

Instruction manual for connecting device TRIGON certified according to EN 354:2010

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.

DESCRIPTION

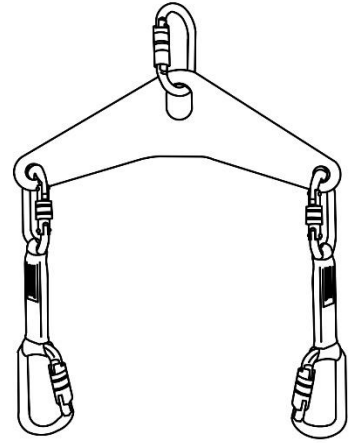
The **TRIGON connecting device** is made of high tensile PES webbings and aerospace grade aluminum alloy (7075). The device has two webbing straps equipped with EN 362 certified connectors which are meant to be connected to the full body harness. The 3rd anchor point is the central eye located in the aluminum part. To this point the lifting / lowering line will be connected using a certified EN 362 connector.

FIELD OF USE

The TRIGON will be used as a component of a rescue system, mainly in confined spaces, or to help lift or lower a person equipped with a suitable full body harness. These can be used also as connecting lanyards (EN 354:2010) in complex systems for working at heights. 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 or hot metal splash. Avoid contact with sharp edges, electricity, chemicals, corrosive solutions and substances, excessive heat, oils, paints or any other contaminants.

WARNING! This product is developed as a Personal Protective Equipment against Fall (PPEaF). Bringing modifications to it or assigning other uses are strictly forbidden! Each user shall use his own PPEaF as well as his own rescue equipment. The user must know the performances and limitations of his equipment! In case of uncertainty regarding the equipment seek advice from the manufacturer or distributor.

TRIGON



CONNECTORS: GATE OPENING / CLOSING

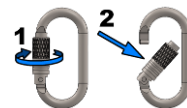
Auto-Lock



Tri-Lock



Twist-Lock



Screw



WARNING! 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 that the gate is fully closed and secured before use.

-The user must monitor their integrity, functionality and correct settings before, during, and after using their PPE!

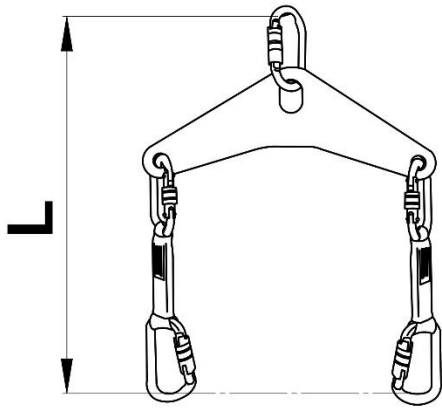
-Avoid contact of the product with abrasive edges, sharp edges, greases and oils, corrosive chemicals, heat, flames, sparks and incandescent metal splash.

-This products can be used only by trained persons! Beginners may use it only under direct supervision of trained and experienced users!

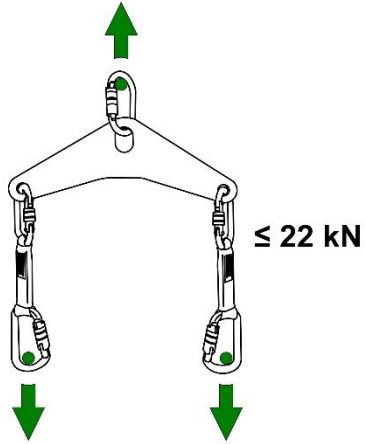
-It is forbidden to intentionally or accidentally apply mechanical shocks to these products. E.g.: dropping the device from a height onto hard surfaces (such as concrete), use of the device for material handling or securing goods during transport etc.)!

Below some examples of correct / incorrect use of the device and carabiners are presented. Please 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 for your system and read their instructions carefully, before use!

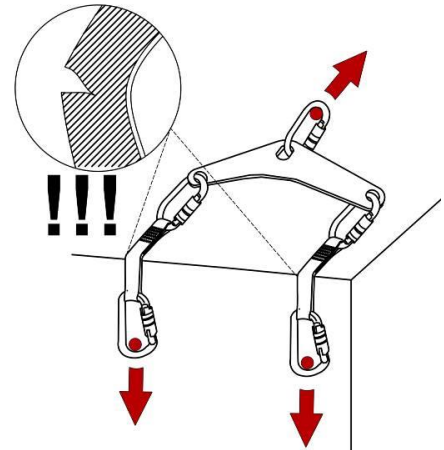
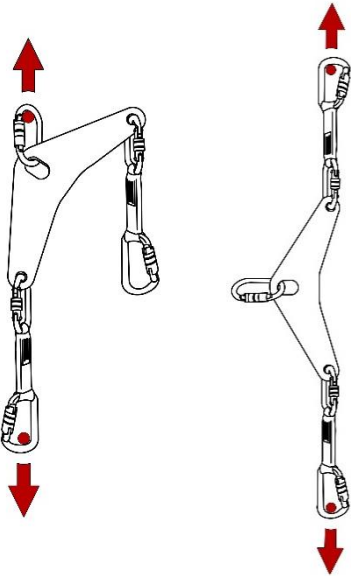
LENGTH



CORRECT LOADING

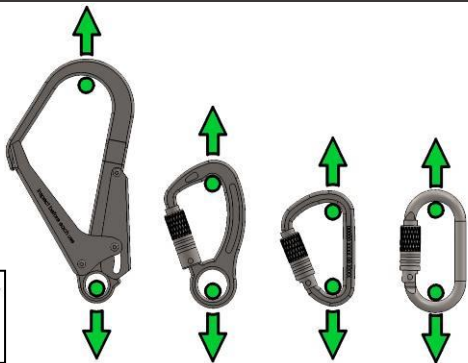


INCORRECT LOADING

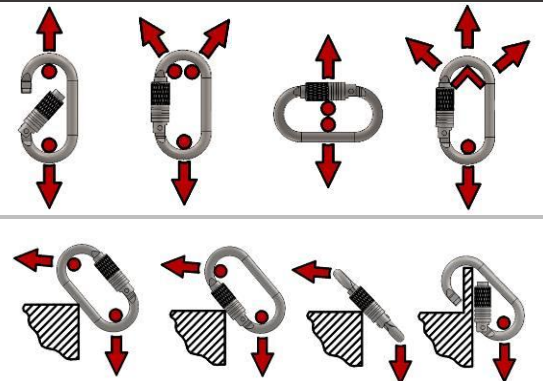


CONNECTORS: CORRECT / INCORRECT LOADING

CORRECT



INCORRECT

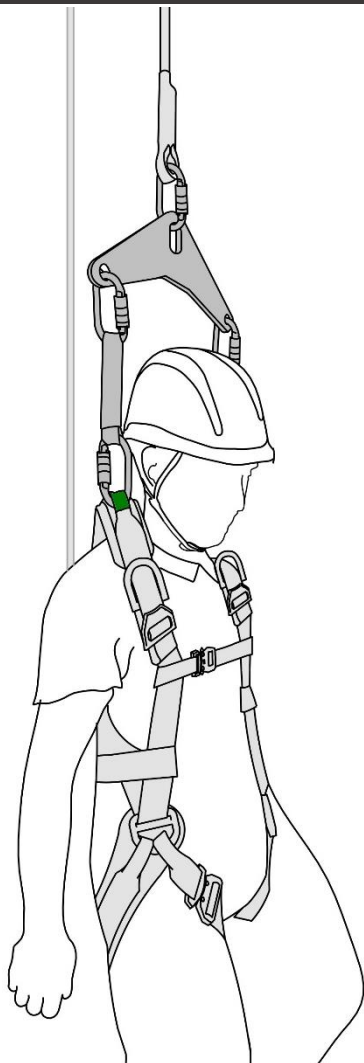


Use: The TRIGON will be used as a component of a rescue system, mainly in confined spaces, or to help lift or lower a person equipped with a suitable full body harness. The device was developed to be attached to a double anchorage point on the full body harness (check images below), thus keeping the user's body in stable position. The **top connector** of the device will be attached to the lifting / lowering line. The **two bottom connectors** will be attached to suitable double anchorage points on the full body harness. These points can be two rescue loops/rings certified according to EN 1497 or two sternal loops/rings certified according to EN 361.

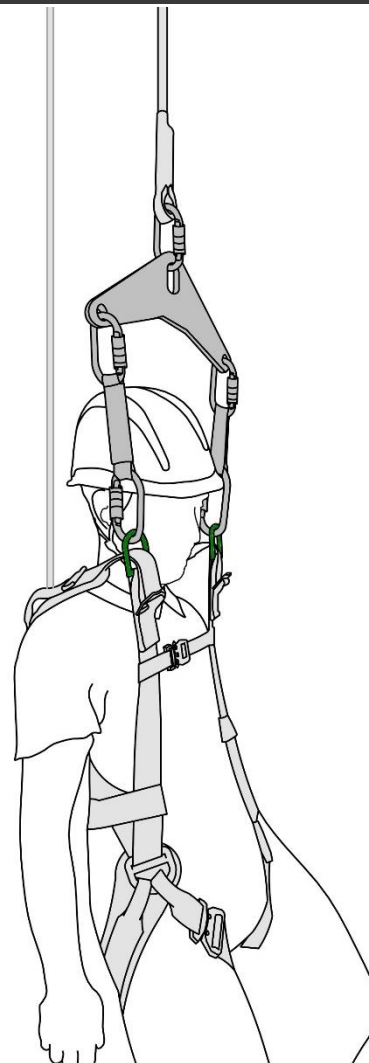
Additional to the lifting/lowering system, the user must be connected to a back-up, fall arrest system (E.g.: An EN 360 retractable fall arrester, connected to the "A" marked dorsal attachment point of an EN 361 full body harness).

Below, two types of connections are depicted using the **TRIGON** device together with **V35 MULTIACCESS** full body harness. The V35 features two EN 1497 RESCUE LOOPS on the shoulders and two EN 361 STERNAL RINGS in the chest area, that may be used as connection points for the TRIGON.

Attachment to EN 1497 RESCUE LOOPS



Attachment to EN 361 STERNAL RINGS



WARNING! Make sure that the product or connectors will NOT come in contact with sharp edges during use! Take all necessary precautions to avoid contact with sharp edges or any other factor that will damage your equipment! Seek advice from the manufacturer if there are any doubts!

WARNING! If the anchor device is used as a component of a fall arrest system, it is very important that the system includes an energy absorber which will dissipate the energy of the fall, keeping the arising forces below 6 kN.

WARNING! The length of the connecting device (including terminations and connectors) must never 2m!

WARNING! Always keep the lanyards taut during use! Slack must be minimized near a fall hazard zone!

WARNING! Do not use the product for lifting or handling materials! Personal Protective Equipment against Falls should never be used as lifting equipment!

WARNING! Before each use a visual inspection and functional test must be performed by the user!

Beware: damages can be inflicted without your knowledge (e.g. negligence of a coworker) and it is important that a visual check is performed before each use!

The equipment must be withdrawn from use if:


1. The marking/label is missing or is unreadable.
2. **DAMAGE** has been identified (incisions, cuts, tearing, worn seams, discoloration, hardened or thinned areas, burns, melted areas, rust, plastic 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!
3. Contact with paints or unknown chemicals had occurred (irreversible contaminations).
4. The equipment was involved in a fall arrest or had been subjected to heavy loading.
5. The integrity of the equipment is questionable and the inspection log is incomplete or missing.
6. The equipment was in service longer than **10 years**.

WARNING! The equipment must be immediately withdrawn from use if it was involved in an incident or was subjected to heavy loading! 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!

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!

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). The use of disinfectants is forbidden, as long term effects of various types of disinfectants and concentrations are not known! Transport of the equipment must be made in its protective bag or box, away from any factor that could contaminate or inflict damage.

MARKING: The connecting devices are fitted with a label which contains the following elements and essential **information:** manufacturer (**Vertiqual Engineering S.R.L**), name of the model and version (e.g. **TRIGON**), L = Maximum length (including connectors) [cm], manufacturing date (mm/yyyy), standards/norms the product complies to (EN 354:2010), European CE marking with notified body number **CE 2756**, international symbol for reading the instructions before use  and the product's serial number (000000). The label must be always present and readable! **NOTE !** Since the webbing straps can be removed (using EN 362 connectors), the same Serial No. is marked in 3 places : 1) Serial No. is stamped on the edge of the aluminium spreader, 2) Serial No. is printed on the label found on LEFT arm ; 3) Serial No. is printed on the label found on RIGHT arm ;

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! It is recommended to mark the anchor lanyard with the date of the next inspection!**

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!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 product complies with the **European PPE Regulation (EU) 2016/425** and the harmonized standard **EN 354:2010**. Conformity assessment was carried out by **NB 1019** (VUÚJ, a.s. Adress: Pikartská 1337/7, 716 07 Ostrava-Radvanice, Czech Republic) and production control by **NB 2756** (INCDPM: Adress, 35 A, Ghencea Blv, Sector 6, Postal code: 061 692, Bucharest).

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