

LEADERSHIP IN PROCESS HEAT

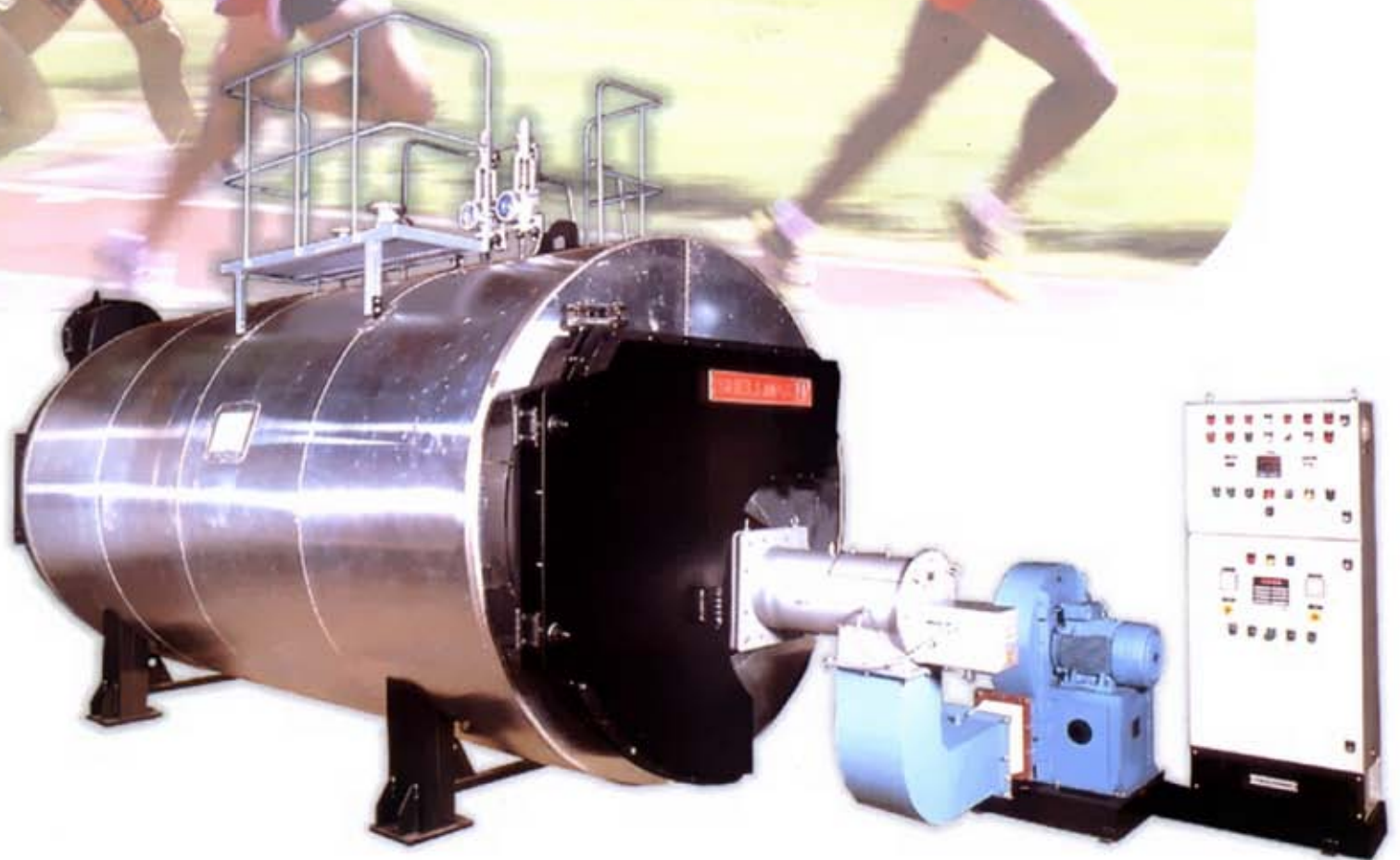


Shellmax

FULLY PACKAGED, 3 PASS, SMOKE TUBE STEAM BOILERS



**Performance that leaves
the rest behind**



Shellmax

boilers

Powerful energy solutions

Thermax presents Shellmax, a boiler that gives you steam at the lowest operating cost coupled with trouble free operations and long life.

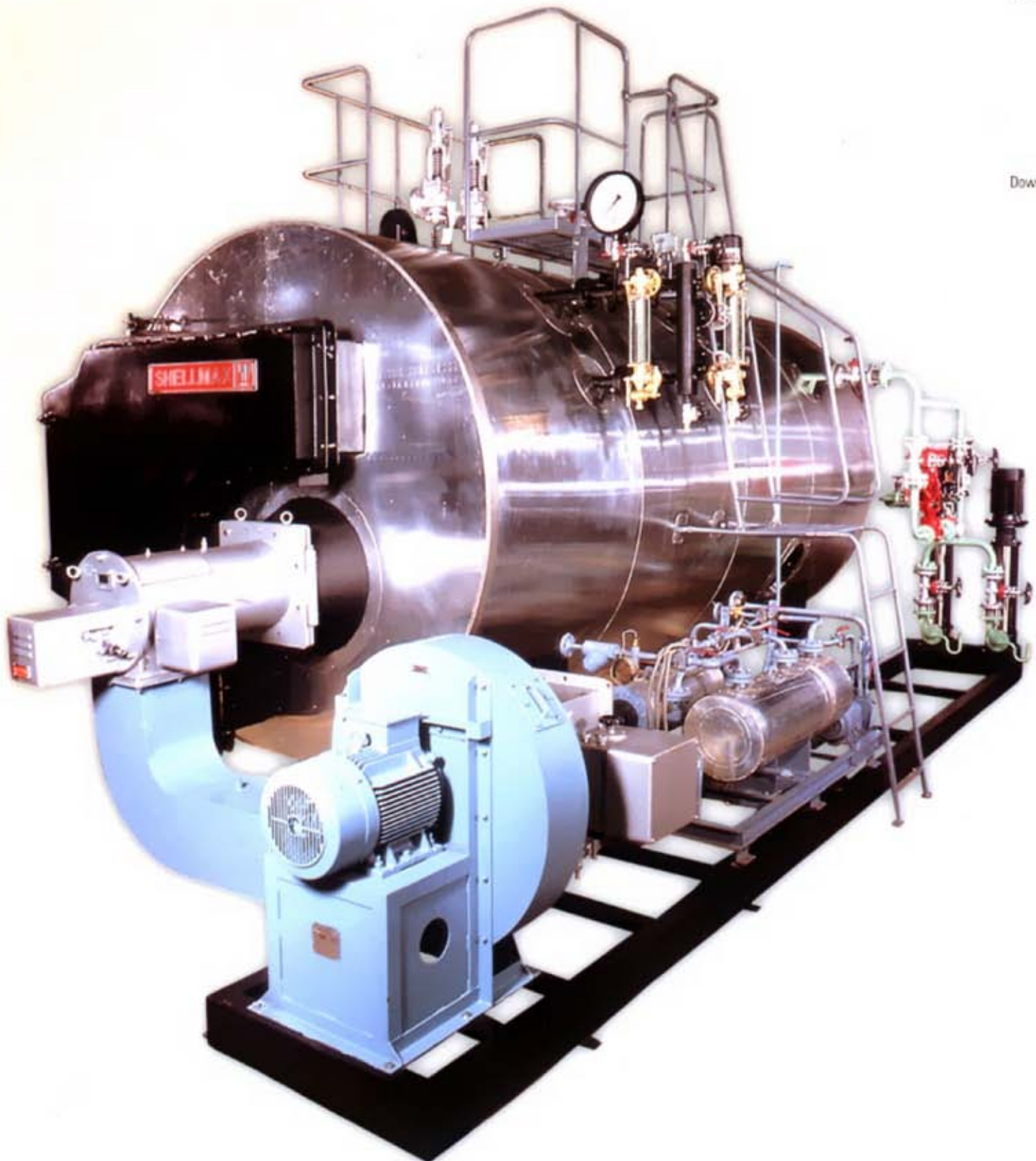
Shellmax, uniquely designed through intensive Research and Development, based on extensive user feed back and trials, is a boiler most suitable for all types of industrial heating applications.

CNC Plasma Arc
Plate Cutting Machine

Submerged ARC
Welding (SAW)

Furnace Corrugation
Machine

Down Hand Welding



Operations

Trouble-free & reliable



Shellmax ensures uninterrupted availability of steam to the process, which means no downtime or production loss. This outstanding reliability is the result of Shellmax's high quality design and manufacturing process.

CNC Plasma Arc Plate Cutting Machine

Ensures straight cuts leaving minimum Heat Affected Zone (HAZ), hence better material life.

Submerged Arc Welding (SAW)

SAW welding on shell and furnace joints ensures uniform heat to base metal, and thus, higher life of weld joints.

Corrugated Furnace

- Imparts strength to the furnace and allows flexibility for thermal expansion
- Minimal stresses transferred to tube plate due to thermal expansion
- Tube to tube plate joint failures are the lowest among all types of furnaces

Tube Expansion

Tube expansion ensures no air gap between tube and tube plate preventing overheating of weld joints. This gives longer life to joints and minimizes tube to tube sheet failure as compared to other boilers.

Down Hand Welding

Working towards 'zero defect' manufacturing, Thermax has developed special fixtures in-house, for tube to tube plate welding in down hand position.

Stress Relieving

Stresses, generated during manufacturing, are relieved by heating the pressure part to 600° C in a stress relieving furnace.

Manufacturing to National & International Codes

Thermax manufactures to national and international codes like IBR, ASME, ABS, ISO, DIN, GOST and BS. Quality control includes inspection by agencies like Bureau Veritas, Lloyd's Register, Societe Generale de Surveillance, TUV and ITS (Intertek Testing Services).

Thermax also has ASME 'S', 'U' and 'H' stamps and National Board 'R' stamp authorisation.

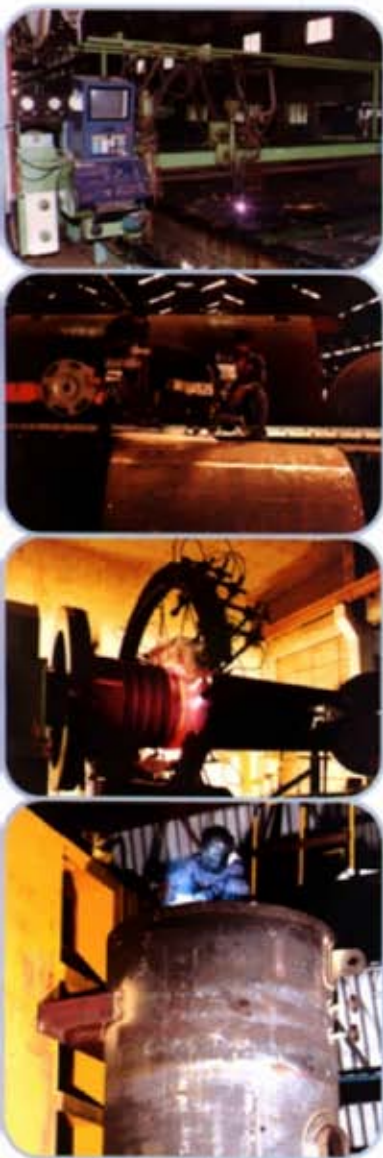
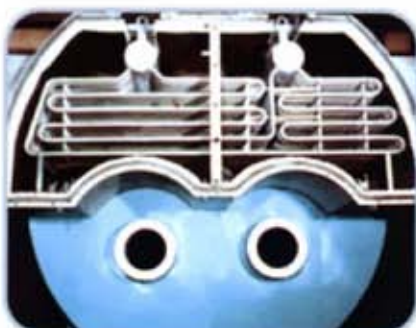
Options for enhanced

Superheater

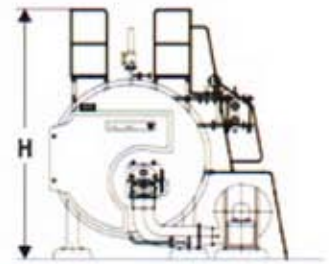
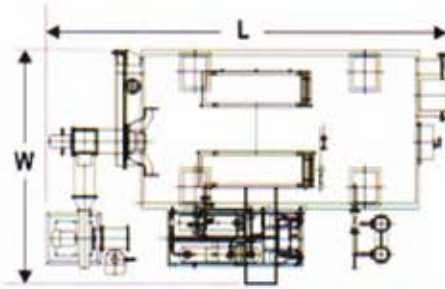
- Superheat steam can be made available up to 75°C

Air pre-heater

- Non IBR, non-corrosive air pre-heater
- Automatic soot blower provided



Technical Specifications



MODEL	BOILER PRESSURE kg/cm ² g	UNITS	SM 10B	SM 15B	SM 20B	SM 30B	SM 40B	SM 50B	SM 60B	SM 80B	SM 100B	SM 120B	SM 140B	SM 160B
Capacity (MCR) F&A100°C	10.54 / 17.5	kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
FO Consumption (NCV - 9650 kCal / kg)	10.54	kg/hr	63	95	126	189	252	315	378	504	630	756	882	1008
	17.5	kg/hr	63	96	127	191	254	318	382	509	636	763	890	1017
Electrical Connected	10.54	kW	13.6	14.7	16.2	21.1	25.9	32.7	36.7	46.2	49.7	64.5	70.5	83.5
Load for FO	17.5	kW	15.4	16.5	18.0	25.6	30.4	33.2	43.2	55.7	59.2	68.5	81.5	90.5
Estimated space required**														
L	10.54 / 17.5	mts	4.7	4.8	5.0	5.3	5.9	6.5	7.0	7.5	8.3	8.9	9.6	10.0
W	10.54 / 17.5	mts	3.1	3.1	3.2	3.4	3.5	3.6	3.7	3.9	3.9	4.1	4.3	4.5
H	10.54 / 17.5	mts	3.2	3.2	3.4	3.6	3.7	3.7	4.0	4.1	4.2	4.4	4.6	5.0
Dry Weight*	10.54	tons	5.0	5.5	6.5	8.0	9.5	10.5	13.0	16.0	19.0	22.0	32.0	34.0
	17.5	tons	5.5	6.0	7.5	9.5	11.5	12.5	16.0	19.0	23.0	27.0	38.0	41.0
Flue Gas Outlet	10.54/17.5	NB mm	300	300	350	400	450	500	550	650	700	750	850	900

Note : Customised models available on request. * Dry weight is for pressure part. **Estimated space required excludes space for control panel



22 tph Shellmax



**Over 1000
Installations
Worldwide**

Customer reference list

Food Industry

- Nestle
- Pepsico India
- Coca Cola

Chemical Industry

- Aquagel Chemicals
- Dharamsi Morarji
- Nagarjuna Agrochem

Textile Industry

- Garden Mills
- Raymonds
- Shahi Exports

Pharmaceutical Industry

- Aurobindo Pharmaceuticals
- Dr. Reddy's Laboratory
- Lupin Laboratories

Distillery

- McDowell
- Show Wallace

Rubber

- Apollo Tyres

Lowest operating costs

High efficiency

92%

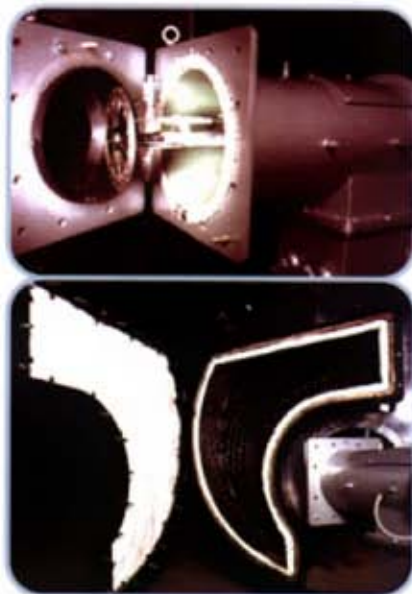
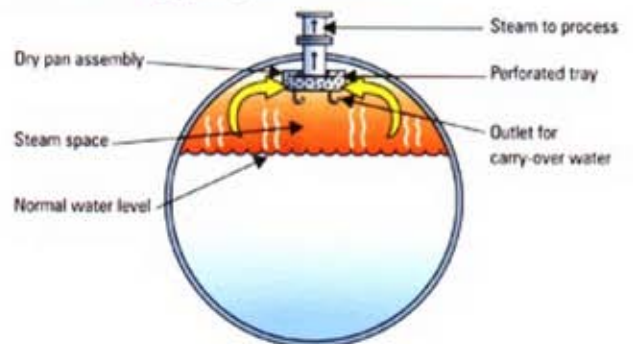
Shellmax is designed to give a guaranteed overall thermal efficiency of 92% with heat recovery unit. This efficiency is also the result of:

- Adequate furnace volume for complete combustion
- High heat absorption in convective heating zone
- Non IBR, non-corrosive air pre-heater
- Leak-proof Air Damper - improves part load efficiency and ensures smooth start-up

High purity steam

Shellmax delivers high purity steam which **increases usable heat** to the process thus reducing fuel costs. High purity of steam is achieved by having sufficient freeboard height and a large disengaging surface area. The result - dryness fraction of 98% and above.

Mechanics of high purity steam in Shellmax



Easy maintenance

Swing open burner

- This facilitates quick and easy maintenance without dismantling the burner and opening the front door

Ceramic Wool as refractory material

- Lightweight, yet possessing the highest refractory index
- Eliminates all problems associated with castable refractory
- Long life - no need for replacement

savings

Multifuel Burner

- Burners suitable for light and heavy oil, gas (Natural, LPG, Biogas) and oil cum gas available

Enhanced Efficiency

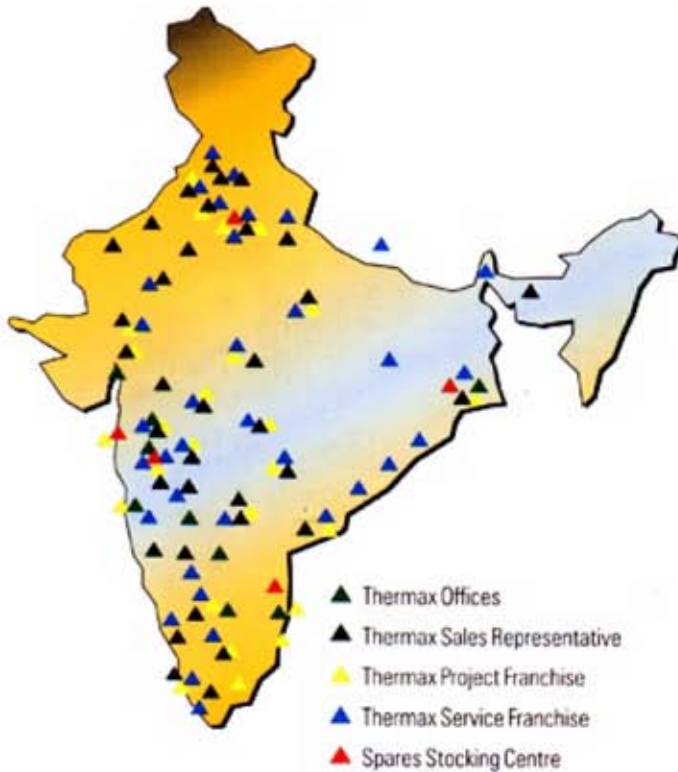
- For natural gas fired boilers, thermal efficiency can be enhanced to 95% with air preheater

Single Element Control

- Precise water level control - consistent steam purity
- Eliminates feed water pump motor ON/OFF operation. Increases pump motor life
- 2 and 3 element control also available on request



Networked for Service



Thermax's highly trained sales and service dealers and franchisees are, today, the industry's benchmark in service and capability. This nationwide network gives you dedicated, efficient and prompt service within 24 hours.

The Thermax network offers :

- System guidance, selection of equipment and accessories
- Complete Boiler House Package with accessories
- Annual Service Contract
- Comprehensive Service Contract
- Operation & Maintenance Services
- Timely spares support
- Boiler maintenance chemicals
- Fuel Supply - LDO, FO, LSHS
- Upgrades, Retrofit Kit
- Full fledged facility for customer training



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An ISO 9001
& ISO 14000
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