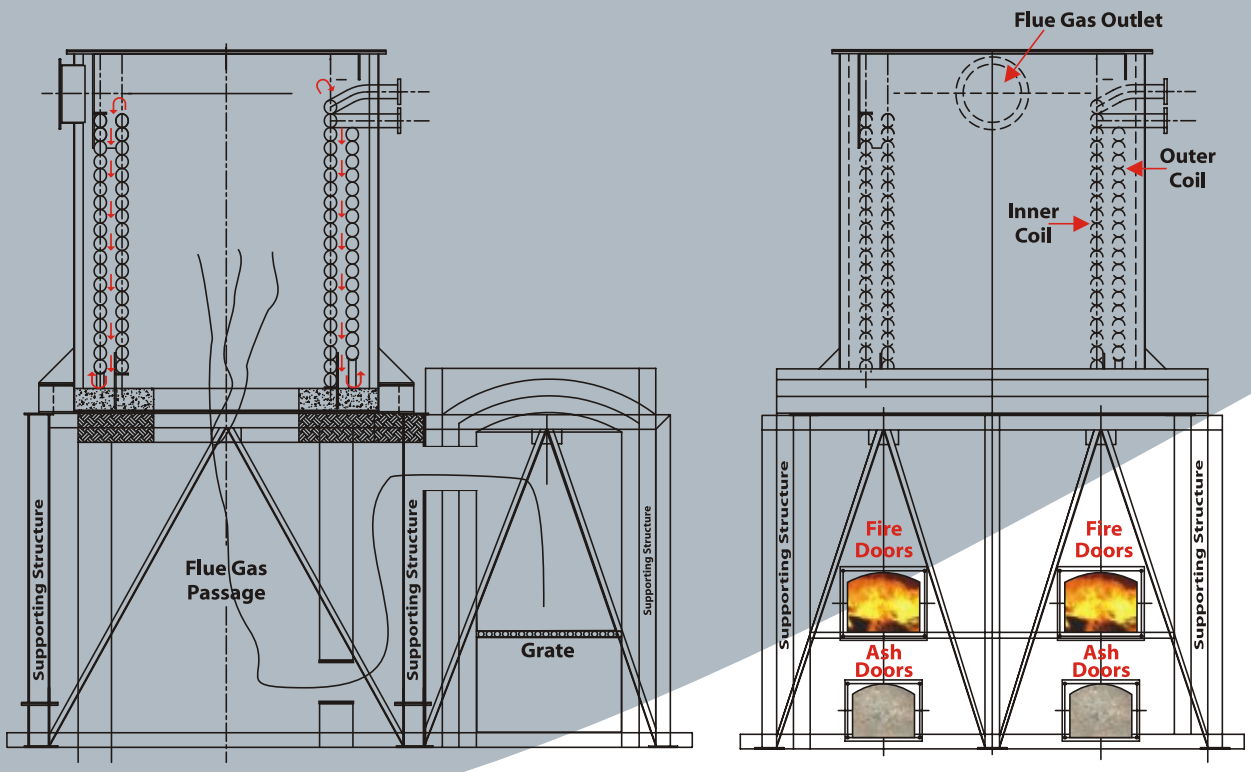
FLUIDTHERM (SOLID FUEL)

THREE PASS COAL / AGROWASTE FIRED SEMI-AUTOMATIC THERMIC FLUID HEATER

Salient Features:

- Robust and reliable
- Easy maintenance
- Adequate thermic fluid flow rates
- Assured net saving of 50% on fuel cost for switch from oil fired unit

Schematic Diagram



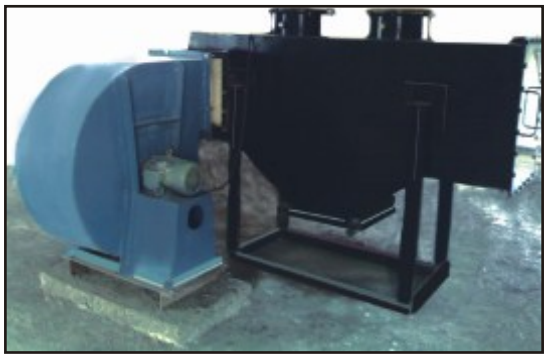
Constructional Features:

- Vertical, coil type, three pass unit
- External furnace made up of fire bricks
- Fixed grate for solid fuel firing
- Coil made up of SEAMLESS Pipe confirming to ASTM A 106 Grade B Standard
- Coil hydraulically tested at 55 kg/cm^2 (g) pressure
- I. D. fan impeller statically and dynamically balanced for smooth operation

Operational Features:

- Manual solid fuel firing (so ease of operation and less maintenance)

- Induced draught inside the unit (in case of unit without air preheater as a HRU)



- Balanced draught inside the unit (in case of unit with air preheater as a HRU)

Safety Features:

- Thermic fluid low flow tripping
- Overriding temperature tripping
- Single phasing prevention cum over load protection for control circuit
- Miniature Circuit Breaker (MCB) for control circuit
- Thermic fluid level switch on expansion tank (optional)
- High stack temperature annunciation / alarm (optional)

Combustion and heat transfer:

- High furnace volume ensuring longer furnace residence time and complete combustion of fuel at low excess air
- Three pass design ensuring highest total length of flue gas passage and superior thermal efficiency
- Smoke index considerably low
- Superior combustion efficiency

TECHNICAL SPECIFICATIONS

Details			Unit	Models*								
				200	300	400	600	800	1000	1500	2000	2500
Maximum heat output			kcal/hr	200000	300000	400000	600000	800000	1000000	1500000	200000	2500000
Maximum thermic fluid temperature at the outlet of the unit **			°C	← 300 →								
Thermic fluid flow rate ***			m^3/hr	12	18	24	36	48	60	90	120	150
Thermal Efficiency (based on G. C. V. of fuel)	Without HRU		%	← 75±1 →								
	With HRU		%	← 78±1 →								
Heat transfer area			m^2	15	22.5	30	45	60	75	112.5	150	187.5
Fuel consumption ****	Without HRU	Coal	kg/hr	59.3	88.9	118.5	177.8	237	296.3	444.4	592.6	740.7
		Agrowaste Briquettes	kg/hr	66.7	100	133.3	200	266.7	333.3	500	666.7	833.3
	With HRU	Coal	kg/hr	57	85.5	114	170.9	227.9	284.9	427.4	569.8	712.3
		Agrowaste Briquettes	kg/hr	64.1	96.2	128.2	192.3	256.4	320.5	480.8	641	801.3
Electrical Supply				← 415V±5%, 3 Phase, 4 Wire →								
Thermic fluid circulation pump head			m LC	← 50 →								
Thermic fluid circulation pump *****			kw	5.59	7.46	7.46	11.19	---	14.91	18.64	22.37	29.83
I. D. fan			kw	2.24	2.24	2.24	5.59	---	7.46	7.46	11.19	14.91
F. D. fan (if installed alongwith Air Preheater)			kw	0.75	0.75	0.75	1.49	---	2.24	3.73	3.73	5.59
Total connected electrical load (without Air Preheater as a HRU)			kw	7.83	9.7	9.7	16.78	---	22.37	26.1	33.56	44.74
Total connected electrical load (with Air Preheater as a HRU)			kw	8.58	10.45	10.45	18.27	---	24.61	29.83	37.29	50.33
Normal electrical consumption (without Air Preheater as a HRU)			kw	6.26	7.76	7.76	13.42	---	17.9	20.88	26.85	35.79
Normal electrical consumption (with Air Preheater as a HRU)			kw	6.86	8.36	8.36	14.62	---	19.69	23.86	29.83	40.26
Mode of firing				← Manual →								
Type of grate				← Horizontal fixed →								
Flue gas exit temperature	At heater outlet		°C	← 240 →								
	At HRU outlet		°C	← 150 →								
Ash removal				← Manual →								
Material of construction	Shell			← IS 2062 →								
	Coil			← ASTM - A 106 Gr. B **Seamless** Pipes →								
	External furnace			← Supporting structure of Mild Steel, Fire Bricks & Insulating Bricks →								
Overall dimensions (approx.)	Length Width Height		mm mm mm	← Kindly refer our General Assembly Drawing for this data →								
Flue gas outlet size (dia.)			mm	← Kindly refer our P & I Diagram for this data →								

Kindly note:

* Higher capacity models can be designed, manufactured & supplied as per specific requirement.

** Units having capability to supply thermic fluid having temperature > 300°C at the outlet of the unit can be designed, manufactured & supplied as per specific requirement.

*** Thermic fluid flow rate is specified with the assumption that the temperature difference between supply temperature & return temperature = 37°C

**** The fuel consumption figures mentioned are tentative. The actual practical / operational figures will depend on the actual calorific value of the fuel as specified in the fuel supplier's test certificate.

***** The connected electrical load of thermic fluid circulation pump is specified with the assumption that the temperature difference between supply temperature & return temperature = 37°C.

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In view of our constant endeavors to improve the quality of our products, we reserve the rights to alter or change the specifications without prior notice.