



WARNING

All users must read and understand this manual before use. This product must only be used by persons who are trained and competent in its use as part of a double rope access system. Users accept all risks and responsibilities for all damage, injury or death during all rope access activities involving the use of this product. If users are not able to accept full responsibility or all risks involved they should not use this product. All users must be competent in emergency procedures and rescue methods associated with the use of this device. These are detailed in the 'Deployment' section of these instructions. Users should take great care that hair, fingers, clothing or other items do not become entangled with the **EN Forcer**. DO NOT allow anything to affect the proper function of the device.

Do not use the device for any other purpose.

INDIVIDUALLY TESTED

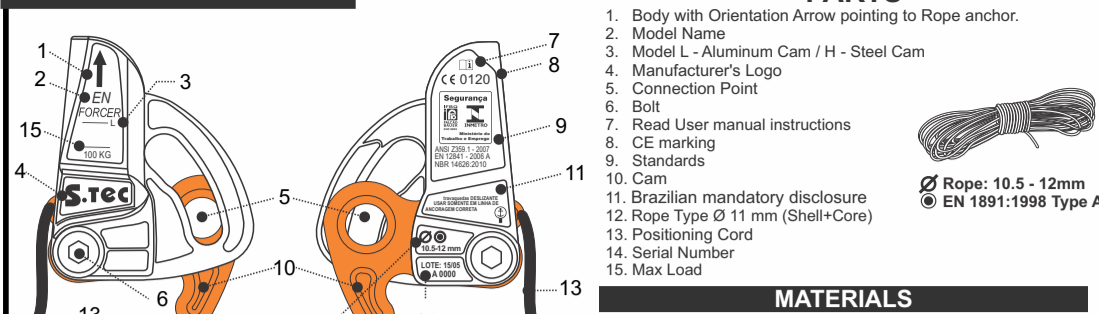


Made in Brazil - SAFE TEC INDUSTRIA

www.safetecbr.com.br



1 - PARTS & MARKING



Requires a round section Locking Karabiner to connect to the harness. (Not supplied).
Oval shaped karabiners with a 10mm are recommended.
Users must check for the proper function of cam with selected Karabiner before use to verify suitability.
Do not use if karabiners affected cam function.

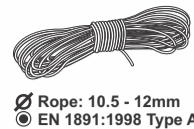
Rope Diameter: 10.5 - 12 mm
Rope Type: EN1891:1998 Type A
Serial Number: E.g. 15 05-A 0000
15 - Year 2012
05 - Month - May
A 0000 - Unique Item Serial N°

305g / 13.8 oz

Field of Application: The EN Forcer has been tested in the UK by SGS to the requirements of EN 12841:2006 Type A - Rope Adjustment Device. Tests were carried out using EN1891 Type A Low Stretch Ropes: Mammut Performance Static 10.5 & 11mm and Beal Industrie 10.5mm & 11mm. Other ropes have provided excellent results - check all different ropes prior to use. To be used in conjunction with EN 12841 Type C or B device. Terms: 'Back-Up Rope' is used to describe the 'Safety Line' as termed in EN 12841 2006. 'User' refers to individuals or persons selecting this device for use. The device has also been tested to Brazilian Standard: NBR 14626:2010 by IFBQ (Falcão Bauer Quality Institute) accredited in Brazil by INMETRO with code OCP 0003.

PARTS

1. Body with Orientation Arrow pointing to Rope anchor.
2. Model Name
3. Model L - Aluminum Cam / H - Steel Cam
4. Manufacturer's Logo
5. Connection Point
6. Bolt
7. Read User manual instructions
8. CE marking
9. Standards
10. Cam
11. Brazilian mandatory disclosure
12. Rope Type Ø 11 mm (Shell+Core)
13. Positioning Cord
14. Serial Number
15. Max Load



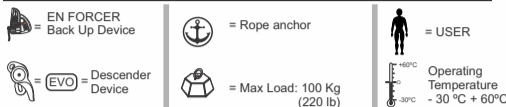
Rope: 10.5 - 12mm
EN 1891:1998 Type A

MATERIALS

The Safetec **EN FORCER** is available with either Aluminium Cam or Stainless Cam. The Cam colour identifies the model: Aluminium Cam Model has a Orange anodised Cam, the Stainless Steel Cam Model has a Silver Cam.

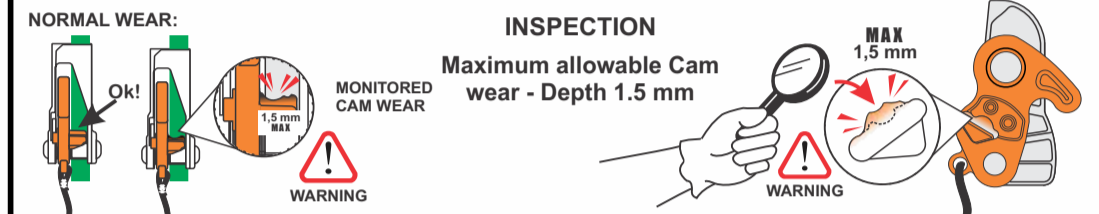
Materials
Body - Stainless Steel Silver / Cam Orange - Aluminium / Cam Silver
Stainless Steel / Spring - Stainless Steel / Cord - Nylon / Axis - Stainless Steel / Bolts - Stainless Steel.

LEGENDS



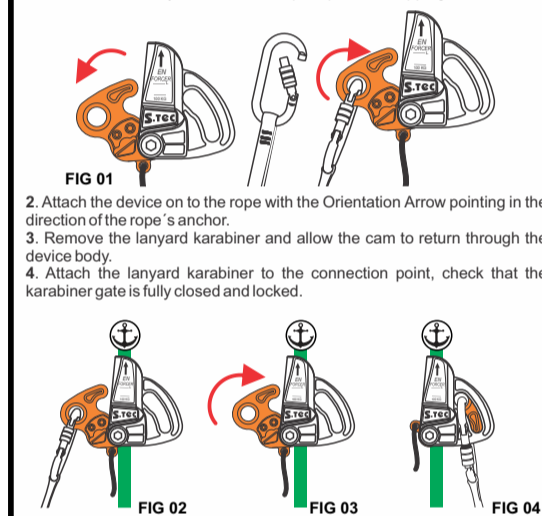
2 - INSPECTION

This **EN Forcer** must be inspected prior to each use. This inspection should check for any corrosion, cracks, evidence of abrasion, deformation, loose bolt or missing components together with full function test and markings are clear and readable. In addition to pre-use checks a regular detailed examination should be carried out by and recorded by an authorized competent person at suitable periods, these should be at no more than six months intervals. Following any emergency loading. Incident or droppage **EN Forcer** must be removed from service for examination. If users or inspectors are not 100% confident that the **EN Forcer** is fit for use, it must be removed from service. Devices passing inspection shall only be re-used once written records are completed.

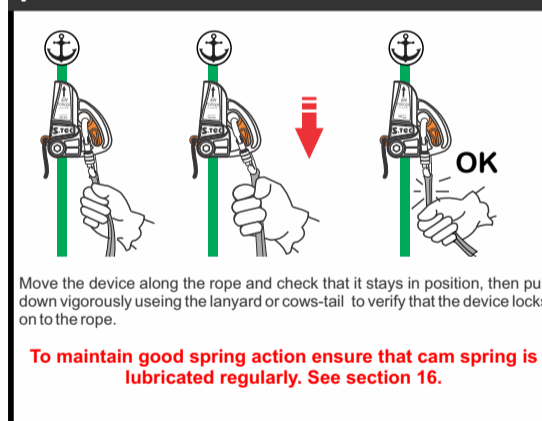


6 - STAGES OF INSTALLATION

1. Push the cam through the device body to the opposite side. Temporary attachment of the lanyard karabiner helps to prevent dropping the device.

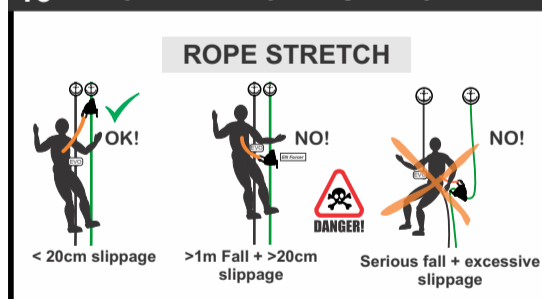


7 - OPERATIONAL CHECK - FUNCTION TEST



To maintain good spring action ensure that cam spring is lubricated regularly. See section 16.

13 - CLEARANCE DISTANCE



14 - EXAMPLE BASED ON 10% ELONGATION

Additionally uncontrolled downward movement will occur due to the elongation of the Back-Up Rope during loading. This should be assessed for the particular rope being used but a minimum of 10% elongation should be expected.

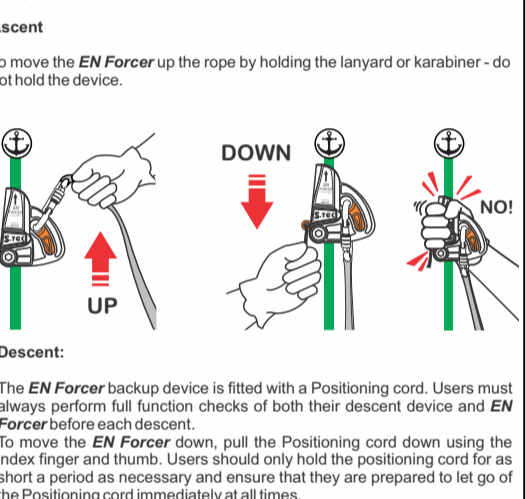
The amount of elongation will depend on several factors including:
I. Elongation Properties of the particular rope used;
II. Length of rope between the **EN Forcer** and the rope anchorage;
III. Knot tightening;
IV. Weight of user;
V. Amount of slack in cows-tails/lanyards;
VI. All other factors that must be determined by the user;

On long ropes the elongation will be many meters.
Clearance - The clearance distance must be carefully assessed for all situations. At work positions when the device is positioned high and there is less than 10cm slack in the Lanyard or Cows-tail there will be very little slippage (e.g. a 100kg user less than 20cm). Additional slackness in the connecting lanyard increase slippage.

$C = D \times 10\% + 2m$

8 - POSITIONING

At all times that the user is stationary the **EN Forcer** should be positioned as high as possible. The **EN Forcer** must always be above the descender or chest ascender and never below its lanyard/cows-tail attachment point (FF1)



In many applications the **EN Forcer** should be controlled independently of the descender device, in others it may be necessary to control both **EN Forcer** and descender device simultaneously. It is the responsibility of the user to carry out a risk assessment and determine which method is best for their operational activity and environment.

WARNING
If users keep hold of Positioning Cord the device will not function. Users must release their hold of the Cord immediately if anything unexpected occurs. At all times users must check that the lanyard is not caught on obstacles and that it will not come in to contact with sharp edges, heat, tools or any other source of damage.

15 - DEPLOYMENT

WARNING
The body of the **EN Forcer** must NOT be squeezed or the Cord be pulled with more than the index finger and thumb to de-weight a loaded or partially loaded **EN Forcer**.

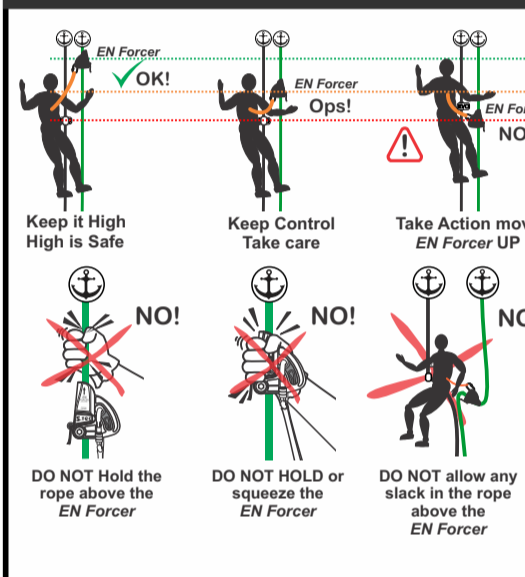
Accidental Deployment
It is essential that all users are competent in the techniques required to overcome accidental loading. If accidental loading occurs during ascent, first check the ascent equipment, then continue ascending until the **EN Forcer** is no longer under any loading. If loading occurs during descent, first check the descent equipment, then use techniques to complete a short ascent of the Working Rope until the **EN Forcer** is no longer under any loading. Any other accidental loading should be assessed and appropriate methods used to overcome the loading. At all times two safety systems must be in place.

Emergency Deployment
If failure of the Working system e.g. Working Rope failure or user detachment from the Working Rope, occurs and the user becomes suspended on the Back-Up Rope, the user and work colleagues must consider the planned procedural options available with regard to all factors of the actual event.

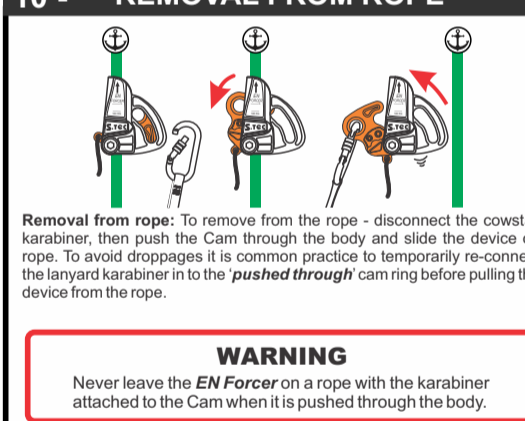
These options may include amongst others:
I. The deployment and use of a new Working Rope.
II. The rescue by a colleague using new ropes.
III. The use of the Back-up Rope to attach escape equipment (descender or ascenders) for the user to evacuate on the single Back-up Rope.
IV. Other techniques undertaken by competent persons.

All emergency actions should only be carried out following a risk assessment of the situation. During emergency deployment of the Back-up system any downward movement of the user will be determined by several factors: back-up rope stretch, cows-tail stretch, knot tightening and device slippage. With the exception of very minor glazing a properly used **EN Forcer** will lock on to the Back-Up Rope without causing any damage to itself, lanyard, karabiners or the Back-Up Rope. Following any Emergency Deployment all equipment must be removed from service for inspection by a competent person.

9 - OPTIMUM POSITION



10 - REMOVAL FROM ROPE



WARNING
Never leave the **EN Forcer** on a rope with the karabiner attached to the Cam when it is pushed through the body.

16 - GENERAL INFORMATION

Rope Condition: wear, wetness and contaminants will affect the performance of the **EN Forcer**. Some rope conditions will make positioning of the **EN Forcer** more difficult. Others e.g. oil & grease will affect the device's ability to perform - Back-Up may not be provided. The effective operation of the **EN Forcer** should be monitored and checked in all conditions. Where any performance doubt exists, the **EN Forcer** should not be used.

Sea Water: it is essential that this **EN Forcer** is cleaned as soon as practicable after each exposure to sea water or saline environment.

Chemical reagent: avoid contact with any substance or material that may cause corrosion or other damage to the device. If contact occurs consult expert advice as to damage and cleaning requirements. Inspect prior to any re-use.

Maintenance: the **EN Forcer** is not user maintainable with the exception of disinfection, cleaning and lubrication as detailed below.

Disinfection: following any contamination the source of the contamination should be determined and advice obtained as to suitable disinfecting procedure. After disinfection the device should be re-cleaned. Sterilisation may be required.

Cleaning: If soiled rinse in clean warm water of domestic supply quality (maximum temperature 40°C) with mild detergent at appropriate dilution (pH range 5.5 - 8.5). Dry naturally away from direct heat sources. To remove grease use a detergent that has properties that do not affect the metal spring, body, cam or nylon cord.

Lubrication: It is essential to maintain lubrication of the Cam spring. Lubricate regularly and after cleaning with light machine oil or teflon or silicone lubricant to ensure free movement of the cam. Wipe off the excess to avoid contamination of ropes and textile equip.

Lifespan: it is very difficult to define the safe lifespan due to varying use and storage conditions and may be as little as one use, or even earlier if damaged (e.g. in transit or storage) prior to first use. For the product to remain in service it must pass a visual and tactile examination. Maximum lifespan: 10 years from 1st use. Maximum Cam wear 1.5mm.

Obsolescence: this device may become obsolete before the end of its lifespan. Reasons for this may include changes in applicable standards, regulations, legislation, development of new techniques, incompatibility with other equipment etc.

Transportation & Storage: after cleaning store unpacked in a cool, dry, dark place in a chemically neutral environment away from excessive heat or heat sources, high humidity, sharp edges, corrosives or other possible causes of damage.

Do not store wet.

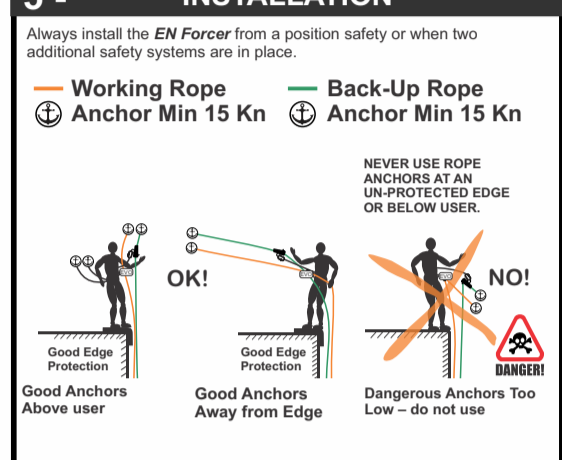
3 - TERMS

'Back-Up Rope' is used to describe the 'Safety Line' as termed in EN 12841 2006. 'Device' is used in place of the product name. 'User' refers to individuals or persons selecting this device for use.

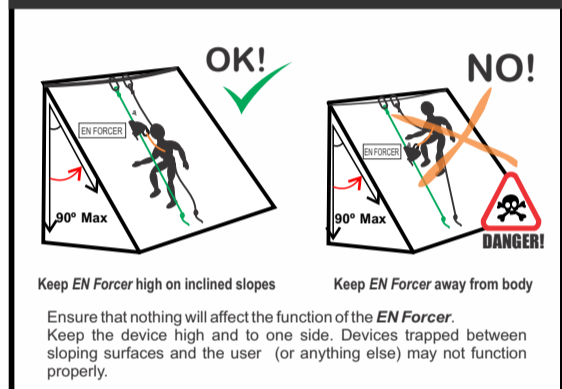
4 - COMPATIBILITY

Lanyard: It is recommended that an EN354 lanyards up to 60cm long.
Cows-tail: Connection may be made using a dynamic climbing rope with suitable terminations, attached to either ventral (waist) or sternal (chest) points. **Recommended length:** waist <80cm, chest <50cm. Further information provided in section 22.
Harness: Front attachment point of an EN361 2002 or EN813 2008 harness.
Connectors: EN 362 2004 Connector - Locking karabiner.
Ropes: the type of rope and its condition will greatly affect the dynamic designed slippage of the device. Factors include: manufacturer's coatings, weave pattern and tightness, wear from use, contaminants* Safetec recommend that 11mm ropes are used for most applications and that users assess performance prior to use. Rock Engineering (Geo) and other 'dirty' operation will often cause 10.5mm due to working conditions increasing friction on devices. *Abrasive contaminants - grit and dirt will provide more rapid breaking whilst grease may increase slippage beyond acceptable.
The **EN Forcer** is a non-aggressive device and during correct operational use it will not damage ropes. In emergency deployment (see 'Deployment' section) with the exception of very minor glazing a properly used **EN Forcer** will lock on to the Back-Up rope without causing serious damage to itself, its lanyard, karabiners or to the rope. The user is responsible for ensuring the combination of all components in the rope access system do not adversely affect the performance of any item with due regard to all user instruction.
Gloves: the use of suitable work gloves is recommended.

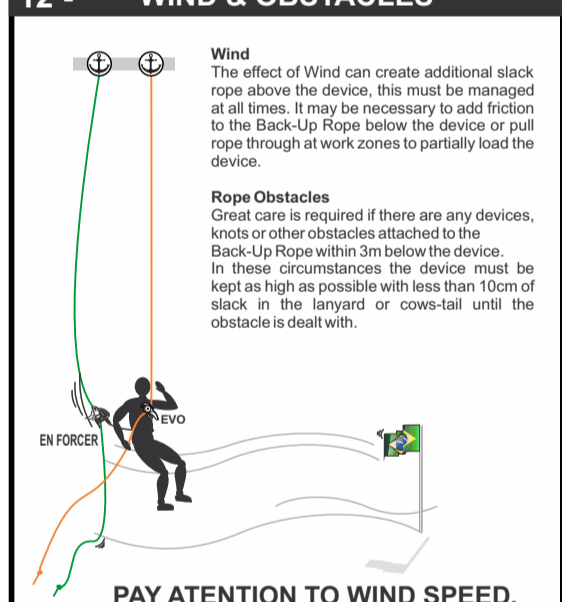
5 - INSTALLATION



11 - SLOPING SURFACES



12 - WIND & OBSTACLES



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