## BS MAXTHERM MXT & MXT-H

Design of BS Maxtherm MXT & MXT-H Series are based on the unique 5-Pass circuit for flue gases ensuring maximum extraction of the heat energy from the fuel while burning it efficiently.

MXT Series are suitable for application upto a maximum temperature of 300 degree Centigrade and MXT-H Series are suitable for application upto a maximum temperature of 370 degree Centigrade for outlet temperature of Thermic Fluid.


Manufactured & Marketed by

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Authorised Dealer :

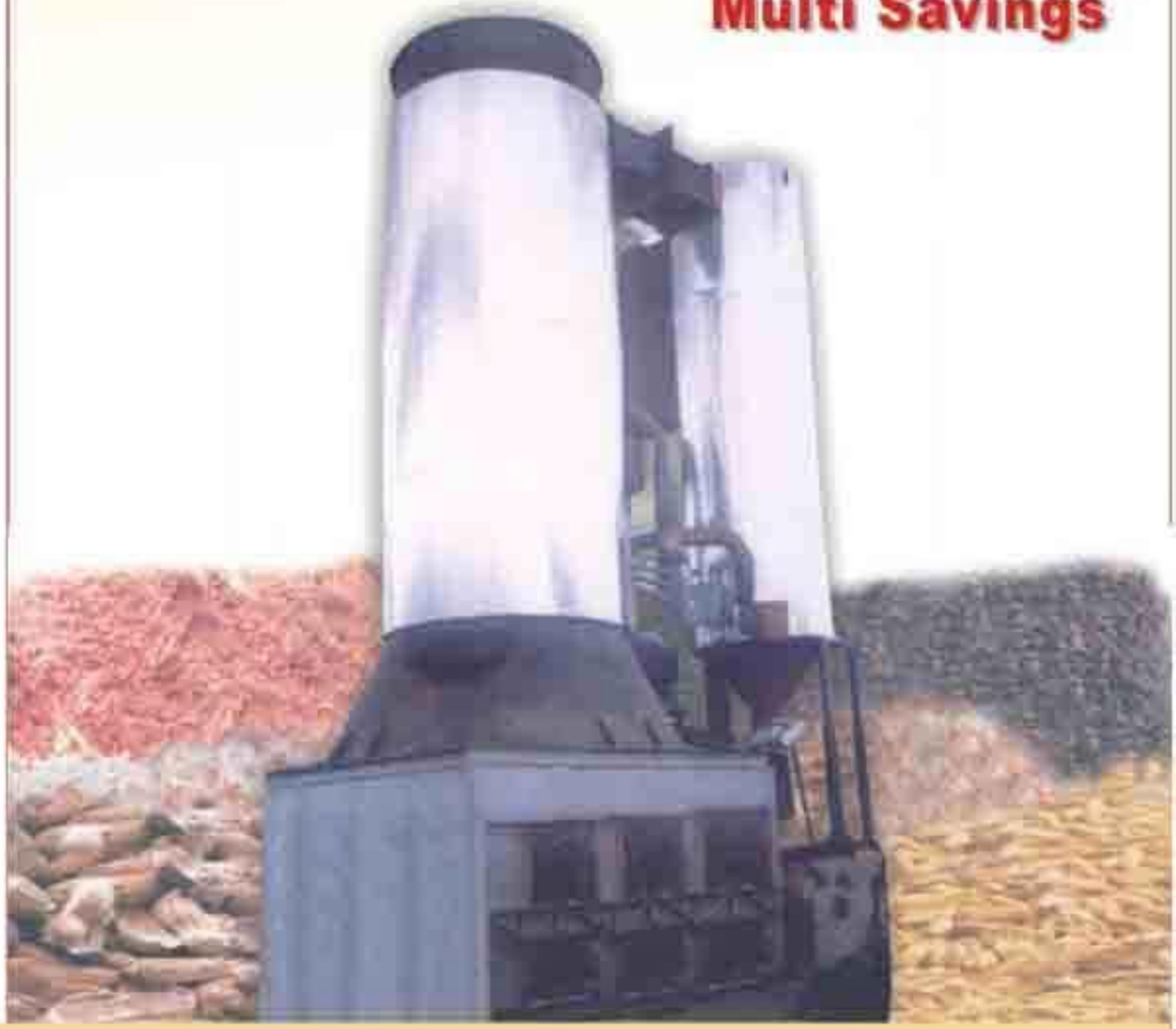


# Thermic Fluid Heater

BS MAXTHERM MXT,MXT-H Series

**5-Pass Multi Fuel Thermic Fluid Heater**

## Multi Fuel with Multi Savings



## BS MAXTHERM THERMIC FLUID HEATER

# FIVE PASS (MXT Series)

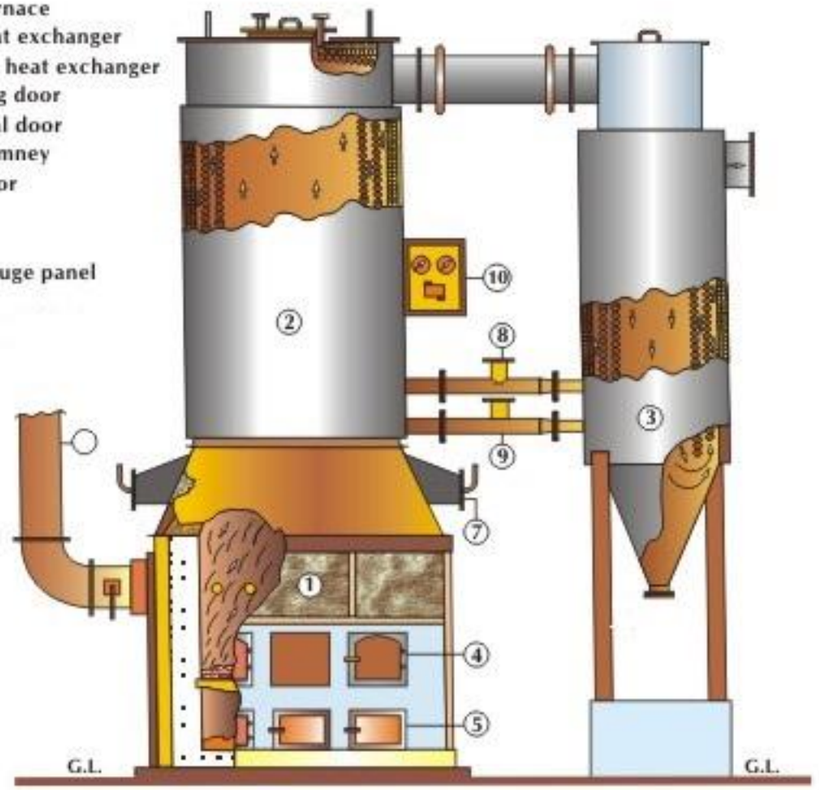
New MXT series with 5 Pass Thermic fluid heater is designed to cater to the heat requirement of the Process Industries where consistent temperature with Fuel Efficiency is utmost required.

Suitablity for multiful operation accessibility to the heat surface area and ample provision for ash removal makes MXT an ideal and attractive choice to the industries such as Textiles, Edible Oil Plants, Laminates, Plywood, Foods ect.

The MXT TF System is a forced circulation, fully automatic thermic fluid heater. The thermic fluid is circulated in a closed loop through heater and user equipment where the heat is dissipated through process. The same thermic fluid is recirculated through heater for reheating. The expansion and deaerator tanks ensure a pressureless and vapour free Unitherm system.

The Thermic fluid heater gives high temperature upto 300°C using thermic fluids at near atmospheric pressure as compared to steam heating which requires 85 kg/cm2 pressure. Thus expensive high pressure pipings and fittings and condensate return system is eliminated.

(1) External furnace
(2) Radiant heat exchanger
(3) Convection heat exchanger
(4) Fuel feeding door
(5) Ash removal door
(6) By-pass chimney
(7) Ash collactor
(8) Oil inlet
(9) Oil outlet
(10) Pressure gauge panel




## The Savings

- The unique design and construction ofMaxtherm MXT series thermic fluid heater gives :
- Unmatched, consistent efficiency of 78 ± 2% under operating conditions due to lower stack losses.
- Heavy duty thermic fluid pump with higher capacity & head provides 35 mlc at heater outlet eliminates need for booster pump in many applications.
- Flexibility to use various fuels multiplies the savings to the maximum.

## The Safeties and Controls

- Digital electronic indicator cum controller for forward temperature for ID fan cut off.
- Digital electronic indicator cum controller for return temperature for ID fan cut off.
- Electronic stack temperature safety shuts off the unit in case of abnormally high temperature.
- Low level switch controller in expansion / deaerator tank shuts off the unit in case of low thermic fluid level in tank.
- Differential pressure switch shuts off unit in case of abnormal thermic fluid flow conditions.
- Pressure gauge for pump pressure measurement.
- Pressure gauge for circuit pressure measurement.
- Audio visual alarm for abnormal operation conditions.
- Diesel engine for thermic fluid circulation for standby (optional).

## The Heat Exchanger

- Unique 5 Pass Thermic fluid heater comprises of 2 sets of heat exchanger (3RC + 2CE)
- Larger heat transfer surface, adequate flue gas pass & velocity gives increased heat transfer efficiency.
- Higher thermic fluid flow rates through the heater coils improves the life of the coil and thermic fluid heater to a great extent.
- Multiple ash collecting device at both the heat exchangers to collect almost all fly ash which can be removed during operation with great ease & thus provides :

- **Consistent efficiency & output**
- **No choking of flue gas passes and hence reduced down time for cleaning.**
- **No back firing due to choked flue gas passes**

### Radiant Heater Exchanger (3RC)

2 sets of helical tube coil & roof coil manufacturered from Boiler tubes of adequate thickness ensuring longer life of heater.

Heavy duty M.S. Shell with adequate insulation & cladding which keeps the heat loss at minimum.

**Connecting Duct :** between two heat exchanger is provided with expansion bellow & do not require any refractories due to lower flue gas temperature.

### Convective Heater Exchanger (2CE)

2 sets of multistart helical tube coils ensure two passes of flue gas, heavy duty MS shell with adequate insulation & cladding keeps heat losses to minimum

Dust Collector provided at bottom which can be easily opened on hinge for heater cleaning.

## The External Furnace

Fuel of Your Choice :

- MXT & MXT-H incorporate larger combustion chamber volume and larger grate area for maximum combustion efficiency & fuel flexibility.
- Combination of FD Fan, ID Fan & Preheated combustion air ensures complete combustion of low grade fuels.
- Furnace with heavy duty steel structure & casing lined with high quality fire & Insulation bricks as well as extra insulation panel provide reduced heat losses and longer furnace life.

## The Options

**Special accessories can be provided as optional :**

- Diesel engine for the thermic fluid circulation as standby power supply.
- Multi-cyclone dust collector as per statutory requirements.
- fully automatic fluidised Bed Combustion chamber for coal, lignite, husk, sawdust, ect.
- Pneumatic feeding device for sawdust / husk / bagasse and other agrowaste
- Automatic screw feeding device for coal and agrowaste
- Step grate furnace for agrowaste
- Variable speed drive for ID fan for power and fuel savings.
- Provision of oil / gas burner to switch over to oil / gas from solid fuels.

| Technical Specifications | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DETAILS | UNIT | MXT 800 | MXT 1000 | MXT 1200 | MXT 1500 | MXT 1800 | MXT 2000 | MXT 2500 | MXT 3000 | MXT 3500 | MXT 4000 | MXT 4500 | MXT 5000 |
| Heat Output | Kcals/Hr | 800000 | 1000000 | 1200000 | 1500000 | 1800000 | 2000000 | 2500000 | 3000000 | 3500000 | 4000000 | 4500000 | 5000000 |
| Maximum Thermic Fluid Outlet Temperature | Degree Centigrade | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| Difference in Thermic Fluid Inlet & Outlet Temperature at full load | Degree Centigrade | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Head available at heater outlet | MLC | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Coal consumption (GCV : 4500 Kcals/kg) | Kg/Hr | 228 | 285 | 342 | 428 | 513 | 570 | 713 | 855 | 998 | 1140 | 1283 | 1425 |
| Wood consumption (GCV : 4000 Kcals/kg) | Kg/Hr | 257 | 322 | 386 | 482 | 579 | 643 | 804 | 964 | 1125 | 1285 | 1446 | 1607 |
| Rice Husk consumption (GCV : 3300 Kcals/kg) | Kg/Hr | 311 | 389 | 467 | 583 | 467 | 778 | 972 | 1167 | 1361 | 1555 | 1750 | 1944 |
| Connected Load | | | | | | | | | | | | | |
| Thermic Fluid Pump | kW | 11 | 15 | 18.5 | 22 | 27 | 30 | 33 | 37.5 | 45 | 55 | 75 | 100 |
| ID Fan | kW | 11 | 12.5 | 15 | 15 | 18.5 | 18.5 | 22 | 27 | 30 | 55 | 75 | 100 |
| FD Fan | kW | 3.7 | 3.7 | 3.7 | 3.7 | 5.5 | 5.5 | 7.5 | 7.5 | 12.5 | 18.5 | 22 | 30 |
| Screw Feeder (Optional) | kW | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 3.7 | 3.7 | 3.7 | 5 | 5 | 5 | 7.5 |
| Chimney outlet diameter for flue gas | mm | 450 | 450 | 500 | 550 | 650 | 700 | 750 | 850 | 950 | 1050 | 1150 | 1300 |

**STATUTORY CONDITIONS for calculating THERMAL EFFICIENCY of MXT Series of THERMIC FLUID HEATERS**

1) Efficiency will be calculated as per BS845 and after receiving analysis report along with NCV of the fuel used.
2) Rated thermal efficiency of MXT Series of Thermic Fluid Heaters is 78%, +/- 2%. The rated efficiency is guarranteed subject to clean external and internal heating surfaces and on compliance of fuel used to the GCVs as mentioned above.
3) Rated electricity supply required is 415 Volts +/- 6%, 50 Hz +/- 3%, 3 Phase AC with Neutral