

***italmatic***<sup>®</sup>

»»» OFFICIAL COMPANY PROFILE



Worldwide presence  
Global leader



Quality certificate  
ISO-TS and ISO 9001



100% Made in Italy  
Top Quality





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ITALMATIC has been manufacturing autoclaves with quick opening by now since 40 years.

Taking advantage of experiences obtained in the different fields of composite materials and can supply its own customers.

**THE ITALMATIC GROUP IS TODAY:**

- 200 employees worldwide (110 in Italy)
- Group sales turnover approx. 60+ Millions Euro
- 2 main production sites in Italy (20.000+ square meters); 1 in house software engineering company

- Manufacturing process made 100% in Italy to ensure quality control and solid production synergies;
- International coverage: subsidiaries abroad and wide distribution network
- Slim organizational structure geared to an efficient and quick decision making process;
- Healthy Financial Company.

Private, Family Owned Group, established in 1966 in Italy, with financial headquarter in Cassina de' Pecchi (Milano) - and sales department/manufacturing facilities in Capannori (Lucca) ITALY.



**TESCO ITALMATIC LLC**  
Oakland park  
FLORIDA [USA]

**GEMATIC AUTOMOTIVE GMBH**  
Montabaur  
GERMANIA

**ITALMATIC PRESSE STAMPI**  
Capannori  
LUCCA [ITALY]

**ITALMATIC SRL**  
Cassina de Pecchi  
MILANO [ITALY]

**GIGA PIÙ AUTOMATISATION & SOFTWARE**  
Capannori  
LUCCA [ITALY]

**ITALMATIC SINGAPORE**  
Tyre and Retreading equipment (ASIA)  
da Jin Factory Building,  
SINGAPORE



**GROUP** Our Business Structure

The Core business of the group is the design, manufacturing, installations and after sale service for equipment such as Autoclaves, Ovens, Press for different industrial sectors.



Italmatic an **ISO certified Company** synonymous of quality for manufactured equipment and services offered to own Customers.

In fact, quality in Italmatic is very important and matter of important and continuous investments.

Quality is achieved through important and continue investments in each level of the company.



**AUTOCLAVES**

- Aeronautical Autoclaves for composites
- Autoclave for Glass
- Autoclaves for rubber
- Autoclave for impregnation
- Other applications



**OVENS FOR COMPOSITES**

- Aeronautical
- Aerospace
- Automotive
- Nautical industries
- Other applications



**FOR COMPOSITES**

- Aeronautical
- Aerospace
- Automotive
- Nautical industries
- Other applications

- Italmatic manufacturing facility is located in Lucca-Tuscany-Italy with total surface of about 15,000 square meters.

- Italmatic Service/After Sales is made of more than 15 technicians as sum of mechanicals, electricians and software experts to ensure to the customer prompt assistance, spare parts and intervention for programmed or extraordinary maintenance of the equipment.

- Italmatic puts at customer disposal the expertise for refurbishment or upgrades of equipment including the ones manufactured by competitors.

Italmatic shares a commitment aimed to assure the maximum level of integrity in the execution of the company activities and of attention to principle of social and environment respect. The company integrity and ethics that each of us always put in our work distinguish our way to operate.



**Working with a strong sense of integrity is crucial to keep our credibility and trust in our Customers,** partners, employees and towards the whole reference community of the company.



Generating a transparency environment in executing our activity is a maximum priority for all of us and in this environment we must constantly respect principles of tenability to sure our business. CSR represents our commitment to operate frankly and truthfulness in our relationships and communications, to avoid socially unacceptable behaviours and to assure the maximum environment safeguard in carrying out our activity. **Our code contains rules on individual and categories responsibilities, towards the environment and towards employees, customers, suppliers and other interested parties.**

Italmatic is a leading producer of autoclaves having mainly application in the composite, glass and rubber curing industries. The development and implementation of management controls for the above autoclaves are done internally through companies skilled in software and hardware solutions being part of Italmatic group, **as a warranty of maximum assistance on the long term.**

The autoclave is a machine that can be manufactured with horizontal or vertical axle destined to different applications.

Pressure, temperature and vacuum (this last one if applicable) are run by the control system with PLC and man-machine interface.

**The system includes its own diagnosis system and can be integrated to the company's system.**

Inside the autoclave, in case of working by air/nitrogen, a heating and a cooling batteries are installed.

The placing of pressurization fluid in autoclave occurs by means of an inlet flange. **The autoclave consists of a cylindrical body supported by two or more resting feet and closed at its ends**, by one side with a welded convex bottom and by the other side with a

mobile bottom hinged to a flag opening system. The autoclave surface, in face of working by air/nitrogen, is insulated internally with rock wool and contained by plate sheets of Alu-Zinc.

It is insulated outside in case of working by direct steam. The nuts closure is by teeth. The bottom opening is with unique manoeuvre, equipped with safeties for opening and closure.

We create  
**what**  
You imagine

We are a team of professionals building autoclaves for any need.

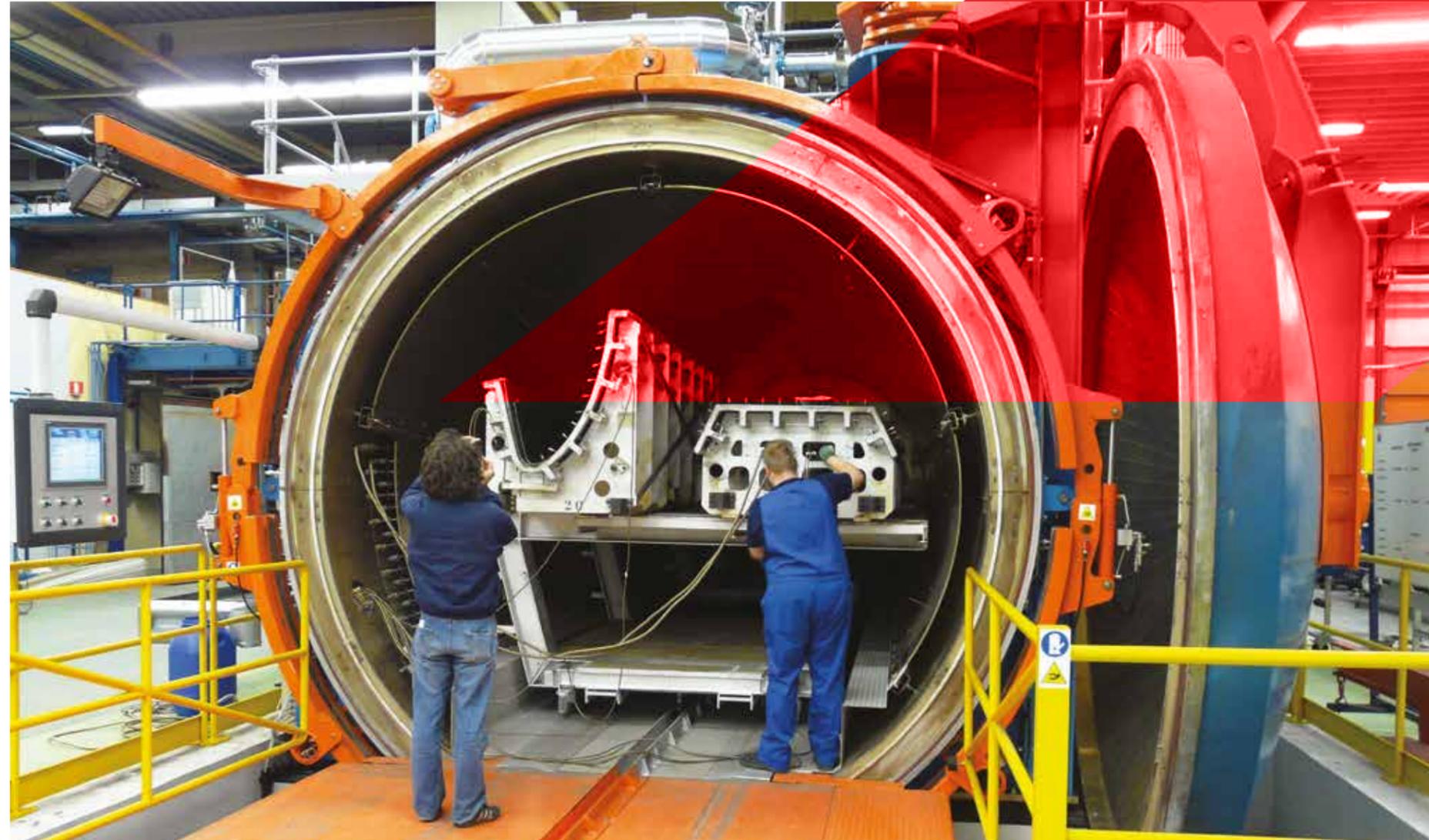
## AUTOCLAVES FOR COMPOSITES

We call composite material the produce coming from the polymerization of carbon fibers and resins, adequately prepared and shaped overlapping coats of fibers and resin on moulds or cores.

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Polymerization of resins can occur in moulds heated or in vacuum, but the best results are obtained through process in autoclave, keeping it in vacuum sealed in suitable envelopes to eliminate all air infiltrations and submitting it to outside pressure to improve its consistency.





*In particular Italmatic for aeronautical, spatial and military fields, for structural parts and not, manufacture autoclaves in the respect of most severe American and European production standards like: BOEING D6-49327; BAC5317-5; BAC5514, BAC5578; BAC5621, AIPI03-02-019 BQG0080, CPS8100, CPS7100, AP3222 assuring thermal uniformity according to AMS2750E and certification of the equipment according to rules NADCAP.*



## AUTOCLAVES for Composites

### Italmatic fabrication capability

- Autoclave diameter from 1.050mm up to 6.000mm.
- For higher diameter fabrication on site is provided for transportability reasons.
- Autoclave length from 1.000mm up to 40.000mm provided in monolithic parts up to 25.000mm for transportability reasons.
- Working pressure in autoclave up to 40 bar by Compressed air or Nitrogen.
- Working temperature in autoclave up to 450°C.



The Autoclaves are manufactured in accordance with the final destination country as per regulation in force (such as PED, ASME VIII Div.1, SELO, CUTR ex Gost, etc.) and certified through primary notified body agency (Bureau Veritas, SGS, Lloyds , TUV, Rina).





More  
than 500  
plants  
running  
in the world

Italmatic autoclaves followed step by step these innovations and assure safety, reliability, precision and repeatability of cycles in time.



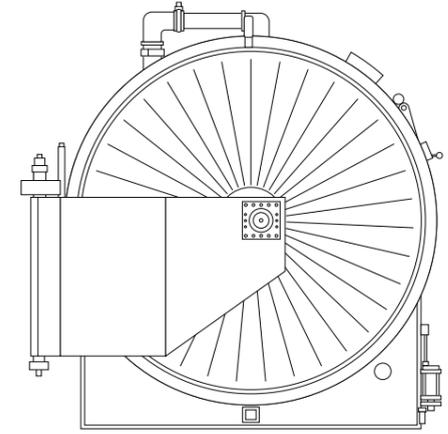
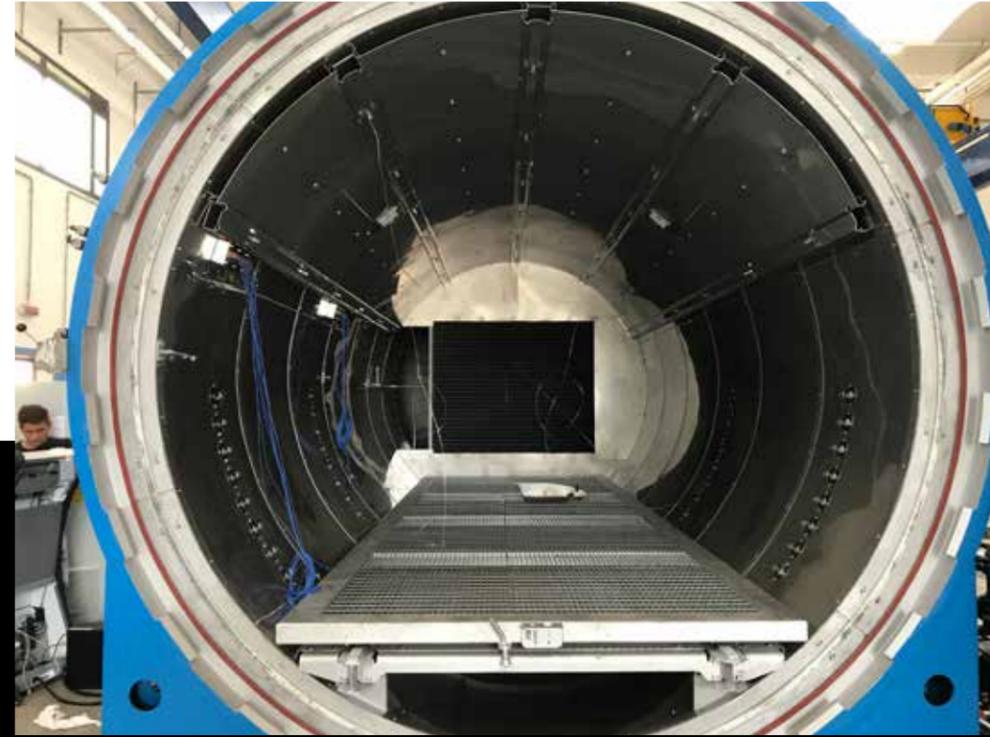


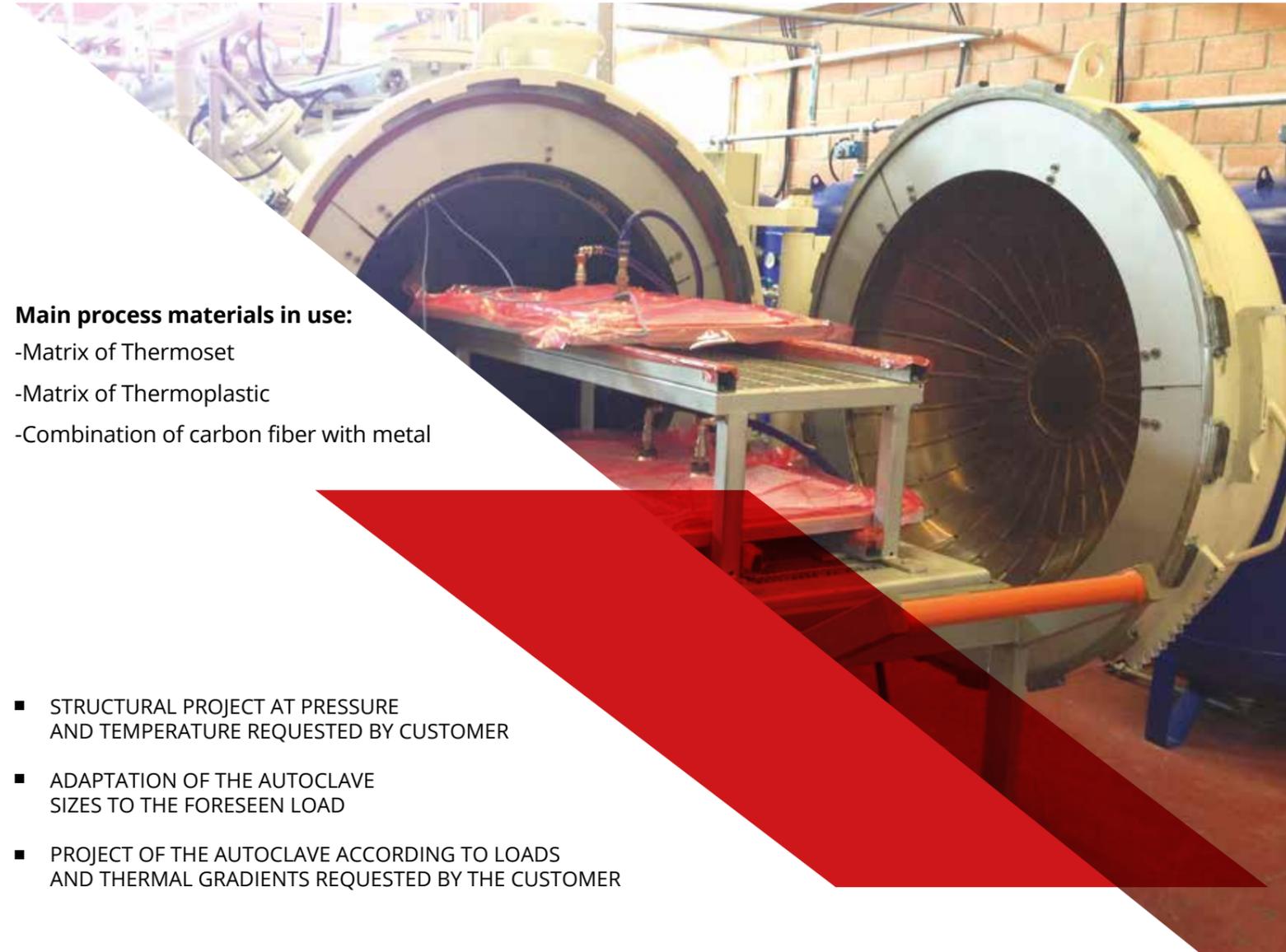
Study and project of personalized systems for air recirculation in the autoclave to obtain the best heat transfer to products under process



Autoclave trolley provided with Thermocouples and Vacuum plugs installed directly onto.



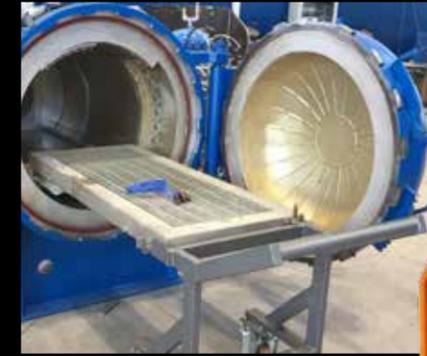




**Main process materials in use:**

- Matrix of Thermoset
- Matrix of Thermoplastic
- Combination of carbon fiber with metal

- STRUCTURAL PROJECT AT PRESSURE AND TEMPERATURE REQUESTED BY CUSTOMER
- ADAPTATION OF THE AUTOCLAVE SIZES TO THE FORESEEN LOAD
- PROJECT OF THE AUTOCLAVE ACCORDING TO LOADS AND THERMAL GRADIENTS REQUESTED BY THE CUSTOMER



## GLASS AUTOCLAVES

The process of lamination is the coupling of two or more tempered or hardened glass. The coupling is made by using plastic film (such as PVB-polyvinyl butyral or EVA or CentryGlass) positioned between glass (so called "glass sandwich"). In addition, between glasses it is possible to insert decorative materials (Tissues, fibres) or structural (polycarbonate, aluminum, photovoltaics).



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## AUTOCLAVES Glass

The glass lamination (or stratification) finds wide application in building industry for safety glass (shatter-proof, bullet proof, fire resistant, hurricane proof), Automation Industry (cars, coaches, lorries, tractors) and Green Energy for the photovoltaics.

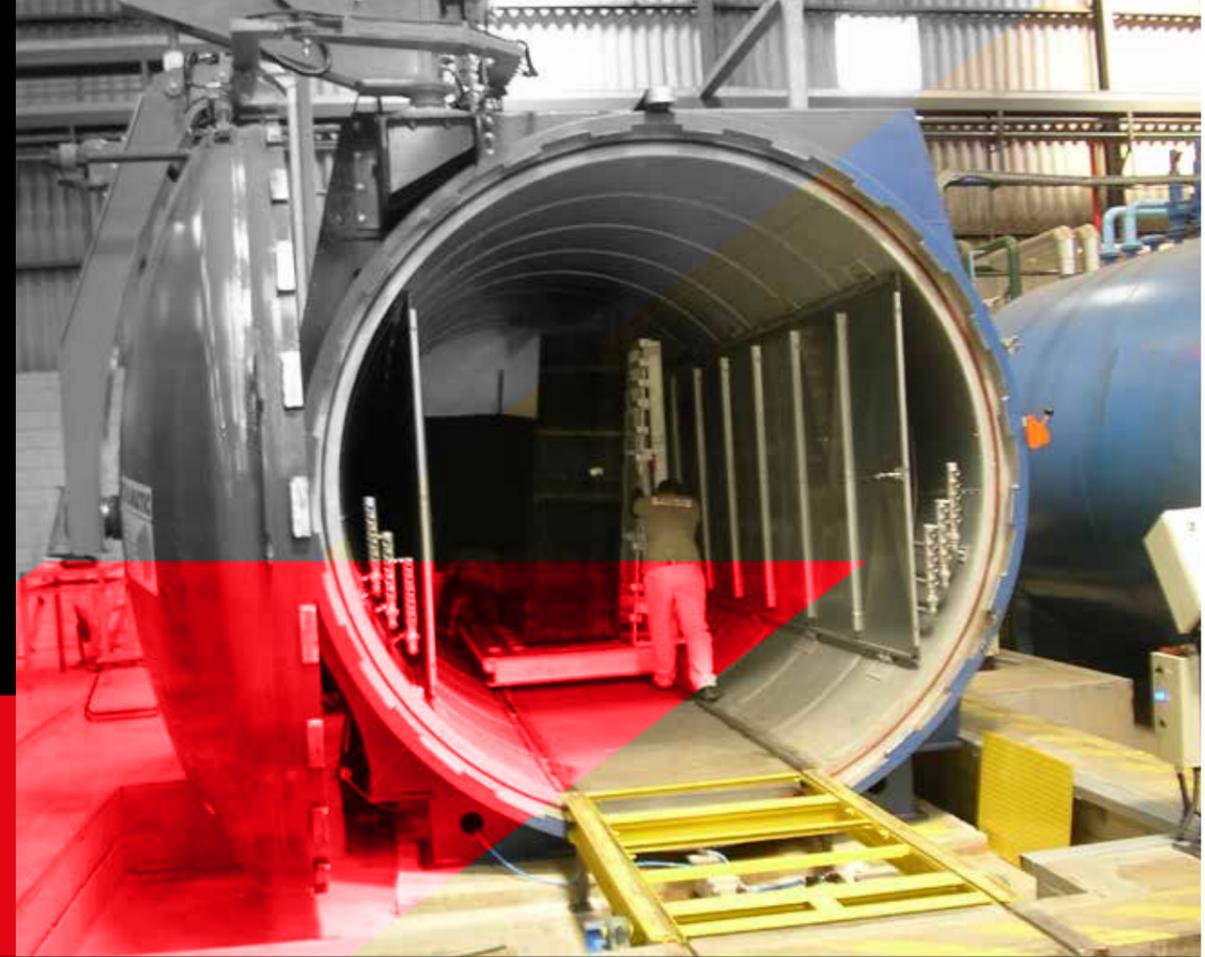
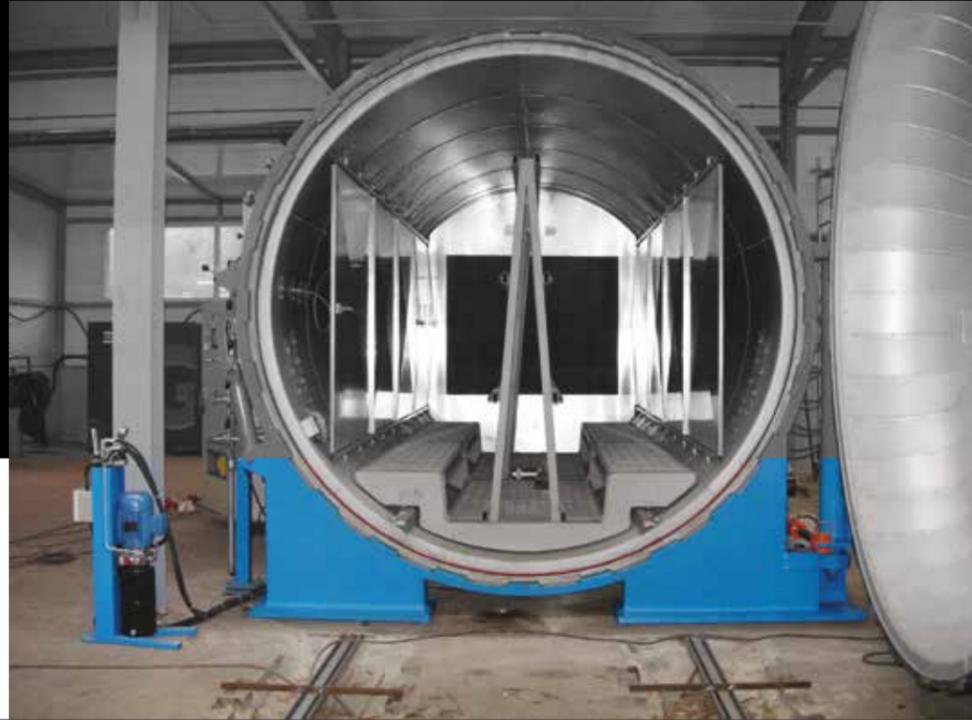


**AUTOCLAVES** Glass

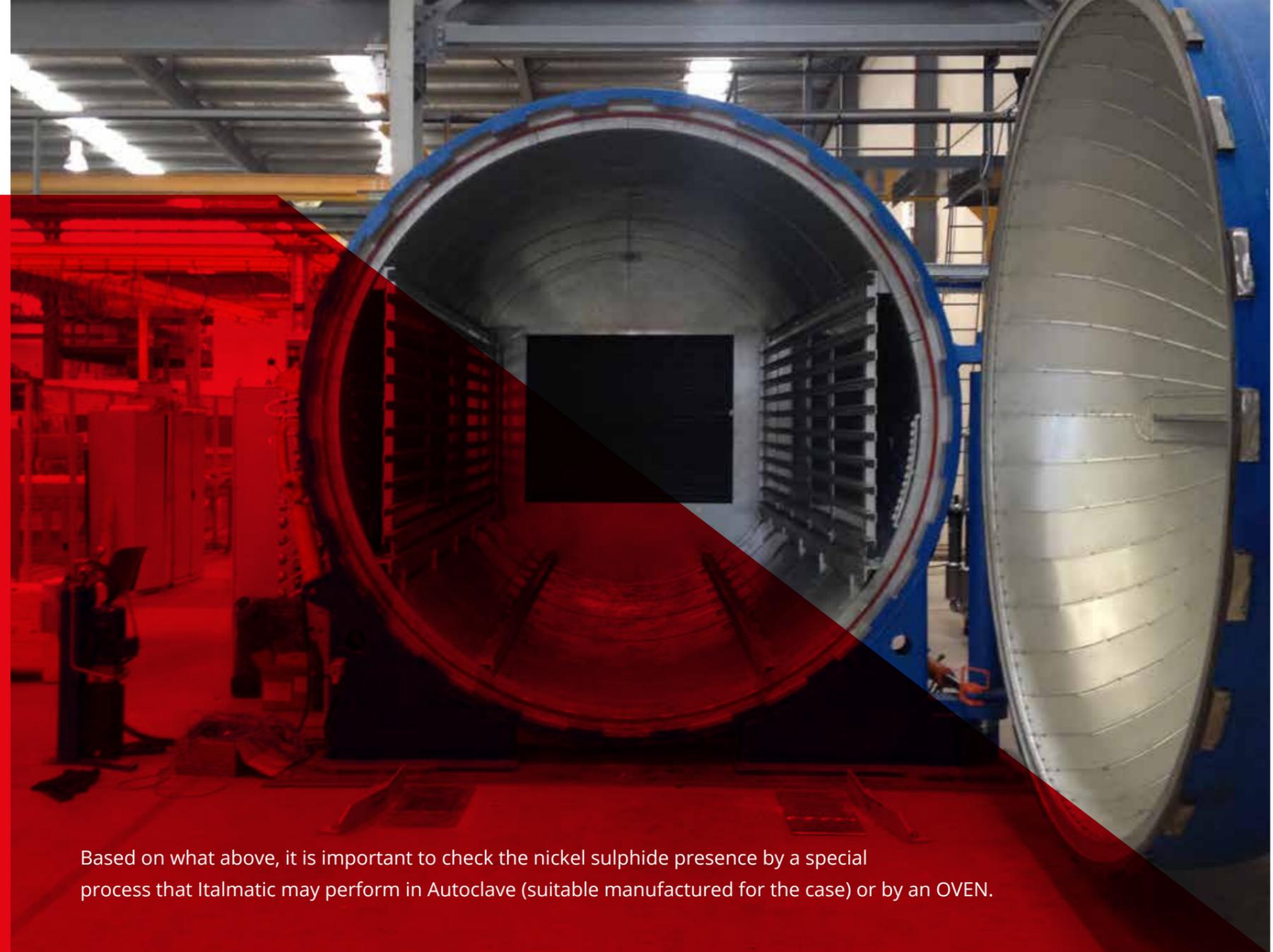
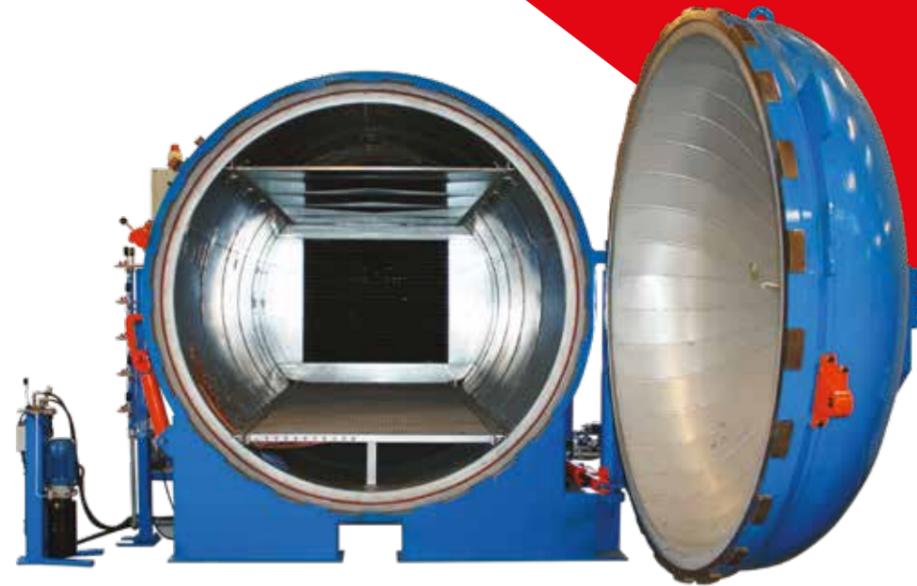
Italmatic autoclaves are designed to perform lamination also for windshields and photovoltaic glasses.



For special glass the vacuum technology is applied, by placing the glass sandwich in a sealed bag and then sucking all the air inside the bag. The sandwich vacuum-sealed is ready for being processed in autoclave at temperature and pressure as above described.



Italmatic Heat Treat Soak option  
Latest years Researches, with the aim to identify the causes of spontaneous breaks of tempered glass, discovered the presence into the raw glass of nickel sulphide has to be considered as primary cause.



Based on what above, it is important to check the nickel sulphide presence by a special process that Italmatic may perform in Autoclave (suitable manufactured for the case) or by an OVEN.

# AUTOCLAVES Glass

Starting from the Design of each machinery, ITALMATIC takes advantage from analytical fluid-dynamic software to ensure the uniformity and the distribution of the temperatures alongside the autoclave.



## CURING AUTOCLAVES

AIG - AIM - AIT



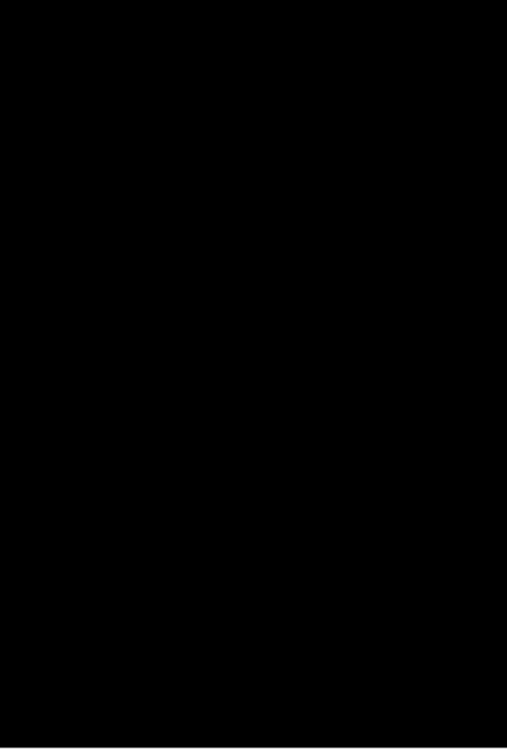
Italmatic autoclaves are manufactures with certified materials and according to the most modern technologies assuring:

- Max. safety of working in the respect of rules in force
- A considerable energy saving
- Long life
- Easiness of use



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Curing of cylinders, rubber products and for different industrial fields.



Autoclave for curing of rubber components mainly for automotive industry.

# Italian Technology



**AUTOCLAVI FOR RUBBER VULCANIZATION.**

Heating media :

- by direct steam  
(with or without mixture of air compressed)
- by combination of direct / indirect steam
- by electricity



Retreading and repairing of OTR and agricultural tyres.



Autoclave for OTR tires up to 63"



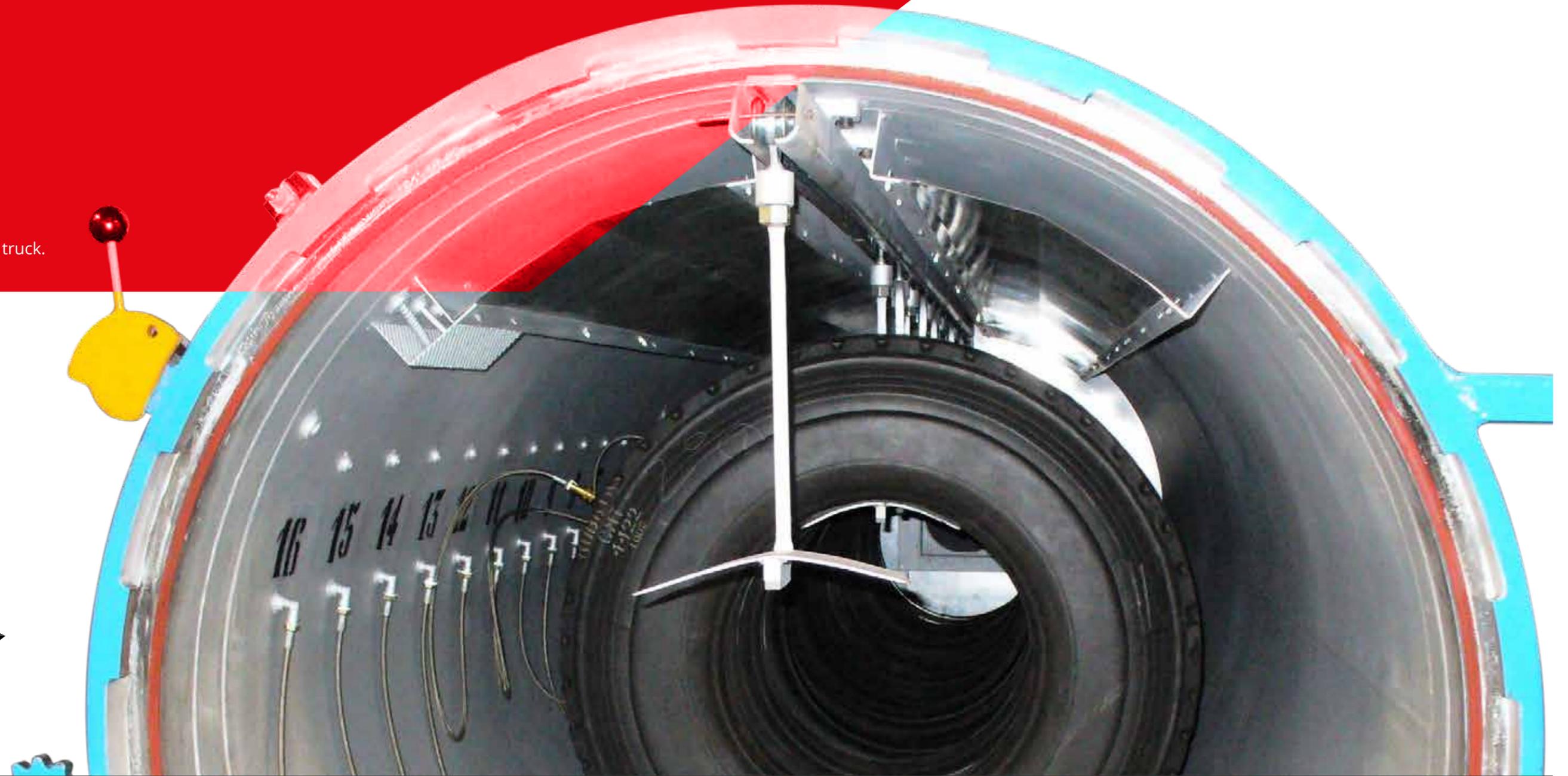


“OTR autoclaves may be equipped with central support beam combined with monorail for truck tires, or with upper monorail for an optimal use in case of OTR retreading with “pre-cured” system. OTR autoclave are fitted with modern components to record and control pressure and temperature.

Equipped with hydraulic system for door closing and locking (or eventually manual for smaller dimension) and fully insulated to provide very low heat loss.” Further optional are : DPC system, Outside envelope test, Cooling system, automatic Trolley for loading/unloading



Autoclave for Retreading and repairing of tires for truck and or light truck.







MAIN HEATING SYSTEMS SUPPLIED ARE:

- Direct steam.
- Mix of air and steam.
- Hot air circulation with steam coil, or heating element, or combined with both.



## IMPREGNATION AUTOCLAVES

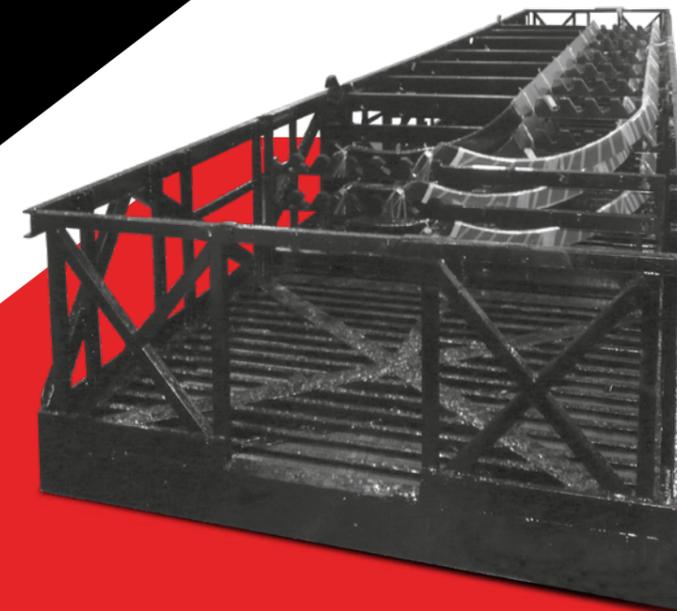
Italmatic autoclaves are specifically built to assure a perfect impregnation in vacuum assisted by means of resins, compounds, etc.

This application is known especially in mechanical, electric, electronic, wood treatment, industries, foundries and in the field of "marbles/granites".



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In electric and electro-mechanical industries in general, the impregnation procedure increases the capacity of dielectric resistance of components, as much as their resistance of insulation, assuring the impossibility of introduction and deposit of outside impurities in the porosities of materials under treatment.



In the wood industry, this treatment allows an absolute protection of the material destined to the use in constructions in general, where long efficiency and duration in time are required, in outside climatic conditions particularly difficult.



## AUTOCLAVES FOR OTHER APPLICATIONS

### **AUTOCLAVE FOR VPI**

The aim of the process is to increase the capacity of dielectric resistance of components as much as their insulation resistance, avoiding the deposit of outside impurities in the porosities of materials under treatment.

### **AUTOCLAVE FOR AERATED CONCRETE**

Italmatic autoclaves for the production of cellular concrete (Gasbeton), are conceived in modular solutions for length higher than 25 linear meters.

The materials at their natural conditions are loaded in suitable trolleys and suffer a solidification procedure with dedicated cycles.

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## OVENS

Italmatic ovens for composite materials are designed for all procedures of polymerization, baking and drying of materials in carbon fibers, glass and other nature, destined mainly to AERONAUTICAL, SPACE, AUTMOTIVE, NAUTICAL industries, etc.



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## OVENS

Thanks to the experience gained in the field of manufacture of autoclaves, it was possible applying the same technology to thermodynamics of process of the oven, getting qualified as manufacturers of ovens n Class 1.

Ovens are built in modular solution to get better adapted to future needs of enlargement, but they can also be produced with personalized sizes on demand.



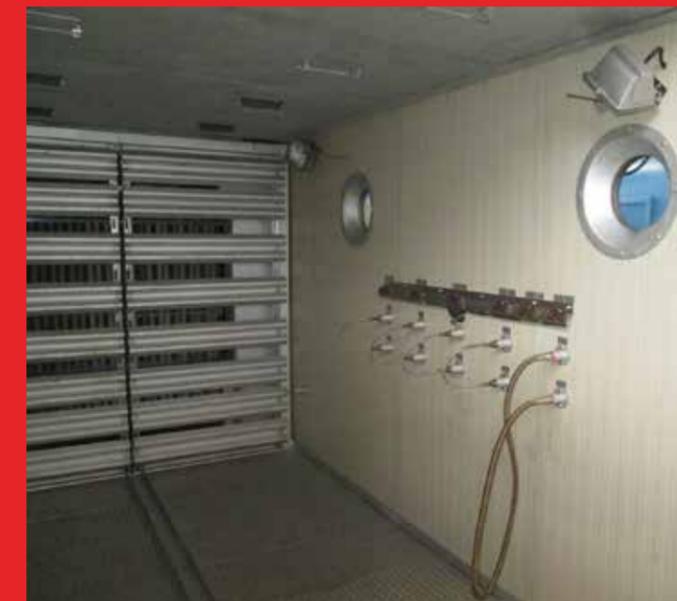
Considering the importance of the optimization of spaces inside production facilities, we propose solutions with standard door opening of double swing door, guillotine or single door, both in manual and in automatic versions.



In the optic of saving of energy and of process cost of the component being handled, we design and build our ovens paying particular attention to what follows:

Door, walls, ceiling and floor are insulated with ecological materials with high yield; dimensioned on the design temperature, to contain thermal dissipation of heating.

Venting motors are designed to work at variable speed, using dedicated inverters, in order that the same motor can satisfy both recirculation of heating hot air and of the cold one of extraction for cooling.



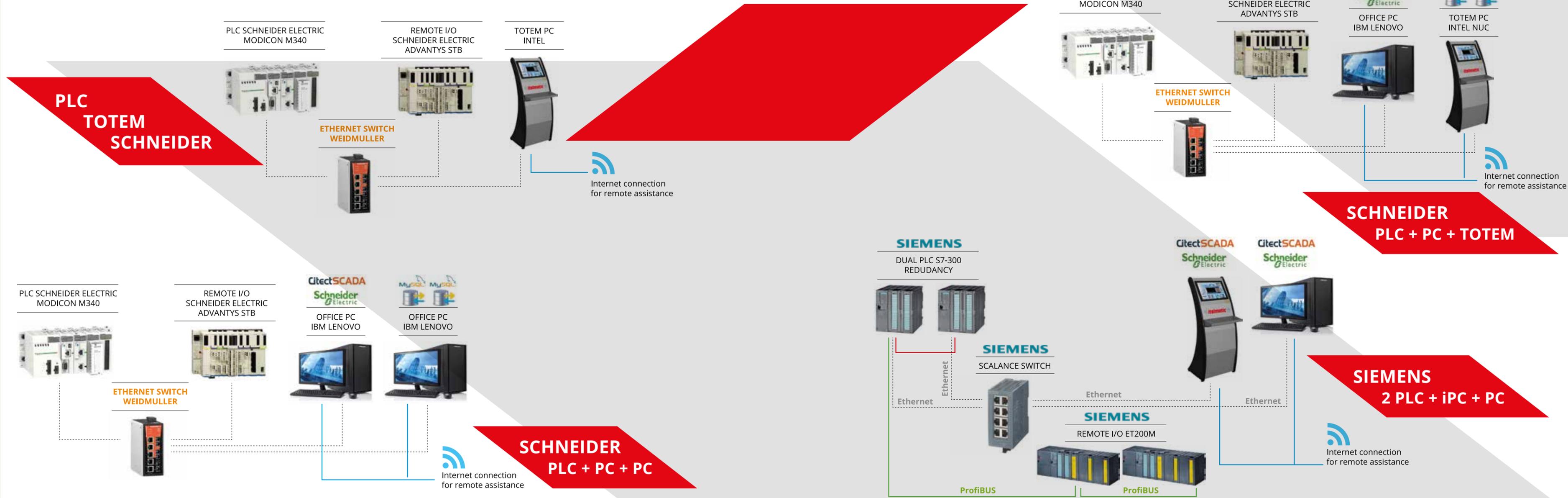
Systems of dynamic regulation of flow, run by various temperature sensors positioned in different areas of the oven, to optimize the energy consumption of electric battery and of fluid recirculation motors, in the respect of temperature uniformity in the chamber.

## ITALMATIC CONTROL SYSTEM ICS

Italmatic Control System (ICS) is the result of the experience and research that our electronic and software engineers shared with all users of machines for production cycles. Our **Scada control system** (Supervisory Control and Data Acquisition) that satisfies every most restrictive certifications requested by the main players in this industry, is installed in every equipment manufactured by the Group.



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## PRESSES FOR COMPOSITE MATERIALS

Italmatic boasts more than 40 years in the national and international market for the construction of hydraulic presses, with heating platens, designed to handle panels and/or moulds.



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## PRESSES for composites materials

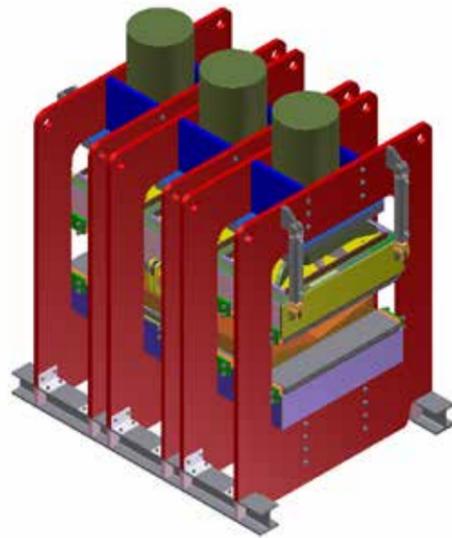
Today we introduce innovative presses for composite materials for AERONAUTICAL, SPACE AND AUTOMOTIVE industries which get distinguished for materials stoutness, high quality of selected components and technology in the van which exceed the industrial standards normally followed in the machines field. Thanks to technological developments for design (Cad and FEM), the personalized dimensioning according to the Customer's requirements and the running of all process parameters by a dedicated running and supervision software, we can manufacture presses with multiple platens, with dedicated heating and cooling systems, with variable pressures according to the specifications requested and which can be integrated to other production technologies (ex. RTM etc.).



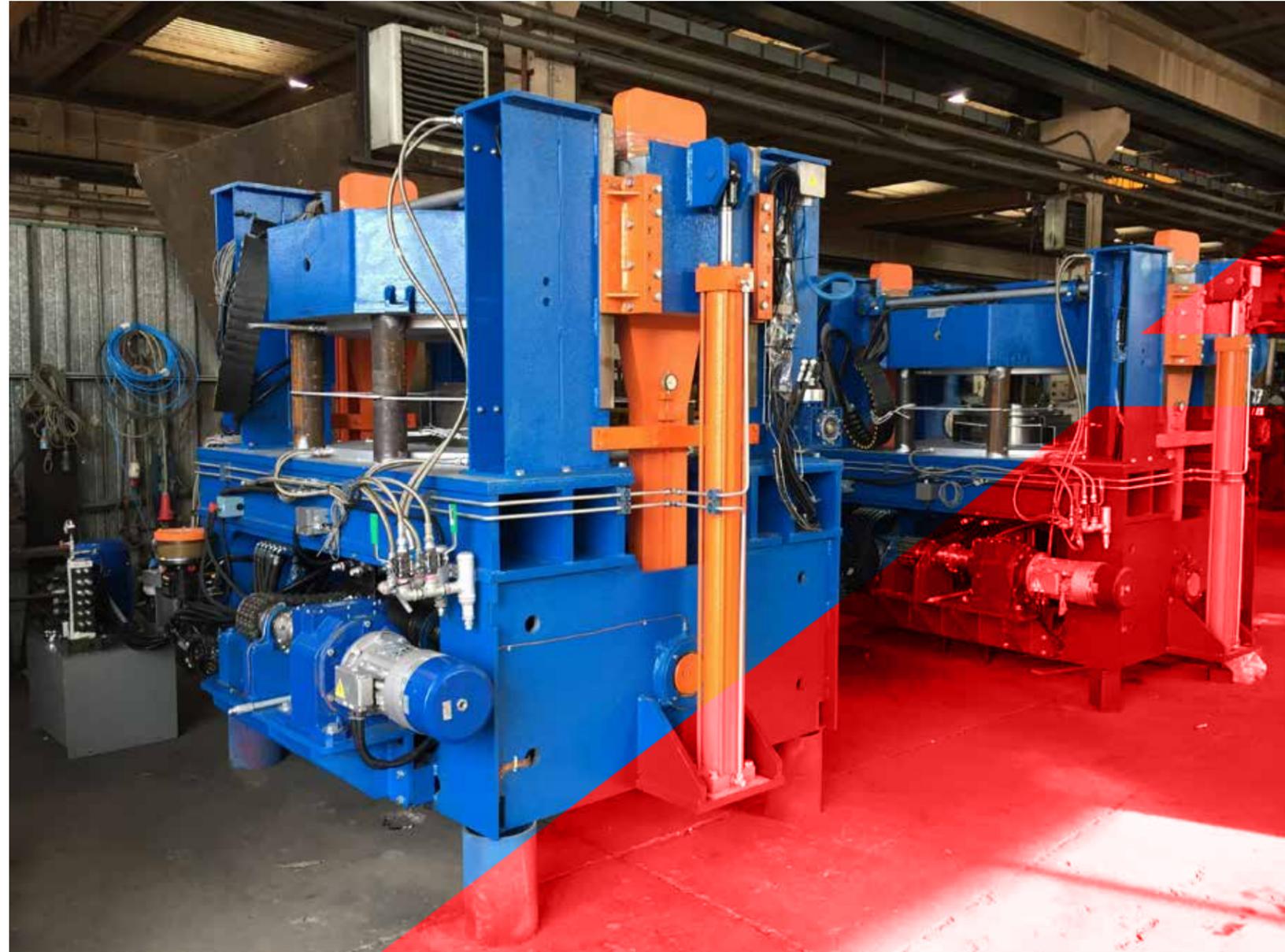
The process control is obtained through PLC (SIEMENS, SCHNEIDER, ALLEN BRADLEY or equivalent) with dedicated Touch Screen panel or supervision PC, according to production and reports requirements, HMI is completely prepared, developed and updated by our engineers



Working platens are heated electrically or by oil recirculation and cooled by water, by means of distributed passing through in the aim to assure both thermal uniformity and parallelism.



Both carpentry and hearing platens are manufactured as monolithic metal components, worked mechanically, to obtain the best geometry in absence of weldings.



All our machines are built and tested internally in our production sites, by skilled technicians assuring our Customers a qualified and certified product.

## SERVICES

Italmatic offer to all their Customers or demanding parties the experience of their skilled technicians for all services.



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**Analysis of thermo and fluid dynamics (CFD and CFX).**

It consists of one or more tests of thermal and fluid dynamic simulation of the treatment of the component being handled.



**Consultancy and design.**

Italmatic boasts a team of prepared and expert technicians with multiannual technical experiences, who can assist the Customer starting from the first design phase of the whole production plant.



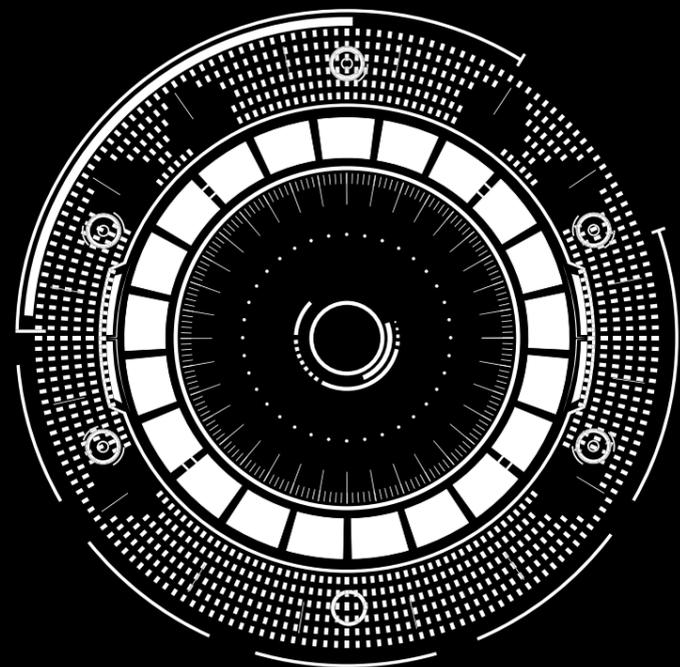
**After sale service.**

Italmatic use first quality materials that can be found in the market on wide scale and assure availability of spare parts for a minimum of 10 years of use.



**Retrofitting.**

For all Customers having the intention to update or replace old, bad working or worn out equipment, Italmatic offer retro-fitting support of machines and accessories.



# Professionality expertise since 1969

The young & dynamic Italmatic staff is focused to activities of research and development, with the scope to provide always solutions that guarantee energy saving with high technological content, customized on Customers necessities.

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