

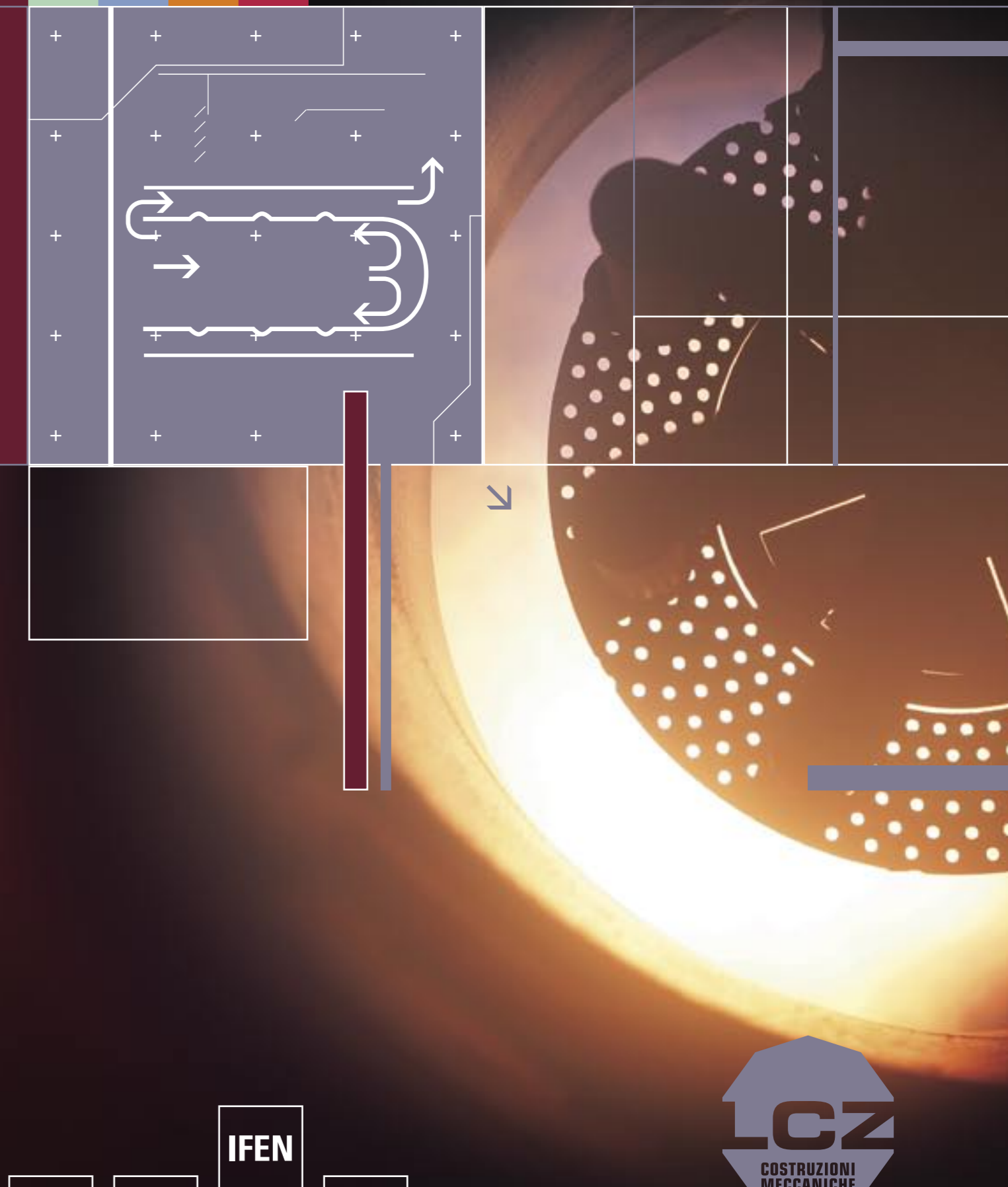


L.C.Z. was founded in 1971, with the aid of three partners who already had considerable expertise in the construction of Steam Generators, by a company established in the Forties. In time, the company has specialized in the construction of steam generators, pressure equipment, heating systems and industrial installation, developing a complete range of products and installations for every industry, from food processing to packaging, from chemicals to apparel, from systems for industrial laundries to complete installations for processing milk and producing cheese.

L.C.Z. has become a reference at the national level in the design and construction of industrial steam systems.

Illustrations and technical specifications should be considered for reference purpose only. LCZ srl, constantly focused on ongoing production, reserves the right to modify these without prior notice.

IFEN September 2010



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IFEN



ACCESSORIES AND COMPLEMENTS

- **Installation and startup:** L.C.Z. installs and starts the equipment supplied, ensuring maximum efficiency and proper use. The professional skill gained in the sector by our structure guarantees the client prompt intervention with the maximum assurance of perfect function.
- **Design:** our technical department can solve any design problem indicating the most appropriate solutions for the type of industrial process you need to realize.
- **Assistance and spare parts:** our client need only do his own job. This philosophy has led L.C.Z. to develop over the years a service network with capabilities ranging from simple tune-up and adjustment to analysis of the waters, scheduled inspections and prompt replacement of malfunctioning equipment, from our well-stocked spare parts warehouse.
- **Heating systems:** for over thirty years we have been constructing steam heating systems on a turnkey basis. Our experience enables us to supply and install all the equipment in a steam heating system so as to provide the most efficient possible use of the generator.

# SERIES IFEN STEAM GENERATORS FOR MEDIUM DEMAND 12 bar



The IFEN series steam boiler is semifixed type wet bottom with pressurized combustion "flame reversal".

This type of combustion guarantees a temperature of approximately 900 °C on inlet to the fume tubes, and it allows a far longer service life of the generator and prevents the well-known "thermal fatigue" phenomena. Pressurised "Reverse flame" combustion enables lower polluting compound emissions considering also the furnace that has been designed to have a low heat load.

According to the potentiality several technical sagacities in constructive phase are previewed in order to guarantee a high quality, which local waviness heat produced without transversal weldings and tube plates heat flanged.

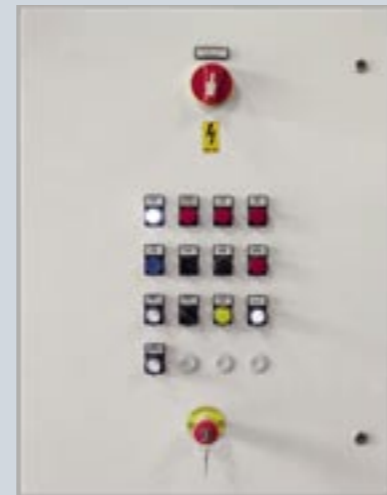
The insulating skirt is formed by layers of mineral wool of suitable thickness and density, and lined with stainless sheet-steel with finishings on a level with the connections in stainless steel.

The operation of generator is completely automatic and it's directly commanded by control board installed on board.

**The guaranteed minimal efficiency is of 92%. It's also able to be gifted of an "economizer", reaching so a 97% maximum yield approximately.**

The steam boiler is supplied with the CE Control Certificate for a single product (assembly) pursuant to directive 97/23/CE (PED).

- Functions with liquid and gas fuels
- High setam/water ratio
- Reduced emission of pollutant compounds
- Easy inspection of tube plates
- High efficiency (92%)
- Skirt of water feed unit with n.2 pumps separated for easier dislocation
- n. 2 water feed pumps e n. 2 level indicators
- On request boiler pressures of **15bar** and **18bar**
- On request with economizer for higher efficiency
- On request with **"Total Safety System"** for the exemption of patented conductor on 24/72 hours of functioning in accordance with European law EN12953, 8/15 and national German law TRD604.



electric panel

## STANDARD EQUIPMENT

Supplied in block unit, mounted on a single base complete with main power panel with connections to the various devices and single base with water feed pumps.

## Adjustment and safety accessories:

- electronic level regulator
- n. 2 certified safety probes (electrodes)
- n. 2 operating pressure switches
- n.1 safety pressure switch
- n.1 pressure gauge
- n. 2 certified spring-action safety valves

## Valves and connectors supplied:

- steam uptake valve
- pressure gauge holder tap
- steam uptake valve instruments
- n. 2 level indicators
- discharge unit: valve and male tap
- (on request automation discharge with pneumatic valve)

## Infeed unit:

- n. 2 electric pumps
- n. 3 interception valves
- n. 3 non-return valves

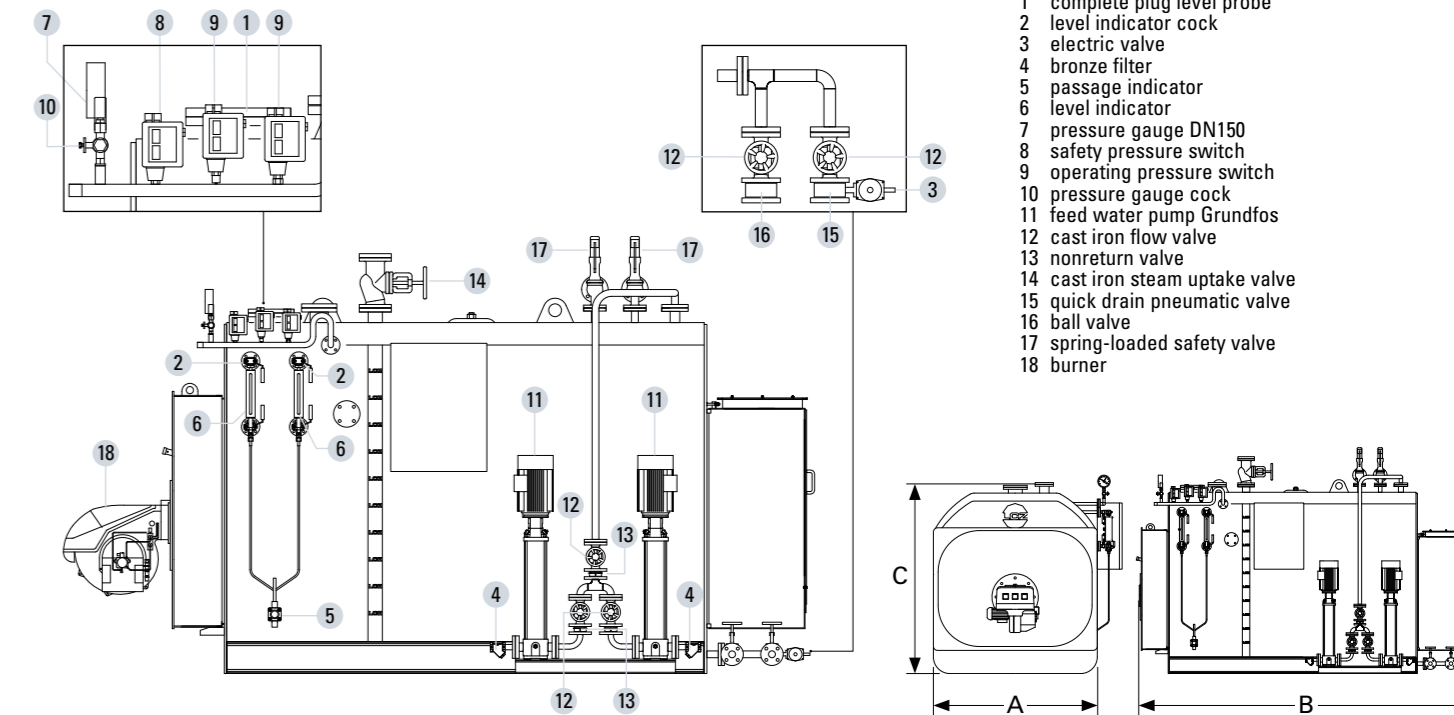
infeed water unit



pressure gauge and switches cock



back smoke chamber



- 1 complete plug level probe
- 2 level indicator cock
- 3 electric valve
- 4 bronze filter
- 5 passage indicator
- 6 level indicator
- 7 pressure gauge DN150
- 8 safety pressure switch
- 9 operating pressure switch
- 10 pressure gauge cock
- 11 feed water pump Grundfos
- 12 cast iron flow valve
- 13 nonreturn valve
- 14 cast iron steam uptake valve
- 15 quick drain pneumatic valve
- 16 ball valve
- 17 spring-loaded safety valve
- 18 burner

Model	Nominal usable power	Thermal power	Steam production	Loss of pressure	Level capacity	Geometric capacity	Heated surface	Evaporating surface	Volume combust. chamber	Dimensions AxBxC	Weight
	kW	kW	kg/h	mbar	l	l	m <sup>2</sup>	m <sup>2</sup>	m <sup>3</sup>	mm	kg
IFEN650	443	481	650	5	1280	1830	14,2	2,09	0,56	1560x2600x1840	2420
IFEN850	579	630	850	4	1475	2190	22,3	2,59	0,71	1560x2600x1840	2900
IFEN1000	681	741	1000	4	2000	2640	25,0	2,69	0,88	1710x3050x1945	3350
IFEN1350	920	1.000	1350	5,5	2300	3050	31,5	3,14	1,04	1710x3410x1945	3800
IFEN1500	1.022	1.111	1500	2,5	2490	3380	40,5	3,43	1,37	1880x3510x2060	4550
IFEN1800	1.227	1.333	1800	3	2490	3380	40,5	3,43	1,37	1880x3510x2060	4550
IFEN2000	1.363	1.481	2000	4	2825	4020	48,1	4,12	1,66	1880x4010x2060	5200
IFEN2500	1.703	1.852	2500	4,5	3600	5000	58,3	4,43	1,85	2020x4110x2340	6500
IFEN3000	2.044	2.222	3000	5	4800	6950	73,7	5,75	2,15	2140x4650x2460	8000
IFEN4000	2.726	2.963	4000	6,5	5200	7400	88,0	6,46	2,88	2240x4900x2580	9050
IFEN5000	3.407	3.703	5000	10	5800	8200	98,0	7,20	3,22	2240x5330x2580	9850