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# STEAM-MATIC

FIRE TUBE STEAM BOILER

**SG**  
SERIES



HIGHER PERFORMANCE, LOWER COSTS

**Cannon**  
**BONO ENERGIA**

## STEAM-MATIC

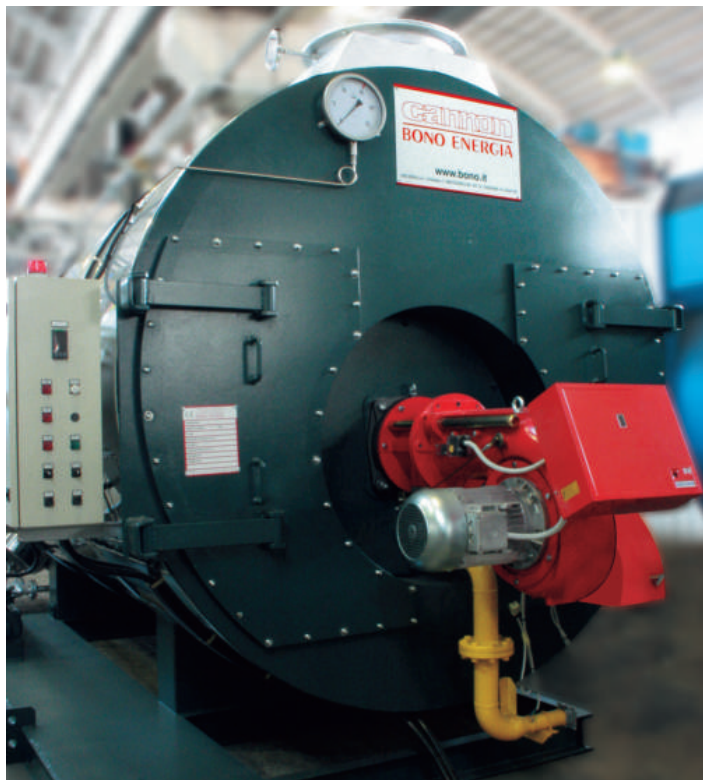
# COST-SAVING, PERFORMANCE

### A STORY OF INNOVATION

**STEAM-MATIC SG boilers** have been developed upon BONO ENERGIA's significant technical and technological expertise in manufacturing complex, high-capacity thermal equipment.

With over **5,000** installations worldwide, **STEAM-MATIC SG boilers represent a remarkable achievement** and a valid response to the needs of the industrial market, as they offer reliability and high performance.

**STEAM-MATIC SG boilers are innovative:** they offer the combination of the significant advantages of an entirely water-cooled flue-gas reversing chamber with a simple, efficient shell and tubes configuration.



### CONFIGURATION

**STEAM-MATIC SG boilers are supplied according to European norm EN 12953-10 in a package execution ready to be connected to customers' utilities including:**

- Burner and relevant accessories
- Regulation and control systems
- Water feeding unit
- Electric Wiring to junction boxes
- Control panel



**STEAM-MATIC SG boilers offer superior performance:** the innovative design of the pressure vessel ensures excellent heat transfer in two passes and provide full accessibility to the boiler and the flue gas reversing chamber. The large volume of water and a wide steam chamber provide high working flexibility and a considerable steam reserve.

**STEAM-MATIC SG are low consumption boilers,** Bono technology ensures a basic thermal efficiency of 89% reducing fuel consumption to the minimum. Additional devices such as flue gas/air, flue gas/water economisers or integrated control system Optispark allow to reach 95%!

**STEAM-MATIC SG series** are compatible with new generation control systems "OPTispark", "SAFEspark", "AMECspark".

### TECHNICAL STRENGTHS

- **Up to 95% thermal efficiency** is achieved through the optimisation of the heat exchange surfaces and the use of heat recovery systems (i.e. economisers) that are built inside the boiler structure, and can be easily and fully inspected, without any expensive or bulky flue gas ducts required.
- **An extremely innovative design** ensures complete access to the furnace, the tubes and the tube plates.
- **An optimised heat exchange** over the entire surface allows the heat flux to be evenly distributed. Throughout its two-way course, the heat flux guarantees equal heat transfer conditions across all the tubes, preventing the significant thermal unbalance between the second and the third pass typical of the three-pass design.
- **The rational, efficient architecture** characterising the furnace, the shell and the tube plates gives the boiler a more flexible and stable structure especially at high working pressures.
- **The large furnace** ensures reduced thermal load and high radiant heat transfer. The total absorption of thermal expansion and reduction of the flue gas temperature at the furnace end are extremely important features.

From 6 t/h to 25 t/h work

# PERFORMANCE AND INNOVATION

STEAM MATIC

- **The absence of refractory lining or boiler studs** in the wet-back design, eliminates eventual stress on both the shell of the boiler and the rear tube plate.
- **The use of dished tube plates** guarantees negligible forming stress and high level of safety under the most critical working conditions.
- **A water tube wall that allows free expansion of the pressure vessel and of the tubes:** an innovative, reliable, efficient solution adopted to join the flue gas reversing chamber with the boiler shell.

The water tube wall also ensures:

- **High water** circulation in an area subject to thermal stress, preventing the formation of cold/hot spot areas.
- **The removal of radiant heat loss** and the significant cooling of flue gases. The cooler burner flame and the longer furnace represent an efficient system to preserve the rear tubes ends, since the flame temperature is cooler and less aggressive in comparison with the three-pass boiler design.
- **The protection of the fire tubes and the rear tube plate** from overheating caused by possible misfiring.
- **Easy access to the large flue gas reversing chamber**, allowing an accurate inspection of the tubes, the furnace and the tube plate.



## MAIN APPLICATIONS

**STEAM-MATIC SG boilers are used in a wide range of steam-intensive industrial processes for heavy-duty applications:**

- Paper
- Food & beverage
- District heating
- Plastic and rubber
- Chemical & petrochemical
- Wood
- Infrastructure & building materials

**BONO ENERGIA**, part of **CANNON GROUP**, is the Italian leader for the production of industrial boilers and thermal fluid heaters. A staff of 150 dedicated specialists, with more than 30 engineers, are distributed in three modern production facilities. Bono Energia currently operates according to ISO 9001:2000 and ASME Quality Systems (ASME stamp, American Society of Mechanical Engineers). Design, construction and testing are carried out according to the strictest international standards: PED, ASME, EN, DIN, GOST-R, SQLO, R.I.Na., A.B.S., Ukrsepro.



Working pressure up to 30 bar