

SHELLMAX™

Fully Packaged, 3 Pass, Smoke Tube Boiler



Capacity Range
1 TPH to 16 TPH

Standard Design Pressure
10.54 & 17.50 Kg/cm²

Heating Business

Improving your business is our business

Thermax is an engineering major providing sustainable solutions in the areas of energy and environment. Spanning over 86 countries, clients make use of Thermax's business-to-business solutions for heating, cooling, power and cogeneration plants; waste heat recovery units; systems for water & wastewater management and air pollution control; performance improving chemicals.

Thermax's operations are supported by ongoing Research & Development, tie-ups with global technology majors, an international sales & service network spread over 27 countries and state-of-the-art manufacturing facilities in 14 locations including India, Indonesia, China, Poland, Denmark and Germany.

As a part of Thermax, Heating business - a strategic business unit offers packaged boilers, thermal oil heaters, waste heat recovery boilers, hot water and air generators. These are available in modular construction as a standard package configuration or a custom design for specific requirements. Innovated by a strong R&D that focuses on customer applications, we offer a range of heating systems designed to combust wide range of solid, oil & gas fuels including biomass and heavy liquid fuels. Heating SBU helps small and medium firms & fortune 500 companies to reduce energy cost with a worldwide presence of oil & gas based systems in Middle East and Europe, biomass and solid fuel fired equipment in South East Asia and Africa.

Unique Design Features

- Corrugated furnace - Increases heat transfer area, offers flexibility for thermal expansion and ensures minimal stress transfer to tube plate.
- Burner Options - Choice of rotary cup, steam automatised, pressure jet, mono bloc and dual bloc burners available to suit different customer requirements.
- Efficiency Enhancement - Optional accessories such as air pre-heater and economiser can be integrated with the main unit.
- Automation - High level automation to control water level, steam flow and water flow, is available as add on options. Programable logic controllers (PLC) with supervisory control and data acquisition (SCADA) system can also be offered.



Corrugated Furnace*

* For specific sizes



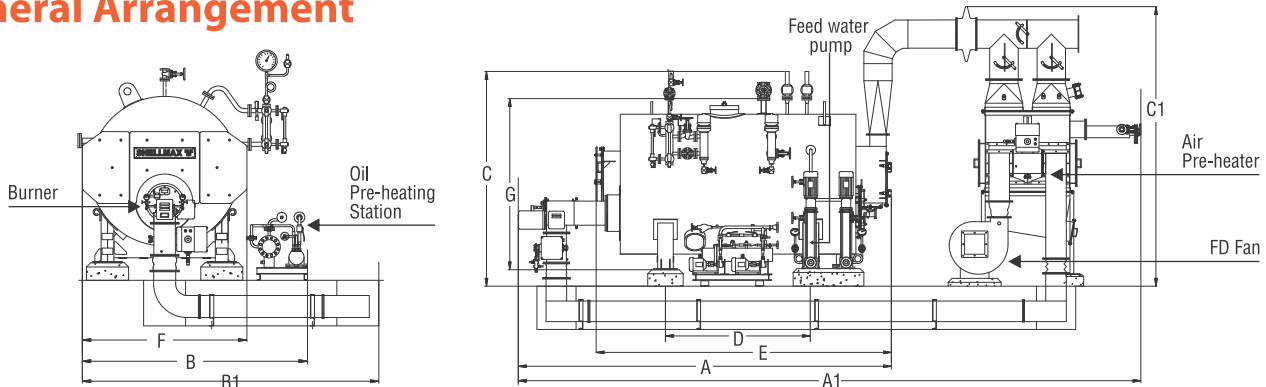
Air Pre-heater with corrosion management system

Technical Specifications

Description	Unit	SM-10DH	SM-15DH	SM-20DH	SM-30DH	SM-40DH	SM-50DH	SM-60DH	SM-80DH	SM-100DH	SM-120DH	SM-140DH	SM-160DH
Capacity (F&A 100°C)	kg / hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design pressure (SVLOP)	kg / cm ² g	10.54 / 17.50											
Efficiency	As Per BS 845 Part 1 NCV Basis												
Furnace oil / Natural gas	%	89 (without HRU), 92 (with APH - for FO), 94 (with Fin tube type Economiser)											
Fuel	Furnace Oil / Natural Gas												
Fuel Firing System	Pressure Jet, Dual Bloc (Make-Thermax Oertli)												
Fuel consumption	Without HRU / With HRU												
Furnace Oil	kg / hr	63/61	94/91	126/122	189/182	251/243	314/304	377/365	503/487	629/608	754/730	880/852	1006/973
Natural Gas	Nm ³ / hr	71/69	107/104	143/138	214/207	286/276	338/357	428/406	571/541	714/676	857/811	999/946	1142/1081
Connected Electrical Load	10.54/17.5												
Furnace Oil (With APH)	kW	16/17	16/17	18/19	26/28.5	28/30	37/40	40/44	50/59	58/67	71/75	78.5/86	86/93.5
Natural Gas (With Economiser)	kW	-	-	-	-	-	19.5/23	23/26.5	28/37.5	41.5/45.5	49/53	49/56.5	56.5/64
Dimensions & Weight													
A	mm	4221	4721	4971	5221	5822	6322	6894	7769	8419	8886	9509	10002
B	mm	2937	3027	3027	3160	3415	3415	3560	3713	3885	3995	4708	5049
C	mm	3273	3353	3353	3473	3773	3773	3923	4023	4223	4323	4573	4823
D	mm	1400	1850	2100	2200	2700	3200	3700	4350	4750	4700	5200	5200
E	mm	3280	3780	4045	4290	4830	5330	5880	6680	7180	7530	8130	8630
F	mm	1912	2042	2042	2090	2360	2360	2510	2610	2810	2910	3160	3290
G	mm	2160	2180	2180	2303	2660	2660	2812	2950	3112	3252	3537	3794
A1	mm	7411	7922	8196	8693	9517	10280	11064	12018	13678	14008	15087	15904
B1	mm	3478	3541	3530	3829	4115	4425	4708	4965	5235	5417	4660	4840
C1	mm	3559	3559	3604	3742	3951	4221	4642	4786	5027	5300	5820	6223
Chimney Top Diameter	mm	350	400	450	450	500	600	650	700	800	850	950	1000
Dry Weight (10.54 / 17.5)	tonne	4.6/5.6	5.5/6.8	6/7.5	6.8/8.9	9.3/12	10.3/13.2	12.1/15	15/19	18.5/22.5	20.8/26	26/33	31/40
Flooded Weight (10.54 / 17.5)	tonne	8.5/9.5	11/12.5	11.6/13	13.7/15.6	19.5/21.9	21.1/24	25.6/28.3	30.8/34.5	38.6/42.6	43.2/48.5	54.2/61.2	66.2/75.2

Note : Design Standard-IBR. Efficiency is calculated based on NCV of Furnace Oil as 9650 kcal/kg and Natural Gas as 8500 kcal/Nm³. Air Preheater (APH) is recommended for FO/ Firing and Economiser is recommended for NG firing. In case of Dual fuel burner option, Heat Recovery Unit (HRU) shall be selected on the basis of primary fuel. If economiser is selected for HRU, it is to be bypassed for FO firing Option. Above mentioned weight and dimensions may vary with actuals. Please refer to offer document for more details.

General Arrangement



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Thermax Business Portfolio

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- Air Pollution Control
- Chemicals
- Water and Wastewater Solutions
- Solar
- Specialised Services