

Technical Data Sheet TI-A21

Spring bases for Safety Catchers

KR/T and KRP/T series



- Release without lifting the load after minor lowering of the load
- Compensates lateral misalignments between axis guidance and clamping rod

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1 Purpose

For safety reasons, the clamping system of a Safety Catcher can only be released if it is not under load.

If the vertical axis of a machine overshoots after reaching its top cut-off position or moves slightly downwards for any particular reason, the Safety Catcher is subjected to a partial load. In practice, this means that the load must first be raised before the clamping systems of the Safety Catcher can open and before a movement in load direction is possible.

This effect, often found to be disturbing and time-wasting, can be avoided by not bolting the Safety Catcher directly to the machine frame, but rather on top of a spring-base.

A spring base can compensate a minor lowering movement of the load, making it possible to release the clamping without lifting the load. The same applies for horizontal and oblique axes

The spring base also can compensate to a certain extent misalignments between axis guidance and clamping rod. No further compensating methods are required.

For more information and a simulation of a spring base, see the SITEMA website www.sitema.com and navigate to *Products, Accessories, Flanges and Spring Bases*.

2 Advantages of a spring base

Here the advantages of spring bases:

- The axis does not need to be lifted before a downward movement when minor lowering occurs during the normal cyclic operation.
- Releasing the clamping is possible in the final position of the axis.
- The spring base compensates for lateral misalignment between the axis guidance and the clamping rod. No further compensating methods are required.
- Longer service life of the Safety Catcher as fewer constraint forces act on the Safety Catcher.

3 Design and function

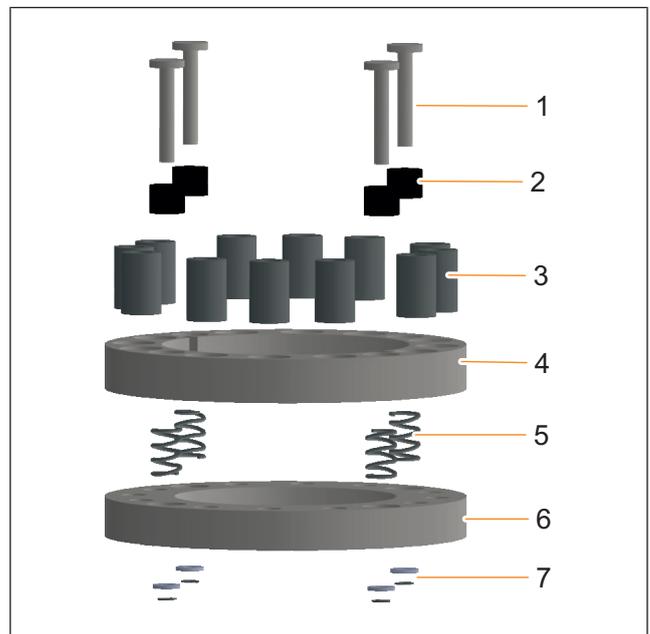


Fig. 1: Design of spring bases for Safety Catchers - tensile versions

1	Bolt	2	Elastomer springs
3	Distance sleeves	4	Housing
5	Springs	6	Bottom plate
7	Washer and retainer ring		

The housing (4) is firmly attached to the machine frame. It carries the Safety Catcher and is free to move vertically (stroke h) as well as horizontally (radial play of 2 mm) against the machine frame.

If the Safety Catcher is not under load, the springs (5) push it against the stop.

3.1 Function

If the slide should settle slightly (due to leakage, for example) while the Safety Catcher is engaged, at first only the spring force is exerted on the Safety Catcher. In this situation, the clamping can be released without any lifting.

If the lowering movement exceeds the stroke length h , the Safety Catcher takes the full weight of the load. Now a short upward movement is required to release the clamping.

The crucial safety criterion *Safety Brake can only be released if the rod is free of load* is satisfied without restriction.

i The stroke length h of the spring base has to be added to the length of the lowering movement (see Table 1: Technical data of the spring bases). This value is important for construction and engineering safety analyses.

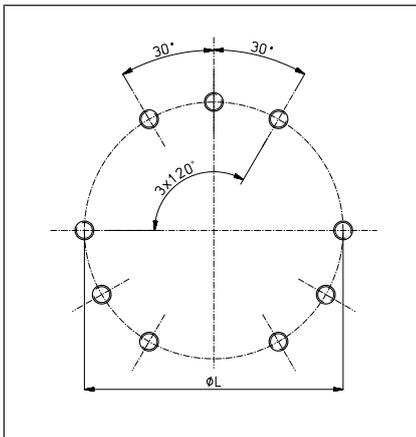


Fig. 2: Drilling pattern FS 25, FS 40, and FS 63

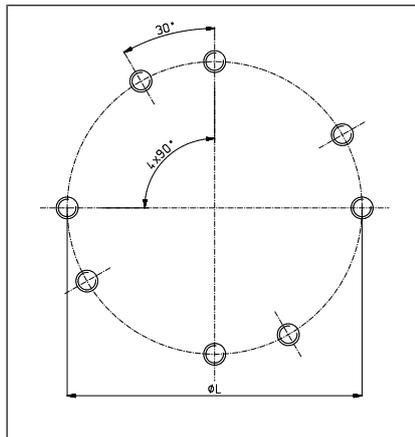


Fig. 3: Drilling pattern FS 56

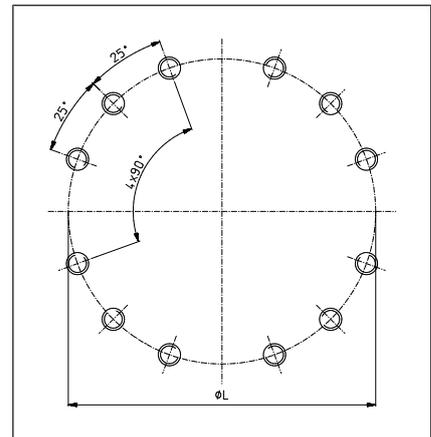


Fig. 4: Drilling pattern FS 80

4 Ordering and mounting

If the spring base and the Safety Catcher are ordered together, the spring base is already mounted on the Safety Catcher, ready for use.

All spring bases are also available separately and are delivered together with assembly instructions. (For administrative reasons, there are two items on the offer and the invoice.)

5 Mounting and drilling patterns

Use screws and the distance sleeves to mount the a spring base on the machine frame.

All fastening elements which take up the load must be dimensioned to take up at least 3.5 times the admissible load M of the Safety Catcher. Mounting screws are not included in the scope of delivery.

On the machine, threads have to be prepared with the appropriate dimensions (see Table 1: Technical data of spring bases) and according to the drilling patterns shown here.

6 Dimensions

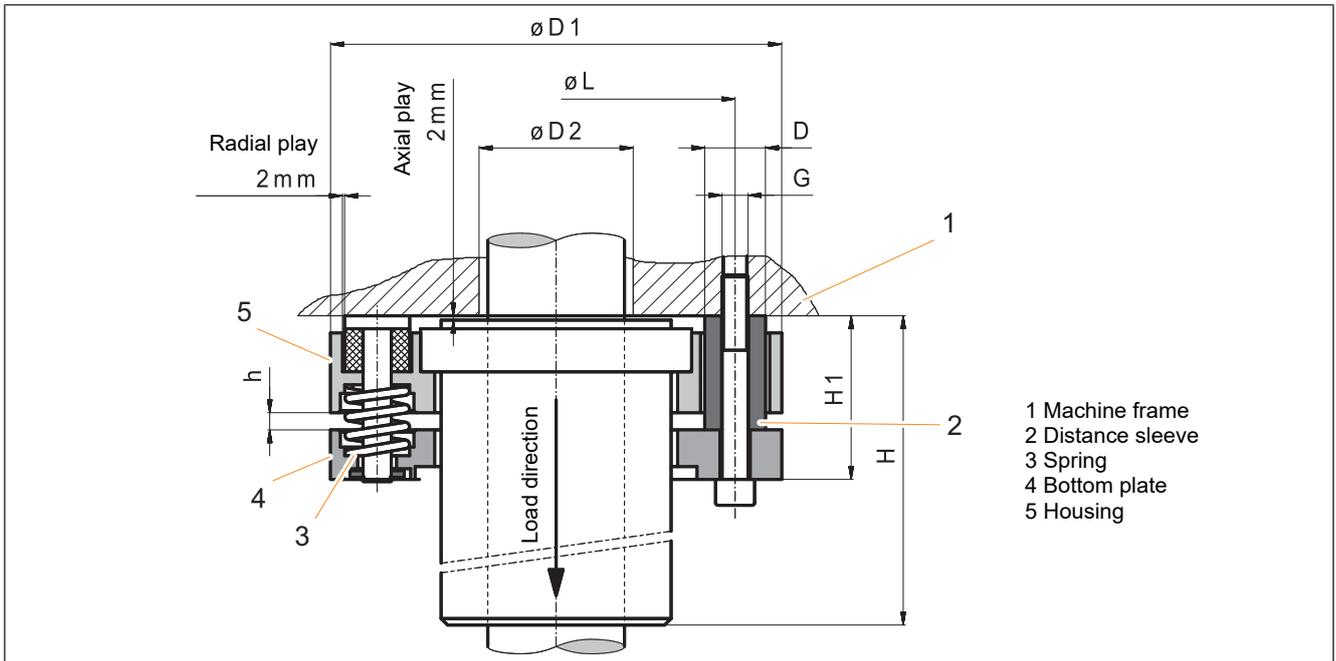


Fig. 5: Dimensions of spring bases for Safety Catchers of the KR/T and KRP/T series

Safety Catcher		Spring base		Release pressure	H	H1	D	D1	D2	L	G*	h	Wt.
	ID no. (order no.)		ID no. (order no.)	bar	mm	mm	mm	mm	mm	mm		mm	kg
KR/T 25	KR 025 35	FS 25	FS 025 20	60	157	40	20	154	40	122	9 x M6	6	3
KRP/T 25	KR 025 36			6									
KR/T 40	KR 040 35	FS 40	FS 040 20	60	216	73	28	208	50	165	9 x M12	8	10
KRP/T 40	KR 040 36			6									
KR/T 56	KR 056 35	FS 56	FS 056 20	60	267	76	32	262	70	215	8 x M16	8	15.2
KRP/T 56	KR 056 36			6									
KR/T 80	KR 080 35	FS 80	FS 080 20	60	327	92	36	327	100	276	12 x M20	8	22
KRP/T 80	KR 080 36			6									

Table 1: Technical data of spring bases

Subject to modification without prior notice

7 Further information

The following Assembly instructions exist for the different spring base series and types:

Spring base	ID no.	For Safety Catcher	Assembly instructions
FS 25	FS 025 20	KR/T 25	FS-BA-006
		KRP/T 25	
FS 40	FS 040 20	KR/T 40	
		KRP/T 40	
FS 56	FS 056 20	KR/T 56	
		KRP/T 56	
FS 80	FS 080 20	KR/T 80	
		KRP/T 80	

The corresponding assembly instructions are provided upon delivery. Upon request, we will send it to you.