Roll Seam Technology
Ultrasonic roll seam systems
for sealing, welding and cutting
in textile and packaging industry

Your partner for roll seam solutions with ultrasound
Technology and system integration in one unit

As your partner for roll seam solutions
and system integration with ultrasound we
assist you from product development to
product introduction.

One technology
– many possible applications

One major advantage of ultrasonic
technology is its environmental friendli-
ness and energy efficiency. An increasing
number of applications and products can
be achieved and improved with ultrasonic
roll seam technology. SONOTRONIC is
the market leader as a system supplier of
ultrasonic components for roll seam seal-
ing, particularly in the textile industry. The
technology is also being used increasingly
in packaging technology. Moreover, we are
also integrating the technology in special
machines for different industries, e.g. in
the automotive industry, according to the
application.

Individually adapted and specially
designed ultrasonic systems
For the various requirements and cus-
tomer requests, we individually adapt our
innovative ultrasonic systems or produce
special one-off designs. We develop
and manufacture our systems to be fitted
both into new installations and into existing
ones.

Tested quality
All our ultrasonic systems are perfectly
matched to one another and in packaging
industry comply with safety classes up to
IP68. We satisfy customer requirements
by continuous quality and environmental
management in our company, according to
the tried and tested standards DIN EN ISO
9001 and DIN EN ISO 14001.

“SONOTRONIC: Partner
for ultrasonic solutions and
system integration.”

Ultrasonic roll seam sealing pattern
Company headquarters in Karlsbad, Germany
Green ultrasonic technology by SONOTRONIC

The SONOTRONIC roll seam module,
supported at both ends, is used for con-
tinuous welding and for Cut&Seal in textile
processing, in various industrial sectors. It
can easily be incorporated in existing and
new machine concepts and is made up of
three components:
■ Roll seam sonotrode module (with roll
seam sonotrode supported at both ends)
■ Anvil module (exchange anvil)
■ Control module

Technical data
Weld width [mm] 2 - 25
Max. [N] welding force or application force of
the anvil
400
Max. speed [m/min] 80
Frequency [kHz] 35
Generator power [W] 400
Max. compressed air [bar] 6
Connected loads of drive [V] / [A] 230 / 4
Dimensions of sonotrode module W x H x D [mm] 420 x 138 x 168
Dimensions of anvil module W x H x D [mm] 393 x 294 x 192
Dimensions of control module W x H x D [mm] 600 x 600 x 350

Advantages
■ The application force can be adjusted
by electro-pneumatic pressure control
■ Circumferential speed of the
sonotrode and anvil unit is regulated
by a master-slave coupling
■ Fan-cooled roll seam sonotrode and
ultrasonic converter

Industries
■ Automobile industry
■ Plastics industries
■ Packaging industry
■ Food industry
■ Textile industry
■ Environmental sector

Products
■ Ultrasonic components
■ Ultrasonic systems
■ Standard machines
■ Special machines

Technologies
■ Ultrasound
■ Hot plate
■ Infra red

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Linked with success.
Roll seam technology in textile machining
Continuous ultrasonic cutting and sealing of the highest quality

The ultrasonic roll seam units from SONOTRONIC are suitable not only for continuous sealing but also for the simultaneous cutting and sealing of synthetic textiles.

**Continuous sealing seams with high design flexibility**

In ultrasonic roll seam sealing, continuous sealing seams are produced by the disc-shaped sonotrode without seam interruptions, for which purpose the roll seam sonotrode has a titanium mounting on one or both sides. At the same time the design of the anvil wheels with different contours and widths allows flexibility in seam design.

**Simultaneous cutting and sealing (Cut & Seal)**

A further application of the innovative ultrasonic roll seam technology from

SONOTRONIC is the simultaneous cutting and sealing of thermoplastic textiles with extremely wear-resistant steel sonotrodes. This produces not only fixed seams but also minimal seam projections. During ultrasonic edge cutting the edges are already sealed so that they cannot fray.

**Possible applications**

In the textile industry ultrasonic roll seam units replace conventional sewing machines. Continuous sealing seams and seams with free geometries can be produced. Fabrics from thermoplastic synthetic fibres are then no longer sewn with one thread but are sealed ultrasonically, and because of this no holes are made in the fabric by needle stitches and there is no subsequent taping.

Besides their use at manual workstations, ultrasonic roll seam systems can also be integrated in existing machines.

**Advantages**

- Cutting and sealing of elastic and non-elastic textiles
- No fraying in edge cutting
- Minimum seam projection
- Sealing seam width 2-25 mm
- Flexible seam design
- No subsequent taping of the seams
- Rotary sonotrode of titanium (10 or 25 mm wide) or steel (7 or 10 mm wide, Cut & Seal applications)
- Sealing speed of 0.3-20 m/min or 10-80 m/min
- Control of the amplitude proportional to the sealing speed

**Technical data**

- Dimensions of the module W x H x T [mm] 250 x 428 x 127
- Electrical connected loads of the drive [V] / [A] 230 / 4
- Max. air pressure [bars] 6
- Power of the generator [W] 400
- Frequency [kHz] 35
- Max. speed [m/min] 80
- Max. welding force [N] 250
- Welding width [mm] 2 - 9

**“Continuous welding seams without fraying.”**

"Continuous welding seams without fraying.”

The ultrasonic roll seam units from SONOTRONIC are suitable not only for continuous sealing but also for the simultaneous cutting and sealing of synthetic textiles.
Roll seam technology in the field of packaging
Optimum ultrasonic sealing without heat loading of the filling material

An ever expanding application for the continuous ultrasonic sealing method from SONOTRONIC lies in packaging technology.

Applications
Here ultrasonic roll seam technology is applied mainly in horizontal and vertical tubular bag machines. Bags with four sealed edges can also be produced by ultrasonic roll seam sealing.

Economic process
Both the roll seam sonotrode and the anvil are driven in this process so that there is neither slip nor wave formation in the film. No relative movement is generated between the sealing wheel and film by the double drive either.

Newly developed unilaterally mounted roll seam sonotrodes
In addition to the proven roller seam sonotrodes mounted on both sides, SONOTRONIC has now also developed special unilaterally mounted roll seam sonotrodes. In the case of horizontal tubular bag machines the roll seam sonotrode with unilateral mounting can be assembled directly underneath the filled bag.

No thermal radiation
In addition to the well known advantages of ultrasonic sealing, such as tight sealing of wetted surfaces, optically attractive seams and consistent sealing results, ultrasonic roll seam technology is also characterised by further advantages. In continuous sealing, no thermal radiation is transmitted to the product, which is particularly advantageous in the case of heat-sensitive products such as chocolate.

New possibilities in the choice of film
Unlike thermal methods, ultrasonic technology also enables mono-films to be used because no heat insensitive outer layer need be laminated onto the film. Furthermore, very thin polymer films (15 µm) of high quality can also be sealed by the continuous ultrasonic method, which has not hitherto been successful with thermal sealing systems.

Advantages
- Continuous sealing seams
- Tight sealing seams even on product wetted surfaces
- No thermal radiation to damage the product or film
- Assembly directly underneath the bag
- Sealing of mono-films and very thin films (15 µm) possible
- No slip or saving of the film
- Use in VFFS and HFFS machines and for bags with four sealed edges
- Environmentally friendly and energy-saving
The cantilevered SONOTRONIC roll seam module is particularly suitable for continuous sealing and weld separation without interfering contours in the packaging industry. The roll seam module can also be integrated in existing or new machine concepts.

### Technical data

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Ultrasonic roll seam module supported at both ends
Simple integration in existing or new machine concepts

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- The application force can be adjusted by electro-pneumatic pressure control valve
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