

APPLICATION

Pull ropes are used as actuators for operation of pull rope emergency stop switches along conveyor belts.

The Kiepe pull ropes and accessories are designed for the installation of the Kiepe pull rope emergency stop switches according to the standard requirements.

Within the European Union, these requirements mainly generate from DIN EN ISO 13850; EN/IEC 60 947-5-5 and EN 620.

After commissioning, the fulfilment of these requirements is a definite condition for the certification of EC conformity.

Dependent on the design of the emergency stop system, the length of the pull rope **1** can be up to 100 m and the distance between the pull rope supports up to 4 m.

FUNCTION

The pull rope emergency stop switch is actuated to switch off the conveyor belts, when the pull rope **1** is pulled in any direction or the pull rope breaks. Because the anchor hooks **3** take on the force of the tension springs **2** and the actuation forces of the pull rope, a stable substructure is essential.

The rope supports **6** bear and support the pull rope **1** over its entire length. They must be mounted at a specified distance and in a straight line to the release lever of the pull rope emergency stop switch.

The tension force of the tension springs **2** is adjusted to the selected pull rope emergency stop switch and can be readjusted by using turnbuckles or other tensioning elements **4**.

Clamps **7** and thimbles **8** are used for securing the pull rope. Quick links **5** simplify the installation and the exchange of components.

TECHNICAL DATA

Designation	Pull rope system Actuator components of emergency stop devices
Actuation	Manual
Complies with	EN 620; DIN EN ISO 13850, DIN EN 60947-5-5, BGI 710
To be used for	Pull rope emergency stop switches PAS, LRS (single-sided pull rope installation) HEN, NTS, SEG; PRS (two-sided pull rope installation)

MECHANIC

Pull Rope	Zinc coated steel wire; alternative stainless steel, \varnothing 2mm UV-stabilized, red PVC-coating breaking load > 2,000N
Installation position	horizontal up to 15°
Pull rope length	Up to 100 m (depending on design of emergency stop system)
Distance between rope supports	Maximum 4 m (depending on design of emergency stop system)

AMBIENT CONDITIONS

Ambient temperature range	-25°C...+70°C
Installation temperature range	+10°C...+35°C
Storage temperature range	-40°C... +75°C

PULL ROPES, RED, PVC-COATED

		Ordering Code	
Description	Similar illustration	Stainless steel ASTM316/1.4401	Steel, galvanized
1 Pull rope, steel cable, galvanized Ø 3 mm; 50 m Ø 3 mm; 100 m Ø 3 mm; 500 m spool		94.045 731.211	94.045 731.011
		94.045 731.221	94.045 731.021
		94.045 731.231	94.045 731.031
Pull rope, steel cable, galvanized Ø 5 mm; 50 m Ø 5 mm; 100 m Ø 5 mm; 500 m spool		94.045 731.212	94.045 731.012
		94.045 731.222	94.045 731.022
		94.045 731.232	94.045 731.032

TENSION SPRINGS ~ AISI 301

Description	Similar illustration	Installation length/Distance a	Ordering Code
2 Tension spring L; HEN, NTS, SEG, PRS Tension spring M; HEN, NTS, SEG, PRS Tension spring M*; HEN, NTS, SEG, PRS Tension spring XL; LRS, PAS		2x50 m/4 m	251.05.01.02.18
		2x50 m/2,5 m	94.000 026.683
		2x50 m/2,5 m	93.059 126.001
		1x30 m/2,5 m	580.00.50.01.01

* with excess travel reduction „h“

OTHER MOUNTING ACCESSORIES

Description	Similar illustration	Material	Ordering Code
3 Anchor hook M10* Anchor hook M12* Anchor hook M8*		Steel, galvanized	93.098 412.120
		Steel, galvanized	93.098 412.130
		Stainless steel, AISI 304	93.098 412.310
4 Turnbuckle M6; 2 Eyelets Turnbuckle M6; 1 Hook/1 Eyelet Turnbuckle M6; 1 Hook/1 Eyelet		Steel, galvanized	93.098 411.101
		Steel, galvanized	93.098 411.102
		Stainless steel, AISI 316	93.098 411.302
5 Quick link 6 mm Quick link 6 mm, long		Steel, galvanized	93.098 415.001
		Stainless steel, AISI 316	93.098 415.202
6 Eyebolt M12x60* Eyebolt M12x200* Eyebolt M12x60*		Steel, galvanized	93.098 413.130
		Steel, galvanized	93.098 413.131
		Stainless steel, AISI 304	93.098 413.330
7 Rope clamp, U-Form, Size 3-5 Rope clamp, U-Form, Size 3 Rope clamp, U-Form, Size 5		Steel, galvanized	93.098 414.001
		Stainless steel, AISI 316	93.098 414.203
		Stainless steel, AISI 316	93.098 414.205
Rope clamp, egg form, Size 3 Rope clamp, egg form, Size 5		Steel, galvanized	94.047 869.001
		Steel, galvanized	94.047 869.002
8 Thimble Size 3 Thimble Size 5		Steel, galvanized	93.097 510.003
		Steel, galvanized	93.097 510.005
9 Marking label emergency stop for pull rope 40x70, 1 role of 50 pieces			93.066 950.002
20 Pulley M10x60, wheel Ø 71 mm, incl. 2 nuts		Steel, galvanized	93.069 106.001

* incl. 2 nuts + 2 lock washers

MOUNTING

Anchor hook **3** and rope support **6** have to be linearly installed to the substructure of the conveying system as seen in the mounting diagram.

A Stable substructure must be provided by the client. The rope support must be mounted using the distances approved for the installation.

Emergency Stop switches with single-sided pull rope installation are mounted centred between the anchor hooks **3** of the pull rope.

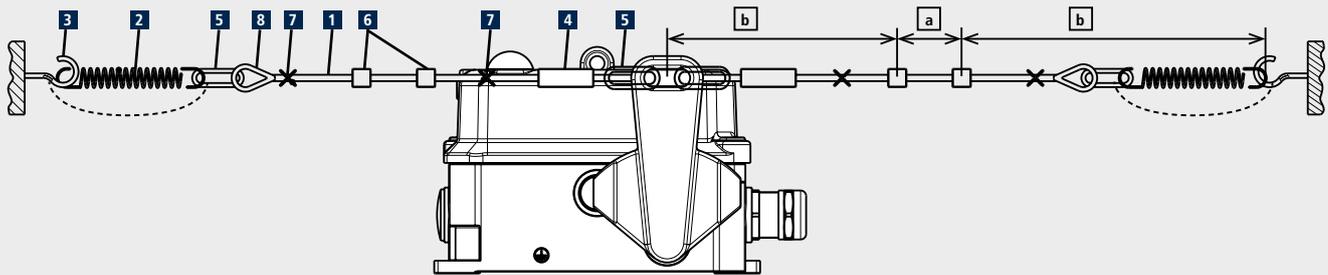
The tension spring **2** is connected to the anchor hook **3**. The tensioning element **4** can now either be attached to the tension spring or to the pull rope emergency stop switch. The pull rope is then secured and run up to the pull rope emergency stop switch through the rope supports. The pull rope is tensioned according to the operating instructions and fixed with clamps **7**.

The tensioning element **4** is used in order to adjust the operating point of the tensioning spring. The tension spring **2** must be under symmetrical tension in case of two-sided installed pull rope.

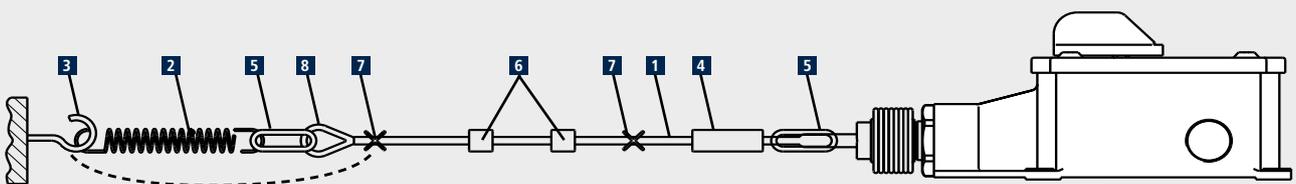
Functionality must be tested after the tension spring **2** has been adjusted:

- ▶ The pull rope must be freely operational in any direction.
- ▶ Actuation force and stroke of the pull rope must comply with the standard guidelines.
- ▶ When simulation a tear or break of the pull rope, the connected pull rope emergency stop switch must trigger.
- ▶ The operator at the switch's pull rope must have a clear view of the full operating length.

MOUNTING DIAGRAM



Two-sided pull rope installation



Single-sided pull rope installation

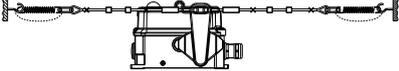
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|-------------------------|-----------------------------|---------------------|
| 1 Pull rope | 4 Tensioning element | 7 Clamp (2x) |
| 2 Tension spring | 5 Quick link | 8 Thimble |
| 3 Anchor hook | 6 Rope support | |

a Distance between Eyebolts: 2.5 m up to 4 m (depending from tension spring)

b Distance to first Eyebolt: 0.75 up to 1 m

Ordering Recommendation see next page

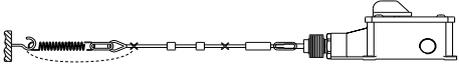
ORDERING RECOMMENDATIONS

Two-sided pull rope installation for each 1 piece pull rope switches Typ HEN, NTS, SEG, PRS				Necessary amount of pieces for	
			Ordering Code	2x25 m (Distance a=2.5m)	2x50 m (Distance a=4m)
1	Pull rope	∅ 5 mm, 50 m	94.045 731.012	1	
		∅ 5 mm, 100 m	94.045 731.022		1
2	Tension spring	M (Tension length 300 mm, h*=360 mm*)	94.000 026.683	2	
		L (Tension length 340 mm)	251.05.01.02.18		2
3	Anchor hook	M12	93.098 412.130	2	2
4	Turnbuckle	M6; 2 Eyelets	93.098 411.101	2	2
5	Quick link	M6	93.098 415.001	4	4
6	Eye screw	M12x60	93.098 413.130	20-22	26-28
7	Rope clamp	U-Form, Size 3-5	93.098 414.001	10	8
8	Thimble	Size 5	93.097 510.005	4	2
9	Marking label	1 coil with 50 pcs., optional	93.066 950.002	19-24	25-30

Remark:

Example (main material: steel, galvanized), Temperature during installation: +10°C...+35°C, ambient temperature range: -25°C...+70°C.

* The spring M needs a stroke reduction h, installed at each spring with pull rope + 1 pcs. thimble + 1 pcs. rope clamp

Single-sided pull rope installation for each 1 piece pull rope switches Typ PAS, LRS				Necessary amount of pieces for	
			Ordering Code	1 x 20 m (LRS) (Distance a=2.5m)	1 x 30 m (PAS) (Distance a=2.5m)
1	Pull rope	∅ 5 mm, 50 m	94.045 731.012	1	1
2	Tension spring	XL	580.00.50.01.01	1	1
3	Anchor hook	M12	93.098 412.130	1	1
4	Turnbuckle	M6; 2 Eyelets	93.098 411.101	1	1
5	Quick link	M6	93.098 415.001	2	2
6	Eye screw	M12x60	93.098 413.130	8	12
7	Rope clamp	U-Form, Size 3-5	93.098 414.001	4	4
8	Thimble	Size 5	93.097 510.005	1	1
9	Marking label	1 coil with 50 pcs., optional	93.066 950.002	7-10	11-14

Remark:

Example (main material: steel, galvanized), Temperature during Installation: +10°C...+35°C and max. Temperature change of +/-5°C.

Subject to change without notice.

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