



VERTICAL THERMAL OIL HEATER

Model
MTV



*MechMar
Boilers*

4,000,000 – 20,000,000 BTU/hr, 1172 – 5860 kw



MechMar Bestobell Berhad was formed on 1st January 1984 as a result of a merger between MechMar Sdn Bhd and the Malaysian group of Bestobell Companies. The merged Group has become the premier engineering, manufacturing, merchanting and service company in Malaysia. It is the biggest boiler manufacturer in the region with a factory land area of 3 hectares and a built-up area of more than 1 hectare.

For its high quality workmanship and reliability, it qualified in 1985 under Lloyd's Register of Shipping as a Class 1 Fabricator – which is one of the highest qualifications any manufacturing company can attain. The double honours is that it becomes also the first company in South East Asia to be qualified and now joins the ranks of the world's premier fabrication companies.

INDIRECT HEATING SYSTEM

The use of thermal oil for heating system arises primarily because of the needs for process heat at high temperatures and other advantages when compared to hot water or steam systems. Hot water and steam are excellent heat transfer medium which permits the transfer of a large amount of heat, without pressurisation of the system, up to the boiling temperature at 100 deg. C. However where temperature exceeds 100 deg. C, pressurised hot water or steam system is required. Hence, as the temperature rises the resulting pressure begins to make increasing demands with respect to design material and costs. Between 200 deg. C and 300 deg. C, the pressure rises from 15 to 87 bars.

Thermal oil heaters, on the other hand, can operate at temperatures up to 320 deg. C, without having a pressure build-up. The heating process is indirect, i.e. the thermal oil serves as the heating medium. This indirect method has numerous advantages:

- No pressure within the system
- No water and hence eliminates costly chemical treatment.
- No freezing – thermal oil does not freeze at 0 deg. C
- Thermal oil heating system requires only minimal operating and maintenance requirements
- High pressure hot water and steam boilers require certificated boiler attendants, annual shutdown for inspection by the authority whereas thermal oil heaters does not fall under pressure vessel regulations.
- The efficiency of thermal oil heating system is high due to the non-corrosion and non-scale formation characteristics of the oil, hence the heat transfer surfaces remain clean without the need for any treatment.



VERTICAL THERMAL OIL HEATER

TITAN model MTV

CONVERTING WASTE INTO USEFUL ENERGY

MechMar-Bell has developed a unique combustion system which will burn most production solid wastes for conversion into useful heat energy. The special features of this system are the circular air-cooled combustion chamber and tangential air nozzles which will give rise to a cyclonic state of combustion.

Cyclonic mixing of air and fuel is controlled automatically and a generously sized furnace contributes to a highly efficient and trouble-free operation.

Basically, the system has been designed for combustion of all kinds of production wastes from wood bark, sawdust, chips, shavings and other wastes such as palm fibres, kernels, rice husks, straw, cocoa hull and coconut shells, etc. The thermal heater is so designed that the radiant heat from hot combustion chamber refractory preheats the incoming combustion air to give higher thermal efficiency.



Complete unit of a 10 MBTU heater installed at site in Indonesia. Fuel being used is sawmill off-cuts.

SIMPLE DESIGN AND PACKAGE ARRANGEMENT

Simplicity of design enhances the operation reliability of TITAN thermal fluid heaters. The three-pass design of the unit ensures maximum heat transfer by radiation and convection in the heating coils.

EASY ASSEMBLY AND INSTALLATION

Modular design of the compact TITAN heater permits easy transportation and installation at site. Erection at site requires bolting up of the main sections of the unit together. This can be done with great ease and with unskilled labour. The TITAN thermal heater requires only a simple circular reinforced concrete plinth.

SAFETY

To ensure safe operation of the thermal heater, a self-acting constant pressure regulating valve can be fitted (optional item) to prevent overheating of the fluid due to low circulation around the process plant. Also high temperature sensing devices are incorporated to cut out both the I.D. and F.D. Fans at pre-set limits.

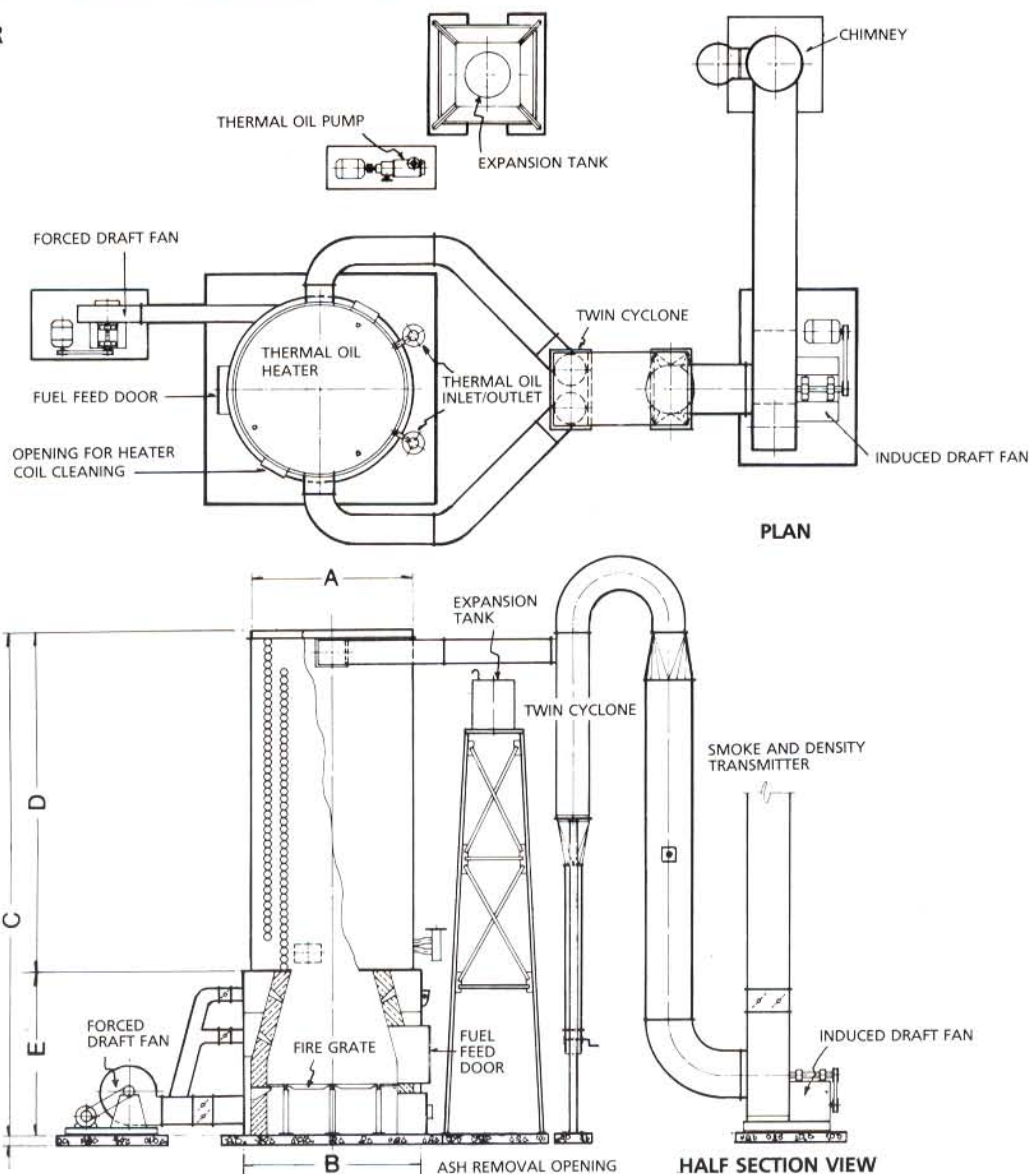
CIRCULATING PUMP

High temperature transfer pumps are selected for reliable operation with thermal fluids. The design incorporates an extended shaft and air cooled mechanical seal. A standard flange mounted motor is fitted. The pump is sized taking into consideration cold start conditions.

QUALITY

Only high quality materials are used in the construction of the heaters. It undergoes stringent quality control inspection at all stages of manufacture, followed by stringent testing and functional checks. The thermal heater is dressed to a high standard of finish before delivery.

TITAN 'MTV' BOILER



Titan 'MTV' Boiler

Output	BTU (10 ⁶)	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
Leading Dimensions	A	mm	2054	2140	2248	2517	2550	2846	3094
	B	mm	2205	2310	2520	2730	2887	3150	3622
	C	mm	5214	5717	6191	6799	7340	8484	9098
	D	mm	3454	3627	4046	4489	4865	5844	6403
	E	mm	1760	2090	2145	2310	2475	2640	4235

SALES OFFICES

Kuala Lumpur

MECHMAR COCHRAN BOILERS (M) S/B

No.1, Jalan Perunding U1/17, Seksyen U1,
Glenmarie Industrial Park,

40150 Shah Alam, Selangor Darul Ehsan

Tel : 603-55693688

Fax : 603-55691368

JOHOR

MechMar Maju Sdn. Bhd.

Lot 14 Jalan Timah, Pasir Gudang Ind. Est.

81700 Pasir Gudang, Johor, Malaysia.

Tel: 07-513632-4 Telex: MMBPG MA 60615

BUTTERWORTH

MechMar Maju Sdn. Bhd.

Lot 2824 Prai Ind. Est., 13600 Prai,

Butterworth, Malaysia.

Tel: 04-307857 Telex: MMBW MA 40423

Fax: 04-306234

SINGAPORE

MechMar (Pte.) Ltd.

1121, Block 170, Stirling Road,

Singapore 0314.

Tel: 02-4736988 Telex: MMSP RS 27174

Fax: 02-47559159

MechMar Maju Sdn Bhd

(A member of the MechMar Bestobell Group)

HONG KONG

MechMar Allen Co. Ltd.

Flat G, 8th Floor, Hilton Tower,

96 Granville Road, Kowloon, Hong Kong.

Tel: 3-7237712 Telex: 37947 MMAHK HX

SRI LANKA

MechMar (Sri Lanka) Pte Ltd.

61 Jetawana Road, Colombo 14, Sri Lanka.

Tel: 23116 Telex: 22494 GMW CE

Fax: 0094-1-546672

OVERSEAS AGENTS

PHILIPPINES

Supertech Industrial Corporation

18 Hernandez Avenue, San Antonio Valley 3,

Paranaque, Metro Manila, Philippines.

Tel: 828-81-60 Telex: 66235 ETPSK

THAILAND

Hitech Engineering Co. Ltd.

10/2 King Building 4th Floor,

Silom Road, Bangkok 10500, Thailand.

Tel: 234-4670 Telex: 87639 NEW FUJI

AUSTRALIA

MechMar (Australia) Pty. Ltd.

17-19 Cheltenham Parade,

Cheltenham, South Australia 5014

Tel: 08-347-1677 Fax: 08-347-1277

Telex: AA 89066 MOYLE

BANGLADESH

Bishwa Binimoy

41/4-B, Hatkhola Road, Wari,

Dhaka-3, Bangladesh.

Tel: 236378 Telex: 642418 DCCI BJ

FACTORY

MechMar Boilers Sdn. Bhd.

Lot 14 Jalan Timah, Pasir Gudang Ind Est.,

81700 Pasir Gudang, Johor, Malaysia.

Tel: 07-511341 Telex: MMBPG MA 60615

Fax: 07-511837

Local Distributor

** We reserve the right to introduce changes in design or specification should we consider them necessary in the interest of improved performance.*