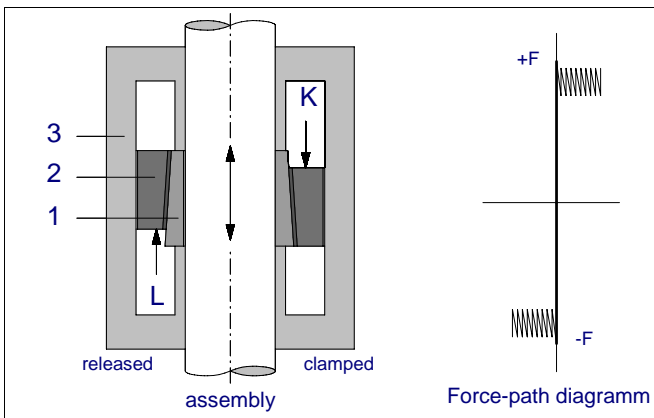


Technical Information TI-F10 Locking Units

- ☑ Holding in both load directions
- ☑ Hydraulic respectively pneumatic actuation



Function

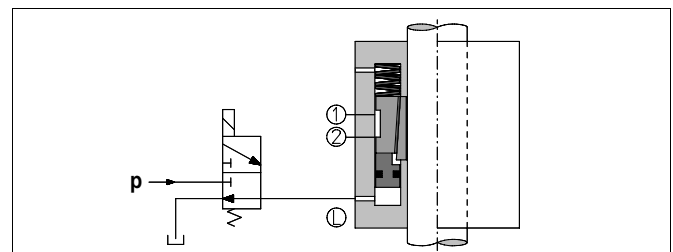


SITEMA Locking Units clamp a shaft infinitely variable without changing its position, and absorb axial forces in both directions. Depending on their type they are unclamped by hydraulic or pneumatic pressure. The clamping force is generated by spring action or by hydraulic pressure.

The clamping system consists of a conical sleeve (1) and a clamping ring (2). The sleeve (1) is axially fixed in the housing (3), allowing only radial movement. The clamping ring (2) is guided by the housing (3) and is forced in an axial direction over the sleeve (1) to achieve the clamping action. The clamping force K is generated by pressure or spring action and is intensified by means of conical (or inclined) surfaces. The force L unclamps the locking unit. A well-defined clearance ensures that the shaft can move without any friction.

SITEMA locking units absorb forces in both directions. In case of overload, the shaft slips through the clamping unit and will normally cause no damage. Applications with recurrent overload should be avoided. In this case, depending on force-level, slipping speed, and rod quality, seizing potential exists.

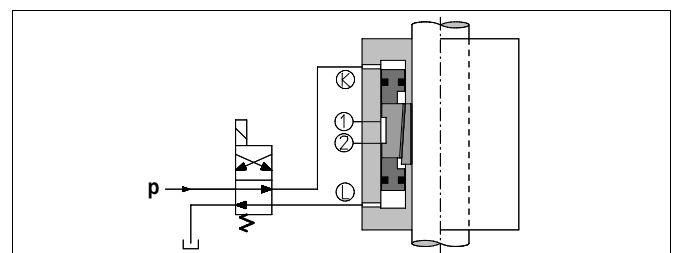
Locking by springs / hydraulic releasing Types KFH, KFP, u.a.



If the unit is pressureless - as shown in the schematic drawing - the rod is clamped by force of the springs and can hold full nominal holding force. The proximity switch 1 is signalling „rod clamped“.

During every operational cycle the 3/2-way valve is actuated electrically and releases the Locking Unit. In all other operational conditions, as well as in cases of power failure, emergency stop, etc. the locking unit is actuated, secures the rod and stops the load. In case of pressure failure, the load is secured in the same way. To avoid possible problems, the shaft should not be moved unless the proximity switch 2 indicates „released“.

Hydraulic clamping and releasing Types KB and KBP



If the port K is pressurized - as shown in the schematic drawing - the rod is clamped by force of the annular hydraulic (or pneumatic, resp.) piston and can hold a force proportional to the applied pressure. Using the nominal pressure the full nominal holding force is achieved. The proximity switch 1 is signalling „rod clamped“.

By switching the valve pressure is applied to port L , which unclamps the Locking Unit. To avoid possible problems, the shaft should not be moved before the proximity switch 2 indicates a „released“.

Synopsis of available types

Type	KFH KFH/X, KFH/Z	KFHL	KFHC	KFHW	KB	KFP KFP/Z	KFPC	KBP
Hydraulic actuation	●	●	●	●	●			
Pneumatic actuation						●	●	●
Clamping by spring force	●	●	●	●		●	●	
Clamping by pressure					●			●
Self-locking when pressureless	●	●	●	●	⊙	●	●	⊙
Releasing by pressure	●	●	●	●	●	●	●	●
Can be used as emergency brake			●	●			●	
Corrosion protected		●	●	●			●	
Certified by Lloyd's Register		●						
available for rod diameter (mm)	10 to 250	18 to 125	30	18 to 40	25 to 300	12 to 100	30	10 to 100
Data sheet	TI-F50 TI-F13, TI-F19	TI-F52	TI-F17	TI-F16	TI-F15	TI-F20	TI-F21	
Operating manual	BA-F50, BA-F51 BA-F13, BA-F19	Ba-F52	BA-F17	BA-F16	BA-F15	BA-F20	BA-F21	BA-F25
	● true ⊙ undefined, load will be more or less released after pressure drop at port K							

More product information

For details on data, application, control, assembly and functional test of the various Locking Units refer to the data sheets and operating manuals as named above.