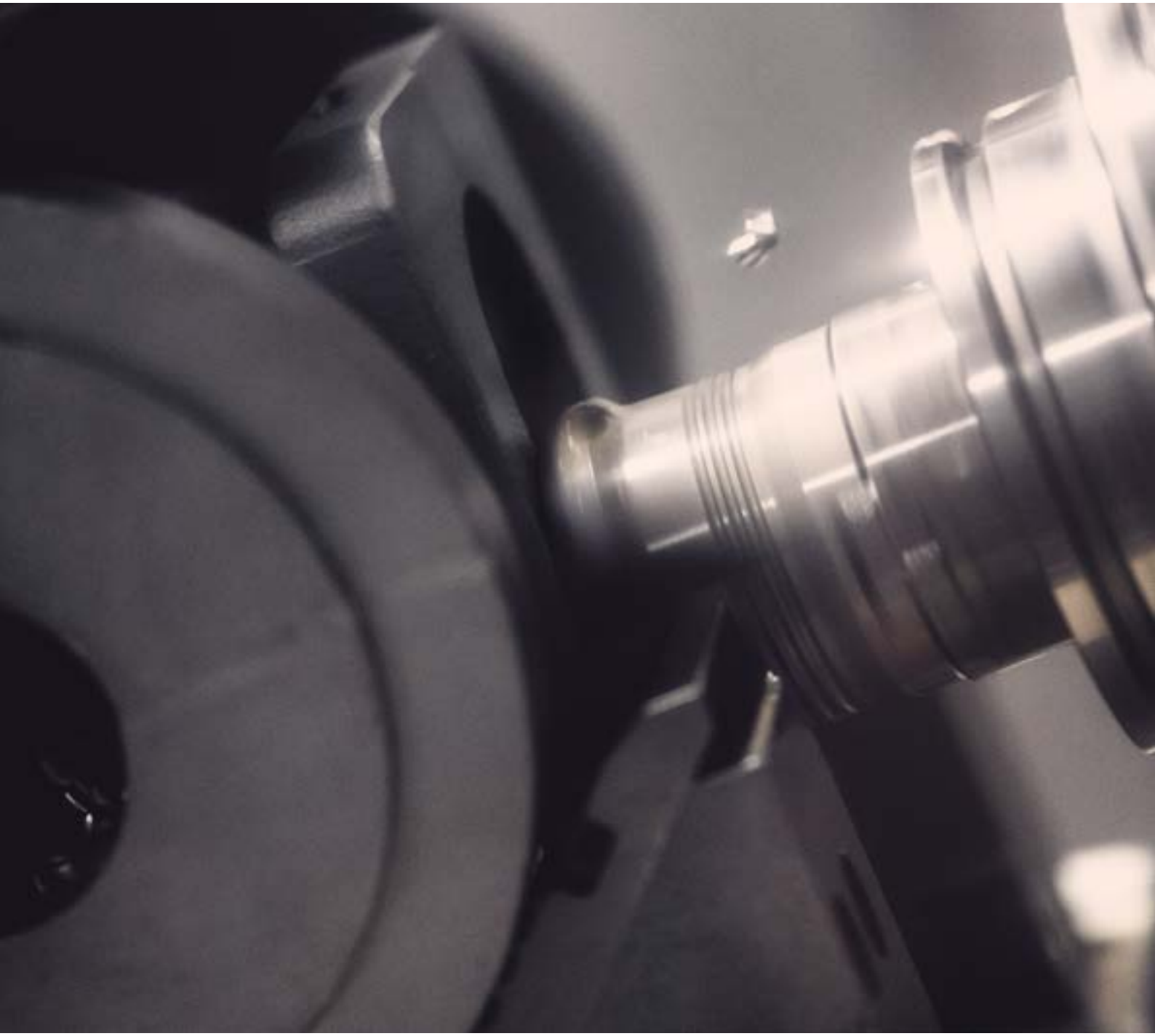


SAMSON FRANCE

A high-tech production site

CONTENTS

EDITORIAL

From left to right and from top to bottom: Gérald Salvadori (Chief Development and Production Officer - CDPO), Bruno Senaux (Chief Commercial Officer - CCO), Stéphane Deschamps (Chief Executive Officer - CEO) and Bruno Soulas (Chief Administrative Officer - CAO).

A Clear Vision toward the Future

"SAMSON France has built a solid reputation in fluid control valves and related equipment, through sustained innovation over nearly 60 years. We are today a leading player in our industry, with an average of 70 orders delivered daily. We are a driving force in the SAMSON group, with 2,500 customers and are working hard to improve our operations to serve our customers.

To meet this goal, we are engaged in a vast improvement program to transform our facilities and build the **Smart Factory of the Future**. We are implementing digital technologies, logistics robots and connected systems to make intelligent use of machine data generated by our processes.

This progress in **performance** is fully supported by our 300 employees in their day-to-day commitment and company-wide training programs. Thanks to their expertise – design, engineering, production, assembly and delivery – we continue to enhance our high-quality specialist valves, accessories and services.

This determination to respond to all types of demands is closely linked to production process **flexibility,** a key priority. For our customers, this means greater responsiveness, with 30% of orders shipped in less than a week. This also enables us to implement a higher level of adaptability through the design, development and production of customized solutions to meet all customer specifications and needs.

We want to share with you the initiatives that enable us to achieve excellence:

Building the Smart Factory of the Future – through Robotization, Connectivity and Digitalization.

Improving Performance – through Quality, Expertise and Know-how.

Increasing Flexibility – through Responsiveness, Autonomy and Customization.

Our ultimate objective in building a state-of-the-art facility is to continually improve our engineering, production, order processing and service to benefit customers. Our clear vision ensures your success now and in the future."

Stéphane Deschamps
CEO, SAMSON France

SAMSON AT A GLANCE

SAMSON France is a subsidiary of the SAMSON group. Our head office and production center, in Vaulx-en-Velin (just outside of Lyon), is built on a 23,000 m² area, with 10,000 m² of production facilities.

SAMSON France, which produces different devices of the group's standard range (such as control valves and self-operated regulators), also develops and manufactures its own product range, mainly oriented towards the food and pharmaceutical industries (hygienic, aseptic and utility valves).

- Revenues are constantly growing and in 2018, they reached nearly **54** million euros.
- SAMSON France employs **300** people.
- The firm is represented in France and Africa through **8** sales offices.
- Over **30** machine tools are in operation on the production site.

■ 1962

SAMSON Régulation was founded in the Lyon suburb of Villeurbanne by Jean Falconnier, in partnership with Herbert Feistner.

■ 1972

The SAMSON SA production company was established to introduce and support SAMSON group products in the French market. The first production facility was built on the current Vaulx-en-Velin site.

■ 1987

A second building was built to enable the two companies to work on the same site.

■ 2011

The two companies merged to create SAMSON Régulation SA.

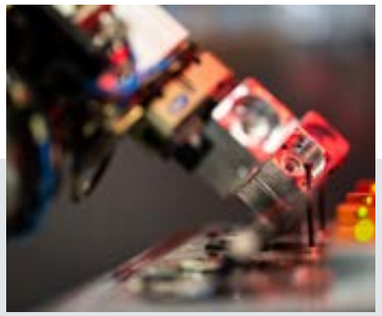
■ 2014

A third building was built, adding 1,800 m² of space to install new generation production machines.

■ 2018

SAMSON reaches the threshold of 17,000 control valves and over 90,000 accessories per year.

Robotization



Connectivity

Digitalization

> "All the new machines we install in the factory can generate enormous amounts of data. We are currently collecting, processing and using only part of this data and developing our database for future added-value processing. The Industry 4.0 approach is well established, building the necessary foundations to analyze and optimize production."
>
> **Laurent Martinod, Digitalization Department Manager**

SMART FACTORY OF THE FUTURE

The company has invested in robots and new generation connected equipment to support all our qualified employees. All new machines are 4.0 compatible and are generating quantities of data during production, including data collection, analysis and applications to constantly optimize and improve the production process.

This innovative approach is a core component of the company's strategy to make our production facility ever more efficient and competitive.

Factory of the future

THE SMART FACTORY BY SAMSON

Communication between management tools (ERP) and the production tool

Autonomy of robots and machines for greater productivity

Gathering of data and operational applications

Use of operational data boxes and optimization of manufacturing processes fabrication

QR code on the valve

Digital key for the customer to access documents related to the valve

Cobotics

Collaborative work between robots and operators for greater production efficiency

Machine loading through real-time management

Supply of stock and raw materials to workstations using the SAMROB Robot, connected to production schedule

Robotization of logistics and machining

Automated control and loading & unloading of machined and raw parts

Dematerialization

Elimination of paper on all machining stations, including manufacturing documents (drawings) available on touch screens

Logistics robot

- **Ensures the distribution** of the right parts to the right places within the factory
- **Transfer of crates** of parts to different milling stations
- **Streamlines the process**, allowing operators to focus on machining, rather than on supplying parts to machines

SAMROB

The robot handles crates containers filled with machined parts and navigates between different workstations. This is now a routine operation in the machining environment. The SAMROB logistics robot was initially installed in 2018 and is now connected to the production schedule.

"We realized that our qualified operators spent time handling stock boxes or parts, with no added value. After having ensured that we were complying with current regulations concerning autonomous robots, we implemented the use of SAMROB in the factory to automate these tasks."
Gérald Salvadori, Chief Development and Production Officer - CDPO

Smart System

- Shortest path for the robot chosen, using a complete mapping system of the factory produced by an integrated 2D scanner
- Detection of obstacles based on a stop-and-start system, including the search for an alternative path
- Capable of operating 24/7
- Return to recharging station at the best possible time

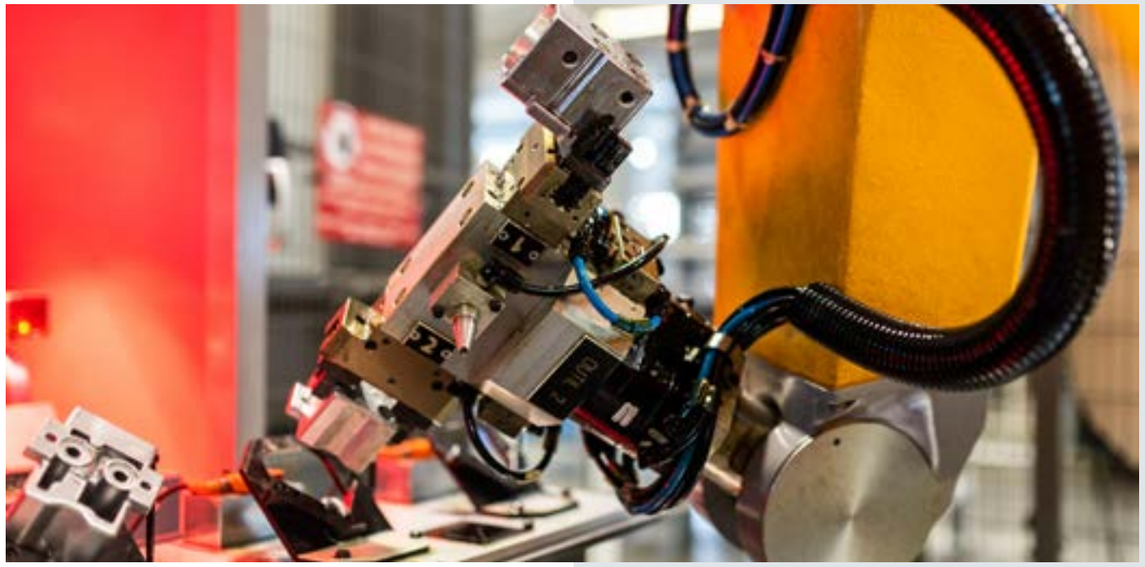
Automated feed of a robotized machining unit. SAMROB will, in the future, supply all the machines in the factory to ensure continuous production.

INDUSTRY 4.0 – MACHINING

The installation of robotized machining units triggered the move to create a smart and connected factory. Robots now carry out control tests and directly supply workstations with the parts to be machined.

A robotized milling unit...

- **Integration of a six-axis robotic arm** to the numerically-controlled machine tool
- **Possibility of changing the gripper** in order to adapt to the parts being handled
- **Cleaning and controlling of parts** in hidden time while milling is proceeding
- **Automatic parts recognition** using a built-in camera system in the robotic unit
- **24/7 operation capacity**



... that is also connected

- **Interfaces between operators and the milling unit** through the use of touch screens by operators for production purposes (drawings, production schedules).
- Machine-tool connected to a monitoring system for **real-time transmission of operating data**
- Analysis of operational data to **optimize the production process**

" Data must be analyzed over a period of several months for it to become relevant. We currently use this data for the milling unit, with developments underway throughout the factory. This will enable us to monitor the efficiency of machines (effective utilization, downtime, maintenance) and to gather and analyze comments by operators in view of improvements in productivity."
Yannick Roger, Machining Workshop Manager

Quality

Expertise

Know-how

> “Our know-how is based on the experience of our operators and is constantly being strengthened through training. We involve our staff so that they actively contribute to quality (self-testing, qualification). Internal and external audits also allow us to determine and assess their expertise. This process, which has been applied for several years, is an integral part of our dynamic continuous improvement programs.”
>
> **Joséphine Signoles-Fontaine, QSE Service Manager**

PERFORMANCE

SAMSON products are well-known for their reliability and high level of quality, a reputation built up over nearly 60 years, through uninterrupted investments to constantly update and modernize production infrastructures.

The expertise and commitment of operators and assembly personnel are essential in ensuring that the company stays on the cutting edge of technological development, to ensure quality production in all areas of the factory: assembly, machining, high-precision welding, tooling, painting, etc. This know-how and continuous improvement are the keys to maintaining SAMSON’s strategic priority: performance for the benefit of all customers.

Performance

VALVE ASSEMBLY WORKSHOP

Hygienic and aseptic valves are among the key hallmarks of the French factory. Designed, developed and manufactured in France, all these valves are personally handled by the experts in this workshop.

- **Responsiveness** to accurately meet customer requirements
- **Knowledge sharing** to maintain our know-how and transmit expertise to our assemblers
- **Traceability** throughout the assembly process (surface roughness, polishing and dimensional testing)

The workshop at a glance

- Hygienic valves (3347)
- Aseptic valves (3349)
- Pressure regulators (2371)

Over **4 000** hygienic and aseptic valves were exported worldwide in 2018.

"I know this range by heart. I have seen the multiple upgrades implemented since the department was created at the end of the 1990's. I've monitored numerous changes and improvements of hygienic and aseptic valves over that period. This is why I am committed to pass my knowledge on to new assemblers. In this industry, I think it is particularly interesting to take on the challenge of assembling various types of valves and to avoid falling into any sort of routine."
Roger Oliver, Hygienic and Aseptic Valve Assembler

"Here, each operator manages orders from start to finish, by first receiving assembly parts and then carrying out all steps from assembly, to packaging and shipping."
Mario Martins, Assembly Team Leader

Certificates & Approvals

Issued by independent certification bodies for these valves

VALVE ASSEMBLY WORKSHOP

This workshop is a central hub of the factory, where valves are assembled in full (body, internal parts, actuators and accessories). Over 20 experienced people are actively involved in assembling, testing and shipping most SAMSON valves.

The workshop at a glance

- Linear valves (3241, 3351, 3251, 3252, 2412, 2417)
- Three-way valves (3244)
- Rotary valves (3310, 3331)

Workshop teams assembled over **13 000** valves in 2018.

In addition, teams also assemble valves and actuators produced by the group's subsidiaries.

"I cover a wide range of tasks between assembling accessories onto valves and working in a clean room. I am interested in many aspects of the industry and enjoy learning new things, and so I appreciate having this position because it constantly allows me to progress. My main focus is on accuracy and I pay close attention to my wide range of responsibilities. I especially like working in the clean room for which I have the necessary qualifications. We carry out all sorts of tests in this well-equipped room, as well as assembling special valves requiring specific precautions."
Sébastien Duwez, Industrial Valve Assembler

High-performance equipment

- **7 pre-assembly stations** for linear and rotary valves
- **13 assembly stations for complete valves** (assembly, adjustment and initialization of accessories)
- **1 clean room** for assembling and testing special valves
- **3 test benches** dedicated to leak testing
- **100% of valves** are tested prior to delivery

"When a valve leaves the workshop, it must meet the specific requirements of the customer. SAMSON issues 3.1 acceptance certificates to guarantee that our products comply with each order."
Philippe Ginisty, Assembly Workshop Manager

ACCESSORIES ASSEMBLY WORKSHOP

SAMSON France's range of accessories are a key component in our overall offer. Our two dedicated teams of **35** people currently ensure production and assembly tasks for these devices.

The French factory is particularly specialized in **air supply regulators** and **solenoid valves**.

In 2018, **30,000** supply pressure regulators and over **25,000** solenoid valves were delivered to customers.

The workshop at a glance

The assembly range includes over 10 different types of accessories, including:

- Limit switches
- Temperature sensors
- Pneumatic lock-up valves
- Quick exhaust valves
- Safety temperature monitors

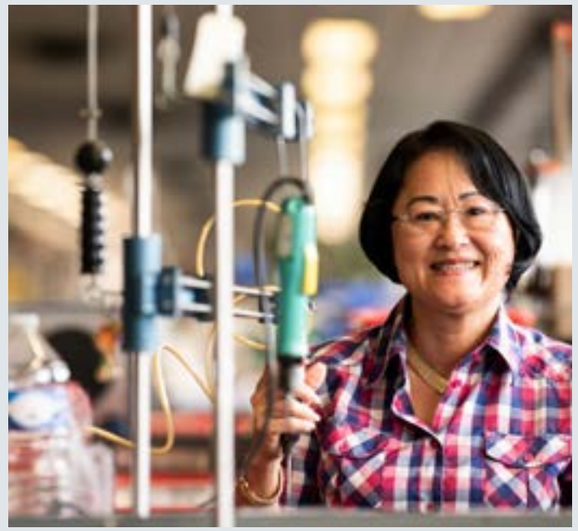
Planning ahead

- Enough stock to **cover the next 15 days** must be available for all types of accessories, based on a Kanban planning system

"To adjust our assembly priorities, we regularly monitor the availability of our accessories. This enables us to respond to customer orders rapidly and plan ahead for future needs."
Philippe Ginisty, Assembly Workshop Manager

Meticulous assembly

- **Systematic audits** on test benches for leakage and flow testing to guarantee that all devices assembled are operational and provide the required features
- Assemblers must be **accurate, patient and multi-skilled** to meticulously carry out assembly and testing operations



"I work on solenoid valves type 3963. My main task is to adjust and calibrate the coils in the solenoid valves and I also oversee their assembly process. I handle very small parts on a daily basis, often using tweezers. This task requires patience and concentration. I need to be extremely accurate. I appreciate the calm environment I work in and the fact that I am fully responsible for my workstation, managing the coil from start to finish."
Nadine Di Piro, Production Operator

QUALITY

SAMSON is particularly focused on achieving quality. Testing, carried out by highly qualified technicians, is an integral part of the production process. Four of these tests are clearly representative of the company's know-how.

Dye penetrant inspection

This non-destructive test method is used to detect superficial discontinuities on metal parts.

3D testing

Three-dimensional measuring devices are used by the metrologist to guarantee ultra-precise dimensional checking of machined parts.

PMI analysis

Positive Material Identification (PMI) is carried out with an X-ray fluorescence gun, used to check the chemical composition of metal parts.

Helium leak testing

This leakage test is used to ensure that fugitive emission rates are compliant with regulatory guidelines. This procedure detects possible leaks from the inside to the outside of the valve, with a very high degree of sensitivity.

SURFACE TREATMENT

Liquid painting

Two or three layers of liquid paint are applied using a spray gun suitable for the applications in question and compatible with **specific applications and demanding conditions** (high temperatures, corrosion, offshore environments, etc.).

Powder coating

Epoxy powder, sprayed on the part with an electrostatic gun, offers excellent **resistance to impact and corrosion** for standard industrial applications.

"In parallel to these two techniques, one of our operators focuses on glass-bead blasting for stainless steel hygienic and aseptic valves. This surface treatment involves blasting glass micro-beads onto the external parts of the valve to provide them with a matte finish and to create a specific aesthetic appearance for stainless steel parts."
Loic Douzain, Team Leader

Responsiveness

Autonomy

Customization

> " One of SAMSON's major strengths is that our employees are dedicated to responding quickly as part of their everyday way of working. Flexibility is a core concept for our department, where we have designated specific product names and references that are essential in our production process. Our teams constantly adapt to meet all customer requirements."
>
> **Virginie Payet-Maugeron, Parts Management Team Leader**

FLEXIBILITY

Customers have a wide range of specific requirements and demands, from the need to receive delivery of an order on short notice to having us design and produce a customized valve.
To respond to this challenge and remain competitive, SAMSON France has implemented flexible production methods and organized its facilities and equipment accordingly. This strategy has been deployed throughout the company and is based on three main operating principles:

- **Pick-to-order/Assemble-to-order (PTO/ATO):** to be responsive to deliver orders quickly and accurately
- **Manufacture-to-order (MTO):** to be autonomous by manufacturing (machining and/or assembling) standard products on demand
- **Engineer-to-order (ETO) :** to design, engineer and manufacture customized products, tailor-made to customer specifications

RESPONSIVENESS

FAST-TRACK

- **Short turnaround times** for processing orders
- Reduced delivery times, with equipment being shipped in less **than 5 days** after order registration
- On average, **30%** of orders are managed via this system

SHIPPING

- **Standard** or **specific packaging**
- Orders **carefully checked** prior to shipping
- Direct delivery to customers in France and to over **40 countries worldwide**

AFTER-SALES SERVICE

- **Repairs** and **maintenance** for all SAMSON devices
- **Spare parts in stock and available** for repairs and exchange on an emergency basis
- **Customer on-site intervention**
- **Hotline** for product commissioning

RESPONSIVENESS

Storage units for parts for assembling complete valves

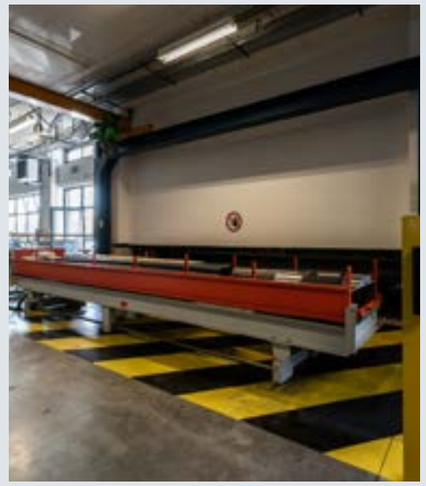
- **15 automated storage silos** for parts used to prepare orders (picking) prior to routing to assembly workshops
- **Minimum floorspace required** to free up maximum storage space (8.85 m height x 60-80 cm depth)
- **928 storage racks** loaded and unloaded by a shuttle, with potential storage for up to **18,000 stock items**

"We have optimized product storage solutions using these automated stock silos. Our performance has improved and stock monitoring is more accurate, with less picking errors. Parts are now easier to find than ever."
Robert Cuilleron, Head of Industrial Management

AUTONOMY

A storage system for raw materials used in machining

- **Raw materials** are received as bars and profiles
- **Easy & safe handling**
  Computer-controlled storage system for bars and profiles
- **Efficient use of space**
  Significant gain of storage capacities
  (526 m3 at a height of 13.6 m)
- **A wide range of raw materials**
  76 storage cases with a total capacity of 228 tons, all stacked and carried on a pallet loader



"This system simplifies raw material stock management. We know precisely what is available at any given moment. If I need to take items out, I will get what I expect and the stock will be where it should be. I need to ensure strict and methodical traceability management and check materials as soon as they are delivered."
Nicolas Meyer, Procurement

AUTONOMY

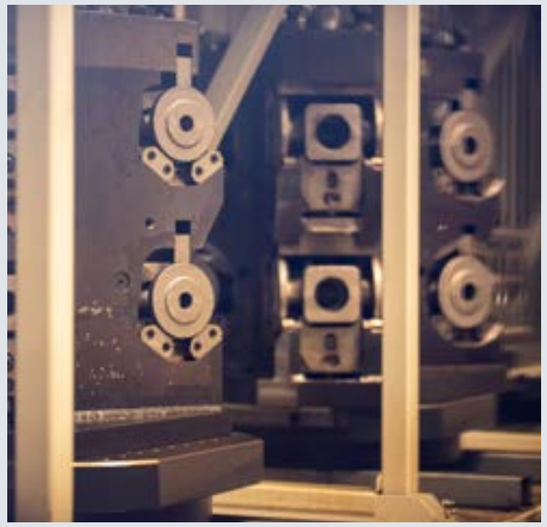
Flexible Manufacturing System (FMS)

The FMS robotic production line is the key for the factory's **flexibility** and **autonomy**. This state-of-the-art technology enables us to adapt production scheduling to real-time events, based on needs and deadlines.

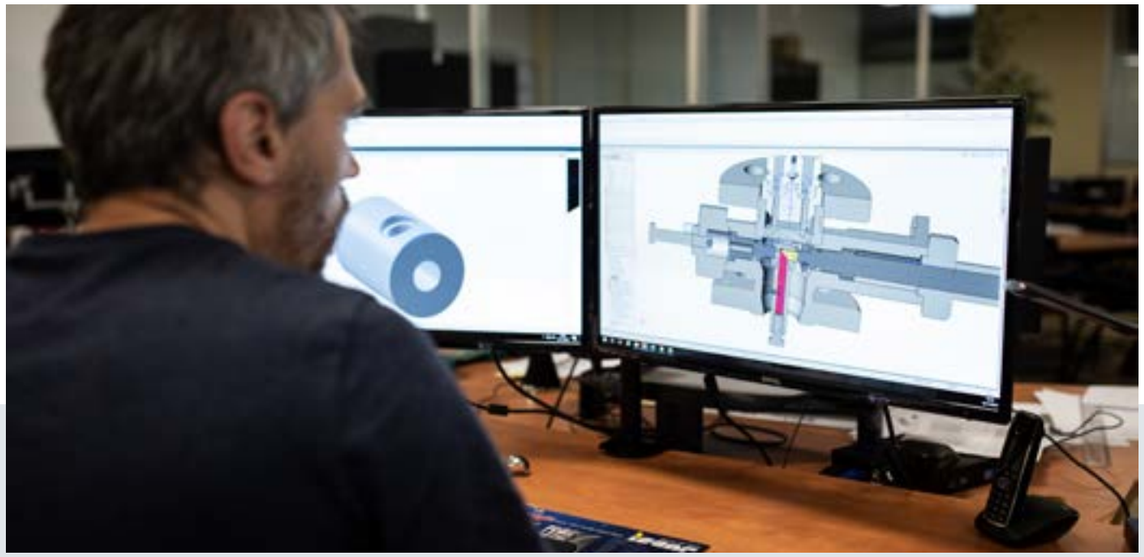
"The flexibility of the FMS line generates several advantages, such as the ability for machining six parts on an assembly pallet overnight and also for storing and machining small series of parts needed on a regular basis, such as one single valve body."
Gérald Salvadori, Chief Development and Production Officer - CDPO

An automated line

- Two computer numerical control machines with **automatic tool replacement systems**
- **Automatic robotic transport** and pallet loading system for parts
- Simultaneous storage and machining for **20 series of parts** (bodies, yokes, insulating valve bonnets)
- **24,000** parts machined in 2018
- **Non-stop 24/7 operations**



"Thanks to FMS, we no longer need to prepare or remove tools. 450 tools are stored in high performance automated tool magazines for each machine. This is of significant interest for all adjusters, particularly as there is always a risk of an error occurring when handling tools. This risk is reduced with the automated tool magazine. When machining a series of parts, we save time and boost productivity."
Pascal Cuenca, FMS Adjuster



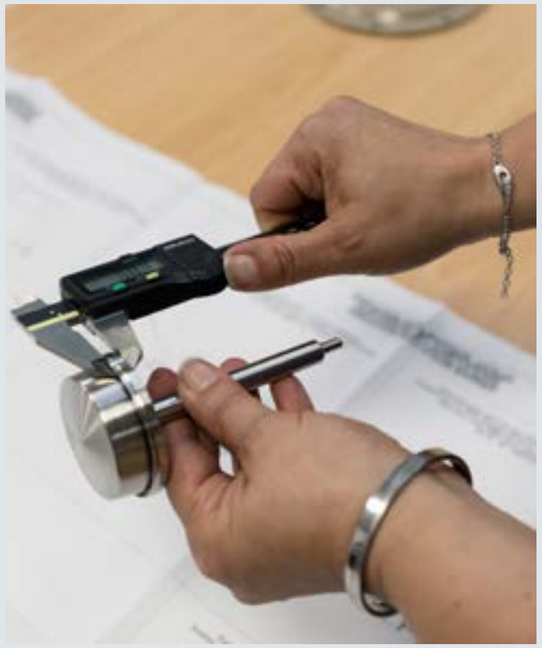
CUSTOMIZATION

Tailor-made products

SAMSON France is above all dedicated to providing responsive and autonomous solutions, producing and delivering standard valves. In addition to these ready-made products, the company is also capable of responding to any special requirements its customers may have.
Building on several decades of experience, SAMSON can propose specific tailor-made engineering services to design and build customized products, known as Engineering to order (ETO).

The basic principles of ETO

- Adaptable factory management for customized products
- Design, engineering and production of unique turnkey valves and parts suitable for the customer's process and needs (e.g. special materials or fittings)
- Specific technical assistance, advice and quality engineering



"When a customer needs a product that is not available in standard SAMSON lines, the R&D department can design the product after considering technical feasibility and checking required standards and regulations."
Michael Lachenal-Chevallet, R&D Department Manager

Coordinated cross-company action

Several departments must coordinate their efforts as part of an ETO project, to undertake specific studies to design, produce and deliver customized solutions.

- **Sales teams** gather information and obtain process data from the customer
- **Product management** studies customer data, while clarifying and validating the requirements
- **Research & Development** adapts the existing range, develops new products (after a study phase) and drafts manufacturing modeling documents (3D and general assembly drawings)
- **Manufacturing engineering** experts design, prepare and upgrade production equipment (machines, tooling) to meet special requirements

3347

3321CT

3310

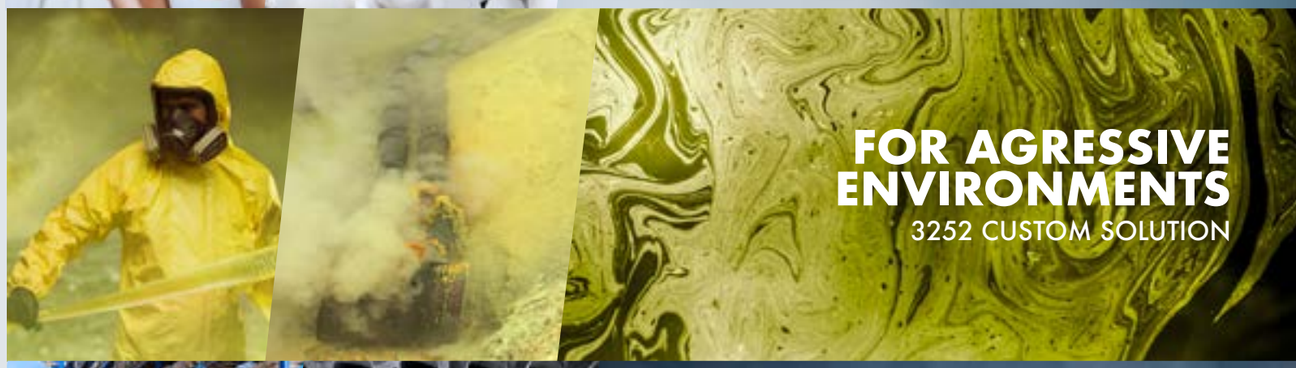
> " Among the wide range of control devices manufactured by the SAMSON group, we are specifically in charge of managing 14 products, which includes valves and accessories. Our main missions: product management in line with the market needs, product database management, technical assistance for French product sales, document management, communication and organization of events."
>
> **Mathieu Gillet, Marketing Team Manager**

PRODUCTS & APPLICATIONS

SAMSON France manufactures products used in fluid control in industrial applications:

- Linear valves
- Rotary valves
- Actuators
- Self-operated regulators
- Accessories

There are multiple possibilities for combining the equipment we produce: SAMSON is therefore capable of providing a wide range of applications to various industries through its modular solutions.



SAMSON AT A GLANCE

STAFF

– Worldwide 4,000
– Europe 3,300
– Asia 500
– Americas 200
– Frankfurt am Main, Germany 1,600

MARKETS

– Chemicals and petrochemicals
– Power and energy
– District heating and cooling, building automation
– General industry
– Industrial gases
– Food and beverages
– Metallurgy and mining
– Oil and gas
– Pharmaceuticals and biotechnology
– Marine equipment
– Water and wastewater
– Pulp and paper

PRODUCTS

– Valves
– Self-operated regulators
– Actuators
– Valve accessories
– Signal converters
– Controllers and automation systems
– Sensors and thermostats
– Digital solutions

SALES SITES

– More than 50 subsidiaries in over 40 countries
– More than 200 representatives

PRODUCTION SITES

– SAMSON Germany, Frankfurt, established 1916
  Total plot and production area: 150,000 m²
– SAMSON France, Lyon, established 1962
  Total plot and production area: 23,400 m²
– SAMSON Turkey, Istanbul established 1984
  Total plot and production area: 11,053 m²
– SAMSON USA, Baytown, TX, established 1992
  Total plot and production area: 9,200 m²
– SAMSON China, Beijing, established 1998
  Total plot and production area: 10,138 m²
– SAMSON India, Pune district, established 1999
  Total plot and production area: 18,000 m²
– SAMSON Russia, Rostov-on-Don, established 2015
  Total plot and production area: 5,000 m²
– SAMSON AIR TORQUE, Bergamo, Italy
  Total plot and production area: 27,684 m²
– SAMSON CERA SYSTEM, Hermsdorf, Germany
  Total plot and production area: 14,700 m²
– SAMSON KT-ELEKTRONIK, Berlin, Germany
  Total plot and production area: 1,060 m²
– SAMSON LEUSCH, Neuss, Germany
  Total plot and production area: 18,400 m²
– SAMSON PFEIFFER, Kempen, Germany
  Total plot and production area: 35,400 m²
– SAMSON RINGO, Zaragoza, Spain
  Total plot and production area: 18,270 m²
– SAMSON SED, Bad Rappenau, Germany
  Total plot and production area: 10,370 m²
– SAMSON STARLINE, Bergamo, Italy
  Total plot and production area: 26,409 m²
– SAMSON VETEC, Speyer, Germany
  Total plot and production area: 27,090 m²

SAMSON RÉGULATION S.A.S.
1, rue Jean Corona · 69120 Vaulx-en-Velin
Phone : +33 (0)4 72 04 75 00
E-mail: samson@samson.fr · Internet: www.samsongroup.com

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