

STEAM-MATIC

FIRE TUBE STEAM BOILER

SM
SERIES



HIGHER PERFORMANCE, LOWER COSTS

Cannon
BONO ENERGIA

COST-SAVING, PERFORMANCE

STEAM-MATIC

ENGINEERED TO LAST

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

With over **10,000** installations worldwide, **STEAM-MATIC 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 SM boilers are reliable: severe quality controls during all productive cycle, hydraulic and fire workshop tests before shipment, easy installation and maintenance represent, together with the proved quality of BONO ENERGIA boilers design, the best guarantee for a very long service life.

STEAM-MATIC SM boilers offer superior performance: saturated steam production, medium and high pressure up to 25 bar, the efficient design of pressure vessels and new generation electronic control systems ensure performance and low energy consumption.



STEAM-MATIC SM are low consumption boilers: Bono technology ensures a 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 "OPTIsark", "SAFEspark", "AMECspark".

TECHNICAL STRENGTHS

- **Up to 95% thermal efficiency** is achieved through the optimisation of heat transfer surfaces and the use of heat recovery systems (i.e. economiser or air preheater) that are built into the boiler, can be easily and fully inspected without any expensive or bulky flue gas ducts required.
- **Optimised heat transfer** over the entire heated surface allows the heat flux to be distributed more evenly. Throughout its two-way course, the heat flux guarantees equal heat exchange conditions across all the tubes, preventing the significant thermal unbalance between the second and the third pass typical of the three-pass design. Also, the arrangement of the tubes vis-à-vis the flue gas inversion chamber allows an even distribution of thermal stress over the tube plate.
- **A two-pass design** ensures full access to the furnace, the tubes and the tube plates.
- **The unit accommodates a large water volume** and a remarkable steam reserve for maximum operating flexibility and stability in steam level and pressure.

CONFIGURATION

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

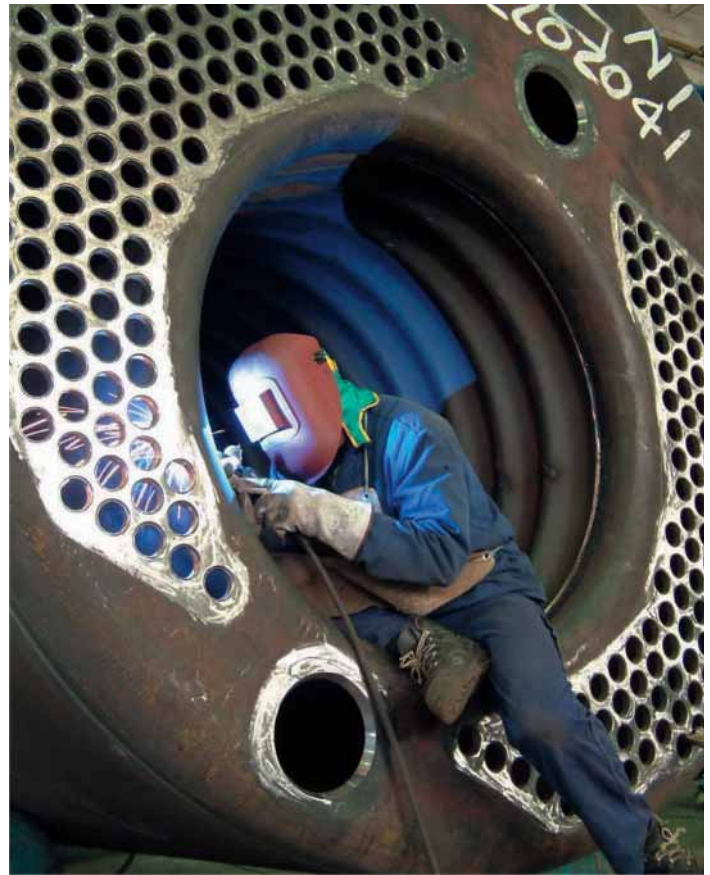
- Burner and relevant accessories
- Regulation and control systems
- Water feeding unit
- Electric Wiring to junction boxes
- Control panel

From 1 t/h to 5 t/h work

PERFORMANCE AND RELIABILITY

STEAM MATIC

- **The rational, efficient architecture characterising the furnace, the shell and the tube plates**, makes the boiler structurally more flexible and stable especially at high working pressures.
- **The large furnace** ensures reduced thermal loads readings and high radiant heat transfer. It also facilitates the total absorption of thermal expansion and reduces flue gas temperature at the furnace end.
- **Expanded fire tubes welded to the tube plates** ensure a tight mechanical seal between tube & plate and the long-life cycle of the tube ends from overheating due to un-proper combustion and intensive reflected heating.
- **The smokebox at the rear of the furnace is easily accessible** for full inspection of the boiler. Unlike other equipment, Steam-Matic SM units ensure rapid and easy cleaning of the tubes and the furnace, which helps to maintain heat exchange surfaces clean for maximum thermal efficiency. Owing to sophisticated insulation, the small-sized smokebox does not require any maintenance.
- **The use of dished tube plates** guarantees negligible forming stress and a high level of safety. They also eliminate angular stress, which is typical of plain tube plates.



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.

MAIN APPLICATIONS

STEAM-MATIC SM 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

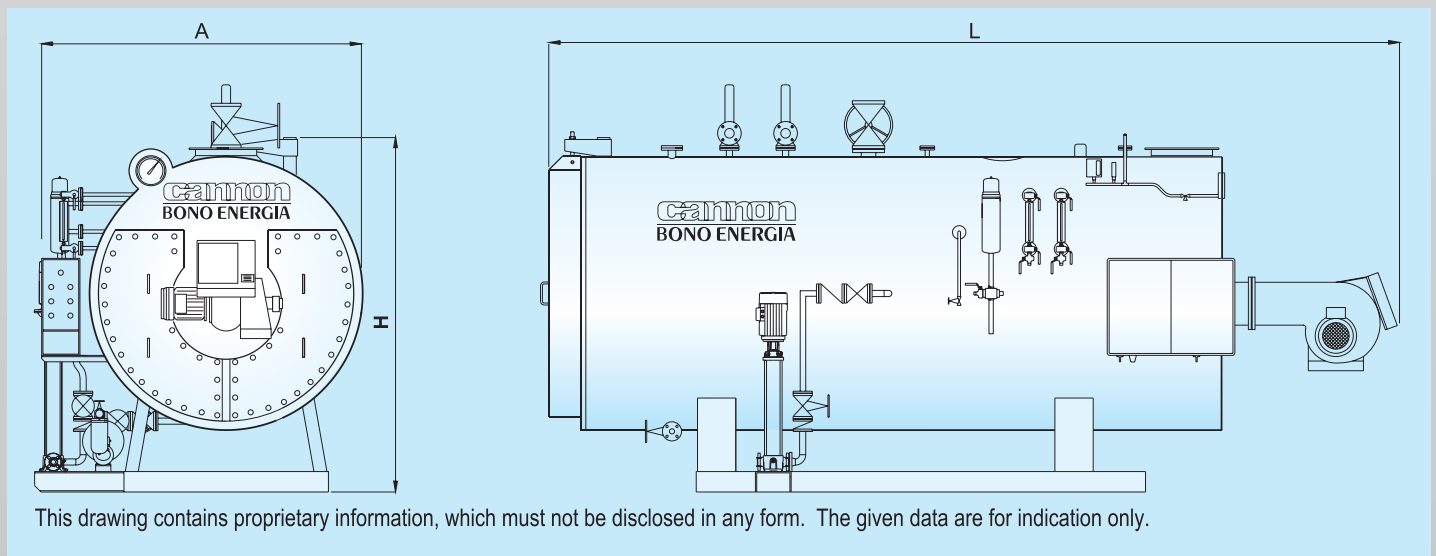


Working pressure up to 25 bar

COST-SAVING, PERFORMANCE AND INNOVATION

Features		RANGE					
		100	150	200	300	400	500
Thermal capacity	Kcal/h	600.000	900.000	1.200.000	1.800.000	2.400.000	3.000.000
	MW	0,7	1,0	1,4	2,1	2,5	3,5
Steam production	Kg/h	1.000	1.500	2.000	3.000	4.000	5.000
Feed water temp.	C°	90 - 95	90 - 95	90 - 95	90 - 95	90 - 95	90 - 95
Design pressure	bar	12 15 18	12 15 18	12 15 18	12 15 18	12 15 18	12 15 18
Thermal efficiency	%	89	89	89	92*	92*	92*
Consumption:							
-heavy fuel oil	Kg/h	52,1	78,2	104,3	151,3	201,7	252,1
-diesel oil	L/h	49,6	74,4	99,1	143,9	191,8	239,8
-natural gas	Nm3/h	59,5	89,2	119,0	172,6	230,2	287,7
Overall dimensions:							
-max length L	mm	3.600	4.200	4.200	5.200	5.900	6.400
-width A	mm	1.850	2.250	2.250	2.400	2.400	2.500
-height H	mm	1.900	2.250	2.250	2.650	2.650	2.800
Empty weight	t	3,5 3,7 4,0	6,5 6,8 7,0	7,0 7,2 7,4	10,0 10,5 10,9	11,0 11,6 12,1	13,0 13,7 14,4

Fuels:	
Heavy fuel oil (l.h.v 9.700 Kcal/kg. viscosity < 5-7°E at 50°C pressure 2 bar)	
Diesel oil (l.h.v 10.200 Kcal/kg. pressure 1,5 bar)	
Natural Gas (l.h.v. 8.500Kcal/Nm3 Stab. press. 200/300mbar)	
*with economizer	
Electric power	Auxiliaries power
380 V. - 50 Hz. - 3 ph + N	220V.
Feeding water and boiler water:	
EN 12953-10 :2003 requirements for feedwater and and boiler water quality up to European standard.	



SM 07 2007 eng - Cannon Communication - Italy

CERTIFIED
UNI EN ISO 9001:2000
LR 170324



U **S**
Cert. 28.818 Cert. 28.817
Company Authorized to
Use the Indicated ASME
Symbols



Cannon
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