SiTEMA
Expertise in Safety

The Safety Company

We are the specialists

SITEMA is the only company in the world specializing in the development and production of clamping devices and linear brakes. The consequence of that specialization: SITEMA is an internationally respected partner to machinery manufacturers. We specialize in securing, clamping and fixing loads in axial motion. It is a field in which we have been a leading brand name for many years, particularly with our SITEMA Clamping Heads. Alongside our broad product portfolio, we offer unique consulting and solution-delivering expertise to meet any challenge.

Supreme experience

It was back in 1979 that SITEMA developed the first system enabling the transmission of high braking forces of hydraulic elevators by friction directly on the piston rod. This new technology was the foundation for ongoing development and diversification into a wide variety of different clamping heads. Today, SITEMA manufactures hydraulically, pneumatically, mechanically and electrically operated clamping heads for many different applications.

Transparency is the key to our success

Our corporate headquarter is designed to suit the way we work: straight-lined, and transparent. With an open architectural style that connects and encourages interaction. With a spatial concept that promotes teamwork yet maintains focus on attaining our shared success.

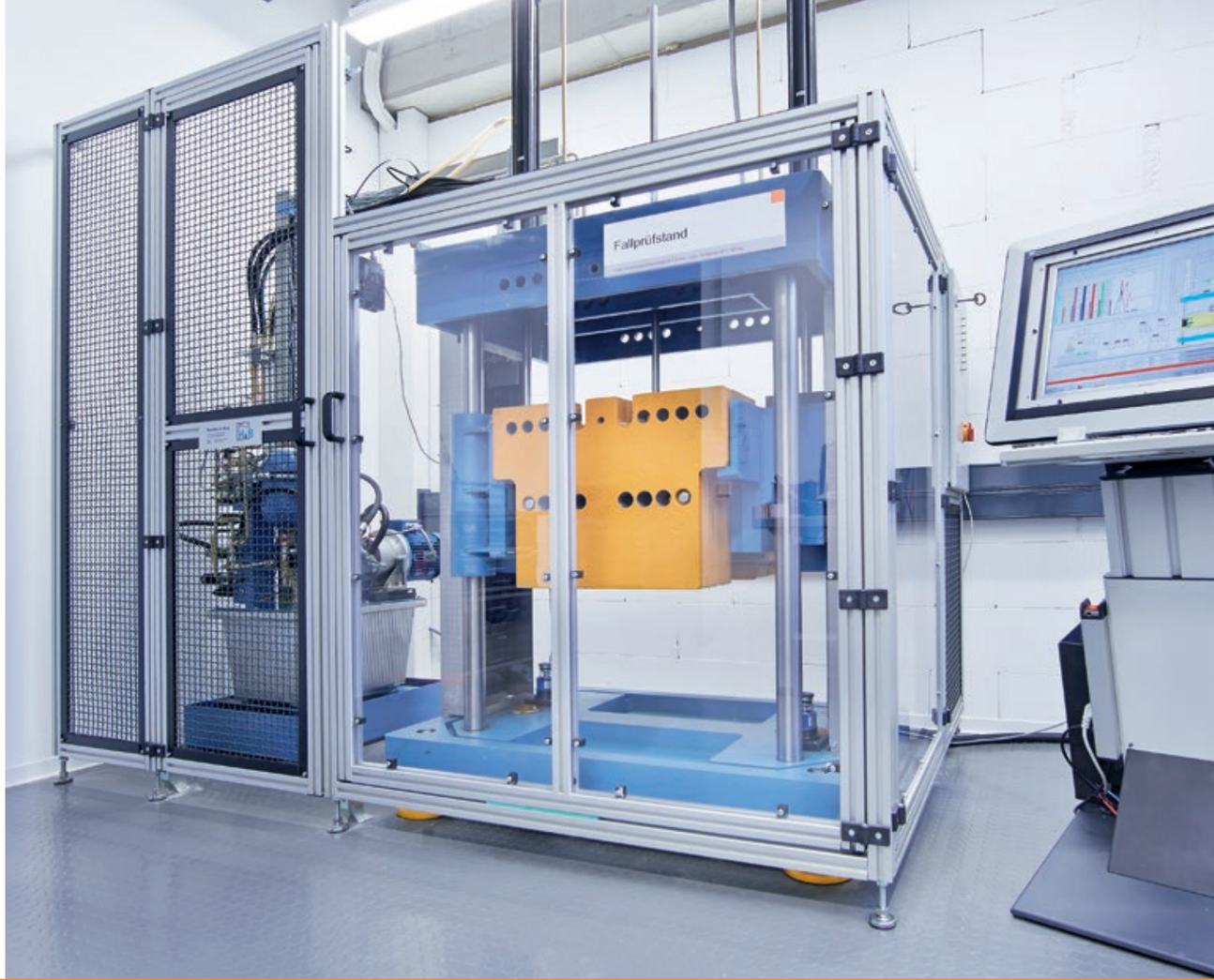
Continuous improvement

Sustained progress

When you have a mature product range, it's all about optimizing the detail. SITEMA's development team delivers continuous improvement in design and ensures regular expansion of the product portfolio. One of the fruits of those efforts was the PowerStroke, an innovative solution for holding molds closed. Find out more about the clamping head with integrated short stroke cylinder on page 20.

Customer-oriented testing

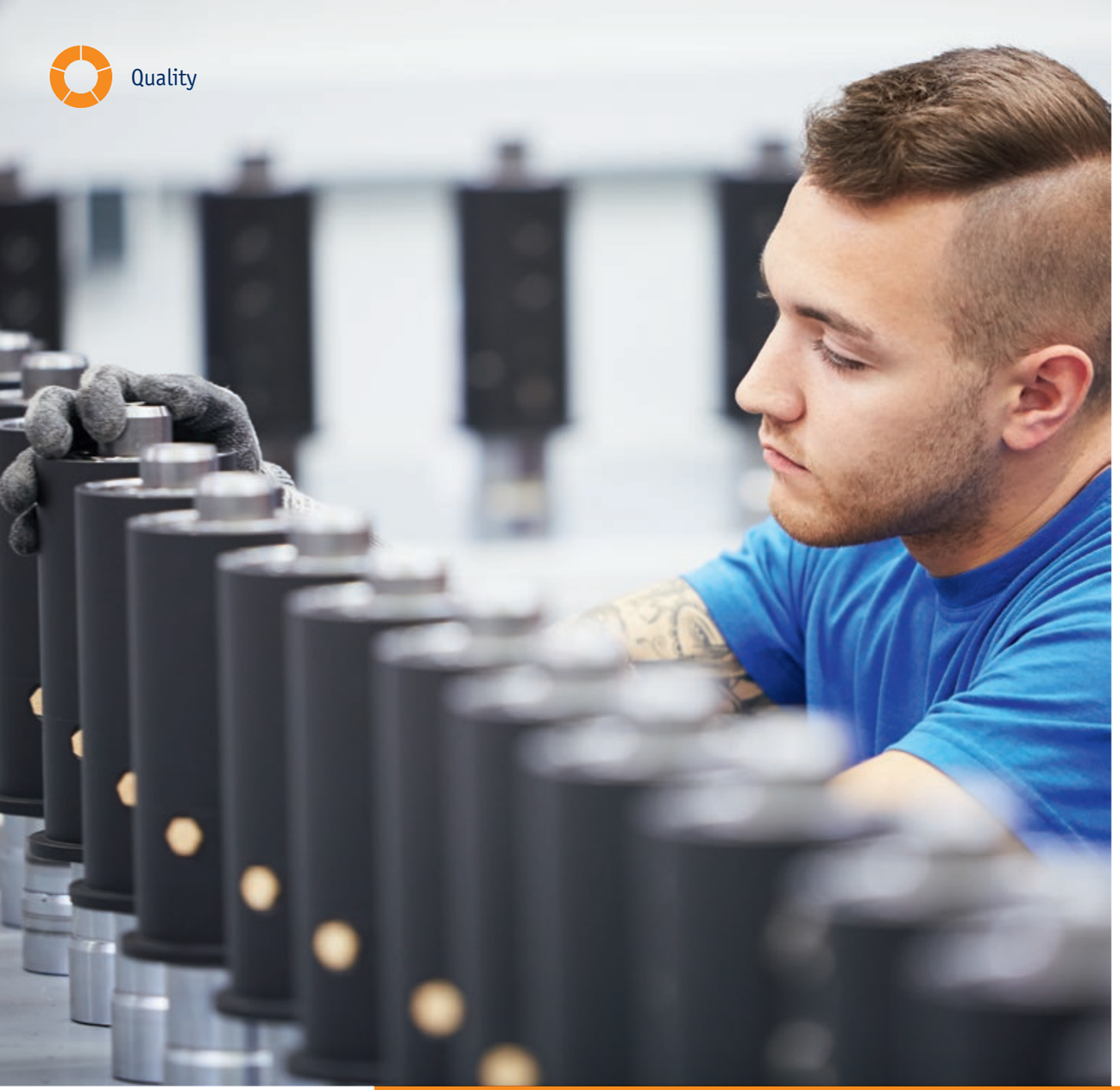
For clamping force testing, SITEMA has presses with up to 1000 metric tons test force as well as a dynamic test rig for drop speeds up to 3 meters per second. Working closely with our customers' development teams, we make sure a SITEMA Clamping Head always meets requirements.



Tailored for you

Custom solutions, individual and fast

SITEMA's development team is expert in analyzing technical requirements for the production of single items and small lots. Using that expertise, SITEMA is able to design and produce individually tailored custom solutions with high levels of commitment. The more unusual a clamping head application, the more we are inspired to create a new solution.



Quality creates trust

Guaranteed reliability

Our success is founded on adherence to the very highest quality standards in our products. Because safety components absolutely have to deliver functional reliability – and that is something we do as a matter of course. SITEMA Clamping Heads are approved as restraint device by the competent European bodies.

Certified to ISO 9001 and ISO 14001, SITEMA operates a highly efficient management system in keeping with internationally recognized benchmarks to assure absolute reliability and quality including in its inhouse processes and procedures.

100 % outgoing testing

Immediately following on from the production process, each individual clamping head is checked in terms of functionality and holding force on our own inhouse test rigs. The complete test documentation is archived and available for customers to inspect at any time.

DGUV test certificate for Safety Catchers (e.g. for presses to EN 693)

DGUV test certificate for Safety Brakes

DGUV test certificate for Locking Units KFHS

Lloyd's Register certification for Locking Units KFHL

ISO 9001:2008 certificate

ISO 14001:2004 certificate

Our values reinforce trust

"Fulfilling the quality expectations of our customers is the top priority in all corporate processes." That core tenet of our philosophy demonstrates: Quality is a fundamental principle to which we are committed.

We do everything for your safety

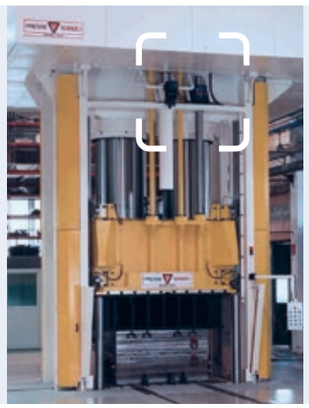
Development and design. Project management and customer contact. Fabrication and assembly. Outgoing testing and shipping. We do not let anyone else take care of your safety – we handle everything ourselves.

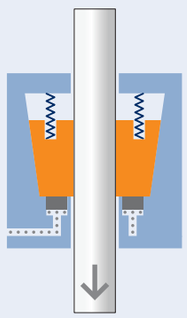
Product Overview

Infinitely variable clamping on round rods

Safety Catchers
Series K, KR, KRP ...

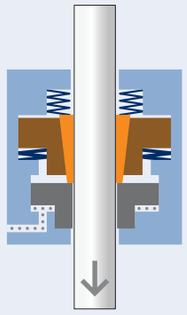
- One load direction
- Hydraulic or pneumatic actuation
- For loads from 10 kN to 1000 kN





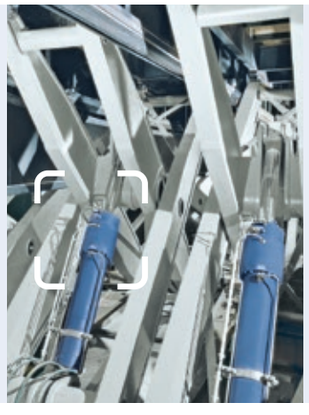
Safety Brakes
Series KSP

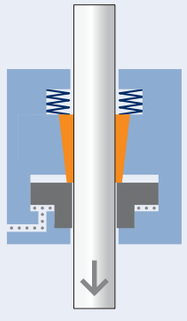
- One load direction
- Pneumatic actuation
- For loads up to 30 kN



Safety Locks
Series KRG, KRGP

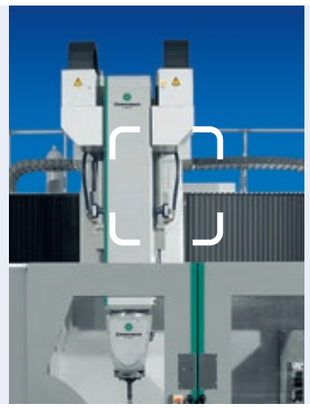
- One load direction
- Hydraulic or pneumatic actuation
- For loads from 2 kN to 500 kN

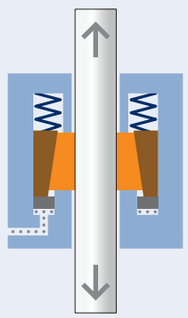


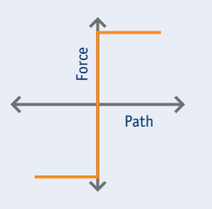


Locking Units
Series KFH, KFP, KB ...

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

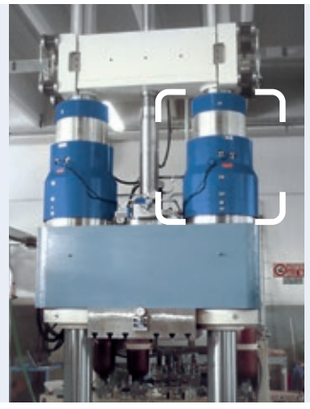


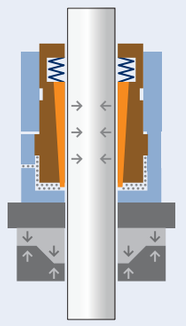


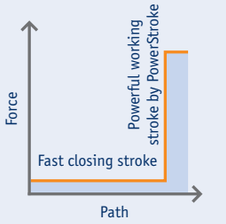


PowerStroke
Series FSK, FSKP

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

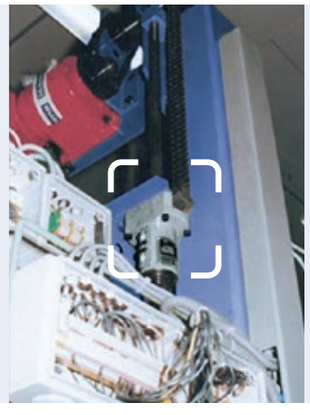






Alternative solutions

- 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.

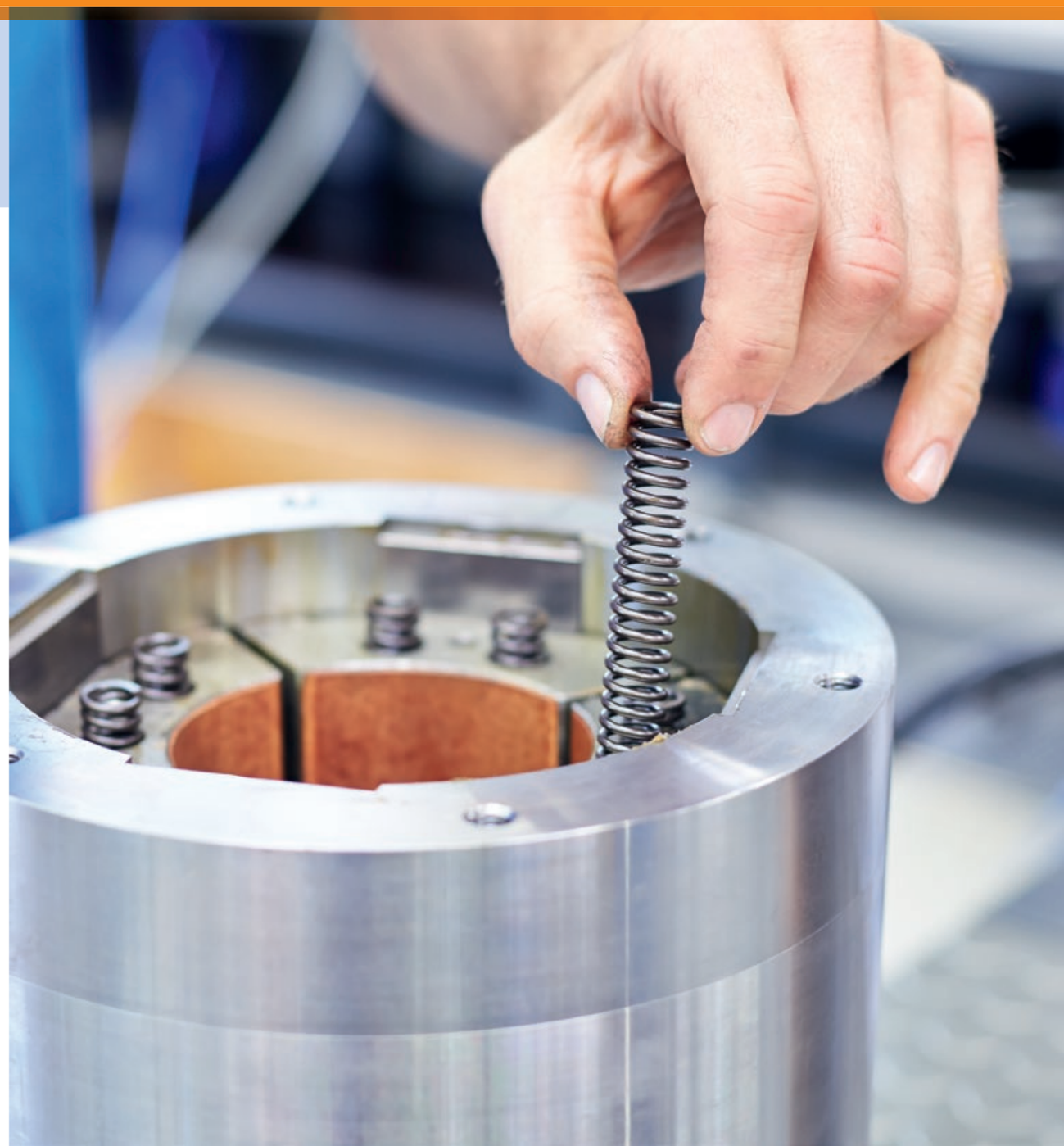
Hydraulic press
Safety Catcher as DGUV-approved restraint device

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

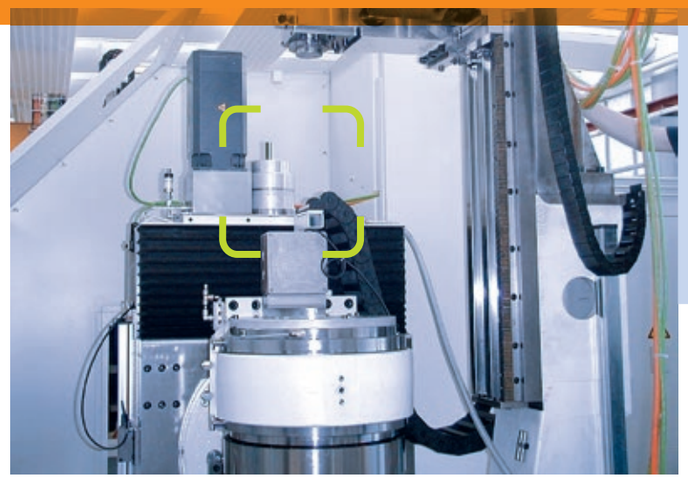
- Loading gantries
- Lifting equipment
- Vertical servo drives
- Linear axes
- Palletizers
- Component lifts
- Packaging machinery

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

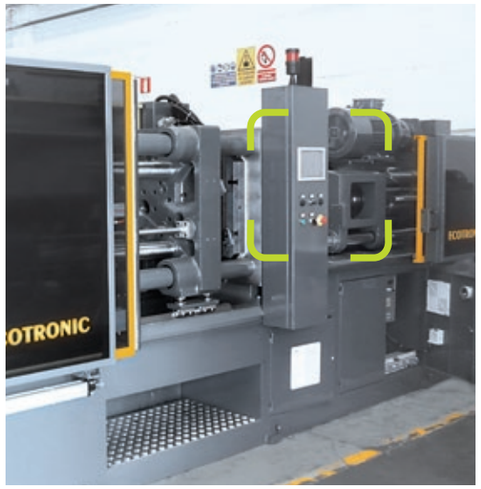
The PowerStroke can be used in any horizontal and vertical applications requiring large forces to be built up over short working distances.

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

We can go other ways too

Alternative solutions for clamping and fixing

Mechanical Safety Catcher KRM

The series KRM Safety Catcher is held open by purely mechanical means, and acts in the event of breakage of the load carrier (rope, strap, chain, etc.). It uses the energy of the falling load to generate the clamping force. It is used wherever personal protection and accident prevention must be assured in conjunction with lifted loads or tools in the event of failure of a load carrier. Series KRM Safety Catchers hold falling masses by an infinitely variable function at every point of the lift in a mechanically secure and absolutely reliable way.

Electropneumatic Module EPM

The Electropneumatic Module EPM can be used to operate SITEMA pneumatic Clamping Heads in locations where no stationary pneumatic power is available. The compact module generates the necessary pressure by its own electric compressor.

As the interface between the electric power supply / actuator and SITEMA pneumatic Clamping Head, the EPM automatically activates the clamping head as soon as the electric power fails or is turned off.

Electric Locking Unit KFE

Where hydraulic or pneumatic solutions are not possible, the electric Locking Unit KFE can be used. As an infinitely variable lock on round rods, it absorbs axial forces in both load directions without play. The holding force is generated by the tried and proven clamping system of the SITEMA Locking Units. If the switching voltage drops or the electric power supply fails, the unit clamps automatically by spring force. Consequently, the Locking Unit KFE is also suitable for use in safety applications.

We take special care to deliver something special

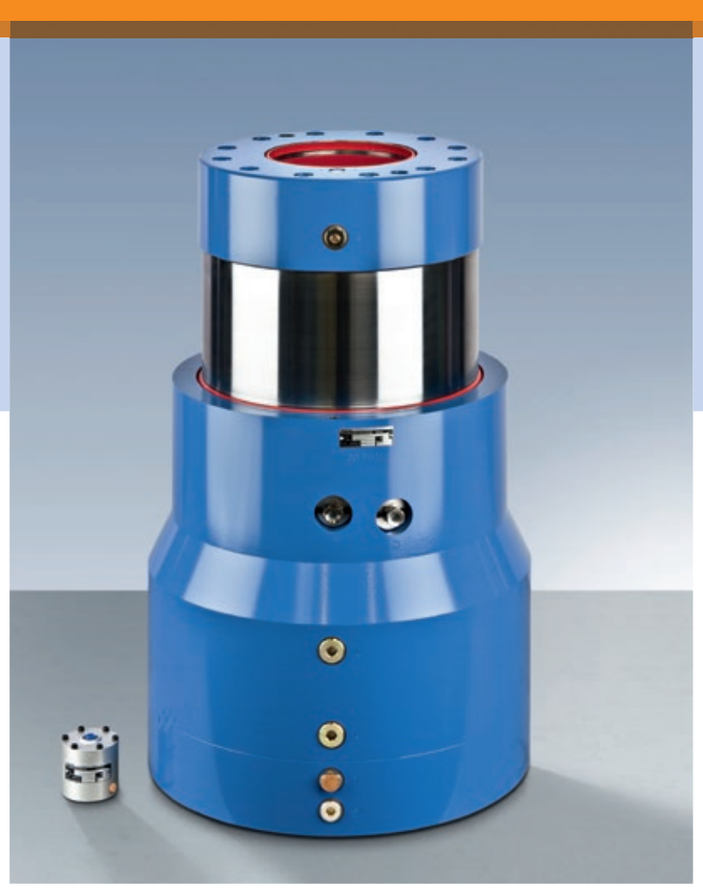
Carefully conceived production concept

SITEMA is optimally fitted out with state-of-the-art machining centers and flexible assembly lines. The available capacity ensures we have full control over the production of all key components – in terms of both quality and scheduling. The machining centers also provide lots of creative scope for custom solutions, as well as speeding up the testing of innovative design variants for example.

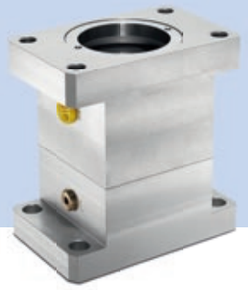
For special cases

There's nothing that SITEMA can't do! From extremely small to large clamping heads for rods up to 300 millimeters in diameter. Whether in the open air, at below-zero temperatures, underwater, or in aggressive environments: Wherever rod clamping is in demand, we will find the right solution.

What can we do for you?



Special customer wishes result in special clamping heads.



A solution for any cylinder

We can supply the right clamping heads for any hydraulic and pneumatic cylinders commonly used on world markets.

Talk to us!

Our service for your efficiency

Rapid response

Whether in providing advice, repairs or shipping: The services offered by SITEMA are all focused on rapid response. They are backed by a highly committed, customer-oriented team who are able to meet complex customer requirements quickly and efficiently. Express delivery of complete replacement components and expert service and support backup optimize SITEMA customers' productivity.

Short delivery lead times

Quick availability of standard products is backed by our high stock levels. Some 2000 SITEMA Clamping Heads featuring a wide variety of different holding forces and for many different rod diameters are permanently at the ready to assure fast shipping. With its status as a "Known Consignor", SITEMA meets all the conditions for fast air freight around the world.

Canada
China
France
Italy
Japan
Mexico

• Karlsruhe

South Korea
Taiwan
Turkey
United Kingdom
USA

Globally local

Perfect support

Our global support provides you with assured safety without borders.

You will find all our current service and sales partners listed on our website at www.sitema.com, or you can follow the link in the adjacent QR code directly on your cell phone.

SITEMA
Expertise in Safety

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