Typical Combloc Boiler House with Balance of Plant.

Thermax introduces 100% modular, skid mounted, pre insulated boiler house design with following features

- Pre engineered boiler house layout
- 100% modular and skid mounted design
- Easy access for cleaning
- In house design and manufacturing ensuring superior quality
- Optional supply for automatic fuel feeding and ash handling system

Five decades of delivering energy-environment solutions for sustainable growth worldwide

Head Office
India

Manufacturing Units
India
China
Denmark
Germany
Indonesia
Poland

Sales & Service

Bangladesh	Iran	Russia
Belgium	Kenya	Saudi Arabia
Brazil	Malaysia	Sri Lanka
China	Myanmar	Thailand
Denmark	Nigeria	U.K.
Germany	Philippines	U.S.A.
India	Qatar	UAE
Indonesia		

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Thermax Business Portfolio
- Heating
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- Power Generation
- Air Pollution Control
- Chemicals
- Water & Wastewater Solutions
- Solar
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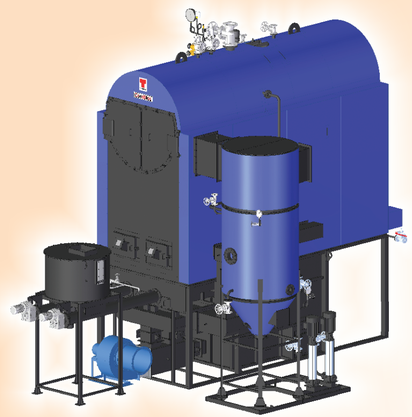
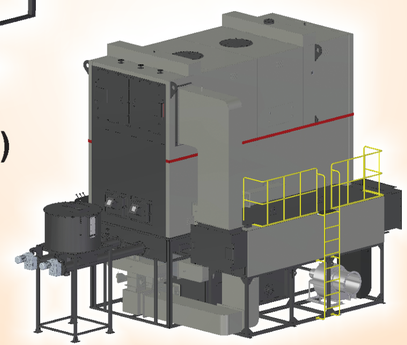
THERMAX

Under Feed Stoker Technology



CB-UFS (Combloc)



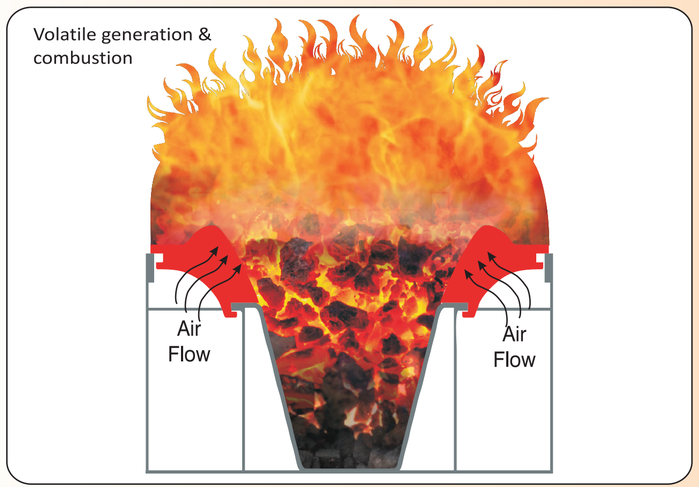
CT-UFS (Enerbloc)

Heating Division

Thermax with its insatiable urge for technological developments brings yet another technical marvel

The underfeed stoker. More popular in Europe and north America for combustion of variety of fuels, Thermax partnered with Lambion Energy Solutions GmbH, Germany to introduce this technology for the first time in Asian markets till 5 MW heat generation capacity, specially custom designed to suit the local fuels availability.

How it works



Underfeed stoker essentially utilises combined gasification and combustion of fuel. The name itself suggests that the fresh fuel is fed from beneath the heap of burning fuel and is continuously replenished in the entire length of retort with a screw feeder. The combustion air is supplied through a set of castings mounted on the retort. The gasification of fuel on top layer of heap facilitates volatile combustion. The balance combustion of fixed carbon happens on flat surfaces provided in furnace or on stationary grates.

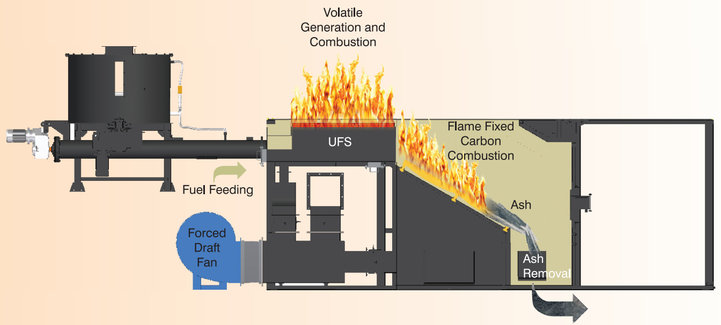
Features

- Silent and highly efficient combustion.
- Automated and regulated fuel feeding ensuring automated combustion in consistent efficiency regime.
- High part load efficiency.
- Smokeless operation at very high loads.
- Proven technology in European market for over 4 decades.
- Fuel flexible design – suitable for variety of fuels.
- Lower SPM levels across fuel matrix.
- Substantial amount of fuel remains in the retort enabling boiler service even during temporary breakdown.

Under Feed Stoker Technology

Under feed stoker technology can be used with both boilers and heaters. Thermax offers UFS technology in packaged, hybrid boilers – Combloc and also in revolutionary compact thermic fluid heaters – Enerbloc CT.

Packaged with UFS Combloc and Enerbloc are most efficient, smart and affordable solutions for process heating industry.

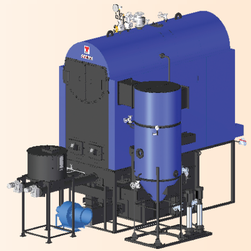


Features CB UFS and CT UFS

- Custom designed for combustion of variety of fuels.
- Hybrid design – combination of under feed stoker with sloped stationary grate.
- Automated air and fuel regulation for efficient combustion.
- Multiple pass furnace design facilitating efficient utilisation of radiant heat transfer.
- Silent combustion - Very less carryover of fuel.
- Eco friendly – very low CO and dust emission.
- Sufficient large access doors for ease of operation and maintenance.
- Modular design for ease of construction, minimal site refractory and low installed cost.
- Factory insulated units.

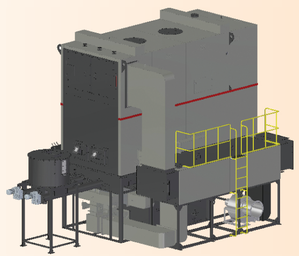
Fuels

Indonesian Coal | Crushed Biomass Briquettes | Wood Chips | Biomass Pellets | Other Dry Biomass*



CB-UFS

Description	Units	CB-15	CB-20	CB-30	CB-40	CB-50	CB-60	CB-80
Boiler Performance								
Steam Output (F & A 100°C)	kg/hr	1500	2000	3000	4000	5000	6000	8000
Max. Steam Temperature (10.54/17.0)	°C (kg/cm²)	185/208						
Steam quality	%	98						
Efficiency as per BS 845 - Part 1 (on NCV Basis)								
Indonesian Coal	%	86.5						
Biomass briquette	%	86.5						
Wood chips	%	87						
Biomass pellets	%	87						
Overall Dimensions with HRU								
Length	mm	8000	8000	8300	8600	9000	9000	9000
Width	mm	4000	4000	4500	4700	4900	5700	6000
Height	mm	5000	5000	5300	5700	6000	6200	6500
Connected Load								
with Cyclomax for 10.54 (Kg/cm2)	kW	17.1	20.9	25.2	35.2	41.2	48.2	58.4
with Cyclomax for 17.00 (Kg/cm2)	kW	17.9	21.7	27.7	37.7	44.7	51.7	60.4
Chimney								
Chimney top diameter (recommended)	mm	400	450	550	650	750	800	850



CT-UFS

Description	Units	CT - 15	CT - 20	CT - 25	CT - 30
Heater Performance					
Heat Capacity	kcal/hr	1500000	2000000	2500000	3000000
Max. T.F. Outlet Temperature (Std.)	°C	280	280	280	280
Thermic Fluid Flow rate	m³/hr	105	140	175	210
Efficiency as per BS 845 - Part 1 (on NCV Basis)					
Indonesian Coal	%	83			
Biomass briquette	%	83			
Wood chips	%	83			
Biomass pellets	%	84			
Overall Dimensions with HRU					
Length	mm	7718	8410	8345	8570
Width	mm	5700	6000	6300	6600
Height	mm	5100	5500	5800	5800
Connected Load					
with Cyclomax + Thermoclutch	kW	39.3	51.9	74.9	76.7
with Cyclomax + without Thermoclutch	kW	54.3	59.9	89.9	91.7
Chimney					
Chimney top diameter (recommended)	mm	600	700	750	800