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SAFETY FOR MAN, MACHINE AND PROCESS



Contacts that protect life.



Pressure-sensitive Safety Devices

Safety Edges HSC® | Safety Mats HSM® | Safety Bumpers HSB®

parkan.ua

Safety for Man, Machine and Process

Since 1987, our family business has developed to become a world-wide active specialist in industrial safety. With own subsidiaries and sales partners in all important industrial nations of the world, we are at the disposal of our customers for all questions of safety at work.

The requirements of the market make it necessary to constantly review our products and redesign them on the highest-possible level within the framework of the applicable standards and directives.

Our organisation is certified to ISO 9001:2008. In addition, in May 2011 we have introduced the Full Quality Assurance System (FQA) according to Annex X of the Machinery Directive MRL 2006/42/EC for the product series HST® and HSV® and certified by the Testing and Certification Body in DGUV Test, Committee Electrical Engineering.

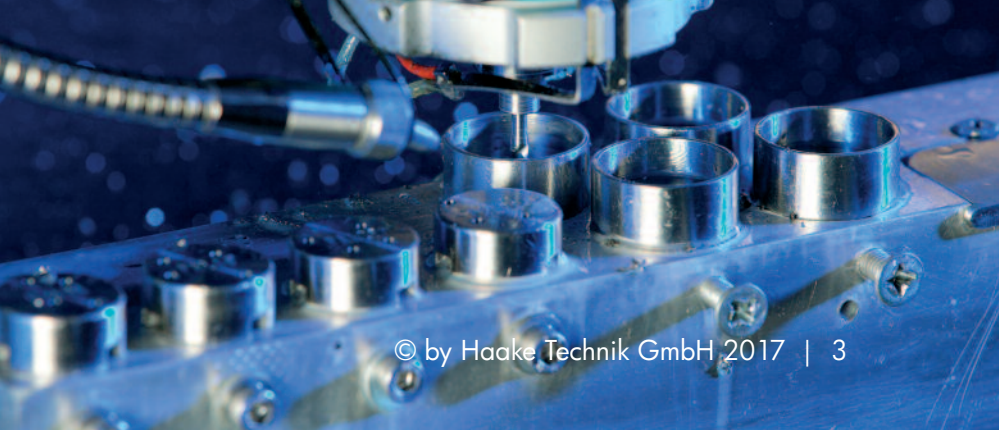
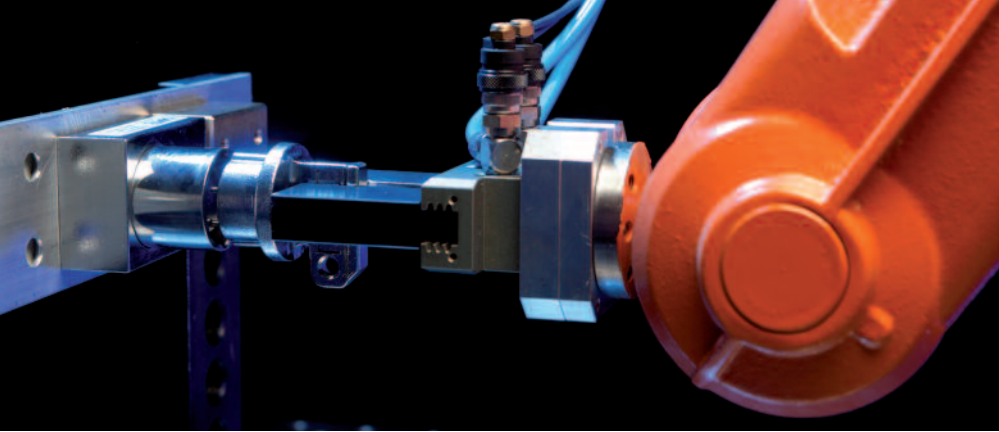
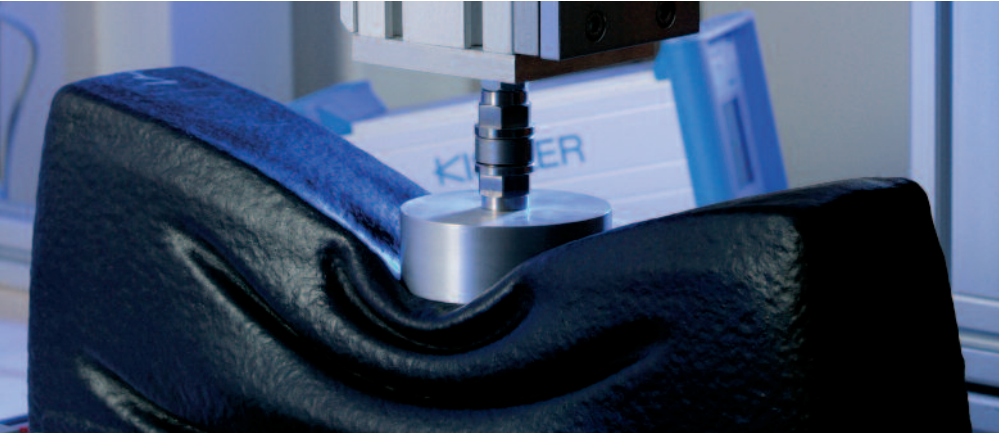
The Full Quality Assurance System (FQA) allows us to market these product series HST® and HSV® without further testing by notified testing laboratories. This is mandatory for safety components independently brought on the market and not being covered by harmonized European standards.

Our ambition with regard to safety goes even further: Regularly, we have a selection of our products tested and certified by independent bodies (BG ETEM).



Oliver and André Haake

**Inspecting,
measuring,
testing,
using...
merciless!**



Pressure-sensitive Safety Devices Safety Edges HSC®

Safety Edges HSC®

For the protection against risks at shearing and crushing edges

Shearing and crushing edges at automatically driven devices bear a substantial risk of injury for persons. To protect against these risks, Safety Edges are employed.

Crushing and shearing edges may occur at automated machine doors, lifting tables, theatre stages, automatically opening and closing doors and many others. Safety Edges, when activated, will immediately switch off the power source.

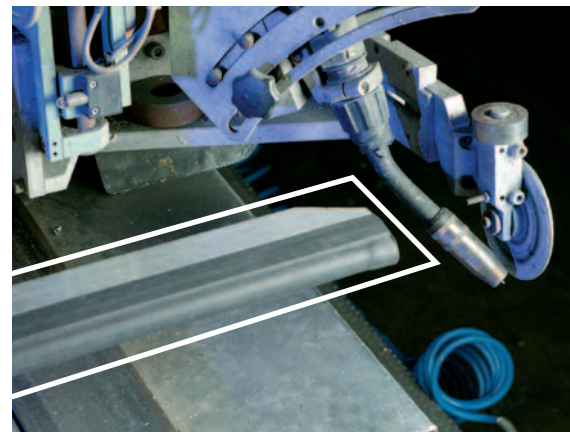
Our Safety Edges use a unique high-integrity principle with mechanically opening N/C contacts connected in series. Pressure on the safety edge will positively break the current circuit.

We offer a large range of variants, which are selected depending on the application (indoors/outdoors/dry/wet/aggressive media) and inertia forces and speeds at the crushing position.



Safety Edge with mechanically opening contacts (Haake Contact Chain®)

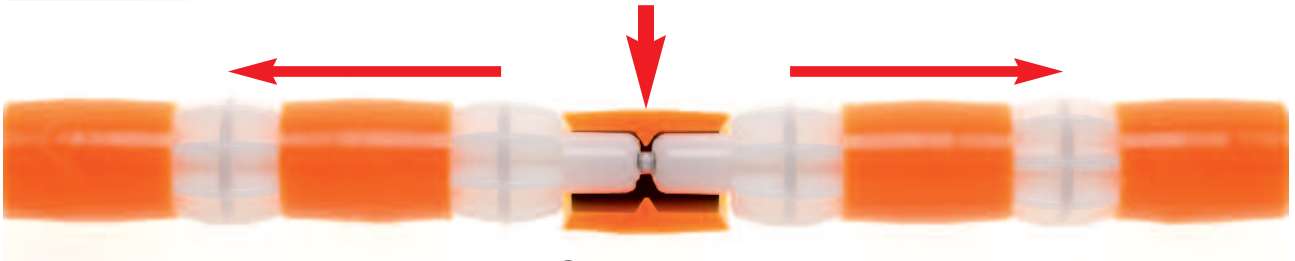
- no additional control unit required
- wired directly to existing E-stop relay unit
- operated from any direction
- supply of ready-to-use Safety Edges according to customer's specification
- various versions depending on application:
 - indoors/dry
 - indoors/aggressive media
 - outdoors/wet
- BG approved



Design and mode of operation of the Safety Edge HSC®



Contact closed



Contact open

Our Contact Chain® is built up of current conducting contact rollers and insulating intermediate elements (wedge rollers) alternately lined up on a so-called expander cord. By pretension, the contact rollers are pressed together, and the current circuit is made.

Actuation of the safety edge leads to at least one pair of the contact rollers to separate by action of the

wedge-shaped intermediate elements, and the current circuit is broken.

Since a circuit interruption signal is directly available, transformation of the output signal is not required. This signal is fed to the safety relay unit already needed for the E-stop button.

The sensor portion in the safety edge is immediately behind the front of the rubber profile. The separation

of the contacts is not caused by a bending of the Contact Chain, but by a transformation of external radial forces into axial forces. Even with very low switching forces and after a very short actuating travel, actuation will lead to a turn-off function.

You will find detailed product information and data sheets under www.haake-technik.com.

The most important standard profiles at a glance

Basically, every application is different. Moving masses and speeds vary in every application. For this reason, we offer a wide range of safety edges having different over-travels/heights.

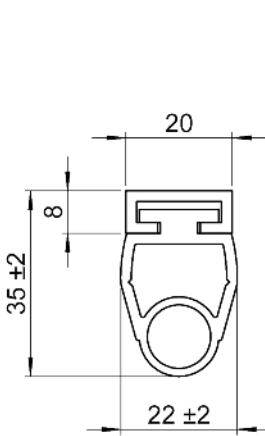
Since the environmental and mounting conditions may also vary in every application, we kindly ask you

to inform us precisely about your specific application. We will then check whether it is reasonable and/or feasible to design a special solution. Based on our experiences, we have developed a range of standard profiles that can be used for many applications. The advantage of these standard profiles is that they

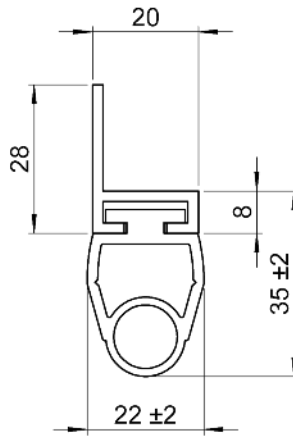
have been successfully tested in many practical cases.

HSC® 35

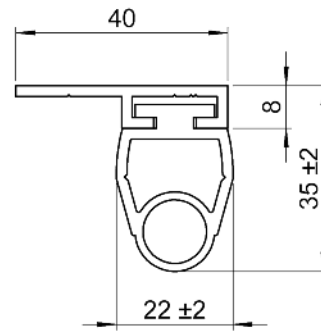
Force/travel diagrams and Technical Data can be found in our data sheets under www.haake-technik.com.



HSC 35-20-01 T



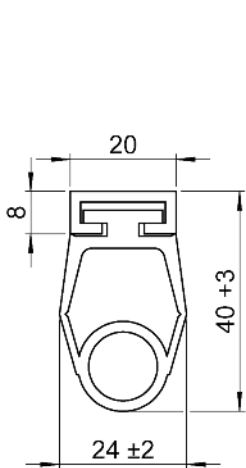
HSC 35-20-02 T



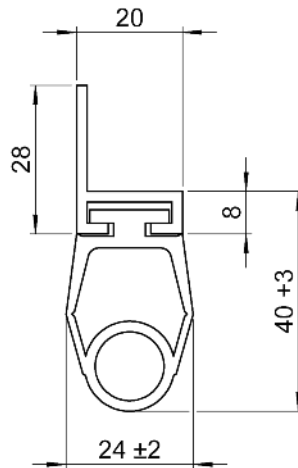
HSC 35-20-03 T

HSC® 40

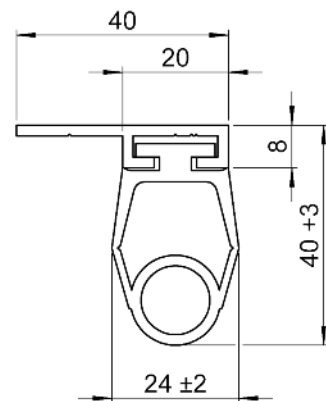
Force/travel diagrams and Technical Data can be found in our data sheets under www.haake-technik.com.



HSC 40-20-01 T



HSC 40-20-02 T

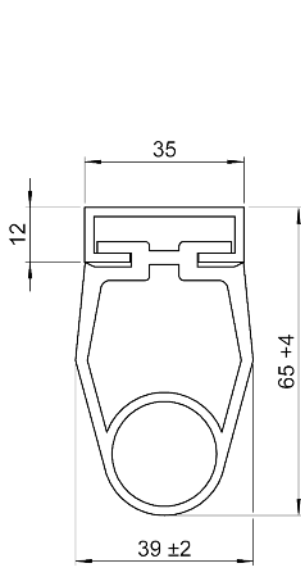


HSC 40-20-03 T

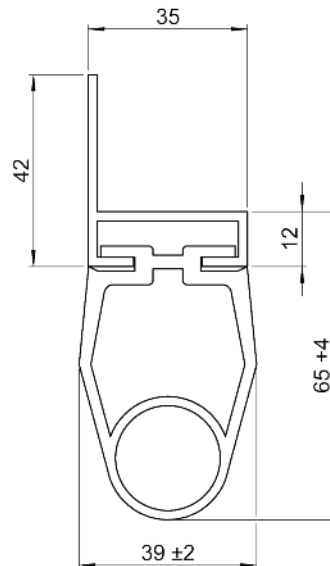
The most important standard profiles at a glance

HSC® 65

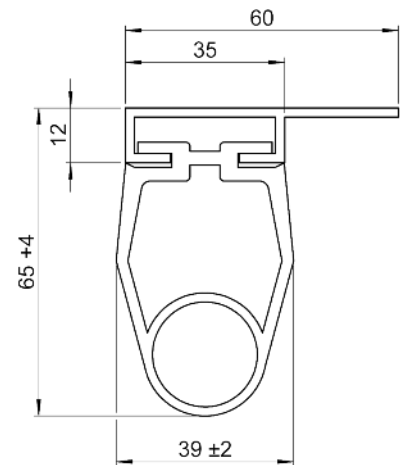
Force/travel diagrams and Technical Data can be found in our data sheets under www.haake-technik.com.



HSC 65-35-01 T



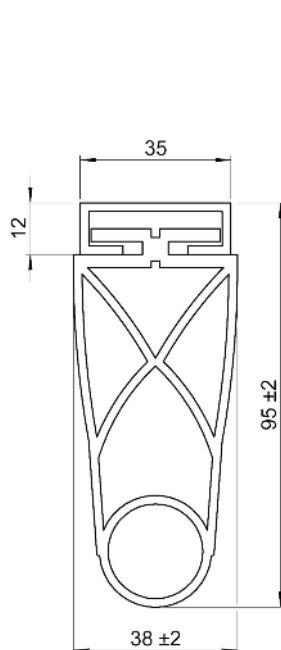
HSC 65-35-02 T



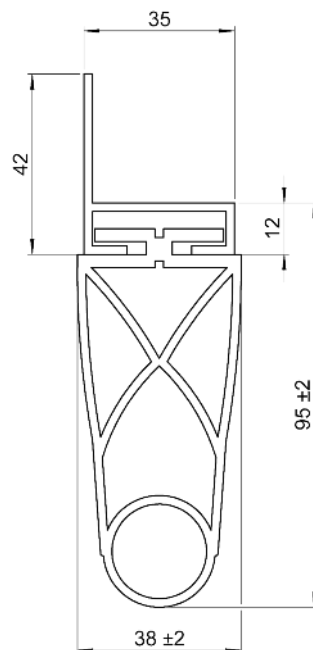
HSC 65-35-03 T

HSC® 95

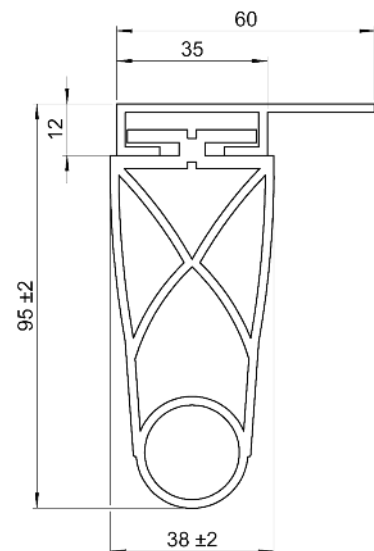
Force/travel diagrams and Technical Data can be found in our data sheets under www.haake-technik.com.



HSC 95-35-01 T



HSC 95-35-02 T



HSC 95-35-03 T

Pressure-sensitive Safety Devices

Safety Mats HSM®

Safety Mats HSM®

For the protection of hazardous areas

Safety mats are employed to protect hazardous areas at machines and other equipment.

When a person steps on the Safety Mat HSM®, it will immediately switch off the power source. As long as the person stays on the mat, the machine cannot be restarted.

Our Safety Mats are equipped, similar to our Safety Edges HSC®, with mechanical, positive-opening contacts. Therefore, an additional safety control unit is not needed.

The contact mat is placed between polyurethane mats protecting it against environmental influences. The cover material has a slip-resistant structure. The Safety Mats are manufactured in the size specified by the customer. Larger areas are achieved by placing several mats side by side. Around the final mat surface, an aluminium border trim is installed and fixed onto the ground by screws.

Very different conditions of use can be found in practical applications. In your enquiry, please specify them so we can select the most suitable configuration. In order to meet the respective conditions, we use polyurethane as a standard material for the outside cover. Other materials may be possible, please ask us. The surface structure can also be varied, depending on the actual conditions. In order to reduce the risk of slipping, the cover material is checked.

Pressure-sensitive Safety Devices Safety Mats HSM®

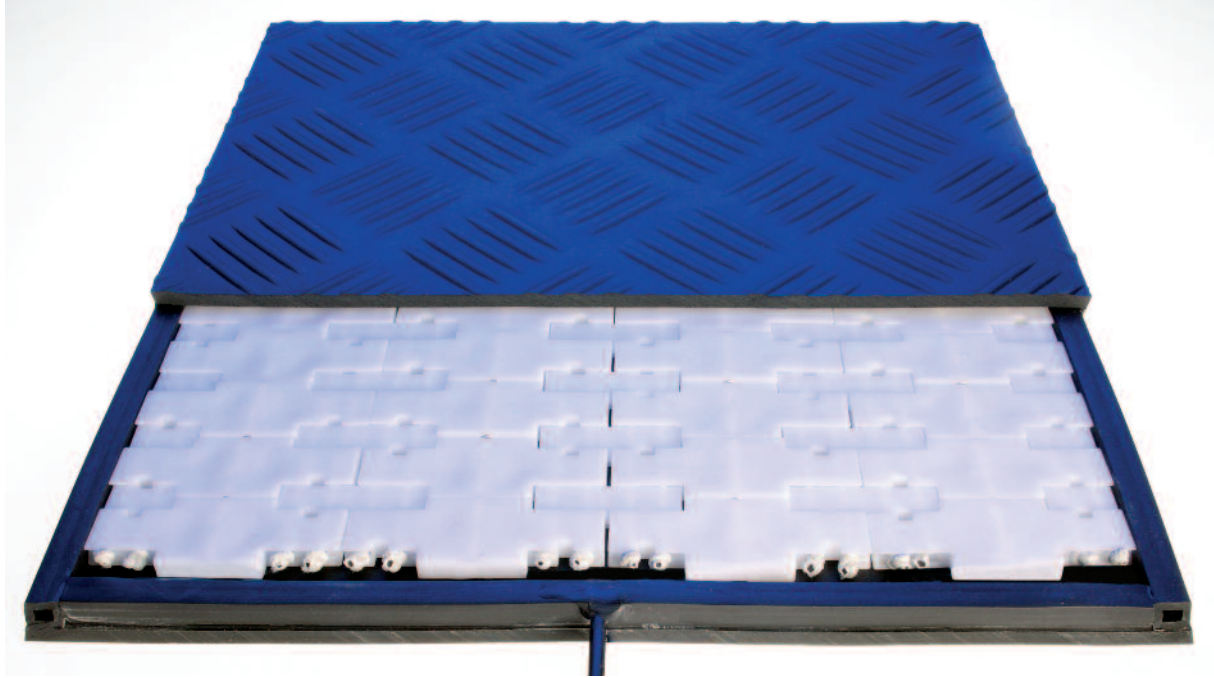


Safety Mat HSM® with mechanically opening contacts



- no additional control unit required
- wired directly to existing E-stop relay unit
- suitable for harsh environments
- different surface materials depending on application
- dimensions to customers' specification
- supply of ready-to-use Safety Mats including machined ramp trim
- BG approved

Design and mode of operation of the Safety Mat HSM®



Our Safety Mats HSM® are built up of mechanically opening N/C contacts connected in series, in the form of a contact mat – similar to the unique Haake Contact Chain®.

Current conducting contact plates and insulating intermediate wedge-elements are alternately lined up on an expander cord. By pretension, the contact elements are pressed together, and the current circuit is made.

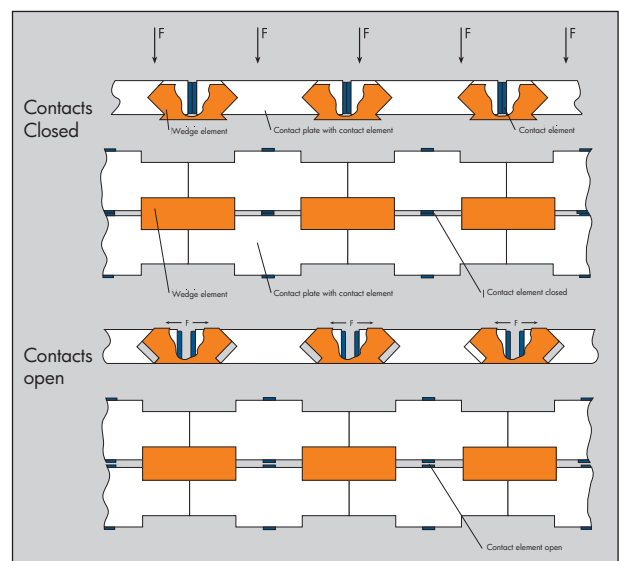
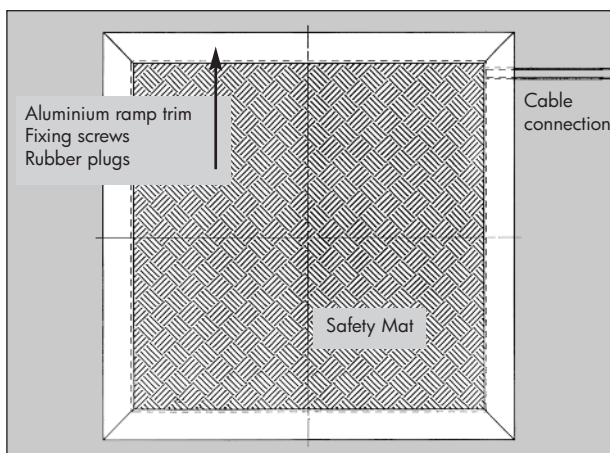
When stepping on the Safety Mat, the wedge elements separate at

least one of the contact elements. The current circuit is broken.

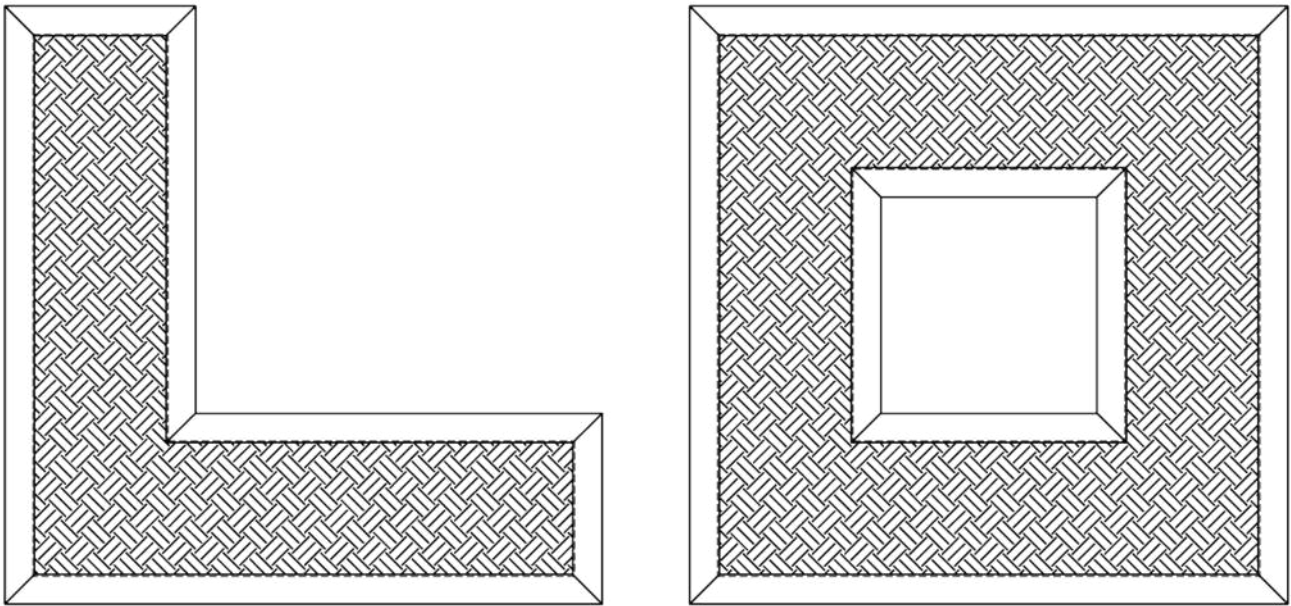
Since a circuit interruption signal is directly available, transformation of the output signal is not required. This signal is fed to the safety relay unit already needed for the E-stop button.

The number of the lined-up contact elements and of the wedge elements depends on the size of the Safety

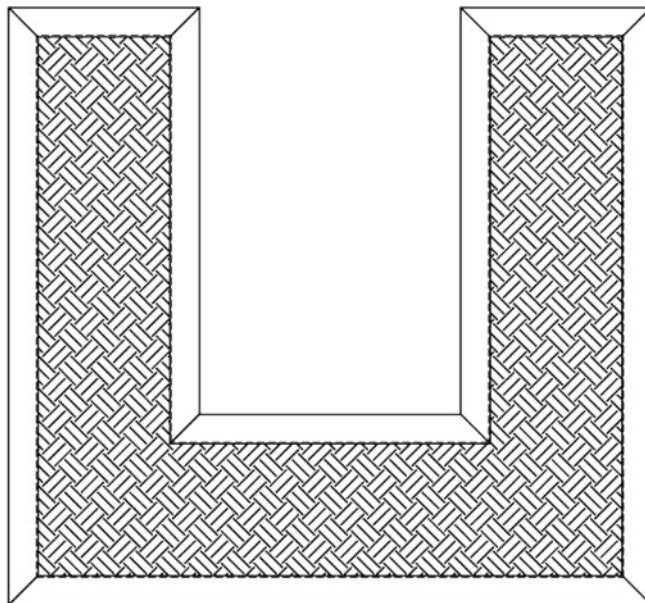
Mat. The Safety Mat is placed between polyurethane mats protecting it against environmental influences. The cover material has a slip-resistant structure.



Special designs of the Safety Mat HSM®



Special designs L-shaped, quadrangular with internal cut-out and U-shaped.



Special designs of the Safety Mat can be manufactured upon request.

You will find detailed product information and data sheets under www.haake-technik.com.

Pressure-sensitive Safety Devices Safety Bumpers HSB®



Safety Bumpers HSB®

**For the protection of
hazardous movements with
large overtravels**

Shearing and crushing edges at automatically driven devices bear a substantial risk of injury for persons. To protect against these risks, Safety Bumpers are employed.

Safety Bumpers, when activated, will immediately switch off the power source. An additional control unit is not required. The signal is fed to the existing E-stop relay unit.

The Safety Bumpers comprise a rubber-foam cushion, in which our

Haake Contact Chain® is embedded. Normally, the rubber-foam cushion is provided with a high abrasion-resistant, elastic polyurethane surface. For applications in harsh conditions, additional materials and solutions can be supplied. Please inform us about your application.



Pressure-sensitive Safety Devices Safety Bumpers HSB®



Safety Bumper with mechanically opening contacts (Haake Contact Chain®)

- no additional control unit required
- wired directly to existing E-stop relay unit
- most various dimensions, shapes, and colours, depending on application
- resistant against many chemicals
- short switching travels
- contact chain immediately behind actuation surface
- signal independent from direction of actuation



Design and mode of operation of the Safety Bumper HSB®



The bumper is made of soft polyurethane foam, in which the contact chains are embedded. The number and the locations of the contact chains are selected according to the size and application of the Safety Bumper.

For a purely linear movement, normally the front side only of the Safety Bumper is used as the actuation surface. In other cases, when the machines also run along curves, the side faces, too, are equipped with contact chains.

The complete foam-rubber body with the embedded contact chains is glued to a carrying plate and fully coated with a polyurethane layer. The colour is black or signal red. Yellow safety stripes can optionally be applied.



You will find detailed product information and data sheets under www.haake-technik.com.

Applications of the Safety Bumpers HSB®

Here you can see a small selection of application examples.

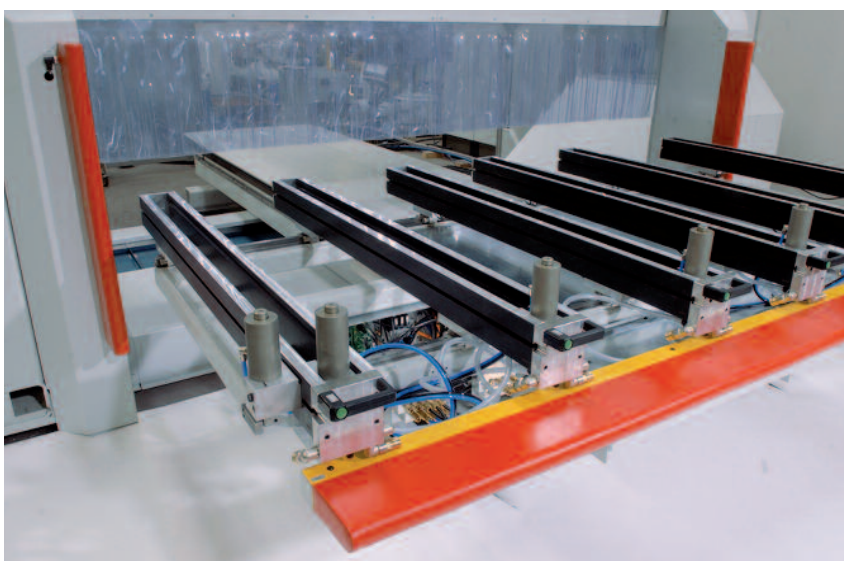
For example theatre stages.



For example CNC machining centres.



For example materials handling.



Interlocking Devices HST®, HSV®



Trapped Key Interlocking HST®

For protecting the operator, dangerous machines and systems are very often equipped with guards (protective doors) including interlocking devices with guard locking. Their job is to prevent dangerous machine functions, when the guard is not closed and locked, and to keep the door locked, until the risk of injury has passed. These functions are carried out by key-operated, mechanical interlocking devices, also called key transfer systems.

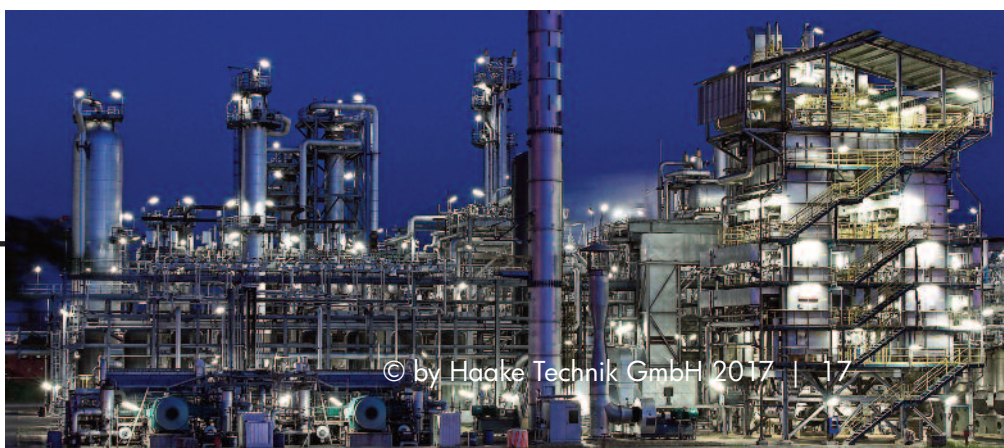
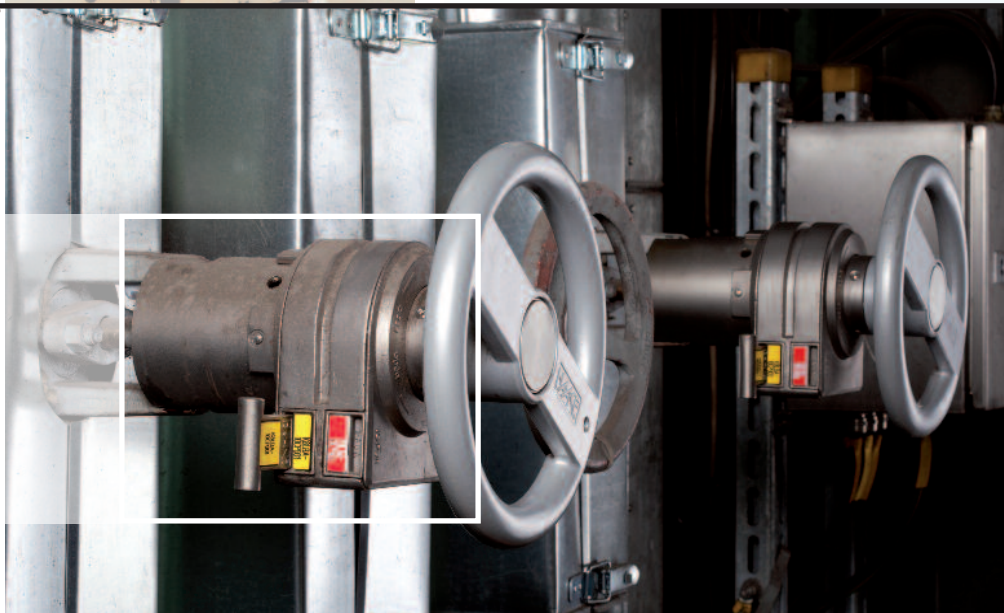
Please note: when using our key transfer system, cables need not be laid to/from the guards as otherwise usual.



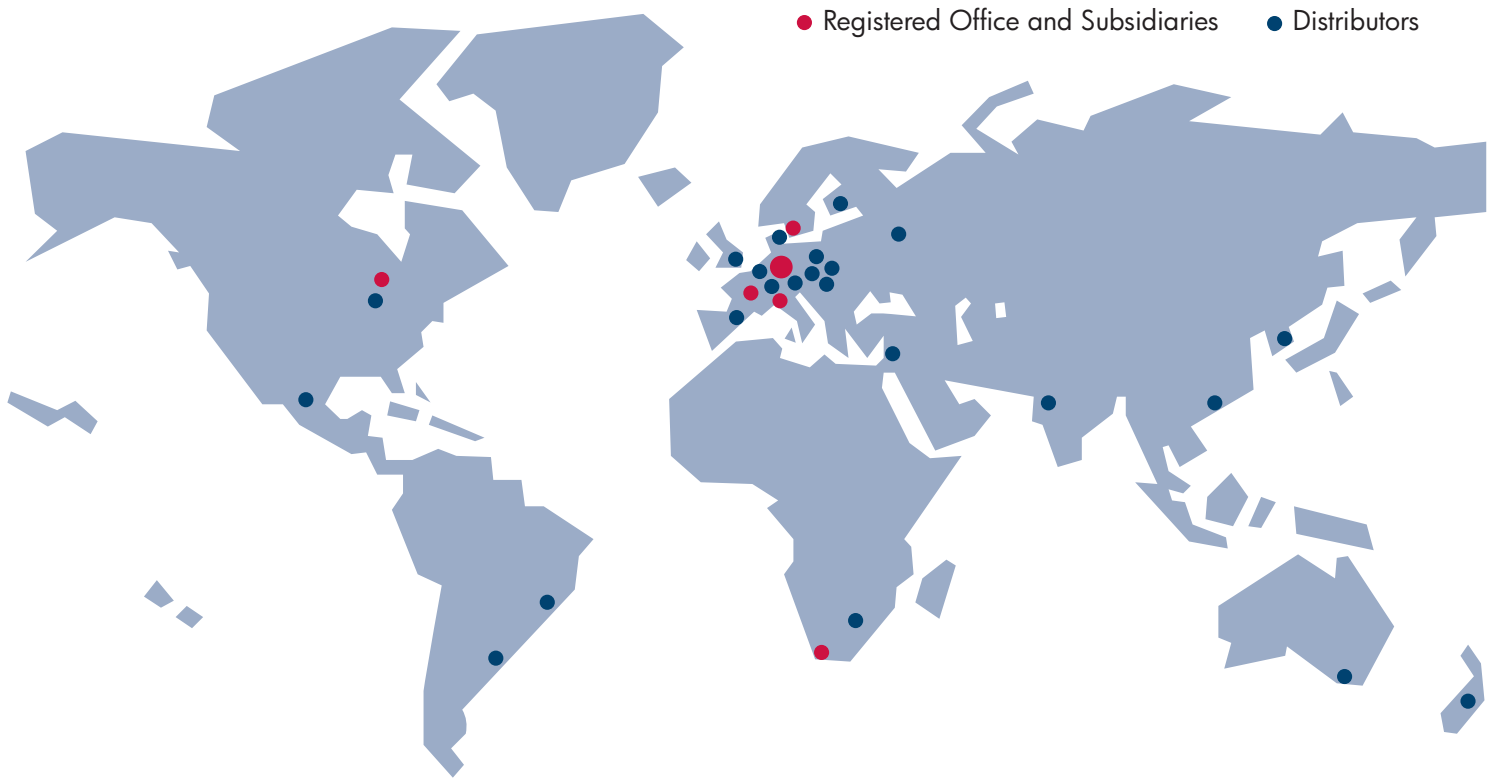
Valve Interlocks HSV®

Valves play a central role in many industrial production lines and power networks. The valves carry out important functions for safety and process control. Correct adjustment and operation of valves is vital for the proper functional performance of complete plants.

Valve interlocking systems assure the controlled opening and closing of valves. They are used, when certain sequences are required for opening and closing several valves, in order to prevent accidents, protect materials, or assure the safety of processes.



Haake Technik Worldwide



With own subsidiaries and distributors, Haake Technik GmbH is present in the whole world at our customers' disposal.

As a family business, Haake Technik GmbH stands with its own name for the high quality of all products and services.

Haake Technik is certified to ISO 9001:2008. The products are „made in Germany“ and tested and certified by independent institutions.

Haake Technik GmbH manufactures and sells

Trapped Key Interlocking HST®

Valve Interlocks HSV®

Safety Edges HSC®

Safety Mats HSM®

Safety Bumpers HSB®

The website of Haake Technik GmbH offers comprehensive information about our whole range.

www.haake-technik.com



Your Distributor

PARKAN.UA

Haake Technik GmbH
Master Esch 72 · 48691 Vreden · Germany
Phone +49 2564 3965-0 · Fax +49 2564 3965-90
info@haake-technik.com · www.haake-technik.com

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HAAKE®

SAFETY FOR MAN, MACHINE AND PROCESS