This is how it works

Functional principle Thermal impulse sealing

Thermal impulse sealing is a method for joining thermoplastic films. The sealing bar is equipped with a heating band ❷ for this purpose. Silicone glass hard fabric ❹ is applied to the bar body ❺ with the double-sided adhesive film Isotac ❻. The heating band ❷ which is spring-mounted on the bar ends is stretched over it and electrically insulated. To achieve a better expansion of the heating band, PTFE fibreglass ❸ is fitted under it on the sealing bar. The heating band is covered with a heat-resistant non-stick covering ❶, which prevents the films to be sealed from adhering to the heating band. In order to perform sealing, the sealing bar is pressed on to the film to be sealed. The heating strip is subsequently heated by an adjustable pulse of current. Heating of the heating strip raises the temperature of the films to melting point and welds them together. After the current flow is cut off (=pulse time), the heating strip and the sealing seam can cool again. The accumulated heat is conducted away through the silicone glass hard fabric ❹ into the bar body ❺.

An electric control, a pulse generator adapted to the bars and a lifting and contact pressure mechanism are always required in order to operate the sealing bars.

We can supply you sealing bars up to 3500 mm in length for own installation. The sealing bars can be equipped with the most diverse heating strips. The required output of the pulse generator depends on the length of the sealing bar. The sealing bars are installed as serial equipment in pallet packaging units from well known manufacturers. Likewise, these sealing devices are used for the most diverse individual fields of application.

Take advantage of our know how! Our designers will be pleased to devise the solution for your specific application in consultation with you. You will receive sealing bars, pulse generators, cables and switches for your specific application.

Discuss your individual requirements with us. We will develop just the right solution with you:

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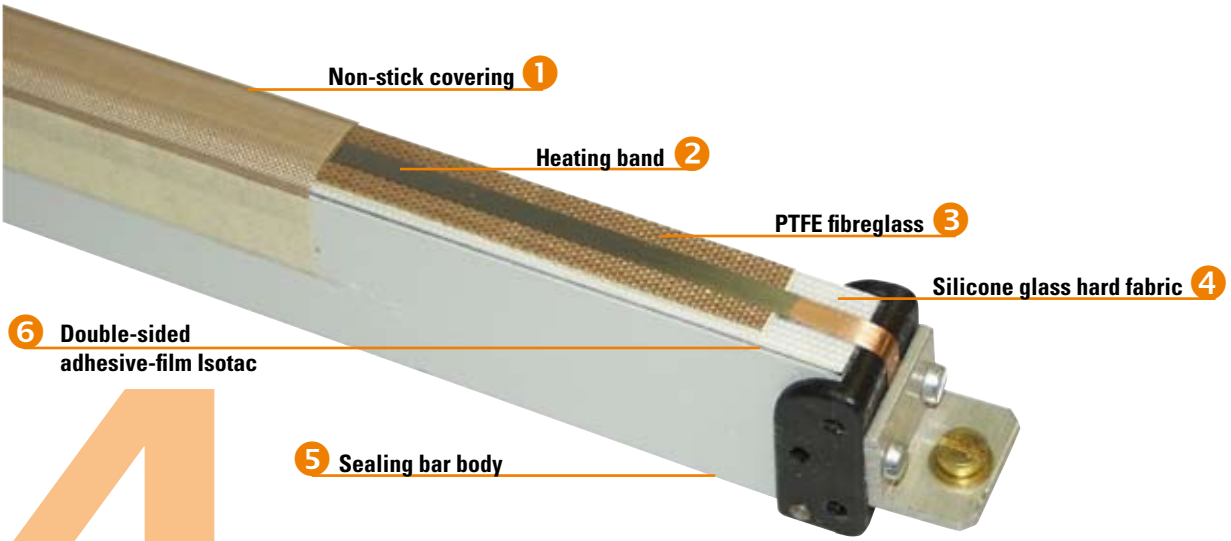


4 Components & Accessories

Heating bands
for different applications

Product information

Heating bands for sealing
For sealing films and bags made of PE and compound material, flat heating bands, hollow bands and double-seam beands are available in various different thickness and widths.

The ends of the heating bands are copper plated, in order to prevent heating in the connection area. They are available in all lengths, but also by the metre without copper plating.

Heating bands for separation sealing
For sealing and simultaneous separation of the film at the seam. Spearating wire, bead heating bands and T-profile heating bands are likewise available in different thicknesses and widths.

Separating wires: these are principally used wherever only very narrow sealing seams are to be achieved, regardless of the film.

Bead heating bands: for heating bands from a width of 4 mm upwards, these can be eqipped with a V-shaped bead in order to achieve separation with a wider sealing seam. These heating bands are mainly used for thinner films.

T-profile heating band: these are used when sharp-edged separation is required with only a limited sealing seam width for thicker films.

Form sealing bands
The special form heating bands provide a solution to the most complicated form sealing tasks. Form heating bands can be manufactured in almost all shapes and are available in different thicknesses.

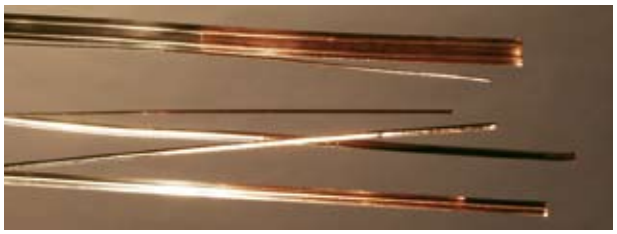
Embossing
Even embossing sealing, such as expiry date, company logo, etc., can be performed by eqippping the top bar with a flat heating band and the bottom bar with a special embossing strip (photo). The embossing strip is engraved according to customer requirements.

We also manufacture heating strips for your specific application. Zebra heating strips for interrupted sealing seams for example are therefore possible (see photo below). Consult us concerning your "heating strip wishes".

Flat heating band


Hollow band


Double-seam band



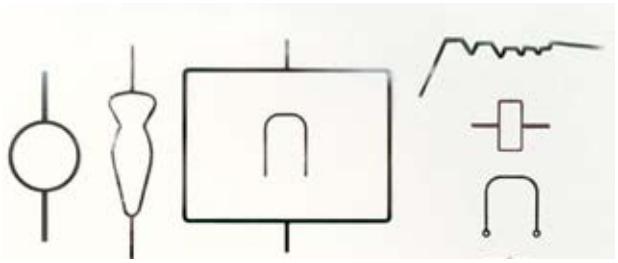

Separating wire


Bead heating band


T-profile heating band

Sealing and separation in a single operation


Separating wire | Bead heating band | T-profile




Example of a special heating band: Zebra heating bands for interrupted sealing seams

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Heating bands
for different applications

Model	Flat heating band	Order no.	Bead heating band	Order no.
CONIFORM 220 N	2 x 0,12 mm 220/320 mm SK	1 000 004	2 x 0,12 mm 220/320 mm S, SK	1 000 011
CONIFORM 300 N	2 x 0,12 mm 300/500 mm SK	1 071 249	2 x 0,12 mm 300/500 mm S, SK	1 071 287
HT 380 / Special	4 x 0,25 mm 380/580 mm SK	1 071 071	4 x 0,25 mm 380/580 mm S, SK	1 071 134
HT 580 / Special	4 x 0,25 mm 580/780 mm SK	1 070 156	4 x 0,25 mm 580/780 mm S, SK	1 002 470
HT 780 / Special	4 x 0,25 mm 780/980 mm SK	1 070 513	4 x 0,25 mm 780/980 mm S, SK	1 070 512
HT 980 / Special	4 x 0,25 mm 980/1.180 mm SK	1 071 090	4 x 0,25 mm 980/1.180 mm S, SK	1 071 541
HT 1180 / Special	4 x 0,25 mm 1.180/1.380 mm SK	1 070 517	4 x 0,25 mm 1.180/1.380 mm S, SK	1 002 475
HT 1380 / Special	4 x 0,25 mm 1.380/1.580 mm SK	1 002 377	4 x 0,25 mm 1.380/1.580 mm S, SK	1 002 480
H 180	4 x 0,25 mm 180/380 mm SK	1 071 344		
H 220	4 x 0,25 mm 220/420 mm SK	1 071 073		
H 280	4 x 0,25 mm 280/480 mm SK	1 071 070		
H 380	4 x 0,25 mm 380/580 mm SK	1 071 071		
H 580	4 x 0,25 mm 580/780mm SK	1 070 156		
SZ 100	4 x 0,25 mm 100/300 mm SK	1 002 149		
SZ 220	4 x 0,25 mm 220/420 mm SK	1 071 073		
SZ 280	4 x 0,25 mm 280/480 mm SK	1 071 070		
SZ 380	4 x 0,25 mm 380/580 mm SK	1 071 071		
SZ 580	4 x 0,25 mm 580/780 mm SK	1 070 156		
SZ-S 100	4 x 0,25 mm 100/300 mm SK	1 002 149		
SZ-S 220	4 x 0,25 mm 220/420 mm SK	1 071 073		
SZ-G Mobile 380	2 x 0,15 mm 380/580 mm	2 014 319		
Fermant® 22 N	4 x 0,25 mm 220/470 mm SK	1 071 502	4 x 0,25 mm 220/470 mm S, SK *	1 071 575
Fermant® 40 N / LH / LP	4 x 0,25 mm 400/650 mm SK	1 071 074	4 x 0,25 mm 400/650 mm S, SK *	1 071 550
Fermant® 60 N / LH / LP	4 x 0,25 mm 600/850 mm SK	1 071 498	4 x 0,25 mm 600/850 mm S, SK *	1 071 578
Fermant® 80 N / LH / LP	4 x 0,25 mm 800/1.050 mm SK	1 071 499	4 x 0,25 mm 800/1.050 mm S, SK *	1 071 577
Fermant® 120 N	4 x 0,25 mm 1.200/1.450 mm SK	1 071 501	4 x 0,25 mm 1.200/1.450 mm S, SK *	1 071 576
Fermant® 40 N-2M-T	4 x 0,25 mm 400/650 mm SK	1 071 074		
HTM 1000 N / LP	6 x 0,25 mm 1.000/1.200 mm SK	1 002 701	6 x 0,25 mm 1.000/1.200 mm S, SK *	1 002 818
HTM 2000	6 x 0,25 mm 2.000/2.200 mm SK	1 002 716		
HTMST 1000 / LP	6 x 0,25 mm 1.000/1.200 mm SK	1 002 701		

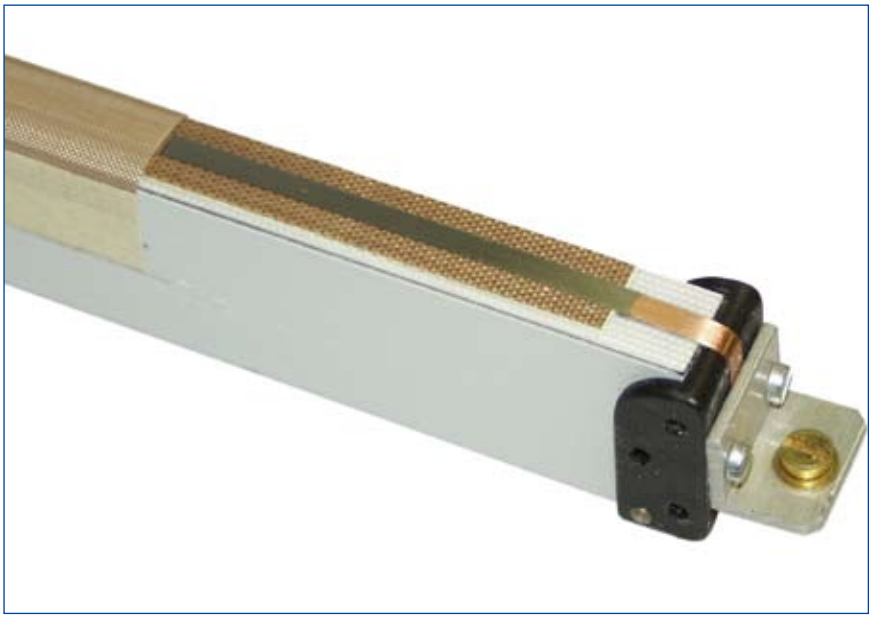
Key: SK = angled edge, S = bead

* not for LH and LP versions

Sealing bars
for packing machine building

Product information

Sealing bars
We can supply you sealing bars up to 3,500 mm in length for installation by the customer. The sealing bars can be equipped with the most diverse types of heating bands. The impulse unit output required depends on the length of the sealing bar. The sealing bars are installed in palletising packing systems of well-known manufacturers. Likewise, these sealing devices are used for the most diverse individual fields of application.



Product information

Water-cooled sealing bars
In order to avoid excessive heating of the sealing device with a high pulse rate, it can be prepared for water cooling. The water circulating through the rail body absorbs the excess heat and is cooled again in the connected cooling unit.

Function principle
The device cools the liquid to the desired temperature of between 10 °C and 25 °C. A built-in stirrer in the insulated liquid reservoir ensures good mixing of the liquid and intensive heat exchange. The temperature of the liquid therefore remains constant. The cooling temperature can be optimally adjusted using a keyboard on the device. The current temperature is displayed by LED for control.

Owing to the water cooling, a constant temperature of the bar body is achieved. This is a basic prerequisite for optimum and above all consistent quality sealing results.

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Accessories and materials subject to wear
for sealing bars

Product information

Non-stick covering
The non-stick covering serves to cover the heating bands and prevents adhesion of the film after sealing. Available in different sizes by metre.

Silicone glass hard fabric
The silicone glass hard fabric serves as an eletrical insulation layer between the bar body and heating band and guarantees rapid heat dissipation. Simply apply with the double-sided adhesive-film Isotac (small illustration). Also available in different sizes.

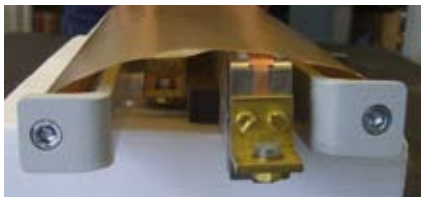
PTFE fibreglass, self-adhesvie
The PTFE fibreglass is additionally glued to the silicone glass hard fabric for longer sealing bars and allows improved heating band glide.

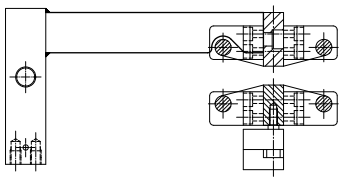
Silicone rubber
The slicone rubber serves as a counter-layer with single-sided heating. It is used with our sealing bars, our SP 4 sealing press that is in great demand and in many other applications too.

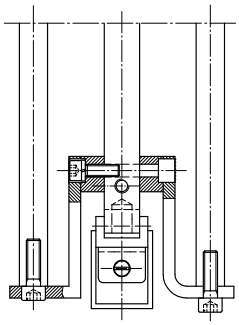
Product information

Heating band tensioner
This small tool is used to optimally tension the heating strips on the sealing bars. Simply clamp the heating strip in the groove of the pin and roll on the heating strip – hey presto!

Teflon coverings
The alternative to the non-stick coating. We can equip almost all our appliances with a device for Teflon coating. The Teflon fabric is stretched over the bars. If an area of the fabric is worn, turn a few millimetres forwards and a new coating will be available – without time-consuming removal of the sealing bars!







Impulse units
analog and digital

Product information

Analog pulse generator
In order to be able to seal films using the thermal pulse sealing method, it is important to heat the sealing bars in a controlled manner. A pulse generator is necessary in order to generate the necessary voltage at the sealing bar. The pulse generator output is governed by various different factors, such as for example the length and cross section of the heating strip or the type and thickness of the film to be sealed. A potentiometer makes infinite adjustment of the required pulse time possible.

Digital temperature control
The pulse generators can also be equipped with digital temperature control for special applications. Use of this control is meaningful with a larger number of items per minute and a requirement for absolutely consistent seam quality.

Process data recording
Since process data recording is constantly increasing in importance, we offer resistron temperature control with an interface for a large number of our devices. A connection with a PC is established via this interface. All the current sealing parameters can be recorded and analysed with the aid of the software provided.

Process data recording via software

Digital temperature control

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Pinhole devices
for manufaturing porous film

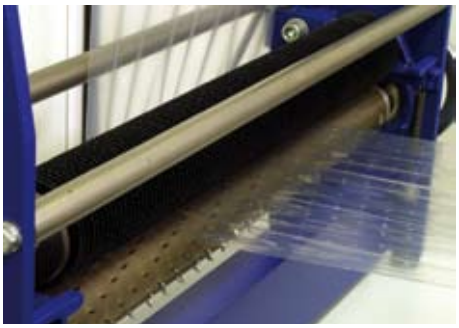
Product information

Pinhole devices are used in conjunction with film blowing units, bag manufacturing machines or wrapping units. Perforated films are mainly used for shrink packaging and in addition, wherever the film is intended to provide air compensation. The pinhole devices consist of a roller equipped with needles and a low-wear counter-pressure brush roller. The brush roller (Ø 65 mm) can be raised manually from the needle roller.

The normal version of the needle roller (Ø 50 mm) consists of a base axle and two screw-fitted carrier shells for the needles. The edging of the carrier shell and the corresponding fixing holes cannot be equipped with needles.

Equipment of the carrier shells with a special customer-specific needle pattern is possible. Minor deviations in the predetermined needle pattern cannot be completely avoided however owing to the manual manufacturing method. The carrier shells are replaceable and can be redressed at the factory if desired. The needle and brush rollers are not driven; the self-driven film is transported through the perforating station.

The brush roller presses the film on to the needle base and the contact pressure exerted by the own weight of the roller is reinforced by spring resistance. The needles therefore perforate the film. The needle and brush rollers are driven by the own movement of the film. The needles remerge from the film by the rotation of the rollers and the film is perforated. The input and output angle of the film to the needle roller should be approx. 15° for optimum perforation results.



We will be pleased to supply needle devices with their own drive in special dimensions and pneumatically operated raising of the brush roller on request.