



ITALSIGMA

Giuliani Federico
group



TOGETHER IS BETTER

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ITALSIGMA S.R.L.

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Italsigma S.r.L. has been operating in the material testing field since 1982, with the aim to provide **turnkey systems** to its customers.

Any company that wants to stay competitive in today's market cannot be done without testing. Moreover, only static and dynamic experimental tests on specimens or components can provide evident values for strength calculation and evaluation of day by day durability.

Undoubtedly, laboratory tests carried out by simulation under any load conditions, therefore very close to real-life conditions, allow a company to **save time and money** by detecting functional limitations.

Accurate planning and great attention to our customers' needs have enabled us to successfully interface with structured, cutting-edge companies, **such as our collaboration with the most important Italian research centres.** Over the years Italsigma has developed and made various testing machines 'night after night', supported only by the passion of achieving a result that places us among companies that **work hard** in the research world.

Italsigma S.r.L. has always paid great attention to experimentation and innovation, to offer its customers highly innovative solutions ensuring high performance. This approach has allowed us to achieve a leading position in the field of testing machinery based on specific requirements in the national territory, working with most Italian Universities and obtaining significant results abroad.

The company has always been people-oriented. Our people are considered a key resource, to increase the quality of service offered to our customers.

Our production process policy is 'quality comes first'.

The company has grown continuously thanks to its skilled and qualified staff that carefully oversee every research and development process.

Finally, thanks to technological development, we are able to maintain low costs and thus offer our customers solutions designed specifically to meet their needs at an affordable price, always offering the best quality.



<< In the testing field, if something seems simple, you might not have understood it well >>

Handwritten signature: Francesco Giuliani



1975

Start of activities in the testing field for Giuliani S.n.C.

1995

Start of activities in the alimentary industry field for Giuliani S.n.C.

2013

Italsigma is rapporteur for a report on the stress tests at the "International Reliability & Technologies" fair

2015

Italsigma is the main sponsor of the international conference of Stress Analysis in Messina attended by all the Italian Universities

1960

Foundation of the company Giuliani S.n.C.

1982

Foundation of the company Italsigma S.r.L. operating in the testing field

2012

Merge of the two societies all activities are exercised by the company Italsigma S.r.L.

2013

Italsigma is rapporteur for a report on the testing machines at the AIM conference

2016

Italsigma is sponsor of the international conference about the "Analysis of fracture" in Catania attended by scholars from all around the world

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The Italsigma S.r.l. carries out its activities in several sectors: **biomedical, automotive, structural and seismic engineering, railway, hydraulic systems, oil and gas.**

The assistance offered to customers starts from the planning stage until the prototype realization.

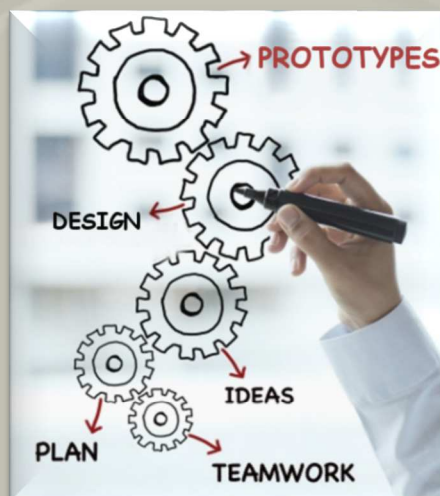
Automotive



Biomedical



**Structural
and Seismic
Engineering**

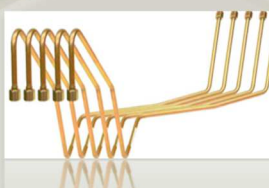


Oil & Gas

Railway



**Hydraulic
Systems**



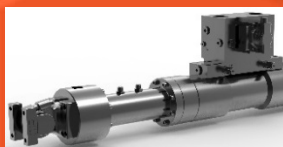
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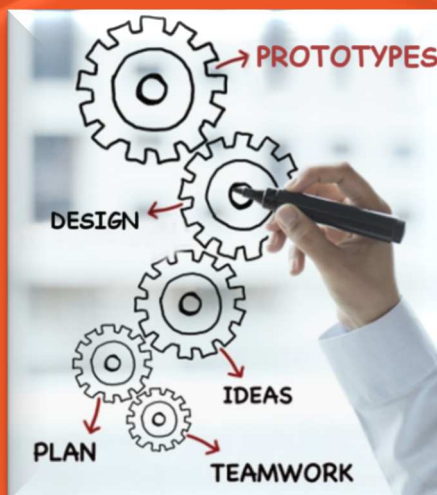
**CAT
Laboratory**



**Testing
Machines**

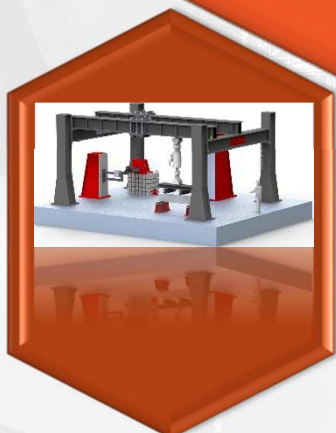


Components



**Special
Applications**

**Contrast
Frames**



Grips



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CAT LABORATORY

Italsigma S.r.l. has always developed a strong R&D activity, focusing on the creation of a **Technological Applications Centre (CAT Italsigma)**.

This centre is used to meet three primary customer needs:

- To have an overview of testing systems already operating in laboratory.
- To make tests managed by remote clients, eliminating waiting times for the realization of the system.
- To calibrate the equipment tailored for our customers, to ensure the reliability of the measurements and test results comparable to those obtained worldwide.



The main innovation of the Technological Applications Centre (CAT Italsigma) consists of an advanced use of WEB technology for the design of experiments, for remote verification of the evidence and, if required, for conducting of the tests remotely.

In other words, the centre is made available to other companies wishing to use our equipment as though they were in their own laboratory.

An example of such technology is the surgeon robot 'Da Vinci' which for several years has allowed surgeons to operate on patient remotely.

In our case any test can be performed and manage remotely.

Italsigma machines are equipped with the **latest user friendly technology to optimize quality at competitive prices**, always considering as a priority the needs of the companies and research centres with whom we collaborate.

Italsigma has a cutting edge design studio with design software for three dimensional drawing and calculation programs and analysis of the finite element and structures.



Great care and attention has been taken in creating economic and social added value to our territory because we believe that **collaboration is the driving force for responsible development**. This results have been achieved thanks to a network of established suppliers in region and the ability to promptly handle production peaks and mechanical work.

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TESTING MACHINES



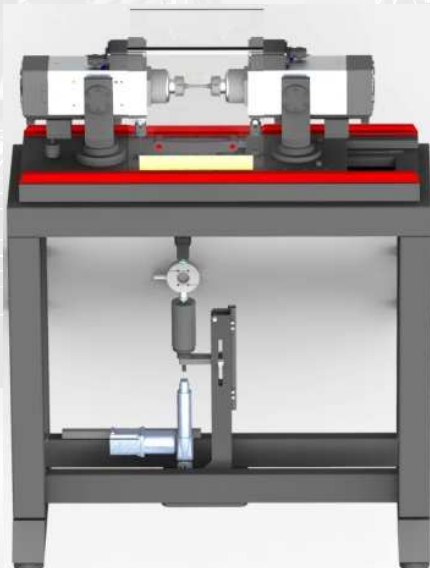
Biaxial Machine:
500 kN vertical load
100 kN horizontal load
Vert. and horiz. stroke 100 mm.



VHCF Machine
for Fatigue test



Servohydraulic Monoaxial
100 kN Machine



Rotary Bending
Machine:
6000 rpm
35 N



Linear Motor
Machine
with 2 columns:
9 kN Load
100 mm Stroke



50 kN Creep
Machine

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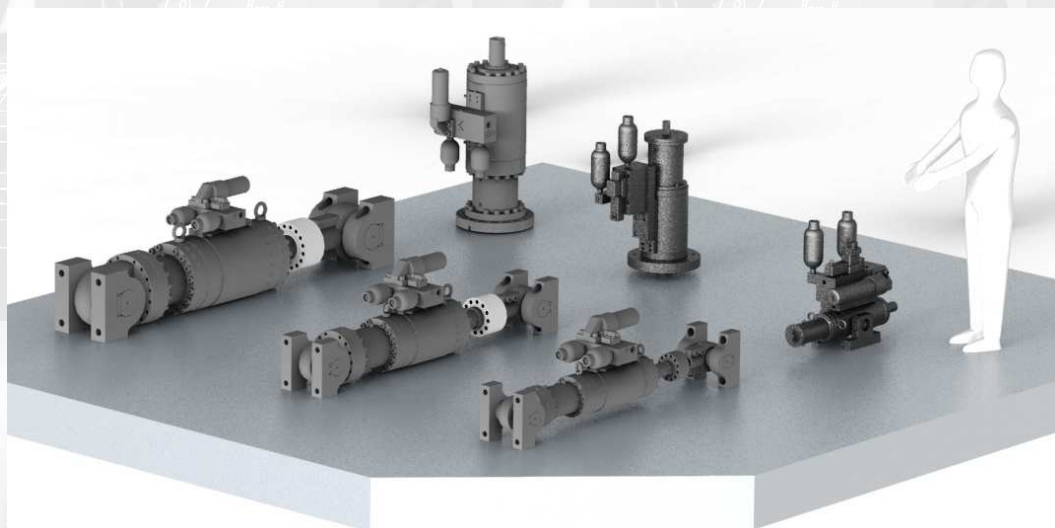
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COMPONENTS



HYDRAULIC POWER UNITS:

Flow from 20 to 500 l/min – Working pressure 210 bar



HYDRAULIC CYLINDERS:

Static and dynamic capacity from 10 to 5000 kN

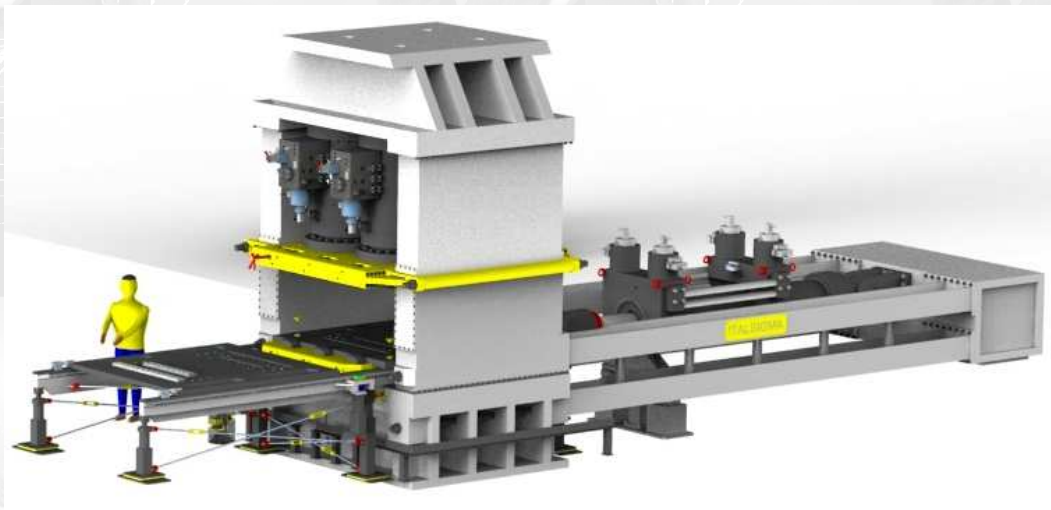
Stroke from 20 to 5000 mm

Dynamic performance up to 4 m/sec

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SPECIAL APPLICATIONS



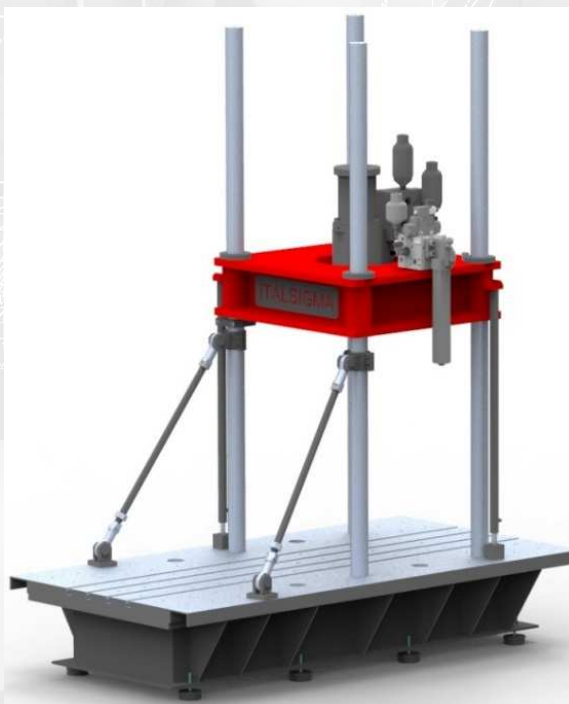
Seismic insulator Testing Machine:

30 MN vertical load – 3.000 kN horizontal load – 1.000 mm stroke.



Machine Tests on Rails:

1.000 kN vertical load



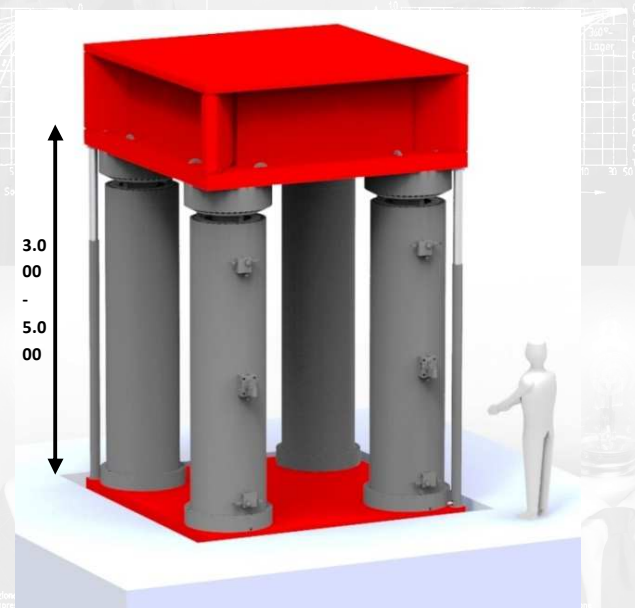
Load frame with 4 columns:

500 kN load – 300 mm. stroke –
Dynamic performance +/- 1 mm. 40 Hz

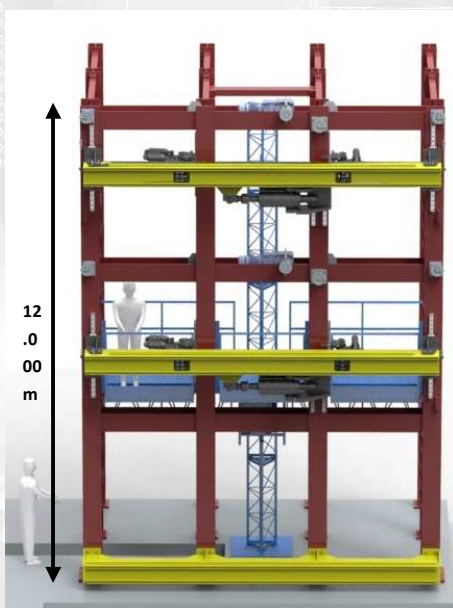
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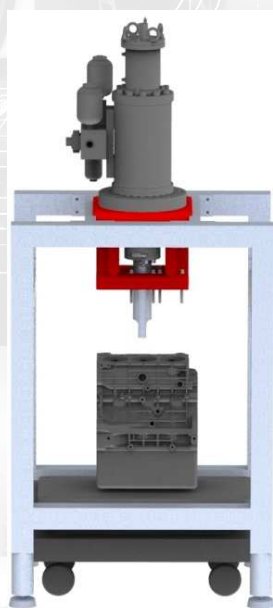
OTHERS SPECIAL APPLICATIONS



Monoaxial press of 30 MN:
2.000 mm stroke



Seismic Tests Plant on
curtain walls for buildings



Load frame for
Engine tests:
500 kN load



Load frame for
Automotive:
500 kN load
2.000 mm. stroke



Load frame with
2 columns with
light up to 3.000 mm.

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OTHERS SPECIAL APPLICATIONS



Mobile Laboratory for hydraulic power supply up to 6.000 l/min, 350 bar



Implant for Test on Connecting Rods



Damage Tests System on "Full Scale" piping



Biaxial System for Traction (25 MN) and Bending (1 MN/m) Tests

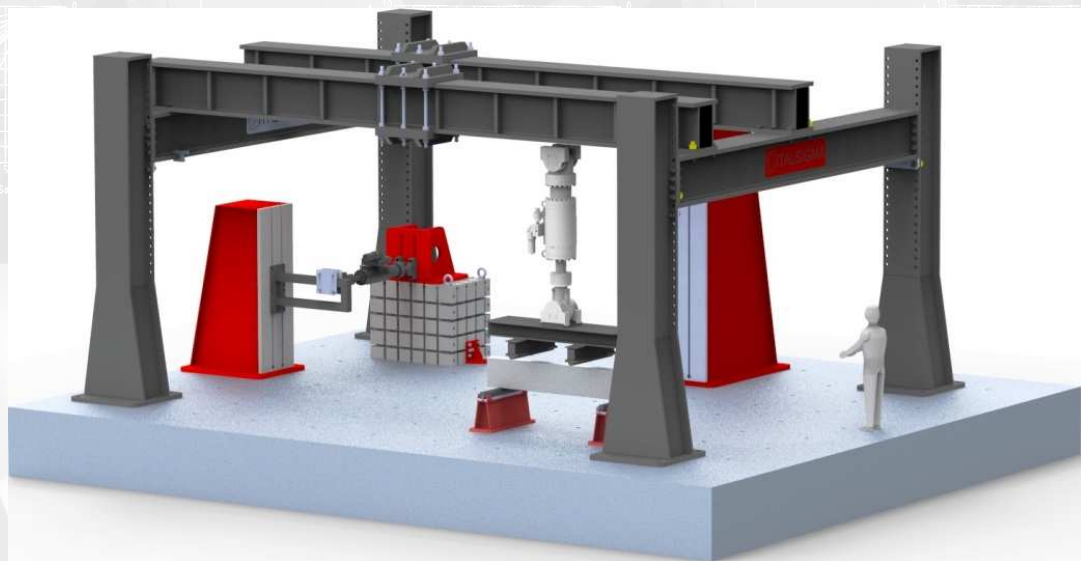


Calibration System for components up to 25 MN

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CONTRAST FRAMES



Complex Structure of modular load frames,
made according to the request of our clients.



Load frames for Tests, according to international standards.

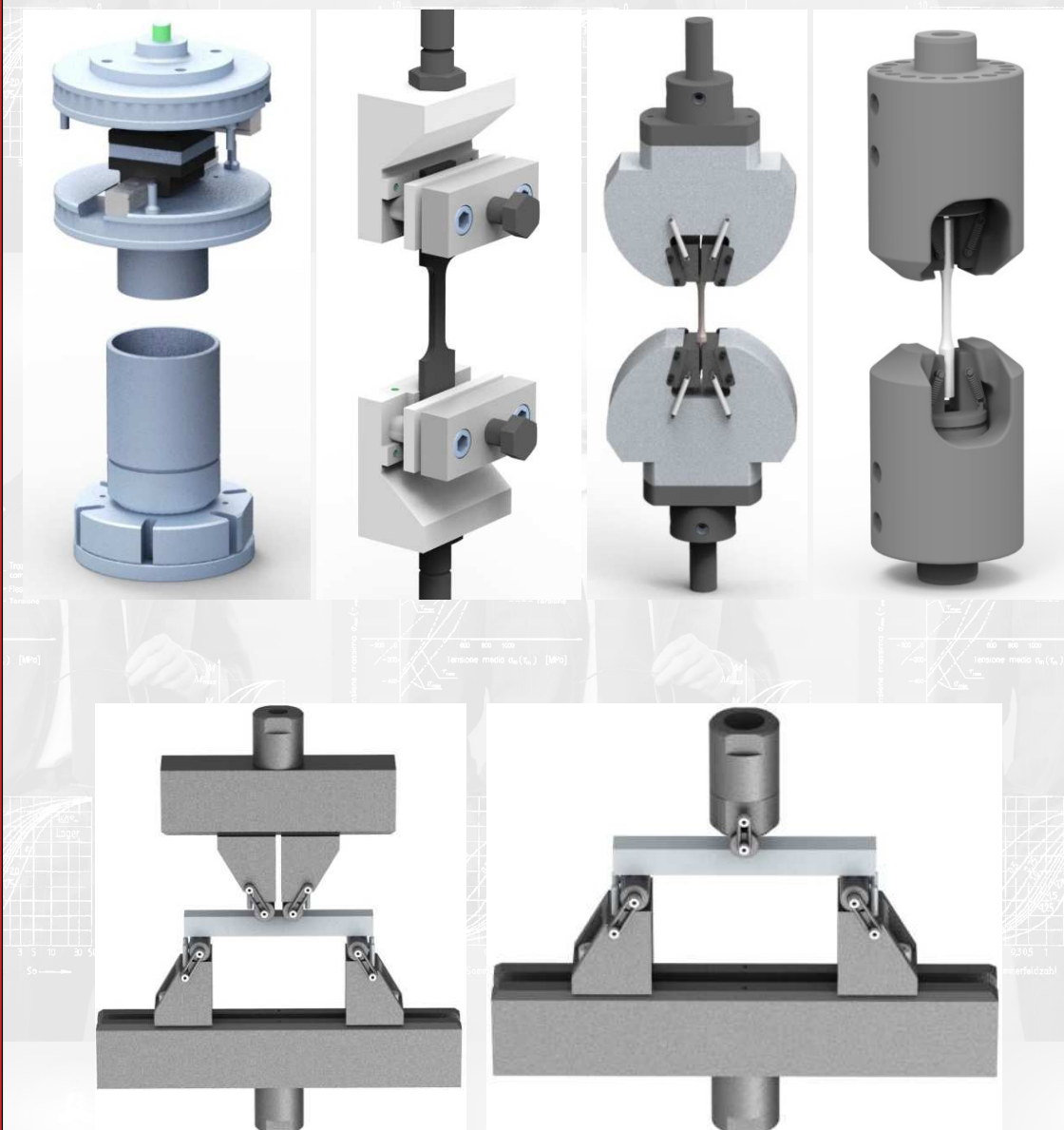
Load capacity from 50 kN to 30 MN

Dimensions on request

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GRIPS

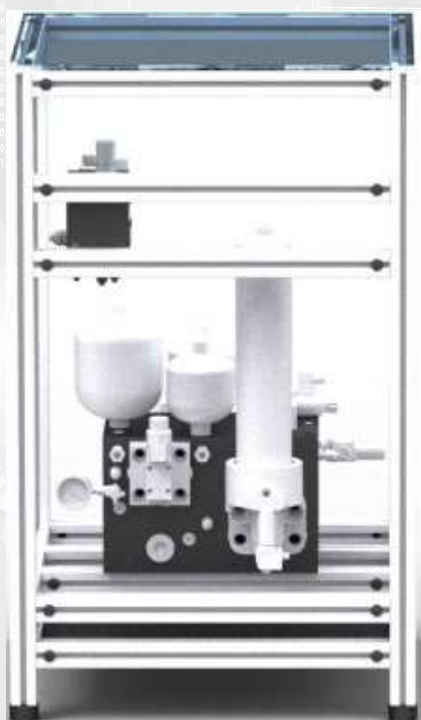


Wide range of **MECHANICAL AND HYDRAULIC GRIPS** for
static and dynamic tests
of traction, compression, bending and torsion

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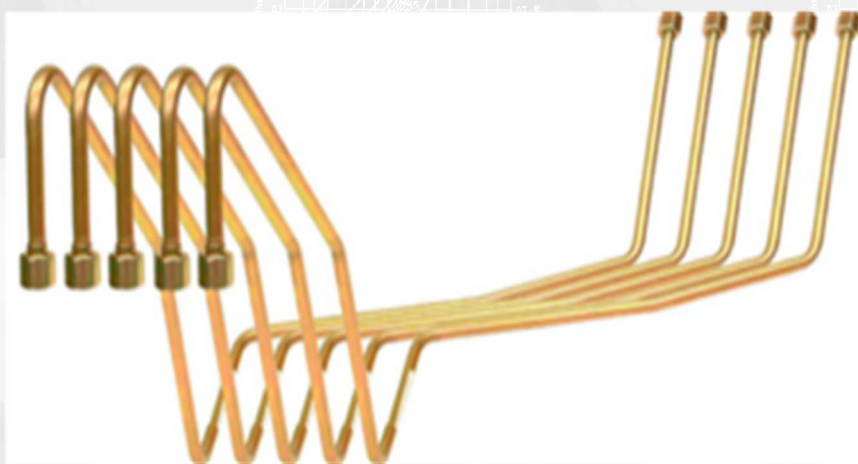
HYDRAULIC PLANT ENGINEERING



Manifold for oil flow distribution



Manifold for the direct oil on hydraulic cylinders management



Innovative piping solutions

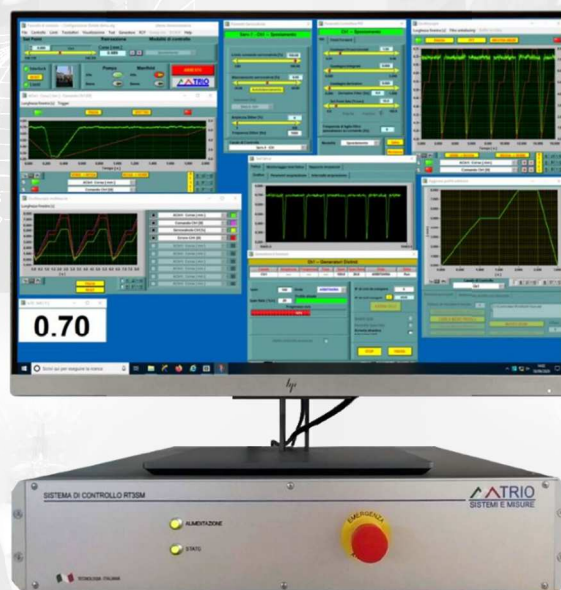
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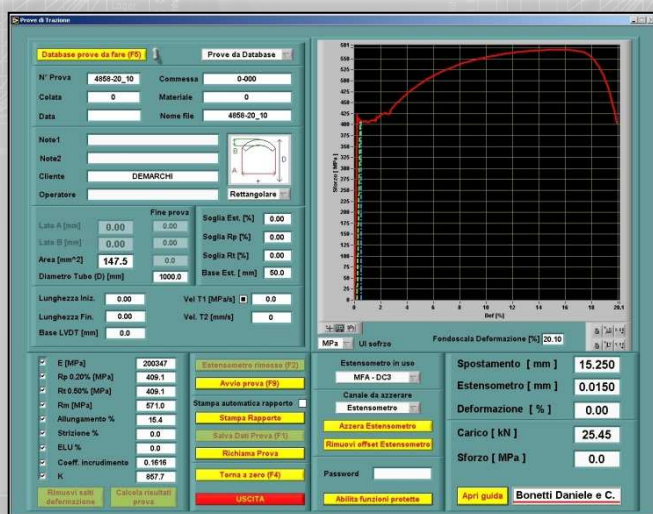
ELECTRONIC CONTROLLER RT3

The Electronic Controller RT3 is the result of a custom design based on the integration of advanced technology components, reliable, easy to find and to replace with the same that the market will offer in the more advanced versions.

It's built on the Real Time National Instrument hardware platform and the software is entirely developed in LabVIEW. In particular, RT3 system is made up by an embedded computer and by one or more acquisition and generation boards that are selected and combined according to the specific features of the final application. The different components are available on the market and are easy to find in case of update or of an improbable failure.



The RT3 control system is managed by an application software that works with a Real-Time operating system (working in deterministic mode without the inconvenient of the latency times caused by Windows environment) and is interfaced by an Ethernet link with a normal PC in a Windows environment, where reside application software developed with LabVIEW for the system management, the user interface, the configurations database, the data acquisition and operator front-end.

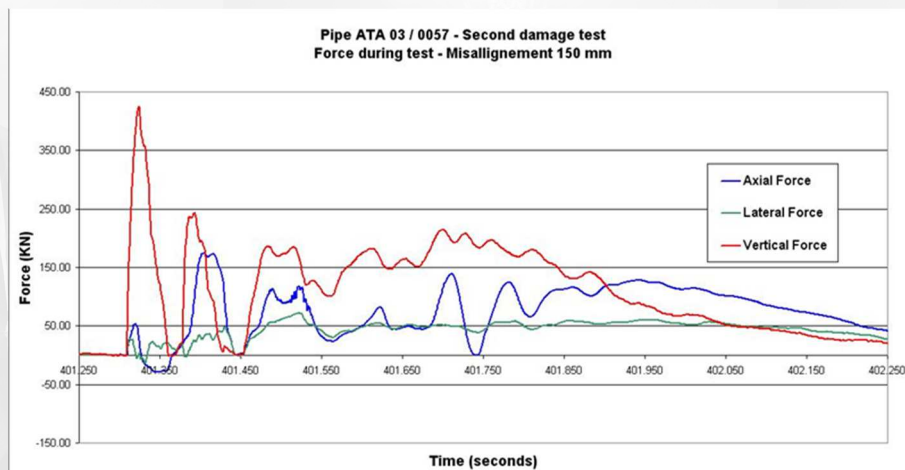
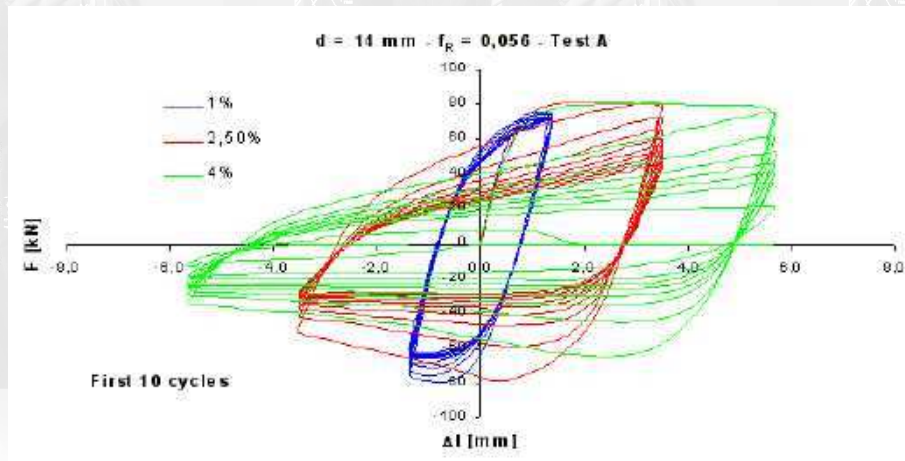


Into the RT3 system there are the electronic modules for the transducer conditioning, the drive of the servo valves and the management of the hydraulic devices.

According to these ideas and considering the versatility of his software, the system will maintain its value and its actuality in the years to satisfy the growing future operative needs. The particular initial configuration of RT3 can be upgraded to increase the number of control and acquisition channels to build complex testing devices.

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Features:

- Real Time National Instrument hardware platform
- software developed in LabVIEW in Windows environment
- Acquisition and generation boards with a resolution of 16 bits (18 bits optional).
- Flexible configuration for more control channels according to the selected hardware (from 1 to 4).
- 32 acquisition channels (optionally expandable)
- Add on software for specific testing request
- Control of hydraulic and/or electromechanical testing systems
- Automated start-up and shut-down sequences
- Continuous data acquisition with high response real-time graphics
- Integrated safety system

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SERVICES

Global service

Assembly of mounting hydraulic pipe and **testing** of the system plan.

Verification of the general conditions acceptable for correct use of the operations of **internal and external cleaning of the tank** and shift of hydraulic oil with replacement filter elements and control and charging of accumulators.

Revision of the servo valves and spare parts. Check and calibration high and low pressure.



After Sales Service

One of our major strengths is the ability to **provide "turnkey" systems**.

After sales service is an integrant part of co-operation process with Italsigma.

Our team, made of experts in mechanics, hydraulic and electronics **ensure that the installation is totally available**.



Scheduled maintenance

Scheduled preventive maintenance is the key to obtain high productivity.

It significantly reduces cost and machine downtime, ensure reliability and prolongs the life of part, system and installations.

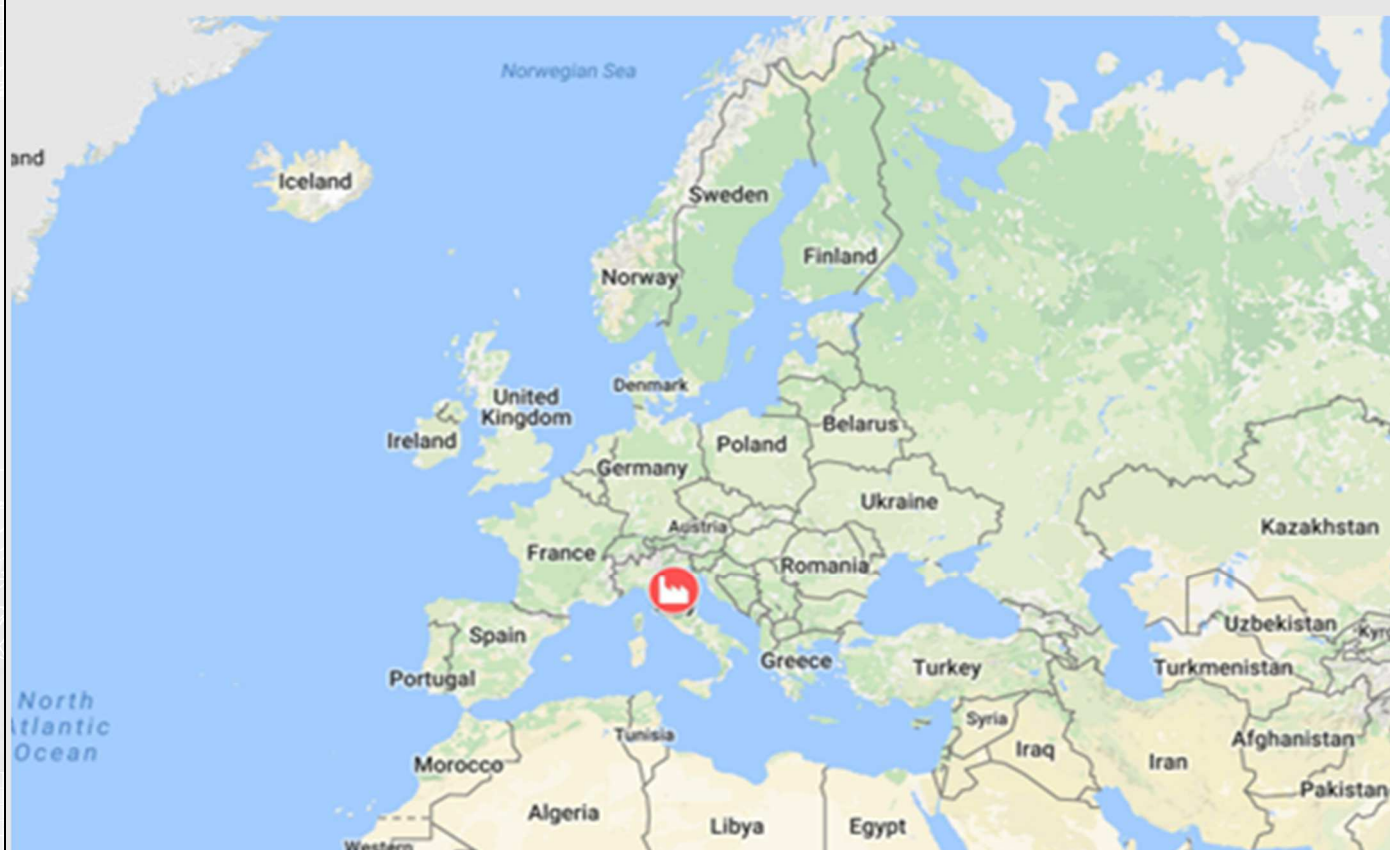


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REFERENCES: Universities - Industries - Research Centers





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