







DESCRIPTION







The GX range features outstanding monobloc steam generators, designed to give maximum reliability and durability. All models have a corrugated furnace and are sized to achieve reduced thermal loads and enable optimal operation, even under harsh working conditions. A complete range that can satisfy a wide variety of applications, also available with superheating (GX S) and waste heat recovery sections (GX C).

FEATURES

-  **Design pressure: 12 or 15 bar**
-  **Heat output: 1163 ÷ 17442 kW**
-  **Steam capacity: 1700 ÷ 32000 kg/h**
-  **Efficiency: 90,0 %**

The entire range is available, on request, with a design pressure 25 bar

ADVANTAGES

-  **High steam quality**
At high load the internal separator prevents the entrainment of water droplets to the steam outlet, the steam produced is then always of high quality having a very high dryness fraction.
-  **Reliability and durability**
Maximum reliability and durability guaranteed through design with low surface heat losses.
-  **Fully flanged tube plates**
The hot-flanged tube plates ensure the absorption of the thermal expansions under different working loads.
-  **Configurable to specific requirements**
A wide range of optional accessories are available to customize the product to meet specific requirements.
-  **Maximum security**
The generator has been designed in accordance with the strictest international safety regulations in force.
-  **Constant supply of high quality steam**
Thanks to the generously dimensioned steam chamber the boiler can meet the varying demand of the system including instantaneous peak demands

High pressure steam boiler genuine three pass

MODELS



GX



GX S



GX C

AVAILABLE CERTIFICATIONS



RECOMMENDED TECHNOLOGIES



MAIN APPLICATIONS

- ⊕ Paper industry
- ⊕ Tanning industry
- ⊕ Rubber processing
- ⊕ Water purification and treatment plants
- ⊕ Food and beverage industry
- ⊕ Meat processing
- ⊕ Distilleries
- ⊕ Beer industry
- ⊕ Heavy industry
- ⊕ Wine farms
- ⊕ Dairy Industry
- ⊕ Chemical and pharmaceutical industries
- ⊕ Manufacturing industry
- ⊕ Hospitals
- ⊕ District heating
- ⊕ Petrochemical industry

GX

High pressure steam boiler genuine three pass wet back firetube. Suitable for liquid and gaseous fuels. Supplied complete with the accessories needed for automatic operation with mechanical and hydraulic assembly for all equipment and certifications, also in compliance with the PED 97 /23/EC Directive.



GX 12 bar

Design pressure: **12 bar**

Operating pressure: **8 - 11,5 bar**

Heat output: **1163 ÷ 17442 kW**

Steam capacity: **1700 ÷ 25000 kg/h**

Efficiency: **90,0 %**

GX 15 bar

Design pressure: **15 bar**

Operating pressure: **12-14 bar**

Heat output: **1163 ÷ 17442 kW**

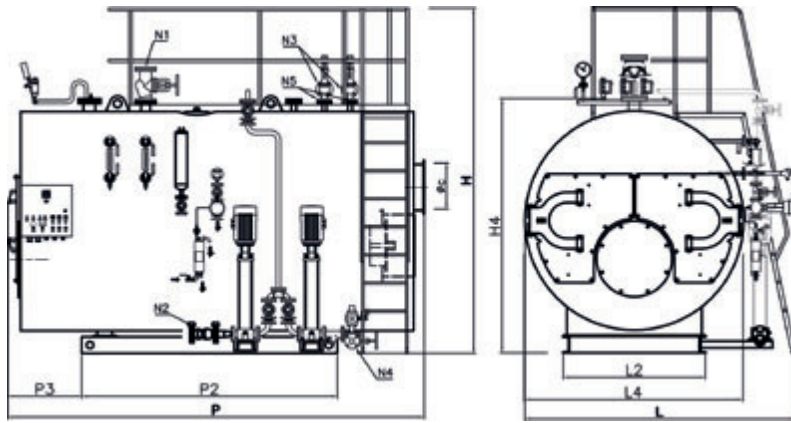
Steam capacity: **1700 ÷ 25000 kg/h**

Efficiency: **90,0 %**

TECHNICAL DATA

Model	Heat output **	Flow thermal	Steam capacity *:	Volume level H2O	Total volume H2O	Flue gas pressure drop	Gas consumption	Diesel fuel consumption	Nafta consumption	Empty weight *
GX	kW	kW	kg/h	lt	lt	mbar	Nm3/h	kg/h	kg/h	kg
1000	1163	1292	1700	4565	5940	5,5	132,3	108,9	114,5	6800
1200	1395	1550	2050	4565	5840	7,0	158,7	130,7	137,4	7550
1500	1744	1937	2560	5475	6960	7,0	198,3	163,3	171,8	8950
1750	2035	2261	3000	5475	6860	7,0	231,4	190,6	200,4	10050
2000	2326	2584	3410	6615	8435	8,5	264,5	217,8	229,1	10950
2500	2907	3230	4260	7640	9610	8,0	330,7	272,4	286,4	12050
3000	3488	3875	5100	7955	9865	9,0	396,8	326,8	343,6	13650
3500	4070	4522	6000	9725	11940	10,5	463,0	381,3	400,9	15050
4000	4651	5167	6800	10470	12670	10,0	529,0	435,7	458,1	16600
5000	5814	6460	8520	11200	13750	10,5	661,4	544,7	572,8	19200
6000	6977	7752	10240	13545	16530	12,0	793,7	653,6	687,3	21700
7000	8140	9044	12000	15970	20030	12,0	926,0	762,5	801,9	24700
8000	9302	10335	13600	19450	24700	14,0	1058,1	871,4	916,3	28800
9000	10465	11627	15300	22060	28140	14,0	1190,4	980,3	1030,8	30800
10000	11628	12920	17000	24680	32000	15,0	1322,7	1089,3	1145,5	37600
12000	13953	15503	20000	29250	37500	19,0	1587,2	1307,1	1374,5	39200
13000	15116	16795	22170	30000	39000	20,0	1719,5	1416,1	1489,1	41300
15000	17441	19401	25000	30000	39000	25,0	1986,3	1635,8	1720,1	47000

** powers referring to methane gas; For diesel or naphtha operation the rule may provide for a downgrade* steam capacity with feed water at 80 ° C* peso a vuoto riferito al modello singola pompa 12 bar.



DIMENSIONS

Model	H	L	L2	L4	P	P2	ØC	N1	N2
GX	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
1000	3200	2450	1200	2000	4100	2400	400	65	40
1200	3200	2450	1200	2000	4100	2400	400	65	50
1500	3300	2550	1400	2180	4100	2500	450	80	50
1750	3350	2650	1400	2180	4100	2500	450	80	50
2000	3350	2650	1400	2180	4600	3000	500	80	50
2500	3500	2760	1500	2300	4900	3200	550	100	50
3000	3600	2900	1500	2340	5100	3200	600	100	50
3500	3600	2900	1500	2400	5600	3500	600	125	65
4000	3780	3000	1600	2500	5700	3700	650	125	65
5000	3954	3260	1600	2640	5700	3500	650	125	65
6000	4110	3390	1700	2740	6300	4000	700	150	80
7000	4250	3460	1800	2880	6750	4500	700	150	80
8000	4400	3620	1900	3040	7250	5000	800	150	80
9000	4550	3750	2000	3200	7650	5100	900	200	80
10000	4550	3750	1900	3280	8050	5500	900	200	80
12000	4650	4000	2300	3350	8700	6000	1100	200	100
13000	4870	4500	2300	3500	9030	6200	1100	200	100
15000	4870	4500	2300	3500	9300	6500	1100	250	100

STANDARD EQUIPMENT

Accessories on the steam side, including:

- Steam outlet/crown valve
- 2 spring safety valves
- 2 Reflex level indicator gauge
- 2 Level indicator guage drain and shut-off valve unit

Monitoring instrumentation, comprising:

- Large dial 3 way test valve manometer
- Limit pressure switch
- Manual reset safety pressure presure switch

Blow down system comprising:

- Purge shut-off valve
- Quick exhaust valve with manual lever

Automatic conductivity probe level control system comprising:

- Pump start and stop probes
- 1st and 2nd alarm probes and low level burner lockout

Boiler control panel, IP 55 400V/3 +N/ 50Hz

AVAILABLE CONDITIONS

Single feed water pump

- 1 vertical multi-stage centrifugal electric pump for water at 120°C
- 1 shut-off globe valve
- 1 pump suction filter
- 2 non-return valves

Twin feed pumps

- 2 vertical multistage vertical centrifugal pumps for water at 90 ° C
- 3 delivery shut-off valves
- 2 pump suction filters
- 3 non-return valves

PRODUCT CODES

Model	12 bar		15 bar	
	1 pump	2 pumps	1 pump	2 pumps
GX 1000	86161000	86161004	86171000	86171004
GX 1200	86161200	86161204	86171200	86171204
GX 1500	86161500	86161504	86171500	86171504
GX 1750	86161750	86161754	86171750	86171754
GX 2000	86162000	86162004	86172000	86172004
GX 2500	86162500	86162504	86172500	86172504
GX 3000	86163000	86163004	86173000	86173004
GX 3500	86163500	86163504	86173500	86173504
GX 4000	86164000	86164004	86174000	86174004
GX 5000	86165000	86165004	86175000	86175004
GX 6000	86166000	86166004	86176000	86176004
GX 7000	86167000	86167004	86177000	86177004
GX 8000	86168000	86168004	86178000	86178004
GX 9000	86169000	86169004	86179000	86179004
GX 10000	86169900	86169904	86179900	86179904
GX 12000	86169912	86169922	86179912	86179922
GX 13000	86169913	86169923	86179913	86179923
GX 15000	86169915	86169925	86179915	86179925

GX S

Maximum temperature: 300 °C

Design pressure: 12 or 15 bar*

Steam capacity: 1700 ÷ 25000 kg/h

Efficiency: 90 %

Efficiency with energy saver: up to 95.0%

• * upon request, up to 25 bar

ICI GX S steam boiler features genuine three pass, wet back, firetube, complete with steam superheater, in monobloc construction, with completely automatic operation, i.e. complete with all accessories to have it up and running quickly.

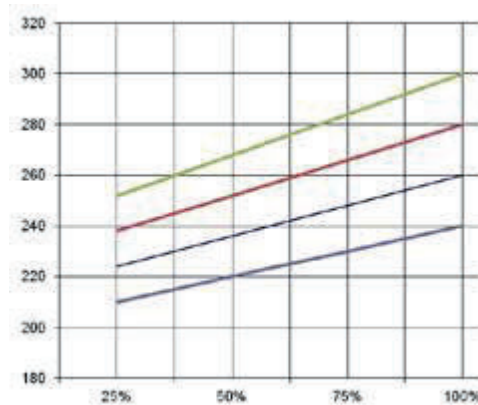


The flame passes through the furnace and the combustion gases are conveyed to the fully submerged reversal chamber. In this chamber the combustion is complete and the hot gases reverse their direction re-entering the tube bundle towards the front of the boiler. Here the gases enter the steam/gas exchanger which constitutes the superheater in the reverse direction, and this considerably reduces their temperature. Finally, the third pass of gases brings the combustion products towards the back of the boiler to be carried to the chimney.

SUPERHEATER INSTALLATION AND OPERATION

Steam temperature in relation to thermal load

During the operation of the boiler, as the modulation ratio of the burner varies, the flow rate and temperature of the combustion gas arriving at the superheater vary accordingly. The temperature of the superheated steam is therefore lower at low thermal loads, as shown in the diagram:



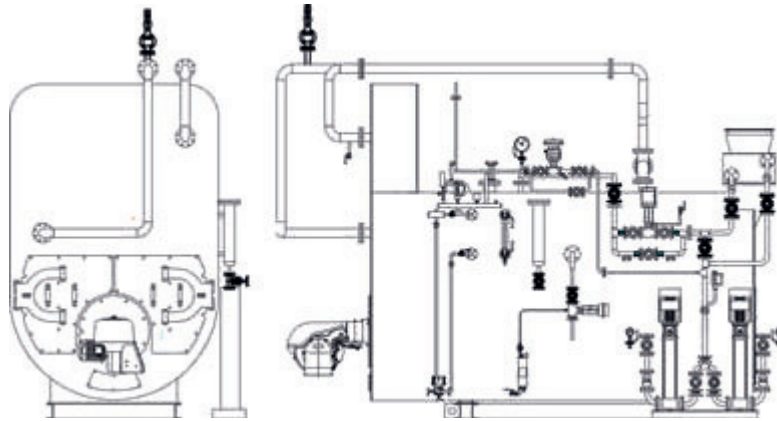
The steam temperature specified on the technical data sheet refers to the maximum thermal load.

Superheater safety valve

The superheater is supplied directly connected to the boiler steam chamber, without isolation valves; it is not necessary to fit a dedicated safety valve since the boiler safety valve size is also suitable for the capacity of the superheater.

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STANDARD EQUIPMENT

Accessories on the steam side, including:

- 1 steam outlet globe valve
- 1 startup bleed valve
- 2 safety valves
- 2 Reflex level indicator gauge
- 2 Level indicator guage drain and shut-off valve unit

Monitoring instrumentation, comprising:

- Large dial 3 way test valve manometer
- Limit pressure switch
- Manual reset safety pressure switch

AVAILABLE CONDITIONS

Single feed water pump

- 1 vertical multi-stage centrifugal electric pump for water at 120°C
- 1 shut-off globe valve
- 1 pump suction filter
- 2 non-return valves

Blow down system comprising:

- Purge shut-off valve
- Quick exhaust valve with manual lever

Automatic conductivity probe level regulator composed of:

- Pump start-up probe and pump shut-off probe
- 1st and 2nd alarm probes and low level burner lockout

Boiler control panel, IP 55

Twin feed pumps

- 2 vertical multistage vertical centrifugal pumps for water at 90 ° C
- 3 delivery shut-off valves
- 2 pump suction filters
- 3 non-return valves

The Commercial Technical Department of ICI Caldaie is at your disposal to define the specific technical, construction, performance and economic features of your designs.

GX C

Design pressure: **12 or 15 bar** *

Steam capacity:

- Combustion side: **1700 ÷ 25000 kg/h**

- Recovery side: **100 ÷ 5000 kg/h**

Efficiency: **90 %**

Efficiency with energy saver: **up to 95.0%**

• * upon request, up to 25 bar

The efficiency of the GX C waste-heat boilers can be increased by a further 5% if provided with an economiser, which is an accessory available for any product version.



The GX C boiler is an innovative design which combines steam production from a conventional boiler and also utilises exhaust gas heat recovery, arising from an external source; the latter "free" source is configured as the priority, while the combustion can simply serve as a backup or to provide the remaining power if recovery gases are insufficient to cover system steam demand.

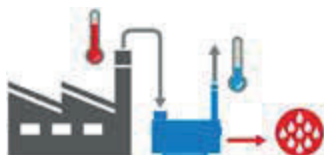
The recovery section is completely separated from the combustion one but immersed in the same boiler water. The front access panels are fixed to the boiler body by means of double-joint hinges, which make it possible to open and inspect the inside without having to remove the burner.

APPLICATIONS

The exhaust gases that can be used in waste-heat boilers can come from:

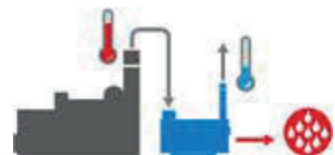
INDUSTRIAL PROCESSES

- Furnaces
- Post-combustion chamber
- Incinerators
- Industrial processes with flue gas at high temperature



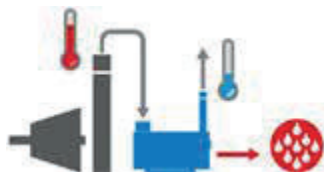
COGENERATORS

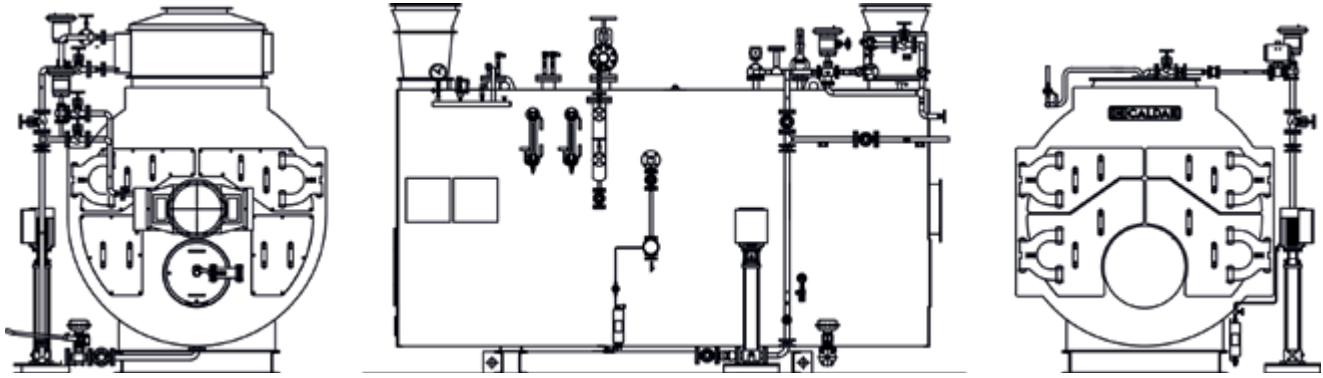
- Diesel engines
- Gas and biogas engines
- Vegetable oil engines



POWER PLANTS

- Turbogas plants





STANDARD EQUIPMENT

Accessories on the steam side, including:

- Steam outlet/crown valve
- 2 spring safety valves
- 2 Reflex level indicator gauge
- 2 Level indicator guage drain and shut-off valve unit

Monitoring instrumentation, comprising:

- Large dial 3 way test valve manometer
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Blow down system comprising:

- Purge shut-off valve
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Automatic conductivity probe level control system comprising:

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Boiler control panel, IP 55 400V/3 +N/ 50Hz

AVAILABLE CONDITIONS

Single feed water pump

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ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	12 bar		15 bar	
		1 pump	2 pumps	1 pump	2 pumps
See "Accessories" section	Automatic blowdown system for boilers of the SIXEN and GX series	■	■	■	■
17090037	Salinity control unit (pneumatic TDS)	■	■	■	■
17090035	Salinity control unit (electric TDS)	■	■	■	■
38040100	Sample cooler	■	■	■	■
See "Accessories" section	Standby feed water pump	■		■	
See "Accessories" section	Modulating level regulation with electric valve	■	■	■	■
See "Accessories" section	Modulating level regulation with pump/s + inverter	■	■	■	■
39050100	Modulating feed of electrical two-way valve and pump with inverter	■		■	
39050110	Modulating feed of electrical two-way valve and pumps with inverter		■		■
90060010	High level safety kit	■	■	■	■
90060040	Self-checking High level safety unit	■	■	■	■
90060050	Self-checking Low level safety units	■	■	■	■
86800081	Global safety system GSS72 L (GX 1000-1200)	■	■	■	■
86800080	Global safety system GSS72 H	■	■	■	■
90060060	Ladder and handrail	■	■	■	■
90060061	Ladder and handrail	■	■	■	■
90060062	Ladder and handrail	■	■	■	■
90060090	Side platform	■	■	■	■
90060070	2nd stage regulation pressure switch	■	■	■	■
90060078	Cascade control panel for steam boilers	■	■	■	■
QCTETERM	Eterm Easy manager panel	■	■	■	■

COMPONENTS FOR HEATING PLANT ROOM COMPATIBLE WITH THE RANGE



ECXV
Vertical energy saver



VRC
Condensate collection tank



VRC-V
Condensate collection tank



DEG
Atmospheric deaerator



ADD
Feed water treatment unit for steam boilers



BDV
Blowdown vessel



VEX
Steam accumulator



DEG/P
Pressurised deaerator