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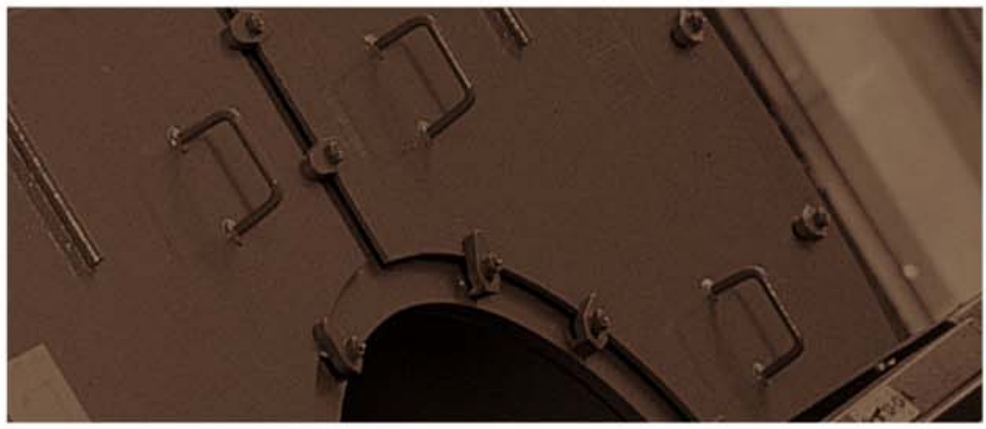
Industrial /Commercial Division
The Fulton Companies

Fulton FB-S Horizontal Fuel-Fired Steam Boiler

Capacity Range From 60-400BHP

Fulton
FB-S
Steam Boiler
Three-pass/ Wet-back/ Corrugated furnace



The New Tradition

Design Feature

1. FB-S boiler is designed and manufactured to comply with ASME code and Chinese Boiler Standard, with maximum working pressure of 1.04 MPa (150psi) to 1.28 MPa (185psi).
2. Standard model is three- pass, wet-back, and corrugated furnace design boiler with generous heating surface.
3. Selected brand burner fully matches with the boiler.
4. Fuel flexibility: Light oil, Heavy oil, Natural gas, Town gas and Dual-fuel.
5. 3 year warranty on pressure vessel backed by Fulton worldwide service and spares system.

Operating Principal

The standard model for FB-S is three pass, wet-back and corrugated furnace design boiler. In the first pass, the flame and high temperature flue gas flows from the front to the back of the furnace; Through the second pass pipes, high temperature flue gas flows from the combustion furnace to the front chamber; In the third pass, the flue gas passes through the third pass pipes to the back of the boiler stack and vents out. Corrugated furnace highly increases the heat exchange area, heat transfer efficiency and reduces the possible damage to the boiler durability caused by heat expansion and cold contraction. Generous heating surface maximizes heat transfer with minimum thermal stresses, providing high efficiency and long boiler life.

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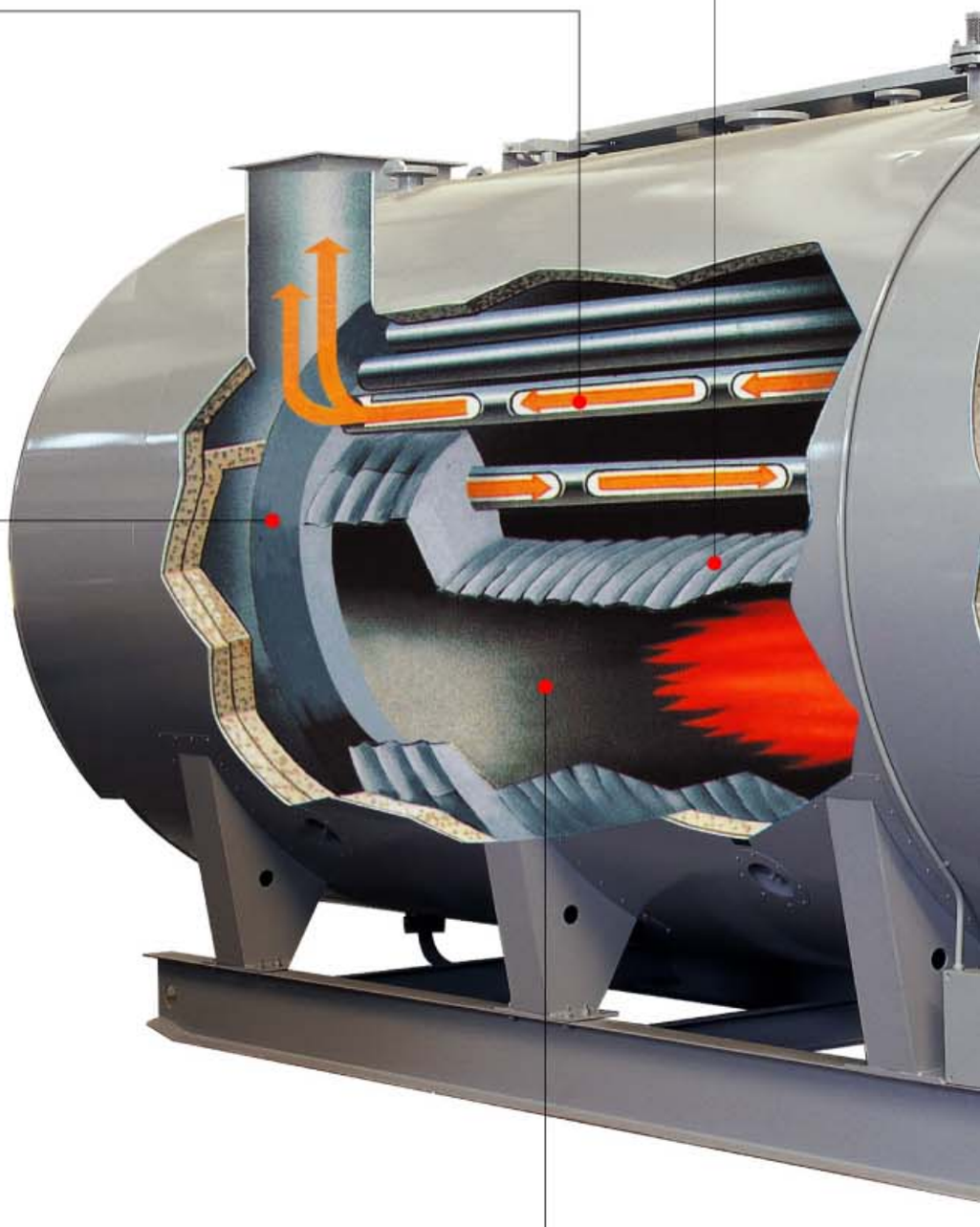


Large water content and steam chamber ensure low sensitivity to load change, and stability of steam pressure & steam quality.

Combustion chamber located well below water level with generous clearance from bottom of boiler allowing proper circulation. Low located combustion chamber provides additional safety margin between furnace and water level, make less water carryover and supplies better quality steam.

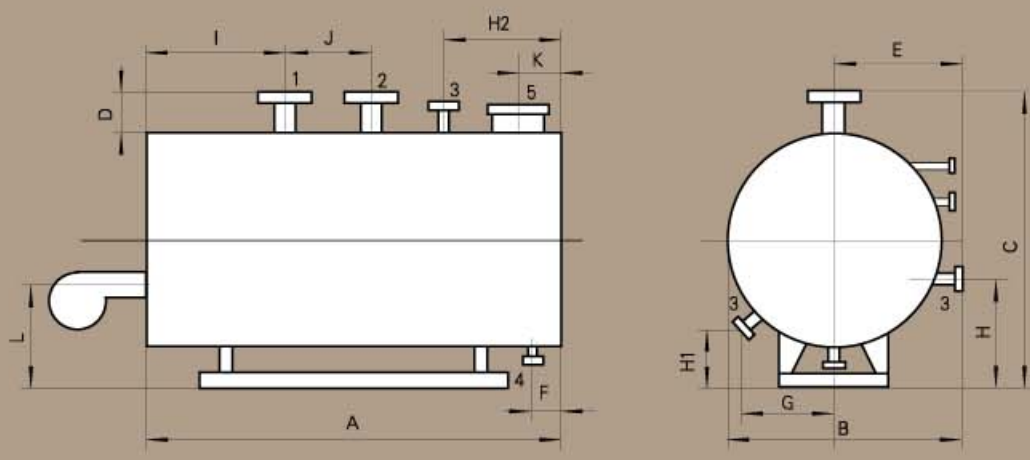
Water level probe directly immerses into pressure vessel, avoids false water level, increases operating safety.

Fulton adopted the design of "air-insulation" to reduce heat exchange loss from the front smoke box.

As a Fulton tradition, burner is chosen to fully match with the boiler. High efficiency, optimum performance is achieved to meet varying load demand and provide high combustion efficiency. Emission is limited to a low level to comply with the environmental requirement.

Boiler Connection/ Dimension

Model: FB-S			60	100	125	150	200	250	300	400
Main steam valve	1	mm	DN50	DN65	DN65	DN80	DN100	DN100	DN100	DN125
		inch	2	$2\frac{1}{2}$	$2\frac{1}{2}$	3	4	4	4	5
Safety valve	2	mm	DN25	DN40	DN40(2)	DN40(2)	DN40(2)	DN40(2)	DN50(2)	DN50(2)
		inch	1	$1\frac{1}{2}$	$1\frac{1}{2}$(2)	$1\frac{1}{2}$ (2)	$1\frac{1}{2}$(2)	$1\frac{1}{2}$(2)	2(2)	2(2)
Inlet water valve	3	mm	DN32	DN32	DN32	DN32	DN32	DN32	DN40	DN50
		inch	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Blowdown outlet	4	mm	DN40	DN40	DN40	DN40	DN50	DN50	DN50	DN50
		inch	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	2	2
Flue diameter	5	mm	300	350	400	400	450	500	500	600
		inch	12	14	16	16	18	20	20	24
Water drain gauge outlet		mm	DN15	DN15	DN15	DN15	DN15	DN15	DN15	DN15
		inch	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Exterior dimension	A	mm	3324	3624	4072	4422	4772	4956	5248	5540
		inch	131	143	160	174	188	195	206	218
	B	mm	1705	1785	2100	2148	2196	2170	2435	2700
		inch	67	70	83	85	86	85	96	106
	C	mm	1955	2040	2335	2412	2490	2546	2773	3000
		inch	77	80	92	95	98	100	109	118
	D	mm	160	160	200	175	150	150	165	180
		inch	6	6	8	7	6	6	6	7
	E	mm	890	925	930	965	1000	1062	1062	
		inch	35	36	37	38	39	42	42	
	F	mm	504	504	510	485	460	460	505	550
		inch	20	20	20	19	18	18	20	22
	H	mm	600	640	640(H1)	670(H1)	700(H1)	588(H1)	588(H1)	1070(H2)
		inch	24	25	25	26	28	23	23	42
	G	mm			696	723	750	822	822	
		inch			27	28	30	32	32	
	I	mm	1320	1540	2510	2620	1250	1250	1250	1450
		inch	52	61	99	103	49	49	49	57
	J	mm	900	960	550	550	1600	1780	1780	1100
		inch	35	38	22	22	63	70	70	43
	K	mm	160	190	230	230	270	300	300	400
		inch	6	7	9	9	11	12	12	16
	L	mm	710	760	970	1000	1000	1000	1095	1190
		inch	28	30	38	39	39	39	43	47



FBS Boiler Specification

Model: FB-S			60	100	125	150	200	250	300	400
Nominal steam output(1)		kg/h	939	1566	1958	2350	3133	3916	4699	6266
Boiler output		kBtu/hr	2008	3347	4184	5021	6694	8368	10041	13388
Operating pressure		MPa	1.04	1.04	1.04	1.04	1.04	1.04(1.28)	1.28	1.28
		psi	150	150	150	150	150	150(185)	185	185
Operating steam		°C	184	184	184	184	184	184(193)	193	193
temperature(saturation)		°F	363	363	363	363	363	363(380)	380	380
Heating surface		m^2	28.75	38.66	52.83	65.32	80.31	98.64(100.44)	129.51	157.62
		ft^2	310	416	569	703	865	1062(1081)	1394	1697
Fuel consumption at rated output—applicable under altitude 610m										
Light diesel oil		kg/h	51.9	86.6	108.3	130.0	173.3	216.6	260.0	346.6
		lb/h	114.5	191.0	238.8	286.6	382.0	477.5	573.0	764.1
Heavy diesel oil		kg/h	53.1	88.5	110.7	132.8	177.1	221.3	265.6	354.2
		lb/h	117.0	195.1	244.0	292.8	390.4	488.0	585.5	780.8
Town gas		m^3/h	161.6	269.5	337.0	404.4	539.1	673.9	808.6	1078.3
		ft^3/h	5706	9517	11899	14281	19039	23797	28556	38078
Natural gas		m^3/hr	65.4	108.9	136.3	163.6	218.1	272.6	327.1	436.1
		ft^3/hr	2308	3849	4812	5776	7701	9625	11550	15401
Water content (full)		L	2500	2950	3500	4200	4900	6000	7200	8300
		ft^3	88.3	104.2	123.6	148.3	173.0	211.9	254.3	293.1
Gross weight		t	4.3	5.15	6.5	7.8	9.2	11.62	15.16	17.83
		lb	9480	11354	14330	17196	20282	25617	33422	39308
Power 220v/380v	Light oil	kW	1.5	2.2	4.5	5.4	7.5	9	9	12
	Natural gas	kW	1.5	2.2	4.5	5.4	7.5	15	12	13.5
	Heavy oil	kW	2.2	2.6	4.5	5.4	8.6	16	17	22.5
Water pump electric power		kW	2.2	2.2	2.2	3.0	3.0	3.0	4.5	5.5

Boiler Specification

Note: 1) All steam output rating from 0 PSI at 212°F, fuel consumption based on light oil 20,160 Btu/lb(11200Kcal/kg), heavy oil 19,728Btu/lb(10960Kcal/kg), natural gas 1,000 Btu/ft^3(8900Kcal/m^3).

2) Specifications and dimensions are for information only. The Fulton Company reserve the right to change specifications and/or dimension.

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