



User Instructions



95 gm
8.8mm-11mm rope

Delta Vee™ Climbing / Rescue Tool

The unique multi function tool for
climbing, guiding and rescue

KEEP THESE INSTRUCTIONS:

Refer to these instructions before and after each use. Read and understand warning below before first use. Retain a copy for your permanent records. Retain a second copy to keep with the device.

If you have any questions, comments or concerns, contact us at
1600 Kentucky Street, suite A-3
Bellingham, WA 98229 • USA
P: 360.734.2311 • F: 360.738.2241
E: info@conterra-inc.com • W: www.conterra-inc.com



PLEASE READ!

Climbing, caving, rescue, rope access, and other activities involving the use of this device are inherently dangerous. You are responsible for your own actions and decisions. Even when this device is properly used, loss, injury or death could occur. By using this device you agree to hold harmless Conterra Inc, its owners, employees, or agents. If you do not agree to the above, do not use the device. Return the device for a full refund. If you agree to the above, and decide to use the device, before use you must:

- Read and understand all instructions
- Get specific professional hands on training in its proper use.
- Become acquainted with its capabilities and limitations
- Understand the inherent risks involved with the use of this device.



FAILURE TO HEED OR UNDERSTAND ANY OF THESE
WARNINGS MAY RESULT IN INJURY OR DEATH



WARNINGS



- Always clip this device in to your harness with a locking carabiner. Be sure that you attach the carabiner and device according to your harness manufacturer's instructions.
- Make sure hair, loose clothing and your brake hand do not get caught in the device during use.
- Never take your braking hand off the rope or ropes, unless the devices is locked off or otherwise made secure.
- Fast rappelling or lowering can cause any device to become hot and possibly damage the rope sheath or your harness, as well as burn you. We recommend a speed of less than 10m per minute.
- If belaying two seconding climbers in Guide Mode, always grip the braking side of both ropes at all times. If one of the two seconds hangs on the rope, it is possible that the locking function of the device may not work on the other second's rope.
- New dry treated ropes and smaller diameter ropes feed through belay/rappel devices faster, which can be more difficult to control when belaying or rappelling.
- If you are using soft/ worn ropes or ropes with loose sheaths, understand that sheath bunching can occur. This can cause the rope to jam in the device.
- Always consider how best to carry out a rescue in case you or others are in trouble. (See next page).

CARE AND MAINTENANCE

The ΔV(Delta Vee) must not come into contact with corrosive materials such as battery acid, battery fumes, solvents, chlorine bleach, antifreeze, alcohol or gasoline.

After contact with saltwater or salt air, always rinse, and store dry. Store this device in a cool, dry, dark place.

LIFESPAN, INSPECTION AND RETIREMENT

The lifespan of this device depends upon how often you use it and on the conditions of its use. With proper care the lifespan of this device is five to ten years. With frequent use and proper care the lifespan of a metal product is two to five years. The shelf life of this device is indefinite.

- Inspect your gear for signs of damage and wear before and after each use.
- Damaged gear must be retired and destroyed to prevent future use.
- Things that reduce the lifespan of the ΔV: Falls, abrasion, wear, saltwater/ air or harsh environments.
- If there is wear or gouging deeper than about 1mm, retire the device.
- If corrosion forms, retire the device.
- If any deformation (bends) or cracks are noticed, retire the device.
- If any sharp spots form, retire the device.
- If you have any doubts about the dependability of your gear, retire it.
- Do not loan this device to others, or use it if you obtained it second hand.

LIMITED WARRANTY

The original retail buyer is guaranteed that the ΔV(Delta Vee) is free from defects in material and workmanship as originally sold, for one year following purchase unless otherwise indicated by law. If you receive a defective product, return it to us and we will replace it subject to the following conditions: We do not warrant products which show normal wear and tear or that have been used or maintained improperly, modified or altered, or damaged in any manner.

Δ (Delta) = Change

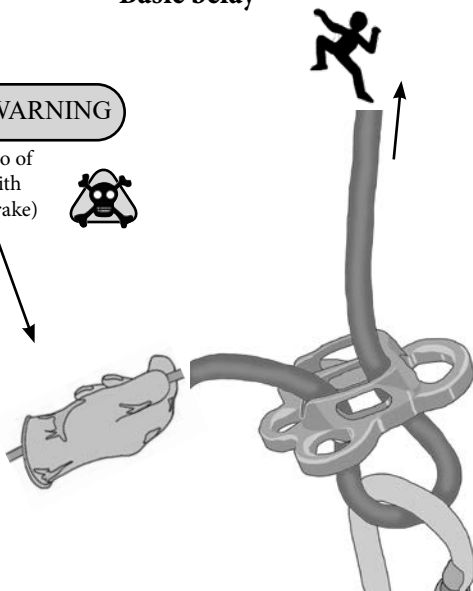
ΔV = Change in Velocity

V (Vee) = Velocity

Basic belay



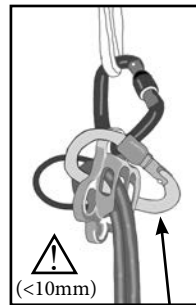
Never let go of the rope with control (Brake) hand.



Guide Belay

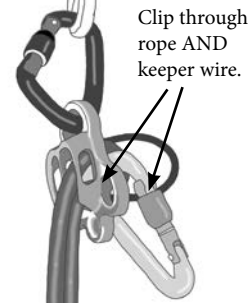


Guide Belay is an advanced climbing technique, and should not be attempted without professional instruction, and practice in a controlled environment. Slack must never be allowed to form between the climber and the device!

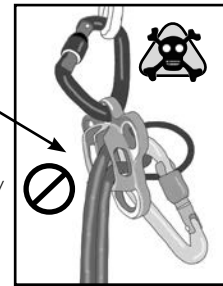


Conterra recommends using a "Captured Plaquette" technique when using ropes < 10mm in diameter.

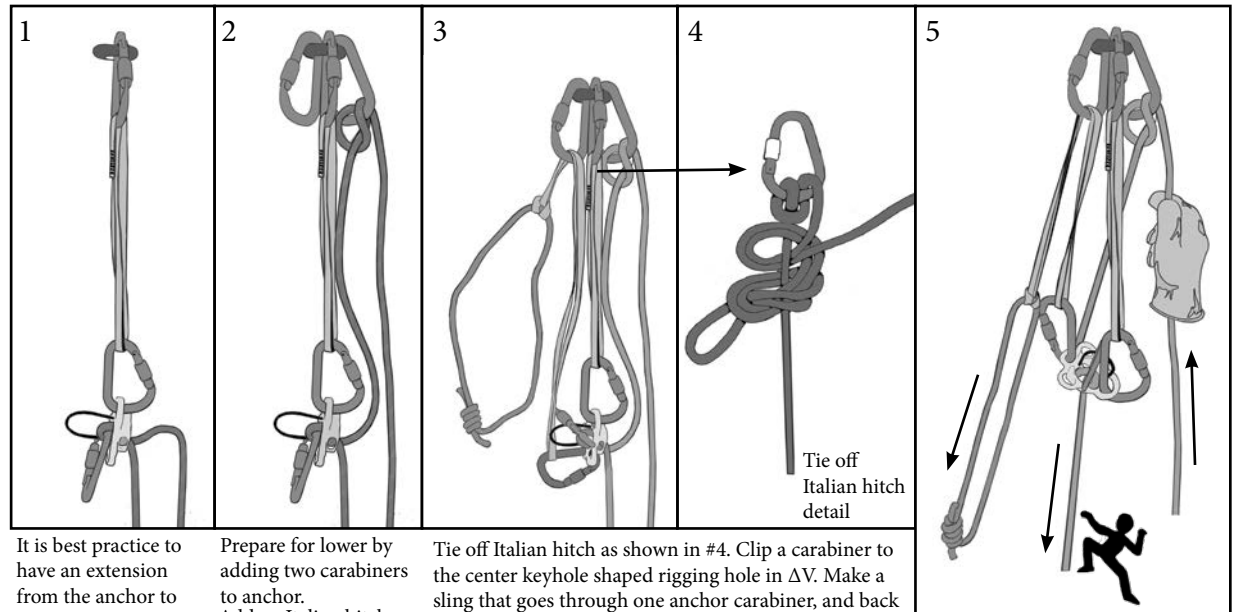
Clip through rope AND keeper wire.



Do not attempt to perform a guide belay with the ΔV upside down (big hole on the bottom/ keyhole on top). Belay failure may result!



Guide Belay Release



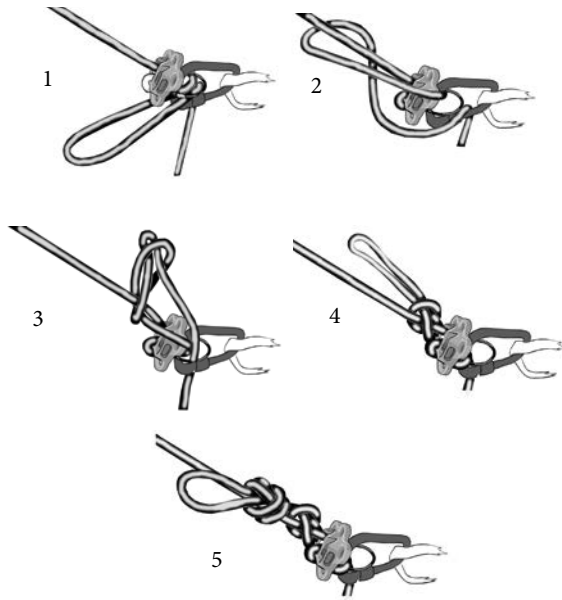
It is best practice to have an extension from the anchor to the ΔV for guide belay.

Prepare for lower by adding two carabiners to anchor. Add an Italian hitch with the non loaded rope.

Tie off Italian hitch as shown in #4. Clip a carabiner to the center keyhole shaped rigging hole in ΔV. Make a sling that goes through one anchor carabiner, and back to your harness.

Weight the harness sling, untie the hitch lock off, and lower the client.

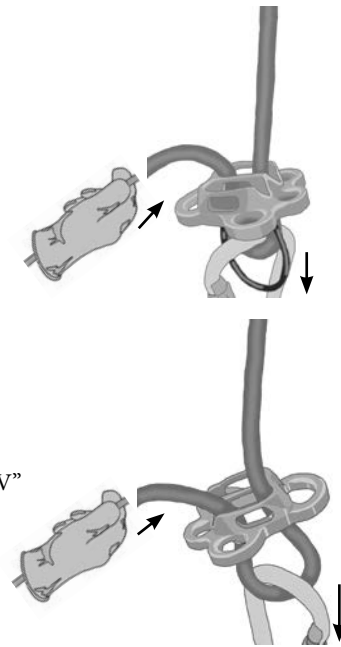
Tying off the ΔV



Basic Rappel

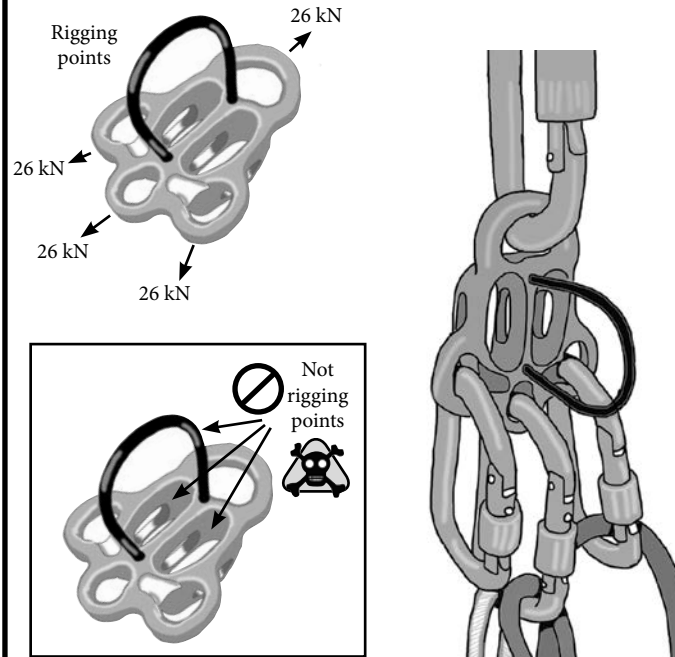
(Single or double line)

Less friction-
In feed line on round side.



More friction-
In feed line on "V"
side.

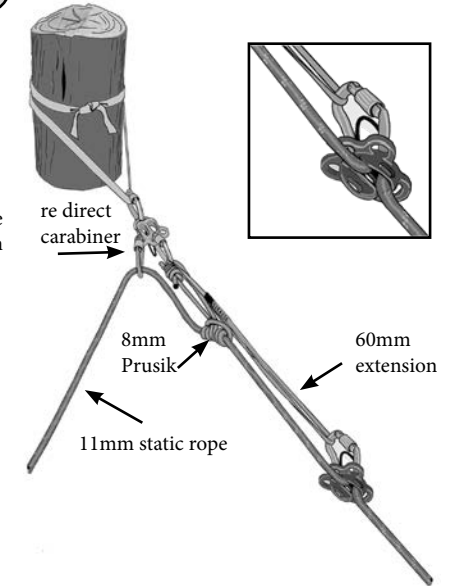
Rigging plate



Improvised rescue lower

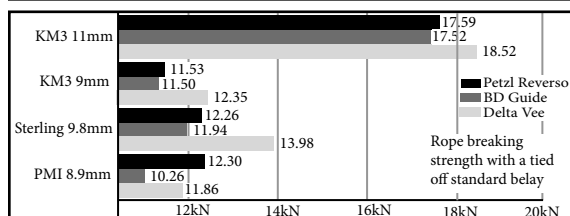
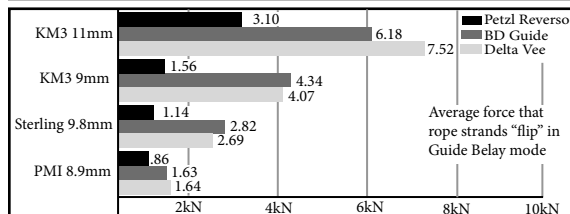
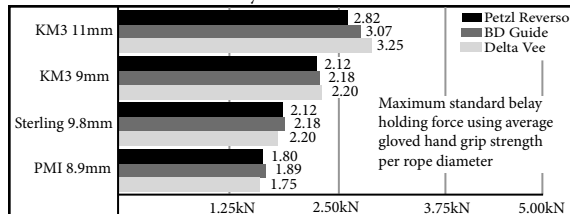


Improvised rescue lower is an advanced technique, and should not be attempted without professional instruction, and practice in a controlled environment. (For more in depth information on this technique, refer to the "Technical Rescue Riggers Guide" 4th ed by Rick Lipke)



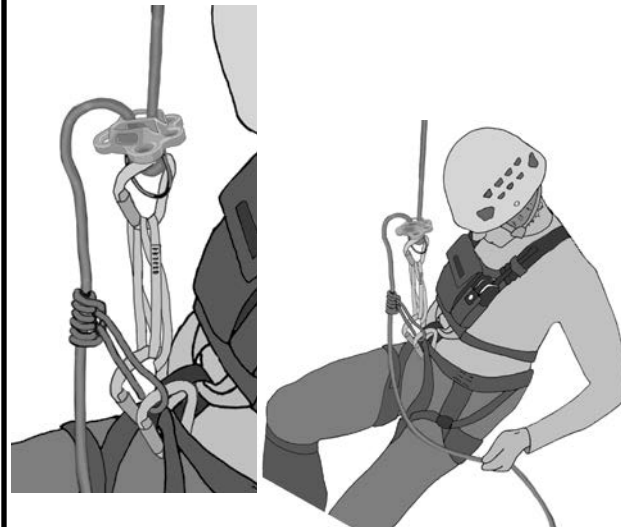
ΔV Performance Data

Performance data and comparisons between the ΔV and other popular devices, utilizing various brands and styles of rope. Tests were performed at our in house Conterra test facility.

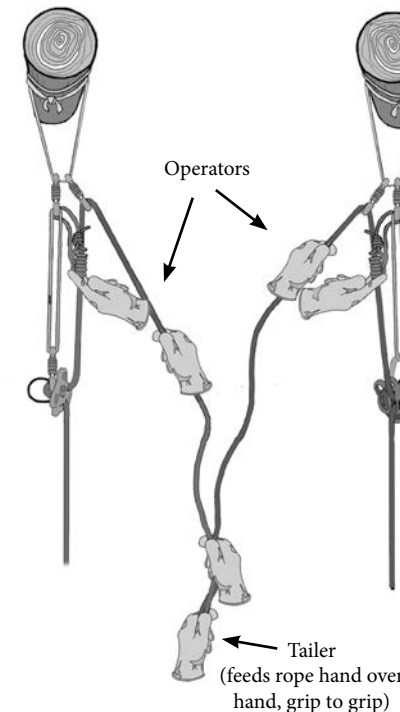


Extended Rappel

- Extend your ΔV up to roughly chin level.
- Use a Prusik attached to rappel point of your harness as a back up / auto stop.
- Size Prusik and extension so that the Prusik cannot reach the ΔV.
- It is recommended that an extension and backup Prusik should be used for any rappel during mountaineering, or a rescue operation.



Improvised Lower Rescue system



Improvised rescue system points

- All carabiners should open DOWN and away from obstacles. Micro oscillations caused by a tensioned main line running over objects can vibrate screw gates open.
- Use High Directional Anchors (HDA) when ever possible.
- Rig so that there is a minimum of 3m of rope in service (rope between the lowering device and the patient /rescue package (ideally 5m).
- DCD extension should be about 60 cm long, and have a breaking strength of $\geq 20\text{kN}$
- During lowering operations, make sure that the tailer feeds the ropes HAND OVER HAND, GRIP to GRIP, and not simply sliding the rope through hands.
- Rope tail(s) must be secured to an object, "closing the Loop", so that they cannot run free through the system.
- The Delta-Vee causes an 11mm nylon or polyester static rope to break at about 17 kN, and a 9mm nylon or polyester static rope to break at about 12 kN. This is important because it directly relates to margins of safety. More information is available in the "Technical Rescue Riggers Guide" 4th ed by Rick Lipke)

