SED FLOW CONTROL GMBH

VALVE TECHNOLOGY ONE STEP AHEAD

SMART IN FLOW CONTROL

COMPANY

SAMSON operates wherever there is controlled flow of oils, gases, vapors or chemical substances. Valves are our core business. With our valves, we are active in a market that has enormous potential for future innovations. We are further expanding the valves' decentralized intelligence. By developing new, smart systems, we are transforming process automation to the benefit of our customers and to achieve greater flexibility, safety and reliability in industrial processes.

Founded in 1907, SAMSON has grown into a world leading valve manufacturer with more than 660 million Euro sales and 4500 employees in 50 subsidiaries all around the world.

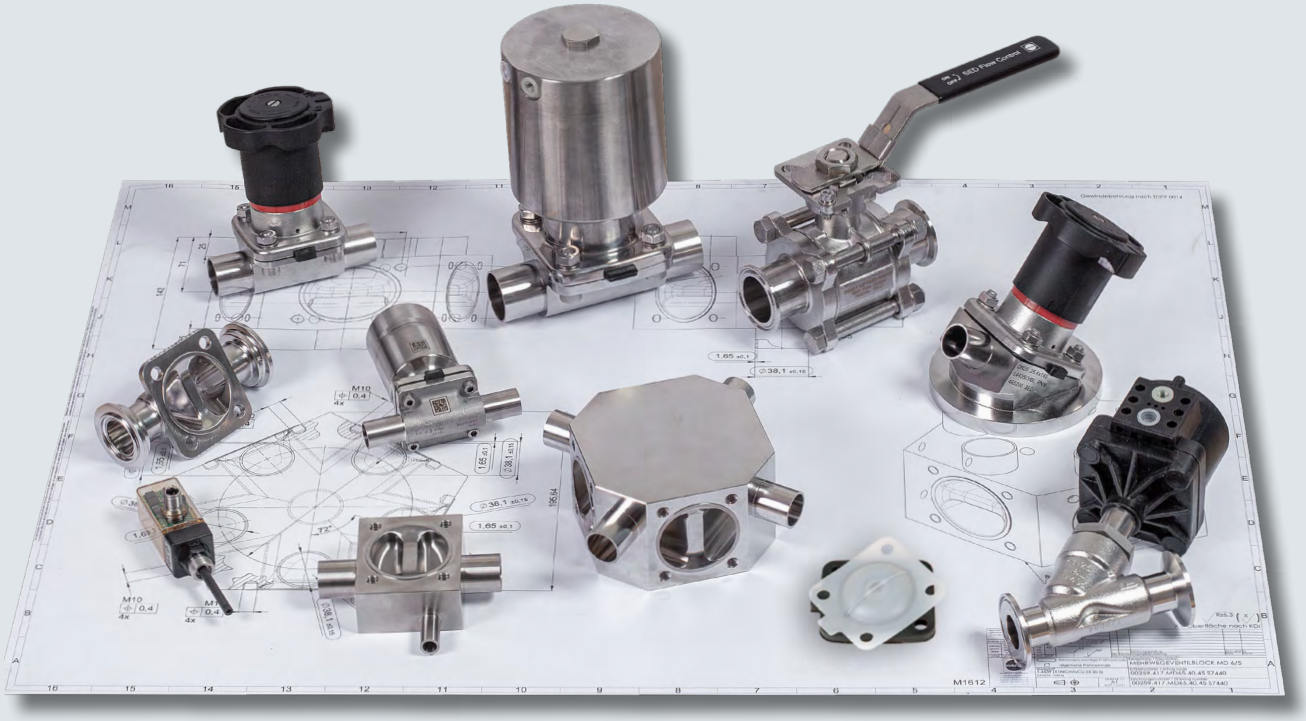
SED Flow Control is an international operating company, leading in the development, production and worldwide sales of sophisticated valve technologies.

YOUR PARTNER FOR AUTOMATED PROCESS TECHNOLOGY EQUIPMENT FOR CLOSING, DOSING, CONTROLLING AND REGULATING

SED FLOW CONTROL was established in 1984 and became a member of the SAMSON Group in 2017. Thanks to the powerful support of a world leading valve company we are well prepared to all future challenges. Our mission is to provide high quality products for the life science and industrial market. A clearly defined range of products, our flexibility and our proximity to the clients are factors of considerable importance for our customers.

Our highly motivated employees in product management, engineering, sales and all other departments are pleased to work with our customers' challenges. Whether it is a big volume order, a short delivery time, or just an opportunity to find the most efficient process valve solution, SED is ready to take this challenge.

PRODUCT PORTFOLIO



Many years of experience in all process applications and continuous research and development guarantee the highest quality and reliability of our products.

Valve bodies and actuation components are manufactured utilizing the highest grade of metal and plastic, allowing the product line to cover a large variety of demanding process applications.

SOPHISTICATED PRODUCTS
WITH ATTRACTIVE FEATURES

SED is specialized in the development and manufacturing of diaphragm valves, seat valves and variable area flowmeters. A comprehensive range of control equipment and accessories completes the product portfolio.

Product groups

- Metal Diaphragm Valve Aseptic
- Metal Diaphragm Valve Industrial
- Plastic Diaphragm Valve
- Metal Seat Valve
- Ball Valve Aseptic
- Variable Area Flowmeter
- Monitoring and Control Equipment
  - Electropneumatic positioner
  - Electrical position indicator, on request with integrated pilot valve; ASI; ATEX and other
  - Manual accessory
  - Optical position indicator
  - Pilot valves

MARKETS & APPLICATIONS




Pharma and Biotech Industry

In the pharmaceutical and biotechnology industries, sterility and purity are top priorities. This places the highest demands on the quality and processing of the components used, as strict regulations and standards do not allow any leeway.

Applications
- Fragmentation
- Purified water
- Aseptic filling
- Steam production
- Steam sterilization
- Autoclaving

Food and Beverage

SED also offers a variety of solutions for the food and beverage industry. From the production to filling and cleaning services. In all these areas, SED diaphragm valves are already playing their part in achieving a successful result.

Applications
- Fermentation
- Mixing procedure
- Freeze-drying
- Media supply
- Cleaning systems

Chemical Industry

Due to critical processes in the chemical industry, the main focus when designing the valves is initially on the process data. In most cases, highly aggressive media are found there, which exhibit temperatures and pressures in borderline ranges.

Applications
- Liquid transportation
- Acid filling

Water treatment

In water treatment there are two general types of water, process water and drinking water. During the production of process water, the water is purified, such as in reverse osmosis. While in the production of drinking water, substances such as minerals are added to the water.

Applications
- Water treatment
- Water distribution

DIAPHRAGM VALVES FOR ASEPTIC APPLICATIONS

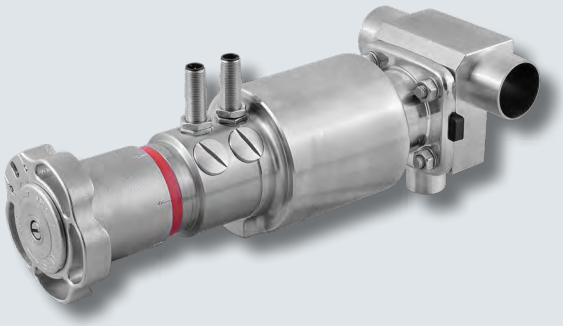
Take advantage of sophisticated aseptic diaphragm valves from SED. Long experience in many installed bases confirms the reliability of our products and the benefits of our advanced design.

SED valve bodies are manufactured as standard from the material 1.4435/316L ASME BPE and according to EN 10204 inspection certificate 3.1 material test report (MTR). All valve bodies contain a clear identification with the heat number for traceability. SED offers three series of manually and pneumatically operated aseptic diaphragm valves, named STERIPUR, KMA and KMD. The selection of each is influenced by different criteria, i.e. application, technical specification, process system, plant design, available space and last but not least the total cost of owernership (TCO).

WE ARE PROVIDING YOU THE BEST PRODUCT FOR YOUR APPLICATION

STERIPUR series are manually or pneumatically operated with stainless steel high performance piston actuator. The compact design provides advantages in multiport bodies and manifold valve assemblies. This is characterised by the fact that the outside diameter of the actuator has the same size as the bonnet flange. Through holes in the valve body allow direct mounting of the actuator. This type of mounting eliminates loose parts such as nuts, washers and open threads. This has a positive effect on the mounting and cleaning properties as well as on the compactness of the valve.

KMA series are either manually operated with stainless steel bonnet and plastic handwheel or pneumatically operated with stainless steel distance piece with high cycle plastic actuation.



KMD series are manually or pneumatically operated with high temperature resistant plastic and high cycle performing piston actuator. Compact and light design as well as reduced heat conduction protects against burns and high energy loss. Bottom entry steel bolting minimizes crevices, corners and loose parts during maintenance.

DIAPHRAGM VALVE SOLUTIONS - MULTIPORT VALVES

Due to SED's know-how and capabilities, efficient customized multiport valve solutions have become more important to our customers.

**YOUR CHALLENGE IS OUR CHALLENGE,
SEND US YOUR INQUIRIES**

A multiport valve consists of a valve body machined from a solid block with several tube ends and actuators from 1 to 20 or even more. The specification of multiport valves in the process industry is becoming more and more important. The reason is the optimization of processes. The advantage for you as our customer is the active and cooperative collaboration during the design and specification of the valve. This refers especially to the process requirements dictated by the P&ID's for correct flow direction, drainability and installation requirements.

Compact design and smaller envelope dimension together with SED actuators reinforce the advantages of the multiport design.

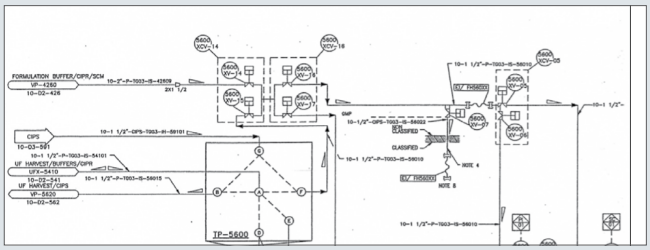
- Customer specific design
- Optimized drainability
- Minimized dead leg
- Reduces surface contact, hold up volume and cross contamination
- Reduction of connections, fittings, welds in the system
- Reduces validation and validation documentation rquirements

**WE DO NOT ONLY SUPPLY VALVES,
WE SUPPORT AND LEAD OUR CUSTOMERS
TOWARDS MORE EFFICIENT PROCESS SOLUTIONS**

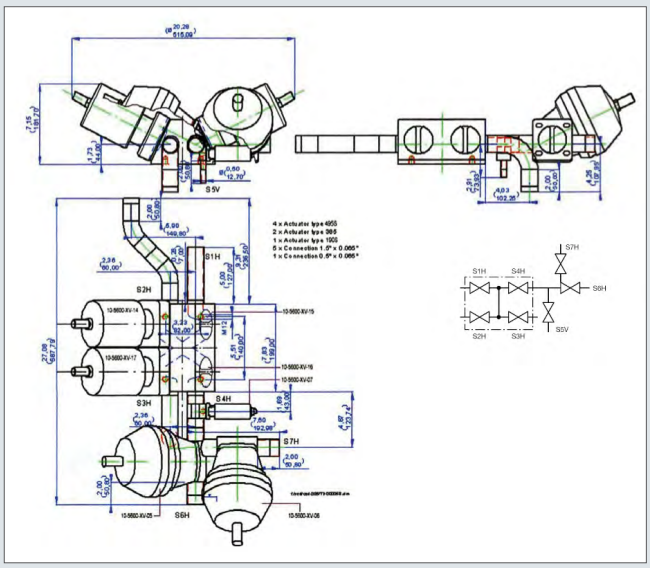
The application of multiport block valves is mainly for the distribution, point of use, sampling, diverting, mixing, bypass, drain and process sterilization.

From the idea to the solution

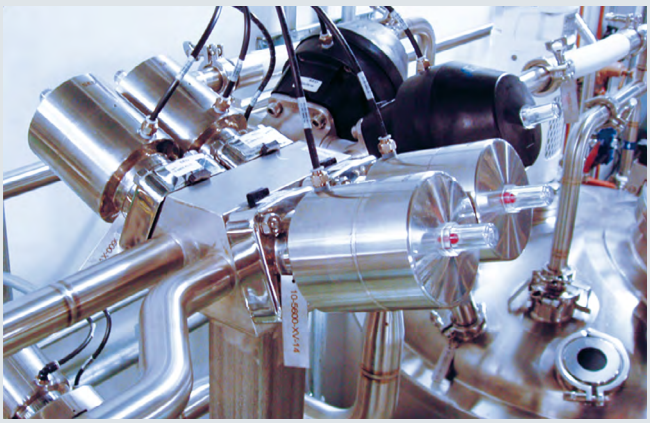
1. Creation of a P&ID



2. Construction of 3D model



3. Application specific solution



SHUT-OFF AND CONTROL VALVES

Angle Seat Valves with stainless steel bodies are a complementary product to diaphragm valves in aseptic applications, which are made of the same materials. They are available in different versions, manually or pneumatically operated, as on/off or control valves with stuffing box as well as bellows. The SED product portfolio is a particularly attractive range. The main areas of application are steam generation and distribution.

The SED three-piece STERIFLU **2/2-way ball valves** are engineered to meet the demands for process piping components of the aseptic industry. The internal diameter of the ball and the opening of the pipe connection are identical in their dimensions to comply with ASME/BPE guidelines. The STERIFLU ball valves are available manually operated with a stainless steel handle or pneumatically operated with a piston actuator, alternatively single or double acting.

SAMSON type 3347 is a pneumatically controlled globe valve used in hygienic processes mainly in food and beverage sector. Type 3347 is designed cavity free and fully drainable and is machined in stainless steel according to 316L. Due to the high cleanability connected with easy mainentance like change of the seals and plug the type 3347 is excellent suitable for all requirements in its application range.

SAMSON type 3349 is a pneumatically controlled L-globe valve for aseptic use where the stem is sealed with a diaphragm. The product wetted parts are the valve body and the diaphragm only which makes the type 3349 suitable for pharmaceutical applications. High-quality materials in compliance with FDA and USP Class VI and the diaphragm seal design enables secured aseptic processes and prevents contamination. The easy to clean and cavity-free design connected with tight outer dimensions enables the use in various aseptic processes and cleaning utilities like CIP and SIP.

In combination with the well known SAMSON electropneumatical positioners the types 3347 and 3349 offer a wide range of control functionality for all purposes within the life science markets.

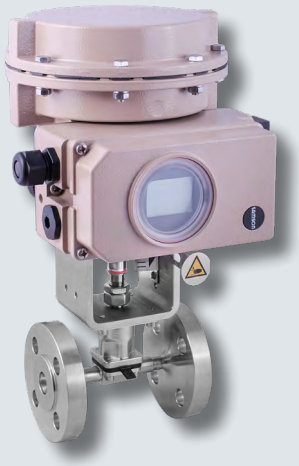
INDUSTRIAL DIAPHRAGM VALVES AND VARIABLE AREA FLOWMETERS

Extensive range for handling liquids, gases and chemicals also with solid particles

Metal Diaphragm Valves are available in DN10 to DN200 or bigger. The standard flanges are either DIN PN16 or ANSI 150. As threaded socket the sizes are from DN10 to DN 80. Actuators are available as manually or pneumatically operated. According to the valve size the design is compact and light. The SED portfolio includes diaphragm valves made of various metallic materials - with and without lining - as well as valves with flange or threaded ends.

Plastic Diaphragm Valves cover the sizes from DN10 to DN100, manually or pneumatically operated. The connections are threaded, true union, spigot end or flanged. Plastic material is available in PVC, CPVC, PP, PVDF and ABS.

Variable Area Flow Meter (VAF)
It is one of the widest ranges in the market with measurements based on water of 1,5 l/h to 50.000 l/h. Available tube materials are PVC, PA or PSU. The VAF can be equipped with floaters in plastic or stainless steel. Optional accessory are max-min contacts.



VALVE MONITORING, ADJUSTMENT AND CONTROL

Control Head Switch 024.63-65/89

The control head for linear movements provides signals for both open and closed positions of the valve and optionally includes an integrated solenoid valve for a direct air line connection in the actuator. The integrated solenoid valve has a high flowrate and is suitable for pneumatically operated valves up to DN100. The control head's circumferential position indication is also available with ASI Bus and provides a number of further attractive features.

Contact-Free Limit Switch 024.50

Limit switches are used to control, monitor and view the position of the valve or to activate other system components. SED offers a contact-free robust limit switch 024.50 monitoring up to three positions based on magnet field measurement technology. Apart from lifetime and among other features like IO-Link technology or ATEX II 3G approval the limit switch 024.50 is hermetically sealed and available in high performing plastic housing and therefore suitable for all monitoring purposes. The 024.50 limit switch is for single and double acting valve control functions on linear actuators. A coloured LED light indicates the two or three valve positions in a 360° angle. The self-teaching limit switch 024.50 with M12 or M16 connector and easy mounting without additional assembly set allows a very easy installation and start-up of the device.

A DEDICATED AND WELL THOUGHT-OUT RANGE OF ACCESSORIES GUARANTEES MAXIMUM RELIABILITY IN THE PROCESS

3/2-Way Plastic Pilot Valve 602

The solenoid valve is an electromagnetic pilot valve for controlling pneumatically operated valve actuators. It has a compact design which is ideal for simple direct mounting with banjo bolt.

Electropneumatic Positioner 024.16.251 / 024.16.3xx

Compact positioner for integral, top and side mounting on pneumatically operated process valves. Explosion protection* with "intrinsic safety" according to ATEX, EAC and CSA (others on request) for use in all hazardous areas. Remote control and setpoint adjustment is possible via a 4-20 mA signal and optionally via HART*, Profibus PA* from Foundation Fieldbus*. A non-contact, continuous sensor measures the position of the valve. Easy installation through automatic tuning function and simple display navigation* including valve position indication on LCD*.

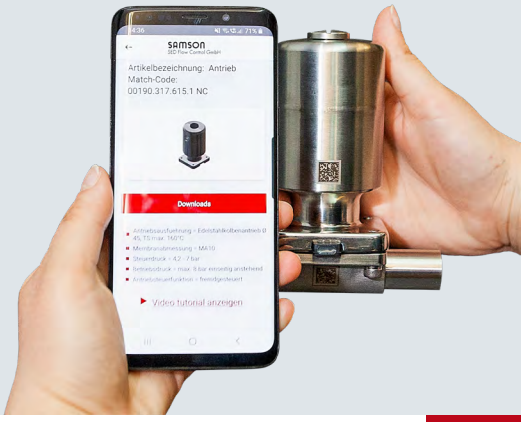
*Features depending on model and configuration

SAM EDOC

The electronic document management system of SED Flow Control supports you in identifying our valves and provides you with all important documents. With the free app for your smartphone or tablet, you can access data sheets, operating instructions and certificates in just a few seconds. Scan the QR code on your valve and actuator or read the digital signature of the diaphragm with the associated RFID reader.

Benefits:

- Fast identification of components
- Important documents always available
- Simple handling
- Download of certificates and user manuals
- Maintenance support by video tutorials
- Offline mode



YOUR PARTNER FOR ADVANCED VALVE TECHNOLOGIES

Production
The company has installed the most modern machinery and individual production facilities which are fully adapted to current market requirements.

Specifically:

- The 3D-CAD-CAM network connects all the CAD workstations with the CNC machining facilities, bringing our products from conception to manufacturing.
- Injection molding manufacturing, special injection molding machines, tools adapted to high performance plastics and specific processes.
- The assembly in room facilities with clean environment and ultrasonic clean washing including other automated assembly capabilities. Work stations which are ergonomically designed for the health and safety of our employees.
- Programmable welding machine and polishing work stations for aseptic diaphragm valves in order to guarantee the greatest flexibility and quality.

Testing
The diaphragm is the most important component that is decisive for the performance characteristics of a diaphragm valve. A new process simulation system has been set up to further develop our diaphragm technology.

In this plant, plant conditions such as those existing in the pharmaceutical and food industry can be realistically simulated. Thus, the latest findings in the field of the development of new valve diaphragms can be gained.

STATE-OF-THE-ART PRODUCTION FACILITIES
ALLOW COMPETITIVE MANUFACTURING
AND RELIABLE CUSTOMER SERVICE

In addition to these test scenarios, tests reflecting customer-specific applications can also be performed at the facility. With these and the possibilities offered by the Rolf Sandvoss Innovation Center of our parent company SAMSON AG, we are also prepared in the best way possible for future challenges.

THE FUNDAMENTAL AREAS OF OUR QUALITY POLICY

Products and Services

An accelerated implementation of customized solutions is achieved with personal contact and direct customer input. This is supported by the specialization of SED through development and production areas with efficient experience and extensive training requirements.

Suppliers

The quality of our products directly depends on the performance of our suppliers. Due to our supplier qualification process, continuous assessments are performed, documented and form the basis of a close customer-supplier-relationship.

Workflows

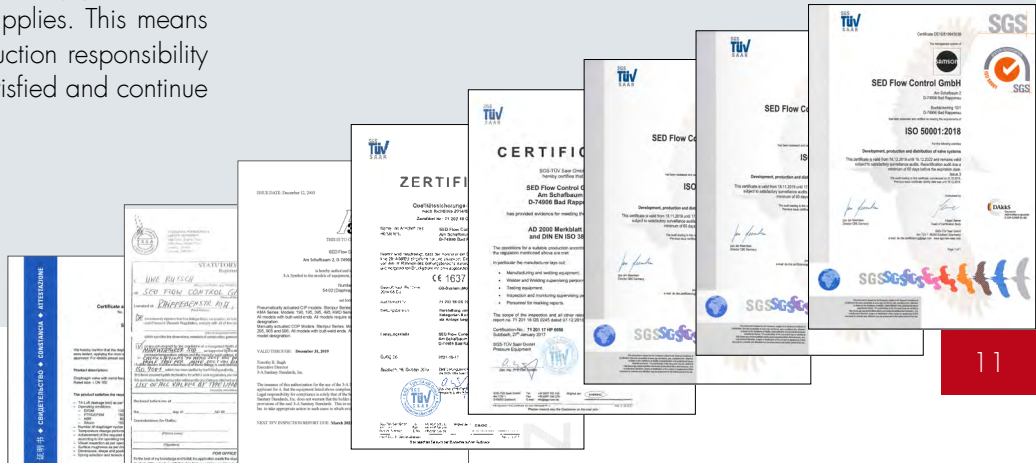
For each individual step of the manufacturing process the motto "my colleague is my customer" applies. This means that everyone has to handle their production responsibility in a way that the internal customer is satisfied and continue the work in the best way possible.

Customers

The customer is our employer and should see his ideas and wishes realized. This means to implement solutions based on the individual customer requirements or to develop them together under economic aspects.

Employees

Our employees are our capital. Comprehensive quality is not the result of individuals, but of successful teamwork. The ability to develop new ideas, to take responsibility, to show initiative and creativity contributes to our continuous development. This work is to come to fruition in every department and is to be secured through continuous further training.



SAMSON AT A GLANCE

STAFF

- Worldwide 4,500
- Europe 3,600
- Asia 600
- Americas 200
- Frankfurt am Main, Germany 1,900

MARKETS AND APPLICATIONS

- Chemicals and petrochemicals
- Food and beverages
- Pharmaceuticals and biotechnology
- Oil and gas
- Liquefied Natural Gas (LNG)
- Marine equipment
- Power and energy
- Industrial gases
- Cryogenic applications
- District energy and building automation
- Metallurgy and mining
- Pulp and paper
- Water technology
- Other industries

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Positioners and 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 in 1916
  Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established in 1962
  Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul, established in 1984
  Total plot and production area: 11,053 m²
- SAMSON USA, Baytown, TX, established in 1992
  Total plot and production area: 9,200 m²
- SAMSON China, Beijing, established in 1998
  Total plot and production area: 10,138 m²
- SAMSON India, Pune district, established in 1999
  Total plot and production area: 18,000 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 VDH PRODUCTS, the Netherlands
- SAMSON VETEC, Speyer, Germany
  Total plot and production area: 27,090 m²

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