

### USER INSTRUCTIONS

#### Standard Product: D012

#### Version without opening catch in front plate: D011

#### Description

Quadra is a descender device with variable friction, for use on kernmantel rope (Ø10 to 11.5mm) and can be used for:

- abseiling
- ascending
- lowering and hauling

Quadra has a double-braking mechanism when in normal friction configuration, meaning it will brake if the handle is either released or squeezed fully. Quadra can be used on a working line at any angle.

Quadra has been certified with a Maximum Rated load of 200kg, compliant with EN12841(C). It has a minimum rated load of 30kg.

Quadra has also been independently tested for a descent energy of  $1.5 \times 10^6$  J, with 20 consecutive descents of 100m each, meeting the requirements of EN341(B):1993. Note: EN341 is outside of the scope of the CE mark.

#### Before Each Use

Check condition and operation of device. Refer to notes on reverse for more information.

Ensure that the handle, gate, bobbin and top plate are all free to move smoothly over their full range and that spring-loaded elements return fully.

Confirm braking and descending functions under operational load in a location where there is no fall risk.

#### Attachment

For descending or ascending, hold Quadra with handle on right hand side and connect to central waist attachment point of harness. For hauling or lowering attach Quadra to anchorage point. Always use a suitable locking connector.

#### Inserting Rope

Quadra may be opened without removing the connector. Open the gate and manipulate the connector through the opening, this allows the top plate to swivel anti-clockwise.

Lay the rope across the lower part of back plate, then underneath the top plate, then between the cam and block and then between the bobbin and bollard (fig.1).

- For reduced friction configuration, close Quadra by swivelling the top plate clockwise. The top plate will automatically lock onto the connector.
- For normal friction configuration, take in the slack, then bring the rope around the bobbin and insert in channel between the top plate and the handle bollard (fig.2).

#### Removing Rope

Release the rope from the channel between the top plate and the handle bollard. Open the top plate by either: D012. opening the gate and passing the connector through the opening as the top plate is swivelled anti-clockwise.

D011. removing the connector from the lower hole and swivelling the top plate.

Release the rope from the bobbin and from the cam, then pass under the top plate and over the back plate.

#### Locking-Off

If it is necessary for both hands to be free, it will not be possible to control the tail rope and so Quadra should be "locked-off". To do this pass a loop of the tail rope through the connector (fig.3) and then over the other end of Quadra device (fig.4), making sure the karabiner remains fastened.

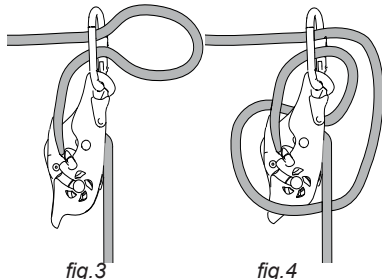


fig.3

fig.4

### Warnings

- Always use in conjunction with a suitable back-up system.
- Always maintain control of tail rope, unless Quadra is "locked-off".
- Always keep right hand on tail rope and in a low position close to hip, in order to keep rope in Normal Friction configuration when descending
- Always use a connector (EN362 Class B) with bar size between Ø10mm and Ø12.7mm.
- Do NOT use screwlinks (EN362 Class Q) with bar size less than Ø10mm
- Do NOT allow the handle movement to become obstructed, such as by fingers, clothing or other equipment.
- Always minimise slack in anchor line.
- Do NOT over-load or apply dynamic load as this may damage the rope.
- Always be aware of the device temperature rising during long/fast descents due to friction - this may damage the rope.
- Ensure a knot or other end termination is used at the bottom of the working line, to prevent descending off the end of the line.
- Ensure the rope does not run over any sharp edges or abrasive surfaces.
- Do NOT use outside of limits or for any purpose than described above.
- Do NOT use as part of a fall arrest system.



#### Use as Rope Access Descender and Ascender

Quadra can be used either in normal or reduced friction configurations. It is possible to change from one configuration to the other while Quadra is under load.

**Normal Friction** - Quadra has a double-braking function and will brake if the handle is released or if it is squeezed fully. Quadra does not require additional friction from a second connector to hold higher loads (fig.6).

fig.6

**Reduced Friction** - Quadra is easily adjusted and can be used for: ascending, paying rope in and out or under partial load, such as when moving across a horizontal surface towards an edge prior to abseiling. Pass rope around back as shown. (fig.7). Caution: this will give a rapid descent if used when fully suspended.



fig.7

**To descend** - Quadra should be in normal friction configuration - gently squeeze the handle with left hand, while controlling the tail rope with right hand. When the handle is in a central position (the "sweet spot") the rope will pass through the device (fig.8). If the handle is squeezed too hard, or is released the device will brake.

**To descend with partial load** - Quadra should be in reduced friction configuration - gently squeeze handle with left hand, while maintaining firm and full control of tail rope with right hand. Increase pressure on handle until friction is reduced to required level. Extra care must be taken as secondary ("panic") brake is not enabled.

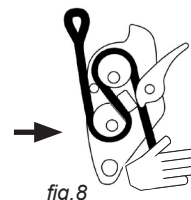


fig.8

**To ascend** - Quadra should be in reduced friction configuration - lift body weight by pulling on the anchor rope with left hand, while simultaneously pulling the tail rope up through Quadra with right hand (fig.9).

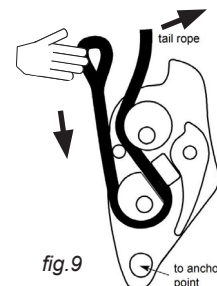


fig.9

#### Use for Lowering & Hauling

Quadra should be connected to a suitable anchorage. Operation of Quadra is similar to that described above, with the anchor rope becoming the load rope (attached to the load) and Quadra being inverted.

#### To pay out slack

Quadra should be in reduced friction configuration - gently squeeze the handle with one hand, while pulling the load rope out through Quadra with the other hand (fig.10).

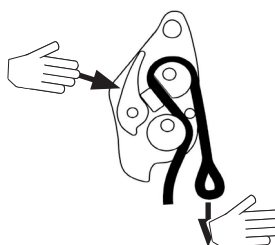


fig.10

#### To lower

Quadra should be in normal friction configuration - gently squeeze the handle with one hand, while controlling the tail rope with the other hand (fig.11).

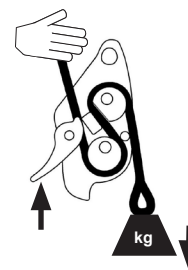


fig.11

#### To haul/take in slack

Quadra should be in reduced friction configuration - feed load rope into Quadra with one hand, while pulling tail rope out with other hand (fig.12).



fig.12

1 - Personal issue and traceability:

If this product is classed as personal protective equipment it should be individually issued to the person who will be using it. The product should remain traceable to the original certificate of conformity and a permanent record should be kept of its use. This user instruction forms part of the permanent product record. All users must receive and read a copy of these instructions and should understand what the instructions mean and be familiar with them, including, but not limited to function, suitability, compatibility of the product and inspection for defects arising from damage. A copy of this user instruction should be kept with the equipment, and referred to before and after each use. In the event of a rescue, these instructions should be provided to the rescuer.

2a - Anchor Points:

The anchor device or anchor point used should be of sufficient strength to sustain foreseeable loads in all permitted directions. Specific standards requirements:  
EN: Anchor device should conform to EN795, with minimum static strength of 12kN. heightec recommend a higher strength of 15kN as specified in the IRATA ICOP and BS7985.  
When more than one system is attached to an anchorage, these strengths should be multiplied by the number of systems. Anchorages should be positioned to minimise the potential for falls, and the distance and consequences of any potential fall, ideally above the user. Verify there is sufficient free space beneath the user to avoid collision with the ground or other obstacles and minimise sideways or pendulum falls. The connecting system instructions should give advice on clearance required, but a fall arrest energy absorber may extend by up to 1.75m.

2b - Further Requirements for Anchor Points in US (ANSI):

ANSI: (a) where certified, twice the maximum arrest force, or (b) where not certified 22.2kN (5,000lbf) for fall arrest, 13.3kN (3,000lbf) for work positioning, or 4.5kN (1,000lbf) for restraint. When designing, selecting, and certifying a fall arrest anchorage, the qualified person shall include the limitations on use of the system in fall protection procedures described in ANSI Z359.2. Design, selection and installation of certified fall arrest anchorages shall include determining a safe location where and how to connect those anchorages by taking into consideration the forces generated by arresting a fall, total existing and anticipated loading, load path, structural member strengths, connection and support strengths, stability, clearance requirements, swing fall, rescue deflection of the system, and impact on the structural members to which the fall arrest system is attached.

Anchorages selected for rescue systems shall have a strength capable of sustaining static loads, applied in the directions permitted by the rescue system of at least 3,100lbf for connection of rescue system only, or meet a Factor of Safety of 5:1 based on the static load placed on the system when the system is designed, installed and used under the supervision of a qualified person.

Persons engaged in rescue operations that are exposed to a fall hazard, must be provided an anchorage suitable for fall arrest in accordance with ANSI Z359.1.  
Anchorage connectors shall not be attached to anchorages where such attachment would reduce the anchorage system strength below the applicable level set forth above or reduce the anchorage strength below the allowable level set by applicable structural codes. A suitable anchorage connector shall be used for rigging the connection of lanyards and lifelines to structural members. A lanyard shall not be connected back onto itself for use as an anchorage connector unless specifically designed for this purpose.  
Anchorage connections shall be stabilised to prevent unwanted movement or disengagement of the rescue system from the anchorage. Verify system connections by pre-tensioning the system before applying the intended load.  
Other components used in fall protection or work positioning systems must conform to the relevant standards, be compatible with each other and be used in accordance with their user instructions.

3a - Inspection and care:

The strength of this product may be affected by cuts, nicks, deep scratches, wear, abrasion, deformation, chemical contamination, UV degradation, exposure to flame, extreme temperatures and other factors. Keep this equipment away from such sources of damage. Use this product with caution near moving machinery, electrical hazards, sharp edges and abrasive surfaces.  
This product must be inspected before and after use, and particularly after being used for rescue, to ensure the product is in a suitable condition and operates correctly. Written records should be kept of all inspections.  
If there is any doubt about condition of the product, or it has been subjected to a fall or substantial shock load, withdraw it from use until confirmed to be safe, in writing, by a person deemed to be competent by The heightec Group.  
No repairs of this product should be undertaken, any attempt to do so may invalidate its compliance and/or certification.  
The safety of users depends upon the continued efficiency and durability of this equipment, which must be subjected to detailed visual and tactile examination by a competent person\* at intervals of no greater than 6 months for textiles or 12 months for metals, taking into account relevant legislation, equipment type, frequency of use and environmental conditions. These examinations should be carried out strictly in accordance with the manufacturer's periodic examination procedures. Detailed examinations should include confirmation of the legibility of product markings.

\*A competent person may be defined as someone who "...has appropriate theoretical and practical knowledge and experience..."

The results of examinations should be recorded. Intermittent inspections of components which may be subject to excessive wear may also be appropriate. The results of these need not be recorded. It is recommended that this product is marked with the date of the next or last inspection. Contact your distributor for information on suitable inspection procedures.

3b - Inspection criteria:

Textile products or elements: check material and stitching for damage including cuts, nicks, abrasion, fraying, discolouration, heat or chemical damage etc. Ensure stoppers are present on ends of adjustment webbing.  
Metal devices or components: check for damage, corrosion, excessive tightness, sharp edges, excessive play, deformation, cracking or anything that might affect strength. Check security and correct operation of any moving parts e.g. side plates, return action of springs, cams, operating handles, bearings. Check function of closure mechanisms, where present (e.g. screwlink thread, connector gates).

3c - Cleaning, maintenance and storage:

Wash textiles by hand with non-detergent soap at approx 25°C (cool). Rinse and dry naturally, away from direct sources of heat and sunlight. If necessary use a disinfectant compatible with polyamide and polyester. Use diluted and rinse thoroughly in clean water. Dry as previously stated. These cleaning procedures must be strictly adhered to.  
Mechanical metal products with moving parts should be occasionally oiled, at bearings or pivot points, with excess oil removed. Store and transport in a dry, clean condition, away from sources of severe vibration, humidity, direct heat, sunlight and any physical or chemical contaminants.

4 - Lifespan:

Textile products or elements: maximum 10 year lifespan from date of manufacture, subject to competent use, maintenance and examination programme.  
Metal products: indefinite lifespan, subject to competent use, care and examination programme. The lifespan of all products will be reduced by normal wear and tear, particularly when used in abrasive or corrosive environments. In extreme circumstances, the life of an item may be reduced to a single use.

5a - General usage:

Users should be suitably trained and competent to work in situations where a risk of falling may be present or under the direct supervision of such a person, fully trained in the use of this product and free of medical contra-indications for work at height or rescue. Do not use this product outside of its limitations or if you are unsure of any aspect of its use. No alterations or additions may be made to the product. The heightec Group do not take any responsibility for injury or accident of any kind arising from the use of this product.

INSPECTION RECORDS		ID Number:		
Product:		PO/ Certificate No.:		
Model/Type:		Purchase Date:		
Manufacture Date:		First Use Date:		
Date	Observations / Comments	Actions	Inspector	Next Due

It is essential a rescue plan is in place to deal with emergencies and in particular to consider treatment and recovery of a fallen or suspended person. Rescue equipment must be present and personnel should be competent in its use. Orthostatic intolerance can occur when a person is suspended motionless in a harness, and is potentially fatal. Ensure that the rescue of a suspended person is carried-out promptly.  
Contamination with oils, lubricants, water or solvents may alter the performance of the product. For rope devices behaviour will vary according to the age, type, diameter and characteristics of the rope used.

5b - Care of rope during use:

Take any steps necessary to protect the rope from damage during use, including rope protectors, edge protectors, intermediate anchor points or deviations to avoid sharp or rough edges. Consider also the position of the rope below the user. Ensure rope cannot suffer from the effects of wind, or become trapped around obstacles.


6 - Guarantee:


This product is guaranteed for three years against faults arising from manufacturing errors or materials defects. This guarantee does not include normal wear and tear, faults arising from uses for which the product was not designed and accidental damage.


7 - Notes:


If this product is re-sold outside the original country of destination the reseller shall provide these instructions in the language of the country in which the product is to be used.


Markings:  
The following markings may be present on the product:


 UKCA mark - UK Conformity

 CE mark - European Conformity.

 Read these instructions before use.

 For use with kernmantel ropes conforming to EN1891 type A

 XX-YY - Diameter range of rope which this product may be used, in mm

 Direction of use

Date of manufacture is marked on the product in the form:  
DAY MONTH YEAR, DDDMMYY eg.120510.

The ID no. is unique to this item.  
**Do not remove or obscure the product labels or markings.**  
Unique ID should be read in conjunction with product code and batch number e.g. D01 120510 123