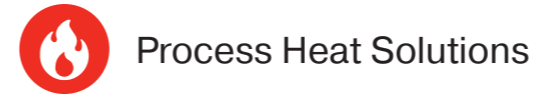


Conserving Resources,  
Preserving the Future.



## Thermosyphon

State of the art solid fuel-fired, high pressure natural circulation boiler



Air Pollution Control



Boiler and Heater



Build-Own-Operate



Chemical



Cooling



Projects and Energy Solutions



Process Heating



Renewable Energy



Water and Waste Solutions

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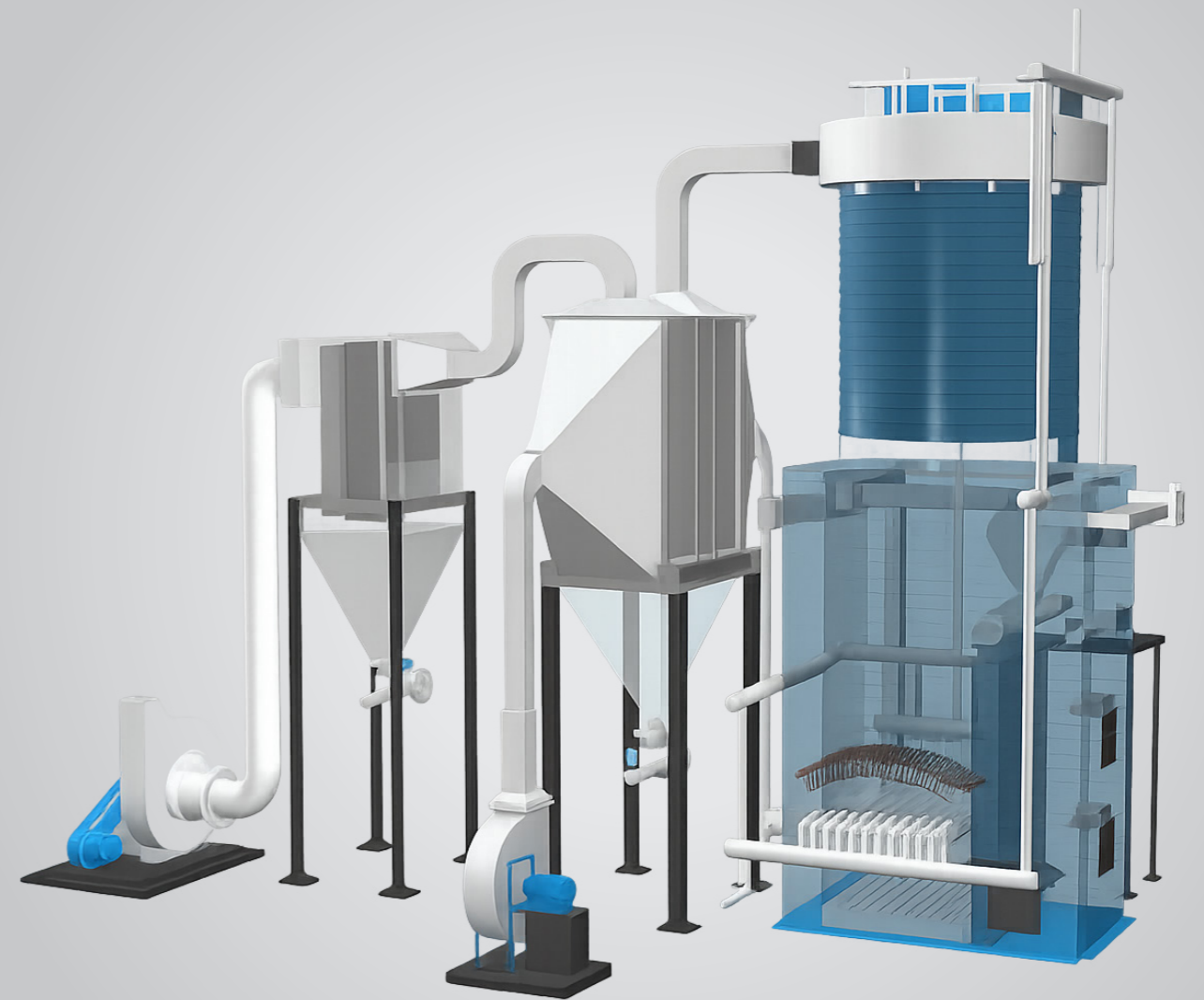


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This brochure presents only some of our products and we reserve the right to amend any product details without notice. The photographs used in the brochure are indicative and may not match the actual plant

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Design: [www.graphicjammedia.com](http://www.graphicjammedia.com)



Capacity: 2 to 60 Kcal/Hr

# 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.

## Thermosyphon: World's first solid fuel-fired, high pressure natural circulation boiler by Thermax

Thermosyphon is a closed loop, high pressure, natural circulation equipment that uses water as heating medium.

Factors that make it the perfect and safest choice in industries like food and edible oil, where it is necessary to achieve temperatures up to 280°C, and the possibility of contamination from leakages is unthinkable.

Multiple reasons that make natural circulation Thermosyphon a much superior choice than thermic fluid heating in these industries.

### Advantage Thermosyphon

#### Non-Toxic Process Heating

Thermosyphon uses distilled water as heat transfer medium. This, being 100% non-toxic, puts an end to all risks of contamination in case of leakages - a factor that is of special importance in industries like food, edible oil, etc.

#### No Pump Required

Thermosyphon works on the principle of natural circulation, hence no circulation pump is required. Reduction in moving parts boosts reliability and contributes to power saving.

#### Multi Start Helix Angle

The multi-start coil ensures no vapor locks and smooth start ups. Then, the single pass design on flue gas side and parallel flow on the water side ensures lesser coil choking.

#### Hermetically Sealed System

Thermosyphon comes with completely welded construction with no flange joints, and operates on the close loop concept. This hermitically sealed system offers the twin advantages of low maintenance and no internal corrosion.

## Combustion options for every need

Thermosyphon can be offered with either of the following advanced combustion systems, depending on fuel type and application:

#### Fluidised Bed Combustion

The high turbulence of the fluidised bed ensures efficient and uniform combustion. It allows quick response to load changes and delivers high thermal efficiency, especially when using low-grade or high-moisture fuels.

#### Reciprocating Grate Combustion

This robust and fully automated combustion system is ideal for handling a wide variety of biomass fuels, including those with fouling and variable characteristics. Its zoned fuel feeding and air distribution ensure complete combustion and high uptime.

Mechanised fuel feeding supports both systems, enabling greater automation and ease of operation.

## Advantage Solid Fuel

Parameter	Unit	Solid Fuel Thermosyphon	Oil Fired Thermosyphon
Heater capacity	kCal/hr	20,00,000	20,00,000
Average load	kCal/hr	15,00,000	15,00,000
Efficiency	%	80% on imported coal	85% on FO
Fuel calorific value	kCal/Kg	5800	9650
Fuel feed rate	kg/hr	323	194
Rate of fuel	Rs/kg	5.50	21
Total working hours	hrs	6000	6000
Fuel cost	Rs/yr	10,668,103	24,481,865
Connected power	kw	44	22
Power	Rs/kw	4.50	4.50
Total power cost	Rs/yr	1,188,000	594,000
Total cost	Rs/yr	11,856,103	25,075,865
<b>Operating cost saving</b>	<b>Rs/yr</b>	<b>13,219,762</b>	

## Technical Specifications

Parameters Heater	Unit	MODEL			
		SFTS-10	SFTS-15	SFTS-20	SFTS-25
Heater output	kCal/hr	10,00,000	15,00,000	20,00,000	25,00,000
Operating pressure	kg/cm <sup>2</sup>	75	75	75	75
Temperature@ operating pressure	°C	290	290	290	290
Thermal efficiency - Imp. Coal - Husk	% %	80 76			
<b>Fuels</b>		Indonesian coal/ husk			
<b>Electrical Connected Load</b>					
Total load (with CYCLOMAX)	kw	44		52	
<b>Overall Unit Dimensions</b>					
- Length	mm	8400	8400	9500	9500
- Width	mm	8400	8800	9000	9000
- Height	mm	8400	11685	19000	19000

\*Efficiency as per BS: 845 Part I indirect method.

Higher capacity Thermosyphon models are available as customised options

In view of our constant endeavour to improve the quality of our products, we reserve the right to alter or change specifications without prior notice. All photographs shown in this publication are representative in purpose, and to be used for reference only. For actual details and specifications, please refer to Thermax offer document