



*Lamborghini*  
CALORECLIMA



Wall hung condensing boilers with instantaneous domestic hot water production

## Raggio

# RAGGIO

## TECHNOLOGY AND FUNCTIONALITY LIKE UNIQUE THINKING



**The RAGGIO exclusive lines** radically remodel the aesthetic concept offered so far by using crystal and by the revolutionary use of geometric shapes.

A multicolour trapezoidal LED environment, set in the frontal, allows you to perceive the status and operating modes of the boiler, also on a visual chromatic level.

**The large 7" colour full touch screen display** incorporated in the front surface of the black tempered glass provides the user with total remote interaction with the product, also thanks to the addition of the **CONNECT** remote control that is managed from an iOS and Android App.

**Designed to meet the "robust" product requests** in every aspect: **primary high-pass heat exchanger**, secondary DHW heat exchanger enhanced with **20 plates**, high head circulator, new electronic control.

All these elements are designed in order to also **guarantee maximum long-term efficiency and reliability**, and not only, replacing old generators in particularly dirty systems: ideal for "hassle-free" replacement.

## THE RANGE

models operating with natural gas, LPG and propane air

### mod. 28 C

COMBINED (16.1 L/MIN AT  $\Delta T$  25°C)

### mod. 34 C

COMBINED (19.5 L/MIN AT  $\Delta T$  25°C)

## SILENCE...RAGGIO IS COMING: ONLY 45 dB\*

The detailed design of **RAGGIO** has made it possible to achieve **significant values in terms of silence and acoustic comfort**, thereby making it almost difficult to distinguish the background noise of a home from the noise produced by the boiler during normal operation.

**The on/off transistors of the boiler have also been optimised** according to acoustic comfort so that the user will no longer have to worry about understanding whether the boiler is on or off by its noise as in old-generation boilers.

(\*) mod. 28 kW

# BOILER CONTROL

## CONTROL BOARD AND FUNCTIONS

The innovative **RAGGIO** control and management electronics are at the top of the category. The **large 7" colour full touch screen graphic display** enables real-time display of the operation information thanks to the **simple and intuitive graphic display**.

By simply touching the display, it is possible to set the heating and DHW temperature set points.

Thanks to the contextual guide, **RAGGIO** informs the user directly of the possible causes of malfunction and, at the same time, provides the technician with indications on possible solutions to solve the problem.

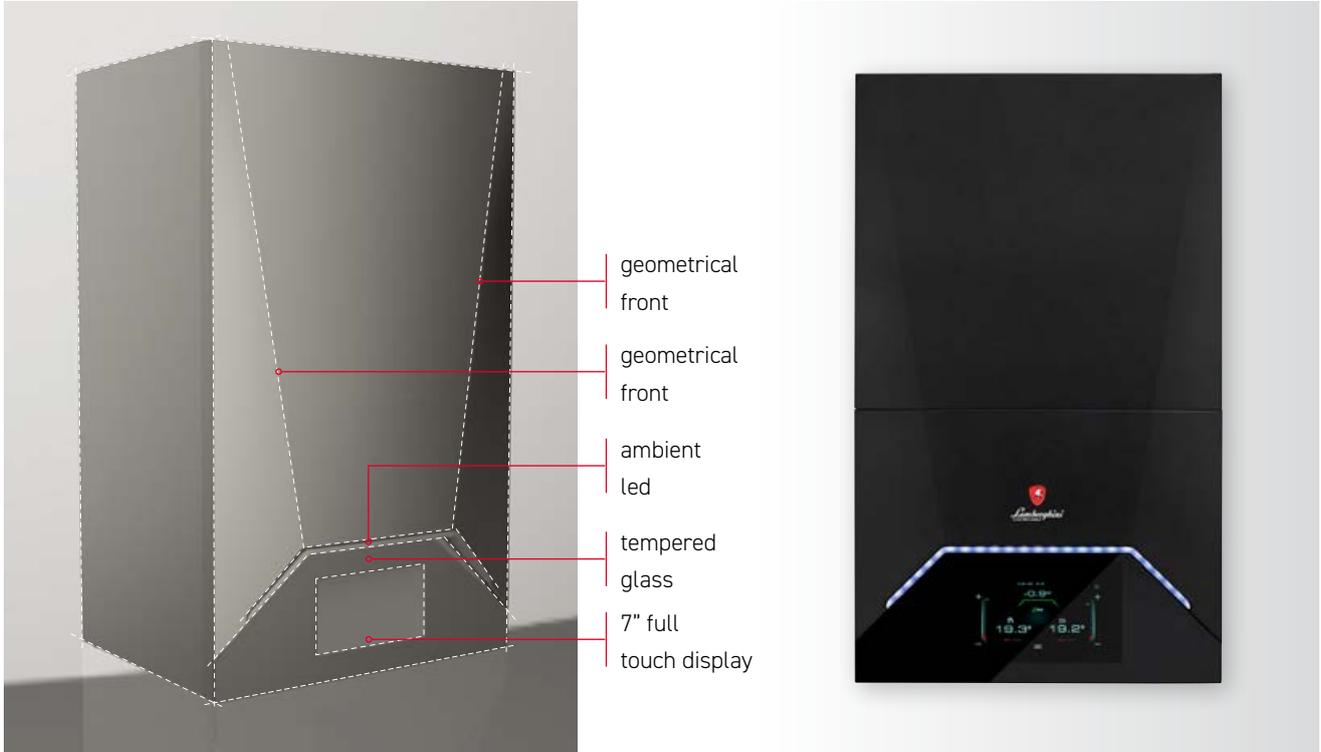
The system pressure is also no longer a problem since, thanks to the **electro-charging function** semi-automatic system, a simple "touch" is all it takes for the boiler to automatically restore the appropriate pressure without requiring manual intervention by the user.



**KEY 1** User menu **2** Connection status **3** Pressure status **4** System pressure **5** ECO mode on/off **6** Date and time **7** Flame present in DHW mode **8** Flame present in Heating mode **9** DHW temperature **10** Heating temperature **11** Increase DHW temperature **12** Increase Heating temperature **13** Decrease DHW temperature **14** Decrease Heating temperature **15** Boiler on/off selection **16** Heating on/off selection **17** Help

# TOP AESTHETICS

## EXCLUSIVE DESIGN (PATENTED)



# TOP INNOVATION

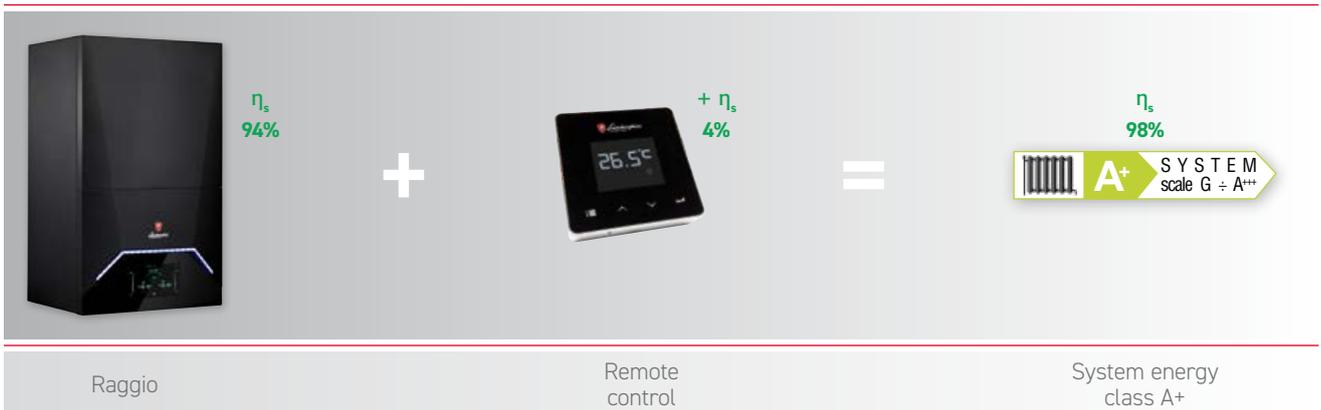


Developing **sustainable and low environmental impact solutions** that counteract global warming has now become a reality! RAGGIO is already able to adjust itself autonomously (plug-in) and function correctly in total safety with mixtures of natural gas enriched with hydrogen already provided for distribution in Europe (\*)

(\*) mixtures of Natural Gas/Hydrogen 80%/20%

# TOP EFFICIENCY

RAGGIO is not only aesthetically appealing but also reaches **room heating energy efficiency values** among the highest in the boiler category:  $\eta_s$  94%, and with the Wi-Fi CONNECT remote control timer, it reaches an **A+** system energy class (scale from G to A+++).



# CHARACTERISTICS

## IDENTITY CARD

- > **Aesthetics** with exclusive lines (Patent) that radically remodel the aesthetic concept by using tempered crystal and having geometrical shapes
- > Wide range of optional **accessories available: kit remote control** Wi-Fi CONNECT controlled via App, **hydraulic connection** kit (5 pipes, 4 valves), **fitting cover** casing
- > **Boiler** with extra thick **stainless steel** primary exchanger, with **large passes** guaranteeing duration and reduced maintenance
- > **High head, enhanced modulating heating circulator** on all models also able to adapt to particularly resistant systems
- > **Standard semi-automatic system electro-charging**
- > **Enhanced DHW exchanger with high number of plates** (20), particularly immune to clogging and able to maintain constant DHW production capacity over time
- >  **A+ SYSTEM**: being combined with the **CONNECT** modulating remote control, and the outdoor temperature reading directly from the internet, it reaches the maximum energy efficiency A+ (scale from G to A+++)
- > It easily adapts to the load conditions thanks to the broad **modulating range** that can reach **1:12** (mod. 34C, 1:10 mod. 28C)
- > **MC<sup>2</sup>**: Multi Combustion Control, new combustion system with gas-adaptive patented technology for better adaptability of use to the varying gas mains conditions
- > **7" colour touch-screen graphic display**
- > Prompt display of the operation status thanks to the front **multicolour LED**
- > **Particularly suitable for operation in flues requiring "heavy duty" pipes** thanks operation with 50mm diameter flue outlets
- > **Designed to simplify and make normal maintenance and cleaning steps easier** thanks to easy access to the internal parts
- > **EASY WIRING: simplified electric wiring** that does not require removing the boiler's casing thanks to **direct access to the external connection terminal board** available on the lower part of the device
- > **Range Rated certified** to adjust the generated power to the system's needs by increasing the efficiency of the system and preserving the mechanics of the machine



Exclusive Lamborghini CaloreClima "Thermobalance"™ thermal unit



Operating with natural gas mixtures enriched with hydrogen already provided for distribution in Europe (\*)  
 (\*) mixtures of Natural Gas/ Hydrogen 80%/20%



simplified electric wiring with direct access to the external connection terminal board available on the lower part of the device



Modulating ratio between Pmax and Pmin



**F.P.S:** Flue gas Protection System. The flue gas check valve offers **easy connection to pressurised collective flue systems** (e.g. in restructuring), in accordance with regulation UNI 7129



**MC<sup>2</sup>:** Multi Combustion Control, new combustion system with patented "Gas-adaptive" technology



This equipment is designed specifically to offer **particularly simple** installation and maintenance



Operation in a **partially protected place** with a minimum temperature of **-5°C, as standard**



Appliance can be combined with **preheating** systems for the **domestic hot water**



Device operates with **climatic control** and sliding system temperature (optional external temperature probe)



Remote control of boiler parameters via remote control



You can **delay burner ignition** by starting it up only when domestic hot water is actually drawn



**M.G.R:** Methane LPG Propane-air Ready, with a simple configuration, the boiler can run on methane or LPG without using additional conversion kits



It reaches one of the highest seasonal space heating efficiencies in its category: **η<sub>s</sub> 94%**



**7.5 m increased head circulation pump.** Enables supply of all the necessary power also to systems with high pressure drops



Approved for operation with **50mm diameter flue gas discharge**



Stainless steel **high performance mono-thermal** primary exchanger



**Enhanced 20-plate DHW heat exchanger.** Reduced clogging over time, also with particularly hard water



Appliance certified as "range rated" according to **EN 15502**

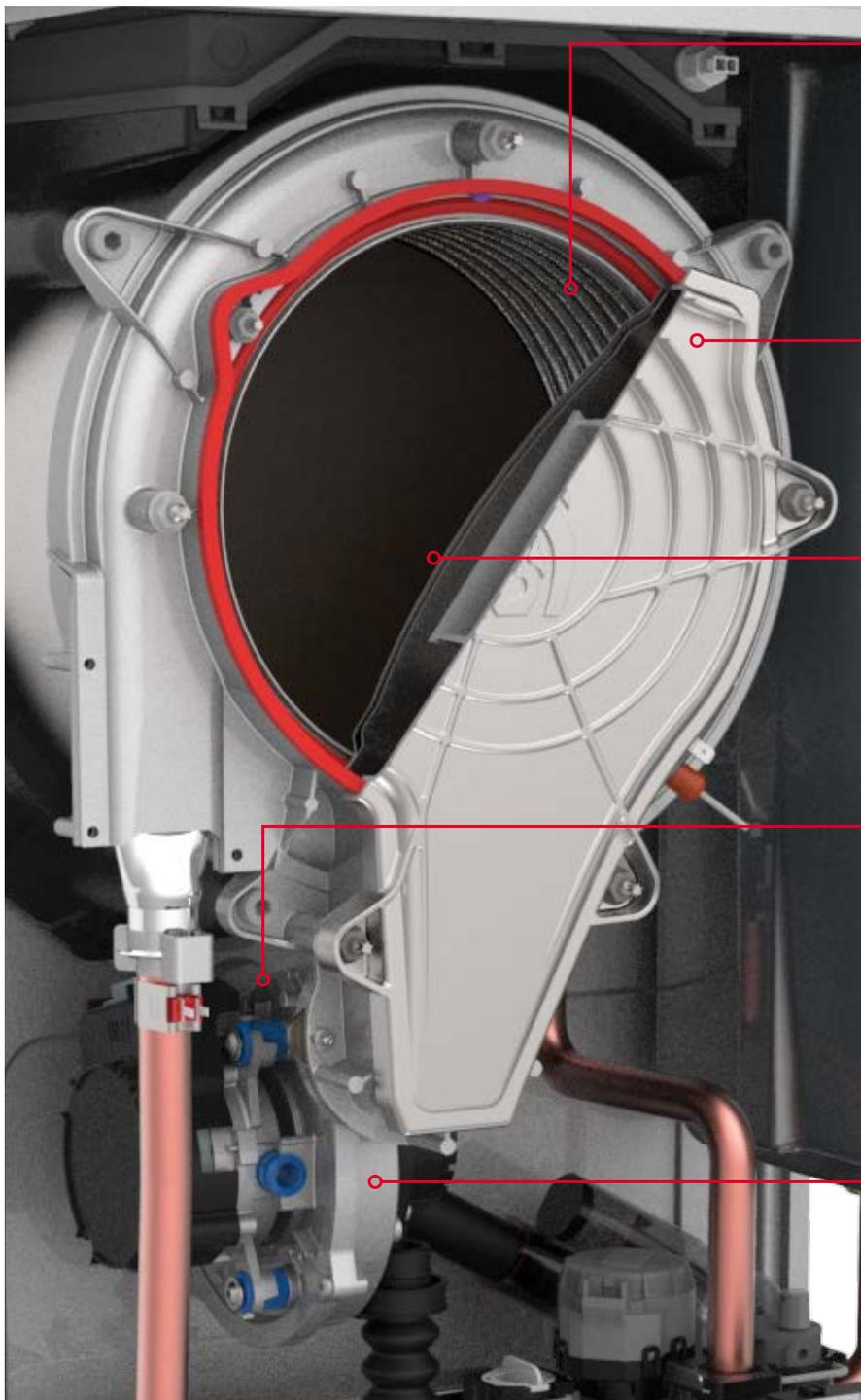
# RAGGIO

## VIEW INSIDE

### THERMOBALANCE™ THERMAL UNIT IN ITS 5 ELEMENTS



The **RAGGIO** combustion chamber and heat exchanger maximise the functional benefits and construction sturdiness. The single circuit design ensures that any system air bubbles do not remain trapped in the heat exchanger and facilitates chemical washing as much as possible.



#### EXCHANGER **1**

Stainless **steel high-pass single-circuit**, exchanger, clog-resistant and easy to clean

#### BURNER HOLDER **2**

**Self-cooling** burner holder without insulating panel

#### BURNER **3**

Exclusive **special stainless steel semi-spherical burner** with longlife gasket

#### GAS ADAPTIVE **4**

Intelligent "**Gas-adaptive**" system derived from industrial boilers, which monitors and self-stabilises combustion, based on gas + flue gas conditions

#### FAN **5**

Offset fan, to make **maintenance easier on the thermal unit without taking it down.**  
**Built-in flue gas backflow valve** for connection to C.C.S. (compliant with UNI 7129)

# CONNECT

## REMOTE CONTROL

- Remote control supplied with the A+ product kit to **manage comfort in the home also from Smartphone**
- It can manage **until 8 zones** by additional control units
- **Connection to the home Wi-Fi network** through the supplied RF/WiFi receiver
- CONNECT APP available for switching the boiler on and off and **managing home comfort** for heating/DHW via remote control from Smartphone (iOS and Android)
- **Maximisation of ambient comfort** with modulating regulation of the flow temperature through the **Ambient Climatic Compensation (ACC)** differentiated for each zone and **Outdoor Climatic Compensation (OCC)** through **outdoor temperature detected directly from the Internet** (or from an optional outdoor probe)
- **Improves ambient heating medium seasonal efficiency by +4%**
- **Weekly hourly programming in 30-minute intervals** via APP CONNECT
- **Operating mode:** Off, Holiday, Automatic, Manual
- **Three modifiable temperature levels:** Comfort, Economy, Antifrost

(\*) It's also available the code of boiler only

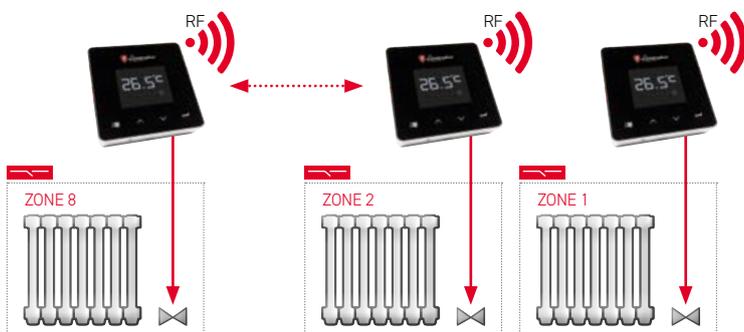


Control

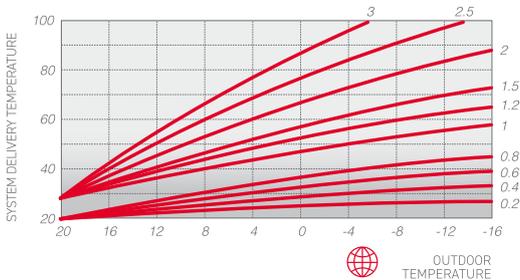


RF/Wi-Fi receiver

## MULTIZONE MANAGEMENT

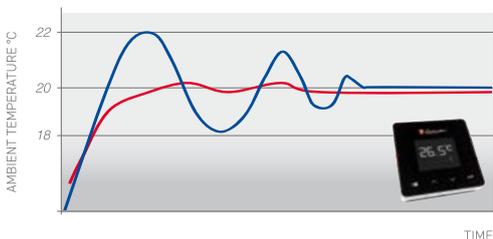


## CLIMATIC COMPENSATION



### OCC | WEB | OUTDOOR AIR CLIMATIC COMPENSATION

By reading the outdoor temperature directly from the Internet (or from the optional outdoor probe), the system can change the temperature based on the outdoor temperature measured according to the climatic curves set, thus ensuring maximum user ambient comfort as the outdoor climate conditions change.

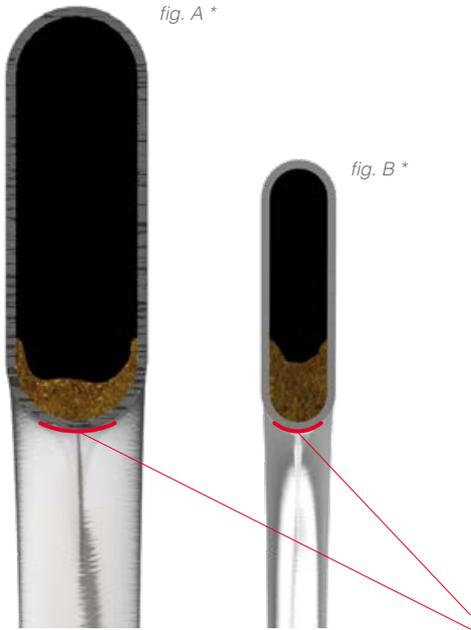


### ACC | AMBIENT CLIMATIC COMPENSATION

The modulating function of CONNECT allows the boiler's power to be modulated as the value of the set room temperature is reached. This improves the quality of comfort by eliminating heat peaks with consequent energy savings.

WITH CONNECT REMOTE CONTROL TIMER  
WITH NON-MODULATING AMBIENT THERMOSTAT

# TOP EFFICIENCY ALSO ON OLD SYSTEMS (REPLACEMENTS)



The RAGGIO (**fig. A**) thermal unit heat exchanger compared to the more classic and popular steel exchanger (**fig. B**). This shape enables the heat exchanger to work at almost maximum design efficiency, even in partially clogged conditions, whereas with the same amount of deposits and sediment (e.g. due to installation on old systems), the heat exchanger in **fig. B** tends to get clogged more quickly in the part in contact with the flame as a result of the reduced fluid flow area, where an actual barrier of deposits \* forms obstructing the heat exchange and reducing the efficiency to below nominal values.

\* Ref.: same amount (5 gr.) of scaling and deposits in heat exchanger (A) and (B), with the same pipe length section. Scale 150% of the actual measurement.

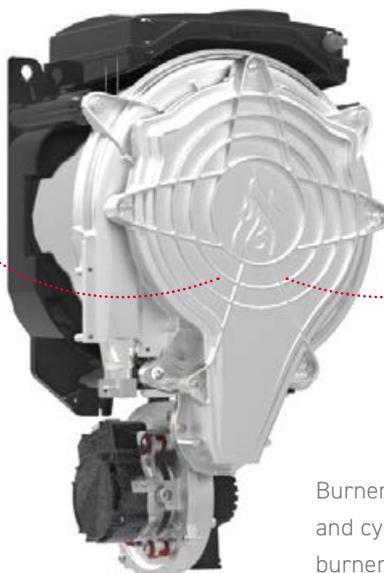
Heat exchange section with a flame

## THE MOTOR: COMBUSTION CHAMBER

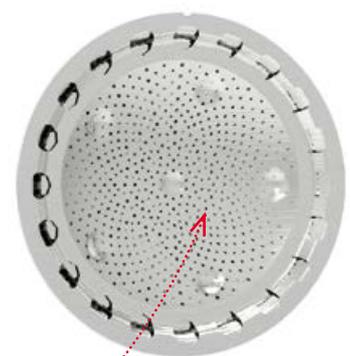
The pipe used in the RAGGIO heat exchanger is made of **stainless steel**, a material that creates an **extremely smooth surface**, thereby less affected by scaling and deposits.



Increased extra section, the smooth surface and coil section drastically reduce the percentage of deposits inside the pipe and considerably increase the service life of the heat exchanger



Burner door with insulating panel and cylindrical stainless steel burner



Fan with air-gas pre-mixing unit

# THE ENHANCED HYDRAULIC UNIT

All RAGGIO series models are equipped with an **enhanced 20-plate DHW plate heat exchanger and an enhanced heating circulator with head of 7.5 m.w.c.**



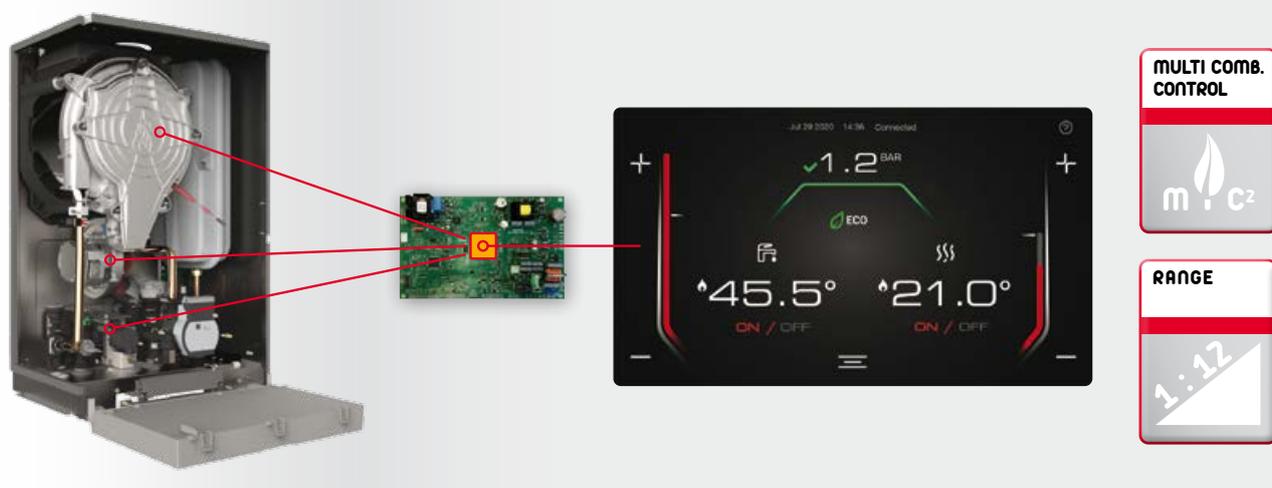
The significant increase in the pass section of the **20-plate heat exchanger** compared to a traditional one (e.g. with 14 plates) significantly **reduces clogging over time, even with particularly hard water**, significantly increasing its average service and minimising maintenance costs.

The enhanced **7.5 metre head** system circulation **pump** allows all RAGGIO models to be able to function correctly **supplying all the necessary power even in high pressure drops** (particularly large new systems or old system with scaling).

## MC<sup>2</sup>: MULTI COMBUSTION CONTROL

The electronic device controls the flame ionisation current in order to ensure **perfect combustion** according to the change in air density or gas quality. The ratio between the air/gas flow ( $\lambda$ ) and the flame ionisation signal is used to control the air-gas ratio and, therefore, combustion.

**MC<sup>2</sup>: Multi Combustion Control**, the new combustion system with **gas-adaptive** patented technology for better adaptability of use to the varying gas mains conditions (e.g. pressure fluctuations or drops).



Furthermore, the new control electronics **allow you to achieve high modulation fields** that can reach up to **1:12 with model 34C**.

This way, **RAGGIO can** easily and efficiently **adjust itself to the actual power requested by the system, avoiding annoying on/off operation** that increases operation costs and reduces the average service life of the product.

# SIMPLE ELECTRICAL CONNECTIONS

## QUICK AND SAFE OPERATIONS

The electrical connections to be performed to connect **RAGGIO** are extremely simple and easy.

**The terminal board for the connections can be accessed directly from the outside** in the bottom part of the device without having to remove the casing to access inside.

This makes **technical operations** safe and **extremely quick**, also avoiding any accidental damage to parts inside the device.



# EASY MAINTENANCE

## PROBLEM-FREE MAINTENANCE

When servicing the device for the first time, technicians can appreciate the care with which each part has been designed to facilitate their work. As a result of easy access to the main components, the **"Thermobalance"**™ thermal unit enables maximum accuracy and fast maintenance.

A few examples:

- Internal access is facilitated by a **3-piece casing** with removable sides.
- The electric box of the electronic board can be easily removed from the chassis, giving **free access to the internal parts**.
- The **fan offset from the burner** is situated underneath and must not be removed in order to access the steel burner-heat exchanger.
- The **burner's door** is fully **air-cooled** automatically and does not require an insulating panel, thereby avoiding the risk of it getting damaged or breaking when being removed for cleaning.
- The **burner is removed by only unscrewing 3 bolts**, giving free access to the stainless steel heat exchanger.
- The **extra-increased pass primary heat exchanger** is designed to challenge extremely hard water conditions and can be **easily cleaned** thanks to the non-manifold single pipe circuit.
- The DHW **inlet filter** can be easily **removed** directly from the inside, **without having to remove the boiler water connections**.
- Disassembly and **replacement of the plate heat exchanger** is carried out easily **by removing the two hex bolts** that can be accessed from the front



# ACCESSORIES AVAILABLE

## HYDRAULIC ACCESSORIES - FLUE GAS

The careful design of aesthetics of **RAGGIO** has no limits.

The boiler has a series of accessories that not only make installation functional but also appealing in terms of aesthetic appearance.

A **black moulded cover is available** to cover the hydraulic connections and the **relative 5-pipe kit complete with four valves**.



FITTING COVER KIT

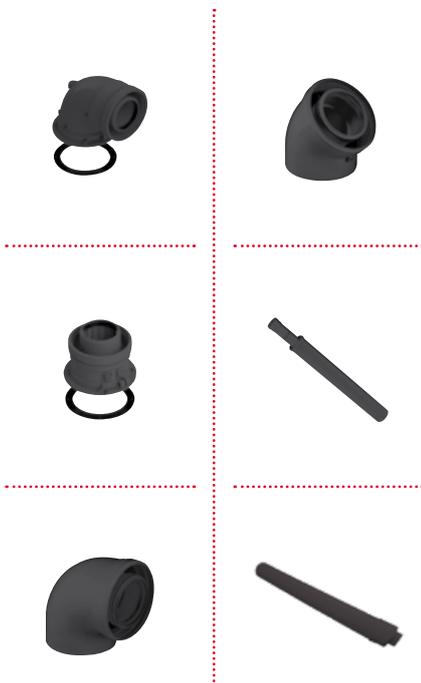


HYDRAULIC KIT

Lastly, for the most demanding and design-conscious customers, in addition to the traditional white series, a **full range of black flue gas accessories is available**.



### COAXIAL FLUE GAS ACCESSORIES 60/100



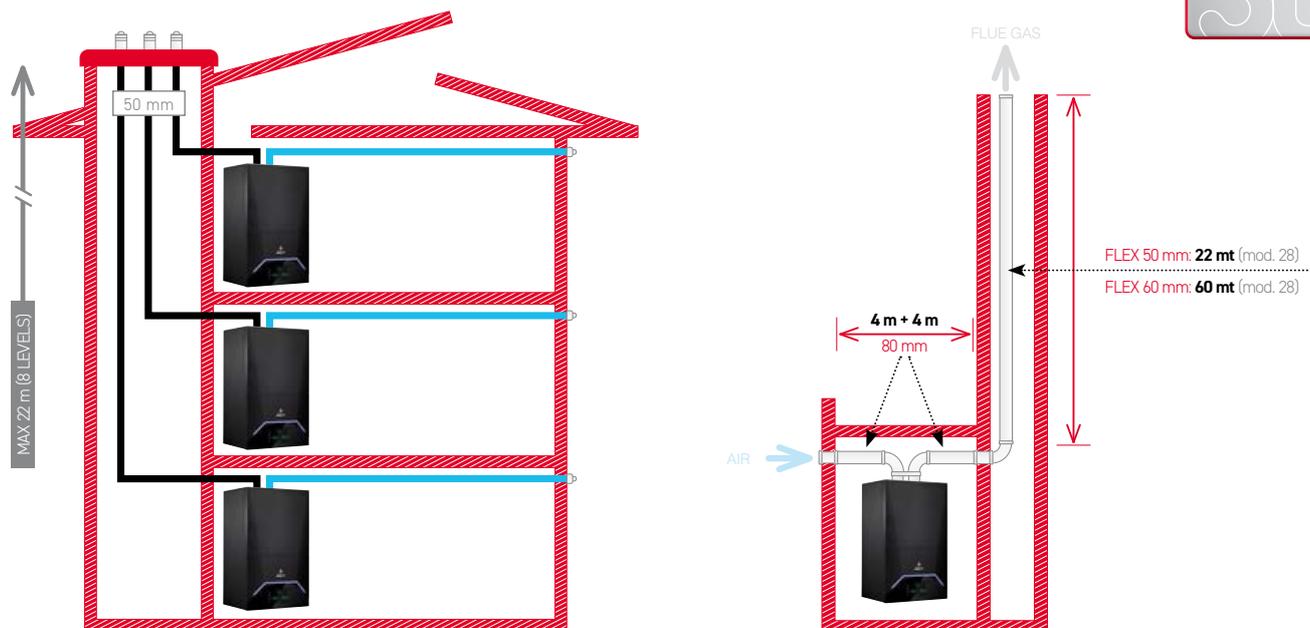
### SEPARATE FLUE GAS ACCESSORIES 80/80



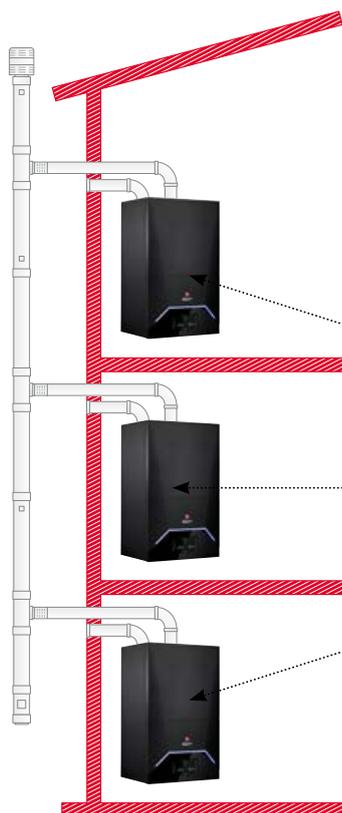
# SIMPLIFIED REPLACEMENT

## FLUE EXHAUST Ø 50 MM

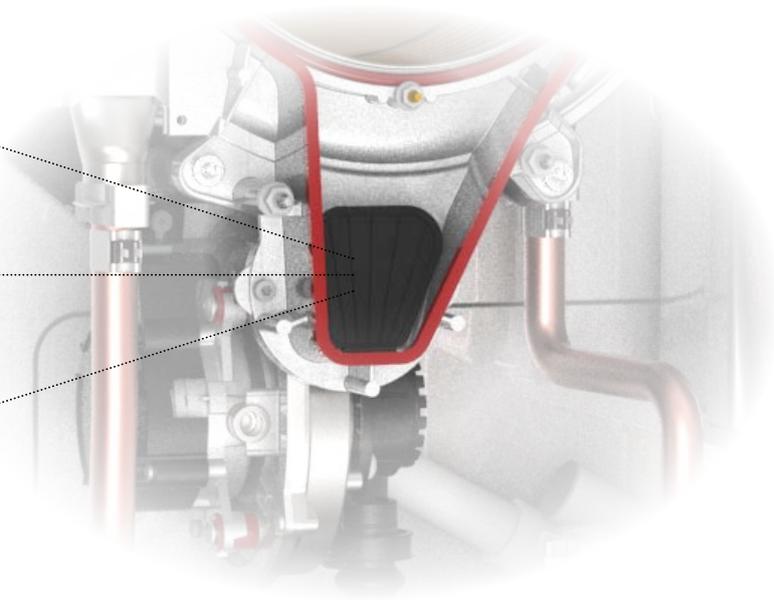
The new boiler can also be installed with 50 mm diameter outlets. Particularly important in the **replacement market** in the frequent case of collective flues that require **“heavy” pipes**, where it is necessary to have a **high flue gas ejection capacity** also with small diameters.



## COLLECTIVE PRESSURISED

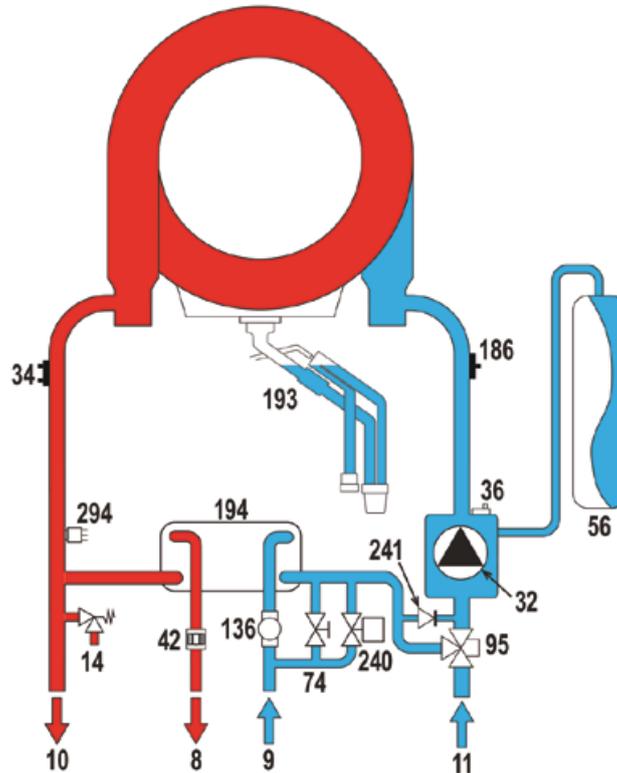


**F.P.S.:** Flue gas **P**rotection **S**ystem). The flue gas check valve (standard installation) offers **easy connection to pressurised collective flue systems** (e.g. in restructuring), in accordance with regulation UNI 7129. **For other installers, the solution of pressurised collective flue gas is more cost effective** (decrease in the diameter of the chimneys).



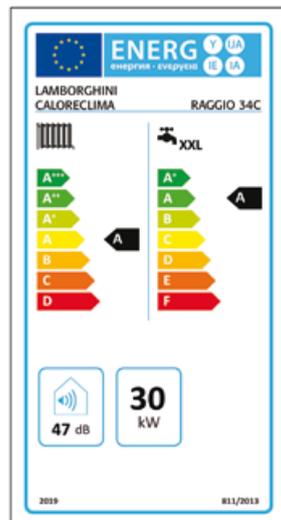
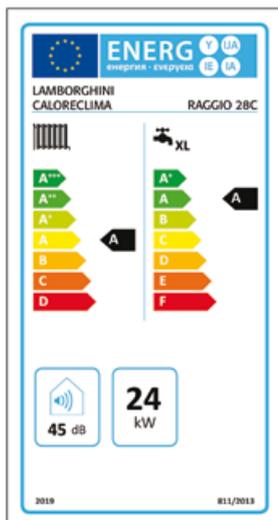
# CHARACTERISTICS

## HYDRAULICS - ENERGY LABEL

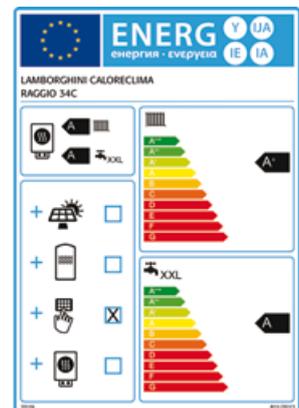
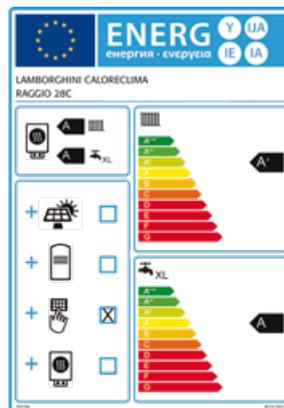


**KEY** 8 DHW outlet 9 DHW inlet 10 System delivery 11 System return 14 Safety valve 32 Heating circulator 34 Heating temperature sensor 36 Automatic air vent 42 DHW temperature probe 56 Expansion vessel 74 System filling tap 95 Diverter valve 136 Flowmeter 186 Return sensor 193 Siphon 194 DHW heat exchanger 240 System filling solenoid valve 241 Automatic bypass (inside the pump unit) 294 Pressure sensor

### BOILER ENERGY LABEL

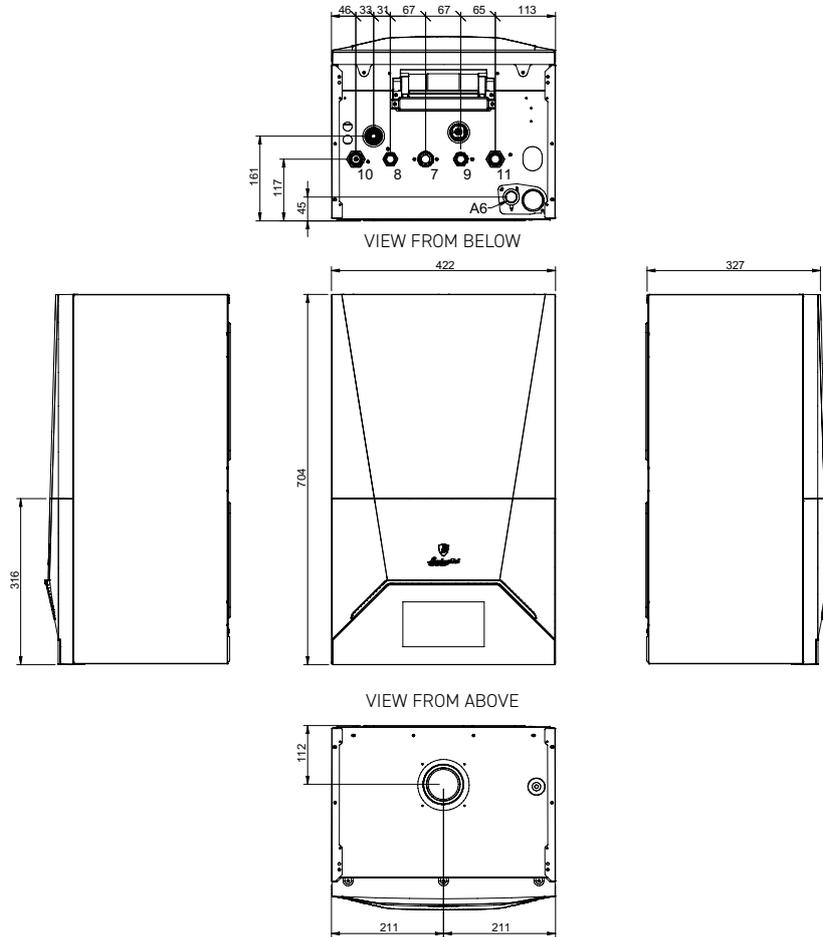


### BOILER SYSTEM ENERGY LABEL + AMBIENT CONTROL



# CHARACTERISTICS

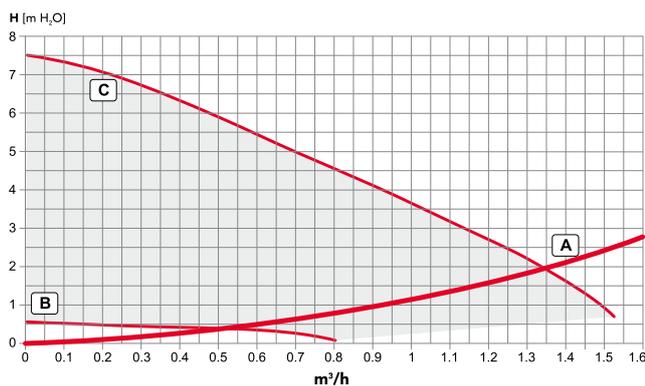
## DIMENSIONS - HEAD/PRESSURE DROPS



**KEY** 7 3/4" gas inlet 8 1/2" DHW outlet 9 1/2" DHW inlet 10 3/4" system delivery 11 3/4" system return A6 condensate discharge connection

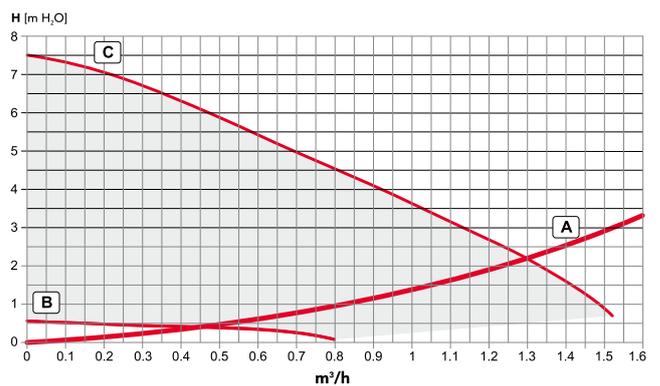
### EFFECTIVE HEAD AVAILABLE TO THE SYSTEM

#### RAGGIO 28 C



A Boiler pressure drops - B Min circulator speed - C Max circulator speed

#### RAGGIO 34 C



A Boiler pressure drops - B Min circulator speed - C Max circulator speed

# BOILER KIT WITH CONNECT CONTROL

## SUMMARY TABLE

RAGGIO		28 C	34 C
Classe ERP	 (Class G - A <sup>+</sup> )	 (*)	 (*)
	 (Class G - A)	 	 
Heating max / min heat input	kW	24.5 / 2.9	30.6 / 2.9
Heating max / min heat output (80/60°C)	kW	24.0 / 2.8	30 / 2.8
Heating max / min heat output (50/30°C)	kW	26.0 / 3.1	32.5 / 3.1
DHW max heat input	kW	28.5	34.7
DHW min heat input	kW	2.9	2.9
DHW max / min heat output	kW	28.0 / 2.8	34.0 / 2.8
Pmax efficiency (80-60°C)	%	98.1	97.9
Pmin efficiency (80-60°C)	%	98	98
Pmax efficiency (50-30°C)	%	106.1	106.1
Pmin efficiency (50-30°C)	%	107.5	107.5
Efficiency 30%	%	109.7	109.5
G20 supply gas pressure	mbar	20	20
G20 max gas flow rate	m <sup>3</sup> /h	3.02	3.67
G20 min gas flow rate	m <sup>3</sup> /h	0.31	0.31
CO <sub>2</sub> max / min G20	%	9±0.8	9±0.8
G31 supply gas pressure	mbar	37	37
G31 max/ min gas flow rate	kg/h	2.21 / 0.23	2.70 / 0.23
CO <sub>2</sub> max / min G31	%	10±0.8	10±0.8
NOx emission class (EN 15502-1)	-	6	6
Max heating working pressure	bar	2.5	2.5
Min heating working pressure	bar	0.8	0.8
Max heating temperature	°C	95	95
Heating water content	litres	2.9	4.3
Heating expansion vessel capacity	litres	8	10
Heating expansion vessel preload pressure	bar	0.8	0.8
DHW max working pressure	bar	9	9
DHW min working pressure	bar	0.3	0.3
DHW flow rate Δt 25°C	l/min	16.1	19.5
DHW flow rate Δt 30°C	l/min	13.4	16.2
Protection rating	IP	X4D	X4D
Supply voltage	V/Hz	230V / 50Hz	230V / 50Hz
Absorbed electric power	W	82	99

(\*) In combination with CONNECT remote control. It's also available the code of boiler only



The illustrations and data provided are indicative. Lamborghini CaloreClima reserves the right to make any changes deemed to be most appropriate for the improvement of the product or of the service offered without being obliged to give prior notice.

The images in this catalogue are under copyright owned by Lamborghini CaloreClima.