



COMMODORE

**CAST IRON BOILER
OIL & GAS FIRED**

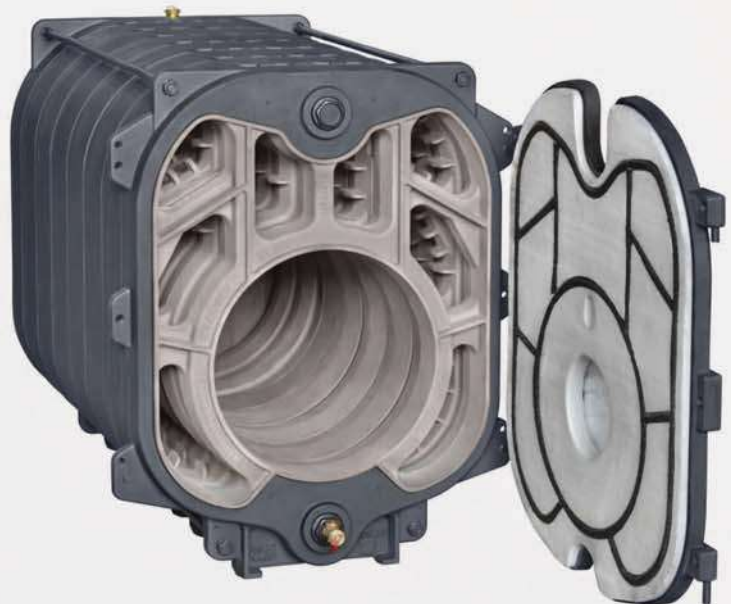
**Rated Output:
162 KW - 432KW**



 **Saint Roch**

- **SAINT ROCH**
Hypoeutectic grey
cast iron
- **10 model range from:**
162 Kw - 432 Kw
- **92 - 93 % Efficiency**
- **Operates with forced
draught oil or gas burners.**
- **Resistant
to condensation**
- **Operates at low or sliding
temperatures**
- **6 Bar working
pressure**
- **Refractory cord
between elements**
- **Ideal for collective
applications (Ecogroupage)**
- **10 year guarantee**
- **Economic/energy saving
eco-friendly**
- **5 Pass smoke cycle**

COMMODORE



The SAINT ROCH Commodore is a 5 pass boiler that satisfies a large number of industrial and collective applications. It has a cast iron body with a round combustion chamber.

The SAINT ROCH Commodore 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.

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 it's fine and regular graphite repartition.



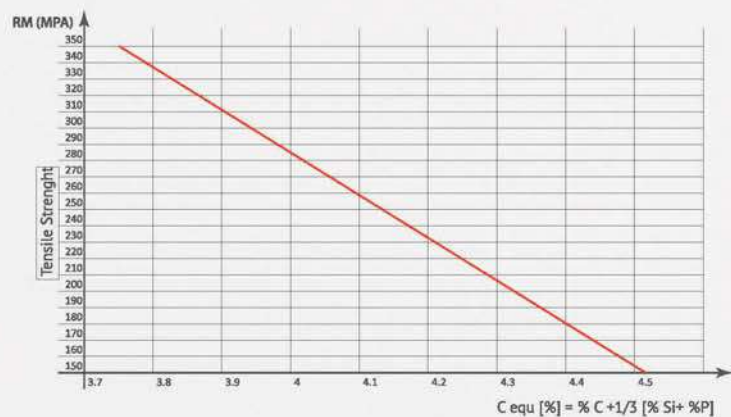
Flake Graphite

• High Si content

- Homogeneous fine flake graphite distribution.
- Pearliet-ferrite structure

• Low Phosphorus content

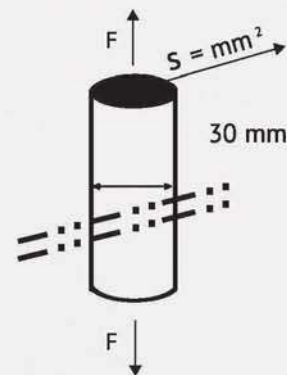
- Excellent moulding capacity.
- **Less production of steatite** (fragility of the cast-iron)
- Excellent heat transmission
- Water corrosion resistant (Pearliet structure)
- High mechanical strength
- Excellent thermal shock resistance



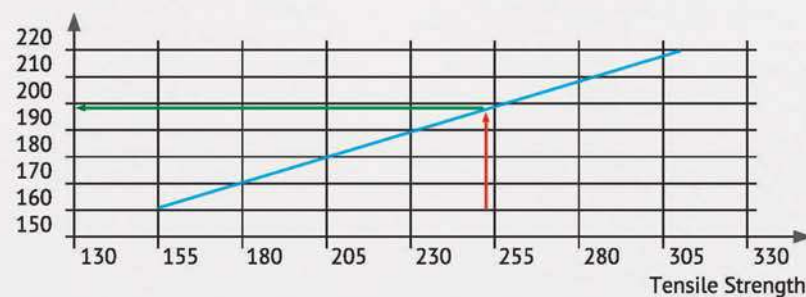
Tensile Strength $\sigma_t = F/S$

	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)



State of the Art Element Engineering

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

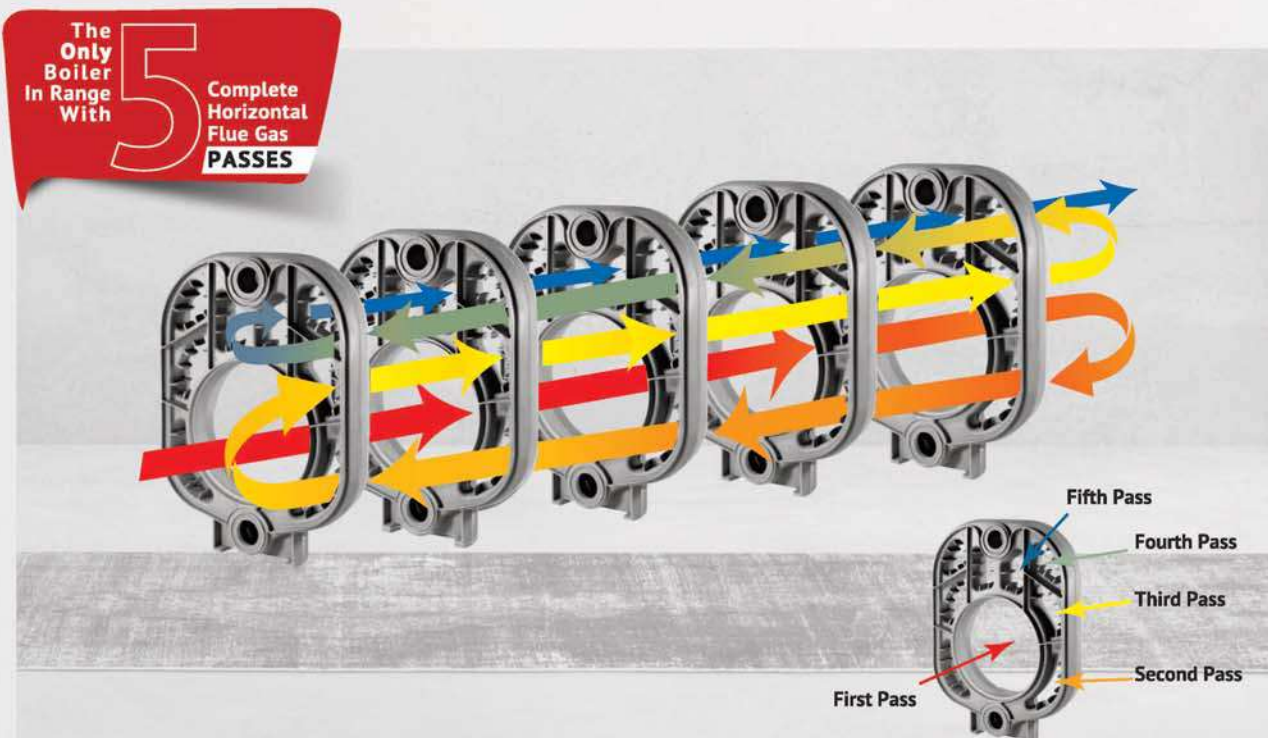
5 Pass Smoke Cycle

The elements are designed to form a smoke cycle of five complete horizontal passes along the boiler body making full use of the heat provided by the burner. This increases efficiency and lowers energy consumption.

The elements are designed with ridges on one side and grooves on the other, where a refractory cord is fitted. The refractory cord adapts to the expansion and shrinking of the heating elements.

A 25 mm cord covered with butyl rubber is fixed to the boiler's door. These refractory cords guarantee a 100 % gas tight seal.

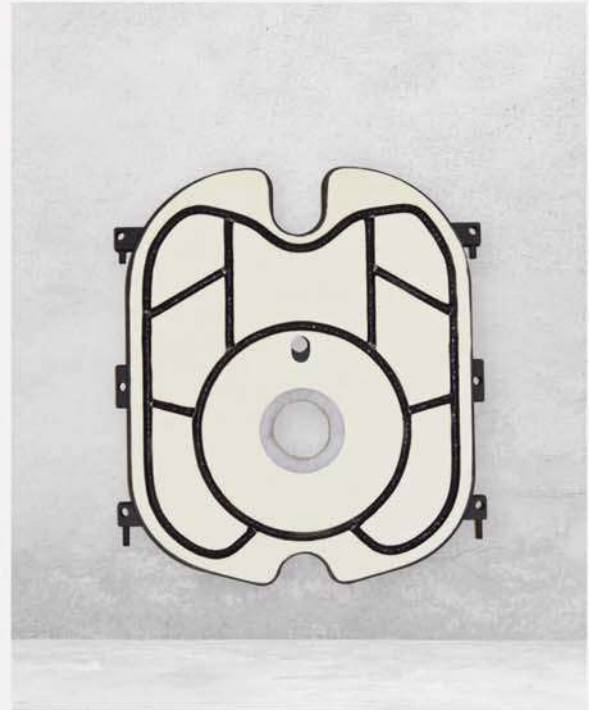
The boiler has 5 horizontal flue gas passes, ensuring full exposure of burner heat, increasing efficiency while reducing emissions.



Triple Insulation System

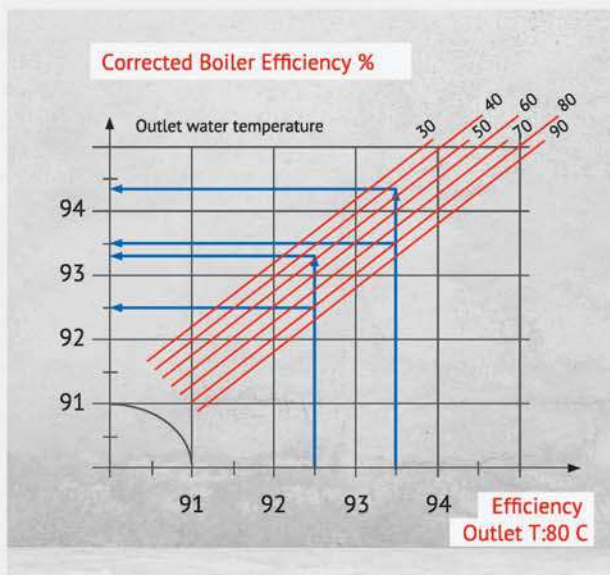
The triple insulation system prevents smoke leakage and heat losses, increasing boiler efficiency.

- 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 Commodore 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. Only horizontal cleaning is required.



Low Temperature

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

92-93 % Efficiency

The Commodore has 92-93 % efficiency at normal load (100%/70°C).

Ecogroup Cells

The collector is adapted to the individual power of each boiler and not the total power installed.
 The power fractioning leads to the separate start of each boiler according to demand.
 The load on each boiler being a maximum, the operating efficiency remains at its optimum level.
 Automatic control adapts supplied power to demand.

SAINT ROCH boilers operate at very low temperatures making it possible to produce the desired temperature without a mixing valve.

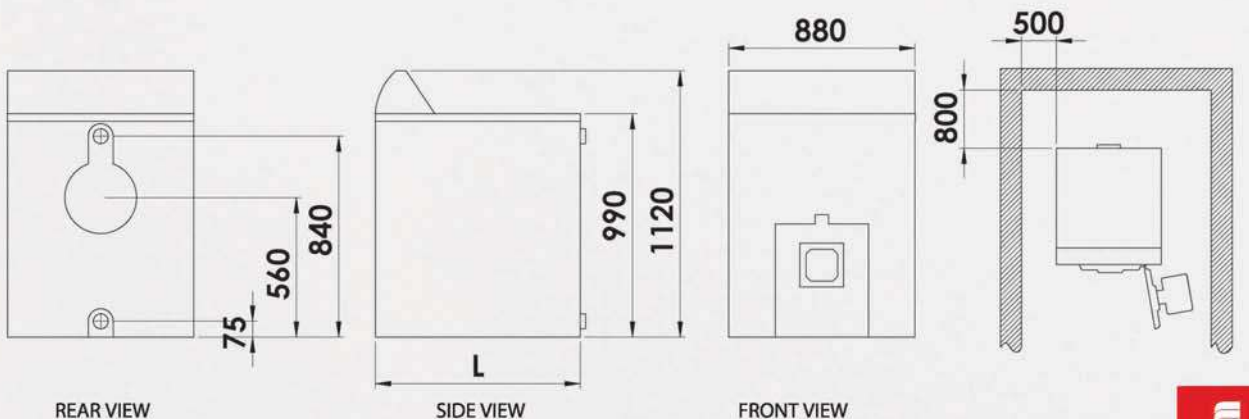
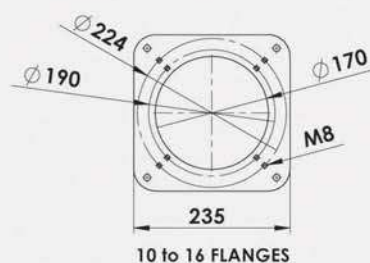
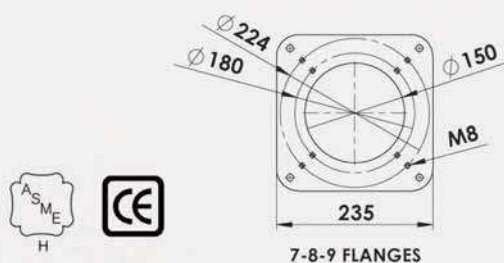


	Heat Output	2 Boiler Cell			3 Boiler Cell			4 Boiler Cell		
		Cell Output	Collector Outlet	Smoke Outlet	Cell Output	Collector Outlet	Smoke Outlet	Cell Output	Collector Outlet	Smoke Outlet
	KW	KW	Ø mm	Ø mm	KW	Ø mm	Ø mm	KW	Ø mm	Ø mm
Commodore 7	162	324	90	300	486	102	400	648	113	450
Commodore 8	204	408	102	355	612	113	450	816	139	500
Commodore 9	224	448	102	355	672	113	450	890	139	500
Commodore 10	253	506	102	400	759	127	500	1012	139	560
Commodore 11	283	566	113	400	849	139	500	1132	168	560
Commodore 12	310	620	113	450	930	139	560	1240	168	630
Commodore 13	339	678	113	450	1017	139	560	1356	168	630
Commodore 14	371	742	127	500	1113	168	550	1484	194	710
Commodore 15	395	790	127	500	1185	168	630	1580	194	710
Commodore 16	432	864	139	500	1296	168	630	1728	194	710

Technical Data

Model		7	8	9	10	11	12	13	14	15	16
Heat output	KW	162	204	224	253	283	310	339	371	395	432
Input power	KW	178	225	246	278	312	340	375	408	430	475
Number of elements		7	8	9	10	11	12	13	14	15	16
Gas	Flowing fume mass	Kg/h	270	341	373	421	473	515	568	618	719
	Fume volume	m³/h	363	466	504	574	647	693	778	831	958
	CO ₂ percentage	%	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Oil	Flowing fume mass	Kg/h	272	350	370	418	476	530	588	635	740
	Fume volume	m³/h	347	454	475	540	618	676	765	811	936
	CO ₂ percentage	%	13	12.7	13.2	13.2	13	12.7	12.6	12.7	12.7
Fume temperature	°C	177	183	179	182	184	176	184	176	163	172
Fume Circuit volume	L	195	226	258	290	322	354	386	418	450	482
Combustion chamber length	mm	789	919	1049	1179	1309	1439	1569	1699	1829	1959
Combustion chamber Diameter	mm	400	400	400	400	400	400	400	400	400	400
Necessary draw	mbar	0.33	0.36	0.35	0.34	0.33	0.35	0.35	0.33	0.30	0.30
Fume resistance	mbar	2.9	3.5	2.2	2.6	2.7	3.5	3.6	4.4	4.6	4.6
Efficiency at 30% charge 50°C	%	92.2	91.4	92.3	92.2	91.5	92.6	90.7	92	94.3	92.1
Efficiency at 100% charge 70°C	%	91	90.7	91.1	91	90.7	91.2	90.4	90.9	91.9	90.9
Nominal water flow at Pn ΔT15°	m³/h	9.3	11.7	12.8	14.5	16.2	17.8	19.4	21.3	22.6	24.8
Water capacity	L	115	130	145	160	175	190	205	220	235	250
Maximum working pressure	Bar	6	6	6	6	6	6	6	6	6	6
Working temperature	°C	90	90	90	90	90	90	90	90	90	90
Flue outlet	Mm	180	180	180	180	180	180	180	180	180	180
Supply	°G	3	3	3	3	3	3	3	3	3	3
Return	°G	3	3	3	3	3	3	3	3	3	3
Drain	°G	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Boiler body weight	kg	705	800	895	980	1060	1150	1240	1330	1420	1510

MODEL	7	8	9	10	11	12	13	14	15	16
L (mm)	1095	1225	1355	1485	1615	1745	1875	2005	2135	2265





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The manufacturer reserves the right to modify the characteristics of models described in this document without notice, to remain at the leading edge of progress.