



BRICK MACHINERY AND PLANTS
INDUSTRIAL AUTOMATION
PROCESS PLANTS

FOR OVER 70 YEARS
WE HAVE BEEN
PROVIDING OUR CUSTOMERS
WITH RELIABLE
AND SUSTAINABLE SOLUTIONS





WE ARE A LEADING ITALIAN MANUFACTURER OF COMPLETE PLANTS FOR THE BRICK INDUSTRY AND INNOVATIVE SOLUTIONS IN THE FIELD OF INDUSTRIAL AUTOMATION, HANDLING AND PROCESS PLANTS

It all started in the **50s** when **Araldo Capaccioli** began to design machinery in a small artisan workshop in **Tuscany**, where there was at that time an abundance of kilns scattered throughout the region.

The history of our company has been shaped, by the same **passion for innovation and development**, intertwined with the story of the **Capaccioli family**, which still today - after **70 years** and **two generations** – runs the company with the same enthusiasm as its founder.



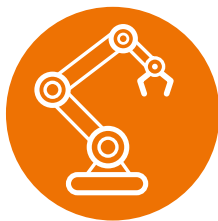
A SINGLE SUPPLIER YOU CAN COUNT ON



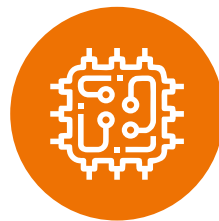
MECHANICS



AUTOMATION



ROBOTICS



ELECTRONICS



PROCESS

Our long-standing experience in the world of mechanics, automation, robotics, electronics and processes allows us to offer a complete range of services and solutions as a **single supplier**, adopting a **customised and 'tailor-made' approach**.

We have a team of highly qualified engineers and

technicians who enable our company to expand relentlessly in world markets with the best technological solutions.

AN INTERNATIONAL COMPANY AND A CLOSE-KNIT TEAM

We are able to operate **all over the world**, bringing together **different but complementary skills** from our **design, production and assembly** departments, to pursue the idea of innovation and pro-

fessionalism that has been part of us since the very beginning. We are **an international company**, which retains the solid principles of a **family business**: this is the great **added value** of Capaccioli.



KEY WORDS FOR OUR ROADMAP IN THE COMING YEARS

► FULL AUTOMATION OF PRODUCTION PROCESSES

Machines and equipment are fully integrated into a single block of interconnected units that communicate and cooperate with each other, forming **efficient and reliable production systems** that perform fast, repetitive and hazardous tasks with the highest precision. This re-

duces labour-intensive tasks, freeing staff from potentially dangerous work tasks.

with the utmost precision to optimise the distance that each part travels between the different steps and reduce both energy consumption and operating costs.

► DECARBONISATION

In keeping with the latest trends in decarbonisation and the reduction of CO₂ emissions, Ca-

paccioli offers various **technological solutions for a new production process** that can be fuelled using innovative energy sources, integrating the use of traditional fossil fuels with alternative fuels such as hydrogen-biomass-syngas and electric heating systems.

► CONTINUOUS INNOVATION

Since it began its activity in the 1950s, Capaccioli has developed its solutions and products, integrating the **most advanced technologies** to develop modern and advanced systems to offer its customers high value-added solutions.

► ENERGY SAVING

The optimisation of industrial processes is aimed at maximising efficiency, safety, and the **reduction and use of raw materials and consumables**. Each step of the process is synchronised



BRICK SECTOR

OUR RANGE OF MACHINES AND SOLUTIONS

OUR PRODUCTS ARE WELL KNOWN THROUGHOUT THE INTERNATIONAL BRICK INDUSTRY. THEY ARE THE RESULT OF EXPERIENCE, KNOW-HOW AND THE SPIRIT OF INNOVATION OF THE COMPANY, WHICH STRIVES CONSTANTLY TO FIND THE BEST TECHNOLOGICAL SOLUTIONS.



CLAY PREPARATION MACHINES



A range of machines and systems for the preparation, storage and shaping of clay, by means of a wet process, including dosing, transport and

storage of the raw material along the production flow. Machinery that **is efficient, Made in Italy, and high-quality.**



EXTRUDERS

Our extruders are designed using the most advanced 3D CAD software programmes, combining a simple layout with overall structural robustness, particularly for moving components. The machine layout is enhanced by the choice of a few important details, such as the perfect positioning of several units, easier availability of spare parts and easy inspection of critical areas.



KILNS AND DRYERS

By carefully evaluating the results of raw material analysis in our laboratories, our technical staff is able to provide the best technological firing solution for **brick-kilns**.

Using traditional or prefabricated structures, we design and manufacture the following types of kilns:

- ▶ **KILN FOR ALL TYPES OF BRICKS AND TILES**
- ▶ **U-CASSETTE KILN**
- ▶ **H- CASSETTE KILN**
- ▶ **SINGLE-LAYER KILN**



Drying can be conducted in various ways. Depending on the type of clay, our drying experts propose the most suitable solution: long, semi-fast or high-speed drying. We design and manufacture any type of brick dryer: static, tunnel or high-speed.

We also refurbish and increase the capacity of existing kilns.

In the Capaccioli range of **brick dryers**, the ultra-rapid **Condor** is at the forefront, ensuring significant savings in energy consumption, low initial investment costs, and ease of use and maintenance.



BURNERS

We offer a wide range of in-house manufactured **burners** that are designed for reducing consumption and pollutant emissions.



PROCESS OPTIMISATION AND ENERGY EFFICIENCY

The production of bricks is an energy-intensive process, the heat requirement is concentrated in the two main stages of the entire production process: drying of the wet material and firing in the tunnel kiln. In keeping with the current trends for decarbonisation, CO₂ reduction and energy saving, we at Capaccioli have designed several technical solutions to meet the latest environmental standards required of



brick production plants to achieve an effective reduction in overall energy consumption. In addition to the traditional fuels used for drying and firing clay material and gas-liquid-solid fossil fuels, there are also innovative heat sources available for the clay brick production process, including

- H₂ plants, operating with a mixture of LPG or natural gas with hydrogen
- Alternative fuels, including biomass, SRF Solid Recovered Fuel, Syngas and others
- Electric heating systems to provide heat without a combustion process and zero CO₂ emissions.

AUTOMATISM

CUTTING LINES

In cutting lines it is essential to pay attention to precision in order to maintain high production levels, which is why we take care of the cutting units down to the smallest detail. They can be of various types:

PUSH CUTTING

MULTI-WIRE CUTTER

CONTINUOUS CYCLE CUTTER

LOADING AND UNLOADING SYSTEM FOR DRYER

Customised lines for loading and unloading the dryer that adapt to individual production requirements, available space and each type of dryer, providing the best possible performance.

SETTING MACHINE

Highly reliable, robotized lines designed to make the best use of space and guarantee continuity and speed to the production cycle.

FIRED MATERIAL UNLOADING AUTOMATED WAREHOUSE PACKAGING AND PALLETISING

Our experience and in-depth knowledge of the production cycle allows us to design systems for unloading the fired product with great precision, speed and synchronism. They are robotized and very versatile, which means they can handle any type of product. The packaging systems are perfectly incorporated into the lines, and the automated forecourt storage systems allow the customer to make the most of his space and avoid any interruption whatsoever of the production cycle.



DRYER HANDLING SYSTEM KILN HANDLING SYSTEM

The automation of the trolleys, dryer floors and kiln carriages is extremely smooth and accurate, thanks to the precision of the handling systems, which follow the entire product drying and firing cycle.



SOFT MUD PLANTS

Easymud technology makes it possible to produce bricks in the form of **“soft mud”**, in other words produced by moulding and not by extrusion, giving them the characteristics of handmade bricks.

Through a fully automated cycle of piece moulding, mould handling and material loading/unloading, our Easymud plants allow the production of **bricks, listels** or **paving formats**, as well as **special pieces**, such as corner elements, which can be used in the laying of ‘exposed’ masonry, with different types of surface finishes.



INDUSTRIAL AUTOMATION



COMPLETE SOLUTIONS AND PRODUCTS FOR INDUSTRIAL AUTOMATION

Our solutions can be applied in various fields including automated handling and manipulation of products and semi-finished goods, end-of-line production processes, and complete plants to improve efficiency and productivity.

We can provide **automated and robotic solutions for fully automated operation of production processes** that can perform fast, repetitive and high-intensity operations with maximum precision.

▶ AUTOMATED MATERIAL HANDLING

Complete solutions including conveyors, lifters, buffer units, material distribution and collection hoppers.

▶ MATERIAL COUNTING, ALIGNMENT, WEIGHING, SORTING

Specific equipment for sorting different materials, detecting defective parts, aligning, positioning and counting.

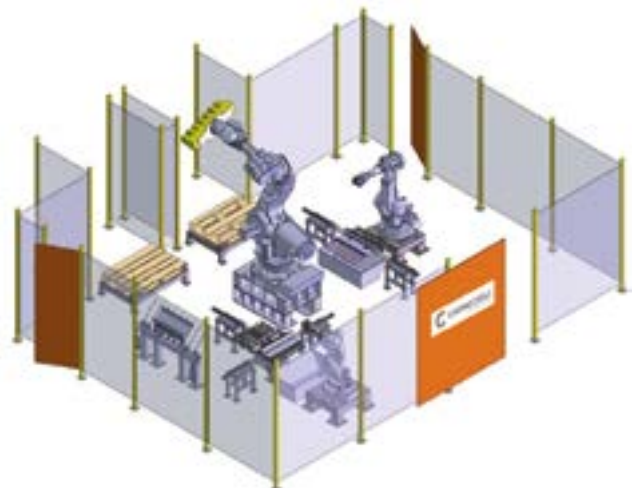
► PICK & PLACE

Material handling units to be installed along the production flow equipped with robot manipulators to move materials from one line to another.



► ROBOTIC PALLETISING

Robotic, fully automated palletising units for optimal and efficient palletising of different materials, including boxes, bags and loose parts



AUTOMATED SYSTEMS FOR VARIOUS INDUSTRIES

▶ STEEL & FOUNDRY

Automated heavy-duty design solutions to improve efficiency and productivity for the steel and foundry industry.



▶ FOOD & BEVERAGE

Integrated systems for handling and transporting batches or boxes of products to be handled with greater precision and delicacy.



▶ PET FOOD

Specially designed for handling bags of pet food, equipped with specially designed manipulators and grippers.



▶ TISSUE & TOWEL

Conveying and palletising units designed for handling packs or boxes of tissues and other paper products.



▶ ENGINEERING AND MANUFACTURING

Automated conveying and material handling lines for a variety of applications in the engineering and manufacturing industry.



Automated plants involving the integration of different machines and equipment into a single block of interconnected units that communicate and collaborate with each other, to streamline the production processes.



► **RELIABLE SYSTEMS FOR PRODUCT QUALITY AND PLANT SAFETY**

Improved process control and optimised operating costs, material inspection and increased product quality, supervision and control of the entire line for a safer working environment.



PROCESS PLANTS

We design and develop innovative solutions and process plants designed for specific applications for the **transformation and processing of industrial products**. We design new plants,

upgrade existing plants, increase efficiency and optimise complex systems for various production processes



► HEAT TREATMENT OF METALS

We have specific know-how on combustion processes, heat exchange and transmission, the chemical and physical properties of materials, and the study of technologies and products such as burners and thermal plants for furnaces and industrial furnaces fed with different gaseous, liquid and solid fuels.

Over the years we have gained specific experience in applications on furnaces for the heat treatment of metals, modernising and upgrading furnaces used in the steel industry.

► MINERAL PROCESSING PLANTS

With our consolidated expertise in materials handling and transport, drying, grinding, crushing and granulation, as well as screening-separation-mixing, we are able to manufacture

equipment and complete plants for processing raw materials.

We supply plants for the processing and treatment of raw materials required for different production processes, complete systems from the receiving station of incoming minerals to the storage of processed materials ready for use.



► WASTE & RECYCLING

We are able to design and install complete plants for the treatment and processing of various types of waste such as plastics, waste from the wood industry, tyres, inert waste from the construction industry, to reconvert recycled materials into products and compounds for reuse in the production cycle of various industries.



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OF ENGINEERS
AND A STAFF
OF **HIGHLY**
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AN **EXPERIENCE**
OF OVER
SEVENTY YEARS
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