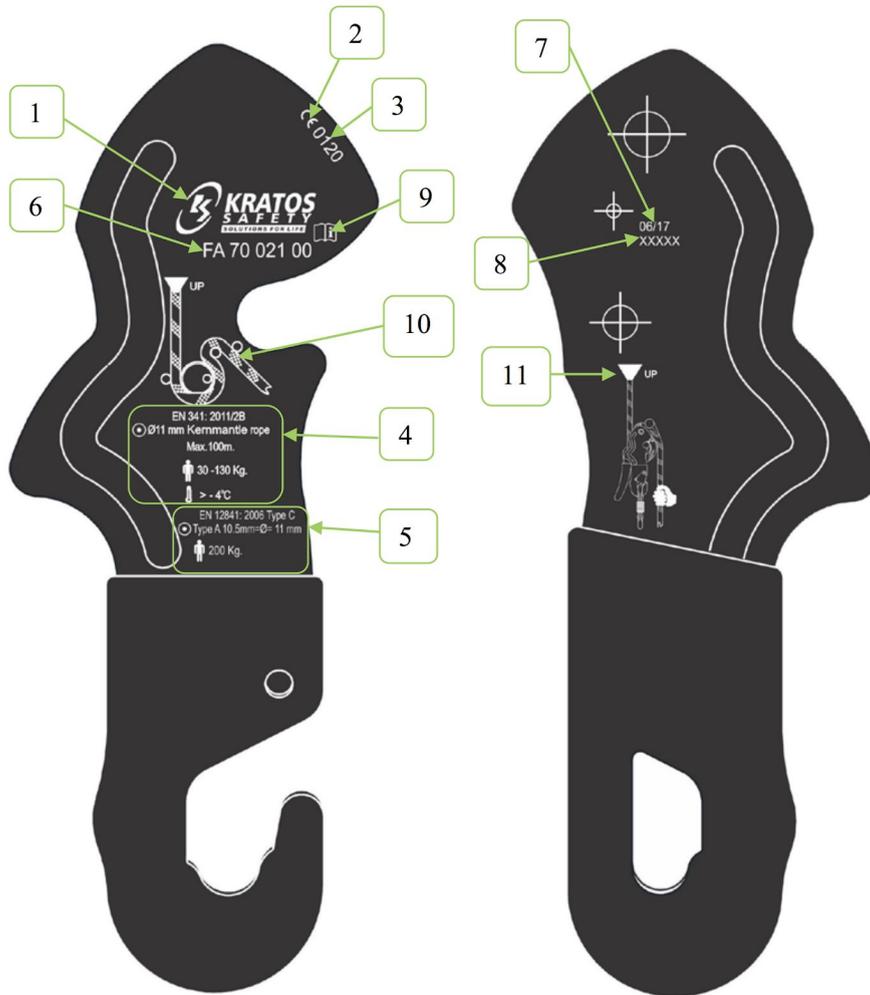


KRATOS - FA 70 021 00 DESCENDER INSTRUCTIONS



For your safety, comply strictly with the instructions for use, verification, maintenance and storage. George Taylor & Co. cannot be held liable for any direct or indirect accident occurring as a result of use other than provided for in this notice; do not use this equipment beyond its capabilities!

LABELLING



1. Manufacturer's name

2. Indication of conformity with the directive

3. Number of the certifying organisation responsible for inspecting the equipment

4. The standard No. the product complies with, its year, and the characteristics related to this standard:

Type of anchorage line the device is suitable for: semi-static kernmantle rope EN1891 Type A Ø = 11 mm
(FA 70 011 99)

100m Maximum descent height allowed

30-130kg Authorised working load

> - 4 °C Minimum temperature for use

5. The standard No. the product complies with, its year, and the characteristics related to this standard

6. The product reference

7. The batch number

8. The individual number within the batch

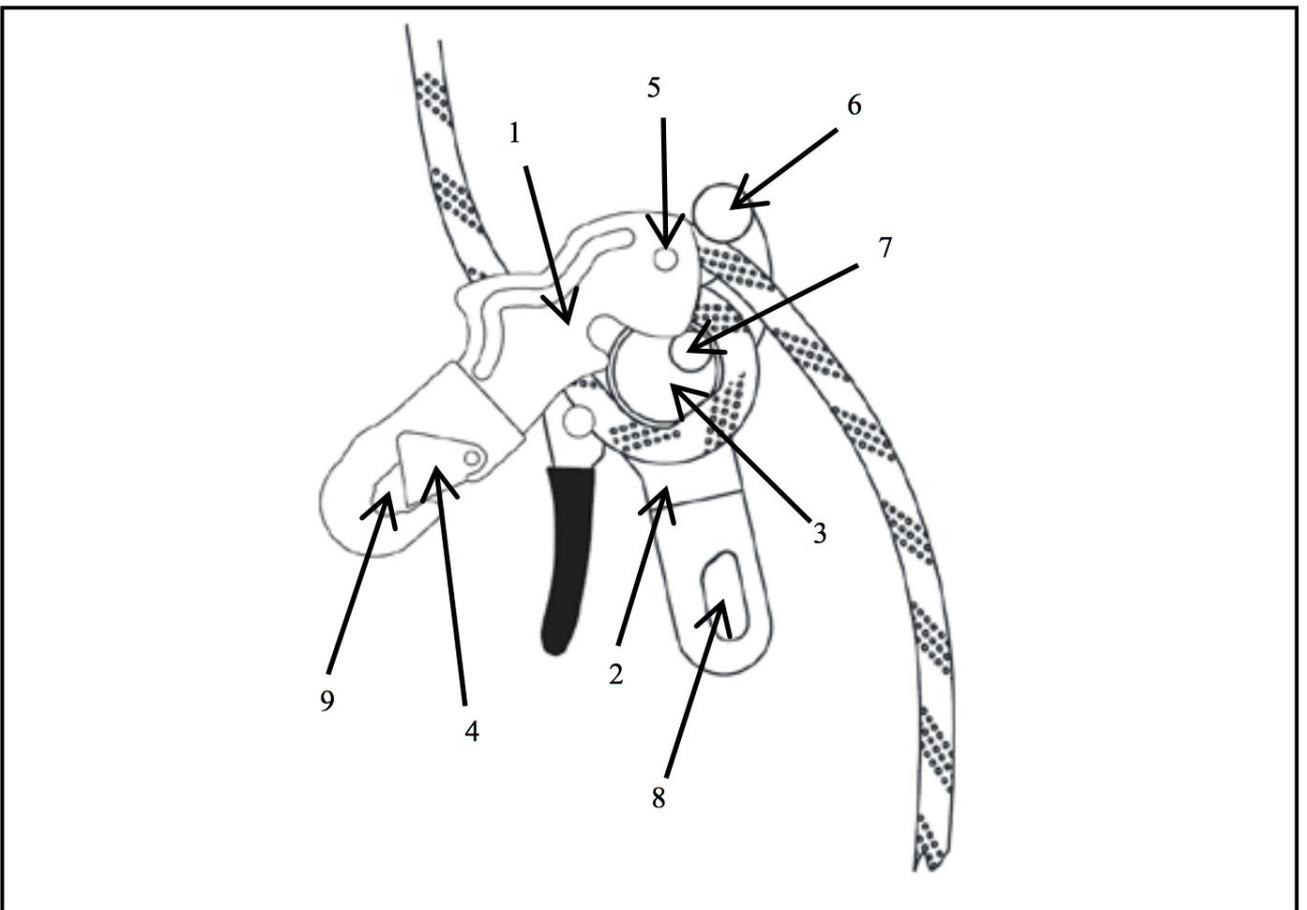
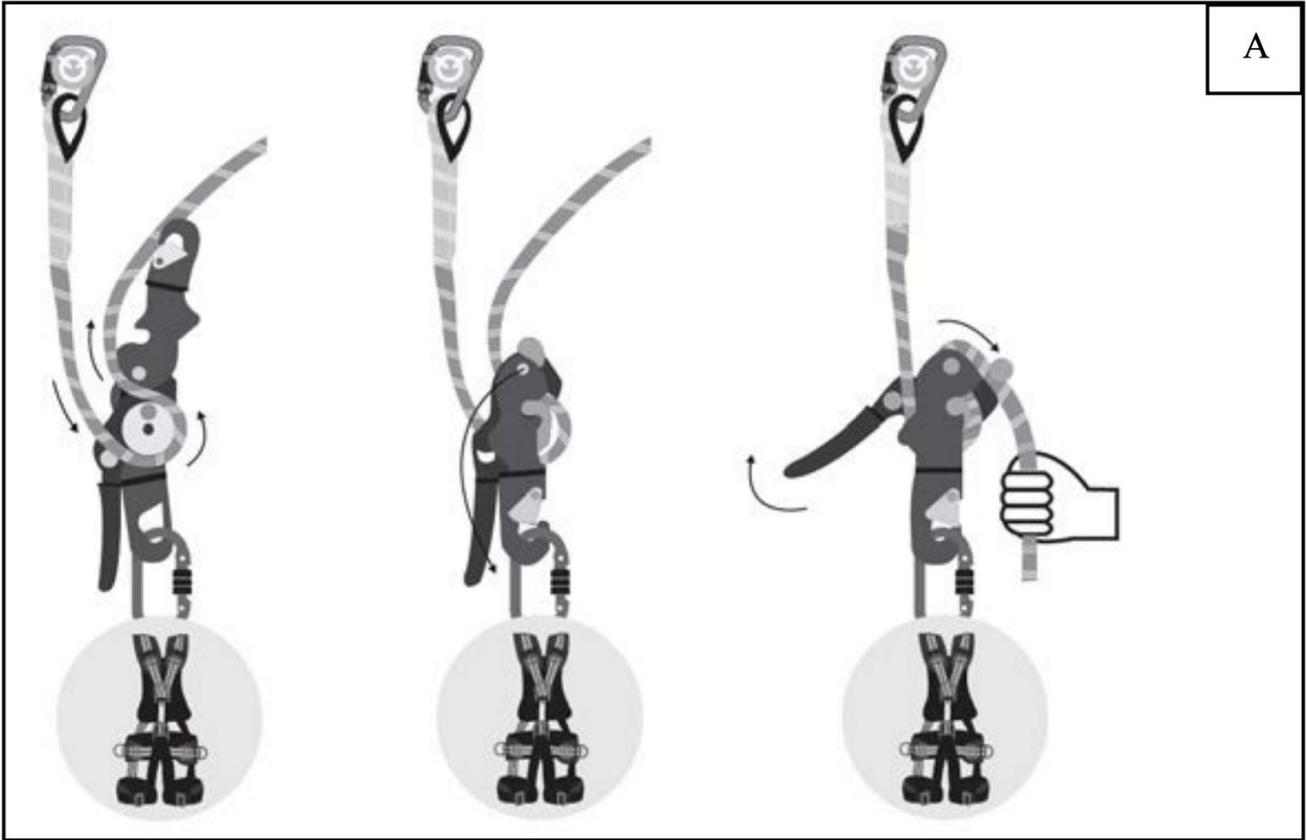
9. Read the instructions before use

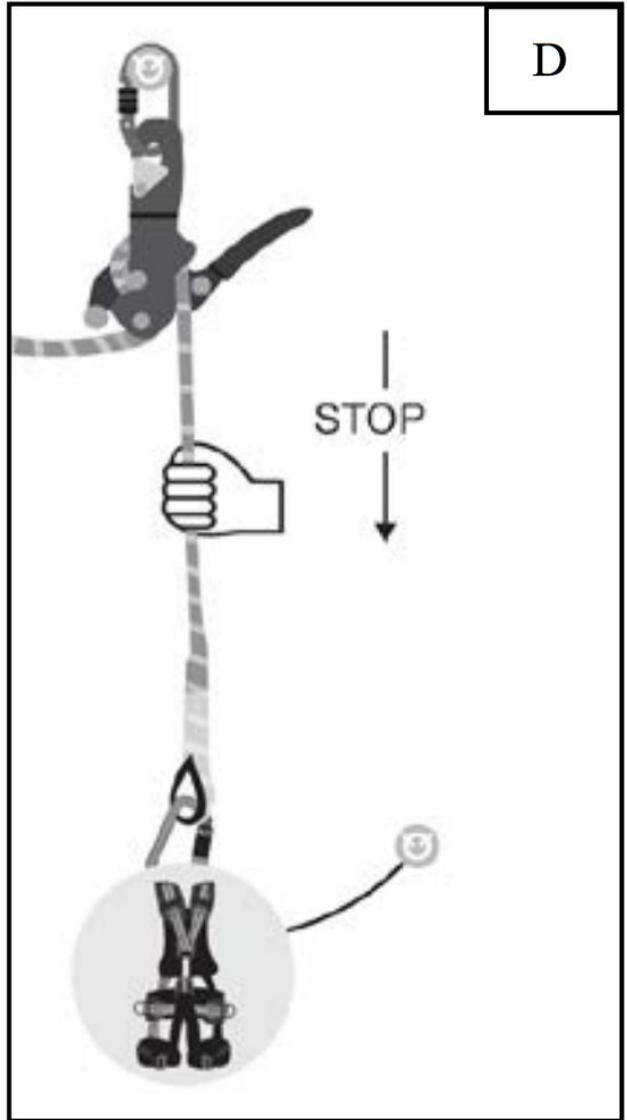
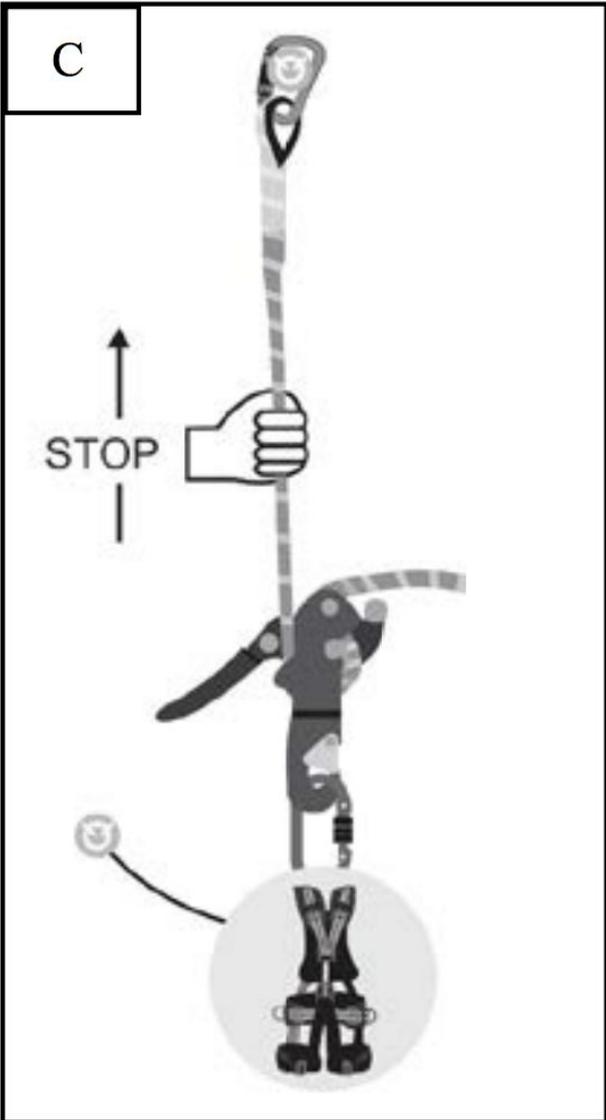
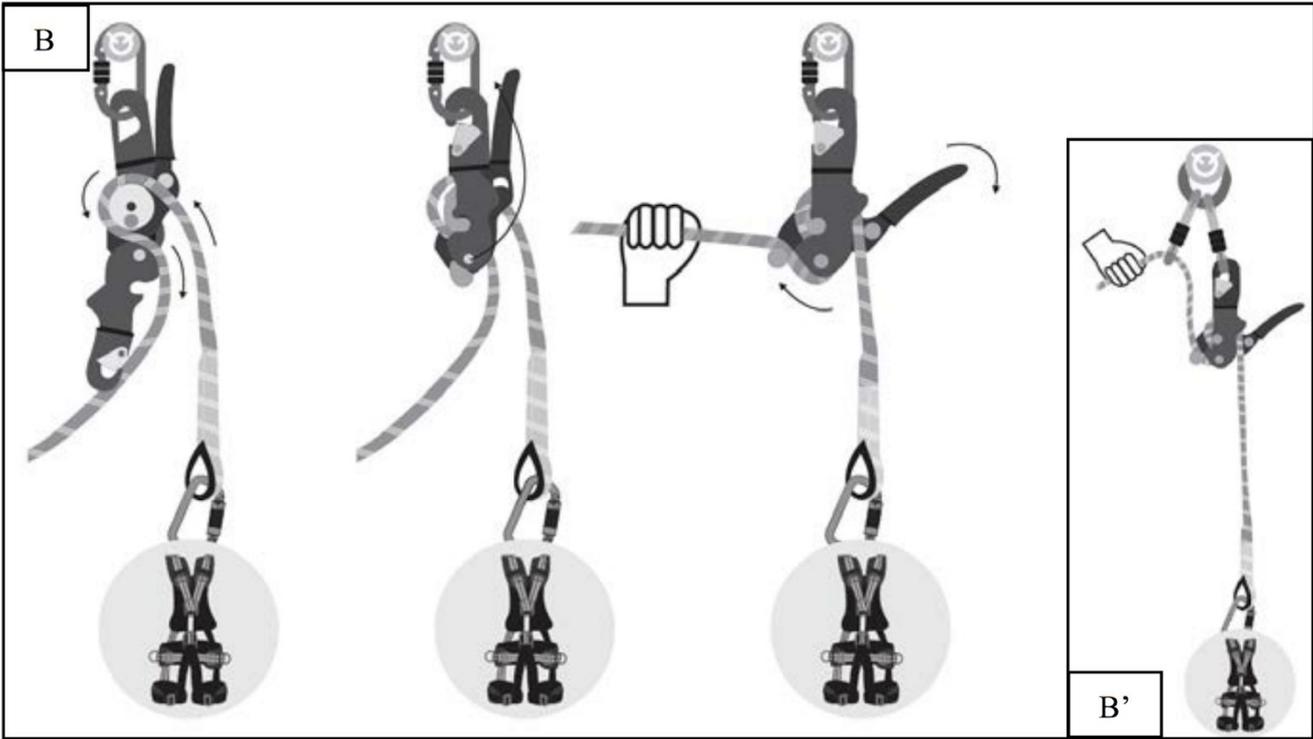
10. Rope passage

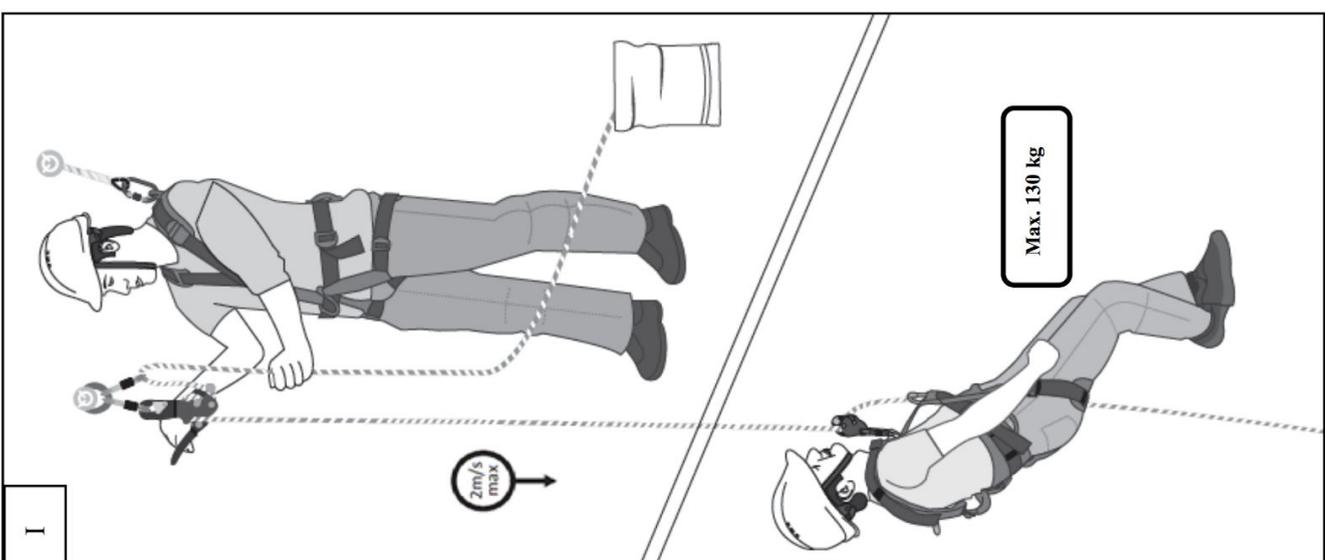
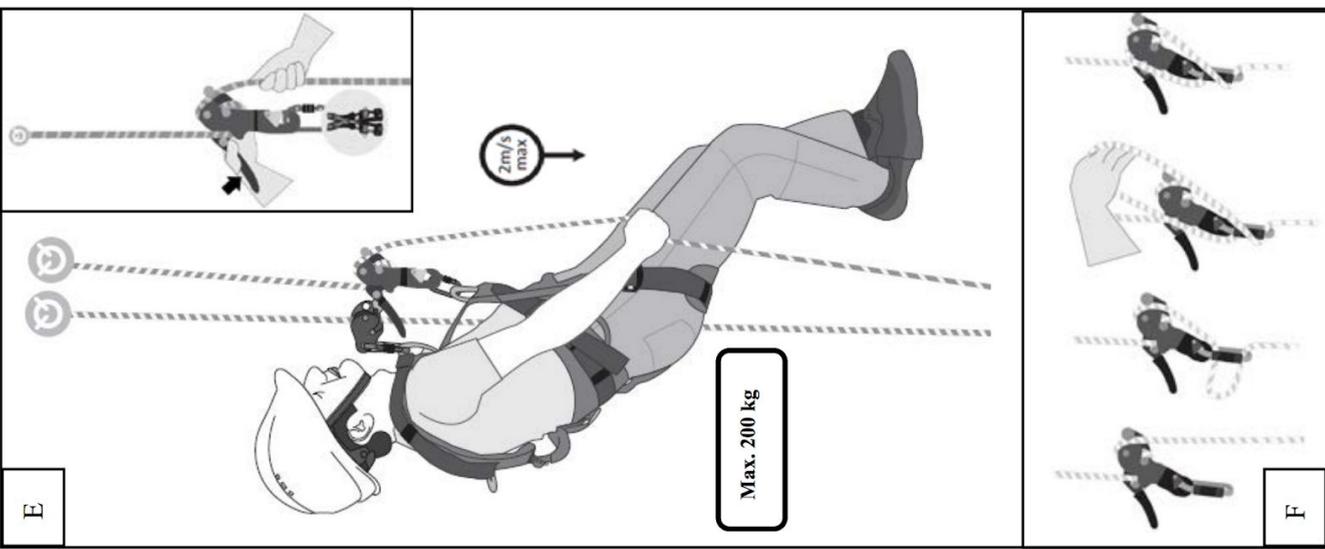
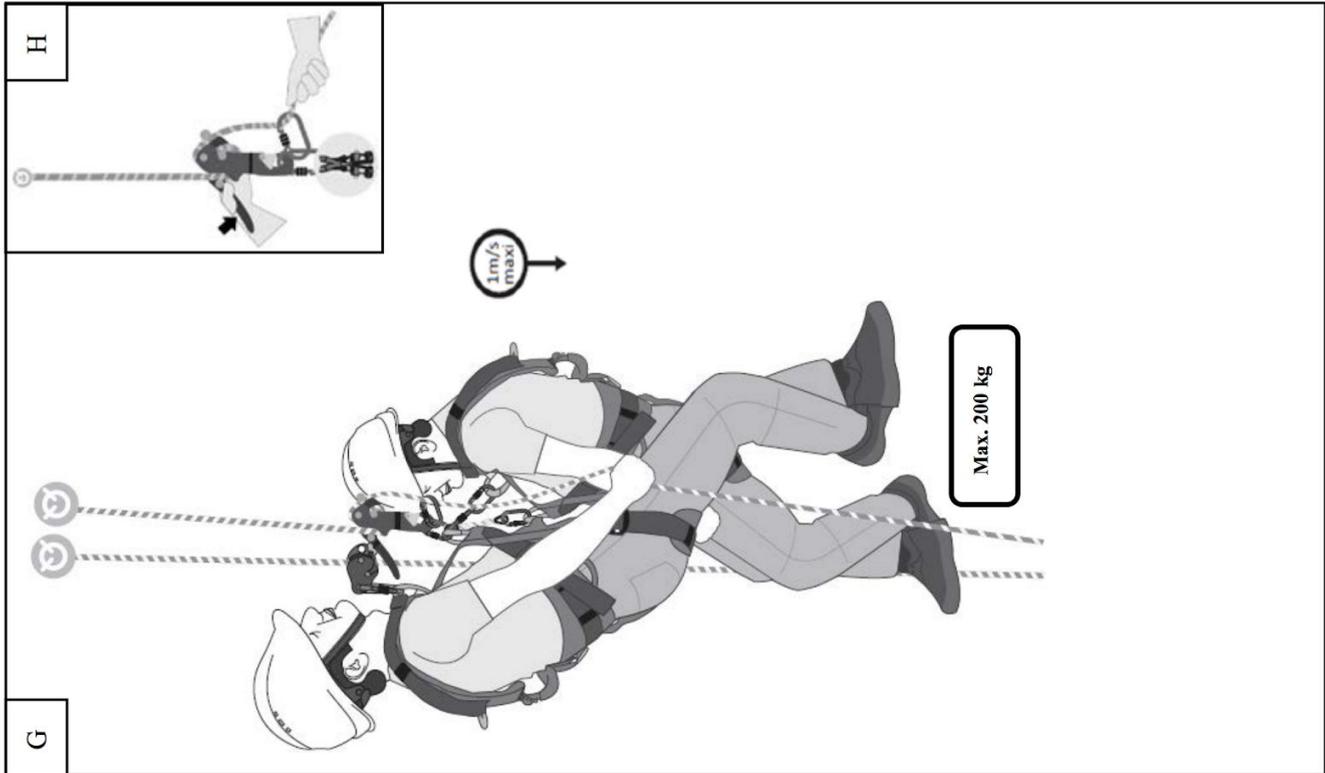
11. Proper installation direction with regard to anchorage point. Indication to hold the rope with a hand

for braking control

A







SCOPE OF APPLICATION

A grip descender is a piece of personal protective equipment; it should be allocated to a single user. The device is intended to be used in an access system on a descending rope all along the working rope or as a descending device for rescue. Rope adjustment devices are not suitable for uses in a fall arrester system as defined in standard EN 363. The use of this equipment should be reserved to experts, trained and practised in these techniques.

EN 12841:2006 Type C: Type C rope adjustment device	EN 341:2011/2B: Descender for rescue
---	--------------------------------------

NOMENCLATURE

(1) Movable plate ; (2) Fixed plate; (3) Cam; (4) Safety lever; (5) Fixed bolt; (6) Upper bolt; (7) Cam bolt (8) Non-opening attachment point; (9) Opening attachment.

OPERATING PRINCIPLE

When tension is applied to the device between the connector and the rope bearing the load, the cam pivots, thus driving the grip assembly. This insures the rope is pinched between the cam and the fixed axis of the device, causing the device to lock. By exerting pressure between the grip and the device, the locking gradually frees, making it possible to descend. When the user releases the grip, the device brakes and automatically blocks the rope.

Warning! One hand should always hold the free strand of the rope, while making sure not to pinch your fingers in the device.

The user must be wearing gloves.

The device can be used to descend at a maximum speed of 2 m/s, you can adjust this speed by braking more or less on the free strand of the rope with the hand positioned on the rope below the descender, and/or by pressing more or less on the grip.

INSTALLING THE DEVICE

Open the movable plate (1). Insert a locking connector compliant with standard EN 362 (maximum length: 110mm) and with a suitable diameter into the nonopening anchorage ring (8) on the fixed plate (2). Connect the assembly to the ventral point of a suspension harness (EN 361-EN 358-EN 813) [A] or to an anchorage point compliant with standard EN 795 (R>12kN – EN 795:2012 or R>10kN – EN 795:1996) situated above the user [B]. Keep the cam (3) in the stop in allow as much rope to pass through and to enable its positioning. Insert the cord around the cam as shown in the drawings on the device. Close the movable plate by passing the connector through the opening anchorage point (9) on the movable plate and lock the assembly on the connector, making sure that the safety lever (4) is closed and that the connector is properly locked to the central point of the suspension harness or to the anchorage point. After the operating tests, lift the grip in order to insert the rope between the fixed bolt (5) and the upper bolt (6) for the placement of the mandatory autobrake. When the device is connected to an anchorage point, add the brake by passing the rope on the brake side into a return connector [B'].

Warning! No outside elements should interfere with the operation of the device. Any hindrance on the device or one of its components (grip, cam) may result in damage and cancel out the braking, resulting in a risk of death.

OPERATING TESTS

Before each use, check the position of the rope and the operation of the device. Warning! Beforehand, take the necessary precautions in order to eliminate any risk of a fall by being auto-belayed or by auto-belaying the person to be descended (use of an independent fall-arrest system). Warning! These operating tests must be conducted without the self-braking, i.e., before inserting the rope between the fixed bolt (5) and the upper bolt (6). The grip must move freely.

Device connected on a harness [C] or device connected to an anchorage point [D]:

Pull on the strand of rope situated on the anchorage side when the device is connected onto a harness, or on the rope situated on the load side when the device is connected to an anchorage point. The rope should not slide inside the device. If the rope slides, check that you have properly inserted the rope in the device. If, after a new operating test, the rope is not blocked, discontinue use of the device. When the device is connected onto a harness, gradually place the equipment under tension, by loading it under your own weight and holding onto the free strand of rope with one hand. The device should lock up and not slide along the rope. In this case, the device is installed correctly and is ready to be used.

Otherwise, the device is not installed correctly: check the insertion of the rope and if, after a new operating test, the device does not block the rope, discontinue use of the device.

Warning! Following this step, put the self-brake in place by lifting the grip and inserting the rope between the fixed bolt (5) and the upper bolt (6). For both configurations [C] and [D]: With one hand, hold the free strand of rope and with the other, press on the grip. The rope should slide inside the device. When the user releases the grip, the device brakes and blocks the rope.

ACCESS ON ROPE – EN 12841:2006 TYPE C: TYPE C ROPE ADJUSTMENT DEVICE

The descender is a Type C rope adjustment device enabling controlled downward progression on the working rope using a manual action, and for stopping anywhere on the working support by releasing the grip. When the adjustable belaying support is loaded with the user's full weight, it becomes a working support, it must be used in conjunction with a Type A rope adjustment device in accordance with standard EN12841, or a fall arrest device in compliance with standard EN353-2 attached to a safety rope. Warning! Always make sure that the type A adjustment device or fall arrest device accompanies the user's movement, without interfering with its operation, and that the user is not loading on the safety rope.

Maximum rated load: 200 kg.

Working rope to be used: Semi-static (core + sheath) kernmantle rope compliant with EN 1891 type A in 10.5 mm or 11 mm. During certification, the tests were conducted using the following rope: FA 70 010 99 or FA 70 011 99.

[E] Descending one person:

The working rope must be connected to an anchorage point compliant with standard EN 795 (R>12kN – EN 795:2012 or R>10kN – EN 795:1996) situated above the user as shown in the drawing on the device. The device is connected to the ventral point of the suspension harness. After conducting the operating tests, and after the placement of the auto-brake, using one hand, hold the free strand of the working rope, and with the other press on the grip in order to begin descending at the desired speed by gauging the pressure on the grip and/or by braking with the hand on the free strand of the safety rope. The device will stop when you release the grip.

[F]

During the stop in the working position, we recommend you make a stop knot with the working rope round the device in order to prevent an accidental descent of the device.

[G] Use for descending two persons: (Only to be used in exceptional cases) Caution, use only 11 mm diameter rope. Caution, you will be 2 persons suspended on the descender, so in this case the speed of descent should be even more controlled and as slow as possible. Consequently, an additional connector should be used to increase braking. This will be connected to the connector on the descender situated on the attachment point of the harness and the free strand of rope must pass through the additional connector [H]. No load impact on the rope is tolerated during this type of use. These manipulations must only be made by experts, practised in this technique. The rescuer should connect the victim to the connector on the descender using connectors or a strap. The use is the same as that described above for one person. The person to be descended should be secured with a second rope.

Anticipating emergencies: During the use of the device, it is necessary that the user anticipate and make necessary arrangements for emergencies. The length of the belaying supports and types of equipment available at the workplace are important factors; consequently, the user should also take into account the evaluation of the risk and training in rescue.

Other use: Rope ascending - for experts practised in this technique only. When the self-brake is disabled, using an ascender handle can easily climb the length of his/her support by taking up the slack after each movement. Never leave slack between the ascender handle and the descender.

RESCUE EVACUATION – EN 341:2011/2B: DESCENDER FOR RESCUE The descender can be used as a descending device for rescue.

Maximum descent height allowed: 100 m Authorised working load: 30 to 130 kg Working rope to be used: Semi-static (core + sheath) kernmantle rope compliant with EN 1891 type A in 11 mm diameter. During certification, the tests were conducted using the following rope: FA 70 O11 99. Technical characteristics of the rope used: sheath slippage 0.98%; stretch 2.5%; core: 60.1%; % sheath: 39.9%; mass per unit of length: 77 g/m; retraction 2%; materials: polyamide.

[I] Descent from an anchorage point:

The device is connected to an anchorage point compliant with standard EN 795 (R>12kN – EN 795:2012 or R>10kN – EN 795:1996) situated above the user. After conducting the operating tests, and after the placement of the auto-brake, and the additional connector [B'], hold the free strand of the working rope using one hand, and with the other press on the grip in order to begin descending at the desired speed by gauging the pressure on the grip and/or by braking with the hand on the free strand of the safety rope. The device will stop when you release the grip.

Make sure the connection of the device to the anchorage point is best arranged so that the descent is not hindered.

If it is necessary to leave the device in place at a work station between one inspection and another, make sure to protect it adequately from ambient conditions.

The person to be descended should be secured with a second rope.

This device was tested for a descending energy greater than 1.5×10^6 J: Calculation formula $W = m \times g \times h \times n$ m = mass = 130 kg; G = acceleration = 9.81ms^{-2} ; h = height= 100m; n = descent number = 12 Warning! During use, you absolutely must make sure to account for this total energy.

If a stop during the descent is necessary, we recommend you make a stop knot with the working rope round the device in order to prevent an accidental descent of the device. [F]

GENERAL RECOMMENDATIONS

Warning! Do not lose control of the descent because it may be difficult to regain it.

Warning! Do not activate the grip accidentally, and make sure that no outside elements can activate it. **Warning!** During or after a descent, the device will heat up, due to the friction of the rope inside the device, and can damage the line.

Warning! Check during use that the connector is properly positioned in the descender and that the connector and the descender are properly locked. Pulling efforts on the connector should be made in the direction of the major axis only.

Warning! Make sure that the rope end is always properly knotted in order to prevent the rope from unintentionally going out of the descender at the end of the rope – this will prevent serious injuries and even death. The rope should always be properly stored, e.g. in a bag, without any knots or twisting, so as not to impede descending. During use, the rope should always be held between the device and the anchorage point in order to limit the risk of a fall.

- The working rope and the safety rope should be connected to two separate anchorage points.
- Any overload or dynamic loading is likely to damage the belaying support.
- It is prohibited to use the device with sharp edges, structures with small diameters and corrosion as this can affect the performance of the system, unless these are adequately protected.
- Straps cannot be used to extend the connection between the device and the user's harness.
- During use, the device should always be maintained above the attachment point on the user's harness.
- Provide for a safety distance from electrical lines or an area presenting an electrical hazard.
- Ensure that the general set-up limits swinging in the event of a fall, and that the work is performed to limit the risk and the height of a fall. For safety reasons and before each use, make sure that in the event of a fall there is no obstacle obstructing the fall arrestor. The minimum clearance below the user's feet must be: see fall arrestor instructions.
- Before and during use, we recommend that you make the necessary arrangements for a safe rescue, should this be required. Prolonged hanging in a harness following a fall can result in various after-effects, which is why it is essential that the rescue operation is carried out as safely and quickly as possible.
- The device must only be used by trained, competent and healthy persons, or under the and direct visual control of a trained and competent person. **Warning! Certain medical conditions can affect user safety, if in doubt please contact your doctor.**

Be aware of the hazards that could reduce the performance of your equipment, and therefore the safety of the user, in the case of exposure to extreme temperatures (<-30°C or >+50°C), prolonged exposure to the elements (UV rays, humidity), to chemical products, electrical constraints, if the fall protection system becomes twisted when in use, or in the case of sharp edges, friction, cuts, etc

Before each use, check the condition of the descender: visual inspection in order to make sure of the descender's condition: it must be clean, no deformations, no cracks, no wear, no oxidation, no abrasive or sharp parts that might damage the rope; the bolts should be properly tightened. Make sure that the spring in the grip functions properly, the grip should return to closed position with no blockage. Make sure the movable plate (1) has no play and that it closes properly

on the cam axis (7). Check the mobility of the safety lever (4), that its recall spring functions properly and that it locks properly when released. The cam (3) and the fixed bolt (5) may wear and should be checked very attentively, if, after functioning tests the rope slides when the device is installed properly, the device should no longer be reused. Check that the cam (3) turns freely. Check for the absence of foreign bodies (sand, etc.) in the mechanism and the absence of lubricant in the rope passage. Check the condition of the connectors used and the functioning of their closure and locking system. Product markings should be readable. If any defects are found or suspected, the device should not be reused. After a fall, or after a significant stress, the product should not be reused. When the product must not be reused, it must be marked "OUT OF SERVICE" (see the "VERIFICATION" section). All belaying supports used must be checked before and after each use.

Perform the operating tests before each use.

Do not remove, add or replace any component of the device.

CHEMICAL PRODUCTS

Do not use the device in the event of contact with chemical products, solvents or fuels that could affect its operation.

TECHNICAL SPECIFICATIONS

Material: Plates and grip in aluminium alloy, cam in stainless steel.

Weight: 450 g

COMPATIBILITY FOR USE

The device is for use with a fall arrest system as defined in the product data sheet (see standard EN 363) to guarantee that the dynamic force exerted on the user during the arrest of a fall is no greater than 6 kN. A fall arrest harness (EN361/EN 358/EN 813) is the only body-gripping device that may be used. All connectors used must be equipped with a locking system and be compliant with standard EN 362. It can be dangerous to create one's own fall protection system in which each safety function can interfere with another safety function. Therefore, it is important to read the recommendations on using each component in the system before use.

Be sure to strictly respect the rope characteristics and diameters indicated. In fact, some of them may be more or less slippery and thus reduce the braking effectiveness. This can come from different factors: type and treatment of the sheath, inappropriate diameter, wet or frozen rope (see specific notice for the rope). The characteristics of the belaying support can change during use, especially due to wear, to soiling, or repeated descents along the same section of the belaying support (see specific notice for the rope for inspections before use). If any defects are found or suspected, the rope should not be reused.

NEVER USE THE DESCENDERS WITH METAL WIRE ROPES. A DESCENDER WITH ITS WORKING ROPE CANNOT BE CONSIDERED AS A FALL PROTECTION SYSTEM.

SERVICE LIFE

The service life of the product is 10 years (in accordance with the annual examination by a competent person authorized by KRATOS SAFETY), it is linked to a variety of factors, such as frequent or incorrect usage, climatic conditions (humidity, frost and ice), strong stresses, exposure to heat sources, ageing, exposure to chemicals, etc. It may be reduced according to use and/or the results of the annual inspections.

INSPECTION

The equipment must be checked systematically in case of doubt or after a fall and at least every year by the manufacturer or a competent person authorised by the manufacturer, to guarantee its conditions and thus the safety of the end user. The product data sheet should be completed (in writing) after each verification. The date of inspection and date of the next inspection must be indicated on the data sheet. It is also recommended to put the date of the next inspection on the product.

MAINTENANCE AND STORAGE

(These instructions must be strictly observed)

During transportation, keep the equipment away from any cutting edges and in its packaging. Clean with soapy water, dry with a dry cloth and hang it in a naturally ventilated area away from any direct fire or heat source, as well as any elements which became wet during their usage. Bleaches and detergents are strictly prohibited. The equipment must be stored in a temperate, dry and ventilated area in its packaging protected from sunlight, heat and chemical products.