

MACKENZIE INDUSTRIES



SUPERHEATER

Biomass Fired Power Plants

Solid Fuel Fired Power Plants

Waste Heat Fired Boilers

Provide Steam Solutions

For Tomorrow's Industry Energy Needs

A subsidiary of Jutasama Group





Mackenzie Industries Sdn. Bhd. Is the boiler division of Jutasama Sdn. Bhd. The Company is engaged in the design, engineering and construction of boiler and energy system. The Company is operated by a team of boiler engineers with many years of experience.

Fabrication of boilers are done in-house by Jutasama which is a reputed company supplying vessels to the process industries as well components to the power plants. It has a 14,000 m2 covered fabrication workshop.

The shop is accredited to ISO9001 Quality Management System and product quality is assured. It is also one of the few ASME authorized "U", "U2" & "S" Stamp workshop in Malaysia. The Company is registered with Department of Occupational Safety & Health, Malaysia (D.O.S.H.) as a pressure vessel & boiler fabricator.

We are capable of design and engineer various industrial boiler and energy system. In particular biomass fired power plants and waste heat fired boilers (HRSG). Other products like steam boilers for the palm oil industries, food processing plants, etc.

THE PRODUCTS

WD Series

This is a natural circulation membrane wall Bi-drum water tube boiler. It is designed for biomass fired industrial power plant, which requires high efficiency performance as well as uninterrupted continuous operation. Depending on the type of fuel and moisture content, firing grate equipment is carefully selected to suit the type of fuel used. E.g. reciprocation grate, air-cooled or water-cooled vibrating grate, traveling grate, etc. Auxiliary equipment like feed water economizer, air pre-heater can be incorporated to enhance the overall boiler efficiency and performance.

BD Series

This is the same as the WD Series except the furnace tubes are of tube and tile construction. This range of boiler is most suitable for supplying steam for most industrial plant application. Fuel fired can be palm waste and wood waste. Grate equipment can be stationery horizontal fix grate or reciprocating grate depending on the type of fuel.

WH Series

This is the industrial HRSG designed for waste heat recovery from gas turbine exhaust. If required, duct fired burner can be incorporated. It is a bi-drum with fin tube and shop assembled unit. It is suitable for gas fired cogen plant application.

Ancillary Equipment

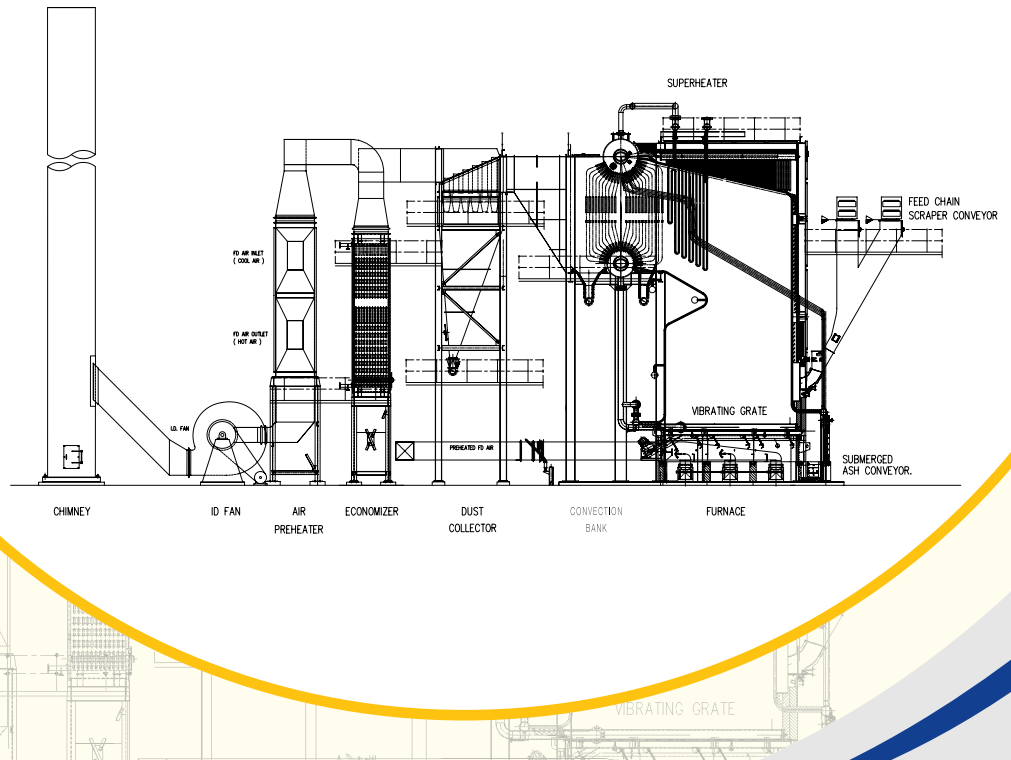
Beside boilers, we are capable of design and supply of feed water economizer, air pre-heater, boiler controls and others.



MACKENZIE WD SERIES



- ✓ Natural circulation membrane wall Bi-drum water tube boiler.
- ✓ Design for biomass fired industrial power plant which requires high efficiency performance as well as uninterrupted operation.
- ✓ Grate: reciprocating grate, air cooled, and water cooled vibrating grate, traveling grate etc.



SPECIFICATIONS

STEAM CONDITIONS

Evaporation Rate : 15 T/H ~ 70 T/H
 Pressure : 20 Barg ~ 80 Barg
 Superheater : Up to 420 °C

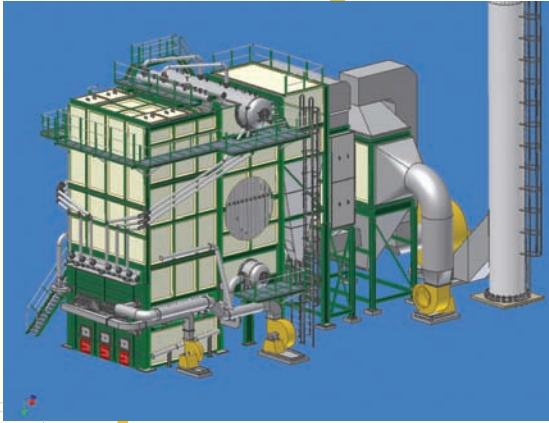
FUEL

- Palm Fiber and Shell
- Processed Palm Empty Fruit Bunches
- Wood Waste
- Rice Husk

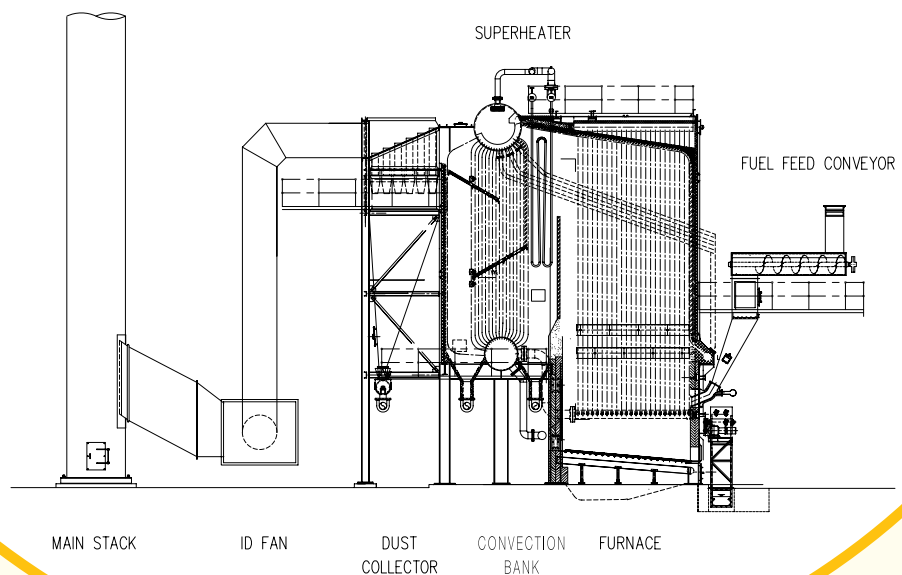
SPECIAL FEATURE

- Membrane Wall Furnace Tubes
- Single Pass Convection Bank
- Vibrating Grate (Water Cool or Air Cool)
- Reciprocating Grate (Water Cool or Air Cool)
- Air Preheater
- Economizer
- Superheater

MACKENZIE BD SERIES



- ✓ Furnace tube & tile construction.
- ✓ Suitable for supplying steam for most industrial plant application.
- ✓ Fuel: palm waste, wood waste.
- ✓ Grate: stationery horizontal fix grate or reciprocating grate.



SPECIFICATIONS

STEAM CONDITIONS

Evaporation Rate : 15 T/H ~ 70 T/H
 Pressure : 15 Barg ~ 70 Barg
 Superheater : Up to 420 °C

FUEL

- Palm Fiber and Shell
- Wood Waste
- Rice Husk

SPECIAL FEATURE

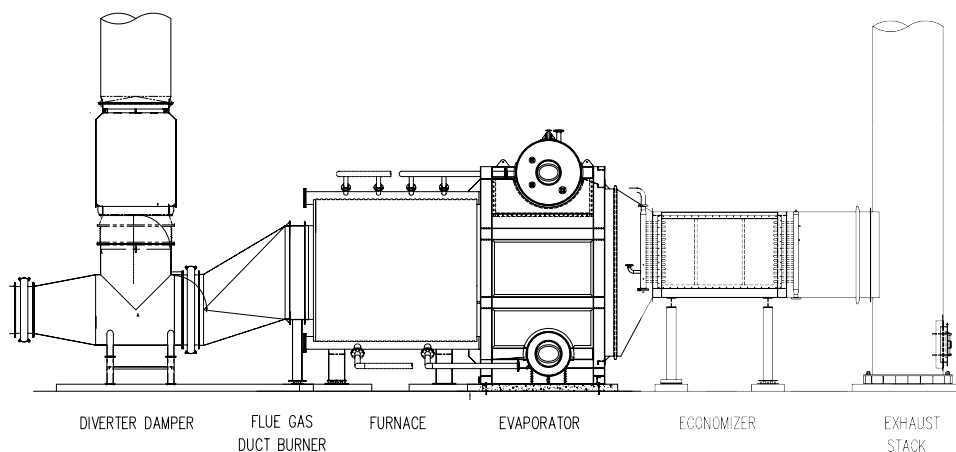
- Brickwall Furnace Tubes
- 3 Pass Convection Bank
- Fix Grate (Water Cool or Air Cool)
- Reciprocating Grate (Water Cool or Air Cool)

WH SERIES

MACKENZIE WH SERIES



- ✓ The industrial HRSG designed for waste heat recovery from gas turbine and gas engine exhaust gas.
- ✓ Suitable for gas fired cogen plant application.
- ✓ Additional duct fired burner can be incorporated, if required.
- ✓ Bi-drum with fin tube construction, shop assembled unit.



SPECIFICATIONS

STEAM CONDITIONS

Evaporation Rate : 5 T/H ~ 40 T/H
Pressure : 6 Barg ~ 80 Barg
Temperature : Saturated /
Superheated

HEATING MEDIUM

- Flue Gas
- Gas Turbine Exhaust Gas
- Gas Engine Exhaust Gas
- Supplement Gas Firing

SPECIAL FEATURE

- Economizer
- Flue Gas Duct Burner
- Diverter Damper
- Modular Design
- Fully Automated Operation
- Compact & Space Saving

ACCREDITATION

Manufactured by:

JUTASAMA - A renowned fabricator with accredited quality recognition.



SUPERHEATER



VIBRATING GRATE

AIR
PRFHATFR

ECONOMIZER

FURN



MACKENZIE INDUSTRIES SDN. BHD.
Lot 1930 Batu 7, Jalan Bukit Kemuning,
Seksyen 32, 40460 Shah Alam,
Selangor Darul Ehsan, Malaysia.

Tel : 603-5123 0018
Fax : 603-5123 0028
Email : general@mackenzie.com.my

A member of  **Wah Seong Corp. Bhd**