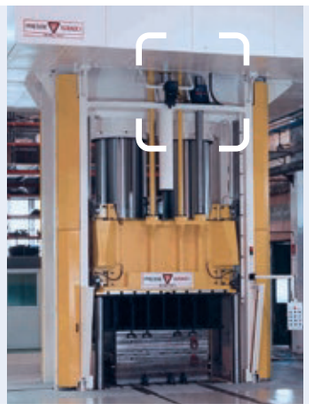
SiTEMA
Expertise in Safety

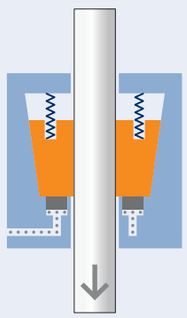
Product Overview

Infinitely variable clamping on round rods

Safety Catchers
Series K, KR, KRP ...

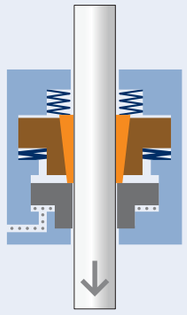
- One load direction
- Hydraulic or pneumatic actuation
- For loads from 10 kN to 1000 kN

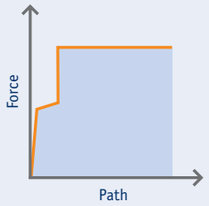




Safety Brakes
Series KSP

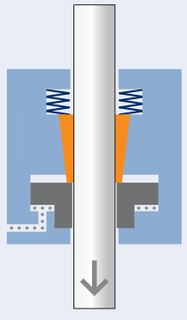
- One load direction
- Pneumatic actuation
- For loads up to 30 kN





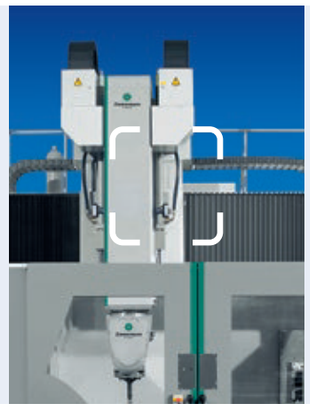
Safety Locks
Series KRG, KRGP

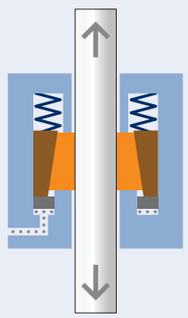
- One load direction
- Hydraulic or pneumatic actuation
- For loads from 2 kN to 500 kN

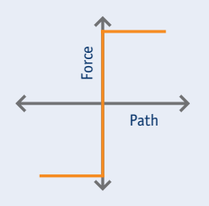


Locking Units
Series KFH, KFP, KB ...

- Both load directions
- Hydraulic or pneumatic actuation
- Holding forces from 1 kN to 1500 kN

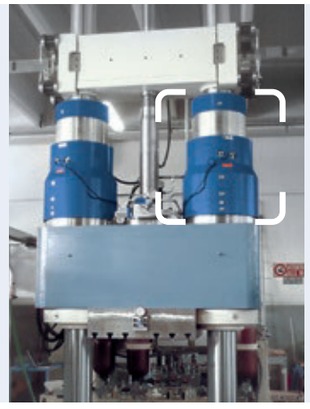


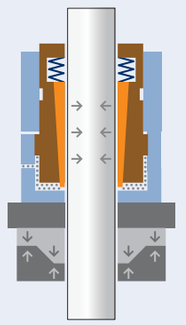


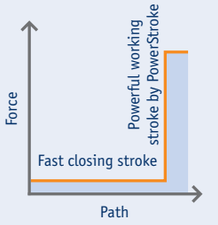


PowerStroke
Series FSK, FSKP

- Clamping head with additional short stroke function
- Hydraulic or pneumatic actuation
- Working forces up to 2000 kN

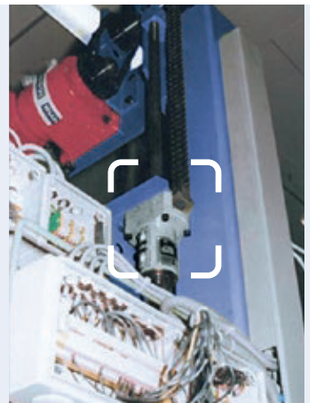






Alternative solutions

- Mechanical Safety Catcher
- Electric Locking Unit
- Electropneumatic module (EPM)
- Accessories: attached components, spring bases, flanges, auto-bleeders, etc.



Innovation without hydraulics and pneumatics

Where conventional SITEMA Clamping Heads cannot be used, we offer special custom solutions.

Safety Catchers

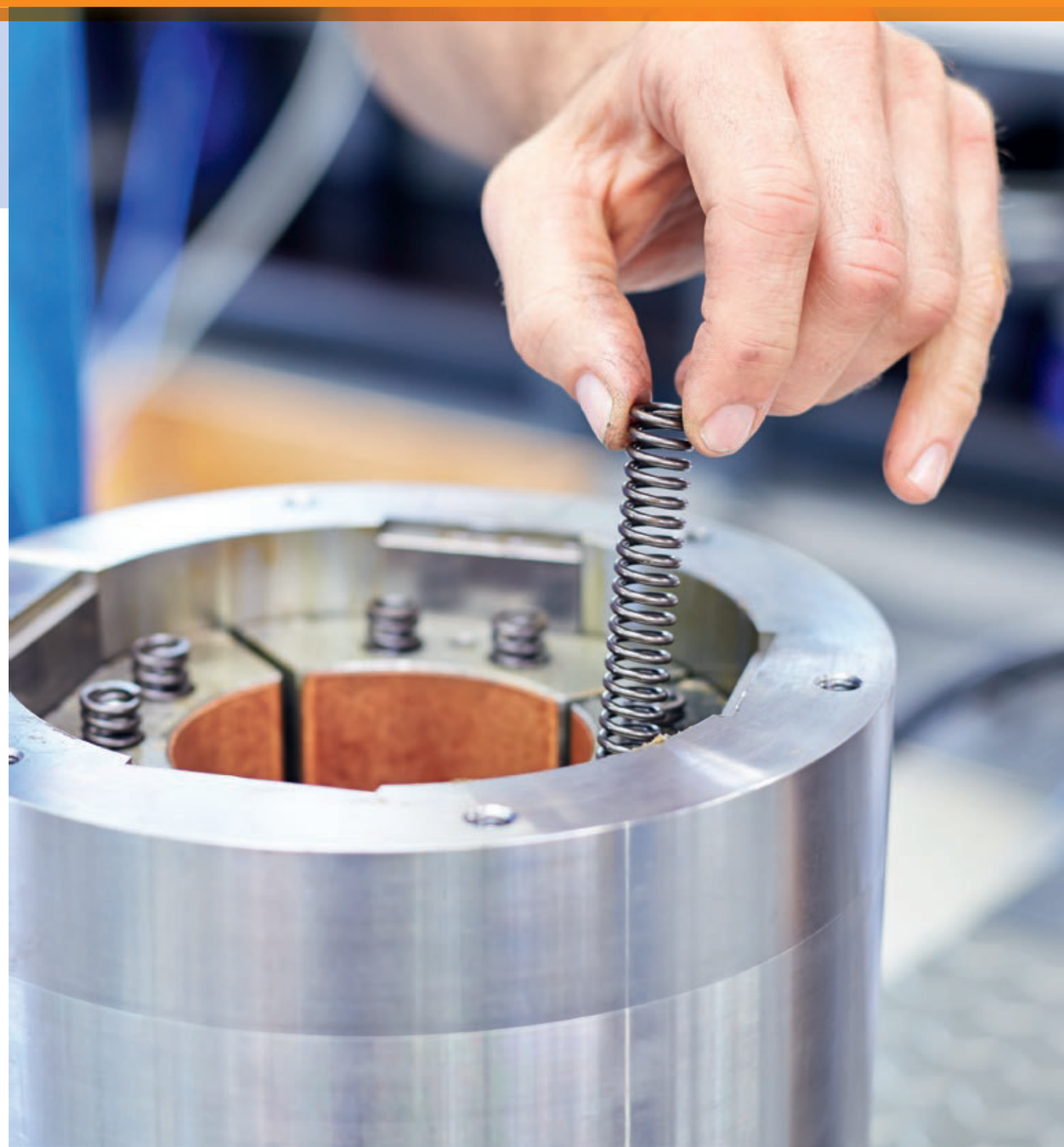
Secure restraining in case of pressure drop

Personal protection and accident prevention

Safety Catchers are used wherever heavy lifted loads have to be secured against falling or accidentally dropping.

Safety Catchers Series K, KR, KRP ...

- For medium-sized, large and very large loads
- DGUV-approved
- One load direction



Functional principle

SITEMA Safety Catchers are held open hydraulically or pneumatically, depending on series, and act in the event of a pressure drop. The clamping system then grasps the rod by means of pre-tensioned springs and secures the load. However, the clamping force is only built up when the rod moves in the load direction, so minimizing wear. The energy of the falling or dropping load is used to generate the clamping force.

Hydraulic press
Safety Catcher as DGUV-approved restraint device

Properties

- Self-reinforcing clamping
- For loads from 10 kN to 1000 kN
- Safety factor built-in
- Hydraulic or pneumatic actuation
- Overload-protected
- Protection against unintentional detachment
- Flexible actuation possible
- Very high B10d value

Applications

- Hydraulic presses
- Mechanical presses
- Injection-molding machinery (closing stroke protection)
- Mold carriers
- Broaching machines
- Hydraulic freight elevators
- Ropeways

Safety Brakes

Securing vertically moving masses

Safety for oblique and vertical axes

Typical applications include oblique-angled and vertical axes in the automation industry to provide vital protection of personnel and machinery.

Functional principle

The SITEMA Safety Brake activates immediately in the event of a pressure drop: When a load is exerted on the rod, the clamping system closes in a self-reinforcing function. In case of overload, the rod is subjected to controlled slip at a high force level. This enables the kinetic energy of moving masses to be reduced by friction, and in an emergency moving loads are also safely stopped.

Applications

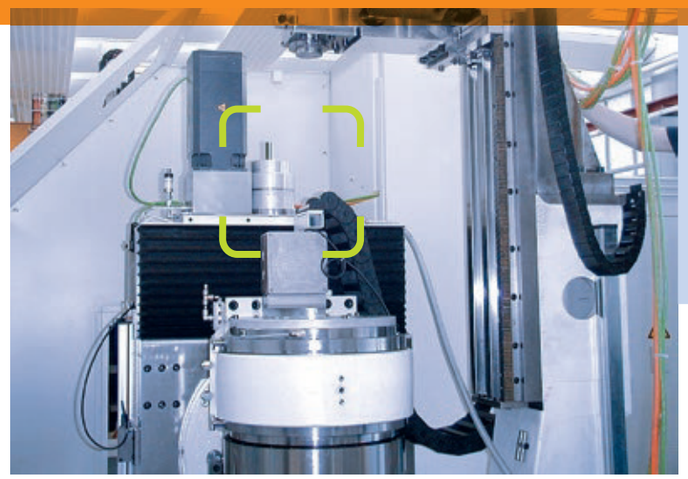
- Loading gantries
- Lifting equipment
- Vertical servo drives
- Linear axes
- Palletizers
- Component lifts
- Packaging machinery

Properties

- Self-reinforcing clamping
- For loads from 2 kN to 30 kN
- Safety factor built-in
- Pneumatic actuationg
- Overload-protected
- Flexible actuation possible
- Very high B10d value

Safety Brakes Series KSP

- For small to medium-sized loads
- DGUV-approved
- One load direction



Grinding machine
Securing the Z-axis in case of emergency stop and for maintenance

Safety Locks

Secure restraining of lifted loads

Compact and safe

The design principle allows for the creation of highly compact clamping heads. They are ideal for applications involving purely static securing.

Safety Locks
Series KRG, KRGP

- For static or slow-moving masses
- Compact design
- One load direction

Functional principle

Hydraulic or pneumatic pressure holds the SITEMA Safety Lock open. To secure the load against dropping, the Safety Lock is depressurized. If the load then starts to move down, the clamping system closes in a self-reinforcing function – the higher the load, the higher the clamping force. This series does enable high loads to be held by a compact unit, but it is not suitable for overloads and impact forces (such as when braking masses).

Properties

- Self-reinforcing clamping
- Very short tapering distance
- For static loads from 2 kN to 500 kN
- Hydraulic or pneumatic actuation
- Flexible actuation possible

Applications

- Scissor-type lifting panels
- Mobile elevated work platforms
- Theater lifting podiums
- Vehicle supports
- Tool trays

Mobile elevated work platform
Securing the telescopic arm of the 101 meter high work platform

Locking Units

Precision locking

Clamping of machinery and plant components

Locking units are used primarily as functional clamps for precision locking, but also for preventing unwanted movement.

Functional principle

SITEMA Locking Units clamp a rod by an infinitely variable function without changing its position. They absorb axial forces without play in both directions. They are held open by hydraulic or pneumatic pressure, depending on series. Their clamping effect is created by spring force or pressure. The standard range also includes approved series optimized for special applications, such as outdoors.

Applications

- Machine tools
- Assembly lines
- Rolling mill stands
- Test rigs
- Steel hydraulics
- Steelworks
- Shipbuilding and offshore

Properties

- Clamping by spring force
- Holding forces from 1 kN to 1500 kN
- Hydraulic or pneumatic actuation
- Clamping in both load directions with no axial play
- Flexible actuation possible
- Overload-protected
- Detachment in all operating states possible without shifting axis

Mobile hydraulics
Coal crusher at an open-cast mine in Australia

Locking Units Series KFH, KFP, KB...

- Extensive standard range with numerous series for special applications, including outdoor, cylinders, machine tools
- DGUV and Lloyd's approved series available
- Both load directions

PowerStroke

Generates large forces over short distances

Clamping head with integrated short stroke function

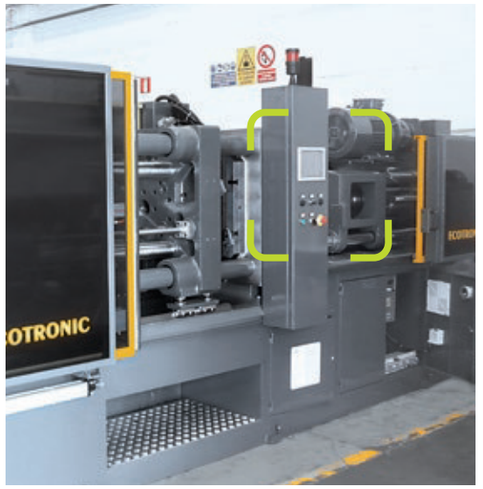
The PowerStroke can be used in any horizontal and vertical applications requiring large forces to be built up over short working distances.

SITEMA PowerStroke series FSK, FSKP

- Clamping head with additional integrated short stroke function
- Ideal for pressing, stamping, joining, riveting, clinching, forming, embossing, closing molds, etc.

Functional principle

The SITEMA PowerStroke grasps a smooth round rod to then move it with great force. The SITEMA Power-Stroke holds onto the rod based on the principle of self-reinforcing clamping. The application of pressure then creates the high axial working force on the rod proportional to the applied pressure. The aim of the concept is to separate the fast stroke and force stroke by design, making systems which need high forces allied to fast movement more compact, energy-saving and fast.



Injection-molding machinery
Closing the mold and applying the closing force

Properties

Hydraulic PowerStroke FSK

- Working forces up to 200 metric tons with one unit
- Rod diameters up to 200 mm

Pneumatic PowerStroke FSKP

- Working forces of 3 metric tons with one unit (pneumatic only)

Applications

- Internal high-pressure presses
- Injection-molding machinery (for holding closed)
- Mold presses
- Vacuum presses
- Welding presses
- Test rigs
- Leak testing

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