C Rise	Number of 50A Contactors		Amperage Draw Three-Phase		
				Three-Phase 220V, 240V	Three-Phase 415V	220V	240V	415V
15	1-15KW	12,902	231	1	1	39	37	21
24	2-12KW	20,643	371	2	1	63	58	33
30	2-15KW	25,804	466	2	1	79	72	42
36	3-12KW	30,965	556	3	1	94	87	50
45	3-15KW	38,706	696	3	2	118	109	63
60	4-15KW	51,593	9,326	2	1	157	145	84
75	5-15KW	64,510	1,162	5	3	197	181	105
90	6-15KW	77,412	1,397	6	3	236	217	125
105	7-15KW	90,314	1,628	7	4	275	253	146
120	8-15KW	103,216	1,862	8	4	315	289	167
150	10-15KW	129,020	2,328	1	5	393	361	209
180	12-15KW	154,824	2,793	12	6	472	433	250
210	14-15KW	180,628	3,259	14	7	550	505	292
240	16-15KW	206,431	3,724	16	8	630	577	334
270	18-15KW	232,235	4,190	18	9	708	650	375
300	20-15KW	258,039	4,656	20	10	787	722	417
330	22-15KW	283,843	5,121	22	11	865	794	459
360	24-15KW	309,647	5,587	24	12	944	866	500
390	26-15KW	335,451	6,052	26	13	1,023	938	542
420	28-15KW	361,255	6,518	28	14	1,102	1,010	584
450	30-15KW	387,059	6,983	30	15	1,180	1,083	626
480	32-15KW	412,863	7,449	32	16	1,259	1,155	667
510	34-15KW	438,667	7,914	34	17	1,138	1,227	709
540	36-15KW	464,471	8,380	36	18	1,416	1,299	751
570	38-15KW	490,275	8,846	38	19	1,495	1,371	793
600	40-15KW	516,079	9,311	40	20	1,574	1,443	834
360	42-15KW	541,883	9,777		21	↑ Not Recommended	↑ Not Recommended	500
660	44-15KW	567,686	10,242		22			918
690	46-15KW	591,222	10,708		23			960
720	48-15KW	619,294	11,173		24			1,001
810	54-15KW	696,706	12,570		27			1,126
900	60-15KW	774,118	13,967		30			1,251
990	66-15KW	851,530	15,363		33			1,376
1080	72-15KW	928,942	16,760		36			1,502
1170	78-15KW	1,006,353	18,157		39			1,627
1260	84-15KW	1,083,765	19,553		42			1,752
1350	91-15KW	1,161,177	20,950		45	1,877		
1440	96-15KW	1,238,589	22,347		48	2,002		
1530	102-15KW	1,316,001	23,743		51	2,127		
1620	108-15Kw	1,393,412	25,140		54	2,252		
1800	120-15Kw	1,547,782	27,933		60	2,503		
1980	132-15Kw	1,703,059	30,727		66	2,753		
2040	136-15KW	1,754,667	31,658		68	2,836		
2220	148-15KW	1,909,491	34,451		74	3,086		
2250	150-15KW	1,935,295	34,917		75	3,128		
2400	160-15KW	2,063,710	37,244		80	3,337		
2640	176-15Kw	2,270,746	40,969		88	3,670		
2820	188-15KW	2,425,570	43,762		94	3,921		
3000	200-15KW	2,579,637	46,556		100	4,171		

Figured at 1 KW=860 Kcal

OPTIONS

SPECIAL CONSTRUCTION

SILICON BRONZE VESSELS	Are available for special applications or very corrosive water conditions. Consult factory for specific sizes.
STAINLESS STEEL VESSELS	Are available for deionized water. Built with stainless steel under rules of Section IV of the ASME Boiler and Pressure Vessel Code for operation on deionized water having a minimum specific resistivity of 10 megohm/cm.
10.34 BAR OR 11 BAR WORKING PRESSURE	Must be specified at time of order.

TANK LININGS

CEMENT	A special formulation of cement providing excellent corrosion protection. Available on 757 Litres and larger tanks.
EPOXY	A solventless two component epoxy lining applied to a minimum 0.25 mm dry thickness. Available on 757 Litres and larger tanks.
GOLDENROD ELEMENTS	Available with Optional Goldenrod Elements - All DVE/DHE models are available with the Goldenrod 24K gold plated elements (patent pending). Goldenrod Elements provide long-life and five times the scaling resistance of standard incoloy elements. Goldenrod Elements carry a three-year warranty against failure due to scale.

OTHER OPTIONAL FEATURES

TEMPERATURE AND PRESSURE RELIEF VALVES	For working pressures other than standard, consult factory. HORIZONTAL OR VERTICAL – See specifications, larger capacities may be obtained in vertical or horizontal construction.
CIRCULATING PUMP PACKAGE	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.
OPTIONAL INTERNATIONAL VOLTAGES	380 Volts
90 mm DIAL TYPE PRESSURE GAUGE	Factory installed.
90 mm DIAL TYPE TEMPERATURE GAUGE	Factory installed.
280 mm x 380 mm MANHOLE	Available as option on tanks 2650 Litres or smaller.

CONTROL OPTIONS

COPPER TUBE TANK HEATER	Double wall copper tube tank heaters are designed for heating potable water with both potable or non-potable liquids or steam, and are specifically engineered for installation in models DVE and DHE for dual energy applications. Tank heaters have a positive fail-safe means of leak detection in the event of either tube failure to prevent mixture of heating medium and potable water. Single wall heat exchangers are also available.
THERMOSTATIC STEP CONTROL	The simplest form of modulation. Allows elements to be stepped on in groups by specifying additional thermostats (up to one per contactor). It is recommended that number of thermostats not exceed five.
SOLID STATE MODULATING STEP CONTROL SEQUENCER	Solid state electronic control device that modulates input to match load through progressive sequencing of steps (up to 20 steps with maximum of one per contactor). Up to 5 stage time delay sequencer provides for stepping of elements in groups or individually (maximum of one step per contactor). Units supplied with this option will have a 120/24 volt control circuit.
TERMINAL BLOCKS	Allows for remote connection to building demand limiter or other functions.
AUTOMATIC RESET HIGH LIMIT	A control that in the event of high temperature, interrupts power, de-energizing elements, automatic reset. (Standard with modulating step control).
INDICATING LIGHTS	Denotes heating stage(s) in operation. Up to one light per contactor is available.
OVERRIDE SWITCHES	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. NOTE: Once door is opened heater may be energized if necessary for service diagnosis.
SHUNT TRIP CIRCUIT BREAKER	A safety device (circuit breaker) which disconnects power to heater in the event of over-current, high temperature or low water level, breaker must be manually reset.
CIRCUIT BREAKER	A safety device which disconnects power to the heater in the event of over-current.

SAMPLE SPECIFICATIONS

The heater(s) shall be A.O. Smith Dura-Power Commercial Electric Model Number _____ or an approved equal. Heater(s) shall be rated at _____ KW, _____ V, _____ phase, 50 cycle AC. The heater shall be for (vertical/ horizontal) installation with lifting lugs and channel skid base. Vessel shall be constructed to Section IV of the ASME Code for 8.5 bar working pressure. Vessel shall be glass-lined with anodic protection. Entire vessel and electrical controls are to be encased in a rectangular sheet metal enclosure with baked enamel finish. Tank to be insulated with fiber glass insulation. Separate 50 mm dial type temperature gauge will be mounted on the front of the enclosure. Enclosure to have hinged locking door over electric controls. There shall be _____ individually replaceable _____ KW, 4 bolt flange mounted, 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. The thermostatic control of the contacts shall be in _____ stages through solid state modulating step control which will balance the water heating input to the demand. 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 ASME temperature and pressure 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.

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