

Technical Data Sheet TI-A21

Spring bases for Safety Catchers series KR/T and KRP/T

- allow a release without lifting the load after minor lowering of the load
- compensate for lateral misalignment between slide guide and clamping rod
- The Safety Catchers' safety function remains unchanged.

Purpose

For reasons of safety, SITEMA Safety Catchers can only be released if their clamping system is not under load.

For a detailed function description and an explanation of the different operating conditions "secure the load" and "take the load", please refer to "Technical Information TI-A1".

As long as the Safety Catcher only secures the load and does not take the load, the clamping can be released by applying pressure at pressure port L «release».

As soon as the Safety Catcher takes the load, applying pressure at pressure port L does not suffice anymore to release the clamping. Additionally, the load needs to be lifted.

In case of a minor lowering of the load (e. g. caused by leakage or post-pulse oscillation), the Safety Catcher already takes the load partially. The clamping cannot be released by solely applying pressure.

Spring bases can compensate for a minor lowering of the load, making it possible to release the clamping without lifting the load.

Application in presses

In practice, spring bases are often used in **presses**: When 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 Safety Catcher is subjected to a partial load. This means that the slide must first be lifted before a closing movement of the press is possible.

This effect can often be avoided when the Safety Catcher is attached on a spring base.

The **advantages** of the spring bases are:

- The slide does not need to be lifted before a downward movement when minor leakage occurs on the cylinder seals.
- The Safety Catcher's crucial safety criteria, "**the clamping can only be released when the weight of the slide is supported entirely by the pressure column of the cylinder**", is satisfied without restriction.
- The spring base **compensates for lateral misalignment** between the slide guide and the clamping rod. Other methods (see "Technical Information TI-A1",) are not necessary in this case.



Function

The flange plate (2) is securely fixed to the machine frame (5) through the distance sleeves (4). The bottom plate (1) bears the Safety Catcher and is free to move vertically (stroke "h") as well as horizontally (radial play of 2 mm) against the machine frame (5).

When released (i. e. not under load) the Safety Catcher 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 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 the stroke length "h", the full weight of the slide will be taken by the Safety Catcher. Now it is only possible to release the Safety Catcher after a short upward movement.

Note:

The overall distance after which the slide will be secured mechanically is increased by the distance h (for h see Table 1). This amount is to be taken into consideration when making safety analyses for engineering purposes.

- i** The **release pressure for hydraulic standard designs is 60 bar, for pneumatic standard designs 6 bar.**
Pressure must be supplied via a flexible line.

The spring bases are fitted with a set of borehole guided distance sleeves which at the same time prevent the body from rotating. This anti-twist protection prevents kinking or squeezing of connecting lines especially with pneumatic designs.

Order and mounting

If the spring base and the Safety Catcher are ordered together, the spring base is factory-mounted under the Safety Catcher, ready for use. All spring bases are also available separately.

The control of the Safety Catcher is not affected by the spring base, see "Technical Information TI-A1".

Attachment

The spring bases are securely fixed to the machine frame through the distance sleeves. All fixation elements carrying the load need to be dimensioned for 3.5 x M. Attachment screws are not included in the scope of delivery.

Threaded holes with the correct dimensions (see *Table 1*) and drilling patterns see *Fig. 1-3* need to be provided in the machine frame.

Drilling patterns

FS 25, FS 40, FS 63

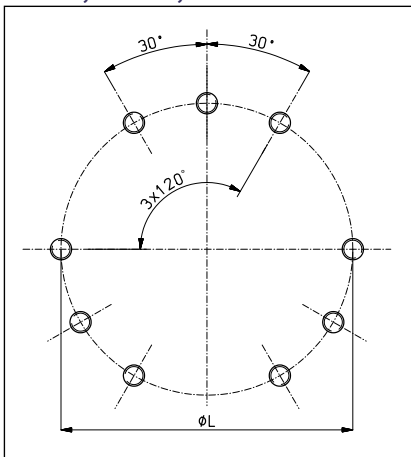


Fig. 1: Drilling pattern FS 25, FS 40, FS 63

FS 56

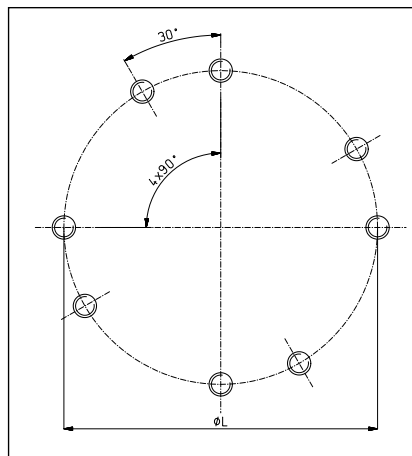


Fig. 2: Drilling pattern FS 56

FS 80

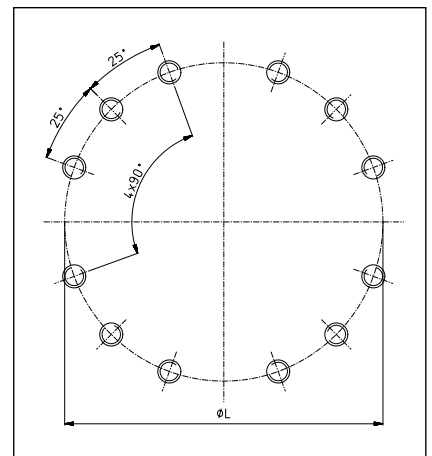


Fig. 3: Drilling pattern FS 80

Dimensions

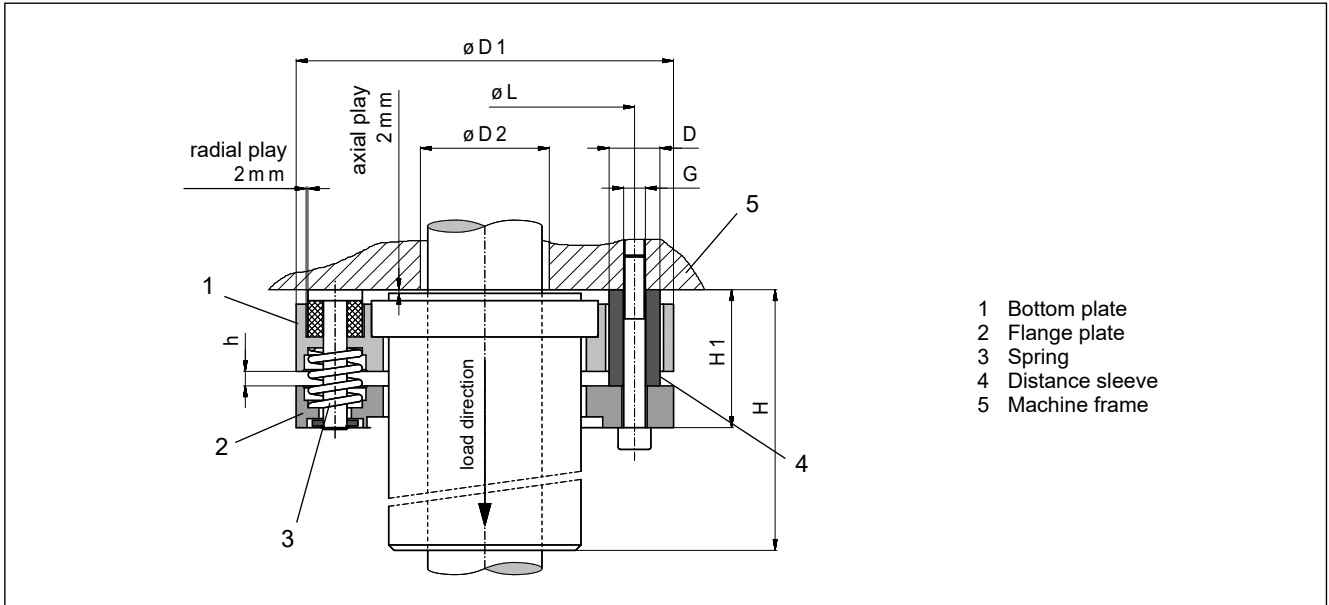


Fig. 4: Dimensions spring bases for Safety Catchers KR/T and KRP/T

Safety Catcher (ID no.) (order no.)	Spring base (ID no.) (order no.)	H	H1	D	D1	D2	L	G*	h	release pressure
		mm	mm	mm	mm	mm	mm		mm	bar
KR/T 25 (KR 025 35)	FS 25 (FS 025 20)	157	40	20	154	40	122	9 x M6	6	60
KRP/T 25 (KR 025 36)										6
KR/T 40 (KR 040 35)	FS 40 (FS 040 20)	216	76	28	208	50	165	9 x M12	8	60
KRP/T 40 (KR 040 36)										6
KR/T 56 (KR 056 35)	FS 56 (FS 056 20)	267	76	32	262	70	215	8 x M16	8	60
KRP/T 56 (KR 056 36)										6
KR/T 80 (KR 080 35)	FS 80 (FS 080 20)	327	92	36	327	100	276	12 x M20	8	60
KRP/T 80 (KR 080 36)										6

Table 1: Dimensions spring bases for Safety Catchers KR/T and KRP/T

Subject to modification without prior notice

* For angular position see drill patterns