





# Your partner for reliable tube connections

# Creating strong connections – with precision and passion



With our smart unions, tubes can be connected easily and efficiently. We are a medium-sized manufacturer. As a system supplier with own production facilities, we can respond flexibly to customer requests and produce customised solutions.

A team of 300 employees located across eight locations in Europe and Asia develops and delivers a comprehensive range of high-quality tube connections.

The SERTO Group headquarters are located in Frauenfeld, Switzerland. We are driven by the Swiss values of quality, reliability and sustainability — worldwide. When it comes to availability, we are also top of the class: we have an impressive delivery capacity of over 95% for catalogue items.

## Our core values

### Smart tube connections and customised solutions

SERTO is owner-operated, equity-financed and part of a charitable foundation. This structure enables us to be agile while still staying aligned with our future goals. Nurturing long-term, mutually beneficial partnerships with our customers, suppliers and employees is important to us.

As a system supplier with our own production facilities and a comprehensive range of products and services, we have full control over the supply chain. We can respond flexibly to customer requirements and offer system solutions, customised designs, component assembly and tube assembly, even in smaller quantities.





### 6000 customers worldwide

### 300 employees in 7 countries







### Frauenfeld

Group headquarters, development, production, logistics and sales















Our production sites in Frauenfeld (Switzerland), Klatovy (Czech Republic) and Brembate (Italy) boast state-of-the-art, highly efficient machinery, which we continuously update.



## **Products**

Impressive versatility – solutions for any need

The broad and extensive range of products under the SERTO brand includes solutions for any requirement. Choose from a variety of materials to find the ideal union for your needs — whether for imperial or metric pipe connections.

SERTO stands out from the competition with its unique radial system. The diverse basic elements in the standard range can be combined with connecting parts. The modular system makes countless, individual solutions possible that are metallically tight, very compact and available for immediate delivery.





### Unions

- Various geometries: straight, elbow, T/L or cross
- Dimensions: from 1 to 35 mm

 In addition to metric connections, numerous imperial connections are also available



### Valves

- Types: non-return valves, regulating and needle valves, fine regulating valves, metering valves, ball valves and stopcocks
- Geometries:
   straight, elbow and bulkhead
- Connections: tube connection, female/male threads or adjusting pins
- Regulating valves with colour-coded rings to make it easier to identify the medium



### Quick couplings

- Ten series
- Coupling functions:

   one-handed operation,
   mechanical coding,
   one- or double-sided shut-off
- Working pressure up to 690 bar or high vacuum up to 10<sup>-7</sup> mbar
- Numerous optional connection variants and sealing materials



### Hose nipples

- Flow-optimised brass version (brass CV)
- Lightweight plastic version (PVDF)



### Adapters

- Huge selection of simple connection elements
- With female and male threads, nozzles and end elements
- Numerous designs for a wide range of combinations
- Threads available as G, R or
   NPT tube threads





### Tubes and hoses

- Plastic hoses for applications with lower (PA, LDPE, PU) or higher demands (PTFE, PVDF, FEP, PFA)
- Manually bendable SERTOflex tube
- Stainless steel tubes grades: 1.4571 and 1.4301
- Jacoflon: PTFE hoses with stainless steel braid







## ∈xmar



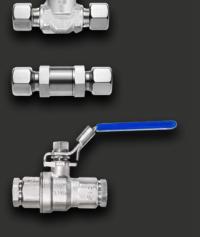
### Unions

- Comprehensive and extensive range
   DIN stainless-steel cutting ring
   unions (grade 1.4571)
- Also available as a NC clamping ring fitting variant for gas applications in connection sizes 6 to 25 mm
- In addition: tapered seal unions, flaring adapters and connectors



### Adapters

- Simple connection elements with female and male threads, end elements
- Primarily made of stainless steel grade 1.4571
- Sizes 1/8 to 2"



### Valves and couplings

- Valves: shut-off and throttle valves, non-return valves
- Ball valves: low and high pressure
- Quick couplings
- Various sealing materials and opening pressures



### Hose fittings

- For the hose types 1 SN, 2 SN, 1 SC, 2 SC, 2 TE and Jacoflon
- The range includes crimp sleeves, as well as cylindrical stubs, nipples with taper and male thread, adapters



### Tube clamps

- DIN 3015 in PA, PP and aluminium
- A series:
   light series, DIN 3015-1,
   available in all clamp sizes
   for various tube diameters
- B series:
   double tube clamps,
   DIN 3015-3 in selected sizes
- Clamps in flame-retardant PA



### Mounting accessories

- Pre-assembly machines
- Aids for lubrication, protection and fastening
- Professional support with the assembly of cutting ring and NC clamping ring





Top-quality stainless steel fittings

The EXMAR brand represents a wide range of products in the field of stainless steel fittings.

This includes cutting ring unions (in accordance with ISO 8434-1/DIN 2353), NC clamping ring, ball valves, other valves, hose fittings, as well as customised solutions for tube connection technology.



















## **Transportation**

## Innovations that drive progress

Discover smart products and technologies for all applications in the transportation sector. Components and systems from SERTO and EXMAR can be found in wet cells, pneumatic lines, brake lines, lubrication, dosing or process lines, as well as battery cooling systems for trains.

Our materials are also unbeatable in rough sea conditions. They can withstand corrosion and fatigue to ensure your ships are always ready for action.

### Specific product characteristics

- DIN stainless steel unions from the EXMAR brand
- Aluminium components for weight reduction
- Sliding unions
- Drain valves

- Tailored logistics concepts, e.g. with ready-to-use containers or ready-to-fit kits
- Pre-assembled tubeline systems
- Ready-to-fit assemblies





## **High-tech**

## High-quality components for the highest demands

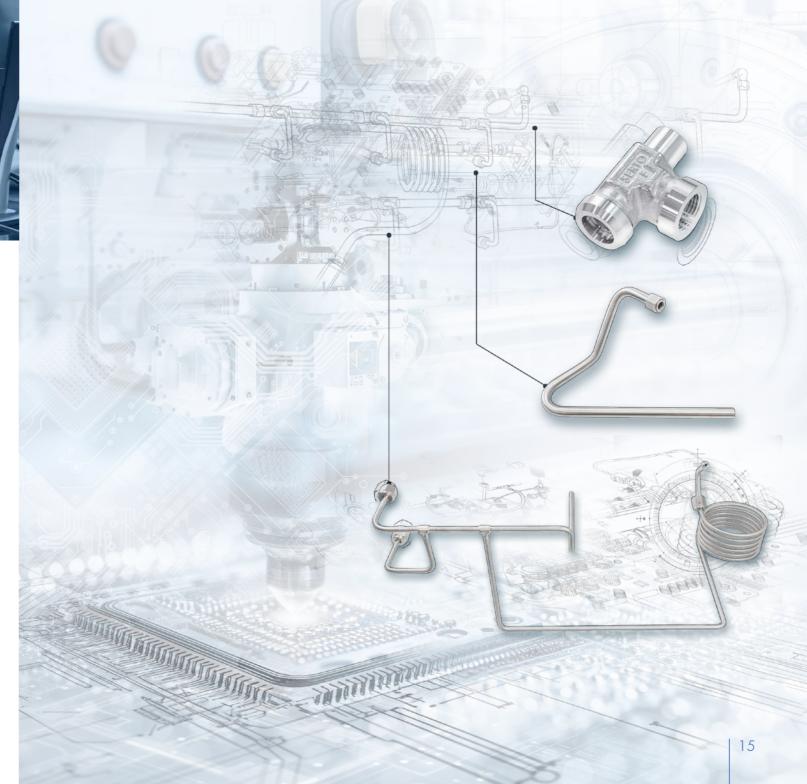
SERTO components and systems are the first choice for the semiconductor industry and for manufacturers of lasers and analysis equipment.

With our specialised services, such as ultrasonic cleaning, cleanroom packing and orbital welding, we meet the strict manufacturing standards required for the production of high-tech components.

### Specific product characteristics

- Ultra-clean stainless steel unions packed in a cleanroom
- UHP (ultra-high purity) connections
- Lubricant-free

- Internally and externally electropolished tubes and flow loops for smooth surfaces
- Orbital welding
- Pre-assembled tubeline systems
- Ready-to-fit assemblies





## Healthcare

## Highest standards for medical excellence

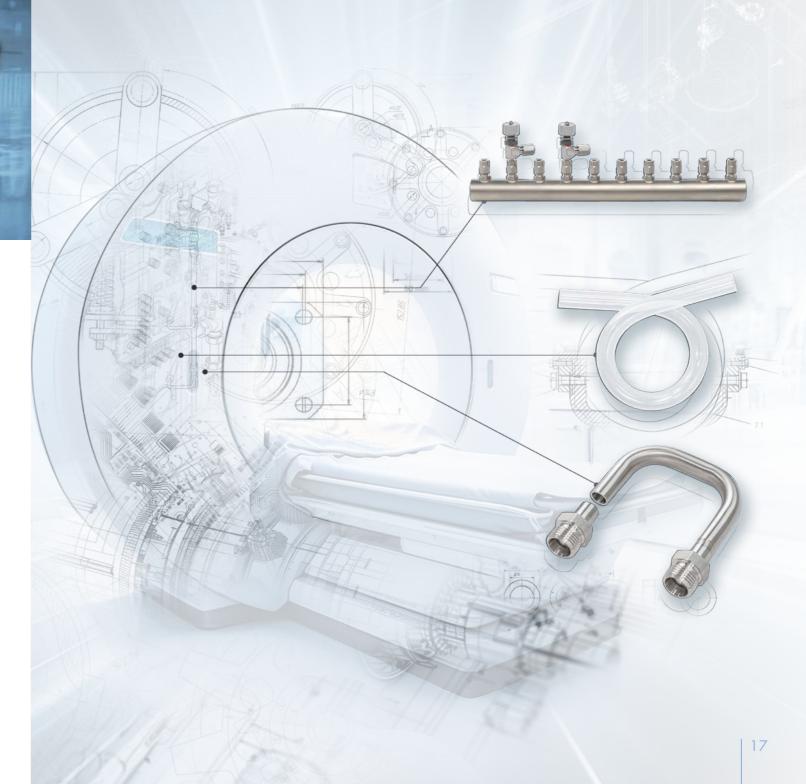
SERTO components and systems can be found in a wide range of medical diagnosis systems, treatment systems, laboratory equipment and medical technology. From analytical instruments to bioreactors to sterilisers — we are your reliable partner for all applications.

With years of experience in system design and comprehensive knowledge of (bio) pharmaceutical standards, we provide expert guidance and support for your product design and development activities.

### **Specific product characteristics**

- Smooth surfaces
- Clean-in-place (CIP)
- Lubricant-free

- OX option: cleaned in an ultrasonic bath, lubricated for oxygen systems
- Tube bending instead of welding: flow-optimised and space-saving
- Internally and externally electropolished tubes and flow loops for smooth surfaces
- Pre-assembled tubeline systems





## **Energy**

## Connections for a green future

Sun, water and wind are the energy sources of the future and are becoming increasingly more important. We offer a wide range of materials and products for these technologies.

SERTO components and systems are integrated in wind turbines, solar thermal systems and inverters. The cooling of power electronics and the generation and conversion of hydrogen are important fields of application.

### **Specific product characteristics**

- Resistance to changing operating conditions
- PVDF and FEP, which are non-conductive and high-frequency stable, for cooling with ultrapure water or water-glycol mixtures
- Stainless steel for applications subject to thermal loads
- Aluminium components for cooling plates

- Tailored logistics concepts, e.g. with ready-to-use containers or ready-to-fit kits
- Pre-assembled tubeline systems
- Ready-to-fit assemblies
- Orbital welding
- Logistics solutions





## Mechanical and plant engineering

## Strong in every area

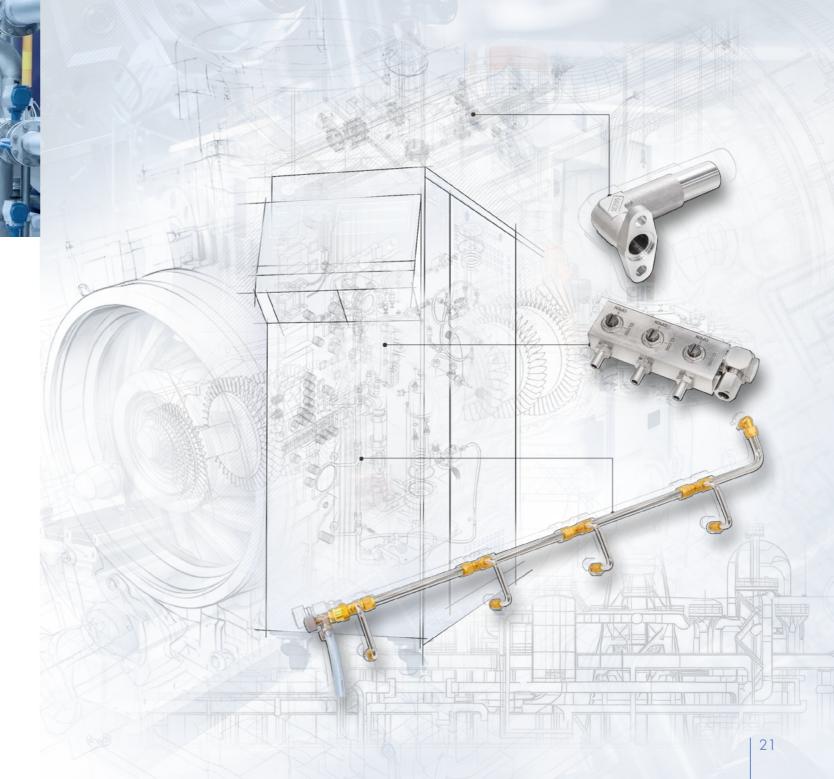
Whether it's weight, resistance, pressure, temperature or approval – we have the perfect solutions for your needs. Components and systems from SERTO and EXMAR complement all applications in mechanical and plant engineering and are used in pumps, compressors, large diesel engines, presses and machining equipment.

We provide flexible solutions for all industries in which media has to be transported, cooled, heated or regulated.

### Specific product characteristics

- SERTO range: various materials, including plastics and metals
- EXMAR range: specialist in stainless steel fittings and cutting ring unions in accordance with ISO 8434-1/DIN 2353

- Customised products/designs
- Assemblies and kits



## **Project Engineering**

## Tailored solutions for every need

Our Project Engineering team develops, optimises and produces customised system solutions — from simple bent tubelines to complex assemblies. With our extensive experience gained from many different projects, we serve as a one-stop provider, offering expert advice and supporting you throughout the entire process — from initial enquiry through to series production.



### **Example project I: System optimisation**

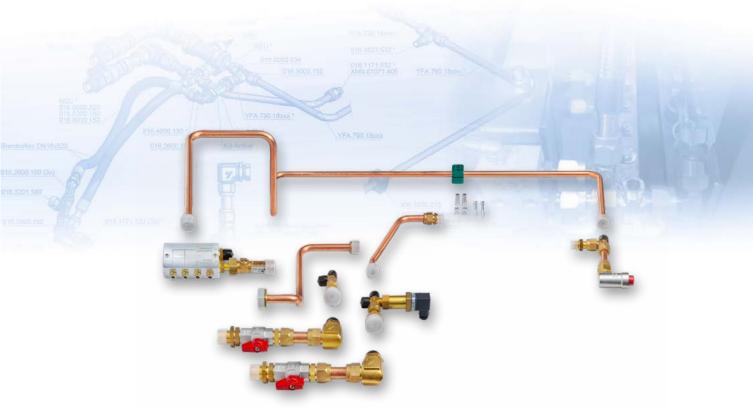
Cooling of power electronics in a frequency converter

#### Situation before:

- Rubber hoses
- Many transitions and connections
- Frequent leaks
- Extremely time-consuming and stressful for assembly workers

#### Situation after:

- Connections optimised and reduced by using an aluminium block with manifolds and customised parts
- Routing optimised
- Ready-to-fit assembly and kit, including clear installation and operating instructions





#### Manufacture to drawing

You visualise it, we bring it to life — in accordance with your exact specifications, whether as a STEP file, drawing or prototype.



### **System optimisation**

We put your system through its paces. Is it suitable for series production? Can manufacturing and assembly be simplified? Or any other areas? We provide you with optimisation proposals based on thorough analyses.



### Manufacture to specification

Haven't found a solution for your specific needs yet? Then let us develop one for you — complete with simulation testing, prototyping and everything else that goes with it.

## **Project Engineering**

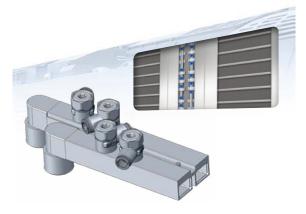
## Impressive services and solutions

Whether it's a fresh idea, ongoing development or a final CAD design – we support your engineering team at every stage. As a flexible system supplier with our own production facilities, we can cater to your exact requirements and offer tailored solutions.

### **Example project II: Manufacture to specification**

#### Initial situation:

Battery temperature control in a train, as a roof-mounted or underfloor container.



### **Developed solution:**

- Aluminium for weight reduction
- Only a few centimetres high
- Assembly-optimised single banjos
- Thermo-stabilised FEP tubelines
- Base plate: laser-cut with numbering and inspection certificate
- Specially developed transport box
- Detailed installation instructions
- Reduced assembly time

### Example project III: Manufacture to drawing

#### **Initial situation:**

Hose line for a processing plant in the chemical industry. FEP chosen as the material due to the necessary corrosion resistance.

### **Developed solution:**

- Production of a warm-formed hose made of FEP
- FEP has outstanding chemical, thermal and mechanical properties





## Cleanroom

### Clean down to the finest detail

Our stainless steel, brass and plastic unions meet the highest purity standards, and so do our valves. In our special cleaning system with multiple baths and an air curtain, the parts remain completely free from contaminants. The assembly then takes place in an ISO Class 8 cleanroom, where each part is individually inspected, documented and packed according to ASTM standards.

#### Cleaning options for every application:

- US Ultrasonically cleaned, unlubricated
- **OX** Ultrasonically cleaned and lubricated for oxygen systems
- SI cleaned and lubricated with silicone-free lubricant for use in paints and lacquers

## Ready-to-fit assemblies

### Impressive one-stop service

You can rely on our expertise in component assembly, no matter what you need. We provide a one-stop service for your assemblies, including professional installation of your system to ensure maximum safety and reliability. Whether it's 10, 100 or 1000 subassemblies — we assemble your components into complete systems, incorporating third-party components where necessary.

But that's not all: We also carry out comprehensive testing to ensure every assembly meets the highest standards. In addition, we take care of planning, manufacturing and distribution, allowing you to save valuable assembly time and make your planning, logistics and inventory management more efficient.



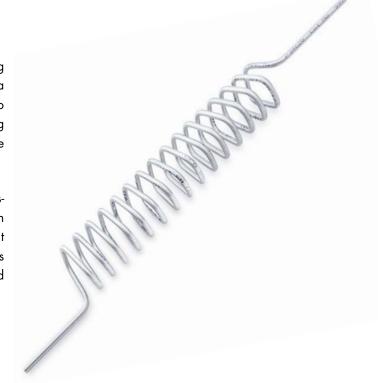


## Bending and pre-assembled tubelines

Precision and efficiency

With fully automated, CNC-controlled bending machines for tube diameters of up to 60 mm and a working radius of up to six metres, SERTO is able to offer cutting-edge solutions. Thanks to ten machining axes, even demanding bending geometries can be achieved without any problems.

But we aren't just experts in bending — we also assemble over 150,000 metres of metal tubes each year. The majority of these are not only bent but also crimped with unions, ball valves, other valves or couplings from our product range — all tailored to the customer's specific requirements.



Whether it's bending, assembly or the right connection solution — with us, you get everything from a single source, perfectly tailored to your project.



#### Benefits at a glance:

- Extensive inventory of rods: over 60 tonnes of raw materials (steel, stainless steel, aluminium, copper and brass) in 6-metre lengths are constantly available.
- Efficient carbide circular saws: up to 3000 cuts per hour ensure high productivity.
- High-precision tube measurement device: the non-contact, optical measurement system guarantees absolute process reliability for three-dimensional tubelines of up to 6 metres long. And that in seconds.
- In-house tool and fixture manufacturing: custom tools, fixtures and gauges are produced in-house to meet specific requirements.





## Sustainability

### Reducing the environmental footprint

We prioritise sustainability in all our processes. We cover 40 % of our electricity needs with photovoltaic systems. We also use rainwater for maintenance and rely on eco-friendly heating systems with groundwater and heat recovery.

We continuously optimise our production processes to reduce waste and support recycling. We also focus on efficiency in the area of transportation in order to minimise  $CO_2$  emissions. Our goal: to protect the environment and use resources responsibly.



## **Certifications and approvals**

## Quality you can rely on



























www.serto.com

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