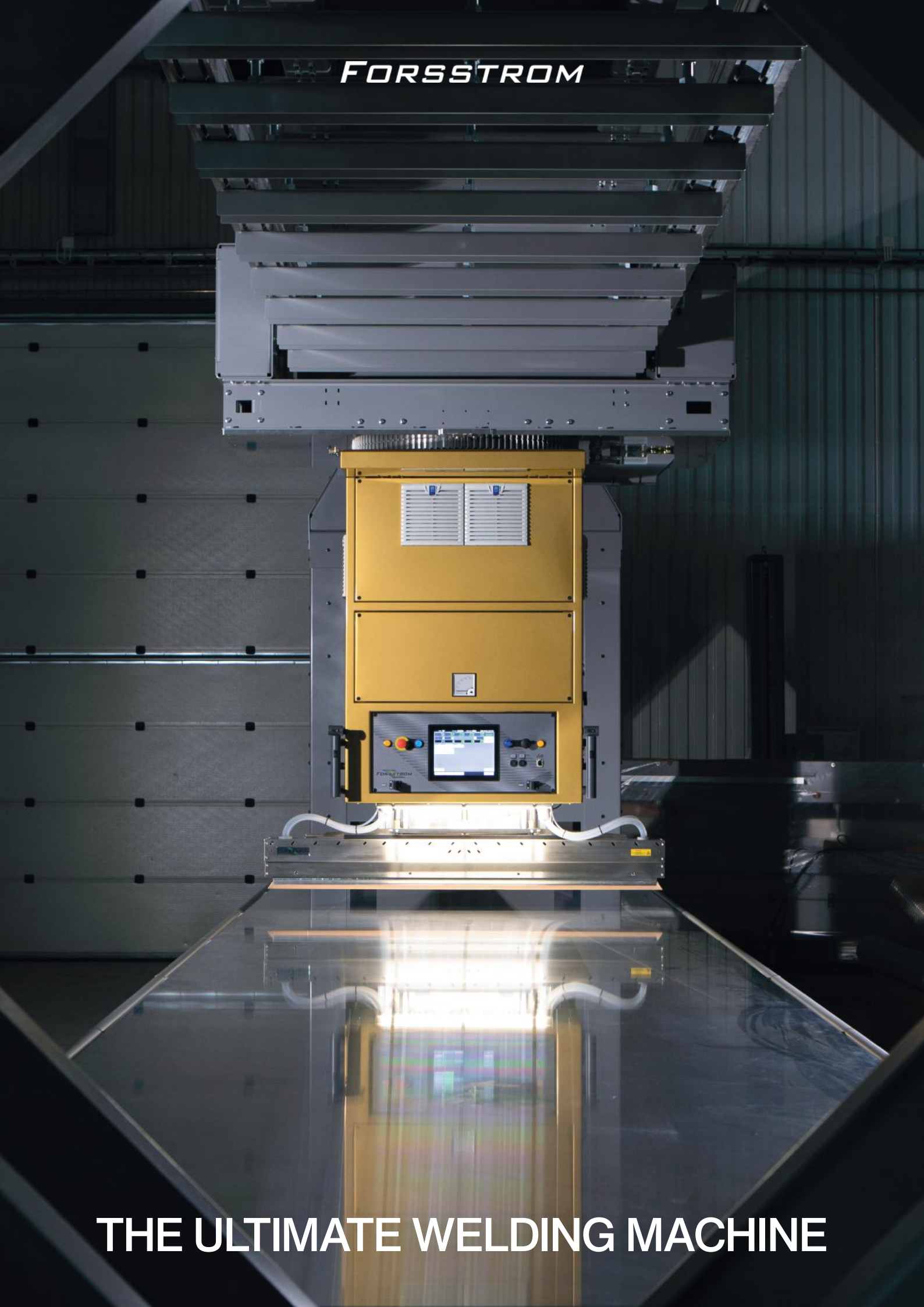


FORSSTROM



The **Ultimate** Welding Machine



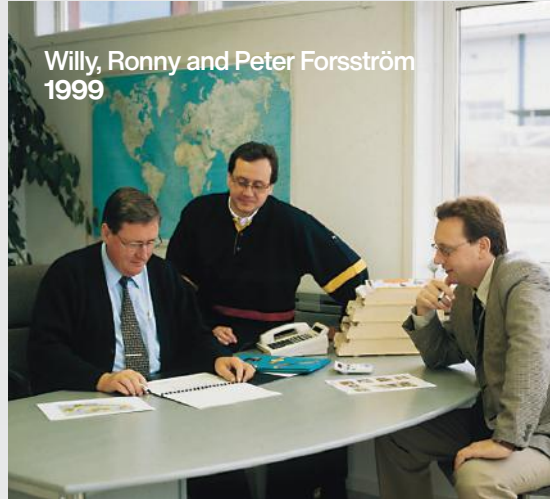


FORSSTROM

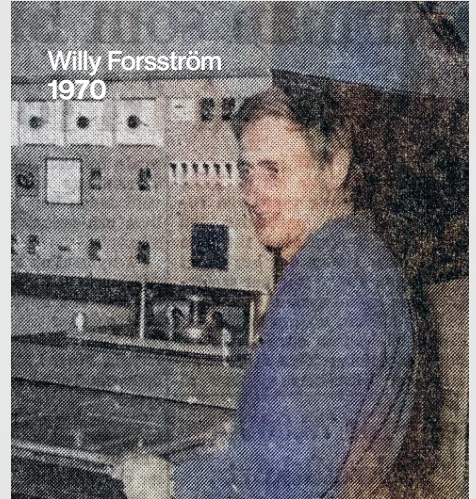
THE ULTIMATE WELDING MACHINE

About us

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**.



Willy, Ronny and Peter Forsström
1999



Willy Forsström
1970

The very first machine

In 1970, Forsstrom High Frequency introduced its very first welding machine to the market. Today, **over five decades later**, that same machine is **still up and running**. By ensuring that our equipment withstands the test of time, **we minimize waste and contribute to a greener future**.

Swedish engineering

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**. 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**.



Forsstrom stood shoulder to shoulder with us in our hour of need. **They are not a supplier to Union; they are part of our family.**

What is High Frequency Welding?

High Frequency (HF) or Radio Frequency (RF) welding is the joining of materials by supplying HF energy in the form of an electromagnetic field (27.12 MHz) and pressure to the material surfaces to be joined.

So, what is HF welding? A generator produces the energy. The tool used to supply the energy is called an electrode. The electrical energy causes the molecules within the material to start moving, which generates heat that causes the material to soften and thereby fuse together. No outside heat is applied. The heat is instead generated within the material. After cooling the welded surface under maintained pressure, the material is fused and a weld has been created. **The weld seam can be at least as strong as the surrounding material – or even stronger.**

Benefits of High Frequency welding

- Repeatable, reliable technology
- Strong, durable and even welds
- Air, gas and waterproof welds
- Multi-layer welding
- An environmentally friendly choice
- Simple and safe way to join materials
- Increased productivity and production speed

Weldable materials

- Polyvinyl chloride (PVC)
- Polyurethane (PU)
- Thermoplastic polyurethanes (TPU)
- Ethylene-vinyl acetate (EVA)
- Special grades of polyolefins (for example PET)



Watch how High Frequency welding works





The weld seam can be at least as strong as the surrounding material
– or even stronger.





The TDW

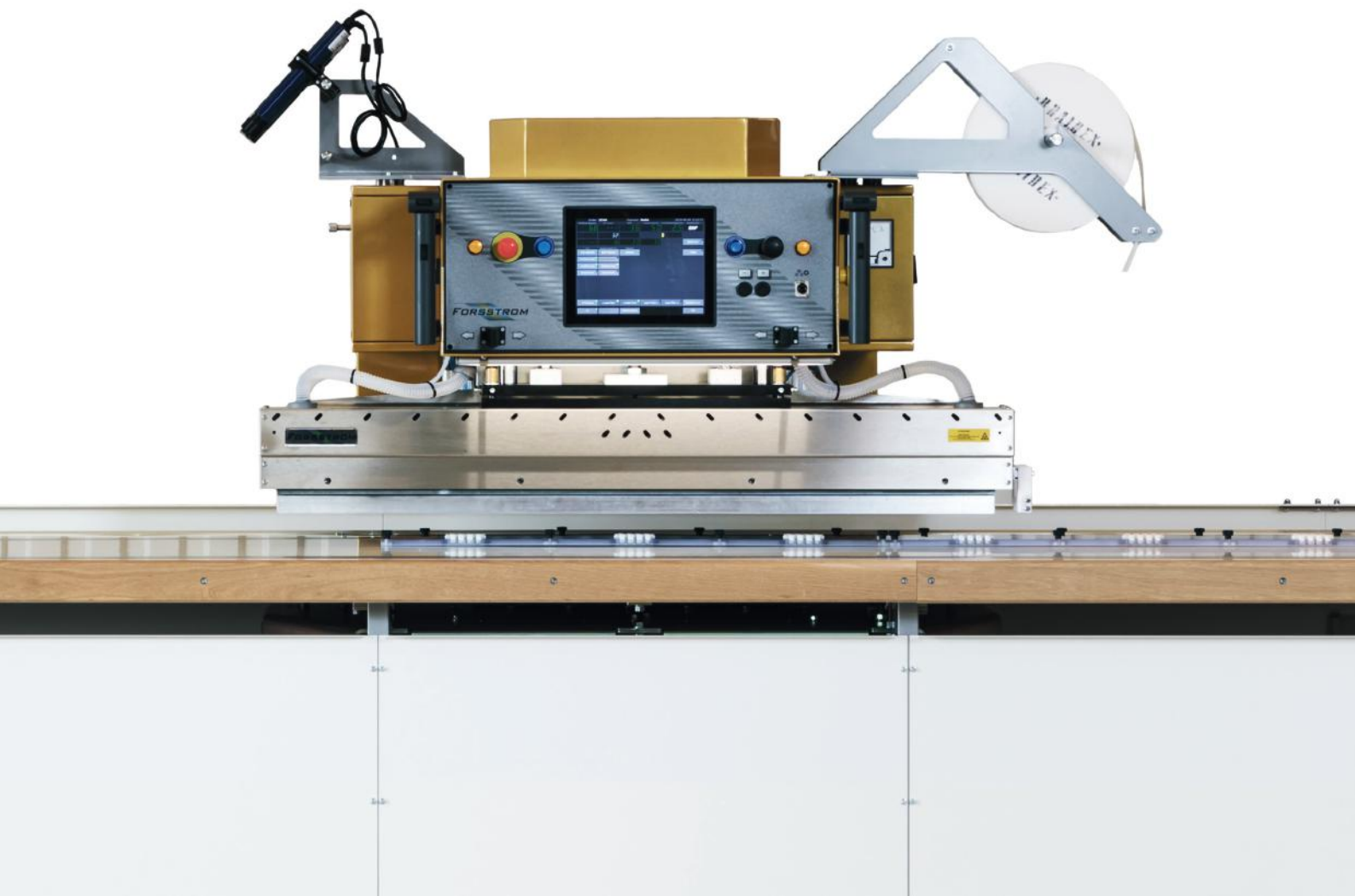
Large and fast travelling welding machine

The TDW machine (5-25 kW) is one of our **most popular models** and has been part of Forsstrom's machine range for **over 30 years**. The TDW is a **large travelling machine** with customized table length and it has **785 mm of free space behind the electrode**. The welding table is **equipped with a large trough for material storage**.

With its **fast machine movement**, the ability to **pre-program welding cycles** and the ability to switch the machine over to **automatic welding**, the TDW machine is suitable for **large products with long, straight welds**, such as tents, truck covers and billboards, as well as large-scale production. The TDW is available in three versions: The TDW, TDW-Mega, and TDW-Ultra.

Areas of application







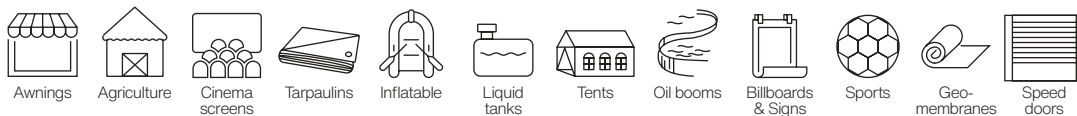
The TX

Well-balanced and efficient stand-alone machine

Forsstrom TX is a reliable and efficient high frequency welding machine with **up to 500 cm² weld area**. The well-balanced machine can both be used as **a stand-alone and as a complement** to a larger system of welding machines.

One big advantage with the TX is the generous **free space of 750 mm behind the electrode**. It enables optimized material handling with the 3-side access. With carefully chosen components, the TX offers good conditions for qualitative HF-welding. The TX is available in two versions: The TX and TX-Mega.

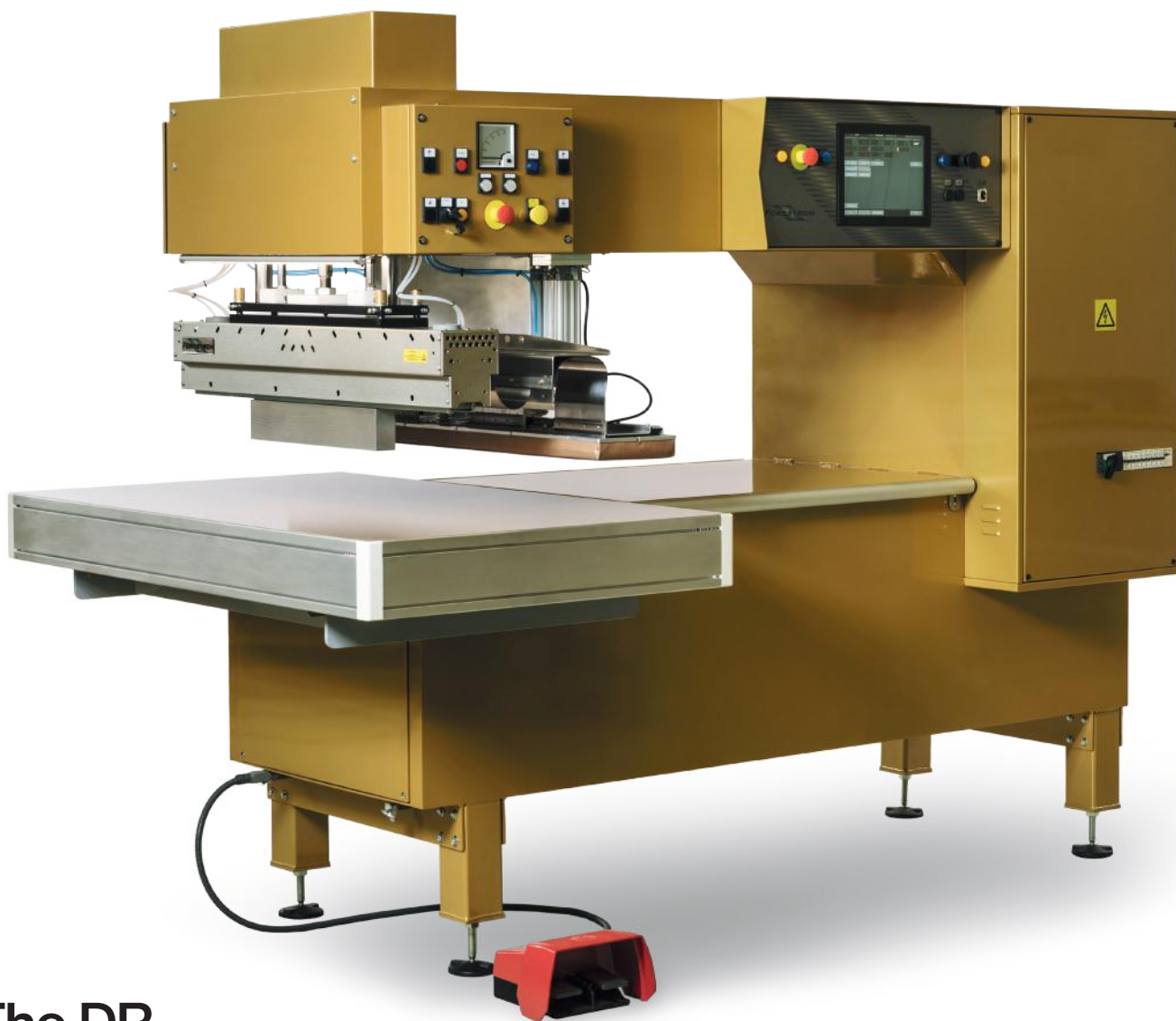
Areas of application



HÖRMANN

Forsstrom was the only company that, **from the first meeting, presented special drawings and solutions and gave extra input.**





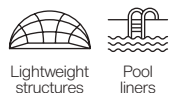
The DR

Made for welding large products

Forsstrom's HF welding machine model DR (5-12 kW) has been part of our machine range for over 25 years and is suitable for welding of large products since it has a large **free space of 1500 mm behind the electrode**.

It enables **optimized material handling** with the possibility to work from three sides of the machine. This model has a **mechanical adjustable stop of the sink depth**, which enables a safe weld of non-reinforced material for the production of for example pool liners.

Areas of application

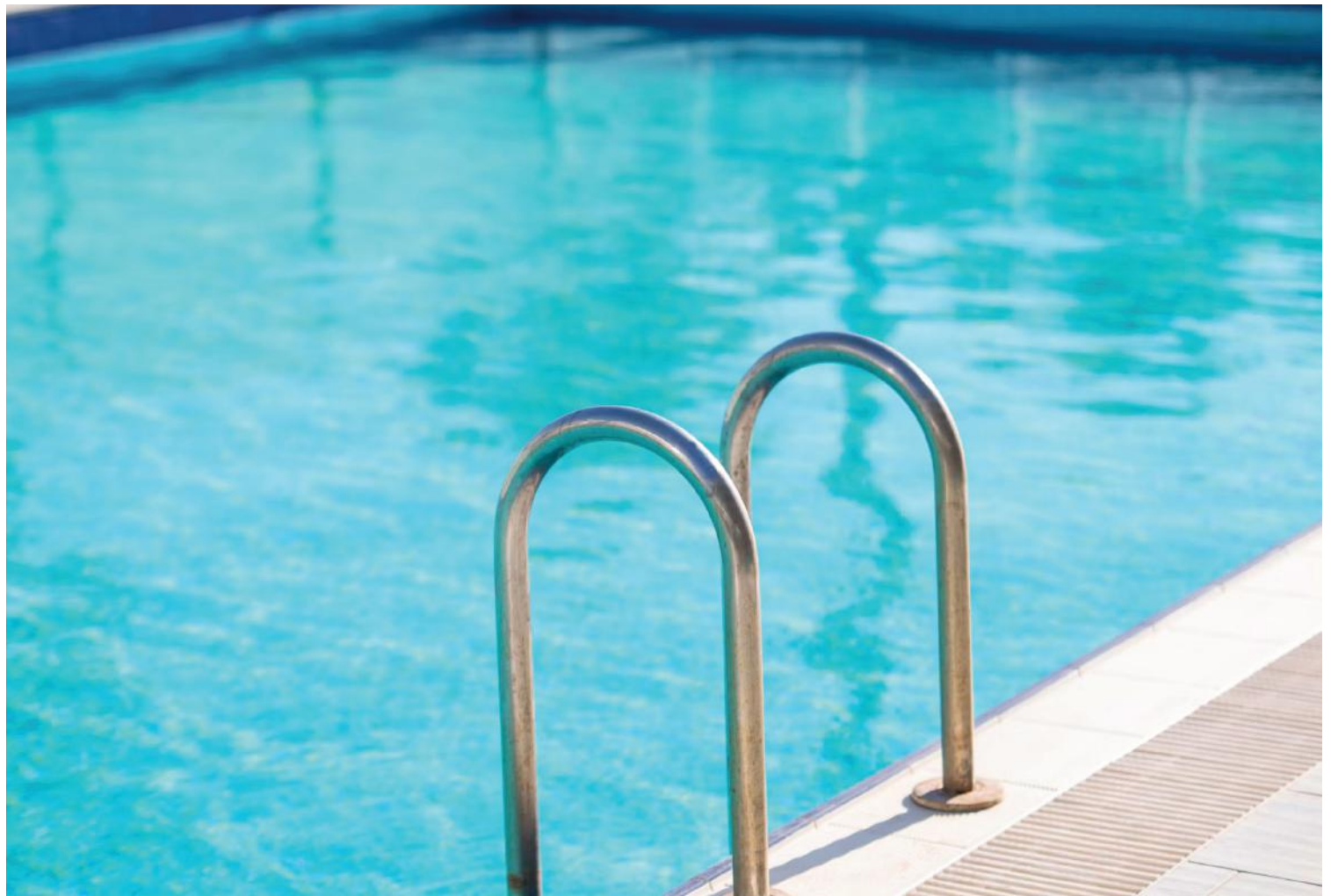


Lightweight
structures

Pool
liners

Wetterskogs

Because they are the best. It is as simple as that. Reliable machines. **Forsstrom has fast delivery times for spare parts, Forsstrom solves our problems quickly and Forsstrom always answers the phone.**







The XP

For production with complex and detailed welding

The stationary HF-welding machine Forsstrom XP has been **developed for complex and detailed welding.**

The XP can weld with as small tools as **1 cm².**

Forsstrom XP is available in three versions: XP 80 (2 kW) with free-arm, XP 120 (3 kW) with welding table and XPV 200 (5 kW) with a transversely-mounted electrode holder.

Forsstrom XP is **a perfect complement to a travelling machine.**

Areas of application



Inflatable



Sports



Medical

Markleen

Their reputation and experience together with the **quality and performance gave us the confidence to purchase the first welding machine.**



The MG-Flex

Discover new production possibilities

Forsstrom MG-Flex 300 is a compact HF-welding machine with a **welding head that can rotate 180°**. The 180° rotation is a helpful tool in the HF-welding process and it makes it **easy for the operators to join heavy materials**.

To increase the manufacturing efficiency, MG-Flex has several unique features: a **Z-guide for controlling overlaps up to 80 mm in width**, **increased lift height (daylight) of welding head 190 mm**, and more. With its great flexibility, Forsstrom **MG-Flex creates new production possibilities**.

Areas of application



Biogas

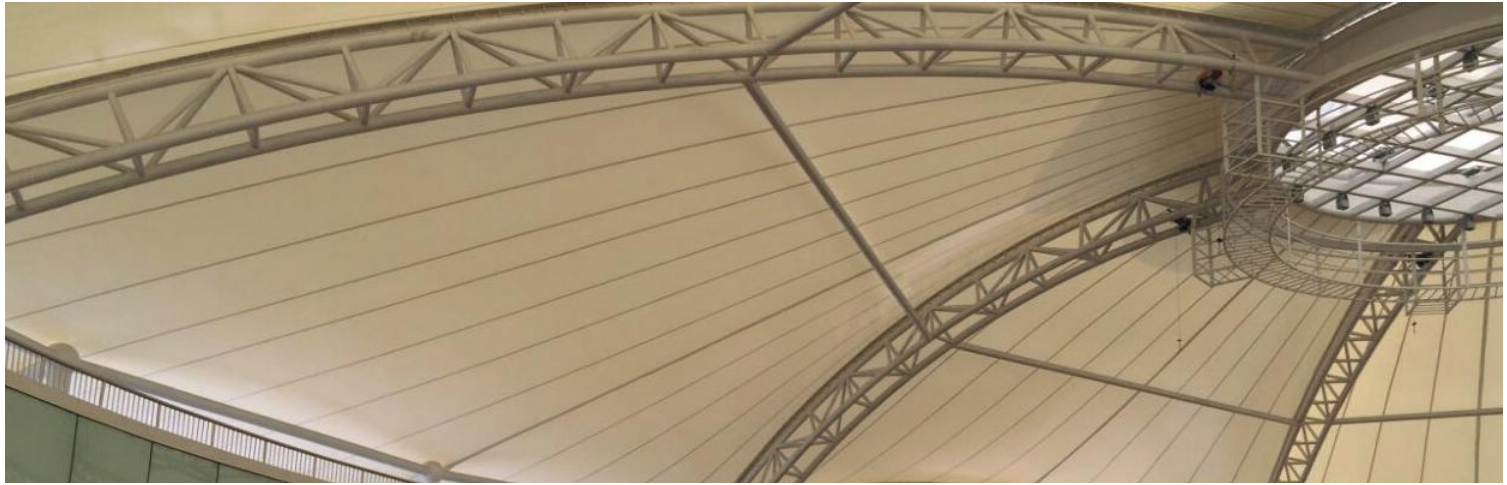


Lightweight
structures



What we like about the Forsstrom organization is that it still seems to be **driven by technicians and technical know-how** (and not by economies of scale of short-term profits dictated by a private equity shareholder).







The MG-L

Unlimited welding possibilities

The MG-L is a **movable suspended HF welding machine** with a **welding head that can rotate $\pm 180^\circ$** , a helpful tool in the HF welding process. The MG-L 500-800 (12-20 kW) has an **advanced drive system** with four **remotely controlled** Mecanum wheels with **individual drive motors** and with 8 rolls in each wheel. This makes it easier for the operator to **move and position the machine in all directions in a very precise way**, greatly facilitating the joining of large and heavy material structures.

To increase the manufacturing efficiency, this machine model has several unique features: a **Z-guide for controlling overlaps up to 140 mm in width**, Forsstrom's latest software and computer with a 12" touch-screen. With its great flexibility, **3 in 1 machine solution** (movable floor travelling, stationary and gantry) **MG-L creates new production possibilities.**

Areas of application



Tarpaulins



Halls



Tents



Biogas



Geo-membranes



Lightweight structures





The TG-90

Developed to minimize handling and increase productivity

Available with an output power from 8-25 kW, the TG-90 Mega offers a wide spectrum of advantages. Manual, **lateral movement of 600 mm** is made possible, as well as manual **180° rotation** of the welding head. These properties allow for a **reduction of material handling times**. The welding table length is adapted to customer requirements and can feature a trough for material storage, or be flat, depending on the nature of manufacture.

The Mega-execution stands for the possibility to **weld up to 400 mm wide welds**. The TG-90 Mega has working platforms on each side of the C-press chassis, and it has operating panels on both sides. The operator has the choice to **ride with the machine on the platforms provided**, or alternatively the operator can stand on the floor in front of the machine, **granting a high degree of flexibility**.

Areas of application



Tarpaulins



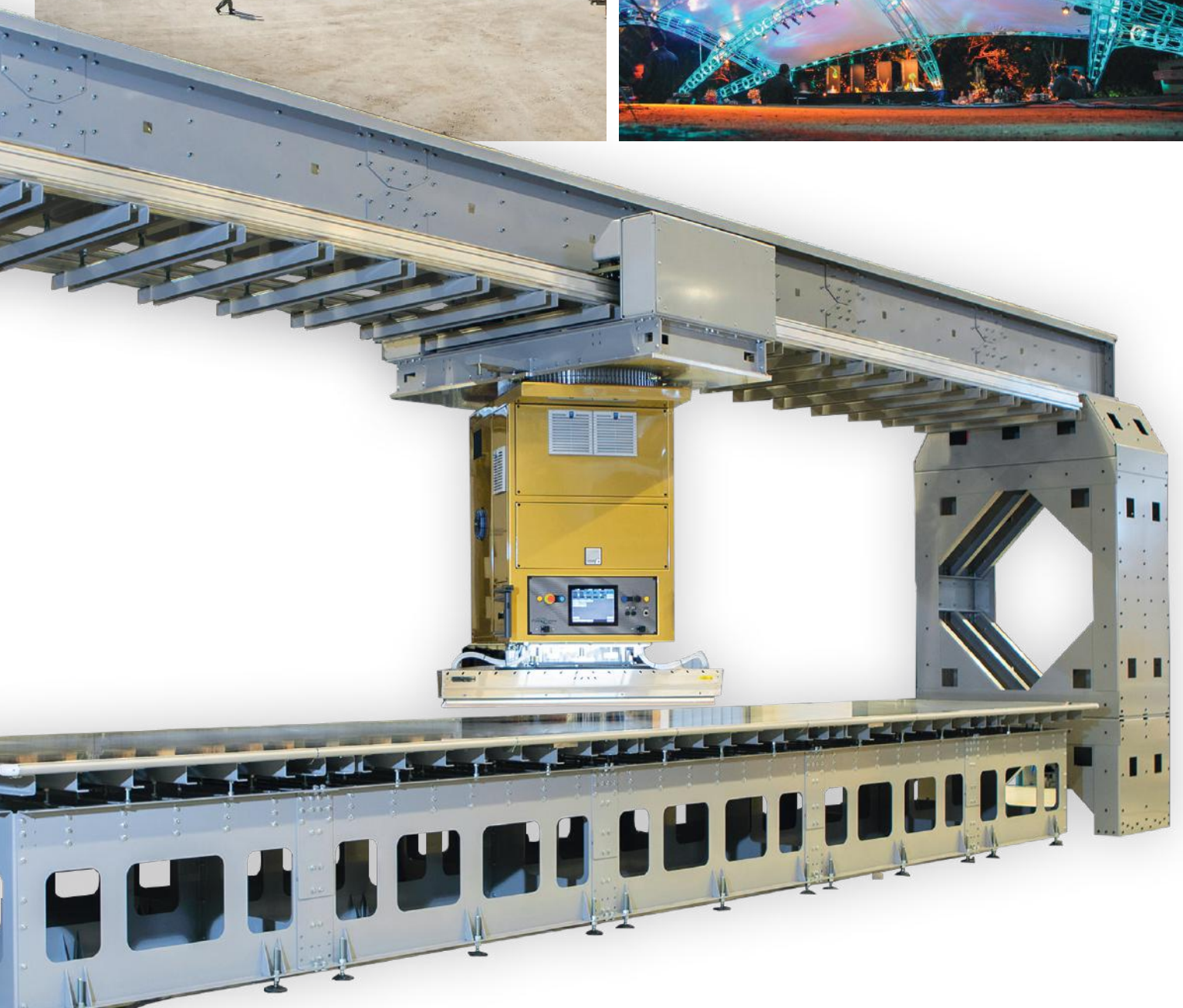
Tents



Oil booms



Lightweight structures





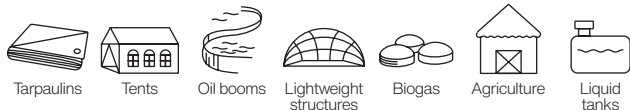
The TDO

Weld with unlimited space on all sides

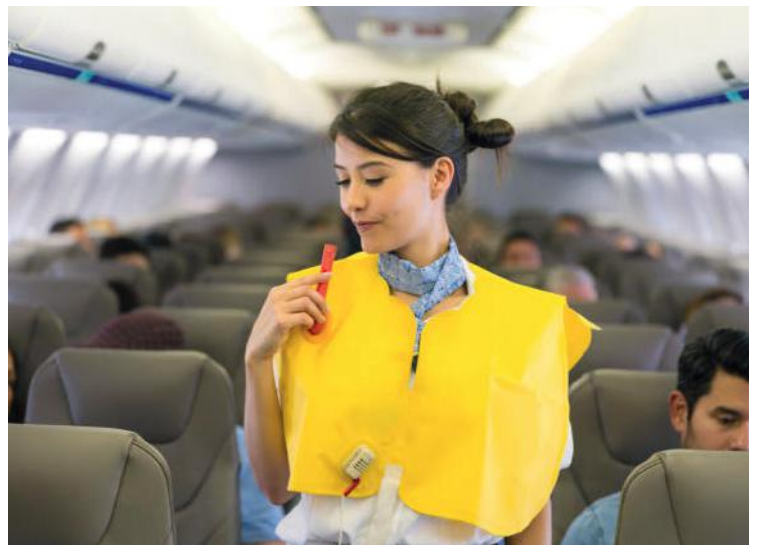
The TDO consists of a suspended HF-generator with welding press. The model is available in a **stationary and a travelling version**. The suspended machine head provides **unlimited space on all sides of the machine**, making the model **suitable for large material volumes**, such as when producing large tents, structures and speed doors.

The stationary version is suitable for the manufacturing of products that require many welding operations, such as details on tents. With its **fast machine movement**, the ability to **pre-program welding cycles** and the ability to switch the machine over to **automatic welding**, the travelling TDO is suitable for large-scale production with long, straight welds.

Areas of application



We expected the machines to be good...they have been great. **Quality of the finished goods sets us apart in our industry.**





The F-Line

Platen welder

Forsstrom F-Line is a 4-8 pillar platen welding machine from 20-60 kW **stable controlled HF-power output** for various HF-welding applications that require precision flat surface for **product positioning and complex shape welds**.

It can be integrated with **fully automatic in-feed of material** as well as **up-winding of the finished product**. When equipped with single or double-sided shuttle tables, it is an **ideal machine for large-volume production**.

Areas of application



Medical



Life vest



Car mat

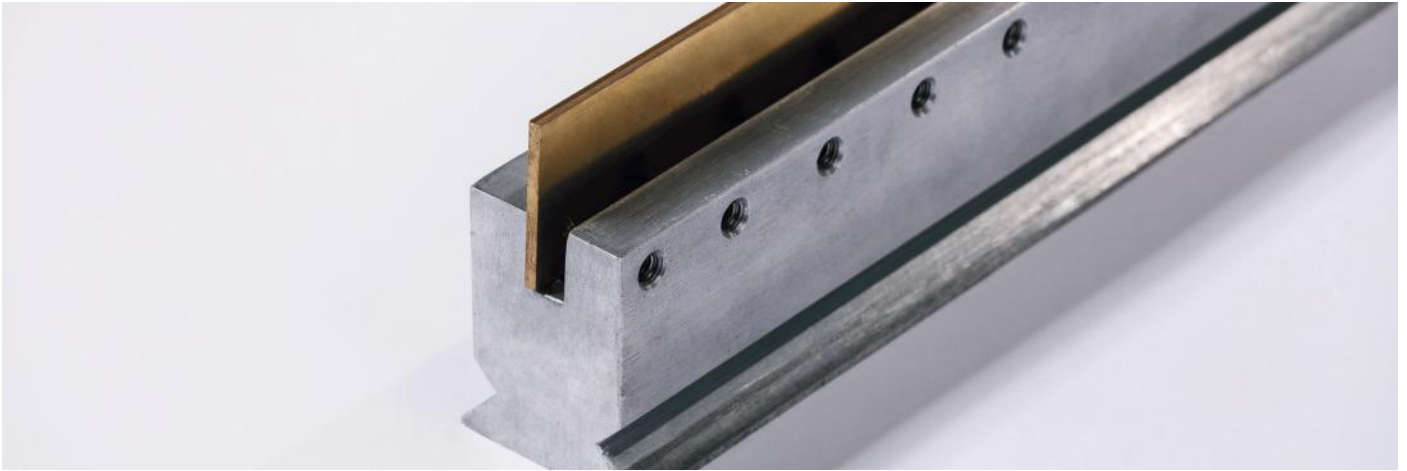


Mattress

LUCKY
INTERNATIONAL

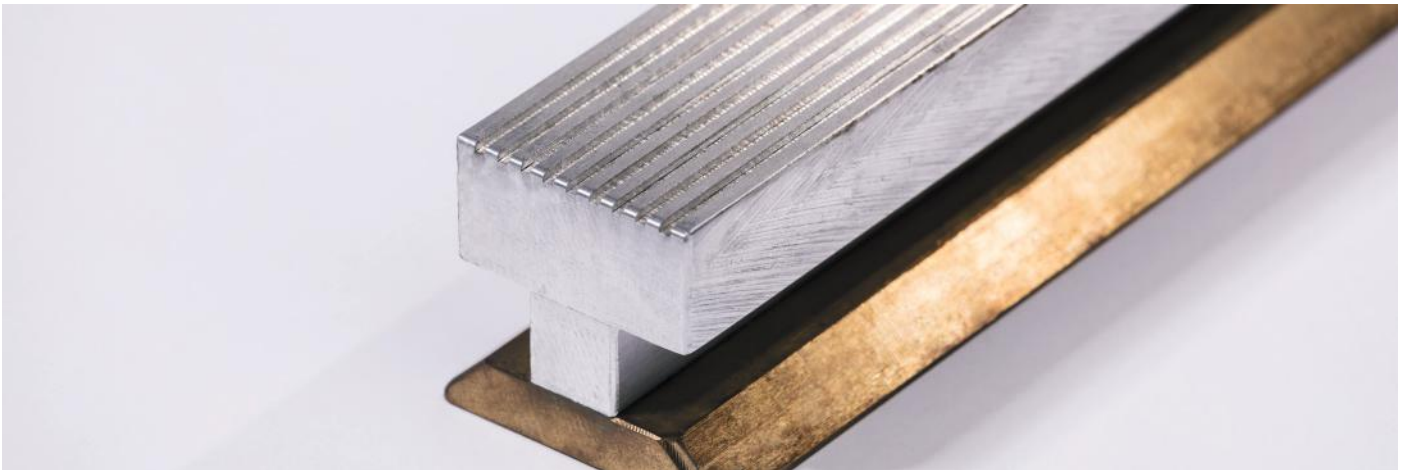
Your machines are a WORK-HORSE, work consistently like a charm. **You have created a special bond with us through your machines.**

Electrodes



Cutting edge electrode

A cutting edge electrode (tear-seal electrode) has a sharp cutting edge adjacent to the welding tool edge along the length of the electrode. With this type of tool it is possible to simultaneously weld and cut the material. This makes it easy to tear off waste material from the product after the welding process is finished.



Grooved electrode

The grooved electrode, also known as a fluted electrode, features grooves on its welding surface, making it versatile for various applications. Particularly beneficial for achieving a stronger seam when welding a reinforced material, since a grooved electrode locks the PVC to the fibres in many more places than a standard electrode does.



Lamella electrode

The lamella electrode consists of several 2 mm spring-loaded lamellas mounted along the electrode. The lamellas adapt to the surface, which makes it possible to weld different amounts of material layers in one step. This both saves time and helps to improve the finish of the final product.



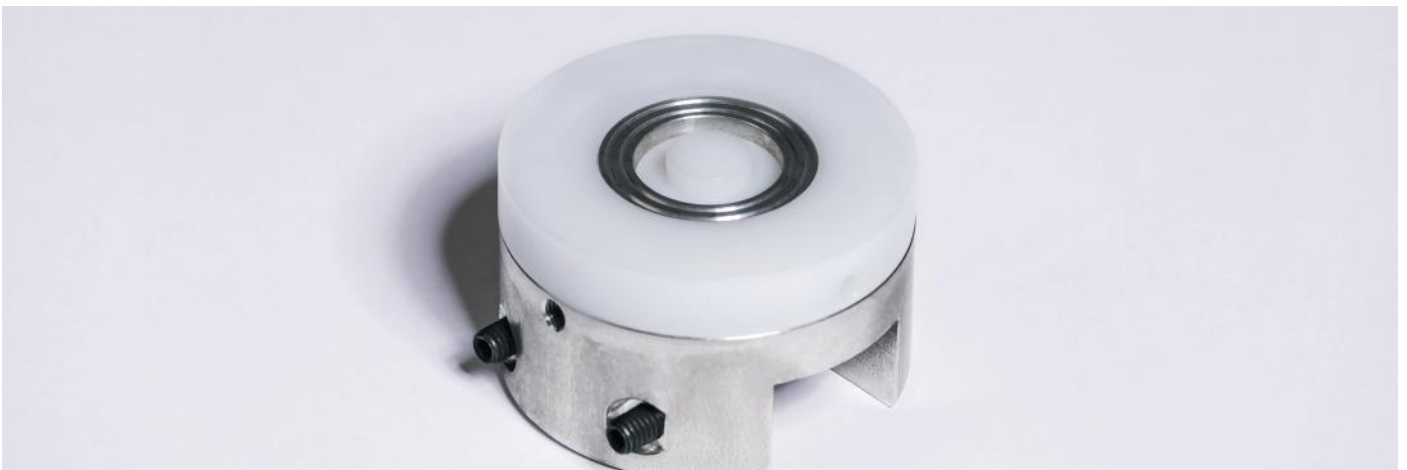
Soft electrode

A soft electrode is a metal tool covered with silicone and Teflon®. With a soft electrode, it is possible to produce a seam that is practically invisible, thanks to the soft edges of the cover material, which reduce the imprint of the electrode on the welded surface. This is particularly important when welding billboards or mesh materials.



Double electrode

A double electrode consists of two parallel welding electrodes mounted on a holder. It is used for creating channels, which is helpful for example when welding truck covers that will be equipped with different types of straps. It saves time since it welds two seams simultaneously and it helps improving the final product's appearance.



Eyelet electrode

An eyelet electrode is a special type of transfer tool, made for welding eyelets and valves onto another material. The eyelet electrode can be placed as a supplementary tool in the correct position directly onto the material. It can also be attached to a standard 20-25 mm wide electrode in the desired position.

Additional equipment



Computer and software

Forsstrom's own operating system optimize HF welding processes, developed by welding experts for welders. The iQ data transfer program enables efficient monitoring, while standard software includes tools like the Length Optimization, ensuring quality welds and streamlined production.



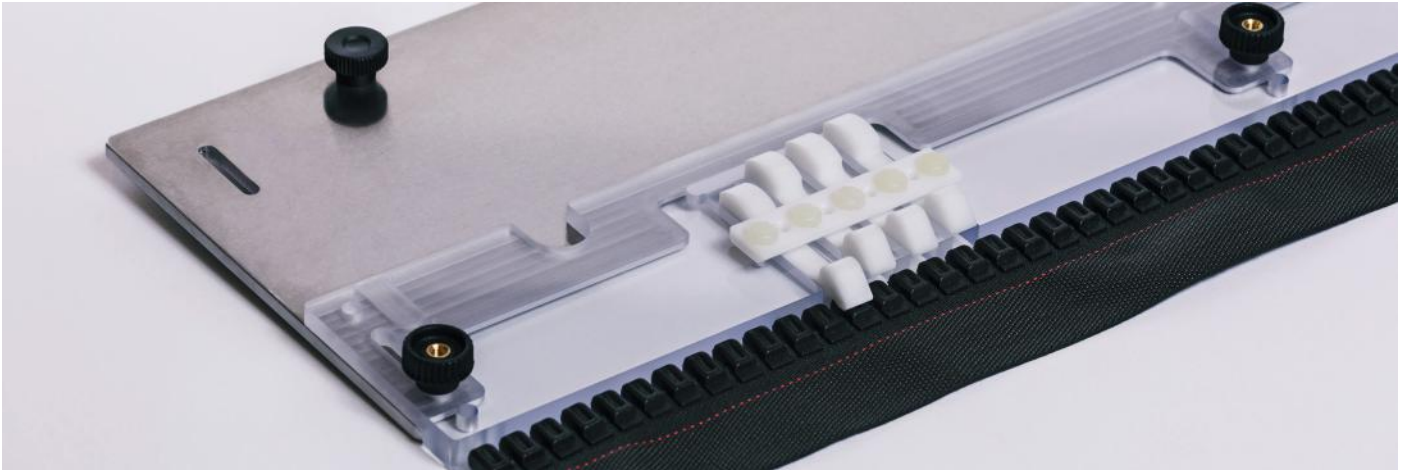
Lasers

Many Forsstrom customers have one or two lasers mounted on one or both sides of the machine chassis. The laser lines make it possible to position the material straight on the welding table. The laser lines are easily adjustable and are normally adjusted when changing to an electrode with a different width.



Cooling

High frequency welding generates heat and the welding tool needs to be cooled. The temperature of the electrode has to be kept at a uniform and limited level. Because of this, the tool holders of Forsstrom's machines are air-cooled as a standard or oil-tempered as an option.



Guides

Forsstrom is constantly developing accessories that make our HF-welding machines better equipped for high quality production. We have developed removable and adjustable guides for welding keder and zipper, which are easily fitted on all Forsstrom stationary and travelling HF-machines.



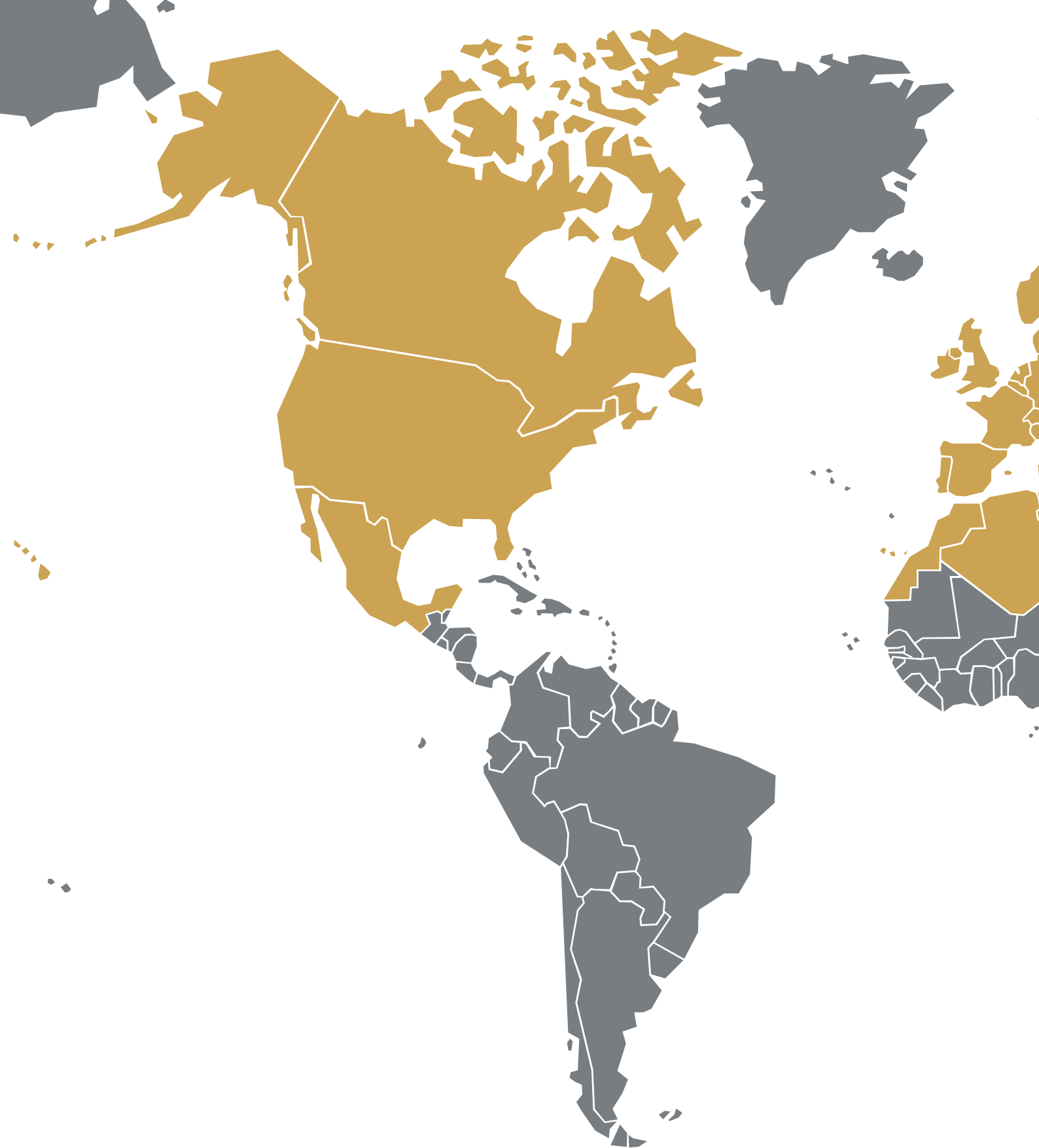
Band holder

A useful accessory is the adjustable band holder, which is mounted on the side of the machine head to facilitate the positioning of reinforcement bands in various widths. The band holder can be equipped with an automatic band cutting unit, which is popular when welding side curtains for trucks.



Material trough

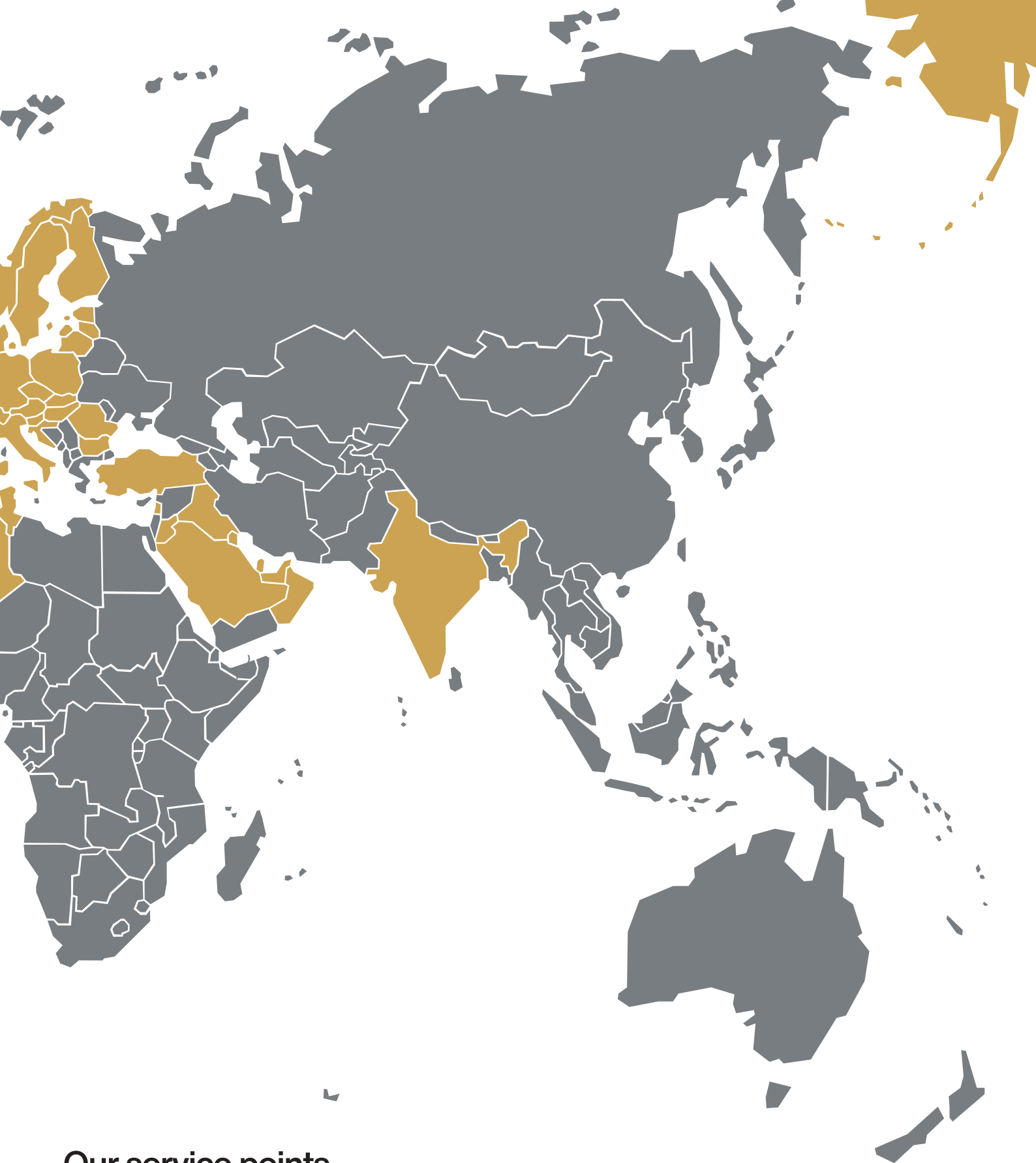
All travelling Forsstrom machines are delivered with a welding table, with or without trough for material storage. The welding table can have a trough in the front of the table, or in the rear of the table or both. It can also be flat, without any trough.



Service agents available globally

When your Forsstrom machine arrives, we send out one or more of our technicians to install it for you. We make sure that the operators that are going to work on the machine understand how to use it in production. We also provide tips and advice on what is necessary to ensure that manufacturing runs as smoothly as possible.

Later, if you have any questions or problems, we provide technical support by phone or e-mail. Many inquiries can be resolved remotely, but we are more than happy to provide onsite help whenever necessary. Our travelling service technicians are stationed around the world and are prepared to make a service call as quickly as possible should the need arise.



Our service points

Austria

HFS-Technik

Germany

Schirmacher

Saudi Arabia

Leeds Trading

UK

HF-Industries / Stanelco

Belgium

Alpha

India

Svan Texcon

Spain

Forsstrom Ibérica

USA

Southwestern HF

Bulgaria

Mirage

Italy

LSB Coperture

Sweden

Forsstrom HF

Finland

Finncut

Poland

Softplast

Switzerland

Pflaumer

France

Olixis industries

Romania

Mons Medius

Turkey

Ta Tek

Sustainable supplier

We offer used Forsstrom machines that have been refurbished and thoroughly tested by Forsstrom according to industry standard and according to our high demands on quality. By refurbishing and revitalizing these machines, we minimize electronic waste and reduce our ecological footprint.

Eco-friendly materials

We prioritize the use of recyclable and eco-friendly materials in our manufacturing processes, reducing the environmental impact of our products.

Energy Efficiency

Our high-frequency welding machines are designed for optimal energy efficiency, minimizing power consumption while maintaining high-performance levels.

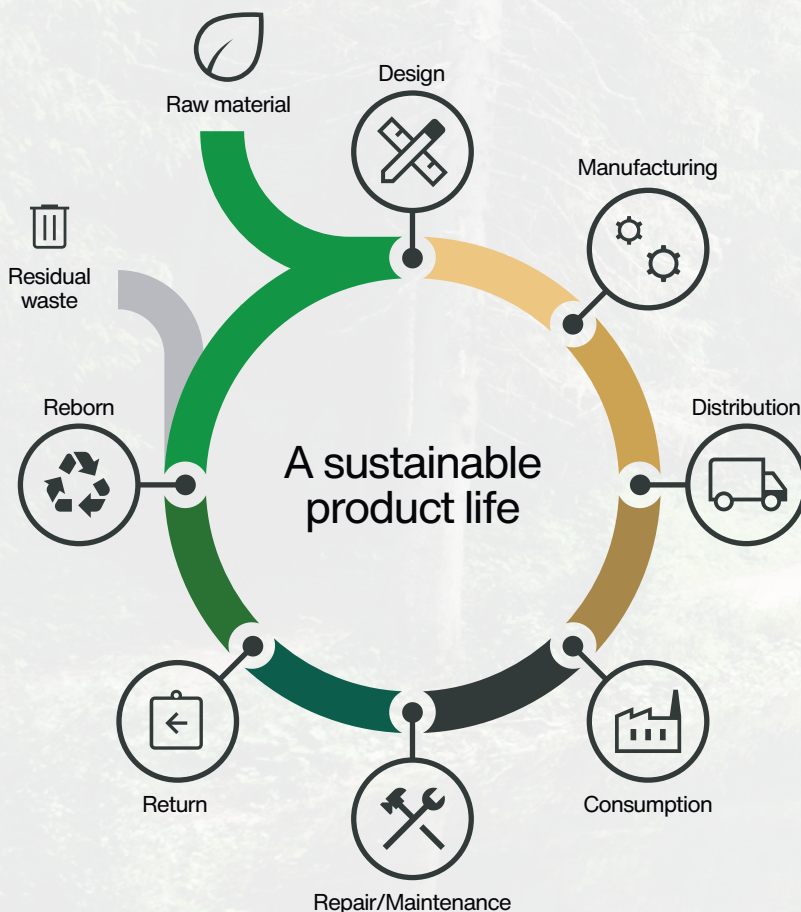
Longevity and durability

By producing durable and long-lasting equipment, we reduce the need for frequent replacements, thus minimizing waste generation.

Lifecycle consideration

We consider the entire lifecycle of our products, from design and production to use and disposal, to minimize environmental impact at every stage.

Reborn





ACT FOR A BETTER WORLD

EXPERIUM



The ultimate demo center

We welcome you to visit us at our demo center in Lysekil, Sweden

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 features and other useful concepts. 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.



Discover Forsstrom Experium.
Schedule a visit today.



Cooperation with the world leading suppliers of material

The best HF-machine manufacturer in the industry should have good relationships with other renowned and important players in the market.

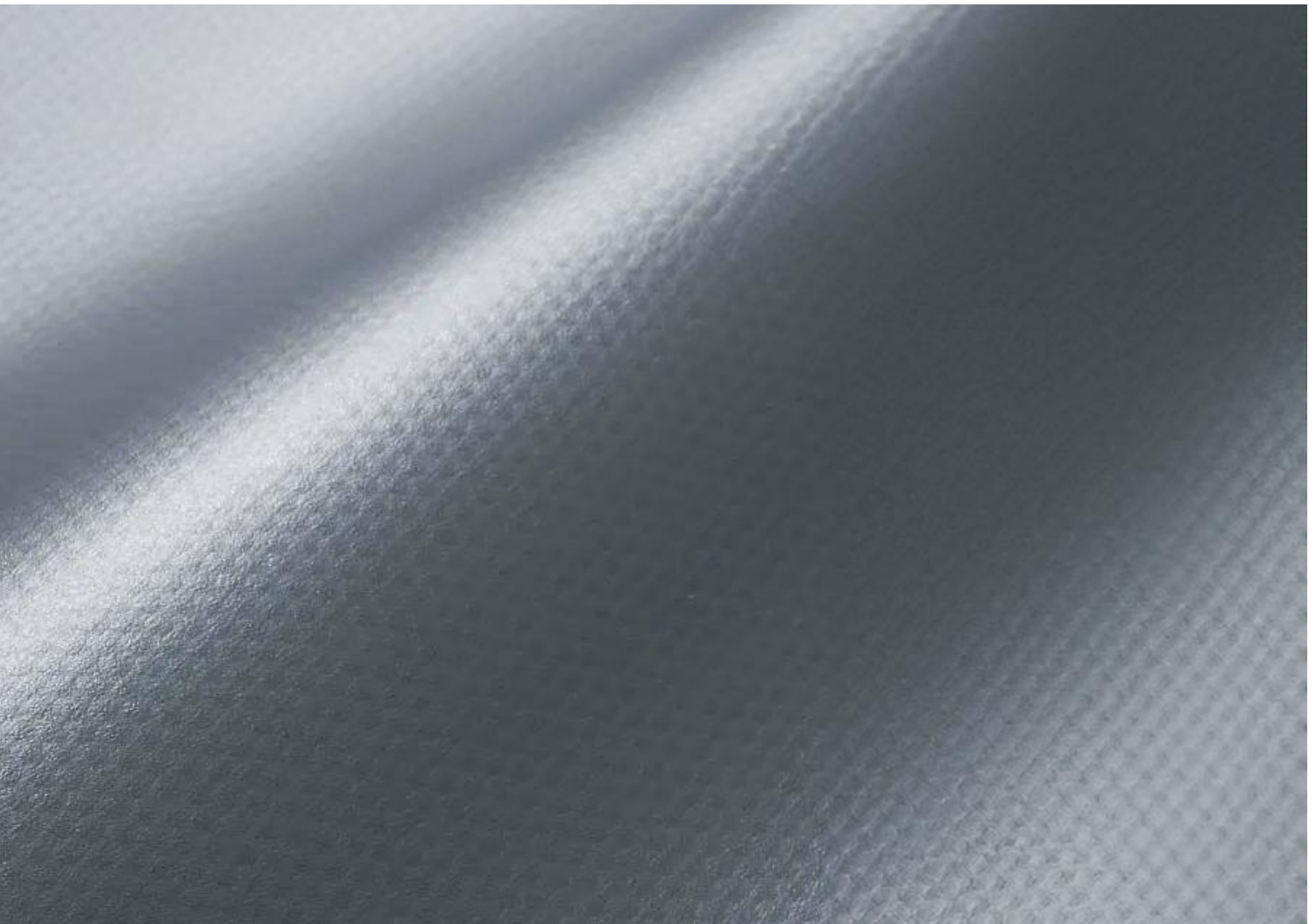
Forsstrom High Frequency AB has partnered with the most important material manufacturers in the world. Some of Forsstrom's most important partners are the material manufacturers such as Serge Ferrari®, Mehler Technologies, Saint Clair Textiles, Verseidag, Renolit, Rivertex, Dickson, Riflex and Sioen.

These relationships give us a deeper knowledge of the properties of the PVC material. Knowing how the PVC material reacts to HF helps us develop our machines.

We have a database with welding parameters for a wide range of materials from a selection of material suppliers. This database can also be found in the Forsstrom software included in all new machines.



Discover Forsstrom's collaboration with **material manufacturers.**



Material partners

Serge Ferrari
group

MEHLER
TECHNOLOGIES

SAINT CLAIR
TEXTILES

VERSEIDAG



RIVERTEX
TECHNICAL FABRICS

DICKSON
innovative textiles for your world

Riflex
Film

SIOEN

