



FISA

*ultrasonic **cleaning**,
innovative **thinking***



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Philippe Vaudeleau has managed the FISA group since 2003. He joined the company in 1991.

A MESSAGE FROM THE PRESIDENT

Philippe Vaudeleau, President of the FISA group

"There's no shortage of projects. We shall tirelessly continue to develop, aiming for exceptional quality in our products and we shall continue to hold our clients' interests at the heart of what we do."

Since FISA's creation in 1981, our goal has remained unchanged: create and offer the best ultrasonic cleaning solutions for industrial players.

Whilst a great number of manufacturers have made the decision to use subcontractors, maximize margins and reduce costs, we made the opposite choice. We are convinced that mastery of all the design and manufacturing stages is essential to ensure the end result and a level of cleaning that meets the high expectations of our clients.

For more than 35 years, we have been designing and manufacturing our ultrasounds, generators, tools, detergents and processors in order to offer turnkey solutions that are perfectly compatible, functional, and adapted to our clients' individual needs and specifications.

Over the years, the FISA group has maintained its spirit as a human-sized company, close to its clients, available and willing to listen, yet never losing sight of its international calling.

Thanks to our network of commercial branches, FISA is currently present in the US, Europe and Asia and we work with well-known industrial companies in the aviation, foundry, horology, precision engineering, medical, optical, and plastics sectors.

In 2016, we recorded a turnover of 22 million euros following 40% growth across the last seven years. We work with more than 110 collaborators around the world and, each year, we produce around 250 machines that are essentially tailor made.

We have managed to impose our company as a key player in the ultrasonic cleaning market.

We attribute this success to the core values that the FISA group has held since its foundation: the quality and reliability of our machines, the desire to continually provide increasingly more advanced technologies and our closeness with our clients. We also attribute this success to our teams, engineers, technicians, and project managers, who invest themselves fully, on a daily basis, to be able to bring you continuously improved machines and cleaning processes.

What's more, the FISA group shows no sign of slowing down. Over the coming years, we shall continue to spread internationally and shall further develop our network of commercial branches in high-growth countries. We shall continue to earmark 10% of our yearly turnover to Innovation and Research in order to offer increasingly innovative software solutions, productive robots, and better designed interfaces.

Confident in our future, we shall continue to invest in our production tools as well as our application labs. Likewise, we shall continue to recruit new talent, who will shape and mold the future of the FISA group.



The FISA Group: a market leader in ultrasonic cleaning

The FISA group manufactures and designs ultrasonic cleaning turnkey solutions. With a turnover of 22 million euros in 2016, and sites in 8 countries around the world, the FISA group is, today, one of the leaders in its sector. Our machines are aimed primarily at industry players that produce parts for the aviation, foundry, watch-making, precision engineering, medical, optical, and plastics sectors.

OUR STORY

FISA is an international group that was founded in 1981 by three engineers specialized in designing, and selling, ultrasonic cleaning machines.

In 1981, they founded FISA and constructed their production facilities in Milan, Italy, and opened their sales office in France.

The FISA group currently employs around 110 people worldwide and has become one of the leading companies on the market for ultrasonic cleaning solutions.

The FISA group is a privately owned, human-sized company that promotes loyalty, respect, equality and confidence through its employees and partners.

OUR VALUES

- **Innovation and technology**

Each year, we earmark 10% of our turnover for Innovation and Research.

- **Environment**

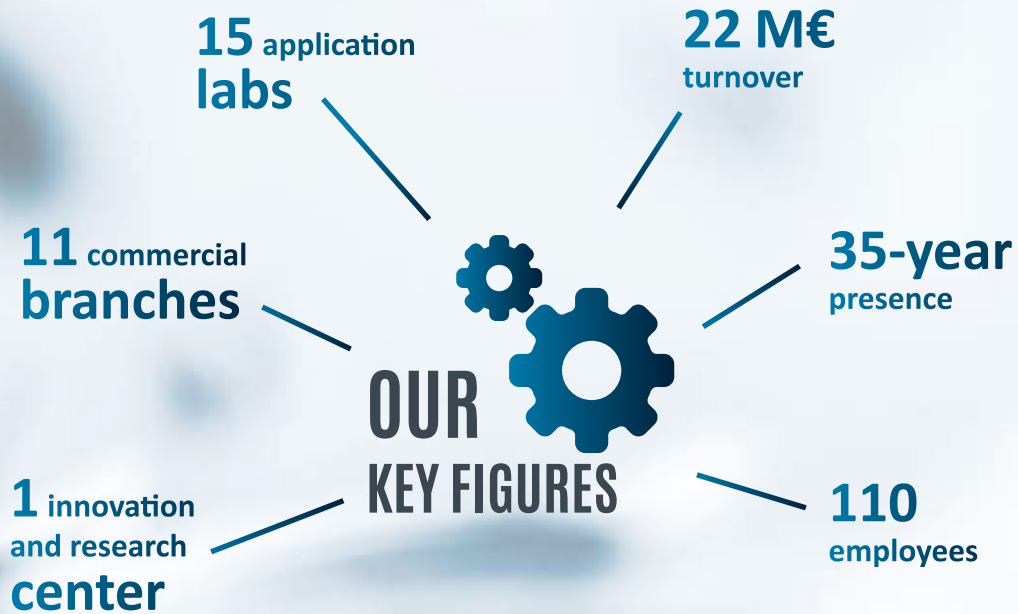
As early as the 1990s, we decided to move away from solvents and opted instead to develop environmentally friendly cleaning processes based on detergents.

- **Closeness**

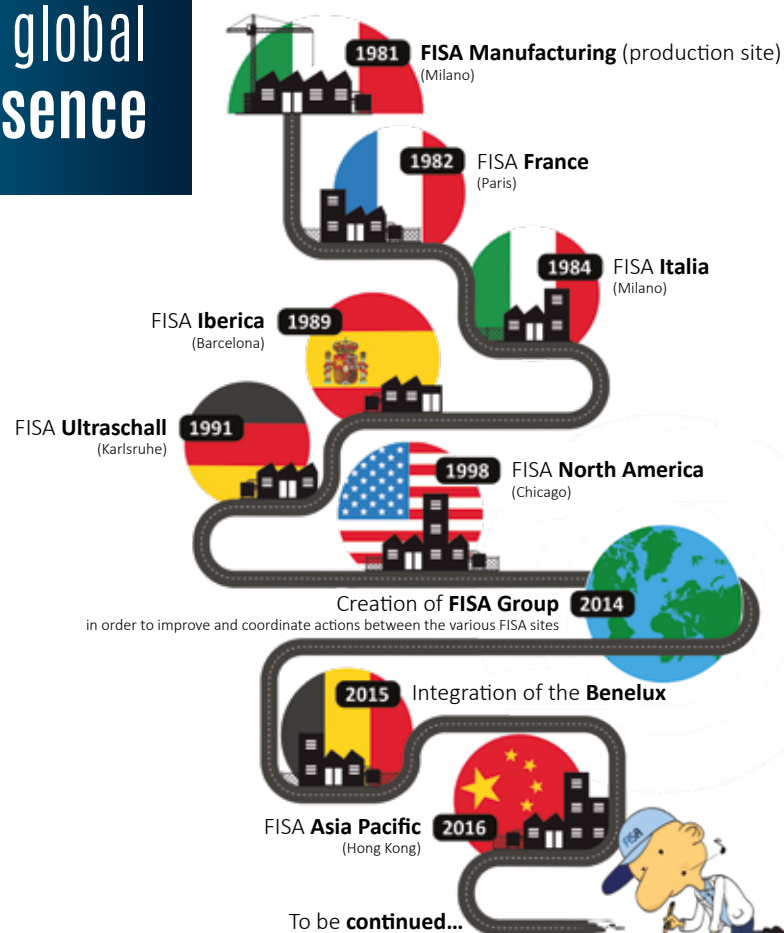
Our commercial branches are present in 8 countries around the world in order to offer you reactivity at any given time.

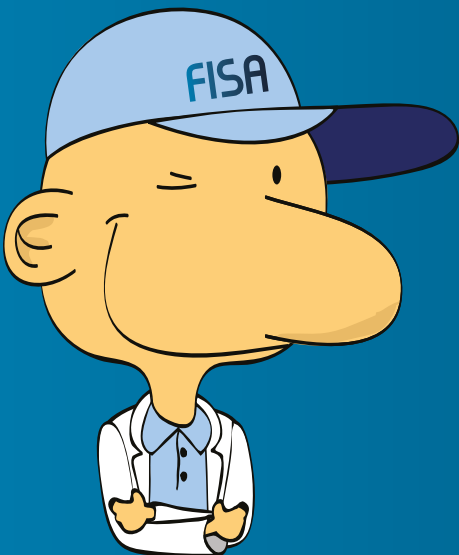
- **Client partnership**

Every project is managed by a project manager who is the contact person for the client and who will be with the client every step of the way in their investment strategy.



Our global presence





Ultrasonic cleaning: an effective solution for all industrial parts

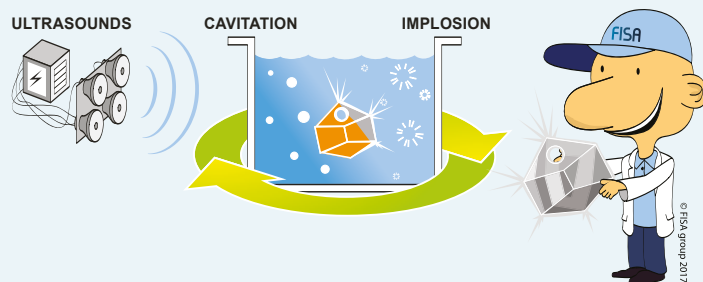
Ultrasonic cleaning is one of the best solutions for any industry that has to meet quality obligations. Ultrasonic cleaning can take between 5 and 30 minutes, depending on the state of the parts to be cleaned and the desired result.

A NON-DESTRUCTIVE AND PERFECTLY MASTERED TECHNICAL PROCESS

Ultrasonic cleaning was first used in industry in the 1960s. Ultrasonic cleaning machines comprise a stainless steel tank, upon which a generator-activated transducer is placed. The parts to be cleaned are placed in a basket that is submerged in a cleaning solution in the tank.

The generator generates a high-frequency electrical current and sends it to the transducers which convert this energy into high-frequency vibrations, i.e. ultrasounds. In the cleaning bath, these ultrasonic frequency waves trigger successive compression and decompression phases, creating gaseous bubbles: a process known as cavitation.

The decompression creates a multitude of microscopic bubbles that come into contact with the parts, which then implode violently during the compression stage. This action causes turbulence that is comparable to minute brushes scrubbing the part being cleaned to remove impurities.



AMONG THE MAIN ADVANTAGES: OPTIMAL QUALITY CLEANING

Unlike traditional cleaning processes, ultrasonic cleaning does not change the state of the surface and enables otherwise unreachable nooks and crannies of a part to be cleaned without having to dismantle it. Ultrasonic cleaning removes grease easily, eliminates impurities, removes rust and gives a shine to all your industrial parts.

On the other hand, the absence of human intervention during the cleaning stage very quickly makes your investment worthwhile when compared to what would be paid for manual labor. Another great advantage: rapid cleaning is synonymous with productivity gain.



On leaving the tank,
the parts are
perfectly cleaned
and grease-free.

AN INVALUABLE STEP IN DEPOSIT APPLICATIONS

The expertise developed by the FISA group in the field of ultrasonic cleaning allows it to make use of liquid deposit application.

These «coating» applications are a natural extension of the cleaning machines. Ultrasonic cleaning is an efficient way to prepare the surface of the parts to be treated to ensure that the varnish you apply adheres correctly.

Such applications can be found in the optical sector to deposit anti-scratch, anti-fog, hydrophobic and oleophobic varnish as well as in the medical sector to deposit active ingredients on implantable equipment, for example. FISA's robots' performance is remarkable for this as they are capable of reaching extremely slow and precise withdrawal speeds of 0.1 mm/sec. Drying and polymerization are also carried out in the machine using IR, UV, or hot air.

Our advantages and strong points

COMPLETELY PERSONALIZED CLEANING SOLUTIONS

The FISA group designs and offers entirely personalized cleaning solutions. We have also designed our own cleaning products and tools to ensure complete compatibility between all of our equipment.

STANDARD OR CUSTOM-MADE MACHINES

We offer a complete range of installations: compact, modular, standard, and tailor-made. For each project, our design office creates a fully finished technical solution that integrates all of your needs as well as your logistic, material, and budgetary constraints. We shall be with you every step of the way, from the conception of the most suitable technical solution to sending our technicians to your production site to install it.

A COMPLETE RANGE OF ULTRASOUNDS

Today, the FISA group is the only industry player to provide three types of ultrasounds : magnetostrictive, single and multi-frequency piezoelectric. This range of ultrasounds covers the different cleaning needs of our clients. Based on the shape and weight of your equipment, the type of pollution, and the expected results, we will provide you with the most suitable type of ultrasounds to guarantee maximum efficiency under all conditions.

ADAPTED DETERGENT PRODUCTS

To maximize the efficiency of cleaning and eliminate all of the impurities from the surfaces being treated, it is important to use suitable detergent. These cleaning products also contain rust inhibiting agents to avoid any form of oxidation after water-based cleaning. For the last 30 years, the FISA group has designed and developed its own cleaning products for optimal results.



The modular C40 line comprises independent modules that can be assembled according to the processes required.



The generator creates high-frequency electrical energy and transmits it to the ultrasonic transducers. Here, a multi-frequency transducer is shown.



Fimm is responsible for designing cleaning products for FISA customers.

PERFECT MASTERY OF THE PRODUCTION PROCESS

We manage all of the industrial processes that are necessary for creating our machines ourselves. The design and development of our machines, robots, and tools are entirely carried out by our teams at our Milan facility in Italy.

Software and plugins entirely developed by FISA

The FISA group designs and develops our own control and management interfaces. Our MCU (Machine Controller Unit) allows you to view all of the parameters and components of our machines using a touchscreen.

It can be easily connected to the local server to share any data and can be remotely maintained so that you have rapid technical assistance when you need it.

The FISA group also develops plugins to better monitor your equipment, reduce breakdowns of your machines and to plan maintenance, etc. These plugins can be activated at any time with a license. They are easy to configure either during or after the installation of your machines.



The machine controller unit allows you to set the parameters on FISA machines. It also centralizes data and allows you to program and plan different interventions.

Innovative robots and automation systems

The FISA group is specialized in designing robotic handling and automation systems that guarantee maximum productivity of your cleaning units. We offer a full range for ultrasonic cleaning, dip-coating, and surface treatment. FISA cleaning machines are all designed to be equipped with these high-performance and powerful systems.

In addition to handling and moving baskets, our robots are at the heart of a wider automation system that includes all aspects of the management process. Our robots can be easily installed or adapted on existing lines, including those of our competitors.



FISA robots allow you to automate installations for cleaning, dip-coating, and surface treatment.

FAST AND RELIABLE CUSTOMER SERVICE

Quality customer service is key for FISA. We make a telephone helpline and remote-maintenance service available to you to assist you in case of technical difficulties.

We can also train your teams to ensure your self-sufficiency and will provide you with a stock of spare parts to ensure the perfect functioning of your equipment. Our goal is to guarantee you a high degree of reactivity and permanent availability.



FISA's technical teams travel to our clients' sites to resolve problems with their equipment.



Helpline and a mobile technical team

FISA guarantees continued follow-up of its installations and assists its clients whenever they experience difficulties. In France, our facilities in the Paris region and in the Rhône-Alpes region enable you to benefit from a telephone helpline and on-site assistance from technicians who will rapidly make their way to your site.

Professional training to guarantee the autonomy of your teams

FISA trains your teams and technicians on how to use our machines and software. Our training organization holds courses for countless trainees every year and has 250 m2 of labs available for you to carry out practical exercises. Our training courses can be completely integrated into your professional training budget and are aimed at all qualification levels. They are tailor made to your equipment and your needs.

Stockpile of spare parts close to production site

We stock over 1,000 references of parts and are capable of sending spare parts anywhere in the world within 24 hours.

Preventative maintenance contracts

FISA provides preventative maintenance contracts for all your installations. The contracts enable you to optimize your production tools to prevent breakdowns and reduce corrective maintenance costs by acting even before a breakdown takes place.



FISA can run training courses on customer premises or in our application labs.



THE BIGGEST NETWORK OF APPLICATION LABS IN THE WORLD

The FISA group has developed a unique sales approach to assess your project step by step and respond to all your needs. In each country where we are present, we make test labs available to our clients so that they can test our solutions and validate our technical suggestions.

These laboratory tests form an integral part of our sales procedure and all enable us, in particular, to improve and completely meet your technical specifications. Our application labs are also open to allow prospective clients to visit our premises to get a better understanding of how our machines work.

In 2016, the FISA group invested 200,000 euros to renovate and improve its french application labs based in Savigny-sur-Orge.



4 QUESTIONS FOR MASSIMO MAROLDA DIRECTOR OF FISALABS

1/ How is the FISA group organized for research and development?

In addition to the research work carried every day by our project managers across our different test labs, we currently have two specific sites that conduct our research: FISAlabs and Fimm. FISAlabs is our research department that is responsible for designing new IT and electronic technologies. Fimm is the department that designs the cleaning products and detergents used in our cleaning solutions. Fimm, like FISAlabs, has its own research lab.

2/ Can you talk to us more specifically about the role of FISAlabs within the FISA group? How do you decide what research to conduct in this department?

FISAlabs designed the tools, plugins, management interfaces and the electronic circuits used in your machines. The department is based in Milan, on the same site as our manufacturing plant. We currently have 4 engineers working there full time: an electronics engineer, IT engineers, an applied industry specialist, and myself. When FISAlabs was created, it was our intention to guarantee a certain degree of autonomy for the department as we did not think that financial profits would be the most important criteria when deciding what research to conduct or not. That is the reason why FISAlabs has its own budget.

As for our research projects. I have identified two main types of research: improvement techniques or tools and long-term projects. In both cases, we study the information passed on to us by our quality service down to the tiniest detail and are constantly in touch with our sales branches, as they are the ones who know exactly what our clients' needs are.

3/ Can you tell us about the Machine Controller Unit (MCU) that FISA has developed? What role does this tool play?

The Machine Controller Unit is the monitoring and management tool connected to all the machines sold by FISA. It was entirely created in its entirety by our teams and has taken us more than two years to develop.

With this MCU, it is possible to change the cleaning parameters in order to adjust the cleaning sequences, to personalize the data display or generate maintenance reports without it being necessary to re-create a program. We wanted a simple tool and one that was intuitive and easy to use.

This tool is completely protected with an optional list of users who do not have access to the same functions depending on their profile. Today, this tool offers gives us a major advantage over the systems proposed by our competitors.



4/ What innovations are you working on? What are you going to study next in research and development?

All of our research projects are guided by a single idea: simplify access to our machines and enable them to be managed while providing ever more innovative cleaning parameters. For example, the operators occasionally need to move our robots manually to resolve problems or to establish diagnostics. We are very close to being able to offer them the option of moving them thanks to the Wi-Fi network. This will be very practical as it will enable them to move the robot with their smartphone or tablet.

As for programming, we are going to study our communication protocols in order to make them more easily compatible with machines connected to a cloud. We think that one day, our clients will want to connect their machines to the cloud to have a single database that will not be dependent on their site location. I think that we need to be ready to make this transition.

Finally, on a personal note, I am very interested in artificial intelligence. AI could be of particular use to us in improving the preventative maintenance of our machines. We have designed a plugin for this and AI could help us improve it further.

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