START

wall-hung condensing boilers

RIELLO
Energy For Life

www.riello.com

START

RIELLO INTRODUCES START, THE RANGE OF CONDENSING BOILERS DESIGNED AROUND THE USER'S COMFORT NEEDS, IN A RENEWED COMBINATION OF TECHNOLOGY AND RESPECT FOR THE ENVIRONMENT.

START marks the beginning of a new generation of condensing boilers, where **technological research is aimed at efficiency and energy saving**, for an increasingly green comfort. Countelss are the innovative features of START. The stainless steel condensing exchanger and the optimisation of the DHW plate exchanger ensure START **high performance and comfort in both heating and DHW modes, placing it at the top of its market category**. The modern and linear design, in line with today's aesthetic trends, allow START to perfectly fit into any environment. Thanks to its **extremely compact size and reduced weight**, START can also be installed recessed into a wall.
The **ease of use and installation**, the common denominator of the range, inherited from years of experience and research by Riello in the heating field, complete the character of START, a candidate to become a reference in its segment. But there's more. START is a product created for today, with an eye on tomorrow.
In fact, **the range is ready to be used with future distribution systems for blends of natural gas and hydrogen**, which will help reduce the environmental impact and emissions of condensing boilers in the coming years.

HOT WATER TEMPERATURE STABILITY

Hot water delivery without temperature fluctuations for optimal comfort during withdrawal

DIGITAL TOUCHPAD INTERFACE

START features a new digital touchpad interface, which retains the simplicity of use that has always characterised Riello products.

HIGH EFFICIENCY

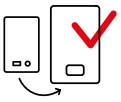
Maximum comfort and reduced consumption thanks to the high modulation ratio 1 : 8 and to the primary and DHW heat-exchangers developed to offer best-in-class performance in the segment

COMPACT DESIGN

Extremely compact product, ideal for installation even in a kitchen cupboard, thanks also to its width of only 400 mm! Can also be installed recessed in-wall and outdoors in partially protected places

LOW NOISE OPERATION

START is a boiler designed to work in very quiet operation conditions, ideal for installation inside homes



EASE OF REPLACEMENT

Thanks to the wide choice of accessories, designed for installation and integration in small spaces, START makes it even easier to replace old boilers.

START OFF
ON THE RIGHT FOOT.

THE RANGE

START is available in 3 output sizes, in combi (KIS) and heating only (IS) versions:

- **START 15**
  - IS version
- **START 25**
  - KIS versions (dedicated codes for NG and LPG)
  - IS version
- **START 30**
  - KIS version

According to the model, availability of conversion kits for propane or propane air and for LPG

HYDROGEN READY 20%

DESIGN AND FLEXIBILITY
FOR AN EASY INTEGRATION

UNIVERSAL INSTALLATION

EASE OF INTEGRATION

EASE OF REPLACEMENT

The START is characterised by a **modern and essential design**, that blends easily into any setting. The compact dimensions and low weight allow the boiler to be **easily installed anywhere, not only inside the house, but also recessed in box or outdoors, in a partially protected space**.
START is therefore also i**deal for the replacement of old boilers, both with DIN or with Riello connection sequence**, thanks to the availability of accessory kits that simplify the conversion.
A **wide range of accessories** complete the offer of START: flues kit, compact water filters (softener and magnetic) and hydraulic connections cover, **allowing an easier installation and harmonising integration in both indoor and outdoor environment**.

hydraulic connection cover

THE WHOLE RIELLO COMFORT IN A SIMPLE TOUCH

The **new digital touchpad interface** is one of the main distinguishing features of START.
With its simple and elegant lines, the new design in black plays a strong contrast with the white of the boiler casing, giving START a strong and modern character, in line with current aesthetic standards.
Designed with a special focus on **user-friendliness**, the START control panel allows intuitive **access to all boiler and system settings and parameters by means of a simple "touch"** on seven points of its surface.
A "buzzer" is generated to confirm the successful operation.
The LCD display has also been designed to simplify communication for the user, using **icons** that allow an easier comprehension than text.

THE IMMEDIATE LANGUAGE OF ICONS

DHW request ongoing

Generic fault

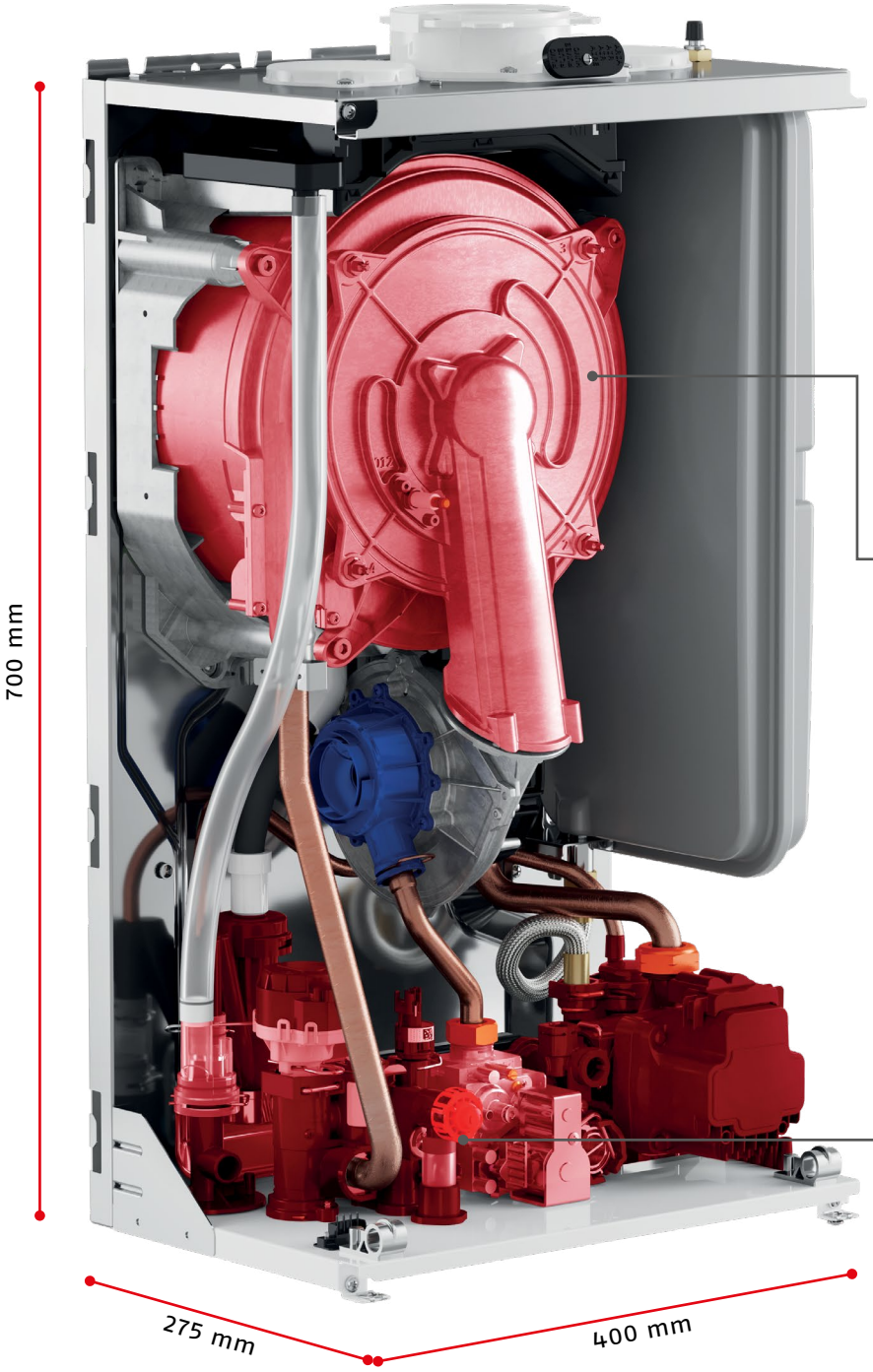
CH water pressure fault

CH request ongoing

Maintenance – flashing bell icon for operation anomaly

Flame presence or flame block

TECHNOLOGY FOR COMFORT AND ENERGY SAVING



Low N0x emissions
CLASS 6 (EN 15502)

New **flue flange** featuring **fast and safe click-fit connections** and integrated flues analysis inlet

High modulation ratio 1:8 on the whole range

New combustion group with **condensing heat exchanger in stainless steel**

8 litres side expansion vessel

High performance plate heat exchanger developped by Riello

New hydraulic group with **DIN type connections sequence**

Compatible with the solutions of the new Riello HI, COMFORT platform integrating smart thermostats, App and boilers of new generation

STAINLESS STEEL PRIMARY HEAT EXCHANGER

The aim of continuous improvement, which has always characterized Riello research, now leads to the evolution of the START condensing range starting from its main element: the primary heat exchanger. The new condensing heat-exchanger, **compact and robust**, is made of a **coiled smooth tube in stainless steel with a large section**, to ensure the **best efficiency and cleanliness over time.** The **front access** to the exchanger is an additional plus that assists maintenance and cleaning of the combustion chamber.

STAINLESS-STEEL HEAT EXCHANGER

FRONT ACCESS TO CONDENSING HEAT EXCHANGER

BEST-IN-CLASS DHW COMFORT

Riello has also optimized the **DHW heat-exchanger, designed in its own Research Laboratories and produced in its own plants,** to obtain the best performance and maximum comfort for the user in terms of temperature stability and waiting times. These pluses, which place **START at the top of its category**, also translate into **environmental respect**, allowing water and energy savings.

DURABILITY

SPECIAL FUNCTIONS

Many functions have been introduced to improve performance and attention to different needs. Among the main ones:

> The **PRE-HEATING** function and its evolution into **SMART PRE-HEATING** have been conceived in order to further save water and gas consumption. They allow, in fact, to keep the water warm inside the new high efficiency plate heat exchanger, to reduce waiting time.

ENERGY SAVING

> Other functions, like **DHW DELAY**, **NO-OSCILLATION PERFORMANCE**, and **SMART FAN** allow to upgrade the boiler performance in particularly difficult operation conditions, like f.i. very high temperature inlet water, or very low flow water pressure, avoiding unpleasant temperature fluctuations.

HOT WATER TEMPERATURE STABILITY

> The specific functions for HEATING ONLY (IS) versions are set up for operation with probe or DHW tank with thermostat and anti-legionella protection function.

REDUCED WAITING TIMES

LOW NOISE OPERATION

This feature makes START ideal for installation indoor, even for replacement in a kitchen.

LOW NOISE OPERATION

A LOOK INTO THE **FUTURE**

START is born now, thinking of tomorrow. The new condensing range is, in fact, designed to operate with blends of natural gas and hydrogen – up to a maximum of 20% – a contribution towards the decarbonisation process started by the European Union.

HYDROGEN READY 20%

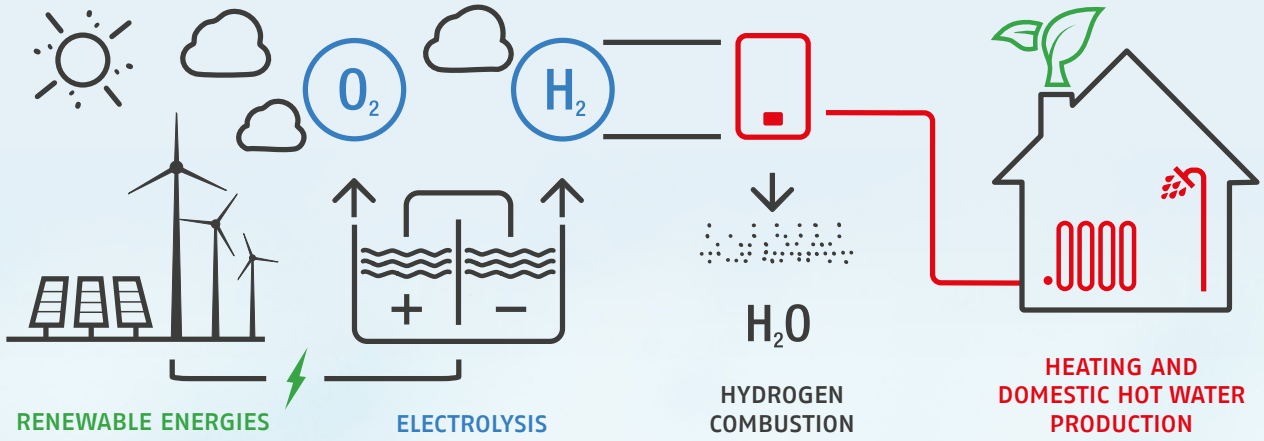
HYDROGEN USE CYCLE

Hydrogen is a safe and clean gas that, blended with natural gas up to a maximum ratio of 20 to 80 percent, makes it possible to generate heat and domestic hot water, with lower CO_2 emissions than other fuels*.

* Data from E. A. Polman (2003) "Reduction of CO_2 emissions by adding hydrogen to natural gas", IEA Greenhouse Gas R&D program, report number PH4/24.

GAS	HIGH CALORIFIC POWER	RELATIVE CO_2 EMISSIONS
H_2 – content [vol%]	Relative Wobbe [%]	[%]
0	100	100
20	94,7	93,7
100	85,0	13,3

Variation of Wobbe index and CO_2 reduction as a function of hydrogen content. The hydrogen is presumed to be made by large-scale steam reforming and that CO_2 is captured with a recovery rate of 86,7% of CO_2.



WITH START,
FOR A GREEN LIFESTYLE

RIELLO HAS ALWAYS DESIGNED PRODUCTS FOR THE WELL-BEING AND COMFORT, WHILE RESPECTING THE ENVIRONMENT

This mission, in order to respond to the increasingly urgent challenges of environmental sustainability, translates today into the s**earch for efficiency and an increasingly conscious use of energy resources**. The START range is the result of this renewed awareness, which is expressed in the development of innovative technologies that reduce energy consumption to ensure increasingly green comfort.

The modern technology of START and its careful control by the user, even remotely, are the key tools for wide-ranging savings. A benefit for the environment that translates into cost savings for the user.

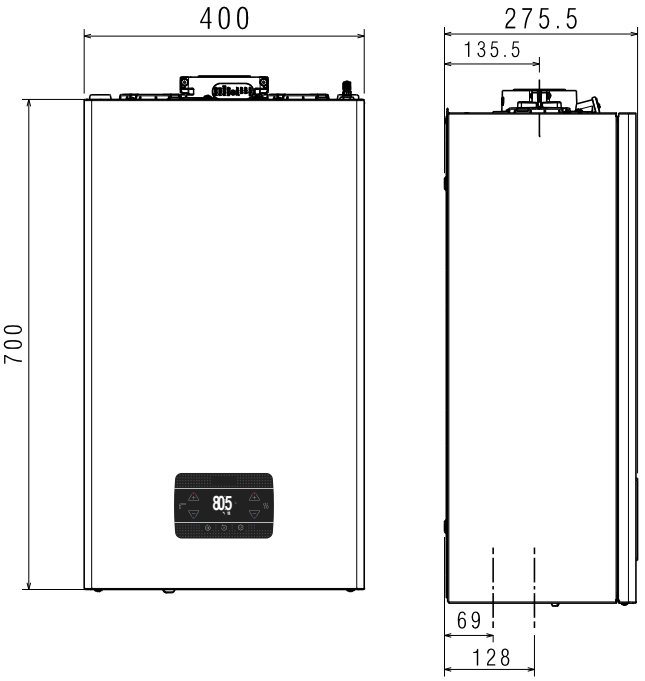
TECHNOLOGY RESPECTING THE ENVIRONMENT

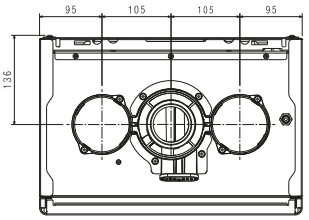
HYDROGEN READY 20%

START looks to the future, already being able to process a mixture of natural gas and 20% hydrogen, the 'green' gas that will be the real environmental turning point in the coming years.

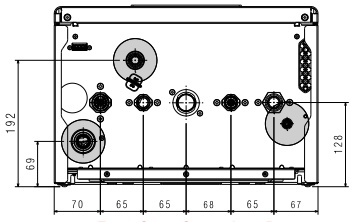
ENERGY SAVING

TECHNICAL DRAWINGS





VIEW FROM ABOVE



VIEW FROM BELOW

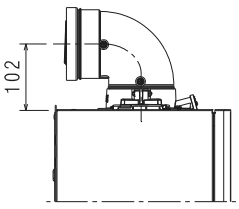
F O G I R

DIN HYDRAULIC CONNECTIONS

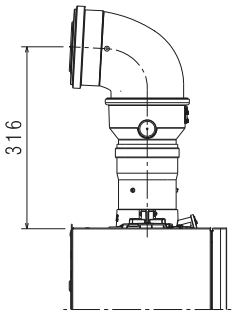
F FLOW O DHW OUTLET G GAS
I DCW INLET R RETURN

FLUE OPTIONS

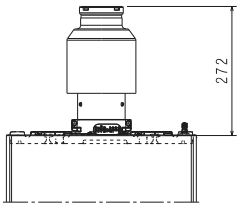
> FLANGE INSTALLED AS STANDARD
> QUICK INSTALLATION WITHOUT THE NEED FOR AN EXTERNAL COLLAR
> BOILER DEPARTURE WITH RIELLO SPECIFIC FLUE OPTIONS



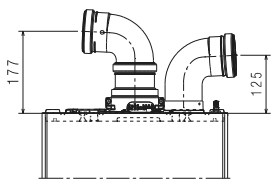
CONCENTRIC FLUE Ø60-100 mm



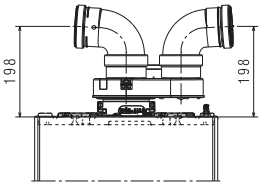
CONCENTRIC FLUE Ø80-125 mm



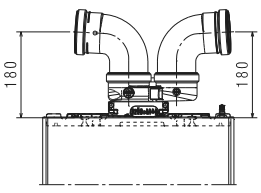
FLUE TYPES B22P- B52P



TWIN FLUE Ø80+80 mm



TWIN FLUE Ø80+80 mm
with ADAPTER



TWIN FLUE Ø80+80 mm
with COMPACT ADAPTER

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TECHNICAL DATA

ENERGY LABELLING SPECIFICATIONS (according to ErP regulations)		UoM	25 C	30 C	15 R(*)	25 R(*)
Seasonal space heating energy efficiency class		D → A+++ (1)	A	A	A	A
Water heating energy efficiency class		F → A+ (2)	A	A	–	–
Rated heat output	pnominal	kW	19	24	15	19
Seasonal space heating energy efficiency	ηs	%	93	93	93	93
USEFUL HEAT OUTPUT						
At rated heat output, high-temperature regime (**)	P4	kW	19,4	24,4	14,5	19,4
At 30% of rated heat output and low-temperature regime (***)	P1	kW	6,5	8,2	4,9	6,5
USEFUL EFFICIENCY						
At rated heat output and high-temperature regime (**)	η4	%	87,3	87,6	87,1	87,3
At 30% of rated heat output and low-temperature regime (***)	η1	%	98,5	98,2	98,7	98,5
AUXILIARY ELECTRICITY CONSUMPTION						
At full load	elmax	W	32	38	32	32
At part load	elmin	W	12	12	12	12
In Stand-by mode	PSB	W	3	3	3	3
OTHER PARAMETERS						
Stand-by heat losses	Pstby	W	30	30	30	30
Annual energy consumption	QHE	GJ	42	56	42	42
Sound power level, indoors	LWA	dB	50	53	50	50
NOx emissions	NOx	mg/kWh	22	22	22	22
FOR COMBINATION HEATERS						
Declared load profile			XL	XL	–	–
DHW energy efficiency	wh	%	84	84	–	–
Daily electricity consumption	Qelec	kWh	0,133	0,152	–	–
Daily fuel consumption	Qfuel	kWh	23,183	23,306	–	–
Annual electricity consumption	AEC	kWh	29	33	–	–
Annual fuel consumption	AFC	GJ	18	18	–	–
OTHER SPECIFICATIONS						
CH heat INPUT (max-min)		kW	20,0 - 3,1	25,0 - 3,95	20,0 - 3,1	20,0 - 3,1
DHW heat nominal INPUT (max-min)		kW	25,0 - 3,1	30,0 - 3,95	25,0 - 3,1	25,0 - 3,1
Power supply voltage		V-Hz	230 - 50	230 - 50	230 - 50	230 - 50
Degree of protection		IP	IPX5D	IPX5D	IPX5D	IPX5D
NOx class			6	6	6	6
CH						
Max pressure-temperature		bar-°C	3-90	3-90	3-90	3-90
Pump: max available head (flow rate 1000 l/h)		mbar	408	408	408	408
Membrane expansion tank		l	8	8	8	8
DHW						
Max pressure		bar	8	8	–	–
DHW production at ΔT = 25°C / 30°C / 35°C		l/min	14,3/11,9/10,2	17,2/14,3/12,3	–	–
DHW minimum flow rate		l/min	2	2	–	–
HYDRAULIC AND GAS CONNECTIONS						
Inlet gas pressure (G20-G31)		mbar	20-37	20-37	20 -37	20 -37
CH Flow - Return / Gas inlet		Ø	3/4"	3/4''	3/4''	3/4''
DHW Inlet - Outlet / DHW tank Flow - Return		Ø	1/2"	1/2''	3/4''	1/2''
DIMENSIONS, WEIGHT						
Boiler dimensions (HxWxD)		mm	700x400x275	700x400x275	700x400x275	700x400x275
Net weight		kg	28,5	30	27,5	29
FLUE OPTIONS AND LENGTHS						
Max length for concentric flues (Ø60-100 mm)		m	5,85	4,85	5,85	5,85
Max length for twin flues (Ø80+80 mm)		m	33+33(A)	27+27(B)	33+33(A)	33+33(A)

(1) The range of energy efficiency class of this products category is between D and A+++.
(2) the range of energy efficiency class of this products category is between F and A+.
(*) The 'Only heating' models are supplied with a three-ways valve. Filling tap is not available.
(**) High-temperature regime means: 60°C Return and 80°C Flow of the boiler.
(***) Low temperature regime means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).

(A) Up to 52+52 via twin flue adapter with air inlet swelling position (available as an accessory)
(B) Up to 45+45 via twin flue adapter with air inlet swelling position (available as an accessory)

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