



# World-leading at the HF Welding Arena

*Machines | Equipment | Expertise | Service*

**FORSSTROM**

# World-Class HF Welding Machines

**Forsstrom High Frequency AB manufactures and sells machines for welding PVC and PU material through the use of High Frequency (HF) technology. Since the 70's, we have perfected and developed HF technology to meet our customers' specific requirements. Our product range is very wide, with machines suitable for a variety of end products in many different market segments.**

Production and development takes place in Lysekil on the Swedish west coast. Quality, innovation and safety are the core principles of our manufacturing philosophy and Forsstrom works with the intention of developing long-term partnerships with its customers. Investing in a HF-welding machine is an investment for many years to come. That's why we offer a complete concept including installation,

training, service and global support. Forsstrom's founder Willy Forsström began building machines for HF-welding in the 1960s. The family owned company was founded in 1970 and has grown steadily. Today, Forsstrom is the world leader in this segment, exporting almost its entire production. Our welding machines are installed with customers located all around the world.



# Extremely strong and durable welds with HF-welding

HF-welding is by far the best method for joining PVC and PU materials. The weld is much stronger, compared to other technologies, such as hot air, hot wedge or sewing. The resulting weld is also airtight and waterproof. The machines are also environmentally friendly with extremely low gas emissions. Welding with HF uses energy in the form of an electromagnetic field (27.12 MHz) to join materials together.

Forsstrom's welding machines are used for the manufacture of truck and boat covers, tarps, tents, structures, pool liners, sunshades, billboards, inflatable products, liquid tanks, stretch ceilings, waterbeds, valve membranes and oil booms. Our HF-welding experts will be pleased to advise you in order to improve and streamline your production.

All machines are CE marked. They also meet the requirements of the ICNIRP (Non-Ionizing Radiation Protection) guidelines for limited exposure to electrical and magnetic fields.

## Advantages of HF-welding

- Repeatability, reliable technology
- Strong, durable and even welds
- Air, gas and waterproof welds
- Multi-layer welding
- An environmentally friendly choice

*Infinite possibilities to produce  
outstanding final products*



# Stationary machines for complicated welding operations

All machines are fitted as standard with a welding table, with or without trough for material handling. The welding table can also be equipped with rollers at the edge of the table top. The rollers simplify the operator's work and shorten the production time for the finished welded product.



When choosing between a stationary or travelling machine, it is important to consider the space requirements necessary to manufacture the final product. The free space behind the electrode, the tool which joins the materials, varies between machines. It is also important to consider the

production volume and the degree of automation needed. Other key factors include the materials to be welded and their thickness. In order to comply with production of a variety of products Forsstrom's stationary machines are available with an output of 2 kW and upwards.



**Our stationary machine models are perfectly suited for smaller, as well as, larger operations which need extensive material handling. With a stationary machine the operator has the benefit of extra space around the machine to position the material.**

*We would be pleased to advise you on the most suitable machine for your business*





# Travelling machines for large-scale production

**Our travelling welding machines are perfect for manufacturing PU and PVC products with long, straight welds, such as tents, structures, oil booms and side curtains for trucks. The machines are suitable for large-scale production.**

The choice of a travelling or stationary welding machine is dependent, among other things, on the product to be manufactured, the available space and how the material should be best handled. A travelling machine needs more space – but makes the production more efficient. Forsstrom's travelling machines can, in principle, be of any length. The only limit in terms of length is the distance between the walls of your production space.

The welding tables for our travelling machines are available in one-meter sections. This makes it possible to adapt the table length to the specific needs of each customer. All machines are fitted as standard with a welding table, with or without a trough for material handling. It is possible to increase the capacity and efficiency with two or more machine heads on the same table. It is also possible to automate travelling machines by adding automatic material handling and indexing.



*You will receive a machine which can manufacture with precision, strength and is adapted for your specific requirements*



All machines are manufactured on order according to customer specification. We make sure it is equipped to make your production as efficient as possible.

# New opportunities with automation

**Some of our HF-welding machines are fully automatic. This means that your entire production process can be handled with minimal supervision. In this case, either a stationary or travelling machine is fitted with various programs and equipment to enable automated production, providing customers with an interesting manufacturing opportunity.**

For example, the stationary TX Automatic and the travelling TG-Flex deliver automatic production capabilities. The TX Automatic is a reliable, efficient and versatile machine.

Forsstrom also delivers automated travelling machines, equipped with devices for material positioning and indexing. With the TG-Flex, material handling can be minimized by allowing the machine head to rotate 360° and also move 1200 mm laterally. This saves time when manufacturing high volume products, such as oil booms, windows for tents and medical mattresses amongst others.

Amongst our range of machines there are models that can be programmed from start to finish for a specific task. The TG-Flex can even be equipped with automatic tool change.

Forsstrom develops its own software programs to deliver optimal solutions. We offer the Windows-based monitoring system iQ and software for various travel programs. WP (Welding Presets) makes it possible to quickly change settings and guarantee quality.

*We design the automation for your process*





**Based on your product and request for manufacturing process, we will guide you in selecting the right type of machine. Stationary or travelling with the automation required to make sure the machine is fully adapted to your needs.**



## Advanced accessories for HF-welding

**Forsstrom is a high-tech company with many advanced machine accessories – we deliver everything in order to optimize and streamline our customers' production. Many of the accessories have been specifically developed to solve challenges for specific complex situations existing in many different industries.**



*We have what you are looking for – or we will develop it for you*

# Forsstrom is an innovative and world-leading company which is constantly developing new customer orientated solutions. Either we have an existing solution, or we can develop it for you.

Forsstrom manufactures high-quality aluminum or brass electrodes for the best welding results, the shape and dimension of the electrode are crucial. We ensure you have the right electrode for your needs. The machine's tool holder can either be air-cooled or oil tempered. Oil tempering is the best solution for machines with higher power and for machines that are intensively used. We can also equip our machines with extra cooling systems. Working closely with our customers we are constantly developing new

accessories. We can advise you concerning lasers for material positioning or solutions such as vacuum systems, band holders or magnets, which help to correctly position the material. An impulse welding unit is an additional option that increases the machine's versatility, which would also enable the welding of non-HF weldable material. The impulse welding unit is easily integrated into the machine and can also be retrofitted in existing machines at customer location.



# Our unique control system specializes in HF-welding



All of our machines come with a computer developed by Forsstrom which monitors and controls the different welding operations. Thanks to our new control system, it is now even easier to use our machines. We train operators from all over the world. It is important to understand the range of possibilities for the machines, to make sure all features are properly used.

Forsstrom's control system has been developed through a collaboration between our programmers and sales team with first hand market knowledge. The system has been developed by an experienced team with knowledge of welding technology and the requirements of welding in industrial production. It is a system developed for welders by welders!

The control system is designed purely for welding and nothing else. Therefore, it is highly specialized for its task. In addition, the computer is designed solely for HF-welding. It is unique in the industry.

It is carefully protected against any external interference, which will guarantee a high quality welding result.

Thanks to the close dialogue between customers, our sales team and programmers, Forsstrom has a wide selection of customized computer programs to facilitate and quality-assure the welding process. We can meet the most specific demands across a wide range of industries. Our software is also available in many different languages to make it easier for operators to understand the machines.

*We focus on the development of intelligent and easy-to-use systems*



# No matter where you are in the world, we are there to help you

Forsstrom offers our customers a complete concept. This includes machine installation, operator training, service and support during the entire lifetime of the machine. No matter where you are in the world, we are there to help you.



We are proud to offer machines of the highest quality and performance. With many years of experience in the industry, we have a solid and extensive knowledge of HF-welding and the global conditions for welding production in the industrial environment. This unique experience creates significant added value for our customers.

By investing in a machine from Forsstrom you will not only have a fantastic welding machine. You will also have access to our experts who can give tips and advice to further develop, improve and streamline your manufacturing process.

It is easy to be impressed by the results delivered by our machines. Forsstrom's product development continues to move ahead, often as a result of close cooperation with our customers and local representatives. They provide us with invaluable information on the requirements of the market. This information is transformed into practical solutions for our customers.

Many of our most innovative machines are developed in this way. We have an impressive range of world-class welding machines and accessories, however we constantly continue to improve and enhance our products. We are always ready for new ideas.



*Our goal is to always produce the best machine for each individual customer*





# HF Demo Center – a sophisticated development center

**The HF Demo Center is Forsstrom's own sophisticated development center. Here, customers and partners from all over the world can see HF-welding in action and learn more about the benefits of the technology. You can discover more about the unique software EMP (Energy Monitoring Program) and other useful concepts. We welcome you to visit us at the HF Demo Center in Lysekil, Sweden!**

Forsstrom also organizes training in our innovative processes in additional locations. We arrange seminars for customers and partners at exhibitions and fairs. We also arrange workshops where material manufacturers and machine suppliers participate. We have close

relations with well-known material manufacturers to ensure that our machines are always at the forefront of HF-welding. Forsstrom has also created a database of welding samples. There you can find the optimal welding parameters for specific materials from world-leading suppliers.



In order to manufacture first-class machines, it is important that we have good relations with other reputable players in the market. Forsstrom collaborates with all leading material manufacturers. Thanks to our collective knowledge of the properties of PVC and PU, we can further develop our machines. It is also important to keep in mind the wider picture and to stay aware of developments taking place in our industry. Many of our customers often utilize additional equipment, such as cutting machines and / or other types of welding machines. Thus, to understand the wider picture of our industry, Forsstrom participates in a number of industry organizations.



*Our customers benefit from the collective knowledge from the world's leading players*





# ForFlexx – when the impossible becomes possible



**ForFlexx makes the impossible possible. ForFlexx is Forsstrom's own, unique and patented welding method. ForFlexx makes it possible to join flexible coated PVC- and PU fabrics with metal attachments using high frequency (HF) welding. It is also possible to join two coated metal surfaces. The method is so innovative that Forsstrom receives support from Eurostars.**



*ForFlexx – unique welding method for metal and plastic*



With ForFlexx, you save time and money in the production of many different end products. This includes tarpaulins, tents, structures, sunshades, advertising signs, inflatable products, liquid tanks, cinema screens, water beds and oil booms.

ForFlexx is the technology of the future – available today. Previously, it was difficult and time consuming to integrate metal attachments with PVC or PU to create a load bearing structure. Thanks to our innovative development work, we found a solution to coat metal with PVC and PU. This innovation makes it possible to integrate the metal part to the PVC or PU using high frequency.

With ForFlexx, the joints become airtight, gas tight and waterproof. The welds become strong and the products become solid and durable. The method is also approved according to the European standard for accelerated aging, BS EN 12280-1.

Technical expertise in the EU has recognized the importance of our innovation. In fierce competition with other companies, Forsstrom has become a Eurostars project and is supported by the EU for its innovative product development. This means that we can continue to develop the technology. Together with Formfinder Software GmbH in Austria, a development project is being carried out with the aim of developing corner plates for lightweight structures based on the ForFlexx technology.

The EU has realized ForFlexx's opportunities for companies around the world. Already in 2017, ForFlexx was awarded a gold medal and a diploma at an international fair. ForFlexx offers unprecedented opportunities. The welding technique is equally suitable in the automotive industry and in the construction industry. Please ask us what ForFlexx can do for you.

# [www.forsstrom.com](http://www.forsstrom.com)

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We make sure it is equipped to make your production as efficient as possible.



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