

group

Who we are

What we do

ice and a commitment to innovation

For more than forty years, we have been developing, producing and installing industrial furnaces and machinery, integrated heat-treatment and reheating systems for ferrous and non-ferrous materials, in Italy and

port, we offer tailor-made engineering solutions with a high technology content, providing not only a product or a service, but an answer to our customers' recuirements. e customer's side with step in the production re our guiding principles We want to be at the ur engineers, at every s

ferrous and non-ferrous materials, in Italy and around the world.

We are technological and strategic partners, we work with the customer at every stage of the project and in the production cycle, offering made-to-measure services and solutions in response to your needs.

We are leaders in complete, direct man-

In Austria, Brazil, Britain, Bulgaria, China, Croatia, Czech Republic, France, Germany, India, Mexico, Peru, Poland, Romania, Russia, Spain, Switzerland, Tunisia, Turkey and Vietnam. e have extensive experience, with more 600 projects completed in Italy and

in northern Italy, which has always been e forefront of technology and engineering. I there, we have opened up to the world, onding to the most complex challenges, new technologies to environmental sus-

we have been developing, producing and installing industrial furnaces,

For more than 40

machinery integrated heat-treatment and reheating systems

customers' requirements and development An answer to our

Turnkey engineering for

industry 4.0 Thermo-fluid dynamic

analysis

Why you should choose the Gadda group

Engineering and Innovation

The quality of our products and services has ade us partners of choice in our field, prolers of **turnkey engineering** for **industry 4.0** at delivers effective, innovative, technological

that delivers effective, innovative, tecrnious solutions to rationalize systems, optimize processes and costs, and consequently generate additional value.

We invest in our engineers to develop innovative projects that offer customers reliable, top-quality solutions to support them in the disitalization process of the so-called "fourth disitalization process of the so-called industrial revolution", acting as a preferential partner to help them take advantage of opportunities for growth and development.

We use **thermo-fluid dynamic analysis software** to research new solutions and devel-

vare to research new sond validate our projects.

opportunities

Tailor-made: Custom solutions

- we design, produce and test in-house.

 We are a full-cycle supplier, from engineering to commissioning at the customer site.

 We provide after-sales support to guarantee the performance of our products.
 - proach means specific needs

Your

Making

Construction and pre-assembly in Italy

Excellence and Quality Made in Italy:

- We always use components of the highest quality and offer systems delivering maximum productivity levels

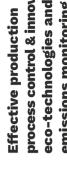
- The more than four hundred companies that place their trust in us are the best testimonials of the attention, commitment and level of innovation was extension.

companies that place their trust in us are the The more than 400 best testimonials

Energy Efficiency Sustainability:

duction process control, use of innovativeco-technologies and emissions monitoring. Energy efficiency is a fundar r processes, together with ction process control, use

Effective production process control & innovative eco-technologies and emissions monitoring





Our products

Batch Automatic Lines



cooling stations, storage stations and handling equipment. Heat treatment lines are fully automatic, all processes are controlled by the computerized control systems and with adequate storage stations, customers can perform continuous production without supervision or during weekends. Projects are tailored to best satisfy customers requirements. Typical materials treated are: bars, alloyed steel pipes, fittings, forged or cast pieces. Batch

lines are very flexible and cover almost any executable thermal treatment. A mod proach allows future expansion to accommodate incremented productivity needs

Bell and Pit Furnaces



Rotary Hearth Furnaces

The Gadda group produces high quality rotary hearth furnaces, which can be integrated in a complete line and automatically fed by robot arms allowing parts tracking. Rotary hearth furnaces are extremely versatile and their high throughput and repeatability of results make them particularly suitable to treat large quantities of similar or identical parts. Optimal sealing of the rotary chamber is obtained with a liquid channel sealing system. A rotary furnace can be designed to lay directly on the floor without the need of a foundation. Furnace loading can be programmed on multiple circular layers in order to fill the chamber with small parts. In rotary furnaces with double doors, a vertical wall in between the two doors reduces thermal losses during loading/unloading operations. for loading/unloading operations and allows the use of existing cranes to manipulate the load. Different types of heating elements and heat recovery devices are available. Optimal sealing and first quality refractory materials reduce thermal losses to a minimum. Furnace forced cooling could be offered as an option. The Gadda group produces high quality bell and pit furnace. Key design factors a imum reliability and high efficiency/low energy consumption. The bell furnaces allows the positioning of heating elements evenly on both long side walls and optimal chamber sealing, allowing excellent temperature uniformity to be reabell furnace combined with multiple bases increases the efficiency of the plant runproductive times. A combination of lift and translation of the furnace increase that the furnace increase that the furnace increase the plant is the furnace increase that the furnace increase the furn

Continuous Bogie Hearth The Gadda group produces multiple types of high-quality continuous furnaces to perform different heat treatment processes. A typical continuous furnace has the shape of a tunnel with a motorized pulling system that moves the load at a controlled speed through the different sections. Various advancement systems are offered as motorized rollers and chain transporsystems. Different types of heating elements and heat recovery devices are available. Specific

thermal profiles are obtained by modulating heating in the different zones. Forced cooling spray quenching or quenching tank sections could be added in series. Excellent furnace temperature uniformity is obtained by CFD engineered forced air recirculation. When needed, air is recirculated in a chamber created between the insulated external panels and an internal stainless-steel panel. A fan mounted on the furnace floor extracts the air from the load and generates a turbulent flow in the recirculation chamber where air is heated up by the heating elements. Hot air flows back into the chamber from below the parts being treated and transfers the heat to the load. Recirculation fans and heating elements are mounted on plugs for easy maintenance operations.

Automation Systems

Chamber Furnaces



The Gadda group produces multiple types of high-quality chamber furnaces for different applications as: reheating furnaces, batch furnaces for heat treatment automatic lines, low temperature high uniformity furnaces, and controlled atmosphere furnaces. Different types of heating elements and heat recovery devices are available. Optimal door sealing and first quality refractory materials reduce thermal losses to a minimum. In chamber forced cooling could be offered as an option.

th automatic lines represent Gadda's core business. Each line could include: austizing and tempering batch furnaces, quenching tanks, loading/unloading machines ling stations, storage stations and handling equipment. Heat treatment lines are fully

Automatic Loading Machines

The Gadda group produces 4 axis automatic loading machines that are de loads up to 50 T along the batch line, immerse loads in the quenching tan



coders on inverte stem. Ground or

it loads onto storage stations. High quality machined fittings and mechanical interallow high precision movements and positioning. Axis control is performed using ers on inverter controlled electric motors, position encoders and laser positioning n. Ground or aerial runway architecture is available in order to accommodate inal customer needs. Loading machines move at speeds as high as 120 meters/ming load immersion in quenching tank within 30s.

Cooling Systems



mal treatments. According to customer needs, forced cooling chambers and/or quenching tanks are available. A forced air cooling station with exhaust hood can be integrated in the line and fec by an automatic loading machine. Internal air recirculation is engineered using computed fluid dynamics in order to optimize flow around actual load shape allowing fast and uniformed controlled namics in order to optimize flow around actual load shape allowing fast and uniformed controlled. The Gadda group produces differmal treatments. According to a ent systems to perform high-quality controlled

cooling. Cooling rate can be controlled in feedback through inverter powered recirculation fan. Isothermal annealing treatment chamber are manufactured. When forced cooling is not needed, free air normalization stations with optional smoke aspiration and thermal shields are offered. Water, water/polymer or oil tanks are designed taking advantage of computed fluid dynamics in order to optimize flow around actual load shape. Different water flow direction solution (horizontal/vertical) with Kaplan duct fans or diffuser nozzles under the load are available. Quenching can be performed: with the load still sustained by the fully integrated loading machine, with the load deposited on trays submerged in the tank or using a dedicated elevator. An automatic tank covering system can be installed for improved safety. Typical time to submerge load from furnace door opening is under 30 seconds. Water cooling is done with an external heat exchanger and cooling tower. Tank volumes range from 20 m³ to 400 m³.

Energy Saving



er efficiency and reduced thermal losses are key factors in the design. Different I technologies are proposed in order to satisfy this requirement such as self-recup burners, regenerative burners or exhaust fumes/combustion air centralized heat exers and this is where Gadda's expertise can make the difference. Optimal door seachieved with sturdy and clever design of movements and closing systems. Prime and adequately dimensioned refractory lining will further improve the energetic mance of the furnace. The computerized management system will help the plant more monitor performances in order to keep all the systems in optimum condition. When high working temperatures must be maintained for a long time, improved er efficiency and reduced thermal losses are key factors in the design. Different h

The Gadda group designs and realizes the hardware and relative softv automated heat treatment plants, using the most advanced industrial tem is designed to manage: means of HMI/MMI configure utomated heat treatment plants, using the most advanced industrial automation of vallable today. The main purpose of the plant supervision system is to monitor processes in real time integrating data with the customer's production management ach project is customized according to the client's specifications and needs. The c s of HMI/MMI configured to access and visualize plant information simply, intusible remotely (WAN); high-level controls through interface with customers mans already in place or data acquisition systems for data storage in relationa level 3 Logic process by means of PLC; ed to access and visualize plant informa

Furnaces

The Gadda group produces high quality bogie hearth furnaces. Key design factors a maximum reliability and high efficiency/low energy consumption. Different types heating elements and heat recovery devices are available. Optimal sealing and fin quality refractory materials reduce thermal losses to a minimum. In chamber forceooling is optional.

Gadda around the world

More than 600





Our clients

Spain, Switzerland, Tunisia, Turkey and Vietnam.

Peru, Poland, Romania, Russia, France, Germany, India, Mexico,

Austria, Brazil, Britain, Búlgaria, China, Croatia, Czech Republic,





OIL & GAS

FORGING

FOUNDRY

SOCCEFI

% LEONARDO

CE CO

VetrerieRiuniteGroup







METALCAM ...

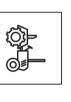


ALUMINIUM

AUTOMOTIVE

AEROSPACE

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POMAS GROUP











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