HESTEGO
PROTECTION SYSTEMS

Clamping and braking systems

www.hestego.cz

HESTEGO
PROTECTION SYSTEMS

HESTEGO a.s.
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COMPANY PROFILE

- Year of founding: 1995
- Number of employees: 300
- 2 production halls, 3 divisions
- Total production area: 8000m²
- Smart solutions: KAIZEN, 5S
- HESTEGOAKADEMIE – internal training
- Our own design department
- Certification in accordance with

  ČSN EN ISO 9001:2009

  ČSN EN ISO 14001:2005

  DIN EN 15085-2

  ČSN EN ISO 3834-2:2006
- Export 35%

HI-TECH SOLUTIONS!

- New range of damping systems
- Emulsion channels draining liquids from the inside of the covering
- Wipers with enhanced properties

CODE OF ETHICS . . .

- The rules of our teamwork are the basis for our success with customers:
  - High-quality production is what maintains us.
  - We are willing to do something extra.
  - We work as if we worked for ourselves.
  - Top-quality performance, care and more responsible approach mean a competitive advantage.


CERTIFICATE TÜV NORD

Management system as per
EN ISO 14001 : 2004

HESTEGO
PROTECTION SYSTEMS

HESTEGO a.s.
Na Nouzce 470/7
682 01 Vyškov
Czech Republic

Development and production of components for machine tools, production of metallic parts and powder painting.


CERTIFICATE TÜV NORD

Management system as per
EN ISO 9001 : 2008

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Development and production of components for machine tools, production of metallic parts and powder painting.


TÜV SÜD Industrie Service GmbH

ZERTIFIKAT
Schweißen von Schienenfahrzeugen und -fahrzeugteilen
nach DIN EN 15085-2

HESTEGO a.s.
Na Nouzce 470/7
CZ-682 01 Vyškov

Zertifizierungsstufe CL1 nach DIN EN 15085-2

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT

CLAMPING SYSTEMS ROTOCLAMP

RotoClamp Inside and Outside

RotoClamp is a compact and powerful pneumatic clamping system, designed for torque motors.

Advantages

- pneumatic clamping with high forces
- safety clamping RotoClamp Standard, if the air supply fails then system clamps
- the values of hydraulic clamping are reached and exceeded
- low system costs in comparison to hydraulics
- Simple installation
- Compact design
- Suitable for all shaft sizes

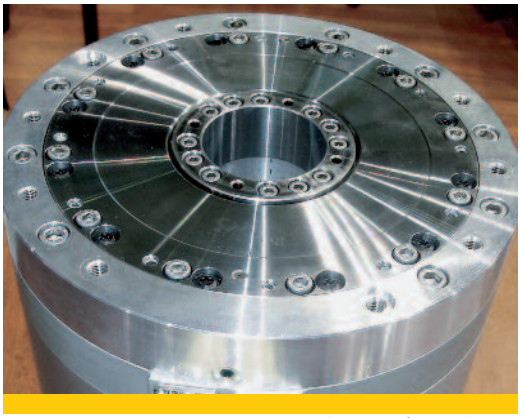
Operating principle: Clamps with spring actuator. Depressurizing the inner spring diaphragm chamber and ventilating the outer spring diaphragm chamber relaxes the diaphragm and presses on the radial contact surfaces at the inner and outer diameter of the spring. The clamping element is reformed elastically in the area of the clamping surface and presses on the shaft. Adding pressurized air to the inner spring diaphragm chamber (4 or 6 Bar) and venting the outer spring diaphragm chamber 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 surface lifts off from the shaft. You have the optional pos¬sibility of increasing the clamping force by extra loading of the outer spring diaphragm chamber with compressed air when clamped (4 or 6 Bar).

Safety: Safety clamping by spring actuator. In case of a power loss, the axis is immediately clamped. Reaction times Very short due to pneumatics. With quick air-vent valve and quick-acting gate valve attached directly to the clamping mechanism, you can realise extremely short clamping times.

Costs: Low costs (in comparison to hydraulics), pneumatic valves and pneumatic piping, low installation costs, no cost for matching, easily replaceable, including safety clamp.

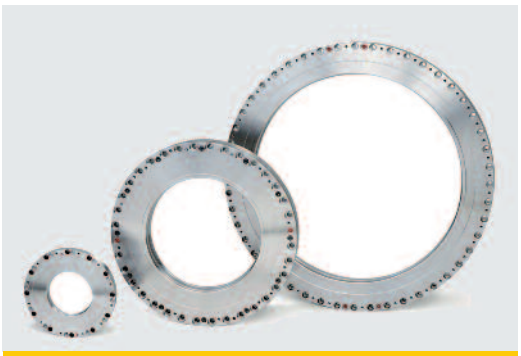
Cleanliness: Very clean due to pneumatics.

Materials: Clamping-body housing hardened and tempered in fine grain mild steel, optional supported flange joint hardened with case-hardening steel, steel coated, alternative lining procedure possible.



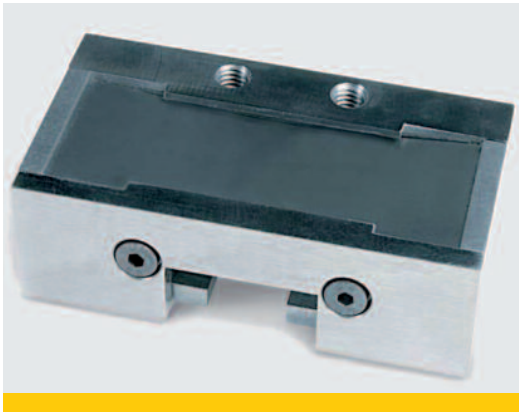
Application of RotoClampu

RotoClamp Outside



RotoClamp Inside

CLAMPING SYSTEMS LINCLAMP

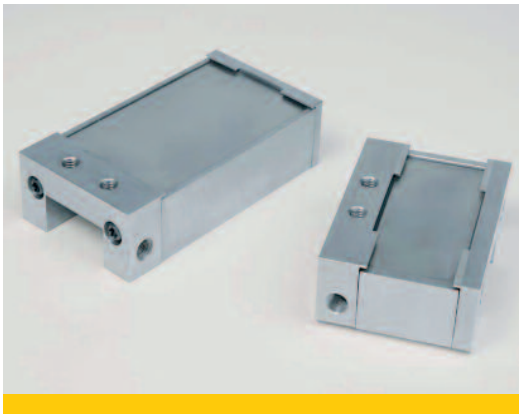


LinClamp

LinClamp clamping and braking systems are designed to brake and retain masses moving axially over linear guide rails and elements. Their design, surface quality, and dimensional, shape, and positional tolerances are equivalent to the commercially available linear guide rails.

Advantage

- suitable for almost all sizes and manufacturers of linear guide systems as well as for surfaces
- compact design, suitable for high and low carriages, simple installation
- easy to install
- compatible to other rail clamping systems
- pneumatic clamping or braking of the highest forces
- optimum safety clamping, failure of pneumatics results in clamping (types S, SK, A)
- low system costs in comparison to hydraulics and electronic solutions
- special linings for clamping without loss of holding power for linear guides with grease lubrication.

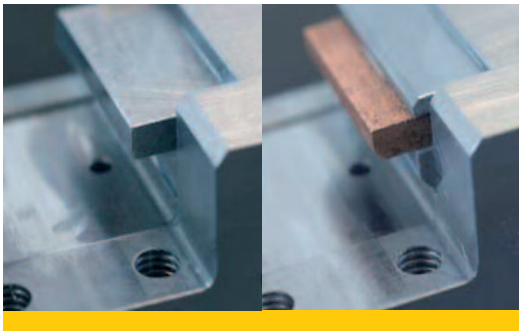


Operating principles

LinClamp S/SK released Compressed air is applied to the chamber between the two spring steel diaphragms. This deforms the spring steel sheets elastically and shortens them in the horizontal direction. The clamp body is deformed in such a way that it contacts at the top with the spring steel sheets and expands at the bottom around the brake shoes. This lifts the brake shoes from the rail and it can be moved freely.

LinClamp S/SK clamped: The chamber between the two spring steel diaphragms is vented. The spring steel sheets spring back to their normal position and expand the upper part of the clamping body. However, this expansion at the top simultaneously leads to a narrowing at the bottom. This narrowing causes the brake shoes to press against the rail and to clamp it.

LinClamp SA released: Venting causes the sheet to spring back and splays out the clamping body below the slide way. The base plate, which has previously been reformed elastically, now springs back to its starting position. It is thereby narrower above the cross web and wider beneath it. The brake shoes lift off from the rail. Operating pressure 4 to 6 Bar.



LinClamp SA clamped: To activate the clamping mechanism, the chamber below the spring steel sheet is filled with compressed air. The prestressed spring steel sheet is thereby pressed upwards and simultaneously stretched. Simultaneously, the lower part of the clamping body is narrower over the cross web as pivot point. This presses the brake shoes against the rail.

CLAMPING SYSTEMS PCLAMP

PClamp

PClamp is a modular designed system for the clamping of rods and pneumatic cylinder.

Advantages:

- Pneumatic clamping with high forces
- Optimum safety clamping – if the pneumatic fail the system is locked
- The values of hydraulic clamps are reached and exceeded
- Low system costs in comparison to hydraulics
- Simple installation
- Wide range for many shaft sizes can be delivered

The clamping forces can be enlarged by up to four clamping modules cover and base plate. Plamp is perfectly suitable for clamping of rods with a diameter from 12 to 40 mm. Dimensions of flange and outer dimensions are conform to metric cylinder ISO 6431. The lengths of PClamp vary according to the choosen clamping force depending on the numbers of modules.

PClamp N: Standard version Comprising the standard cover plate, one to three clamping units and base plate with connections for initiators as well as air inlet. Suitable for linear and rotary loads.

PClamp X: Version with additional safety mechanism for highest safety standards for vertical axes Models with improved safety for vertical axes. After clamping the piston rod, the clamping mechanism can only be released when the axis is moved vertically upwards. The clamping unit is identical to the versions N and ISO.

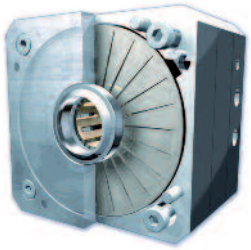
PClamp ISO: Version for ISO pneumatic cylinder Cover plate and base plate are matched to the dimensions on the flange dimen¬sion of the ISO cylinder. Due to the integrated attachments in the housing, the ISO version is ideal for use with standard cy¬linders. The clamping unit is identical to versions N and X.

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

Operating principle for the example of PClamp N

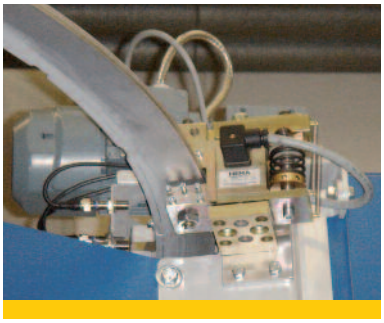
PClamp N released: Pressure is applied to the air chambers between the spring steel sheets. The spring steel sheets bend outwards, reducing their radial width. The clamping collet can therefore expand, releasing the rod.

PClamp N clamped: The air chambers between the spring steel sheets are vented, the elastic spring steel sheets return to their original position, thereby clamping the collet against the rod. In this condition, the PClamp N is able to stop both rotary motion as well as linear motion.



HEMS brakes
Electromagnetic Disk Brakes

The HEMS model range are ultra compact electromagnetic operating, retaining, and emergency brakes with very low energy consumption. The brake operates with an »energy store« in the form of a pressure spring and is vented electromagnetically, so it can also be used as a safety brake (fail safe principle).
Its floating bearing compensates for minor axial asymmetries in the brake disc. The linings present a full contact surface in conjunction with the parallel transfer of forces to the brake blocks. The linings therefore do not need to be ground in. The brake is available for several disc thicknesses, in two flange designs (parallel or vertical for any installed position), and for two braking torque ranges.



Použití HEMS 300, zdroj: Compipack

Temperature range of the brakes

HEMS electromagnetic brakes are suitable for all applications subject to higher temperature fluctuations from -40 to +80 C.

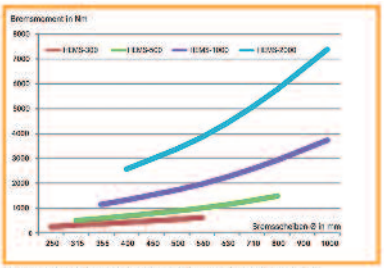
Options

- vertical/parallel flanged connection relative to brake disc
- softer spring for smaller braking torque range
- condition monitor with up to two sensors
- electric wear limit indicator
- special designs with sintered and rubber linings

Applications

HEMS electromagnetic brakes can be used with a rotating brake disc or on a linear clamping rail. Thanks to their compact design and high performance, they are ideal, e.g. locking, emergency stop, service, or safety brakes with rotating brake disc on

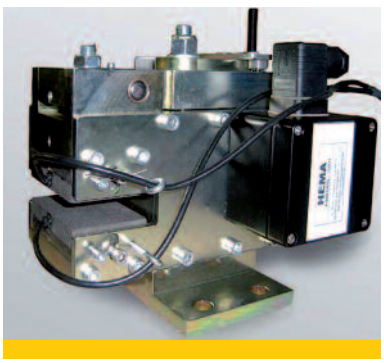
- crane/cross travelling gear (gantry, trolley)
- industrial guided vehicle systems (transport cars)
- general machine building
- crane building, e.g. as travelling gear brake
- conveyor belts
- mining installations
- rope or chain hoists driven by electric motors
- large scale fans
- scissor type lifting tables
- small scale wind turbine generator systems
- rotary indexing tables
- hydroengineering (pumping stations, tidal power stations)
- motor driven assembly systems or, with a linear clamping rail, on
- industrial guided vehicle systems
- belt or chain driven inclined or vertical conveyor systems (antifall device) for goods lifts
- rail guided workpiece or tool changing systems



Ermittlung der Bremsmomente bei einem Reibwert von 0,4

Scheibe-Ø [mm]	HEMS-300 [Nm]	HEMS-500 [Nm]	HEMS-1000 [Nm]	HEMS-2500 [Nm]
250	245			
315	323	514		
355	371	594	1148	
400	425	684	1328	2576
450	485	784	1528	2976
500	545	884	1728	3376
560	617	1004	1968	3856
630		1144	2248	4416
710		1304	2568	5056
800		1484	2928	5776
900			3328	6576
1000			3728	7376

Brzdové momenty HEMS



HEMS-500

HMSB brakes
HMSB Electromagnetic Rod Brake

The HMSB is a compact, electromagnetic rod brake that can be used as a service, retaining, or emergency stop brake. It operates with a spring energy storage device (with a tried and tested spring) and is vented electromagnetically. In the standard version, it can also be used as a safety brake (failsafe principle)

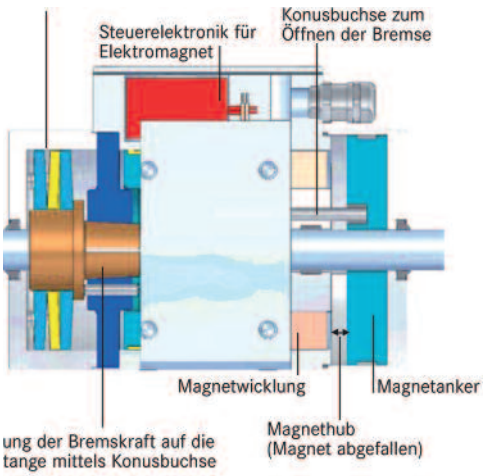
The HMSB as a brake

Under the action of spring force, a conical bush is forced along its axis into a likewise conical hole in the housing. The internal diameter of the bush then causes a cross sectional constriction, exerting a high clamping force on the rod running through the centre. The bush's conical angle serves to amplify the spring force. The bush is made of a special bearing material that cannot damage the rod (usually of hardened steel).

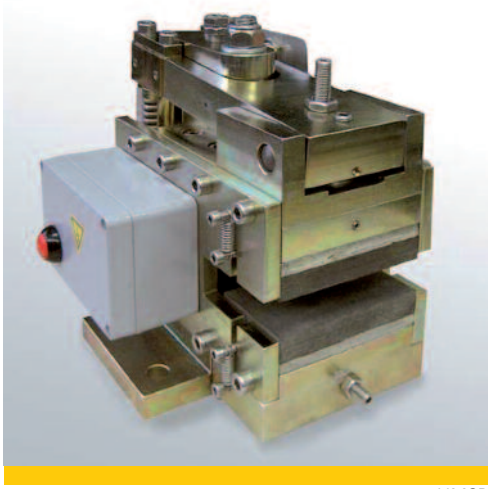
The brake is disengaged when the clamping bush is pressed out of its conical seat against the spring force. For this purpose, an electromagnet embedded directly in the brake housing is energised and exerts a high attractive force on a flat armature. By means of freely moving pins leading through the magnet housing, this attractive force induces a compressive force in the conical bush that then acts on the springs.

The rated voltage for this magnetic drive is 400 Vac. Once the attractive force has been built up, the power draw is less than 15 VA. The electronic controller is integrated in the rod clamp's housing, requiring only that the supply voltage is activated (for disengaging the brake and keeping it disengaged) or deactivated (braking) from the outside. In the pure brake version, the conical bush clamping the rod is not connected firmly to the brake housing. When aligned correctly, the braked mass fastened to the housing also presses against the bush, thereby acting as a brake booster. This self locking mechanism can be utilised for emergency braking (e.g. as an antifall device on a vertical arrangement). This causes such a high clamping force that the magnet is no longer able to disengage the brake. The brake must then be moved counter to the direction of braking so that the magnet can overcome this clamping force.

HMSB Electromagnetic Rod Brake and Clamp



Functional principle



HMSB

HLVB brakes

Mechanical safety brake HLVB

The HLVB is a purely mechanical safety brake for vertically traversing loads with counterbalance, e. g. for manually operated sliding doors on machine housings. The force component resulting from the counter balance serves to keep the brake open for unimpeded load traverse.
On counterbalance failure the brake actuates automatically and immediately and so prevents the load from dropping. When the counterbalance is reinstated the HLVB is againenabled and ready to operate.The HLVB Tandem is a refinement of the HLVB »Standard« for motor driven loads with drive belt, e.g. toothed belt.
Unlike the standard version, the tandem design does notrequire a counterweight to keep the brake open. The load is secured to the housing of the HLVB Tandem. The pressure plates on both sides then integrate the HLVBin the drive belt similar to a turnbuckle. The tension in the belt serves to keep the brake open forunimpeded traverses by the load.
Should the drive belt breakas a result of overload or fatigue, or the tension in the beltdrop below the requisite minimum value for any other reason, the brake immediately engages automatically, preventing the load from falling.
Once a new belt has been installed or its tension increased, the HLVB Tandem disengages and is again ready to run.The HLVB Tandem safety brake can be used on a separate braking rail or directly on a linear guide rail.

Specifications

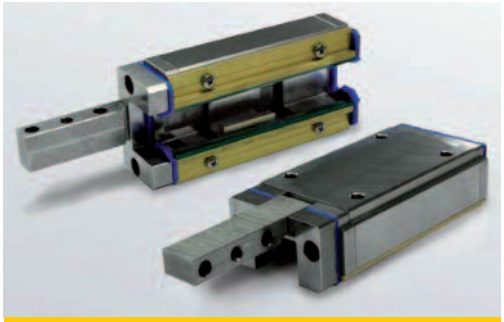
- purely mechanical braking element - no power supplyneeded
- automatic engage, no braking delays caused by switchingand response times
- self locking and self reinforcing - the greater the load, the higher the retaining force
- compact design - the connecting measurements correspond to rail carriages
- sealed design possible for special fields of applicationemergency actuation - the load can be moved easilyagainst the clamping direction, e.g. a closed sliding dooropened, with the corresponding effort
- easy return to service

Current design HLVB »Standard«

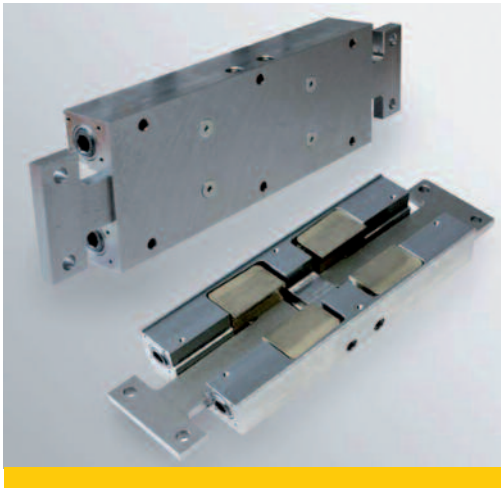
- rail size Bosch Rexroth 25
- nominal retaining force 1000 N (= min retaining force)
- braking path <10 mm

Current design »Tandem«

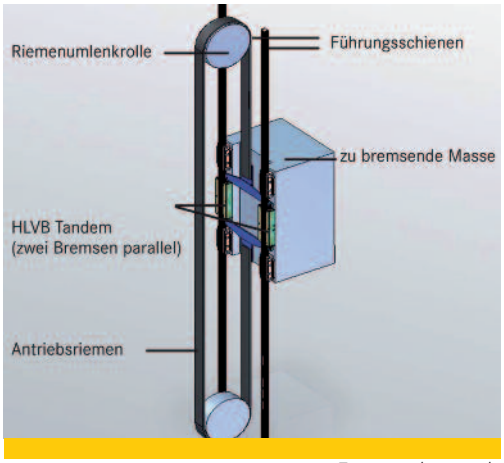
- rail size THK - SHS 35, created retaining force 3750 N
- installed length incl. pressure plates approx 320 mm



HLVB / HLVB tandem



HLVB



Functional principle