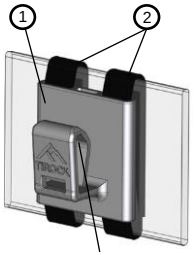
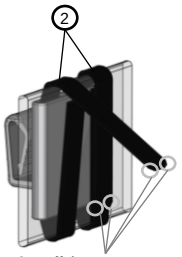


Clamping spring

Figure 1



Cut off the corners at an angle

Figure 2

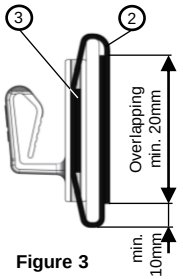


Figure 3

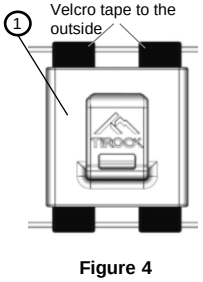


Figure 4

① 1x Ti-Clip clamping and holding mechanism.
② 2x special micro Velcro straps (approx. 18 cm long) for application-optimised and individual attachment of the Ti-Clip to climbing harnesses. The supplied micro Velcro straps are long enough to be easily attached to parts of the climbing harness with a maximum strap width of up to approx. 7 cm.
③ 2x special micro velcro straps (approx. 2cm long) to double the velcro strap inside the Ti-Clip to make it difficult to move along the velcro straps.

Brief description and function

- The Ti-Clip is a protected product and application innovation (Figure 5) for all lead climbers (whether indoor, climbing garden or multi-pitch) and difficulty levels.
- The Ti-Clip is an optimised clamping mechanism. It is attached to the side of the harness and helps in "difficult" clip positions. The Ti-Clip avoids the dangerous intermediate rope clamping with the teeth and offers an efficient movement sequence. It is used to hold the unloaded rope in-between in order to re-grip it efficiently and safely and extend it for clipping.

Figure 5

Figure 6

Benefit / Problem solver

- Clipping as described above, arm's length away from belay hooks without biting into the rope, avoids the associated risk of most serious injuries to the bite and face area in the event of a fall in the same situation (Figure 6).
- Improved hygiene and avoidance of infections, as the rope no longer has to be put in the mouth.
- Efficient movement and easy on the body (especially with high rope friction and long rope lengths, as the rope only needs to be pulled to hip height before re-gripping).
- Additional applications: Static intermediate holding of unloaded climbing material (e.g. carabiners) when no hand is free or even faster handling is necessary (e.g. snap loop on via ferrata - immediately available with one grip when power is already running low).

Important product features for your optimised application

- For optimised clipping, it is recommended to attach one Ti-Clip on the left and another on the right side of the climbing harness.
- Clamping effect: The Ti-Clip covers several rope diameters and holds the rope firmly in almost any position due to the clamping force and the rope deflection. Ropes with a diameter of approx. 8.9 to 11mm should generally be held very well. However, ropes with a somewhat smaller cross-section should also be able to be held well as a rule. This is possible because the deflection of the rope by its own weight makes a significant contribution to the holding force. Note: In rare positions where the deflection of the rope does not occur, there is a possibility that it cannot be held sufficiently.
- The Ti-Clip works the same in both directions and can therefore be operated from both sides.
- Optimised for the lowest possible clamping resistance when inserting the rope, resulting in an ideal and effort-saving flow of movement.
- The rope is released from the Ti-Clip very smoothly and gently by rolling over the contact spring pressure.
- In the event of a sudden uncontrolled fall, the rope releases itself from the Ti-Clip by overcoming the spring pressure.
- The load on the climbing harness caused by the Ti-Clip is minimal, as the maximum effect is the weight of the free end of the rope and the smooth overcoming of the clamping force when the rope (or e.g. the carabiner of a latching sling) is removed and inserted.
- No sharp edges and minimal weight and size for obstruction-free climbing.
- Simple and flexible attachment for different harness widths, thicknesses and non-parallel upper and lower edges.
- Individual positioning on the climbing harness or other harness systems

Explanation of product labelling

Where applicable, the product labelling is located on the product or on or in the packaging:

- 📖 ... Please read product description
- TiROCK ... Company name (TiROCK Sports e.U.)
- PP-No. ... Production product number

Assembly instructions

On our website www.tirock-sports.com you will find short videos explaining positioning and assembly.

Positioning: TiROCK recommends the use of 2 Ti-Clip units on the harness. One unit is positioned on the left and one on the right side of the harness in the area of the hip bone in order to ensure an ideal flow of movement when clipping with both the left and right hand. (Figure 7). Of course, the user can individually choose the ideal position for his or her clipping behaviour or reposition it in the course of use.

Figure 7

Ideally, the Ti-Clip is positioned and fastened over the padded part of the climbing harness, which is usually between 3.2 and 7 cm high. For even much greater harness heights (> 7 cm), the overlap of the Velcro could be too short. In this case, please contact TiROCK directly or use / order micro Velcro straps with an individual excess length.

When attaching the Ti-Clip to the climbing harness, please take into account the safety-relevant technical features of your climbing harness so that the usual safety is not jeopardised. For example, you should make sure that the position of the Ti-Clip on the climbing harness is chosen in such a way that looping back to tighten the climbing harness is possible without restrictions and can be fixed correctly. If necessary, the loop back strap can be slid under the Ti-Clip to ensure that it can be neatly stowed in the loops provided on the climbing harness. The Ti-Clip should remain mounted on the harness and does not need to be removed after climbing.

Assembly: The length of the Velcro tape is to be adjusted and cut to length according to the ideal placement on the respective climbing harness when attaching it to the climbing harness. The length can be cut using scissors.

The two Micro Velcro straps are passed through the rectangular channels on the Ti-Clip, with the fleece side of the Velcro facing outwards (Figure 1 and 4). To make the fit between the Micro Velcro and the Ti-Clip even tighter, we recommend doubling up the Micro Velcro ② with the smaller, approx. 2 cm long Velcro ③ on the underside, in order to obtain a very tight fit after the tapes have been pushed through (figu re 3). The 2 cm long Velcro strip ③ should be positioned inside the Ti-Clip after assembly is complete. It will take a little more force to push it in for a short time to overcome the tightness of the fit.

After you have inserted the two micro Velcro strips including the doubling up into the Ti-Clip, proceed as follows: Hold the Ti-Clip at your ideal final position (see figure 7) on the harness and now wrap the downward part of the Micro Velcro tightly around the harness until the end of the strap ends just below the top edge of the harness (figure 3 - cutting may be necessary here) or continue to wrap it around the full length of the harness so that it finally ends on the side of the Ti-Clip. You may need to move the strap in the Ti-Clip again to get the ideal length to suit your positioning.

The next step is to guide the part of the micro Velcro that sticks out upwards tightly around the belt and press it neatly onto the other end of the micro Velcro (figure 3). Now use scissors to cut off the protruding part of the Micro Velcro so that the end ends at least 10 mm before the lower edge of the climbing harness. It also makes sense to trim the sharp corners at an angle (approx. 1-2 mm x 45°) (figure 2). Otherwise there is a risk that if the ends stick out or are not neatly tied, the connection could open unintentionally when the climbing harness is put on or taken off.

Make sure that the parameters according to figure 3 are observed, otherwise adjust the fastening accordingly.

It is important that you wrap the climbing harness tightly with the Micro Velcro and press it firmly and smoothly together. The Ti-Clip should have a tight fit on the climbing harness. Otherwise, loosen the ends again and try again to get a tight and firm fit. The Velcro straps must lie neatly and firmly on top of each other and the end must be velcroed on smoothly.

TiROCK recommends to use the above described doubling of the Velcro ③ in the area under the Ti-Clip (Figure 3). This prevents the Ti-Clip from shifting vertically, which can be annoying for some people.

WARNING :
Activities related to climbing and mountain sports are very dangerous.
You are responsible for your own actions and deeds in these activities.

Before using this device, you must understand and implement the following points independently and on your own responsibility:

- Read and understand the hazard warnings, product description, assembly and application instructions.
- Train the use or obtain expert knowledge and training.
- Become familiar with the device, its use, strengths and limitations.
- Understand and accept all possible and existing risks and always be aware of them in your actions.

Failure to comply with these warnings and information may result in serious injury or death to you or others.

Further :

- On our website www.tirock-sports.com you will find the latest and updated hazard warnings, product descriptions as well as assembly and application instructions. Please check and make sure you have read and understood the latest version.
- For questions about the product, as well as the application and the hazard information, please contact our support.
- For other languages, please visit our website (Downloads section) or contact our support.

Hazard warnings (1/2)

- The function of the open spring clamp must not be undermined by an abusive fixing (form-fitting or friction-fitting) (e.g. a rope knot on the Ti-Clip), as otherwise the independent release of the clamp in case of overload is not given.
- The Ti-Clip must remain unchanged in its design and must not be modified or blocked in its function. The possibility of free opening and the associated smooth, independent unhooking of the rope upwards must always be guaranteed. The user is responsible for this at all times.
- The Ti-Clip is not a belay device or belay element and does not fulfil any load-bearing or safety functions.
- Please do not expose the Ti-Clip to excessive heat, cold or sunlight, as there is a natural risk of brittleness and fading (temperature range approx. 5 to 35°C).
- No loads exceeding the specifications of the harness manufacturer may be exerted on the climbing harness via the Ti-Clip.
- Of course, safety-relevant properties of the climbing harness must not be impaired by the Ti-Clip. For example, it must be ensured that the harness can be looped back.
- No objects not described for use in the instruction manual may be hung in the Ti-Clip.
- If, in the course of use, severe damage (e.g. breakage, sharp edges or scratch marks which could injure the rope or the user) is caused to the Ti-Clip, endangering safety, this Ti-Clip must be removed immediately.
- Be aware that there is always the possibility that, intentionally or unintentionally, forces are introduced during movement or, for example, through changes in position, which can independently lead to a release from the clamp.

Ti-Clip ATTENTION TiROCK

Hazard warnings (2/2)

- It must be ensured on the user's own responsibility that any clamped objects cannot fall down due to an intended or unintended release of the clamping position (e.g. additional positive fixing). The user must take full responsibility for any possible damage (e.g. injury of an undetermined degree to a person standing under the climber or loss and damage to material) or for preventing such damage.
- Constant repeated disassembly and reassembly of the Ti-Clip is not recommended because frequent opening and closing of the Micro Velcro strap will reduce its flat holding force.
- Intentional or unintentional overstretching of the spring mechanism beyond the usual range (= clamping of objects up to a maximum diameter of 11.5 mm) or the result thereof (e.g. a deteriorated clamping force, visible signs of wear such as discoloured areas, breakage, etc.) can cause lasting damage to the function of the Ti-Clip and make it unusable for its application.
- The rope loop (= distance of the rope between the binding point and the clicked Ti-Clip position) must not be longer than in an alternative application when the rope is held between the teeth for extension during clipping, as otherwise a higher fall height would be the result. Thus, a rope sling for the aforementioned application of maximum one arm length would be common here.
- As is usual in lead climbing, it must be borne in mind that such an application increases the fall height by at least this sling length (including rope stretch).
- The rope sling should only remain hooked into the Ti-Clip for the described application and never for a longer period of time, as otherwise there would be a constant risk of the increased fall height described above.
- The usual climbing premises are still valid despite the Ti-Clip. Clipping at waist level, without holding the rope in between (e.g. teeth, Ti-Clip or other), offers the lowest fall height in the event of a fall.

Product information

- Main dimensions of a Ti-Clip unit: approx. 3.4 x 3.2 x approx. 1.9 cm
- Weight: approx. 6 g per Ti-Clip unit
- Rope compatibility: optimised for common dynamic single ropes from 8.9 to 11 mm diameter
- The maximum elongation of the spring clip is limited to clamps with a maximum diameter of 11.5 mm.
- Material: The Ti-Clip is made of UV and weather-resistant plastic, which has perfect properties for a clamping mechanism of this type. The belt attachment is done by means of micro velcro straps.
- Colours: The Ti-Clip unit is available in several colours. The micro Velcro straps are black.
- Warranty: 6 months (provided proper handling)
- Scope of delivery: Packaging incl. 1 or 2 Ti-Clip parts, as well as the necessary micro Velcro straps and description.
- Current descriptions / videos on www.tirock-sports.com
- Developed in Austria and produced in Germany
- The product was first tested by TÜV Austria (PSA21-102)
- To protect the TiROCK original and to prevent plagiarism, the product is product-protected in several countries.

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Ti-Clip APPLICATION TiROCK

Application description

1. Efficient and safe clipping for lead climbing:

All advantages of the application can be found in the section "Brief description and function" and "Benefits / problem solvers". Furthermore, you can also watch the pictorial motion sequence in explanatory videos at www.tirock-sports.com.

Figure 8

For efficient operation of the Ti-Clip it is important that it is freely accessible and not overhung by e.g. shirts or other objects. Therefore, it is crucial that the outerwear is worn behind and not over the climbing harness.
Clipping the rope into the Ti-Clip is done by a slight downward pressure of the rope on the Ti-Clip to overcome its clamping spring force (Figure 8).
A fall in this situation leads to the automatic unclipping of the rope from the Ti-Clip, resulting in a free fall situation.
The risk of serious injuries to the teeth and jaw due to a fall when using an alternative rope clamping system with teeth can therefore be avoided by using the Ti-Clip.
The smoothest insertion is done directly vertically from top to bottom or, when deploying, by a pulling movement upwards.

Figure 9

For additional lengthening of the loop, the rope in the Ti-Clip can also be pulled further horizontally after insertion (and depending on the rope friction) (Figure 8), so that a maximum reach for clipping can be achieved.
When the climbing rope is pulled up, it rolls or snaps smoothly out of the clamp (figure 9).

Please make sure that you have also read and understood the paragraph "Danger warnings".

2. Quick-release attachment of the latching sling for the via ferrata athlete

Figure 10

Background: In via ferrata sports, it is recommended that, in addition to the via ferrata set, a lanyard is also attached to the climbing harness in order to hang on to the steel rope of the via ferrata if you feel unwell. In addition to the via ferrata set, it is also recommended to attach a sling to the harness in case of discomfort, exhaustion or simply to rest on the steel rope of the via ferrata. A webbing sling, which is attached centrally at the tie-in point, is usually used in conjunction with a karabiner (usually a screw karabiner).

When using the Ti-Clip, the carabiner is now clamped into this (Figure 10) instead of being attached to the usual gear loops on the climbing harness. The decisive advantage of the Ti-Clip is the speed and ease of movement with which the latching sling can now be used. Especially in situations when strength runs out or one feels sudden physical difficulties, the speed factor is decisive.
For this application, the attachment of a Ti-Clip is usually sufficient. The ideal positioning is extremely lateral, so that the carabiner is not unintentionally unclipped by the movement of the leg (e.g. when climbing high steps).