

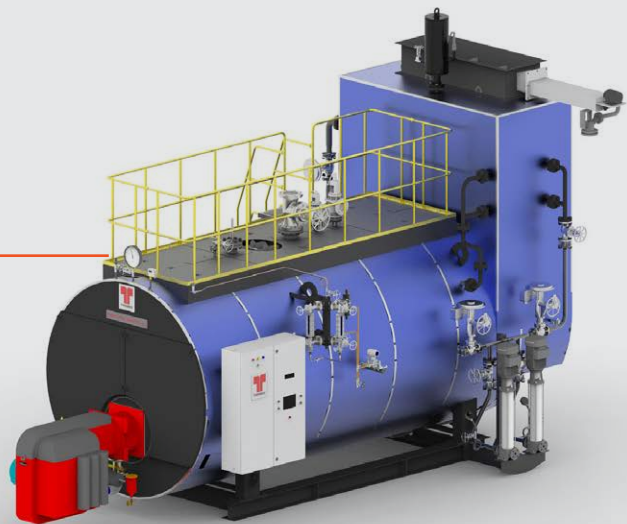


Process Heat Solutions



Shellmax Global Ultra

Flexible. Compact. Advanced

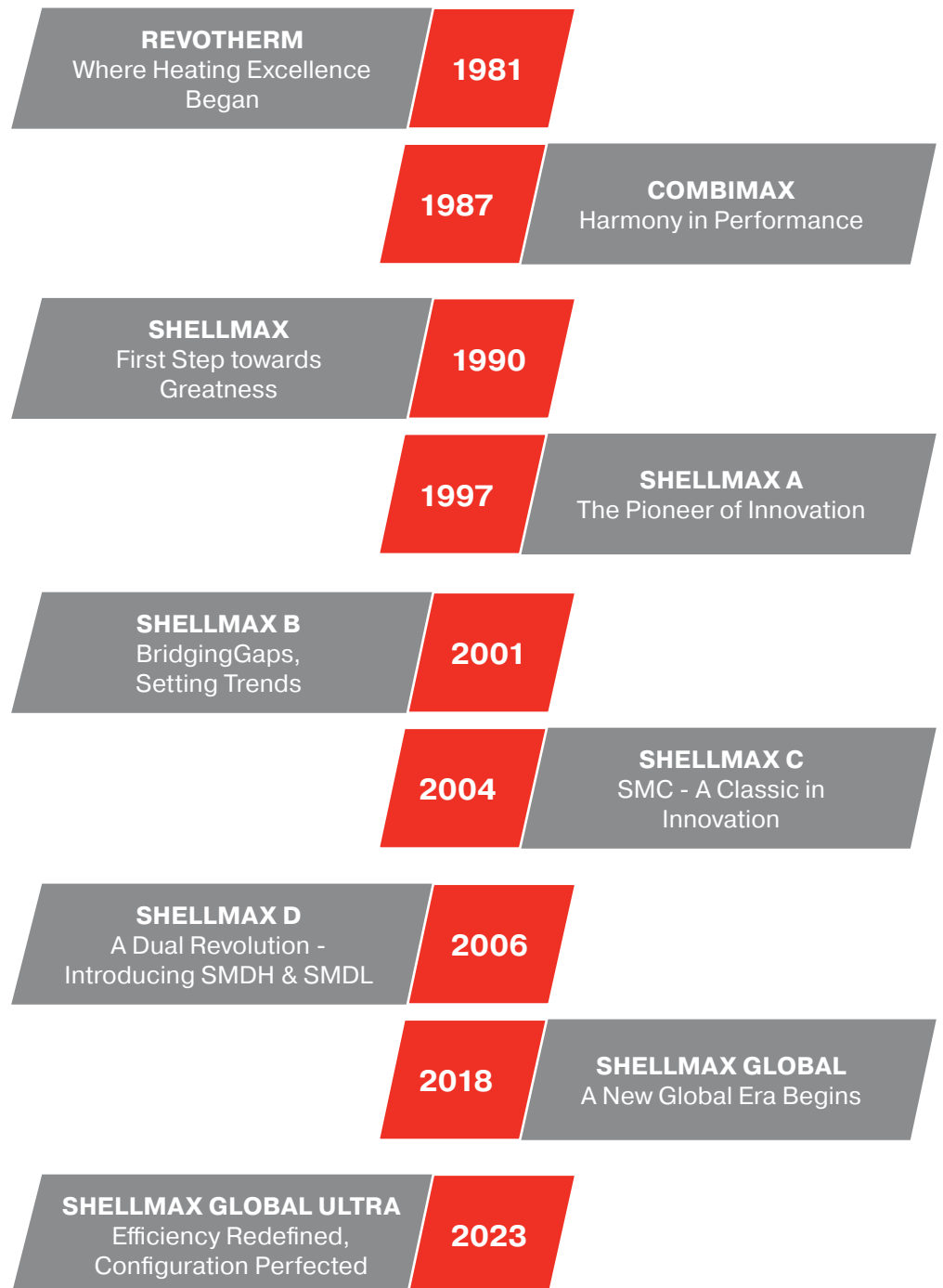
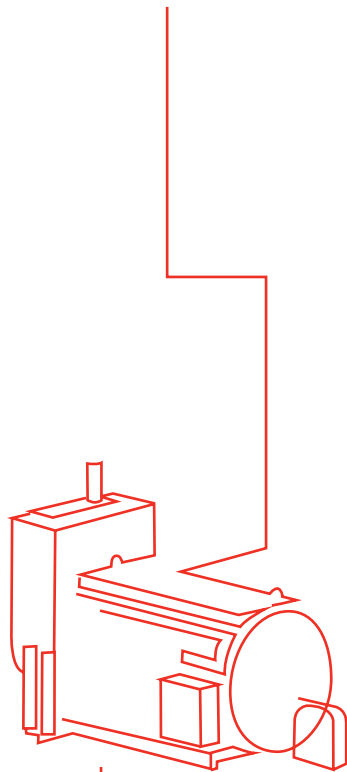


Capacity: 1 TPH to 16 TPH,
customisable up to 34 TPH
Standard Design Pressure:
10.54/17.5 kg/cm²(g)

Conserving Resources, Preserving the Future.

Thermax is a leading conglomerate in the energy and environment space and a trusted partner in energy transition. Thermax's extensive portfolio includes clean air, clean energy, clean water and chemical solutions. Backed by its longstanding industry partnerships across multiple sectors, Thermax has cultivated strong expertise in audit, consulting, execution, and maintenance coupled with digital solutions, ensuring a unified energy-management experience. Leveraging its distinctive engineering capabilities, Thermax converts costs to profits while protecting the environment – a win-win for the industry and society at large.

Legacy of Shellmax Global Series



Shellmax Global Ultra Series

The Shellmax Global Ultra Series boilers are designed with careful consideration to meet evolving needs, offering user flexibility and adhering to global standards. These boilers stand out with their unique and ultra-smart features, allowing users to select modules based on industry requirements, ultimately ensuring the highest efficiency.

Unique Furnace



Liberally sized furnace (high volume) helps in achieving higher combustion efficiency & longer life of the boiler



Suitable for variety of burners



Low VHRR ensures lower emissions & higher efficiency



Higher HTA, lower exit temp ensures longer life



Thermax - Corrugated Furnace* for Reliability & Longer Life

The furnace of boiler is subject to high pressure, differential temperature across the wall which causes bending stress due to differential expansion. Further, load fluctuations & pressure variation create enormous thermal cycling across the furnace. International codes for boiler design have recommended corrugation to improve mechanical strength of boiler by increasing the moment of inertia.

The entire corrugation process is carried out at an in-house facility, at normalising temperature (hot forming at 950° to 980°C) to make sure the grain structure in the steel is oriented close to the parent metal to ensure physical properties.

Corrugation provides adequate flexibility to take care of differential expansion between furnace & tubes.

Uniformity does not allow high stress concentration at discrete points, unlike bowling hoops / stiffener rings.

Each corrugation acts as point of support, increasing the moment of inertia.

* For specific capacities

Flexibility Redefined

Select the best for your industry's process heating needs. Gain a competitive advantage with our configurable modules.



01 Burner Technology

- Dualbloc
- Monobloc



02 Burner Management System

- MCR
- ECR
- O2 trimming



03 Heat Recovery Unit

- Effimiser
- EffiNxt
- Dewtherm



04 Boiler Management

- Thermowiz Nxt
- EDGE Live®
- Relay based panel



Now with Ultra Features



EcoBoost



IE3
Motors



EffiGain



Probe
Type Level
Controller





1. European Burner Technology

Dualbloc Burner



- Compatible with various Heat Recovery Units
- Possibility of retrofitting various PCE/HRU in future
- Compatible with hot combustion air ensuring better combustion
- High availability due to possibility of redundancy in various components

Monobloc Burner

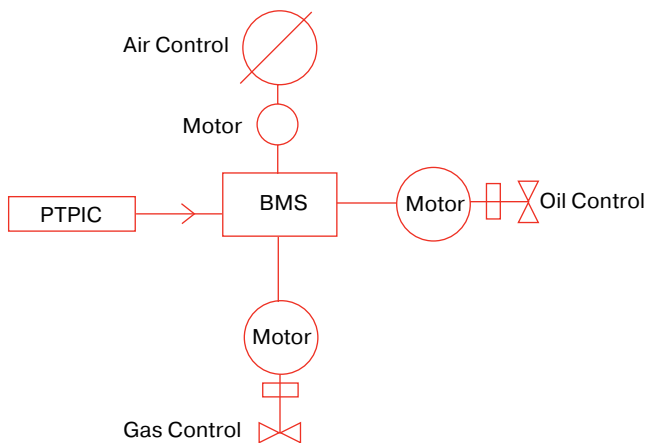
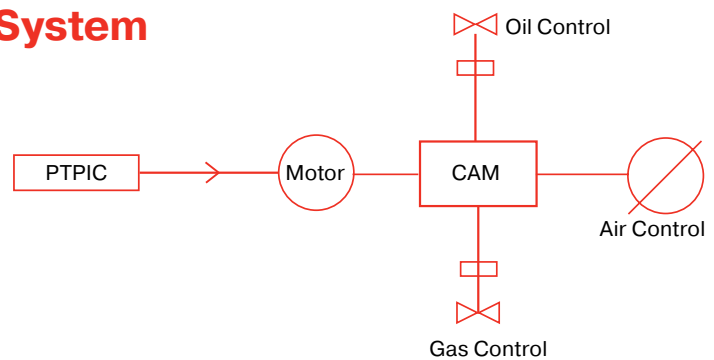
- Plug & play operation
- Compact footprint
- Low installation cost



2. Burner Management System

MCR

- Well-established technology that operators worldwide feel comfortable using
- Reliable performance
- Easy availability of spare parts

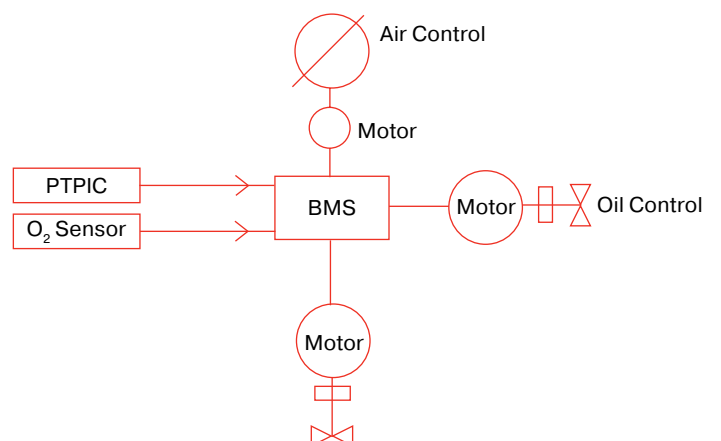


ECR

- Precise air-to-fuel ratio control, especially at part load conditions
- Safe operations
- Controlled emission at all load conditions

ECR with O₂ trimming

- Increased efficiency, especially at part load conditions
- Coupled with VFD operation for Power benefit
- All benefits of ECR also apply



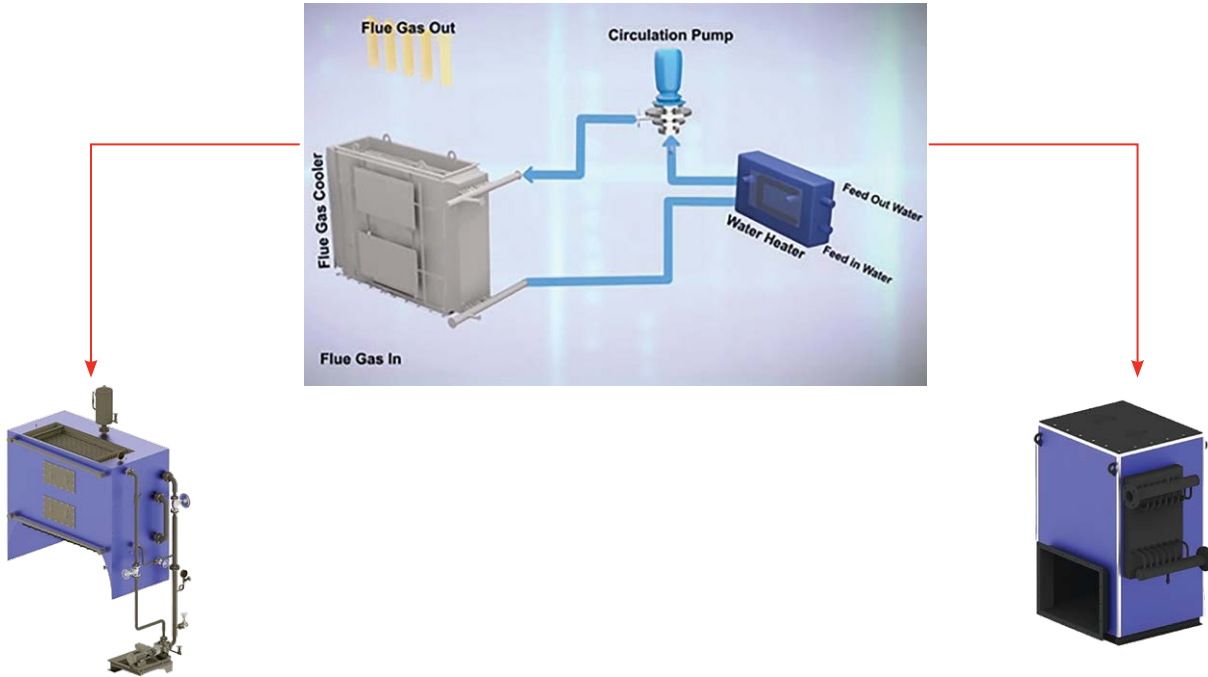


3. Heat Recovery Units

Thermax's unique patented technology utilises a circulating secondary medium to recover heat from the hot flue gas and to transfer it to the incoming feedwater or combustion air, all without direct contact between the two.

The secondary medium temperature control system maintains the circulating medium above the dew point, tailored to the sulphur content of the fuel type. This eliminates the need for bypassing the heat recovery system with changing fuels or load conditions, offering unparalleled fuel flexibility and maximising heat recovery, even at part load conditions.

Utilising the above unique technology, two heat recovery options are available, Effimiser and EffiNxt.



Effimiser

Utilising the unique patented secondary circulating medium temperature control for heating feedwater

EffiNxt

Utilising the unique patented secondary circulating medium temperature control for heating combustion air

BENEFITS

Reduced footprint and installation cost

Reduced fuel bill

Fuel flexibility

Improved uptime - No boiler stoppage due to tube failure

Reliability and long life - Higher resistance to corrosion by pitting



Dewtherm

Dewtherm is a revolutionary heat recovery technology that condenses water vapour in flue gases to recover the latent heat of water vapour, thereby maximising heat recovery.

- Improved efficiency up to **103%***
- Ideal for retrofitting due to its independent draft system
- Customisable to suit unique makeup water requirements



4. Boiler Management Systems

Thermowiz™ Nxt

Experience the power of technology with Thermowiz™ Nxt, a digitally powered device for monitoring, control, and protection of equipment.

- Touch screen graphical operator interface makes it highly user friendly
- MIS reporting enables real-time trends and data logging downloadable on a USB drive
- Networking – Embedded ports on Ethernet, Serial, CAN Open Protocols
- Program modification – Download programs through a USB drive



**THERMAX
EDGE™ Live**

Shellmax Global Ultra comes enabled with EDGE Live®, an intelligent IIoT solution with ensured data security that enables

- Efficiency monitoring and diagnostics
- Data-driven preventive maintenance scheduling
- Remote monitoring of all critical parameters

Operational Parameters		Process parameters	
Steam Pressure	13.7 kg/cm ²	Steam Flow	12160 kg/h
Load	100%	Clamp	3.44%
Flue gas Temp	-	Flue gas draft	-8.2 mmWC
Average Parameters		Operational Parameters	
Boiler Efficiency (GCV)	79.5%	Boiler Outlet Flue Gas Temp	349 °C
Boiler Inlet Efficiency (NCV)	86.6%	Stack Temperature	187 °C
Boiler Inlet Efficiency (GCV)	69.8%	Boiler Inlet Flue Gas Temp	-
Hourly Parameters		Operational Parameters	
Fuel Consumption	2.16 Tonne	Boiler Inlet Flue Gas Temp	349 °C
Boiler Inlet Efficiency (GCV)	62.8%	Stack Temperature	187 °C
Boiler Inlet Efficiency (NCV)	79.5%	Boiler Inlet Flue Gas Temp	-

Relay-based panel

- Well-established technology familiar to operators worldwide
- Reliable performance
- Easy availability of spare parts

Ultra Features

Eco Boost

- EcoBoost integrates heat pumping and heat recovery technology to maximise the steam generation efficiency and to minimise operating cost.
- This reduces the cost of steam heating for pre-heating the makeup water by integrating it with heat pumping technology.



Probe Type Level Controller

- Maximum uptime – Zero moving parts and no electro-mechanical interface
- Energy efficient – Blow-down is not required
- Compact and easy to install, there by saving complicated piping
- Self-monitoring controller complies with SIL3
- CE marking, meets EC directive 97/23/EC



EffiGain™

Making Relay-based Boiler Smart

- EffiGain is an efficiency monitoring and diagnostic system that provides insights required to ensure the equipment operation at optimum efficiency levels. This ultimately results in the reduction of steam costs.



IE3 Motors

- Premium efficiency motors that minimise power consumption and optimise performance



Shellmax

Global Ultra-DB

Shellmax Global Ultra-DB is a fully packaged, smoke-tube type, 3-pass boiler tailored for oil/gas firing, equipped with a dual bloc burner. With the possibility of incorporation of IIoT capabilities, it stands out with best-in-class efficiency. Its thoughtfully engineered design ensures suitability for redundancy, contributing to heightened system reliability. Additionally, it boasts world-class aesthetics, combining functionality with an appealing visual design.



Burner Management Systems

- MCR
- ECR



Heat Recovery Units

- Effimiser
- EffiNxt
- Dewtherm



Boiler Management Systems

- Relay Panel
- Thermowiz™ Nxt



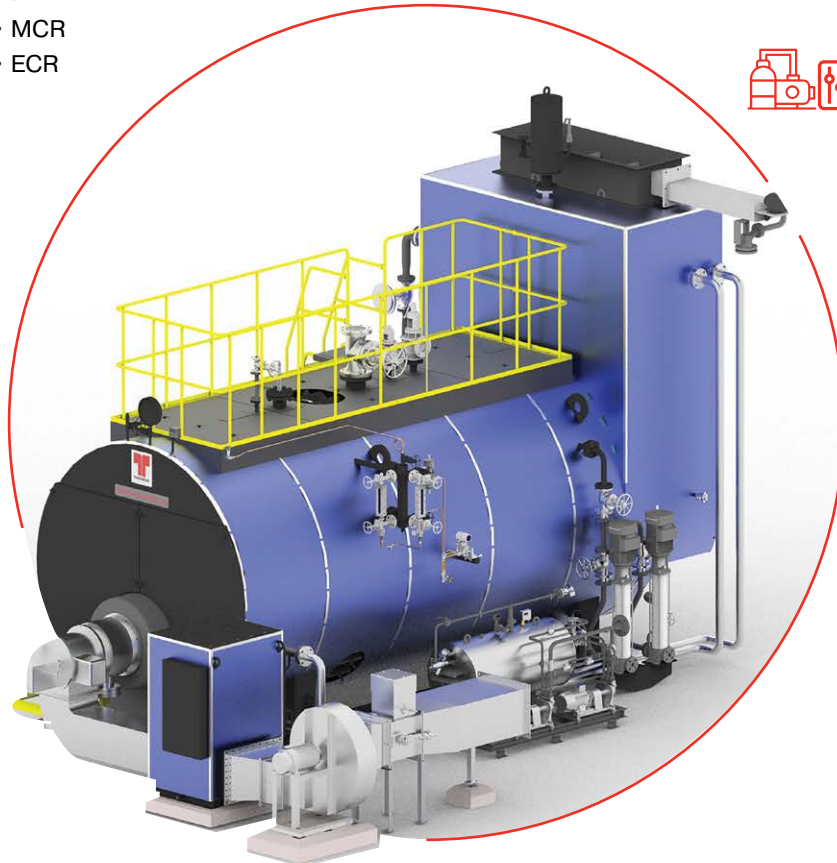
Burner Technology

- Dualbloc burner



Compatible with Hot Air

This boiler model is capable of handling hot air thus improving combustion and making it compatible with multiple HRU options.



*Thermowiz™ Nxt

- Unleashing new PLC with HMI
- IIoT enabled, with remote monitoring



Flexibility to Retrofit

This boiler model also provides the flexibility to retrofit Heat Recovery Units (HRU) and Pollution Combustion Equipment (PCE) in the future.

*Thermowiz Nxt is offered as an option.



Shellmax

Global Ultra-MB

Shellmax Global Ultra-MB is a fully packaged, smoke-tube type, 3-pass, oil/gas-fired boiler. Equipped with Monobloc Burner and IIoT features, it offers plug-and-play boiler operation, best-in-class efficiency, low cost of ownership and world-class aesthetics.



Heat Recovery Units

- Effimiser
- Dewtherm



Burner Management Systems

- MCR
- ECR
- ECR with O₂ trimming



Burner Technology

- Monobloc burner



Boiler Management Systems

- Thermowiz™ Nxt



Low Cost of Ownership

- Reduced fuel bills



Compact Footprint

- 100% skid mounted
- World class aesthetics
- Ergonomic design



Smart Controls

- Unleashing new PLC with HMI
- IIoT enabled, with remote monitoring



Plug & Play

- Saves installation time and cost
- Minimal civil work
- Factory insulated boiler skid
- Pre-wired and pre-assembled



Technical Specifications

Shellmax Global Ultra DB with Effimiser

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100° C	kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	kg/cm ² (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with Effimiser													
FO	%	93.5											
LO	%	94											
NG	%	95											
Fuel Consumption with Effimiser													
FO	kg/hr	60	90	120	180	239	299	359	479	598	718	838	958
LO	kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm ³ /hr	67	100	134	201	267	334	401	535	669	802	936	1070
Connected Load with Effimiser in KW													
FO	10.54 (SVLOP)	16.5	16.5	18	25.95	28.85	35.65	39.65	49.15	52.65	66.15	80.95	88.95
	17.5 (SVLOP)	17.3	17.3	18.8	28.45	31.35	39.15	43.15	58.65	62.15	70.15	76.45	84.45
LO	10.54 (SVLOP)	7.5	7.5	9	13.95	16.85	20.65	24.65	29.65	33.15	49.95	56.95	64.95
	17.5 (SVLOP)	8.3	8.3	9.8	16.45	19.35	24.15	28.15	39.15	42.65	53.95	64.45	72.45
NG	10.54 (SVLOP)	4.9	4.9	6.4	11	12.8	15.5	19.5	24.5	28	41.5	48.5	56.5
	17.5 (SVLOP)	5.7	5.7	7.2	13.5	15.3	19	23	34	37.5	45.5	56	64
Installed dimensions with Effimiser													
Length (L)	Mtr	4.9	5.4	5.4	5.8	6.4	6.9	7.5	8.5	8.9	10.0	10.6	11.2
Width (W)	Mtr	3.5	3.6	3.6	3.7	3.9	4.2	4.2	4.4	4.7	5.2	5.6	5.8
Height (H)	Mtr	3.8	4.0	4.2	4.5	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with Effimiser	Ton(10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
	Ton(17.5)	6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1

Shellmax Global Ultra DB with EffiNxt

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100° C	kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	kg/cm ² (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with EffiNxt													
FO	%	93.5											
LO	%	94											
NG	%	94											
Fuel Consumption with Effimiser													
FO	kg/hr	60	90	120	180	239	299	359	479	598	718	838	958
LO	kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm ³ /hr	68	101	135	203	270	338	406	541	676	811	946	1081
Connected Load with EffiNxt in Kw													
FO	10.54 (SVLOP)	18	18	19.8	27.75	30.55	39.65	43.15	52.65	60.65	73.15	80.95	88.95
	17.5 (SVLOP)	17.3	17.3	18.8	28.45	31.35	39.15	43.15	58.65	62.15	70.15	76.45	84.45
LO	10.54 (SVLOP)	8.25	8.25	10.25	15	17.8	23.9	27.4	32.4	40.4	56.2	56.2	64.2
	17.5 (SVLOP)	8.3	8.3	9.8	16.45	19.35	24.15	28.15	39.15	42.65	53.95	64.45	72.45
NG	10.54 (SVLOP)	6.4	6.4	8.2	12.8	14.5	19.5	23	28	36	48.5	48.5	56.5
	17.5 (SVLOP)	5.7	5.7	7.2	13.5	15.3	19	23	34	37.5	45.5	56	64
Installed dimensions with EffiNxt													
Length (L)	Mtr	4.9	5.4	5.4	5.8	6.4	6.9	7.5	8.5	8.9	10.0	10.6	11.2
Width (W)	Mtr	5.1	5.3	5.3	5.5	5.7	6.1	6.1	6.4	6.7	7.0	7.5	7.9
Height (H)	Mtr	3.8	4.0	4.2	4.4	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with EffiNxt	Ton (10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
	Ton (17.5)	6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1

Technical Specifications

Shellmax Global Ultra MB with Effimiser

SM GLOBAL ULTRA DB	TPH	1	1.5	2	3	4	5	6	8	10	12	14	16
Output F&A 100° C	kg/hr	1000	1500	2000	3000	4000	5000	6000	8000	10000	12000	14000	16000
Design Pressure	kg/cm ² (g)	10.54/17.5											
Thermal Efficiency on NCV (As per BS 845 Part 1) with Effimiser													
FO	%	93.5											
LO	%	94											
NG	%	95											
Fuel Consumption with Effimiser													
FO	kg/hr	60	90	120	180	239	299	359	479	598	718	838	958
LO	kg/hr	56	84	113	169	225	282	338	451	563	676	788	901
NG	Nm ³ /hr	67	100	134	201	267	334	401	535	669	802	936	1070
Connected Load with Effimiser in Kw													
FO	10.54 (SVLOP)	15.42	15.42	16.42	24.72	27.82	28.82	39.02	44.52	55.82	66.52	81.32	89.32
	17.5 (SVLOP)	16.22	16.22	17.22	27.22	30.32	32.32	42.52	54.02	65.32	70.52	88.82	96.82
LO	10.54 (SVLOP)	6.05	6.75	8.55	10.85	13.95	14.95	18.45	19.95	27.45	56.95	56.95	65
	17.5 (SVLOP)	6.05	6.75	8.55	10.85	13.95	14.95	18.45	19.95	27.45	60.2	63.7	71.7
NG	10.54 (SVLOP)	4.2	4.9	6.7	9	11	12	15.5	21	24.5	51.45	51.45	59.45
	17.5 (SVLOP)	5.00	5.70	7.50	11.50	13.50	15.50	19.00	30.50	34.00	55.45	58.95	66.95
Installed dimensions with Effimiser													
Length(L)	Mtr	4.2	4.7	4.7	5.3	5.4	6.5	7.2	8.1	8.4	9.3	9.6	10.2
Width(W)	Mtr	3.5	3.6	3.7	3.9	4.2	4.5	4.5	4.9	5.3	5.2	5.9	6.2
Height(H)	Mtr	3.8	4.0	4.2	4.5	4.8	4.9	5.0	5.2	5.2	6.0	6.2	6.4
Dry Weight for Unit Assembly with Effimiser	Ton (10.54)	5.8	7.1	7.5	9.7	12.5	13.8	15.9	19.2	22.9	26.1	30.8	41.1
		6.6	8.2	8.5	11.4	14.7	16.8	18.7	22.8	26.5	30.8	36.9	48.1



Conserving Resources,
Preserving the Future.



Air Pollution
Control



Boiler and
Heater



Build-Own
-Operate



Chemical



Cooling



Projects and
Energy
Solutions



Process
Heating



Renewable
Energy



Water and Waste
Solutions

Registered Office

D-13, MIDC Industrial Area, R D Ag Road,
Chinchwad, Pune 411019, India.

Email: enquiry@thermaxglobal.com

Customer Care: 1800-209-0115

Bangkok Office

43, Thai CC Tower, Room 245, 24th Floor,
South Sathorn Road, Yannawa, Sathorn,
Bangkok 10120, Thailand.

Email: enquiry@thermaxglobal.com

www.thermaxglobal.com

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This brochure presents only some of our products and we reserve the right to amend any product details without notice.
The photographs used in the brochure are indicative and may not match the actual plant.

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