

Boiler**Product Coding**
PXXXXXXX**Introduction**

Boiler Package is a fully integrated steam generation system designed to supply reliable and efficient steam for industrial processes in oil and gas, petrochemical, refinery, power generation, and utility plants. The package is engineered as a complete unit including the boiler, combustion system, feedwater treatment, control systems, and all necessary auxiliaries to ensure safe and continuous operation.

Modern industrial facilities demand high availability, stable steam quality, and strict compliance with safety and environmental standards. The boiler package is therefore supplied as a modular, factory assembled solution that minimizes site work, shortens installation time, and guarantees consistent performance throughout the operating life of the plant.

Process Overview

- **Feedwater preparation:** Raw make-up water is first treated in the water treatment section, including softeners, demineralization units, deaerators, and chemical dosing systems. This ensures the removal of hardness, dissolved oxygen, and impurities that could cause corrosion or scaling inside the boiler.
- **Combustion and heat generation:** Fuel such as natural gas, fuel oil, or mixed fuels is burned in the burner assembly installed on the boiler furnace. The combustion air is supplied by forced draft fans and controlled by dampers to ensure optimal air-to-fuel ratio and stable flame conditions.
- **Steam generation:** Heat released in the furnace is transferred to the boiler tubes or shell, raising the temperature of feedwater until it is converted into saturated or superheated steam, depending on the design.

- **Steam delivery:** Generated steam is collected in the steam drum or outlet header and routed to the plant distribution system through steam headers, control valves, and safety systems.
- **Blowdown and condensate return:** Continuous and intermittent blowdown systems control the concentration of dissolved solids, while condensate recovery systems return condensed steam back to the feedwater system to maximize energy efficiency.



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Boiler**Product Coding**
PXXXXXXXXX**Features**

- Fully packaged design including boiler, burner, feed-water system, deaerator, pumps, valves, piping, and instrumentation.
- Compliance with international standards such as ASME Section I / Section VIII, EN, and relevant local codes.
- Wide capacity range for low , medium , and high pressure steam generation.
- Fuel flexibility: natural gas, diesel, heavy fuel oil, or dual fuel configurations.
- High thermal efficiency through optimized heat transfer surfaces and optional economizers.
- Advanced control and safety systems including flame scanners, pressure controls, level transmitters, safety valves, and PLC based control panels.
- Modular and skid mounted configuration for fast installation and commissioning.
- Designed for low emissions with optional low NOx burners and flue gas treatment systems.

Applications

- Oil and gas production facilities requiring reliable steam for separation, heating, and enhanced recovery.
- Petrochemical and refinery units for distillation, stripping, and reboiling services.
- Power and utility plants for auxiliary steam generation.
- Food, pharmaceutical, textile, and chemical industries requiring clean and continuous steam supply.
- Desalination plants and water treatment facilities using steam for thermal processes.



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