



We **A**^[AUTOMATION] **R**^[RESEARCH] **E**^[ENVIRONMENT] Tableware





We **A**^[AUTOMATION] **R**^[RESEARCH] **E**^[ENVIRONMENT] Tableware

AUTOMATION

Modern, functional and customized solutions. Processes guaranteeing product quality and optimizing your OpEx. Production systems developed to respect and improve operator working conditions.

RESEARCH

Continuous research to obtain technical and technological improvements to machines, moulds & tools and production processes. Specially designed solutions for continuous evolution of the product in terms of materials, shapes, decoration and surface finishes.

ENVIRONMENT

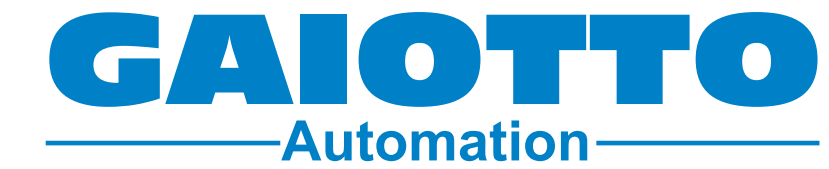
Research and development to optimize and reduce energy consumption. Sustainability of processes for handling the water used in production. Recycling or recovery of waste product to sustain a circular economy.



We **A**_[AUTOMATION] **R**_[RESEARCH] **E**_[ENVIRONMENT] Tableware



FOCUS ON
[AUTOMATION]



The SACMI tableware factory is a complete fully automated solution thanks to the combination of the specific skills and experience of each of our renowned brands such as **SAMA** (forming and glazing technologies), **Riedhammer** (firing) and **Gaiotto** (robotics). **Automation** is a clear trend in the Tableware market to **increase quality and productivity, optimize**

costs and **speed up product development**. Thanks to its specific expertise and its long-established experience as a manufacturer of **complete systems**, SACMI is the all-round partner you need to transform your plant into a **lights-out factory** focusing on a smooth, personalized, just-in-time logic of production flow development and control.

We **A**^[AUTOMATION] **R**^[RESEARCH] **E**^[ENVIRONMENT] Automation

The 4.0 Tableware factory focuses on distributed automation with solutions designed for all phases of the work process. These solutions are modular and can be personalized to help our customers plan their investment successfully with concrete and measurable results at each stage.



BODY PREPARATION

PRESSURE CASTING

DECORATION

ISOSTATIC PRESSING

GLAZING

BODY PREPARATION

By its very nature, the world of Tableware production requires a combination of complex skills and know-how from across the entire field of ceramic technologies. The correct preparation and characterization of raw materials (granulate, slips) is the first step towards creating a quality product.

[VIDEO](#)

[BACK TO THE LAYOUT](#)



BODY PREPARATION

AUTOMATION, REPEATABILITY, CONTROL

In synergy with its R&D centres, SACMI offers its customers complete analysis of ceramic bodies with industrial tests carried out to guarantee the best possible result during production.

Automation, repeatability and control are the distinguishing features of SACMI's complete lines for body preparation, with the possibility to carry out monitoring and data analysis remotely.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



ISOSTATIC PRESSING

The highly versatile and productive forming lines are the core product of SAMA's solutions. From isostatic pressing to robotized demoulding and finishing carried out with GAIOTTO automation, our range of machines is carefully designed – with modular platforms and increasing levels of automation - to meet different production requirements, such as handling diversified product mixes and pieces with complex shapes.

[VIDEO](#)

[BACK TO THE LAYOUT](#)



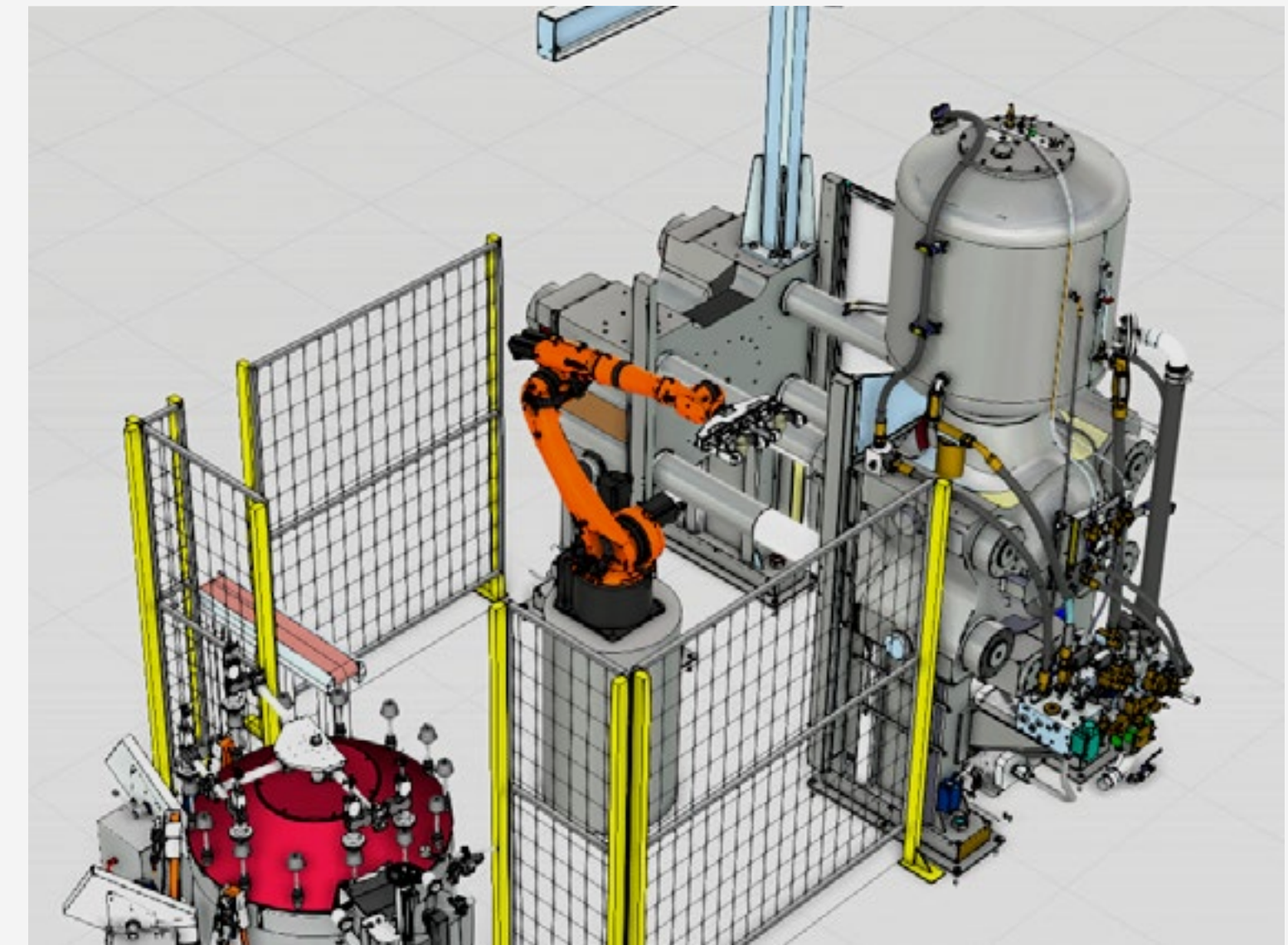
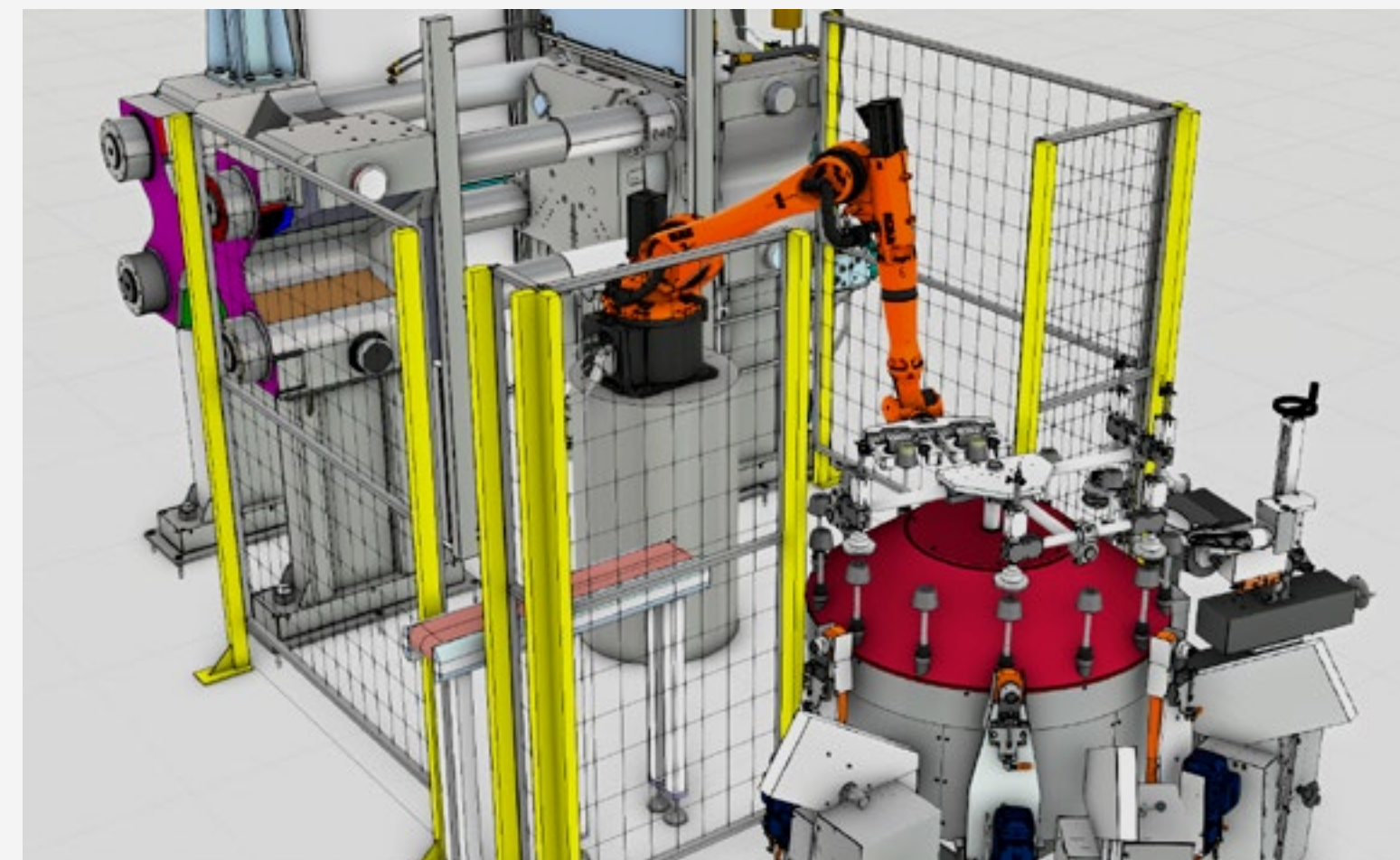
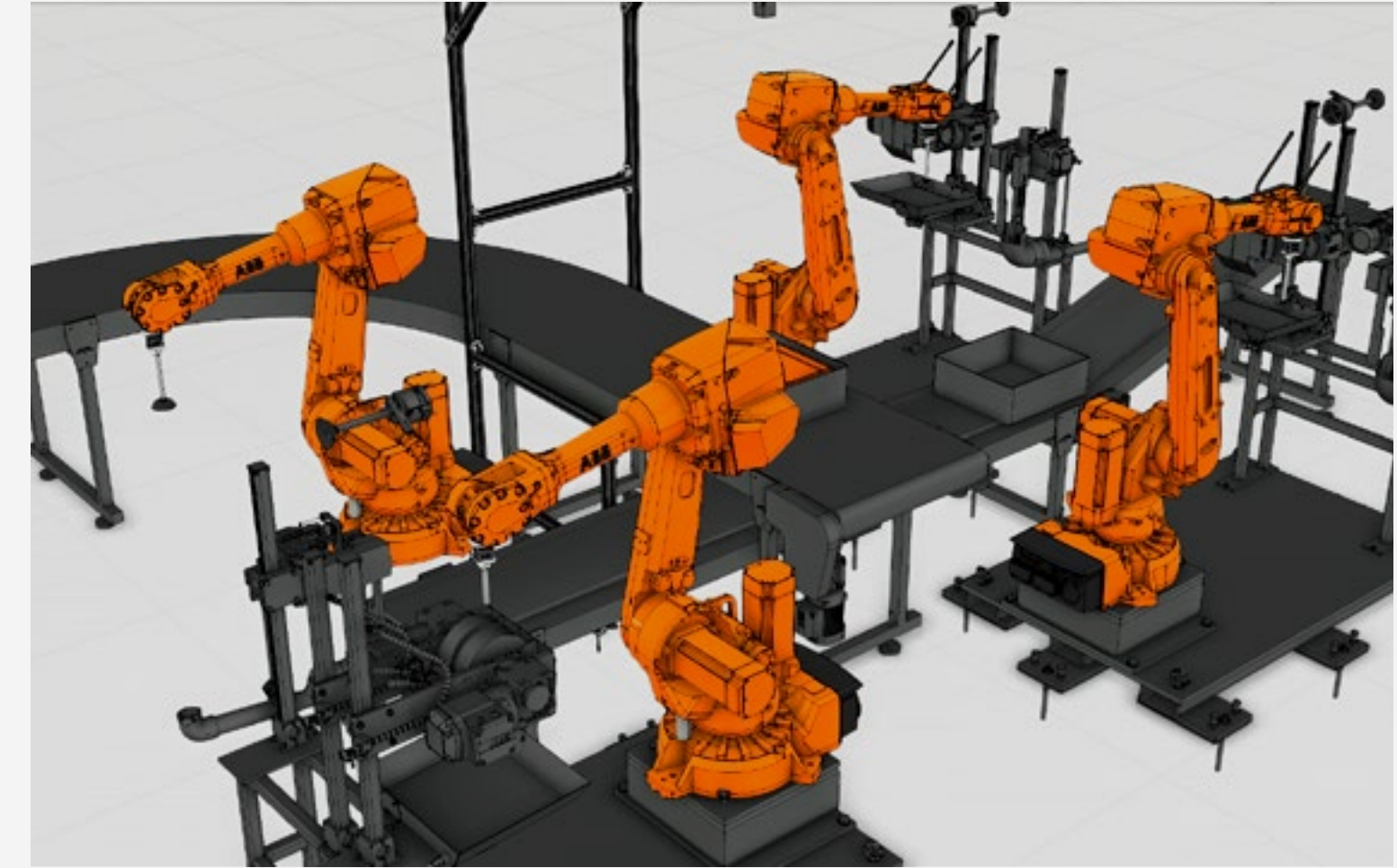
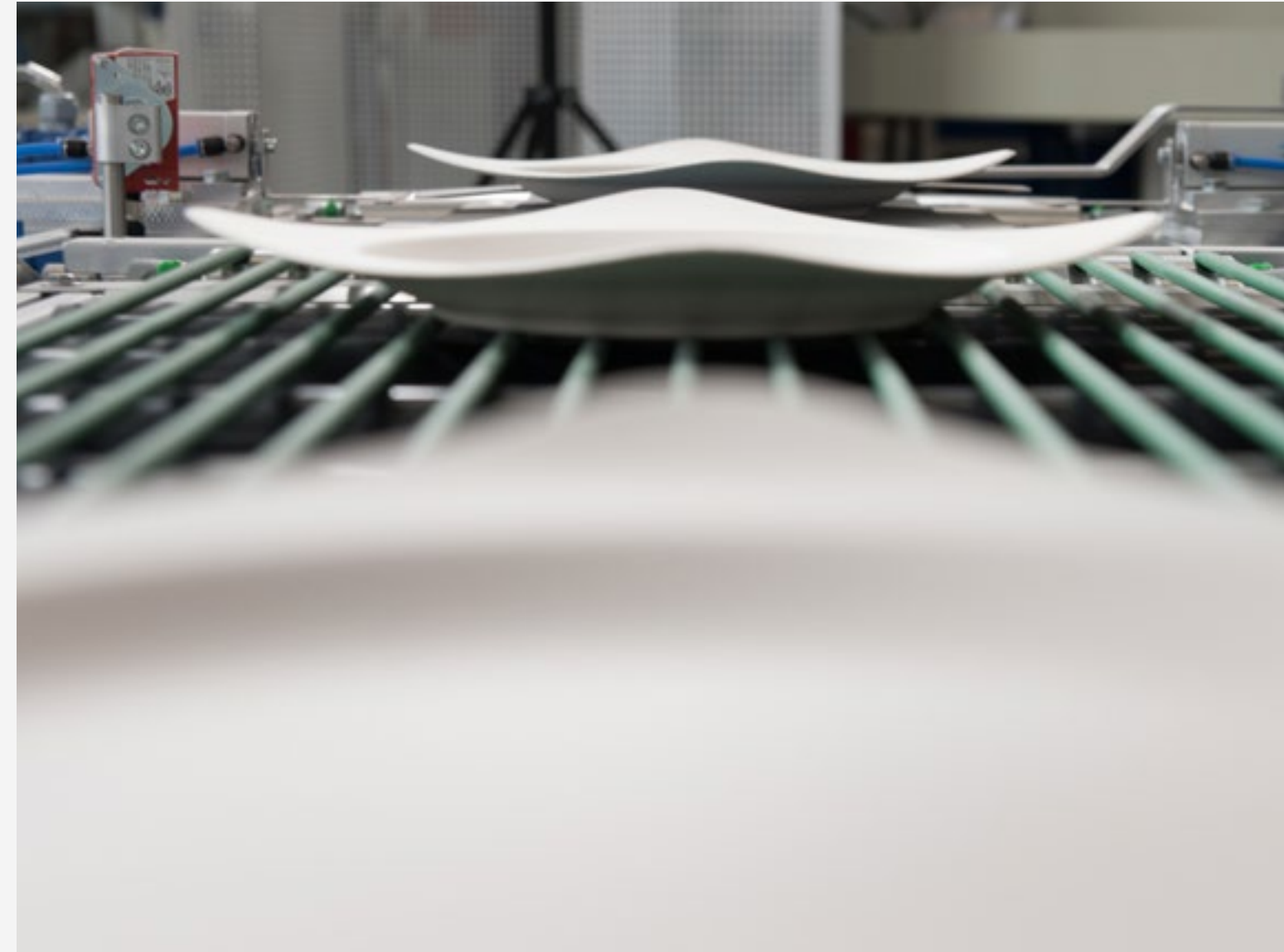
ISOSTATIC PRESSING

THE ADVANTAGES OF AUTOMATION

Automation of production and the possibility to use a robot for the more complex finishing operations leads to two main advantages; first the improvement in quality and work process repeatability and second total traceability of the product throughout the entire production process.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



PRESSURE CASTING

SAMA offers pressure casting lines which are fully automated from cycle control to piece demoulding up to drying and finishing operations.

VIDEO

[BACK TO THE LAYOUT](#)



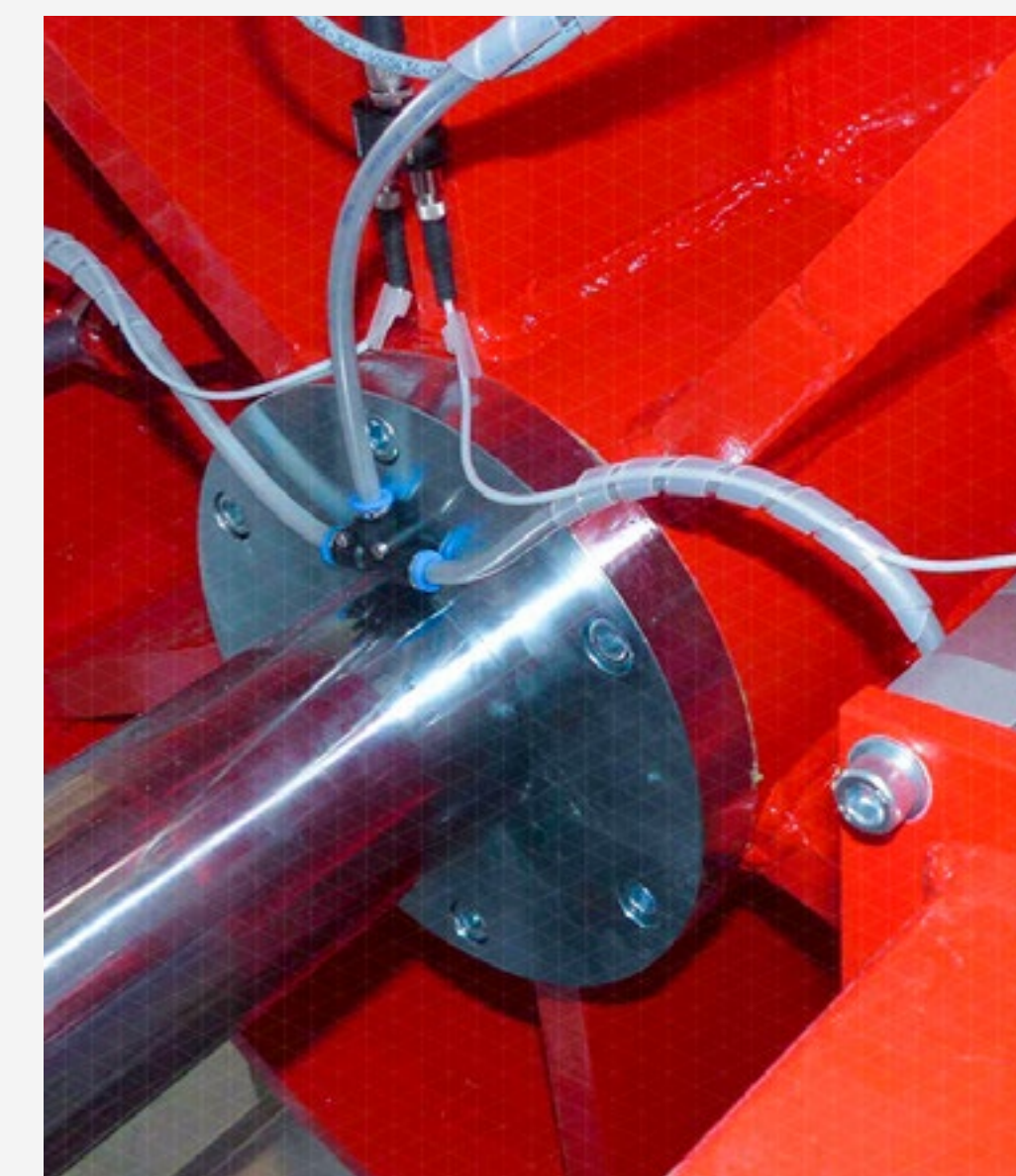
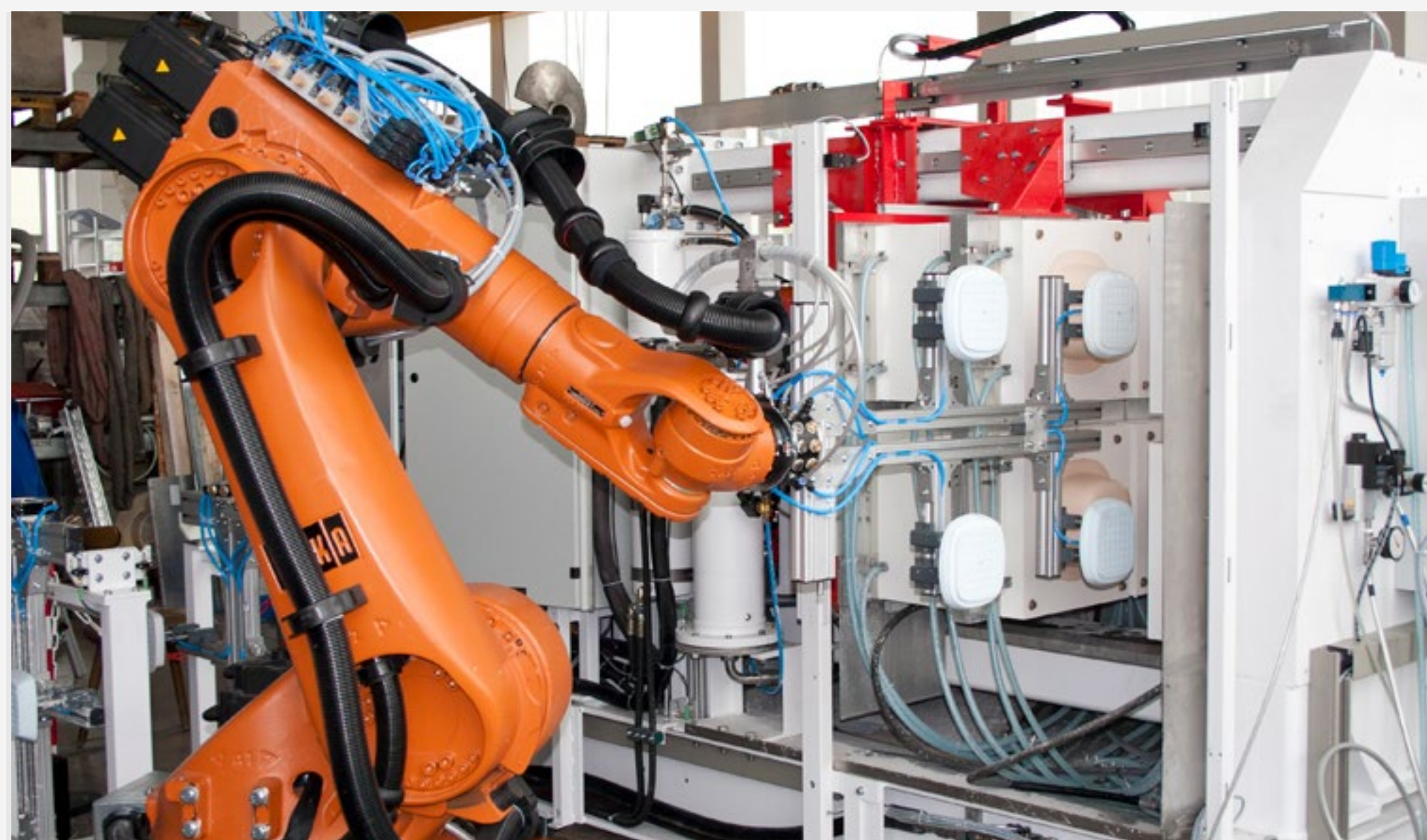
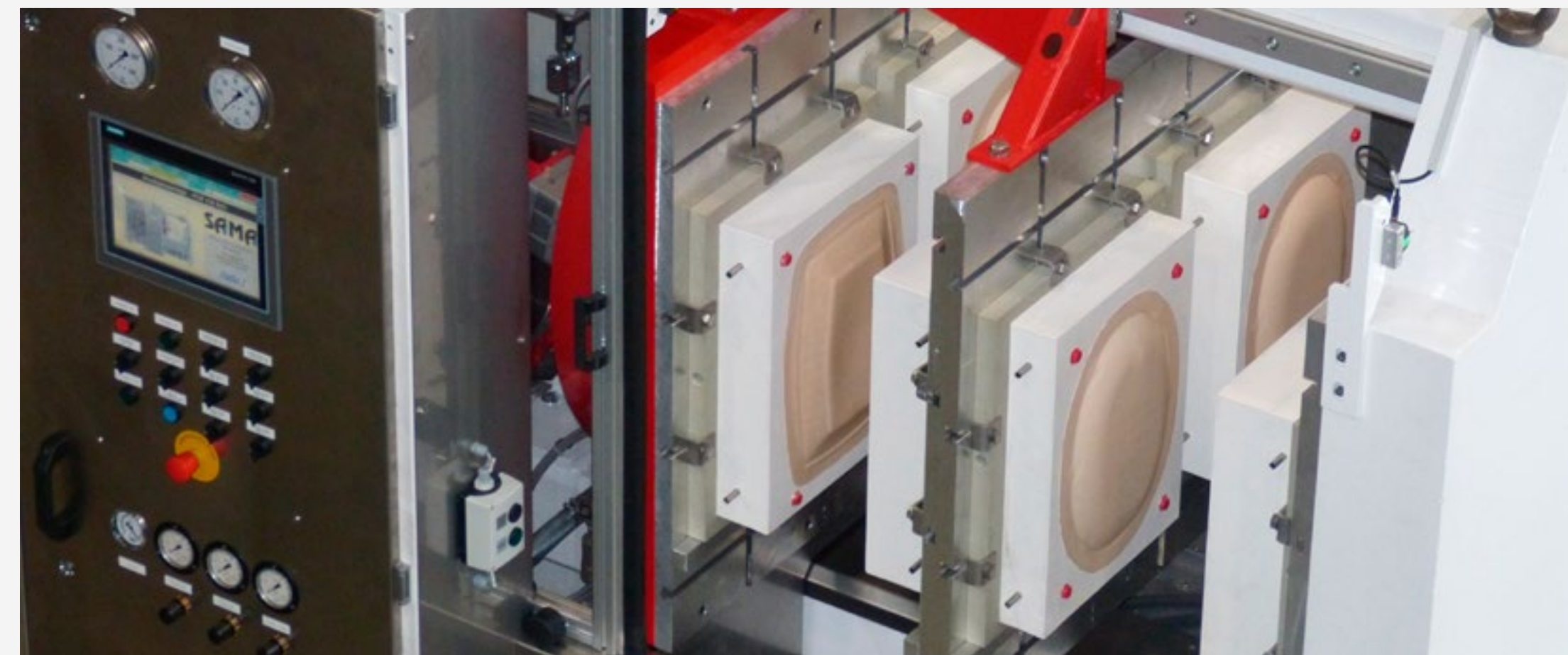
PRESSURE CASTING

PCM RANGE

Available in various tonnages (from 100 to 150 tonnes) and set-ups (single or double head and/or with double mould support plate) the PCM range allows for maximum flexibility in handling the moulds (from 2 to 4 parts, single or multi-cavity). With SAMA's pressure casting solutions, each cell – made up of one or more machines, robots and sets of accessory equipment – can have a personalized configuration according to the particular product.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



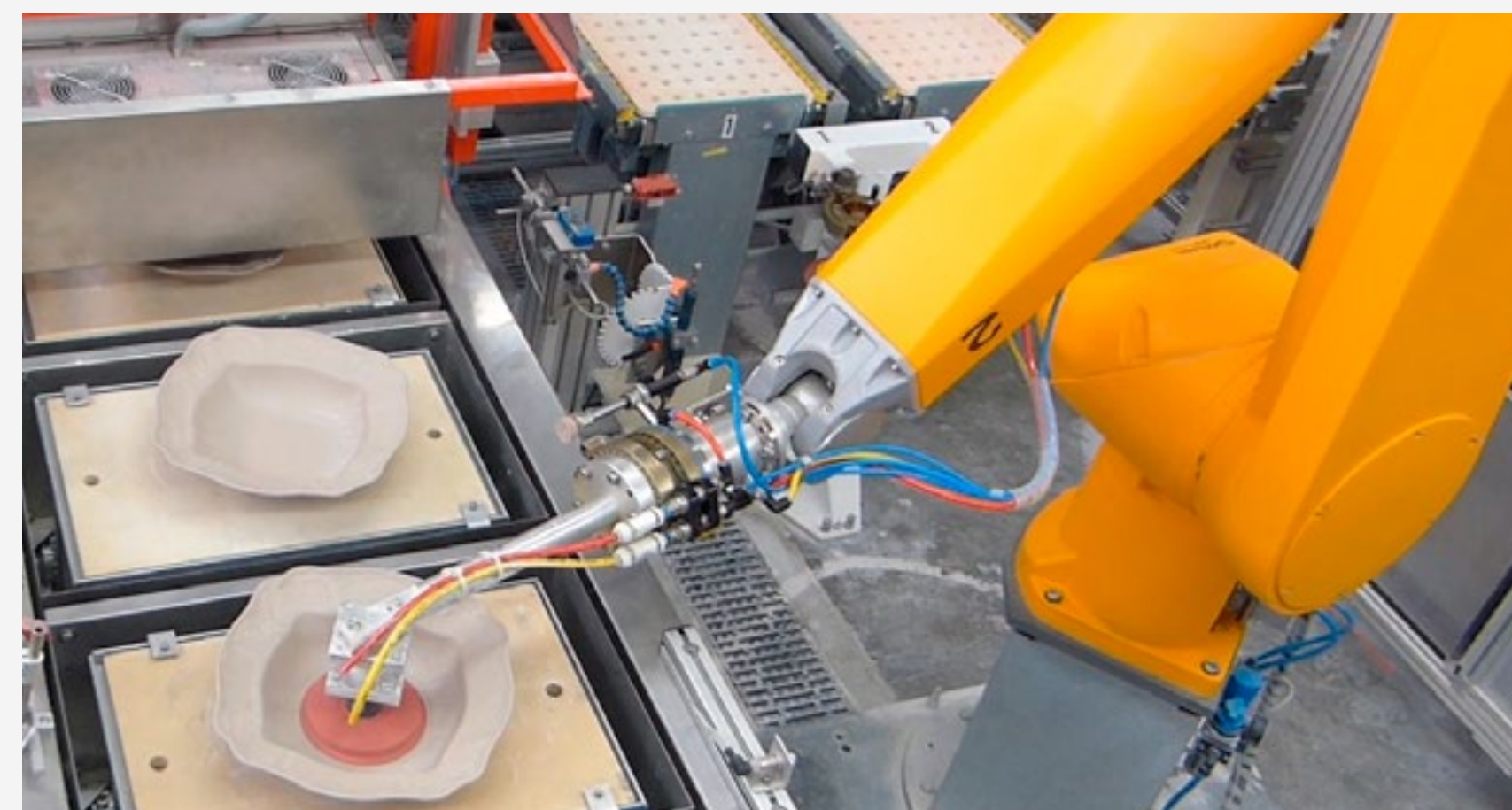
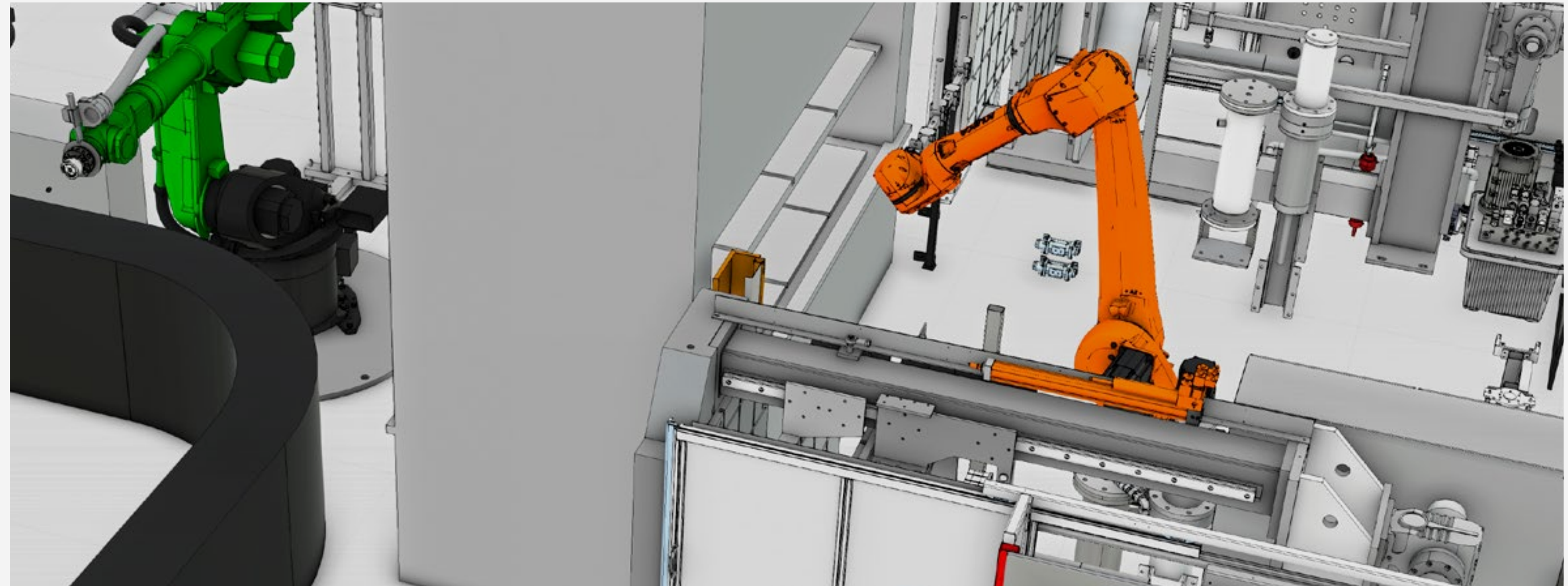
PRESSURE CASTING

INTEGRATION WITH 3D SIMULATION SOFTWARE

Efficiency, quality and process repeatability are also achieved thanks to innovative 3D simulation software which is used to check the overall dimensions and work cycles of the cell at design stage. Carried out together with SACMI-Gaiotto, feasibility studies are becoming more and more important in order to optimize and integrate all the man-machine-robot resources.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



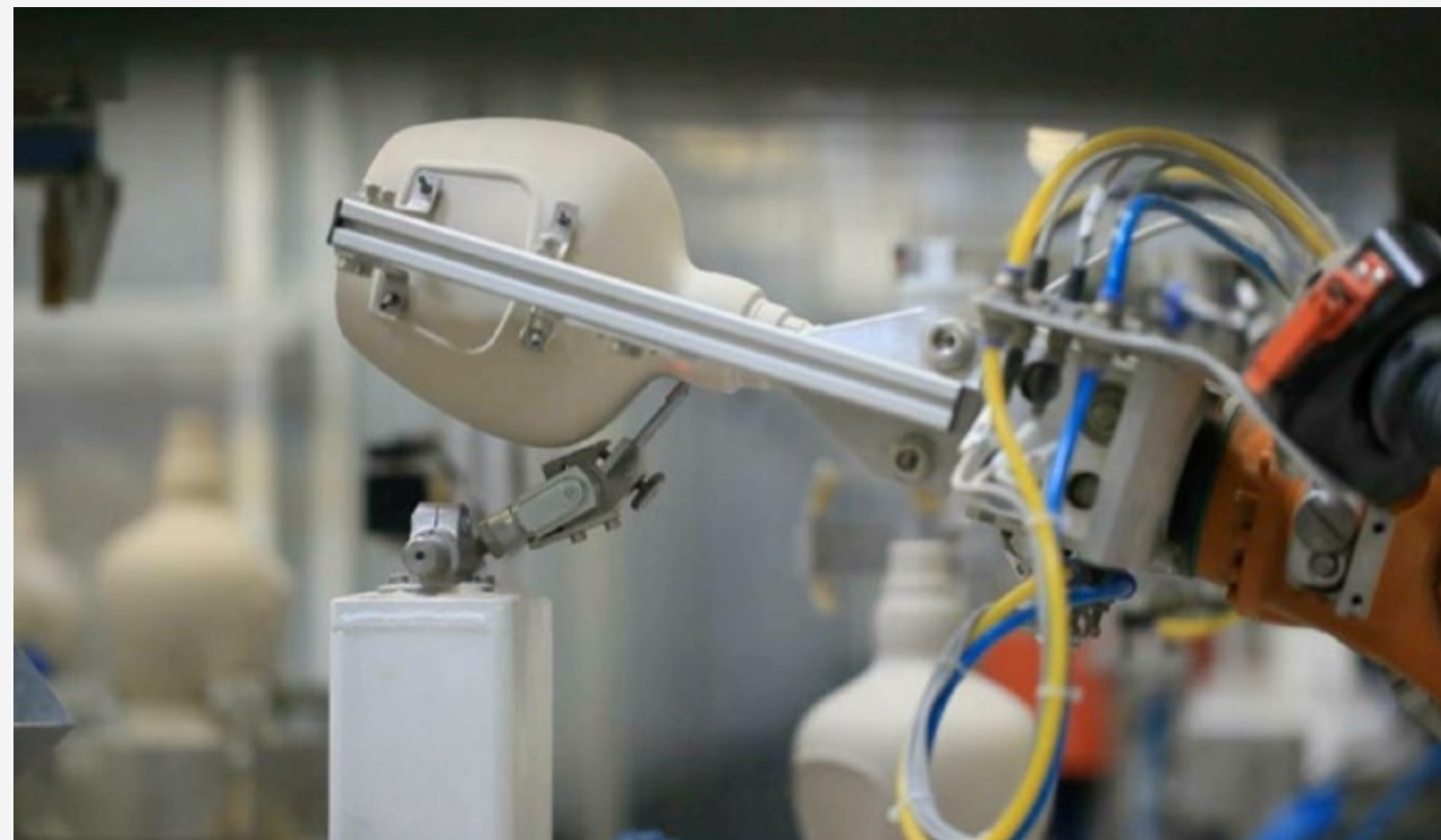
PRESSURE CASTING

MAN-MACHINE INTERACTION ECO-SYSTEM

With SACMI-SAMA-GAIOTTO automation, the line operator is part of a new concept of an eco-system / man-machine interaction which has been carefully studied to reduce the complexity and inefficiencies of manual operations. A single demoulding robot can handle several machines and be equipped with finishing tools to make these stages of the process fully automatic.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



GLAZING

Thanks to its extensive know-how and integration with SACMI systems, SAMA offers glazing solutions for the entire range of tableware items – flatware and holloware – to produce high quality pieces free of glazing defects in one single work process. SAMA's latest generation glazing solutions are specially designed so they can be easily integrated with transfer lines thus reducing the footprint and facilitating installation in existing plants.

VIDEO

BACK TO THE LAYOUT



GLAZING

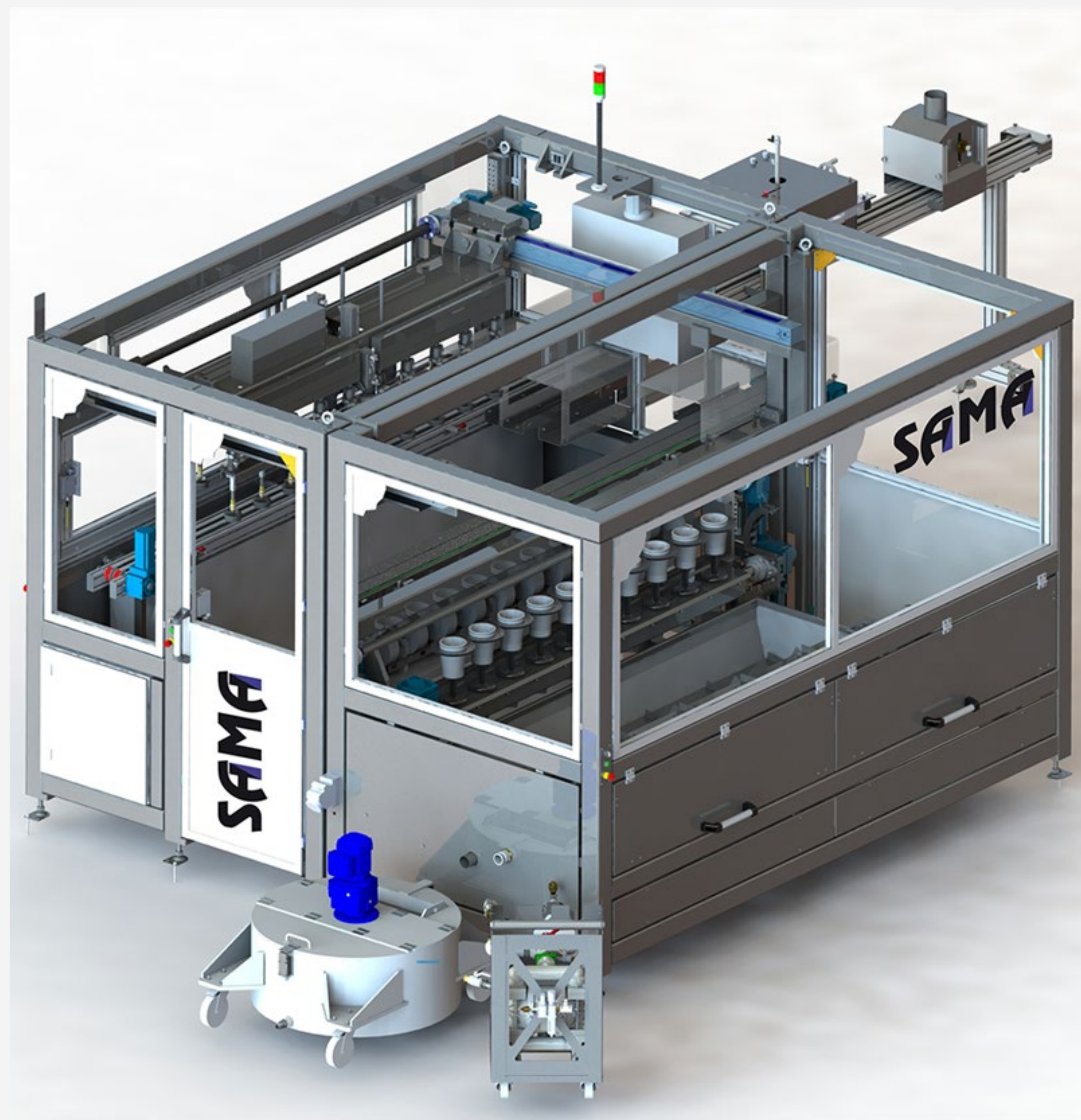
MONO 10T EVOLUTION

MONO 10T Evolution, for the automatic dip glazing of cups, mugs and bowls, is a new solution of innovative design which is modular and configurable as required. Fast and precise, the MONO 10T is the latest in this series of machines which has already enjoyed wide success on the market for over two decades for automatic glazing of these articles.

Alongside the MONO range there are TRIPLEX machines; the ideal solution for dip-glazing plates.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)



DECORATION



SACMI offers state-of-the-art digital printing technologies, with flexible and integrated solutions.

[FIND OUT MORE](#)

[BACK TO THE LAYOUT](#)

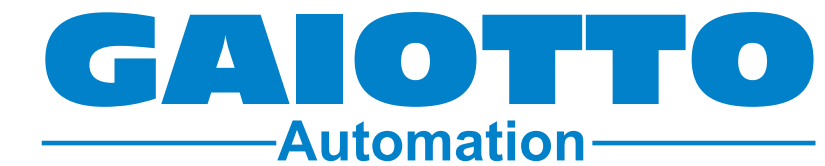




We **A** [AUTOMATION] **R** [RESEARCH] **E** [ENVIRONMENT] Tableware



FOCUS ON
[RESEARCH]



SACMI is the best partner for advanced research in the field of Table-ware technology, with services ranging from its laboratory to the pilot plant, up to the development of machines and tools with direct tests. Thanks to continuous Research & Development, as well as the special departments and services set up at the different companies within

the Group, SACMI offers a unique service to assist the customer from the initial product **concept** to the **raw materials, recipes, technologies** and **processes** required to manufacture it. The possibility to **test and validate solutions in advance** helps customers develop new products whilst **guaranteeing the expected results from the investment.**

We **A**^[AUTOMATION] **R**^[RESEARCH] **E**^[ENVIRONMENT] Research

SACMI has been at the forefront of innovation in this sector for more than 30 years, leading the evolution towards digitalization of processes and increased automation. SACMI assists the customer throughout every stage. Thanks to its network of companies and know-how acquired in the field, working alongside its customers around the world, SACMI is a true product development partner introducing innovation within the daily activities of the factory.

Browse interactive PDF: select from the list on the right and click on the icon for more information.

SACMI R&D CENTRE

SACMI PILOT PLANT

SAMA R&D CENTRE

SAMA PILOT PLANT

DIGITAL DECORATION

CASE HISTORY

KNOW-HOW

SACMI R&D CENTRE

The first step towards creating a good product is the proper formulation of the recipes and bodies.

SACMI Imola's laboratory uses all the latest instruments and testing equipment. The customer can request analysis, tests and characterization of raw materials and recipes with samples or complete sets.

SACMI offers consultancy for product development, suggesting the best formulations for manufacturing and industrialization.

VIDEO

[GO BACK TO THE INDEX](#)



SACMI PILOT PLANT

SUPPORT FOR PROJECT DEVELOPMENT

Alongside the R&D centre, SACMI has also set up a complete pilot plant for carrying out analysis and pre-industrial testing of bodies providing an added benefit to the SAMA technologies for high-pressure casting and dry pressing with isostatic tools.

Both with standard and new products, the opportunity to test recipes in the pilot plant means any critical issues with the body can be resolved, thus reducing potential product defects and facilitating industrialization.

[VIDEO](#)

[GO BACK TO THE INDEX](#)



SAMA R&D CENTRE

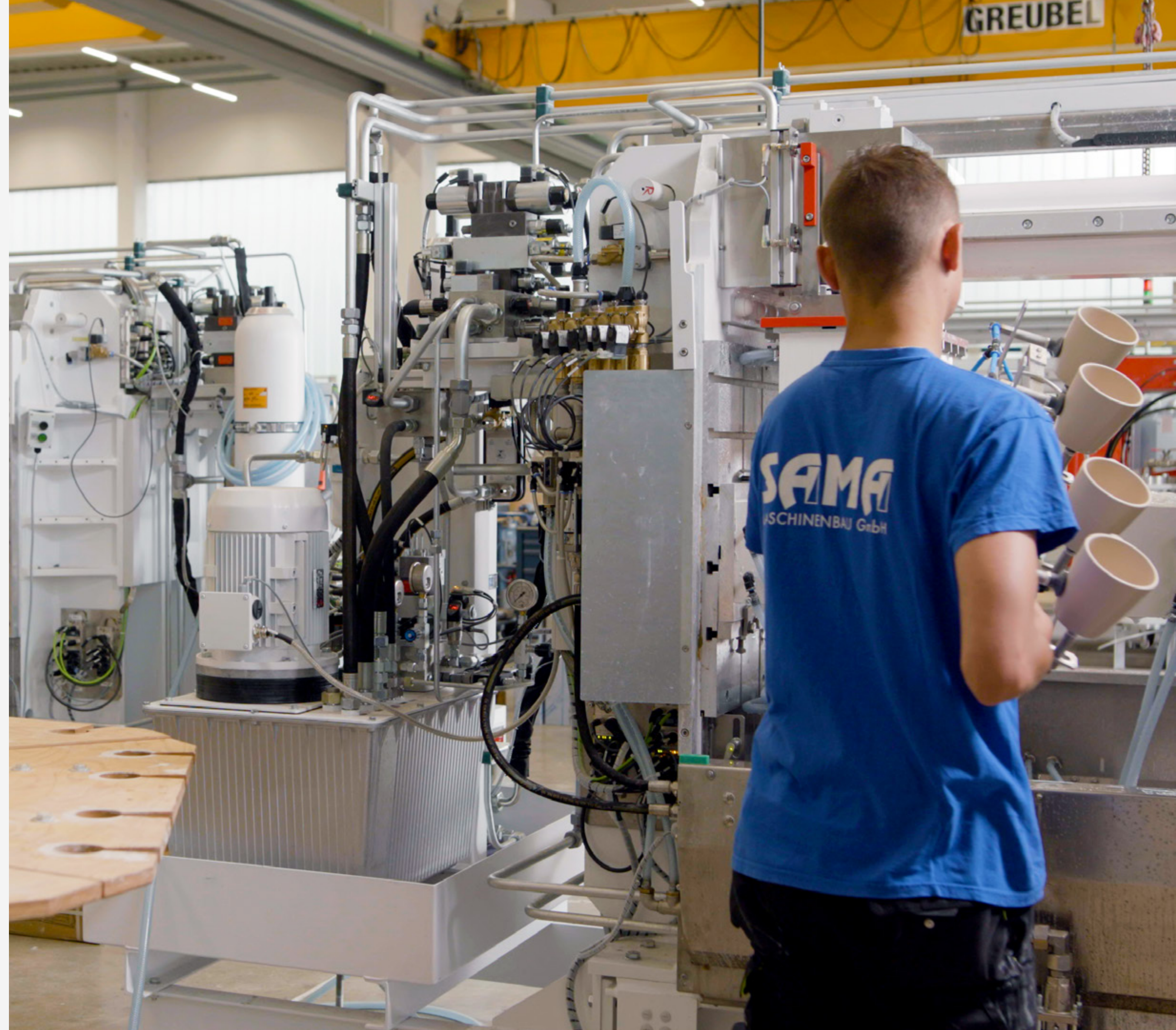
SUPPORT FOR PROJECT DEVELOPMENT

SAMA is the centre of the SACMI Group's activities as far as the design and development of complete solutions for shaping, finishing and glazing Tableware is concerned. It offers a state-of-the-art R&D centre and complete pilot plant.

The video which can be found at the below link, filmed inside SAMA's pilot plant, shows the innovative application of the 4-part resin mould (made "by tooling") for manufacturing cups by means of high-pressure casting technology.

[VIDEO](#)

[GO BACK TO THE INDEX](#)



SAMA PILOT PLANT

MOULD BY TOOLING
/ BY CASTING

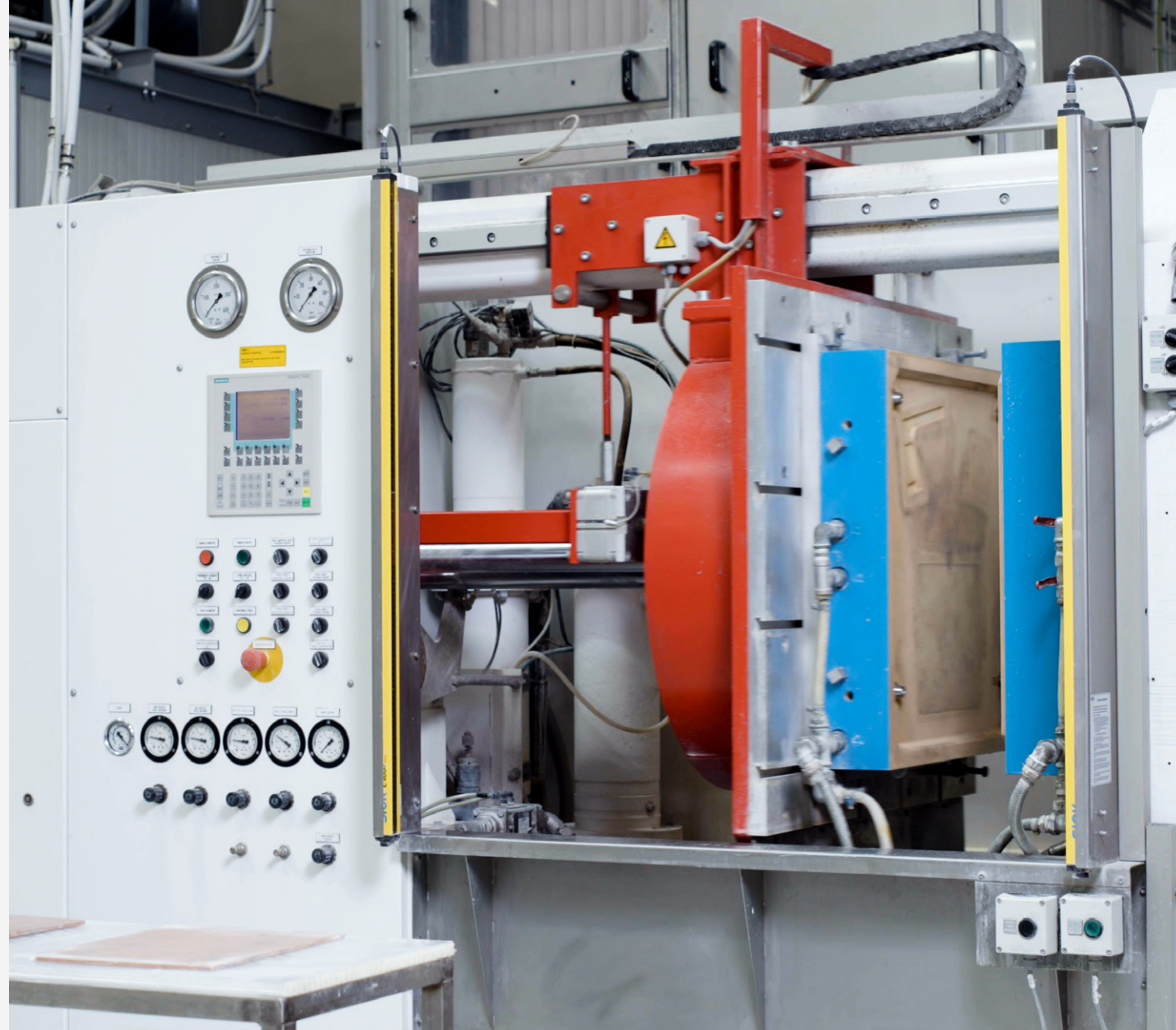
In the field of mould construction, alongside the traditional “by casting” mould production process, SAMA is also using the innovative “by tooling” method which means direct machining of blocks of resin by means of a CNC work station.

The advantages, in light of Digital Product Development, include a drastic reduction in mould development times and the possibility to work 24 hours a day without an operator.

Furthermore, the customer can request the direct supply of resins in order to proceed with mould construction independently according to SAMA know-how.

[VIDEO](#)

[GO BACK TO THE INDEX](#)



SAMA PILOT PLANT

TOOLS FOR ISOSTATIC PRESSING

SAMA has designed and sold more than 4000 resin moulds and isostatic tools around the world. For tool development, SAMA offers a complete service, from the design in the Engineering Department to tests carried out on the press.

The video shows isostatic pressing technology integrated with automatic finishing for the production of plates.

Customers can make use of these applications of the pilot plant to carry out all necessary industrial tests on the tool, whether it is made by them or with the help of consultancy provided by SAMA's technicians.

VIDEO

[GO BACK TO THE INDEX](#)



DIGITAL DECORATION

VERY HIGH RESOLUTION DECORATION



The top quality research and wide experience of the SACMI Group in the field of ceramic decoration has enabled the development of state-of-the-art applications for digital decoration in the Tableware sector.

The DHD (Digital High Definition) series is made up of machines which apply the decoration with a very high resolution, in line, directly on the unfired glaze, perfectly centred on the plate thanks to the vision system.

[FIND OUT MORE](#)

[GO BACK TO THE INDEX](#)



DESIGN PARTNER

UNA CASE HISTORY

Developed and industrialized at the factory of a top customer in the field, DHD performs digital decoration of plates with a resolution of up to 1.200 dpi and speed between 20 and 40 pieces per minute. With 6 colour bars, the solution increases the possibilities for personalization opening up new opportunities also for the Hotel and Catering industry.

Introduced onto the market at the end of 2018, the system has since been further perfected, increasing the types and forms of products which can be decorated digitally and the number of colours available.

VIDEO

[GO BACK TO THE INDEX](#)



KNOW-HOW TO ASSIST THE CUSTOMER

SACMI offers customers its skills and experience to develop the most innovative products. With this objective it has also recently published the first “technological book” for tableware. A unique publication in the industry, this initiative helps spread know-how and training within the companies in this field.

Contact us through your area reference person to show us your project. Together we will assess the best product development strategy to be carried out and tested in partnership with SACMI.

[FIND OUT MORE](#)

[GO BACK TO THE INDEX](#)





We **A**_[AUTOMATION] **R**_[RESEARCH] **E**_[ENVIRONMENT] Environment



FOCUS ON
[ENVIRONMENT]



Automation, digitalisation, optimisation of human-machine resources, respect for the environment. Like the entire ceramic manufacturing industry, tableware has undergone a process of profound transformation in recent years. Automation on the one hand, solutions for the optimisation and integral recovery of the energy and raw materials invested in the process on

the other, are now the hallmark of the offer proposed by the world's leading technology producers. Among these, SACMI is the leader and reference company in design dedicated to sustainable development and, together with its well-known brands SAMA, RIEDHAMMER and GAIOTTO, has been leading the development of the sector for 30 years.

We **A**^[AUTOMATION] **R**^[RESEARCH] **E**^[ENVIRONMENT] Environment

WASTE RECOVERY

ENERGY SAVING

SACMI TOWARDS A CIRCULAR ECONOMY

WATER TREATMENT AND RECOVERY

USE OF ALTERNATIVE FUELS

REDUCTION OF EMISSIONS AND CONSUMPTION

Navigate through the interactive PDF:
choose the topic from the list opposite
and click the button for more information

PROCESSING WASTE RECOVERY

The progressive automation of tableware production plants has accompanied the need to maximise quality while minimising waste and inefficiency.

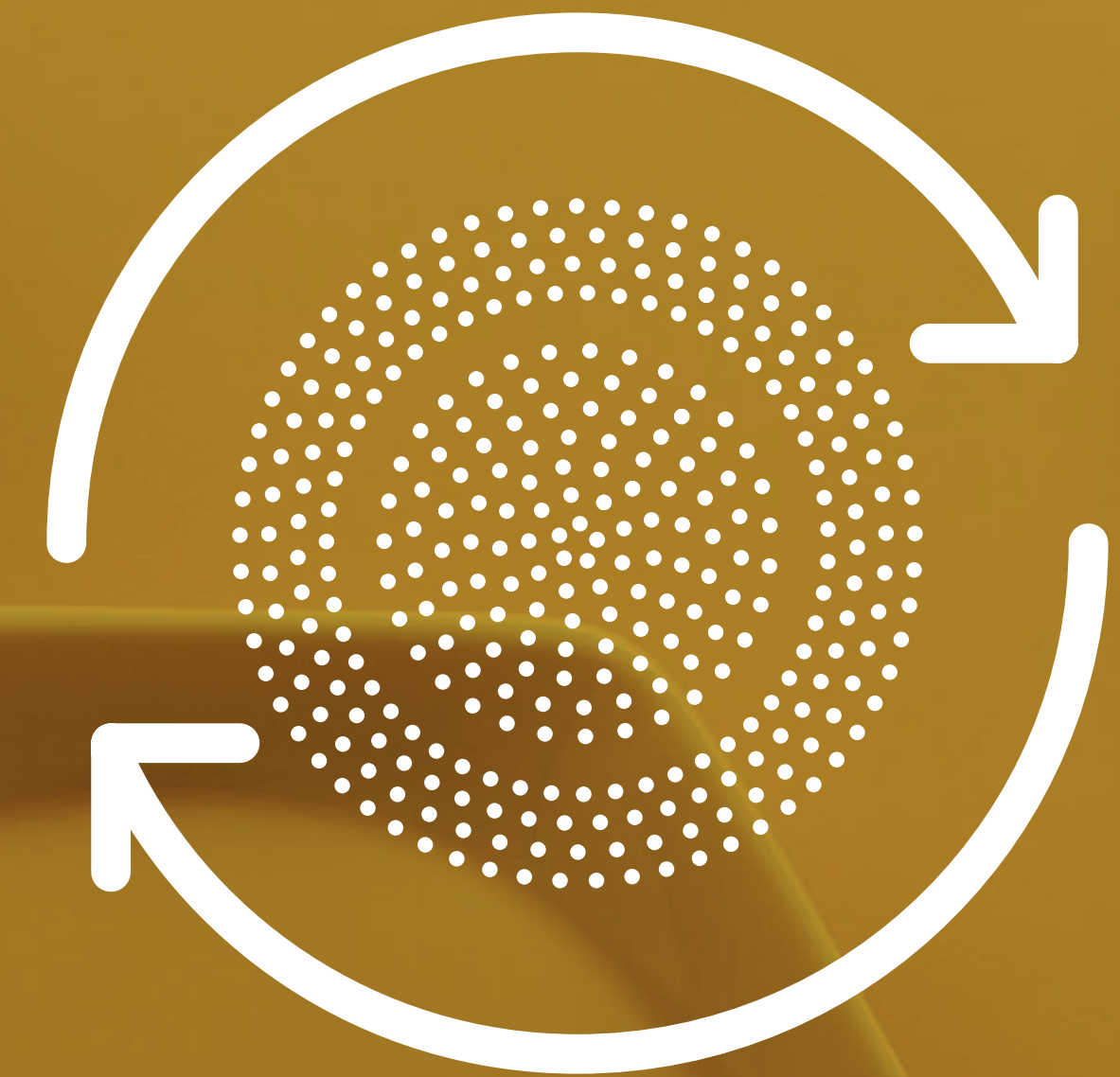
As a direct consequence of this, it is possible not only to **minimise the percentage of defective**

products but also to arrange for the recovery of **residual waste**, reusing it as **raw materials within the process**.

In particular, SACMI plants for tableware are designed for the recovery of **fired waste**, which can be reintegrated into the body.

VIDEO

[BACK TO CONTENTS](#)



SACMI Tableware fired scrap recycling system guarantees **ZERO WASTE** with **TOTAL RECOVERY** of materials

WATER TREATMENT AND RECOVERY

INDUSTRIAL PROCESS

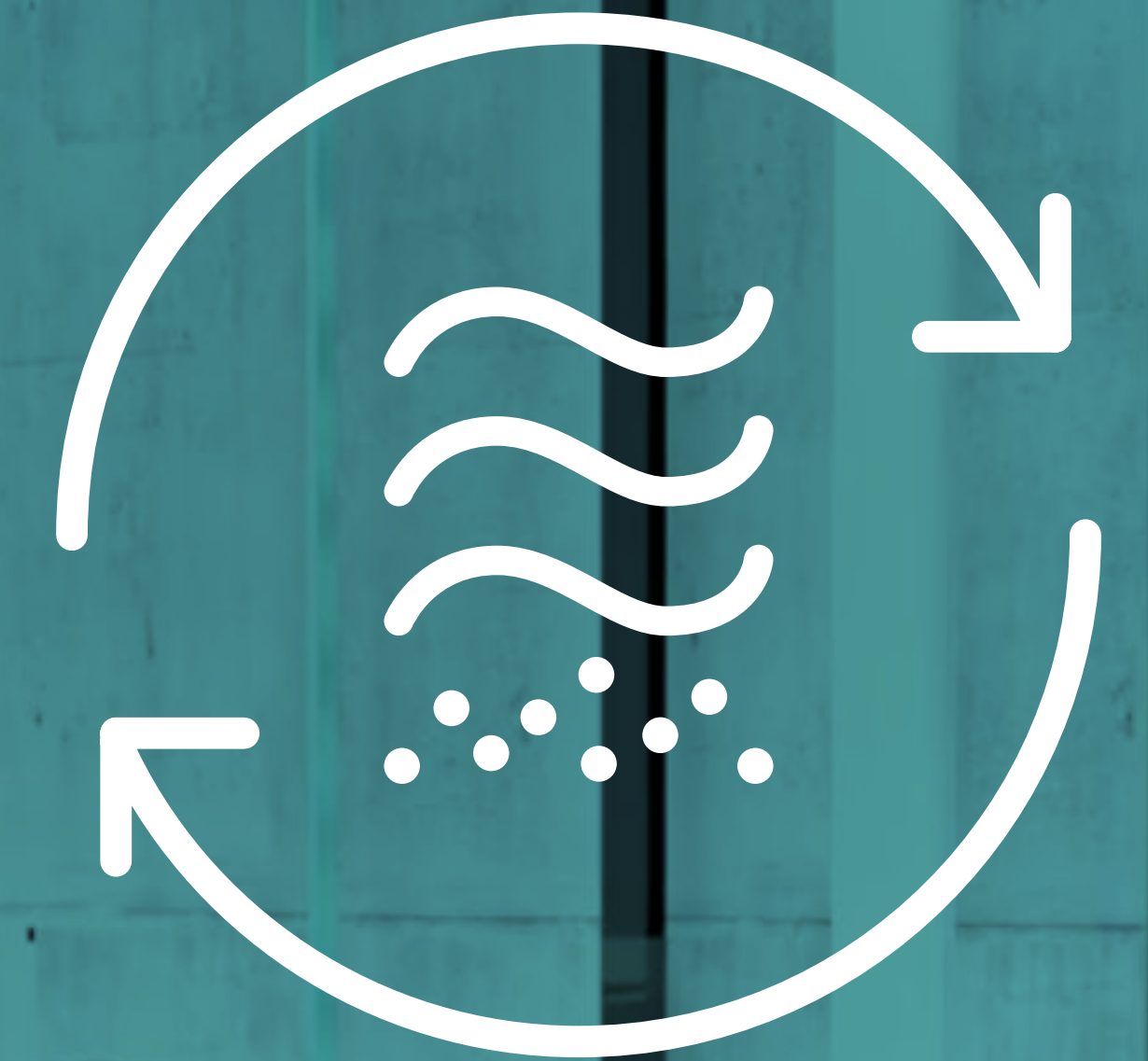
SACMI tableware plants are designed to minimise the consumption of water, which can, in any case, be fully recovered within the factory. Suitably **treated and filtered from the solid parts**, the processing water can be reused for other process steps, or sent to disposal without additional costs.

In the special process of tableware production, the immersion glazing system also involves the complete recirculation of the glaze, with zero process waste.

As a whole, this type of system allows **savings in water consumption of up to 70%** compared to conventional solutions.

[VIDEO](#)

[BACK TO CONTENTS](#)



SACMI Tableware water recycling system guarantees **ZERO WASTE** with **TOTAL RECOVERY** of water

ENERGY SAVING

FORMING MACHINES / ISOSTATIC PRESS

The new GREEN generation of PHO 451-700 isostatic pressing systems is characterised by a significant reduction in the water used in the process (<0.5 m³/h), extremely low noise levels and a **reduction in consumption of up to 30%** compared to conventional solutions. Thanks to the variable-flow drives, the hydraulic pump

applies pressure to the machine only when needed, optimising consumption.

In addition to the extreme flexibility in the production of different items, the SAMA-SACMI PHO also allows for the **best possible power management**, optimising consumption according to the specific product to be made.

VIDEO

BACK TO CONTENTS



rECOvery solutions for
**Consumption
Reduction**
UP TO **30%**

ENERGY SAVING

FORMING MACHINES / CASTING PRESS

With the use of cutting-edge forming technologies in the PCM "GREEN series", SAMA has set a new standard for energy consumption in the production of tableware by pressure casting. In particular, SAMA's range of PCM Green presses, for two-part pressure casting with resin moulds of a wide range of items, require a specific consumption of less than **1 kWh per kg of processed product**, equal to a **15%** reduc-

tion in consumption compared to conventional solutions.

PCM is pre-set for robotised demoulding of the items. The machine does **not require cooling water** and is designed for easy access to mechanical parts, facilitating maintenance. Extremely quiet, the machine incorporates the new generation of PLC controls supplied exclusively by Siemens.

[VIDEO](#)

[BACK TO CONTENTS](#)



rECOvery solutions for
**Consumption
Reduction
UP TO 15%**

REDUCTION OF EMISSIONS AND CONSUMPTION

KILN

Among the most relevant issues today, the improvement of the efficiency of ceramic heat treatment plants is measured both in terms of **reduction of consumption and emissions** and the possibility to install appropriate **heat recovery** systems.

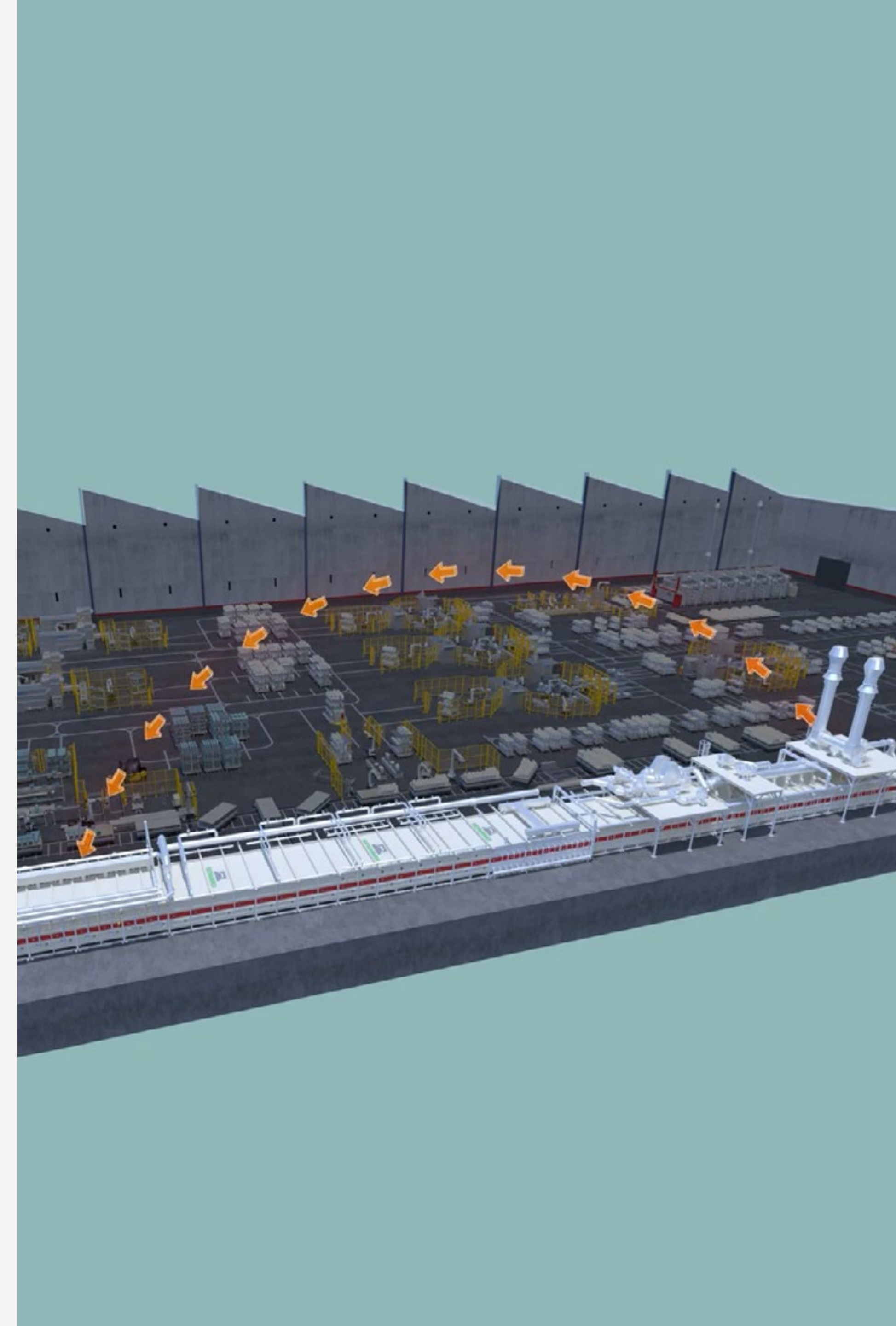
In particular, the Riedhammer tableware kilns incorporate the **EMS** (energy management system), which enables the recovery of hot

air by using it as pre-combustion air, a solution that greatly increases the efficiency of the machine.

In addition to this solution (direct energy recovery to the kiln pre-dryers or as pre-heated combustion air), Riedhammer offers **indirect recovery** systems, where excess heat from the kiln is recovered and can be used to supply other machines or parts of the plant.

[VIDEO](#)

[BACK TO CONTENTS](#)



USE OF ALTERNATIVE FUELS

KILN

The SACMI Group is at the forefront of research into the **fuels of the future**. New burners that allow operating with **methane-hydrogen mixtures** have been already prototyped and tested.

VIDEO

[BACK TO CONTENTS](#)

H₂



Up to **3.000**
tons/year CO₂ emission saving

SACMI with Riedhammer is **READY**
for handling Hydrogen as fuel
of the future for sanitaryware kilns.

SACMI'S VISION TOWARDS A CIRCULAR ECONOMY

Waste recovery, reduced water consumption, optimised press and kiln consumption and research into alternative fuels make SACMI Tableware plants the ideal ally for implementing the **principles of the circular economy** in the tableware production sector. **Controls and automation** contribute, from this point of view, to a further efficiency of the process, optimising the consumption of energy and raw materials at all times, according to the specific product to be made.

[CONTACT US](#)

[BACK TO CONTENTS](#)

