Instruction manual for Self Retractable Lifelines
UPGRADE and UPGRADE TWIN certified according to EN 360

UPGRADE

UPGRADE TWIN

EN 360:2002

(EU) 2016/425 PPE Regulation

150 kg

CE 2233

Thank you for choosing VERTIQUAL®! You have purchased a high quality product that will reliably protect you and will be your companion for a long time when working at heights and depths.
This manual must be read and understood before using the product! This product will be used with other equipment (components) thus forming a system for working at heights. Please refer to the instruction manual of each component in your system for compatibility and correct use! Following these instructions accordingly is essential for your safety. Failure to do so can result in serious or even fatal accidents! Keep these instructions together with the product, accessible to all users, so they can consult them whenever is needed!

WARNING! These instructions are a basic comprehensive guide to the safe use of the purchased equipment. They contain general information about the product, intended to help the user, but cannot cover all the situations that may occur in the daily activities and cannot in any case replace the specialized training courses for safety at heights. This PPE against falls from heights can only be used by well-trained users, who are familiar with the relevant legislation and who have successfully completed a special safety training course for working at heights.
WARNING! For works with risk of falling from heights or in depths, a risk assessment must be carried out in advance in accordance with current regulations and legal provisions (EN standards or specific national rules) that will provide adequate measures for safety and rescue!
WARNING! Instructions for use are updated when technical or legislative changes occur. The latest version of the instructions overwrites previous versions and is the only valid version. Please make sure you follow the instructions of the most recent version. You can download the most recent instructions from our website www.vertiqualsafety.com by accessing the section of each product. For help or additional questions, please contact us at office@vertiqualsafety.com or Tel. (+40) 0365/882143.
WARNING! The user must be medically fit and capable to ensure his own safety and act accordingly in possible emergency situations! Seek medical approval according to the national legislation in force!
WARNING! If the product is re-sold outside the original country of destination, the reseller must provide these instructions manual in the language of the country where the product will be used.

FIELD OF USE

Along with other tested and certified components the **UPGRADE** series Self-Retractable Lifelines (SRLs) are used in fall arrest systems. The purpose of these systems is to stop the free fall of the user, absorbing most of the shock and distributing the remaining force evenly, while holding the users body in a proper position until he or she is rescued. The SRL will be used in vertical applications only (e.g. vertical climbing, ladders etc.), as a connection element between an EN 361 full body harness and an anchor structure / anchor point which meets the requirements of EN 795. In case of fall, its energy absorber will deploy and dissipate the energy efficiently, keeping the arising forces below 6 kN. The product must be used exclusively as a PPEaF (Personal Protective Equipment against Fall), in usual environments with temperatures between -30°C and +50°C, without potentially explosive atmospheres, far away from flames, sparks, hot metal splash, dust, cement or any other fine powders. Avoid contact with sharp edges, abrasive surfaces, electricity, chemicals, corrosive solutions and substances, excessive heat, oils, paints or any other contaminants. The structures used for anchoring have to meet the requirements of EN 795:2012, must have NO sharp edges and must be capable to withstand minimum 12 kN for full metallic anchors and 18 kN for any other types of anchors. The anchor point must be located as high as possible above the user and as close as possible to the vertical axis of the user's position, thus reducing the fall distance and prevent dangerous swing falls. The minimum free space below the user (fall clearance) must be ensured to prevent hitting the ground or any obstacles while the fall is arrested.

DESCRIPTION

The UPGRADE series SRLs efficiently combines the advantages retractable fall arresters with the ones of the conventional shock absorbing lanyards. The fall distance is thus minimised due to the almost instant fall arrest provided by the retractable blocks. UPGRADE SRLs are comprised of the following elements: connector, energy absorber, fall arrest block, retractable webbing, swivel and the end connector (usually a large opening connector). These SRLs are of two main construction types: single (UPGRADE) and twin (UPGRADE TWIN).

▪The **single type** SRL it is meant to be used mostly for stationary works/applications, where the user is protected until he arrives at his workplace, and then, by connecting the SRL accordingly, the user can carry out his work, being protected against falls.

▪Due to its shape, the **twin type** SRL is suitable for a wider variety of applications. The twin type allows the user to alternately connect the hooks on the ends of the SRL to anchor points, thus being able to move, while having at all times one hook attached to an anchor point / anchor structure. This type of lanyard offers high mobility and safety, including the possibility to connect, both hooks to different anchor points, at the same time.

In the event of a fall, impressive forces occur depending on the falling distance and weight of the falling person! The energy absorber is reducing the forces generated below 6kN. A major part of the generated kinetic energy will be dissipated by the special tear-up webbing of the energy absorber, thus keeping the force to a tolerable level. Vertiqual® Self-Retractable Lifelines are manufactured using high tensile PES and PA webbings, steel / aluminium connectors and various components of aluminium, plastics, steel and stainless steel.

COMPONENTS

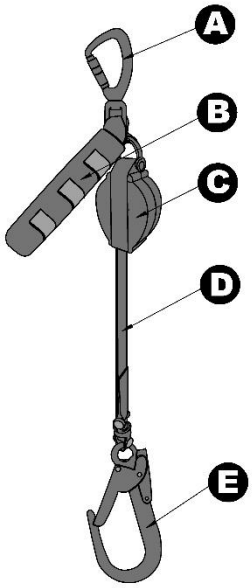
A – connector
(for attaching to the full body harness)

B – energy absorber
(shock pack)

C – fall arrest block

D – retractable webbing

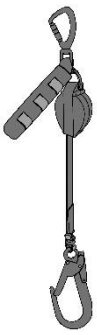
E – connector
(for attaching to a anchor point)



CONSTRUCTION TYPES

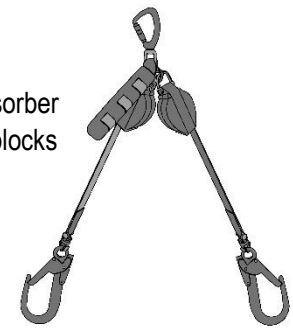
Single

1x energy absorber
1x fall arrest block



Twin

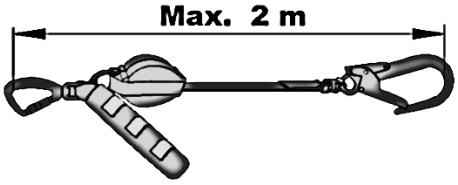
1x energy absorber
2x fall arrest blocks



LENGTH

Length: 2 m (webbing fully extended)

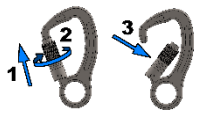
WARNING! It is strictly forbidden to extend the length of your SRL! (by connecting additional carabiners, lanyards, slings etc.)



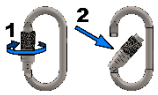
CONNECTORS: GATE OPENING / CLOSING

Auto-Lock

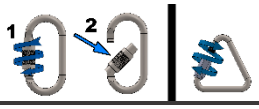
Tri-Lock



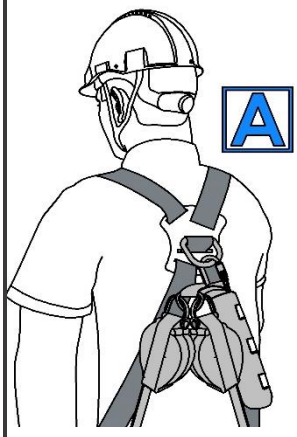
Twist-Lock



Screw



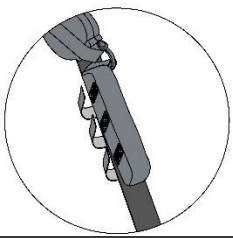
CONNECTING TO THE HARNESS



(!) Use only certified full body harnesses (EN 361)!
(!) Refer to your full body harness manual for complete attachment instructions!

1. Attach and secure the connector at absorber's end of your SRL to an attachment point of your EN 361 harness that is marked with **"A"** or **„A/2"**. These are the only points approved for fall arrest! The points are usually metal rings or textile loops and in case of A/2 marking, the two points need to be connected together!

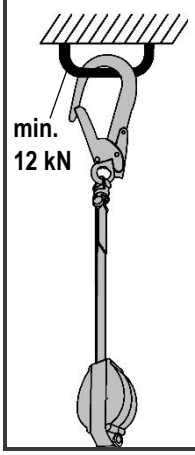
(!) UPGRADE TWIN version will be attached only to the DORSAL attachment point of the harness!



2. After properly attaching the connector, the energy absorber must be strapped to the harness to prevent it from swinging while moving.
Use the straps (hooks and loops) provided on the absorber's cover to attach it to one of the harnesses webbings.

ANCHOR POINTS

The anchor points used must meet (or exceed) the requirements of EN 795!



If a structural anchor point is used (e.g. beam, pipe) make sure that:

- has a proved breaking strength of minimum 12 kN;

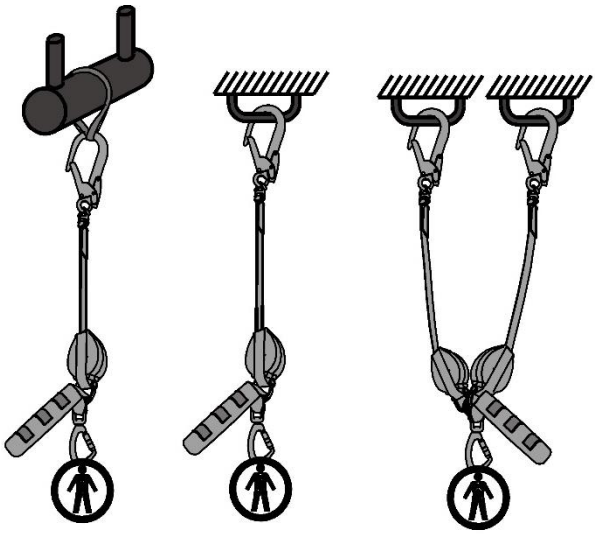
- has closed ends which do NOT allow the connector to slide out;

- has NO sharp edges;

- its shape and size cannot cause incorrect loading of the connector or can put pressure on the connector's gate;

Below some examples of **correct** / **incorrect** use of connectors and Self-Retractable Lifelines are presented. Note that these are the most encountered situations in use, but a full list of all possible incorrect uses cannot be covered by this manual. Use only certified components (carabiners, lanyards, etc.) and read/follow their instructions carefully!

CORRECT USE

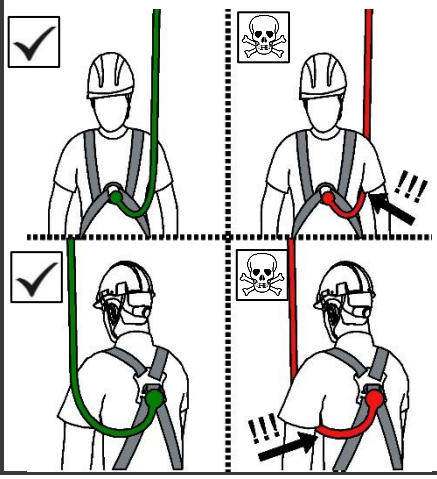


WARNING !

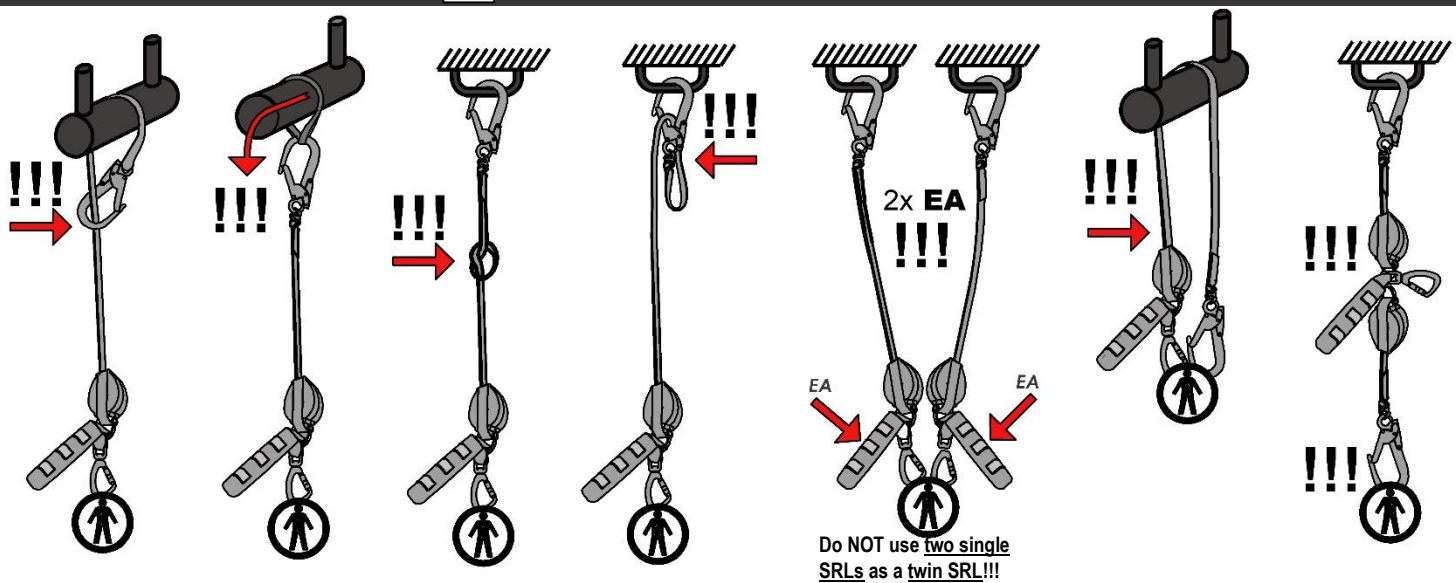
When using the **TWIN version**, having one webbing connected to an anchor point, connect the second, unused webbing **only to approved lanyard parking elements** on your harness! (e.g. a plastic ring). In case of fall, a lanyard parking element will break easily, allowing correct deployment of the absorber!

WARNING !

Connect and use your SRL making sure that the retractable webbing is NEVER passed under your arm(s).
Failure to do so can result in serious or even fatal accidents!

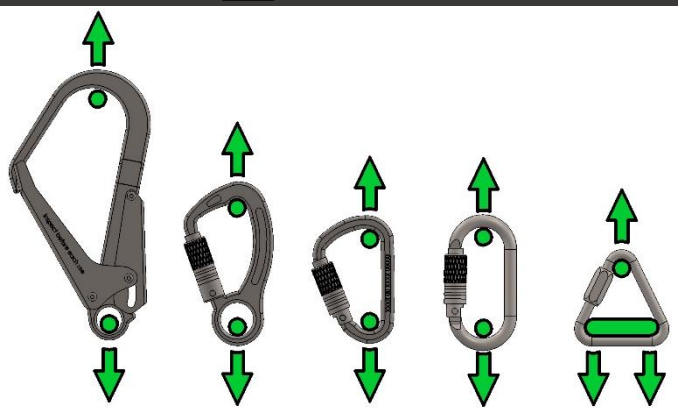


INCORRECT AND DANGEROUS USE

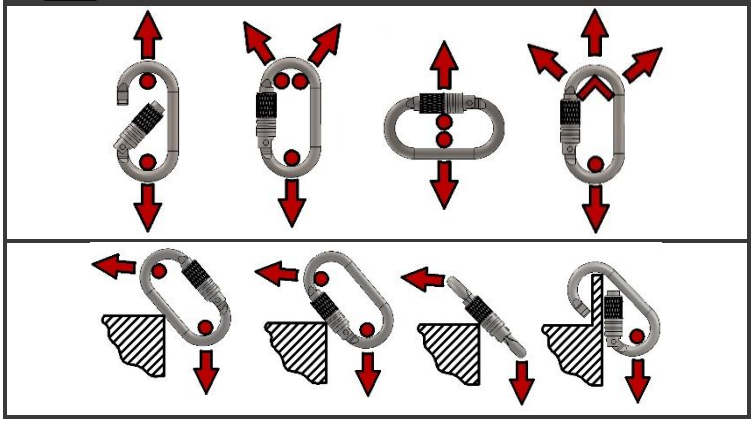


Do NOT use two single SRLs as a twin SRL!!!

CORRECT



INCORRECT AND DANGEROUS USE



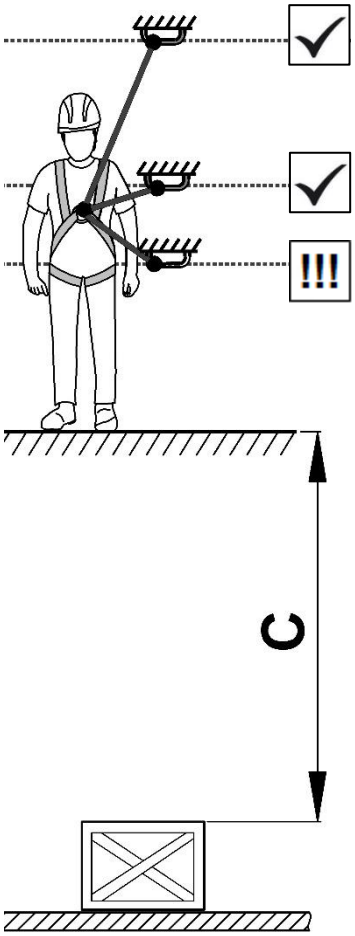
WARNING! Before use, the integrity, correct function and compatibility of the equipment must be checked!
If damage is identified, the equipment must be immediately withdrawn from use! If the lanyard is equipped with SCREW locking carabiners, please make sure that the gate is fully closed and tightened correctly, before using it! Note: **SCREW locking** carabiners shall NOT be used at workplaces where the user must connect/disconnect frequently! If the lanyard is equipped with AUTO-LOCK, TRI-LOCK or TWIST-LOCK carabiners, make sure thet the gate is fully closed and secured before use.
WARNING! This product is designed as a Personal Protective Equipment against Fall (PPEaF) and will be used only by trained and/or otherwise competent persons. Beginners will use it under direct supervision of such persons!
WARNING! The user must know the performances and also the limitations of his equipment before using it! In case of uncertainty regarding the equipment or its safe use, seek advice from the manufacturer or your qualified distributor.
WARNING! UPGRADE and UPGRADE TWIN are supplied as complete systems (including connectors). Components shall not be substituted and no adapters or other accessories should be used!
WARNING! In the event of a fall the user can be injured to the head and neck by the retractable webbing. Choose anchor points located as high as possible above the user and as close as possible to the vertical axis of the user! Thus, the fall distance is reduced and dangerous swing falls are prevented!
WARNING! If there is any doubt regarding the condition of the equipment DO NOT USE IT, instead send it to the manufacturer or to an authorized representative of the manufacturer for a professional evaluation.
WARNING! It is strictly forbidden to expose your PPE to flames or extreme heat! Keep clear from hot and incandescent objects!

ALLOWED USER WEIGHT :
▪ The self retractable lifelines of the **UPGRADE** series (**UPGRADE** and **UPGRADE TWIN)** are tested with test mass of 150 kg, thus being subjected greater and more diversified loads than required by EN 360 standard.

The self retractable lifelines of the UPGRADE series are approved for users with a total weight (person + equipment) of maximum 150 kg!

<u>WARNING</u>: If the total weight of the user exceeds 100 kg, <u>make sure that the full body harness and the other components used</u> are approved for that weight as well!

!!! FALL CLEARANCE !!!



Location of the anchor point	*Required clearance:*
✓ ***above user's head*** *Note: The angle of the webbing with the vertical axis of the anchor point must NOT exceed 30º*	**C = 2m**
✓ ***at the same level or above the fall arrest attachment point of the harness***	**C = 3m**
!!! ***at the same level or above the waist of the user***	**C = 3.6m**

The **fall clearance (C)** or the minimum free space below the work surface is the distance from the surface the user walks on, to the nearest obstacle!

WARNINGS:
▪ Make sure that there is enough clearance (C) below your work surface, <u>before starting the work</u> and maintain it during use!

▪ "Y" version (UPGRADE TWIN) can be connected only to the DORSAL ring of the harness!

▪ Use anchor points located **above** the attachment point of your harness (e.g. sternal/dorsal ring)!

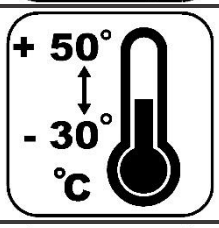
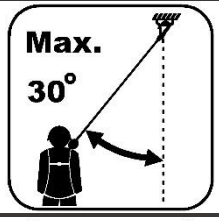
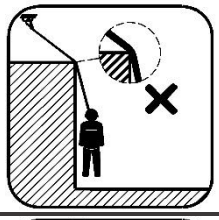
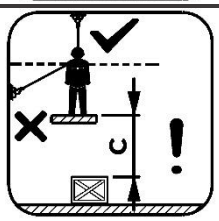
▪ Make sure the fall cannot occur over sharp edges or any factors that can inflict damage to your equipment!

MARKING

All VERTIQUAL® SRLs are fitted with a label which can be accessed by opening the absorber's cover.

The label contains the following elements and essential information: name of the model and version (if applicable), PPE type, length [m], the allowed user weight [kg], product's serial number, manufacturing date (month and year), standards/norms the product complies to (EN 360), European CE marking with notified body number, international symbol for reading the instructions before use and the name of the manufacturer, In this case the label also includes graphic warnings (symbols).

Check "**explanation of symbols**" section for more details. Note: The label must be always present and readable!

EXPLANATION OF SYMBOLS	
	The allowed weight of the <u>fully equipped user</u> is <u>MAXIMUM 150 kg</u>! *Never push your equipment beyond its limits!*
	Perform a <u>visual inspection</u> of your equipment before each use! *It is essential to identify eventual damage of your equipment. Note: damage can sometimes be inflicted without user being aware of it (e.g. a negligent co-worker).* *See „CHECK BEFORE EACH USE" section for more details.*
	Perform a <u>function test</u> of your equipment before each use! *Test each retractable device by quickly pulling the webbing out to make sure it locks properly and can arrest your fall! In addition, check all connectors to make sure they are closing and locking properly!* *See „CHECK BEFORE EACH USE" section for more details.*
	**Use your equipment in usual environments, with temperatures between -30 and +50 ºC!**
	Do NOT tamper with your equipment! *It is strictly forbidden to perform repairs, modifications or additions to your equipment! These can be performed only by the manufacturer!*
	**Use this equipment only in vertical applications, making sure that, at all times, the angle of the webbing with the vertical axis of the anchor point does not exceed 30º**
	**Avoid contact with sharp edges that can inflict damage to your equipment!** *Before use assess the situation making sure that the fall cannot occur over an edge!*
	**The anchor point should be located above the harness attachment point level!** *Ensure a fall clearance (C) of at least 3m below the work surface (user stand level).*

PERIODIC INSPECTIONS AND CHECKS

The user must perform a visual and functional inspection of his equipment before and after each use! During use, it is important to monitor your equipment in order to identify possible damages inflicted in use, without being aware of it. The equipment must be inspected **at least once every 12 months** or more often if required, depending on the working conditions and compulsory after every incident it has been involved in. Inspections can be carried out only by the manufacturer or by an authorized inspections center. **If the periodic inspections were not performed at least once every 12 months, were carried out by unqualified persons, or without strictly respecting the manufacturer's instructions, the warranty is lost and the manufacturer declines any responsibility related to the equipment!**

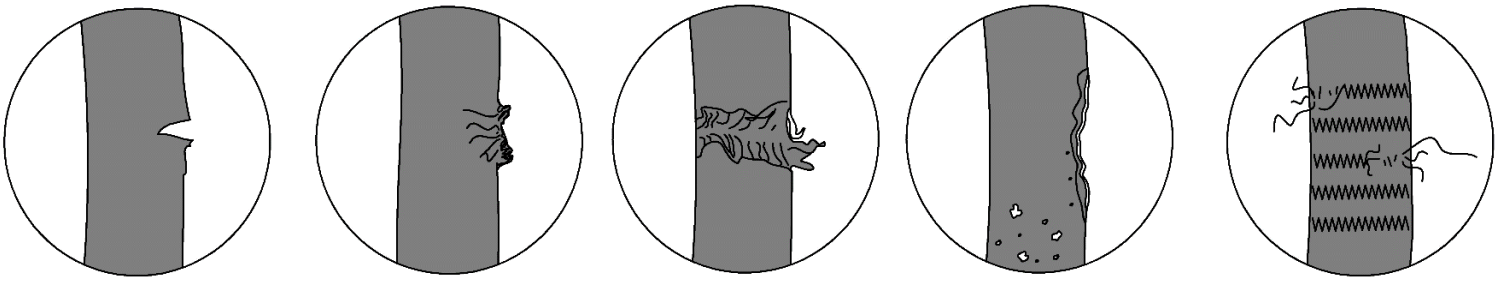
CHECK BEFORE EACH USE!

The user must perform a visual and functional inspection of his equipment before each use!

The equipment must be immediately removed from service if:

1. The marking/label is missing or is unreadable.

2. **DAMAGE has been identified (incisions, cuts, tearing, worn or broken seams, discoloration, hardened or thinned areas, burns, melted areas, rust, cracks, damaged rivets, bends, distortions and other deformations) if any other abnormalities of the parts or structure have been found or if the product had suffered any changes compared to its original condition!**
Damage of textile parts (webbings, seams) might include, but are not limited to:



3. FUNCTION TEST WAS FAILED! Test each retractable device by quickly pulling the webbing out to make sure it locks properly and can arrest your fall! In addition, check all connectors to make sure they are closing and locking properly!

4. The energy absorber is deployed!

5. Contact with paints or unknown chemicals had occurred (irreversible contaminations).

6. The equipment was involved in a fall arrest or had been subjected to heavy loading.

7. The integrity of the equipment is questionable and the inspection log is incomplete or missing.

8. The equipment was in service longer than **10 years**.

RESCUE! A rescue plan must be made before starting the work at heights or depths! It is mandatory to set up and know the specific rescue plan for every situation and to have designated personnel and appropriate means of intervention! Perform a complete risk assessments for your sites and determine the safest and most efficient form of rescue!

The SERVICE LIFE * of PPE against falls, made of textile materials is 6-8 years under normal conditions, but a **maximum of 10 years *** from the date of first use. The date of the first use must be noted in the logbook, otherwise the date of manufacture is considered as the date of the first use. **The storage** of new, unused products under optimal conditions (darkness, dryness, original packaging, constant temperature, without chemical vapors, etc.) should not exceed **2 years**. * PPE that belongs to a single user, has not been used excessively and not often, has been subjected to regular checks by experts, has been found to be "safe" and recorded in the test book, has a complete product history, has not been involved in a fall, is carefully treated and cared for, have been stored in accordance with regulations, have not come into contact with oils, fats or aggressive chemicals, (attention - incomplete list) can remain in use for up to 10 years. Intensive use, heavy and demanding working conditions, incorrect application, incorrect maintenance and care can greatly reduce the service life of the equipment. Certain events, such as falls, high exposure to heat, exposure to corrosive chemicals, can limit the use of your equipment to a single time. A generally valid, binding statement about the duration of use of textile

PPE cannot be made, as this depends on a large number of factors such as UV light exposure, working conditions, contact with various substances, etc. The service life of the equipment ends when one of the cases mentioned in the previous chapter occurs or when the inspector / certified expert decides this on the basis of other facts. The theoretical total service life of textile PPE against falls (Storage time + Service life) is limited to a maximum of 12 years from the date of manufacture.

STORAGE, MAINTENANCE, TRANSPORT

The equipment should be stored in a dry, cool and well-ventilated room, if possible, in its original packaging. While in storage, this PPEaF must be protected from UV radiation, solar radiation, heat, sparks, incandescent metal splash, electricity, chemicals, sharp objects, heat sources, dust, cement, oils and greases or any kind of contaminants. If necessary, the textile parts can be cleaned using warm water (30°C) then rinsed. Drying the wet equipment will be made by hanging it in well-ventilated room away from any heat source When fully dried, the equipment can be stored accordingly in its packaging (bag or box). Transport of the equipment must be made in its protective bag or box, away from any factor that could contaminate or inflict damage.

Inspection Log!

Every PPEaF is delivered with an Inspection Log. This document must be kept safely and sent along with the product for every inspection.
The Log (table) contains important data regarding your equipment. The date, signature of the inspector and the results are also recorded.
The date of first use must be written in the Inspection Log by the user!

Repairs or any other modifications can be performed only by the manufacturer! Any repairs, modifications or additions (even minor ones) performed by anyone else are strictly forbidden, lead to the loss of the manufacturers guarantee and any responsibility related to this product!

WARRANTY AND LIABILITY!

The manufacturer offers a **24 month** warranty for this PPEaF from the date of first use. The user has the obligation to write the date of first use in the Inspection Log. If the date of first use was not filled in, the warranty period will be calculated from the manufacturing date. The warranty is applicable only for material or manufacturing defects! Damage resulting from normal wear and tear, corrosion, poor maintenance (or no maintenance at all), those resulted from carelessness, accidents, fall arrest, unauthorized repairs or modifications, wrong use of this PPEaF or any other reasons are NOT covered by the warranty! The warranty does NOT cover the springs of the carabiners as these can be damaged due to inadequate storage or improper use.

Warranty claims only apply to the product. All claims by the user or any other party for the direct, indirect or any consequential damages resulting from the use of this PPEaF are excluded from guarantee and liability assumptions. Any claims in this regard are hereby expressly rejected.

The user must be informed regarding the dangers of work at heights and depths. He should be aware of the risks and he has to be aware that he is the only responsible for eventual damage, accidents or even death which may result from the use of this equipment. If the user is unable to do so or if he does not have the competence to do so, he cannot use this PPEaF.

VERTIQUAL Engineering SRL herewith rejects any liability claims for direct, indirect, accidental or consequential damages resulting from the use of this PPEaF (Personal Protective Equipment against Fall).

This products comply with the European **PPE Regulation (EU) 2016/425** and the harmonized standards **EN 360:2002.**

The EU type examination was carried out by: **NB 2756** INCDPM (The National Research and Development Institute for Occupational Safety-Bucharest).
Production control (Module D) for all models is carried out by **NB 2233** GÉPTESZT Kft. (1037 Budapest, Jablonka Str. 79, HUNGARY).

The **EU Declaration of Conformity** can be downloaded from our website www.vertiqualsafety.com by accessing the product's dedicated section.

(RO) REGISTRU INSPECȚII **(EN) INSPECTION LOG** **(DE) PRÜFBUCH** **(IT) REGISTRO DI CONTROLLO** **(FR) JOURNAL D'INSPECTION** **(ES) REGISTRO DE INSPECCIÓN**	**PROPRIETAR / OWNER / EIGENTUMER / PROPRIETARIO / PROPRIÉTAIRE / DUEÑO** **UTILIZATOR / USER / BENUTZER / UTILIZZATORE / USAGER / UTILIZADOR** **PRIMA UTILIZARE / FIRST USE / ERSTBENUTZUNG / PRIMO UTILIZZO / PREMIÈRE UTILISATION / PRIMER USO** ***dd / mm / yyyy***	**PRODUCT DETAILS** **ITEM:** _____ **SERIAL N°:**_____ **MANUFACTURED:**_____ **MANUFACTURER:**_____

Inspection date *dd / mm / yyyy*	**Results of the inspection:**	**Inspection passed**		**Signature of the inspector:**	**Next inspection due latest:** ***dd/mm/yy***
		YES	**NO**		

Manufacturer: Vertiqual Engineering S.R.L.
RO-547367 Corunca, St. Calea Sighisoarei, No. 110
www.vertiqualsafety.com

vertiqual® engineering