

PETZL®





"Accessing the inaccessible"

Every participant, climber, mountaineer, caver has dreams, no matter what his or her level. Petzl designs solutions that permit those dreams to be fulfilled with maximum efficiency. This "solutions approach", which combines equipment, technical tips and training, is the motor behind Petzl's activities now more than ever. This unique process embodies the essential values of a Petzl product and is at the heart of this catalog.

"Petzl's mission is to design solutions to aid access to the inaccessible. In other words, to progress in vertical or dark terrain. This process has been present since the beginning. Since the time when Fernand Petzl, a caver, created a solution for what he needed to fulfill his dream of exploring the Dent de Crolles in Chartreuse (France). A solution toward new horizons, which marked the beginning of an adventure that has existed for thirty years for sport and professional activities."

Paul Petzl
President and Founder

Cover:
Anna, Mike and Géraud in the Cirque des Vases,
Gorges de la Jonte, France.

Left:
Descending in to Santito, Sierra Negra, Mexico.

Made by Petzl

Climbing, mountaineering, caving... These are our passions. Magnificent passions, constantly updated, but also demanding on us and our equipment. When choosing the equipment for moving up, down, at night, in the cold... how can we be sure that it corresponds to what we need in terms of durability, ergonomics, safety and comfort? What is the real value of this equipment? Besides comparing price, how do we choose? Optimal functionality, safety requirements, lifetime of products; these are some of the guidelines that Petzl uses to best respond to the needs of participants.

Optimizing the functions of a product!

At Petzl, the value of a product is related to overall quality, usefulness, simplicity, ergonomics and safety. These qualities are at the heart of our product development, and we are constantly asking questions. A few examples?

- If adding this feature could increase the lifetime of the product significantly, but at the same time raises its price, is it essential?
- Would our clients appreciate this added value?
- Would this complementary feature increase the weight of the product and consequently decrease the comfort to the user or the overall efficiency of the system?
- Will this additional feature have an positive or negative impact on the safety of the person using the product?
- Is it really useful, or just a gadget?
- Are we proposing a real solution for solving a problem and helping our clients?

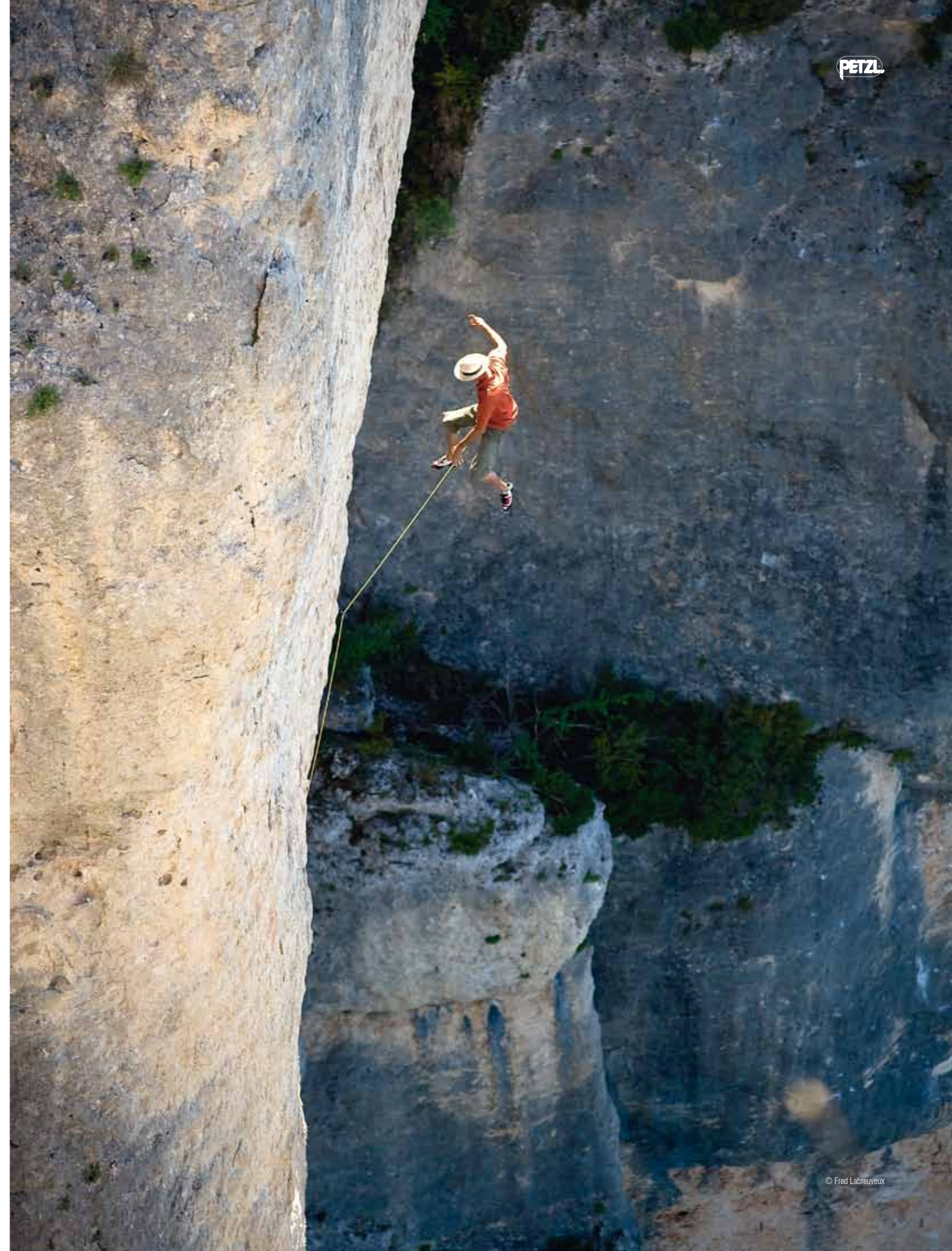
The preoccupation with these types of questions are at the heart of the work of our research and development teams. The answers are developed through extensive testing both internally and externally via field testing all designed to maximize the quality final product.

Safety without compromise

Safety is an essential aspect of the activities for which Petzl products are developed. Whether it is a harness for a climber, a crampon for a mountaineer, or a headlamp for a caver, each product plays a crucial role in its user's safety. In fact, many Petzl products are classified as Personal Protective Equipment. Safety is therefore a major factor in product development. To take this aspect into account, tests and inspections are carried out throughout the design and manufacturing phases of these products, meaning that many products are individually tested after production to ensure quality.

Lifetime of products: Petzl's commitment

At Petzl, we believe that your product should be durable. This is why products made from plastics or textiles are designed for a maximum lifetime of ten years from the date of manufacture. The lifetime is indefinite for metallic products. Of course, this lifetime can be reduced depending on the conditions of use. Use must be associated with regular maintenance and inspection. In the technical pages of this catalogue, and on Petzl.com, you will find all the tips you need for inspecting the products that are key to your activities. To learn more about maintenance and inspection see page 156.



Daniel Dulac getting some air time.
Petzl Roc Trip 2009, Gorges de la Jonte, France.



Erwan Le Lann looking for the next hook ! Ben Nevis.
© Tony Lamiche

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Caving, Mexico

The Underground Network

In the world of caving, the mountains of Ocotempa on the Sierra Negra have a well-deserved reputation. They now shelter four caverns that descend below the famous “sub one thousand” meter mark, with other promising cavities in the area. As usual, this was a team exploration, the result of the perseverance of the global caving community, answering the call of their Mexican friends and the giant caverns. A recap of the 2009 expedition:

The life of an amateur caver is not an easy one. At least once a year, you have to travel to find a major cave system to explore, one that promises discoveries important enough to justify all the time and distance spent away from significant others. Try to do what Phil Bence - member of the 2009 expedition, along with his wife, Florence Guillot, who is also a caver - did. The first thing is to find that rare gem, a place that has potential of being at least one thousand meters deep. Once there, praying for the rain to stop doesn't hurt: the large caves take great pleasure in being located in obviously rainy zones. Underground, you have to carry almost twice as much rope to the bottom as the distance you think you'll descend to. And of course, you have bring it back to the surface at the end. That's why caving is a team sport, bringing the tribes together from one spot to another. Cavers are always attracted to something bigger, more enormous. For them, as for others, exploration is almost a basic need. Searching for spots can transform a bunch of individuals into an efficient group, sharing information, sending Waypoints and scanned cross-sections of previously explored sites by e-mail. All expedition cavers know each other and are part of a group without borders: the expeditions to the Sierra Negra brought together at least half a dozen nationalities.

Sunset at base camp.



"When you spend fifteen hours underground without a weather report, the commitment is real."

Even though he has gone "below a thousand" solo a few times, the famous Australian caver, Al Warild, admits that for an exploration, a small group split into two or three teams is the best option. "Everything began with a small expedition planned for the only known cave, Pozo Verde, which is located right in the middle of the village of Ocotempa in the Sierra Negra," explains Al. "Actually, we preferred to continue looking for new caves to explore, and one day we decided to drop Pozo Verde." Situated in the southern Mexico's mountainous region, the Sierra Negra caught the eye of some Belgian cavers almost twenty years ago. Nobody had further explored the caves in the region. But since then, an international group began to form little by little, through expeditions organized here and there by different people. "When you look closely, there really aren't that many people available for this type of adventure.

Caving is a rough activity; to leave on an expedition, you have to have the time, the financial means, and especially the desire to spend your vacation under harsh conditions," says Phil Bence. "A few years ago I went to Poland for a caving rescue course. While there, I first met some Polish cavers who were keen to explore and we became friends. Then one at a time, I met cavers from other countries, like Gustavo Vela and Franco Attolini, who - with Al - are the driving force behind the expeditions in the Sierra Negra. This is the first expedition organized by Mexican cavers that discovered a "sub one thousand." It's made up of cavers from Switzerland, Spain, the US, and surprisingly, Australia. Which, Al Warild easily explains: "Sure, Mexico is a bit far, but in Australia we have so few large caves that I have to travel a long way to find new ones."

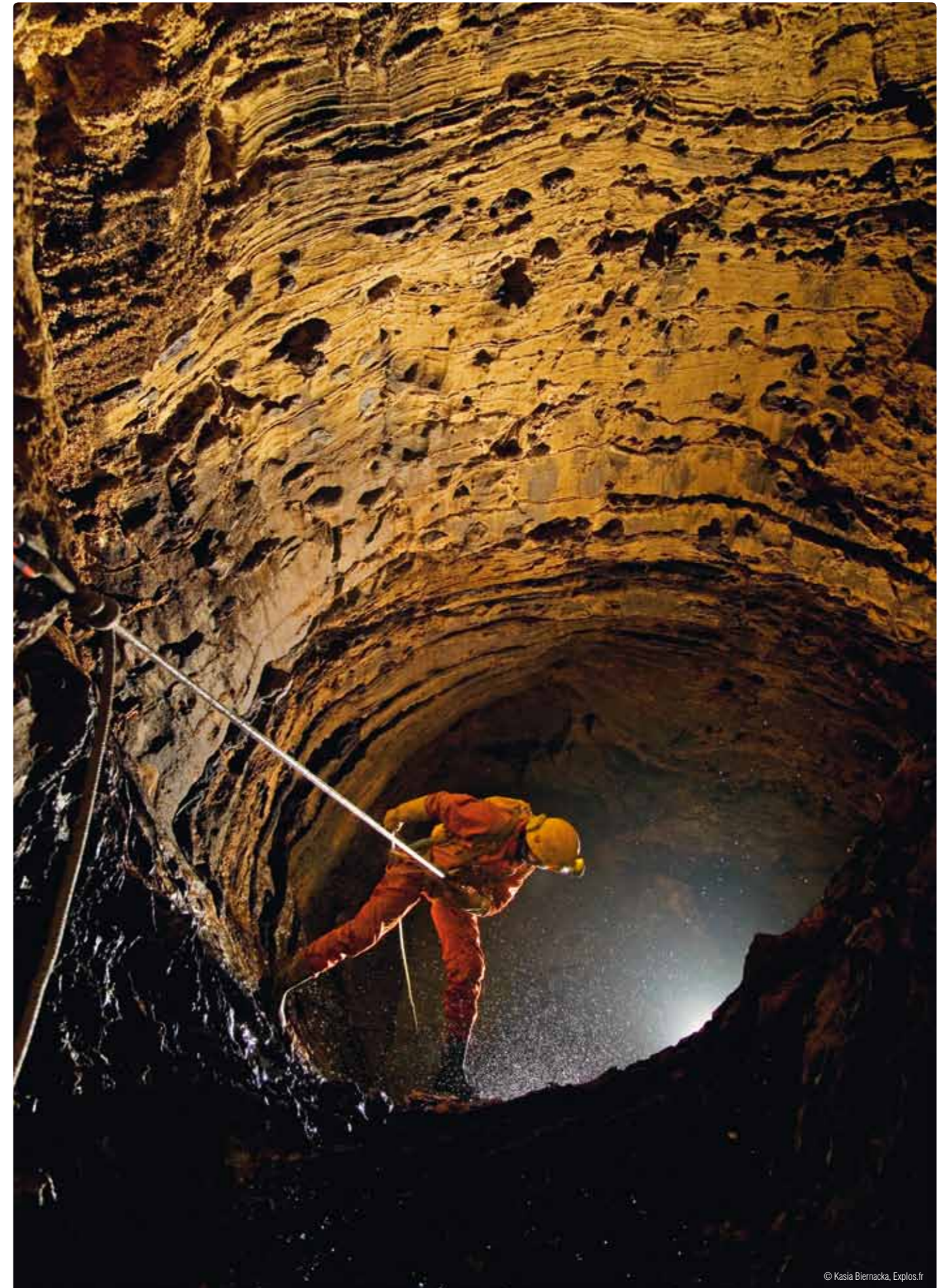
Carrying equipment to camp.



Descent into Santo Cavernario.



The last refueling before the mountain.



Heading out to remove gear.

After spots like Papa New Guinea, Laos or Patagonia in previous years, the group of cavers found themselves in Mexico, enthusiastically welcomed by the local cavers. They were all dreaming of the next “sub one thousand.” Their dreams all came true in early 2009.

The first step was to set up basecamp at 1900 meters of altitude, a one and a half hours’ walk from the village of Huizmaloc. The exploration area is close to Ocotempa. Found by accident (almost) by Gustavo Vela, the Santito cavern kept its promise, and then some: it was pushed to -1125 meters in depth. The other large cave, Akemabis, already promising in 2008, was connected to Santito. Two other entrances were also discovered. “This new system now reaches -1180 m in depth and runs more than five kilometers,” says Phil Bence. Santito is now the fourth “sub one thousand” cavern, with Pozo Verde (-1070 m), Akemabis (-1111 m before a junction) and Akemati (-1135 m). Many other caverns down to -666 m deep were discovered during the expedition.

But really, how do you descend more than a kilometer below the surface? The answer is in the introduction: it’s a team sport, by working together. For Santito, “We rotated small groups of three or four cavers. While one group was off exploring the limits of Santito (mapping and carrying equipment), another looked for

other entrances or checked out another recently discovered cavern, while the third group stayed at camp. Then we would rotate,” explains Phil. The hardest aspect to control was the region’s rainy weather. “When you spend fifteen hours underground and can’t get a weather report, it’s stressful. The commitment is very real,” he says.

The Mexican cavers will have a lot to do for years to come; there’s huge potential for new caves, particularly in the Sierra Negra massif. A “sub one thousand” remains significant... until someone finds the means, or a key passage, to go farther, deeper. Some even imagine a possible “sub two thousand” in the Sierra Negra. Unless they choose, like other migrating cavers, to answer the call of bigger caverns elsewhere in the world.

The 2009 expedition members:

- Organizers: Franco Attolini, Gustavo Vela (Mexico) and Al Warild (Australia)

- Team members: Greg Tunnock (Australia), Simone Burnell (Switzerland), Bev Shade (USA), Ignacio de Rafael Ramos (Spain), Mike Frasier (USA), Phil Bence (France), Flo Guillot (France), Karim Pacheco (Mexico), David Tirado Hernandez (Mexico), Marcella Ramirez (Mexico)

Caving products

SPELIOS

Caving helmet with hybrid lighting: halogen and 14 LEDs with three regulated lighting modes. This two-in-one product is made up of a versatile helmet combining a shell with an expanded foam liner and a waterproof hybrid headlamp. This helmet is suited for cavers and canyoneers looking for a complete, durable and comfortable solution. The hybrid light source delivers a powerful, focused beam (halogen bulb) or a wide flood beam (LEDs), depending on the situation. For greater versatility, the LED light source has three regulated lighting modes to ensure a constant level of lighting until the batteries are completely discharged. Before total depletion, the batteries automatically switch to reserve lighting mode for several hours.

Reference: E75

Helmet available in two sizes:

- size 1 (E75 1): 48 - 56 cm (505 g without batteries)

- size 2 (E75 2): 53 - 61 cm (535 g without batteries)

Degree of protection: IP X8 (waterproof down to -5 meters)

Light quantity (14 LED): 67 lumens

Maximum lighting distance: 100 meters

Maximum light duration (14 LED): 183 hours

For complete headlamp performance information, go to www.petzl.com



• Two light sources to adapt the lighting to the activity: halogen bulb for focused long-distance lighting and 14 LEDs for proximity lighting



• Powerful regulated proximity lighting with 14 LED module

Apolonia cooks the essential tortillas!



Gustavo, Franco and Al get ready at the entrance of Akemabis.



ASCENSION

Ergonomic handled rope clamp for rope ascents. The performance of the ASCENSION has been refined to provide greater comfort, efficiency, ease of use. The ergonomically shaped handle is over molded with dual density grip for greater friction and better grip. The grip is wider at the bottom, providing better comfort for your fingers during use. The index finger indent has also been increased, offering greater efficiency when pulling on the ascender. The cam’s angled teeth provide secure grip in the worst conditions while reducing the effort required to slide the device up the rope. The geometry of the single piece aluminum frame ensures optimal handle orientation when the device is loaded and will maintain solid, comfortable performance for ascents of any length.

References: B17SLN (left) - B17SRG (right)

Weight: 195 g

For use with ropes between 8 and 13 mm in diameter



• Ergonomically shaped grip with dual-density rubber for greater comfort; has an area for the index finger and a wide, supportive base to keep the hand from slipping.



• The thumb catch allows installation or removal with one hand at any point on the rope. Easy to use, even when wearing gloves.

FOOTCORD

This adjustable cord foot loop attaches directly to the ASCENSION or BASIC. Lightweight and compact, with adjustable length. Webbing step is reinforced for comfort under foot.

Reference: C48
Weight: 45 g



SUPERAVANTI

A simple, lightweight, durable caving harness. The SUPERAVANTI's low profile minimizes snagging in tight passages and its low attachment point maximizes efficiency for ascending rope (simultaneous or alternating progression). It is totally adjustable with double-pass friction buckles. PVC protected leg loops for durability. Abrasion resistant polyester webbing. Abrasion protection on the waistbelt buckle. Two low-profile equipment loops. Leg loop buckles are positioned on the inside of the leg to avoid snagging in tight passages.

Reference: C12
Size 1: waistbelt 60-88 cm - 435 g
Size 2: waistbelt 75-103 cm - 485 g



OMNI

The half-moon OMNI is used to close harnesses that have two attachment points that must be joined with a connector. Designed to be loaded on all three axes, it has a breaking strength of 15 kN. Keylock system. Available with manual locking system (SCREW-LOCK) or auto-locking system (TRIACT-LOCK).

References: M37 SL - M37 TL
Weight: 86 g (SL), 92 g (TL)
Breaking strength:
- major axis: 20 kN
- open gate: 7 kN
- minor axis: 15 kN
Gate opening: 22 mm
For more information on carabiner locking systems, go to www.petzl.com



Santito cavern,
Flo descends to - 1000 m.

BASIC

A lightweight, compact multi-purpose ascender that works perfectly for hauling systems, ascending fixed lines and for self-protection when climbing with a fixed rope. Chrome-plated steel cam with angled teeth and self-cleaning slot securely grips the rope, even in muddy or icy conditions. The cam engages without losing a millimeter each time it is weighted and glides smoothly up a rope with minimal effort. Two attachment points allow for different uses (e.g. self-belaying, haul systems, etc.).

Reference: B18AAA
Weight: 135 g
For use with single ropes between 8 and 13 mm in diameter



CROLL

When used with a chest strap and the ASCENSION or BASIC rope clamps, the CROLL makes for a simple and efficient system for ascending fixed lines. The angled attachment hole keeps the device properly aligned on the chest. Chrome-plated steel cam with angled teeth and self-cleaning slot securely grips the rope, even in muddy or icy conditions. The cam engages without losing a millimeter each time it is weighted and glides smoothly up a rope with minimal effort. Ergonomic trigger allows one-handed installation and removal of the CROLL.

Reference: B16AAA
Weight: 130 g
For use with ropes between 8 and 13 mm in diameter

TORSE

Shoulder straps for positioning a CROLL ascender. Ascending a rope (simultaneous or alternating progression) requires a chest strap to enable hands-free use of the CROLL ascender. The TORSE gets the job done in minimalist fashion. Simple, lightweight design. Adjusts rapidly using the mini DoubleBack buckle. Can be quickly and easily detached from the harness with the side release buckle.

Reference: C26
One-size-fits-all
Weight: 90 g



PANTIN

Using the PANTIN foot-mounted rope clamp with a CROLL and ASCENSION makes for faster and less tiring vertical progress when ascending fixed ropes. Available in both LEFT and RIGHT footed versions. The design has been improved to decrease rope friction within the device. Chrome-plated steel cam with angled teeth and self-cleaning slot securely grips the rope, even in muddy or icy conditions. The cam has been refined to increase the efficiency with which the ascender glides on the rope. The wear area has been moved lower on the cam's surface to increase its durability. Easy to adjust DoubleBack buckle. Foot harness is Dyneema-reinforced for maximum durability.

References: B02ALA - B02ARA
Weight: 120 g
For use with ropes between 8 and 13 mm in diameter



© Phil Bence, Explos.fr

SIMPLE

The SIMPLE descender is lightweight, compact, and does not twist the rope during descent. Very easy to use: the rate of descent is controlled by varying the grip on the free end of the rope. Its design is well-suited for descending narrow pits. Spring clip allows the rope to be inserted without removing the device from the harness.

Reference: D04
Weight: 240 g
For use with single ropes between 9 and 12 mm in diameter



STOP

This self-braking descender for single rope is one of the most popular devices for cave descents worldwide. It offers exceptional control and versatility, while the self-braking function facilitates on-rope maneuvers. This makes it easy to stop and maintain your position on the rope. Device can be rapidly installed or removed from the rope without disconnecting it from the harness. May also be used to ascend short distances with the addition of an ascender and foot loop.

Reference: D09
Weight: 326 g
For use with single ropes between 9 and 12 mm in diameter



FREINO

Used with a descender, this carabiner with friction spur is ideal for additional braking during a descent. It provides increased friction for single ropes when rappelling or lowering, without extra gear or the need to open the carabiner. Easy to use: rope can be quickly redirected over the friction spur and removed with one hand. Auto-locking. Keylock system. For use on single ropes with the STOP, GRIGRI, HUIT, HUIT ANTIBRULURE and SIMPLE.

Reference: M42
Weight: 85 g
Breaking strength:
- major axis: 25 kN
- open gate: 9 kN
- minor axis: 10 kN
Gate opening: 15 mm (12 mm for friction spur)

SPELEGYCA

Designed to help pass rebelay when caving or canyoning. Two different arm lengths (32 cm and 58 cm) to facilitate rope maneuvers. Equipped with a STRING, which allows the carabiner to be held in the major axis position and protects the carabiner attachment loop from wear. Abrasion resistant webbing.

Reference: C44
Weight: 90 g
Strength: 22 kN.



TAM TAM

Caving hammer for hand drilling anchors. Handle equipped with a 13 mm socket to fit 8 mm bolt heads. Wrist leash. Hole in shaft for attaching a keeper cord.

Reference: P16
Weight: 535 g



SPATHA

This knife can be attached to a harness or a bag, making it difficult to lose. Textured wheel at blade axis allows easy opening. Serrated blade on small version (SPATHA S) useful for cutting webbing and rope. Smooth blade on large model (SPATHA L) ideal for cutting bread and sausage. Stainless steel blade.

References: S92 S - S92 L
Sizes (knife closed):
- S92 S: 98 mm (50 g)
- S92 L: 120 mm (70 g)



Mike (US) in the pits at the entrance of Santo.



© Gustavo Vela, Explos.fr

Topography session in Santito.



© Gustavo Vela, Explos.fr

ZIPKA® 2 *new*

The ultra-compact ZIPKA² headlamp is equipped with the ZIP retractable cord system. This feature allows the headlamp to be worn on the head or wrist, or attached to any other support, like a tent pole, etc. This headlamp is extremely versatile, thanks to its three lighting levels (maximum, economic and flashing), which are accessed with a simple electronic push-button switch. In maximum mode, the four LEDs deliver 40 lumens of light and provide enough light to see over a distance of 29 meters. In economic mode, the lifetime of the batteries can be extended to up to 120 hours for a long burn-time. The battery compartment is now hinged for easier access along with an easier to use closure system.

References: E94 PS, E94 PT
Weight: 69 g including batteries
Operates on three AAA/LR03 batteries (included)
Degree of protection: IP X4 (Water-resistant)
Light quantity: 40 lumens
Maximum lighting distance: 29 meters
Maximum light duration: 120 hours
For complete headlamp performance information, go to www.petzl.com



CLASSIQUE

Medium capacity caving pack with round base, ideal for holding waterproof containers. Three carrying handles and one transport strap. Interior equipment loop. Interior flap with clear identification window.

Reference: C03
Weight: 600 g
Capacity: 22 liters
Height: 60 cm



PORTAGE

Large capacity caving pack for approaches and all caving uses. Three carrying handles and one transport strap. Interior equipment loop. Interior flap.

Reference: S32
Weight: 760 g
Capacity: 35 liters
Height: 60 cm



PERSONNEL

Small caving pack with two carrying handles and one transport strap. Interior equipment loop. Interior flap.

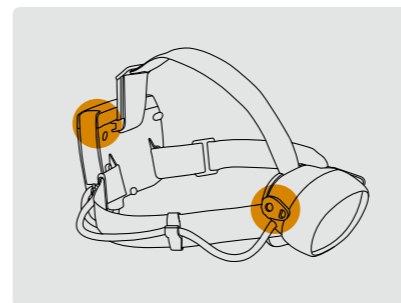
Reference: C14
Weight: 470 g
Capacity: 15 liters
Height: 45 cm

Other caving products:

- FRACTIO caving harness
- ATTACHE carabiner
- SERPENTINE shoulder straps
- DEMI-ROND maillon
- RACK brake bar descender
- SPEEDY maillon with quick gate
- MAILLON RAPIDE N° 5
- DUOBELT LED 14 waterproof headlamp
- EXPLORER LED 14 caving helmet
- ARIANE acetylene generator
- ECRIN ROC ultra-durable helmet
- e+LITE emergency headlamp
- TRANSPORT caving pack
- PERFO SPE drill
- COUDEE, CLOWN et VRILLEE caving bolt hangers

Find all products on pages 140 - 154.

Technical information **Checking your equipment**

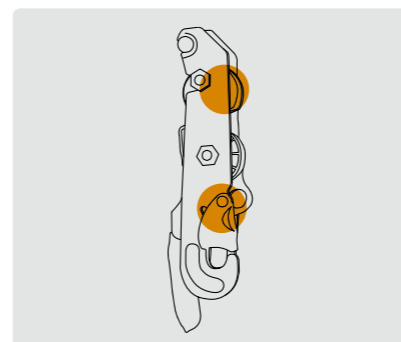


Headlamps

The headlamp is the key to progression in caving; without lighting, there is no movement...

Check:

- the functioning of your headlamps (primary and rescue) before and after each outing by turning them on and off several times in a row
- the condition of the contacts in the battery pack: clean, no corrosion
- that there are enough spare bulbs
- the condition of the electrical wire linking the battery pack with the lamp: no cuts or bad contacts
- that the lamp and the battery pack are secured to the helmet
- the condition and seating of the seals: test the watertightness of the lamp and battery pack by immersing them; clean and lubricate the seals and seating surfaces with silicone grease



Descender

In caving, the rubbing of wet, muddy ropes on the braking elements of a descender wears the cam, bobbin and side-plates. If the wear is extensive, it may reduce braking efficiency and/or damage the rope.

Before each outing, check for:

- deformities, cracks, wear or signs of corrosion on the fixed and/or moving side plates
- friction elements (cam grooves, bobbin);

replace sharp or perforated elements
- locking elements: the condition of the hinge, tightness of the nuts, functioning of the safety gate on the side-plate: the gate should return automatically, the cam and its spring should move freely without rubbing or friction. Perform a test on the rope (with a back-up belay) to check the effectiveness of the STOP.

Retire your descender:

- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability

After each outing, clean and dry all equipment carefully according to the instructions in the technical notices.

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information **Basics**

1 Prepare carefully for your activity

Consult the guidebooks and get information from other cavers. Check the weather forecast to evaluate the risks associated with flooding and to plan your itinerary (wet or dry cave system). Meticulously prepare the equipment required for the exploration, check the lengths of the ropes and bring a bolting kit (hammer, drill, bolts, hangers, wrench...) Advise others about where you are going and for how long.

2 Have your own personal light sources, estimate the length of your outing

Evaluate the energy you will need for lighting your entire trip (calculate a third of the energy for the approach, two thirds for the return, plus back-up lighting equivalent to another third), and don't forget to bring an emergency headlamp for each person. With the change to electric headlamps, lighting is cleaner and more practical, but you get neither the flame nor the heat emitted by an acetylene generator. Always remember to bring a survival covering or bag (one carried by each person, along with candles and a lighter).

3 Manage your time

Underground, time "flies" faster than on the surface. To be well aware of the time, use the hourly "beep" function on your watch (every hour, the watch sounds one or more "beeps").

4 Manage your effort as a team

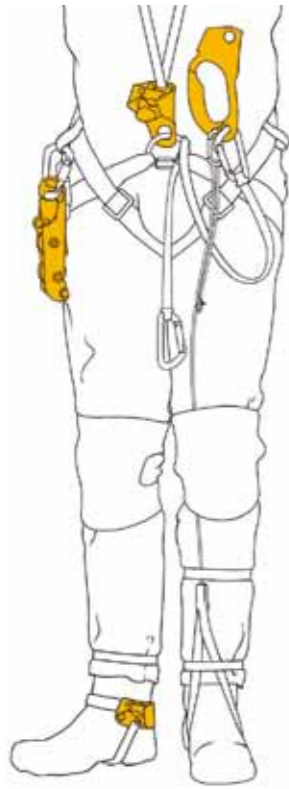
Caving consumes a lot of calories; it is important to eat regularly and bring extra nourishment in case the outing is prolonged. Drink regularly. During progression the body can get overheated and significantly dehydrated, then quickly cooled at rest. Take advantage of waiting time to eat and drink. Anticipate the delayed reaction of the purification tablets before drinking water taken directly from the cave.

5 Be particularly careful at the end of the exploration

Overprotection or rock-solid protection at pit exits is not a luxury when the team is in a state of advanced fatigue. Adjust your pace to that of the weakest member, and check on each other.

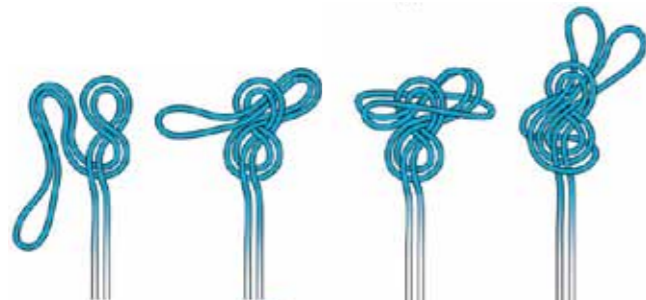
Technical information Tips

A. Gearing up

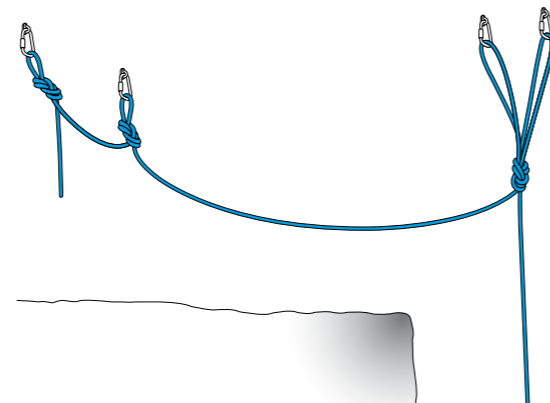


Place the lanyard on the left side of the CROLL, lock the connector. Use a foot-mounted ascender, attach the foot loop with the elastics, and don't forget the knee pads.

Load-distributing knot (rabbit knot)

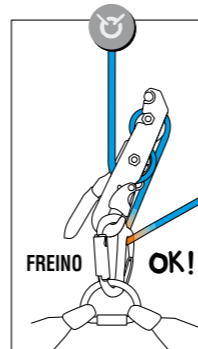
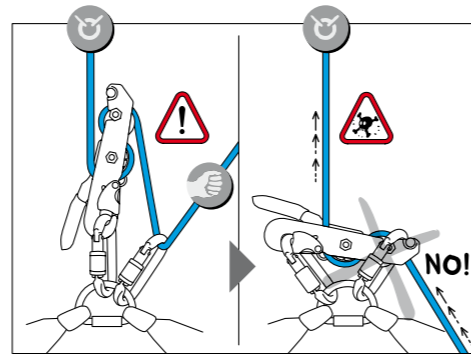
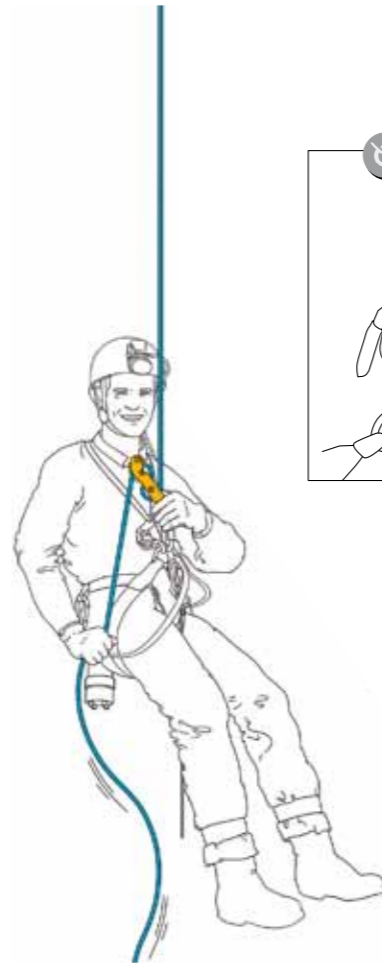


While setting up, think about abrasion and the possibility of the anchor breaking. Place two anchors at pitch heads and also at the end of a lifeline.



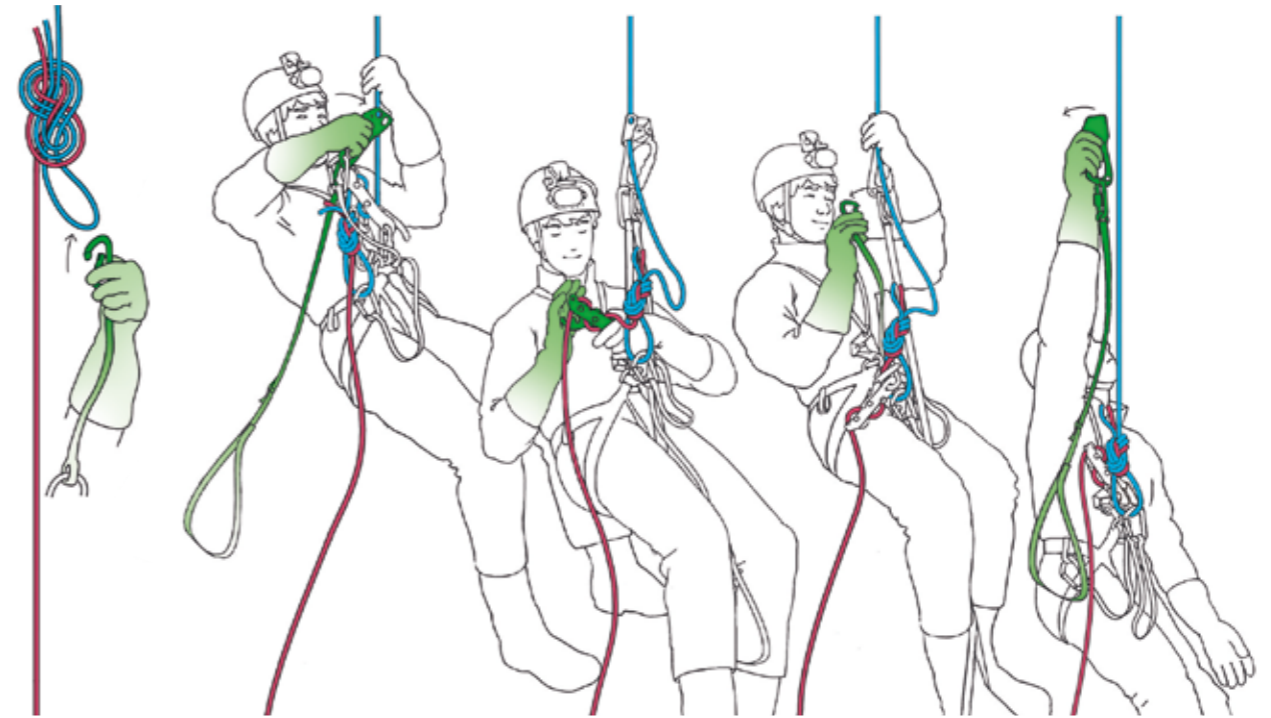
B. Descent

Add a braking carabiner if necessary.



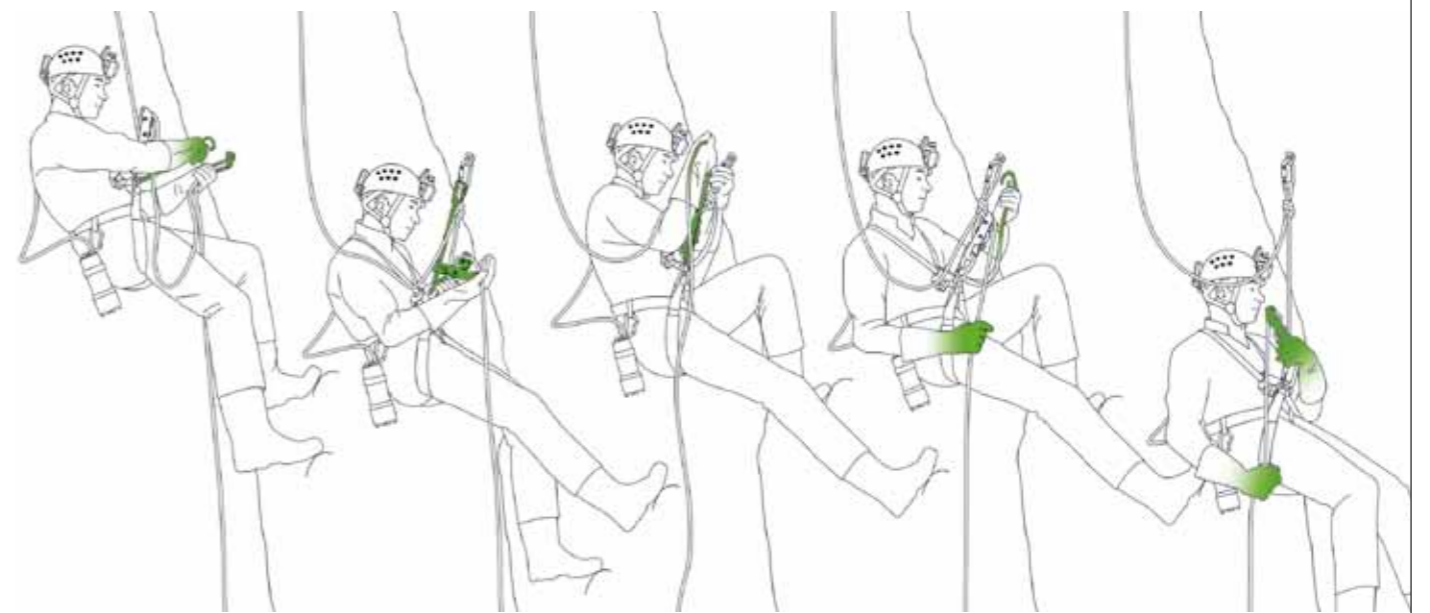
C. Passing a knot during descent

- 1- Clip your lanyard into the rope loop.
- 2- Install the ascender and put your weight on it.
- 3- Remove the STOP and reinstall it below the knot.
- 4- Weight the foot loop and unclip the lanyard from the ascender.
- 5- Transfer your weight onto the STOP and remove the ascender.



D. Passing a knot during descent

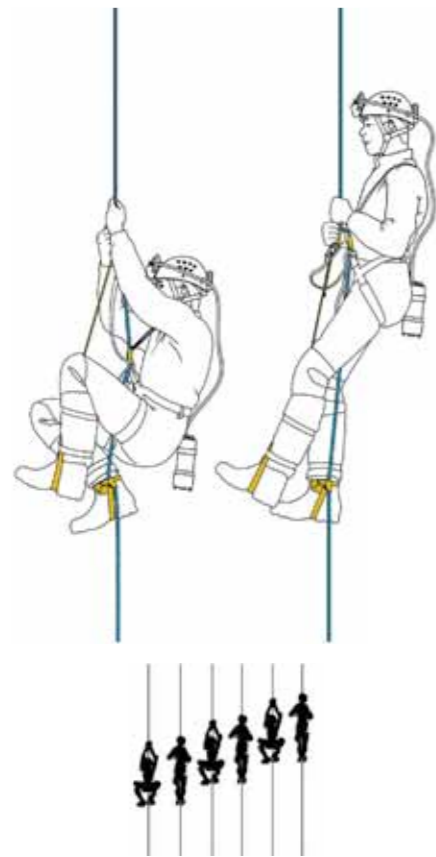
- 1- Clip your lanyard into the anchor.
- 2- Descend to transfer your weight onto the lanyard. Move the STOP to below the knot.
- 3- Take up the slack in the rope and put your weight onto the STOP.
- 4- Check the installation, disconnect the lanyard from the anchor.
- 5- The rope is free for the rest of the party to continue descending.



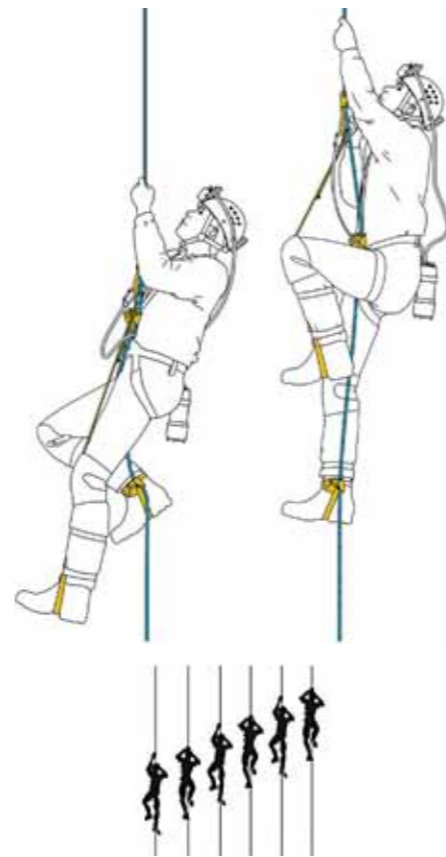
Information is non-exhaustive. Refer to the other pages as well as to the user instructions and technical manuals. Technical training is essential.

E. Ascent

Simultaneous progression technique: less tiring since both legs push at the same time.



Alternating progression technique: faster, but more tiring since one leg pushes at a time.



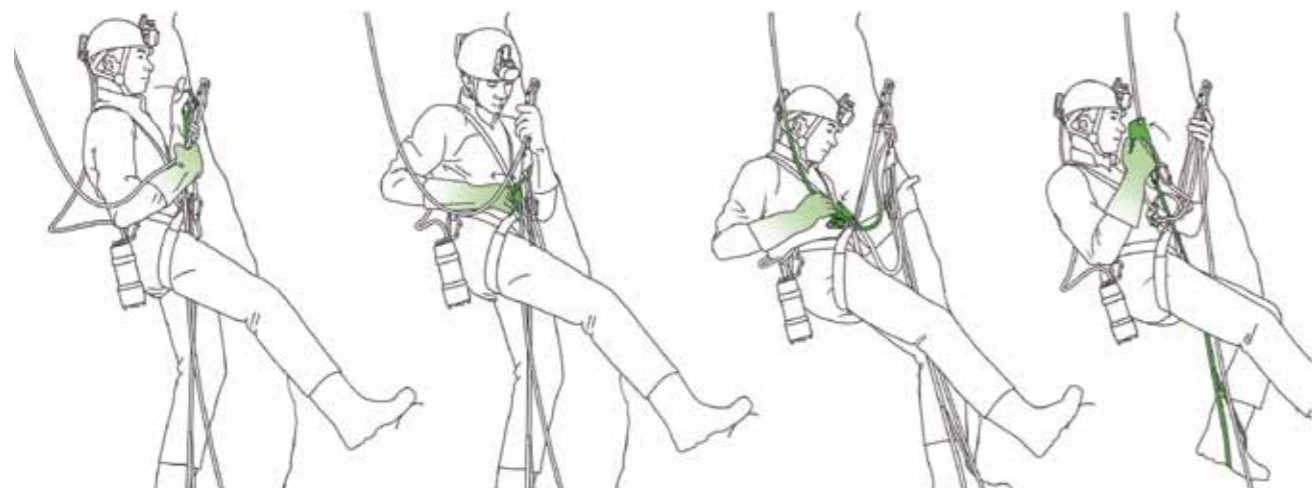
F. Passing a re-belay on ascent

1- Go up to the height of the knot without butting the ascender against it. Clip your lanyard into the anchor.

2- Weighting the foot loop, release the CROLL.

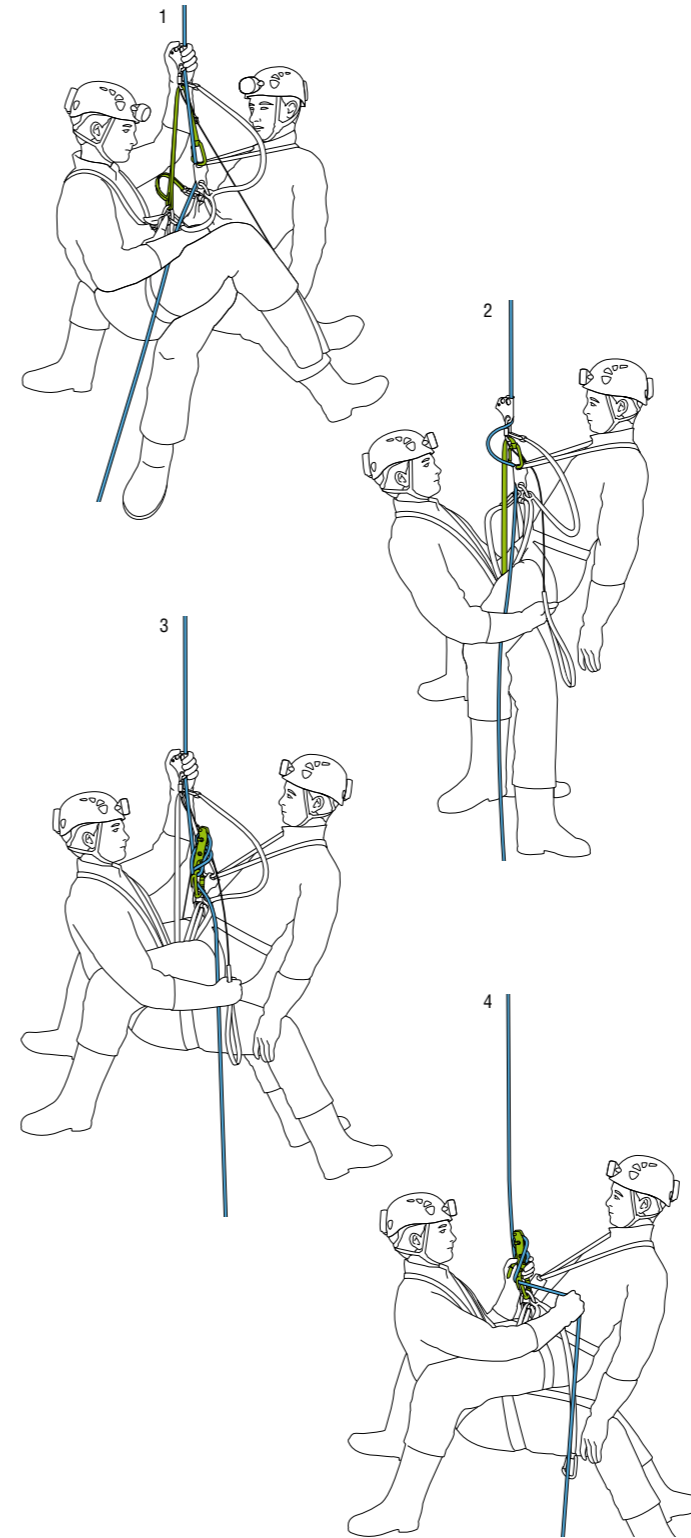
3- Put yourself under tension on the lanyard and reposition the CROLL.

4- Install the ascender above. Put your weight on the ascenders, check the installation and unclip your lanyard. The rope is free for the others.



G. Emergency rescue of team member, downward evacuation from below

In case of an accident, every second counts; intervene rapidly with the appropriate technique. The following is an exceptionally quick and easy technique for releasing and lowering a victim in an emergency. Regular practice with your equipment is essential.



Al and Franco see the sun again.





© POA photography

Viks Kile, climbing paradise for the young... and the not-so-young. Left, Adam Blomberg makes an attempt on Hockeyfirilla, 7b+ (5.12b/c), while Maja, 9, climbs Heil Hilti, 5c (5.9), right.

Sport climbing, Sweden

A vertical playground

Any climber with a family quickly realizes that it is a pleasure to bring the children climbing, even if simply under the pretext of a picnic in the outdoors. Climbing is a game that is fun and prized by children, who move easily from climbing trees to climbing rock. A learning experience of course, but also a pleasure shared with adults. It's about being together at the crag, like when Helena and Adam brought Maja and Jonathan to discover the granite of the Göteborg region.

Maja is nine years old, Jonathan thirteen, and they are lucky, they live in Göteborg. With its ocean, lakes and rivers, this coastal town is known for its fish-filled waters, but Maja and Jonathan prefer climbing to fishing. Göteborg offers everything you need for this activity: Dozens of sites, mainly granite, are spread out through the region, some of them a few kilometers from downtown. All you need is a bicycle to go climbing, which actually provides a great warm-up before jumping on the routes.

It is often said that climbing is natural for a child. This isn't quite true. More precisely, playing is natural - and it just so happens that climbing is a game for a child, a quite fun game. Climbing trees, walls... and why not rocks. Bouldering, then, is perfect for children. Göteborg offers bouldering sites where you can discover that rare gem: a series of boulders with easy, even very easy, problems, easy and safe descents and, last but not least, a landing that looks more like it's in a park than at the base of the North face of the Grandes Jorasses (flat and covered in moss or grass). The best advice for climbing with children is this: whether bouldering or climbing routes, choose an area that is the most adapted for children, whether they are climbing or not. Therefore, a site that is accessible and fun for them. If you don't have a crash pad, dig up an old mattress instead, because if your offspring do not climb, they can always play on the pad or take a little nap. Today, the flat slabs at the base of the Hallsunga cliff near Göteborg, are perfect for a nap for the youngest one - and perfect for his mother Helena, who easily can calmly climb a 6a+ (5.10b) before lunch. Of course, it's important to keep an eye on Maja and Jonathan, who usually climb in the gym, and who need to readjust to



Maja can't find the finishing holds on Banan, 5c (5.9), at Svanvik.

© POA photography



Heading for a family day at the crag...

outdoor climbing. A good solution for two children who are able to belay each other, under the parents' watch, can be to choose two routes that are near each other and appropriate for each climbing team - a 5b (5.9) next to a 6b (5.10c), for example. This allows the children gain independence while the parents can offer them advice and help ensure their safety. For initiating younger children to climbing, games can easily be set up on beginner routes: retrieving a flag at the top, taking turns bringing the flag as high as possible, or climbing with one hand behind the back, for instance.

Cliffs feel higher for children than for adults. The bolts are farther apart than for adults. It is harder for the children's small hands to clip the carabiners. It is enough to have watched one of them spend five minutes trying to make a clip in his first route on lead. Choose gear that is adapted to their size, i.e. a specific harness and helmet. The helmet protects the head not only during a fall, but also when, for example, a quickdraw is dropped or a cell phone falls out of a pocket. Whether lead climbing or not, it may be wise to be near the child to give advice, point out a hold, reassure or

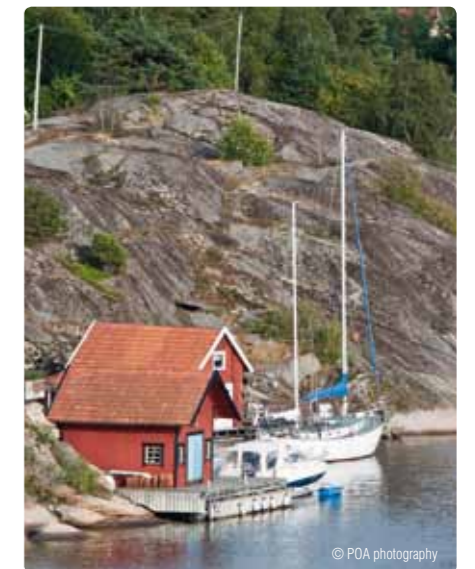
simply help by reaching out your hand. That is what Helena did when Maja couldn't figure out Banan, 5b (5.9), at the Svanvik cliff in Orust. Because he is older, Jonathan climbs mainly in the gym, where he easily climbs 6b (5.10c). Recently, he has been taking advantage of the Scandinavian summer to climb outdoors. His growing passion for bouldering is making him dream of Fontainebleau in France and of Magic Woods in Switzerland. "In Sweden, the natural environment is very beautiful, and I like these landscapes where the boulders are always easy to find."

"Helmets protect the head not only in case of a fall, but also when a quickdraw or a cell phone falls!"



Jonathan cruises the delicate 6a (5.10a) of Maraton, at Viks Kile.

© POA photography



© POA photography

Jonathan emphasizes that a good day of climbing always goes along with a “good lunch with cheese.” Like Jonathan, Maja has been climbing for six years, but since she is younger, she started climbing when she was very young. “What I like here in Sweden is that there are many places to climb near the city.” Maja couldn’t do the last move on Banan, but that didn’t keep her from making a nice attempt on Kalle Anka, a 6b+ (5.10d) at the Timbroklippan crag the next day. The style of the route - overhanging, key holds full of chalk - may be closer to the indoor climbing that Maja is used to. No worries for the youngest climber in the family, no regrets, just enjoyment. Climbing is a game, and adults should always remember how they tackled the world as children, when joy was stronger than fear. In fact, isn’t it this important aspect of childhood that pushes us to climb?

Maja, 9, puts on her gear and helmet and jumps on Maraton, 6a (5.10a), at Viks Kile.



Adam Blomberg tops out on a 6c (5.11a) at Viks Kile: peace and quiet guaranteed!



Sport climbing products



HIRUNDOS

The HIRUNDOS is an ultralight harness for high-end climbing. Its Frame Construction technology is pushed to the maximum. Woven polyester mesh on the inside of the harness wicks moisture for improved comfort and speeds drying in wet conditions. Perforated foam on the waistbelt and leg loops increases breathability. The four equipment-loops allow the harness to be used for big walls and mountaineering. Waistbelt is adjusted with one hand with the DoubleBack buckle. Reinforced tie-in points for increased durability in this high-wear area. Elastic leg loops for greater fit range.

Reference: C36
 Sizes: XS, S, M, L
 Weight: 270 g, 280 g, 300 g, 315 g



CORAX

This is the multi-purpose harness par excellence. Frame Construction technology with breathable monofilament mesh evenly distributes pressure, providing maximum support and comfort. The dual DoubleBack buckles at the waistbelt allow the tie-in point to be centered and equalize the equipment loops on each side. The adjustable leg loops allow size to be adjusted depending on comfort desired or layers of clothing worn and permit the harness to be put on when wearing skis or crampons. Two CARITOOL slots. Detachable elastic leg loop straps.

Reference: C51
 Sizes : 1 and 2
 Weight: 510 g, 560 g



• Dual DoubleBack waistbelt buckles allow the tie-in point to be centered, and correct positioning of the equipment loops.



• Frame Construction Technology for optimal support and comfort in suspension.

KODA

Chalkbag with ergonomic shape, making it easy to access the chalk. It can be opened with only one hand should you forget to open it before you start climbing. The closure system is efficient, thanks to a central cordlock, and there is an integrated emergency whistle. Reinforced rim maintains the shape of the bag. It is made of the same abrasion resistant material as our mountaineering range harnesses. Elastic brush holder for cleaning holds. Double loops for stability allow easy attachment to a belt or carabiner. Two sizes allow climbers to chose the best fit according to their hand size.

Ref: S39 P
 Size S: 57 g
 Size L: 68 g



POWER CRUNCH

Petzl’s chalk is now available in three convenient sizes (25 g, 100 g, and 200 g) for every climber. The small 25 g size is the perfect amount for a day at the crag or a session at the gym. The 100 g will fill a chalk bag. The 200 g is ideal for those with chalk hungry hands who never seem to have enough chalk to get through a tough summer day of climbing. A mix of chalk chunks and powder helps reduce dust.

References: P22B 25 - P22B 100 - P22B 200

PICCHU *new*

The PICCHU helmet is designed for children who want to rock climb or cycle. It is very light and comfortable and constructed for durability. Side openings for ventilation. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. For night use, the PICCHU has a mount on the back of the helmet specially designed for attaching the SIGNAL red safety signalization light. Headlamp can be attached using the four optimally placed clips.

References: A49 CH - A49 AP
One-size-fits-all: 48-54 cm
Weight: 310 g



• Mount for SiGNAL red safety signalization light



• Comfortable foam is removable and washable

GRIGRI®

The GRIGRI's self-braking function helps the belayer catch and hold a climber, making it great for working routes. Works equally well for lead climbing and top roping. Ergonomic design makes for smooth, controllable lowers. Also great for rappelling on single ropes - perfect for setting and cleaning routes. Use is similar to that of conventional belay devices: paying out rope is done using both hands; arresting a fall is done by holding the free end of the rope. For lowering and rappelling, the rate of descent is controlled by the hand holding the free end of the rope (the rope is released with the handle).

References: D14 - D14 B - D14 R
Weight: 225 g
For use with single ropes between 10 and 11 mm in diameter



• Pivoting cam assists the belayer in arresting a fall



• Lip guides the rope during the descent



SIMBA

Because small children do not have well-defined hips for a waistbelt to latch onto, the full body design is necessary. Developed specifically for children from 5 to 10 years old weighing less than 40 kg. Fully adjustable shoulder straps and leg loops for precise fit. Bicolor webbing (black inside, colored outside) facilitates donning. Four DoubleBack adjustment buckles.

Reference: C65
One-size-fits-all
Weight: 390 g



Checking your partner is twice as important here. Helena checks how the children have tied in and how their belay system is set up.



VERSO

The VERSO is Petzl's lightest belay-rappel device. It offers a light and compact option for climbers looking to further reduce the weight/size of their equipment. The asymmetrical V-shaped grooved friction channels adapt the friction for better control using our ARC (Adaptive Rope Control) technology. They decrease friction when taking in slack for greater ease of use. The VERSO can be used on all types of ropes: single ≥ 8.9 mm, half ≥ 8 mm, and twin ≥ 7.5 mm. Used with a symmetrical locking carabiner (Am'D or OK).

References: D19LI - D19TI - D19R
Weight: 57 g
For use on:
- single ropes ≥ 8.9 mm
- half ropes ≥ 8 mm
- twin ropes ≥ 7.5 mm



LOCKER

This manually locking carabiner is compact and light. It is designed for climbing, caving, canyoning, etc. The asymmetrical shape of the carabiner allows for a wide gate opening with excellent capacity and handling. Special compact profile for reduced bulk. Keylock system. Manual-locking SCREW-LOCK (with red alert indicator)

Reference: M55 SL
Weight: 63 g
Breaking strength:
- major axis: 24 kN
- open gate: 8 kN
- minor axis: 9 kN
Gate opening: 21 mm
For more information on carabiner locking systems, go to www.petzl.com



Am'D

The shape and size of this carabiner makes it great for most uses, from connecting a belay device to your harness or as a connector at the end of a lanyard. The D-shape makes it one of the strongest and lightest locking carabiners Petzl makes. Keylock system. Available with manual locking system (SCREW-LOCK) or auto-locking systems (BALL-LOCK, TRIACT-LOCK). Perfectly suited for use with belay devices due to its symmetric shape on both ends of the carabiner.

References: M34 SL - M34 BL - M34 TL
Weight:
- 78 g (SL and BL)
- 74 g (TL)
Breaking strength:
- major axis: 28 kN
- open gate: 8 kN
- minor axis: 7 kN
Gate opening: 21 mm (TL and SL), 22 mm (BL)
For more information on carabiner locking systems, go to www.petzl.com

SPIRIT

Since its release in 1991 the SPIRIT has been considered the best carabiner on the market. No other carabiner has come close to topping its smooth action, perfect ergonomics and durability. The SPIRIT is made for clipping over and over again. It is a great general purpose carabiner for the bolt end of a quickdraw or for racking gear. It is available in straight-gate and bent-gate versions. The bent gate allows the rope to be clipped into it more easily. Hot forged for optimum strength-to-weight ratio. Anodized for increased corrosion resistance. Keylock system.

References: M10 A - M15 A
Weight: 49 g
Breaking strength:
- major axis: 23 kN
- open gate: 9.5 kN
- minor axis: 10 kN
Gate opening: 20 mm



SPIRIT EXPRESS

The ergonomic SPIRIT EXPRESS quickdraw is composed of a straight-gate and a bent-gate SPIRIT carabiner, and an EXPRESS sling, available in 11 and 17 cm lengths. It is perfect for the crag or for alpine adventures. Thanks to the STRING protection, the bent-gate carabiner stays securely positioned when the rope is clipped in it, and a large part of the sling is protected from abrasion.

References: M30 11A - M30 17A
Weight: 104 g (11 cm), 109 g (17 cm)
Quickdraw breaking strength: 22 kN
Carabiner breaking strength:
- major axis: 23 kN
- open gate: 9.5 kN
- minor axis: 10 kN
Gate opening: 20 mm



TIKKA^{®2} new

The TIKKA² offers great versatility with its three lighting modes (maximum, economic and strobe) which are accessed by a simple electronic push-button switch. In maximum mode, the four LEDs deliver 40 lumens of light and provide enough light to see over a distance of 29 meters. The economic mode optimizes battery life and therefore provides a long burn-time of up to 120 hours. The battery compartment is now hinged for easier access along with an easier to use closure system.

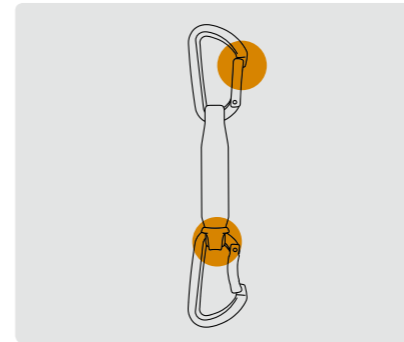
References: E93 PS, E93 PT
Weight: 81 g including batteries
Operates on three AAA/LR03 batteries (included)
Degree of protection: IP X4 (Water-resistant)
Light quantity: 40 lumens
Maximum lighting distance: 29 meters
Maximum light duration: 120 hours
For complete headlamp performance information, go to www.petzl.com

Other sport climbing products:

- METEOR III ultra lightweight climbing helmet
- SAMA men's climbing harness
- SELENA women's climbing harness
- OUISTITI full body harness for children
- CORDEX lightweight gloves
- SPATHA knife with carabiner hole
- BUG backpack for single day climbing
- e+LITE emergency headlamp
- GO oval maillon
- EXPRESS sewn sling
- COLLINOX resin anchor
- COEUR bolt hanger
- COEUR GOUJON complete anchor assembly
- LONG LIFE 12 mm expansion anchor...

Find all products on pages 140 - 154.

Technical information Checking your equipment



Quickdraws

Each pitch that is climbed and "cleaned" involves an average of 75 openings and closings of carabiners. The quickdraw webbing is submitted to repeated shock loads, rubbing against the rock and to the sun's UV rays. Getting sand or small particles inside the fabric also accelerates quickdraw wear. Before and after each outing, inspect the carabiners and the webbing of your quickdraws.

Carabiners (frame, gate, hinge...):

Look for:
- cracks, deformities, corrosion, excessive wear (no more than 1 mm of material worn away), sharp edges from rubbing on anchor points (frame, gate, hinge...)
- good opening and automatic closing of the gate; it must close cleanly and completely. The return spring should be quick and sharp (add a drop of oil if necessary). Clean the Keylock evacuation hole.

Webbing:

On the EXPRESS sling, remove the STRING and inspect the stitching and the areas of contact with the carabiner. Check for cuts, tears, looping or swelling of the webbing. Discoloration or swelling of the webbing often indicates excessive wear.

Retire your quickdraw:

- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information Basics

1 Choose a site according to the physical capabilities and degree of independence of the youngest members.

Pay attention to the length of the approach walk, which may not be suitable for children. Carefully choose the place where you will set up "Base camp": flat, protected from falling rock or equipment. Look for shade or sun, depending on the season. Inspect the area before setting up (check for reptiles, insects, dangerous plants, broken glass,...).

2 Be alert

With children, you must be extremely vigilant in all phases of belaying, gearing up, tying in, setting belays, descending, rappelling, etc. Be very familiar with all the basic techniques. Decide with the children on an area where they can play on their own when they are not climbing. This area should be away from the climbing area and the belayers. The parent should be positioned so as to always keep an eye on young children while belaying them and to be ready to intervene at any given moment.

3 Bring appropriate equipment

For the youngest children, use a full body harness designed and properly adjusted to their size; for older children, check that the waistbelt of the harness fits snugly. In both cases, before each route, check that there is no risk of coming out of the harness in case of inversion... (verify the adjustment between each play session, climb, and change of equipment). Require the children to always wear their helmets. Parents of course set the example: the helmet is not only protection from rockfall, but also from falling equipment (quickdraws, descenders, cell phones, etc.), and of course from somersaults in the gravel.

4 Adapt your belaying technique to the child's weight

When belaying a child climbing on lead, be careful not "short-rope" him during a fall; giving a dynamic belay to a 25-kg child requires training; with very light weights (less than 20 kg), a self-braking device may not be activated... Lower more slowly. Do not let a child belay you if the weight difference is more than 30 to 40 kg.

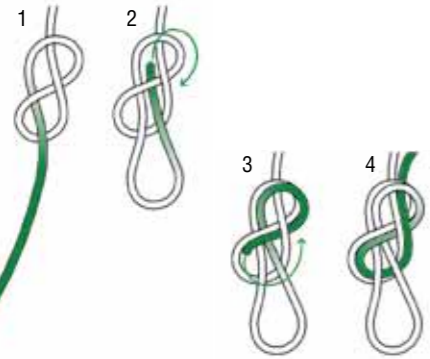
5 Put yourself at the children's pace and plan for rest time

Make the climbing fun; plan some games with the equipment, do rappelling to teach independence, and plan other activities to add some variety. Plan for enough food and water to keep the family refreshed before, during and after any activity.

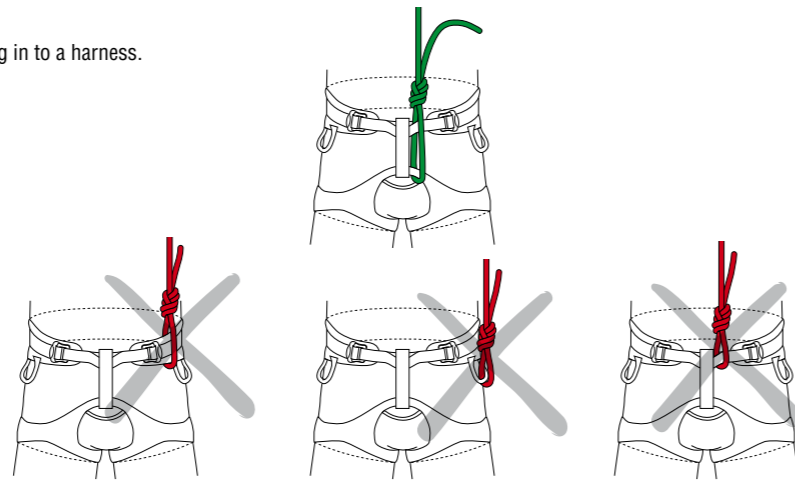
Technical information Tips

A. Tying in

Figure-8 knot.

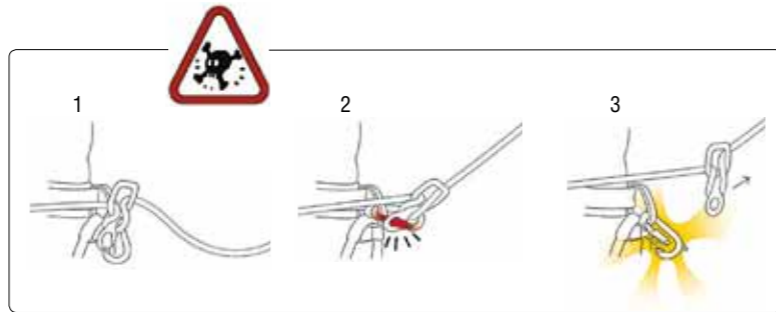
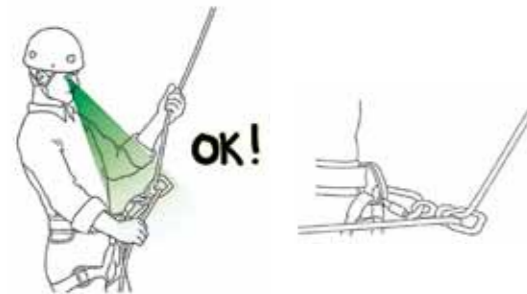


Tying in to a harness.



B. Connection between the belay device and its attachment carabiner

Be careful to properly position the attachment carabiner.



C. Basic belaying techniques

The same technique is used for all Petzl belay devices.

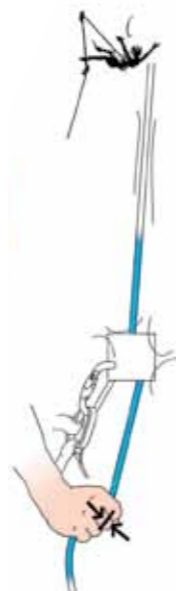
Giving slack.

The brake hand pushes the rope in the device.

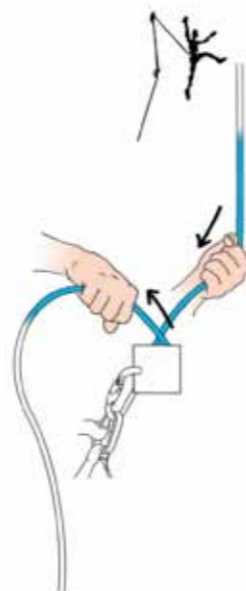


Stopping a fall.

The belayer holds the rope firmly downwards.



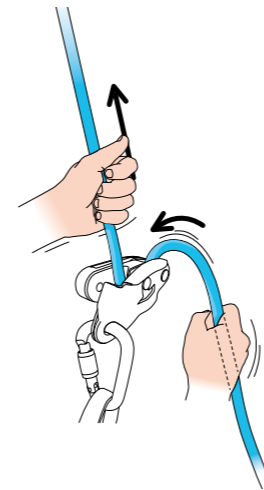
Taking up slack.



D. New GRIGRI technique

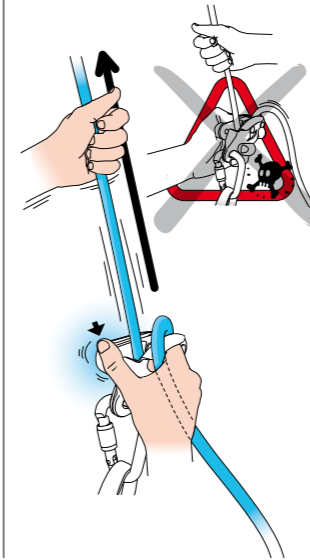
Main position for belaying, giving slack

Get into the habit of keeping your hands in this position; it's the main position for belaying. To help make it easier to slide the rope through the device, it's better to push the rope through it, rather than pulling it.



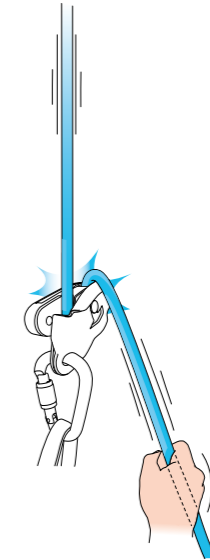
Short transitional position for giving slack quickly

Do not grip the device with your entire hand

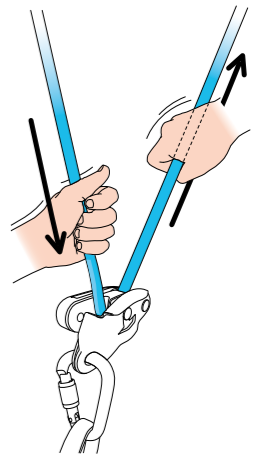


Stopping a fall

The belayer holds the rope firmly downwards. Perform a dynamic belay to absorb the fall.

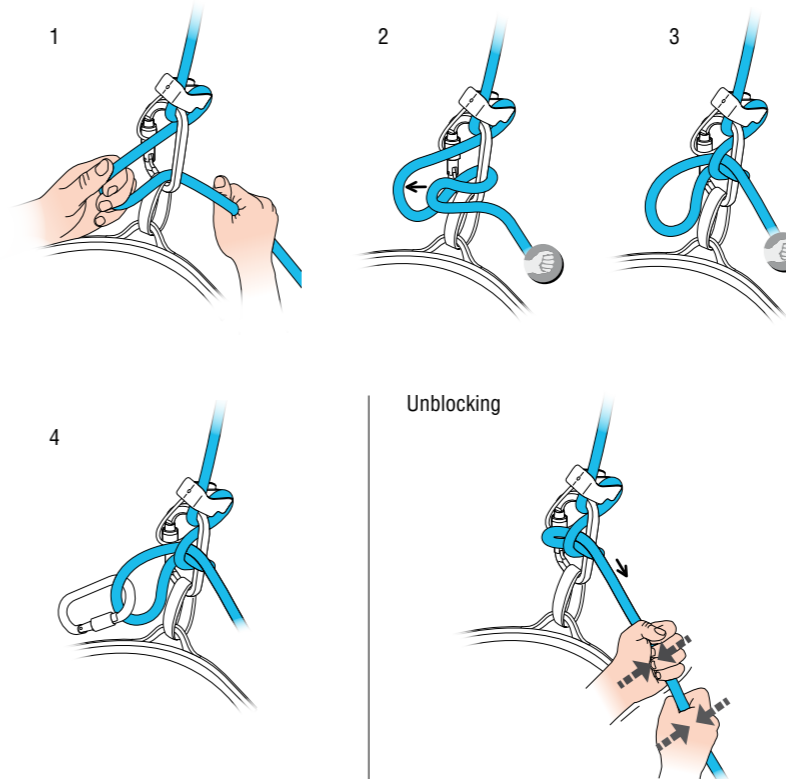


Taking up slack



E. Tying off a belay device

Useful technique to free the hands, for example to untie a knot in the rope. Climber is stopped. Always hold the brake side of the rope when tying or untying the tie-off.



Jonathan on-sights Kalle Anka, 6b+ (5.10d), at Tjörnbrotklippan.

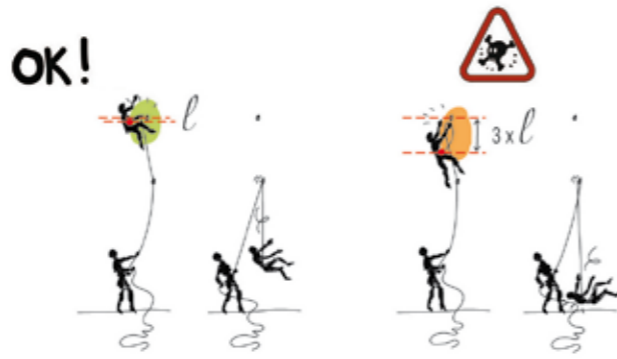


F. Positioning and behavior

Spot the leader before the first bolt is clipped.



Clip the second bolt at waist level; this reduces the amount of rope out and thus helps prevent the climber hitting the ground in case of a fall before making the clip.



Stay directly underneath the first piece of protection.



Backing-up the belayer:

- weight difference

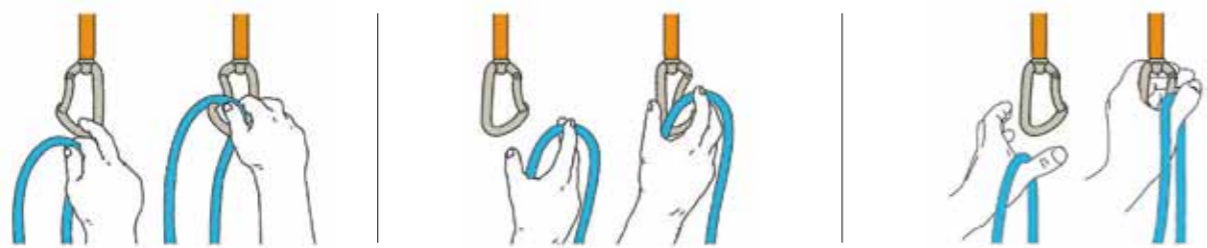


- belaying under a roof

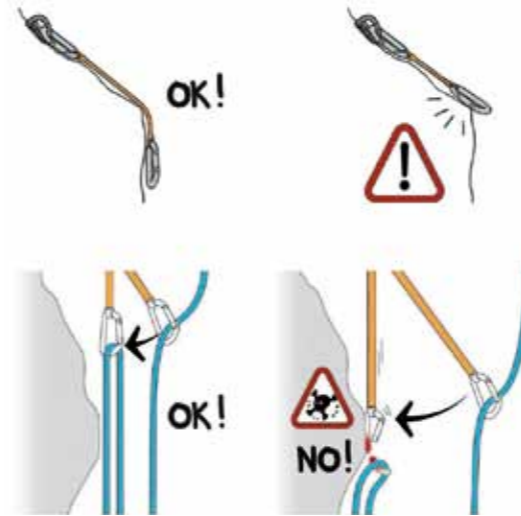


G. Clipping a quickdraw

Clipping methods.



Choose the length of the quickdraw according to the situation.

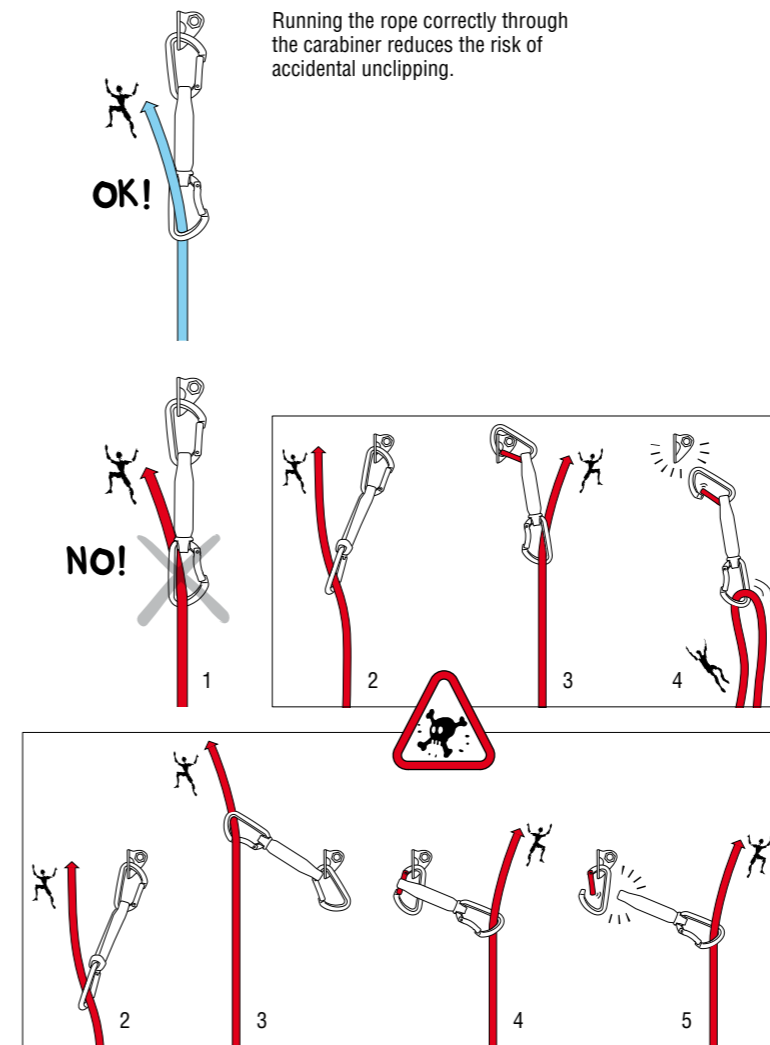


Extending an anchor with a sling to avoid incorrect carabiner loading.



H. Rope path

Running the rope correctly through the carabiner reduces the risk of accidental unclipping.

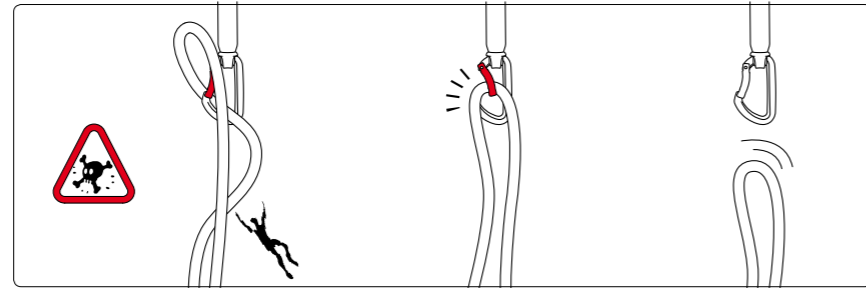
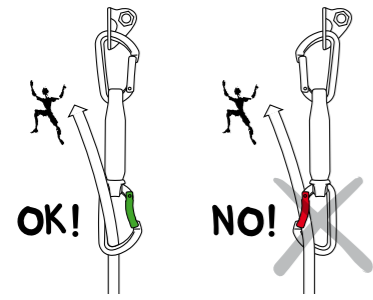


Maja Hallgren top-ropes Till Ulrica 5c (5.9) at Hällsunga.

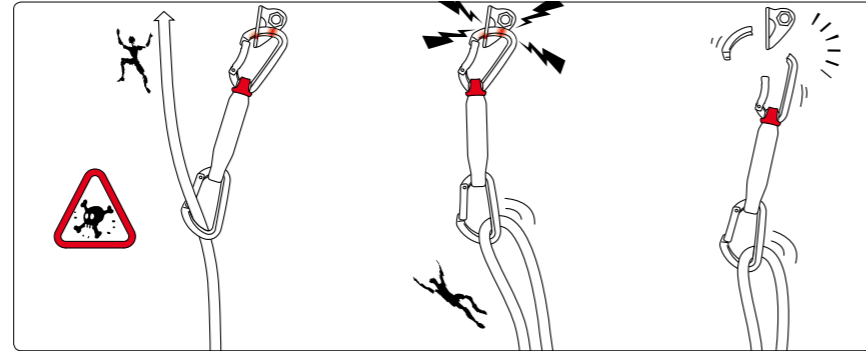
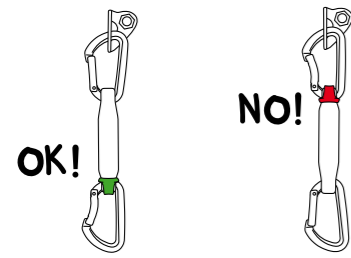


© POA photography

Direction of the quickdraw

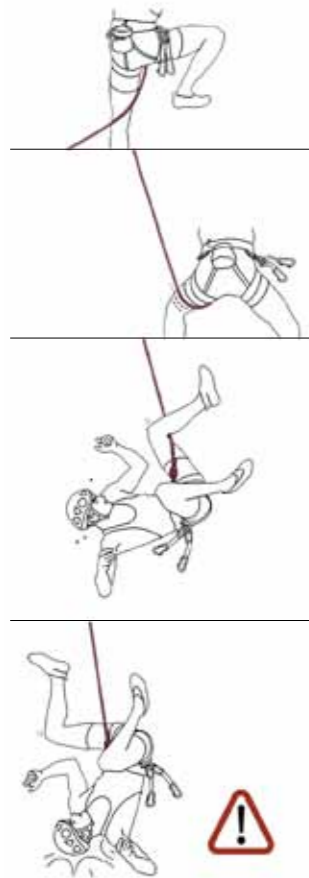


Do not clip a carabiner with a STRING into the anchor. The carabiner could become incorrectly loaded.

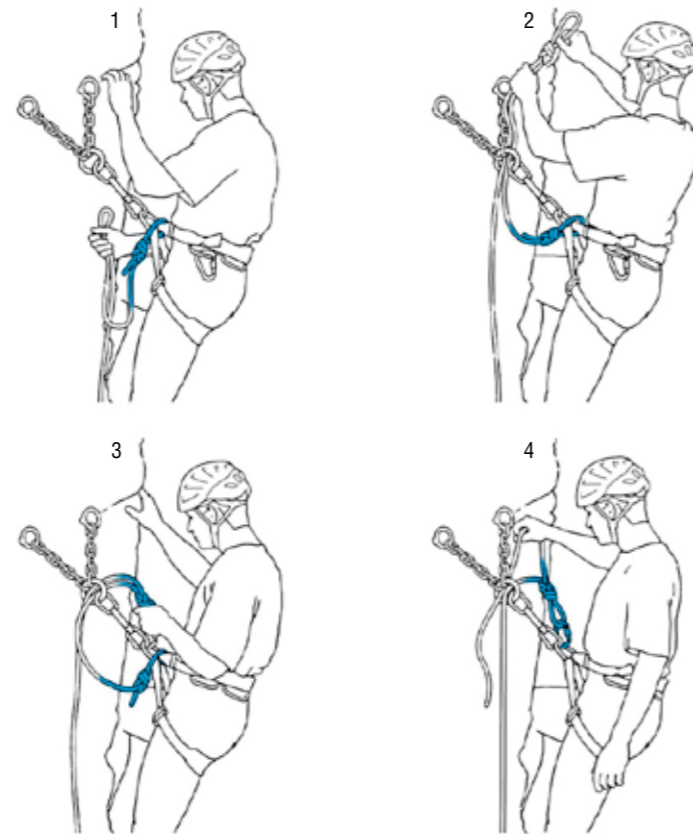


I. The fall

Warning: Do not let the rope run behind your leg.



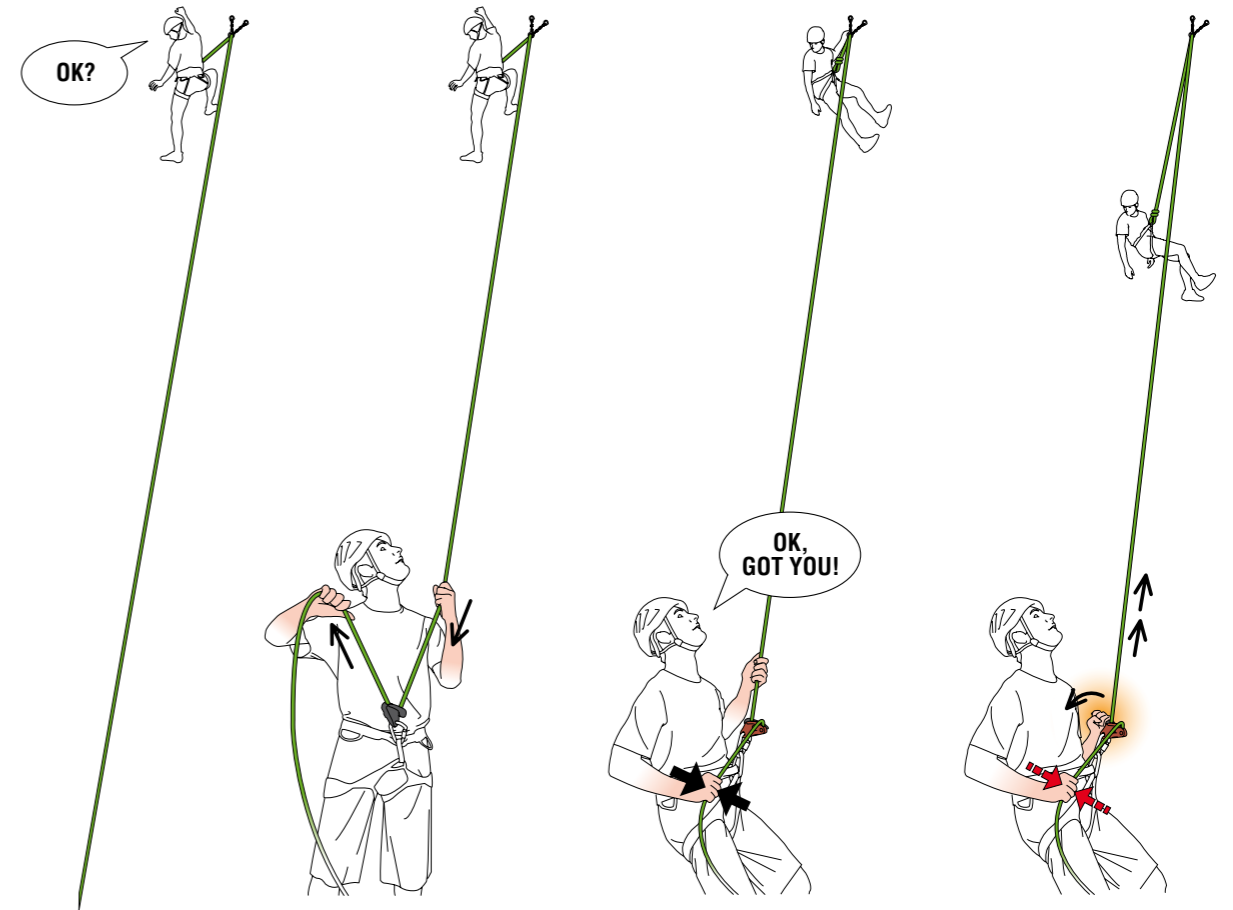
J. Setting up to be lowered without untying



Warning: Tie in directly to the harness if you want to repeat a section of the pitch.

K. Lowering with a GRIGRI and communicating with your partner

Lower slowly and always keep a hand on the brake end of the rope.



POA photography

Multi-pitch climbing, France **Vultures & Co.**

Located in the south of France, the Grands Causses region is made up of vast limestone plateaus and crossed by narrow rivers and majestic canyons. On these breathtaking white and blue cliffs, two very different species flourish and share this timeless space: man and bird. As we accompany three climbers on a multi-pitch route, we meet those who are most familiar with these cliffs: the vultures. A report.

The Causses have a reputation of being harsh and desert-like. But on backside, it's like a paradise lost: green gorges through which the transparent waters of the Tarn, Jonte, and Dourbie flow. A stone's throw from the Parc National des Cévennes, the three rivers form large limestone canyons, surrounded by voluptuous shapes that defy the laws of gravity. This limestone has a name - dolomite - the same as the proud Dolomite Mountains of Italy which also date from the Jurassic period. The ruiniform dolomite is unique in the way it erodes into apparently inaccessible citadels, a climber's dream.

On this particular morning, Anna, Mike and Géraud, all from the area, head to the Cirque des Vases, named for the characteristic shape of the towers above the cliffs of this rocky amphitheatre. A young fifteen-year-old climber, Mike is more familiar with the climbing gym in the nearby town than the rock of the gorges. Transitioning from one to the other is not without hesitation, especially when it is about linking numerous pitches on a big wall. The Jonte - like the Tarn - offers climbing on cliffs between 100 to 150 meters in height and the ever-present exposure is a factor to consider, at least when it's your first time on this magnificent rock.



Although it is usually white, the rock becomes blue as the angle decreases. In many places, as Mike and Anna point out, the rock is also a rust-red color. "The vultures create this phenomenon," explains Géraud Fanguin, a climbing instructor and active member of the Tarn climbing community. "The ochre stains that you see on the rock are found mainly at the summits of the towers and also at the base of the frequently occupied vulture nests. The explanation is that the excrement of the vultures, which is white, is then covered by lichen which is...ochre." In the gorges of the Jonte and the Tarn, the cliffs are full of overhangs, cracks, bulges and other ledges - perched in the middle of the cliffs that serve as refuges for the vultures. As the climbers reach the first belay station, two vultures take flight, cross the cirque with one flap of their wings and start circling the Vase de Sèvres, a characteristic formation named after the town of Sèvres, known for its porcelain. A French institution just like the Causses, which are known for the locally produced Roquefort cheese.

As for the climbing in the gorges, the Vase de Sèvres is a symbol with an extraordinary history. In January 1936, a band of intrepid climbers managed, after nine attempts, to throw a rope over the vase with the help of a gun (!), and hauled themselves to the top, leaving behind a promptly drained bottle of champagne containing their business cards. The bottle was found in 1985 by climbers who made the second ascent on the Vase - with the help of two bolts and many pitons.

Mike has started to enjoy the exposure and the beautiful rock of the gorge; he leads the third pitch, just in line with the Vase de Sèvres, which seems to hover over the route, surrounded by vultures. Of the two threats - potentially falling off the Vase de Sèvres, and a bird of prey with two-meter-plus wingspan getting too close - the second is more likely. This is even though the vulture, which feeds on animal cadavers, is there only to mark her territory and survey her nest. "In 2008, over two hundred pairs of griffon vultures

were counted in the Grands Causses, of which a good portion were in the gorges of the Jonte," explains Géraud. Of the three species of vultures that were present - with the cinereous vulture and the Egyptian vulture - the griffon is the most common, with a wingspan that can reach 2.65 meters. The return of the vultures into the gorges dates to the 1970s and 80s, when they were reintroduced by the Fonds d'intervention des Rapaces, in partnership with the Parc National des Cévennes. With the help of organizations like the LPO - Ligue de Protection des Oiseaux - this operation is considered a success because in 2008 approximately 160 young vultures were born in the region. "Some of them become big travelers, like one that was tagged in the Causses in 2004, and spotted a year later in Greece," continues Géraud. "Others go as far as Senegal in West Africa, more than three thousand kilometers away." Although it is a delicate procedure, the tagging of young vultures allows them to be followed year after year. The tagging allows for many scientific studies:

by following the tagged birds, estimates can be made about demographics for survival, reproduction, movement patterns or lifespan. By using caving techniques for ascending and descending, taggers reach the nests of vultures perched in the middle of the rock faces. When the nests are inside the overhanging roofs, two solutions are possible: a fishing rod equipped with a hook, or else setting an anchor above an overhanging "route"... a route that will never be climbed!

Climbers are now familiar neighbors to the vultures. And even though the reputation of the climbing at the Tarn has spread beyond its borders, attracting the best climbers in the world with its challenging lines, route development has not hindered the growth of colonies of vultures. Just take care, as the locals say. "Don't wander off existing routes, respect the rules. A sector of the gorges, the Arcadie, is reserved for the egg-laying season of the birds, from January to June, for example. And get information before bolting any new routes," says Géraud Fanguin.

Anna Avery looks for the best holds on Troglolo, 6b (5.10c).



The tranquility of the Tarn gorges. After some local Roquefort cheese, some ice cream...both well deserved!



"Even though the reputation of the climbing at the Tarn has spread beyond its borders, route development has not hindered the growth of colonies of vultures."

Geraud on the third pitch of La Cathédrale, 7a+ (5.11d).



© Jocelyn Chavy

The following afternoon, as the sun is setting, it's the talented young Anna's turn to jump on La Cathédrale, a demanding route also known as Quatre Dalles. "Each pitch is completely different. It's a really beautiful route, a bit of traversing, in an amazing setting..." says Anna. As always in the gorges, first one, then two vultures came to glide majestically a few dozen meters from the cliffs and the climbers. The very beautiful final pitch is sustained, and Anna moves only slightly faster than her shadow, "a magical flight, where you search desperately to beat the sun."

The glowing red ball disappears somewhere behind the Peyrelade castle, perched on a rocky point at the entrance of the valley, plunging the latter into the blue fog of the night. Perched on their very own citadels, the vultures once again savor the solitude of the Causses.



Mike Brand on a 6b+ (5.10d) at the cirque des Vases.

Multi-pitch climbing products

METEOR® III

Weighing barely 235 g, this climbing helmet is ultralight. The innovative adjustment system means almost anyone can get a comfortable fit. With excellent ventilation, it is equally at home at the local crags and on long alpine routes. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. Headband adjustment folds into the shell for compact storage and ease of transportation. The expanded polystyrene in the liner absorbs shocks. Compatible with VIZION face shield. Headlamp can be attached using the four optimally placed clips. Removable and washable headband foam and mesh.

References: A71 O - A71 G - A71 W
One-size-fits-all: 53-61 cm
Weight: 235 g



• OMEGA headband for pony-tails.



• Comfortable foam is removable and washable.

ELIA *new*

The ELIA helmet was designed and developed to respond specifically to the needs of women. The innovative OMEGA headband system (Petzl patent) allows the helmet to be put on and removed easily and offers maximum comfort. In addition to this exclusive feature, the helmet has a new headband adjustment mechanism. It allows the helmet to be precisely adjusted for different head shapes. Side openings for ventilation. Injection molded ABS shell is both lightweight and durable. Expanded polystyrene liner absorbs impacts. Foam is removable and washable. Headlamp can be attached using the four optimally placed clips.

References: A48 WH - A48 SK - A48 MI
One-size-fits-all: 52-58 cm
Weight: 285 g



© Jocelyn Chavy

The Petzl Foundation, committed to the protection of large birds of prey

The foundation is committed alongside those who work to protect the large birds of prey in the mountains. Its mission is to contribute to improving communication between conservationists and outdoor enthusiasts in the natural environment. This is why it supports the Conservatoire des Espaces Naturels du Languedoc-Roussillon (France), which coordinates the National Action Plan for the protection of one endangered species: the Bonelli eagle.

The Bonelli eagle is protected in the European Union and is listed in the Directive Oiseaux as one of the protected wild birds. On the international scale, the species is listed in the "endangered" category, based on the criteria in the red book of the IUCN (International Union for Conservation of Nature), because it is at high risk of extinction in the wild.

The Petzl Foundation supports the Conservatoire in its consciousness-raising activities for people who are active in the outdoors, particularly group leaders and developers. The objective is to protect future nesting sites in order to repopulate the species.

To learn more, go to: www.petzl-fondation.org and www.aigledebonelli.fr



© Regard du vivant





REVERSO³

This multi-purpose belay/rappel device is lightweight and easy to use. The asymmetrical V-shaped grooved friction channels adapt the friction for better control using our ARC (Adaptive Rope Control) technology. A single device for all possible uses:

- independent and simultaneous belaying of one or two seconding climbers in Reverso mode
- quick changeovers from Reverso mode to belaying the leader when climbing multi-pitch routes. Carabiner hole to release device when loaded in Reverso mode: allows the loaded device in Reverso mode to be easily and gradually

released with only a carabiner. Usage diagrams (standard belay and Reverso modes) engraved on device. Use with symmetrical shaped locking carabiners (Am'D or OK) to maximize efficiency.

References: D17 G - D17 B - D17 T

Weight: 77 g

For use on:

- single ropes ≥ 8.9 mm
- half ropes ≥ 8 mm
- twin ropes ≥ 7.5 mm



• Asymmetrically grooved sidewalls and release hole for unblocking the device when loaded.



• V-shaped grooved friction channels adapt the friction to the type of rope.



Am'D

The shape and size of this carabiner makes it great for most uses, from connecting a belay device to your harness or as a connector at the end of a lanyard. The D-shape makes it one of the strongest and lightest locking carabiners Petzl makes. Keylock system. Available with manual locking system (SCREW-LOCK) or auto-locking systems (BALL-LOCK, TRIACT-LOCK). Perfectly suited for use with belay devices due to its symmetric shape on both ends of the carabiner.

References: M34 SL - M34 BL - M34 TL

Weight:

- 78 g (SL and BL)

- 74 g (TL)

Breaking strength:

- major axis: 28 kN

- open gate: 8 kN

- minor axis: 7 kN

Gate opening: 21 mm (TL and SL), 22 mm (BL)

For more information on carabiner locking systems, go to www.petzl.com



CORDEX

These lightweight belay/rappel gloves combine the durability of a work glove with the precise fit and dexterity of a fine driving glove. Double-layered leather protects the palm and other high-wear areas. The back is made of abrasion resistant, breathable stretch nylon, ensuring comfort and fit. The low profile neoprene cuff with Velcro closure features a reinforced carabiner hole for attaching the gloves to your harness. Ergonomic cut for high dexterity without being too tight.

Available in four black sizes:

- S: K52 SN, 105 g

- M: K52 MN, 115 g

- L: K52 LN, 118 g

- XL: K52 XLN, 120 g

Available in five tan sizes:

- XS: K52 XST, 100 g

- S: K52 ST, 105 g

- M: K52 MT, 115 g

- L: K52 LT, 118 g

- XL: K52 XLT, 120 g

SAMA

The SAMA is the perfect men's harness for cragging and long routes. The elasticized leg loops stay snug to ensure comfort after a fall and when hanging at the belay, without constricting movement. For maximum support and comfort on long summer days, breathable materials are used in the Frame Construction technology, with a mono-filament mesh that evenly distributes the pressure. Knit polyester on the supporting surfaces wicks moisture for improved comfort and speeds drying in wet conditions. Perforated foam on the waistbelt and leg loops increases breathability. The waistbelt is easily adjusted, thanks to the shape of the DoubleBack buckle. This buckle also helps to prevent improper closure. Reinforced tie-in points for increased durability in this high-wear area. Two slots for CARITool tool holder

Reference: C21

Sizes: S, M, L, XL

Weight: 370 g, 390 g, 420 g, 445 g



SELENA

As the women's version of the SAMA, the SELENA offers all the performance of a Petzl harness, with fit and comfort characteristics tailored for a woman's physique. The shape of the waistbelt is designed to fit a woman's waist and lower back. The rise has been increased by lengthening the belay loop. The waist-to-leg loop-size ratio has been reduced.

Reference: C55

Sizes: XS, S, M, L

Weight: 320 g, 360 g, 385 g, 405 g



KODAPOCHE

Ergonomic chalk bag. The ergonomic shape makes it easy to access the chalk. It can be opened with only one hand should you forget to open it before you start climbing. The closure system is efficient, thanks to a central cordlock, and it has an integrated emergency whistle. The reinforced rim maintains the shape of the bag. It is made of the same abrasion resistant material as our mountaineering range harnesses. Its pleated pocket is perfect for storing your keys, spare change, e+LITE headlamp, energy bar, or topo map without risk of loss, due to the zipper and flap. Elastic brush holder for cleaning holds. Double loops for stability allow easy attachment to a belt or carabiner.

Reference: S40 P

Weight: 84 g

One-size-fits-all



GO

Oval steel maillon with wide opening. Can be placed on a rappel station, for example.

Reference: P15

Weight: 60 g

Strength : 25 kN major axis, 10 kN cross-loaded



TIBLOC

In a bind, this ultra-lightweight ascender can be used to build hauling systems or as a Prusik-replacement in self-rescue situations. Use with the ULTRALEGERE pulley for a lightweight, compact emergency hauling kit. Chrome-plated steel cam with angled teeth and self-cleaning slot securely grips the rope, even in muddy or icy conditions. Can be used as a progress capture device in a hauling system. Small hole at top of the TIBLOC allows a keeper cord to be attached.

Reference: B01

Weight: 39 g

For use on single 8-11 mm ropes with a locking carabiner having a 10 to 12 mm round or oval cross section, such as the Am'D, ATTACHE, WILLIAM, etc.).



Good advice: It's better to rappel a couple of pitches than take the very steep trails of the gorges!



SHUNT

Used below the rappel device, the SHUNT rope clamp works as a rappel back-up and replaces self-jamming knots like the Prusik. Works on single and double ropes. Easy to install on the rope. Smooth clamping surfaces won't damage rope. May be used to ascend single or doubled rope.

Reference: B03
Weight: 188 g
For use on single 10-11 mm ropes or double 8-11 mm ropes



PARTNER *new*

Compact, lightweight pulley with swinging side plates for quick and easy installation. Sheave mounted on sealed ball bearings for excellent efficiency.

Reference: P52A
Weight: 56 g
Efficiency: 91 %
Working load: 5 kN (2.5 kN on one rope end)
Breaking strength: 15 kN
For use on ropes between 7 and 11 mm in diameter



ST'ANNEAU

This Dyneema sling is lighter and more flexible than nylon slings. Very abrasion resistant. Width: 12 mm. Available in three color-coded sizes for easy identification: 24, 60 and 120 cm.

Reference: C07
- 24 cm: green (weight: 10 g)
- 60 cm: yellow (weight: 20 g)
- 120 cm: red (weight: 40 g)
Strength: 22 kN.



FIN'ANNEAU

The lightest and most compact of all our slings, we use 8 mm Dyneema/nylon webbing to cut down on weight without sacrificing strength. Very abrasion resistant. Available in four color-coded sizes for easy identification: 24, 60, 120 and 180 cm.

Reference: C06
- 24 cm: green (weight: 10 g)
- 60 cm: yellow (weight: 20 g)
- 120 cm: red (weight: 35 g)
- 180 cm: gray (weight: 50 g)
Strength: 22 kN.

ZIPKA® PLUS² *new*

The ultra-compact ZIPKA PLUS² headlamp is equipped with the ZIP retractable cord system. This feature allows the headlamp to be worn on the head or wrist, or attached to any other support, like a tent pole, a bicycle seat post, etc. This headlamp integrates two light sources for versatility: one white, high-output LED and one red LED. The white LED delivers 50 lumens in maximum mode and lights up to 35 meters. The ZIPKA PLUS² offers five lighting modes. In economic mode, it can reach a burn-time of 140 hours. The red LED provides lighting to preserve night vision or to become a strobe light for increased safety, for example in an urban environment, etc. ZIPKA PLUS² can be used with lithium batteries to decrease weight or improve performance in cold weather.

References: E98 PM, E98 PP
Weight: 71 g including batteries
Operates on three AAA/LR03 batteries (included)
Degree of protection: IP X4 (Water-resistant)
Light quantity: 50 lumens
Maximum lighting distance: 35 meters
Maximum light duration: 140 hours
For complete headlamp performance information, go to www.petzl.com



• Zip retractable cord minimizes the size and weight of the ZIPKA PLUS²



• Three white lighting modes (maximum, economic and strobe) and two red lighting modes (maximum and strobe).

e+LITE®

The e+LITE headlamp is designed for any situation. It is ultra-lightweight, comes in a hard case and can easily be stored with its batteries in a backpack, jacket, or emergency kit for up to 10 years. It provides white or red lighting in continuous or strobe mode. It can easily be attached with its elastic band and clip. For emergencies, the e+LITE is equipped with a long-range whistle that can signal one's position for rescue (SOS Morse code illustration on the whistle). Waterproof down to -1 m. Locking rotary switch designed to prevent accidental operation. Provides up to four consecutive nights of lighting (45 hours). Easy to use. Can be worn on the head, on the wrist, around the neck or attached to other thin objects with the integrated clip.

Reference: E02 P2
Weight: 28 g including batteries
Light quantity: 16 lumens
Maximum lighting distance: 19 meters
Light visible from 3000 m (white LEDs)
Maximum burn time: 45 hours (continuous lighting), 70 hours (strobe mode)
For complete headlamp performance information, go to www.petzl.com



BUG

The BUG was designed specifically for multi-pitch, long routes that are done in a single day. Its rounded rectangular shape maximizes volume and minimizes interference while in use. The volume is ideal for carrying gear on the approach and when climbing (hydration system, food, clothing, shoes, etc). Everything has been designed for maximum comfort on every pitch: minimal bulk, shoulder straps allowing freedom of arm movement, comfortable and ventilated back panel, foldaway waistbelt, high positioning allows access to back of harness (for chalkbag, gear), lateral compression straps. Astute design includes a guidebook pocket on the outside for quick and easy access, attachment loop for your e+LITE (emergency headlamp), zippered mesh pocket with key clip, small pocket on the shoulder strap for a topo map, and is hydration system compatible.

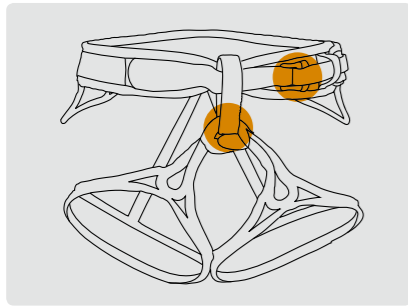
Reference: S71
Weight: 570 g
Capacity: 18 liters

Other products for Multi-pitch climbing:

- CORAX comfortable and adjustable harness
- SPIRIT carabiner
- SPIRIT EXPRESS quickdraw
- ATTACHE 3D ultralight carabiner
- LOCKER asymmetric carabiner
- POWER CRUNCH chalk
- SPATHA knife with carabiner hole...

Find all products on pages 140 - 154.

Technical information **Checking your equipment**



Harness

The faithful companion of the climber and his every move, the harness is submitted to wear, stress and repeated deformation, to repetitive rubbing from the rope at the tie-in points, and to UV rays, along with inevitable contact with the rock surface.

Before each use, verify:

- the date of manufacture; it should not be more than ten years old
- the condition of the webbing at the tie-in points, at the adjustment buckles and at the safety stitching
- there are no cuts or signs of wear, and the general condition of the harness
- the functioning of the adjustment buckles

Retire your harness:

- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information **Basics**

1 Analyze the route and prepare your equipment carefully

Get information about protection, rock quality and exposure. Get the weather forecast and check for risk of storms or high winds. Identify escape routes and the descent. Take clothing, water, food, etc. Climbing with a pack is quite uncomfortable, so you can use a small "hauling" pack. Depending on the route, bring some nuts, hooks, slings and of course a headlamp at the bottom of your pack.

2 Put on your helmet when you get near the route

Climbers or animals can cause rock fall from above while you are walking along the base. Avoid stopping under other climbing parties.

3 Establish communication rules before you start climbing

Be aware of the progression of the route. The wind can render all oral communication impossible. A whistle is more efficient. Small walkie-talkies are also very practical to avoid shouting.

Example of communication: when the leader says "I'm secure", it means that he has set up the belay and is tied into it.

When oral communication is impossible:

- two blasts on the whistle (or two sharp tugs on the rope) signals being tied into the belay
- three blasts on the whistle (or three sharp tugs on the rope) signals that the second is on belay; the second responds that he is climbing by pulling twice

4 Always keep your body weight on the lanyard

Using a webbing sling lanyard at the belay or while rappelling requires special attention, as any direct fall on the lanyard is prohibited. The sling has no shock absorption capacity and even a small fall may create an extremely violent shock for the harness and the climber.

5 Back up your rappel

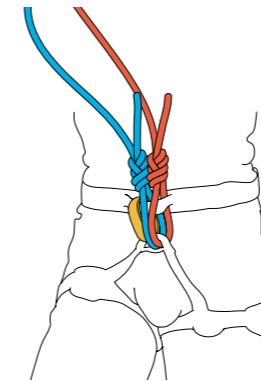
Always descend with a self-belay system (SHUNT or self-blocking knot). Always tie a knot at the end of the rope. Be vigilant during rappels; when you are the last to go down, beware of cracks, trees, or rock features along the descent path so as to minimize the risk of snagging the rope. Always keep both ends of the rope with you at the station (the wind could blow them away to where you can not reach them). Be careful to not lose the rope.

Technical information **Tips**

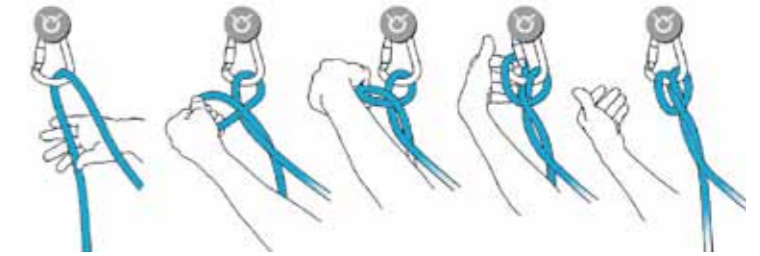


A. Tying in with double ropes

A figure-8 knot on each end of the rope.

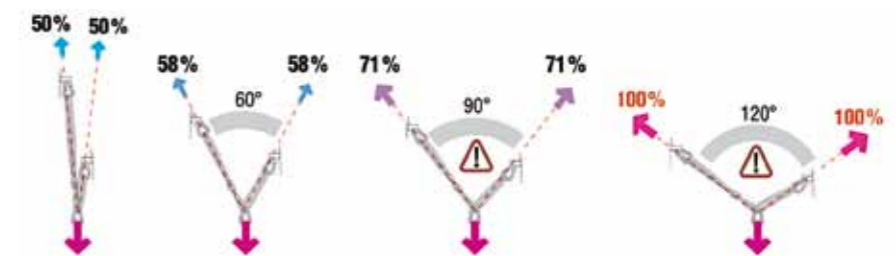


Clipping in with a clove hitch.



B. Belay station

Effect of the angle on a load-sharing anchor.



There is no ideal anchor; the lead climber must adapt the type of anchor to the specific situation. Practice with your equipment. Always evaluate the consequences of an anchor breaking when you set up your belay station.

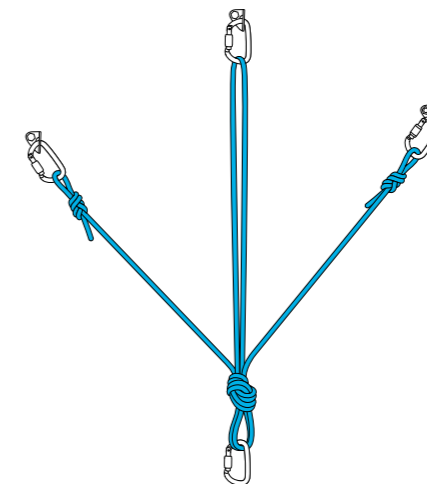
Single direction anchor, the low point of the equalized anchor is fixed

Good load distribution if climber remains in line with the axis (i.e. route is in a straight line). Shock is low if an anchor breaks, which makes it useful for anchors set up on pitons or nuts. Poor load distribution if rope is pulled sideways.

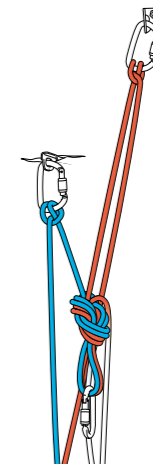
- Belay station with sling equalized with clove hitch (easy to adjust)



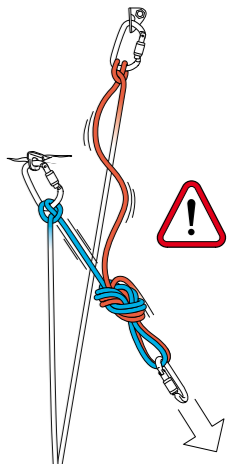
- Belay station with dynamic rope, equalizing three points with a figure eight knot



- Belay station with equalized rope



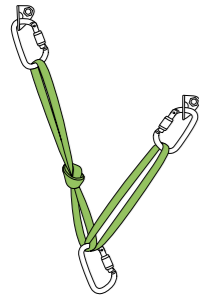
- Consequence of lateral pull



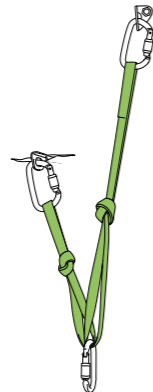
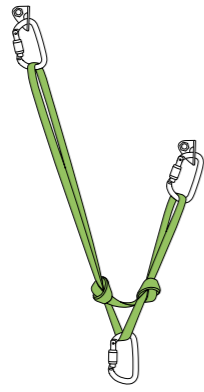
Semi-directional anchor, the low point of the equalized anchor is fixed

Good load distribution, even if the rope pulls slightly to the side (e.g. while traversing). The knots help reduce the consequences of a broken anchor.

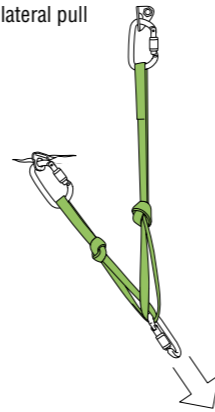
- Belay station with sling and one knot



- Belay station with sling and two knots

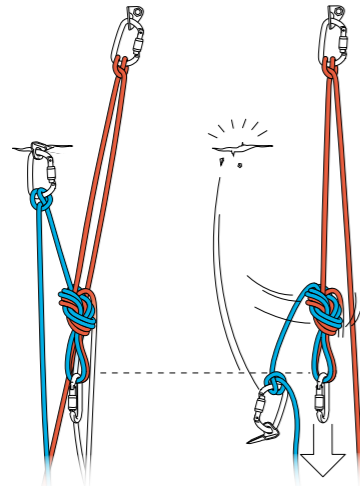


Consequence of lateral pull

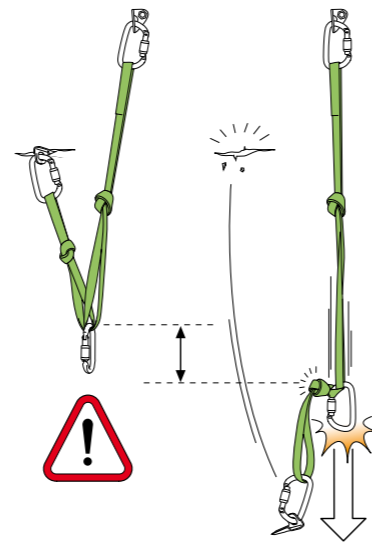


Consequence of a broken anchor

Single direction anchor

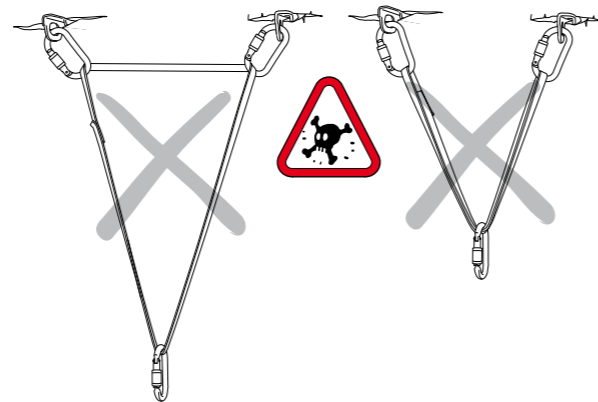
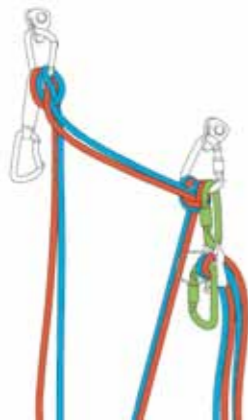


Semi-directional anchor



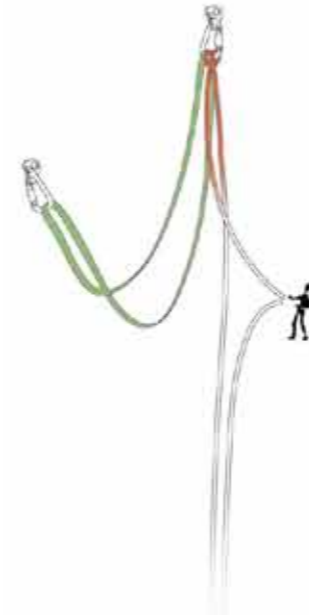
Station with rope stretched between two anchors

Load is not well distributed between the two points. This station should be set up only when the anchors are bombproof.

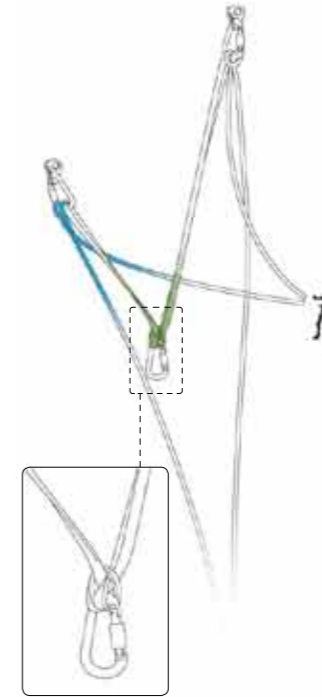


C. Alternating leaders

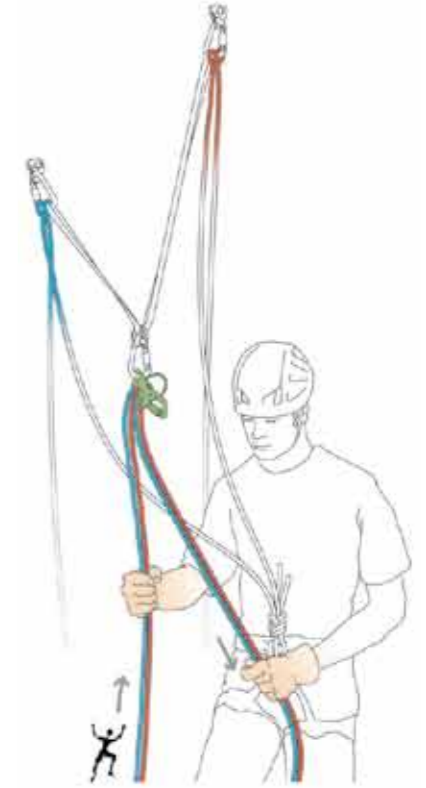
1. At the station: check the anchors and tie in.



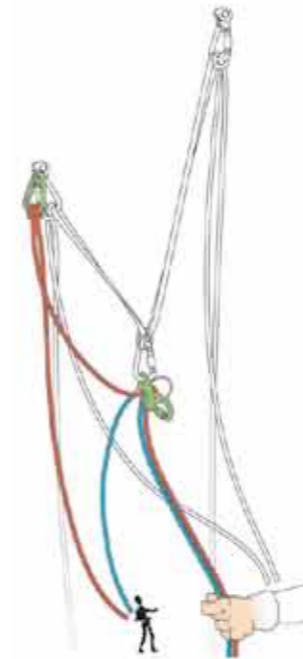
2. Install the belay carabiner on the sling with a clove hitch.



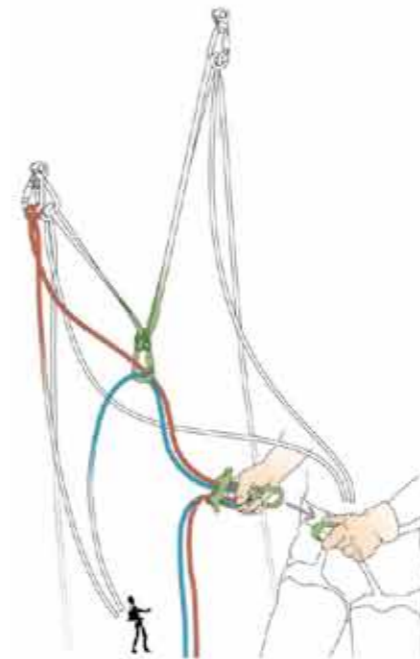
3. Belaying the second.



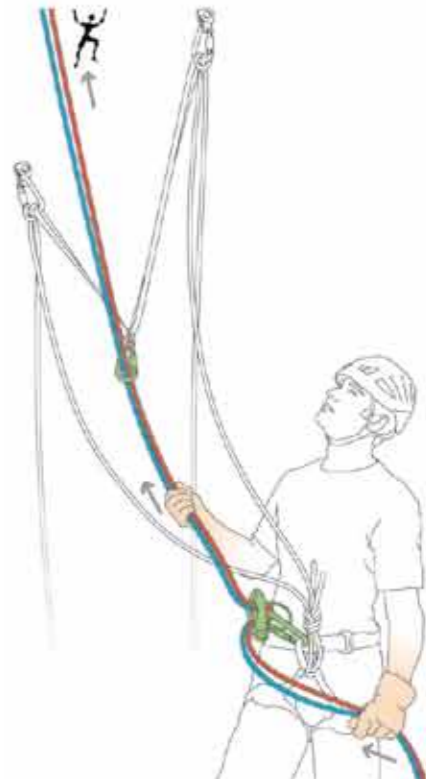
4. The second climber ties in and recovers the gear to begin his lead.



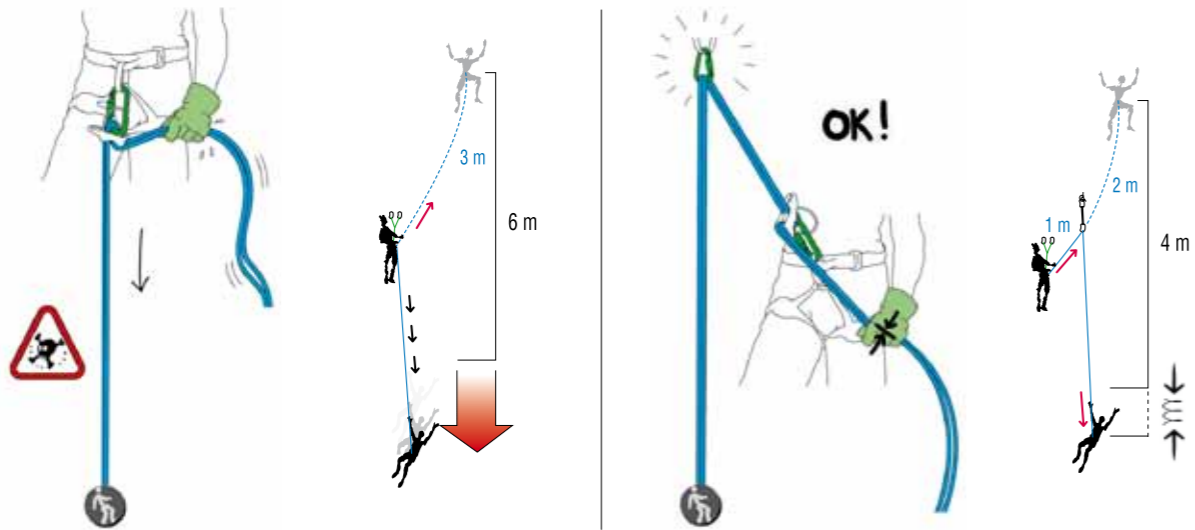
5. Putting in a directional anchor.



6. The second becomes the leader.



A directional anchor is necessary: either very close to the belay, or on the belay if the anchors are bombproof.

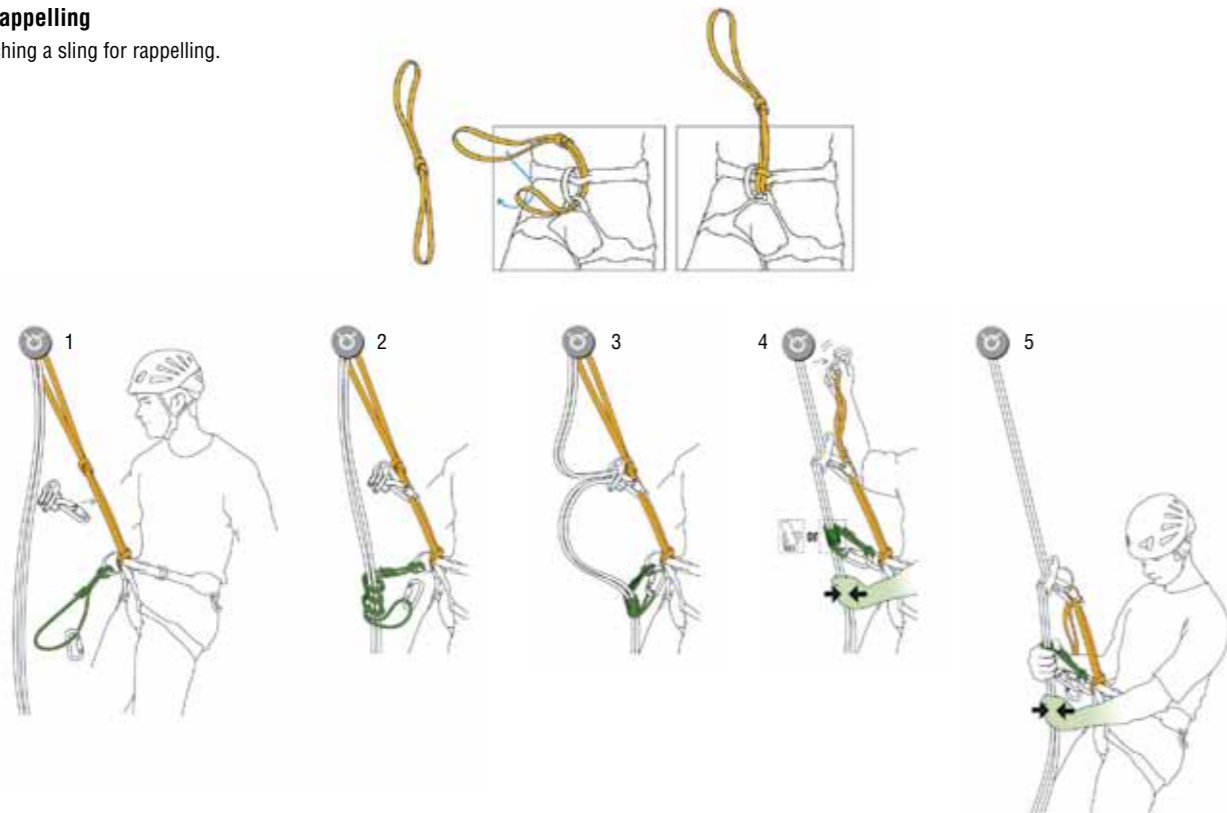


D. Setting up the rappel when descending on two ropes tied together



E. Rappelling

Attaching a sling for rappelling.

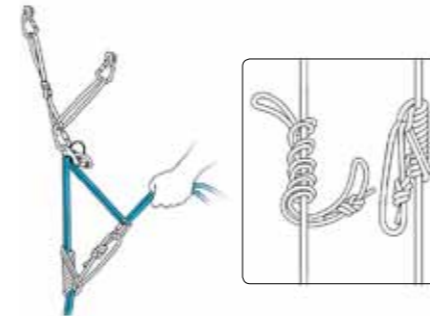


Always keep your body weight on the lanyard.



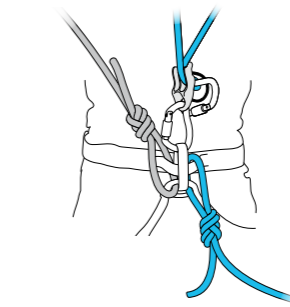
F. Helping the second

Helping the second: hauling.

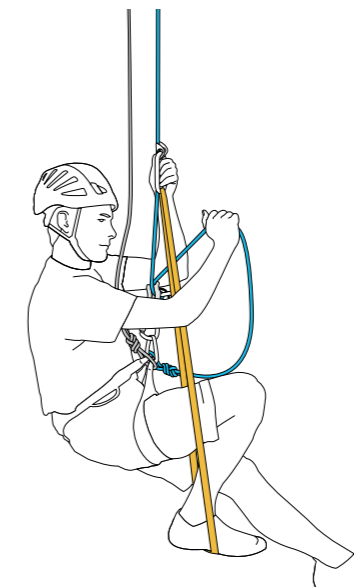
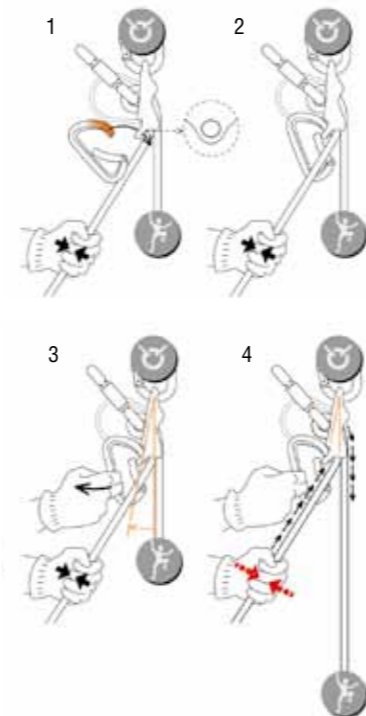


G. Ascending the second's rope

Ascending on a rope with the REVERSO³, backed up by the leader using the other rope.



Releasing the second.



Racing against the setting sun, Anna Avery in the last pitch of La Cathédrale, 7a+ (5.11d).



© Jocelyn Chavy

Mountaineering, Nepal
High Altitude Travelers

Heading for camp IV, around 6400 m, on the immense Manaslu.



© François Damilano



© François Damilano

Paulo Grobel and Philippe Mahou, roped up, between "our" Camp VI and "our" Camp VII, around 7200 m, Manaslu.

Manaslu, Dhaulagiri VII... For the last few years, François Damilano has had a critical view of the current commercialization of mountaineering in the Himalayas. He and Paulo Grobel, also a mountain guide, have adopted a different strategy. Their method combines continuous progression and gradual acclimatization, with the objective of reducing high altitude trauma. The ascent is done in stages, without assistance, from base camp. Why? To enjoy living in high altitude. François Damilano explains this hedonistic vision of the Himalayas.

As we were ascending the slope of Manaslu, we met the same team of four mountaineers three times. It was funny that each time they were coming down from a push to the summit, we were going up, day-by-day. Pushed back by the wind and the deep snow, they were not even heading to base camp, but all the way to the village of Samagaon at 3600 meters! During our ascent, we were constantly being passed or meeting groups on their way down: from France, from Iran, from Korea, and even a group from Catalonia. Everyone questioned us about our unique progression technique, in a small group, in stages... Our method was intriguing, and people on the slopes of Manaslu were starting to talk about this bizarre group which had left base camp a week prior and was progressing directly, without going back and forth up and down the mountain. Ten days later, bad weather prevented us from summiting. But we were able to experiment with our strategy of steady progression in stages on a large scale, on a summit above 8000 meters, on an atypical, rather difficult mountain. We were with our clients completely unassisted in high altitude for eighteen days... As for acclimatization, five out of eight clients, some of whom had never set foot in the Himalayas, headed for the summit in very good condition.

Steady progression, an efficient strategy

This is very different strategy from the one often practiced in the Himalayas today. Starting at base camp, the classic method has been to establish camps at higher and higher altitudes over several trips during the acclimatization period, in order to experience altitude "peaks." Then, the high-altitude summit is attempted by as short a push as possible. This strategy generates serious physical and psychological trauma due to heightened demands on the body created by the changes in altitude and the logistical constraints. During classic progression, there is a big difference of between 800 and 1000 meters in altitude between each camp. The fact that climbers are spread out on the mountain creates group management problems in terms of safety, isolation and decision-making. Besides, the amount of equipment - a set of tents for each camp - requires a huge effort by the porters. All the Himalayan literature is filled with notions of complexity and suffering - to the point that this is our perception of the Himalayas.

Yes to climbing teams and self-sufficiency, no to oxygen and fixed lines

Realizing that these numerous trips up and down between base camp and the altitude camps were traumatizing, some mountaineers tried to imagine these ascents done differently. In the 90s, a French guide, Jean-Pierre Bernard, proposed a method by stages, having everyone climb at the same rhythm, without going back down to base camp, and he tested it successfully on Kun in India, on Denali and on Khan Tengri. In 1990, he reached 7050 m on Shishapangma with his clients on the twentieth day of the ascent... and reached the summit two days later.

Paulo Grobel, a specialist in the forgotten summits of Nepal and Northern India*, was inspired by the method by stages, renamed "steady progression." Paulo explains the experience. First scene: Ninchin Kangsa, a 7000 m peak near Lhasa. "Persistent bad weather forced us to set up many more altitude camps during the rare breaks of good weather. We were very surprised that we all arrived at the summit on the first day of good weather!" Then it was time for Shishapangma. "On Shisha, the idea was to use skis, but without high-altitude porters, so therefore, no oxygen or fixed lines. When we left base camp with our houses on our backs, we said goodbye to our cook for the last time and planned to meet him 15 days later. He burst out laughing, shook our hands and thundered, "No problem, see you tomorrow!" Like many others, he didn't for a second believe in our progression technique. We met him 16 days later, with everyone summiting."

"We said goodbye to our cook and made plans to meet him in 15 days. He burst out laughing and responded, No problem, see you tomorrow!"

Manaslu, 8163 m, at sunset.



© Jocelyn Chavy



© François Damilano

Nice cool weather on Dhaulagiri VII!

A lesson in high altitude

The crucial question is always the same: How do you live in high altitude when everyone claims that it is impossible to stay there? For a long time, doctors specializing in altitude have recommended limiting the climb to 400 meters per day above 3000 m. Steady progression style allows proper acclimatization during the ascent. And it lets the human body adapt to the constraints of altitude while still having time in the day for rehydration, rest, etc. It is a Himalayan lesson. Each climber assesses the constraints of the altitude and has the time to learn how to respond to them. How does this actually happen? Ascending completely unassisted from base camp means that the team progresses toward the summit in stages with the camping equipment and without returning to base camp. In the last few years, many summits have been attained this way, including Chong Kumdan* and Mamotsong Ri*, Gurkarpo Ri, 6898 m at Langtang (Nepal). All these climbs are risky due to their remote character, yet all were successful.

In the spring of 2008, seduced by reflection and previous experiences, I left with Paulo Grobel to climb Dhaulagiri VII (or Putha Hiunchuli, 7250 m). This Dolpo summit was the first 7000 for all of our clients. The route is technically straightforward, but climbing a 7000 m is never an easy undertaking. We were satisfied: reuniting everyone at the summit on the same day means success. All the members of the expedition reached the summit with an enjoyment that I had never experienced before on a Himalayan summit - with ten days at altitude.

A possible alternative for Himalayan expeditions

At high altitude, the difficulty of living together is very real. This obligation of "doing it all together" represents the real challenge of an expedition, and this is what we again achieved on Manaslu. Staying together creates solidarity, which is a safety factor and provides moral support in a magnificent, yet uncomfortable, environment. No fixed lines: climbing roped in is part of the game. The climbing team sticks together on into the night, when we get organized into pairs to melt the snow, cook, and organize life at high altitude. This strengthens the solidarity between mountaineers. This philosophy is similar to the one we use on mountains that are less high, in the Alps and elsewhere, and is the opposite of what the majority of Himalayan expeditions now offer, i.e. typically ascending the mountain alone, with porters and fixed lines and, as we saw on Manaslu, with oxygen.

Dhaulagiri VII.



© François Damilano



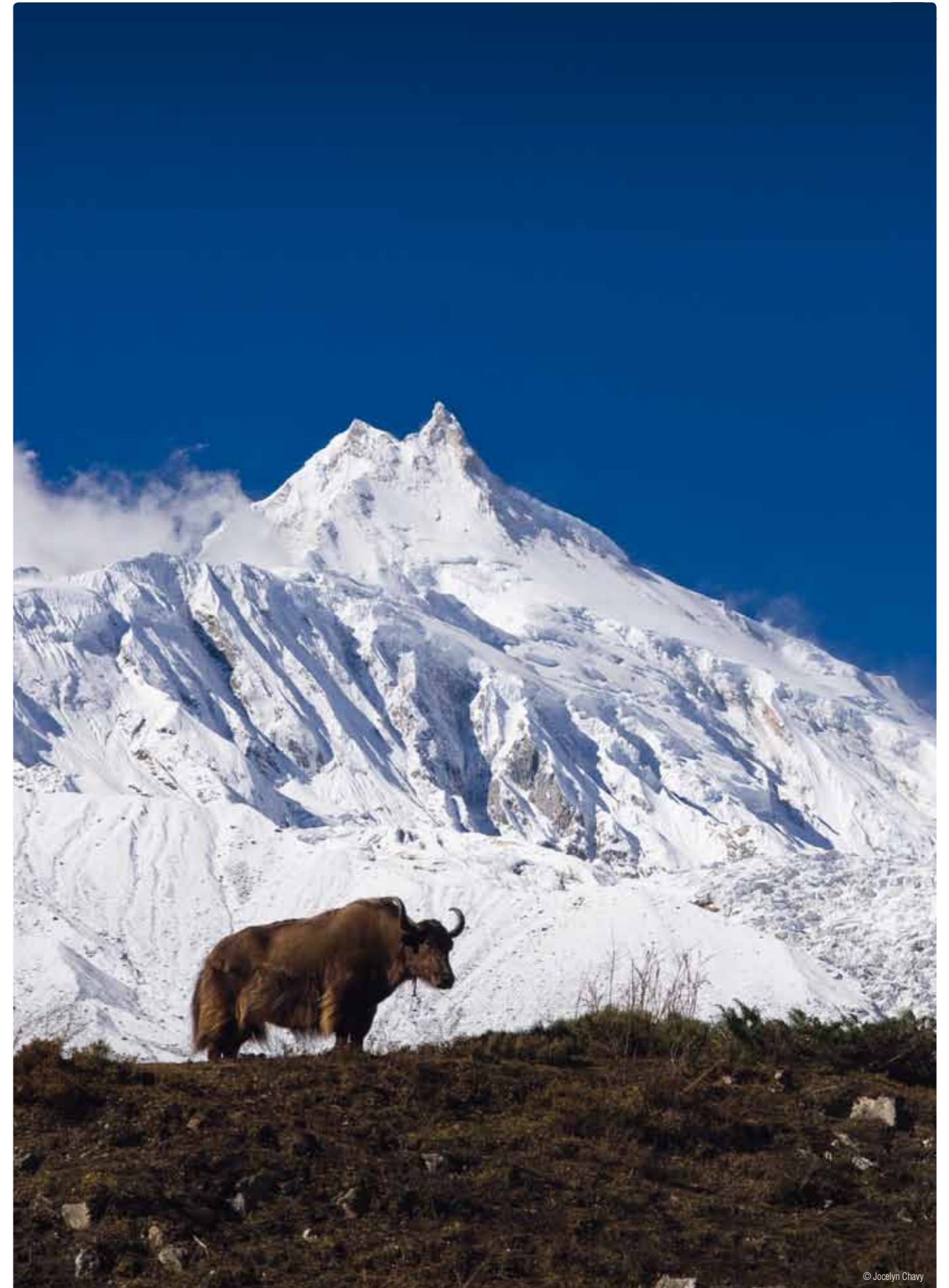
© François Damilano

Stormy day(s) at Manaslu: shoveling warms you up!

Mani near Larkya La, west face of Manaslu.



© Jocelyn Chavy



The eighth-highest summit on the planet, Manaslu.

© Jocelyn Chavy



Paul Vullin and Pierrol Dupuy leaving Camp VII, 7450 m, to attempt the summit of Manaslu.



François Damilano.



Paulo Grobel.

"Staying together creates solidarity, which is a safety factor and provides moral support in a magnificent, yet uncomfortable environment."

A journey in the mountains instead of back-and-forth trips

Four hundred meters of climbing per day: by respecting this criterion, we revolutionize the Himalayan experience and change our philosophy about the expedition. "Leaving on the high seas for a crossing to a destination for which you may or may not reach, only to return to port much later," Paulo likes to say. This symbolic departure forces us to reevaluate the smallest of our actions, to give maximum attention to the preparation, and to pack the food as carefully as possible in order to have a richer high altitude experience, rather than a simple ascent. New tools, like telemedicine and weather forecasts provided by satphone, help to better manage these high-altitude expeditions in order to truly take advantage of the time spent "up there." The Himalayas are not just for heroes.

François Damilano

*Topos of these summits and info on steady progression on www.paulo-grobel.com

Mountaineering products

SUM' TEC

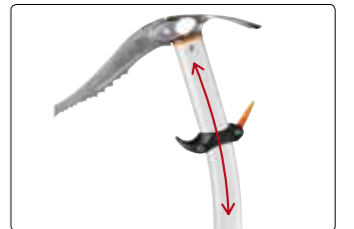
A curved shaft and re-curve pick make the SUM' TEC the ideal tool for those climbers who want a more technical mountaineering axe for steeper terrain. It's the perfect hybrid of a traditional mountaineering axe and a more technical ice tool. The curved shaft provides the necessary clearance on steep or icy terrain. The re-curve pick is tapered to 3.5 mm at its point, allowing for solid placements even on hard ice, and can be easily interchanged. The SUM' TEC's stainless steel head is comfortable in the hand. The SUM' TEC is versatile: by placing the adjustable TRIGREST hand rest in the upper position, the shaft is free to penetrate the snow; by placing it in the lower position, the TRIGREST creates a tighter grip and facilitates progress in steep sections. This system is one-of-a-kind and easy to adjust without tools in the mountains.

Available in two sizes:

- 52 cm: U15 52 (485 g with TRIGREST)
 - 59 cm: U15 59 (505 g with TRIGREST)
- Ice axe: shaft type T / pick type B



• Stainless steel head is comfortable in the hand, and the pick is attached with one screw.



• TRIGREST hand rest can be adjusted without tools into the upper position, (the shaft is free to penetrate the snow), or into the lower position (for better grip and facilitates progress in steep sections).



SARKEN

Technical mountaineering crampons. The SARKEN excels on all mixed terrain. The "T"-shaped front points are designed for excellent penetration in hard ice and stable front pointing on mixed terrain while providing solid purchase in snow and neve. The length of the points is designed for maximum stability without having to high-step. Sharp points for great purchase in ice. Two wide, toothed front points for excellent placements and optimum purchase in soft ice.

Available in four types of binding systems:

- T10SL 22: SIDELOCK (weight: 950 g)
- T10SPL 22: SPIRLOCK (weight: 960 g)
- T10LL 22: LEVERLOCK (weight: 1010 g)
- T10LLF 22: LEVERLOCK FIL (weight: 968 g)

For more information on crampon attachment systems, go to www.petzl.com

AZTAREX

Lightweight multi-purpose ice tool. The AZTAREX excels in situations where every gram counts, but where there is no room for compromise. Perfect for technical, fast-and-light mountaineering. The hand rest provides extra support and allows the tool to be used leashless. When not needed, it can be removed and stored in the shaft so as not to interfere when plunging the tool in snow. The included BLUEICE pick is designed for hard ice and hooking. High performance swing due minimal weight at rotation point (minimized shaft weight). Available in adze and hammer versions.

References: U11 P, U11 M
Weight: 500 g
Length: 50 cm
Type B shaft





SNOWWALKER

The SNOWWALKER is designed for glacier travel and easy snow slopes. The steel pick performs even in hard snow and ice. The wide adze chops steps efficiently and provides a comfortable weight-bearing surface. The anodized shaft is made of high quality, durable 7075 aluminum. RANDO leash included. Pick equipped with hole for clipping a carabiner or attaching a sling.

Available in three sizes:
 - 60 cm: U01 60A (415 g)
 - 68 cm: U01 68A (438 g)
 - 75 cm: U01 75A (458 g)
 Axe type B

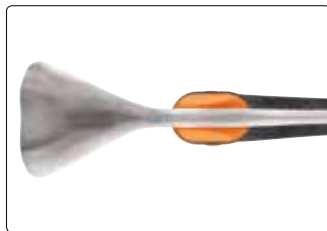


SUMMIT

Classic modern mountaineering ice axe. A result of the expertise acquired from Petzl Charlet over many years, this product applies a new technical approach to this category of ice axes. The curved upper shaft allows the necessary clearance on steep or icy terrain; the lower part is straighter and guarantees solid purchase in snow. The shaft is made of ultralight aluminum with a textured rubber coating for a solid grip and great thermal insulation. The light, forged steel head attached to the shaft ensures maximum efficiency.

The hot-forged chromoly steel pick is curved to offer a comfortable, powerful grip. The pick is thin (3.5 mm) at the tip to ensure solid purchase in ice, and wide in the middle (8 mm) for soft snow. Teeth are positioned and tapered to optimize holding power while descending (used in piolet rampe position). Angled adze directs the axe correctly into the snow (used as "piolet canne"). Head and point are equipped with wide, oval holes for easily clipping a carabiner.

Available in three sizes:
 - 52 cm: U13 52 (weight: 495 g)
 - 59 cm: U13 59 (weight: 535 g)
 - 66 cm: U13 66 (weight: 570 g)
 Type B axe



• Hot forged chromoly steel pick is curved to offer a comfortable, powerful grip.



• Light, forged steel head for maximum efficiency



VASAK

For general purpose mountaineering, VASAK crampons are ideal. Twelve points ensure maximum traction in all conditions, whether you are climbing up steep slopes or ice couloirs. Length of points is designed for maximum stability without having to high-step. Sharp points for great purchase in ice. Two wide front points for purchase in snow, reinforced for rigidity. Lateral points for purchase while traversing.

Available in four types of binding systems:
 - T05SPL 02: SPIRLOCK (weight: 930 g)
 - T05FL 02: FLEXLOCK (weight: 940 g)
 - T05LL 02: LEVERLOCK (weight: 980 g)
 - T05LLF 02: LEVERLOCK FIL (weight: 920 g)
 For more information on crampon attachment systems, go to www.petzl.com



IRVIS

At 810 g/pair (SIDELOCK), the ten-point IRVIS crampons are perfect for glacier travel, ski mountaineering and snowy or icy approaches, where you need a lightweight, simple system for use in varied conditions. Length of points is designed for maximum stability without having to high-step. Sharp points for great purchase in ice. Two wide front points for purchase in snow, reinforced for rigidity. Lateral points for purchase while traversing. Available with three different binding systems, these crampons can fit most boots, even those without welts. Durable and easy to adjust.

Available in three types of binding systems:
 - T03 LL 02: LEVERLOCK (weight: 876 g)
 - T03 SL 02: SIDELOCK (weight: 810 g)
 - T03 FL 02: FLEXLOCK (weight: 820 g)
 For more information on crampon attachment systems, go to www.petzl.com



REVERSO³

This multi-purpose belay/rappel device is lightweight and easy to use. The asymmetrical V-shaped grooved friction channels adapt the friction for better control using our ARC (Adaptive Rope Control) technology.

A single device for all possible uses:
 - independent and simultaneous belaying of one or two seconding climbers in Reverso mode
 - quick changeovers from Reverso mode to belaying the leader when climbing multi-pitch routes. Carabiner hole to release device when loaded in Reverso mode: allows the loaded device in Reverso mode to be easily and gradually released with only a carabiner. Usage diagrams (standard belay and Reverso modes) engraved on device. Use with symmetrical shaped locking carabiners (Am'D or OK) to maximize efficiency.

References: D17 G - D17 B - D17 T
 Weight: 77 g
 For use on:
 - single ropes ≥ 8.9 mm
 - half ropes ≥ 8 mm
 - twin ropes ≥ 7.5 mm

ATTACHE 3D

Ultralight compact pear-shaped carabiner. The new 3D shape offers the versatility of the original ATTACHE while reducing the weight to 55 g and increasing the gate open strength. The rope bearing surfaces have been optimized to balance fluidity with a minimum of excess weight. The locking sleeve offers better grip. Fluid gate design reduces the chance for slings or webbing catching on the gate or locking sleeve. Keylock system offers ease of use with webbing and slings. SCREW-LOCK locking system with lock indicator.

Reference: M38 SL
 Weight: 55 g
 Breaking strength:
 - major axis: 22 kN
 - open gate: 6 kN
 - minor axis: 7 kN
 Gate opening: 22 mm



LASER SONIC

For rapid ice protection, there is nothing faster than the LASER SONIC. The innovative hanger/handle makes placing the screw a breeze, even in the most brittle ice. The design also allows the screw to be removed when still attached to the rope, helping to prevent accidental loss. Aggressive teeth cut quickly into the hardest ice for easy hole starts. Finely polished threads and surface for smooth installation/removal. Hanger hole is large enough for two carabiners. Reverse taper for reduced friction and rapid placements. Curved crank arm allows it to clear uneven ice surfaces. The ICEFLUTE allows for quick access to the ice screws while also providing protection during transport.

- P70 210: 21 cm (weight: 205 g)
 - P70 170: 17 cm (weight: 185 g)
 - P70 130: 13 cm (weight: 165 g)
 - P70 100: 10 cm (weight: 149 g)



CREVASSE RESCUE KIT

The crevasse rescue kit contains everything needed for setting up a hauling system or a rope ascent in case of a fall into a crevasse: one MINI TRAXION pulley, two OK SCREW-LOCK carabiners, one TIBLOC, one OSCILLANTE pulley, one 120 cm ST'ANNEAU sling. This kit is essential for glacier travel. Use the printed visuals on the inside of the storage bag to check that the kit is complete before attaching it to the harness. Weatherproof guide to attach to harness.

Reference: K25 SC2
Weight: 585 g



METEOR® III

Weighing barely 235 g, this climbing helmet is ultralight. The innovative adjustment system means almost anyone can get a comfortable fit. With excellent ventilation, it is equally at home at the local crags and on long alpine routes. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. Headband adjustment folds into the shell for compact storage and ease of transportation. The expanded polystyrene in the liner absorbs shocks. Compatible with VIZION face shield. Headlamp can be attached using the four optimally placed clips. Removable and washable headband foam and mesh.

References: A71 O - A71 G - A71 W
One-size-fits-all: 53-61 cm
Weight: 235 g



ELIA *new*

The ELIA helmet was designed and developed to respond specifically to the needs of women. The innovative OMEGA headband system (Petzl patent) allows the helmet to be put on and removed easily and offers maximum comfort. In addition to this exclusive feature, the helmet has a new headband adjustment mechanism. It allows the helmet to be precisely adjusted for different head shapes. Side openings for ventilation. Injection molded ABS shell is both lightweight and durable. Expanded polystyrene liner absorbs impacts. Foam is removable and washable. Headlamp can be attached using the four optimally placed clips.

References: A48 WH - A48 SK- A48 MI
One-size-fits-all: 52-58 cm
Weight: 285 g



MINI TRAXION

Compact and lightweight self-jamming pulley. The MINI TRAXION has three distinct modes of operation (pulley, progress capture pulley, ascender), making it the ideal companion for extended vertical adventures. Use it for hauling light loads, self-belay, ascending a rope and self-rescue. Efficient and compact: aluminum sheave mounted on a self-lubricating bearing. Trigger cam with teeth and cleaning slot works even on dirty or icy ropes. Cam can be locked in open position so device can be used as a simple pulley. For use on ropes between 8 and 13 mm in diameter

Reference: P07
Weight: 165 g
Efficiency: 71 %
Working load as pulley only: 2,5 kN x 2 = 5 kN
Breaking strength as pulley only: 10 kN x 2 = 20 kN
Working load as self-jamming pulley: 2,5 kN
Breaking strength as self-jamming pulley: 4 kN
For use on ropes between 8 and 13 mm in diameter



OSCILLANTE *new*

The OSCILLANTE emergency pulley weighs practically nothing and can be used in crevasse rescue systems or improvised hauling systems. Quick and easy installation due to the swinging side plates. Nylon sheave and aluminum side plate for excellent strength to weight ratio.

Reference: P02A
Weight: 42 g
Efficiency: 71 %
Working load: 4 kN (2 kN on one rope end)
Breaking strength: 15 kN
For use on ropes between 7 and 11 mm in diameter



FIN'ANNEAU

The lightest and most compact of all our slings, we use 8 mm Dyneema/nylon webbing to cut down on weight without sacrificing strength. Extremely lightweight and compact. Very abrasion resistant. Available in four color-coded sizes for easy identification: 24, 60, 120 and 180 cm. Strength: 22 kN.

Reference: C06
- 24 cm: green (weight: 10 g)
- 60 cm: yellow (weight: 20 g)
- 120 cm: red (weight: 35 g)
- 180 cm: gray (weight: 50 g)

ADJAMA

Easy-to-adjust leg loops mean this men's harness is perfect for ice climbing and mountaineering. Low bulk and flexible rear equipment loops prevent the waistbelt from interfering while wearing a pack. Frame Construction with breathable monofilament mesh evenly distributes pressure, providing maximum support and comfort. Woven polyester mesh on the inside of the harness wicks moisture for improved comfort and speeds drying in wet conditions. Perforated foam on the waistbelt and leg loops increases breathability. The waistbelt is easily adjusted, thanks to the shape of the DoubleBack buckle. This buckle also helps to prevent improper closure. Reinforced tie-in points for increased durability in this high-wear area. Two CARITool slots.

Reference: C22
Sizes: S, M, L
Weight: 420 g, 435 g, 460 g



LUNA

As the women's version of the ADJAMA, the LUNA has all the performance of a Petzl harness tailored to a woman's physique. The shape of the waistbelt is designed to fit a woman's waist and lower back. The rise has been increased by lengthening the belay loop. The waist-to-leg loop-size ratio has been reduced.

Reference: C35
Sizes: S, M, L
Weight: 410 g, 425 g, 450 g

TIKKA XP[®] 2 *new*

The TIKKA XP² integrates two light sources and a Wide Angle lens with assisted open-close feature. This lens allows the user to choose between a focused beam for distance lighting or a wide beam for proximity lighting. This headlamp is equipped with a white high-output LED and a red LED to offer five lighting modes. The white LED delivers 60 lumens in maximum mode and lights up to 60 meters. In economic mode, it can reach a burn-time of 160 hours. The red LED provides lighting to preserve night vision or to become a strobe light for increased safety, for example in an urban environment, etc. TIKKA XP² can be used with lithium batteries to decrease weight or improve performance in cold weather.

References: E99 PG, E99 PI
Degree of protection: IP X4 (Water-resistant)
Weight: 88 g including batteries
Light quantity: 60 lumens
Maximum lighting distance: 60 meters
Maximum light duration: 160 hours
For complete headlamp performance information, go to www.petzl.com



• Wide Angle lens with assisted open-close feature for switching between focused distance lighting to wide proximity lighting.



• Three white lighting modes (maximum, economic and strobe) and two red lighting modes (maximum and strobe).



MYO[®] XP BELT

The MYO XP BELT headlamp evolved from the MYO XP. Its remote battery pack reduces the weight worn on the head to 75 g and protects the batteries from the cold to prolong their burn time. This lamp has all the features required for intensive use in any conditions: a high-output LED for powerful lighting, an optional Wide Angle lens for switching between a wide and a spot beam, three constant lighting modes, a strobe mode for signaling, a Boost mode of 150 lumens, and a battery charge indicator light. Energy source can be quickly changed: quick and easy connector system links the battery pack to the headlamp.

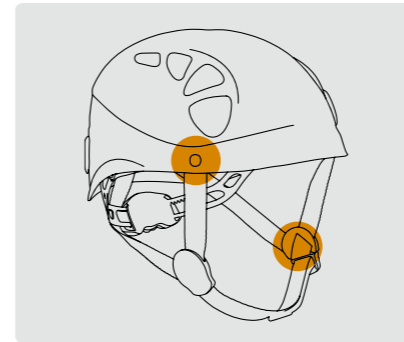
Reference: E84 P2
Degree of protection: IP X4 (Water-resistant)
Weight: 220 g including batteries, 75 g on head
Light quantity: 85 lumens
Maximum lighting distance: 72 meters
Maximum light duration: 180 hours
For complete headlamp performance information, go to www.petzl.com

Other mountaineering products:

- ALTIOS helmet
- ASPIR adjustable harness
- SPIRIT carabiner
- LASER ice screw
- ICEFLUTE protective ice-screw holder
- CARITool harness tool holder
- TURBINE crank for ice screws
- MULTHOOK multifunctional hook
- HAND HOOK ice suspension hook
- GRADISTEP lightweight 5-step etrier
- ST'ANNEAU Dyneema sewn sling
- ASCENSION handled rope clamp
- SPATHA knife with carabiner hole
- FAKIR Carrying bag for crampons
- e+LITE emergency headlamp
- SNOWTUBE snow anchor
- TIBLOC compact emergency ascender
- SNOWSCOPIC trekking pole / ice axe...

Find all products on pages 140 - 154.

Technical information **Checking your equipment**



Helmet

An essential element for head protection, the helmet reminds us of its value in the case of falling rock or a head-first fall. To do its job properly, it must be in good condition and fit well on the head.
Before each use, verify:
- the condition of the shell (no signs of impact, cracks or deformities on the inside or outside)
- the attachment system of the headband (operate the headband adjustment and the chin strap buckle)
- Do not sit on your helmet, as this may damage it

WARNING, a major impact to the helmet can significantly reduce its protective properties (shock absorption, strength) without leaving visible signs of damage. Retire your helmet after a major impact.

After each outing, clean and dry all equipment carefully according to the instructions in the technical notices.

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information **Basics**

1 Prepare your itinerary carefully

Get accurate information about the weather and the condition of your planned route; the difficulties can vary greatly according to the conditions. Decide how you will ascend and descend. Is your party ready for an itinerary at this level of difficulty? Are you sufficiently acclimatized to the altitude?

2 Bring the appropriate equipment

Weight is the number one enemy of mountaineers. Anticipate the necessary gear for the route and the conditions. Bring equipment for retreat and/or rescue. For example, take a crevasse rescue kit for glacier travel. Always have a map, compass, altimeter and headlamp.

3 Adapt your protection to your environment

It is essential to be quick when mountaineering. When the whole team is simul-climbing with a taut rope, exploit quick and reliable opportunities for protection offered by the terrain (a piece of gear in a crack or a sling around a rock horn). On difficult sections, take the time to protect yourself and your partner well. Anticipate belay stations based on upcoming challenges on your route.

4 Know when to turn back

During your journey, keep four important factors in mind: the human element, the conditions, the terrain and the timing. At a turning point, analyzing these four factors will help you decide whether to continue or not. For example: In what kind of physical condition is the team? Are the conditions and weather good? Is the terrain acceptable? Do you still have enough time?

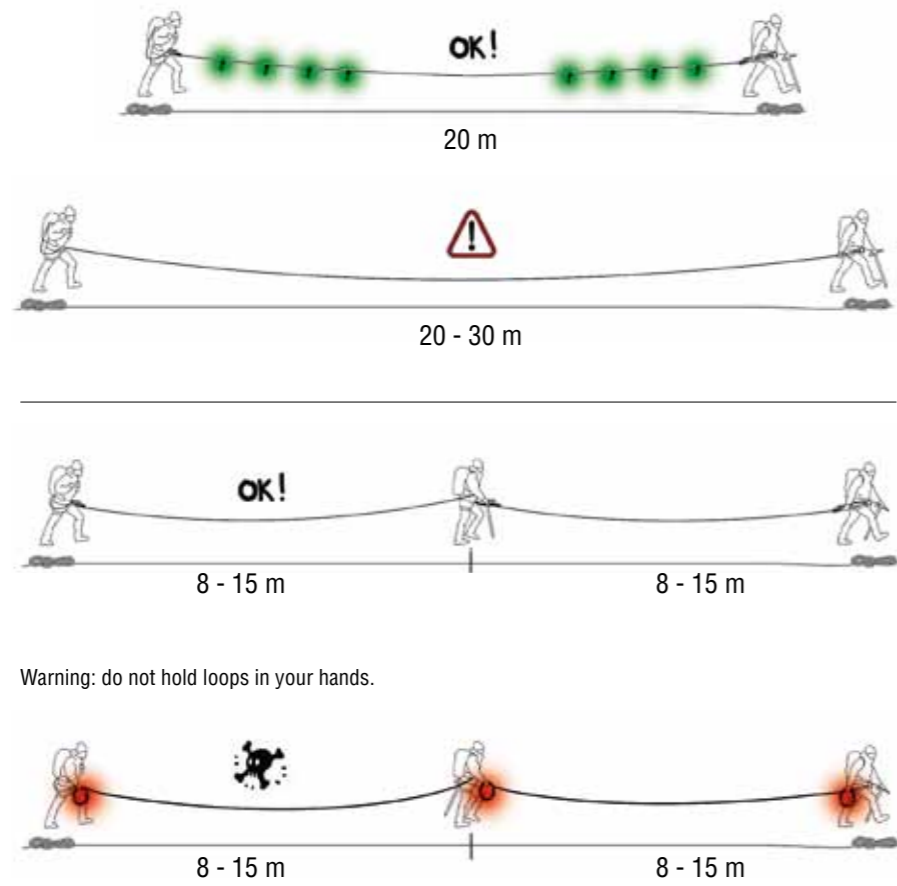
5 Keep focused and organized

Stay focused over easy sections and during the descent. At the summit, you're only half-way done! Keep your pack organized so that you don't lose anything and so that you are always efficient during transitions (adding or removing clothing layers, eating, drinking, putting on or taking off crampons, tying in, finding the guidebook, etc.). Constantly analyze the potential risk for human error (avalanches, falls, seracs, crevasses...); spend the least amount of time in high-risk zones. Avoid regrouping in these zones.

Technical information Tips

A. Tying in and progressing on a crevassed glacier

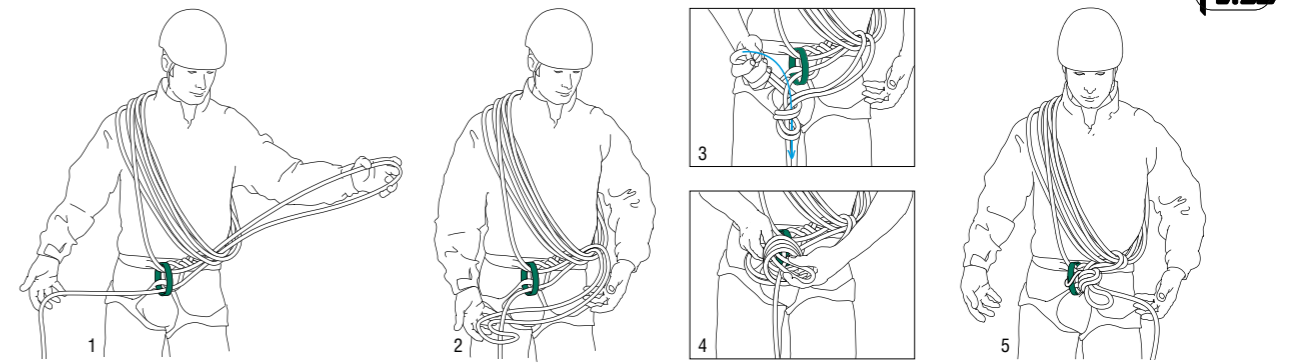
Distances between climbers.



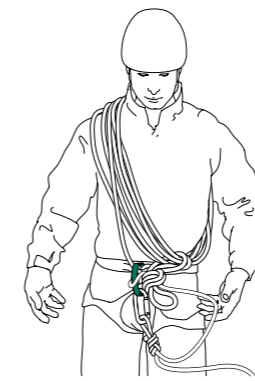
"Summit day without a summit" at Manaslu, around 7450 m.



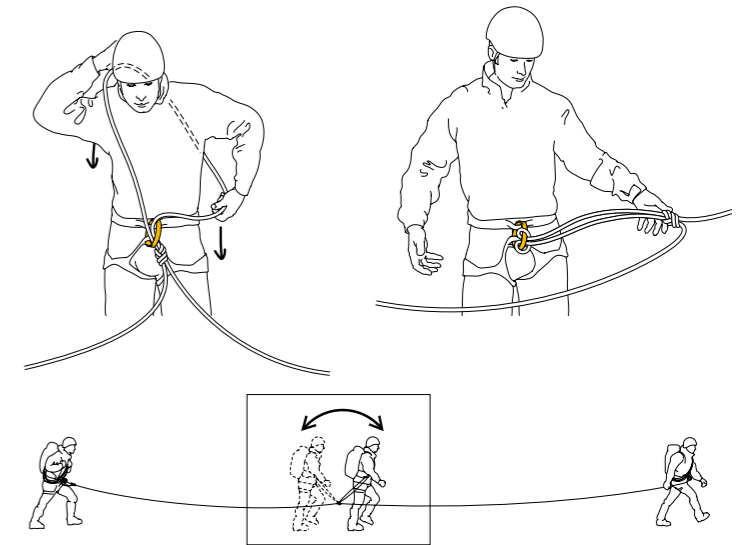
Tying in and chest coil.



Tying off with a cow's tail to avoid loading the chest coil.



Climbing with a party of three: tying in the middle climber.



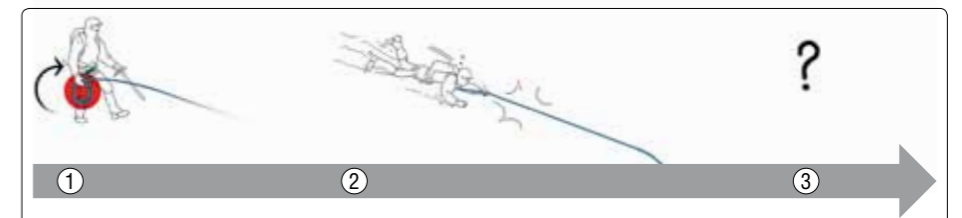
B. Falling into a crevasse

Stopping a fall:

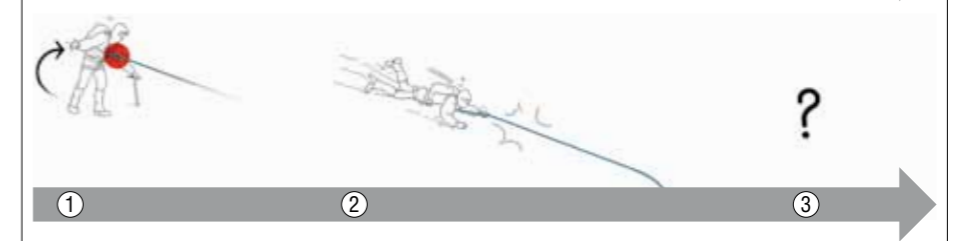
- ventral tie-in, taut rope = OK



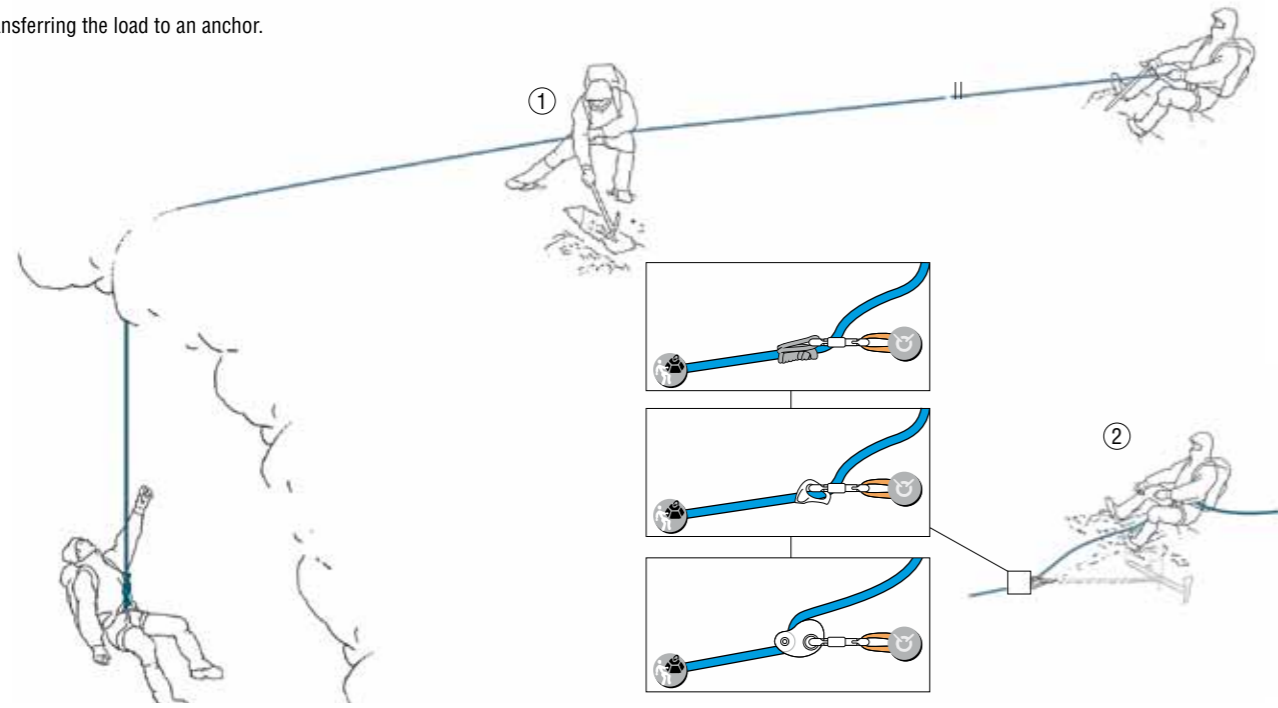
- when holding loops = danger



- tied in at chest-level = danger

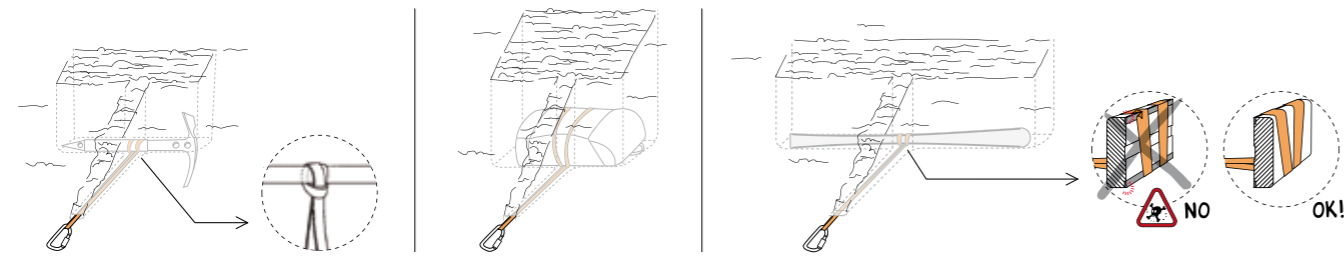


Transferring the load to an anchor.

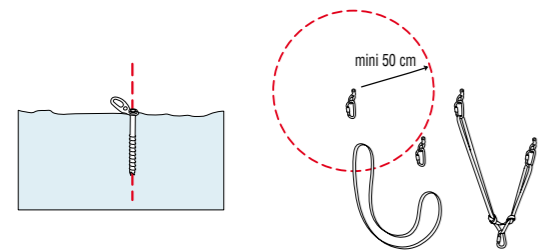


Various anchor solutions.

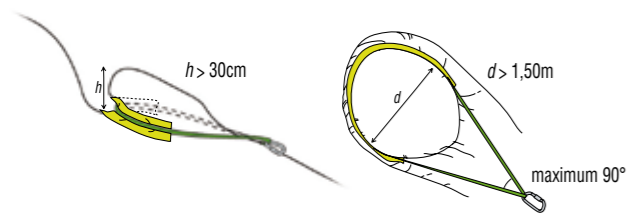
Snow.



Ice.



Hard snow.



Paulo Grobel and Philippe Mahou discuss strategy at Camp III, 6100 m, at Manaslu.

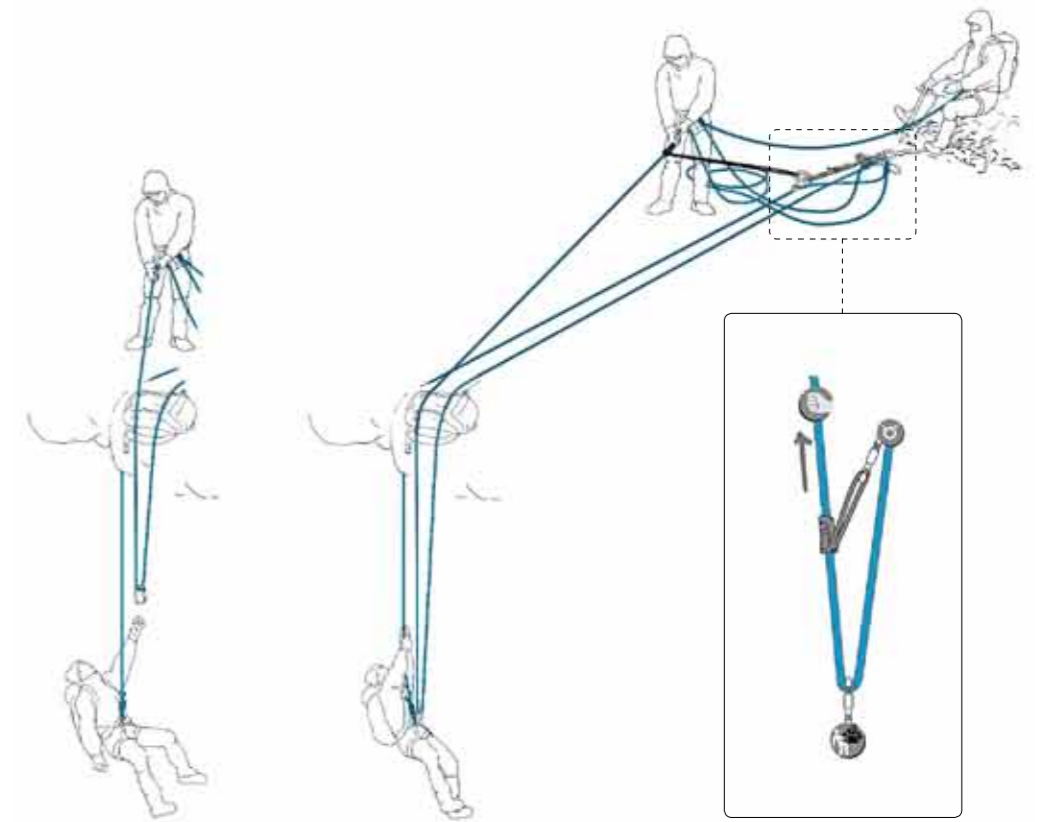


© François Damilano

C. Hauling

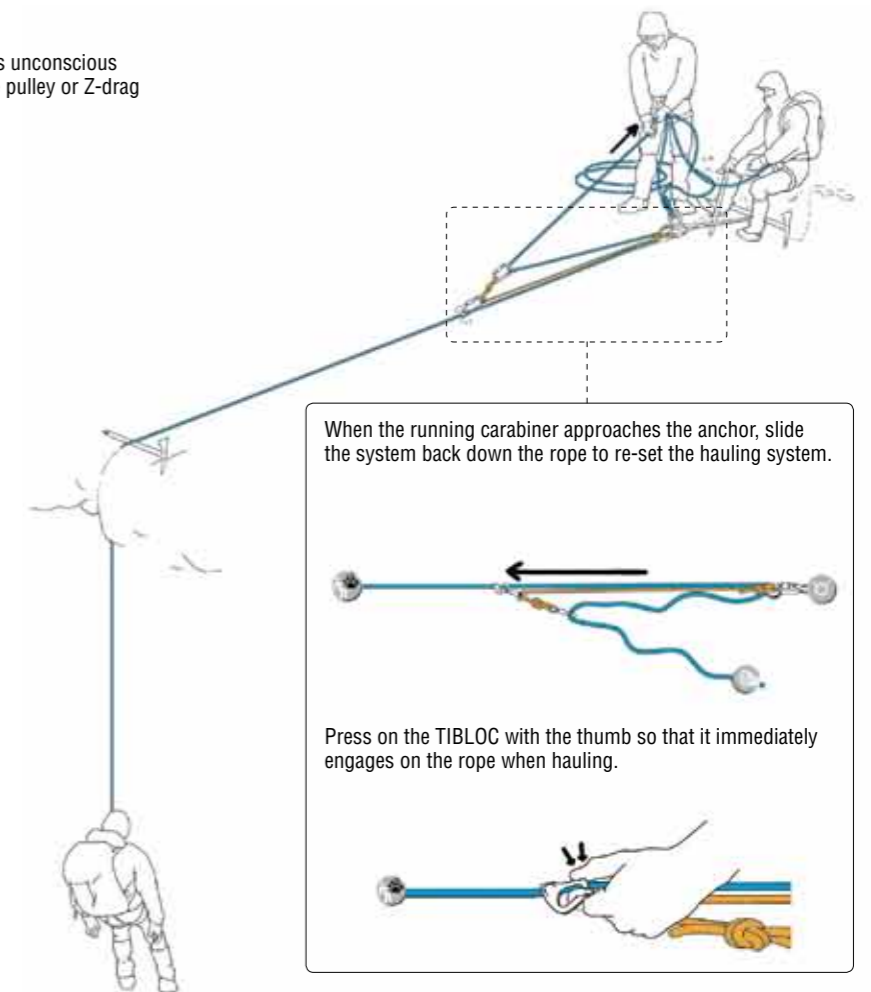
Simple pulley system

The simple pulley system is very efficient. It may be used when the victim can help haul himself out. It is a good solution in case the rope is jammed on the edge of the crevasse. A progress capture device must be installed on the hauling rope. This system requires a lot of rope, but not much equipment.



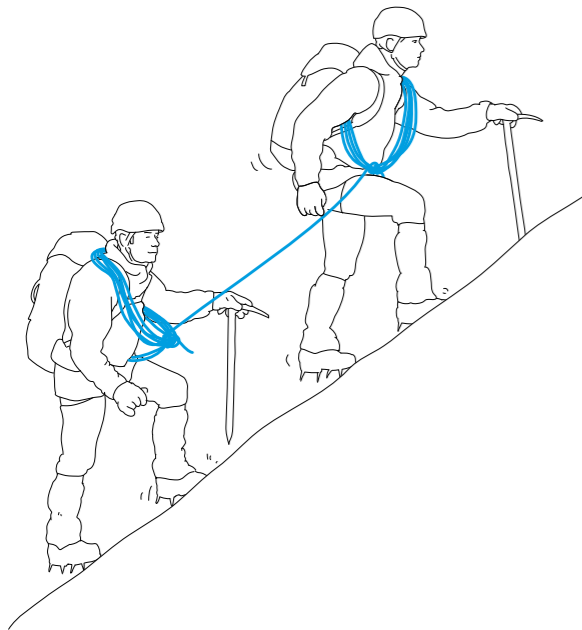
Double mariner system

The double mariner system is used if the victim is unconscious or when you don't have enough rope for a simple pulley or Z-drag system.



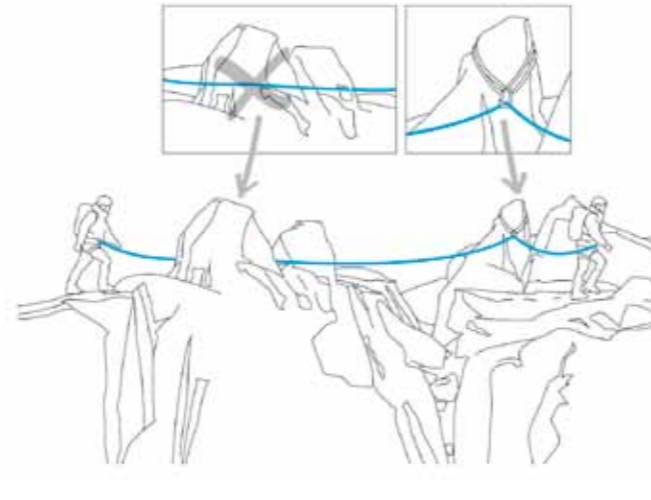
D. Moving along an easy snow slope

The leader adjusts the length of the rope to the difficulty of the terrain and always positions himself uphill. The distance between the leader and second is very short, and the rope is kept taut.

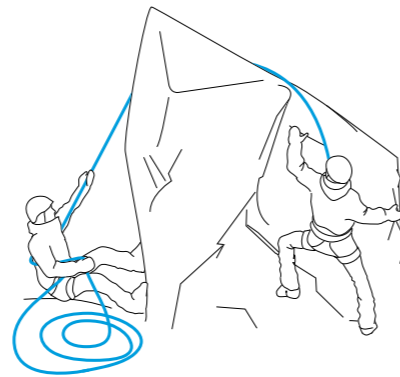


E. Progression on an easy arête

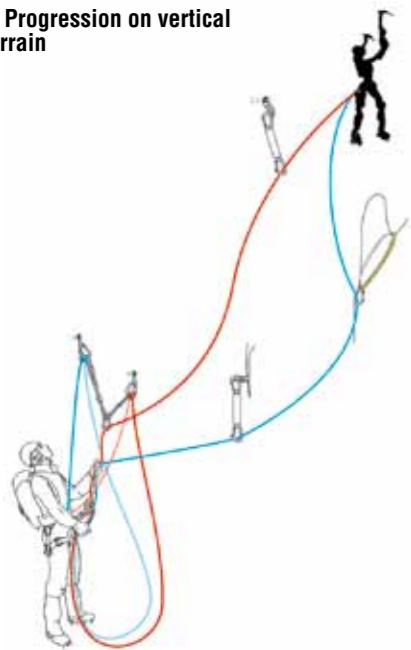
Progressing with a taut rope, the leader places protection and uses natural protection offered by the terrain (boulders, rock features, horns...).



On the harder sections, the leader asks the second to belay him. Once the section is completed, the leader belays the second.

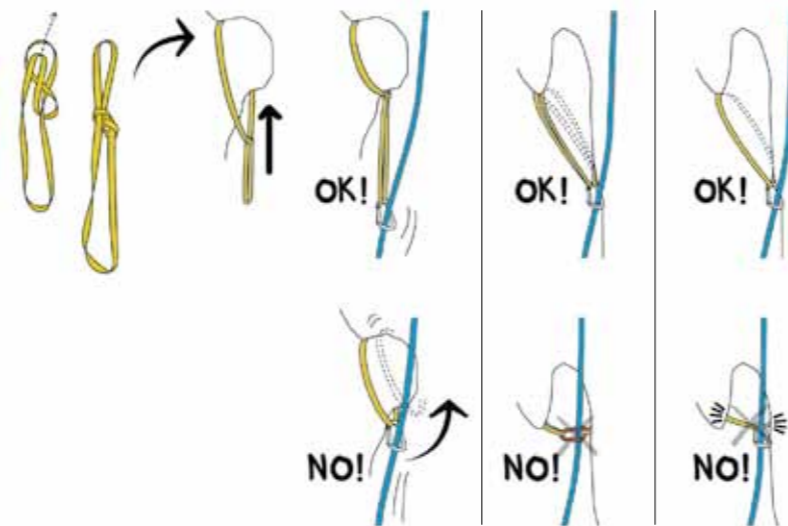


F. Progression on vertical terrain

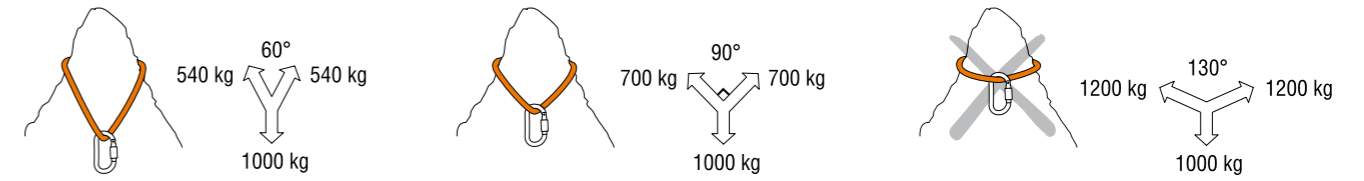


G. Protection

Make a sliding knot on the sling, keeping the sling from coming off the feature. Choose the length of the sling loop according to the feature.



Effects of sling length on the load.

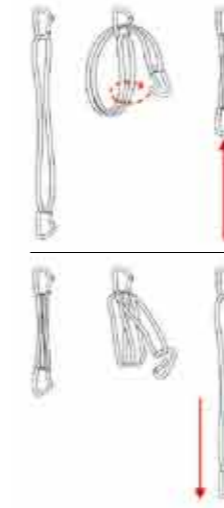


Carrying tips

Carrying webbing slings on the torso.

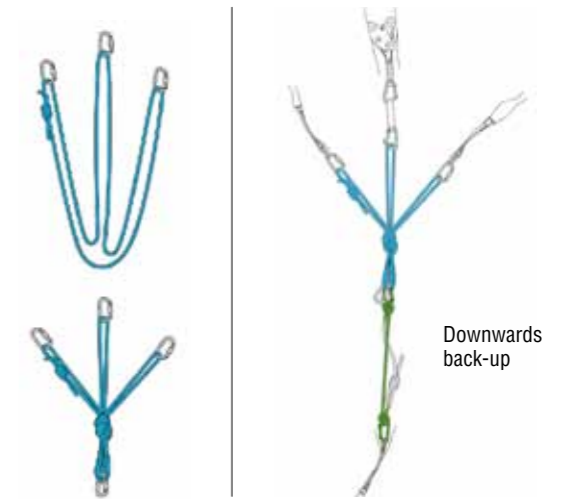


Extendable quick draw

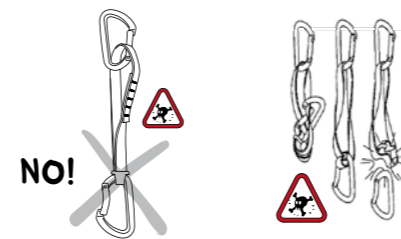


H. Belay station

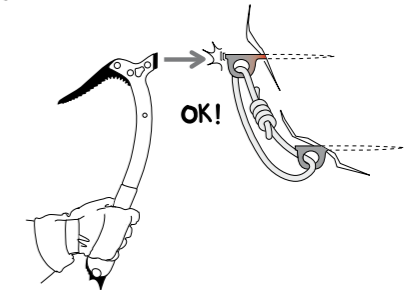
Equalizing nuts and pitons for a belay anchor...



Do not put a STRING on a sling



In the mountains, make sure to hammer in belay station pitons again. The effects of freezing and thawing can cause the pitons to come out of the cracks.



So close and yet so far: Paul Vullin and Pierrol Dupuy with the summit of Manaslu visible in the background.





Ueli Steck climbs the main crack of The Secret, X, 10, second pitch, on the Ben Nevis.

Ice and mixed climbing, Scotland

Happy Hour

If there is one place on earth where climbers celebrate the arrival of the next snowstorm, it has to be Scotland. Each winter, pounded by the North Atlantic winds, the Scottish Highlands are covered by a layer of snow and frost at the mercy of weather conditions. Here, winter climbing has existed for more than a century, and the smell of adventure is as authentic as the whisky borne of the local peat. Climbing is done from the ground up, without bolts, and generally onsite. An introduction to the very modern ethics of Scottish mixed climbing.

Patience is no doubt a virtue, but it's above all it's a trait that is recognized in all who come for a taste of Scottish mixed climbing. As noted in the legendary humor of the local climbers: "Here the ice usually forms on Monday and melts by the weekend." When there is little or no ice, there is usually dirt or frozen vegetation and rock powdered in white. Everything you need to get a taste of Scottish-style. The end-all, be-all comes when a thick layer of frost covers the rock with a shell of ice that creates extremely esthetic

routes. The two key ingredients of 'Made in Scotland' climbing are generally miserable weather and the style - placing your own protection. Placing protection is in itself a challenge, but there is also a usually necessary preliminary operation: finding, and then cleaning, an adequate spot to place it. Forget about spring-loaded cams: they have a tendency to slide out of the frozen cracks of Ben Nevis, when they aren't frozen in the ice and humidity all around. Take a good set of standard nuts out of your closet, along with your old set

of Hexentrics, especially the big ones. But the most important thing? "Come with an open mind," explains Andy Turner. Familiar with the Highlands and more particularly with Ben Nevis for ten years, Andy knows that mixed climbing requires creativity, and a repertoire of moves closer to that of rock than "classic" ice climbing as practiced on the continent. Wedging the shaft or head of your ice tool, laybacking, using knee bars...anything you can use to keep going, to find rest positions, and in theory, not fall. This was Andy's resolve when he got



on The Secret, on-sight, in December 2007. After the first, sustained pitch, the second one was an incredible crack to the right of Number 3 Gully on Ben Nevis. "Being a little creative with the ice axes surely helped me. After ten meters, you can relax a bit," explains Andy, "but only for long enough to get a look at what's next, a crack going from finger to fist jams."

March 2009. After the first ascent by Andy, Steve Ashworth and Vic Scott, The Secret had been repeated many times. During an international gathering of climbers, Ueli Steck and a team of European climbers* came for a taste of Scottish mixed climbing. "I had just finished my trilogy (ultra-rapid ascents of the three North faces of the Eiger, the Grandes Jorasses and the Matterhorn) and I was open to a new project. I like to improve my mountaineering skills,

and Scotland is an ideal place for that," says Ueli. "It was raining every day, but after four consecutive days of it, we started hiking toward Ben Nevis." On third day, under Andy's watchful eye, Ueli climbed The Secret. "I wanted to see what a difficult Scottish route would be like, meaning with difficult gear placements and bad weather. Here the mountains aren't high, but the rules are as important as the routes," stresses Ueli. Clear rules, which Andy Turner repeats: "Keep the mountains clean, unbolted." Climb as much as possible on-sight, without beta, except from the ground: a demanding style that has been practiced since the time of the pioneers. On Ben Nevis, Tower Ridge, climbed in March 1894, was compared to the arête of Lion on the Matterhorn. In 1906, the incredible H. Raeburn climbed Green Gully without crampons, cutting his own steps! After that, the period of the big arêtes in

the 1950s, and of the steep couloirs like Five Point Gully or Zero Gully in the 60s, established standards of difficulty that would not be surpassed in Europe until the equipment would evolve. Since then, pushed by the discovery of new lines, climbers have turned to the large faces and compact-looking slabs in all the Scottish mountains, from Glencoe to Cairngorms, and to the more exotic areas, like the Isle of Skye. The evolution continues today, where climbers are looking for the steepest routes, even overhanging ones, and keeping the same spirit of on-sighting from the bottom, without bolts. Don't mention dry-tooling in Scotland: as the Scots themselves say, if the rock is dry, it's better to be in climbing shoes than carrying ice axes. A route is generally climbed in "whiteness," meaning when the rock is more or less plastered with frost or ice. It's a subjective notion, but one that remains the reality despite the

**"Neither the gusting winds,
nor the fog - and surely not
the magical atmosphere of a
sunrise on the Ben Nevis - will
keep you from coming back."**

Aljaz Anderle tries to see The Secret clearly, pitch 1, Ben Nevis.



© Tony Lamiche

Yann Mimet tries to not come out
of this crack too quickly at Ben Nevis.



© Tony Lamiche



© Tony Lamiche

Martial Dumas takes a break from big walls for some Scottish subtlety.



Yann Mimet tries some Scottish specialties!



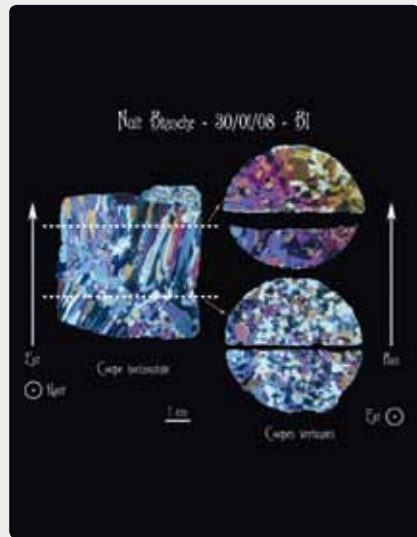
The magic of a calm morning on Ben Nevis... before the storm.

increasing steepness of the new routes, making their ascent in "white conditions" harder to figure out. A question of patience once again.

Not surprisingly, Scottish mixed climbing is also an excellent school for mixed climbing in the mountains. Once you are used to the spindrifts and blowing snow of the Highlands and to placing your ice axe into a vague crack full of frozen grass, you are more than ready to climb under the blue sky of the Alps or Colorado.

Not the gusting winds, which blow you over the plateau when you're looking for the descent route, nor the thick fog that keeps you from seeing your seconding climber at the belay, and surely not the magical atmosphere of a sunrise on the Ben, will keep you from coming back. When you ask Andy Turner whether he has projects for next winter, he says yes, but only under very specific conditions, in other words, when the weather is "absolutely horrible." Which is what we wish for all the climbers bound for Scotland.

*Aljaz Anderle, Martial Dumas, Tony Lamiche, Erwan Le Lann, Mathieu Maynadier, Yann Mimet, Ueli Steck and Andy Turner.



The ice crystal, a scientific study in the heart of frozen waterfalls

With its Foundation, Petzl wishes to contribute to fundamental research related to the heart of its business. Through a partnership with the Laboratoire de Glaciologie et Géophysique de l'Environnement de Grenoble (LGGE), a fundamental research program on icefall ice was launched in 2006. The first of its kind in the world, this approach aims to provide a better understanding of this ice: How do icefalls form? What is the structure of the ice they are composed of? How does this particular type of ice react to outside forces? Every winter, experiments are carried out on the icefalls of Chamonix.

Scientific report 2008-2009

"This winter season, most of the objectives formulated over the past two seasons were met. In particular, a core bit, designed and manufactured at the LGGE in collaboration with Petzl's research department, was used successfully to provide deeper core samples of the vertical ice, revealing the internal structure of the icefalls and their growth patterns. At the same time, photos were used to record the development of ice columns. Finally, pressure measurements confirmed the link between temperature and internal pressure for a free-standing structure. Based on these results, which will be published in fall 2009, there are many new objectives for the coming years." Maurine Montagnat, researcher at CNRS

To find out more: www.fondation-petzl.org/projets-recherche



Ice and mixed climbing products



NOMIC

The NOMIC leashless ice tool allows climbers to ascend ice with the fluidity and freedom of rock climbing. The removable pick weights help to literally propel the pick in the ice. The ergonomic, adjustable molded grip can be held in multiple ways, without pick shift when switching positions; grip size can be adjusted to accommodate different hand sizes or glove combinations. The ASTRO pick was intricately designed for dry-tooling and hooking on a variety of formations, while still allowing for easy cleaning.

Reference: U21
Weight: 635 g
Length: 48 cm
ASTRO pick included (type B)
Pick is interchangeable with CASCADE (NOMIC)
Shaft: type T



• ASTRO pick designed to respond to multiple planting options.



• Adjustable ergonomic handle for easy handling.

QUARK

The QUARK is the classic all-around ice tool for vertical ice and mixed climbing. A balanced, smooth swing and aggressive pick design have made this tool the standard by which all other ice tools are judged. The curved shaft offers ample clearance for mantling and hooking cauliflower ice formations. The forged CASCADE pick tapered for excellent penetration in even brittle ice. It is easy to remove once placed. GRIPREST increases climbing comfort and makes it possible to climb leashless; can be removed for plunging in snow. Available in adze and hammer versions. No-slip dual-density grip for improved performance. Easy to remove CLIPPER leash included.

References: U19 P, U19 M
Weight: 645 g
Length: 50 cm
CASCADE pick included (type B)
Pick interchangeable with QUAD
Shaft: type T



AZTAR

AZTAR is a lightweight and versatile technical ice-axe. It is designed for anything from frozen waterfalls to mountain routes where almost anything can be encountered. The BLUEICE pick handles brittle ice and hard snow with equal aplomb. Small-diameter molded polymer handle ensures an excellent grip and insulation. Good penetration of the shaft for hard snow: straight bottom shaft for piolet canne usage or as a deadman anchor. Curved upper shaft for ease of placement and hooking. Equipped with FREELOCK leash, which is tightened and loosened with a simple rotation of the wrist. Available in adze and hammer versions.

References: U10 P, U10 M
Weight: 590 g
Length: 50 cm
BLUEICE pick included (type B)
Pick interchangeable with QUATRO
Shaft: type T





DART

Mono-point crampons ideal for ice and mixed climbing. Ultra-light. The forged, toothed front mono-point is designed to displace less ice and make for precise placements on micro-edges. Length of points is designed for maximum stability without having to high-step. Sharp points for great purchase in ice. Two points angled forward to reinforce purchase and give support when front-pointing. The third row of points are angled towards the rear for hooking in steep terrain or around ice columns. Two points are toothed and inclined backwards for back stepping or using instep or outer foot. Four teeth for stability while descending face downhill. Lateral points for purchase while traversing. Horizontal structure places the foot as close to the ice as possible: increased sensitivity, more precise placements. Toe bail wire has two positions for perfect fit on all sole thicknesses and can be adjusted to fit technical boots with asymmetrical shapes. Front section can be replaced if the front point is worn. Accessory: EPERON heel spur assembly for even more hooking possibilities.

Available in two types of binding systems:
 - T22SL 02: SIDELOCK (weight: 816 g)
 - T22LLF 02: LEVERLOCK FIL (weight: 824 g)
 Fits boot sizes 34 to 44 with M linking bar (included)
 Optional L linking bar fits boot sizes 38 to 49 (T20850)
 For more information on crampon attachment systems, go to www.petzl.com



DARTWIN

A version of the DART crampons for those who prefer the added stability and holding power of two front points.

Available in two types of binding systems:
 - T21SL 02: SIDELOCK (weight: 860 g)
 - T21LLF 02: LEVERLOCK FIL (weight: 864 g)
 Fits boot sizes 34 to 44 with M linking bar (included)
 Optional L linking bar fits boot sizes 38 to 49 (T20850)
 For more information on crampon attachment systems, go to www.petzl.com



M10

For climbers who want the option to switch between mono or dual-point crampons, the M10 is for you. The replaceable forged front points can be configured asymmetrically or symmetrically for customized precision performance. The LEVERLOCK FIL binding system with wire toe bail is easy to adjust and fits most boots. Sharp points for great purchase in ice. Forged front point is toothed for precise placements. Second row of points angled at 45° forward to support and reinforce placements. Toe bail wire has two positions for perfect fit on all sole thicknesses and can be adjusted to fit technical boots with asymmetrical shapes.

Reference: T23LLF 02
 Optional ANTISNOW front and rear (T23900)
 LEVERLOCK FIL binding system (weight: 1050 g)
 Fits boot sizes 35 to 45 with M linking bar (included)
 Optional L linking bar fits boot sizes 40 to 50 (T20850)



FAKIR

Designed for carrying crampons without adding bulk, this zippered nylon compartment is also great for screws, extra picks, etc. Reinforced, semi-rigid bottom protects your pack from sharp tips. Featuring a mesh top panel which allows water to escape and your equipment to dry, and an internal strap which keeps the crampons in place.

Reference: V01
 Weight: 155 g

ALTIOS

Ultra comfortable multi-purpose helmet. The hybrid suspension system, composed of a mesh panel and expanded polystyrene liner, makes this helmet extremely lightweight and comfortable to wear. Helmet 'floats' above the head. The space between the head and the liner allows for effective ventilation with the Climate Control System. Durable ABS shell. This helmet is very ergonomic, adapting to any head shape, and offers two options for attaching a headlamp: a removable ADAPT system-compatible mount, or clips. Easy-to-use molded adjustment wheel quickly dials in the headband size, even while the helmet is being worn. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. Compatible with VIZION face shield.

References: A45OR - A45PL - A45WH
 Available in two sizes:
 - size 1: 48-56 cm (weight: 305 g)
 - size 2: 53-61 cm (weight: 335 g)



• Ultra-comfortable, thanks to a hybrid suspension system composed of a mesh panel and expanded polystyrene liner. Helmet 'floats' above the head.



• Two attachment options for headlamp: clips or a removable mount for the ADAPT system.

VIZION

This face shield is compatible with the ALTIOS, METEOR III and ELIOS helmets, providing face protection from shattered ice and spindrift. It can be rotated upward when not needed or stored on top of the helmet during transport. Anti-scratch coating on outside and anti-fog coating on inside.

Reference: A44 1
 Weight: 60 g

TIKKA PLUS² ADAPT *new*



The TIKKA PLUS² ADAPT headlamp is designed for those wanting to optimize the use of the lamp on different mounts, using the ADAPT system. This system allows the user to attach the light body of the headlamp onto the elastic headband, a rigid surface (helmet, etc.), or to clip it on a belt, a pocket, etc. The TIKKA PLUS² ADAPT offers five lighting modes and integrates two light sources for versatility: one white high-output LED and one red LED. The white LED delivers 50 lumens in maximum mode and lights up to 35 meters. In economic mode, it can reach a burn-time of 140 hours. The red LED provides lighting to preserve night vision or to become a strobe light for increased safety, for example in an urban environment, etc. TIKKA PLUS² ADAPT can be used with lithium batteries to decrease weight or improve performance in cold weather.

Reference: E97 PMA
 Degree of protection: IP X4 (Water-resistant)
 Weight: 101 g including batteries
 Light quantity: 50 lumens
 Maximum lighting distance: 35 meters
 Maximum light duration: 140 hours
 For complete headlamp performance information, go to www.petzl.com

ADJAMA

Easy-to-adjust leg loops mean this men's harness is perfect for ice climbing and mountaineering. Low bulk and flexible rear equipment loops prevent the waistbelt from interfering while wearing a pack. Frame Construction with breathable monofilament mesh evenly distributes pressure, providing maximum support and comfort. Woven polyester mesh on the inside of the harness wicks moisture for improved comfort and speeds drying in wet conditions. Perforated foam on the waistbelt and leg loops increases breathability. The waistbelt is easily adjusted, thanks to the shape of the DoubleBack buckle. This buckle also helps to prevent improper closure. Reinforced tie-in points for increased durability in this high-wear area. Two CARITOOL slots.

Reference: C22
 Sizes: S, M, L
 Weight: 420 g, 435 g, 460 g

LUNA

As the women's version of the ADJAMA, the LUNA has all the performance of a Petzl harness tailored to a woman's physique. The shape of the waistbelt is designed to fit a woman's waist and lower back. The rise has been increased by lengthening the belay loop. The waist-to-leg loop-size ratio has been reduced.

Reference: C35
 Sizes: S, M, L
 Weight: 410 g, 425 g, 450 g



• Adjustable leg loops allow size to be adjusted depending on comfort desired or layers of clothing worn, and allow the harness to be put on when wearing skis or crampons.



• Two CARITOOL slots to carry your ice screws, pitons, etc. and ice axes.



• Four gear loops: two rigid, inclined front equipment loops for easy access to gear; two flexible rear loops to avoid creating pressure points when wearing a pack.



CARITOOL

To increase your gear carrying options. The practical CARITOOL is a great accessory for mountaineering ice and big-wall climbing, allowing quick access to ice screws, pitons, cams, etc. Also useful for quick storage/holstering of ice tools. Compatible with the slots on most Petzl harnesses and also attaches to webbing waist belts of other harnesses. Lightweight, durable and stable. Nose on top rail allows the user to stack gear on top while gaining access to screws, nuts, or other gear when the CARITOOL is loaded with multiple pieces. Small upper hole for attaching a keeper cord for tools to avoid losing them. Warning, the CARITOOL is not a PPE. It can only hold the weight of gear up to 5 kg.

Reference: P42
 Weight: 25 g

Erwan Le Lann squeezes his ice axes at a unnamed crag at Ben Nevis.



REVERSO³

This multi-purpose belay/rappel device is lightweight and easy to use. The asymmetrical V-shaped grooved friction channels adapt the friction for better control using our ARC (Adaptive Rope Control) technology.

A single device for all possible uses:

- independent and simultaneous belaying of one or two seconding climbers in Reverso mode
- quick changeovers from Reverso mode to belaying the leader when climbing multi-pitch routes. Carabiner hole to release device when loaded in Reverso mode: allows the loaded device in Reverso mode to be easily and gradually released with only a carabiner. Usage diagrams (standard belay and Reverso modes) engraved on device. Use with symmetrical shaped locking carabiners (Am'D or OK) to maximize efficiency.

References: D17 G - D17 B - D17 T

Weight: 77 g
 For use on:
 - single ropes ≥ 8.9 mm
 - half ropes ≥ 8 mm
 - twin ropes ≥ 7.5 mm



LASER SONIC

For rapid ice protection, there is nothing faster than the LASER SONIC. The innovative hanger/handle makes placing the screw a breeze, even in the most brittle ice. The design also allows the screw to be removed when still attached to the rope, helping to prevent accidental loss. Aggressive teeth cut quickly into the hardest ice for easy hole starts. Finely polished threads and surface for smooth installation/removal. Hanger hole is large enough for two carabiners. Reverse taper for reduced friction and rapid placements. Curved crank arm allows it to clear uneven ice surfaces. The ICEFLUTE allows for quick access to the ice screws while also providing protection during transport.

- P70 100: 10 cm (weight: 149 g)
- P70 130: 13 cm (weight: 165 g)
- P70 170: 17 cm (weight: 185 g)
- P70 210: 21 cm (weight: 205 g)



LASER

Lighter and simpler version of the LASER SONIC. It was designed for use with the TURBINE crank. Aggressive teeth cut quickly into the hardest ice for easy hole starts. Finely polished threads and surface for smooth installation/removal. High pull-out resistance. Dual clip-in points on hanger hole. Reverse taper for reduced friction and rapid placements.

- P71 100: 10 cm (weight: 128 g)
- P71 130: 13 cm (weight: 146 g)
- P71 170: 17 cm (weight: 164 g)
- P71 210: 21 cm (weight: 184 g)



TURBINE

Crank for placing and removing LASER ice screws. Fits in the hanger once the screw is engaged. Long lever arm to facilitate placement in the ice. Rotating handle offers a good grip even with gloves. Easily accessible when climbing: adjustable elasticized bandolier system for carrying.

Reference: 65050
Weight: 80 g



ICEFLUTE

Protective ice-screw holder. Holds five ice screws. Securely holds screws and allows for quick, one-handed use. Can be attached directly to a harness or worn on the chest. Open-ended design helps avoid ice/snow build-up. Tubes can be used individually or linked together.

Reference: V10
Weight: 155 g
Holds ice screws up to 21 cm



PETZL charlet

MULTIHOOK

This multifunctional hook can be used to thread an ice anchor, clean wired nuts and camming devices or clean out an ice screw. 8 mm wrench integrated in handle for tightening bolts, etc.

Reference: 04950
Weight: 40 g
Height: 280 mm



NITRO 3

Energy absorber for a quickdraw used for dubious protection on ice or rock. Reduces the impact force on protection in the event of a severe fall (absorber begins to deploy at 2.5 kN).

Reference: 67800
Weight: 60 g
Strength: 22 kN.
Length: 16 cm

Other ice and mixed climbing products:

- SPIRIT carabiner
- Am'D carabiner
- ATTACHE 3D ultralight carabiner
- FIN'ANNEAU Dyneema sewn sling
- CLIPPER quick attach leash
- FREELOCK fixed leash for ice climbing
- Spurs for DART or DARTWIN crampons
- SPATHA knife with carabiner hole
- e+LITE emergency headlamp...

Find all products on pages 140 - 154.

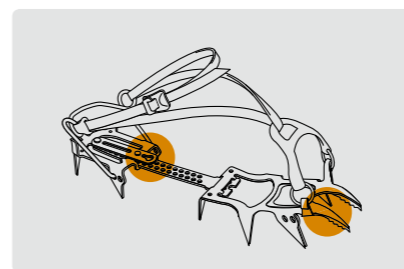


Can you spot the second climber in the photo?!
Number 3 Gully, Ben Nevis.

© Tony Lamiche

Technical information Checking your equipment

PETZL



Ice axes and crampons are basically an extension of the limbs, aiding progression on ice or frozen rock. Walking on ice, repeated striking, and mixed climbing or dry-tooling are activities that put great demands and wear on the equipment.

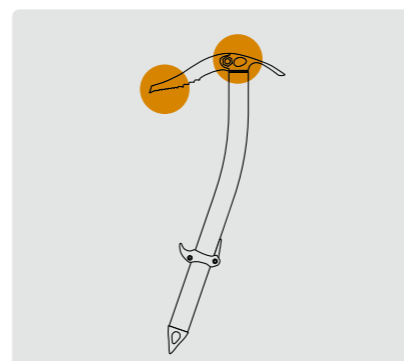
Crampons

Before each use, inspect:

- the bindings: the condition and the fastening of the toe and heel bail attachments, the rivets (e.g. the SIDELOCK's lever), the plastic parts, the webbing and the functioning of the adjustment buckles
- for cracks and deformities on the metallic structure of the crampon, particularly around the front points. Remove the ANTISNOW for a more thorough inspection.

After each use, clean and dry your crampons. Spray with lubricant to avoid corrosion. Sharpen (or have sharpened) the points by filing the side of the tooth, never the top (except for the forged front points). File by hand only, to avoid heating which may affect the properties of the steel.

Verify the proper engagement of the rapid adjustment system and test the attachment of the crampon to the boot.



Ice axes

Before each use, inspect:

- for cracks and deformities
- the condition of the rivets, the attachment of the head, the condition and attachment of the leash
- the condition and attachment of the pick; sharpen if necessary, replace bent or worn picks

Retire your ice axes or crampons:

- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability

After each outing, clean and dry all equipment carefully according to the instructions in the technical notices.

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information Basics

1 Be very aware of the conditions of the ice and the surrounding environment

Consider this activity as a mountaineering activity, with serious and variable risks; rapid changes in conditions can increase the risk at an icefall from "acceptable" to "dangerous", even "unacceptable". How have the conditions been over the past few weeks? What is the forecast temperature? Double-check the ice quality on site. Is there an avalanche risk from above? Are there other climbers already in the route? If so, avoid climbing the same line.

2 Don't forget your helmet and headlamp

You must wear a helmet at the base of the climb, as you would when climbing. A face shield can protect the eyes from flying ice shards. Remember to take a headlamp for late finishes. Keep your headlamp warm by having it close to your body during the day. Carry a threading tool, a cordelette equal to or thicker than 8 mm, and a long ice screw in order to be able to set up a natural ice thread anchor at any given moment.

3 Use double ropes

Avoid falling, if possible: Falling with ice axes in your hands and crampons on your feet can have serious consequences. Clip the ropes in alternately along the route, and use energy absorbers (e.g. NITRO 3) to limit the shock force on the ice screws in case of a fall.

4 Think about protecting the seconding climber

Set up your stations to the side, not directly in line with the next pitch. Place enough gear on traverses so that the second climber doesn't pendulum in a fall.

5 Managing time, gear and effort

Ice climbing is generally practiced during the shortest days of the year. Be quick in all the transitions, when installing the belay stations, and during all maneuvers. This will easily save that precious half-hour which will allow you to descend before dark.

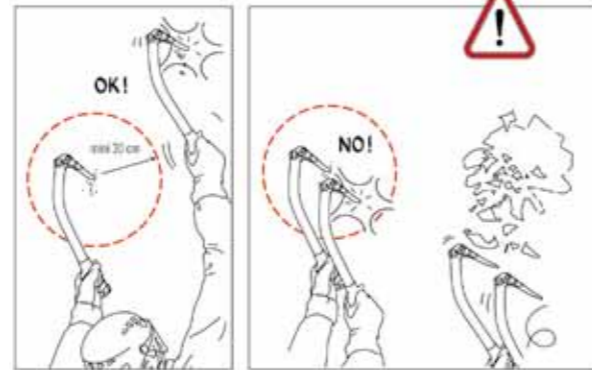
Organize your clothing well (remove layers when climbing and put them on to stay warm at the station); one pitch may take 30 to 45 minutes per team member, even an hour, to climb... beware of freezing winds and dripping water that can make the wait at the station very unpleasant. Manage your effort well, standing on your feet whenever possible so as to not exhaust the upper body; release and relax the forearms when you can.

Technical information Tips

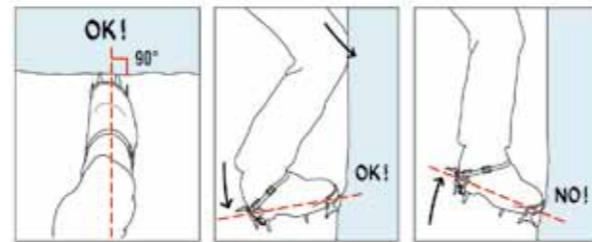
A. Tips for striking



Ice axe



Crampons



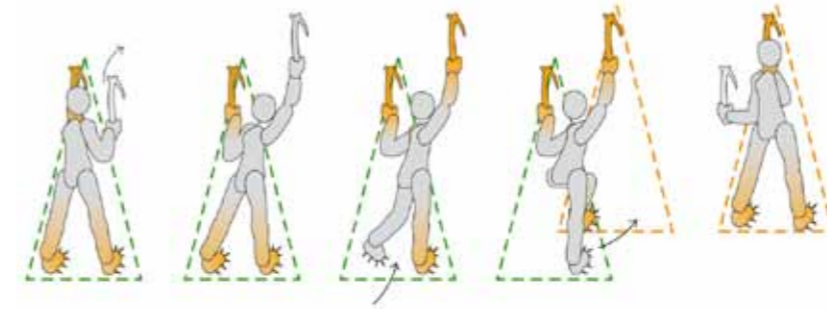
No hesitation for Ueli Steck, in the key pitch of The Secret at Ben Nevis.



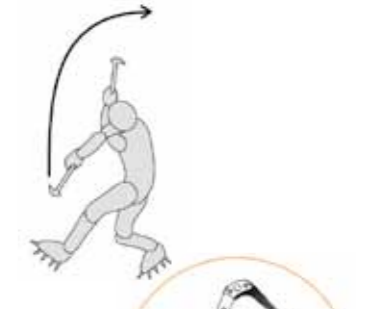
© Tony Lamiche

B. Progression

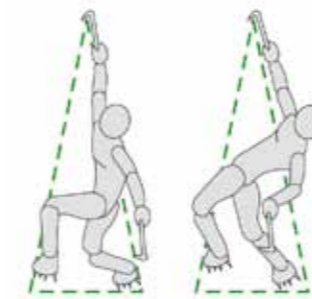
Triangular progression (balanced positioning in triangle form):
Three contact points: the two feet and one ice tool, centered over the feet



Rotation for remote striking.



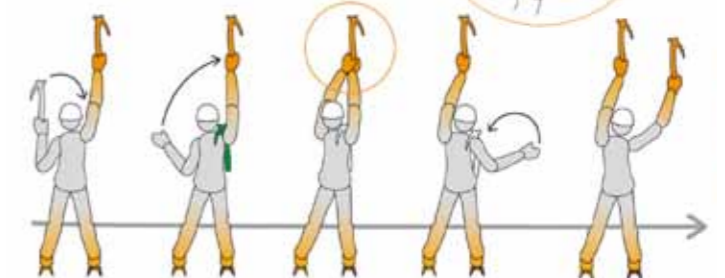
Resting positions.



Mantling.



Switching hands when traversing.



Clipping the quickdraw while dry tooling.

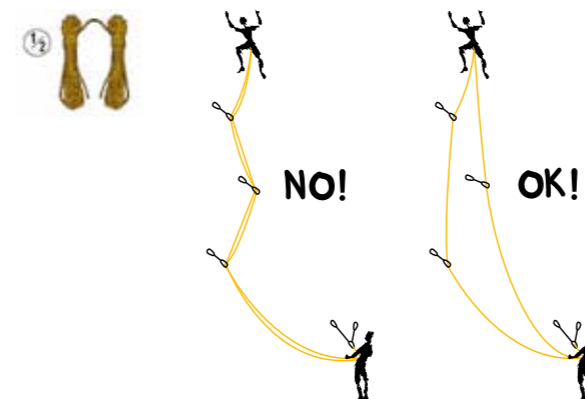
Ice axe in hand.



Ice axe on shoulder.

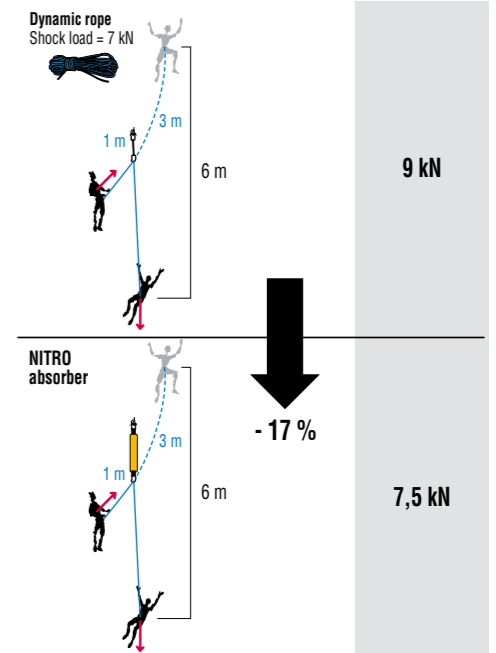


To reduce the shock force on the ice screws in case of a fall, clip the ropes in alternately along the route.



Shock force reduction on directional anchor with energy absorbing quickdraw.

Fall factor: $6/4 = 1.5$

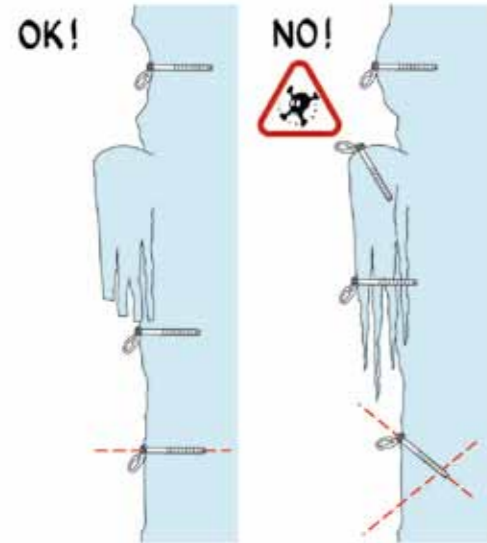


Comparison of shock force with and without an energy absorber.

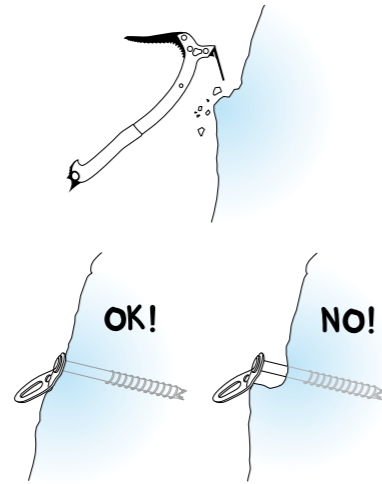


C. Ice screws

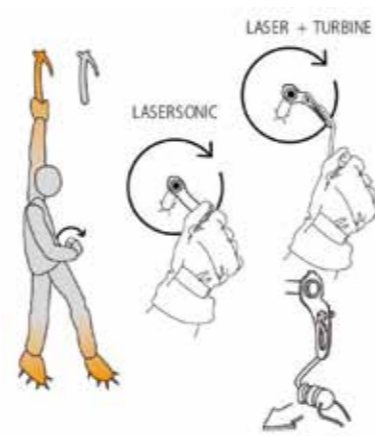
Ice screw placements.



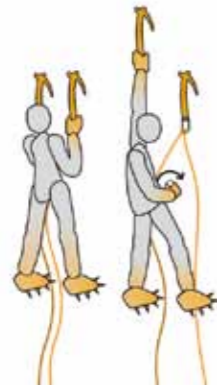
Clean the placement area.



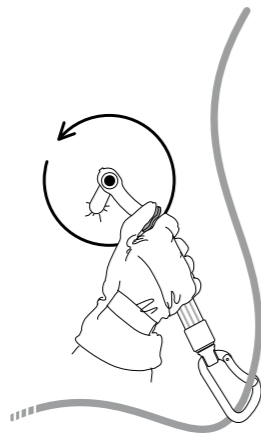
Place the ice screw at hip height.



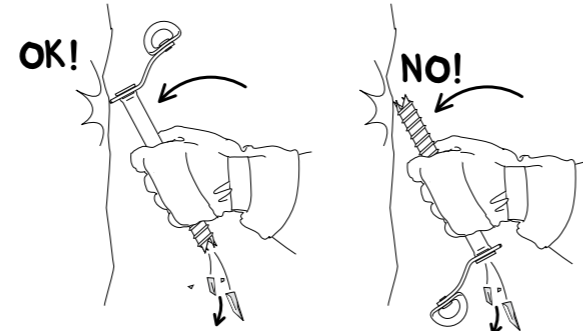
Temporary protection while placing a screw.



Unscrew the LASER SONIC ice screw without unclipping the rope.



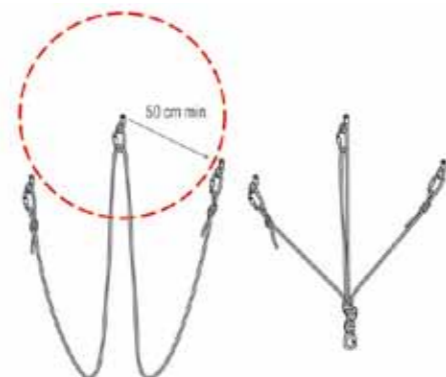
Empty the ice screws, protect the teeth and threads.



Two-screw belay.



Three-screw belay.

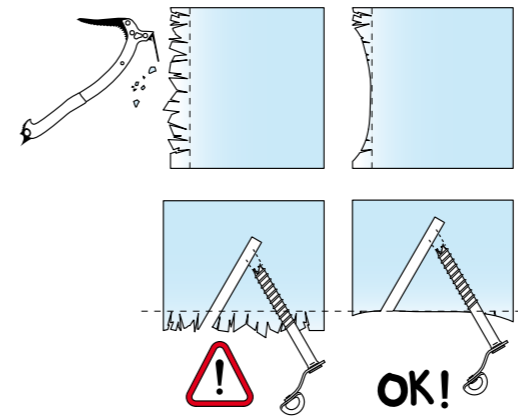


Make sure the belay is in the right spot.

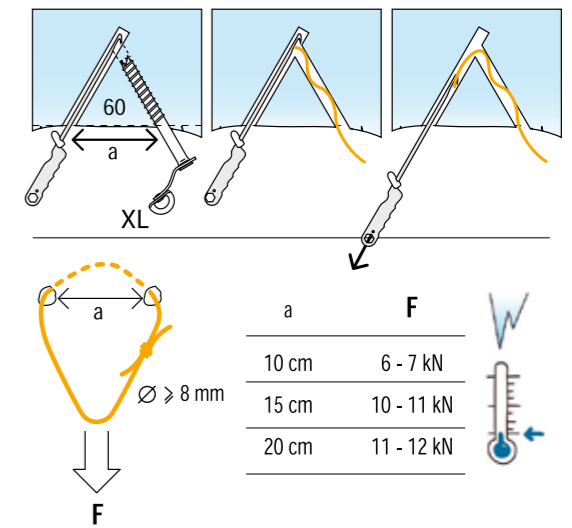


D. Ice threads: preparing the anchor for the rappel

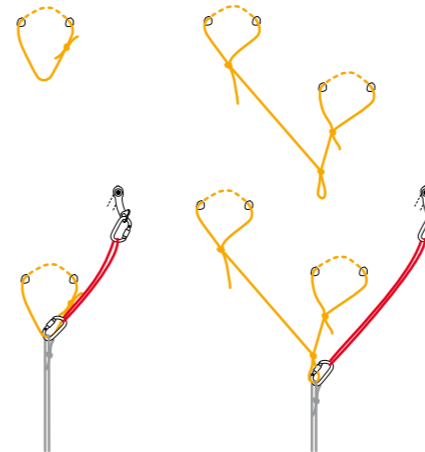
Clean off any fragile surface ice to create an ice thread in more compact ice.



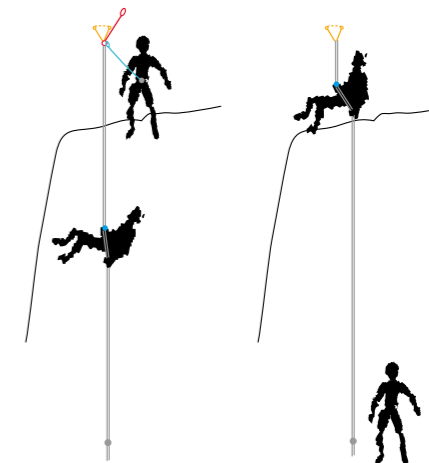
Building an ice thread anchor.



Depending on the ice quality and temperature, make one or several connected threads. Connecting the ice thread with one or more ice screws for rappels.



Rappel on ice thread. The leader descends on ice thread and ice screws. Once the thread has been tested, the second pulls the screw(s) and descends.



What's the best solution? wonders Yann Mimet on the pillar of Babylon, VII, 8, in the Number Three Gully at Ben Nevis.



Big wall

Waypoint Namibia

What makes a climb impassable? I'm 215-meters up a first ascent of a granite crack climb in the heart of Namibia, and all I have to hold onto is a bush. Lots of bushes. Trees, too. In order to get where I'm going - the summit - I need what's behind the bushes, the thing these bushes are choking, the thing that I have travelled 15,400 kilometers by plane, truck, and foot for: a perfect crack.

Namibia is not known for its climbing, which is exactly why I wanted to go there. It's better known as Africa's newest independent country, the source of the continent's largest stores of uranium and diamonds, the Namib Desert, the Skeleton Coast, and its tribal peoples. Previously known as Southwest Africa, this former German colony and South African protectorate holds some of the most coveted, and least visited, natural sites in Africa. In the middle of all of these lies Spitzkoppe, a 500-meter granite plug with over eighty established climbs. When I learned about Spitzkoppe in December 2007, I automatically started wondering what else might be possible to climb in Namibia. I pick unlikely climbing destinations because I want to learn what happens on the margins of adventure. War, apartheid, and remoteness have all combined to keep many of Namibia's vertical landscapes relatively unexplored. When I found an out-of-focus photo of a 1,000-meter granite prow with a mud Himba hut in the foreground, I knew I had found my objective. The Himba are southern Africa's largest pastoral tribal group and have maintained their strong cultural identity despite being on the borderline of battle, resources, and landscape.

I wanted both of the things I saw in that photo: the culture and the climbing. We focused our expedition on getting there - to the Marienfluss Valley - and arrived after five long days on dirt roads averaging, at times, 15 km/hour for entire days of driving. It only took us fifteen minutes to realize that our climbing objective would be unwise. We were eighteen days into our expedition. We turned to the Himba instead.



© Peter Doucette



We learned how to mix butterfat and ochre into a paste to protect ourselves from the sun, how to track shade in 45-degree heat, and when to adapt a goal and opt for understanding. Maybe, in the end, that final action gave us the Southern Crossing. After a few days, we left the Himba and the north to try one more region for climbing: the Brandberg, Namibia's highest peak. We had passed it on the way to the north. We came back to give it more attention. And that's how we got to the bushes.



The anti-bush brush after the testing phase!

We, at that point, were Peter Doucette and I. Kate Rutherford, our other team member, was temporarily laid up in camp with a watery stomach. We were on the Orabeskopf wall, which rises just under 600 meters to a summit of 2,200 meters. It's pure granite. It's riddled with cracks, it's steep, and it's in the shade all day, every day. It had been climbed once before in 1974, when R. Lichman and R. Blumgart ascended the long, central chimney system to the summit. The remoteness of the cliff has largely kept it off climbers' radars and out of the realm of possibility due to the four-wheel drive road, four-hour approach, lack of water, and technical descent. But to us, it was far more feasible than the wall in the northwest. We'd started with a reconnaissance trip and had come back with six days of food, a triple set of cams and nuts, twelve bolts, seven hangers, a hand drill, and a single set of pins. We had exactly one week before we were all to fly back across the Atlantic.

Our first day on the climb, we went all of 60 meters. It took us over two hours to navigate a 10-meter-tall loose block that threatened to keep us from ever climbing a second pitch. There were bushes down there as well - bushes we would later learn were novice bushes. Peter and I quickly developed a routine of finding a stance with our feet and one hand, and using the other to attack the offending foliage, sometimes with a nut tool. We had one goal for those first two days: to make it to the brilliant orange and green corner above. This right-leaning, hanging corner was the first feature I'd picked out on the face as climbable. From the moment I saw it I knew that if we got there, we'd find

success. Looking back at that first moment, I remember seeing the bushes. I remember thinking they were fairly regularly spaced. I remember thinking: that might take some work.

"I learned just what that work would mean in the last hours of daylight on our second day, starting into the hanging corner. It took me thirty minutes to go three meters."

The bushes I'd spied from below were the ones that grew out of the crack. What I could not see were the bushes filling the crack. These didn't move with the force of my hand. They laughed at my nut tool. They only yielded to the hammer. And then I had to reverse these steps to make the crack passable; using the nut tool at the next layer, then my fingers, and finally even my fingernails to scrape the root systems from the inside of the crack. Once I cleared the way, I got a finger jam or hand jam, a piece of protection, and the possibility of turning my attention to my feet.

2009 was the wettest fall on record for Namibia in over two decades. Before climbing on Orabeskopf, I thought this was a good thing. By the fourth time I had dug my hand into the root system of a prickly succulent surrounded by maggot-like beetles, I reconsidered my opinion. Any other crack, and I would have given up. But this one had started to matter; this one had become personal - this one was shaping into a phenomenal climb. Peter and I fought our way over those precious 70 meters for a total of eight hours in two days. The belayer would mark the climber's progress with the telltale streak of black silt raining down the face below the crack. For the climber, progress was directly proportional to a tolerance for ingesting bird excrement and dirt.

Each night we came back to camp by the light of our headlamps, filling our water at a 25 x 75 cm hole along the way, so that we carried up to 18 liters on each trip home. It was winter in Namibia, and we only had twelve hours of daylight a day. By 6:00 pm, we'd be emptying our pockets of the wrappers from

Peter Doucette looks for the crimpers on Herero Arch, 5.12b/A1, on the incredible domes of Spitzkoppe.



© Gabe Rogel



The Himbas dye their skin red with a paste composed of animal fat and hematite powder.

our day's ration of bars and starting in on dinner. By 6:30 we'd be nursing cut hands and expectorating noses in the tent. And we'd be happy.

I didn't expect to find great climbing in Namibia. I expected a brief stint of good climbing, followed by a long search for what would likely be passable climbing. I was going to Africa, after all, to do first ascents. I was going to Africa, after all, to merge climbing and culture. I'd done this before, in Ethiopia and South Africa, and I knew to keep my climbing expectations low and my life-broadening hopes high. And maybe, somewhere along the way during the 30 days of 45 degrees, dirt roads, and crumbly faces leading up to that final day of climbing, I had told myself that utter climbing success would be impossible. I didn't say it out loud, thankfully, because if I had, we might not have found Orabeskopf. And we might not have found a climb that was far more than passable, and was maybe even great.

On the last day of our expedition, we woke up before dawn and placed our homemade grass brushes in our backpacks, filled our water,

and hiked for the last time across talus and grassy slopes filled with puffed adders, horned adders, and spitting cobras. We made it to the base and racked up. We started from the bottom and climbed thirteen pitches to the top without stopping. I sank my hands into freshly cleaned cracks and smiled at the grit that still pressed into my flesh. I brushed, blew at, and kicked the dirt off footholds - dirt we had put there from our efforts at the crack hanging above. We chimneyed, off-widthed, jammed, laybacked, and stemmed to the top of Southern Crossing, V, 5.11+. It's climbing I would travel to do anywhere.

Majka Burhardt

Majka Burhardt is a writer, climber, and guide living in the United States and traveling the world in search of places where climbing and culture collide. Learn more about Namibia, including the upcoming film about the expedition, at www.majkaburhardt.com

Peter Doucette in the chimney of Painted Giraffe, 5.9, at Brandberg.



© Gabe Rogel

Big wall products



CALIDRIS

The waistbelt and wide leg loops of the CALIDRIS provide all the comfort, support and ventilation needed for long aid routes and other activities requiring extended periods of hanging (cleaning and equipping routes, etc.). Lightweight and comfortable, with large gear-carrying capacity, it is perfect for big wall climbing. The CALIDRIS is sized to fit larger users for all types of climbing. Frame Construction technology: bias webbing transfers load and distributes pressure over entire surface area of the waistbelt and leg loops. DoubleBack buckles adjust the leg loops for total comfort when suspended. Dual waist buckles allow tie-in point to be centered and equalize the equipment loops. Reinforced tie-in points for increased durability in this high-wear area. Multiple options in the front and back for organizing and carrying gear. Two CARITOOL slots.

Reference: C57
 Sizes : 1 and 2
 Weight: 600 g, 685 g



• Frame Construction Technology with central reinforcement and large capacity equipment loops



• Lateral slot for CARITOOL tool holder



ALTIOS

Ultra comfortable multi-purpose helmet. The hybrid suspension system, composed of a mesh panel and expanded polystyrene liner, makes this helmet extremely lightweight and comfortable to wear. Helmet 'floats' above the head. The space between the head and the liner allows for effective ventilation with the Climate Control System. Durable ABS shell. This helmet is very ergonomic, adapting to any head shape, and offers two options for attaching a headlamp: clips or a removable ADAPT system-compatible mount. Easy-to-use molded adjustment wheel quickly dials in the headband size, even while the helmet is being worn. Adjustable chinstrap, nape height and headband for an extremely comfortable fit.

References: A450R - A45PL - A45WH
 Available in two sizes:
 - size 1: 48-56 cm (weight: 305 g)
 - size 2: 53-61 cm (weight: 335 g)



GRIGRI®

The GRIGRI's self-braking function helps the belayer catch and hold a climber. Ergonomic design. Also great for rappelling on single ropes. Use is similar to that of conventional belay devices: paying out rope is done using both hands; arresting a fall is done by holding the free end of the rope. For lowering and rappelling, the rate of descent is controlled by the hand holding the free end of the rope (the rope is released with the handle).

References: D14 - D14 B - D14 R
 Weight: 225 g
 For use with single ropes between 10 and 11 mm in diameter

PRO TRAXION

Very efficient progress capture pulley. The PRO TRAXION is designed for hauling heavy loads and is ideal for aid climbing and rescue. Highly efficient large diameter sheave mounted on sealed ball bearings. Trigger cam with teeth and cleaning slot works even on dirty or icy ropes. Swinging side plate permits the rope to be installed once the pulley is in place. Auxiliary attachment point for creating different types of hauling systems. Cam can be locked in open position so device can be used as a simple pulley.

Reference: P51
 Weight: 265 g
 Efficiency: 95 %
 Working load as pulley only: 3 kN x 2 = 6 kN
 Breaking strength as pulley only: 11 kN x 2 = 22 kN
 Working load as self-jamming pulley: 2.5 kN
 Breaking strength as self-jamming pulley: 4 kN
 For use on ropes between 8 and 13 mm in diameter



• Integrated cam.



• Aluminum sheave mounted on sealed ball bearings

ASCENSION

Ergonomic handled rope clamp for rope ascents. The performance of the ASCENSION has been refined to provide greater comfort, efficiency, ease of use. The ergonomically shaped handle is over molded with dual density grip for greater friction and better grip. The grip is wider at the bottom, providing better comfort for your fingers during use. The index finger indent has also been increased, offering greater efficiency when pulling on the ascender. The cam's angled teeth provide secure grip in the worst conditions while reducing the effort required to slide the device up the rope. The geometry of the single piece aluminum frame ensures optimal handle orientation when the device is loaded and will maintain solid, comfortable performance for ascents of any length.

References: B17SLN (left) - B17SRG (right)
 Weight: 195 g
 For use with ropes between 8 and 13 mm in diameter



At a belay on Southern Crossing.



© Peter Doucette



OWALL

The oval OWALL is a general purpose carabiner for trad and aid climbing. Oval shape is ideal for pitons, aiders, racking wired nuts and other protection. Great for racking. Keylock system.

Reference: M41
 Weight: 68 g
 Breaking strength:
 - major axis: 24 kN
 - open gate: 7 kN
 - minor axis: 10 kN
 Gate opening: 22 mm



OK

Many pulleys need an oval-shaped carabiner to work properly. The OK carabiner is designed for just that. It is also very useful at belays. Keylock system. Available with manual or auto-locking system.

SCREW-LOCK (M33 SL): 75 g
 TRIACT-LOCK (M33 TL): 77 g
 Breaking strength:
 - major axis: 24 kN
 - open gate: 7 kN
 - minor axis: 10 kN (M33 TL: 8 kN)
 Gate opening: 19 mm
 For more information on carabiner locking systems, go to www.petzl.com



WILLIAM

A large carabiner can come in handy in many places. The carabiner's shape and size make it useful for belaying and rappelling with the Munter hitch with single or double ropes, anchoring multiple ropes and slings and keeping the belay station organized. Pear shape also facilitates use with the Munter hitch for single or double ropes. Keylock system. Available with manual or auto-locking system.

SCREW-LOCK (M36 SL): 90 g
 BALL-LOCK (M36 BL): 94 g
 TRIACT-LOCK (M36 TL): 88 g
 Breaking strength:
 - major axis: 25 kN
 - open gate: 7 kN
 - minor axis: 7 kN
 Gate opening: 24 mm (TL and BL), 25 mm (SL)
 For more information on carabiner locking systems, go to www.petzl.com



QUICKSTEP

Adjustable single-step etrier for aid climbing. Rapid length adjustment via the DoubleBack buckle. Equipped with a STRING protection, which allows the carabiner to be held in position and protects the sling from wear. 3 mm hole in buckle for attaching a release cord to facilitate adjustment. Loop on the free end of the webbing for attaching a piton during placement. Foot retention system helps keeps your foot in the step while jugging.

Reference: C09
 Weight: 142 g



QUICKFIX

Adjustable positioning sling for aid climbing. Rapid length adjustment via the DoubleBack buckle. Equipped with a STRING protection, which allows the carabiner to be held in position and protects the webbing from wear. Attaches easily to the harness with a simple lark's head hitch. 3 mm hole in buckle for attaching a release cord to facilitate adjustment. Loop on the free end of the webbing for attaching a piton during placement. Warning: the QUICKFIX is not intended to hold falls and is not to be used as a lanyard (breaking strength 150 daN)

Reference: C09100
 Weight: 68 g



PAW S

Rigging plate for organizing the belay and creating a system with multiple anchors. Useful in aid climbing and for setting up Tyrolean traverses. Three anchor point holes. Helps to equalize loads. Lightweight and durable: made of aluminum.

Reference: P63 S
 Weight: 55 g
 Breaking strength: 36 kN



CORDEX PLUS

These medium weight belay/rappel gloves offer extra protection without sacrificing dexterity. Double-layer leather and padding protect the palm from heat generated during long rappels. Fingertips and other high-wear areas are reinforced for increased durability. The back is made of leather with abrasion-resistant stretch nylon at key flex areas. The low profile neoprene cuff with Velcro closure features a reinforced carabiner hole for attaching the gloves to your harness. Durable double layer of leather at high-wear areas: palm, fingertips, between thumb and index finger.

Available in four black sizes:

- S: K53 SN
- M: K53 MN
- L: K53 LN
- XL: K53 XLN

Available in five tan sizes:

- XS: K53 XST
- S: K53 ST
- M: K53 MT
- L: K53 LT
- XL: K53 XLT

BONGO

Piton hammer. For trad climbing, aid climbing or for equipping new routes. Rubber grip reduces vibrations. Hole in shaft for attaching a keeper cord. Hole in head for attaching a piton removal device. Curved head to facilitate piton removal.

Reference: P27
Weight: 680 g
Length: 33 cm



ROCPEC

Hand drill that accepts SDS drill bits. Can drill holes of varying depths and diameters for all types of anchors. Set-up and dismantling without the need for tools.

Reference: P26
Weight: 198 g



BANDI

The BANDI's classic round shape with reinforced large opening allows for easy access. It can be opened with only one hand. The closure system is efficient, thanks to a central cordlock, and it has an integrated emergency whistle. Reinforced rim maintains the shape of the bag. It is made of the same abrasion resistant material as our mountaineering range harnesses. Double loops for stability allow easy attachment to a belt or carabiner.

Reference: S38 P
One-size-fits-all



PITONS

For anchors or progression points in cracks. Range adapted to different types of rock: granite, limestone, hard rock. Can be placed and removed with the BONGO hammer. Hold by jamming or deforming. Available in numerous sizes.

V CONIQUE: 7 cm (66007), 11 cm (66011)
ROCHER MIXTE: 6 cm (65106), 8 cm (65108), 10 cm (65110)
LIVANOS: 4 cm (65504), 6 cm (65506), 8 cm (65508), 10 cm (65510)
UNIVERSEL: 5 cm (65406), 7 cm (65408), 9 cm (65410)
U: 10 cm (65312), 12 cm (65314)

FIXE *new*

The lightweight, compact FIXE pulley is designed for hauling systems and deviations. It offers a good balance between weight and strength. Fixed side plates allow quick installation and coupling with a rope clamp. Sheave mounted on self-lubricating bushings for efficiency.

Reference: P05S0
Weight: 90 g
Efficiency: 71 %
Working load: 5 kN (2.5 kN on one rope end)
Breaking strength: 23 kN
For use on ropes between 7 and 13 mm in diameter



SWIVEL S

Sealed ball bearing swivel. Positioned between the rope and the load, the swivel allows the load to turn without twisting the rope. Accepts up to three carabiners on the load side.

Reference: P58 S
Weight: 95 g
Breaking strength: 23 kN
Working load: 5 kN

TIKKA PLUS² *new*

The TIKKA PLUS² headlamp offers five lighting modes and integrates two light sources for versatility: one white, high-output LED and one red LED. The white LED delivers 50 lumens in maximum mode and lights up to 35 meters. In economic mode, it can reach a burn-time of 140 hours. The red LED provides spare lighting to preserve night vision or to become a strobe light for increased safety, for example in an urban environment, etc. The TIKKA PLUS² can be used with lithium batteries to decrease weight or increase performance in cold weather.

References: E97 PM, E97 PP
Degree of protection: IP X4 (Water-resistant)
Weight: 83 g including batteries
Light quantity: 50 lumens
Maximum lighting distance: 35 meters
Maximum light duration: 140 hours
For complete headlamp performance information, go to www.petzl.com



Other big wall products:

- CORAX comfortable and adjustable harness
- CARITool harness tool holder
- NITRO 3 energy absorber
- ATTACHE 3D ultralight carabiner
- LOCKER asymmetric carabiner
- SPIRIT carabiner
- ST'ANNEAU Dyneema sewn sling
- PROTEC rope protector
- GOUTTE D'EAU and REGLETTE progression hooks
- FIFI suspension hook
- MAILLON RAPIDE N° 5
- POWER CRUNCH chalk
- BOLTBAG equipment pouch
- BUG backpack
- SPATHA knife with carabiner hole
- POCHE TIKKA² pouch for compact lamps
- e+LITE emergency headlamp...

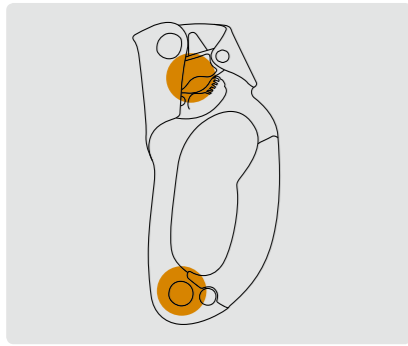
Find all products on pages 140 - 154.



© Gabe Rogel

Taking a break on the Spitzkoppe in Namibia.

Technical information **Checking your equipment**



Handled rope clamps

Handled rope clamps are submitted to rough treatment in aid climbing. They are used for ascending ropes and for hauling packs loaded with equipment. They therefore run over kilometers of rope and must be in perfect working order.

Before each use, verify:

- the general condition of your ASCENSION handled rope clamp: no cracks, deformities, or sharp edges on the frame. Check that the rope runs freely through the device. Inspect the cam stop.

- the condition of the cam. It must be clean, all teeth should be present and in good condition, no traces of wear or corrosion.

- connection holes

Test the functioning of the opening and closing mechanisms of the cam; do a test on a rope (with a back-up belay), check that the device blocks.

Retire your rope clamp after a major impact.

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information **Basics**

1 Prepare your equipment and provisions precisely

Get information about the equipment needed: adapt your equipment to the route you are planning to do, and don't forget the gear required if you need to retreat. Don't underestimate the supplies you will need (water, etc.). Anticipate the effects of isolation: a small injury can seem very big at the end of the world...

Spread the equipment, provisions and rescue gear between many packs so that everything is not lost if a bag falls.

2 Organize your gear

To be efficient on a big wall, you should organize your gear and distribute it to each climber according to his/her role. A well organized gear sling and harness will save precious time.

3 Establish a communication protocol

Communication is extremely important. It is essential to establish rules before starting. For example, when the leader says "off belay", the belay station is installed and the fixed ropes are anchored.

4 Set up solid belay stations

Be careful, on a big wall the station is used not only to belay, but also to haul bags, install a portaledge, etc.

5 Protect your ropes from rubbing and adapt your rope ascent technique

For fixed lines, think about setting up intermediate anchors, deviations, and rope protectors, or use a bag to protect a rub point. During an ascent, always stay on two independent systems (two ascenders or one ascender and one GRIGRI). Always remain connected to your ascender with a lanyard. Adapt your ascent techniques to the route's features. Ascender/ascender, ascender/CROLL, ascender/GRIGRI, ascender/CROLL with PANTIN (big overhang).

Beware: A fall, even a small one, on a webbing lanyard, such as a daisy chain or other such lanyard, may transmit an extremely violent shock to the harness and the climber.

Technical information **Tips**



A. Pitons

The strength of a piton placement depends on the shape of piton, how it is placed, rock quality and the experience level of the climber that placed it.

Working principle: during a fall, the piton must lock into the crack. Force (F), applied to the carabiner torques the piton blade. This torque locks the piton into place. A piton placement must not rely only on friction or compression.

Well placed pitons.

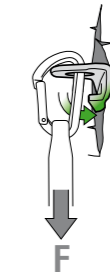
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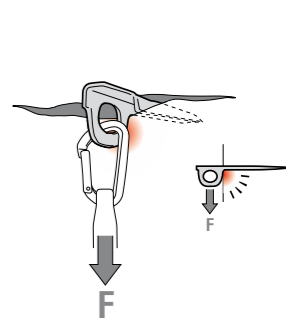
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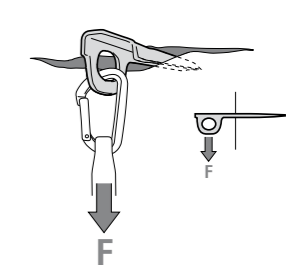
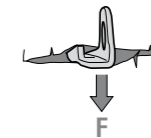
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OK!



Poorly placed pitons.



Clipping pitons.

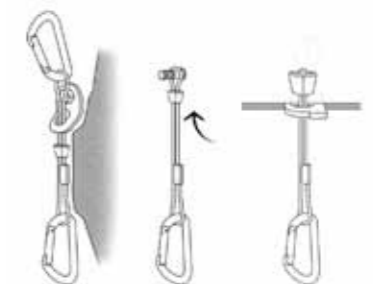
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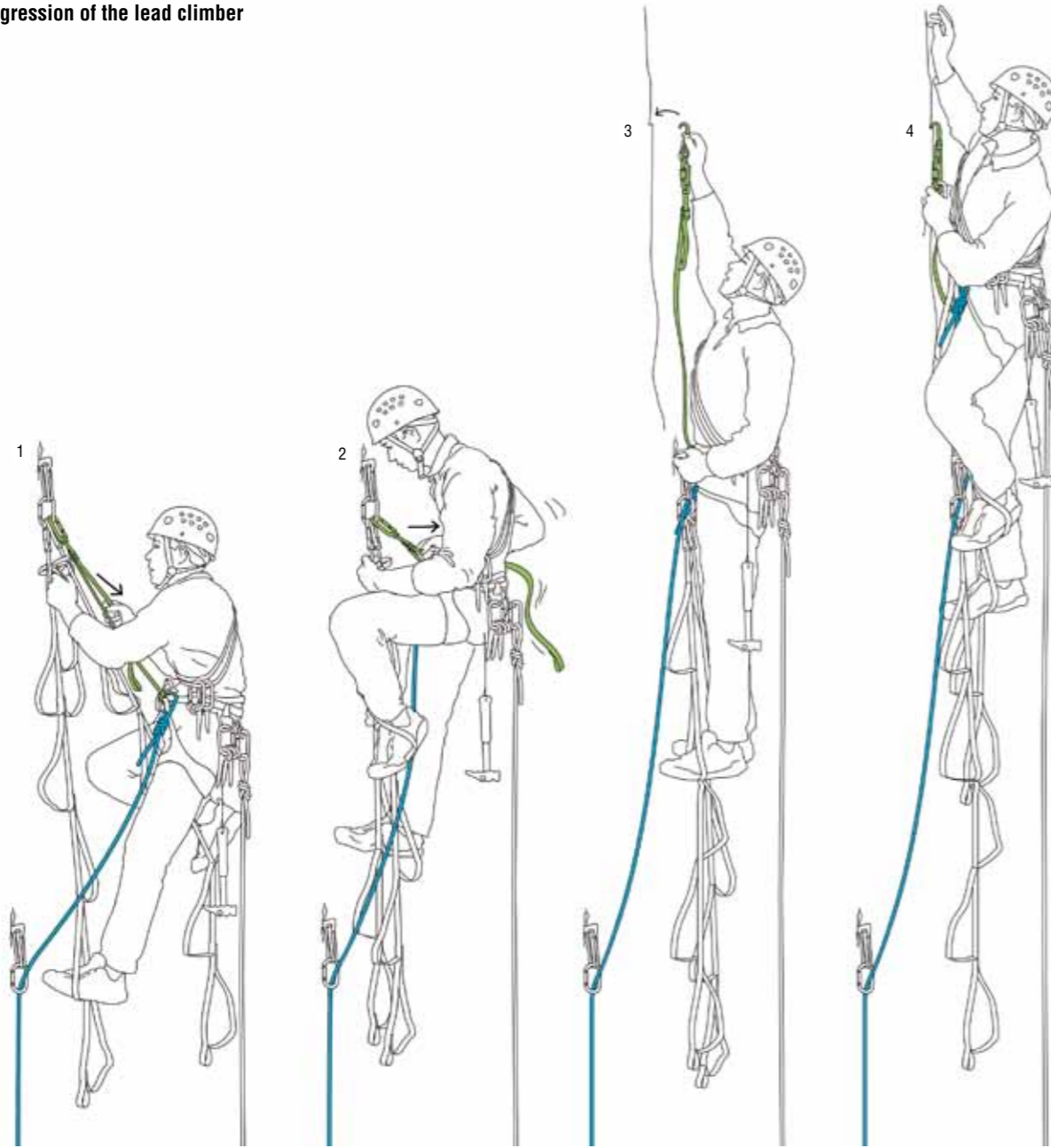
NO!



Tip: clipping otherwise unusable anchors



B. Progression of the lead climber



Peter chimneying on Southern Crossing.



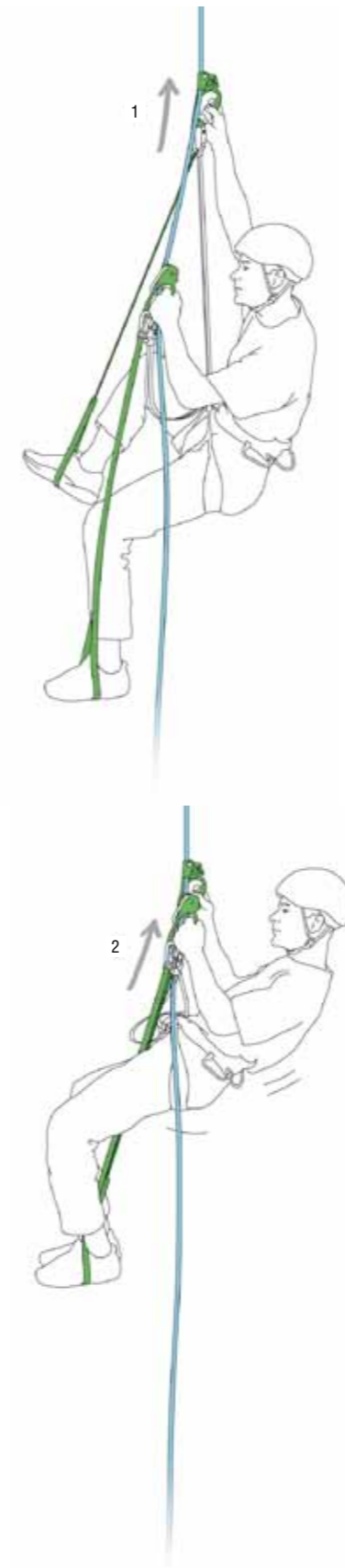
© Peter Doucette

Majka Burhardt on Southern Crossing, P5.

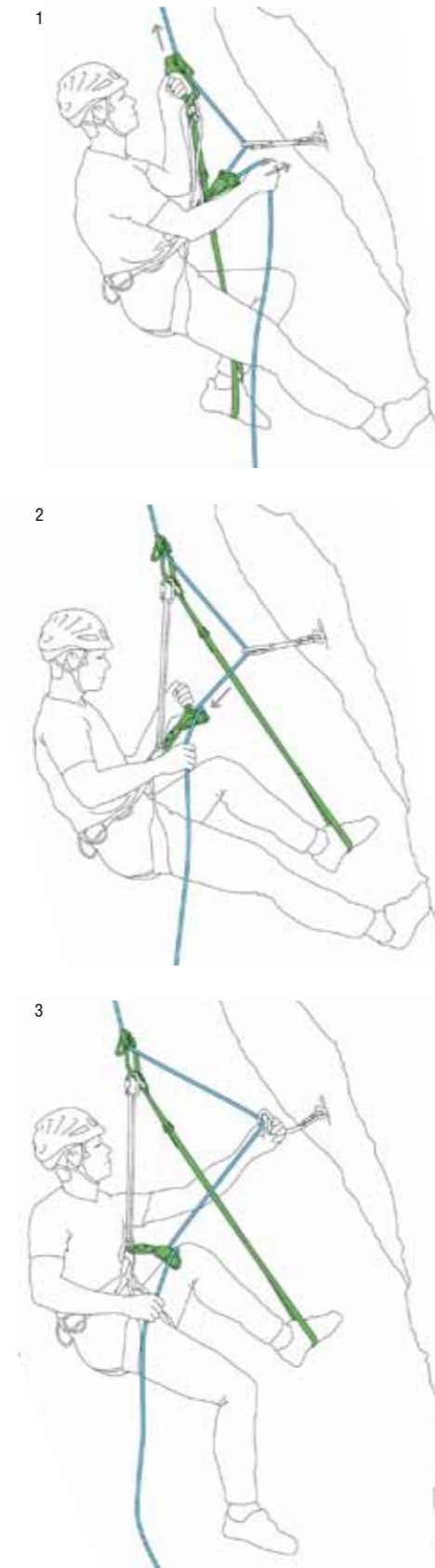


© Peter Doucette

C. Ascending the rope: double ascender technique



D. Cleaning an aid route with the GRIGRI



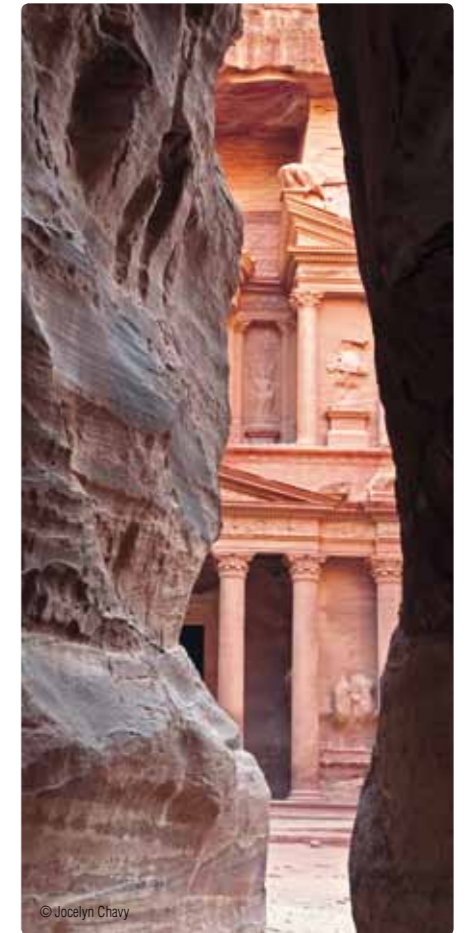
E. Hauling a bag with a progress capture pulley





© Jocelyn Chavy

El Khazneh, the Treasury, looms at the exit of Siq de Petra.



© Jocelyn Chavy

The imprint of thousands of years in the wild Wadi Hasa.

Canyoning, Jordan

Pearls of the desert

Or how following the course of the Wadi Mudjib becomes a lesson in history, with thousand-year-old ruins and a tea kettle at the bottom of a bag. And you really thought there was no water in the desert?

See you in Alaska! With those words, Nasser said goodbye. A joke that says a lot about Bedouin humor since the temperature had been hovering around 38 °C (100 °F) for the last two weeks. To say that Petra – the city of the Nabataeans – is his kingdom doesn't really tell the whole story. An archaeological treasure, Petra is an ancient city that is not defined only by Al-Khazneh (the Treasury), the magnificent tomb that decorates the canyon of Petra. Dozens of mausoleums, cisterns, an ancient theater, a Byzantine church, majestic temples, and altars on the tops of sandstone towers are evidence of many centuries of opulence.

If you look at a satellite map, you will quickly see the clever strategy of the nomads who decided to settle in Petra over 2500 years ago. Situated between the desert to the east, and the ribbons of mountains wrinkled with canyons to the west, north and south, Petra is a natural fortress. Goods travelled through Petra and were exchanged there, as the crossroads of ancient trade routes: spices and silk from the Orient, and specially incense, valued for its sacred and medicinal purposes.

That particular morning, with the sun already high in the sky, Nasser drove me to Djebel Khubtha, where on the summit the Nabataeans who were living there two thousand years ago performed their sacrificial rituals. I had also come to get a look at Al-Khazneh from above, hidden in the Siq and discovered in 1812 by Jean-Louis Burckardt, a Swiss disguised as an Arab, and also illustrated by Hergé in his comic book, *The Adventures of Tintin: The Red Sea Sharks*. The Siq is the canyon of Petra, a gorge a few meters wide winding between cliffs, and is so narrow that the sky is barely visible. It's just wide enough for a carriage drawn by two horses.

When canyoning, Nasser Albedoul never leaves without his teapot!



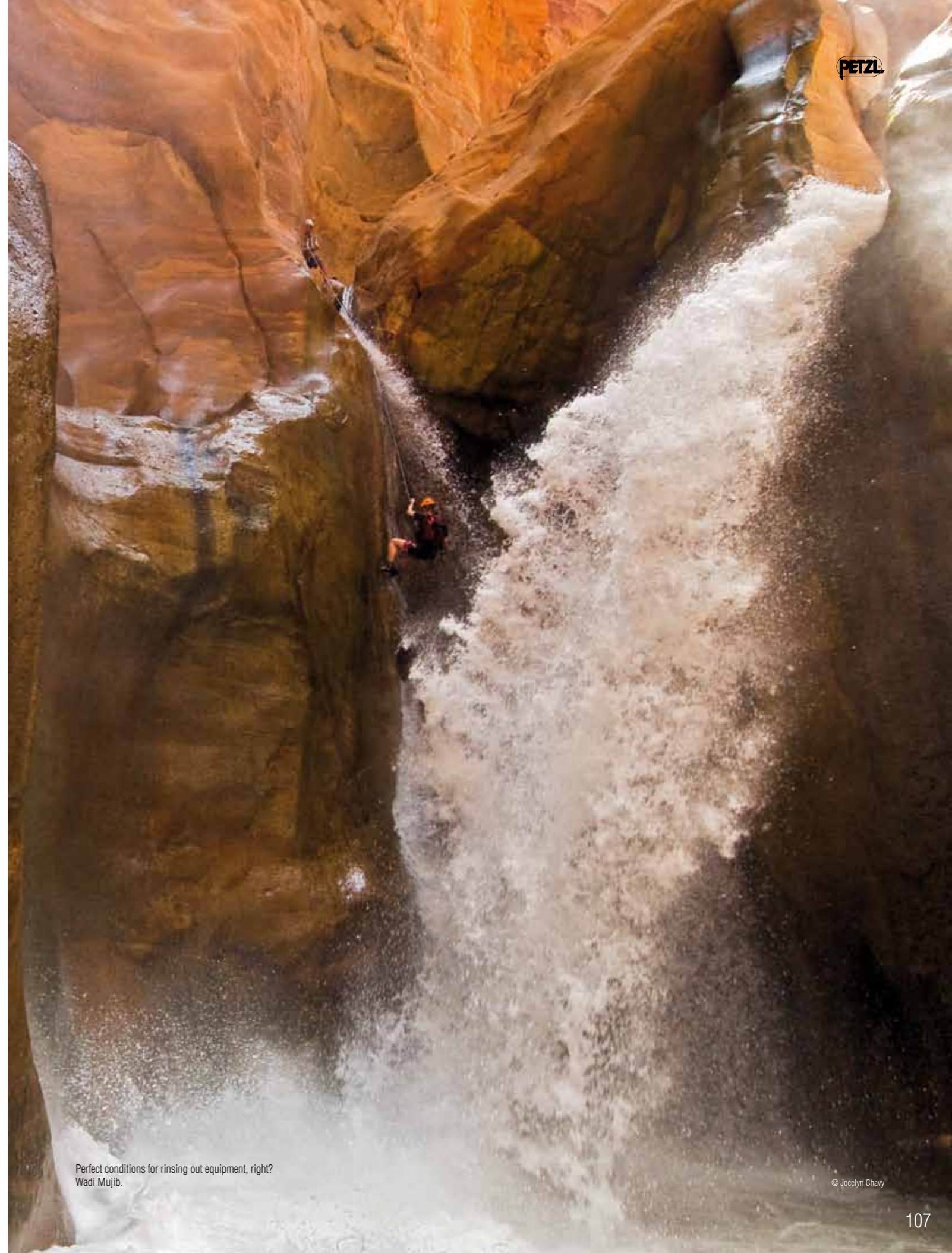
Mahmud Al-Nawasreh, guide at the Wadi Mujib Nature Reserve.



An easily defendable natural access, a trap for attackers as well as for the inhabitants of Petra when the floodwaters would come rushing in furiously between the cliffs.

"The narrowness and length of the canyon have left impressions since the dawn of time, with mentions in the Torah and the Bible."

This thought crossed my mind as the powerful waters of the Wadi Mudjib welled up between the high cliffs. It's as if the compact, chaotic mass of rock of the mountain had been split by a sword; ten-, twenty-, one-hundred-meter-high slices of sandstone piled on top of one another, melted together, then pushed around by the forces of the earth. The desert's white light of the evaporated. The dust of the trail vanished into the milky waters laden with alluvial deposits that color it turquoise. When the water got to mid-thigh, you could still remain lost in your thoughts, but when the water is waist-deep, you know it's time to think about escaping to the shores of the canyon. It's better to downclimb a few giant boulders than to swim between them. "Stay focused. The river looks calm, but in some places the current is powerful. Watch out for siphons!" insisted Mahmud Al-Nawasreh. Athletic and familiar with the infernal roaring of the water at the approach to the fifteen-meter waterfall in the middle of the canyon, Mahmud has worked for nine years for the Royal Society for the Conservation of Nature. The Mujib canyon is part of a natural reserve containing a particularly rich assortment of fauna and flora: birds like the bearded vulture and the Nubian ibex (reintroduced successfully), as well as aquatic plants, which can all survive due to the permanent supply of water. The official entrance to the canyon - in reality, the last part of it - is impressive; as impressive as its exit, encased between two-hundred-meter-high cliffs. The narrowness of the canyon and its length have left impressions since the dawn of time and have inspired its inclusion, under the name of Arnon, in the Torah and the Bible (see for example the Book of Isaiah, chapter 16, or the Book of Numbers, chapter 21). In ancient times, crossing the Arnon was no small feat, as the canyon was supposed to have marked the border between the kingdoms of Edom and Moab, rivals of Israel, with its waters emptying into the Dead Sea. Moses himself, having been refused passage to the Orient over the salty shores of the Dead Sea by the Edomites, had to go back up over the tops of the mountains and across the desert instead. The barren crests and piles of rock carpeting the slopes that surround this plateau, on which one can find ancient cities like Madaba, offer no hint of the Bedouins' most precious commodity: water. Hundreds of meters of downhill of the plateau, water flows abundantly, creating exuberant gardens of oleander.



Perfect conditions for rinsing out equipment, right? Wadi Mujib.

© Jocelyn Chavy



Salam Hilwa in the shower, Wadi Karak.



Adventure in the majestic Wadi Mujib.

To descend to the bed of the Wadi Ghuweir, located to the south, you have to look for ancient Bedouin trails, furrowed by the violent winter rains and now abandoned, except by a few shepherds, whose tents still dot the mountain hollows. The narrow sides of the canyon seem to have been decorated with psychedelic ferrous oxide illuminations; strange arabesque tracings in the rock. The tight space hides the relentless sun. The water follows its sometimes secret course, disappearing under the boulders, only to reappear around the bend. Its destination is no mystery: it is the Dead Sea, tapped upstream by the Jordan River, and presently dropping by one foot per year. The lowest place on earth, 418 meters below sea level, is becoming lower and lower.

At night at the bivouac, it was time to make some decisions: will tomorrow's canyon, like today's, be even more beautiful than the one before? Will it be the Wadi Hasa, a long, two-day meander in the intimate heart of the desert, or the Wadi Karak, punctuated with a series of waterfalls? Nasser would surely choose the Wadi Daba or Wadi Ibn Hammad,

their warm springs reputed for their thermal properties, proof of the intense tectonic activity of the region. Known since ancient times, these thermal sources were used by the Bedouins for bathing and healing, with water temperature sometimes reaching over 45 °C.

Tomorrow will start with a solid breakfast of hummus, a garlic-flavored chick pea purée spread on slabs of bread dipped in oil, cheese, some olives and maybe an egg. And Nasser will do what he usually does; he will pack a bag full of tea leaves, a pound of sugar, some matches and his smoky black tea kettle. At noon, some wood and three stones will create a nice break in the shade of an overhang if the matches haven't gotten too wet. Tonight, while I'm immersed in the Seven Pillars of Wisdom, an autobiography by T. E. Lawrence, Nasser will go home to Petra, the abandoned kingdom where this famous British officer became Lawrence of Arabia, and where Nasser's family has lived for ages. Or to put it more accurately, he'll go to the village recently built beside it.

Until 1982, Nasser Albedoul's family lived like other families, their goats passing by the Umm al-Biyara necropolis at the heart of the ruins of Petra, between an ancient theatre and a Byzantine church.

Jocelyn Chavy

Canyoning products

CANYON®

Whitewater cascades, rappelling, jumping... this is the domain of the CANYON harness. Rugged, non-absorbent materials ensure lightweight longevity for all your aquatic adventures. Removable and replaceable PROTECTION CANYON seat cover protects the wet suit from abrasion. Wide foam waistbelt provides support and comfort. Dyneema-reinforced attachment point is positioned high for comfort during rappels. DoubleBack buckles on the waistbelt and leg loops. Reinforced equipment loops.

Reference: C86
One-size-fits-all
Weight: 700 g



PROTECTION CANYON®

Replacement protective seat for CANYON harness

Reference: C86400
Weight: 170 g



ELIOS®

This versatile, low-profile helmet is easy to adjust, lightweight, comfortable and well-ventilated. The improved dial adjustment system is quick and easy to use, even when wearing the helmet. The combination of shell and foam technology makes it perfect for rock climbing, ice climbing, mountaineering, canyoning and caving. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. Chin strap position adjusts forward or backward for comfort, and side-release chin strap buckle is positioned off to the side and out of the way. Headlamp can be attached using the four optimally placed clips.

References: A42 W1 - A42 O - A42 B - A42 G - A42 A
Available in two sizes:
- size 1: 48-56 cm (weight: 280 g)
- size 2: 53-61 cm (weight: 305 g)



• Single Dyneema tie-in point.

• DoubleBack buckles on the waistbelt and leg loops.

PIRANA

Designed for canyoning descents, the PIRANA descender offers multiple braking options and can be installed on the rope without removing it from the harness. Three different braking positions to select from before beginning a descent. Two supplementary braking spurs allow friction to be varied during descent. Using a carabiner with a cross-section of 12 mm (e.g. ATTACHE) in the attachment hole creates a "rigid" carabiner / descender unit. Reduces the risk of leverage on the carabiner gate due to poor positioning. The PIRANA stays attached to the harness during rope insertion, to help prevent loss. The PIRANA helps prevent the formation of a lark's head hitch around the body and reduces rope twisting, without decreasing braking friction.

Reference: D05

Weight: 90 g

For use with single ropes between 8 and 13 mm in diameter. Can be used on double ropes, but certain braking positions may not be usable depending on the rope's diameter.

For use with a locking carabiner having a 12 mm cross-section (ATTACHE or WILLIAM).



ATTACHE

The size and shape of this locking carabiner make it popular for many uses: attaching a PIRANA descender, connecting a belay device to a harness, belaying with a Munter hitch and as a multi-purpose carabiner for use at belay stations. Compact, lightweight and easy to handle. Pear shape facilitates belaying with the Munter hitch on single ropes. Keylock system. SCREW-LOCK locking system with lock indicator.

Reference: M35 SL

Weight: 80 g

Breaking strength:

- major axis: 23 kN

- open gate: 6 kN

- minor axis: 7 kN

Gate opening: 20 mm



HUIT ANTIBRULURE

Anodized descender with anti-burn tab for holding the device when it is hot from a long or rapid descent. Square shape to reduce twisting of the ropes and formation of a lark's head hitch. High strength forged aluminum. Small hole can be used with thin ropes if necessary, or as a belay plate.

Reference: D01

Weight: 110 g

For use on ropes between 8 and 13 mm in diameter



ANNEAU

Sewn polyester sling to set up a belay or an anchor, or to extend an anchor point. Width: 19 mm. Available in five sizes.

Reference: C40

Sizes:

- 24 cm (weight: 26 g)

- 60 cm (weight: 58 g)

- 80 cm (weight: 80 g)

- 120 cm (weight: 98 g)

- 150 cm (weight: 133 g)

Strength: 22 kN.

Watch out for the current and hidden siphons!



© Jocelyn Chavy

ALCANADRE

Comfortable pack designed for canyoning which includes an approach. Padded shoulder straps. Multiple drain holes in bottom and mesh side panel for rapid water evacuation. Holds three x 6 liter waterproof plastic containers.

Reference: S64

Weight: 700 g

Capacity: 37 liters

Height: 60 cm



ARTUBY

Canyoning pack with round base. Multiple drain holes in bottom and mesh side panel for rapid water evacuation. Two transport handles.

Reference: S63

Weight: 520 g

Capacity: 22 liters

Height: 60 cm



DUO® LED 5

Waterproof down to -5 m and sturdily constructed, the DUO LED 5 headlamp is perfect for canyoning. Its hybrid light source can be directed and adapted to the lighting needs: halogen lighting for focused, regulated, long-range lighting; LED lighting for long-duration proximity lighting. Comfortable and easy to use:

- adjustable and comfortable elastic headband
- on/off switch can be locked to prevent accidental operation
- light body can be tilted

Reference: E69 P

Weight: 300 g including batteries

Operates on four AA/ LR6 batteries (included), or with optional ACCU DUO rechargeable battery pack (E65100 2)

Degree of protection: IP X8 (waterproof down to -5 meters)

Light quantity: 40 lumens (5 LEDs)

Maximum lighting distance: 100 meters (halogen).

Maximum light duration: 65 hours (5 LEDs)

For complete headlamp performance information, go to www.petzl.com



PERFO SPE

Compact, light hand drill for self-drilling anchors. Fitted with a pivoting metal mini handle that facilitates grip.

Reference: P08
Weight: 208 g
Diameter: 8 mm



TAM TAM

Hammer for hand drilling anchors. Handle equipped with a 13 mm socket to fit 8 mm bolt heads. Hole in shaft for attaching a keeper cord. Wrist leash.

Reference: P16
Weight: 535 g



CHEVILLE AUTOFOREUSE

Self-drilling expansion bolt anchor. 12 mm diameter for an 8 mm threaded bolt. Bolt with integrated drill.

Reference: P12
Weight: 21 g



VRILLEE

Lightweight caving bolt hanger. Holds the carabiner parallel to the rock. An advantage for certain placements.

Reference: P13
Weight: 32 g



GO

Wide-opening oval maillon.

Reference: P15
Weight: 60 g

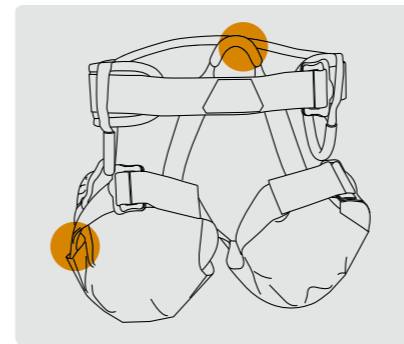
Other canyoning products:
- HUIT descender
- ST'ANNEAU Dyneema sewn sling
- e-LITE emergency headlamp...

Find all products on pages 140 - 154.



Mahmud Al-Nawasreh repeats technical instructions before diving into the big waterfall at Wadi Mujib.

Technical information **Checking your equipment**



During progression in a canyon, the equipment undergoes extreme use. The harness and all the equipment is put to a rough test: rubbing and repeated impact against the rock cause significant abrasion, particularly on slides. Alternating between immersion in water and then drying accelerates the wear on the fabric.

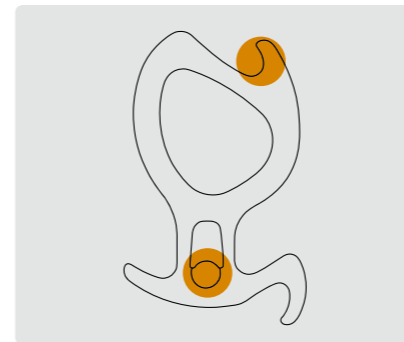
Harness

Before each use, inspect the general condition of the harness, the webbing at the tie-in points, the leg loops (check the webbing hidden behind the rear protection carefully) and the safety stitching.

Check for cuts, wear and damage caused by use (look out for cut or torn threads). Verify the functioning of the buckles and look for corrosion.

Descender

On the body of the descender (PIRANA or HUIT), check for excessive wear, cracks, or deep grooves caused by passage of the rope (maximum 1 mm). Also check for the presence and attachment of the plastic piece that keeps the carabiner in position.



Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Retire your harness or descender:
- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability
After each outing, clean and dry all equipment carefully according to the instructions in the technical notices.

... www.petzl.com/ppe

Technical information **Basics**

1 Prepare carefully for your activity

Consult the guidebooks and get information from other canyoneers. Evaluate the risk of flooding based on the weather and the chosen canyon. Leave early. Identify possible escape routes. Be aware of the risks of a dam being released.

Prepare your equipment carefully, measure the ropes (take a rappel rope that is twice the length of the longest rappel and a rescue rope equal to the length of the longest rappel). Spread the equipment and supplies among the team members so that it can not all be lost in one bag. Use waterproof containers to protect your belongings. Don't forget the mask, the bolting kit and the headlamps in case you return late. Pay particular attention to rescue ropes and equipment, and know where they are.

2 Know how to move through whitewater

Canyoning is fun, but water is nevertheless the biggest danger. Assess the water volume before committing to a descent. Be certain you know the high-risk zones: whirlpool, sump, suction, compression, fast current. Be careful with ropes, slings, packs and anything else that could get caught underwater. Warning: If there's a problem, you only have a few seconds to intervene. Don't lose sight of the rest of the team, specially the member at the back.

3 Always remain vigilant

Safety management is a team sport! All team members are involved. With routine and fatigue, we become less cautious. Remain attentive and check each other when installing ropes, attaching a descender... Determine the rules for visual communication (diving hand signals) with the entire team before setting off.

4 Install lifelines and rappels with care

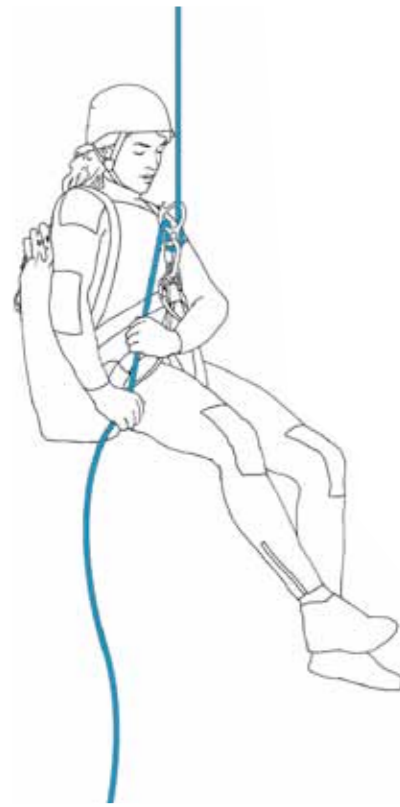
The aquatic environment is very hard on equipment, so verify the strength of the anchors, which could have been damaged by floods or corrosion. Beware of old slings and spinning bolts. Rappelling under waterfalls is a technical maneuver; always install a releasable system. Practice rescue maneuvers and releasing rappels ahead of time so that you can intervene immediately if one or more team members are trapped underwater...

5 Study the bottom before jumping or going down a slide

Avoid stupid accidents... an often-forgotten basic. The leader descends with a rope and inspects the landing zone with a mask. He can then confirm the absence of hidden obstacles in the water. Beware of high jumps even when the water is deep (an incorrect landing position can create a violent shock to the thorax and literally take the canyoneers's breath away).

Technical information Tips

A. Rappelling



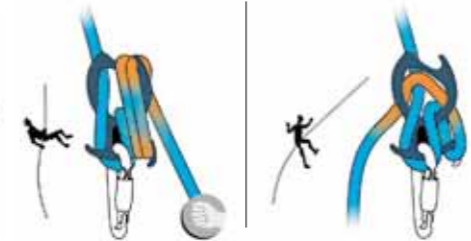
Braking positions



Additional friction

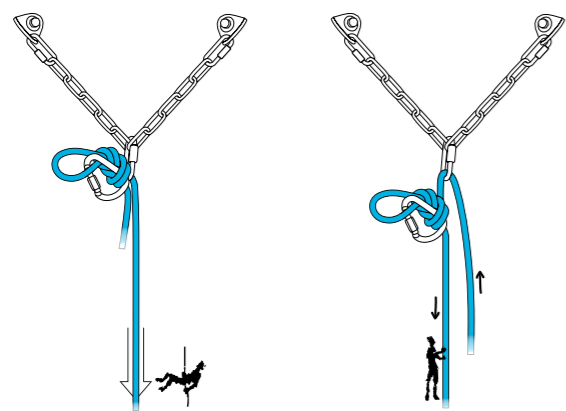


Stopping position

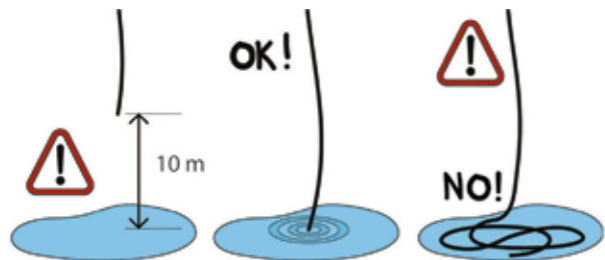


Blocked rappel

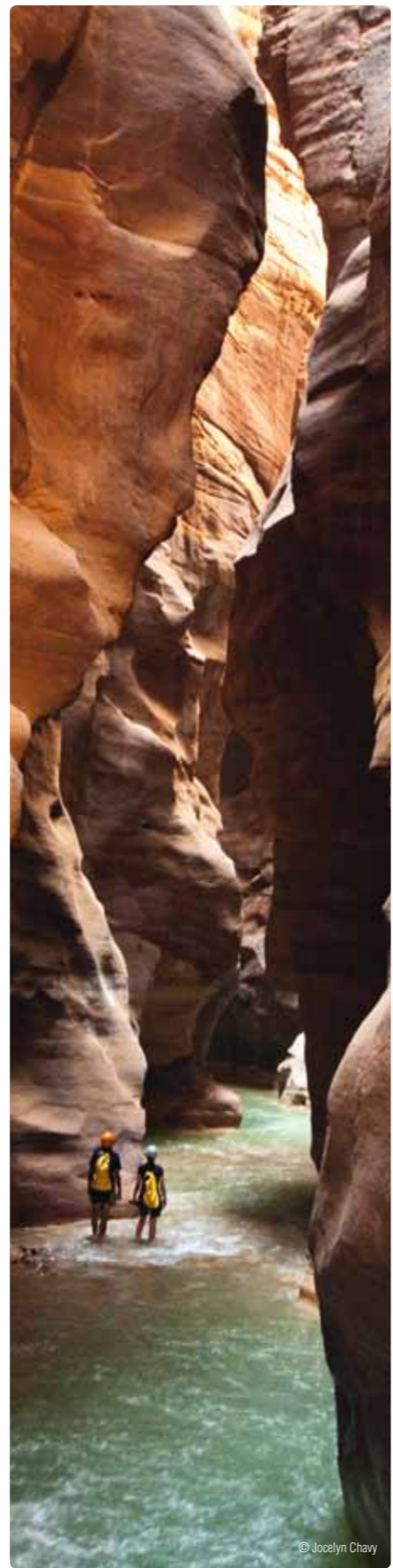
Technique allows the knot to be easily untied.



Make sure the length of the rope is correctly adjusted.



Voyage to the center of the earth: Jules Verne would have loved it...

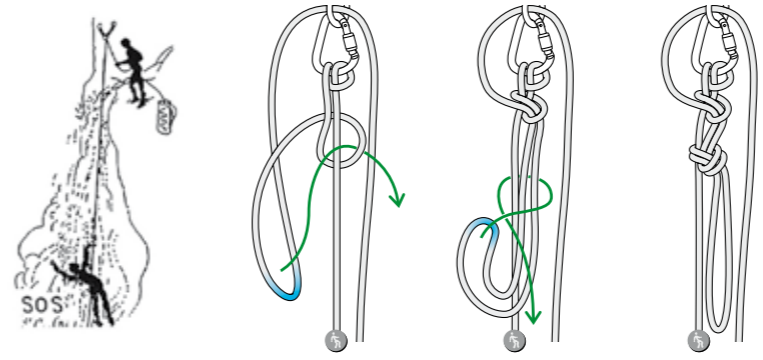


© Jocelyn Chavy

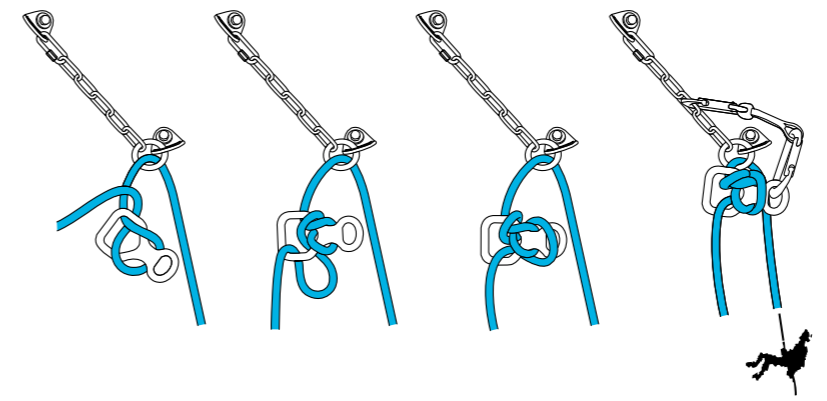
Releasable rappel
These systems allow the friction point of the rope on the rock to be moved or to release a stuck team member.

Two solutions:

- Munter hitch with mule knot and locking knot



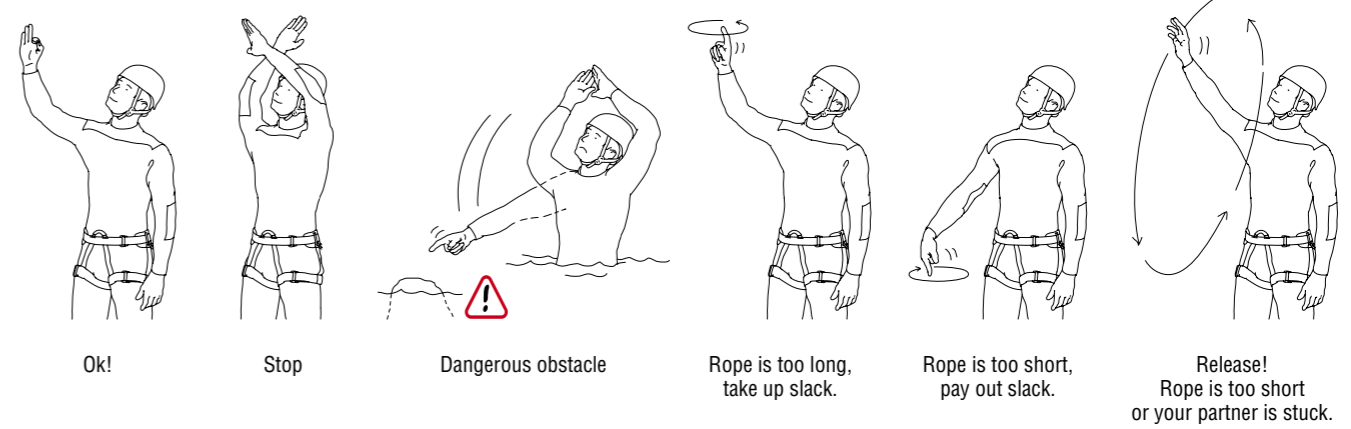
- releasable block using a Figure-8 device



Releasing a stuck partner.



B. Communication

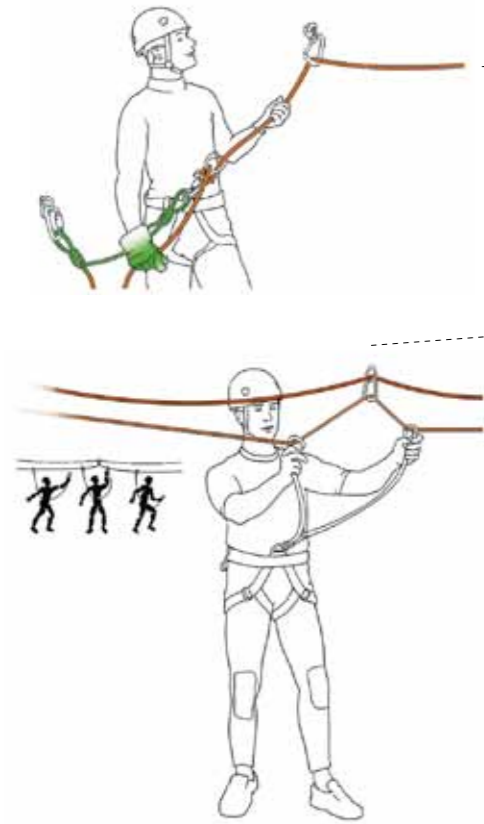


C. Horizontal progression

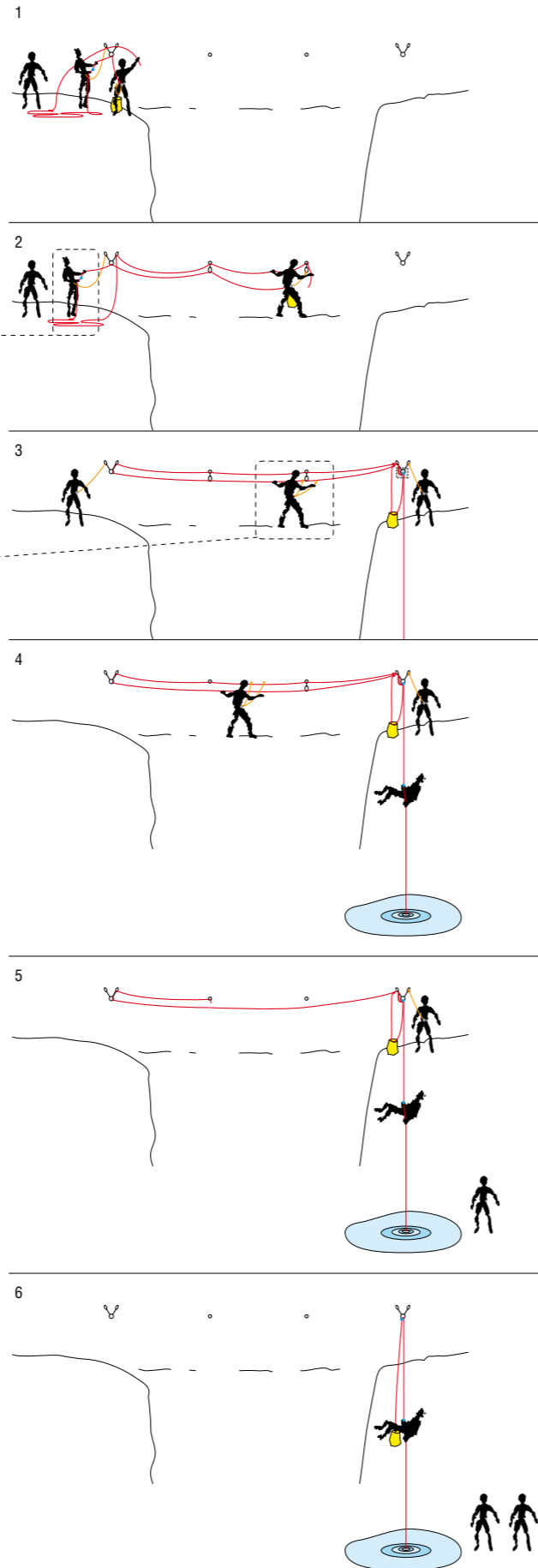
Installing a retrievable fixed line.

The belayer should have enough rope (minimum twice the length of the fixed line).

The last team member recovers the carabiners in the anchor; he is tied into the rope above that runs through the anchors.



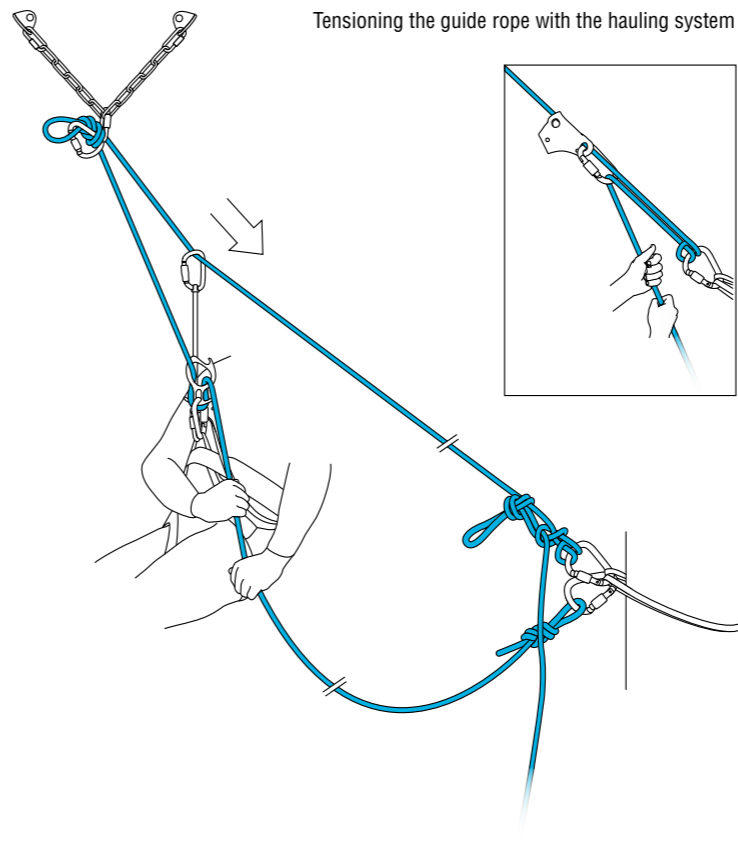
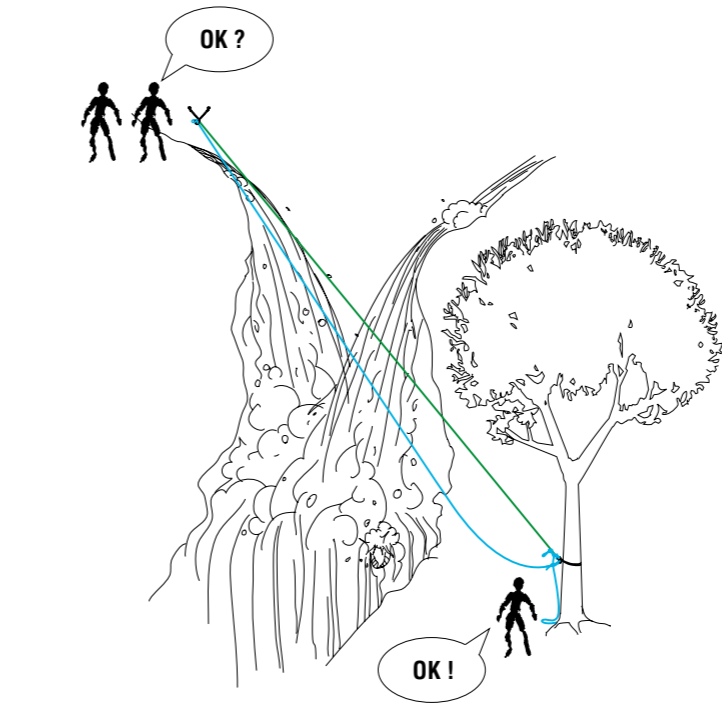
Valérie Lemaître starting to enjoy the wet rappels of the Jordanian canyons.



D. Guided rappel

The leader descends and sets up a hauling system to tension the guide rope (blocked end). It is blocked with a Munter hitch, mule knot and locking knot.

The team members above wait for confirmation from the leader before descending (OK! = set-up completed).

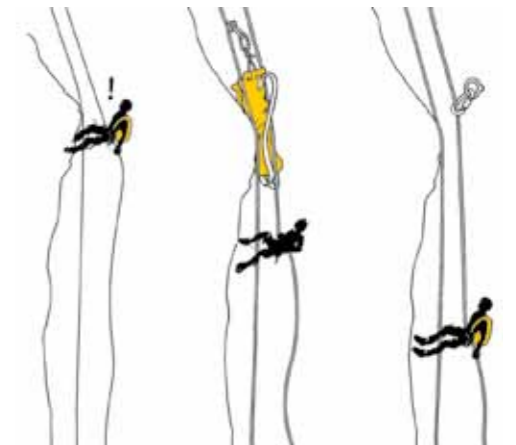


E. Look before you leap

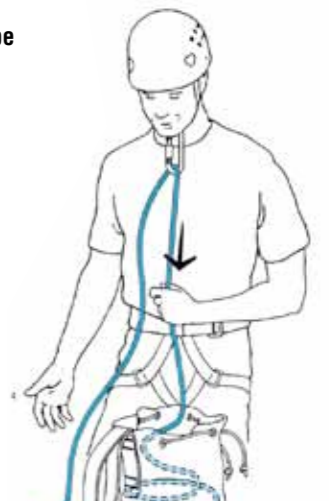
Before jumping or sliding down, always inspect the landing.



F. Protecting the rope



G. Bagging the rope





On the remarkable granite slabs of Kinabalu.



Yes, you really are in the middle of the China Sea! Borneo Tip, Malaysia.

Via ferrata, Malaysia

Borneo Airlines

You've never heard of Kinabalu? Yet it's the highest peak on the Malaysian island of Borneo, surrounded by the South China Sea. Imagine being more than four thousand meters above the forest, lost among immense granite cliffs that make you feel like you are above the clouds... all made accessible by a via ferrata.

The night is black with fog. Hands groping, feet stumbling over wet, tall rocks. The headlamp lights a thick wall of fog, then a granite wall striped with something white: the thick rope that connects us, like an umbilical cord, to the Laban Rata hut at the summit. It's three in the morning, time to make our attempt of Mount Kinabalu, the ancient summit of Borneo, and one of the highest in Southeast Asia. Its peaks emerge from a shield of rock slabs perched at over four thousand meters altitude. The mountain looks like an enormous prehistoric animal, sleeping, its granite back protruding from the Borneo forest. It is not surprising that the first ascent took nine days to reach the complex summit in 1851. The entangled, steep approach through the jungle and the slippery rock weren't the only reasons. The leader of the expedition, a British colonial officer named Hugh Low, had to sacrifice a chicken every day in order to calm the spirits of the mountain and to satisfy the Dusun and Kadazan porters, who lived in these forests, in order to continue the adventure.



© Mountain Torq

The via ferrata rises left of the shield of slabs.



© Aileen Li

Aileen Li and her husband above the clouds!



© Jocelyn Chavy

A relaxing afternoon in a Rungu long-house in Borneo.

"As incredible as it may seem, in the mid-1990's the two-thousand meter Low's Gully was still a blank spot on the map."



© Jocelyn Chavy



© Jocelyn Chavy

Today it's known as Kinabalu National Park, or Taman Negara Kinabalu in Malay, classified by UNESCO as a World Heritage site; but Mount Kinabalu has taken its time divulging its secrets. Even its name is a mystery. "Aki Nabal" is an expression in the Kadazan-Dusun tribes which means "the sacred place of the dead". But according to another legend, Kinabalu is the "Chinese widow", the wife of a Chinese prince who waited in vain for his return from the summit of the mountain. Another story? Take the immense couloir that practically splits the north face of the mountain in two. As incredible as it may seem, in the mid-1990s, this area was still a blank spot on the map. The two thousand-meter steep Low's Gully remained unexplored in spite of many attempts. A team of soldiers from Great Britain and Hong Kong tried to complete it, but the expedition fell victim to difficult conditions and dissention, turning it into a trip from hell. Part of the team managed to escape the canyon, while the other was rescued just in time, starving and near death, after three weeks of being lost in the secret folds of the mountain. In 1998, an expedition funded by National Geographic reached the end of Low's Gully by using thousands of meters of fixed lines. In 2003, a Flemish team succeeded in descending Low's Gully by fair means in a little less than a week, a true achievement.

The South Face, the normal route, is these days much more accessible and frequented, with a maintained trail over the first section, and equipped with a thick rope for the rocky section. Some would call it an easy hike, even though the weather conditions are not always ideal - not to mention the altitude.

At the hut, after a good Chinese noodle soup, here is the kind of joke you can hear, between a couple of bursts of laughter, in a discussion between Malays and Singaporeans, our neighbors during the ascent: "At Kinabalu, there are two seasons: the rainy season, and the really rainy season." This joke shouldn't keep you from this adventure, especially since two via ferrata passages have recently been equipped*. One of them allows you to get familiar with progression techniques on the tall, inclined granite slabs. The other passage traverses the entire side west of the normal route before climbing the tall slabs with those elusive lines and then returning east by climbing the immense sloping dihedral. Nothing bothers Aileen Li, who came from Singapore to celebrate both Christmas and her birthday at the summit! At twenty-eight, Aileen has a long history with Mount Kinabalu, which she climbed for the first time in 2004 with her fiancé. That time the adventure was a little different. "The weather was perfect during our ascent to the new hut, and it stayed that way the next morning when we

climbed Low's Peak. And we followed the via ferrata." You can climb the normal route - to take advantage of the sunrise over Borneo - and come back down along the via ferrata: this is the Low's Peak Circuit. "It offers a completely new perspective on Mount Kinabalu. When you traverse the immense, rugged slabs, the via ferrata makes you feel like you're walking on clouds! It was my seventh ascent of Mount Kinabalu, and it was my best." In the end, the hardest part was the same as for everyone else who comes onto the sleeping giant: the walk through the subalpine zone, which is often wet and burdened with roots and rocks.

If you come to climb Mount Kinabalu, get some information from the Park office: maybe you will have the rare opportunity to see a rafflesia, the largest flower in the world, but only one of five or six thousand plant species present in this biological Noah's Ark. In any case, it is always possible, and highly recommended, to spend a little time with the Runggus of North Borneo and to sleep in one of their long-houses; stroll around the markets between the fresh fish stands before eating a few shrimp beignets and Satay brochettes, a traditional Malaysian dish; or watch the orangutans jump from tree to tree in Sepilok. With the lost world of Kinabalu in the back of your mind...

*For more information, go to: www.mountaintorq.com



© Jocelyn Chavy



© Jocelyn Chavy

Via ferrata products

SCORPIO

This via ferrata lanyard has all the features needed for spending an excellent day out on the cliffs. The retractable lanyard arms keep out of the way. Stored in a zippered pouch, the tearing energy absorber is protected and is easy to inspect. The third arm is great when traversing or when you need to rest by clipping directly to a rung. Connection webbing has a twist in it for girth hitch: easy to attach on the harness, optimizes the strength of the connection to the harness. Available alone or with two different types of connectors: VERTIGO WL or EASHOOK.

References:

- L60 2: SCORPIO (310 g)
- L60 WL: SCORPIO VERTIGO WL (504 g)
- L60 H: SCORPIO EASHOOK (540 g)

Length (not including carabiners):

- total: 90 cm
- lanyard arms: 54 cm extended, 32 cm retracted
- short arm: 7 cm
- after complete tearing: 204 cm



• Short, third arm attached to energy absorber for attaching to rungs when resting, or for moving along a cable at close range.



• VERTIGO WL carabiner can be unlocked quickly and easily, perfect for continuous use.

ZYPER®

The ZYPER via ferrata lanyard absorbs the energy of a fall through the slippage of the dynamic rope through the metallic friction device. Connection webbing has a twist in it for girth hitch: easy to attach on the harness, optimizes the strength of the connection to the harness. Comes equipped with a plastic clip to help keep the excess rope out of the way and on the harness. Available alone or with two VERTIGO WL connectors.

References:

- L56: ZYPER-Y (395 g)
- L56 WL: ZYPER VERTIGO WL (588 g)

Length (not including carabiners):

- total: 90 cm
- lanyard arms: 57 cm



VERTIGO WL

The VERTIGO WL is designed to be used at the end of a via ferrata lanyard. Its ergonomic design and easy-to-use locking system facilitate passing intermediate anchors. The wide opening can fit over most bars and cables. Auto-locking mechanism unlocks quickly and easily for frequent use. Locking sleeve design reduces carabiner wear, increases durability of gate and requires less maintenance. Keylock system.

Reference: M40 WL
Weight: 97 g
Breaking strength:
- major axis: 25 kN
- open gate: 8 kN
- minor axis: 10 kN
Gate opening: 24 mm



• Single Dyneema tie-in point.

• Two-color leg loops (inside and outside surfaces) facilitate donning.

ASPIR

The ASPIR is a comfortable harness that offers many of the advantages of Petzl high-end harnesses: padded waistbelt and leg loops, a reinforced tie-in point and equipment loops. Its low bulk and large range of adjustability make it great for the via ferrata. Adjustable leg loops allow size to be adjusted depending on comfort desired or layers of clothing worn. DoubleBack buckles adjust easily with a single pull and help ensure proper closure. Single Dyneema-reinforced tie-in point for increased durability.

Reference: C24

Sizes: 0, 1 and 2

Weight: 420 g, 450 g, 485 g

The via ferrata has many traverses.



PICCHU *new*

The PICCHU helmet is designed for children who want to rock climb or cycle. It is very light and comfortable and constructed for durability. Side openings for ventilation. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. For night use, the PICCHU has a mount on the back of the helmet specially designed for attaching the SiGNAL red safety signalization light. Headlamp can be attached using the four optimally placed clips.

References: A49 CH - A49 AP

One-size-fits-all: 48-54 cm

Weight: 310 g



OUISTITI

Full body harness for children under 30 kg. Because small children do not have well-defined hips for a waistbelt to latch onto, the full body design is necessary. Two DoubleBack buckles adjust in the back of the harness to keep them out of reach of the young wearer. Bicolor webbing (black inside, colored outside) facilitates donning.

Reference: C68

One-size-fits-all

Weight: 350 g

ELIOS®

This low profile helmet is easy to adjust, comfortable and well-ventilated. The improved dial adjustment system is quick and easy to use, even when wearing the helmet. The combination of shell and foam technology makes it perfect for via ferrata. Adjustable chinstrap, nape height and headband for an extremely comfortable fit. Chin strap position adjusts forward or backward for comfort, and side-release chin strap buckle is positioned off to the side and out of the way. Headlamp can be attached using the four optimally placed clips.

References: A42 W1 - A42 O - A42 B - A42 G - A42 A
Available in two sizes:
- size 1:48-56 cm (weight: 280 g)
- size 2:53-61 cm (weight: 305 g)



TIKKINA® 2 new

The TIKKINA 2 headlamp is designed to meet most everyday lighting needs. It has two lighting modes (maximum and economic) to adapt light quantity to the situation. It is also equipped with new, improved performance LEDs and a push-button switch. The compartment now has an easy-to-use system that allows the user to very easily change the batteries or to equip the headlamp with the ADAPT mounting system.

References: E91 PE, E91 PO, E91 PL, E91 PF
Degree of protection: IP X4 (Water-resistant)
Weight: 80 g including batteries
Light quantity: 23 lumens
Maximum lighting distance: 23 meters
Maximum light duration: 190 hours
For complete headlamp performance information, go to www.petzl.com

Other via ferrata products:

- CORAX adjustable harness
- PANDION basic adjustable harness
- SIMBA full body harness for children
- SPIRIT straight gate carabiner
- BUG backpack
- e+LITE emergency headlamp...

Find all products on pages 140 - 154.

new

VIA FERRATA KIT

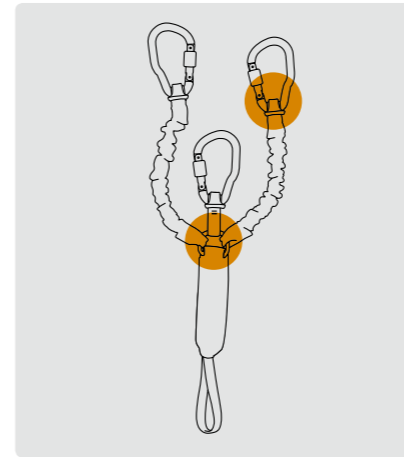
This kit is composed of products specifically designed for via ferrata:

- ELIOS: lightweight, durable and versatile helmet
- PANDION: basic adjustable harness with equipment loop Single Dyneema-reinforced tie-in point; waistbelt and leg loop adjustment with DoubleBack buckles
- SCORPIO VERTIGO WL: retractable Y-shaped lanyard with tearing energy absorber Retractable lanyard arms keep equipment clearly organized. Short, third arm attached to energy absorber. VERTIGO WL automatic locking carabiners.

Reference: K29VF



Technical information Checking your equipment



Energy-absorbing lanyard

The energy-absorbing lanyard is the essential safety link between the human body and the cable of the via ferrata. Its key role is to limit the impact force on the user during fall arrest. Today's tearing lanyards are easy to inspect for evidence of prior activation. At the end of the lanyard, the connection carabiners undergo repeated rubbing on the cable, which accelerates their wear. Their opening/closing and locking mechanisms are constantly used.

Before every use, inspect your energy absorber:
- for the condition of the webbing and safety stitching (different color)
- for cuts and wear
- open the absorber's protective sleeve, take the tearing webbing and verify that it isn't torn.

On your carabiners, check for cracks, deformities and excessive wear (maximum 1 mm).

Test the functioning of the opening and closing mechanisms of the gate: open the gate and check that it closes and locks automatically when released. Add a drop of oil if necessary. Make sure that the gate snaps crisply back to its exact initial (closed) position. The Keylock slot

must not be blocked by any foreign matter (dirt, pebble, etc.).
For EASHOOK carabiners, push on the gate to be sure that it stays closed.

Never reuse an energy absorber after an impact that has activated the absorption system, even minimally (sliding or tearing).

Retire your lanyard or carabiners:
- if the results of your inspection are not satisfactory
- after a significant shock load or impact
- if you have any doubt about their reliability

... www.petzl.com/ppe

Information is non-exhaustive; consult the details of the inspection procedure to be carried out for each item of PPE (Personal Protective Equipment) on its technical notice or at www.petzl.com/ppe

Technical information Basics

1 Prepare for your activity

Choose a via ferrata that is at the level of the participants, starting with the easiest itineraries to get familiar with the site and the access. Check the weather. Watch out for storms. Do not start out after a rainfall, as everything will be slippery.

When you organize an outing, take a dynamic rope that is long enough to belay a retreat or to help a team member. Learn and practice maneuvers for setting up a belay station, a rappel or a hauling system.

Avoid the hottest hours of the day, as you risk sunstroke, sunburn and heat.

Wear semi-rigid walking shoes with a slight heel for a more comfortable position when standing on the bars.

Protect your hands with leather cycling gloves for a better grip on bars or cables and also to maximize dexterity during the constant manipulation of carabiners at the end of the lanyards.

2 Always use a lanyard with an energy absorber and take a helmet

An energy absorbing lanyard is the appropriate method of protection for the via ferrata and its potential fall factors. It is essential to use one. Be sure to always be connected. Remain focused to avoid finding yourself unattached when passing intermediate anchors (even easy ones).

3 Falling should be avoided on via ferratas

In fact, during a fall there is a high risk of hitting a bar, cable or rock. Energy absorbers function optimally for users who weigh between 45 kg and 100 kg. We recommend that users outside these guidelines progress with a back-up belay with a rope from above in order to avoid any big falls.

4 Know when to rest

Clip yourself into a cable or bar with the short arm of the SCORPIO energy-absorbing lanyard whenever you feel tired. Relax your arms by lowering and shaking them out gently.

5 Always wear a helmet

Wear a helmet to protect yourself not only from rockfall, but also from falling objects which may accidentally fall from a pocket, a backpack, or a gear loop in the harness (cell phone, digital camera, water bottle, loose change...). A few grams in a pocket can become projectiles weighing kilos a little farther below.

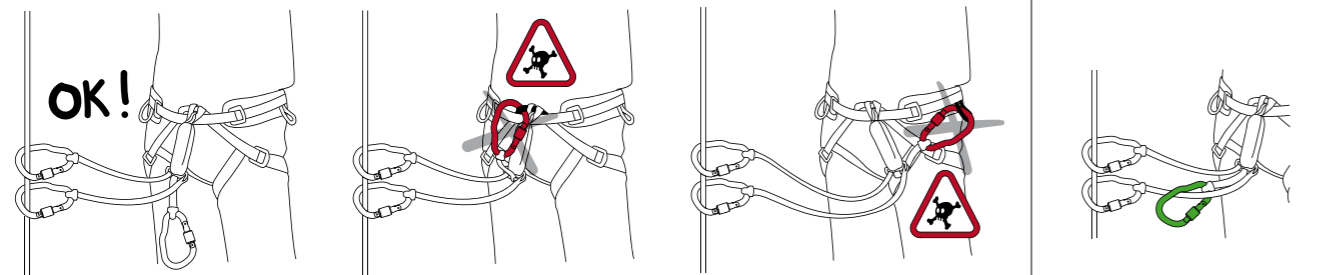
Technical information Tips

A. Installing the energy absorber on the harness



B. Lanyard arrangement

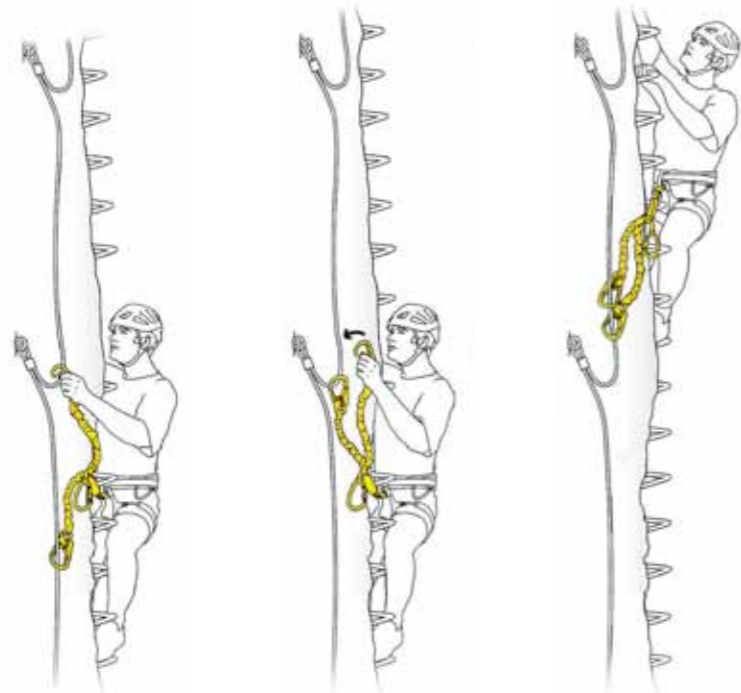
Do not clip your lanyard to a fixed point on the harness. In case of a fall, the energy absorber won't be able to engage and won't absorb the shock.



C. Progression with an energy absorbing lanyard

A few guidelines to remember:

- always stay attached to the cable
- clip the next section of cable as soon as possible
- only one person per section of cable



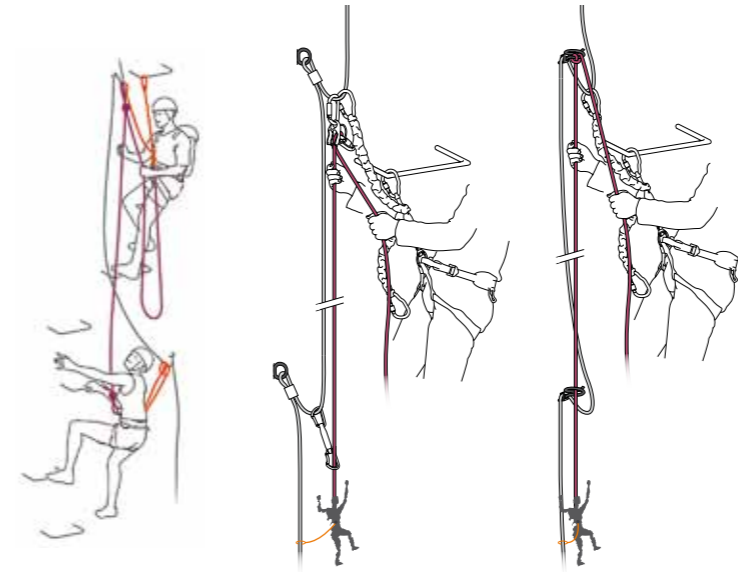
D. Resting position



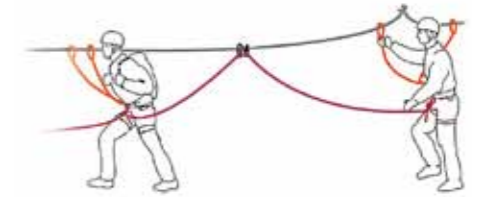
E. Progression while tied in

If you are not comfortable in these types of surroundings or if you think you may fall, you should rope up. Climbing with a rope is safer, as long as you have mastered the rope usage techniques. If you have not mastered these techniques, get assistance from someone with experience or from a professional.

In vertical sections, use climbing belay techniques with a Munter hitch or REVERSO.



In easy traverses, you can progress with a taut rope. The rope should be tensioned between each team member. At least one anchor point should be placed between each team member.



F. Via ferrata equipment

Check the equipment already in place, as some via ferratas are very old. Rope up if:

- The anchors are more than 3 meters apart in vertical sections (risk of fall factor greater than 5)
- there is no cable loop at the anchors. In case of a fall, the carabiner will be poorly loaded.



Trail, Népal

Dawa Sherpa

In a lifetime, a human being travels a long road: on average the equivalent of two to three times around the earth. It is certainly much longer for Dawa Sherpa, who runs more than he walks. This is probably because Dawa loves long journeys. Like the one that brought him from the trails of his childhood in Solu Khumbu, Nepal, to the podiums of the most prestigious trail running races. A portrait.

Dawa is sitting at the table in front of a plate pile high with steaming hot pasta. A few people are eating, crowded around a small table in this Vallouise apartment on a Friday summer evening in France's Southern Alps. One of Dawa's brothers, a very young runner, has just arrived from Katmandu, and jetlag is causing his eyelids to fall. The rain is falling lightly, releasing the perfume of the wet larches. It doesn't much matter; tomorrow the Trail des Ecrins begins: two days of devouring cols, running at top speed on the wild crests of the Ecrin massif. It's a routine for Dawa Sherpa. "I consider myself an amateur runner. I do not want to be a professional," says the man that some consider as having the biggest list of wins of his generation. Numerous victories, including the Mont-Blanc Ultra Trail and the Himal Race, have sealed his reputation, as have his kindness and modesty.

To say that nothing predisposed the young Dawa to running would be neither fair nor accurate. If you were born in a small village at the base of Everest called Chulemo, a four-day walk from the first road, you would certainly have a greater chance of becoming a peasant, possibly a monk or a porter, but you would walk a lot on the mountain terraces sculpted by millennia of effort. Dachiri Sherpa began there. His nickname, Dawa, simply means Monday, the day he was born, in Nepalese. Sent to a Buddhist monastery



He's always in a good mood!

© Dawa Sherpa Collection



© Jocelyn Chavy



© Jocelyn Chavy

at the age of six, he left seven years later, when his father passed away, in order to earn a living and help his six brothers and two sisters. His job? A porter, a “kitchen boy” on the trekking circuits, in other words an assistant-cook and later a trekking guide. By fate, on these trails he met Annie, the woman who would become his wife, during one of his first Himalayan races, which he was tempted to run “just to see what it was like.” Dawa got married, immigrated to Switzerland and started running trails one after the other. He also had to take responsibility for his new life: he worked eight hours a day as a mason on construction sites. This is why he trained very little, compared to what is usual. “I make the round trip to work and home on my bike, which totals about 5000 km a year. I run one or two nights a week because after work I don’t really feel like training.” The Dawa method? Training during races. From spring to fall, his weekends are alike. No marathons, as he has very little love for pavement, but rather medium or long distance trails, “for the pleasure of being in nature.” In 2008, at 39 years of age, he finished second at the Mont-Blanc Ultra Trail, five years after having won the first edition of this famous race. Trying to imagine what a race around Mont Blanc represents

can make your head spin: one hundred and sixty kilometers, more than 9000 meters of positive altitude change. It takes a well-trained hiker eight days to complete it and is something that ultra-marathoners sometimes fail to finish in 45 hours - the official cut-off time of the race. Dawa finished in 21 hours.

“Running everywhere comes down to being at home everywhere, on all the trails of the world” confides Dawa.

“I fulfilled my childhood dream, which was to discover countries outside of Nepal, other places and natural environments, but also other lifestyles. Running everywhere comes down to being at home everywhere, on all the trails of the world.” When the members of Nepal’s Olympic committee saw him win the Himal Race in 2002, a special race with about twenty stages adding up to more than 1000 kilometers and 38,000 meters of altitude change, they simply asked him if he could learn to cross-country



© Dawa Sherpa Collection

Himal Race, Lake Phoksundo, Dolpo, Nepal.

ski in order to represent his country. “I took six two-hour lessons,” Dawa remembers with amusement, “before participating in the Asian Games in Japan and the 2006 Winter Olympics in Turino.” Preparing for the Vancouver Olympics in 2010 will keep him busy until next winter.

Perhaps because he chose to remain an amateur athlete, Dawa has never forgotten where he came from. Like the monastery of his childhood, to which he claims to owe a lot: “Everything I learned, I use every day, in the way I think and manage my life.” Like the promise he made to two of his departed brothers: to take care of their children, whose education in Nepal he is paying for. Ten children in total. The mountains of Nepal occupy his thoughts. For the past two autumns, the most beautiful season in Nepal, he has organized the Solu Khumbu Trail, a race that passes through his village, perched at 2700 meters of altitude. “It’s a race that’s different from other Himalayan races,” clarifies Dawa, who “out of respect for the porters” accompanying the runners, limits the weight they carry to fifteen kilos. His eyes sparkle when he explains that he wants to mix runners and porters in a joyful gathering at

the end of the race. “This allows the young to discover the passion of the trail and of course to give work to the others. Two other projects are also close to my heart: to support the creation of a monastic school, soon to be completed, and to create a dispensary in these valleys forgotten by hikers”.

“It seems like he can run forever,” say people who’ve run with Dawa. His aura brings together the trail running community, in whose birth he participated. “Running is socially enriching. I have created contacts and kept friends from a lot of places I have been to, like the island of La Réunion,” explains the man who attempted the renowned Diagonale des Fous trail race three times, and had to give up... three times. Maybe because of the heat, but certainly while adhering to his personal philosophy: “Never run after a ranking or a prize. Listen to your body, and above all, hold onto the enjoyment of running in the mountains.”

See Dawa’s achievements on www.dachhiridawasherpa.com
More info on www.solukhumbutrail.com



Trail running products



ULTRA BELT

Pure Power by Petzl. Ultra-powerful and ergonomic headlamp designed for activities involving speed and endurance. The ULTRA BELT offers ultra-powerful, regulated lighting (350 lumens) and a wide and intense beam that will last for the entire activity. Designed for action, the ULTRA BELT is held securely on the head. The remote battery pack can easily be carried in a pocket or on the ULTRA harness. Test button for rechargeable battery with battery level indicator. The ULTRA BELT is extremely reliable: in all weather conditions, with long burn-times, the power level is easily verified. The connection system for the battery pack allows it to be pulled out quickly for recharging, replacement, or attachment to the ULTRA harness.

ULTRA BELT ACCU 4: E53 AC
High capacity ACCU 4 ULTRA battery pack (Lithium Ion 4000 mAh)
Weight: 495 g (lamp 230 g + ACCU 4 ULTRA remote battery pack (265 g))

ULTRA BELT ACCU 2: E53 AC2
High capacity ACCU 2 ULTRA battery pack (Lithium Ion 2000 mAh)
Weight: 375 g (lamp 230 g + ACCU 2 ULTRA remote battery pack (145 g))

ULTRA quick charger: 100/240 V EUR/US compatible quick wall charger
Degree of protection: IP 66
Three lighting modes: maximum, optimum and economic
Light quantity: 350 lumens
Maximum lighting distance: 120 meters
Maximum light duration: 34 hours and 20 minutes
For complete headlamp performance information, go to www.petzl.com



• Choice of lighting mode with easy-to-use dial switch.



• Perfectly secure and comfortable on the head.



• Ultra high-output regulated lighting
Maximum light quantity: 350 lumens.



ULTRA harness

Light, ergonomic harness designed for comfortably carrying the ULTRA BELT and ULTRA headlamps' remote battery pack (with optional extension). Worn close to the body, this sculpted harness is completely adjustable to guarantee excellent comfort while remaining stable and securely positioned. Zippered stretch pocket for spare battery, telephone, mp3 player, or e+LITE emergency headlamp, etc. Connection system for quick and easy access to battery back. Attachment point for SIGNAL multidirectional emergency light, allowing user to be visible from a distance while training. Strap for attaching energy gel pack.

Reference: 55960
One-size-fits-all
Weight: 208 g

Ultra Trail du Mont-Blanc,
the ultimate test in this discipline.

© Pascal Tournaire

ULTRA

Pure Power by Petzl. Ultra-powerful and ergonomic headlamp designed for intense activities such as treks and running. The ULTRA offers ultra-powerful, regulated lighting (350 lumens) and a wide and intense beam that will last for the entire activity. Designed for action, the ULTRA is held securely on the head. Test button for rechargeable battery with battery level indicator. Modular design adapts to the situation to maximize burn time or minimize the weight on the head. The connection system for the battery pack allows it to be pulled out quickly to recharge it, to replace it, or to reduce the weight worn on the head from 345 g to 200 g, by shifting it to the ULTRA harness using the ULTRA extension cord (optional). Burn time is doubled with the high-output, large capacity ACCU 4 ULTRA rechargeable battery pack (optional).



Reference: E52 AC
 High capacity ACCU 2 ULTRA battery pack (Lithium Ion 2000 mAh)
 ULTRA quick charger: 100/240 V EUR/US compatible quick wall charger
 Degree of protection: IP 66
 Weight: 345 g (lamp with ACCU 2 ULTRA battery pack)
 Three lighting modes: maximum, optimum and economic
 Light quantity: 350 lumens
 Maximum lighting distance: 120 meters
 Maximum light duration: 16 hours and 55 minutes
 For complete headlamp performance information, go to www.petzl.com



MYO® RXP

The MYO RXP is the first Petzl headlamp that is regulated and programmable, allowing the user to choose the order of lighting levels and to precisely adapt light output. To do this, there are three lighting modes, for each of which the user can select the power from among ten possible levels, from 8 to 140 lumens. This feature allows the lamp to be programmed for the type of activity and the length of use. The maximum lighting mode works well for a short night run. A lower-level lighting mode would favor burn-time and would thus be appropriate for a multi-day trek. This headlamp has Boost mode (160 lumens) and a strobe mode that can be programmed (three strobe modes and one SOS mode). It is compatible with lithium batteries to optimize performance, even at low temperatures. The Wide Angle lens offers the option of switching instantly from a focused beam to a wide beam when necessary.

Reference: E87 P
 Weight: 175 g including batteries
 Operates on three alkaline AA/ LR6 alkaline batteries (included)
 Degree of protection: IP X4 (Water-resistant)
 Light quantity: 160 lumens (Boost)
 Maximum lighting distance: 77 meters
 Maximum light duration: 97 hours
 For complete headlamp performance information, go to www.petzl.com



• Versatile lighting for all situations. Wide Angle lens allows to quickly switch from flood beam proximity lighting to focused long-distance lighting in a single movement.



• Light output can be programmed from among ten levels, from 8 to 140 lumens.



MYO® XP

The MYO XP headlamp was developed for high-level performance. To do this, it uses a high-output LED, a Wide Angle lens, three constant lighting modes and a strobe mode. In maximum level, this headlamp provides powerful lighting (85 lumens) that can be adapted to the situation and the activity. The Wide Angle lens option is useful for instantly switching between long-range and proximity lighting. If necessary, it is possible to occasionally increase the light output to 150 lumens / 97 meters with the Boost mode.

Reference: E83 P2
 Weight: 175 g including batteries
 Operates on three AA / LR6 batteries (included)
 Degree of protection: IP X4 (Water-resistant)
 Light quantity: 150 lumens (Boost)
 Maximum lighting distance: 72 meters
 Maximum light duration: 180 hours
 For complete headlamp performance information, go to www.petzl.com



SIGNAL

The SIGNAL red safety flasher allows the user to be visible from a distance. It emits a red light, in either continuous or flashing mode. The 180° multidirectional beam guarantees optimum visibility from up to one kilometer away. The elastic band and clip allow many options for attachment: on the headband of another headlamp, around the arm, on a pack, etc. The SIGNAL light is an essential part of any safety equipment for nighttime activities.

Reference: E05 P
 Weight: 22 g including batteries
 Operates with two Lithium CR2032 batteries (included)
 Integrated clip, removable and adjustable elastic strap included
 Degree of protection: IP X8 (waterproof down to -1 m)
 Visible for 1000 m
 Maximum burn time: 40 hours (continuous lighting), 120 hours (strobe mode)
 For complete headlamp performance information, go to www.petzl.com



SPIKY PLUS

Non-slip rubber soles with carbon steel points to put over any pair of shoes or boots for added traction on icy, slippery surfaces.

SPIKY PLUS 1: 79510 (fits boot sizes to 42), 110 g
 SPIKY PLUS 2: 79520 (fits boot sizes 42 to 45), 135 g
 SPIKY PLUS 3: 79530 (fits boot sizes 45 and over), 173 g



© Jocelyn Chavy

Orienteering on the Écrins massif, France.

Other trail running products:

- TIKKA PLUS², TIKKA PLUS² ADAPT and TIKKA XP² headlamps
- e+LITE emergency headlamp...

Find all products on pages 140 - 154.

Lighting performance



In order to precisely evaluate the lighting performance of our headlamps, Petzl has developed a thorough protocol for taking specific measurements. Results obtained in this way allow us to compare the lighting performance of many different headlamps. This information makes it easy for the user to make a choice based on his needs or personal criteria.

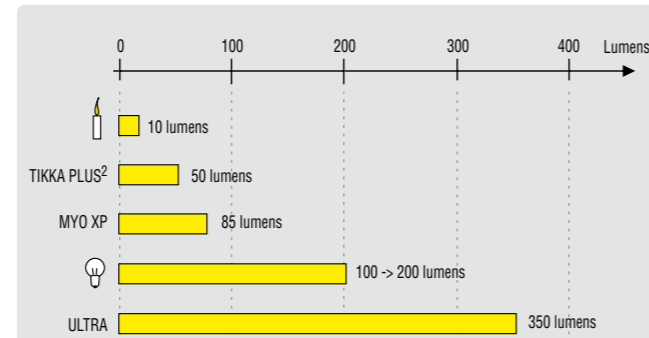
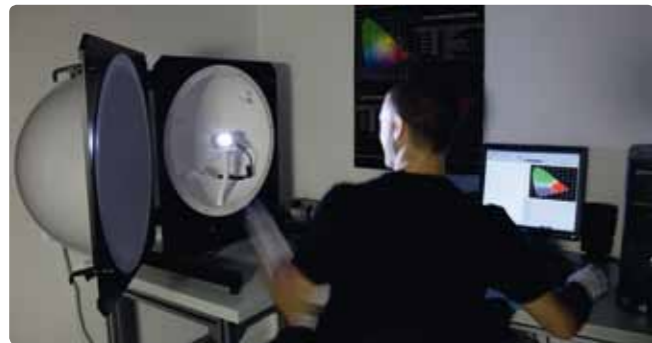
Petzl's measurement protocol

Petzl's measurement protocol is applied to tests performed in the lab on five completely identical headlamps. These headlamps are selected randomly directly from the production line. These headlamps are tested one by one with two new sets of batteries (alkaline or rechargeable), identical to those that come with the headlamps. Headlamps that do not come with batteries are tested with new alkaline batteries. In order to maintain a stable testing environment and statistically significant results, particularly with regard to batteries, all measurements are taken at 20 °C. The final, definitive result for each parameter being tested represents the average of the ten measurements (five headlamps and two energy sources).

Luminous flux

The luminous flux is the total quantity of light emitted in every direction from a source of light. Luminous flux is expressed in lumens (lm). It is measured in the lab, with the help of an integrated sphere device. This measurement is complementary to the lighting distance. Two light sources can in fact shine at the same distance with different intensities. As with lighting distance, luminous flux diminishes as the energy source drains. Petzl indicates luminous flux in maximum mode, thus providing the user with the maximum possible output of each light.

- Some lumen equivalencies:
- candlelight: 10 lumens
 - TIKKA PLUS² (maximum mode): 50 lumens,
 - MYO XP (maximum mode): 85 lumens,
 - household lighting: 100 to 200 lumens
 - ULTRA (maximum mode): 350 lumens.



Minimum lighting

Before measuring lighting distance and burn time, it is useful to have a definition of the minimum amount of light below which a headlamp is no longer effective, i.e., when the lighting level becomes too low for adequate vision. Petzl has evaluated this illumination level to be equivalent to the light emitted from a full moon on a clear night, or 0.25 lux. This minimum lighting level is used as a reference for measuring lighting distance and duration.



Battery life

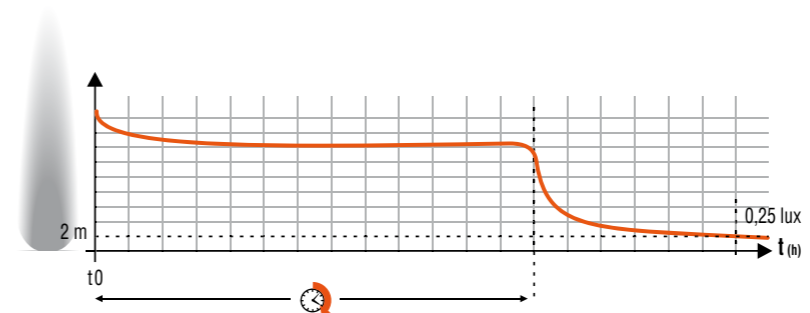
Battery life is defined as the length of time that a headlamp illuminates at 0.25 lux or more from a distance of two meters. When the light produced is lower than this level, we consider that the headlamp is no longer usable, whether for walking, reading, or any other activity.

Lighting distance

According to Petzl's protocol, lighting distance corresponds to the distance to which a headlamp illuminates at 0.25 lux or more.

Regulated headlamps

Regulated headlamps are equipped with an electronic regulating mechanism that maintains a constant lighting distance for a given amount of time. This distance/time association is indicated with the performance information of the headlamp. Once the available electric energy is no longer sufficient, the regulation automatically stops. In this case, the lighting strength diminishes to survival lighting to allow the user enough time to change the batteries.

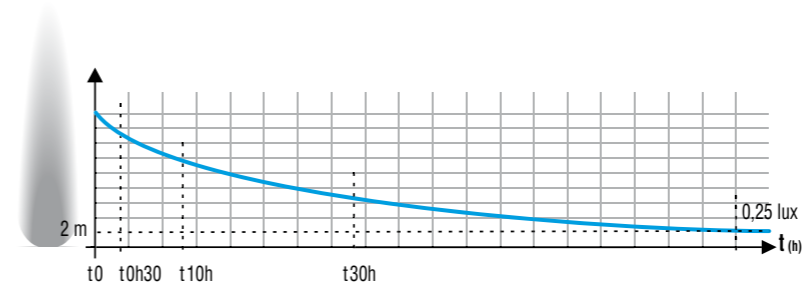


Regulated headlamp: changes in lighting distance over time

Non-regulated headlamps

For non-regulated headlamps, lighting distance decreases progressively as the energy source is drained.

- Lighting distance measurements are performed:
- after 30 minutes of use (limited and short use)
 - after 10 hours of use (continuous use)
 - after 30 hours of use



Non-regulated headlamp: changes in lighting distance over time

Special case: signal lighting

Petzl considers signal lighting to be efficient when visible from 100 m or more. Under this distance, the lighting is not sufficient for being seen and ensuring adequate safety. Battery life is defined as the length of time that the headlamp produces signal lighting that illuminates at 0.00001 lux or more from a distance of 100 m.

Adapting the lighting

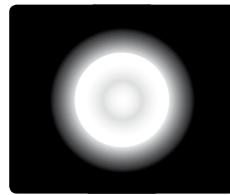
Lighting can be adapted to different needs by varying two parameters:

- the pattern of the beam: wide or focused. Different Petzl models offer either one type of beam or the possibility of alternating between a wide or focused beam.
- the lighting level: most Petzl headlamps have a choice of several modes (maximum, optimum, economic and Boost)

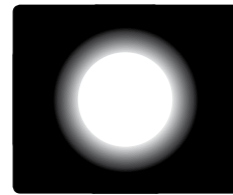
Beam pattern

Petzl headlamps have a uniform beam. This beam also has a residual component, which is much wider than the main beam. This peripheral light makes the headlamp more versatile and comfortable to use.

Irregular beam



Uniform beam



The beam pattern depends on the type of light source and on the optics. There are two types of beams: wide beams and narrow, focused beams.

• Wide beam

The wide beam emits close-range light for stationary activities or those requiring slower movement.



• Focused beam

This beam concentrates the light to shine long distances and can be precisely aimed.

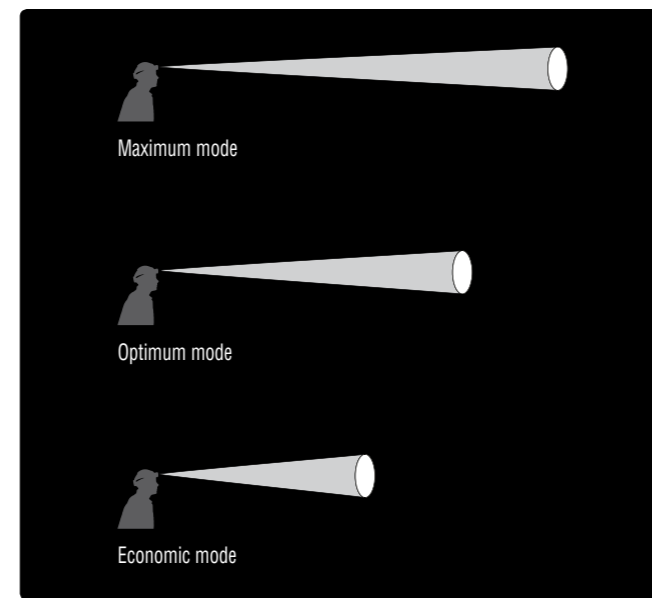


Lighting levels

Lighting performance needs change in different situations. This is why Petzl headlamps offer advanced solutions for lighting management: maximum, optimum, economic and Boost modes.

• Lighting modes:

Most of our LED headlamps offer a choice between three different brightness levels: maximum, optimum and economic. This way, the user can adapt the lighting level to the situation in order to favor either light quantity or battery life. Along with these three levels, there is also a strobe mode, used for signaling location (for rescue, searches, etc.).



• Boost mode

Boost mode is available on certain LED headlamps. It increases lighting strength to approximately 50 % greater than maximum mode for 20 seconds.

Degree of protection and electromagnetic compatibility



The performance and durability of electrical equipment also depends on external factors during use.

For this reason, each headlamp carries its own degree of protection (IP XX), as well as an indication of its level of electromagnetic compatibility (EMC).

IP XX: degree of protection

The IP rating indicates the level of protection a product has against the entry of solids and liquids. It is expressed as IP XX. The XX represents two numbers. These numbers indicate conformity with the conditions summarized in the tables below.

| The first number indicates protection against solid objects: | |
|---|---|
| X = Not measured | - |
| 0 = Not protected | - |
| 1 = Protected against solids ≥ 50 mm in diameter | |
| 2 = Protected against solids ≥ 12.5 mm in diameter | |
| 3 = Protected against solids ≥ 2.5 mm in diameter | |
| 4 = Protected against solids ≥ 1 mm in diameter | |
| 5 = Protected against dust (limited ingress, no harmful deposits) | |
| 6 = Completely protected against dust | |

| The second number indicates protection against liquids: | |
|--|---|
| X = Not measured | - |
| 0 = Not protected | - |
| 1 = Protected against vertically falling water drops | |
| 2 = Protected against water drops (15° from vertical) | |
| 3 = Protected against rain (60° from vertical) | |
| 4 = Protected against sprayed water | |
| 5 = Protected against jets of water | |
| 6 = Protected against forceful hose-projected water | |
| 7 = temporary immersion (-1 meter for 30 minutes) | |
| 8 = prolonged immersion (deeper than 1 meter for period defined by manufacturer) | |

Petzl headlamps fall into two categories:

• Water-resistant headlamps (IPX4 or IPX6) resist the worst meteorological conditions (high humidity, snow, rain, quick immersion, etc.). They work even when water penetrates the headlamp body. This is due to stainless steel contacts and waterproofing of sensitive parts. In this type of situation, the headlamp should be dried and the batteries changed. The contacts should be inspected. This applies to all headlamps, except for the e+LITE, the SIGNAL and the DUO line.

• Waterproof -1 m and -5 m (IPX8) are water-tight. They can withstand an immersion of more than 30 minutes at -1 m to -5 m. If water does enter the headlamp, while changing the batteries in a damp environment, it should be dried. This applies to the e+LITE, the SIGNAL and the DUO line. Please note: to maintain the waterproof properties of a headlamp, certain care and storage guidelines must be followed. Note: If sea-water gets inside, rinse the lamp thoroughly in fresh water and dry it.

Electromagnetic compatibility (EMC)

The electromagnetic compatibility (EMC) describes the ability of an electric device to work properly, independent of possible electromagnetic disturbances in the environment, and without producing its own.

All Petzl headlamps conform to the requirements of the 89/366/CEE directive concerning electromagnetic compatibility: they will not interfere with any other CE-marked devices.

Vertical sports and lighting equipment













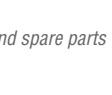
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Martina Cufar onsights the Women's Infinity Lane 8A+.
Petzl Roc Trip 2009. Gorges de la Jonte.









© Sam Bié

Harnesses















| | | | Size | Weight | Waist belt | Leg loops |
|------------------------|---|---|------|--------|-------------|------------|
| HIRUNDOS C36 | Ultralight harness for high-end climbing |  | XS | 270 g | 59 - 71 cm | 43 - 48 cm |
| | | | S | 280 g | 66 - 78 cm | 47 - 52 cm |
| | | | M | 300 g | 71 - 83 cm | 52 - 57 cm |
| | | | L | 315 g | 80 - 94 cm | 57 - 62 cm |
| SAMA C21 | Men's climbing harness with elastic leg loops |  | S | 370 g | 70 - 81 cm | 47 - 52 cm |
| | | | M | 390 g | 76 - 90 cm | 52 - 59 cm |
| | | | L | 420 g | 85 - 100 cm | 57 - 64 cm |
| SELENA C55 | Women's harness with elastic leg loops |  | XS | 320 g | 58 - 69 cm | 43 - 48 cm |
| | | | S | 360 g | 60 - 71 cm | 47 - 52 cm |
| | | | M | 385 g | 67 - 81 cm | 52 - 59 cm |
| | | | L | 405 g | 74 - 89 cm | 57 - 64 cm |
| ADJAMA C22 | Men's climbing and mountaineering harness with adjustable leg loops |  | S | 420 g | 70 - 81 cm | 47 - 57 cm |
| | | | M | 435 g | 76 - 90 cm | 52 - 62 cm |
| | | | L | 460 g | 85 - 100 cm | 57 - 67 cm |
| LUNA C35 | Women's climbing and mountaineering harness with adjustable leg loops |  | S | 410 g | 60 - 71 cm | 47 - 57 cm |
| | | | M | 425 g | 67 - 81 cm | 52 - 62 cm |
| | | | L | 450 g | 74 - 89 cm | 57 - 67 cm |
| CALIDRIS C57 | Comfortable and ventilated adjustable harness for extended periods of hanging |  | 1 | 600 g | 65 - 95 cm | 48 - 60 cm |
| | | | 2 | 685 g | 83 - 110 cm | 56 - 70 cm |
| CORAX C51 | Comfortable and adjustable harness |  | 1 | 510 g | 60 - 90 cm | 48 - 58 cm |
| | | | 2 | 560 g | 75 - 105 cm | 56 - 68 cm |
| ASPIR C24 | Adjustable harness with padded waistbelt and leg loops |  | 0 | 420 g | 53 - 72 cm | 40 - 58 cm |
| | | | 1 | 450 g | 68 - 94 cm | 48 - 62 cm |
| | | | 2 | 485 g | 86 - 110 cm | 57 - 70 cm |
| PANDION C29 | Basic adjustable harness with gear loop |  | — | 400 g | 60 - 101 cm | < 67 cm |
| GYM C32 | Basic adjustable harness for beginners and group programs |  | — | 390 g | 60 - 101 cm | < 67 cm |
| QUISTITI C68 | Full body harness for children less than 30 kg |  | — | 350 g | — | < 51 cm |
| SIMBA C65 | Full body adjustable harness for children less than 40 kg |  | — | 390 g | — | < 51 cm |
| 8003 C05 | Full body harness for adults |  | 1 | 580 g | 60 - 95 cm | 42 - 62 cm |
| | | | 2 | 610 g | 75 - 105 cm | 52 - 77 cm |
| FRACTIO C16 | Caving harness with double waistbelt | | 1 | 485 g | 60 - 88 cm | 43 - 60 cm |
| | | | 2 | 592 g | 75 - 103 cm | 50 - 72 cm |
| SUPERAVANTI C12 | Basic lightweight caving harness | | 1 | 435 g | 60 - 88 cm | 43 - 60 cm |
| | | | 2 | 485 g | 75 - 103 cm | 50 - 72 cm |
| CANYON C86 | Canyoning harness with padded waistbelt and protective seat | | — | 700 g | 67 - 120 cm | 52 - 77 cm |

Helmets



| | | | Size | Head circumference | Weight | | | |
|--------------------------------|---|---|-------------------|--|---|---|------------|-------|
| METEOR III A71 | Ultra lightweight climbing helmet |  | — | 53 - 61 cm | 235 g | | | |
| | | | ALTIOS A45 | Ultra comfortable multi-purpose helmet |  | 1 | 48 - 56 cm | 305 g |
| | | | | | | 2 | 53 - 61 cm | 305 g |
| ELIOS A42 | Lightweight and durable helmet |  | 1 | 48 - 56 cm | 280 g | | | |
| | | | 2 | 53 - 61 cm | 305 g | | | |
| ELIA A48 | Women's climbing and mountaineering helmet |  | — | 52 - 58 cm | 285 g | | | |
| PICCHU A49 | Children's climbing and cycling helmet |  | — | 48 - 54 cm | 310 g | | | |
| ECRIN ROC A01 | Ultra-durable helmet with foam headband |  | — | 53 - 63 cm | 445 g | | | |
| SPELIOS E75 | Caving helmet with hybrid lighting: halogen / 14 LEDs with three regulated lighting levels. |  | 1 | 48 - 56 cm | 505 g | | | |
| | | | 2 | 53 - 61 cm | 535 g | | | |
| EXPLORER LED 14 E70 L14 | Caving helmet with three source of light: acetylene, halogen and 14 LED |  | — | 53 - 63 cm | 725 g | | | |

Belay devices, descenders

| | | | Rope compatibility | Weight |
|---|---|---|--|--------|
| Belay devices-descenders | | | | |
| VERSO D19 LI, D19 TI, D19 R | Petzl's lightest belay/rappel device with adaptive rope control technology |  | simple: 8.9 mm - 11 mm double: > 8 mm twin: > 7.5 mm | 57 g |
| REVERSO³ D17 G, D17 B, D17 T | Ultra-light versatile belay/rappel device with braking friction adapted to a wide range of rope types; Reverso mode |  | simple: 8.9 mm - 11 mm double: > 8 mm twin: > 7.5 mm | 77 g |
| GRIGRI[®] D14, D14 B, D14 R | Self-braking belay device |  | simple: 10 mm - 11 mm | 225 g |
| Descenders | | | | |
| HUIT D02 | Figure 8 descender |  | simple: 9 mm - 13 mm double: 8 mm - 11 mm | 100 g |
| HUIT ANTIBRULURE D01 | Figure 8 descender with anti-burn grip |  | simple: 9 mm - 13 mm double: 8 mm - 11 mm | 110 g |
| PIRANA D05 | Descender for canyoning |  | simple: 9 mm - 13 mm double: 8 mm - 11 mm | 90 g |
| STOP D09 | Self-braking descender for single rope |  | simple: 9 mm - 12 mm | 326 g |
| SIMPLE D04 | Single rope descender |  | simple: 9 mm - 12 mm | 240 g |
| RACK D11 | Variable friction descender with braking bars |  | simple: 9 mm - 13 mm double: 8 mm - 11 mm | 470 g |
| Via ferrata lanyards | | | | |
| SCORPIO EASHOOK L60 H | Retractable Y-shaped lanyard with tearing energy absorber, EASHOOK carabiners |  | — | 540 g |
| SCORPIO VERTIGO WL L60 WL | Retractable Y-shaped lanyard with tearing energy absorber, VERTIGO WL carabiners |  | — | 504 g |
| SCORPIO L60 2 | Retractable Y-shaped lanyard with tearing energy absorber |  | — | 310 g |
| ZYPER VERTIGO L56 WL | Y-shaped lanyard with friction energy absorber, VERTIGO WL carabiners |  | — | 588 g |
| ZYPER-Y L56 | Y-shaped lanyard with friction energy absorber |  | — | 395 g |

Carabiners

| | | Locking system | Strength | | | Weight |
|--|---|----------------|------------|-----------|------------|--------|
| | | | major axis | open gate | minor axis | |
| Locking carabiners | | | | | | |
| Am'D M34 SL / M34 BL / M34 TL | D-shaped carabiner for connecting devices on harnesses | SCREW-LOCK | 28 kN | 8 kN | 7 kN | 78 g |
| | | BALL-LOCK | | | | 78 g |
| | | TRIACT-LOCK | | | | 74 g |
| WILLIAM M36 SL / M36 BL / M36 TL | Pear-shaped carabiner for belay stations and belaying with Munter hitch | SCREW-LOCK | 25 kN | 7 kN | 7 kN | 90 g |
| | | BALL-LOCK | | | | 94 g |
| | | TRIACT-LOCK | | | | 88 g |
| ATTACHE 3D M38 SL | Ultralight compact pear-shaped carabiner | SCREW-LOCK | 22 kN | 6 kN | 7 kN | 55 g |
| ATTACHE M35 SL | Compact pear-shaped carabiner | SCREW-LOCK | 23 kN | 6 kN | 7 kN | 80 g |
| LOCKER SL M55 SL | Compact and light asymmetrical locking carabiner | SCREW-LOCK | 24 kN | 8 kN | 9 kN | 63 g |
| OK M33 SL / M33 TL | Oval-shaped carabiner for use with pulleys | SCREW-LOCK | 24 kN | 7 kN | 10 kN | 75 g |
| | | TRIACT-LOCK | | | | 8 kN |
| Special locking carabiners | | | | | | |
| FREINO M42 | Carabiner with friction spur for descenders | TWIST-LOCK | 25 kN | 9 kN | 10 kN | 85 g |
| VERTIGO WL M40 WL | Via ferrata carabiner | WIRE-LOCK | 25 kN | 8 kN | 10 kN | 97 g |
| OMNI M37 SL / M37 TL | Semi-circle carabiner for fastening a harness | SCREW-LOCK | 20 kN | 7 kN | 15 kN | 86 g |
| | | TRIACT-LOCK | | | | 92 g |
| Non-locking carabiners | | | | | | |
| SPIRIT M15 A / M10 A | Straight or bent gate carabiner | — | 23 kN | 9.5 kN | 10 kN | 49 g |
| | | | | | | 49 g |
| SPIRIT EXPRESS M30 11A / M30 17A | EXPRESS quickdraw with SPIRIT straight and bent gate carabiners (11 or 17 cm) | — | — | — | — | 104 g |
| | | | | | | 109 g |
| OWALL M41 | Oval-shaped carabiner for aid climbing | — | 24 kN | 7 kN | 10 kN | 68 g |



Ice axes

| | | Length | Shaft type | Weight |
|---------------------------------|---|-------------|------------|---|
| Ice climbing | | | | |
| NOMIC U21 | Leashless dry-tooling and ice climbing tool | 48 cm | T | 635 g |
| QUARK U19 P / U19 M | Technical ice climbing tool, hammer or adze versions | 50 cm | T | 697 g without leash 759 g with leash |
| Technical mountaineering | | | | |
| AZTAR U10 P / U10 M | Multi-purpose ice tool, hammer or adze versions | 50 cm | T | 590 g |
| AZTAREX U11 P / U11 M | Lightweight multi-purpose ice tool, hammer or adze versions | 50 cm | T | 500 g |
| Classic mountaineering | | | | |
| SUMMIT U13 | Classic modern mountaineering ice axe | 52 cm | B | 495 g |
| | | 59 cm | | 535 g |
| | | 66 cm | | 570 g |
| SUM' TEC U15 | Lightweight, technical, classic mountaineering ice axe | 52 cm | T | 485 g |
| | | 59 cm | | 505 g |
| Glacier travel | | | | |
| SNOWWALKER U01 | Glacier touring ice axe | 60 cm | B | 415 g |
| | | 68 cm | | 438 g |
| | | 75 cm | | 458 g |
| SNOWRACER U02 | Lightweight axe for ski mountaineering and light climbing. | 50 cm | B | 340 g |
| SNOWSCOPIC U03 | Trekking pole / ice axe for approaches and easy snow climbs | 65 - 105 cm | B | 450 g |

Crampons

| | | Multi-mount system | Number of points | Weight* |
|---------------------------------|---|--------------------|------------------|--------------------|
| Ice climbing | | | | |
| DART T22 | Mono-point crampon for ice and mixed climbing | LEVERLOCK FIL | 11 | 2 x 412 g = 824 g |
| | | SIDELOCK | 11 | 2 x 408 g = 816 g |
| DARTWIN T21 | Dual-point crampon for ice and mixed climbing | LEVERLOCK FIL | 12 | 2 x 432 g = 864 g |
| | | SIDELOCK | 12 | 2 x 430 g = 860 g |
| M10 LLF T23LLF 02 | Modular crampon for ice and mixed climbing | LEVERLOCK FIL | 14 | 2 x 525 g = 1050 g |
| Technical mountaineering | | | | |
| SARKEN T10 | Technical mountaineering crampon | SIDELOCK | 12 | 2 x 475 g = 950 g |
| | | SPIRLOCK | 12 | 2 x 480 g = 960 g |
| | | LEVERLOCK | 12 | 2 x 505 g = 1010 g |
| | | LEVERLOCK FIL | 12 | 2 x 484 g = 968 g |
| Classic mountaineering | | | | |
| VASAK T05 | Classic 12-point mountaineering crampon | SPIRLOCK | 12 | 2 x 465 g = 930 g |
| | | FLEXLOCK | 12 | 2 x 470 g = 940 g |
| | | LEVERLOCK | 12 | 2 x 490 g = 980 g |
| | | LEVERLOCK FIL | 12 | 2 x 460 g = 920 g |
| Glacier travel | | | | |
| IRVIS T03 | 10-point crampon for ski touring and glacier travel | LEVERLOCK | 10 | 2 x 438 g = 876 g |
| | | SIDELOCK | 10 | 2 x 405 g = 810 g |
| | | FLEXLOCK | 10 | 2 x 410 g = 820 g |

* Weights with ANTISNOW, except for the DART, DARTWIN, M10 LLF crampons.

Ascenders

| | | Rope diameter | Weight |
|-------------------------------------|---|---------------|--------|
| Ascenders | | | |
| ASCENSION B17SRG / B17SLN | Ergonomic handled ascender for right or left hand | 8 - 13 mm | 195 g |
| CROLL B16AAA | Ventral ascender | 8 - 13 mm | 130 g |
| PANTIN B02ALA / B02ARA | Foot ascender - left and right foot versions | 8 - 13 mm | 120 g |
| Multi-purpose ascenders | | | |
| SHUNT B03 | Back-up ascender | 8 - 11 mm | 188 g |
| BASIC B18AAA | Multi-purpose lightweight ascender | 8 - 13 mm | 135 g |
| MICROCENDER B54 | Compact and lightweight ascender | 9 - 13 mm | 162 g |
| TIBLOC B01 | Compact emergency ascender | 8 - 11 mm | 39 g |
| Adjustable foot loops | | | |
| FOOTAPE C47 | Adjustable webbing foot loop | — | 76 g |
| FOOTCORD C48 | Adjustable cord foot loop for caving | — | 45 g |

Pulleys



| | | | Rope diameter | Efficiency | Weight |
|---------------------------------------|---|--|-------------------------------|------------|--------|
| Progress capture pulleys | | | | | |
| MINI TRAXION P07 | Compact, lightweight progress capture pulley | | 8 - 13 mm | 71 % | 165 g |
| PRO TRAXION P51 | Very efficient progress capture pulley | | 8 - 13 mm | 95 % | 265 g |
| Single pulleys | | | | | |
| ULTRALEGERE P00A | Pulley for occasional use | | ≤ 13 mm | — | 10 g |
| OSCILLANTE P02A | Swing-sided pulley for emergency use | | ≤ 13 mm | 71 % | 42 g |
| FIXE P05S0 | Pulley with fixed side plates | | ≤ 13 mm | 71 % | 90 g |
| PARTNER P52A | Compact pulley with swinging side plates | | ≤ 11 mm | 91 % | 56 g |
| RESCUE P50A | Ultra-strong pulley with swinging side plates | | ≤ 13 mm | 95 % | 185 g |
| Prusik pulleys | | | | | |
| MINI P59A | Lightweight Prusik pulley | | ≤ 11 mm | 91 % | 80 g |
| GEMINI P66A | Double Prusik pulley | | ≤ 11 mm | 91 % | 135 g |
| Transport pulleys | | | | | |
| TANDEM P21 | Double pulley for use with ropes | | ≤ 13 mm | 71 % | 195 g |
| TANDEM CABLE P21 CAB | Double pulley for use with ropes and cables | | rope ≤ 13 mm cable ≤ 12 mm | 71 % | 258 g |
| TANDEM SPEED P21 SPE | Efficient double pulley for use on ropes and cables | | rope ≤ 13 mm cable ≤ 12 mm | 91 % | 270 g |
| CREVASSE RESCUE KIT K25 SC2 | Kit containing the equipment needed for hauling/ascending in crevasse rescue situations: MINI TRAXION, 2 OK SCREW-LOCK carabiners, TIBLOC, OSCILLANTE pulley, 120 cm STANNEAU sling | | 8 - 13 mm | — | 585 g |

Anchors









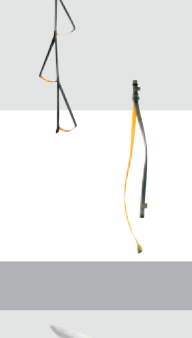
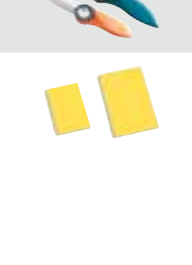
| Ice protection | | |
|--|--|---|
| LASER SONIC P70 | Ice screw with integrated handle |  |
| LASER P71 | Ice screw |  |
| Ice protection accessories | | |
| TURBINE 65050 | Crank for ice screws |  |
| ICEFLUTE V10 | Protective ice-screw holder |  |
| SNOWTUBE 68810 / 68820 | Snow anchor |  |
| HAND HOOK 64801 | Suspension hook for ice-climbing |  |
| MULTIHOOK 04950 | Multipurpose hook |  |
| NITRO 3 67800 | Energy absorber for use as a quickdraw |  |
| Rock anchors | | |
| V CONIQUE 66007 / 66011 | Chromoly steel channel piton |  |
| ROCHER MIXTE 65106 / 65108 / 65110 | Semi-hardened steel forged piton |  |
| UNIVERSEL 65406 / 65408 / 65410 | Semi-hardened steel forged piton |  |
| U 65312 / 65314 | Semi-hardened steel forged piton |  |
| LIVANOS 65504 / 65506 / 65508 / 65510 | Chromoly steel channel piton |  |
| COEUR P34050 / P38150 | Bolt hanger |  |
| COEUR GOUJON P32 / P33 | Complete anchor assembly |  |
| LONG LIFE P38 | 12 mm expansion anchor |  |

| BAT'INOX P57 | 14 mm resin anchor |  |
|-------------------------------------|-------------------------------------|---|
| AMPOULE BAT'INOX P41 | Resin glue for BAT'INOX |  |
| COLLINOX P55 | 10 mm resin anchor |  |
| AMPOULE COLLINOX P56 | Resin glue for COLLINOX |  |
| Caving anchors - maillons | | |
| VRILLEE P13 | Caving bolt hanger |  |
| COUDEE P04 | Caving bolt hanger |  |
| CHEVILLE AUTO-FOREUSE P12 | Self-drilling expansion bolt anchor |  |
| DELTA P11 | Triangular maillon |  |
| SPEEDY P14 | Maillon with rapid gate |  |
| PRESTO P10 | Maillon with wide rapid gate |  |
| GO P15 | Oval maillon |  |
| DEMI ROND P18 | Semi-circular maillon |  |
| Rock and caving anchor accessories | | |
| BONGO P27 | Piton hammer |  |
| TAM TAM P16 | Caving hammer |  |
| ROCPEC P26 / P26210 / P26212 | SDS-bit hand drill |  |
| ROCPEC ADP P26 ADP | Adaptor for ROCPEC drill |  |
| PERFO SPE P08 | Drill for self-drilling anchors |  |
| BOLTBAG C11 A | Bolting equipment pouch |  |
| PROTEC C45 | Rope protector |  |
| SWIVEL S P58 S | Ball bearing swivel |  |
| PAW S P63 S | Rigging plate | |

Accessories and packs



| Caving pack | | |
|--------------------------|--|---|
| BUG S71 | Backpack for single day multi-pitch climbing |  |
| Caving packs | | |
| TRANSPORT C02 | 45 liter large capacity comfortable caving pack |  |
| PORTAGE S32 | 35 liter large capacity caving pack |  |
| CLASSIQUE C03 | 22 liter medium capacity caving pack with round base |  |
| PERSONNEL C14 | 15 liter small caving pack |  |
| Canyoning packs | | |
| ALCANADRE S64 | 37 liter comfortable canyoneering pack |  |
| ARTUBY S63 | 22 liter canyoneering pack |  |
| Chalk bags | | |
| BANDI S38P | Classic cylinder shaped chalk bag |  |
| KODA S39P | Chalkbag with ergonomic shape |  |
| KODAPOCHE S40P | Ergonomically shaped chalk bag with pocket |  |
| POWER CRUNCH P22B | Chunky chalk |  |
| Gloves, lanyard | | |
| CORDEX K52 | Lightweight belay/rappel gloves |  |
| CORDEX PLUS K53 | Lightweight belay/rappel gloves |  |
| SPELEGYCA C44 | Asymmetric double lanyard |  |

| Sewn slings | | |
|-----------------------------------|---|---|
| ANNEAU C40 | Polyester sling |  |
| ST'ANNEAU C07 | Dyneema sling |  |
| FIN'ANNEAU C06 | Ultralight Dyneema sling |  |
| Aid climbing accessories | | |
| FIFI V12 | Suspension hook for aid climbing |  |
| MAILLON RAPIDE N° 5 P49100 | Quick link for installing a retrieval system on the FIFI hook |  |
| GOUTTE D'EAU P06 | Large radius progression hook |  |
| REGLETTE P06 S | Small radius progression hook |  |
| QUICKSTEP C09 | Adjustable single-step etrier for aid climbing |  |
| WALLSTEP C01 | 7-step etrier for aid climbing |  |
| GRADISTEP C08 | Lightweight 5-step etrier for aided sections on free climbs |  |
| LOOPING C25 | 4-step etrier for aid climbing | |
| QUICKFIX C09100 | Adjustable positioning sling for aid climbing | |
| Accessories | | |
| SPATHA S92 S / S92 L | Knife with carabiner hole | |
| CARNET S90 / S91 | Topographic notebook for caving | |




Headlamps




| | | | Light quantity (lumens) | Beam patterns | Distance maximum | Battery life maximum | Weight worn on head |
|--|---|---|-------------------------|---------------|------------------|----------------------|---------------------|
| SIGNAL E05 P | Multi-mount red safety light |  | — | wide | 1000 m * | 120 h | 22 g |
| e+LITE E02 P2 | Headlamp for emergency situations |  | 16 lm (maximum) | wide | 19 m | 45 h | 28 g |
| TIKKINA ® 2 E91 PE - E91 PO E91 PL - E91 PF | 2 LED headlamp with two lighting levels |  | 23 lm (maximum) | wide | 23 m | 190 h | 80 g |
| TIKKA ® 2 E93 PS - E93 PT | 4 LED headlamp, three lighting modes (two continuous and one flashing) |  | 40 lm (maximum) | wide | 29 m | 120 h | 81 g |
| ZIPKA ® 2 E94 PS - E94 PT | Ultra-compact 4 LED headlamp with retractable cord, three lighting modes (two continuous and one flashing) |  | 40 lm (maximum) | wide | 29 m | 120 h | 69 g |
| TIKKA PLUS ® 2 E97 PM - E97 PP | Headlamp with 1 high-output LED, 1 red LED and five lighting modes (three continuous and two blinking) |  | 50 lm (maximum) | wide | 35 m | 140 h | 83 g |
| TIKKA PLUS ® 2 ADAPT E97 PMA | Headlamp with one high-output LED, one red LED and five lighting modes (three continuous and two strobe) and ADAPT system |  | 50 lm (maximum) | wide | 35 m | 140 h | 101 g |

* Maximum distance at which the light is still visible

Find accessories and spare parts for all products at www.petzl.com

| | | | Light quantity (lumens) | Beam patterns | Distance maximum | Battery life maximum | Weight worn on head |
|--|--|---|-------------------------|----------------|------------------|----------------------|---------------------|
| ZIPKA ® PLUS 2 E98 PM - E98 PP | Ultra-compact headlamp with retractable cord, 1 high-output LED, 1 red LED and five lighting modes (three continuous and two blinking) |  | 50 lm (maximum) | wide | 35 m | 140 h | 71 g |
| TIKKA XP ® 2 E99 PG - E99 PI | Headlamp with one high-output LED, one red LED and five lighting modes (three continuous and two strobe) and Wide Angle lens |  | 60 lm (maximum) | wide / focused | 60 m | 160 h | 88 g |
| TACTIKKA ® E46 P2 - E46 PC2 | 3 LED headlamp with 1 lighting mode and red flip filter |  | 26 lm | wide | 27 m | 120 h | 78 g |
| TACTIKKA ® PLUS E49 P - E49 PC | 4 LED headlamp with 4 lighting modes and red flip filter |  | 35 lm (maximum) | wide | 32 m | 150 h | 78 g |
| TACTIKKA ® PLUS ADAPT E49 PA | 4 LED headlamp with 4 lighting modes, red flip filter and ADAPT system |  | 35 lm (maximum) | wide | 32 m | 150 h | 92 g |
| TACTIKKA ® XP E89 PC - E89 PD | High-output headlamp, 4 lighting modes, Boost mode and colored Wide Angle lens |  | 40 lm (Boost) | wide / focused | 35 m | 120 h | 95 g |
| TACTIKKA ® XP ADAPT E89 P | High-output headlamp, 4 lighting modes, Boost mode, colored Wide Angle lens and ADAPT system |  | 40 lm (Boost) | wide / focused | 35 m | 120 h | 120 g |

Find accessories and spare parts for all products at www.petzl.com

| | | | Light quantity (lumens) | Beam patterns | Distance maximum | Battery life maximum | Weight worn on head |
|----------------------------------|---|---|-------------------------|----------------|------------------|----------------------|---------------------|
| MYO® XP E83 P2 | Powerful headlamp, 4 lighting modes, Boost mode and Wide Angle lens |  | 85 lm (maximum) | wide / focused | 72 m | 180 h | 175 g |
| MYO® XP BELT E84 P2 | Powerful headlamp with remote battery pack, 4 lighting modes, BOOST mode and Wide Angle lens |  | 85 lm (maximum) | wide / focused | 72 m | 180 h | 75 g |
| MYO® RXP E87 P | Powerful, regulated and programmable headlamp, 4 lighting modes, Boost mode and Wide Angle lens |  | 140 lm (Level n° 10) | wide / focused | 77 m | 95 h | 175 g |
| DUO LED 5 E69 P | Hybrid waterproof headlamp: halogen / 5 LEDs |  | 40 lm (5 LED) | wide / focused | 100 m | 65 h | 300 g |
| DUO LED 14 E72 P | Hybrid waterproof headlamp: halogen / 14 LEDs with 3 regulated lighting modes |  | 67 lm (14 LEDs) | wide / focused | 100 m | 183 h | 300 g |
| DUO LED 14 ACCU E72 AC | Hybrid waterproof headlamp: halogen / 14 LEDs with 3 regulated lighting modes and rechargeable battery |  | 67 lm (14 LEDs) | wide / focused | 100 m | 96 h | 380 g |
| DUOBELT LED 5 E73 P | Hybrid waterproof headlamp: halogen / 5 LEDs and remote battery pack |  | 40 lm (5 LEDs) | wide / focused | 100 m | 350 h | 140 g |
| DUOBELT LED 14 E76 P | Hybrid waterproof headlamp: halogen / 14 LEDs with 3 regulated lighting modes with rechargeable battery and remote battery pack |  | 67 lm (14 LEDs) | wide / focused | 100 m | 430 h | 140 g |
| ULTRA E52 AC | Ultra-powerful headlamp, 3 regulated brightness modes, ACCU 2 ULTRA rechargeable battery |  | 350 lm | wide / focused | 120 m --> 1 h 30 | 16 h 55 | 345 g |
| ULTRA BELT ACCU 2 E53 AC2 | Ultra-powerful headlamp, 3 brightness modes, ACCU 4 ULTRA remote rechargeable battery |  | 350 lm | wide / focused | 120 m --> 1 h 30 | 16 h 55 | 230 g |
| ULTRA BELT ACCU 4 E53 AC | Ultra-powerful headlamp, 3 brightness modes, ACCU 2 ULTRA remote rechargeable battery |  | 350 lm | wide / focused | 120 m --> 3 h 15 | 34 h 20 | 230 g |

Find accessories and spare parts for all products at www.petzl.com

Equipment organized by activity

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Equipment maintenance and inspection



"Me, my gear and I"

Most participants have a strong relationship with their equipment. This relationship may take many shapes: passionate for "gearfreaks", all-consuming for "collectors", cultish for "fetishists", orderly for the "obsessed"... Even for the slightly detached, this relationship is rarely a complete "I don't care..." Why? Because this equipment is made to stop a fall and/or aid progression in vertical or dark environments, it is safety and even life that are at stake.

However, the equipment gets a little more worn with each outing, ages over time (even when stored on a shelf, plastics and textiles have a limited lifespan), or may be seriously damaged during its first use. The point is, it will not last forever.

Therefore, no matter what your relationship is with your equipment, it is essential that you know how to inspect and care for it. This involves all the equipment: yours and your team members', for everyone's safety. Even the least gear-focused can not avoid this.

Lifetime of products

For Petzl's plastic and textile products, the maximum lifetime is 10 years from the date of manufacture. The lifetime is indefinite for metallic products. **WARNING:** An exceptional event may require you to retire a product after only one use... (look for the entire text related to the lifetime of each product in its technical notice).

Maintenance, inspection and traceability of equipment

Taking good care of equipment ensures a longer lifetime. Save all product technical notices, as they contain many recommendations and instructions about product maintenance. We recommend that you read and carefully follow the instructions for inspection that are also presented on the notices. An audiovisual module to assist with inspection as a complement to the notices is available for consultation and downloading at www.petzl.com. This module is a result of our experience and expertise regarding the wear, aging and general lifespan of a product, an expertise that we update constantly, notably in the context of V.axess, a centre for research, experimentation and training. Do not remove the identification markings on products (cloth labels, engravings...); they contain important information for traceability.

End of the life of a product

What should you do with equipment that is no longer usable? Leaving it as is, at the bottom of a pack or displayed as a souvenir on the fireplace, will not prevent it from showing up again on a route... As soon as you decide to retire a product, you must identify it, separate it from the rest of the equipment and, most importantly, make it unusable. Cut ropes, slings and harnesses into smaller pieces and break or saw apart metal products. Recycling processes for textiles and metals will take care of the rest.

For all questions concerning inspection of equipment, contact Petzl: www.petzl.com/contact

Warning

Activities at height are inherently dangerous and may result in serious injury or death. Take the time to fully read and understand the information presented in this catalog, as well as the instructions for use that come with the products. Gaining an adequate apprenticeship is your own responsibility. The information presented in this catalog is believed to be correct at press time. But it is not guaranteed to be exhaustive, correct, understandable, or up-to-date. PETZL reserves the right to modify this information at any time. Petzl's civil liability does not extend to products that have been modified or repaired outside our factories. Contact PETZL if you have any doubt or difficulty in understanding the information presented in this catalog. (www.petzl.com/contact)



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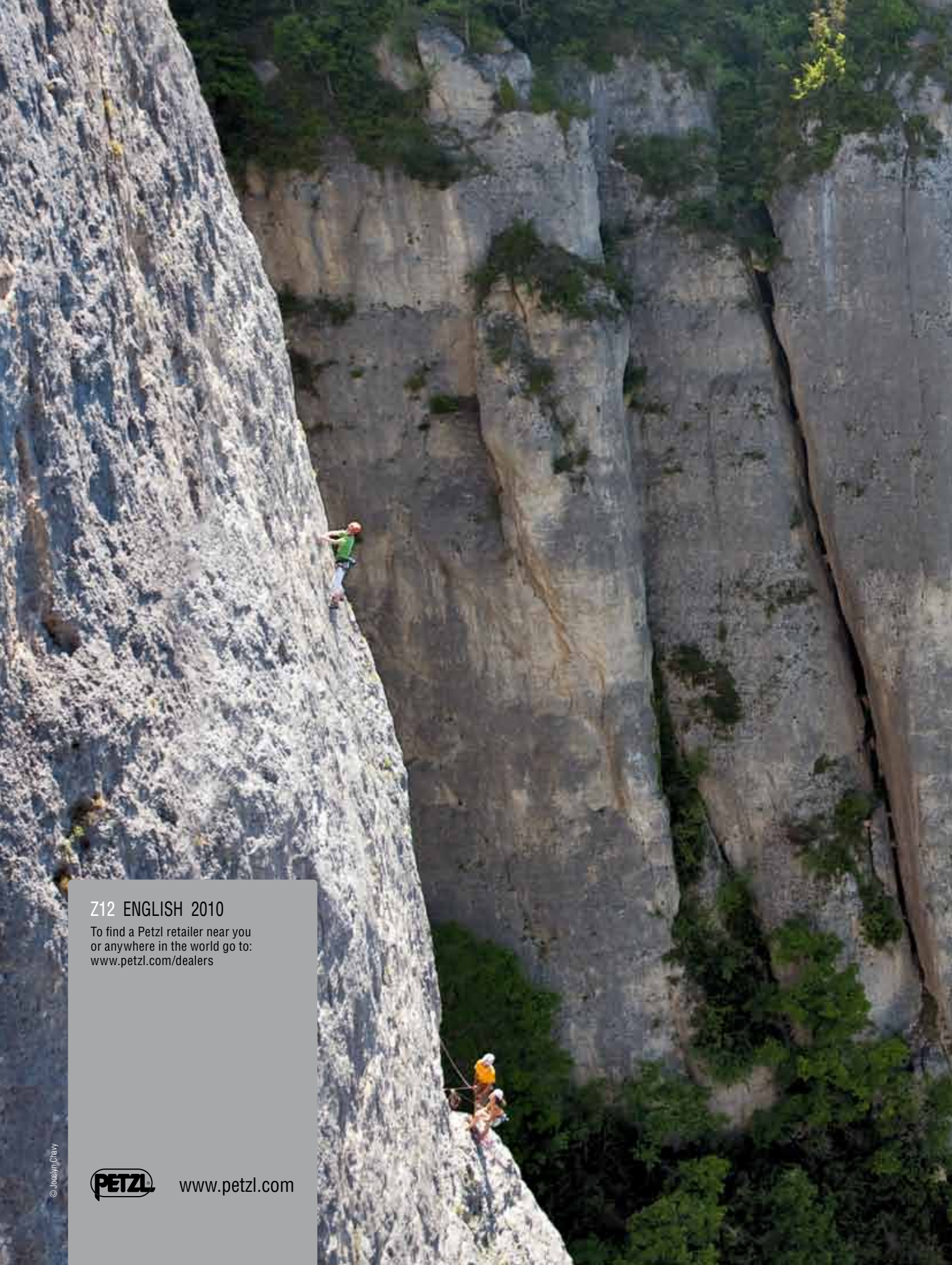
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The Petzl Institute was created to be a place for exchange and experimentation. Its goal is to unite experiences and knowledge under one roof in order to invent and develop the techniques of tomorrow. To reach these objectives, it is necessary to increase our understanding of the different components of verticality. This modeling phase is essential. It must integrate human dimensions, both physiological and psychological, as well as technical dimensions, which may involve equipment or progression.

Embodied by a new, 500 m² multi-use building, V.axess offers modular solutions designed to allow simulation of most situations encountered in vertical terrain: a 20 m tower laid out with exterior sloping walls and equipped to reproduce/simulate all kinds of conditions of vertical progression. This new tool is totally adaptable to our needs and allows us to - in a controlled setting - analyze and better understand different phenomena observed in the field. This new information will allow us to invent and experiment with techniques for the 21st century.



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