

Energy
For
Life

we are proud to be partner of



MUSEO
NAZIONALE
SCIENZA
E TECNOLOGIA
LEONARDO
DA VINCI

RIELLO
Energy For Life

Across the world, Riello sets the standard in reliable, high efficiency, low-maintenance burner technology. With burner capacities from 10 kW to 32 MW, Riello oil, gas, dual fuel and Low NOx burners deliver unbeatable performance across the full range of residential and commercial heating applications, as well as in industrial processes.



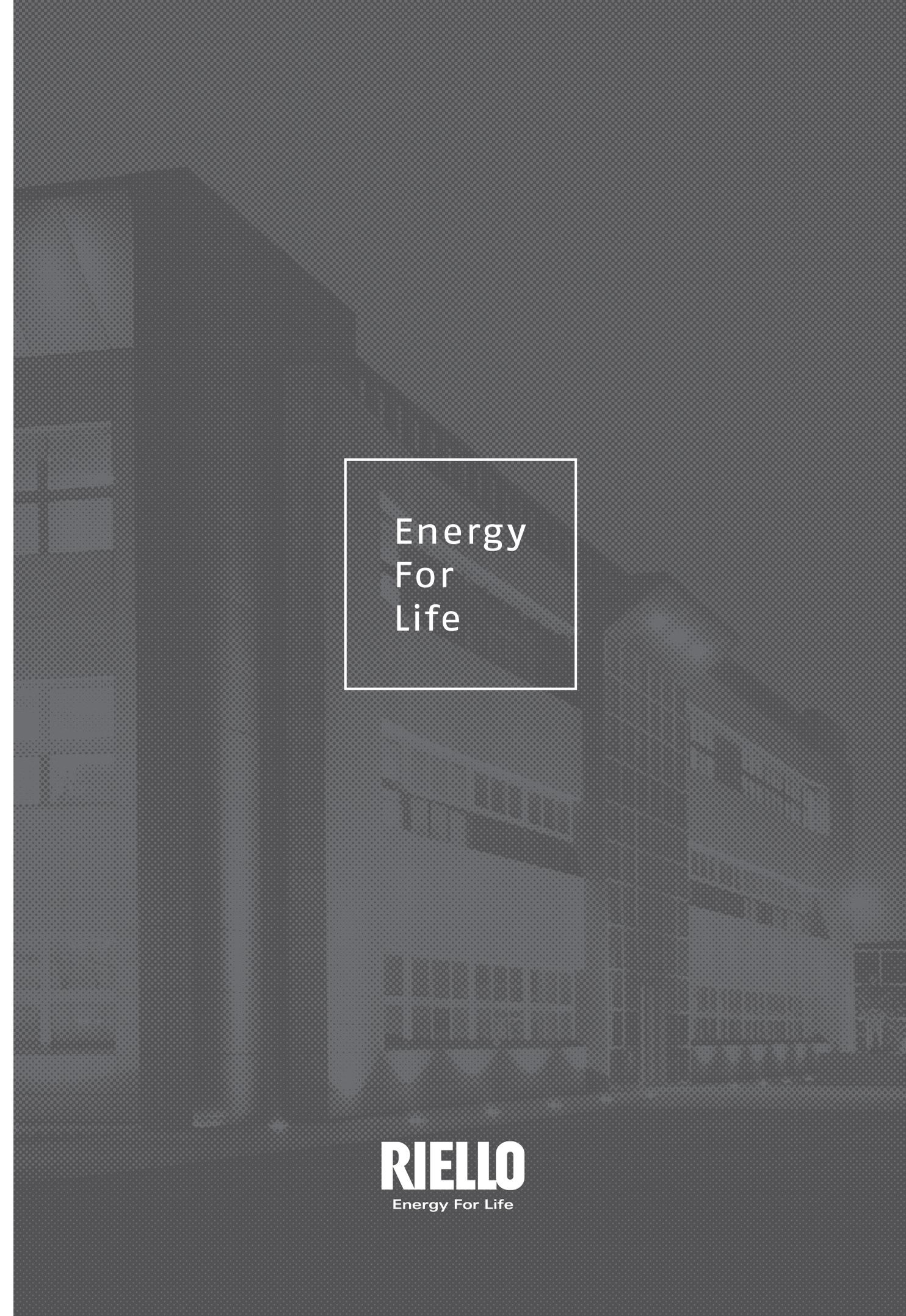
The mark of responsible forestry



ELEMENTAL
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Printed on certified paper in respect of the environment

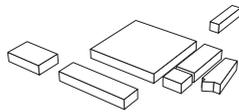


Energy
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Life

RIELLO
Energy For Life

RIELLO, A VALUABLE REALITY

Riello's strength is the result of its technological innovation capacities and the experience it has acquired in its 90-year history. The reliability of a team of technicians, professionals and collaborators who are called upon every day to make their own contribution in terms of hard work, skill and creativity is a great value. Thanks to their commitment, and the use of innovative projects and ideas, Riello is now the Italian leader in the production of systems and technologies for every type of environment. This leading role means that new products are created every year, based on groundbreaking technology to ensure the efficient use of energy and an improvement in the quality of the atmosphere and the well-being of the entire community. The figures are the most effective guarantee of this promise. The industrial organization currently boasts 8 production plants, Research Centres for product development, and a Combustion Research Centre that is one of the best in the world. The company's presence on worldwide markets is distinguished by a well-constructed and efficient sales network, alongside many important Training Centres located in various countries. Riello has 17 operational branches abroad (in Europe, America and Asia), with customers in over 60 countries.



HQ Legnago

3.000 sq m

Training Centre

700 sq m

S.Pietro di Legnago

Production Site

22.000 sq m

Angiari

Combustion Research
Centre

4.000 sq m

[1]

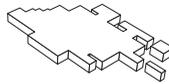


Lecco

Research Centre

1.500 sq m

[1]



Piombino Dese

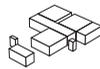
Production Site

28.000 sq m

Research Centre

650 sq m

[1]



Morbegno

Production Site

13.000 sq m

Production

Testing Site

500 sq m

[1]



Volpago

Production Site

17.000 sq m

Research Centre

600 sq m

[1]



Villanova di Cepagatti

Production Site

12.000 sq m

Research Centre

500 sq m

[1]



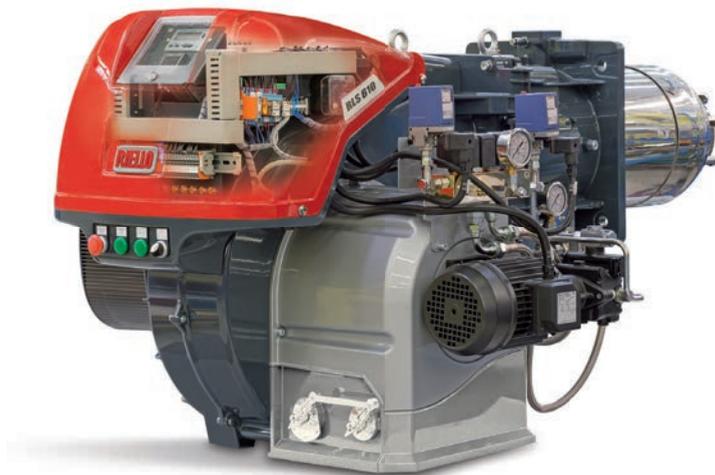
		
Mississauga Canada Production Site 5.000 sq m [2]	Torun Polonia Production Site 16.000 sq m [3]	Shanghai Cina Production Site 14.880 sq m [4]

THE POWER OF A WORLDWIDE INDUSTRIAL FOOTPRINT

The concentration on industrial processes, and the ongoing investment in research, are the factors that have allowed Riello to improve the productivity of its plants, and identify new development areas. If, on one side, the traditional work sectors have seen an increase in the range of high efficiency applications (such as gas and light oil condensing boilers), on the other there's a focus on new technologies combining energy efficiency and the reduction of polluting emissions with the use of renewable energies. Such a wide range of products has notably increased the company's levels of competitiveness, so it's now able to meet all its customers' needs, from domestic applications to commercial and industrial systems.

RIELLO'S HEART: THE BURNERS

Riello is always looking for solutions that combine maximum comfort with the lowest environmental impact. Developments within the regulatory environment set increasingly restrictive standards that all devices for room air conditioning and industrial process systems must comply with, both in terms of polluting emissions and efficient use of energy resources. Through its own Centres of Excellence, Riello actively follows the developments of all technologies that can contribute to achieving maximum performance for its products and, at the same time, focuses on using its products in a synergistic, modular way in order to provide the best solution for each specific application.



[1]



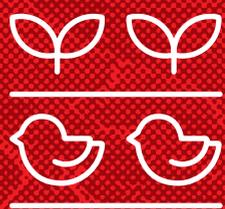
[2]

The burner marks the beginning of Riello's manufacturing history and, thanks to substantial investments and intensive R&D efforts, over the years it has managed to achieve the highest levels of technological development both in the domestic and industrial/commercial segments, consolidating the Company's historical leadership position in this important sector. One of the results of such R&D activity is the design of low energy consumption domestic boilers associated with low polluting emission combustion technologies and equipped with partialisation systems for supplied output, which meet the requirements of regulatory developments for the heat generators on which they are installed and increase the output of monobloc burners up to 20 MW, which has been made possible by designing and manufacturing all pieces of equipment involved in the combustion process and enables the Company to supply highpowered, safe devices that are easy to use, install and maintain. Technological evolution also focuses on industrial applications, where burners are fitted with devices and combustion heads capable of delivering high modulating ratios and diversified combustion technologies are deployed in order to offer optimal solutions for direct or indirect exchange systems.



[3]

- [1] High-power monoblock
RLS 610/EVi MX
- [2] High-power monoblock
RS 2000/EV
- [3] Light oil residential
modulating burner
RDB/M-MK





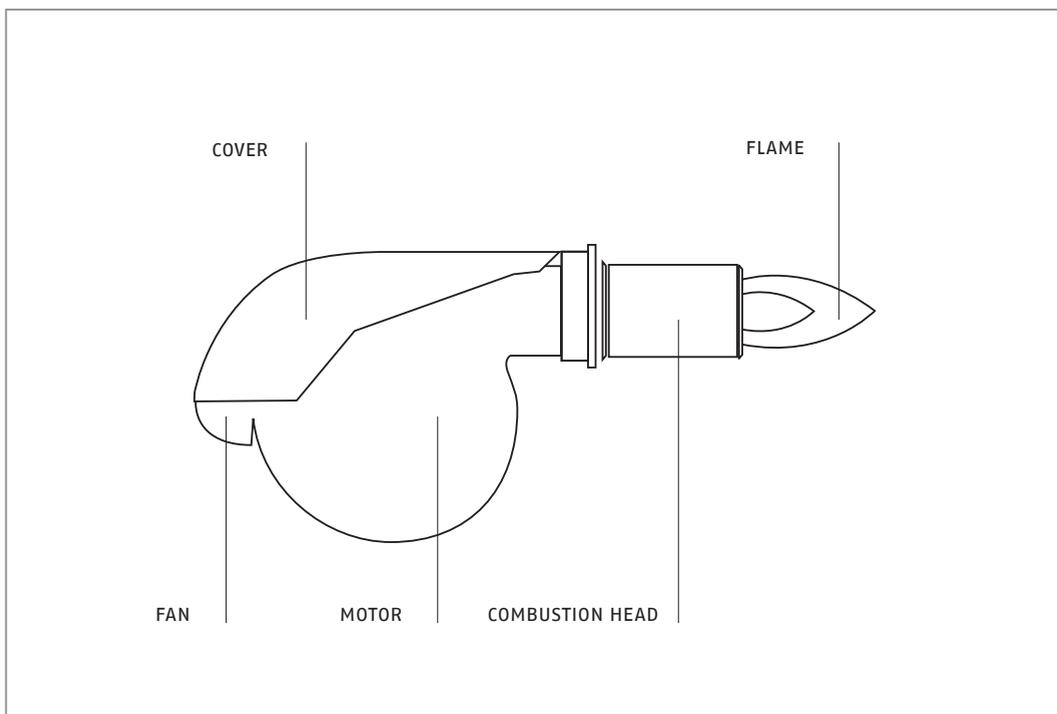
THE BURNER IN THE AGRIFOOD INDUSTRY

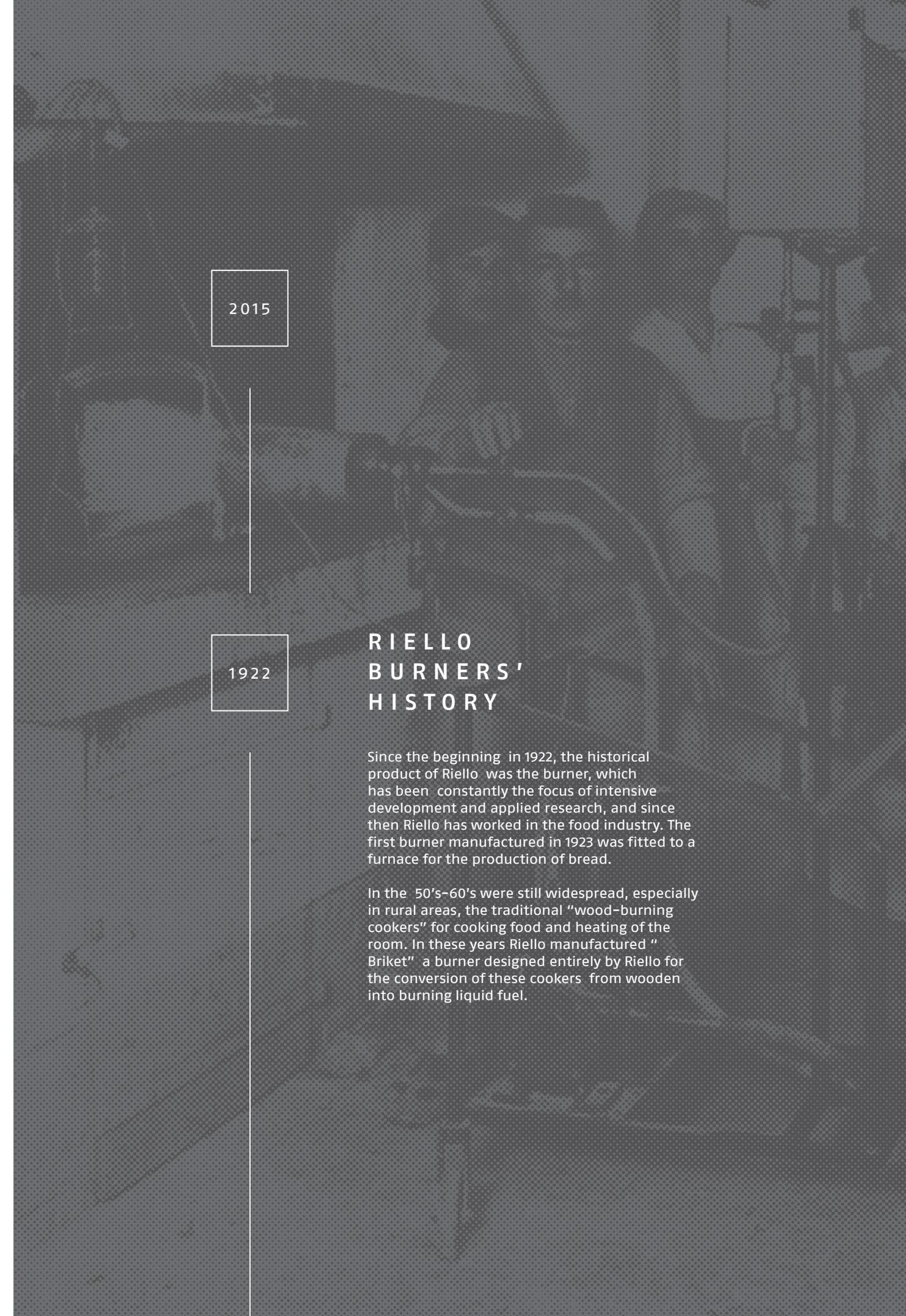
One of the sectors in which combustion technology is important is the food industry, in particular in ovens and equipment for the artisan and industrial production of bread, pizza and all kinds of leavened products and pastry-making.

Always in the food industry, the burner is used in the production of steam for cleaning, de-greasing, sanification, pasteurization, sterilization as well as for cooking food and being an ideal solution for technology of fertilization in greenhouses or in structures for growing vegetables or flowers.

The burner is a machine which produces heat transforming, through a controlled combustion, the "chemical" energy of the fuels into thermal energy (heat) which is then used, through exchange systems, in several use in the human activities.

These thermal machines which generate heat, beside to heat our homes, helps in the life cycle of the agrifood cultivation in all the main phases: from the early development of seedlings in greenhouses, and of farm animals through the processes of transformation in the canning industry until the preparation of the dishes at the base of the power supply that provides daily, with nutrition, energy that sustains life.





2015

1922

RIELLO BURNERS' HISTORY

Since the beginning in 1922, the historical product of Riello was the burner, which has been constantly the focus of intensive development and applied research, and since then Riello has worked in the food industry. The first burner manufactured in 1923 was fitted to a furnace for the production of bread.

In the 50's-60's were still widespread, especially in rural areas, the traditional "wood-burning cookers" for cooking food and heating of the room. In these years Riello manufactured "Briket" a burner designed entirely by Riello for the conversion of these cookers from wooden into burning liquid fuel.

RIELLO AT MUSEO NAZIONALE SCIENZA E TECNOLOGIA LEONARDO DA VINCI

**MUSEO
NAZIONALE
SCIENZA
E TECNOLOGIA
LEONARDO
DA VINCI**

FROM APRIL 2015

NATIONAL MUSEUM OF
SCIENCE AND TECHNOLOGY
LEONARDO DA VINCI

VIA SAN VITTORE 21, MILANO

Riello is participating in the #FoodPeople exhibition, one of the initiatives held in Milan during the Expo 2015. The exhibition is organized by the Leonardo da Vinci National Science and Technology Museum in Milan: a look at the evolution of automation, food technology and the way food has been and will be consumed over the last 150 years and in the future too.

The Riello icon on display is the first fifties stove with the Briket burner installed, proof of the tight bond between the company and the food industry.

THE BRIKET

Briket is a kerosene burner that Riello manufactured in 1950 to convert the traditional wood-burning stoves. The burner was installed inside the combustion chamber for the wood, fixed to the inlet so that the flame produced provided heat to the upper griddle as with the traditional wood-burning stoves.

The combustion developed by Briket appeared clean and efficient thanks to the use of kerosene, light fuel and refined, and the technique of evaporation of the fuel applied in the burner itself, which thereby generates a blue flame and smoke-free.





HEATING FOR GREENHOUSE AND BREEDING



DRYING OF CEREAL



PRODUCTION OF BREAD AND BAKERY INDUSTRY



DAIRY AND MEAT INDUSTRY



CANNING INDUSTRY



COOKING FOOD IN THE COMMUNITY

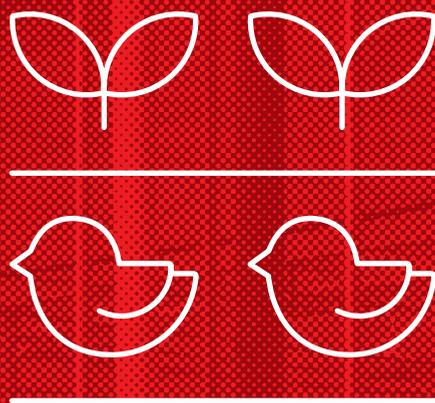


BEVERAGE INDUSTRY



COFFEE ROASTING

HEATING FOR GREENHOUSE AND BREEDING





HEATING FOR GREENHOUSES WITH AIR HEATER GENERATORS

Greenhouse heating allows to obtain high production also in regions with colder climates and irregular seasonal temperatures. The heating of the basal zone allows to obtain a microclimate such as to make flexible the production both in terms of species cultivated that of maturation times. The heating greenhouses may be a hot air generators distributed or centralized water boilers with a large volume and heating elements or heaters. For species and varieties that allow it exists also the heating of the substrate that enables significant energy savings.



GULLIVER SERIES



RL SERIES

	OUTPUT RANGE (kW)	FUEL
R40 F	30 - 202	LIGHT OIL
GULLIVER RG	16.6 - 309.5	LIGHT OIL
RL 28 - 50	90 - 593	LIGHT OIL
RL 34 -44	97 - 485	LIGHT OIL



HEATING FOR GREENHOUSE AND BREEDING

RANGE OF BURNERS FOR GREENHOUSE WITH CENTRALIZED HEATING



[1]



[2]



[3]



[4]

- [1] RLS 200/E MX
- [2] RLS 800/M MX
- [3] RLS 1200/E MX
- [4] RLS 160/M MX

	OUTPUT RANGE (kW)	FUEL
RLS 200/E MX	570 - 2400	GAS - LIGHT OIL
RLS 800/M MX	1750 - 8000	GAS - LIGHT OIL
RLS 1200/E MX	1500 - 11500	GAS - LIGHT OIL
RLS 160/M MX	300 - 1840	GAS - LIGHT OIL

GREENHOUSE WITH CENTRALIZED HEATING

The main requirements of the devices used are:

- Reliability must be guaranteed the highest standards of operational safety.
- Accuracy: ability to maintain the temperature values in the greenhouse desired
- Operation: easy operation and maintenance of the devices in everyday use
- Low NOx emissions to apply the "carbonic fertilization".

CO₂ CONTROL

A particular functional requirement is the one that derives from the use of combustion products as a source of CO₂ for the diffusion dosed in the greenhouse in order to modulate the cycle of photosynthesis and plant growth.

In such applications it is necessary that the emissions of nitrogen oxides NO_x are particularly low in order to avoid that with the humidity has an effect "acid rain" that can damage the leaves of the crops.





HEATING FOR BREEDING INDUSTRY

In order to ensure animal breeding the minimum temperatures required, Riello is able to provide various types of burners to be fitted to hot air generator or central hot water boilers. Right temperature is a very important requirement for the good life of animals and it varies in respect of the age of the animal. Therefore a reliable and efficient heating system is fundamental and Riello supply the right products for any type of customers' requirement.



RIELLO 40 GS SERIES



GULLIVER BS SERIES



	OUTPUT RANGE (kW)	FUEL
RIELLO 40 GS	11 - 220	GAS
GULLIVER BS	16 - 250	GAS







THE DRYING PROCESS

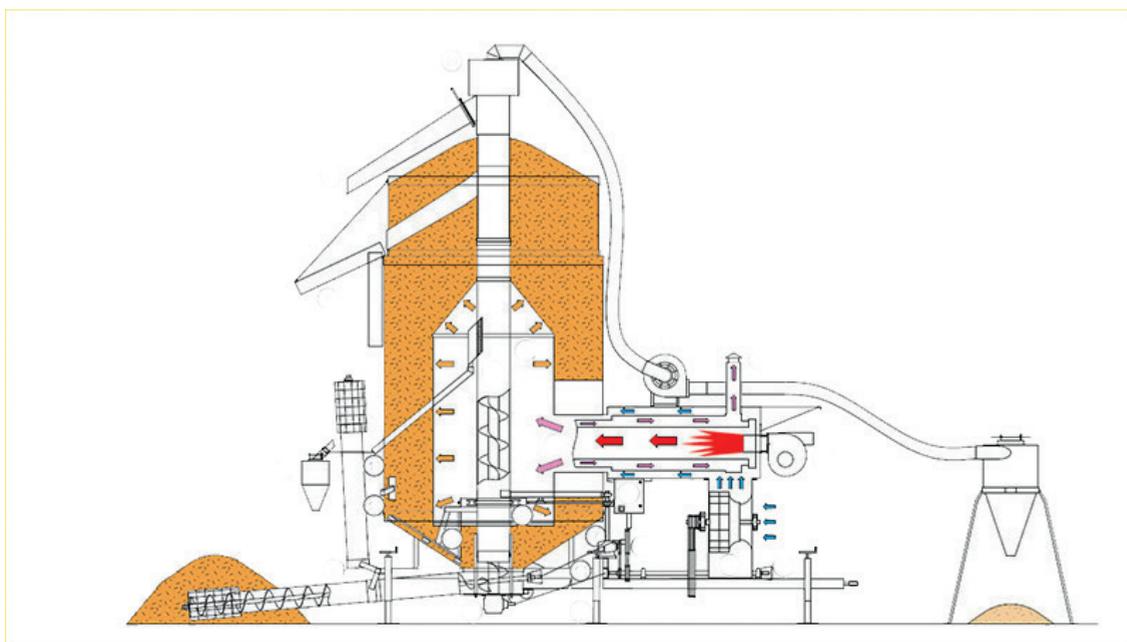
The drying process of cereals has a vital role in the production chain and transformation of the same, as it allows the cultivation and proper storage even in countries that in the season of harvesting have a climate less favorable.

The burner installed on driers generates the heat necessary to the functioning of the system, which may have fixed or movable structures, and is based on heating the air that invests the product to be treated with temperatures sufficient to evaporate the water contained reducing, the humidity up to the optimum value for storage.

Power can be supplied either with liquid or gaseous fuels and with direct or indirect thermal exchange system.



Drying process structure



DRYING OF CEREAL

BURNERS FOR CEREAL DRYERS FIXED OR MOBILE APPLICATION TYPE



[1]



[2]



[3]



[4]

- [1] RS 250/M MZ
- [2] PRESS G
- [3] RL 190/ M
- [4] RS 400/P BLU

	OUTPUT RANGE (kW)	FUEL
RS 250/M MZ	600 - 2650	GAS
PRESS G	130 - 1660	LIGHT OIL
RL 190/ M	534 - 1423	LIGHT OIL
RS 400/P BLU	800 - 4500	GAS

BURNERS FOR BIG DRYERS

Some samples of applications





FIXED DRYERS STRUCTURE FOR INDUSTRIAL APPLICATIONS

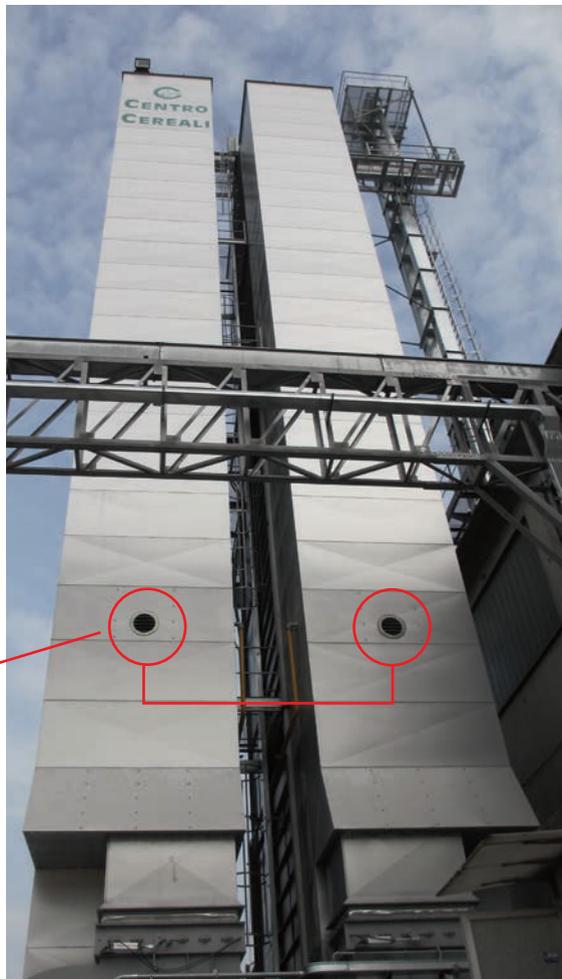
Air duct burners of the GVA ADB range are used in all applications requiring direct heating of duct air in industrial processes.

Two stage operation, with 1 : 7 modulation ratio, foresees the adjustment of fuel flow rate on two levels, whilst combustion air flow rate has been calibrated to allow combustion at maximum burner output.

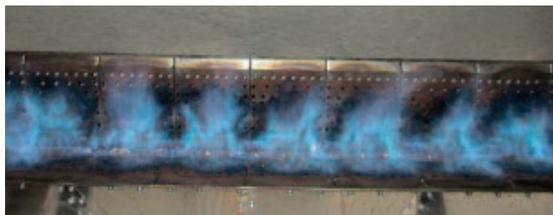
GVA ADB burners are suitable for installations that require a direct exchange gas burner, with automated operation adjustment field, which guarantees quick and uniform mixing between combustion gas and process air.

These include, specifically:

- cereal dryers
- forage crop dryers
- tobacco dryers



Flame examples



PRODUCTION OF BREAD AND BAKERY INDUSTRY





PREMIX SERIES



RS SERIES

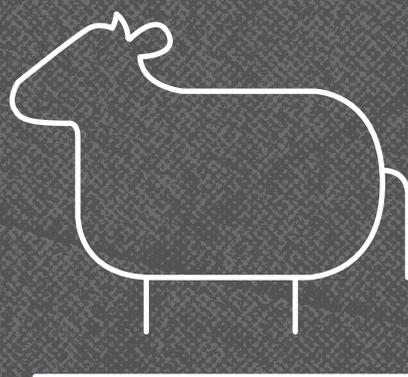
BREAD AND BAKERY APPLICATIONS

The story of Riello began with the development of burners for producing bread. After a period of more than 90 years, during which the company has continuously pursued high standards of quality, reliability and energy savings, Riello S.p.A., offers a complete range of burners and accessories for the combustion of gas and light oil, designed for the equipment for the artisan and industrial production of bread, pizzas and every type of leavened product and confectionery.



	OUTPUT RANGE (kW)	FUEL
RX 35	5 - 35	GAS
RS 34	45 - 390	GAS
RIELLO 40 F	30 - 202	LIGHT OIL







DAIRY AND MEAT INDUSTRY

The use of steam in the food industry is also applied in this process. Riello has a wide range of products suitable for these applications. Generally, the steam is generated at a high pressure (12-15 bars) but they are also realized generators at low pressure (0.5-1 bar). The production capacity of steam per unit may vary from less than 1 ton / h up to 20-25 tons/h for the generators smoke pipes and also in addition to those water tube that covering also the field of higher pressures.



RS 190 SERIES



DB SERIES

	OUTPUT RANGE (kW)	FUEL
RS 190 SERIES	470 - 2290	GAS
DB 30 SE BLU	5000 - 30000	GAS







CANNING INDUSTRY

The use of steam in the food industry is common in many machining operations and processes used for different types of products. Generally, the steam is generated at a high pressure (12-15 bars) but they are also realized generators at low pressure (0.5-1 bar). The production capacity of steam per unit may vary from less than 1 ton / h up to 20-25 tons/h for the generators smoke pipes and also in addition to those water tube that covering also the field of higher pressures, as in use in sugar (30 bar). Riello supplies a wide range of products for the canning industry.



RS 2000/EV SERIES



PRODUCTION OF TOMATOES

In the last three years, Italy has been among the top three global producers of tomato industry, with a production of about 5 million tons, after the United States (California) and after China. This industry is very important and the plants must be reliable, to avoid any damages during the several phases of the canning process.



COOKING FOOD IN THE COMMUNITY





COOKING FOOD IN THE COMMUNITY

Even in more recent times, solutions have been designed for cooking systems used by large communities. An important note goes to the customized solutions for mobile kitchens used in different countries in the fields of Defense and Civil Protection.

Oil burner series R40 pursuant to mobile kitchens for use by community.
Output range up to 65 kW with manual adjustment of flame.



RIELLO 40 H SERIES



RIELLO 40 F SERIES

	OUTPUT RANGE (kW)	FUEL
RIELLO 40 H5	21 - 65	LIGHT OIL
RIELLO 40 F5	30 - 60	LIGHT OIL
RIELLO 40 F10	54 - 107	LIGHT OIL
RIELLO 40 F20	95 - 202	LIGHT OIL







BEVERAGE INDUSTRY

Riello is present in the beverage industry, thanks to his know how in the production of burners for steam boilers. An example is the process of beer production where the steam is used for cooking the wort with hops through immersion in a boiler and heated to the boiling point. The cooking time depends on the type of beer which is meant to produce. The boiling, which serves for the sterilization and the concentration of the must, takes place by means of steam or high-pressure jets of boiling water.

	OUTPUT RANGE (kW)	FUEL
RS 34 SERIES	45 - 390	GAS
RS 190 SERIES	470 - 2290	GAS
RS 500 SERIES	1000 - 5170	GAS



RS 34 SERIES



RS 190 SERIES



RS 500 SERIES

COFFEE ROASTING





ROASTING

The roasting process consists in bringing the coffee beans at very high temperatures for about 15-18 minutes. The temperatures reached ranging from 190 ° C (light roast) up to a maximum of 230 ° C (dark roast). The espresso coffee blends are roasted up to a maximum of 120 ° C (medium roast).

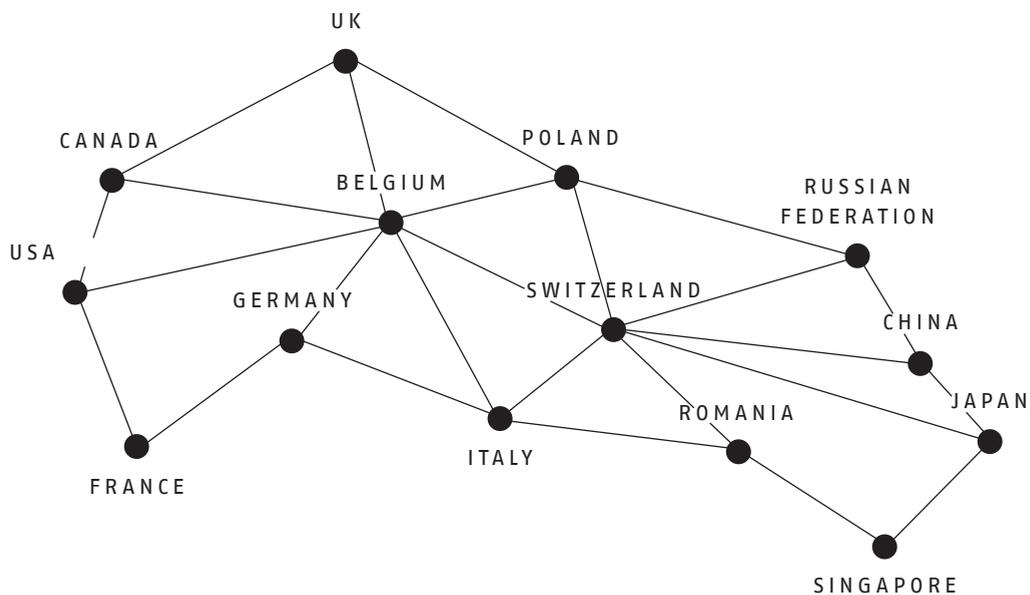
The machines used for this process are equipped with gas burners with very clean combustion and efficiently, delivering the required heat output with a precise load modulation, to keep the roasting curve request, according to the various quality of treated product.



THE "AFTERBURNERS"

The "afterburners" are devices equipped with the burner that are installed on the duct outlet of the smokes of coffee roasting, in order to overthrow, through combustion at 800 ° C, the volatile organic solvents (VOC) content before discharge into the atmosphere.





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A WORLDWIDE PRESENCE

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