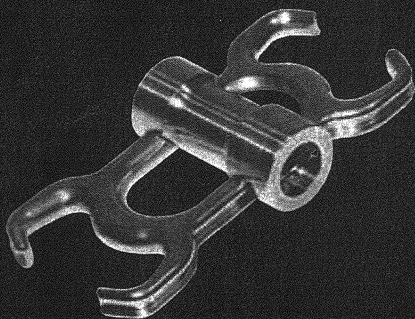




CONTERRA

The SCARAB®
Rescue Tool
by CONTERRA



SCARAB SFR-1
NFPA (G)

INSTRUCTIONS

U.S. Patent No: 7,648,126 B2
Other U.S. and Foreign Patents Pending

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USER INFORMATION

MEETS THE DESCENT CONTROL DEVICE OF
NFPA 1983, STANDARD ON LIFE SAFETY ROPE
AND EQUIPMENT FOR EMERGENCY SERVICES,
2017 EDITION, RATED FOR GENERAL USE (G)
FOR ROPE DIAMETERS 9.5MM - 12.5MM



THIS DESCENT CONTROL DEVICE HAS PASSED
THE MANNER OF FUNCTION AND HOLDING
LOAD TESTS USING THE FOLLOWING ROPE:
TEUFELBERGER, KMIII, C3301-12-00200, 9.5MM
PMI, MAX WEAR HUDSON CLASSIC
PROFESSIONAL, RR125OW046M, 12.5MM

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.

Additional information regarding Auxiliary
Equipment can be found in NFPA 1500, Standard
on Fire Department Occupational Safety and Health
Program, and NFPA 1983, Standard on Life Safety
Rope and Equipment For Emergency Services.

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

The sample log suggests records that should be main-
tained by the purchaser or user of rescue equipment.

Equipment Inspection and Maintenance Log

Item _____ # _____ Date in Service _____
Brand/Model _____ Strength _____

Date	How Used or Maintained	Comments	Name

SCARAB® STRENGTH

The SCARAB® is incredibly light and strong. It has endured over ten years of drop and slow pull testing. It has also undergone extensive heat and wear studies utilizing Conterra's state of the art capstan test bed.

The frame and crossbar's strength is greater than 40kN. When pulled in position of function with Nylon rescue ropes, the ropes fail at the nose of the SCARAB® at about their knotted strength (just like most other descent control devices). When pulling 12.7mm rescue ropes on tied off SCARAB's, the ropes break at about 27kN (see chart below).

In drop tests, a tied off SCARAB® was able to withstand a one meter drop of a 280 Kg mass on three meters of rope. The frame deflected approximately 3mm, with no significant rope damage visible. The SCARAB® was easily unlocked, and the mass lowered with no trouble (*The SCARAB® did not loose function*).

In addition to a battery of slow pull and drop tests, the SCARAB® has undergone extensive heat and wear studies. One device was tested by pulling over a mile of rope through it under rescue sized tension, with temperature reading thermocouples being monitored at several locations during pulls. At 2kN of tension, and a lowering speed of 10M per minute, the SCARAB® maintains a frame temperature at about 100 degrees C. To our knowledge, the SCARAB® is the only descent control device to have ever undergone this type or degree of testing, anywhere.

NOTE ON STRENGTH RATING

The MBS of ropes as they are slow pull tested on locked off SCARAB® devices are listed below. This is included so that users may make properly informed decisions regarding how much force to apply to SCARAB® tools when used in a rescue system.

The information on the chart below is from testing on several different brands, styles, and diameters of rope using Conterra's calibrated hydraulic test ram. The samples pulled were rigged as single strands, and tied off in "hard lock" configuration. They were pulled at the rate of 100mm per minute until the ropes broke. The values listed are the lowest minimum breaking strengths (MBS) of five sample ropes tested in each set.



WARNING!

Your SCARAB® Rescue Tool is a very specialized piece of equipment. In order to stay safe, your SCARAB® must be treated with respect:

- 1) It is YOUR responsibility to carefully read and understand these instructions before using your SCARAB®. Keep these instructions for future reference. Failure to follow instructions can lead to loss, serious injury, or death.
- 2) You must also test your SCARAB® with the ropes that you intend to use, while in a safe environment, while also **attached to a separate belay line**. You must do this before attempting to use your SCARAB® in the field.
- 3) Climbing, mountaineering and rescue work are dangerous activities. Even when properly done, events can happen that may lead to loss, injury, or even death. You must seek proper professional instruction in climbing, rescue and SCARAB® use before ever using your SCARAB®. Failure to do so may endanger your own life as well as others.
- 4) **Legal Statement, Please read carefully;**
By using your SCARAB® you have shown that you understand and agree that you that you are assuming full risk and responsibility for any injury or loss that you receive or cause to others while using the SCARAB®, and that such injury, loss or damage will be your responsibility, and not that of Conterra Inc, Conterra Precision Manufacturing, or it's owners, managers, employees, agents or other participants for claims for damages which might arise from the use of the SCARAB® including negligence for which the proprietors would otherwise be responsible. You further agree to accept full responsibility for the cost of any treatment for any injury that you receive or cause others as well as any loss of wages, income, or disability that you may suffer or cause others.

If you do not agree to the above conditions, please return your SCARAB® to Conterra Inc. in unused condition, for a full refund.

Wear

Your SCARAB® is designed to last for many years of professional rescue use. However, dirt, grit, and industrial abrasives that a rope may transport can wear even the ultra tough Stainless or Titanium that makes up your SCARAB®.

Frequently check the frame and crossbar for wear. If the crossbar is worn more than .030" or the frame is worn more than .090" then it is time to retire your SCARAB® (see below).

If the FRAME wears .090", or the distance from the edge of a penny to the top of Lincoln's head, it's time to retire your SCARAB®.



If the CROSSBAR wears .030", or the distance from the edge of a penny to the edge of Lincoln's bust, it's time to retire your SCARAB®.

Damage

If your SCARAB® is dropped or shock loaded to the point that you can see deformation of the frame or crossbar, retire and replace the device.

There are no user repairable parts to this device. Do not attempt any field repairs or alteration of any kind.

If visible corrosion or deterioration is found to be present on your Scarab, retire and replace the device.

SCARAB® vs Knot

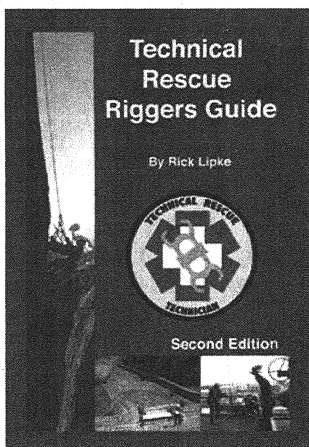
Diameter	Brand/Style	MBS (in Scarab®)	MBS (Knot*)
8mm (5/16")	PMI	9.8kN	9.6kN
	New England (Polyester)	9.9kN	8.6kN
	Blue Water	11.8kN	11.7kN
9.5mm (3/8")	PMI	12.5kN	11.0kN
	New England	19.3kN	16.5kN
11.2mm (7/16")	PMI Max wear	22.5kN	21.3kN
	PMI EZ Bend	20.5kN	21.0kN
	Blue Water II	23.3kN	22.0kN
	New England	23.7kN	21.8kN
	KM III		
12.7mm (1/2")	PMI Max wear	30.1kN	33.0kN
	PMI EZ Bend	29.5kN	31.7kN
	Sterling Super Static	28.1kN	30.0kN
	New England KM III	27.5kN	28.3kN

Conterra recommends that the maximum peak force exerted on the rescue system be 1.5 - 2 times less than the breaking strengths listed above.

Conterra also recommends that the normal working load should be less than 3kN.

FURTHER INFORMATION

For detailed information on how to use your SCARAB®, as well as step by step techniques in rope rescue, get the "Technical Rescue Riggers Guide, *Second Edition*" by Rick Lipke. Available from any Conterra supplier, or by contacting Conterra Inc.



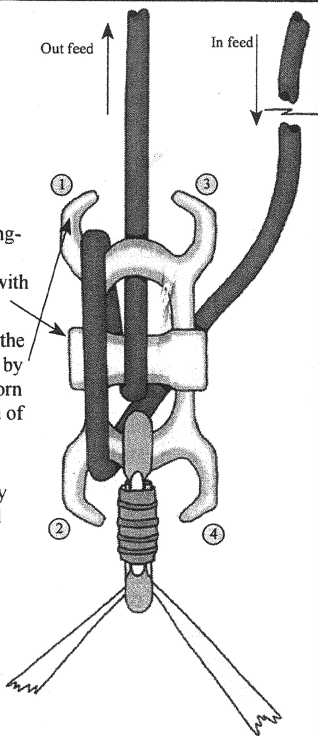
Threading your Scarab®



Load SCARAB® by swinging open the crossbar and capturing a bight of rope with the crossbar.

Wrap the Hyper-horns in the order shown. Always start by wrapping a FORWARD horn (# 1 or #3 on out feed end of device).

Wrap all horns, then slowly unwrap until desired speed of descent is reached.



For more information on the SCARAB®, visit:
www.scarabrescue.com

Questions, comments, Concerns?

contact us at:

CONTERRA INC

1600 Kentucky Street A-3

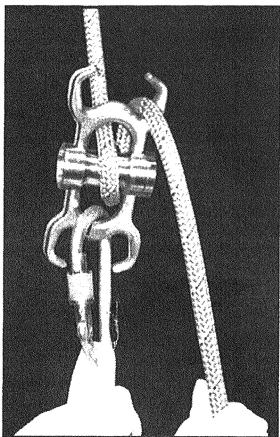
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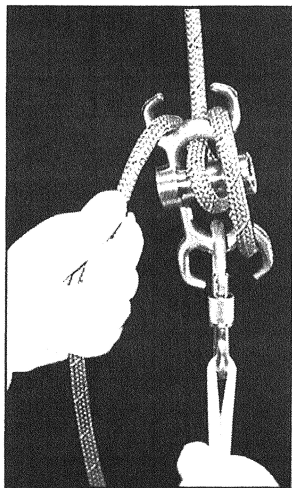
Basic Instructions for the SCARAB®



1) This is the beginning position for lowering or rappelling: Swing open the crossbar, reeve a bight of rope through the frame and around the crossbar. Bring the in feed line over a FORWARD Hyper-horn.



2) To add friction, wrap the in feed line around a rear horn (anchor or harness side) on the same side as you began with.

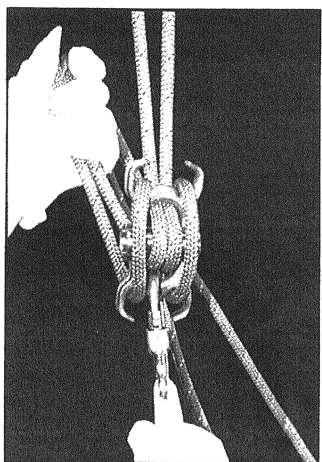
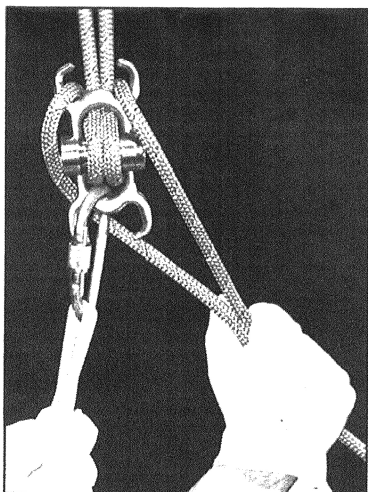


3) For rescue sized masses (200kg) cross to the empty forward Hyper-horn. For even more friction (for 280kg) wrap the remaining horn.

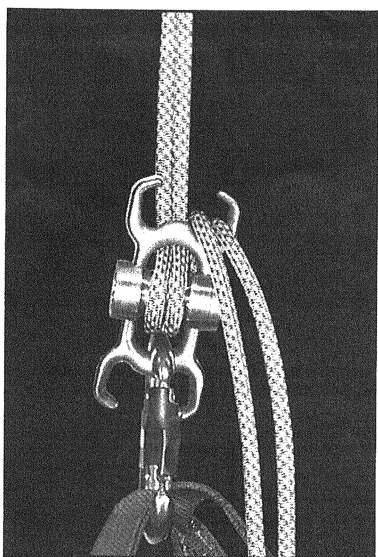
It is safe practice to always have all horns engaged before loading the system for lowering or rappelling.

Twin rope applications -Start with each rope over a forward Hyper-horn.

You may then control both ropes with one hand



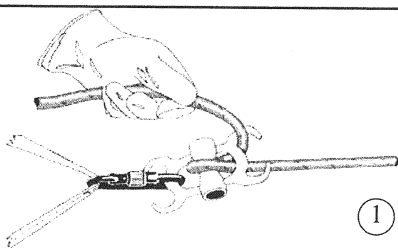
With small diameter ropes (not certified for NFPA G), such as this 8.1mm half rope, it is possible to rig two strands as if they were one strand of rope. Many configurations are possible depending on the diameter and construction of rope used.



Lowering with your SCARAB®

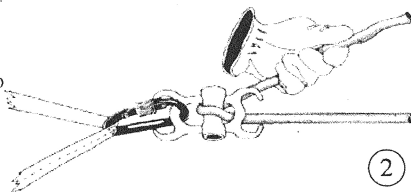
READY!

READY!- Ready position with rope hooked over ONE FORWARD horn on the out feed end of device).



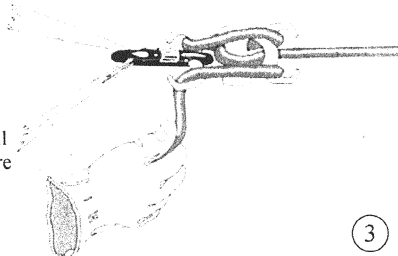
APPROACH THE EDGE!

APPROACH THE EDGE- Un-wrap the forward horn, allow rope to flow through the SCARAB® until rescue package is in position.



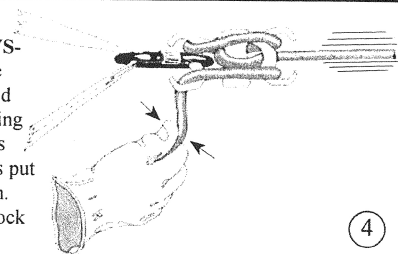
PREPARE TO TENSION THE SYSTEM!

PREPARE TO TENSION THE SYSTEM- Wrap all Hyper-horns in order. Do not lock off. (Always have all horns engaged before loading the system)



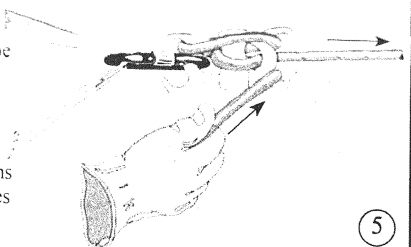
TENSION THE SYSTEM!

TENSION THE SYSTEM- Hold the rope tightly in gloved hand to resist the force being applied to the rope as the rescue package is put into hanging position. You do not need to lock off.



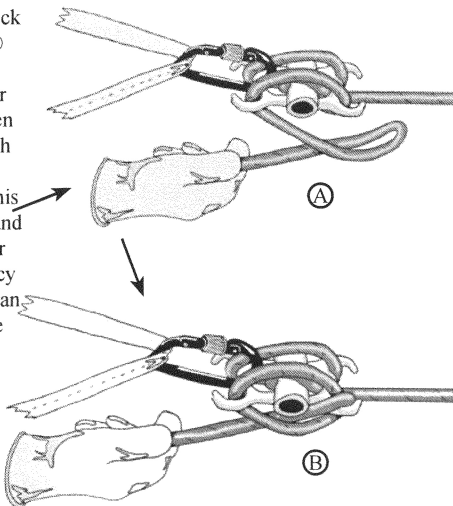
DOWN!

DOWN- Allow rope to slide through gloved hand to achieve desired speed. You may slowly unwrap horns to adjust for changes in terrain etc.



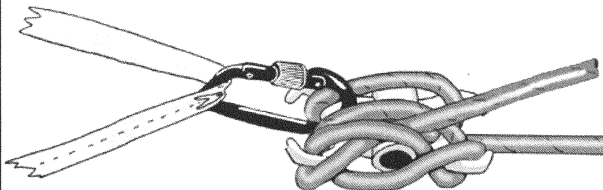
Locking off your SCARAB®

For an extended stop, you may lock off a SCARAB® rescue tool by wrapping all four Hyper-horns, then place a bight with a twist over a forward horn. This is a “soft lock” and is appropriate for all non emergency situations. You can now let go of the rope.



Unattended Lock Off

If the Main line must be left unattended in an emergency, a second bight with a twist can be added to a rear horn. This is a “hard lock” and will hold an 11mm or 12.5 mm rescue rope until the rope breaks.

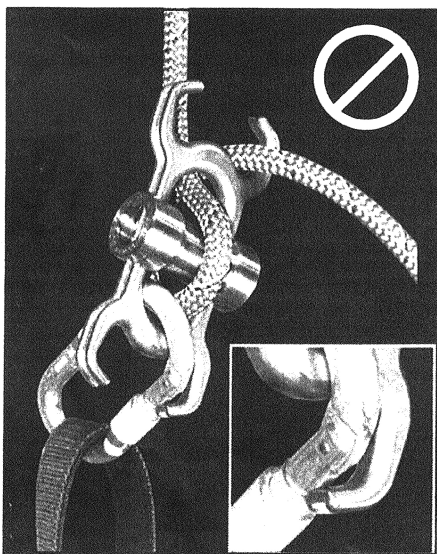
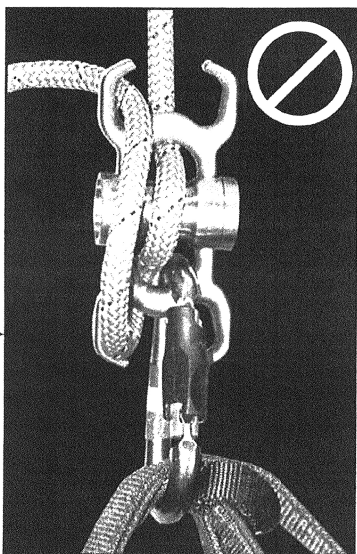




CAUTION

AVOID THE FOLLOWING PROBLEMS:

Do not begin threading this way. It hinders crossbar movement, and in the event of a shock load, it could damage the device.



Make sure your carabiner is properly aligned and oriented before loading the SCARAB®, particularly on rappel. Small carabiners can sometimes jamb inside a Hyper-horn. This could possibly damage the carabiner or even lever the gate open. Pay attention to your system, before you weight it!