



# TITAN MC

## VERTICAL COMBINATION BOILER



### TITAN VERTICAL COMBINATION BOILER

A boiler built to burn a wide variety of production wastes viz wood chips and shavings, bagasse, coffee hulls, cardboard, paper, rice husks, bamboo, cotton, tobacco waste, palm shell and fibre.

### OUTSTANDING FEATURES

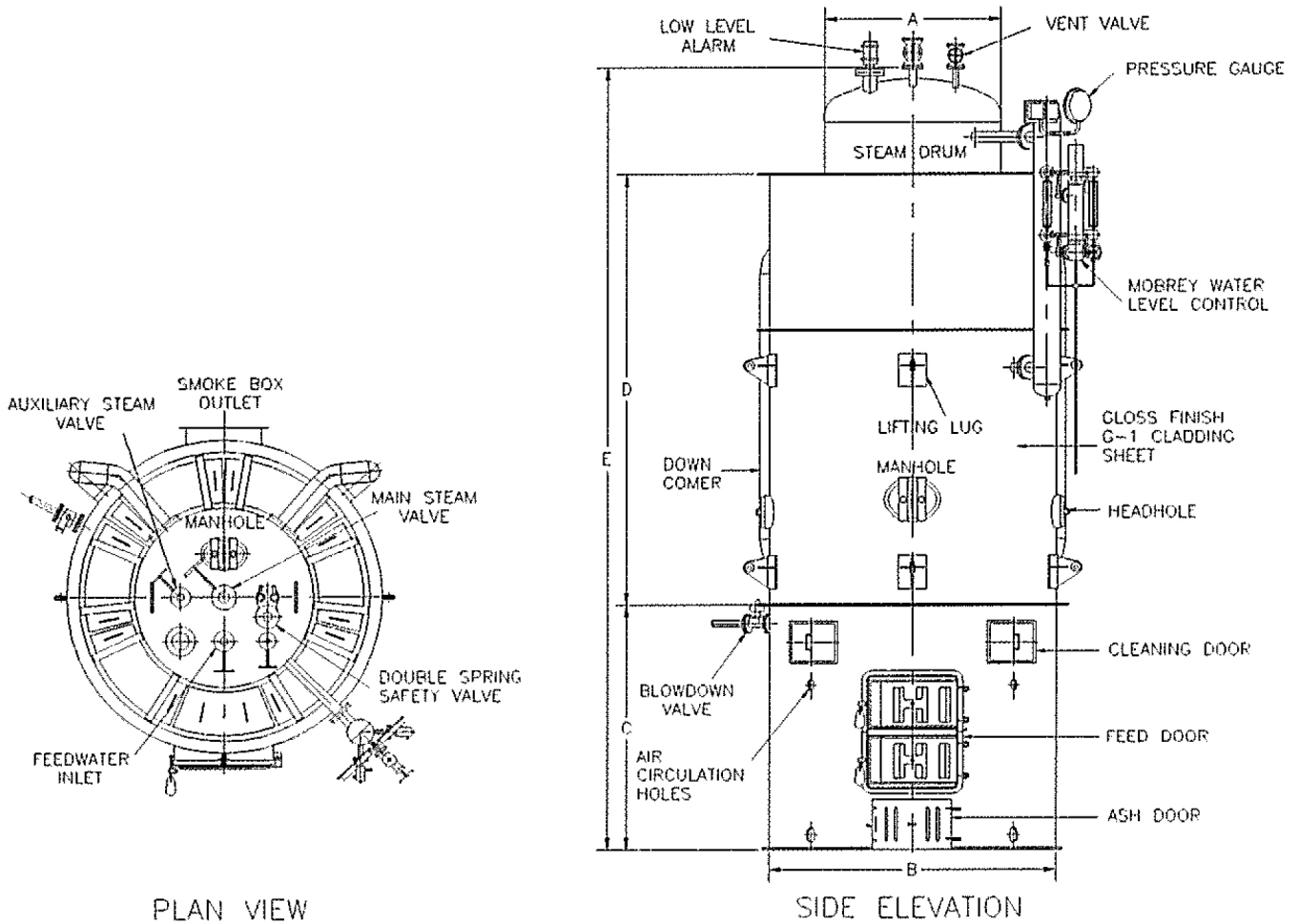
- Rapid steam raising.
- Higher thermal efficiency, hence lower fuel consumption.
- Occupies small floor area.
- Requires a simple foundation.
- No external brickwork.
- Easy and cheap to instal.

### RECOMMENDED INDUSTRIAL APPLICATIONS

Factories for manufacture of:

- plywood
- wood furniture
- timber moulding
- tyre-moulding
- rubber works
- paper box
- pharmaceuticals
- meehoon (vermicelli)
- kiln dried timber and others where steam is utilised for process-heating.

<b>3,000 - 12,000 lbs steam / hr</b>
<b>879-3,516 kw</b>



BOILER CAPACITY	lbs/hr	3000	6000	9000	12000	
DIMENSION	A	mm	1080	1301	1636	1770
	B	mm	1800	2158	2550	2550
	C	mm	1445	1989	2012	2012
	D	mm	2840	3570	3650	3866
	E	mm	4951	6474	6630	6846
MAIN STEAM VALVE	mm	80	80	100	100	
SAFETY VALVE	mm	40	40	50	65	
FEED WATER INLET	mm	50	50	65	80	
BLOWDOWN VALVE	mm	40	40	40	40	
EVAPORATION F & A 100°C	ton / hr	1,364	2,727	4,091	5,455	
	lbs / hr	3000	6000	9000	12000	
FUEL CONSUMPTION (WOOD)	kw	879	1787	2680	3516	
	lbs / hr	812	1625	2438	3250	
FUEL CONSUMPTION (WOOD)	kg / hr	369	738	1108	1477	
	kg	11.27	16.8	18.5	22.3	
DRY WEIGHT	kg	11.27	16.8	18.5	22.3	
OPERATING WEIGHT	kg	13.4	18	27.3	31.7	

SALES OFFICE:



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**MECHMAR BOILERS SDN BHD** a wholly owned subsidiary of **MECHMAR CORPORATION (M) BERHAD**, the market leader in Malaysia for boiler manufacturing achieved yet another distinction with the award of ISO 9002 certification Lloyd's Registration Quality Assurance making it the first boiler manufacturing company in Malaysia to attain this recognition.

With Lloyd's Class I certification for its product and ISO 9002 certification for its quality management system, **MECHMAR BOILERS SDN BHD** is now among the elite group of boiler manufacturing company in the world. For its high quality workmanship and consistency in quality, **MECHMAR BOILERS SDN BHD** is already a holder of CLASS I fabricator licence for pressure vessel manufacturing from Lloyd's Register of Shipping since 1985.

**MECHMAR BOILERS SDN BHD** started operation at Lot 14, Jalan Timah, Pasir Gudang Industrial Estate, Johore in 1977 and to date have produced more than 3000 units of boilers ranging from 500 lb to above 132,000 lb capacity of steam per hour. It also manufactures Hot Water Boilers, Thermal Fluid Heaters and other pressure vessel.

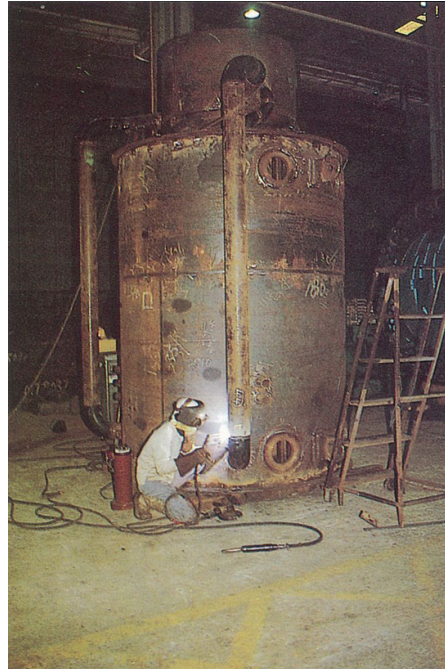
The products are developed and marketed by **MECHMAR COCHRAN BOILERS (M) SDN BHD**, another wholly owned subsidiary of **MECHMAR CORPORATION (M) BHD**.

**MECHMAR COCHRAN BOILERS (M) SDN BHD** markets a wide range of boilers, thermal oil heaters, steam plant and power plant installation. It operate from offices and service centres in Shah Alam, Johore ann Prai to ensure excellent after sales service and prompt supply of spares.



# TITAN MC

## Vertical Combination Boiler



Boiler being fabricated in our factory



Site installation in progress

### TECHNICAL SPECIFICATIONS

#### Boiler Design and Construction

The boiler is of Class I all-welded construction, fully x-rayed and stress-relieved in accordance with ASME/BS/DIN and other international standards.

The combined water tube fire tube design enhances maximum heat transfer with 3 passes for the flue gas.

With the furnace directly above the fire-grate, a greater percentage of the heat released from the fuel is first transferred by radiation and then by convection in the vertical convection tubes thereby achieving a higher boiler efficiency than the conventional solid fuel boiler with external furnaces. This combustion design significantly reduces fuel consumption.

### ACCESSIBILITY AND MAINTENANCE

- A large elliptical manhole is provided in the steam drum.
- Handholes are provided for inspection of the boiler
- Full access into the furnace through large feeding door.
- Access to the flue tube ends is easily carried out by opening the cover of the reversing chamber.



## BOILER MOUNTINGS

The boiler mountings include:-

- 1 Twin Safety Relief Valves
- 1 Main Steam Valve
- 1 Electrical Feed Water Pump
- 1 Steam Injector
- 1 Blowdown Valve
- 2 Mobrey Water Level Controllers
- 2 Water Level Gauge Glasses
- 1 Pressure Gauge
- 2 Pressure Controls (Optional)
- 1 Feedcheck Valve

## INSPECTION AND TESTING

The boiler is surveyed by Lloyds's during manufacturing. On completion of stress relieving, the boiler is hydraulically tested to 1½ times its design pressure and maintained for not less than 30 minutes.

## WATER LEVEL CONTROL

Two sets of Mobrey Level Controllers are mounted onto the boiler. First set to operate the pump and signal the low water level alarm. Second set to signal independently the second low water level alarm. The water level can be controlled visually on two level gauge glasses connected to the Mobrey Level Controllers.

## INSULATION

The boiler is fully insulated with high quality rock wool and cladded with PVC coated sheets or glass finished G.I. sheets.

## BOILER FEED WATER SYSTEM

An electrically-driven centrifugal pump is fitted to the boiler with one set of stop / check valve mounted at the inlet of the boiler. A steam injector is included as a standard item.

## INDUCED DROUGHT FAN AND DUST COLLECTOR (OPTIONAL)

An induced-draught fan of suitable capacity and dust collector (optional) are supplied together with the boiler.

## WATER TREATMENT (OPTIONAL)

The purpose of feed water treatment is to prevent corrosion and the formation of scale within the boiler. The water has to be clear, softened and free from suspended particles and other impurities.

## FURNACE

Fuel is fed manually into the furnace. Auto screw feed is included as an optional item when sawdust wastes is used for burning. The grates are of high quality cast iron material.

## COMMISSIONING

We include the services of skilled technicians to commission, test and check all the controls upon completion of the installation.