

## OTHER OFFERINGS

### CPP / IPP

- Powerpac Boilers
  - Atmospheric Fluidized Bed Combustion Boiler (AFBC)
  - Travelling Grate / Dumping Grate / Pulsating Grate / Reciprocating Grate / Water Cooled Vibrating Grate Boiler
- Waste Heat Recovery Boiler (WHRB)
- Slop / Vinsae Fired Boiler

### Process Industrial Boiler

- Hypac - AFBC
- Energypac- Grate Fired
- Energypac Plus
- Effypac - Manual / Auto Fired
- Oilpac / Gaspac

### Thermic Fluid Heater

- AFBC / Grate / Oil & Gas

### Retrofit & Spares

- Spares for Boilers
- Structures
- Centrifugal Fans
- Boilers Services
  - Annual Service Contract
  - Engineering and Operation audit of Boilers
  - O&M Services
  - RLA / Health audit of Boiler
- Pollution Control Equipment's
  - Electrostatic Precipitators (ESP)
  - Bag Filter
  - Cyclones
  - Wet Scrubber

www.cheemaboilers.com



CBL quality standards are inspected and certified by prestigious global agencies like:



### CHEEMA BOILERS LIMITED

#### HEAD OFFICE :

D188, Sector 74, Mohali, Punjab (India)-160071

Tel: +91-172-5090 487, 5055 666, Fax: +91-172-5090 486

Email: marketing@cheemaboilers.com

#### SALES & SERVICES OFFICE :

Delhi NCR | Ahmedabad | Mumbai

Kolkata | Hyderabad | Chennai

Follow us on:

### Certifications and Accreditations

- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018
- ISO 3834-2:2005
- EN1090-1:2009 + A1: 2011
- EN1090-2:2018
- ASME 'U', 'S' & 'H' Certificates



SERVICE SUPPORT - 24x7  
Tel: +91-7777881225

#### WORKS :

Banmajra, Kurali, Distt. Ropar, Punjab (India)

Tel: +91-160-5005 800-02



## BIOMASS ENERGY SOLUTIONS

Efficient Energy Technologies.



## BAGASSE & BIOMASS FIRED BOILERS

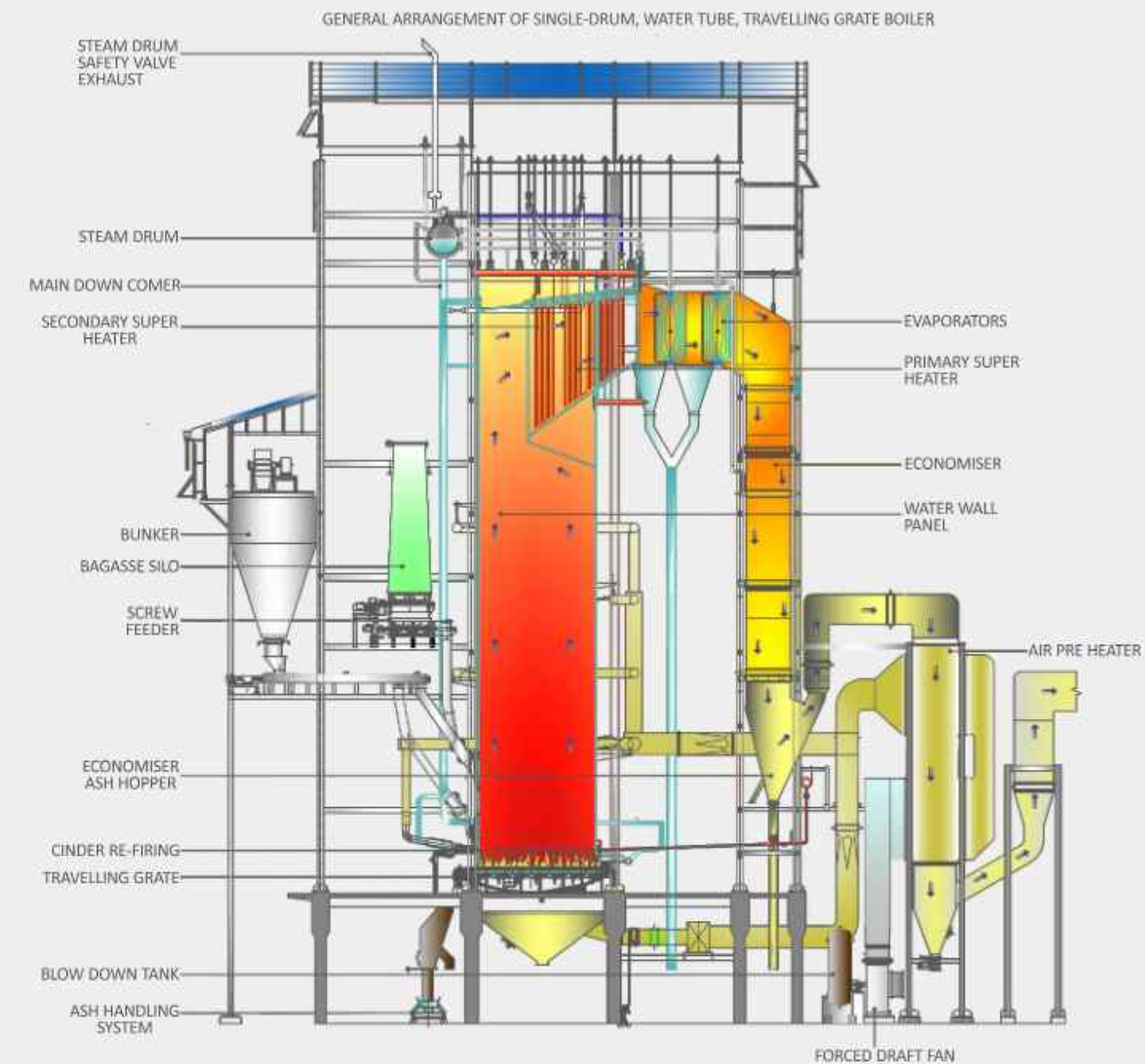
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All accessories shown do not form part of standard supply | In view of our endeavour to improve the quality of our products, the company reserves the right to alter or change specifications without prior notice.





**CBL Boiler Solutions** integrate design innovations manufacturing excellence to create some of the most efficient and trustworthy steam and power generation systems. For over two decades, CBL has commissioned over 3000 Boilers across India and overseas. We are a research-driven organization and have set benchmark standards in innovative technologies. These technologies help improve efficiency and operating-flexibility of our boilers and allied products in the most economical and environment-friendly manner. We have a large sales and service network covering the entire country as well as many global locations.



#### OPERATING RANGE

**Capacity :** up to 275 TPH | **Pressure:** Up to 130kg/cm<sup>2</sup> (g) | **Steam Temperature :** Up to 540°C

**FUELS** - corn cobs, palm kernel shell, soya stalk, coconut shells, olive pellets, coal, lignite, eucalyptus Bark, groundnut shell, juliflora, cashew nut shells, paddy straw, empty fruit bunches, etc.







# POWERED BY INNOVATION AND EXCELLENCE

**Etkon Enerji Elektrik Uretim Ve Tic A.S (Turkey)**

50 TPH, 67 Kg/cm<sup>2</sup>, 455°C



**Shiraguppi Sugar Works Ltd.  
Belgaum (Karnataka)**

100 TPH, 87 Kg/cm<sup>2</sup>, 520°C



**Nawanshahr Power Pvt. Ltd.  
Nawanshahr (Punjab)**

70 TPH, 90 Kg/cm<sup>2</sup>, 515°C



**Dalmia Bharat Sugar and  
Industries Ltd., Jawaharpur (U.P)**

30 TPH, 45 Kg/cm<sup>2</sup>, 440°C



**Gaps Power Project Limited,  
Aurangabad (Maharashtra)**

60 TPH, 45 Kg/cm<sup>2</sup>, 460°C

## BAGASSE & BIOMASS FIRED BOILERS

CBL offers both Bi-Drum and Single-Drum Travelling Grate Boilers with inherent benefits like fuel flexibility, low maintenance and enhanced availability. They are designed for diverse applications with wide range of steam generating capacities and fuel compatibilities governed by modern-day industrial needs.  
(Dumping Grate/Reciprocating Grate can also be offered depending upon fuel options.)

### PRODUCT FEATURES

#### LOW MAINTENANCE - HIGH UPTIME

- Water-cooled membrane wall construction ensures structural rigidity and prevents the possibility of any gas leakage from furnace. The design enables negligible use of refractory in the furnace.
- SG Iron Grate Bar of Travelling Grate Stoker, Hardened and Tempered Steel Chain of TG, Cross-beams, and Skid Bards made of heavy sections and heat resistant material – all add to the ruggedness of the boiler.
- Cross Flow, Single Pass, in-line Boiler Bank / Evaporator Arrangement eliminates eddies resulting in minimum erosion and optimum gas velocity.
- The Wide-Spaced Superheater arrangement minimizes external fouling due to alkali constituents in ash in biomass fuels.
- Highly-efficient drum internal e.g. turbo separator and two-stage screen separator eliminates internal fouling of superheater tubes and helps in achieving steam purity of .02 ppm silica and 0.1 ppm total dissolved solids (TDS).
- Optimum gas velocities across pressure parts reduce erosion thus resulting in improved life of heating surfaces.

#### HIGH EFFICIENCY - BETTER PERFORMANCE

- Optimum grate area loading ensures efficient combustion of fuel and minimizes non-burnt carbon loss.
- The large furnace volume and optimum heat release rate ensures complete combustion of fuel.
- Staggered secondary air nozzles at multi-levels enables better turbulence due to high pressure air jets.
- Heat recovery rate economizer and air heater results in low gas exit temperature.
- Cinder Re-firing system reduces non-burnt carbon loss and increases boiler efficiency.
- Online cleaning of tube surface with motorized steam operated online soot-blowing system resulting in longer life of boiler tubes & maximum heat recovery throughout the Running cycle.

#### LOW POWER CONSUMPTION GREATER SAVINGS

- Optimum gas velocities reduce draft loss across the gas path.
- Cross flow, Single Pass Boiler Bank design with optimum excess air-operation and using CBL manufactured highly-efficient fans ensure much Lower Power Consumption and reduced operated cost.

#### ENVIRONMENT FRIENDLY OPERATIONS

- Efficient Air Pollution control equipment limits particulate emissions.
- Efficient Silencers that meet Occupational Safety and Health Administration (OSHA) norms.
- Minimum noise level in fans.

#### AUTOMATED FUNCTIONING

- Automatic Control System – DCS/ PLC.
- Extensive use of supervisory controls and data acquisition system (SCADA) to minimize manual intervention, enhance safety and ease of operation.
- Safety and interlocks as per HAZOP (Hazard and Operability Analysis) for complete safety of operator equipment.



# BAGASSE & BIOMASS FIRED BOILERS



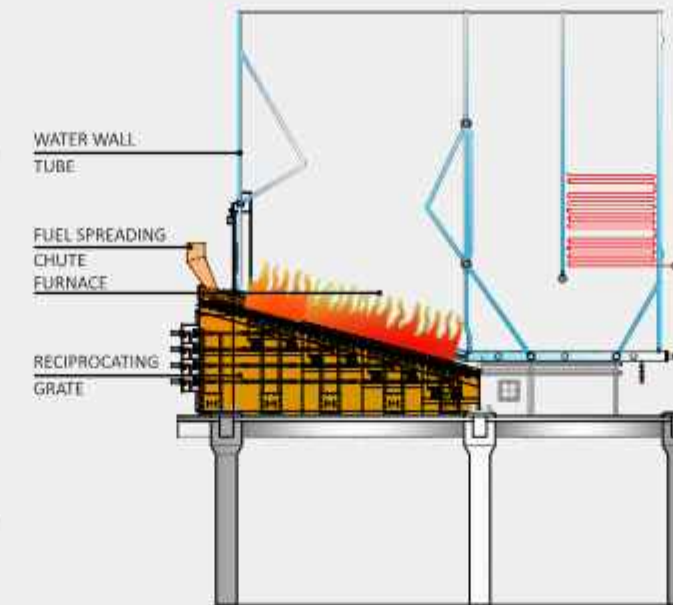
TRAVELLING GRATE-COMBUSTION AREA

## OTHER FEATURES

- Mechanical/Dense Phase Fly Ash Handling System.
- HP Feed Water heaters for improving cycle efficiency/fuel economy.
- Variable speed feeders for regulating the fuel feed according to load demand.
- Adequate number of soot-blowers provided for online cleaning of all heating surfaces—superheaters, boiler bank and economizer.
- Online Bagasse storage silos for stable boiler operation.
- Indoor and outdoor installation options.
- Variable frequency drives for fans and feed pumps.

## FEATURES OF RECIPROCATING GRATE BOILER

- Easy to adopt in large range of boilers.
- Reciprocating Grate suitable for variety of Biomass fuels.
- The entire grate is divided in four different sections i.e., drying, Combustion, post combustion and ash zone. The air/speed can be controlled for each section.
- Sloped air cooled reciprocating grate appears inclined ladder shape that makes the fuel moved towards ash discharge end easily.
- As with every stroke of grate the fuel agitates/upside down it ensures complete combustion of fuel on the grate.
- Fuel retention time on the grate/furnace is more which results complete combustion.
- Fuel sizing is not much important as spreading is not required.
- The fixed grate bar and moveable grate bars are arranged at regular interval. The movable grate will take reciprocating motion through hydraulic drive. This spreads the fuel move uniformly and discharges regularly.
- Speed of Grate and stroke length of cylinder of individual section can be adjusted through the Hydraulic drive to ensure complete combustion.
- Cold/hot air can be provided for combustion can be provided from bottom of LHS/RHS.



- Reciprocating grate can be transported as assembled (Modules) also.
- Replacement of Grate bar is very easy.
- Erection is simple as all the grate bars are mounted on the grate carrier.

