



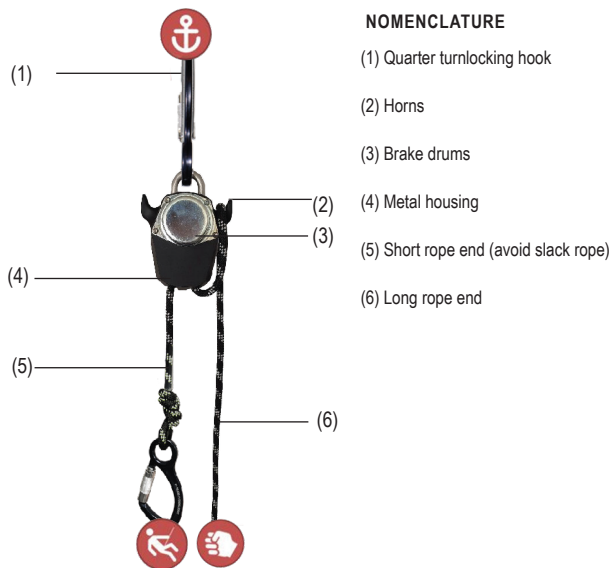
EVAC Mini

USER INSTRUCTION MANUAL DESCENDER AND RESCUE DEVICE

THESE INSTRUCTIONS APPLY TO THE FOLLOWING MODELS:
AFX209060

EN 341:2011-1B
ANSI/ASSE Z359.4:2013

PRODUCT OVERVIEW



NOMENCLATURE

- (1) Quarter turnlocking hook
- (2) Horns
- (3) Brake drums
- (4) Metal housing
- (5) Short rope end (avoid slack rope)
- (6) Long rope end

AFX209060

To facilitate reading, only the masculine form is used in this document; all references to the male gender shall be deemed and construed to include the female gender.

You may only use this product if you have read and understood these instructions for use, if you have undergone training and if you are physically and mentally capable of doing so.

You must complete a training on correct use, installation, inspection, maintenance and use limitations before using this product. You should repeat the training regularly without endangering trainees or users.

In order to ensure your safety, we offer trainings where you can learn how to safely operate this product.

This manual including the use protocol must be kept with the product. In case of loss or if manual and inspection protocol became unusable, the effective versions of both documents are available for download at <http://kstrong.com/>

USE PROTOCOL:

After each usage, you must fill in the table pages 12-13. The rope of *EVAC mini* MUST BE REPLACED as soon as the cumulative height indicated in the table is reached. Maximum cumulative height must not exceed 1500 m.

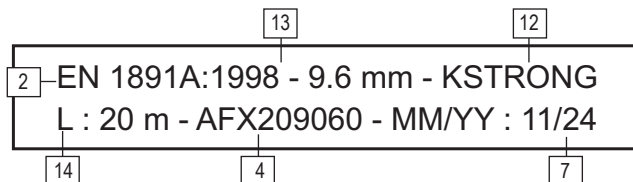
LABELLING

On the housing



S/N: DDMMYY 25 XXX **8**
MM/YYYY **7**

On the rope



1	Read the instructions before use
2	The number of the standard to which the product conforms and its year: EN 341:2011-1B
3	Name of product
4	The product reference
5	min 30 kg / max 141 kg: Authorised working load
6	max 250 m: Maximum descent height allowed
7	The date of manufacture
8	The individual number
9	Device shall be for the use of 1 user MAX.
10	Indication of compliance with PPE regulation 2016/425 and compliance with the harmonised standard according to EN 341:2011-1A as demonstrated by notified body no. 0598
11	Minimum temperature for use
12	Manufacturer's name
13	Diameter of the rope
14	Length of the rope

This guide must be translated by the dealer into the language of the country of use, except if the translation is provided by the manufacturer.

For your own safety, you must strictly follow the usage, inspection, maintenance and storage instructions.

KSTRONG cannot be held liable for any direct or indirect accident occurring following use other than that provided for in these instructions; do not use this equipment beyond its limits! The user is responsible for the risks to which he is exposed. People who do not assume their responsibilities should not use this product. Before using this equipment, you must read and understand all usage instructions in this guide.

There are many possible improper uses and it is not possible for us to list them all. ONLY THE PROPER USES DESCRIBED IN THIS NOTICE ARE PERMITTED, ALL OTHER USE IS PROHIBITED: RISK OF DEATH.

SCOPE OF APPLICATION:

EN 341:2011 class 1B: Descender for rescue

A descender is a piece of personal protective equipment; it should be allocated to a single user (not an obligation). The use of this equipment should be reserved to experts, trained and practised in these techniques. This product may only be used by 1 person at a time.

OPERATING PRINCIPLE:

This product may only be used as a rescue, descender device and only for transporting persons. Do not use this product as a suspension system for work position. Using this product without having read these instructions for use can lead to accidents resulting in severe injuries or death. Read these instructions for use carefully before using this product. In case of doubt or if you have questions please contact KSTRONG.

Warning! This product (housing and rope) will heat up during the descent. Touching the housing or holding the long rope end during descent may lead to burns. Do not touch the housing during or after long descents. Do not hold on to the long rope end during descent.

INSTALLING AND USING THE DEVICE:

WARNING! Only the rope (ref. AFX209060) supplied with the product is approved for use with the EVAC mini. Do not pass the loaded rope end through the "horns", as this would prevent any descent and damage the device. The images below show the correct use and an example of incorrect use (not all can be illustrated) of the device.

The device can be used in both directions, according to the image in § Presentation of the product (p. 3), or with the anchorage attached to the short end (5) and the user attached to the karabiner (1).



RIGHT



WRONG

Always fix this product to an anchor device before descending. The device's anchoring point must be positioned above the user and must comply with standard EN795:2012 (R>12kN).

Descender function :

This function enables lowering 1 person at a controlled speed by means of 2 fly wheel brakes operating in both directions (maximum controlled speed < 2 m/sec).

Control descent or stop descent function :

Using the "horns", you can control the descent speed and also stop a descent. The unloaded, longer rope end should run through the "horns". By guiding the long rope end, you can control the descent speed or stop the descent at any time.

If the "horns" are not used, the descent will automatically be kept at a maximum speed < 2 m/sec. If you use the product as a shuttle rescue system with at least two people to be rescued, make sure you pass the rope through the "horns" correctly.

Standard rule: The rope end that passes through the "horns" must always be the unloaded end (long rope end).

Warning! If you run the shorter end of the rope through the "horns" (short end = loaded rope end, on which a person is suspended), the descent will be blocked and the person cannot be lowered to the ground.

Here under an example of usage of *EVAC mini*:

1°) Self evacuation from a higher to a lower position:

The photos below show an evacuation with the EVAC mini attached to the anchorage. The same applies when the EVAC mini is attached to the operator.

Example: A person is working on an aerial working platform (secured with a belaying system). Finishing, he notices that the platform is stuck and it cannot descend. He takes the tape sling and the descender device out of the bag.

1

He fixes the lanyard(s) in order to create his anchor point on the AWP (general rule: always use the anchorage on the aerial work platform or, failing that, fix the lanyard(s) on a stable element). Then he hooks the descender device in the anchor point.

Do not forget to lock the connector !

2

He hooks the connector of the short rope to his harness.

Do not forget to lock the connector!

3

Now he unclips from the belaying system, lets the long rope end to the ground and pulls it until the short rope end is tight. Then the rescuer wraps the rope around one of the "horns".

Important : Avoid slack rope between descender device & safety harness (short rope end).

4

Then he exits the platform and keeps the long end rope in his hand.



5

Now he starts the descent which can be controlled or stopped at any time via the long rope end. Of course he can also release the long rope end completely and he will be lowered automatically at a controlled speed < 2m/sec.

2°) Self evacuation of another person from the platform (shuttle system):

During shuttle system evacuation operations involving several people, the EVAC mini must be attached to the anchorage device. Using the shuttle system is not possible when the device is attached to the operator.

Example: Following the sample example of the previous situation, a 2nd person has to evacuate the platform.

The EVAC mini system comes with connectors at each end of the rope. This allows two or more people to use the device as a shuttle system. To do this, follow the procedure in Point 1°). The first user to reach the ground then disconnects from the device. During the descent, the connector for the long rope end rises back up, and the long end then becomes the short end. If the descent height was less than the length of the rope, the rest of the rope should have passed through the descender to bring the connector back up to the level of the second person, who is still on the platform. This person can then hook onto the connector. The new short rope end must be removed from the "horn" so that the rope from what is now the long end can be passed through the opposite "horn". Now, the second person can begin to descend following the same principle detailed in Situation 1°).

- This product may only be used by one person at a time.
- For shuttle system operation minimum 2 overalls/harnesses must be available.

Important notes on using the "horns":



"Horn"

Short rope end (has to be tightened, no loose rope)

Long rope end (passed through the "horn")

The "horns" allow you to control your descent speed or stop a descent. The unloaded long end of the rope passes through a "horn"; by holding this rope end, you can control your descent speed or immobilize yourself in a stable position (suspended). If you do not use a "horn", then your descent will be kept at a speed < 2 m/sec, thanks to the 2 mechanical brake systems. When using the shuttle system (see Situation 2°), make sure to use the "horns" correctly.

General rule: Only the long (unloaded) rope end is passed through the "horn".

Warning! If you run the short end (short end = loaded rope end, on which a person is suspended) of the rope through the "horns", the descent will be blocked and the person cannot be lowered to the ground.

OPERATING TESTS:

Before each use check if the rope runs smoothly. Pull both rope ends slowly one after the other. If you feel slight resistance, the product works. Check the fly wheel brakes. Pull both rope ends quickly one after the other. If you hear a „click“ and the rope resists slightly when you pull it, the brakes are OK. Then check 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).

This device was tested for a descending energy of 1.5×10^6 J Max.:

Calculation formula $W = m \times g \times h \times n$

$W = \text{energy (J)}$

$m = \text{mass} = 141 \text{ kg}$

$G = \text{acceleration} = 9.81 \text{ ms}^{-2}$

$h = \text{height} = 250 \text{ m}$

$n = \text{descent number} = 43$

Warning ! During use, you absolutely must make sure to account for this total energy.

Maximum descent distance recommended by the manufacturer:

For 1 person $\leq 75 \text{ kg}$: 2 000 m

For 1 person $\leq 100 \text{ kg}$: 1 500 m

For 1 person $\leq 141 \text{ kg}$: 1 000 m

GENERAL RECOMMENDATIONS:

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

Warning! Check during use that the connector is properly positioned and locked in the descender. 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.

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.

Ensure 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.

Use the product between: - 40°C / +65°C.

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 or a long descent can result in various after-effects, such as the cut of the blood circulation, the lack of blood flow in the brain, the dysregulation of the heart rate, etc. That is called suspension trauma, or harness hang syndrome (see the general communication made by KSTRONG). This is why it is essential that the rescue operation is carried out as safely and quickly as possible.

This product offers you a range of applications for various situations. Using this product requires solid training by professionals who have been trained on this product. The device must only be used by trained, competent and healthy persons. **Warning!** Certain medical conditions can affect user safety, if in doubt please contact your doctor.

It is forbidden to fasten the product through intermediary of any other device than those specified by KSTRONG.

Before and after each use, check the condition of the device: 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. Check for the absence of foreign bodies (sand, etc.) in the mechanism and the absence of lubricant in the rope passage. Inspect the rope along its entire length to verify the integrity of the sheath and the core, and the regularity of the diameter (9.6 mm). Check if the rope runs smoothly. Pull both rope ends slowly one after the other. If you feel slight resistance, the product works. Check the fly wheel brakes. Pull both rope ends quickly one after the other. If you hear a „click“ and the rope resists slightly when you pull it, the brakes are OK. 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. When the product must not be reused, it must be marked „OUT OF SERVICE“ (see the „INSPECTION“ section). All belaying supports used must be checked before and after each use.

Using this product without having performed a visual and functional inspection can lead to accidents resulting in severe injuries or death. The visual and functional inspection must be carried out by a competent person. KSTRONG offers trainings for that purpose.

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: EVAC mini: Steel / Karabiner: Aluminium / Kernmantle rope: Polyamide (EN 1891, class A).

Max. descent load: 141 kg (1 person)

Max. descent height: 250 m

Descent speed: < 2 m/sec

Descent controllable with "horns".

Can be used as a shuttle system.

KSTRONG certifies that this equipment has been tested and certified in accordance with EN 341:2011 class 1B.

COMPATIBILITY FOR USE:

A fall arrest harness (EN361) 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. 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.

This product may only be used in combination with tested and certified products.

Only use this product with tested products or with products that have been recommended by KSTRONG. The following products correspond to the applicable PPE against falls from a height standards.

Tested and certified products:

Rescue overall/harness EN 1497 or EN1498

Karabiner EN 362

Anchor device EN 795

Full body harness EN813 along with EN361

SERVICE LIFE:

The service life of the product is 10 years (in accordance with the annual examination by a competent person authorized by KSTRONG), 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. After a max. of 10 years textile parts must be replaced and metal parts must be inspected by KSTRONG.

INSPECTION:

Inspection by KSTRONG or an authorized partner is only valid under the proviso that:

- components of this product have not been modified,
- textile parts have not been contaminated with chemicals,
- this product has not been exposed to temperatures under -40°C or over +65°C,
- metal parts have not fallen to the ground from more than 2m.

The equipment must be checked systematically in case of doubt or after a fall and at least every year, but in any case after a maximum cumulative length of 2000 m (at 100 kg) by the manufacturer or a competent person authorised by the manufacturer, to guarantee its conditions and thus the safety of the end user. Enter the cumulative length in the use protocol. If used as an emergency equipment (= sealed in special packaging), the packaging has to be inspected at least once a year and in any case before each use (damage, humidity etc.). If this packaging is damaged, it must be sent to KSTRONG or a competent person for inspection. If not, it is not necessary to proceed with the annual inspection.

The shorter the descent height, the more often the rope will run through the descender device until the device has to be inspected.

After a max. cumulative length of 1500 m, the rope has to be changed. If the rope does not seem safe anymore, send the device to KSTRONG or a competent person to check and replace the rope.




The product data sheet should be completed (in writing) after each periodic 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. If you use this product in very harsh environments (extreme weather and use conditions, heavy descents and liftings) you have to check this product more often.

MAINTENANCE AND STORAGE: (These instructions must be strictly observed)

Clean the metal parts with a wet towel. Never tumble-dry, never let it dry in the sun or over a heat source. Air-dry this product in an airy, shaded place. When drying this product, always put it with the brake drums upwards to avoid humidity in the housing. Rinse the rope with warm water and wipe it with a dry towel afterwards. Never disinfect the rope. Never use chemical detergents, nor bleach. Disinfection of this product is prohibited. In case of contamination, retire this product environmentally-friendly.

During transportation, keep the equipment away from any cutting edges and in its packaging. Store the rope loosely in figure of eight loops to avoid knots, which may result in blocking the device.

Repairs may only be effected by KSTRONG or a competent person. Repairs, adjustments or changes to this product that have not been authorized by KSTRONG can lead to severe accidents and falls. Changes (e.g. longer rope) and repairs have to be performed by KSTRONG only or a competent person.

DATE OF USE	NUMBER OF DE-SCENT (a)	LENGTH OF DESCENT (b)	COEFFICIENT OF SEVERITY OF USE (c) Weight transported during the descent				COMBINED LENGTH = a x b x c	CUMULATIVE LENGTH	CHECKING BEFORE AND AFTER EACH USE	SIGNATURE OF USER
			<75 kg 0,7	<100 kg 1	<150 kg 1.5					
04/01/2018	4	15 m		✓ (=1)			60 m		04/01/2018	
06/02/2018	1	40 m	✓ (=0.7)				28 m	88 m	06/02/2018	
21/02/2018	5	20 m			✓ (=1.5)		150 m	238 m	21/02/2018	

examples

13

Notes.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Certification Body:

Allgemeine Unfallversicherungsanstalt, Sicherheitstechnische Prüfstelle, NB 0511

Ongoing Assessment Body:

SGS Fimko Oy Takomotie 8, FI-00380 Helsinki, Finland (Notified Body 0598)

For EU Declaration, please visit <https://kstrong.com/asia/eu-declaration-form/>



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