Access
the
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ACCESSBOOK n° 4

Ice climbing basics

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Access the inaccessible. You have dreams and our mission is to help you realize them to the fullest extent possible.

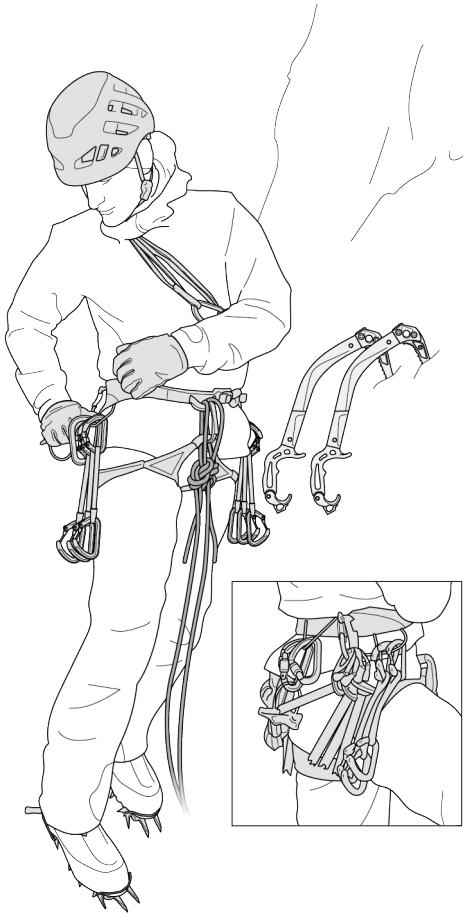
Petzl's ACCESS BOOK booklets are designed to go with you as you prepare for and achieve your goals as a mountaineer, climber, skier… Each ACCESS BOOK covers one particular activity. It is a collection of selected technical tips from Petzl.com.

This fourth booklet is dedicated to ice climbing. We address technical aspects of the activity such as equipment choice, ice screw placement, progression, building a belay or making a V-thread. What sets this activity apart is its environment: ice. Apart from technique, ice climbing requires significant experience to better understand ice quality and formation; this topic is not covered in this booklet.

Warnings:
- These booklets present an excerpt from the body of techniques for the activity
- Get training and practice in the techniques of the activity
- Carefully read the Instructions for Use of the products associated with the proposed techniques
- The environment and the activity itself are inherently dangerous. You are responsible for your own actions and decisions

Contents

Quiver



Ice axes: curved shaft for optimal striking power, and more effective placements and hooking on steep ice. Offset handle for more mobility and improved comfort when hanging.

Crampons: mono-point or dual-point technical crampons.

Ice screw holder: an essential accessory for easy, one-handed access and organization of ice screws on the harness.

Ice screws: be sure to take enough, in various sizes, for protection on the pitches.

Threading tool: required for making a V-thread (see page 10).

A piece of cord for V-threads: take 3-5 m of 6-7 mm cord for making V-threads.

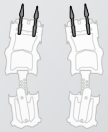
Ropes: DRY treated rope is preferred for better handling in cold, wet conditions.

Gloves: better to take two pairs as they quickly become wet. Keep one pair warm in your down jacket. Avoid large gloves such as ski gloves or mittens, which do not provide good grip on ice axes.

Multi-pitch climbing equipment: harness, helmet, quickdraws, belay device...

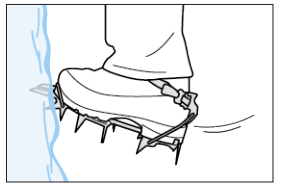
Ice screw size	Primary use
Long (21 cm)	Making V-threads / belays
Medium (17 cm)	Protection while climbing / possibly for making belays if the ice quality is good
Short (13 cm)	Protection while progressing on thin to very thin ice

Dual-point or mono-point crampons?

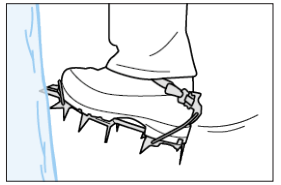


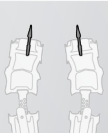
The dual-point configuration offers good lateral stability: it is ideal for beginners.

- Long dual-points : optimal configuration for snow or ice gulleys, or moderate ice climbing. When the ice is covered by snow, the long points will reach the ice through the snow layer.

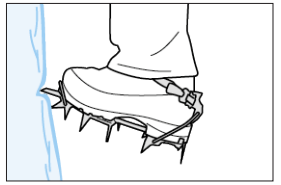


- Short dual-points: for hard ice. The secondary points will contact the ice, increasing stability and reducing calf fatigue.

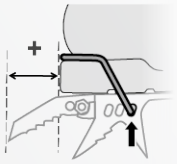




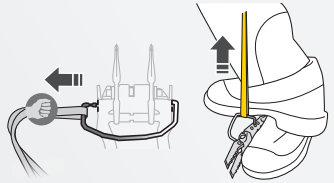
The mono-point configuration is useful for technical ice climbing or in hard ice where more precision is desired. It offers better point penetration, greater foot mobility and easier hooking.



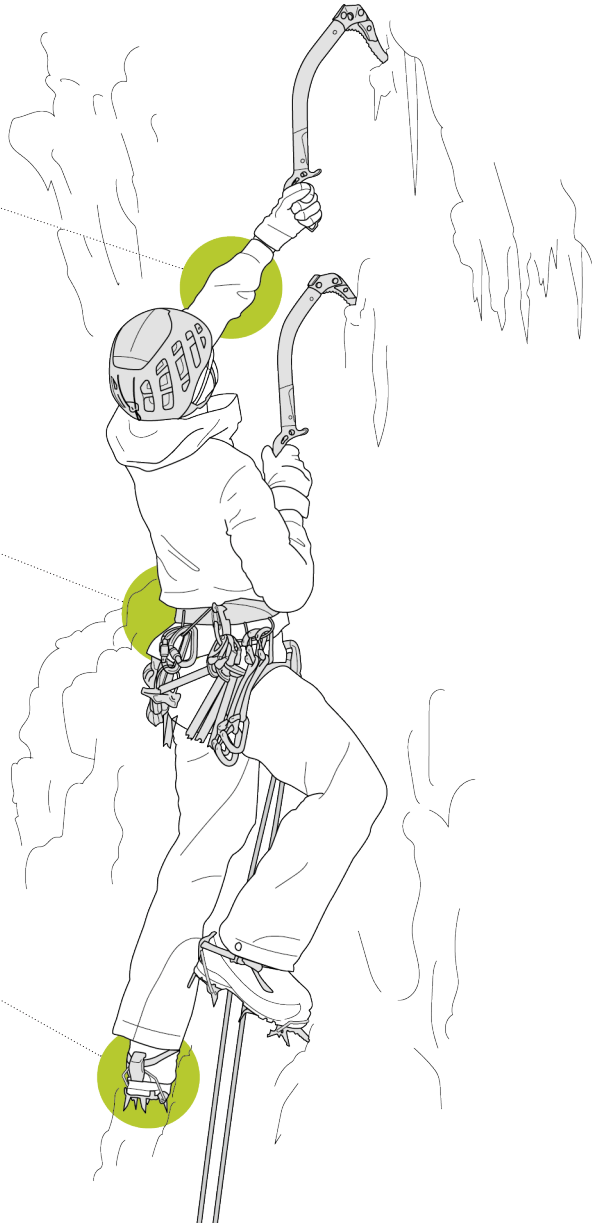
By adjusting the front binding system, you can move your boot forward or back on the crampon and thus adjust the penetration depth of the front points.



Tip for removing the toe bail wire



Basic position



Keep the arms as straight as possible

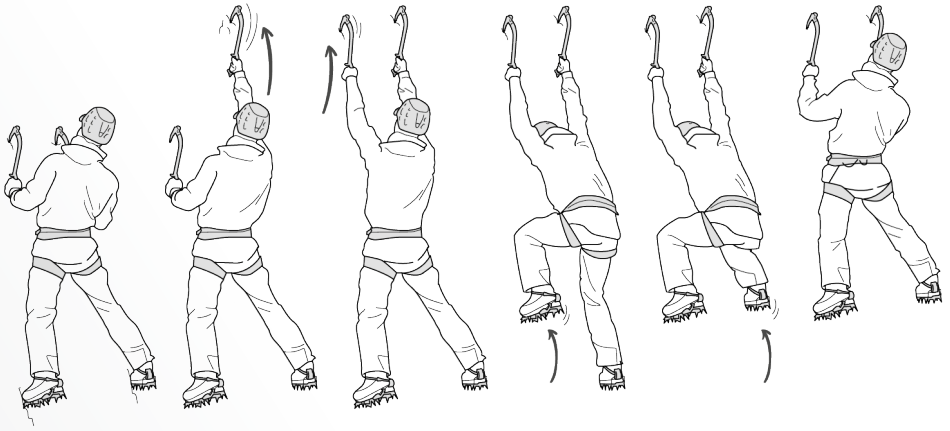
Hips close to the ice

Back slightly arched

Feet slightly apart

Heels low: reduces calf fatigue and helps prevent the front points from slipping

Beginner technique



Use your legs to move up, to conserve arm strength.

Avoid climbing above your ice axes: this can cause them to slip.

PETZL.COM

For the strike, see our video **Ice climbing technique - the basics** available at Petzl.com.

Ice screw placement

When to place?

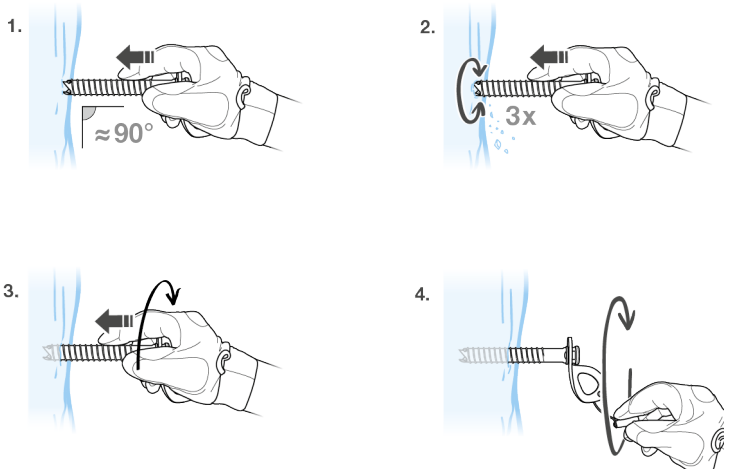
Don't wait until you find yourself in difficulty. Plan ahead so you can find good ice, and be relaxed during placement.

Where to place?

Choose the thickest and most homogeneous ice possible. Avoid areas of soft, aerated or cracked ice. Clean the surface ice or snow. Choose a screw length suitable for the ice thickness. The quality of the ice determines the holding power of the ice screw.

Do not leave your ice axe close to the screw placement.

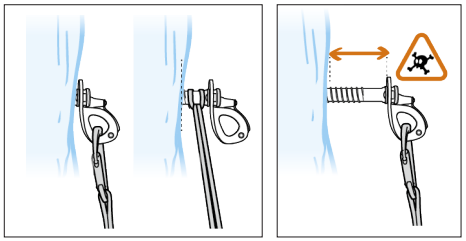
How to place?



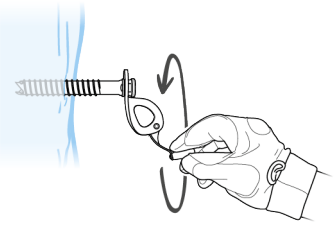
For screw placement, see our video **Ice climbing basics** available at Petzl.com.

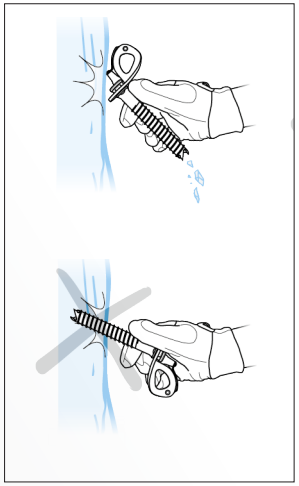
Ice screw placement

Clipping the ice screw



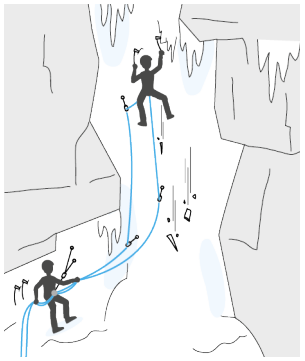
How to remove an ice screw?



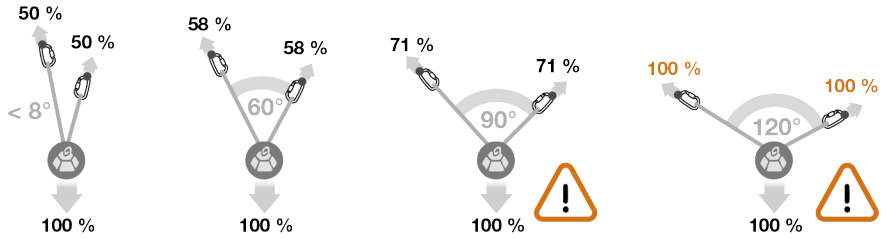


Building a belay

Anticipate the belay position: it must offer protection from falling ice on the next pitch. It should be fairly comfortable and built in good-quality ice. Use long screws.

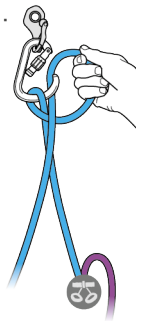


Belay triangulation angles



Setting up a belay with ice screws

1.



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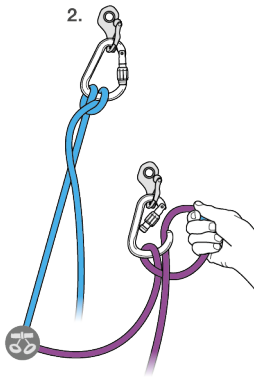

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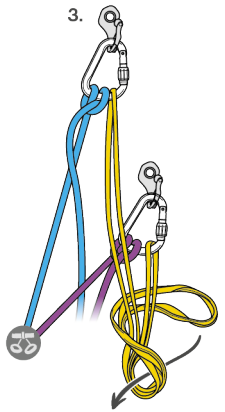
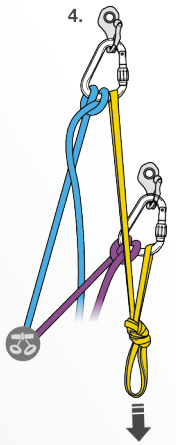
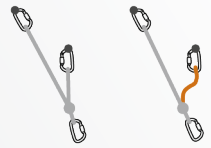


Building a belay

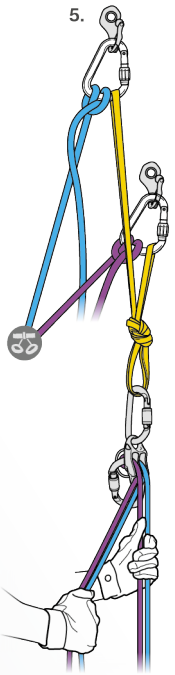
4.

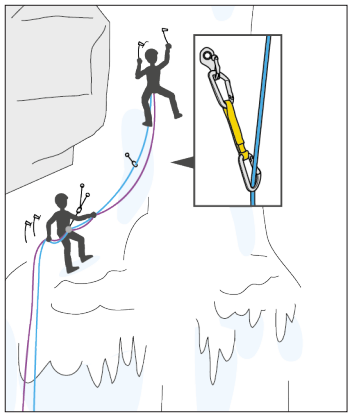




Make sure the slings are properly triangulated, to share the load on the two screws when belaying the second.

5.

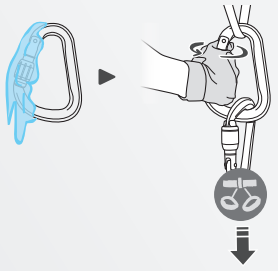




WARNING: place a screw immediately after leaving the belay to protect the leader at the beginning of the next pitch.

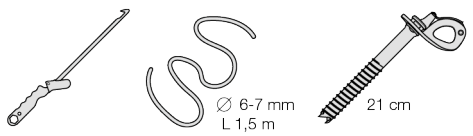
Unlocking a frozen screwgate carabiner:

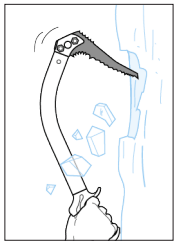
Put your weight on the carabiner and grip the screw sleeve with the palm of your hand.



Building a V-thread anchor

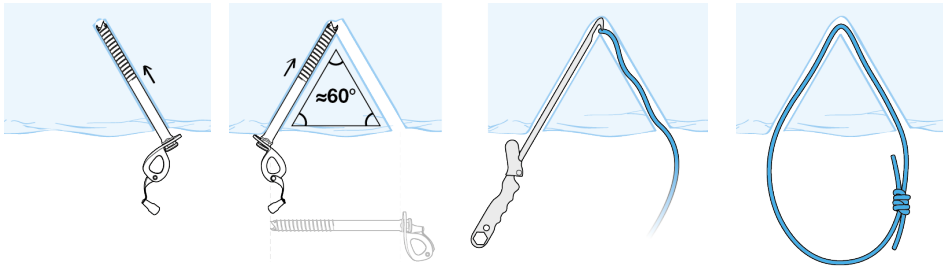
Equipment



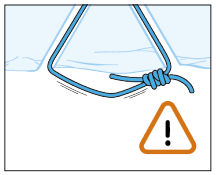


Before building the V-thread, start by cleaning the ice with an axe.

Construction



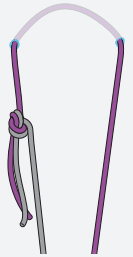
The strength of the V-thread depends greatly on ice quality and on the way it is made (distance between holes, angle...). Beware of existing V-threads, as they may have hidden damage and turn out to be dangerous if reused.



Direct rope thread:

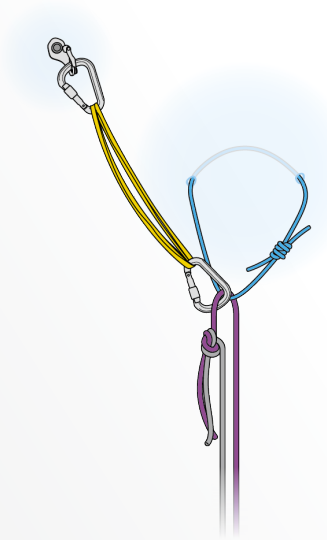
The rappel rope can be threaded directly through the V-thread hole.

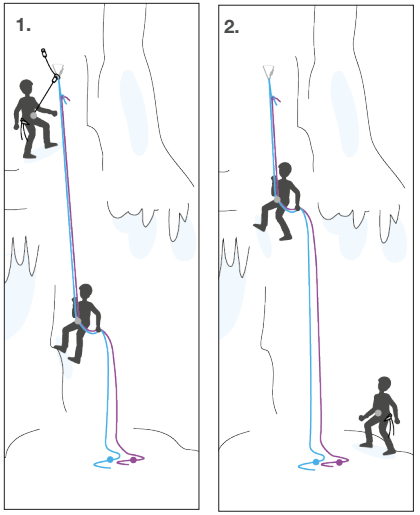
- ⊕ Ease of linking rappels
- ⊕ No equipment left in place
- ⊖ Rope can freeze in the hole
- ⊖ More friction when pulling the rope

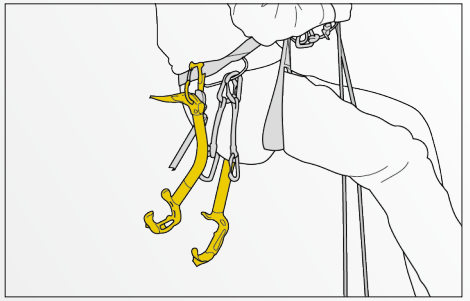


Rappelling from a V-thread

A screw placement backs up the V-thread for the first rappeller. The last person removes this screw before rappelling.







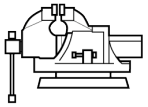
Ice axes clipped to the harness while rappelling, picks pointing backward.

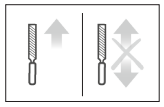
Sharpening

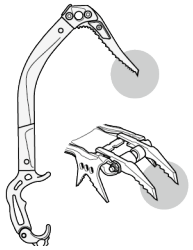
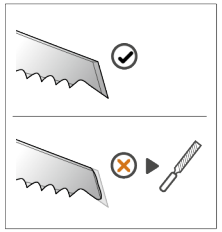
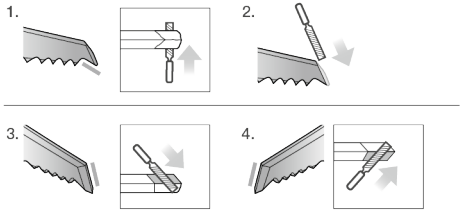
In ice climbing, good equipment maintenance is essential. Be sure to dry your equipment well after each outing. It is also important to monitor the sharpness of screws, axes and crampons for easy ice penetration.

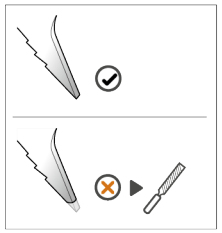
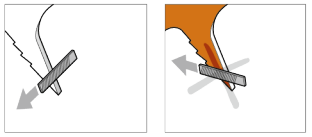
Whatever the product, sharpening is a tricky task. Be sure to always follow the original angle of the tooth edge.

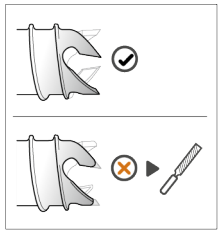
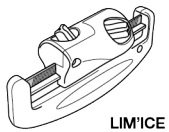
Necessary equipment





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For optimal sharpening, see our video **Sharpening ice screws** available at Petzl.com.

Notes

For more information…

Find more technical advice and videos
on ice climbing at **www.petzl.com**

The information contained in this brochure is non-exhaustive.
See the Instructions for Use for the products, and their related technical advice. Training is essential.
In the mountains, the environment you are traveling in is inherently dangerous: You are responsible for your own actions, decisions and safety.

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