



General information about RAUMER products comply with the standards

This general information explains how to use correctly the anchors.

The general information must be associated to the technical data sheet and the inspection sheet. Read both documents to have a complete information and ascertain to understand well all the informations, before to use the product.

Only the techniques shown without symbol of death are authorized.

Take Vision of the updates and of all the additional informations on the site www.raumerclimbing.com

In case of doubt or difficulty to understand the informations, don't risk, but contact Raumer Srl – Via delle Prese 13 – 36014 Santorso (VI) – Tel. +39 371 3046373

Anchor Rock Art. 166 (Ø 12)

Anchor Rock Art. 110 (Ø 10)

Reference Standard:

Anchor Device type A - EN 795: 2012

Anchors:

Rock Art. 166 (Ø 12) + Hang Fix Art. 109/114/224

Rock Art. 110 (Ø 10) + Hang Fix Art. 156/157/215/150

Reference Standard:

Rock anchor - EN 959: 2018

UIAA 123

Material: Stainless Steel AISI 316 L

USE AND APPLICATION

These anchors are intended for rock climbing, caving, canyoning and mountaineering.

The anchor devices type A Rock Art. 166 e art. 110 have been tested according to EN 795: 2012, for use by one person and they're removable from the structure.

The plate Rock is tested according to EN 959:2018 if couple with its relative Hang Fix, and it's designed for use as rock anchors; rock anchors are defined as anchor devices insert in a rock hole, held in place by resin (or expansion forces) and with an attachment point for a connector.

The anchor device is tested according to UIAA 123-2 - rock anchors.

When the anchor device is used as part of a fall arrest system, the user must be equipped with the necessary means to limit the maximum dynamic forces exerted on them during the arrest of a fall with a maximum of 6 kN.

Warning: this anchor device must be used exclusively for protection against falls from a height and for lifting equipment.

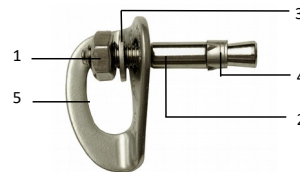
Don't stress the product beyond its limits or in other different situations than that for which it is intended.

Check that the product is compatible with the other materials you want to use: contact Raumer if you are not sure of compatibility.

Attention: activities involving the use of this device are all dangerous and high-risk and may also involve in fatal injuries. Make sure you fully understand the use of this product and work out in how to use it, to familiarize yourself with it and learn to know its performances and limits.

NOMENCLATURE

1. nut
2. body
3. washer
4. expansion sector
5. plate



DIMENSIONS OF THE HANG FIX

Art. 109:	M12 x 74 mm – weight 124 gr
Art. 114:	M12 x 100 mm – weight 144 gr
Art. 224:	M12 x 120 mm – weight 164 gr
Art. 156:	M10 x 66 mm – weight 94 gr
Art. 157:	M10 x 86 mm – weight 105 gr
Art. 215:	M10 x 86 mm – weight 107 gr
Art. 150:	M10 x 110 mm – weight 120 gr

Material: Stainless Steel AISI 316 L

DYNAMIC STRENGTH TESTS

- 1) Direction parallel to longitudinal axis of the device
- 2) Direction perpendicular to longitudinal axis of the device

Peak of force:	9 kN
Maximum deflection of anchor device:	30 mm
Maximum deformation of anchor point:	21 mm

MARKING

Producer: Raumer Srl – identified with logo "Raumer"

Pictogram indicating the need to read the instructions before use:



Serial number (example 110 001 0515) composed by:

- Identification of the model – Art. n. (es.166 o 110)
- Lot number: (es. 001)
- Month and year of manufacture: (es. 0515 = may 2015)

Reference Standards: EN 795:2012/A
EN 959:2018

Class of the anchor, surrounded by a circle: 2

Radial load bearing capacity: 27 KN

Axial Load bearing capacity: 26 KN

See the table on the attached data sheet, with the effective resistance.

Material: Stainless Steel INOX AISI 316 L

Device usable by only a single connected user: 1P

Markings should always be read for all the lifetime of the product and must not be removed.

It's recommended that the anchor device is marked with the date of the next or last inspection.

If the marking of the connector is no longer accessible after installation, it must be provided some additional markings near the device.

SECURITY REQUIREMENTS

Depending on environmental factors, the anchors are potentially responsible for suffering from:

- galvanic corrosion
 - corrosion
 - SCC: Stress Corrosion Cracking
- Our anchors are made of 316L stainless steel and therefore of class 2, suitable for environments

that are not aggressive enough to cause SCC; The environment in which they will be installed will be without signs of SCC in evidence and not suspect, with few corrosive agents.

RISKS OF USE AND RESPONSIBILITY

This product should only be used by competent persons and who have received adequate training, having been subjected to visual inspection by a trained and competent person.

It's yours responsibility to know this product, learn to use it, learn the proper techniques and the safety measures.

You alone are solely fully all risks and responsibilities for any damage, injury or death which may derivar to yourself or others persons, following incorrect use of each kind of product of the company RAUMER Srl. Keep these instructions that describe the range of use and the methods of application of the product.

You are responsible to consider all the notices and updates regarding these products.

No liability will be recognized by the company Raumer Srl for damages, injuries or death caused by: improper use (also due to support or unsuitable environment), stresses the product beyond its limits, modification of the product, repairs made by unauthorized persons.

If you are not able to undertake this responsibility and take these risks, do not use these products.

Your life depends on the continual efficiency of your equipment (we strongly recommend that the equipment is for personal use) and its history (use, storage, controls, etc.)

If the product is not for personal use (for example is of associations), we strongly recommend that the pre and post- use controls carried out by a competent person.

Check and make sure that all the anchors do not show signs of cracks or wear.

Before using the equipment consider as a possible rescue, in case of emergency, it can be performed safely and efficiently.

Attention! Do not use the product if the user's physical conditions are not appropriate for work prescribed. Do not use this product if you suffer from medical conditions such as vertigo, labyrinthitis or other conditions which may compromise the safety of the equipment in normal use or emergency.

CHECKS AND INSPECTIONS

Before each use

Before each use, make sure that the product is:

- in very good condition and working properly;
- suitable for the use you intend to do: they are authorized only the techniques not crossed out; any other use is forbidden: beware of death! The examples shown in the attached form are just some of the wrong applications: there are many other more that is impossible to list;
- free of cracks, deformations and corrosions ;

Carefully check the state and the type of support in that you want to fix the product; if the rock is cracked, etc. ... avoid it. If you have the minimum doubt about the safety and the effectiveness of the product, replace it immediately.

During each use

Regularly check the state of the product and make sure you have correctly connected all devices among themselves . Check visually the goodness of the anchor.

The resistance of natural/not natural anchors, in the rock, can't be guaranteed in advance, so it's necessary a critical judgment by the user, to guarantee an appropriate protection.

Periodical inspections

It's not enough to check the material before and during each use, but periodical checks must be done by a technician authorized by the manufacturer at least every 12 months; all the checks pre and post use must be done by a competent person (the frequency depends from the intensity and type of use).

When carrying out the checks is necessary to report the results of an inspection sheet; this should allow you to record a lot of data; The inspection sheet should always be attached to the general information of the product and is also downloadable from the site www.raumerclimbing.com.

The product should be used only by one person, so that you know well the whole story of the product.

Caution: You must make regular periodic inspections! The safety of users depends on the continued efficiency and durability of the equipment.

We recommend to hold and fill the inspection sheet for each component, system and sub-system. You can also download it from the site www.raumerclimbing.com

COMPATIBILITY

This product can be used in conjunction with personal protective equipment, in compliance with (UE) 2016/425 Regulation of the European Parliament and the Council of the European Union and in accordance with the instructions of use (if devices are compatible there is a good functional interaction). An anchor must be compatible to the device to which it is connected; if the connection is inconsistent, you can compromise the security features of the system (release or break ...).

Compatible devices are, for example, manufactured and certified harnesses according to EN 12277, dynamic ropes certified according to EN 892, connectors in accordance with EN 362 or 12275, etc ...

Warning: Please avoid the use of these anchors with others made of different materials. For example, do not use plates made of stainless steel and galvanized steel anchors, because also in a modest hostile environment there will be obtained effects of galvanic corrosion.

Contact Raumer if you are not sure of the compatibility of your device.

OPERATING MODE

See informational sheets about:

Installation

Make sure about the hardness, the nature and compactness of the rock on which you'll insert the anchor.

Clean the rock and remove any friable part; create a pitch to put the Hang Fix and the plate. The area for fixing the anchor must be absolutely massive. In addition to all the other evaluations, a good method is to beat vigorously on the chosen area with a hammer. The "sing" of the rock must be dry and clear, and not as an isolated and "march" plaque.

You perform the hole in the rock with an appropriate electropneumatic hammer-drill, taking care to make it perpendicular to the drilling plane. The depth of the hole should be at least 5mm longer than the total length of the Fix. Attention to the diameter of the drill bit: must be exactly as the diameter of the anchor.

Clean the hole from the powder, blowing inside it with the help of a little tube.

At this point it is necessary to proceed to fix the plate Rock. After mounting the Hang Fix on the plate you have to put the Hang Fix into the hole that you've made; hit with the hammer on the head of the threaded fix and introduce it until when the plaque is tight to the rock. Orient the Rock in the direction of the load that will be applied and then, with a hex wrench fix the nut, operating a suitable torque, observing the established torque.

See the attached technical data sheet.

Attention!!!

- When using a plate , always make sure the nail is made of the same material and that the diameter is compatible.
- These devices are resistant to corrosion according with standards (excellent resistance to corrosion in the interior, but not excellent environment or surrounding area of the seaside - see general information/lifetime) .
- The installation must be tested in an appropriate manner, for example by calculation or test.
- The installer must be a responsible person or organization, who has received an appropriate training.
- Do not connect the rope directly to the ROCK plaque (see technical data sheet)!!!
- The load-bearing of the anchor cannot be guaranteed if the rock in which it is installed is less strong or not very homogeneous, not consolidated or with micro-cracks. In these cases we recommend using the anchor with a HANG FIX as long as possible or prefer a different type of anchoring system, or choose a different area in which to install it.

Resistance

Our products comply with the requirements of EN 795: 2012/A and EN 959:2018 – see attached technical data sheet.

They are also comply with the requirements of UIAA 123

Please note that the company Raumer disclaims any responsibility in case of improper installation and/or use in inappropriate rocks or inappropriate environments or inappropriate dowels.

Precautions for use

Attention: after a fall or a major impact, check:

- rock around the anchor: there must be no cracks;
- anchor: observe it visually and check that there are no cracks, deformation, and
- verify that the anchor is not rotated or moved;

If you're in doubt replace it.

Use only if the external temperature is between -40 ° and + 50 ° C.

For safety purposes, it's essential to systems of arrest fall from a height, that the anchor point is always placed, if possible, above the user; you use a complete safety belt; fixing is performed so as to minimize potential falls and their height.

The position is essential for safely blocking a fall: carefully verify what will be the height of the fall, length of rope and "pendulum" effect to avoid all possible obstacles (es. The ground, rubbing against the rocks, etc.). Get used to always double systems, during your activities, for extra security.

Always make sure that connectors inserted in their anchorage are free to move and position in the right direction of load application.

COMPLEMENTARY STANDARDS INFORMATIONS

- provide for a rescue plan and define the means to act quickly in case of difficulties (It means to be trained to apply the appropriate rescue techniques).
- allow a sufficient height under the user so, in case of fall, do not collide with obstacles (remember that also the length of the carabiner can affect on the height of the fall).
- check to use the product with respect to government regulations and the safety regulations in force.
- respect all the instructions of use given in the general informations of each device used or associated with this product.
- attention: you need health fitness for the activities at height.
- to the user of these devices must be provided all the instructions of use; the retailers must deliver the device with these instructions, in the language of the country of use, when It's sold out of the first country of destination.

It's a user responsibility to record and store with these instructions, the information provided in the inspection sheet.

GENERAL INFORMATIONS

Life time

The potential life time of the Raumer's products is undefined (it is advisable to replace them anyway after 10 years).

It is known that equipment may degrade progressively when it is used, so the actual life time of the products can not be quantified precisely, but occurs when the product becomes obsolete in the system or when it meets one of elimination.

The lifetime is also reduced considerably by the conditions and intensity of use: heavy use, contact with chemicals substances, use near sea water or splashing water, high temperatures, abrasions or cuts, damage to parts/components of the product, chemical environments, mud, sand, snow, ice, competence of the user, violent shocks , storage, are some of the factors that accelerating product wear.

Warning: the duration may be limited to only one use in specific conditions (contact with acids, dangerous chemicals products, if the product suffers sharp falls or tensions, etc ... this list is not exhaustive). In a marine environment or other potentially corrosive environments, it would be better to use materials with high corrosion resistance , of class 1 , like titanium; we invites the installer to monitor and inspect the anchors at regular intervals to check their status.

Attention: anchors installed in marine areas, on rocks containing ferrous inclusions or other minerals of not certain nature, in some cases may suffer violent corrosive attacks that can compromise its use even in very short time!

Attention: the life of the anchorage is considerably limited in the case of installation in an environment with obvious Stress Corrosion Cracking SCC.

Elimination

Do not use the product:

- after a violent fall, since no visible deformations could be considerably impaired resistance;
- if the result of the check is not satisfactory;

- when you do not know the entire history of its use and when it becomes obsolete and you have the slightest doubt about its reliability;
- general wear of the plate and/or significant reduction of the section in correspondence with the carabiner;
- if there're cracks, wear or defects;
- when corrosion severely alters the surface condition.

Destroy retired equipment to prevent further use.

Product obsolescence

The product may be judged obsolete and thus retired from service, when they occur, for example, incompatibility with other equipment, changes in applicable standards, etc ...

Chemical products

All chemicals, solvents or corrosive substances can be very dangerous for these items. If there's a chance to come in contact with these substances contact directly Raumer indicating composition and exact name of the product, so we can respond properly after studying the case.

Changes and repairs

Modifications and/or repairs not authorized by the company Raumer are prohibited because they can reduce product performance. Repairs or modifications must be carried out inside the department production of Raumer Srl and not outside.

Warranty

This product has a 3-year warranty, against every defects in manufacturing or material. The guarantee excludes oxidation, normal wear and tear, modifications or alterations, incorrect storage, damage due to accidents, incorrect storage, negligence and improper use.

Transport

It does not need any special precautions for transportation, however avoid contact with chemical reagents or other corrosive substances and adequately protect from any pointed objects or sharp.

Maintenance and storage

The user should not perform any special maintenance, but should be limited to the cleaning of the product as explained below.

Cleaning: frequently rinse the product only with lukewarm fresh water (max 40°C). Leave it to dry naturally away from direct heat. Do not put the product in contact with corrosive substances or solvents; do not store at extreme temperatures;

Storage: after cleaning and drying, store the equipments in a dry, cool, dark place (avoid UV rays), chemically neutral place (absolutely avoid saline environments), away from sharp edges, heat, humidity, corrosive substances or other potentially harmful conditions.

Caution: Do not store when wet! Improper storage, as well as the aging of the product, may damage it and impair its performance and safety.

Testing and conformity

This product is tested in accordance with the standard by the Notified Body n°2008 - DOLOMITICERT S.C.A.R.L., Z.I. Villanova 7/A- 32013 Longarone (BL).

This product is also tested and complies UIAA 123 : Quality Label of the International Climbing and Mountaineering Federation.

Attention: laboratory tests, the instructions for use and standards are not always able to reproduce the practice, so the results obtained in real conditions of use in natural environments may sometimes differ to a considerable degree. The best instructions can be had from continuous use under the supervision of qualified and prepared instructors.