3i

Providing reliable energy-efficient boilers

TORRENT®

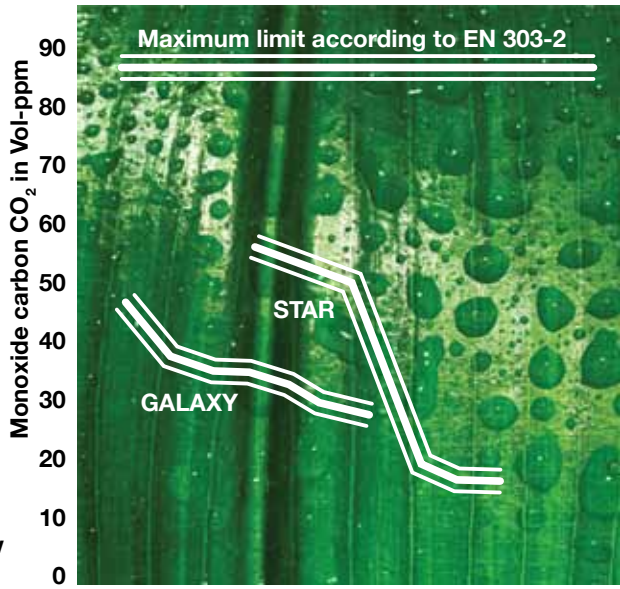
BOILERS

Offering economically viable and sustainable solutions

As the overall market sets on the path of environmental sustainability and energy costs continue to increase, industry leaders will be hard pressed to find economically viable solutions to stay ahead. Offering a sustainable product will no longer be enough but manufacturing companies must offer an economic product too.

TORRENT boilers address these issues. The boilers are not only sustainable but also economic. Designed and manufactured in Europe where environmental standards and fuel costs are highest they offer high efficiencies and a steady and reliable service that last a lifetime. TORRENT boilers strengthen your bottom line significantly by reducing energy and disposal costs altogether.

CO_2 Emissions



Monoxide carbon CO_2 in Vol-ppm

90 80 70 60 50 40 30 20 10 0

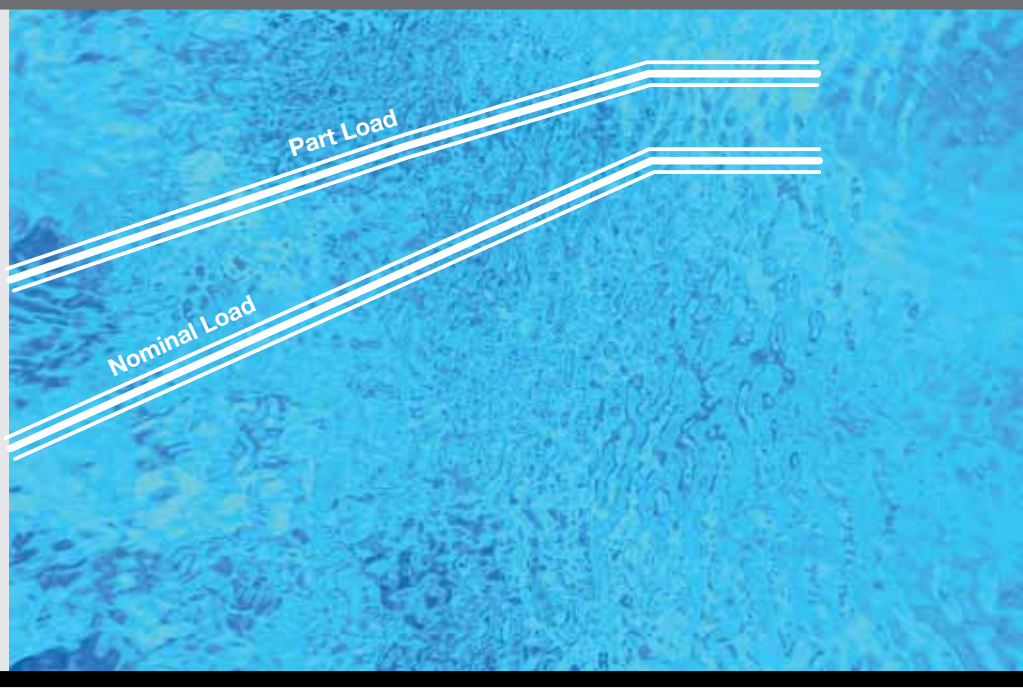
2 3 4 5 6 7 8 9 10 11

Type of boiler

The TORRENT boilers meet the environmental standards of low CO_2 emissions

Efficiency requirements for hot water boilers Reference to EN 303.02

The part load and nominal load in relation to the boiler efficiency and heat output level



Boiler Efficiency in [%]

90 89 88 87 86 85 84 83 82 81

10 100 1000

Heat Output Pn in [kW]

Designed and produced in Europe, 3i offers:

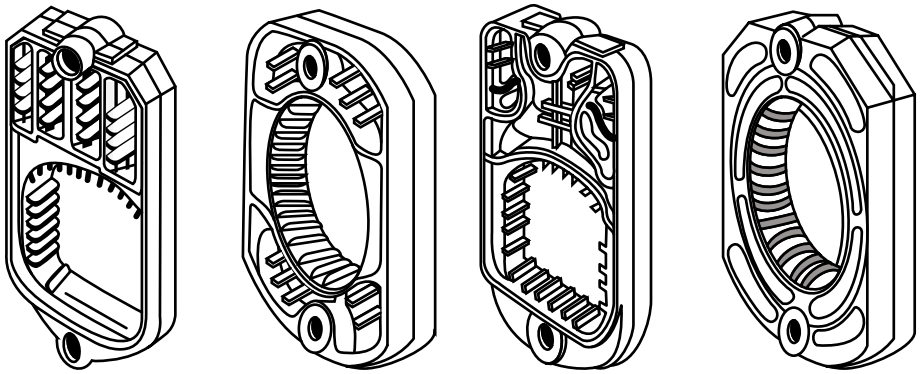
A complete series of boilers with four specially designed cast iron elements available in five models

Each of these models are designed for the complete exploitation of heat input with the maximum energy efficiency of each type of boiler.

The high quality of the the cast iron boilers is maintained and controlled by experienced technicians at our foundry. The casting is carried out in moulds of high accuracy which are produced in a modern, automatic furan resins unit, achieving correct geometry and excellent casting surfaces. The boiler wall thickness and quality of the cast iron is controlled ensuring strength against fatigue and long life.

The TORRENT cast iron elements provide the ability to assemble a boiler fast and easy. They are a perfect match with all major burner types and the increase in cast iron elements increase the power rating of a boiler.

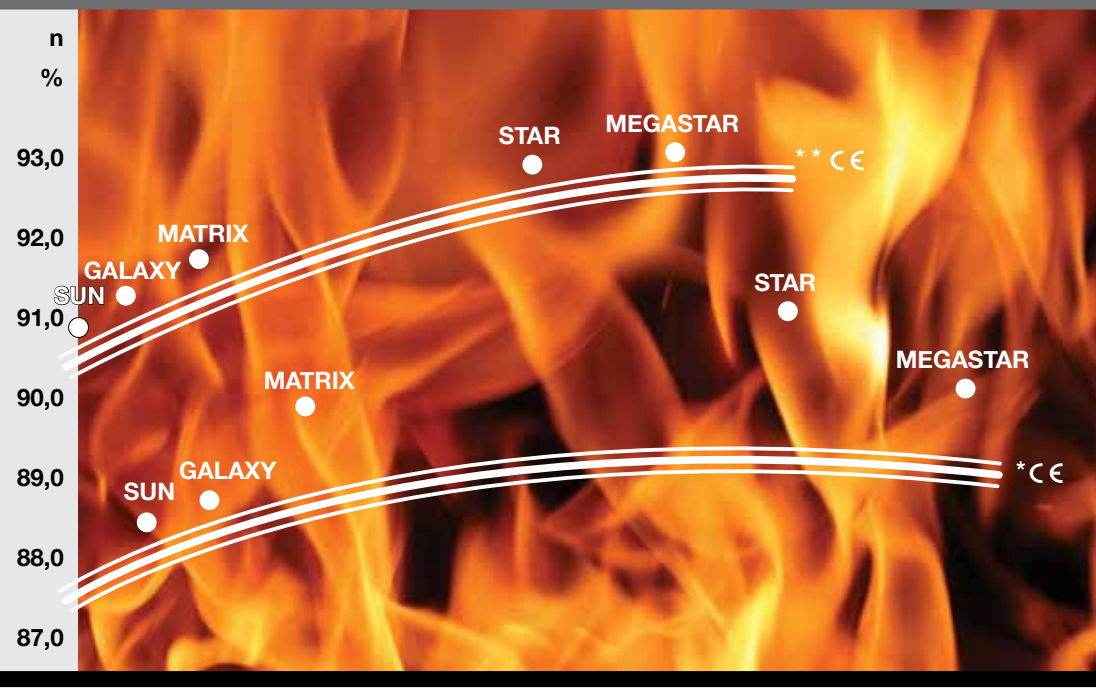
The cast iron quality GG20 is in accordance with DIN1691 and each cast iron element has three complete finned flue gas passes providing extensive heating surfaces.



Sun | **Galaxy** | **Matrix** | **Star / Mega Star**

TORRENT Boiler Efficiency

The efficiency of each TORRENT boiler in relation to the output



A new generation of high performance boilers

All TORRENT assembled boilers and cast iron elements are tested according to the European Standards EN 303-1

Superior Thermal Efficiency
The three complete finned flue gas pass elements allow the burner heat to circulate repeatedly through the cast iron boiler increasing efficiency.

Fins
The design of the fins increase the heating surface when the boiler is operating at lower temperatures. The fins also work as a barrier to corrosion. These two aspects increase the efficiency of the boilers as fewer burner firings are required.

Cast Iron Elements
These enable the boiler to be easily installed and assembled on location, be easily repaired and maintained, and provide the flexibility to increase output by increasing the elements.

Maintenance
The combustion chamber door is easy to open right or left and facilitates access for cleaning and maintenance.

DIN and EN Standards

The TORRENT cast iron boilers are designed and tested for endurance and thermal efficiency according to the German DIN Standards and European EN Standards.

CE

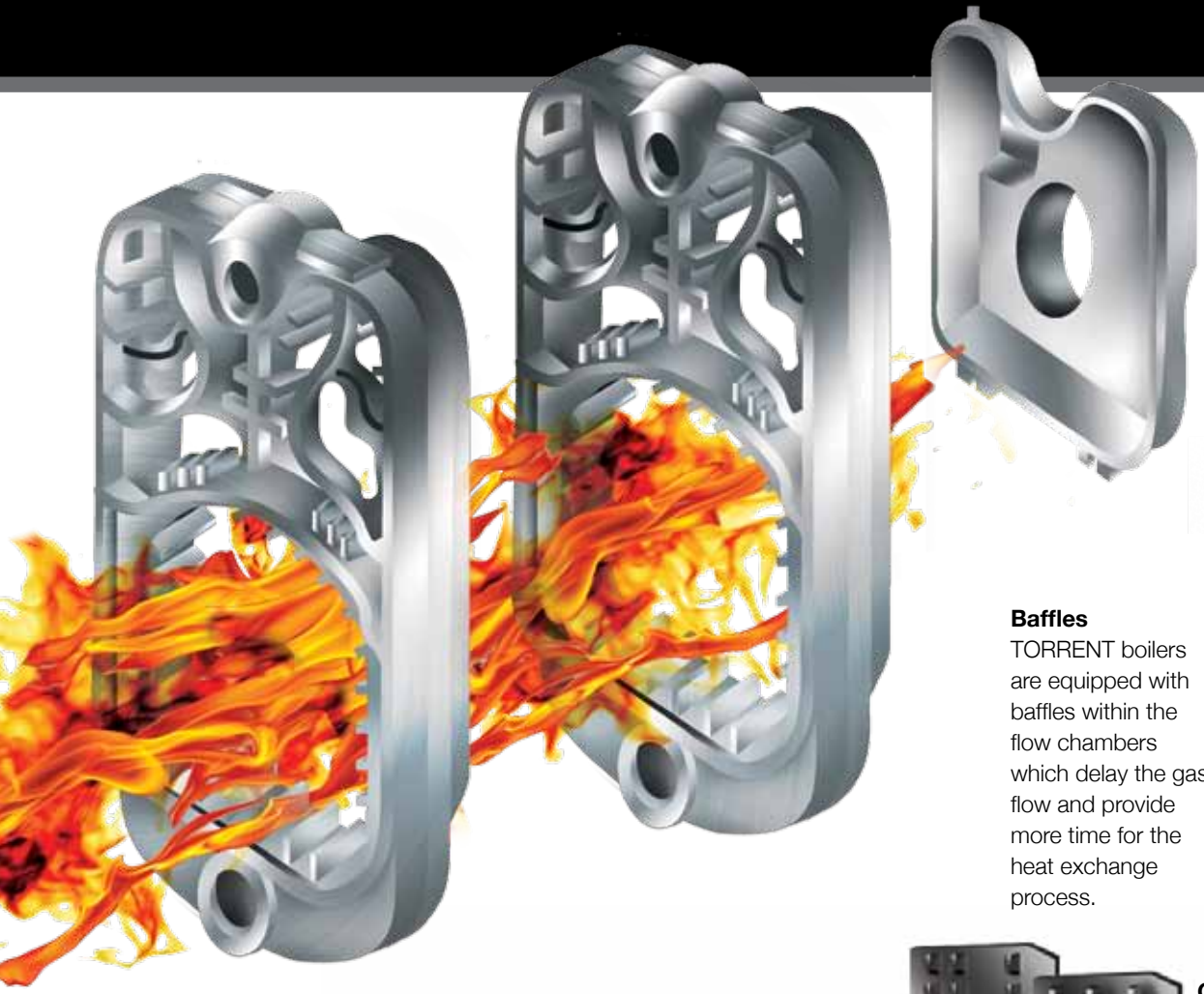
All TORRENTS are certified according to the 92/42 EC Directive and hold the CE quality symbol for oil firing.

The efficiency of all boilers meets the requirements of the European Standards EN 304, EN 303-1, EN 303-2 and EN 303-3.

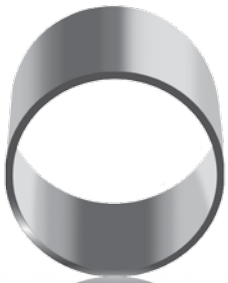
Emissions of pollutants and flue gases quality satisfy all European environmental Regulations and are in accordance with the EN 303-2 and EN 267 standards (LOW-NOX).

All the cast iron elements are hydraulically tested at 10 bar pressure with cold water before machining.

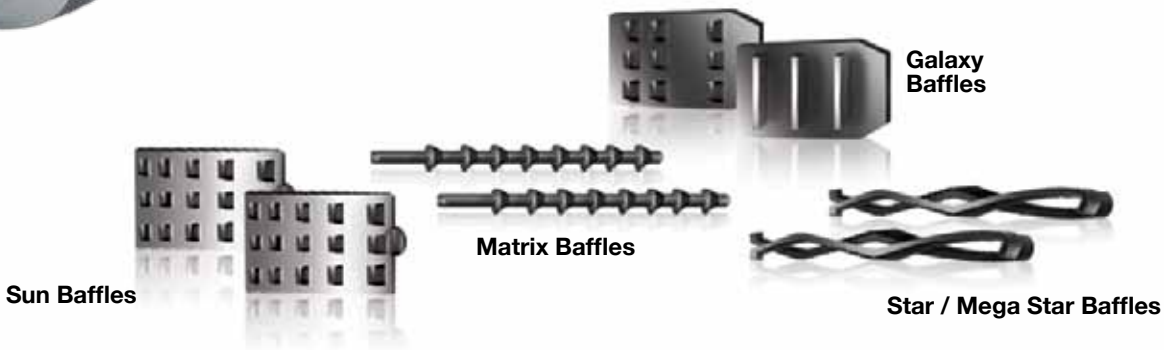
Cast iron quality is in accordance with DIN1691.



Baffles
TORRENT boilers are equipped with baffles within the flow chambers which delay the gas flow and provide more time for the heat exchange process.

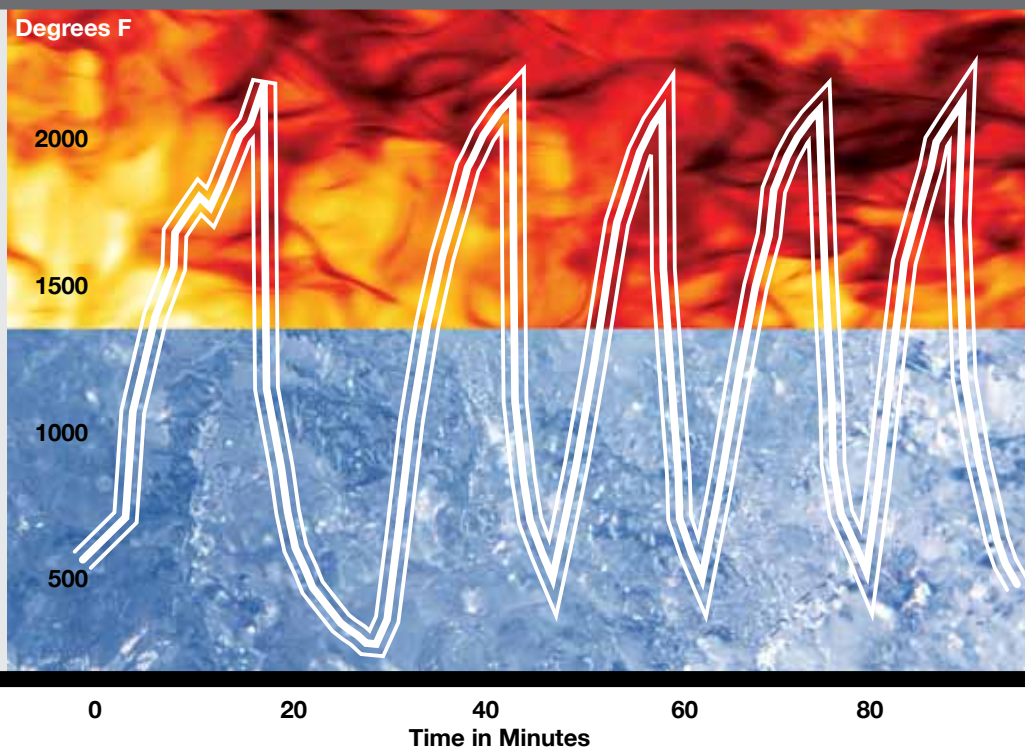


Nipples
Cast iron push nipples are used to avoid leakage and provide a perfect gas tight leak free seal.



Thermal Shock Resistance

Thermal shock is a usual occurrence in boiler operation. It takes place when high temperature cast iron surfaces come into contact with lower temperature return water. This rapid and extreme temperature fluctuation creates a stress that can crack the cast iron. With conventional boilers, this results in cracked sections that need to be replaced. TORRENT boilers can withstand thermal shock because they are designed and manufactured with a cast iron quality that has flexible qualities and very high resistance to mechanical damage.



The complete series of boilers with four specially designed cast iron elements available in five models

Sun Series (25-81 KW)

Galaxy Series (39-126 KW)

Matrix Series (150-338 KW)

Operational Characteristics

Type	Number of Elements	Nominal Power		Input Power		Combustion chamber pressure mmH_2O	Water content lt	Total weight (Dry) kg
		kcal/h	kW	kcal/h	kW			
SUN								
SND 2	2	21.686	25,2	24.755	28,8	2,0	9,0	112
SND 3	3	31.500	36,6	35.836	41,7	4,0	12,3	141
SND 4	4	41.258	48,0	46.777	54,4	6,0	16,0	170
SND 5	5	51.200	59,5	58.115	67,6	6,5	19,5	199
SND 6	6	61.100	71,0	69.431	80,7	7,5	23,0	226
SND 7	7	69.825	81,2	79.436	92,4	8,8	25,5	256
GALAXY								
GLX 3	3	38.467	44,8	43.673	50,8	4,5	17	172
GLX 4	4	50.498	58,7	57.303	66,6	6,5	23	212
GLX 5	5	62.485	72,7	70.998	82,6	6,7	29	249
GLX 6	6	74.591	86,7	84.024	97,7	6,7	35	290
GLX 7	7	91.178	106,0	103.014	119,8	8,2	41	330
GLX 8	8	107.902	125,5	121.049	140,8	12,7	47	369
MATRIX								
MRX – 5	5	129.403	150,5	144.423	168,0	13	67	529
MRX – 6	6	165.013	191,9	184.578	214,6	21	80	610
MRX – 7	7	198.283	230,6	222.290	258,5	27	93	683
MRX – 8	8	229.496	266,9	257.282	299,2	28	106	760
MRX – 9	9	260.019	302,4	291.501	339,0	29	119	834
MRX – 10	10	290.046	337,3	325.164	378,2	29	132	907

Star Series (217-500 KW)

Mega Star Series (500-1400 KW)

Operational Characteristics

Type	Number of Elements	Nominal Power		Input Power		Combustion chamber pressure mmH_2O	Water content lt	Total weight (Dry) kg
		kcal/h	kW	kcal/h	kW			
STAR								
STAR 6	6	187.000	217,5	208.892	242,9	7,9	73	726
STAR 7	7	238.000	276,9	262.925	305,8	12,2	85	832
STAR 8	8	289.000	336,0	320.152	372,3	17,1	97	931
STAR 9	9	345.000	401,2	379.036	440,8	23,2	109	1029
STAR 10	10	390.000	453,5	430.801	501,0	29,2	121	1127
STAR 11	11	430.000	500,0	473.719	550,9	35,7	138	1225
MEGA STAR								
MS 7	7	431.300	501,6	482.424	561,1	8	305	2015
MS 8	8	515.900	600,0	573.222	666,7	15	350	2260
MS 9	9	593.300	690,0	657.761	765,0	30	395	2510
MS 10	10	670.700	780,0	742.746	863,8	33	440	2715
MS 11	11	748.100	870,0	826.630	961,4	42	485	2960
MS 12	12	825.500	960,0	911.148	1.059,7	51	530	3210
MS 13	13	911.400	1.060,0	1.004.850	1.168,6	60	575	3450
MS 14	14	997.400	1.160,0	1.099.669	1.278,9	69	620	3695
MS 15	15	1.100.602	1.280,0	1.213.413	1.411,2	80	665	3940
MS 16	16	1.203.783	1.400,0	1.327.170	1.543,5	93	710	4185

Innovation

First in Innovation

3i has obtained the ability to produce specialized products due to its continuous research and development program. It is because of this effort that 3i is now able to produce boilers that are not only sustainable but also economic, highly efficient and reliable. Don't wait any longer. Join the world of 3i today and rest easy.

Company details

The 3i factory is located 68 kilometers north of Athens, on a property of 60,000m and a covered area of 30,000m .
Onsite, we have advanced testing equipment and continuous quality control that ensures top performance of all our products.

3i International Innovative Industries S.A.

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More products ranges from 3i

ISOPIPE® TC

The closed cell elastomeric rubber insulation is a lasting solution against mould. It has outstanding thermal protection and is condensation resistant.

ISOPIPE® HT

The closed cell synthetic rubber solution for high temperatures. Environmentally friendly with limited smoke and toxic emissions in the case of fire.

ISOTECH®

ISOTECH Pre-Insulated Pipes, Copper-Cu, Polyethylene-PE, Multilayer-PEX-AL-PEX is the ideal solution for cooling and thermo-plumbing works.

A wide range of accesories are also available from 3i

For all the technical specifications on the TORRENT range, refer to the TORRENT Technical Brochure.