



OPTIMAJOR

**CAST IRON BOILER
OIL & GAS FIRED**

**Rated Output:
92Kw to 203 Kw**



 **Saint Roch**

- **SAINT ROCH**
Hypoeutectic grey cast iron
- 8 model range from:
92 Kw - 203 Kw
- **Efficiency:**
at 30% charge 90-91.1%
at 100% charge 90.6-91.6%
- Operates with forced
draught oil or gas burners
- Resistant
to condensation
- Operates at low or sliding
temperatures
- 6 Bar working
pressure
- Economizers in flue ways
increase efficiency
- Refractory cord
between elements
- Ideal for collective
applications (Ecogroupage)
- 10 year guarantee
- Economic/energy saving
eco-friendly.

OPTIMAJOR



The Optimajor is a medium power boiler that satisfies all individual, collective and industrial applications. It has a cast iron body with an anti-corrosion combustion chamber.

The Optimajor is economic and can be equipped with a forced draught oil or gas burner.

Ideal for building Ecogroup cells and operates at low and sliding temperatures.

SAINT ROCH Burners

The SAINT ROCH cast iron boilers can be supplied complete with burners that are for forced draught oil or gas. It is highly recommended to supply the package boiler + burner, as the SAINT ROCH burners are specifically adapted and tested for optimal operation with SAINT ROCH boilers.



All SAINT ROCH burners are equipped with a special hydraulic air damper which prevents the flow of air from the ambient to the boiler, in order to avoid cooling down the boiler. Vice versa, it also prevents the flow of air from the chimney to the boiler when the boiler is stopped, in order to reduce energy losses.

Model	7	8	9	10	11	12	13	14
Heat Output	92.4	108.2	124	139.7	155.6	171.5	187.5	203.5
Heat Input	101.9	119	132.2	153.3	170.5	187.7	204.9	222.1
Recommended	S10	S20	S20	S20	S20	S20s	S20s	S20s
Nozzle size	1.75x60	2.00x60	2.50x60	2.75x60	3.00x60	3.25x60	3.50x60	3.75x60



Durable Element Engineering

The heating elements are engineered to ensure high efficiency and boiler safety. The combustion chamber is equipped with fins ensuring exposure to burner heat, preventing the formation of dangerous inner stresses and reducing noise levels.

The elements are designed with grooves on both sides, where a refractory cord is fitted.

The refractory cord adapts to the expansion and shrinking of the heating elements.



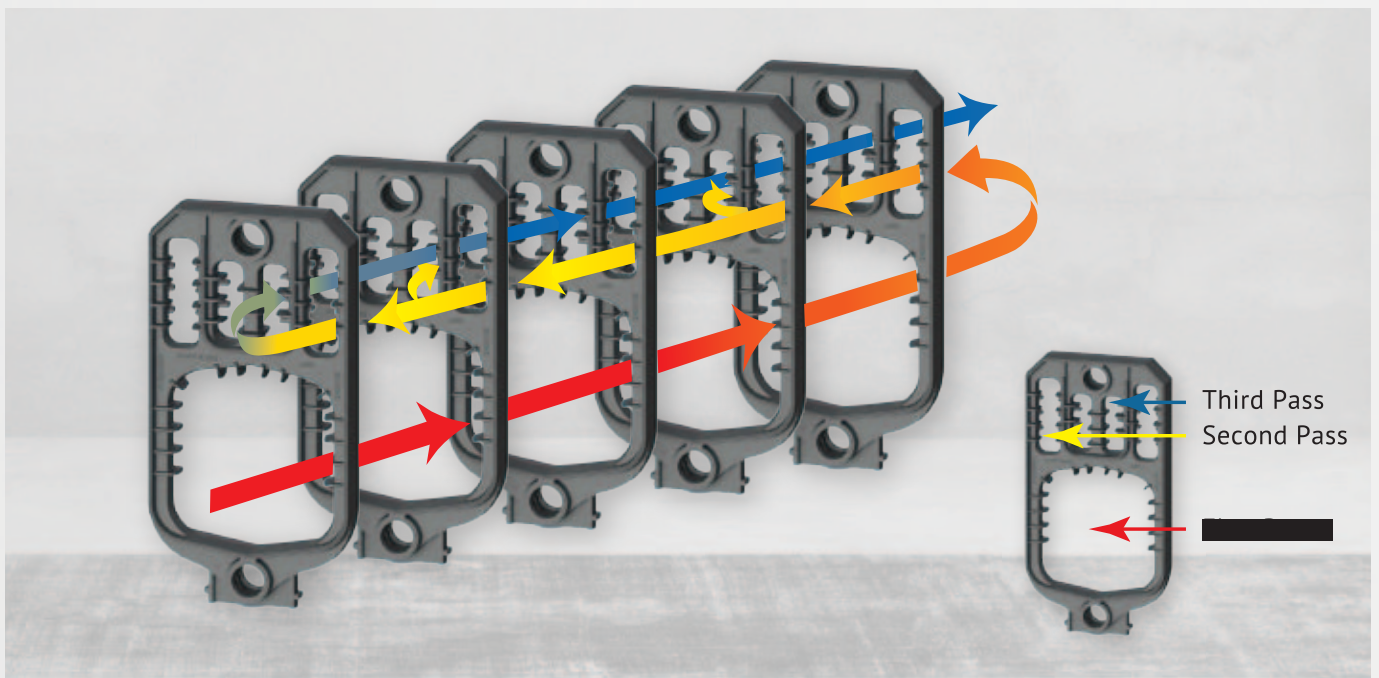
Economizing System

The Optimajor is equipped with 4 turbulators in the flue ways to slow the smoke cycle, increase element exposure to heat and facilitate cleaning.

This increases efficiency and lowers energy consumption.

3 Pass Design

The Optimajor has triple horizontal flue gas passes, ensuring full exposure of burner heat, increasing efficiency while reducing emissions.



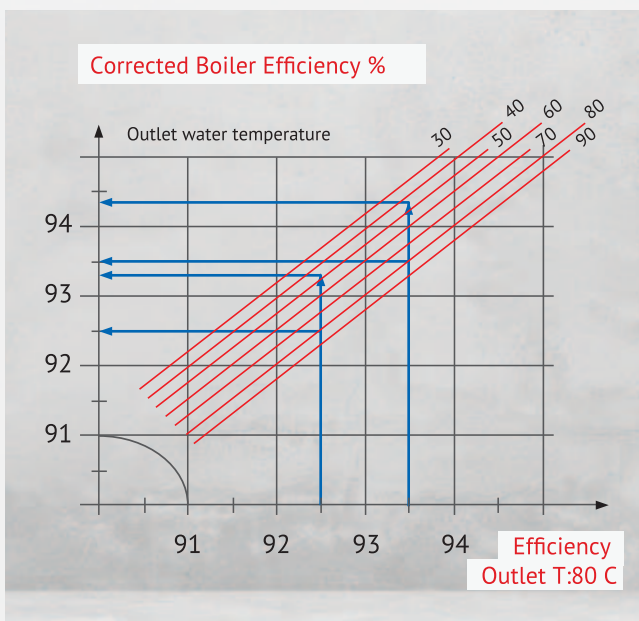
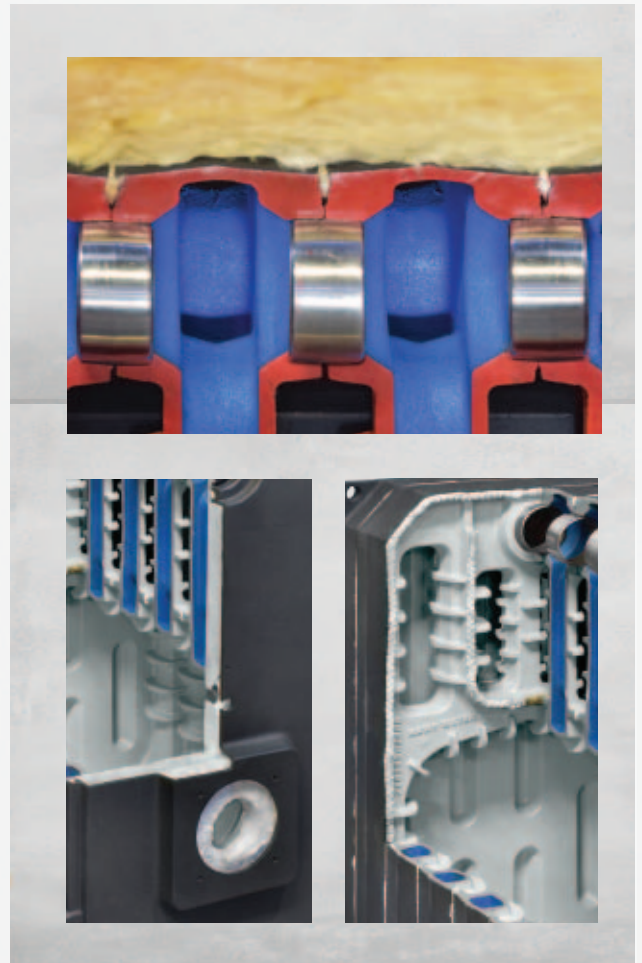
Triple Insulation System

The triple insulation system prevents smoke leakage and heat losses, increasing boiler efficiency.

- Cast iron body insulation:
100 mm thick high density glass wool covering the cast iron body.
- Combustion chamber door insulation:
30 mm ceramic fiber in addition to 100 mm glass wool.
- Inter-element insulation:
Refractory cords fitted between elements.

Easy Maintenance

The Optimajor is designed with a hinged door that pivots left and right allowing complete access to the entire boiler body which makes cleaning the boiler an easy task.



Low Temperature

Thanks to the condensation resistant SAINT ROCH cast iron, the Optimajor can operate at low and sliding temperatures.

90.6-91.6% Efficiency

The Optimajor has 90.6-91.6 % efficiency at normal load (100%/70C).

Hypoeutectic Grey Cast Iron With Flake Graphite

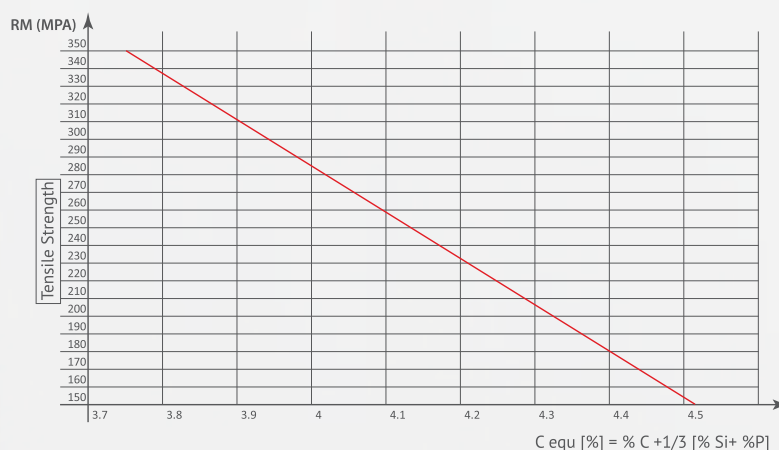
The **SAINT ROCH** cast iron makes the ideal compromise between tensile strength and brinell hardness. It provides optimal heat storage and transfer with its fine and regular graphite repartition.



Flake Graphite

• Low Phosphorus content

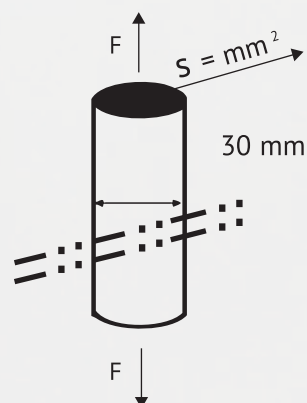
- Excellent moulding capacity.
- Less production of steatite (fragility of the cast-iron)
- Excellent heat transmission
- Water corrosion resistant (Pearlit structure)
- High mechanical strength
- Excellent thermal shock resistance



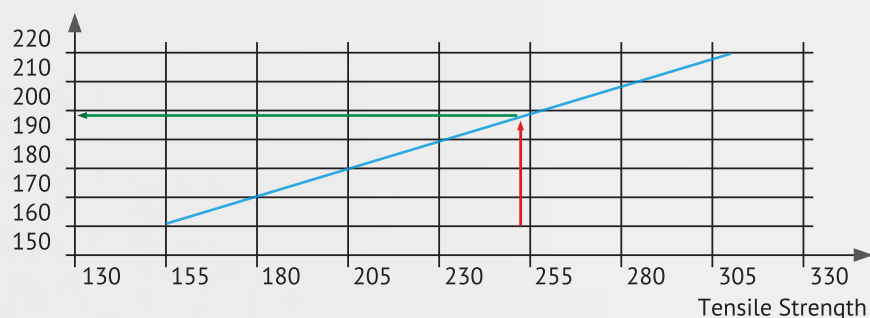
Tensile Strength $\sigma_t = F/S$

	σ_t	σ_t
GG 20	20 kg/mm ²	196 N/mm ²
GG 25	25 kg/mm ²	245 N/mm ²
Saint Roch	24,36 kg/mm ²	238,6 N/mm ²

Higher cast iron thickness
The higher "S" the higher "F"



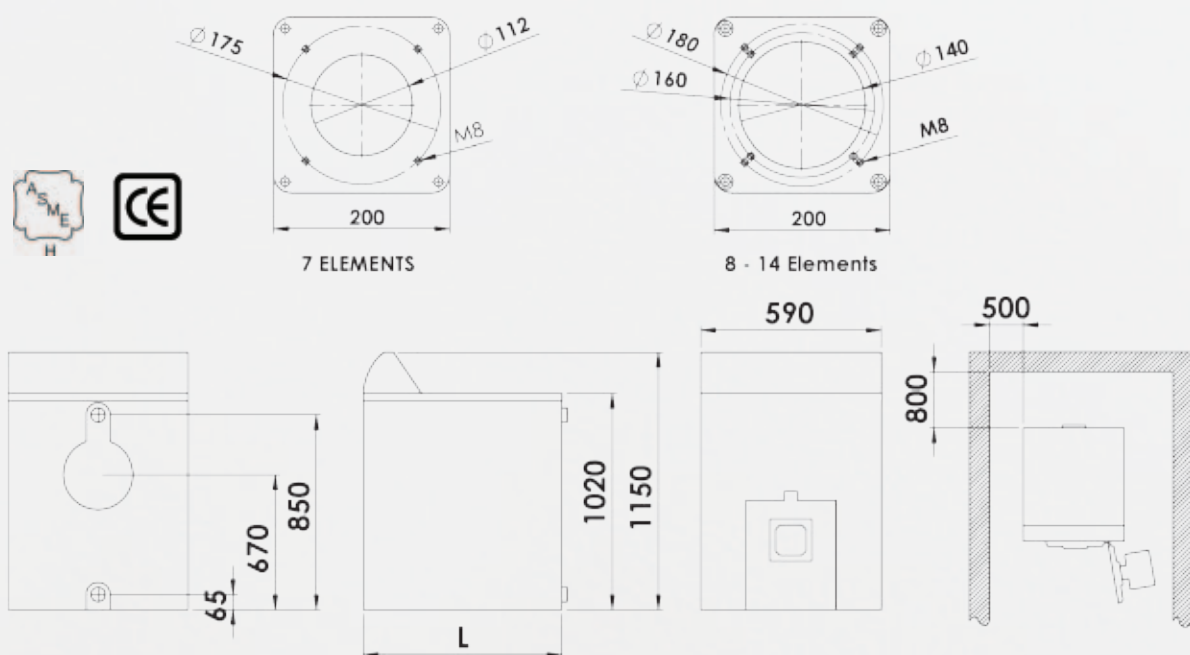
Hb (Brinell hardness)



Technical Data

Model		7	8	9	10	11	12	13	14
Heat output CE 92/42	KW	92.40	108.20	124.00	139.70	155.60	171.50	187.50	203.50
Input power	KW	101.90	119.00	132.20	153.30	170.50	187.70	204.90	222.10
Number of elements		7	8	9	10	11	12	13	14
Gas	Flowing fume mass	Kg/h	155	180	206	232	258	310	336
	Fume volume	m ³ /h	212	251	283	317	353	425	461
	CO2 percentage	%	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Oil	Flowing fume mass	Kg/h	154	181	209	232	259	313	340
	Fume volume	m ³ /h	213	249	285	312	348	420	456
	CO2 percentage	%	13.2	13.1	13	13.2	13.3	13.4	13.3
Fume temperature	°c	208	211	208	202	208	206	204	202
Fume circuit volume	L	58.5	67.3	76.1	84.9	93.7	102.5	111.3	120.1
Combustion chamber length	mm	618	721	824	927	1030	1133	1236	1339
Combustion chamber diameter	mm	420*370	420*370	420*370	420*370	420*370	420*370	420*370	420*370
Necessary draw	mbar	0.20	0.25	0.32	0.41	0.52	0.65	0.80	0.97
Fume resistance	mbar	0.15	0.20	0.27	0.36	0.47	0.60	0.75	0.92
Efficiency at 30 % charge 50°C	%	91.3	91.9	92.2	92.5	92.7	93.2	93.6	93.7
Efficiency at 100 % charge 70°C	%	90.6	90.9	91	91.1	91.3	91.4	91.5	91.6
Nominal water flow at Pn ΔT 15°	m ³ /h	3.97	4.65	5.33	6.01	6.69	7.37	8.05	8.73
Water capacity	L	55.0	62.5	70.0	77.5	85.0	92.5	100.0	107.5
Maximum working pressure	Bar	6	6	6	6	6	6	6	6
Working temperature	°c	90	90	90	90	90	90	90	90
Ø Flue outlet	mm	200	200	200	200	200	200	200	200
Supply Ø	"G	2	2	2	2	2	2	2	2
return Ø	"G	2	2	2	2	2	2	2	2
Drain	"G	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Boiler body weight	Kg	445	495	545	595	645	695	745	795

MODEL	7	8	9	10	11	12	13	14
L (mm)	840	940	1040	1140	1240	1340	1440	1540





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