ROLLCE™ ENGINEERING PTE LTD

COMMITTED TO EXCELLENCE

EFFIMAX GLOBAL

SIMPLY EFFICIENT

Fully Wet Back 3 / 4 Pass Packaged
Fire Tube Boiler with Recovery Unit

Capacity Range

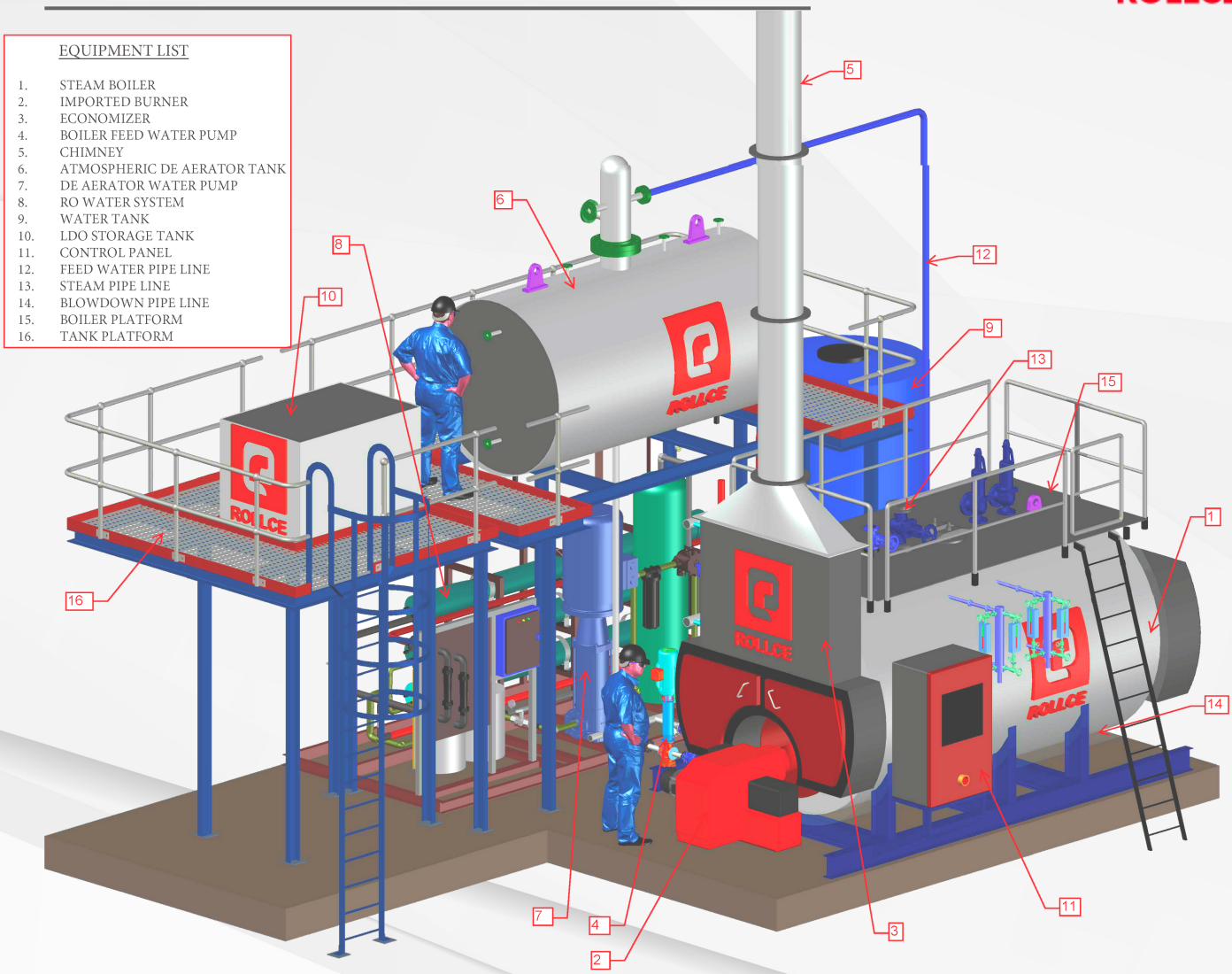
500 kg/hr to 30,000 kg/hr

Design Pressure

Up to 35 kg/cm2

HEATING SOLUTIONS

EFFIMAX OVERVIEW



FIRE TUBE BOILER CONFIGURATIONS

Capacity Range	500 kg/hr to 30,000 kg/hr
Maximum Design Pressure	Up to 35 kg/cm2
Steam Temperature	Saturated, Superheated steam – 50C over saturated
Fuels (Oil)	FO, LDO, HSD, LSHS, LACO & many more
Fuels (Gas)	CNG, Hydrogen, Biogas, Corex Gas, BFG and many more
Design Standards	IBR, ASME, EN, GOST
Certification	CE, DOSH
Design and Manufacturing Certification	IBR, BV, TUV, SGS, LYODS

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ROLLCE

Up to
95% η

With the new Evolution, Rollce has launched a new efficient class of boilers.
What was previously reserved for large scale systems can now be realised with smaller systems

1

Special design integral economiser

- Upto 6% increase in efficiency compared to boiler without economizer.
- Factory assembled and insulated
- Up to 40% reduction in footprint
- Smart product design.

4

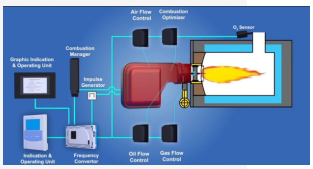
Intelligent boiler feed water pump

- Inbuilt VSD (variable speed drive) based pump with a flow control system.
- Reduced power consumption with IE-4 motor.
- Direct feed water control through the pump, No separate feed water control valve is required.
- Smart communication system.

2

Advanced Electronic regulation monobloc burner

- Burner from C/B Unigas, the largest burner manufacturer in the world.
- Burner with the digital burner management system.
- Higher turn-down ratio 1: 5.
- Online 02 trim and VSD (variable speed drive) for combustion fan.
- Multi-fuel firing options (Diesel/Gas/Bunker Oil/Reuse Oil/Waste Gas).



5

Advanced control systems

- PLC Control with HMI touchscreen display.
- Control & Modification through smartphones.
- PC browser/Smart device-embedded communication ports.
- Data logging & Access control for data.
- On Screen alarms and acknowledgments.

3

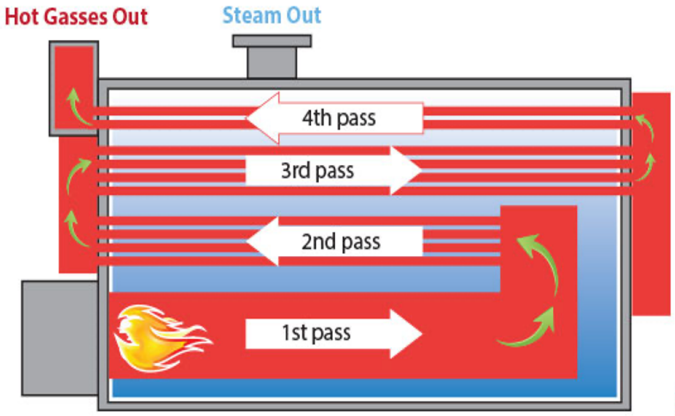
Special X-1D heat transfer tubes

- +85% More heat transfer compared to standard plain tubes.
- +50% More resistance to sooting than plain tubes therefore. maintaining baller efficiency and reducing maintenance costs.
- CFO based internal ribbed design for creating turbulation while limiting pressure drop.

EFFIMAX FEATURES

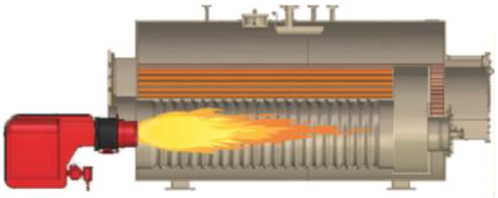
4 PASSES FIRE TUBE DESIGN

A four-pass boiler design consists of four sets of horizontal tubes, with the stack outlet at the front of the vessel. A downdraft design keeps the cooler water from having an effect on the hot surfaces within the boiler. 4-pass boilers leverage natural draft operation which allows cool water to contact the hottest part of the boiler.



- Maximized heat transfer
- Minimum refractory
- High steam/water storage
- Effective handling of wide load demands
- Better efficiency & low maintenance
- Minimum stack temperature

HIGH COMBUSTION EFFICIENCY - FURNACE



- Liberally sized furnace (high volume) helps in achieving higher combustion efficiency & longer life of the boiler.
- Suitable for a variety of burners.
- VHRR < 1mw/m"3 ensures lower emissions & higher efficiency.
- Higher HTA, lower exit tern ensures longer life.

A UNIQUE OFFERING FROM ROLLCE - A CORRUGATED FURNACE FOR RELIABILITY & LONGER LIFE

The furnace of the boiler is subject to high pressure, and differential temperature across the wall which causes bending stress due to differential expansion. Further, load fluctuations & pressure variation create enormous thermal cycling across the furnace, Boiler code (EN 12953) has recommended corrugation to improve the mechanical strength of the boiler by increasing the moment of inertia.

A. Each corrugation acts as a point of support, increasing the moment of inertia.
B. Corrugation provides adequate flexibility to take care of differential expansion between furnace &tubes.
C. Uniformity does not allow high-stress concentration at discreet points, unlike bowling hoops/stiffener rings.
D. The entire corrugation process is carried out at an in-house facility, at a normalizing temperature (hot forming at 950° to 980°C) to make sure the grain structure in the steel is oriented close to the parent metal to assure physical properties.

GAS TRAIN ASSEMBLY

- Enhanced safety- Designed as per international codes like EN 676, and NFPA.
- Zero gas leakage -with valve proving system.
- Save installation time &space- pre-piped, fully assembled gas train housed within boiler skid.
- Reliability- Components are sourced from European suppliers, and tried & tested on the field.

FEED WATER PUMPS

- Boilers are provided with 2 boiler feed pumps in 1 working + 1 standby configuration.
- Reduce power bills with efficient pumps sourced from renowned OEMs.
- Superior metallurgy & manufacturing process guarantees long
- life & uptime.
- Avoid treated water wastage with mechanical seals.
- Low NPSH requirement, service tanks can be placed at lower heights.

ELECTRONIC COMPOUND REGULATION (ECR) WITH 02 TRIMMING SYSTEM

Fuel & air controls are linked electronically, with individual stepping motors meeting the highest safety norms. This technology offers accurate controls, high repeatability & eliminates hysteresis. This system was developed by Siemens & Adopted by reputed burner manufacturers.

Benefits of ECR & 02 Trimming:

- Thermal efficiency improvement at part load.
- Energy conservation through the blower motor speed control.
- Supervisory control system-easy to monitor.
- Fail-safe BMS with built-in diagnostics.

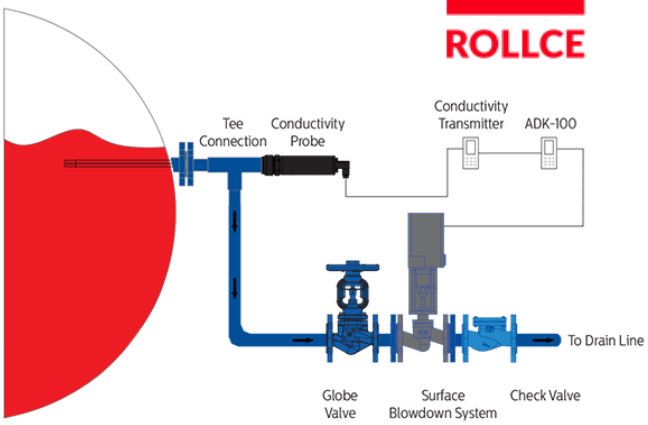
WHY ECR?

- Burner & component design changed &tested in collaboration with Siemens.
- Separate servo motor for regulating sleeve for precise control of primary and secondary air distribution.
- A number of installations running successfully across the globe.

SURFACE TYPE AUTOMATIC BLOW DOWN SYSTEM

Blow-down systems are required to maintain boiler water quality within acceptable limits, throughout the operating period of the boiler.

- Saves energy - by optimizing blow-down rates, based on water quality & boiler load
- Frees skilled boiler operators for other tasks, as well as avoids human errors.
- Automatic temperature compensation for accurate measurement.

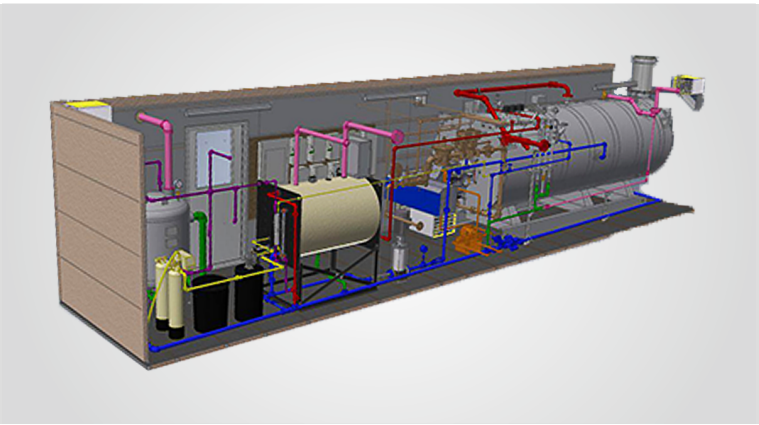


FLOW METERS

For measuring the consumption of utilities/ generation of steam

A. Steam flow meter - Vortex type/ Orifice type
B. Water flow meter - Vortex type/ Orifice type
C. Oil flow meter- Gear type/ Coriolis type

- High measurement accuracy 7 repeatabilities.
- Quality construction for long service life & reliability.
- Easy to use & maintain.
- Seamless communication with panel for data display, record & reporting.



STEAM ROOM

Boiler Fuel> LPG, Diesel, Bunker Oil, NG, Bio-Gas

Boiler Description> Portable packaged boiler, all boiler accessories installed in the Container boiler room or a platform, It's easier to transport everywhere if you need to use it. It's a kind of Full automatic steam boiler that burns diesel fuel, helps save your time and energy, widely used in oil fields and outdoor fields.

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ROLLCE

EFFIMAX BENEFITS

- Liberally sized combustion chamber to ensure clean combustion of difficult heavy fuels- low volumetric heat release rates
- Large water holding capacity to meet fluctuating load demands- thermal flywheel
- Optimum heat transfer area with proper layout hence lesser stack temperature & high Thermal efficiency.
- Fully corrugated furnace construction to have thermal flexibility & better mechanical strength (a requirement for high-pressure boilers)
- Heat treatment of the complete pressure part helps in gaining the original grain structure of metal & improves the life of the boiler.
- Large disengaging surface, high freeboard coupled with steam separator delivers 98% dry steam to process.
- Boilers integrated with best combustion systems from CIB UNIGAS Imported European Burner.
- Compact design so less space is required.
- Compact fully packaged unit- facilitates quick installation & commissioning.
- Centric furnace, better stress distribution.
- Compact tube layout, compact design.

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