



Utech Projects Pvt. Ltd.

THERMIC FLUID HEATER

**Wood Chips Firing
External Furnace**



**Solid Fired TFH
with HRU**



**Oil / Gas Fired
TFH System**



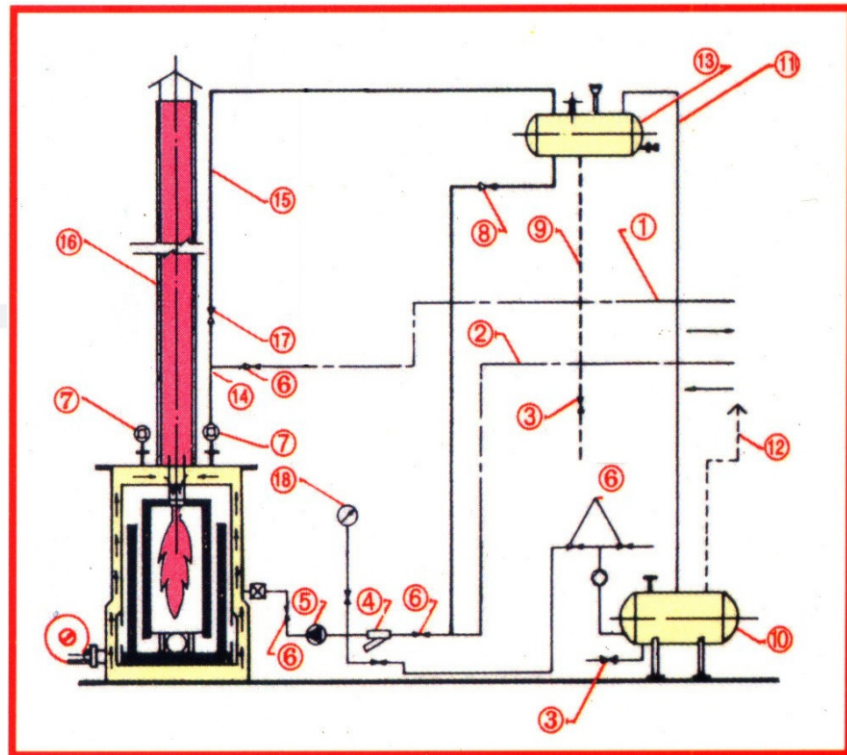
**Control Panel For
Automatic Operation**



- **Higher Efficiency $88 \pm 2\%$ For Liquid & Gas, $75 \pm 2\%$ For Solid Fuel Firing**
- **Liquid Sealing Arrangement**
- **Simplex / Duplex Circulating Pump System**
- **Turnkey System**

THERMIC FLUID HEATER

1. Outflow
2. Return Flow
3. Drain Valve
4. Strainer
5. Oil circulation Pump
6. Isolating Valve
7. Header
8. Suction Valve
9. Drain Pipe
10. Drain Tank
11. Air Expansion pipe
12. Airvent
13. Expansion Tank
14. Separator
15. Air Vent
16. Chimney
17. Airvent Valve
18. Pressure Gauge



THREE PASS VERTICAL / HORIZONTAL

Ist Pass : First pass of the flue gas is downward inside spirally wound coil through which thermic oil circulates. Exposed to maximum heating area to radiant heat.

IInd Pass : Upward in between the two spirally wound coil. Convective heating area.

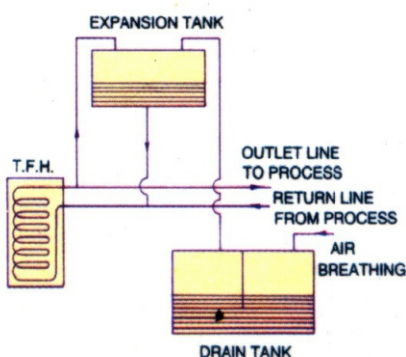
IIIrd Pass : Downward between outside coil & inner shell. Unique shell design reduces stack loss.

Insulation : Combustion air is forced between the two shells & aluminium radiator which acts as insulation for outer shell & preheats the air for better combustion efficiency.

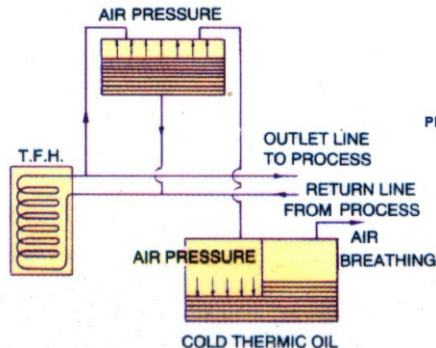
Burner & it's Controls : Fully automatic, downward firing, pressure jet, On-Off Modulation or High/Low modulation. Burner will have all safeties like flame failure device (Photocell), high temperature cut off, low flow safety, high pressure cut off. In case of abnormal condition unit will go in lockout with audio-visual alarm. The modulation is achieved by providing on-off temperature controller which will start & stop the burner according to heat load & reduces fuel consumption in proportion to heat load in plant giving best fuel efficiency for plant operation.

LIQUID SEALING SYSTEM PREVENTS THERMIC OIL OXIDATION

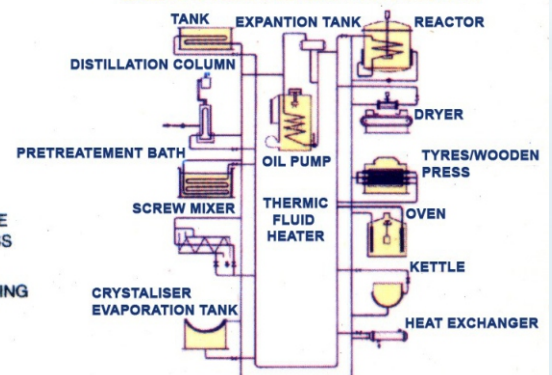
OIL LEVELS AT COLD CONDITIONS



OIL LEVELS AT HOT CONDITIONS



APPLICATIONS OF ENERGYPACK THERMIC FLUID HEATER



| MODEL | HEAT OUTPUT KCAL / HR | GAS NM ³ / HR | FUEL CONSUMPTION | | MODEL | COAL KGS / HR | BRI-QUETTE KGS / HR | WOOD KGS / HR |
|---------|--------------------------|-----------------------------|--------------------|------------------|-------------|------------------|------------------------|------------------|
| | | | L.D.O. KGS / HR | F.O. KGS / HR | | | | |
| EPT/05 | 50,000 | 7 | 5.5 | 5.9 | EPT-EXT-05 | 13 | 17 | 21 |
| EPT/10 | 1,00000 | 14 | 11 | 11.8 | EPT-EXT-010 | 26 | 34 | 42 |
| EPT/20 | 2,00000 | 28 | 22 | 23.6 | EPT-EXT-020 | 52 | 68 | 84 |
| EPT/30 | 3,00000 | 42 | 33 | 35.4 | EPT-EXT-030 | 78 | 102 | 126 |
| EPT/40 | 4,00000 | 56 | 44 | 47.2 | EPT-EXT-040 | 104 | 136 | 168 |
| EPT/50 | 5,00000 | 68 | 55 | 59 | EPT-EXT-050 | 130 | 170 | 210 |
| EPT/60 | 6,00000 | 84 | 66 | 72.8 | EPT-EXT-060 | 156 | 204 | 252 |
| EPT/100 | 10,00,000 | 136 | 110 | 118 | EPT-EXT-100 | 260 | 340 | 420 |
| EPT/150 | 15,00,000 | 204 | 165 | 177 | EPT-EXT-150 | 390 | 510 | 630 |
| EPT/200 | 20,00,000 | 272 | 220 | 236 | EPT-EXT-200 | 520 | 680 | 840 |



| CALORIFIC VALUE | |
|---------------------------|--------------------------------|
| FURNACE OIL- 9650 KCAL/HR | WOOD - 3200 KCAL/KGS |
| LDO - 10,250 KCAL/HR | BRIQUETTE- 4000 KCAL/KGS |
| COAL - 5400 KCAL/KGS | GAS - 8500 NM ³ /HR |

KEY FEATURES OF THERMIC FLUID HEATERS

1. HEAVY CONSTRUCTION

Thermic Fluid Heaters are fabricated as per latest engineering practice to ensure safety operation along with a comparatively high efficiency level.

2. THREE PASS FORCED CIRCULATION Thermic Fluid circulates through Double Vertical Coil having Single/Double/Triple start depending on capacity. Three pass circulation guarantees a higher efficiency level which helps to enhance the most of the energy from the fuel.

3. ABILITY TO USE WASTE AS A FUEL

4. FULLY AUTOMATIC CONTROL to enhance the performance and to reduce operator involvement, thermic fluid heaters are supported with fully automatic control system including efficiency controls, safety controls and alarm notification. Specifically the high flue gas temperature control, controls demand set points such as temperature & pressure to supply energy depending on the plant demand.

5. AIR PRE-HEATER TO ENHANCE THE EFFICIENCY To achieve utmost absorption of heat from the fuel, thermic fluid heaters are featured with air pre heater to heat the inlet air for the combustion process.

6. COST EFFECTIVE DESIGN EnergyPack provides cost effective design for chimneys, piping for TFH to reduce the cost involved with the TFH accessories. EnergyPack is capable to construct guy wire rope & self supported chimneys as per the latest available standards and to the client's specification.

OTHER PRODUCTS

IBR & NON IBR STEAM BOILERS

Self Supported Chimneys.
Hot water Boilers.
Heat Exchangers (TEMA).
Pressure Vessels (ASME).

Waste Heat Boilers.
Electrode Boilers.
Dewaxing Autoclave Boilers.
Incinerators.



D M Plant



P H Dosing System



R O Plant



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