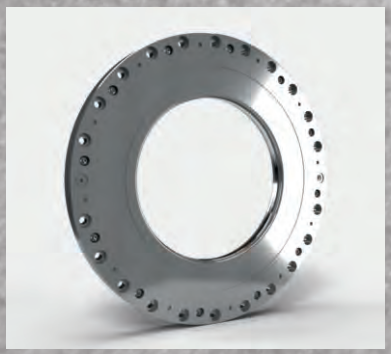
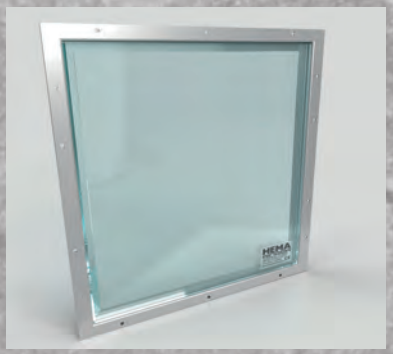
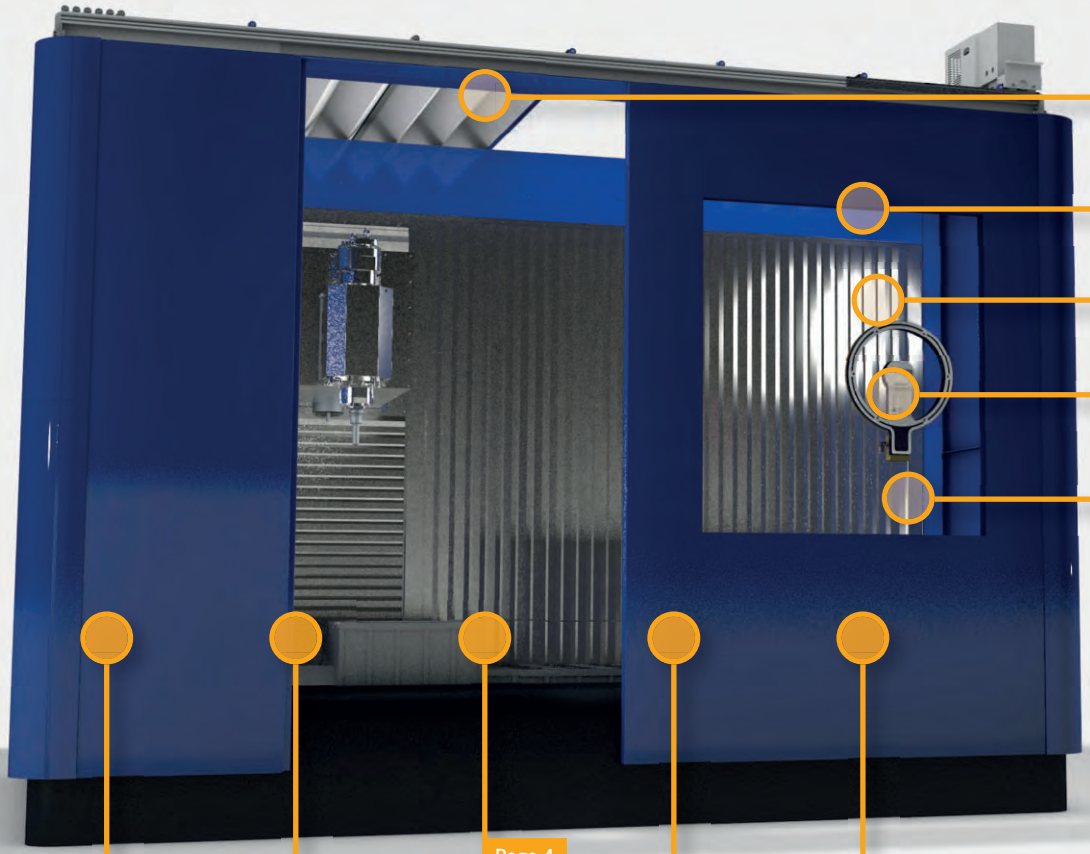
Your partner all around the production machine





HEMA

Our range of products



Roof covers
Page 16

Machine
Safety Windows
Page 24

LED Machine lights
Page 30

Spin windows
Page 26

Backwall systems and
Partition systems
Page 12

Page 4
Bellows
and Aprons

Page 18
Telescopic
Steel Covers

Page 20
Spiral Springs

Page 32
Pneumatic Clamping
and Braking Systems

Page 22
Roller covers and
Link Aprons

HEMA - Your strong partner

For over 45 years we have been developing and manufacturing protection systems for machines. We started in 1977 with the production of bellows - today HEMA offers you a wide range of portfolio around the production machine.

Worldwide, more than 600 employees work at our locations in Germany, Italy, Romania, China and the USA. An international network of experienced sales partners ensures close contact with our customers on site.

Our portfolio for you

With our wide range of products, we provide a comprehensive range of products around the production machine:

Protection systems
We design and manufacture customised bellows, complete rear wall systems, roller covers and link aprons, spiral springs and telescopic steel covers for your individual requirements.

Clamping and braking systems
Our pneumatic clamping and braking systems include products for rotational position clamping in different effective directions, for fast and safe clamping and braking of axial loads or for translational applications for almost any linear guide system.

Vision systems
With our third product area, the vision systems, we offer you safety windows for machine tools, spin windows and LED lighting systems.

Quality - tested and certified
In cooperation with renowned institutes, we carry out special product tests such as impact tests of machine safety windows or acceleration simulation of covers.
In our internal test area, we simulate the long-term stress on our products in endurance tests.
All European production sites are certified according to DIN ISO 9001:2015.

Your tailored product solution

With this compact overview of our product portfolio, we would like to give you an initial overview. We manufacture almost all products individually for you, designed for the respective machine and matched to the application environment.

We will be happy to develop also your tailored product solution - please contact us!

Illustration right: HEMA Headquarter, Seligenstadt


Max. Last 500 kg
最大荷重 500 kg

ELASTIC Bellows

Bellows not only protect machines and devices from contamination, they are also used in many variations for occupational safety. They are used in many areas, whether as guideway protection, for laser, plasma and welding applications or as special versions for medical technology.

ELASTIC Bellows

The ELASTIC bellows comprise a product range with many possible combinations. Their basic components such as material, shape, processing method and dimensions are matched to the respective area of application.

Due to the additional use of sliding profiles, roller or ball bearings, the low-friction process achieves a higher smooth running and thus a longer service life.

The ELASTIC bellows are fastened as standard via metal end frames or Velcro strips.

The main material color for ELASTIC bellows is black, but signal colours such as yellow or white for the medical sector are also available.

Heat-resistant and self-extinguishing materials according to the UL 94 standard are also available.

Design

The essential component of the ELASTIC Bellows is a stabilising PVC frame inside every fold that lends the ELASTIC Bellows high dimensional stability. Reversion to the original shape is therefore assured after direct impacts.

Beside PVC frames PP and Polyamide can be offered as an alternative material for the support frames.

Depending on the individual requirements, the frames are attached to the bellows material with thermal bonding, high-frequency welding (HF) or sewing.

Thermically bonded ELASTIC Bellows are maintenance free, water and dust proof as well as oil resistant and, to a certain extent, acid resistant. The guide frames are bonded under the influence of temperature and with the aid of special fluxes, thereby achieving a permanent bonding between the inner PVC frame and the outer bellow material.

In addition to optimum dimensional stability, a perfect and uniform appearance is achieved. For applications under high temperatures, bellows in sewn design are used. The sewn version consists primarily of high temperature materials. Strong fabrics therefore assure a long lasting solution even under extreme loads.

Mounting

ELASTIC Bellows can be easily mounted on machines and devices with components such as:

- frames of metal or synthetic material attached to both ends and designed to customer specifications
- Velcro tape, easy and fast, maintenance friendly
- clip fasteners combined with metal frames

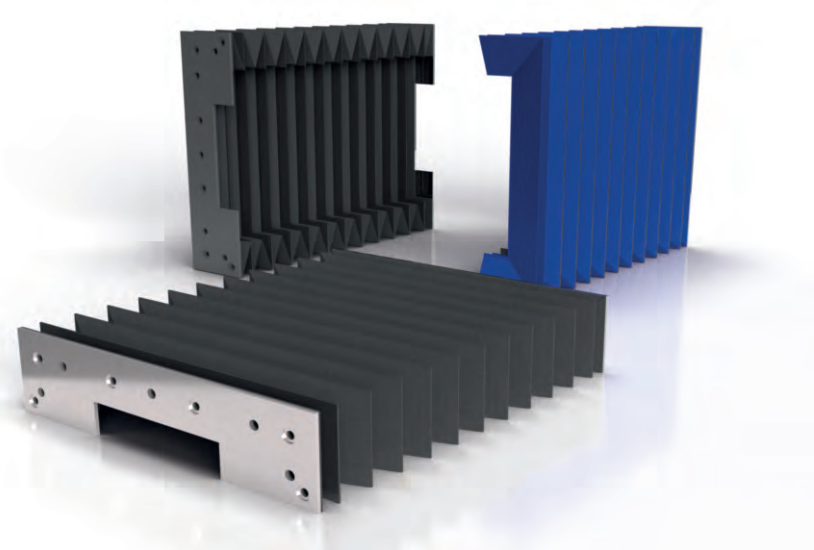


Illustration left: Lifting table bellows
Illustration right: U-shaped bellows

LAMINAT and HF bellows

LAMINAT Bellows
This type of bellows already has a high inherent rigidity due to the combination of two materials and can be manufactured in various shapes. They serve as a protective element for columns, guides, rods, spindles and shafts. The bellows are used, for example, on screw jacks, for measuring instruments as well as in medical and food technology.
LAMINAT Bellows can be used for horizontal and vertical use (also mixed forms) and are characterised by uniform and very quiet running properties.
However, they have a lower resistance to temperature and limited resistance to moisture. Here, especially for covering shafts and spindles, series such as rubber disc or rubber fabric bellows are suitable.

Material
LAMINAT Bellows can be adapted through the choice of basic components, materials, shape, colours, and dimensions. The basic design concept of the LAMINAT Bellows is based on a two-component material.
A manufacturing technique developed to perfection combines the outer material requested by the customer with the appropriate interior material selected by the HEMA designer. For additional stability PVC or metal frames can be added.

Design
LAMINAT Bellows can be designed and produced in a variety of forms. They are primarily used to cover and protect columns and spindles. Rectangular, hexagonal, octagonal and twelve-sided sections are available as well as roof and inclined shapes and Venetian blind style standards.
LAMINAT Bellows are available as split designs as well. The split type facilitates bellow replacement and maintenance, and so is perfect as a retrofit on machines. The bellows can afterwards be closed with adhesive tape, Velcro tape or bonding.

High-frequency welded bellows (HF Bellows)
The HF Bellows reliably protect spindles and shafts against dirt and are resistant to oil and coolants. They can be used horizontally or vertically.
This type of bellows consists of stamped discs which are welded on the inside and outside. It has a particularly good dimensional stability, a high transverse stiffness and is and is characterised by low compression dimensions.

Material
TPU045/080 is used as standard material.

Forms
Depending on the design, the bellows can be equipped with additional support and guide rings made of plastic. These ensure an even distance from the spindle and can thus increase the operating time.

Illustration left: LAMINAT Bellows, open version
Illustration right: HF Bellows

Fabric and rubber bellows

Bellows as protection from dirt or from unattended intervention are available in many types and designs. In addition to our ELASTIC Bellows, we also offer special versions.

Fabric bellows

Fabric bellows are particularly suitable for applications with high wear, strong pressure conditions or higher temperatures up to 200°C.

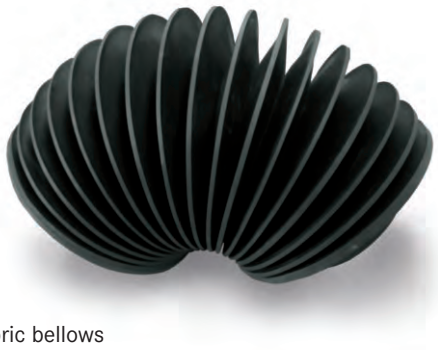
Typical areas of application are piston rods with the resulting high ambient temperatures or cardan shafts.

Fabric bellows consist of a two-component structure in which the carrier fabric is coated with a special plastic.

Fabric bellows are supplied with CR rubber coating as standard. Lamination with Teflon film for high temperature applications is possible as well as special versions in leather and with carbon fibre/aramid or aluminium/fibreglass coating. The fabric bellows contain structural reinforcements to withstand the mechanical forces attaching them.

Rubber disc bellows

This special type of bellows is often used as a spindle protection cover. The individual rubber discs lie directly on top of each other. Since each rubber disk lies flat on the other, excellent compression dimensions will be achieved. They are completely leak proof.



Round rubber discs are used for the standard versions of this type of bellows, alternatively other profiles can be manufactured. The standard rubber disc bellows are made of CSM rubber film, which has particularly good light and weather resistance and is also suitable for use in outdoor areas.

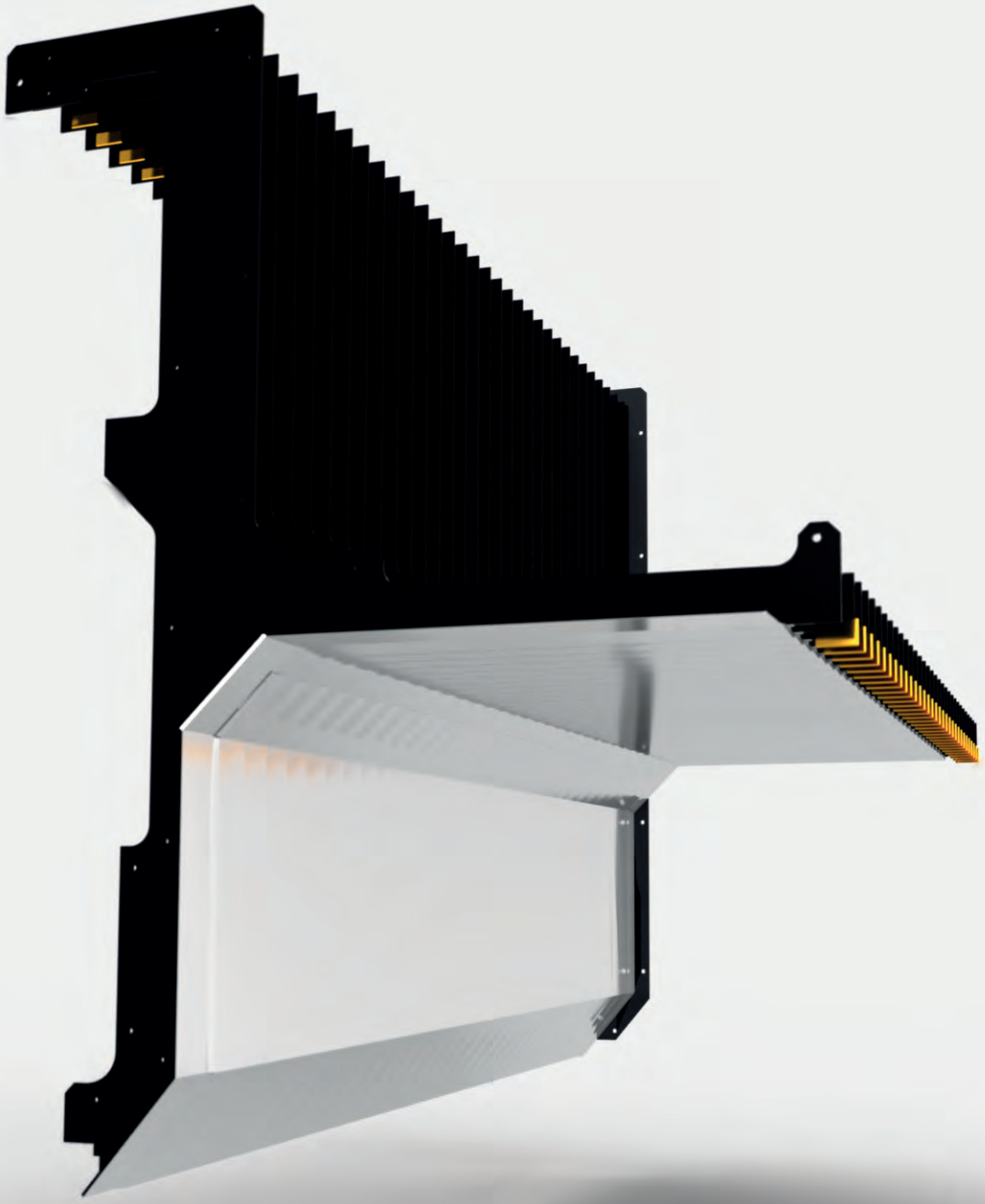
For oil or coolant protection applications, the use of NBR rubber sheeting is recommended. Alternative materials are available for particularly high temperature requirements.

Soft PVC bellows

As moulded parts, soft PVC bellows are mainly produced in large quantities. For these bellows, a minimum quantity of the existing mould is required in order to produce them economically. However, numerous available moulds allow attractive prices even for smaller quantities. For special assembly situations, special versions with zips can also be manufactured.

The standard material used is a special PVC. The bellows are oil-, alkali- and acid-resistant as well as water- and dust-tight. The operating temperature range is between -20°C and +80°C, with a maximum of +120°C for short periods. In addition to the standard colour of black, versions in other colours or in transparent material are possible.

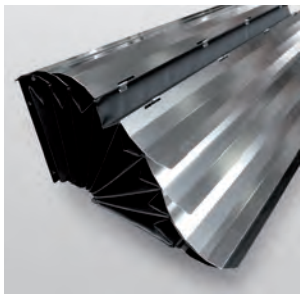
Illustration left: Fabric bellows
Illustration above: Rubber disc bellows



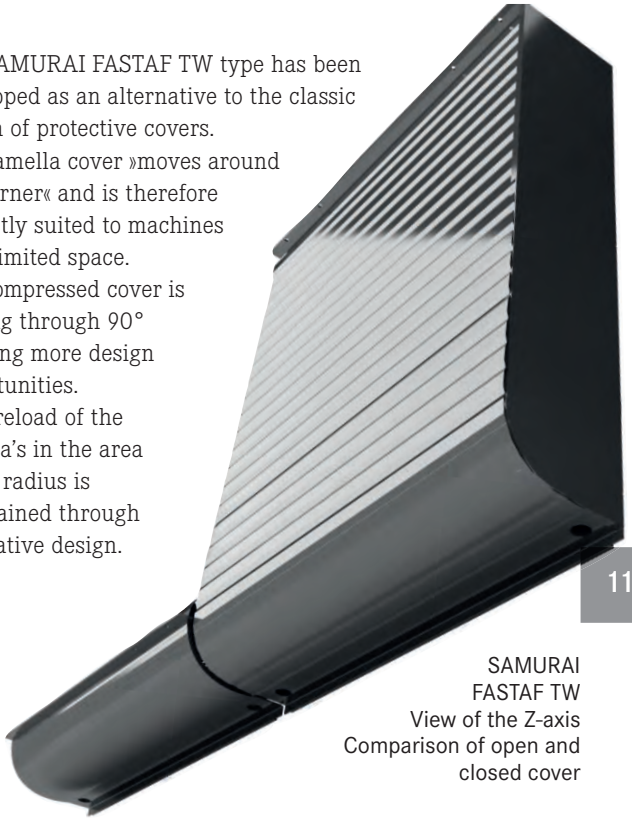
SAMURAI Bellows and Aprons

The SAMURAI bellows are an improvement of the ELASTIC bellows. A special feature of this type of bellows are the lamellas which are attached to the upper edge of the bellows and additionally reinforce the bellows.
This provides effective protection against fast, very hot and sharp-edged chips.
SAMURAI bellows are very well suited for HSC applications. Solutions for machining centres with speeds over 100 m/min and accelerations over 2g have been successfully realised.
The bellows can be mounted on the front, on each of the sides or in any combination of all sides. combination of all sides. The lamellas are made of stainless steel. In addition to numerous standard shapes, individual shapes can also be according to customer specifications. The basic version of the lamella is flat, the end edges are usually formed in the form of a scraper, so that a very good finish is achieved, forming a smooth, dense surface on the SAMURAI bellows. This results in a high contact pressure over the entire area. Thanks to the scraper edge on the lamellas, dirt particles rarely get between the folds of the bellows.

Product types
The SAMURAI bellows are manufactured in different basic types with fixed or flexible or lamellas.



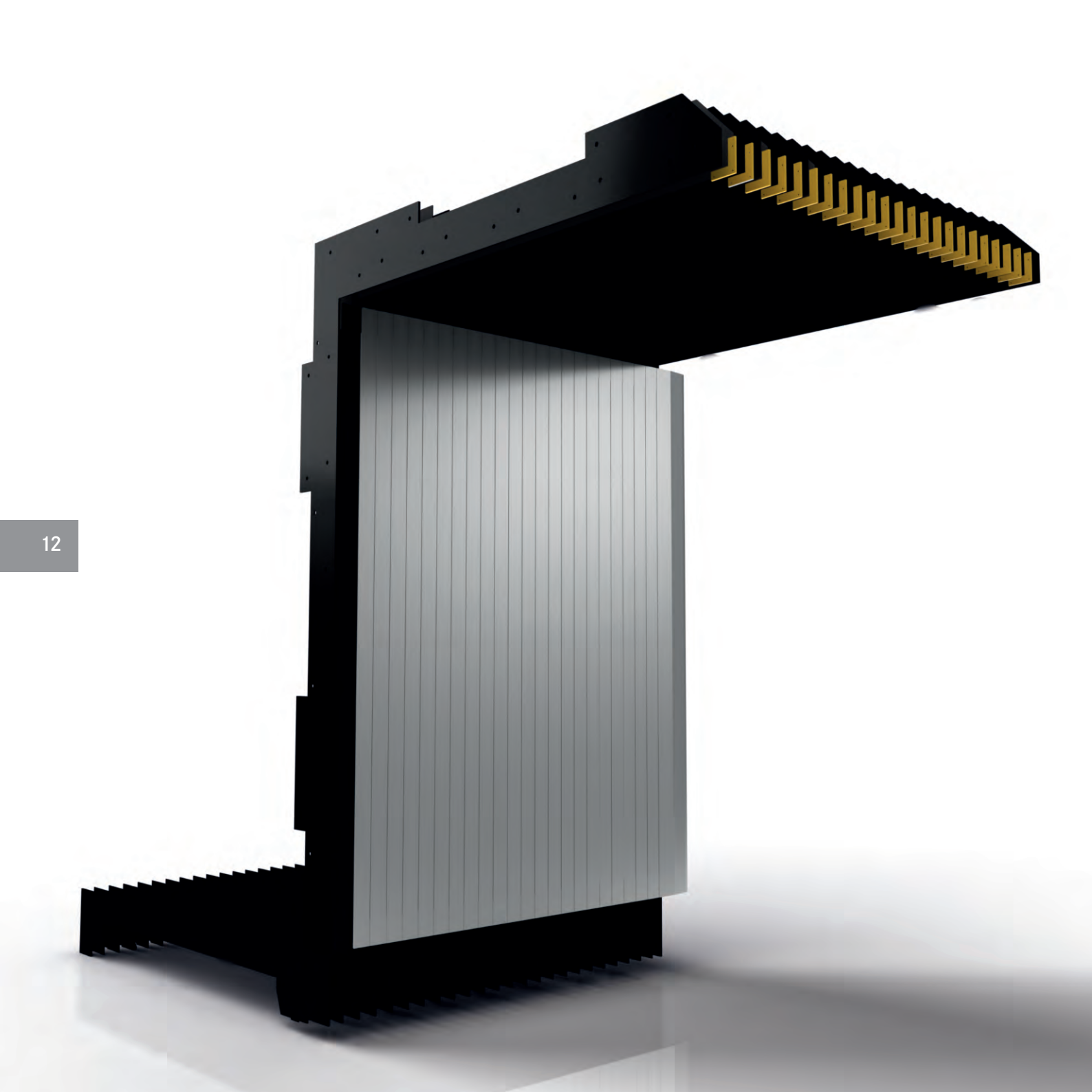
The SAMURAI FASTAF TW type has been developed as an alternative to the classic design of protective covers.
This lamella cover »moves around the corner« and is therefore perfectly suited to machines with limited space.
The compressed cover is moving through 90° allowing more design opportunities.
The preload of the lamella's in the area of the radius is maintained through innovative design.



SAMURAI
FASTAF TW
View of the Z-axis
Comparison of open and closed cover

In addition to SAMURAI bellows, SAMURAI lamella aprons are also available. With this type of cover, the lamellas are are fixed directly to a carrier material.
The lamella aprons are used, for example, as a Z-cover in machining centres.

Illustration left: SAMURAI bellows in Vector design
Illustration above: Fixed lamellas on the left, flexible lamellas on the right



SAMURAI BELLOWS

Special form VECTOR

The FASTAF VECTOR type of bellows is a special solution for machining centres that require a continuous cover of the machining area, consisting for example of the rear wall and roof cover. Due to a special design of the firmly mounted lamellas, an overlapping of the corner area is achieved - thus only one bellows is required for the protective cover.

The existing installation space can be better utilized, and chip contamination can be largely avoided, even in the corner area.

The VECTOR Bellow has two overlapping, folded lamellas, fixed on each fold as chip protection. This design is safe to use even at high travel speeds and accelerations. It can be flexibly designed regarding the inner angles, outer angles or also in a combination of different combined angles.

Covers for one axis

Large bellows are also used to protect the working area of large machining centres. However, the long travels and large working areas of the machines require special solutions in the area of protective covers.

Depending on the design of the machine, rear wall covers can be used according to the moving column or venetian blind principle.

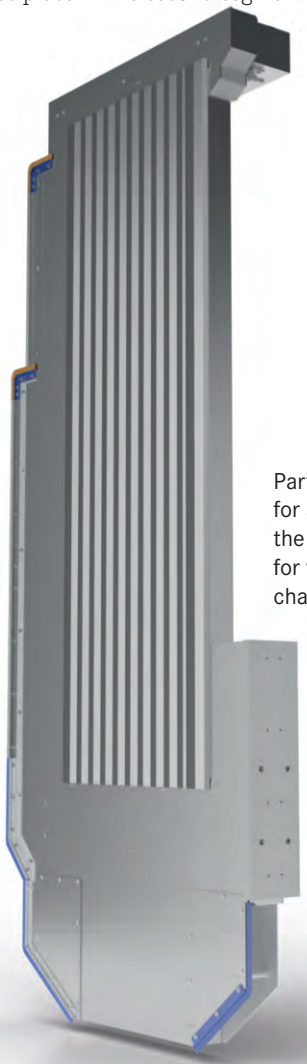
The moving column principle is particularly suitable when the load-bearing, rigid frame claddings on the machines for the upper guidance of the covers are missing. This type is designed in an L-shape and runs on glides.

If a rigid upper guide is available, the bellows is guided by means of profiles, roller or rail systems similar to a venetian blind.

Partition systems

SAMURAI Bellows are also used as a complete solution as partition systems in machining centres.

With the partition system, the machining area is divided, machining can continue in one segment while work piece changing takes place in the second segment.



Partition system for subdividing the machining area for work piece changing

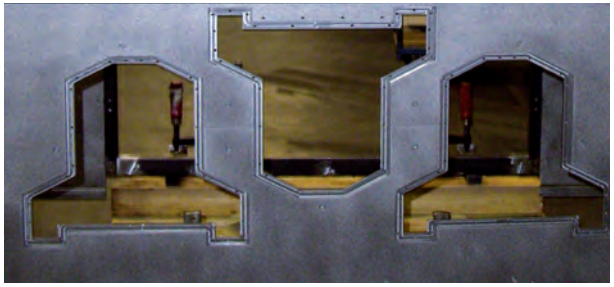
Illustration left: SAMURAI Bellow in moving column design

Backwall systems

Classic machining centres are equipped with complete rear wall systems to protect against chip contamination from the ongoing production process.
The frame construction is made of rigid, torsion-resistant sheet steel, the mounting options for the rear wall are realised by the customer or integrated into the frame construction at the customer's request.

Backwall systems for multiple axes
For the power transmission of the X-axis in the upper and lower area, connections are required on the machine side. For optimum power transmission to the cover of the X-axis cover, it must be connected to the moving column or other load-bearing machine parts at the top and bottom.
SAMURAI bellows are used as rear wall protection; the overlapping lamellas effectively protect the bellows against hot and sharp-edged chips. Additional elements such as scissor constructions can be used to absorb the dynamic loads. The rear wall system can also achieve a travel speed of up to 120 m/min in the maximum dimensions.

RAM System
The spindle is individually adapted to the customer's machine-side RAM requirements.



Development and design
The design and realisation of large protective covers and complete backwall systems is realised by an experienced team throughout the entire process. All relevant data of the machine are included in the development right from the start. Each protective cover is an individual product and not a subsequently modified »of shelf«; only in this way can the best possible integration into the machine tool be guaranteed.

Manufacturing of the components
The individual components of each protective cover are on the most modern machines. Elements such as scissor systems or plastic glides for smoother running are individually selected with regard to application and area of use and designed according to the travel speeds. Before delivery, the individual assemblies are carefully checked for accuracy of fit and smooth function.

Reusable transport system

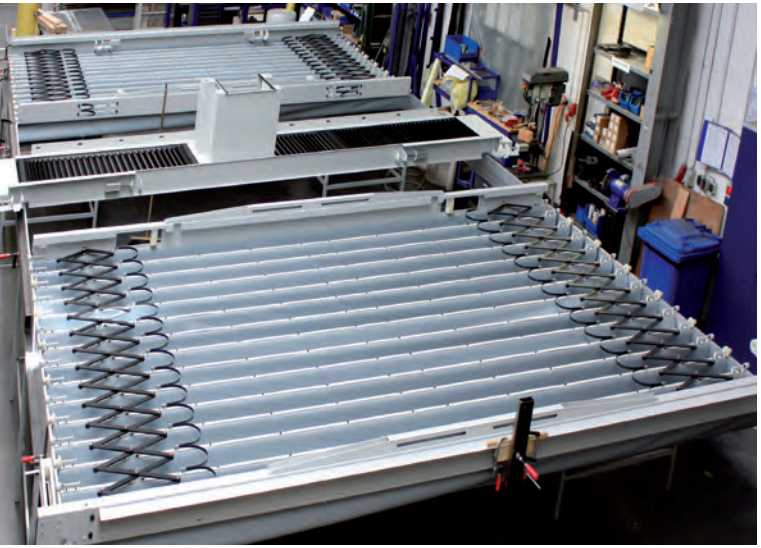
Shipment
The assemblies are shipped in safe, compact packaging. Reusable shipping systems can also be used as an option.

Illustration left: Back panel system with four spindle feed-throughs
Illustration above: RAM for three machining heads

Roof covers for OEM and retrofit

We design our roof covers individually for each machine, whether for the initial equipment of the machine tool or for subsequent retrofit equipment.

Roof covers for machine tools
Machine tools for machining large workpieces are mainly loaded with workpieces from above. If the machining area is not closed during the production process, chips and cooling lubricants can escape from the machine tool into the production environment and cause contamination.



Covers for special applications
However, roof covers are also used in other applications such as 3D printing. Special 3D printers for the production of metal components work in the high temperature range, and the design and choice of materials must be adapted to this.

X-Velo roof cover
The X-Velo is suitable for both initial equipment and retrofitting; modular in design, it can be adapted for systems up to 12 m long and 6 m wide. Travel speeds of up to 75 m/min are possible.
The material used is translucent, so the ambient light from the production hall can be used to support the illumination of the machine room. For opening and closing, the X-Velo can be optionally controlled via the machine tool or alternatively equipped with its own motor and control.
The open profile allows easy cleaning of contamination such as chips.

Illustration left: Roof cover, view from the machining area
Illustration above: Test construction of a roof cover
Illustration above right: X-Velo roof cover, translucent material

GLADIATOR Telescopic steel covers

Telescopic steel covers are one of the traditional forms of cover types for machine tools. They are used wherever effective protection against the ingress of chips and other sharp-edged elements is crucial. The penetration of coolants can also be effectively reduced by design measures and suitable wiper systems. The GLADIATOR telescopic steel covers are individually adapted to the individual machine design. Dimensions from 5 m width and extension lengths of over 15 metres can be realised.

Material
The steel covers are made of high-quality, cold-rolled sheet steel in a material thickness of 1.5 to 3 mm, also in a stainless steel version on request. A suitable cover type (horizontal, vertical, inclining, transverse) with the matching slideway solutions is possible for all common machine types.

Tightness
Due to the design method of the steel covers, complete liquid tightness cannot be guaranteed.
The standard designs provide sufficient protection against the ingress of liquids. In case of extreme loads, additional protection can be achieved by a special channel system or a thermally bonded ELASTIC bellow which is installed under the steel cover as primary protection.
Various components are available to adapt the telescopic steel covers to the individual application.

Wiper
In addition to standard wipers, wipers with exchangeable lip and lip protection are available. All systems have optimised wiper profiles and different degrees of hardness for dry and wet machining. The scraper lips are made from high-quality The wiper lips are made of high-quality polyurethane or synthetic rubber and have very good mechanical and chemical abilities.

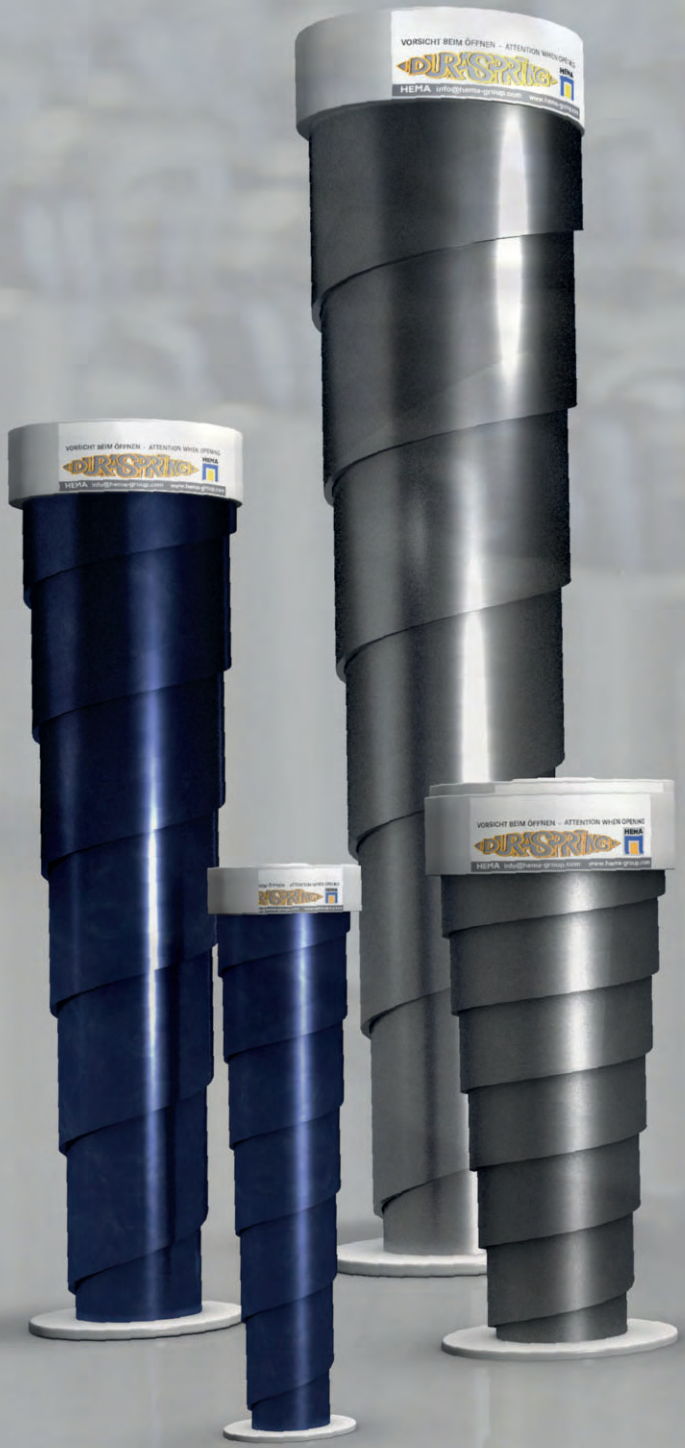
Support and guide glides, support rollers
Telescopic steel covers up to a weight of approx. 50 kg can be supported by support and slide guides. Special profiled brass parts with a support width of approx. 5 mm are used for the glides; these are suitable for hardened and soft guideways. Support rollers should be used for covers with a dead weight of 50 kg or more. Hardened guideways (> 58 HRC) or separate support/guide tracks are required for the support rollers.

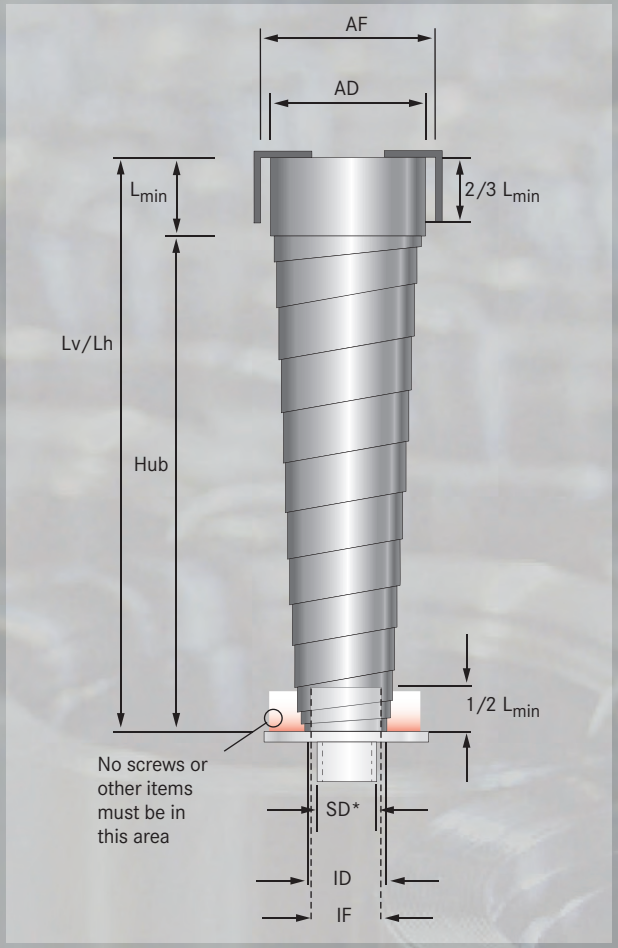
Accessibility, access window
Optionally, the largest box can be made accessible by adding a inspection plate. Access windows can also be installed in the largest box section to facilitate maintenance and repair of the machine parts underneath.

Scissor, slide and buffer systems
For higher travel speeds of over 30 m/min, scissor systems are installed.
Optional dampers are available for both travel directions to reduce shocks, noise or friction.

Mounting
The covers are fixed either directly to the respective start and end box sections or via additional fixing strips/angles, which can be fitted internally or externally.

Illustration left: GLADIATOR Telescopic steel cover in assembly





Legend

SD	Maximum outside diameter of the part to be covered *value is reduced by 6 mm when using flanges
ID	Inside diameter of spiral spring (±1 mm)
AD	Outside diameter of spiral spring (± 2 mm)
Lh	Maximum extension length for horizontal installation position
Lv	Maximum extension length for vertical installation position
BB	Band width, corresponds to L_{min}

Centering flange (deliverable on demand):

AF	Interior diameter of the larger centering flange AD + 4 mm
IF	Outer diameter of the smaller centering flange ID - 2 mm
Option	Through-boring of the flange SD + 2 mm

DURASPRING SPIRAL SPRINGS

Spiral springs are used as reliable protective covers for spindles. For our DURASPRING spiral springs we use high-quality spring steel in various thicknesses; this is formed into a spiral by pressure forming. For the standard spiral springs we use spring steel of of extreme hardness (55-58 Rockwell) with rounded edges and a strength of up to 1800 N/m^2.

The spiral springs are available in two versions:
DURASPRING BLUE - standard spring in blued steel
DURASPRING SILVER - stainless steel version
If the spiral springs are regularly exposed to coolants with a high water content, the use of DURASPRING SILVER is recommended. However, stainless spiral springs have lower spring forces and therefore cannot be manufactured in all sizes.

Sizes
The spiral springs are available in sizes from 15 up to 160 mm inner diameter as standard version, special types are available on request, for vertical use these can be manufactured up to an extension length of 4,500 mm.

Velocity
DURASPRING spiral springs are designed for speeds of up to 40 metres/minute in the standard version.

In individual robot applications, special solutions with almost double speed were achieved. The optimal operating conditions are in oily applications. For fine particles and dust, bellows should be used as an alternative.

Installation/operating position
DURASPRING spiral springs can be used in horizontal or vertical installation position. This installation position is taken into account in the production of the individual spring, no other installation is possible.
Horizontally springs are set to run particularly evenly, so that the coil overlap is greater, the »sagging« is reduced, especially in the case of long extension lengths, and the transverse stability is significantly improved.
For vertically installed DURASPRING spiral springs, longer extension lengths apply in principle than in comparison with horizontal types. The critical design factor for this type is the starting force ratio, as the spring works against gravity, among other things. Vertical types therefore have a high initial force, which ensures that the spiral spring extends quickly when the machine is started/ extended.

Flanges (optional equipment)
Simple centering flanges are required at both ends of the DURASPRING spiral spring for installation. These flanges must allow the spring to rotate to prevent damage to the springs. The springs must be guided so that they can move freely and must not be bolted or riveted.

All standard sizes of the DURASPRING spiral spring can be found here for easy download:
www.hema-group.com/services/downloads
Need a different size? We would be happy to advise you.

Illustration left: DURASPRING Silver in stainless steel

Roller covers and link aprons

Where space is limited, the ROLLER cover systems are the ideal solution. A space-saving alternative to bellows covers when a complete sealing is not required. Roller cover systems without housing are suitable for smaller roller diameters and for shorter extensions. For longer extensions and especially when steel is the cover band material, a housing variant should be selected for safety reasons.
The installation can be vertical, horizontal or transverse, the pull-out to the right, left, up or down.
The ROLLER systems can be equipped with different drive concepts:

- Torsion springs TF: drive separate to band
- SA steel belt motor: cover belt as drive
- Steel belt motor FM: drive separate band
- Electric drive: according to customer specification

Band
Depending on the load, different materials can be used as a cover:

- Steel band, standard stainless: Protection against hot and cold swarfs, cooling liquid
- Plastic bands, e.g. Preotex, owning cloth, neoprene, etc. Protection against dust and cooling liquids, hand protection
- Link aprons: Protection against large chips and coolant, recommended for applications in which additional transverse additional transverse stability of the cover is required

Link aprons
Link aprons are a protective cover that is particularly suitable for frontal protection against chips or coolant or unintentional intervention. In many cases they are operated as a suspended protective curtain or for particularly smooth running via a idle roller. The link aprons offer good mobility, are easy to install and take up little space.

All link aprons are made of hollow profiles with the highest precision. Plastic end caps improve the sliding properties, these are blue in the standard version, other colours are optionally available.
FLEXPRO aprons consist of a highly tear-resistant plastic band material, the metal rods are made of aluminium, brass, steel as flat or half-round profiles.
FLEXSTAR aprons consist of anodised aluminium hollow profiles which are connected by means of a polyurethane connector profile. The FLEXSTAR-S version is fully movable in both directions, the FLEXSTAR-C/CR only allows a one-sided rolling movement, but is more stable in terms of position. FLEXSTAR windows with additional window inserts are particularly suitable for the assembly area or for machine covers with a viewing area.

Roller covers and link aprons with electrical drive
We are also able to manufacture complex solutions with electric drives for you, whether for the initial equipment of your machine or retrofitting for more protection and safety.

Link apron with electric drive

Illustration left: Roller covers and link aprons


HEMA
WINDOW

Machine safety windows

OEM ✓
Retrofit ✓

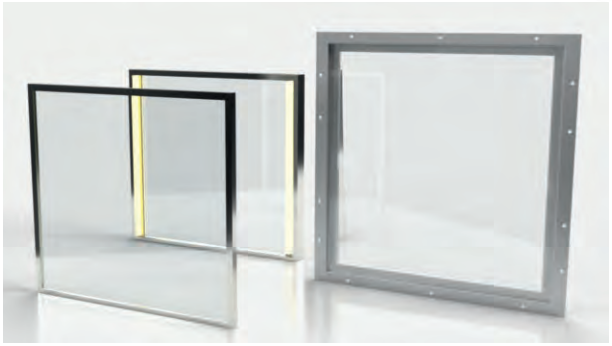
Machine safety windows are protective devices on machine tools. They prevent the ejection of tools, workpieces and fragments from the working area of the machine and to protect persons from injuries caused by flying parts.
According to current tests and stage of development, polycarbonate is the most suitable material for safety windows due to its energy absorption capacity. The retention capacity of an 8 mm thick polycarbonate pane corresponds approximately to a 3 mm thick St 12.03 steel sheet.

However, polycarbonate is sensitive to scratches and is damaged by hot chips and sparks hitting the surface.
In addition, polycarbonate has little resistance to the effects of cooling lubricants, greases and oils, which can cause the polycarbonate to become brittle. As a result, the retention capacity can decrease significantly within a few years and must be replaced; the protective function is no longer fully guaranteed.

»HEMA Window« machine safety windows
The »HEMA Window« machine safety windows are permanently and effectively protected against external influencing factors by their encapsulation and sealing and are designed in accordance with the standards for cutting machine tools:

- DIN EN 23125 for turning machines
- DIN EN ISO 16089 for stationary grinding machines
- DIN EN 12417 for machining centres

The HEMA machine safety windows correspond to the VDMA recommendations and guarantee a restraint system in accordance with the afore mentioned standards..



On the operator's side, the »HEMA Window« machine safety windows are scratch-resistant coated as standard. The glass window to the machine interior can be optionally equipped with a SPINVISTA rotating window. The integration of LED lights is also possible.

Clamp and adhesive connections as well as frame solutions are best suited for installation. The metal frames can be manufactured in various profile shapes.

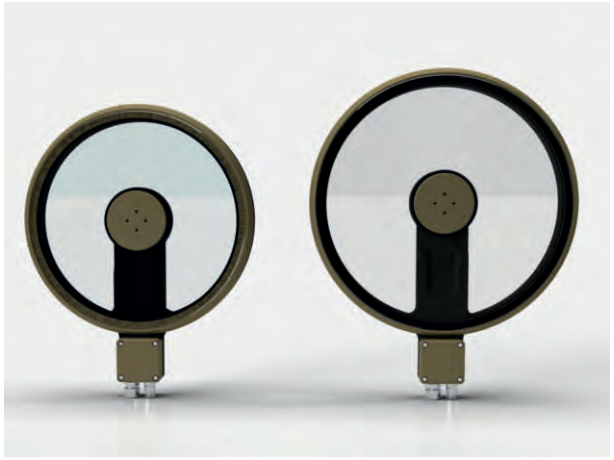
Illustration left: HEMA Window mwith metal frame
Illustration right: HEMA Window with SPINVISTA


SPINVISTA
evo
VDC 24 ± 3 V
Sicherung / Fuse 5 A
Status LED
Leuchtet rot
Blinkt rot
Leuchtet grün
Red light
Flashing red
Green light
Power LED
Leuchtet
Lights on
Gerät in Wartephase
Gerät läuft an
Gerät in Betrieb
Device in standby
Device starts up
Device in operation
Gerät betriebsbereit
Device operational
HEMA
Status
Power

SPINVISTA Spin Windows

SPINVISTA Spin Windows are suitable for all types of CNC high-speed milling machines, lathes and machining centres. They ensure a direct view into the machine during setup and the machining process.
Work ergonomics and productivity are considerably improved by the generous view of the actual machining process in the machine without any visual impairment by coolant or chips.

SPINVISTA Spin Windows types EVO and NEO
The SPINVISTA Spin Window is available in two versions, which differ in the size of the visible surface.

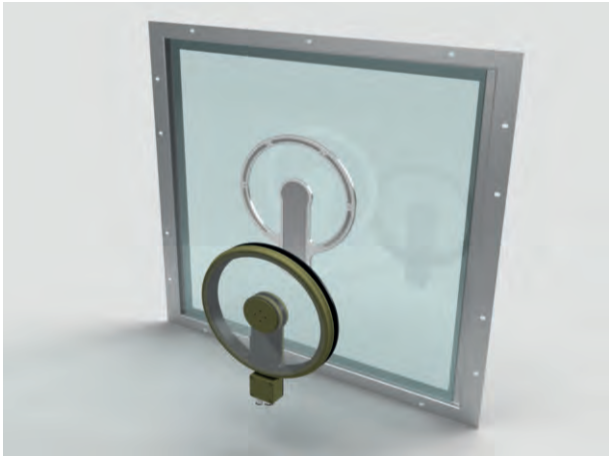


SPINVISTA EVO and SPINVISTA NEO

SPINVISTA EVO: Optimal for the replacement of already mounted systems in case of defect or upgrade, 1:1 compatible with existing mounting systems from HEMA

SPINVISTA NEO: Larger viewing area with proven functionality according SPINVISTA EVO

Installation and mounting
The installation of the SPINVISTA can be carried out in the OEM original equipment as well as in retrofitting without any problems.
Complete solutions - ready-to-install machine windows with already installed SPINIVISTA Spin windows - are also available.



Machine safety window with mounting frame

The installation can be carried out in the operator door as well as in a »fixed« window. The flat design with an overall height of < 32 mm makes it easy to adapt to a wide variety of door and window designs. If there is sufficient space between them, they can also be mounted on sliding doors.

Mounting options
- Adhesive mounting
- Mounting plate
- Direct bolt connection to safety window

Illustration on the left: Direct view of the machining process in the machine

Large viewing area
Optimized housing design for a larger viewing area

Fast brake
Spin disk brakes in a few seconds to a non-critical speed and can be safely touched

360° Position
Installation position freely selectable

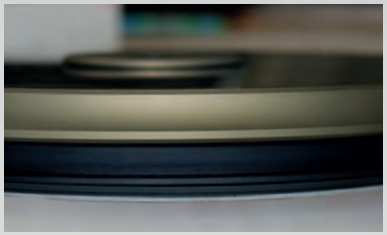
Hard anodized aluminum housing surface
Resistant to abrasion and excellent thermal conductivity

Protection against moisture
Motor and electronics fully sealed, protected against sparking and humidity

High-tech Motor
Brushless DC motor with reverse polarity and overheat protection

Reliable installation
Mounting frame for adhesive mounting

Low height
<32 mm including mounting frame, also suitable for many machine doors



Connection orientation configurable
Three positions selectable, sealing air connection on option

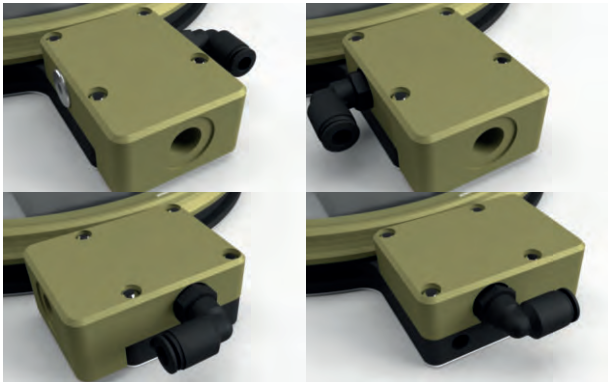
Extremely watertight
Excellent protection against coolant due to labyrinth construction and optional sealing air

SPINVISTA SPIN WINDOWS

Mounting positions

The SPINVISTA can be mounted in any position from 0° to 360°rotated position on the machine safety window, at a vertical inclination of up to 5°. The power supply can be in three positions.

Variable mounting, any position from 0° - 360° possible

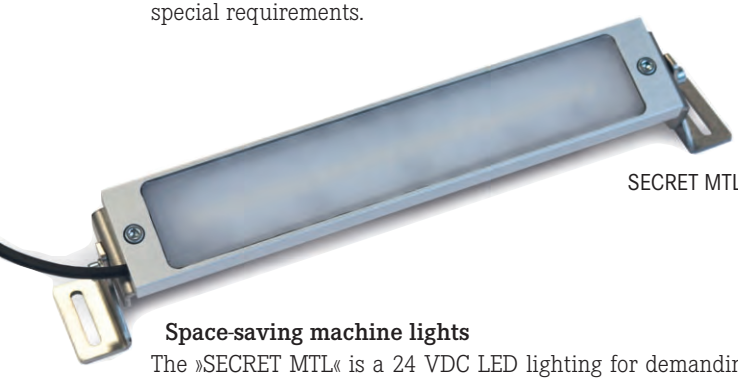


Connection variants, example G1/4

Type	SPINVISTA EVO	SPINVISTA NEO
Application	Milling centers, turning and grinding machines	Milling centers, turning and grinding machines
Operating temperature	+10°C ... + 50°C permissible	+10°C ... + 50°C permissible
Dimensions	Ø 253 mm / 253 x 321 x 31.6 mm	Ø 290 mm / 290 x 358 x 31.6 mm
Inside diameter	Ø 216 mm	Ø 253 mm
Field of view	284 cm²	430 cm²
Nominal voltage	24 VDC ± 3V	24 VDC ± 3V
Current	0.5 A (starting current 3.5 A/24 VDC)	0.5 A (starting current 3.5 A/24 VDC)
Power consumption idle	approx. 12 W (24 V, 500 mA)	approx. 12 W (24 V, 500 mA)
Rotational speed	2.300 U/min	2.300 U/min
Weight	1.8 kg	2.1 kg
Noise	<65 dB (A) DIN EN ISO 11200	<65 dB (A) DIN EN ISO 11200
Overpressure / sealing air	min. 2 mbar, max. 50 mbar (optional)	min. 2 mbar, max. 50 mbar (optional)
Air consumption	~1.1m³/h (at 20 mbar)	~1.1m³/h (at 20 mbar)
Air cleanliness	ISO 8573-1:2010[3:4:3] required	ISO 8573-1:2010[3:4:3] required
Montage	Maximum angle of inclination disc 5° Any orientation of the connection	Maximum angle of inclination disc 5° Any orientation of the connection
Motor	Brushless with blockage and reverse polarity protection	Brushless with blockage and reverse polarity protection

LED MACHINE LIGHTS

LED machine lights are robust, durable and reliable. Whether compact dimensions, additional equipment such as glass covers or space-saving installation - every application has its special requirements.



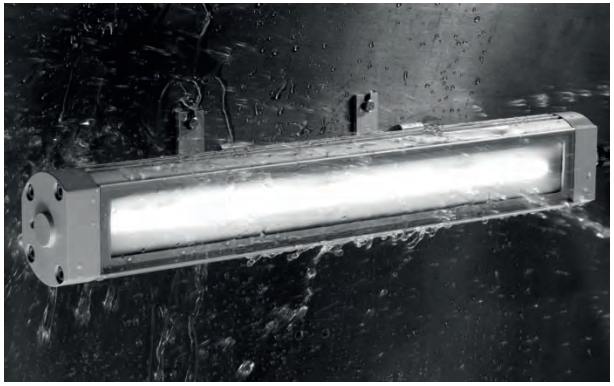
SECRET MTL

Space-saving machine lights

The »SECRET MTL« is a 24 VDC LED lighting for demanding applications. The compact and extremely flat LED lighting strip can be integrated almost invisibly into the machine. With bright light and a very wide beam angle, the »Secret MTL« is suitable both for the original equipment of machines and just as easily for retrofitting.

Machine lights with protective glass

The HE-TRACK-ALPHA LED machine lights are suitable for small and medium-sized machine tools.



HE-TRACK-ALPHA maschine light

Illustration left: Machine light in the working area of a machine

The housing is made of tough, silver anodised aluminium. The 5 mm thick, tempered protective glass ensures diffuse, glare-free light emission due to its matt surface.
The lights can be mounted both horizontally and vertically using optionally available fixings.

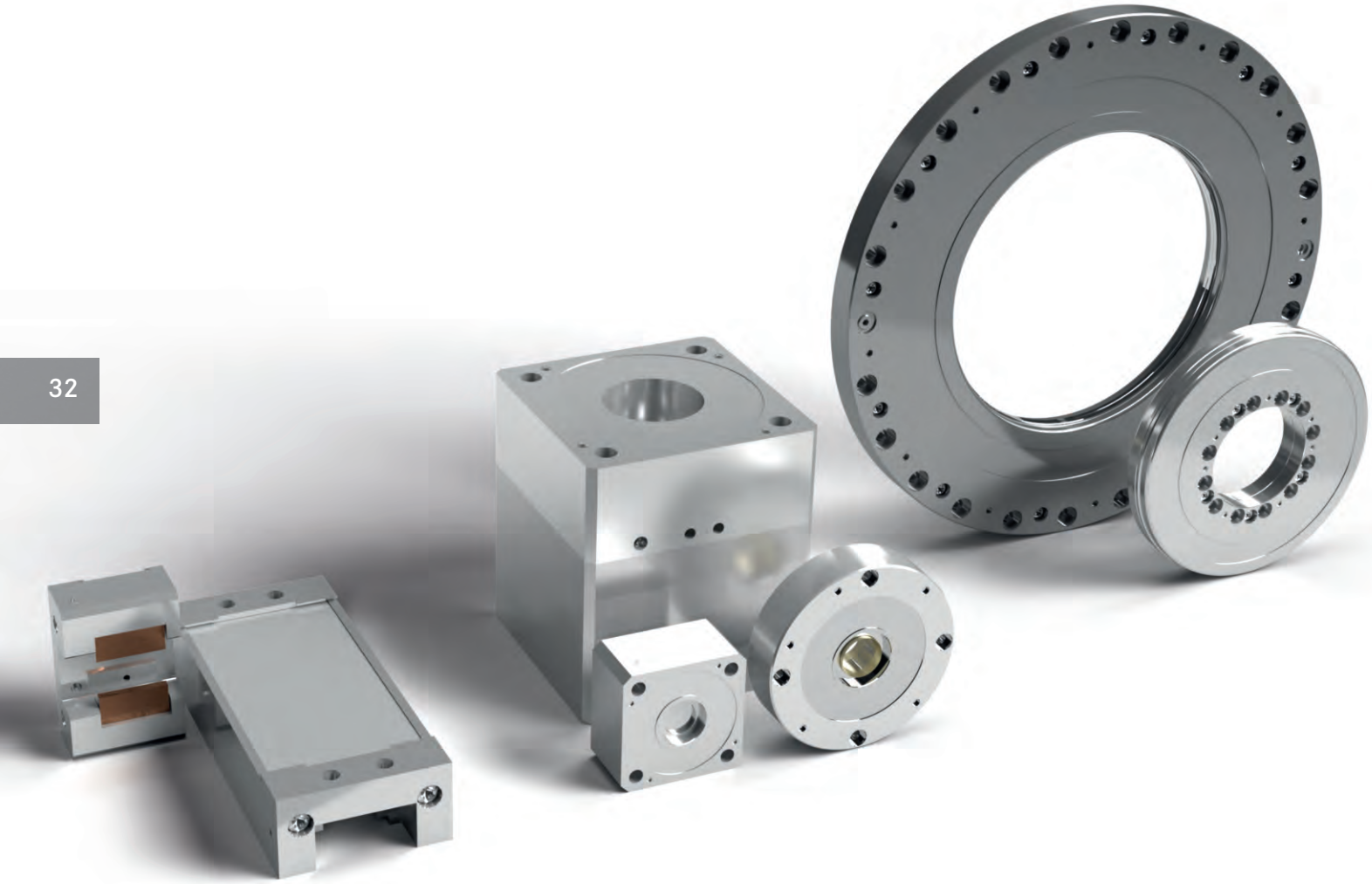
Spot lights

Our spot lights can be installed directly in the machine housing to save space. This also avoids interfering contours where contaminants such as chips or dirts nests.
The HE-P Spot recessed lights are a compact LED lighting system in »spot« design with low space requirements.
The lights head is made of anodised aluminum. The standard colour is black, other colours are available on request.

LED machine lights - the advantages

- Tough design, shock and vibration resistant
- Resistant to many coolants
- Ambient temperature -20°C to +55°C
- LED technology with up to 50,000 operating hours
- UL certified

Our complete product range of LED lighting systems can be found here for easy download, under the heading of vision systems:
www.hema-group.com/services/downloads



Pneumatic clamping systems

HEMA clamping systems offer an innovative, fast and compact solution for the most importa applications.

RotoClamp
RotoClamp is ideal for rotary position clamping in axes, tables and swivel heads of machines. Two versions – Inside and Outside – allow various directions of the clamping function. Tandem versions are also available as an option to increase the clamping moment.

PClamp
PClamp clamps and brakes axial loads quickly and safely. They can be adapted to standard systems such as pneumatic cylinders from leading manufacturers (SMC, Festo, etc.) or to individual solutions. Rotary clamping is also possible with PClamp.

LinClamp
For single linear applications in with emergency braking, the LinClamp systems with sintered linings are recommended. Of course, you can also use LinClamp with steel pads for almost all types of linear guide system for fast and safe clamping.

MClamp
For all applications with manual clamping on linear rails.

The functional principle using the example of RotoClamp
Clamping by spring accumulator. By venting the inner spring diaphragm chamber and venting the outer spring diaphragm chamber, the diaphragm is relaxed and presses on the radial contact surfaces on the inner and outer diameter of the spring. The clamping element is elastically deformed in the area of the clamping surface and presses on the shaft.

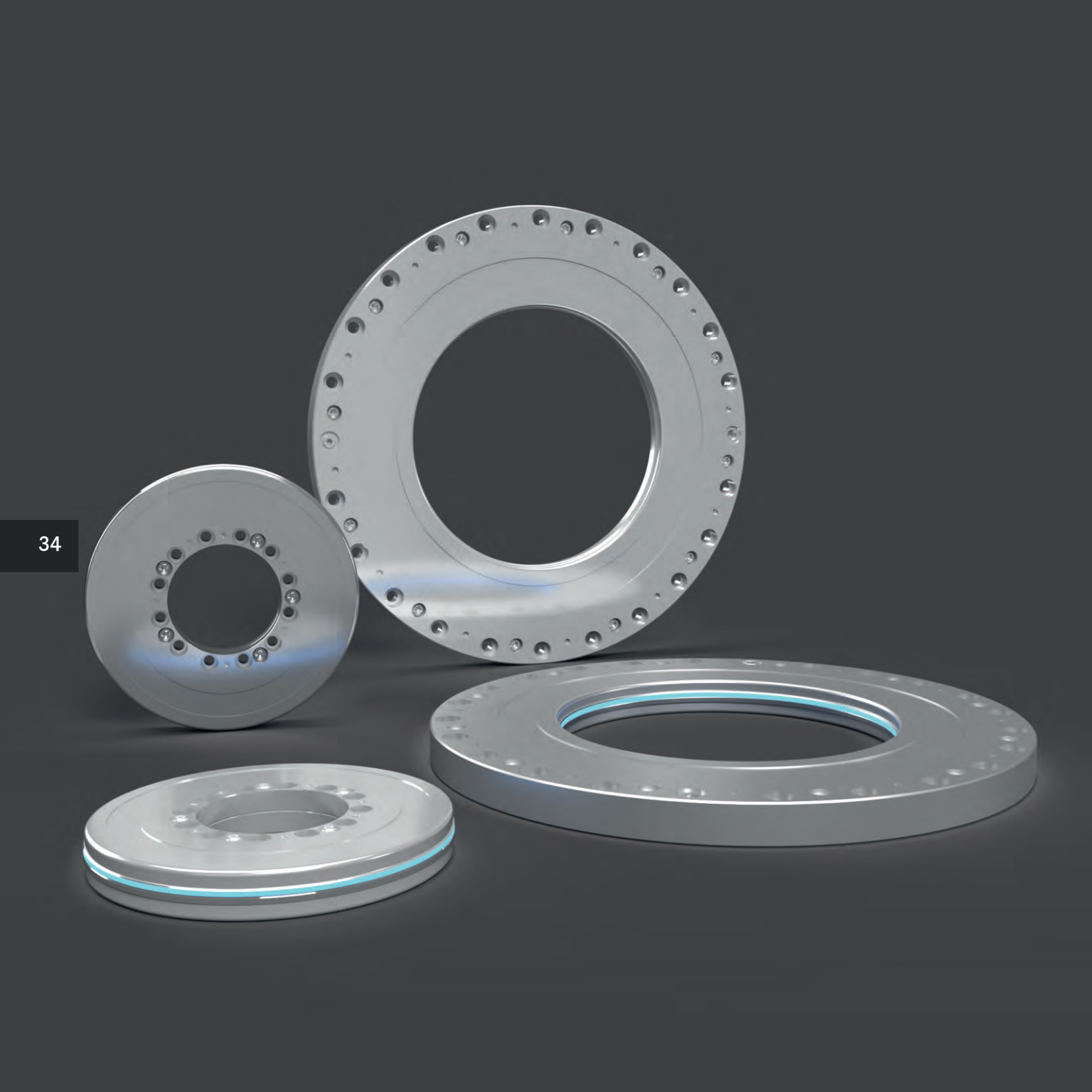
By pressurising the inner spring diaphragm chamber with compressed air and venting the outer spring diaphragm chamber, the diaphragm is bent and the distance between the two radial contact surfaces on the inner and outer diameter is shortened. Radial contact surfaces on the inner and outer diameter of the spring, the clamping surface lifts off the shaft. Optionally, the clamping force can be increased by applying compressed.

The advantages

- **Safety clamping through spring mechanism**
  The axis that is at a standstill in the event of a power failure is immediately clamped.
- **Response times**
  The reaction times are very short thanks to the pneumatics. Extremely short clamping times can be achieved with check valves directly at the clamping can be realised.
- **Materials**
  Clamping body housing in tempered tool steel, clamping flanges optionally available in case hardened steel.
- **Costs**
  Lower costs compared to hydraulic systems.
  Pneumatic valves and pneumatic piping, less installation work, no tuning effort, easy to replace, safety clamping included.
- **Cleanliness**
  Very clean due to pneumatics.

Detailed information on our pneumatic clamping systems can be found here for easy download:
www.hema-group.com/services/downloads

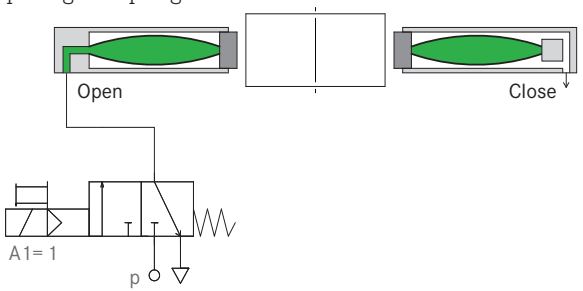
Illustration left: Pneumatic clamping systems



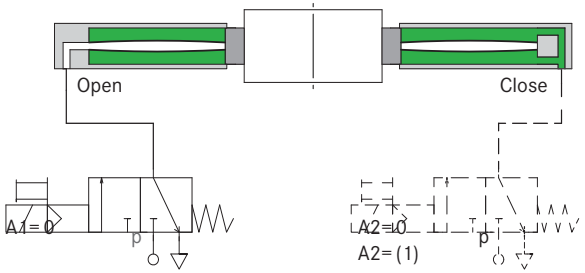
RotoClamp Inside and Outside

Function of the RotoClamp Inside Standard

Opening the spring actuator



Clamping with spring actuator and booster (optional)



Release RotoClamp Inside

Adding pressurized air to the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) bends the diaphragm and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is shortened.
The clamping element is opened in this state.

Clamping RotoClamp Inside

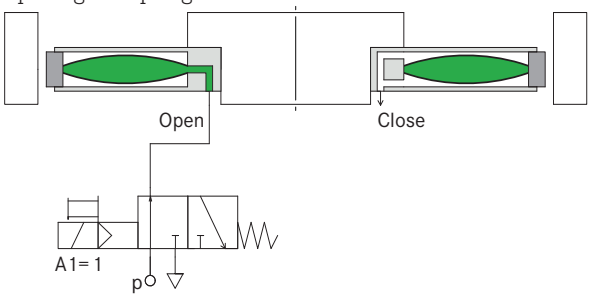
Depressurizing the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) relaxes the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is elastic deformed in the area of the clamping surface. The clamping element is closed in this state.

Clamping RotoClamp Inside with Booster

You have the optional possibility of increasing the clamping force by extra loading of the outer spring diaphragm chamber (close) with compressed air.
The clamping element is closed in this state.

Function of the RotoClamp Outside

Opening the spring actuator

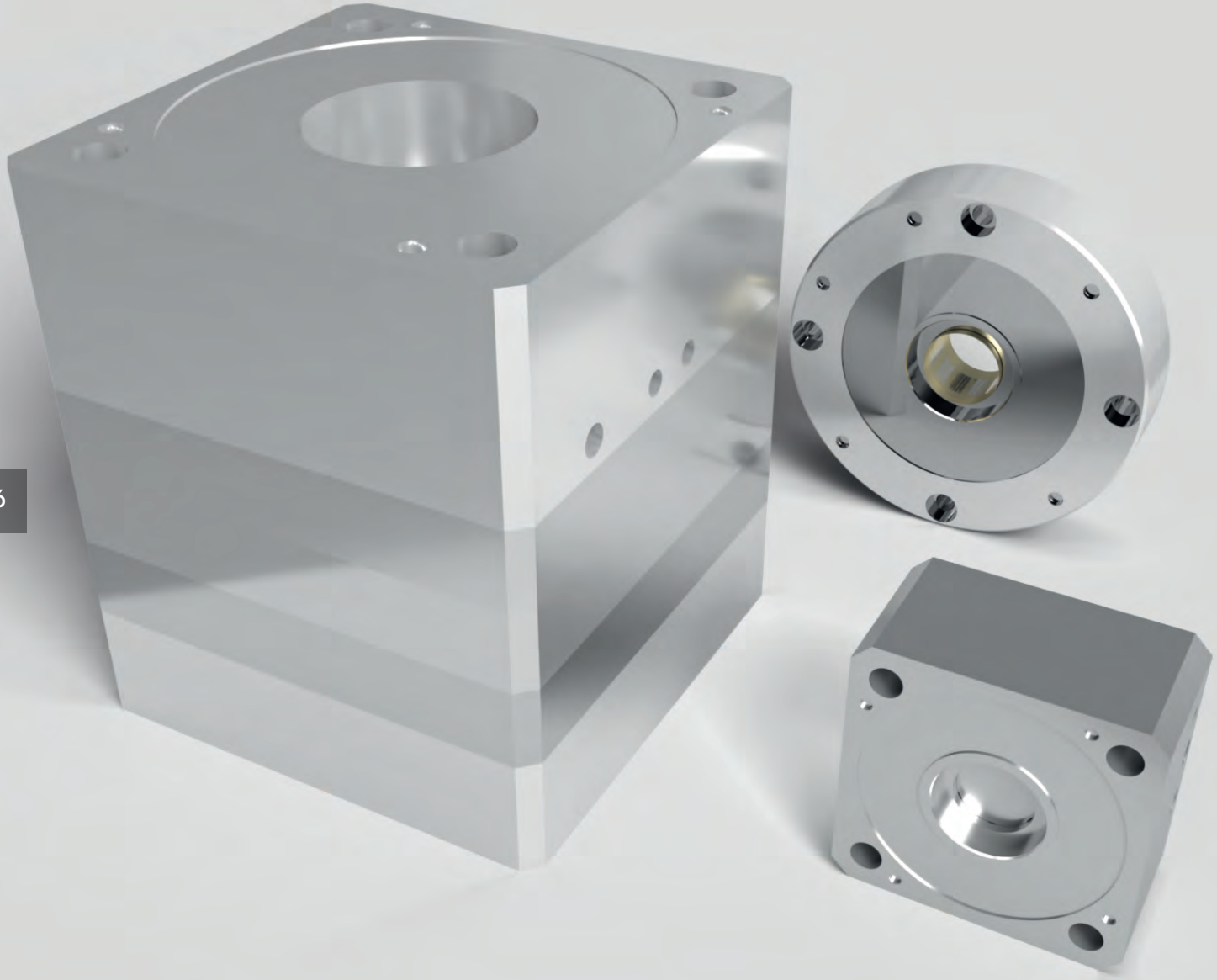


Realase RotoClamp Outside

Adding pressurized air to the inner spring diaphragm chamber (open) and venting the outer spring diaphragm chamber (close) bends the diaphragm and the distance between the two radial contact surfaces at the inner and outer diameter of the spring is shortened. The clamping element is opened in this state.

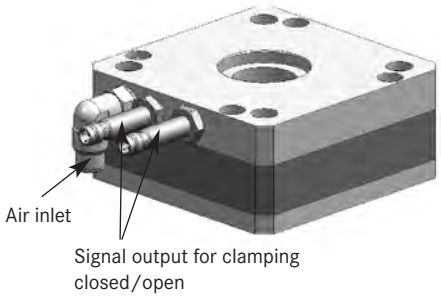
The functional principles of clamps and clamps with booster correspond to those of the inside function.

Illustration left: RotoClamp Inside and Outside, directions of action



PCLAMP

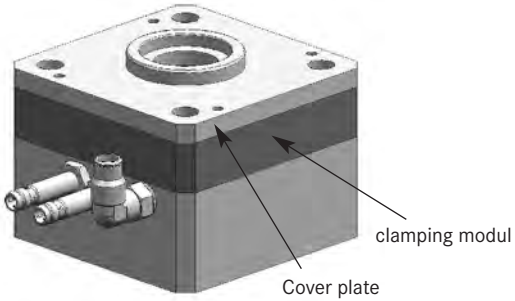
PClamp N



Standard version

Cover plate, one to four clamping units and base plate with connections for initiators as well as air inlet.
Suitable for linear and rotary loads.

PClamp ISO



Version for ISO Pneumatic cylinder

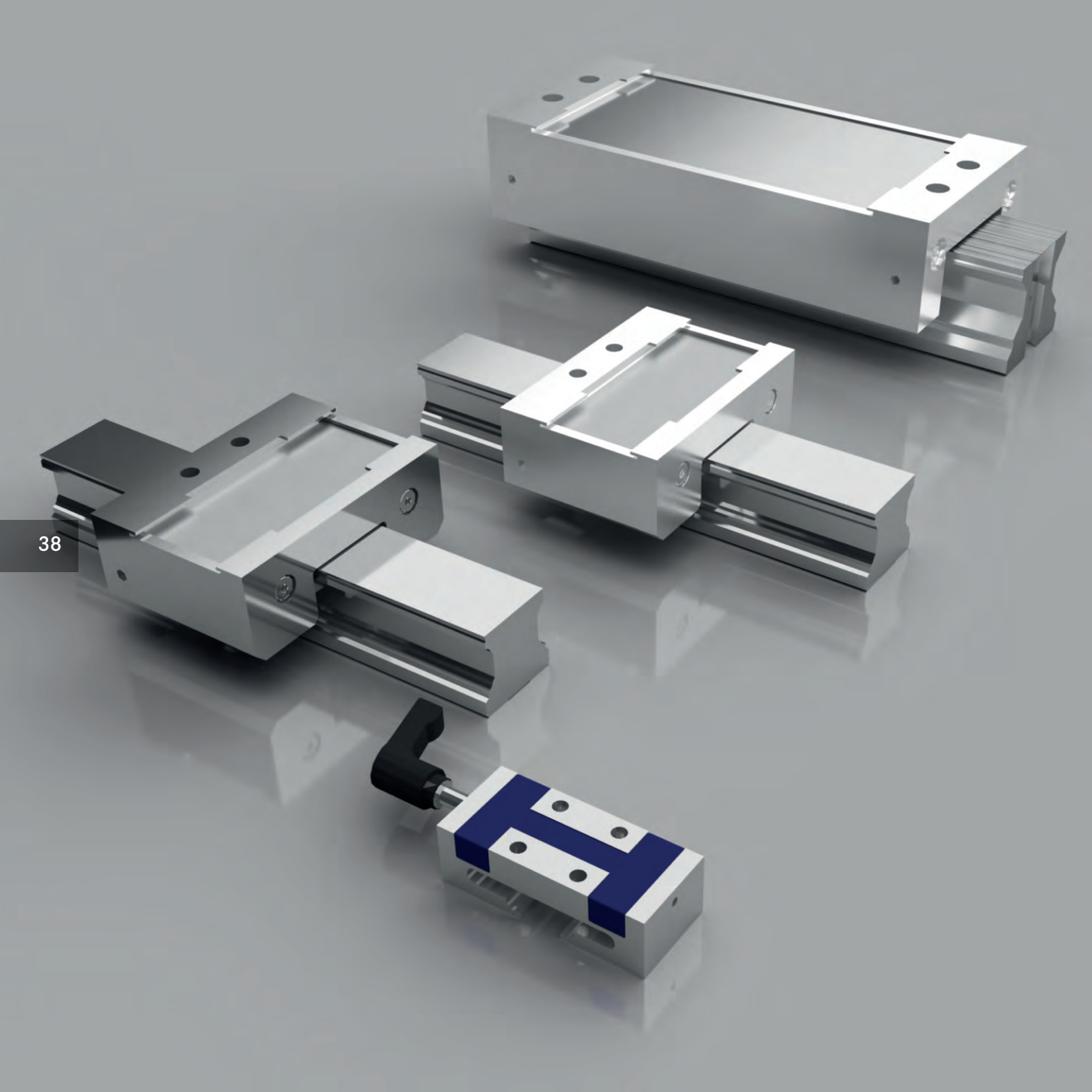
Cover plate and base plate are matched to the flange dimension of the ISO cylinder. Due to the joints in the housing, the ISO version is ideal for use with standard cylinders. The clamping unit is identical to version N.

PClamp E

Compact version for smaller forces

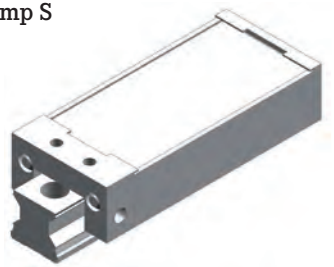
PClamp E has a lower height – ideal for applications with limited installation space or operating ranges in which lower holding forces are required. Sensors cannot be used. The clamping unit has a different appearance than Version N and ISO, although the active principle is identical.

Illustration left: PClamp



LinClamp & MClamp

LinClamp S

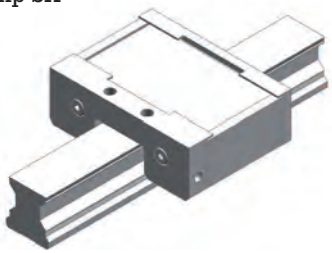


Long design, passive

Consisting of a monoblock clamping body and two spring diaphragm including air chamber, for any adaptations on linear guide rails. Available as a clamp or brake for high or low linear guide carriages,

Special solutions like air connection from above or special screw attachment points on request.

LinClamp SK

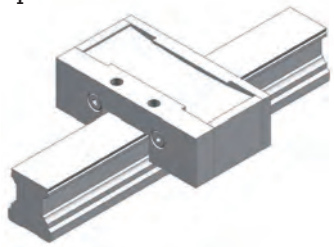


Wide, short design, passive

Consisting of a monoblock clamping body and two spring diaphragm including air chambers, for any adaptations on linear guide rails. Available as a clamp or brake for high or low linear guide carriages,

Special solutions like air connection from above or special screw attachment points on request.

LinClamp SA

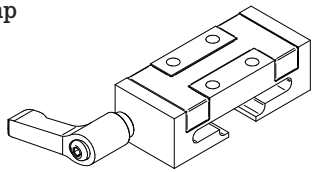


Wide, short design, active

Consisting of a monoblock clamping body and a spring diaphragm including air chambers, for any adaptations on linear guide rails available as a clamp or brake for high or low linear guide carriages.

Special solutions like air connection from above or special screw attachment points on request.

MClamp



Manual clamping system

The MClamp supplements the HEMA pneumatic rail clamps with a manually operated clamping element with high holding forces. the four connection holes enable almost universal use.

Illustration left: LinClamp and MClamp

HEMA Maschinen- und Apparateschutz GmbH
Am Klinggraben 2, 63500 Seligenstadt, Germany
Phone: +49(0)6182/773-0 - Fax: +49(0)6182/773-35
info@hema-group.com - www.hema-group.com

09082023