

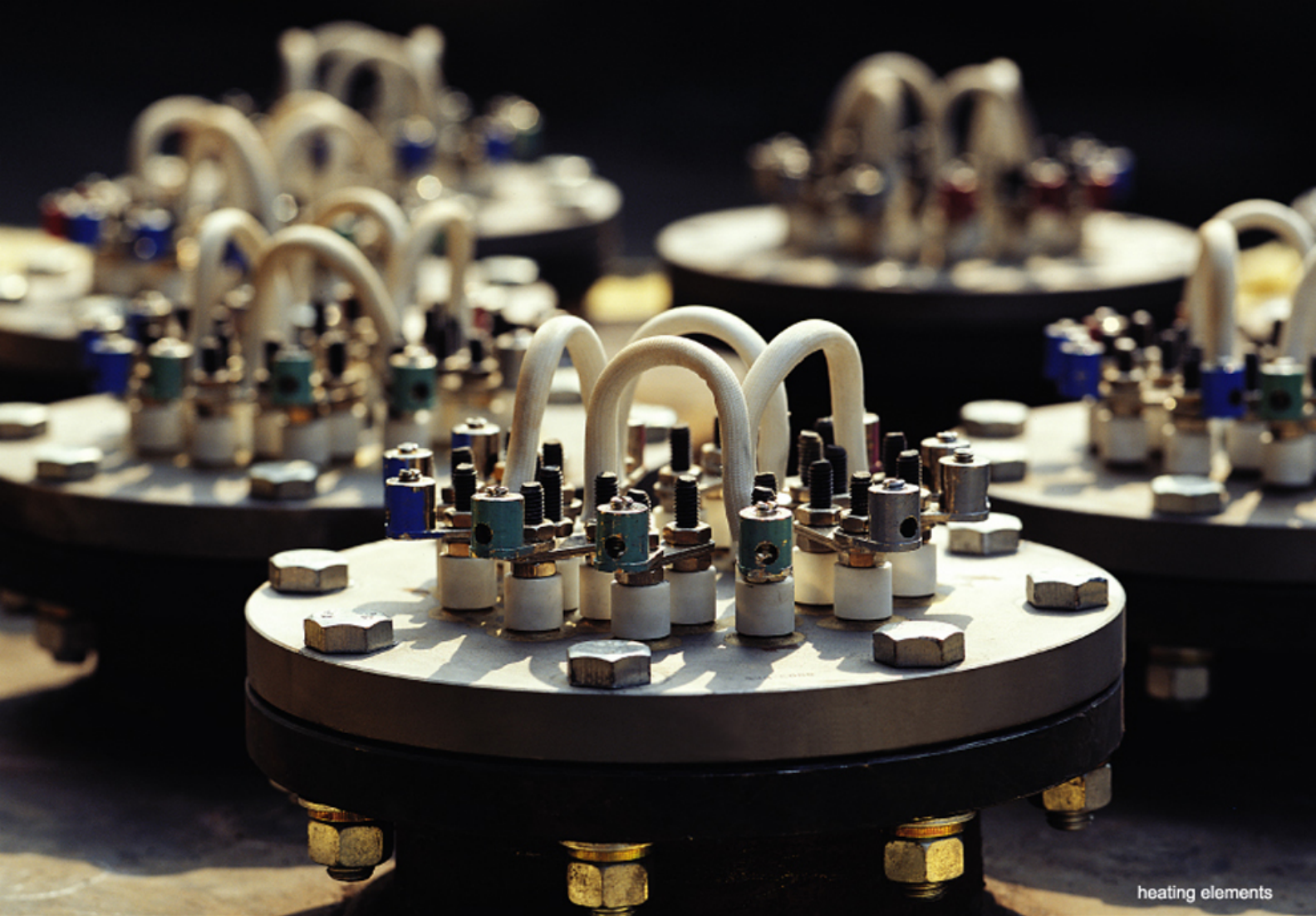


Built/certified in accordance to
ASME Boiler and Pressure
Vessel Code

Fulton Electric Steam and Hot Water Boilers From 12 to 2000kW (1.2 to 200BHP)

A complete line of packaged boilers for
efficient, quiet and safe operation for any
commercial/industrial process application





heating elements

Fulton Electric Steam and Hot Water Boilers Are Efficient, Quiet, And Safe For Your Process Needs



step sequencer

Features and advantages

- Nearly 100% efficient
- Quiet, clean
- No NO_x emissions
- Ideal choice where fossil fuels are not available or where electricity rates are favorable
- Built to ASME Code
- Vertical design requires minimal floor space
- Completely wired control panel box located in front of the boiler.
- Safe. Solid state relays. All wiring meets NEC specifications.
- Second (auxiliary) low water water cut-off probe is standard



Fulton manufactures a complete line of electric steam and hot water boiler from 12 kW to 2000 kW (1.2 to 200BHP) up to 300 PSI for heating and process applications.

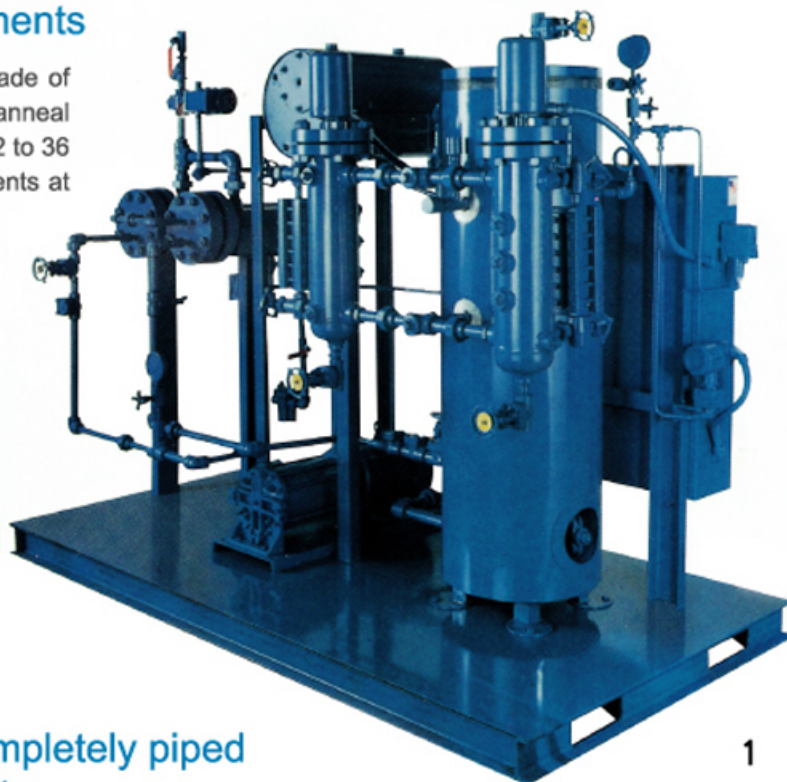
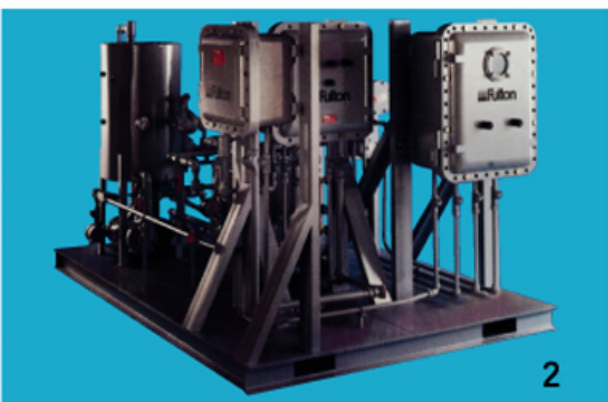
Fulton's vertical design is a full packaged boiler built to ASME specifications and applicable standards and codes. They are very efficient because the heating elements are totally immersed in water and the pressure vessel is fully insulated. Radiation losses are minimal. With a carefully calculated heat to steam ratio, operating pressures are achieved quickly with maximum efficiency. Electric boilers have no wasted fuel going out the stack as associated with fossil fuel, therefore, electric boilers are environmentally friendly. No NO_x (nitrogen oxides) are being transmitted to the atmosphere.

50 to 2000 kW elements mount vertically

Can be serviced and periodically maintained simply by unbolting the element(s) from the flanges in the top of the boiler's "head". Expansion and contraction of the top mounted elements cause scale to flake off and drop to the bottom of the boiler. Strategically located 3" x 4" handholes allow easy inspection and periodic clean-out maintenance.

Stainless steel heating elements

Fulton uses low watt density elements* made of stainless steel. Stainless will not melt or anneal as easily as copper elements. The small 12 to 36 kW boilers use horizontally mounted elements at the bottom.



Fulton can custom build completely piped and wired skid mounted units.

Save valuable time and expenses in the field by ordering complete skid mounted units ready for power and water hook up. Unit 1-50 kW (5 BHP) 600 PSIG steam boiler with dual level controls, skid-mounted, pre-piped with feed system and tandem feed-water preheaters. This unit is used for steam injection for pharmaceutical crystallization process.

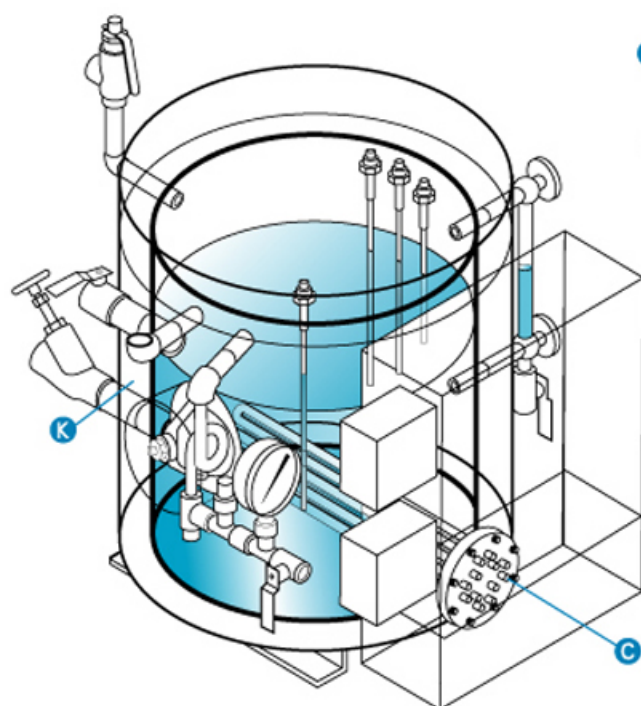
Unit 2-36 kW (3.6BHP) 15 PSIG electric steam boiler with 3 kW electric steam superheater skid mounted and pre-piped with return system and chemical feed system. Explosion proof, Class 1, Group C, D DN 1. All controls, instrumentation by Fulton including single source power connection. This unit is used for manufacturing/sterilization of surgical equipment.

The element(s) are easily accessible-permit quick removal for service or inspection. Heating element thermostats are optional.

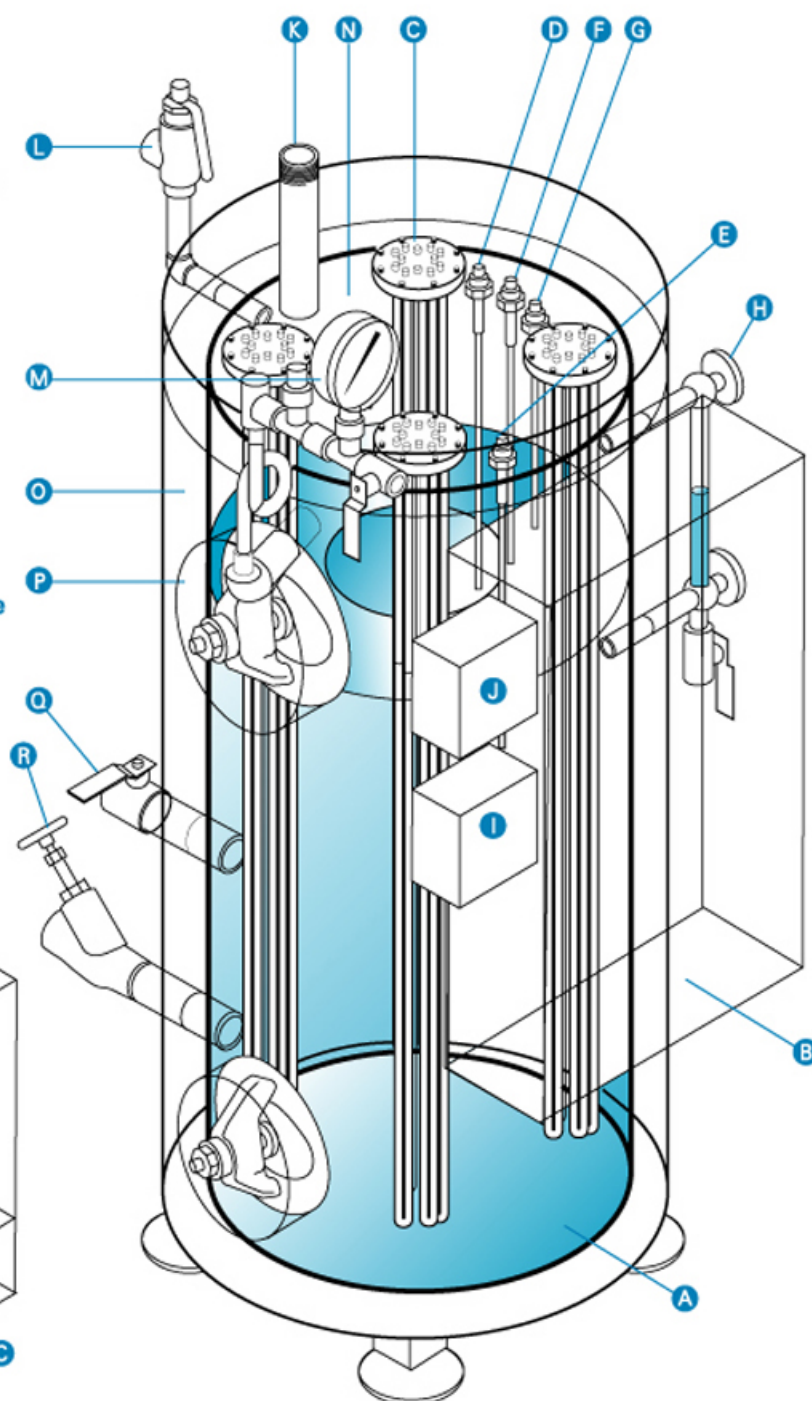
Component locations of the Fulton 12 to 2000 kW (1.2 to 200BHP) Steam Boilers

- A) Pressure Vessel Is Built To ASME Code
- B) Electric Control Panel Box
- C) Electric Heating Elements
- D) Low Water Cut Off Probe
- E) Second (Auxiliary) Low Water Cut Off Probe
- F) Pump "On" Probe
- G) Pump "Off" Probe
- H) Sight Glass Assembly
- I) Operating Pressure Control
- J) High Limit Pressure Control (w/manual reset)
- K) Steam Outlet
- L) Safety Valve
- M) Steam Gauge Assembly
- N) Steam Pressure Gauge
- O) High Temperature Insulation Surrounds The Pressure Vessels
- P) Large (3"x 4") Easily Access Handholes
- Q) Feed Water Shut Off Valve
- R) Blowdown Valve
- S) Water Bottle Assembly For 300 to 2000 kW only

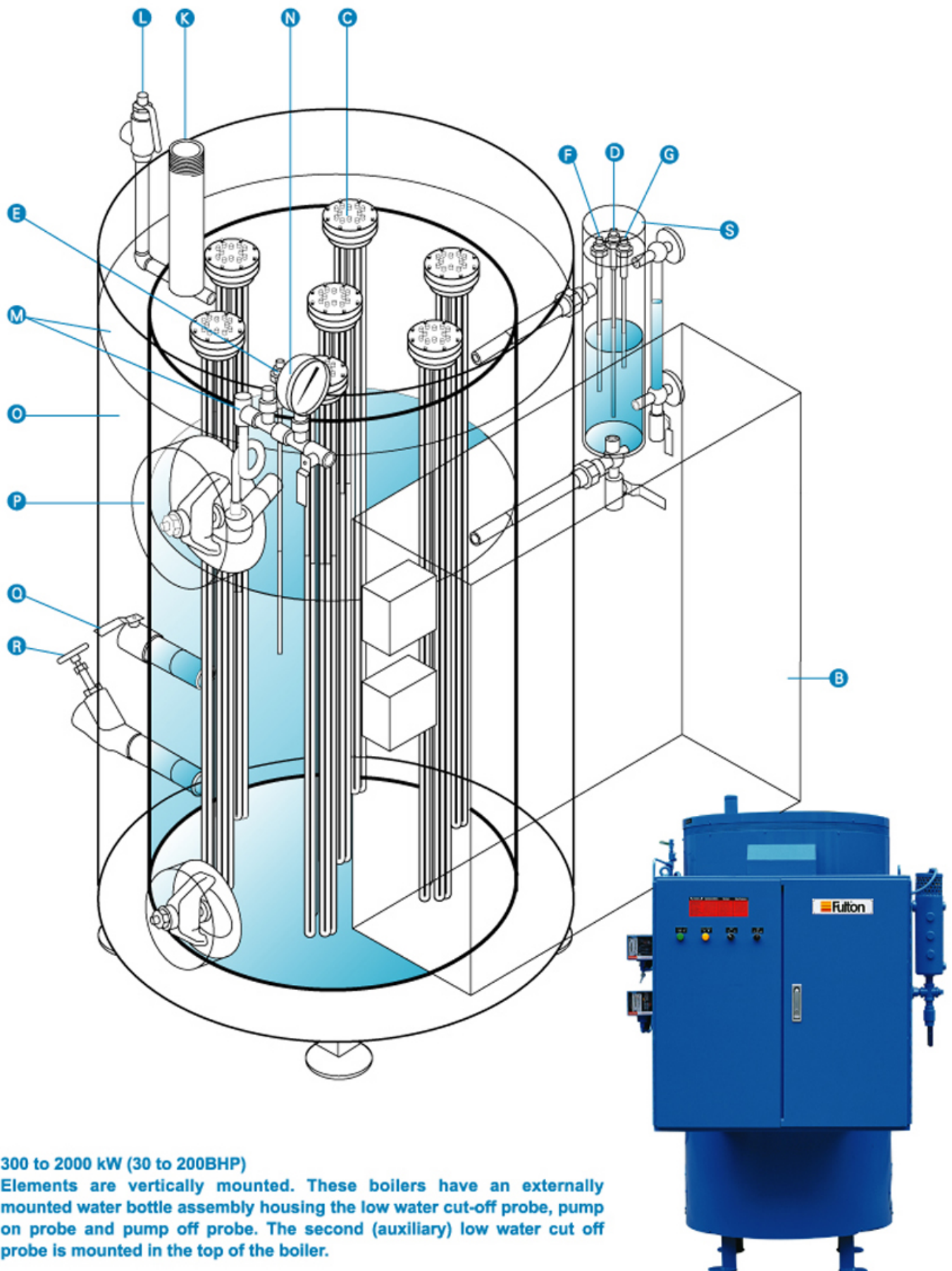
Note: All Fulton Electric Steam Boilers have a second (auxiliary) low water cut-off probe.



12 to 36 kW (1.2 to 3.6BHP)
 Element(s) are horizontally mounted at the bottom of pressure vessel.
 All probes are mounted in the top of the boiler.



50-200 kW (5 to 20BHP)
 Elements are vertically mounted.
 All probes are mounted in the top of the boiler.



Fulton FB-L Steam Boilers

Dimensions

Model FB-L		012	015	018	024	030	036	050	075	100	150	200	300	500	750	1000	1250	1500	1750	2000
Unit size	kW	12	15	18	24	30	36	50	75	100	150	200	300	500	750	1000	1250	1500	1750	2000
	HP	1.2	1.5	1.8	2.4	3.0	3.6	5.0	7.5	10	15	20	30	50	75	100	125	150	175	200
Height																				
(A) Boiler Overall	inch	24	24	24	24	24	24	55	55	55	55	55	75	75	75	75	89	89	89	89
	mm	610	610	610	610	610	610	1397	1397	1397	1397	1397	1905	1905	1905	1905	2261	2261	2261	2261
(B) Boiler w/Piping	inch	30	30	30	30	30	30	65	65	65	65	71	80	80	80	80	94	94	94	94
	mm	762	762	762	762	762	762	1651	1651	1651	1651	1803	2032	2032	2032	2032	2388	2388	2388	2388
(C) Feedwater Inlet	inch	8	8	8	8	8	8	16	16	16	16	16	24	24	24	24	24	24	24	24
	mm	203	203	203	203	203	203	406	406	406	406	406	610	610	610	610	610	610	610	610
(D) Blowdown outlet	inch	4	4	4	4	4	4	6	6	6	6	6	6.5	6.5	6.5	6.5	11.25	11.25	11.25	11.25
	mm	102	102	102	102	102	102	152	152	152	152	152	165	165	165	165	286	286	286	286
(E) Electric Control Box	inch	20.5	20.5	20.5	20.5	20.5	20.5	50	50	50	50	48	64	64	64	64	78	78	78	78
	mm	521	521	521	521	521	521	1270	1270	1270	1270	1219	1626	1626	1626	1626	1981	1981	1981	1981
(F) Hand Hole	inch	11	11	11	11	11	11	38	38	38	38	38	55	55	55	55	65	65	65	65
	mm	279	279	279	279	279	279	965	965	965	965	965	1397	1397	1397	1397	1651	1651	1651	1651

Width & Depth

(G) Boiler only	inch	20	20	20	20	20	20	17	24	24	28	32	36	44	50	63	63	74	74	74
	mm	508	508	508	508	508	508	432	610	610	711	813	914	1118	1270	1600	1600	1800	1800	1800
(H) Overall Depth Electric Panel to Blowdown	inch	30	30	30	30	30	30	35	35	35	39	46	46	56	62	83	83	102	102	102
	mm	762	762	762	762	762	762	899	899	899	991	1168	1168	1442	1575	2108	2108	2600	2600	2600
(I) Electric Panel Width	inch	14	14	14	14	14	14	17	17	32	32	40	52	64	64	64	64	72	72	72
	mm	356	356	356	356	356	356	432	432	813	813	1016	1321	1626	1626	1626	1626	1828	1828	1828
(J) Boiler Width Overall	inch	33	33	33	33	33	33	35	42	42	46	52	56	64	72	91	91	99	99	99
	mm	838	838	838	838	838	838	889	1067	1067	1168	1321	1422	1625	1829	2311	2311	2515	2515	2515

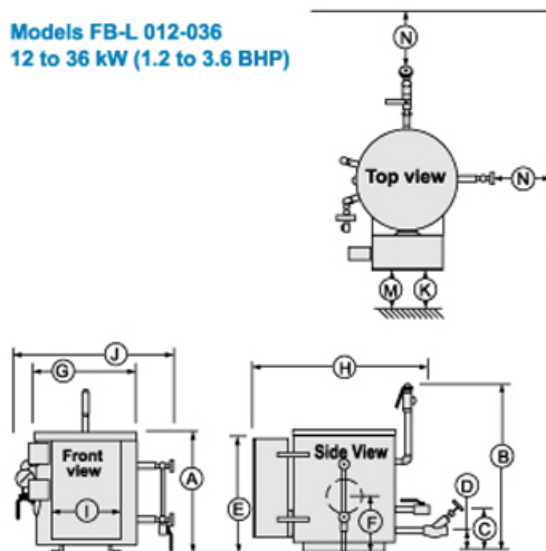
Minimum Clearances

(K) Horizontal to remove elements	inch	14	14	14	14	14	14	-	-	-	-	-	-	-	-	-	-	-	-	-
	mm	356	356	356	356	356	356	-	-	-	-	-	-	-	-	-	-	-	-	-
(L) Floor to Ceiling to remove elements	inch	-	-	-	-	-	-	95	95	95	95	95	139	139	139	139	155	155	155	155
	mm	-	-	-	-	-	-	2413	2413	2413	2413	2413	3531	3531	3531	3531	3937	3937	3937	3937
(M) Front of Boiler	inch	24	24	24	24	24	24	24	32	32	32	34	34	36	36	36	36	36	36	36
	mm	610	610	610	610	610	610	610	813	813	813	864	864	914	914	914	914	914	914	914
(N) Sides & Rear of Boiler	inch	12	12	12	12	12	12	12	12	12	12	24	24	24	24	24	24	24	24	24
	mm	305	305	305	305	305	305	305	305	305	305	610	610	610	610	610	610	610	610	610

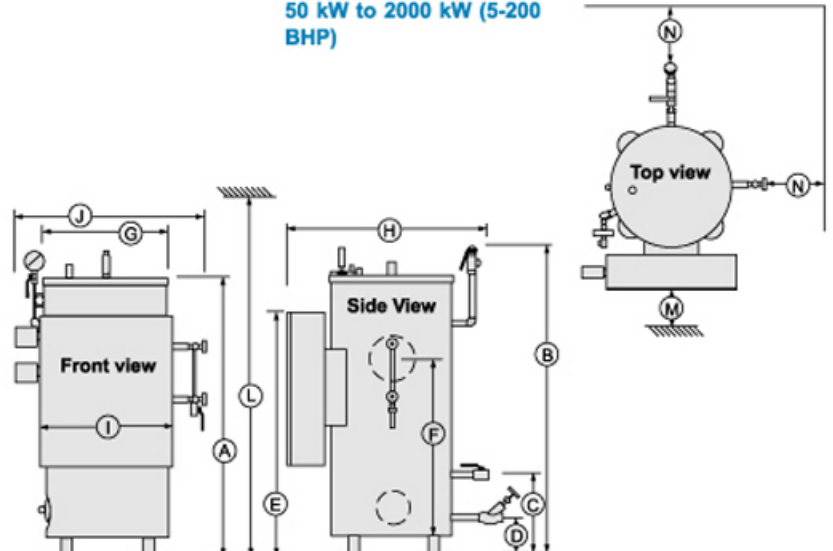
Dimensions are approximate. We reserve the right to change specifications.
-Indicates not available.

Panel Box size may change depending on voltage.

Models FB-L 012-036
12 to 36 kW (1.2 to 3.6 BHP)



Models FB-L 050-2000
50 kW to 2000 kW (5-200 BHP)



Specifications

Model FB-L		012	015	018	024	030	036	050	075	100	150	200	300	500	750	1000	1250	1500	1750	2000
Number of Elements		1	1	1	2	2	2	2	3	4	6	4	4	7	10	14	17	20	24	27
Output	1000BTU/HR	41	51	61	82	102	123	171	256	341	512	683	1025	1708	2561	3416	3933	4719	5506	6832
	1000Kcal/HR	10	13	15	21	26	31	43	64	86	129	172	258	430	645	860	1075	1290	1505	1720
Steam Output	LB/HR	40	50	60	81	101	121	169	252	336	505	674	1011	1684	2526	3368	4210	5052	5894	6136
	KG/HR	18	23	27	37	46	55	77	115	153	230	306	460	765	1148	1530	1913	2295	2678	3060
Approx. Shipping Weight	LB	420	420	420	440	450	450	580	850	970	1225	1380	1440	1850	2150	2300	2814	4500	4803	4850
	KG	191	191	191	200	204	204	263	386	440	556	623	655	839	977	1043	1276	2040	2183	2200
Water Capacity	GALLONS	7	7	7	7	7	7	13	39	39	50	79	115	195	270	360	420	880	880	880
	LITERS	26	26	26	26	26	26	49	148	148	189	299	435	738	1022	1362	1588	3326	3326	3326

Boiler Connection Sizes

Steam Outlet	inch	0.75	0.75	0.75	0.75	0.75	0.75	1	1.5	1.5	2	3	3	4	4	6	6	8	8	10
15 PSI	mm	19	19	19	19	19	19	25	38	38	51	76	76	100	100	150	150	200	200	254
Steam Outlet	inch	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1	1	1.25	1.5	2	3	3	3	3	3	3	4
16-300 PSI	mm	19	19	19	19	19	19	19	25	25	32	38	51	76	76	76	75	75	75	100
Feedwater Inlet	inch	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1	1	1	1	1	1	1.25	1.25	1.25	1.25	1.25
	mm	19	19	19	19	19	19	19	19	25	25	25	25	25	25	32	32	32	32	32
Blowdown Outlet	inch	1	1	1	1	1	1	1	1	1	1.25	1.25	1.5	1.5	2	2	2	2	2	2
	mm	25	25	25	25	25	25	25	25	25	32	32	38	38	51	51	51	51	51	51
Water Col.	inch												0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Blowdown Outlet	mm	-	-	-	-	-	-	-	-	-	-	-	19	19	19	19	19	19	19	19
Sight Glass	inch	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Blowdown Outlet	mm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Safety Valve	inch	0.75	0.75	0.75	0.75	0.75	0.75	1	1	1	1.25	1.5	1.5	2	2.5	2.5	2.5	2.5	2.5	2.5
15 PSI	mm	19	19	19	19	19	19	25	25	25	32	38	38	51	64	64	64	64	64	64
Safety Valve	inch	0.50	0.50	0.50	0.50	0.50	0.50	0.75	0.75	0.75	1	1	1.25	1.5	2	2	2	2	2	2
16-300 PSI	mm	13	13	13	13	13	13	19	19	19	25	25	32	38	51	51	51	51	51	51

Electrical Power Requirements (In Amps)

208V 3 Phase	34	42	50	67	84	100	139	208	278	416	556	832	1388	2083	2777	3472	4166	4861	5556
240V 3 Phase	29	36	43	58	73	87	120	180	241	361	481	724	1205	1807	2409	3012	3614	4217	4819
380V 3 Phase	18	23	27	36	46	55	76	114	152	228	304	456	760	1140	1519	1899	2279	2659	3039

Probe liquid level control is standard on all units

Optional water level controls

Watts 142-5

McDonnell Miller 53-2

McDonnell Miller 157-157M

Notes:

-Indicates not available.

*Indicates voltages available at special request

**steam output ratings, at 180°F(82°C) feed water temperature, (0 PSI).

Standard electrical control panel components

- Low Water Relay
 - Water Level Relay
 - High Limit Pressure Control Switch w/manual reset
 - Operating Pressure Control Element Contactor(s) Switch
 - Pump Starter (1 phase)
 - Power Switch
 - Power Lamp
 - Element Energized lamp
 - CSD-1 Low Water Relay With Manual Reset (75 kW-2000 kW)
- Models FB-L 100 to FB-L 2000 includes a step sequencer.

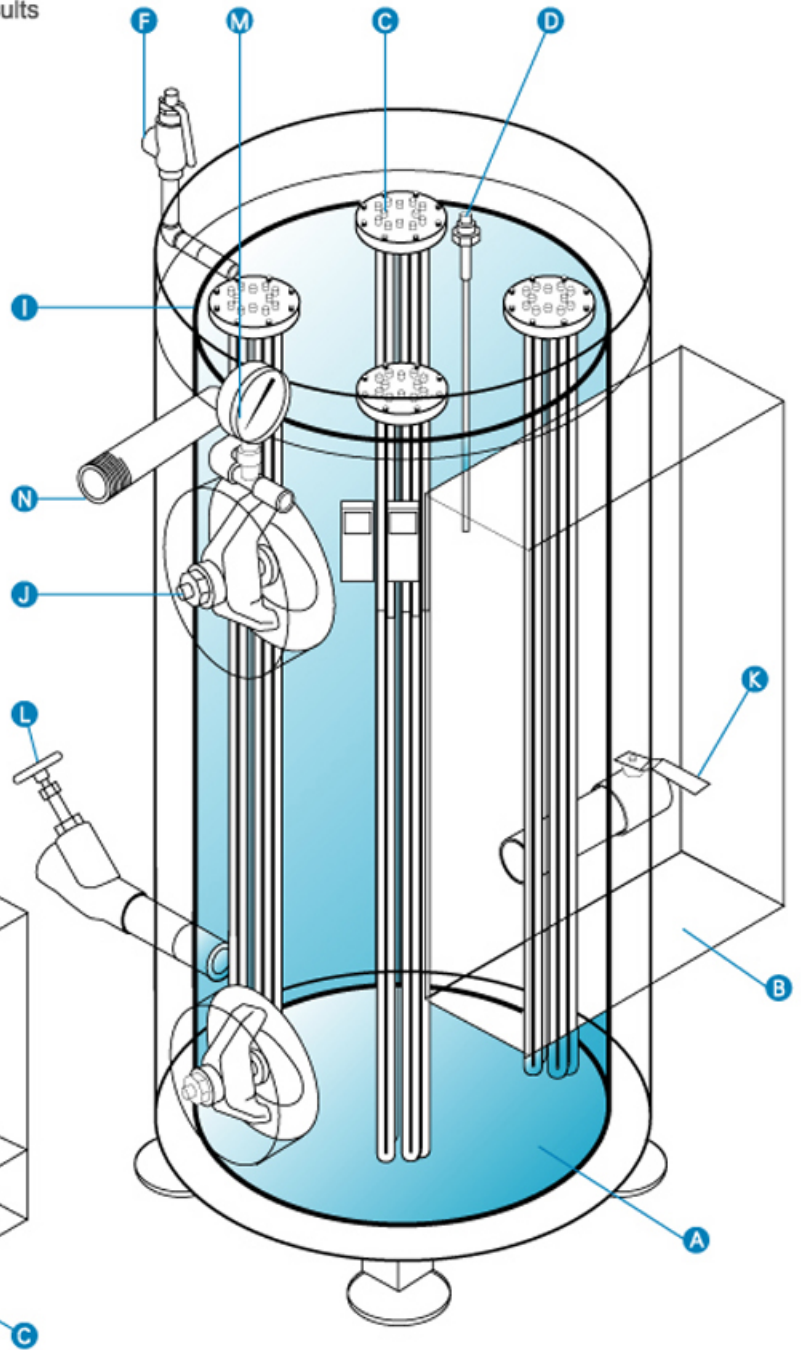


Component locations of the Fulton 12 to 1960 kW (1.2 to 196BHP) Hot Water Boilers

Operating Principle

The Fulton Electric Hot Water Boiler is designed for completely controlled forced circulation and even heating of water by multiple stainless steel low watt density elements. Forced even circulation of water is achieved by inducing incoming water to spin upward within the water vessel. The spinning water is evenly heated, eliminating stratification. This unique circulation method achieves an even flow of water across the elements. This results in low flux temperatures and long element life.

- A) Pressure Vessel Is Built To ASME Code
- B) Electric Control Panel Box
- C) Electric Heating Elements
- D) Low Water Cut Off Probe
- F) Safety Valve
- G) Operating temperature control
- H) High limit temperature control (w/manual reset)
- I) High Temperature Insulation Surrounds The Pressure Vessels
- J) Large (3"x 4") Easily Access Handholes
- K) Return Water Inlet
- L) Blowdown Valve
- M) Temperature gauge
- N) Water outlet

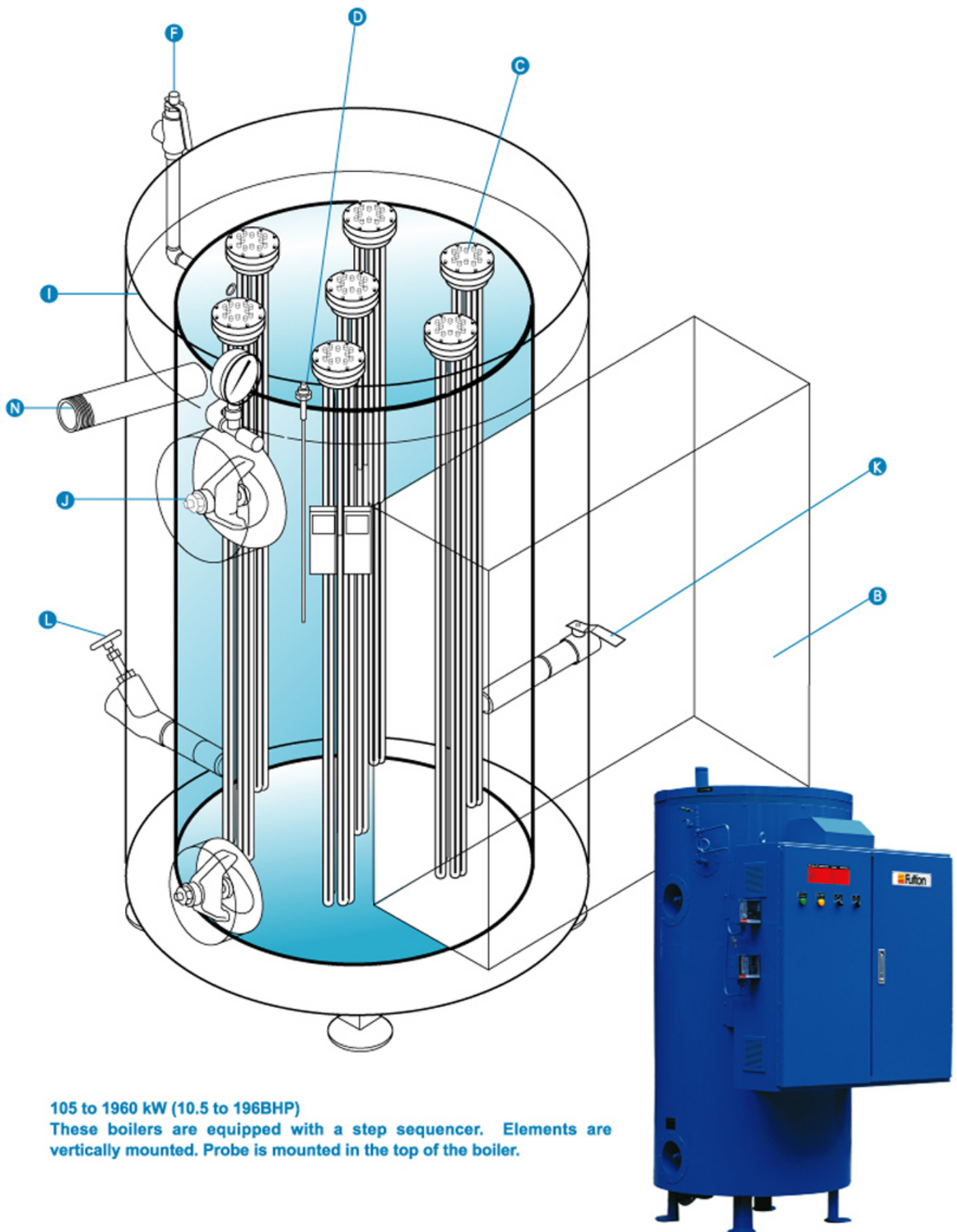


12 to 36 kW (1.2 to 3.6BHP)

Element(s) are horizontally mounted at the bottom of pressure vessel.
Probe is mounted in the top of the boiler.

50-70 kW (5 to 7BHP)

Elements are vertically mounted.
Probe is mounted in the top of the boiler.



Fulton FB-W Hot Water Dimensions

Model FB-W		012	030	070	105	175	210	280	350	420	490	560	630
Unit size	kW	12	30	70	105	175	210	280	350	420	490	560	630
	HP	1.2	3.0	7.0	10.5	17.5	21	28	35	42	49	56	63
Height													
(A) Boiler Overall	inch mm	24 610	24 610	55 1400	55 1400	55 1400	55 1400	55 1400	55 1400	55 1400	55 1400	55 1400	55 1400
(B) Hot Water Outlet	inch mm	18.25 464	18.25 464	40.50 1156	40.50 1156	40.25 1149	45.30 1149	45.30 1149	45 1143	45 1143	44.75 1137	44.75 1137	44.50 1130
(C) Return water Inlet	inch mm	4 100	4 100	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241	9.5 241
(D) Blowdown Outlet	inch mm	4 100	4 100	6 150	6 150	6 150	6 150	6 150	6 150	6.5 165	6.5 165	6.5 165	7 180
Width & Depth													
(E) Boiler Diameter	inch mm	20 508	20 508	17 430	24 610	28 710	28 710	36 915	40 1015	40 1015	44 1120	44 1120	50 1270
(F) Overall Depth Electric Panel to Blowdown	inch mm	49 1245	49 1245	41 1041	41 1041	48 1219	48 1219	60 1524	64 1626	64 1626	68 1727	68 1727	74 1880
(G) Boiler Width Overall	inch mm	32 813	32 813	40 1016	40 1016	44 1118	44 1118	48 1272	72 1828	72 1828	72 1828	72 1828	72 1828
Minimum Clearances													
(H) Floor to Ceiling to remove elements	inch mm	NA	NA	95 2415	95 2415	95 2415	95 2415	95 2415	95 2415	95 2415	95 2415	95 2415	95 2415
(I) Front of Boiler	inch mm	24 610	24 610	32 815	32 815	34 865	34 865	36 915	36 915	36 915	36 915	36 915	36 915
(J) Sides & Rear of Boiler	inch mm	24 610	24 610	24 610	24 610	24 610	24 610	24 610	24 610	24 610	24 610	24 610	24 610
Boiler connection sizes													
(K) Hot Water Outlet	inch mm	1.25 32	1.25 32	1.50 40	1.50 40	2 50	2 50	2 50	2.50 65	2.50 65	3 75	3 75	3 75
(L) Return water Inlet	inch mm	1.25 32	1.25 32	1.50 40	1.50 40	2 50	2 50	2 50	2.50 65	2.50 65	3 75	3 75	3 75
(M) Blowdown Outlet	inch mm	1 25	1 25	1 25	1 25	1.25 32	1.25 32	1.25 32	1.25 32	1.50 40	1.50 40	1.50 40	2 51
(N) Safety Valve	inch mm	1.25 32	1.25 32	1.25 32	1.25 32	1.25 32	1.25 32	1.25 32	1.25 32	1.25 32	2 51	2 51	2.5 65
Weight													
Approx Shipping Weight	LB KG	420 191	450 204	580 263	950 386	1225 556	1225 556	1380 623	1850 839	1850 839	2000 908	2150 977	2300 1043
Specifications													
Output	1000BTU/HR 1000KCAL/HR	41 10	101 25	235 59	359 90	585 147	717 179	938 236	1195 299	1406 354	1672 418	1876 472	2150 538
Number of Elements		1	2	2	3	5	6	4	5	6	7	8	9
Electrical Power Requirements (In Amps)**													
208V, 50/60Hz,3 phase		34	84	194	292	485	583	780	971	1166	1360	1555	1748
240V, 50/60Hz,3 phase		29	73	169	252	420	505	676	842	1012	1179	1349	1515
380V, 50/60Hz,3 phase		18	45	107	160	266	319	426	532	639	744	852	957
Water Capacity	GALLONS KG	13 49	13 49	20 75	50 189	66 249	66 249	133 503	133 503	133 503	180 681	180 681	213 806

Dimensions are approximate. We reserve the right to change specifications.

Panel Box size may change depending on voltage.

--Indicates not available.

700	770	840	910	980	1140	1260	1400	1540	1680	1820	1960
700	770	840	910	980	1140	1260	1400	1540	1680	1820	1960
70	77	84	91	98	114	126	140	154	168	182	196

55	75	75	75	75	90.25	90.25	90.25	90.25	90.25	90.25	90.25
1400	1905	1905	1905	1905	2292	2292	2292	2292	2292	2292	2292
44.50	58.25	58.25	58.25	58.25	64.25	64.25	64.25	63.25	63.25	63.25	63.25
1130	1480	1480	1480	1480	1631	1631	1631	1606	1606	1606	1606
9.5	11.25	11.25	11.25	11.25	13.75	13.75	13.75	13.75	13.75	13.75	13.75
241	286	286	286	286	349	349	349	349	349	349	349
7	6.5	6.5	6.5	6.5	11.25	11.25	11.25	11.25	11.25	11.25	11.25
180	165	165	165	165	286	286	286	286	286	286	286

50	63	63	63	63	74	74	74	74	74	74	74
1270	1600	1600	1600	1600	1880	1880	1880	1880	1880	1880	1880
74	83	83	83	83	90	90	90	102	102	102	102
1880	2108	2108	2108	2108	2286	2286	2286	2591	2591	2591	2591
72	73	73	73	73	73	73	73	84	84	84	84
1828	1854	1854	1854	1854	1854	1854	1854	2134	2134	2134	2134

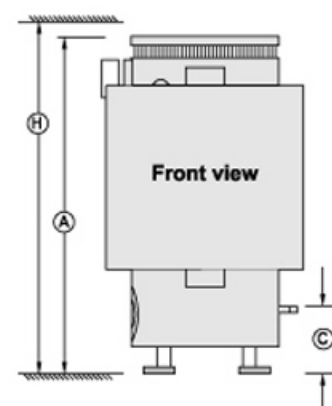
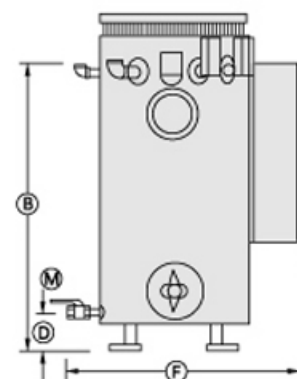
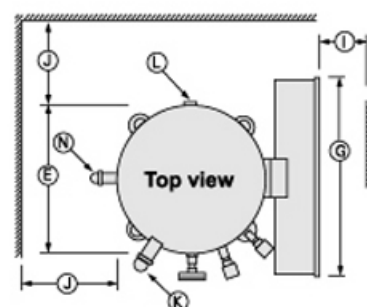
95	119	119	119	119	139	139	139	139	139	139	139
2415	3022	3022	3022	3022	3531	3531	3531	3531	3531	3531	3531
36	36	36	36	36	36	36	36	36	36	36	36
915	915	915	915	915	915	915	915	915	915	915	915
24	24	24	24	24	24	24	24	24	24	24	24
610	610	610	610	610	610	610	610	610	610	610	610

3	4	4	4	4	4	4	4	6	6	6	6
75	100	100	100	100	100	100	100	152.4	152.4	152.4	152.4
3	4	4	4	4	6	6	6	6	6	6	6
75	100	100	100	100	152.4	152.4	152.4	152.4	152.4	152.4	152.4
2	2	2	2	2	2	2	2	2	2	2	2
51	51	51	51	51	51	51	51	51	51	51	51
2.5	2.5	2.5	2.5	2.5	2.5	2.5	2	2	2	2	2
65	65	65	65	65	65	65	51	51	51	51	51

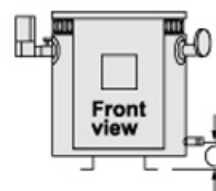
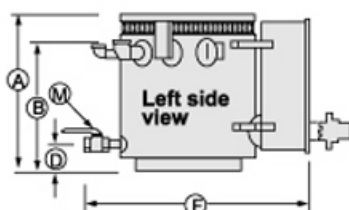
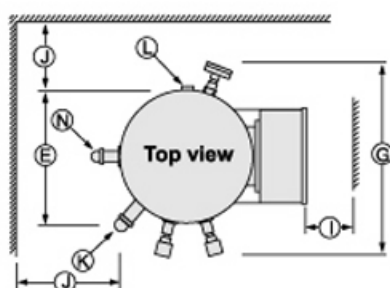
2300	2561	2561	2561	2561	2800	2800	2800	4500	4500	4500	4500
1043	1164	1164	1164	1164	1273	1273	1273	2040	2040	2040	2040

2344	2627	2866	3105	3344	3821	4300	4777	5254	5732	6210	6688
590	662	722	783	842	963	1084	1204	1324	1445	1565	1686
10	11	12	13	14	16	18	20	22	24	26	28

1944	2138	2333	2528	2722	3164	3500	3888	4278	4667	5056	5444
1686	1855	2024	2193	2361	2274	3036	3373	3711	4048	4386	4723
1065	1171	1278	1384	1491	1734	1917	2130	2343	2555	2738	2981
213	360	360	360	360	617	617	617	880	880	880	880
806	1360	1360	1360	1360	2332	2332	2332	3330	3330	3330	3330



FB-070-W-FB-1960-W
Electrical Hot Water Boilers



FB-012-W-FB-030-W
Electrical Hot Water Boilers



Applications - Pressing operations in dry-cleaning and tailor shops, food, chemical, pharmaceutical, plastics processing, sterilization, humidification control anywhere steam/hot water is needed.



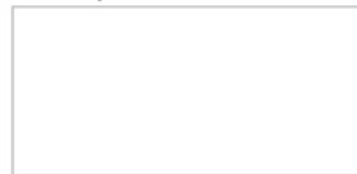
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Sales Representative



Fulton China LLC is part of the Fulton Companies
manufactures high grade industrial/commercial heat
transfer products