

Technical Data Sheet TI-A20

Spring-base for SITEMA - Safety Catchers K and KR

General Information

Purpose

SITEMA Safety Catchers can only be unlocked if their clamping system is not under load. This is a matter of principle and complies with the relevant safety regulations. If, however, the slide or any other load carrying device overshoots after reaching its top cut-off position, or moves slightly downward for any particular reason, the Absturzsicherung K und KR is subjected to a partial load. In practice this means that the slide must first be raised before a closing movement of the press is possible. This effect oft can be avoided by not bolting the safety catcher directly to the machine frame, but rather on a spring-base.

Solution

The housing (1) is securely fixed to the machine frame. Inside this housing the flange plate (2) which bears the safety catcher, is free to move vertically (stroke "h") as well as transversely (by the permitted eccentricity of "x"), and is allowed to tilt. The safety catcher when released (i.e. not under load) is pressed upward by the spring (3), against the stop. If the slide should settle slightly (due to leakage, for example) while the safety catcher is engaged, only the spring force — which is very low in comparison to the holding force — is exerted on the safety catcher. In this case, the safety catcher can be released without an upward movement. Only when the lowering movement exceeds stroke length "h", the full weight of the slide will be borne by the safety catcher. Now it is possible to release the safety catcher after only a short upward movement.

Note:

The overall lowering path, after which the slide will be secured mechanically, is increased by the distance h (for h see picture at page 2). This amount is to be taken into consideration when making safety analyses for engineering purposes. Special note must be made of this in the operating instructions for the press.

Advantages

Raising the slide before the lowering movement is no longer required, even if a leakage should occur at the cylinder seals.

The crucial safety criteria, "**safety catcher can only be released when the weight of the slide is supported entirely by the hydraulic pressure**", is satisfied without restriction. Enlarging the maximum lowering distance by the stroke "h" is not relevant to safety in this case.

The **spring-base also compensates for certain misalignment** between the slide guide and the clamping rod. Other methods („*Technical Information TI-A10*" § 14 „*How to attach*") are not necessary in this case.

There are two alternatives for **attaching** the Safety Catcher to the **machine frame**. Either using threaded holes arranged identical to the ones on the clamping device or the externally attached shoulder which engages with the coupling flange FL/FS („*Technical Data Sheet TI-A30*")

Mounting

As usually ordered the the spring-base is factory-mounted under the Absturzsicherung K und KR, ready for use. Special mounting instructions are supplied for retrofitting.

The electric control of the Safety Catcher unit is described in „*Technical Information TI-A10*". The required release pressure is 60 bar for standard hydraulic versions and 6 bar for pneumatic ones. Pressure must be supplied via a flexible line.

Dimensions

For KR 25/FS 25 to KR 80/FS 80

In these sizes a centrally located spring carries the weight of the clamping device. The housing has no protection against torsion and is therefore self-aligning to the forces applied by the connecting hose.

For KRP 25/FS 25 to KRP 80/FS 80

For these pneumatic version the connecting hoses often rather small and flexible. In order to prevent kinking or squeezing, the suiting spring bases internally have an anti-twist protection..

For KRP 100/FS 100, K 100/FS 100 to K 140/FS 140

By contrast, these sizes are fitted with a set of borehole guided compression spring, which by the way prevents the body from being rotated.

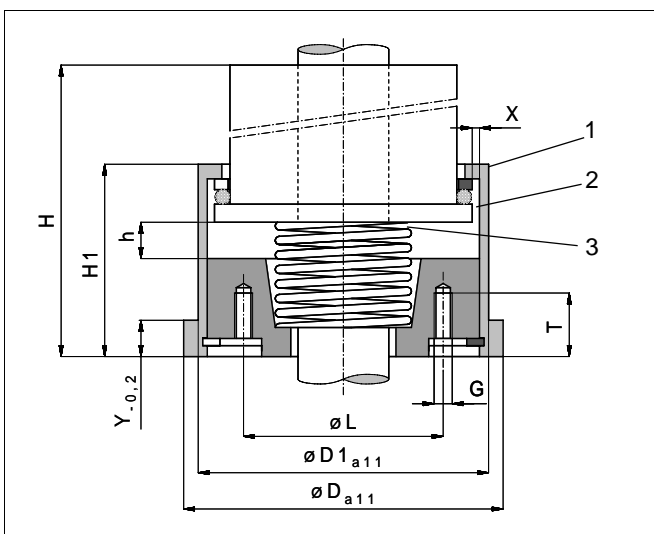


Fig. 1: Spring base for KR 25 to KR 80 and KRP 25 to KRP 80

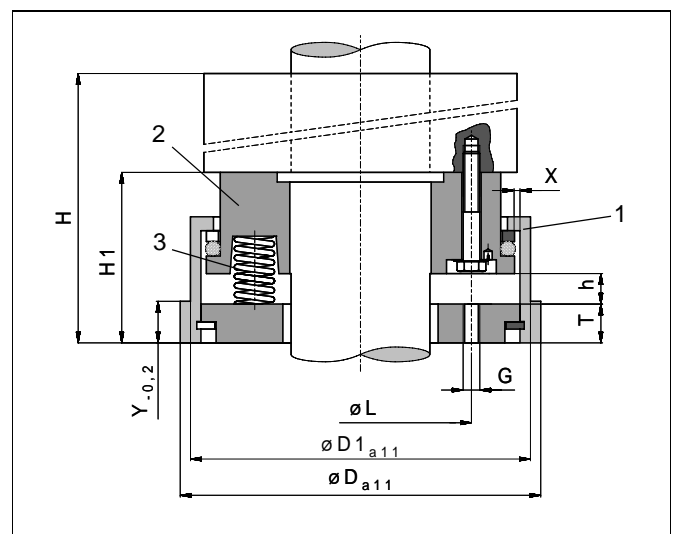


Fig. 2: Spring Base for KRP 100 and K 100 to K 140

Safety Catcher	Spring-base	H	H1	D	D1	Y	L	G	T	h	X
	Ident.-No.	mm	mm	mm	mm	mm	mm		mm	mm	mm
KR 25	FS 025 10	192	58	98	92	10	56	6xM6	12	6	2
KRP 25	FS 025 11										
KR 40	FS 040 10	257	75	146	140	16	80	6xM8	20	8	3,5
KRP 40	FS 040 11										
KR 56	FS 056 10	339	106	192	176	20	115	6xM10	20	8	4
KRP 56	FS 056 14										
KR 80	FS 080 10	390	102	246	236	20	160	6xM10	25	8	4
KRP 80	FS 080 11										
K 100	FS 100 10	404	94	260	245	30	160	6xM12	32	10	4
KRP 100	FS 100 11	459									
K 125	FS 125 10	450	94	325	310	30	220	4xM16	31	10	4
K 140	FS 140 10	484	94	355	340	30	250	4xM16	31	10	4

Subject to modification without prior notice