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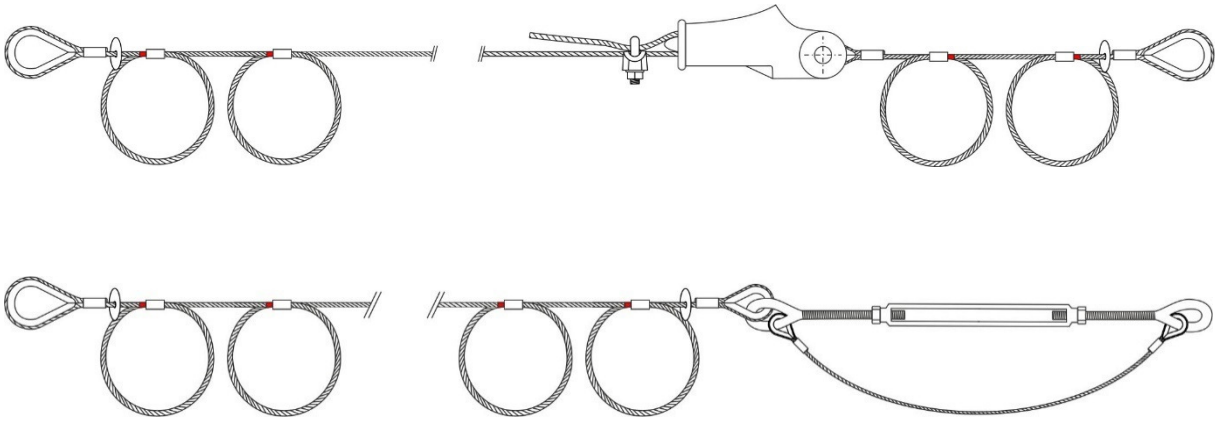
Operating instructions

Lifeline

Model Savekingline®



Information for the safe usage

Version 1.80

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1.Preamble

Thank you for your decision to buy the Savekingline®. In case of a person falling, the four damping elements that are integrated in the stopper system allow a higher shock absorption than conventional security systems. The impact force and therefore the risk of injury is significantly reduced.
The maximum force acting on the anchor points is significantly reduced too.

The Savekingline® can withstand the forces of a falling person and allows a quick way of rescuing the climbing person. The Savekingline® does not prevent the falling itself.

Many thanks for the contribution:

Matthias Möller	Free expert	Crossbeams, Crossbeam adapters
Arved Hammerstädt	Company Cast	Cross beam suspension
Steffen Boschert	Company SWL	PPE Anchoring equipment

For making their products available for photographs

2. Applicants of the Savekingline® and their area of application

The Savekingline® is used for protecting people during work in heights where a lifting platform doesn't suffice. The protection is always horizontally. The used equipment depends on the assessment of the risk of falling.
The Savekingline® is a system of class C according to DIN EN 795 and 8. General Product Safety Directive (GPSD) and personal protection equipment class 3 against falling.
The Savekingline® is only to be used for temporary fixed or portable installation. The Savekingline® is only to be used with personal protective equipment against falls from a height.
Both the installation as well as the usage of the Savekingline® is only those people allowed that are qualified. Qualified people might be trained stage technicians and rigger.

3. General safety instructions

Before using the Savekingline® the information for safe usage have to be read first. Keep this operating instruction such that the user of the Savekingline® has to have access to it at all time. Please keep the safety instruction in mind. If any questions occur, please contact the manufacturer Drahtseile24 GmbH.

The following paragraphs are especially important:

- Only one person should use the Savekingline® at a time.
- The anchoring sections has to be horizontal.
- The Savekingline® must not be used with retractable fall limiters according to DIN EN 360.
- The improper use of the components of the Savekingline® like using the components for lifting purposes is strictly prohibited.
- Every user of the Savekingline® has to be physically able to use the Savekingline®. A suitability may be determined by a company doctor.
- Every user of the Savekingline® has to have knowledge of the safe way of using the Savekingline®. The safe use may be practiced.
- A visual inspection as well as a functionality test has to be done prior to using the Savekingline®. If there is any uncertainty about the safe condition of the system, the Savekingline® must not be used.
- A qualified person has to inspect the system at least once a year.
- A damaged system or a Savekingline® that has caught a person must not be used anymore and has to be disposed.

The life cycle of the Savekingline® is ten years staring from the first dispatch.
Please find the engraving on the labelling badge that are at the ends of the Savekingline® (year of manufacturing).
Please note the year of the first dispatch (date of purchase) and the year of manufacturing of the Savekingline® in appendix 3 (Documentation of the recurring inspection) on page 38 of this document.

Definition of suitable rescue measures

When the Savekingline® has caught a falling person, suitable rescuing measures are necessary. A caught person that is hanging in the air is to be brought back to the floor within the shortest possible time. This requires the availability of the rescuing personnel and rescuing equipment. The possible emergency case of a suspension trauma requires specific first aid measures. Please find section 5.2 of this operating instruction.
The Savekingline® must not be used in a different way than described in section 2.

If the equipment is sold to a different country the reseller has to make the following instructions available. Maintenance instructions, instructions about the recurring checks as well as instructions about the usage of the Savekingline®.

4. Components of the Savekingline®

The **Savekingline® with a variable length** consists of two main components. The rope components and the rope lock component.

Picture 4.1

Picture 4.1: *Wire rope component* with a 2-ton bow shackle made from high tensile steel according to DIN EN 13889 with screw collar pin. (Included in the dispatch)

Remark: The two damping elements and the wire rope, which is the lifeline are one unit.

Picture 4.2

Undetachable three hole wedge

Picture 4.2: *Rope lock component* with asymmetric rope lock according to EN 13411-6 and two damping elements with a 2-ton bow shackle made from high tensile steel according to DIN EN 13889 with screw collar pin. (Included in dispatch)

Remark: The wire rope lock with the undetachable three-hole wedge must not be separated from the Savekingline® damping elements.

If the components are considered defect, the complete *wire rope component* has to be sent to the supplier for further checks. The Savekingline® must not be used.

The **Savekingline® with a fixed length** consists of the provided shackles together with one main component:

Picture 4.3

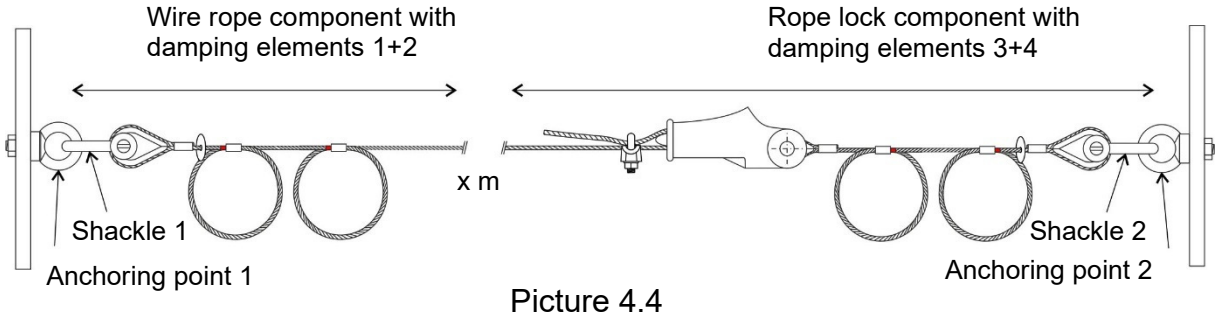
Picture 4.3: A single combined unit: High strength turnbuckle with two thimbles 1/2x9inch, US specification FF-T-791.
2x 2 damping elements, both sided with a 2-ton bow shackle made from hight tensile steel with a screw collar pin according to DIN EN 13889
(Included in the dispatch)

Remark: Turnbuckle, damping elements and lifeline wire rope are on single combined unit and must not be separated. If the components are considered defect, the complete component has to be sent to the supplier for further checks. The Savekingline® must not be used when considered defect.

Remark: The whole equipment of the Savekingline® must not be altered without written consent of the supplier. All repair works can only be conducted in agreement with the supplier.

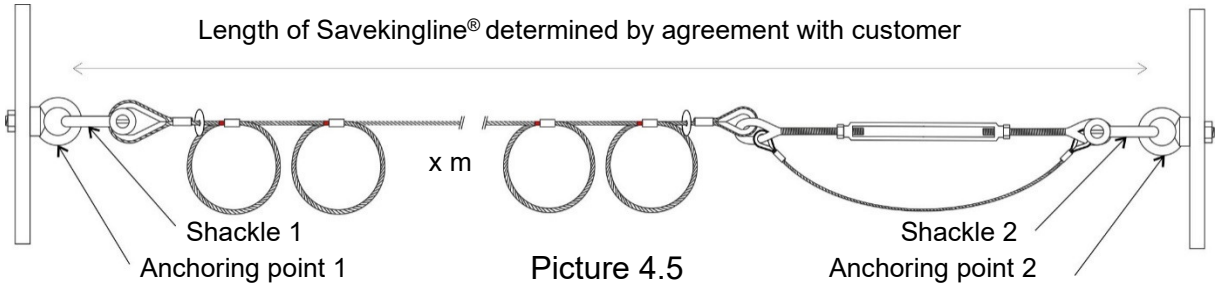
The following sketch shows the components of the assembled Savekingline®.

Picture 4.4: **Savekingline® with a variable length**



Picture 4.4

Picture 4.5: **Savekingline® for a fixed length**



Picture 4.5

Savekingline® for a fixed length, with turnbuckle and 2 x 2 Damping elements

4.1. Meaning of the Savekingline® labelling badge

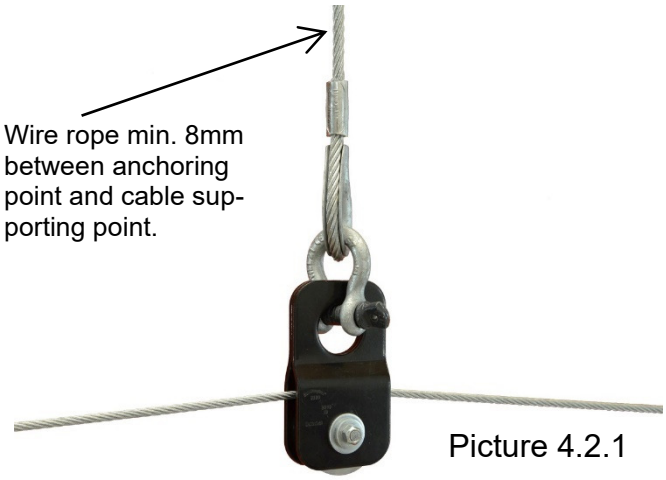
Savekingline®:	Product name
10317:	Batch number of the used wire rope
CE 0299	CE label with test number
ID:	Logo of the German Trade Association for Ropes and Load Attachment Rigging
2019:	Year of production
6mm:	Nominal diameter of the used wire rope
1 Person:	Authorized of one person
Hand with book:	Please respect this operating instruction
EN 795:2012:	Norm with year of issue
Drahtseile24 GmbH:	Supplier

The functions of the Savekingline® components are explained in the following table.

Name	Explanation of the functions
Anchoring points 1 und 2 (Variable and fixed length)	Anchoring point 1 is used to mount the wire rope component; Anchoring point 2 is used to mount the rope lock component. The anchoring points have to withstand an impact force of at least 6 kilonewton. They have to be made available by the user and are not parts of the Savekingline®.
Shackle 1 und 2 (Variable and fixed length)	2 t bow shackles from hight tensile steel with screw collar pin according to DIN EN 13889 size ½ inch (Included in the dispatch)
Wire rope component with damping elements 1+2 **(Variable length)**	Wire rope 6mm, 6x19+FC with a maximum length of 60 m with implemented damping elements. The field size must not exceed 12 m. Field delimitations can be achieve with pulleys. That is explained in chapter 5.3.5. The damping elements 1+2 are to protect the anchoring point 1 with a reduction of the impact force resulting from catching a falling person. The wire rope in its total length is used for attaching the personal protective equipment.
Wire lock component, damping elements 3+4 **(Variable length)**	The wire lock component is used to adjust the length of the Savekingline®. The damping elements are used to protect the anchoring point 2. The parts of the wire lock component are undetachable combined.
Savekingline® with damping elements 1-4 and turnbuckle **(Fixed length)**	The damping elements 1-4 are used to protect the anchoring points 1+2. The turnbuckle is used to tighten the Savekingline®. All components of the Savekingline® with a fixed length are undetachable combined.
Labelling and identification	The labelling of the Savekingline® are at their ends. Each Savekingline® has two identical labelling badges with data that is explained in chapter 4.1 on page 8 of this document.

4.2. Savekingline® with lengths >12m

The maximum length of a Savekingline® system must not exceed 60m. The maximum length of a single field of the Savekingline® must not exceed 12m. If the length of a field exceeds 12 m the Savekingline® has to be split in smaller fields with each length of at most 12m. To achieve this intermediary cable supporting points are necessary. To create such intermediary cable supporting points, pulleys, as described in picture 4.2.1 are necessary. Each such supporting points has to have a minimum bearing capacity of 6-12kN depending on the bending angle. *Please find explanations to picture 5.3.1.6 on page 16.*



Picture 4.2.1

Picture 4.2.1: Redirection pulley labelled by Drahtseile24 GmbH to split fields. Other redirection pulleys must not be used. Attached with a bow shackle according to DIN EN 13889 and a working load limit of 2t

Picture 4.2.2: Savekingline® schematically split in 5x12m fields with a total system length of 60m.

Picture 4.2.2

5. Usage of the Savekingline®

The product must only be used by instructed people. During those instructions, the correct usage of the system has to be applied.

The usage instruction includes construction planning, creation of a rescuing concept, assembly of the Savekingline®, the usage of the Savekingline® with PPE, disassembly, transportation as well as the storage of the Savekingline®. Additionally, the correct way to deal with a Savekingline® that was used to catch a falling person. The usage also includes maintenance, restoration and recurring checks.

5.1 Assembly planning

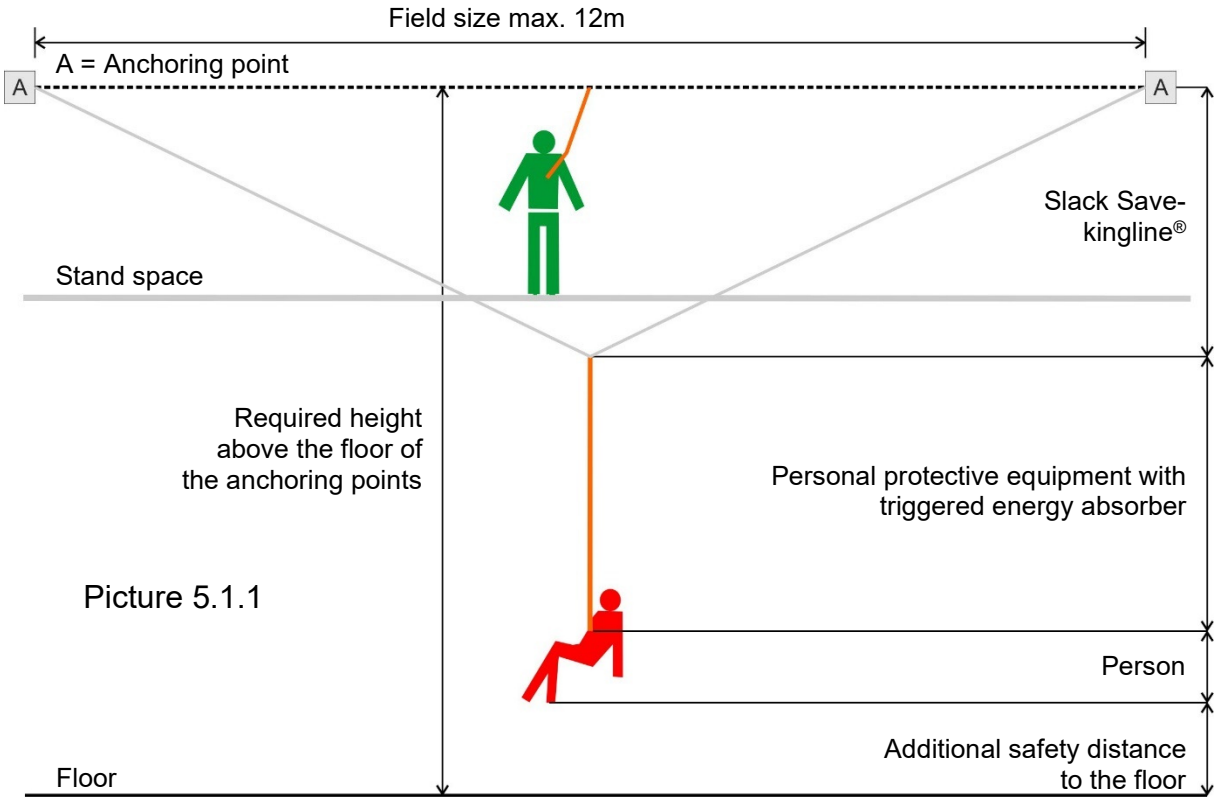
Before installing and using the system, an assembly plan has to be created to ensure the safe functioning of the Savekingline® in combination with the anchoring points. The assembly plan has to be created by people that have sufficient experience and knowledge and are informed about the relevant regulations. This might point out potential threats that could occur during the usage of PPE against falls from a height. During the assembly planning the installation conditions have to be determined to ensure a safe function of the Savekingline®. The following definition is particularly important:

Definition of suitable anchoring points and methods regarding the stability of the supporting structures.

Determination of the course of the Savekingline® to create a suitable distance to the working area such that the Savekingline® is within reachable distance for the climbing worker and the potential fall from a height is reduced to a minimum.

- Definition of the required cleared area below the Savekingline-system with regard of the maximum slack of the components including the caught person. Please find the sketch on page 12.
- The Savekingline® has to have a safe distance to any sharp object. Even with a deviation during the process of catching the falling person, the Savekingline® must not be in contact with any sharp edges as this could damage the Savekingline®.
- The Savekingline® can be assembled outdoors but climatic impacts have to be taken into consideration.
- It is necessary that the Savekingline® as well as their anchoring points are implied in the equipotential bonding of the electric plant.
- The anchoring section for personal protective equipping at the Savekingline® is only for a horizontal section that has a deviation of ±3°
- With the usage of pulleys, it has to be taken into account that the force acting on the Savekingline® can be twice the triggering force. The triggering force of the Savekingline® is 6kN, this results in a maximum deviation force of 12kN at a redirection angle of 180°.Please find picture 5.3.5.5 on page 22 for a sketch of the deviation forces.

The following sketch explains the minimum height of the anchoring points:



Picture 5.1.1

The cleared area has to be calculated to include a sufficient safety distance to the floor or any other obstacle. Please consider picture 5.1.1.

The minimum height of the anchoring points results from the expected maximum values of the exemplary used PPE:

Slack of the Savekingline® at a maximum field size (12m)	2,90 m
PPE with triggered energy absorber (consider the remark)	3,75 m
Caught person in a body harness, sternal (chest)	1,50 m
Additional safety distance to the floor	1,00 m
Minimum height of the anchoring points	9,15 m

Remark: The minimum height of the anchoring points is determined by the choice of the PPE with triggered energy absorber and is set by the user.
In this example the factor is 3.75m.

The field size must not exceed 12m.

5.2 Rescuing concept

A plan has to be created to rescue the person that was caught from the Savekingline® after falling. The concept may vary depending on the exact situation. Most importantly is it to rescue the fallen person immediately to reduce the risk of a suspension trauma. The concept also includes the availability of suitable first aid measures.

For more information please find German Social Accident Insurance (DGUV) information 204-011
"Erste Hilfe – Notfallsituation Hängetrauma" (former BGI 8699);
Download: publikationen.dguv.de.

5.3 Assembling of the Savekingline®

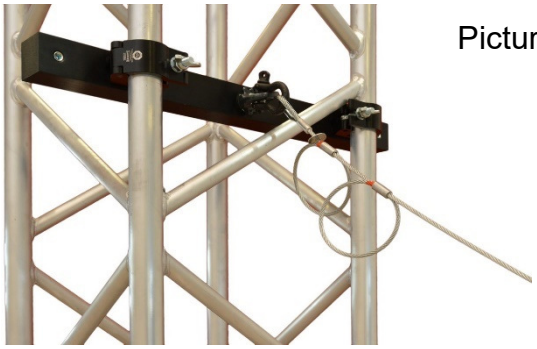
The installation of the Savekingline® has to be done according to the installation planning and can only be executed by qualified people like stage technicians and riggers. The assembling of the system should be done from a safe standing platform like a lifting platform. In case of the risk of a person falling from the lifting platform, suitable safety measures have to be taken. An example would be the usage of personal protective equipment against falls from a height in combination with sufficiently carrying anchoring points.

5.3.1 Anchoring points

The Savekingline® has to be attached to a sufficiently bearing cross beam construction or a building design.
The requirements for anchoring points are explained as follows.

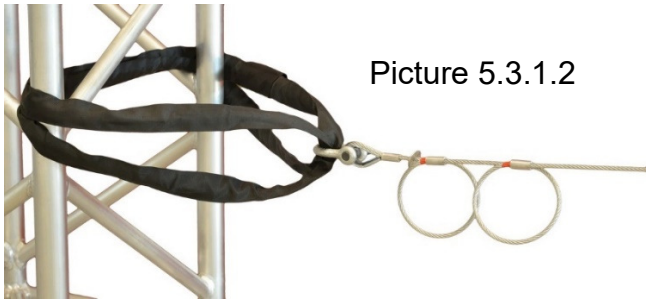
Anchoring points at a cross beam construction

The bearing capacity of the anchoring points has to be at least 6kN to securely absorb the impact of the falling person.
The Savekingline® may be attached to a suitable traverse system with a universal cross beam mounting with a carrying capacity of WLL 1500kg.
Please find picture 5.3.1.1



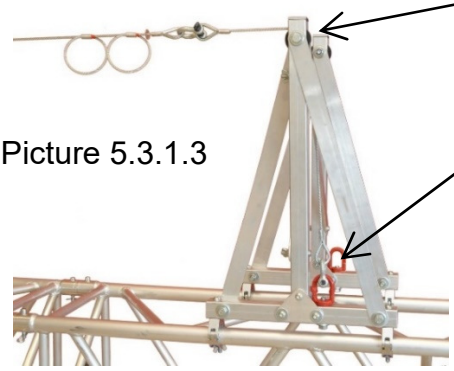
Picture 5.3.1.1

Picture 5.3.1.1: Savekingline® attached to a vertical traverse Prolyte S52SV with a traverse mounting LT2-p by the company Cast



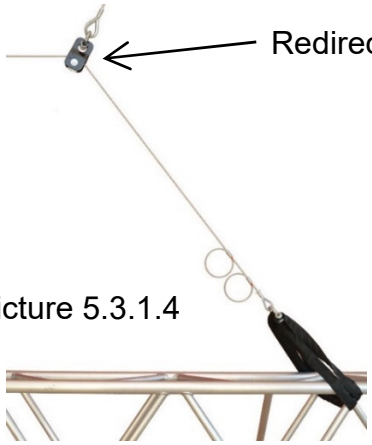
Picture 5.3.1.2

Picture 5.3.1.2: Savekingline® attached to traverse Prolyte S52SV with Softsteel WLL 2t



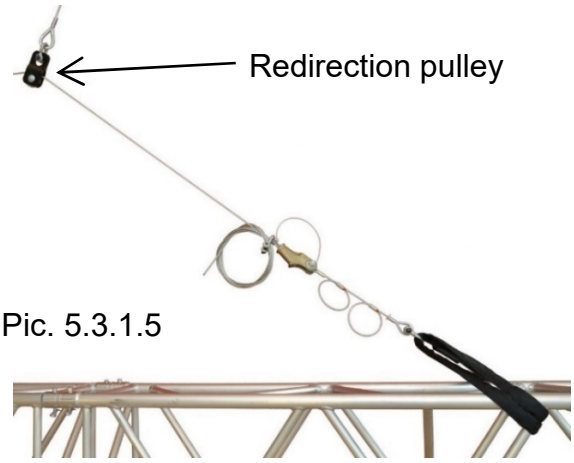
Picture 5.3.1.3

Picture 5.3.1.3: Savekingline® attached to horizontal traverse Prolyte S52SV with Prolyte traverse adapter and 90° redirection



Picture 5.3.1.4

Picture 5.3.1.4: Savekingline® attached to horizontal traverse Prolyte S52SV with Prolyte Softsteel WLL 2t.
Through the redirection pulley the Savekingline® is made horizontal.

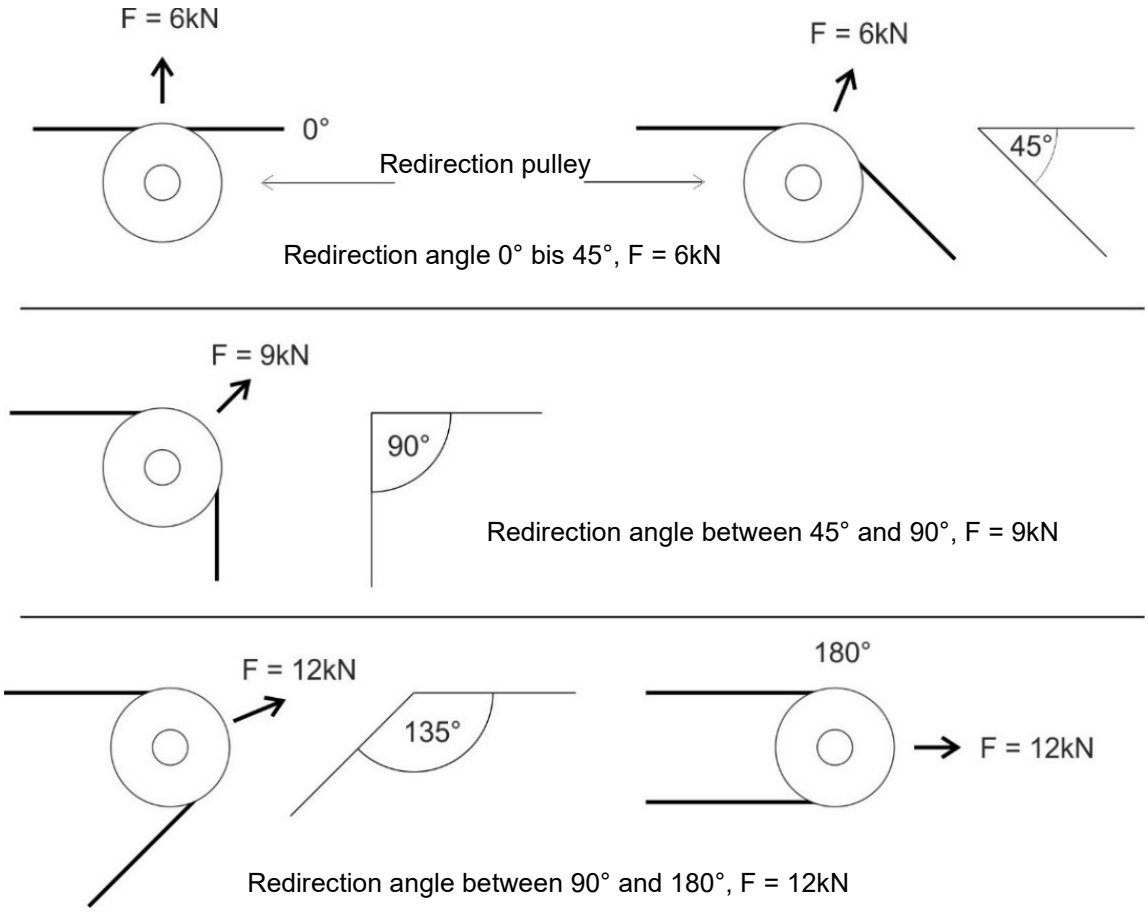


Pic. 5.3.1.5

Picture 5.3.1.5: *Rope lock component* Attached to horizontal traverse Prolyte S52SV through Prolyte Softsteel WLL 2t. Through the redirection pulley the Savekingline® is made horizontal.

Remark: With redirecting the Savekingline® as shown in picture 5.3.1.3 and 5.3.1.4 and 5.3.1.5, forces greater than 6kN may occur depending on the redirection angle please consider the following picture 5.3.1.6:

Picture 5.3.1.6



Picture 5.3.1.6: Forces acting on the anchoring points of the redirection pulleys at different angles.

Anchoring points at building constructions

Structurally embedded anchoring points are necessary for the attachment of the Savekingline® in or at building constructions. Mounting equipment may be bolted, screwed or welded and have to have a bearing capacity of at least 6kN. Suitable anchoring points are for example anchor devices according to type A or B DIN EN 795:2012.
It is to take into account that at anchoring points according to EN 795, redirection pulleys must not be attached as the forces acting on the pulley could exceed 12kN. Please consider picture 5.3.1.6.

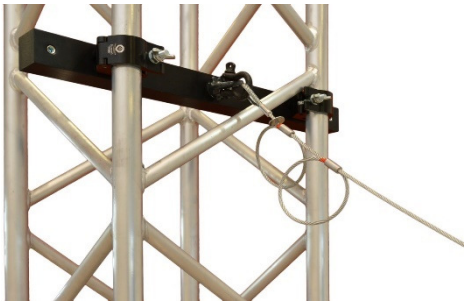
5.3.2 Assembling and tensioning of the Savekingline®

The system is assembled as described in the sketch (please find picture 4.4 and 4.5) and the assembly plan (section 5.1)

To reduce the risk of falling for the installing personal a lifting platform is to be used unless the installation of the cross-beam construction is within working heights.

5.3.3 Installation of the Savekingline® with a variable length.

Picture 5.3.3.1



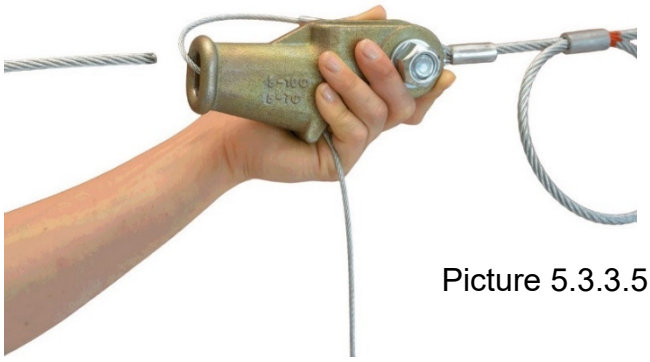
Picture 5.3.3.2

Step 1: Attaching the *wire rope component* to a suitable anchoring point with a traverse suspension (picture 5.3.3.1) or Softsteel WLL 2t (picture 5.3.3.2) and rolling out the wire rope component without any twists.

Picture 5.3.3.3

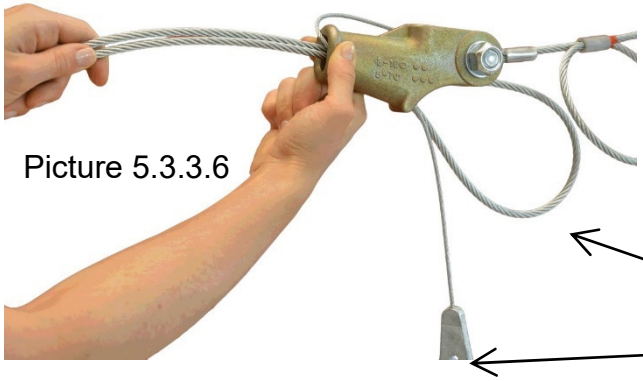
Picture 5.3.3.4

Step 2: Attaching the *rope lock component* at a suitable anchoring point, like picture 5.3.3.3 with a traverse suspension or like picture 5.3.3.4 with Softsteel WLL 2t.



Picture 5.3.3.5

Picture 5.3.3.5:Carry the end of the wire rope component through the rope lock.



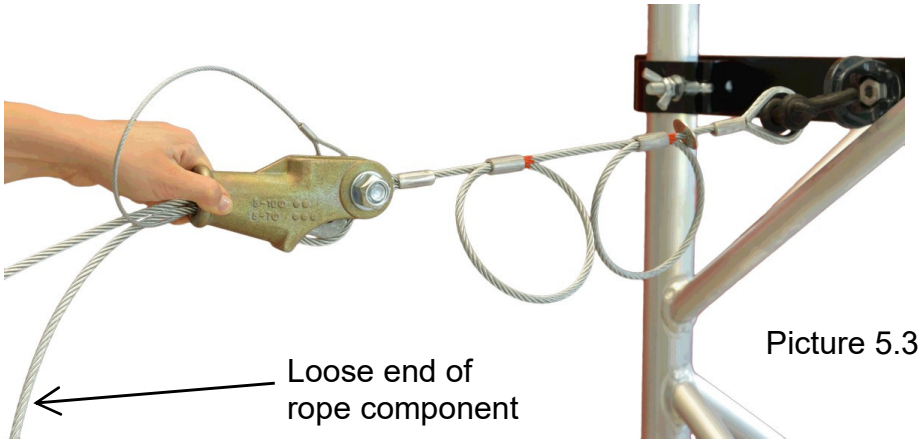
Picture 5.3.3.6

Back bent loop

Three hole wedge

Picture 5.3.3.6: Back bending the end of the rope component to reinsert into the rope lock.

Step 3: Insert the wire component in the rope lock (Picture 5.3.3.5), back bend it and reinsert the wire component without twists into the rope lock (picture 5.3.3.6)
Import: The back bent end of the wire rope has to be below the previously inserted wire rope such that the force of Savekingline® runs evenly through the rope lock.



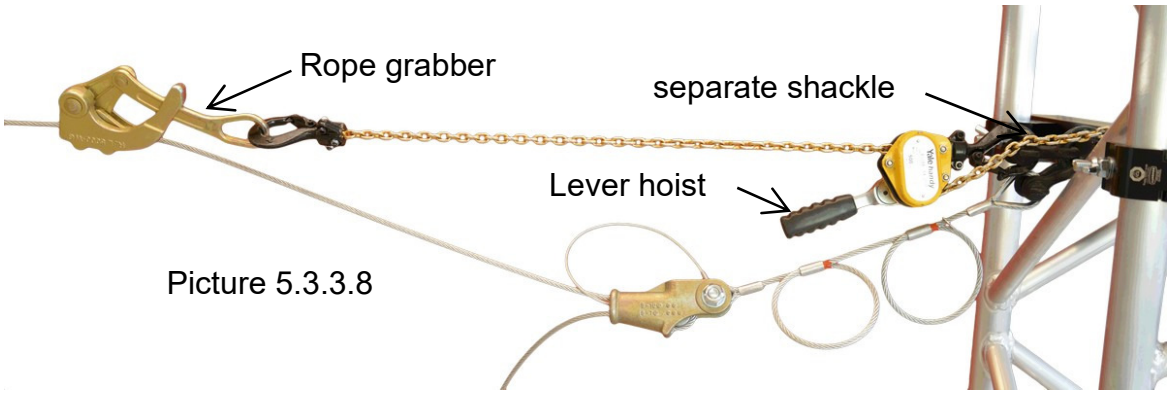
Loose end of rope component

Picture 5.3.3.7

Step 4: Insert the undetachable three hole wedge into the rope lock with its head in direction of the rope lock and tighten the loop of the wire rope by pulling the loose end of the rope component (picture 5.3.3.7). If necessary, push the rope component further through the rope lock to create a sufficient tension of the Savekingline®.

Assembling the Savekingline® with pretension:

In case of big Savekingline® systems e.g. >8m it might be necessary to use a rope tightening device. (Picture 5.3.3.8 to Picture 5.3.3.15)
In the following pictures a way of tensioning the Savekingline® is shown.
Note: The rope grabber as well as the lever hoist is not included in dispatch.



Picture 5.3.3.8

Step 5: With a separate shackle the lever hoist is to be attached close to the anchoring points of the Savekingline®. Picture 5.3.3.8

- Hang up the hook of the lever hoist in the eyelet of the rope grabber Pic. 5.3.3.9
- Open the rope grabber opposing to the spring pressure Pic. 5.3.3.10
- Insert the Savekingline® in the gap of the rope grabber. Pic. 5.3.3.11
- Release the opening lever and pull the Savekingline® through the rope grabber to create a small pretension. Pic. 5.3.3.12
- Tighten the Savekingline® with the lever hoist to a maximum of 15Nm.
  The lever force generates a tension in the Savekingline® of 2kN. Pic. 5.3.3.13

Picture 5.3.3.9

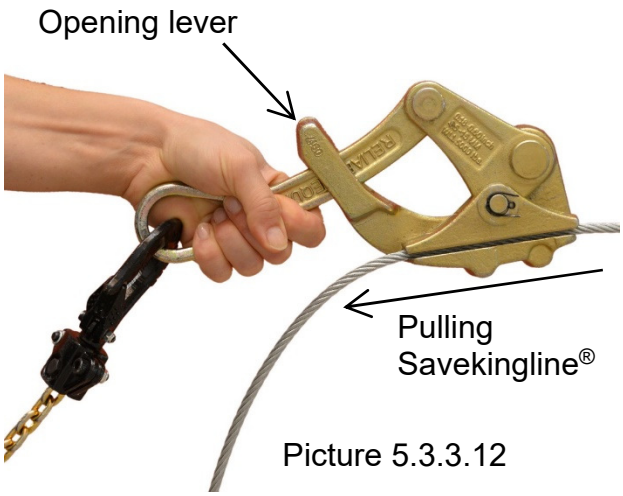
Picture 5.3.3.10

Picture 5.3.3.11

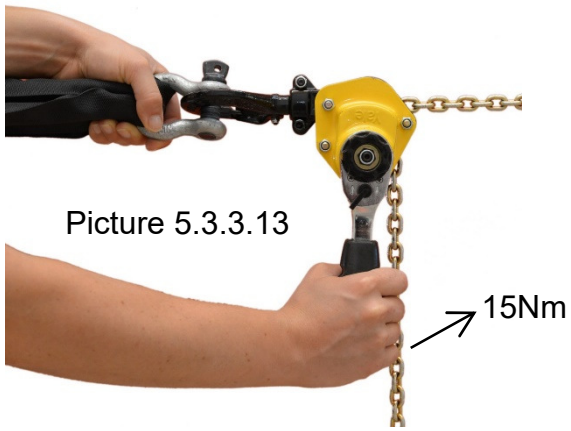
Picture 5.3.3.9: Hang up the hook of the lever hoist in the eyelet of the rope grabber

Picture 5.3.3.10: Open the rope grabber opposite to the spring pressure

Picture 5.3.3.11: Insert the Savekingline® in the gap of the rope grabber.

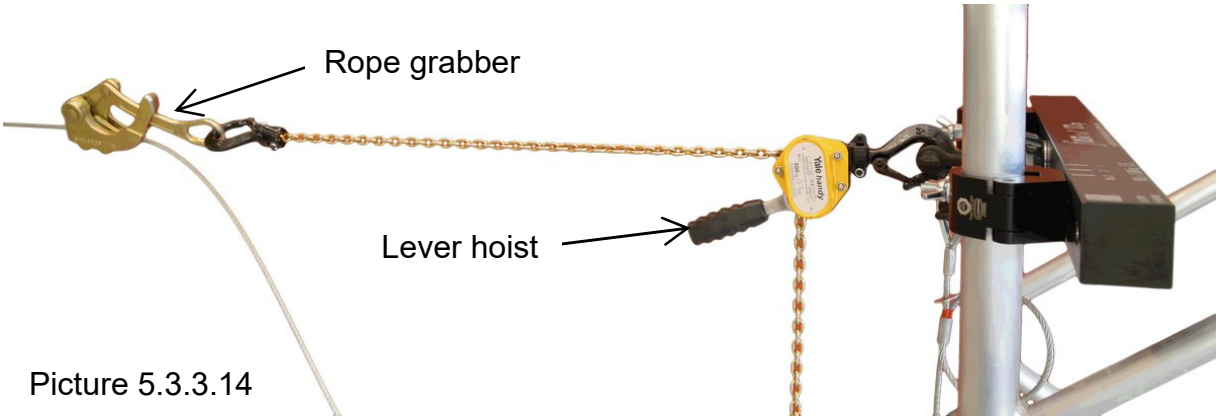


Picture 5.3.3.12: Release the opening lever and pull the Savekingline® through the rope grabber to create a small pretension.



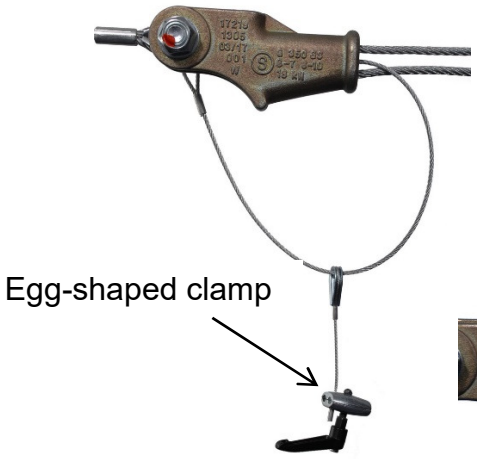
Picture 5.3.3.13: Tighten the Savekingline® with the lever hoist to a maximum of 15Nm.
The lever force generates a tension in the Savekingline® of 2kN.

It is also approved to use the lever hoist to pretension the Savekingline® to install the rope lock. This is shown in picture 5.3.3.14



Picture 5.3.3.15

Step 6: The rope lock is to be set in the untighten part of Savekingline® as tight as possible (Picture 5.3.3.15).
Note: The process is described in more detail in step 3 + 4.

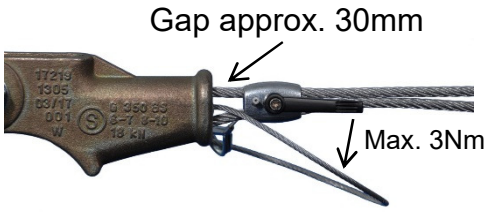


Egg-shaped clamp

Picture 5.3.3.16

Gap approx. 150mm

Picture 5.3.3.17



Gap approx. 30mm

Max. 3Nm

Picture 5.3.3.18

Picture 5.3.3.17: Position the egg-shaped clamp with a gap of 150mm to the wire rope

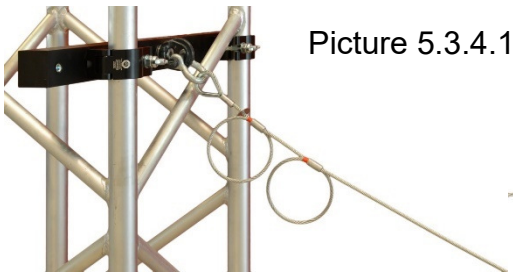
Picture 5.3.3.18: Move the egg-shaped clamp to the rope lock component and tighten the clamping lever with a tightening torque of at most 3Nm. Then move the clamping lever in the direction of the wire rope

Step 7: The lever hoist is eased and is removed together with the rope grabber. The loose wire rope end is secured by the egg-shaped clamp (picture 5.3.3.16).
To do so the clamping lever is opened and the egg-shaped clamp is positioned 150mm from both wire ropes (picture 5.3.3.17). The egg-shaped clamp is now closed such that it is just movable. Then the egg-shaped clamp is moved closer to the rope lock to reduce the gap to 30mm (picture 5.3.3.18) and closed through the clamping lever with a tightening torque of at most 3Nm. The clamp lever is adjustable and is to be put in the direction of the rope after tightening it.
The other wire rope end is to be put in a ring without any twists and is fixed at the wire rope with a shackle.
If the field size is below 12m the Savekingline® is fully assembled.

If the total size is above 12m, the Savekingline® has to be split into field sizes below 12m as described in section 4.2.

5.3.4 Assembling a Savekingline® with a fixed length

The **Savekingline® with a previously defined length** consists of one main element which itself consists of several undetachable elements as well as one separate shackle.

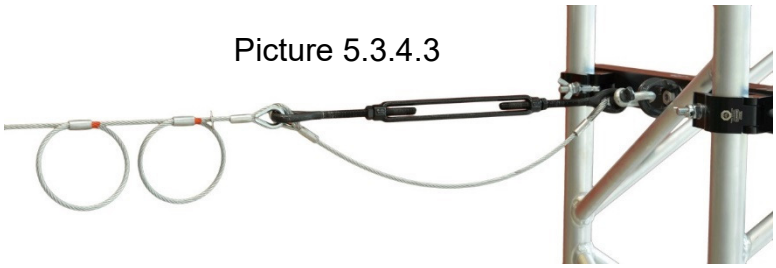


Picture 5.3.4.1

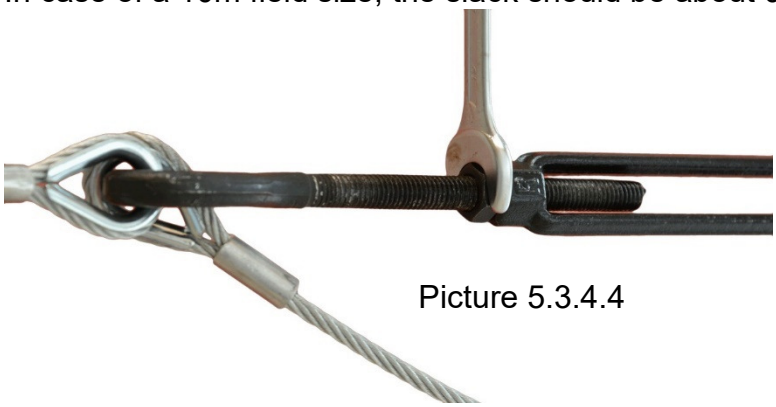
Picture 5.3.4.2

Step 1 (Picture 5.3.4.1): The end of the Savekingline® which has only two damping elements (no turnbuckle) has to be attached at a suitable anchoring point with a shackle of working load limit 2t.
Step 2 (Picture 5.3.4.2) The other end of the Savekingline® with a completely opened turn buckle has to be attached to another suitable anchoring point with another shackle of working load limit 2.

Picture 5.3.4.3



Step 3 (Picture 5.3.4.3): Turn the turnbuckle till the slack of the Savekingline® is approximately 1% of the field size.
In case of a 10m field size, the slack should be about 0,1m.



Picture 5.3.4.4

Step 4 (Picture 5.3.4.4): Fix the lock nuts of the rope lock with a 19mm open-end wrench.

If the field size is below 12m the Savekingline® is fully assembled.
If the total size is above 12m, the Savekingline® has to be split into field sizes below 12m as described in section 4.2.

5.3.5 Splitting the Savekingline® in smaller fields or redirect it

If the total length of the Savekingline® is above 12m, it has to be split into smaller fields that are shorter than 12m. Only constructions that are specified by Drahtseile24 GmbH are to be used for field separation. Any other redirection or field separation could damage the Savekingline® or limit its functions.

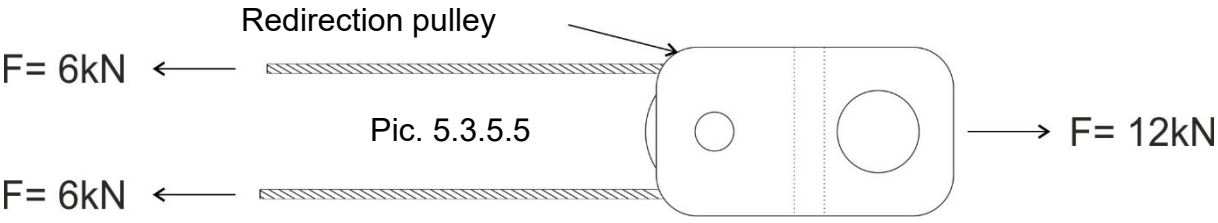
Picture 5.3.5.1 Picture 5.3.5.2 Picture 5.3.5.3

Picture 5.3.5.1 + Picture 5.3.5.2 + Picture5.3.5.3: Installation Of the foldable redirection pulleys

Picture 5.3.5.4: Label of the redirection pulley: Savekingline®; Year of production; batch nr. ; Drahtseile24 GmbH; Manufacturer identification „ID “ EN 795:2012

Picture 5.3.5.4

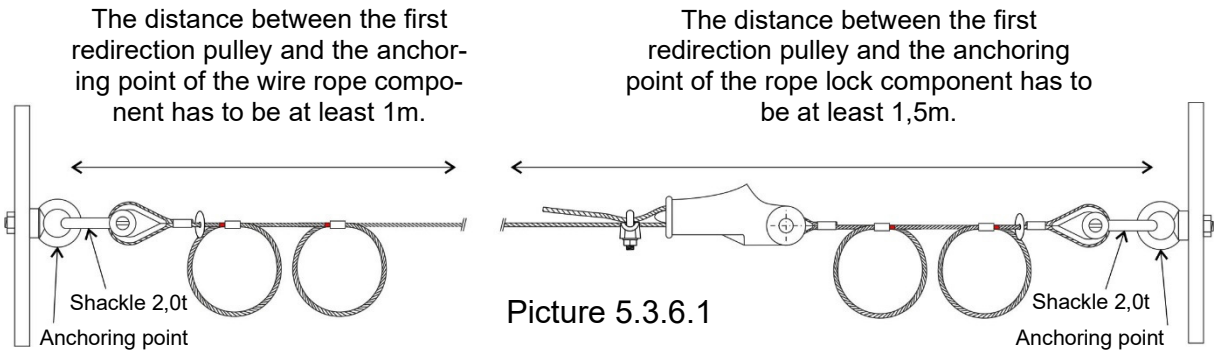
Remark: If the redirection angle exceeds 45°, the impact force acting on the anchoring points of the redirection pulley is greater than the force of the Savekingline® (6kN) .
The force can reach up to 12kN if the redirection angle is between 90° and 180°. Please consider picture 5.3.5.5



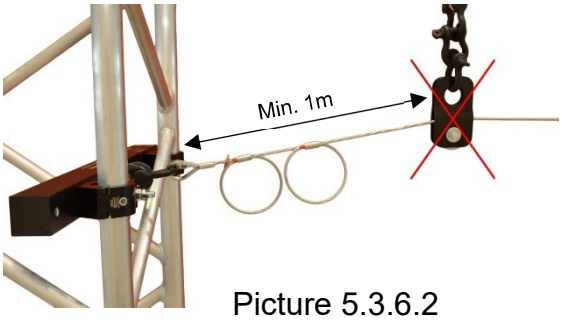
Pic. 5.3.5.5

5.3.6 Potential mistake during field splitting, redirecting or attaching the Savekingline®

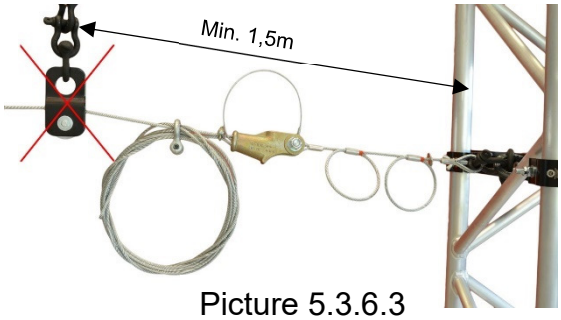
Savekingline® with a variable length: The damping elements must not be limited in their movement. In case of a falling person, the braking distance of the damping elements on each side of the Savekingline® can reach up to 0,65m. This means the first redirection pulley to split the field has to have a gap of at least 1m to the anchoring point at the wire rope component and at least 1,5m at the rope lock component. Please find picture 5.3.6.1



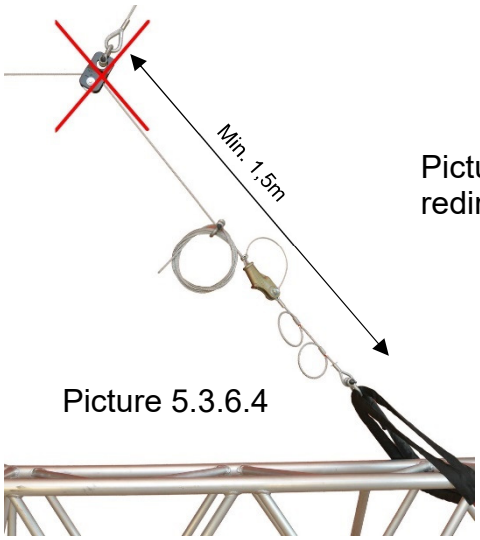
Picture 5.3.6.1



Picture 5.3.6.2



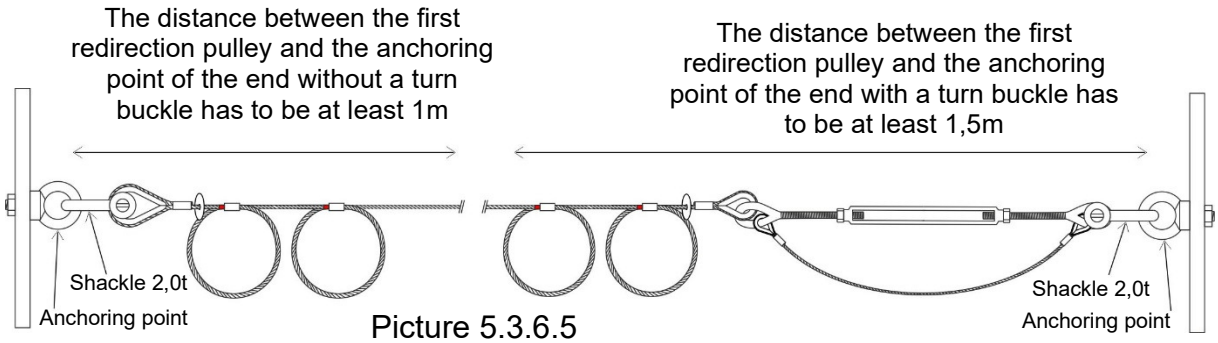
Picture 5.3.6.3



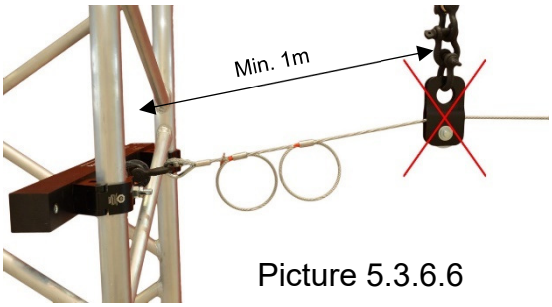
Picture 5.3.6.4

Picture 5.3.6.2 + Picture 5.3.6.3 + Picture 5.3.6.4: The redirection pulley is too close to the anchoring point

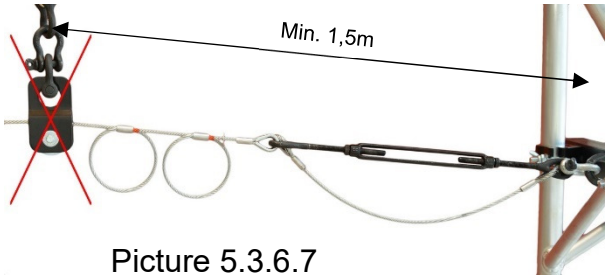
Savekingline® with a variable length: The damping elements must not be limited in their movement. In case of a falling person, the braking distance of the damping elements on each side of the Savekingline® can reach up to 0,65m. This means the first redirection pulley to split the field has to have a distance of at least 1m to the anchoring point at the wire rope component and at least 1,5m at the rope lock component. Please find picture 5.3.6.5



Picture 5.3.6.5



Picture 5.3.6.6



Picture 5.3.6.7

Picture 5.3.6.6 + Picture 5.3.6.7:
The redirection pulley is too close to the anchoring point

5.4 Handing over the Savekingline® for usage

The Savekingline® has to be checked before handing over for use.
The inspection before the handover is to be documented.

A copy of this operating manual has to be handed over together with the Savekingline®. The documentation of the inspection is evidence that the installation was correctly done. The operating manual is part of the documentation. The operation manual is the basis for further inspections of the Savekingline®. In appendix 4 you find a sample of such installation documents.

5.5 Use the Savekingline® with PPE against falls from a height

The Savekingline® is used with personal protective equipment against falls from a height. Suitable PPE consists of a safety harness according to EN 361, lanyards according to EN 354 and a shock absorber according to EN 355.

The person that uses the Savekingline® has to have PPE with a shock absorber. The shock absorber limits the dynamic forces (impact force) acting on the falling person during the process of catching to 6kN.

A „Y"-connector lanyard with two pipe hooks is to be used to hook into the Savekingline®. Both hooks should be connected with the Savekingline® at any given time.
To move into a different working area, one hooks can be released at a time. But one hook has to be attached at any time.

Note: The wire rope of the Savekingline® might wear down aluminium hooks quickly. A steel hook is therefore recommended please consider picture 5.5.1

Pic. 5.5.1

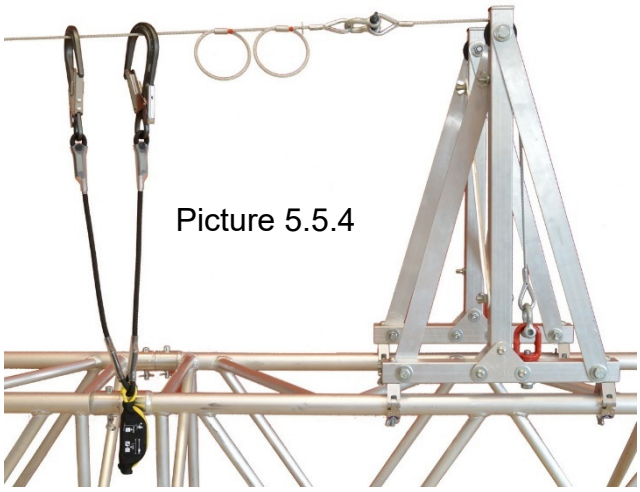
Picture 5.5.1: Steel connector by the company Petzl
Model MGO 60S, 50kN

Pic. 5.5.2

Picture 5.5.2: Both connectors hooked in

Pic. 5.5.3

Picture 5.5.3: Hooking in one connector at a time.

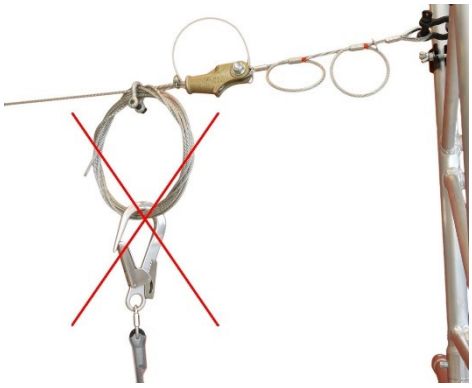


Picture 5.5.4: Correctly connecting the PPE to the Savekingline®.

5.5.1 Mistake while hooking into the Savekingline®

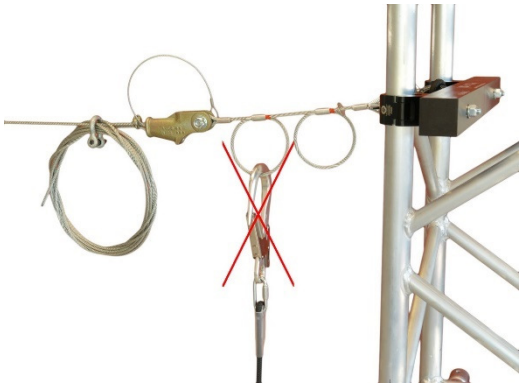
The damping elements must not be limited in their functionality when connecting the PPE to the Savekingline®. This means that the loops of the damping elements have to be able to tighten without any obstruction.
The following pictures show wrong ways of connecting PPE to the Savekingline®.

Pic. 5.5.1.1

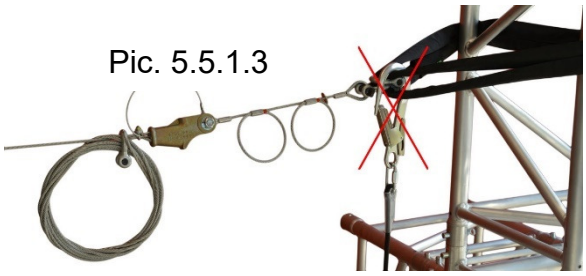


Pic. 5.5.1.1: Don’t connect the PPE to the rope circle.

Pic. 5.5.1.2

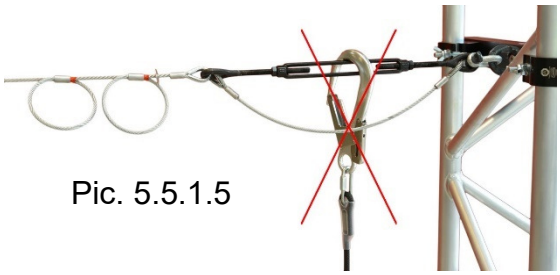


Pic. 5.5.1.2: Don’t hook PPE into the damping elements.

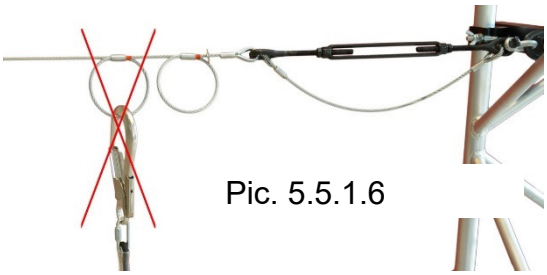


Pic. 5.5.1.3: Don’t connect to the components of the anchoring points

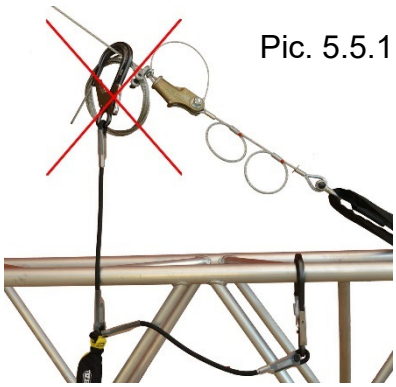
Pic. 5.5.1.4: Don’t connect to the components of the rope lock.



Pic. 5.5.1.5 Don’t connect to the components of the rope lock.



Pic. 5.5.1.6: Don’t hook PPE into the damping elements.



Pic. 5.5.1.7: Only hook into horizontal parts of the Savekingline® with a horizontal deviation < 3°

Pic. 5.5.1.8: Only hook into horizontal parts of the Savekingline® with a horizontal deviation < 3°

Important: The section of the Savekingline® with a fixed length to connect PPE to is only between the damping elements that **have a horizontal deviation of ±3°.** The connectable section of a **Savekingline®** with a variable length is between the damping elements on the one end and the loose wire rope ring on the other.

5.6 Disassembling Savekingline®

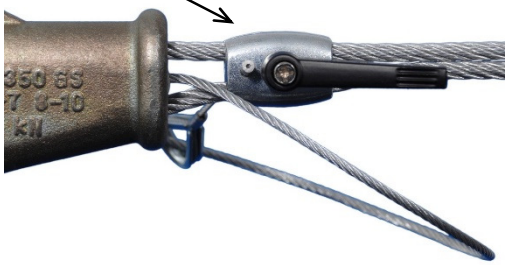
5.6.1 Disassembling a Savekingline® with a variable length

The disassembling of the Savekingline® happens in reversed order to the assembling.
The installation is described in section 5.3.2.
The disassembly is described in the following pictures.

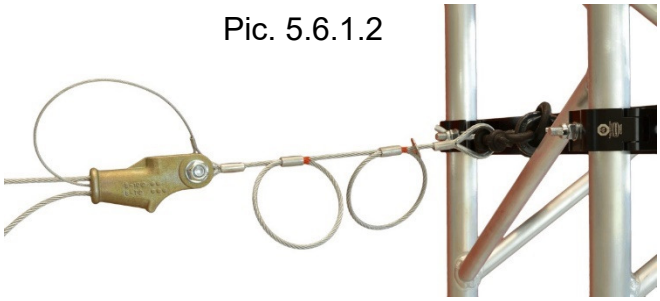
To reduce the risk of falling for the disassembling personal a lifting platform is to be used unless the installation of the cross beam construction is within working heights.

Egg-shaped clamp

Pic. 5.6.1.1



Pic. 5.6.1.2



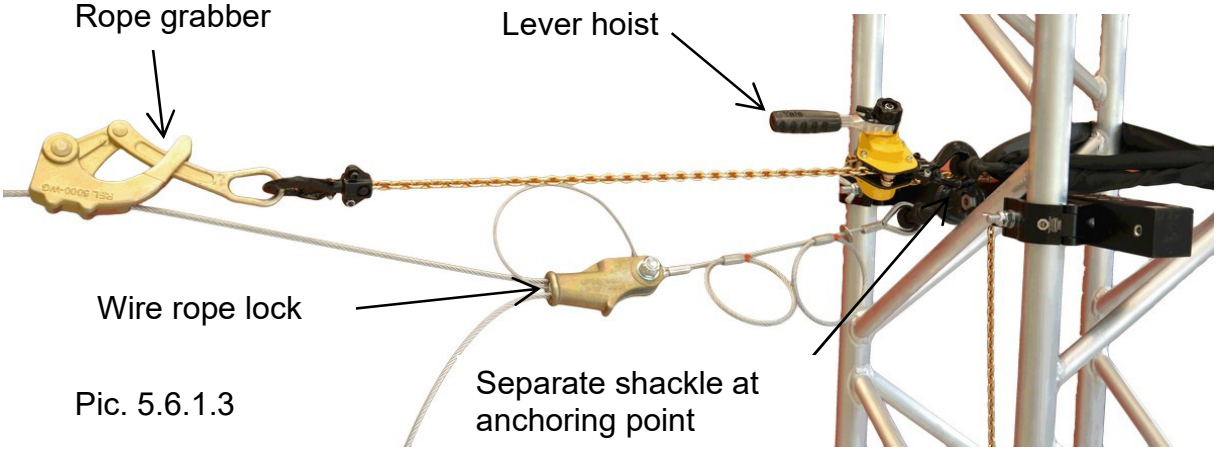
Deinstallation step 1: Picture 5.6.1.1 + Picture 5.6.1.2: First of all, the egg-shaped clamp is opened and the rope ring is opened without twists.

In the next step it is to be determined whether a mounting aid consisting of rope grabber and lever hoist is necessary. It is advisable to use the mounting aid in case of big Savekingline® systems or fields with removed redirection pulleys.

The following picture with description describes the removal with a mounting aid.

Rope grabber

Lever hoist



Wire rope lock

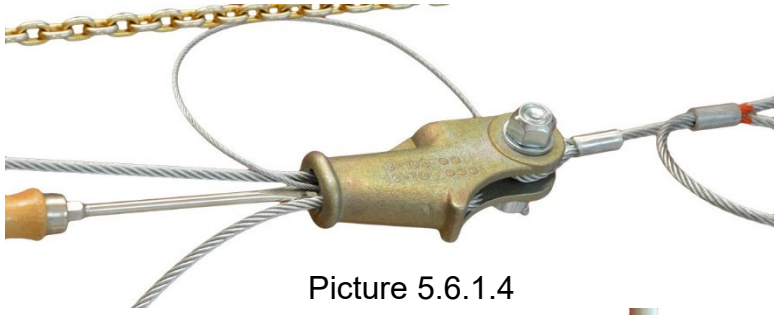
Separate shackle at anchoring point

Pic. 5.6.1.3

Picture 5.6.1.3: Position the lever hoist with a separate shackle at the anchoring point and attach to it to the rope grabber. Connect the rope grabber with the rope of the Savekingline®. Release the tension of the rope lock component through the lever hoist.

Deinstallation step 2: Position the lever hoist with a separate shackle at the anchoring point and attach to it to the rope grabber. Connect the rope grabber with the rope of the Savekingline®. Release the tension of the rope lock component through the lever hoist. After sufficient release of the tension, the shackle of the Savekingline® at the anchoring point can be opened securely. The rope lock component must not be opened on a lifting platform as the three hole wedge is stuck tightly in the rope lock. The lever hoist is to be released completely. Before opening the rope grabber a second person has to secure the Savekingline® against falling and helps with lowering the Savekingline®. An additional rope should be used to do so.
The rope lock component is to be opened on the floor. An additional tool may be used to release the three hole wedge if it is too tightly stuck in the rope lock housing.
With a flat tip screwdriver (6-8mm) and a hammer (300g) the wedge can be loosened carefully.
(Please consider picture 5.6.1.4)

Picture 5.6.1.4: Carefully release the wedge with a hammer and a flat tip screwdriver.



Picture 5.6.1.4

Picture 5.6.1.5: Release the Savekingline® such that a riskless opening of the rope grabber is possible.

Pic 5.6.1.5

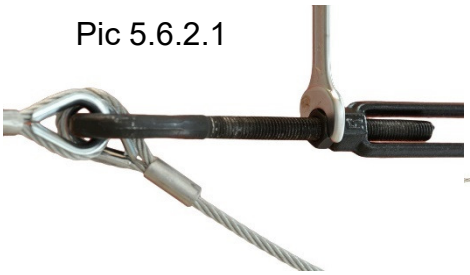
After successfully disassembling the Savekingline® all the components of the Savekingline® should be cleaned with a dry towel. The Savekingline® has to be inspected for any damage. Finally, all parts of the Savekingline® including the accessory should be safely stored in the provided bag. The parts should be safe from any mechanical or climatic circumstances.

5.6.2 Disassembling of a Savekingline® with a fixed length

The disassembling of the Savekingline® happens in reversed order to the assembling. The installation is described in section 5.3.2.
The disassembly is described in the following pictures.

To reduce the risk of falling for the disassembling personal a lifting platform is to be used unless the installation of the cross-beam construction is within working heights.

Pic 5.6.2.1



Pic 5.6.2.2

Deinstallation step 1: Loose the lock nuts till the end of the threads with a 19mm open-end wrench. (Picture 5.6.2.1), afterwards the turnbuckle is to be opened completely (Picture 5.6.2.2). In most cases a safe opening of the shackle is possible. If that's not the case, a mounting aid should be used as described in section 5.6.1.
A second person helps with lowering the Savekingline® and secures it against falling. An additional rope should be used to do so. After that the shackle on the other end of the Savekingline® is opened.
After successfully disassembling the Savekingline® all the components of the Savekingline® should be cleaned with a dry towel. The Savekingline® has to be inspected for any damage. Finally, all parts of the Savekingline® including the accessory should be safely stored in the provided bag. The parts should be safe from any mechanical or climatic circumstances.

5.7 Transportation/Storage

The Savekingline® is to be dryly stored in the provided bag to prevent any damage during transportation. The storage place has to be dry.

5.8 Use in case of a fall

The Savekingline® has to be sent to the manufacturer if a person has fallen into it. The manufacturer may check and/or dispose it.

5.9 Maintenance and restoration

The component of the Savekingline® system must not be repaired. Any faulty parts have to be replaced by original Drahtseile24 GmbH parts.

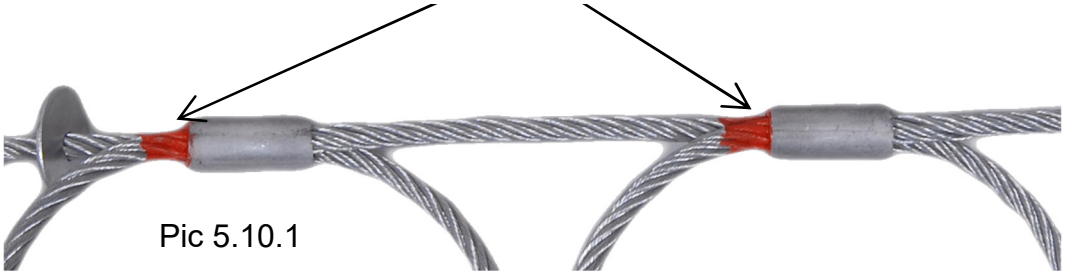
All metal parts should be maintained with an oily spray. An example is Multi 40 by the company Weldotec GmbH

If the Savekingline® is heavily contaminated e.g. by bitumen and can’t be cleaned by oily spray, the Savekingline® has to be sent to the manufacturer.

5.10 Recurring inspections

Visual checks before every use of the Savekingline® are necessary to ensure that there are no damages, the Savekingline® is still functioning securely and the Savekingline® is not infiltrated with corrosion. In case of doubt whether the Savekingline® is fully functioning, it must not be used. The safety of the user depends on the functionality and durability of the Savekingline® and redirection pulleys. During the visual inspection the colour marking has to be checked. Intact colour marking is shown in picture 5.10.1.

Picture 5.10.1: Colour marking intact

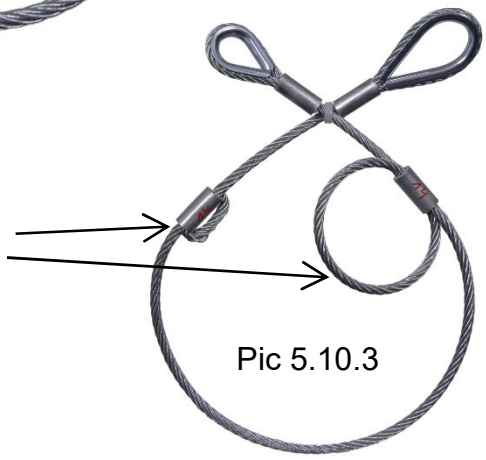


Pic 5.10.1

Picture 5.10.2: Colour marking inconsistent (replacement state reached)

Pic 5.10.2

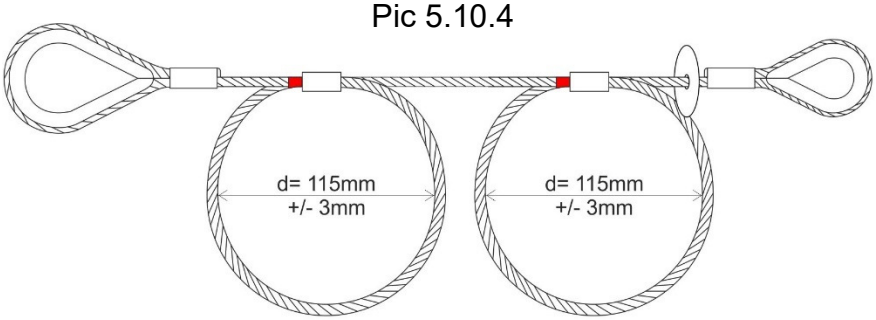
Picture 5.10.3: Damping elements tightened after usage (replacement state reached)



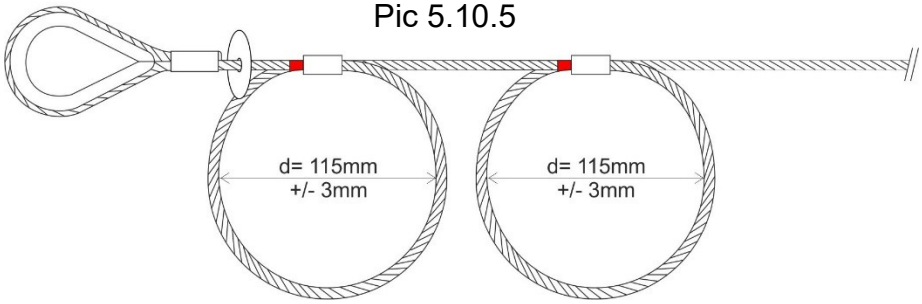
Pic 5.10.3

An inconsistent (Pic 5.10.2) or already tightened Savekingline® (Pic 5.10.3) must not be used anymore and has to be disposed

Pic 5.10.4



Pic 5.10.5



⚠ *Additionally, to the visual checks, size inspections of the damping elements are crucial. The loop of the damping elements have to have an inner diameter of 115 +/- 3mm. The shape is nearly circular. Consider picture 5.10.4 and 5.10.5*

A qualified person has to inspect the system at least once a year. The definition of such a skilled person can be found in
DGUV Grundsatz 315-390 Grundsätze für die Prüfung maschinentechnischer Einrichtungen in Bühnen und Studios. (Principles for the testing of mechanical equipment on stages and in studios)
Download: publikationen.dguv.de.

After the successful inspection of the Savekingline® it has to recieve a label (mounted with a cable tie) with the date of the inspection. A booklet to document the inspection is found in appendix 3 of this operations instruction. The process of testing is described in appendix A.3 BS EN 795 "Personal fall protection equipment. Anchor devices".

6 Decommissioning

A Savekingline® that is damaged or had been used to catch a person must not be used anymore and has to be disposed.

The life cycle of a Savekingline® is ten years after the first dispatch. Please check the engraving of the labelling badge that is positioned at both ends of the Savekingline® and shows the year of manufacturing.

A discarded Savekingline® has to be decommissioned and has to be disposed.

6.1 Disable the Savekingline®

To disable the Savekingline® its components have to be cut with a wire rope cutter.

6.2 Disposing

The disabled Savekingline® has to be disposed as scrap metal.

Appendix 1: EC-Type-Examination

certificate
no. PS 19060036
dated 2019-11-04

DGUV Test
Prüf- und Zertifizierungsstelle
Fachbereich Persönliche Schutzausrüstungen

Translation In any case the German original shall prevail

European notified body
Identification number 0299

EU Type-Examination Certificate

Name and address of the manufacturer:	Drahtseile 24 GmbH Gewerbestraße 18 21279 Hollenstedt Germany
Product designation:	**anchor device**
Type:	Savekingline
Testing based on:	EN 795:2012-07 (D)
Corresponding report:	19 1 0174
Further details:	Prod.-Id. 19 1 0174 / draht / savekingline model 1: with adjustable length and wedge type socket model 2: with fixed length and turnbuckle Intended purpose: anchor device with an anchor point for systems of the personal fall protection equipment according to EN 363:2008

This product is a personal protective equipment of category III in accordance with the regulation (EU) 2016/425. This EU Type-Examination Certificate authorises the placement of the above mentioned product on the market on the condition that control measures according to module C2 (Annex VII) or module D (Annex VIII) are taken. The product tested complies with the essential requirements of Annex II.

The present certificate is valid until and including: **2024-11-03**

Further provisions concerning the validity, the extension of the validity and other conditions are laid down in the Rules of Procedure for Testing and Certification.

Signature Dipl.-Ing. Bartelsbach

Prüf- und Zertifizierungsstelle DGUV Test Fachbereich PSA

Postal address: Zwerggenberger Str. 68 / 42781 Haan
Phone/Fax: +49 (0) 21 29 / 575-431 / +49 (0)[illegible] E-Mail: psa-za@bgbau.de
Internet: www.za-bgbau.de

FZ901_Kalli-E
03.15

DAkkS Deutsche Akkreditierungsstelle D-PL-17008-05-00

Appendix 2: Declaration of conformity

EU – Declaration of conformity

The manufacturer as well as the authorized person declares that:

Drahtseile24 GmbH
Ingo Witthuhn
Gewerbestraße 18
21279 Hollenstedt

The Lifeline, anchoring instalation for PPE type „C“

Product name: Savekingline®
Nominal size: 6mm
Batch numbrt.: 10317
CE label with test number
6mm: Wire rope nominal size
1 Person: Only used by one person at a time
EN 795:2012: Regulation with issuing year
Drahtseile24 GmbH: Manufacturer
ID: Logo FSA

is conform with the regulation **EU-Regulation 89/686/EWG**

The following regulationss have been taken into account:

DIN EN 795	Persönliche Absturzschutzausrüstung – Anschlageinrichtungen 2012
DIN EN 12385-4	Tabelle 12 - Seilklasse 6x19M Drahtseile aus Stahldraht Deutsche Fassung EN 12385-4:2002
DIN EN 13411-3	Endverbindungen für Drahtseile aus Stahldraht – Sicherheit Teil 3: Pressklemmen und Verpressen; Deutsche Fassung EN 13411-3:2004

Hollenstedt, am 28.10.2019

Appendix 3: Documentation of the recurring inspection

The components of the Savekingline® with variable or fixed length need an own documentation.

The following draft may be used:

	Savekingline® with a variable length *(Wire rope comp.+ Rope lock comp.)*					
	Savekingline® with a fixed length					
Manufacturer contact: Date of purchase:			Drahtseile24 GmbH Gewerbestraße 18 21279 Hollenstedt Deutschland Phone.: +49 (0) 41 65 22 15 20 Email: info@sicherungsseile.de			
Manufacturing year of the Savekingline®:			Batch number of the Savekingline® *With a fixed length:*			
Batch number of the *Wire rope component:*			Batch number of the rope lock components*:*			
Date	*Result of the Visual inspection*	*Result of the functionality check*	*Readability of the product label*	*Evaluation of the defect for further use*	*Next inspection*	*Inspecting person*

Appendix 4: Installation documents (Sample)

A documentation should be kept for installing the Savekingline® with a variable or fixed length.

The following draft may be used.

Drahtseile 24 – Savekingline® – **Installation documents**	
Address and place of the installation:	
Name and address of the assembling company/name of the responsible person	
Used mounting devices (e.g. Shackle according to DIN)	
Signature of the fitter	

Space for personal notes.

End of the operating instructions