

# **Thermic Fluid Heater**

## **Vertical Solid Fuel & F. B. C. System**



**Most Economical Solution for  
Multifuel Fired System**



## Technical Advantages For Thermic Fluid Heater

### 1. Superior Design

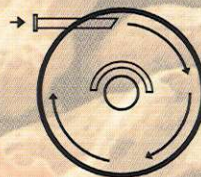
The Thermic Fluid Heater design adopts the principles of Standard code for optimum heat flux, maximum heat absorption for long operating life of Heater and Thermic fluid. Superior manufacturing technology coupled with best engineering practices ensures trouble free operation of Thermic Fluid Heating System.

### 2. Hi-Efficiency

Appropriate combustion technology best suited to the type of fuel such as feeding system, fuel spreading, furnace design, combustion air distribution, draft control etc. results in Perfect combustion of fuel hence low operating cost. Air Pre Heater supplied along with Thermic Fluid Heater recovers maximum heat from flue gases, with low power consumption of ID Fan and easy to clean and maintain enhances the operating efficiency of TFH.

### 3. Compact Deaerator-Cum-Expansion Tank

It requires less space, buffer vessel prevents cooling of hot oil coming from process, tangential Thermic fluid entry in deaerator ensures best deaeration.



Continuous Deaeration

## Controls & Safeties

### 1. Precise Electrical Panel & Instruments

The Thermic Fluid Heating System having Electrical Panel that Control Inlet and Outlet Temperature of Thermicfluid Heater. This Precise Temperature Controller also prevents overheating of Thermic Fluid.

### 2. Prevents Coil tube over heating, choking

The differential pressure switch fitted across the Orifice plate assembly and another fitted across return line and outlet of Thermopac signals low flow alarm condition and thus preventing over heating and choking.

### 3. Prevents high pressure condition

In case, accidental high pressure occurs, the pressure switch stops the ID & FD Fan.

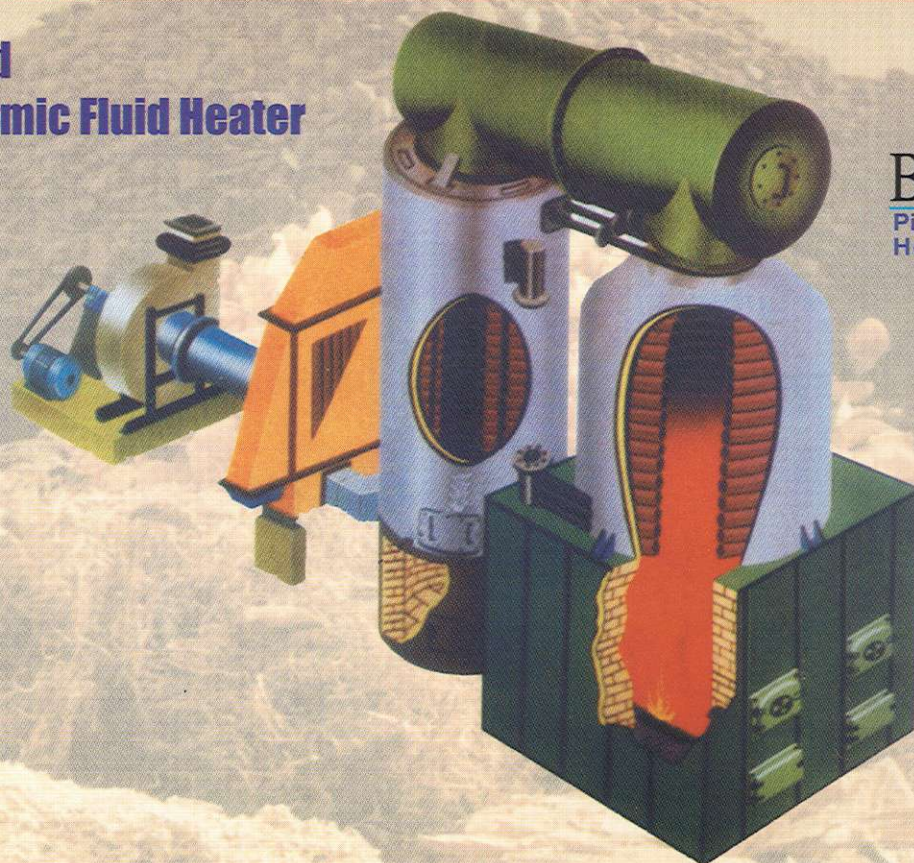
### 4. Precise Oil Level Controllar

The visual level indicator and the float actuated level switch fitted in the Deaerator-cum-expansion signals alarm incase of drop in Thermic fluid level in the system below the minimum.

### 5. Thermic Fluid Degradation Protection incase of power failure ( optional)

When a power failure occurs, the combustion gets arrested with FD / ID fans going OFF. The dedicated DG set enables the Thermic Fluid Pump to keep the circulation ON.

# Multi Fuel Fired Four Pass Thermic Fluid Heater



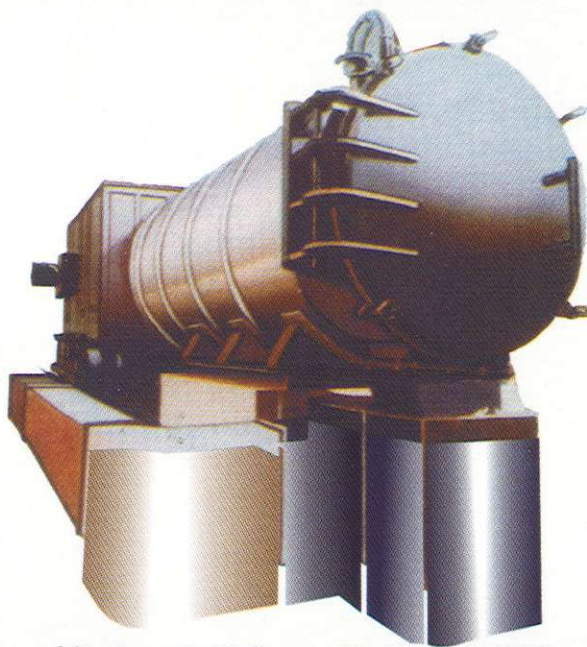
## Technical Specification

Description	Units	VTFH-04	VTFH-06	VTFH-10	VTFH-15	VTFH-20	VTFH-25
<b>Heater performance</b>							
Capacity	kcal / hr	4 x10 <sup>5</sup>	6 x10 <sup>5</sup>	1 x10 <sup>6</sup>	1.5x10 <sup>6</sup>	2 x10 <sup>6</sup>	2.5x10 <sup>6</sup>
Max. T.F. Outlet Temperature	°c	300	300	300	300	300	300
Flow rate	m <sup>3</sup> /hr	30	50	70	120	160	210
Thermal Efficiency ( η % )	%	76	76	76	76	76	76
T. F. head available at outlet	°mlc	←————— 27 —————→					
<b>Heater Construction features</b>							
Coil hold up capacity	litres	470	550	1200	2350	3100	3700
<b>Material of Construction</b>							
Tubes		ERW as per BS 3059 part 1					
<b>Thermic Fluid Pump</b>							
Flow	m / hr	30	50	70	120	160	210
Head	m <sup>3</sup> /c	50	50	50	50	60	60
Power	HP	10	15	25	30	40	50
<b>Connected Load</b>							
Coal or Lignite	HP	17	25.5	40	47.5	62.5	80
Wood	HP	17	25.5	40	47.5	62.5	80
Husk	HP	21	31	47	53	75	95
<b>Fuel Consumption</b>							
Coal	kg/hr	117	175	292	439	585	731
Wood	kg/hr	165	247	411	617	823	1128
Husk	kg/hr	188	282	470	705	940	1175
Lignite	kg/hr	176	263	439	658	877	1097

- GCV For coal is 4500 Kcal/KG
- GCV For Wood is 3200 Kcal/KG
- GCV For Lignite is 3000 Kcal/KG
- GCV For Husk is 2800 Kcal/KG



Vertical Three Pass (VTFH)



Horizontal Three Pass (HTFH)

**TECHNICAL SPECIFICATION OF SOLID FUEL FIRED IN HORIZONTAL THERMIC FLUID HEATER**

DETAIL	UNIT	HTFH10	HTFH20	HTFH30	HTFH40	HTFH60	HTFH100	HTFH150	HTFH200	HTFH250	
Heat Output	Kcal/Hr	1,00,000	2,00,000	3,00,000	4,00,000	6,00,000	10,00,000	15,00,000	20,00,000	25,00,000	
Outlet Temp.	Degree C	300	300	300	300	300	300	300	300	300	
Thermal Efficiency	$\eta$ +2%	70	70	70	70	70	70	70	70	70	
Fuel Consumption	LIGNITE	Kg. / Hr	48	95	142	190	285	476	719	952	1190
	COAL	Kg. / Hr	32	64	96	128	192	320	476	635	794
	WOOD	Kg. / Hr	45	90	135	180	270	445	670	893	1116
Electric Load Thermic Fluid Pump	HP	5	7.5	7.5	10	15	20	30	40	50	
Overall Dimensions											
Length	mm	3215	3915	4250	5690	6505	7115				
Width	mm	2120	2465	3120	3330	3940	4090				
Height	mm	1230	1575	2115	2365	2365	2795				

- GCV For coal is 4500 Kcal/KG
- GCV For Wood is 3200 Kcal/KG
- GCV For Lignite is 3000 Kcal/KG
- GCV For Husk is 2800 Kcal/KG



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