

Processing  
thermoplastics with  
ultrasonic technology

Product portfolio

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# Well thought out from A to Z

Whether it is welding, punching, riveting or cutting thermoplastics, ultrasonic is the simplest, most flexible and most sustainable solution. We are sure about that. It is our passion to adapt this proven, but still amazing technology precisely to your purpose. Using a modular system, we design the ultrasonic application perfectly tailored to your production. With the usual Swiss precision and the highest quality standards. Simple and personal. And thanks to our short decision paths, we are faster than anyone else.

## **swiss-sonic - This is us**

Our dedicated, compact team consists of around 20 employees. From the initial idea to consulting, development and design, to commissioning and training, and on to our services: We offer you a comprehensive package for your production. We are present at numerous locations worldwide with representatives from our local partner network.

**We are glad to  
support you:  
+41 (0)71 680 08 05  
info@swiss-sonic.ch**

# Solutions for industrial machinery

We think flexibly and keep an eye on the big picture. Our ultrasonic systems are modular and customized. This is particularly advantageous when we use them to form a component within a complex production line. Would you like to integrate ultrasonic technology into your production? We dare to say: with our system and our ultrasonic expertise, we will develop the perfect solution for your production. Which solution would you like?



## **Actuator UWS 20kHz / 35kHz**

This actuator fits like a piece of a puzzle into your production. Designed for machines with high cycle rates and quantities, the UWS guarantees reliable and fast production when it comes to cutting or welding plastics, fabrics or non-wovens. Depending on the design, you can choose between simple on-off functions or dynamic force profiles specifically tailored to your production part.



## **Actuator UWA 20kHz**

This compact and flexible actuator can be precisely adapted to your application. It is also suitable for production lines where space is limited. We have designed the UWA to be particularly slim for this purpose. Another plus: our in-house developed quick-change system ensures the shortest changeover times when you are producing different production parts.

## Accessories for industrial machines



### **Actuator control unit**

It is the control center for the mechanical movement of your actuator. With force profiles perfectly tailored to your production, it enables ultrasonic applications at the highest level.

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### **Ultrasonic switching unit**

Flexibility for your production. Our switching unit allows multiple ultrasonic systems to be operated via a generator - either manually or via your machine control (PLC).

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### **Ultrasonic stack bracket**

It is the perfect mount for the mechanical assembly of your ultrasonic stack. It holds it reliably in place. As a variant, we install leveling screws.

# Presses

Whether you are dealing with fine or coarse material, plastic, fabric or non-wovens, higher or lower quantities, larger or smaller productions: we configure your press exactly according to your needs. For the most beautiful welds and cleanest cuts. These ultrasonic systems are designed for both process-reliable series production and multifunctional applications. Which variant do you need?



## **Pneumatic press UWP 20-2 / UWP 35-2**

This ultrasonic press can be used to process parts made of a wide variety of thermoplastic materials - maximum flexibility guaranteed. The UWP performs welding, punching or cutting operations with pinpoint accuracy and in an automated manner thanks to precise linear guides and optionally by means of dynamic force profiles. The UWP is also available with a quick-change system for simple and rapid replacement of your ultrasonic stack.



## **Pneumatic press MWP 20-2 / MWP 35-2**

This linear ultrasonic press with variable stroke height is particularly suitable for individual applications. From delicate blister packs and larger hollow forms to neatly executed seams in functional clothing - we tailor the variant to your production part. The MWP is controlled by the actuator control unit, which triggers dynamic force profiles. On request, we can also equip your MWP with a somewhat simpler on-off control.



**Pneumatic press USP 35-1**

It is the most compact and cost-optimized ultrasonic press in our range. We developed it for simpler, cylinder-guided applications that require only an on-off control. The USP welds, cuts or punches smaller production parts automatically and reliably.



**Manual press HWP 35-1**

Our manual ultrasonic press is perfect for small production facilities. The linear guided triggering of the welding or cutting process guarantees highly precise results despite manual control. During the development of the HWP, we paid particular attention to ergonomics. Thanks to the lever effect, it can be operated with very little force.

## Accessories for Presses



### **Quick-change system for ultrasonic stack QUS (only for UWP)**

Do you manufacture different products that require different transducer systems? This quick-change system allows changeover in no time at all.

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### **Quick-change system for support fixture QSF**

For productions that manufacture different production parts, quick replacement of the support fixture is essential. Our quick-change system enables changeover in just a few seconds.

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### **Support fixture identification**

These sensors detect which support fixture you have inserted and which production part you want to produce. The ultrasonic generator automatically sets the correct parameters.

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### **Protection-foil feeder EFM**

Do you process optically demanding parts with visible surfaces? The EFM, which we have designed specifically for use in combination with our ultrasonic presses, protects your production parts with a protective film during production.

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### **Production part detection**

These special sensors are used for ergonomic reasons and to protect your production part and the operating personnel. They detect whether there is currently a production part in your ultrasonic press. Only then the operating cycle can be triggered.

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### **Production part downholder**

This automatically controlled device holds sensitive and delicate production parts in the support fixture. It is used primarily for the welding of more complicated geometries.



#### **Production part ejector**

This automated ejector is located in the support fixture. It ejects sensitive and delicate production parts out of the support fixture directly after the ultrasonic process.

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#### **Leveling clamping plate**

This clamping plate is permanently installed in the ultrasonic press and fixes the support fixture. Through the leveling, it also ensures that it is aligned 100 percent straight to the horn.

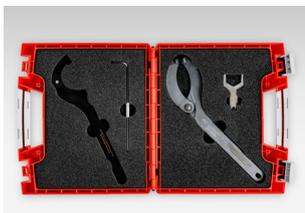
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#### **Micrometer end-stop**

Precision when touching down is the most important factor when it comes to beautiful weld seams and clean cuts. With this measuring device, you can set exactly how much material your horn touches, down to the micrometer.

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#### **Tool set**

Our tool set gives you all the tools you need to maintain your swiss-sonic ultrasonic press. We put the case together individually for your swiss-sonic ultrasonic system.

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#### **Sound protection cabin**

This compact sound protection cabin can be used in combination with all 20kHz ultrasonic presses. Thanks to its modular design, we can adapt it to your very specific needs.

# Hand-held devices

In every production process, there are work steps that can be better and more efficiently carried out by hand. For example, when it comes to fixing production parts before inserting them into the production process or for quick riveting. Even in textile processing, cutting processes by hand can sometimes deliver more efficient and cleaner results. Our hand-held devices are designed for precisely these production moments. We have adapted their ergonomic design to the different uses. Which model do you need?



## **Hand-held cutting device UCH 35**

This hand-held device is used primarily for cutting thermoplastic fabrics and non-wovens. Like the scissors, it is guided over a fixed surface. When processing several textile layers or films, a clean cut-weld seam is created.



## **Hand-held device UWG 35**

This ergonomic hand-held device is particularly useful for spot welding or riveting. Its major advantage is that it can be used flexibly in space, making it ideal for materials with complex geometries. For greater force application, it can be guided with two hands.



**Hand-held device UCW 35**

This hand-held device, which can be operated with one hand, is used by anyone who needs ultrasonic technology to be fast and flexible to use and to cover a wide area. The UCW can be used for all variants in three-dimensional space, whether working from top to bottom or bottom to top. It is also an ideal tool for a robot arm.

Accessories for hand-held devices



**Balancer for UCW 35**

This device turns your UCW into a highly precise hand-held device with linear guidance. The additional built-in ergonomic counterbalance is the ideal addition if you work at a fixed work table.

# Tools

The horn is the tool used to transfer the ultrasonic energy to or into the material of the production part. The design of the horn depends on the shape and material of your production part. We design the geometry of the horn precisely for your application and create it to your specifications - in aluminum, steel or titanium, in all shapes and colors, as needed. What would you like?



## **Horn**

We adapt the shape of your horn to your required application with micrometer precision. And if you wish, we can give your tool additional protection against wear and corrosion by means of coating.

Horn variants



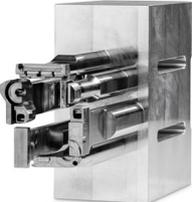
**Round horn**



**Round-rectangle horn**



**Rectangle horn**



**Composit horn**



**Cutting horn**



**Rotary horn**



**Block horn**



**Riveting horn**

## Tools

### Extras for tools



#### Coating

Does your horn need additional protection against wear and corrosion, or should it have non-stick properties? We can coat your tools according to your requirements. It is also possible to color them to match your production line.



#### Support fixture

The support fixture, which we have adapted precisely to your needs, holds your production part in position during the welding or cutting process. It is mounted on the clamping plate and is available in aluminum or steel.



#### Tool alignment

This tool makes it easy to achieve a high-precision alignment between the horn and the support fixture. It thus guarantees cleanly executed and visually appealing results.

# Generators

The generator is the energy source and the brain of your ultrasonic system, making it the intelligent pacemaker. It transforms the power from the power socket into high-frequency electrical energy and transmits it to the transducer, which converts it into mechanical ultrasonic energy. The ultrasonic generator controls the pneumatics and thus the actuator of your system, as well as its entire operating cycle with force profiles. We have developed our ultrasonic generators in-house for a range of customer-specific needs. Which model is right for your production line?



## Generator Hawk 20kHz / 35kHz

The Hawk is the perfect ultrasonic generator for industrial production lines and for your hand-held devices. On request, we can supply it as a wall mounted variant. The Hawk also reliably controls directly wired actuators and is IoT- and network-compatible via Ethernet. The touch display is currently the most user-friendly interface on the market.



## Generators Anaconda and Viper XL 20kHz / 35kHz

We have integrated control of the entire ultrasonic operating cycle into these two generator models. It is, so to speak, the all-in-one solution for your ultrasonic application. Various inputs and outputs also enable the control of peripheral devices and a connection to your machine control system (PLC).

## Generators



### **Generator GT-Twin 35kHz**

We developed this compact ultrasonic generator especially for industrial machines that produce different production parts. The GT-Twin has two power units. It can therefore control two different ultrasonic systems simultaneously and transmit their specifically required energy profiles. The control is done via the machine control (PLC).

## Accessories for generators



### **PoE-HMI**

Our flexibly mountable touch screen makes the user interface of your Hawks amazingly user-friendly. Would you have thought that? As easy as with a smartphone app!

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### **Two-hand release**

The safety switch for initiating an operating cycle with both hands is used to protect your employees.

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### **Foot switch**

Whether seated or standing, this pedal to initiate the operating cycle allows your operator to initiate the welding or cutting process by foot.

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### **Ultrasonic cable**

Our ultrasonic cables for energy transmission are available in various lengths, with different connectors and in an oil-resistant variant.

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### **Anaconda IoT-Kit**

This add-on kit makes your Anaconda IoT- and network-compatible. It reads the operating data from your ultrasonic generator and makes it available on a web server for further use.

# Transducer and booster

The transducer converts the high-frequency electrical energy from the generator into mechanical ultrasonic energy, while the booster additionally amplifies or attenuates it. Together with the horn, they form the ultrasonic stack in the ultrasonic system. Our transducers, boosters and transducer-booster units are designed for different applications and materials and vary in terms of their ultrasonic amplitudes. What fits into your production line?



## **Transducer 35kHz / 20kHz**

The transducer converts high-frequency electrical oscillation into a mechanical longitudinal oscillation with a constant output amplitude. We have attached a connector for pneumatic cooling to this model.



## **Transducer-booster unit 35kHz**

The 2-in-1 combo is an especially compact variant for your ultrasonic stack. We adapt it to your specific production conditions. We have attached a connector for pneumatic cooling to this combo version.



**Booster 20kHz / 35kHz**

The booster amplifies the mechanical oscillation and transmits it to the horn. The titanium variant is particularly suitable for high-volume production with high cycle rates.

Booster variants



**Titanium-booster 20kHz / 35kHz**



**Aluminum-booster 20kHz / 35kHz**

What solution do you need?  
We are makers. We are  
Experts. And we love the  
challenge. Get in contact to  
us.

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