

STEC
SAFE TEC - SAFETY EQUIPMENT

Duck-R

T 002

**Rope Access Back-Up Device
CE 0120 - EN 12841 Type A**

WARNING

All users must read and understand this manual before use. This product must only be used by persons who are trained and competent in its use as part of a double rope access system. Users accept all risks and responsibilities for all damage, injury or death during all rope access activities involving the use of this product. If users are not able to accept full responsibility or all risks involved they should not use this product. All users must be competent in emergency procedures and rescue methods associated with the use of this device. These are detailed in the 'Deployment' section of these instructions. Users should take great care that hair, fingers, clothing or other items do not become entangled with the Duck-R. DO NOT allow anything to affect the proper function of the device. Do not use the device for any other purpose.

INDIVIDUALLY TESTED

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1 FIELD OF APPLICATION

The Duck-R has been tested in the UK by SGS to the requirements of EN 12841:2006 Type A - Rope Adjustment Device, using Teufelberger 11mm and Edelrid 10.5mm EN1891 Type A Low Stretch Ropes. Other ropes have provided excellent results - check all different ropes prior to use. To be used in conjunction with EN 12841 Type C or B device, each device attached to independent ropes. Each attached to independent anchors with minimum strength of 15kN. Terms: 'Back-Up Rope' is used to describe the 'Safety Line' as termed in EN 12841 2006. 'User' refers to individuals or persons selecting this device for use.

2 PARTS & MARKING

Materials
Body - Stainless Steel
Cam - Aluminium
Spring - Spring Stainless Steel
Cord - Nylon

Certification
Notified Body: CE0120
EN 12841:2006 A

Rope Diameter
Ø 10.5 - 11mm

Rope Type:
EN1891:1998 Type A

Serial Number
E.g. 12 07 0000
12 - Year 2012
07 - Month - July
0000 - Unique Item No.

1. Body with Orientation Arrow pointing to Rope anchor.
2. Certification details*
3. Serial Number
4. Model Name
5. Connection Point
6. Manufacturer's Logo
7. Read Instructions Logo
8. Cam
9. Friction Point
10. Bolt
11. Positioning Cord
12. Rope - not supplied
13. Warning logo

⊕ Rope anchor
⊖ Max Load 100kg
Operating Temperature -30 °C + 60°C
Product weight **260gr**

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3 INSPECTION

This Duck-R must be inspected prior to each use. This inspection should check for any corrosion, cracks, evidence of abrasion, deformation, loose bolt or missing components together with full function test and markings are clear and readable. In addition to pre-use checks a regular detailed examination should be carried out by an authorized competent person at suitable periods and recorded, these should be at no more than six months intervals and these instructions must be adhered to. Following any emergency loading the Duck-R must be removed from service for examination. If any change is not 100% confident that the Duck-R is fit for use, it must be removed from service for further investigations. Devices passing inspection should only be re-used once written records are completed.

Normal Wear: The Cam will wear with use and this should be monitored.

INSPECTION

Maximum allowable Cam wear 1.5 mm

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4 COMPATIBILITY

Harness: Front attachment point of an EN361 2002 or EN813 2008 harness.
Lanyard it is recommended that Duck-R is used with a EN 354 lanyards no longer than 50cm.
Cows-tail connection may be made using dynamic climbing rope with suitable terminations, attached to either ventral (waist) or sternal (chest) points. Recommended length: waist <80cm, chest <50cm including any knots and connectors. Further information provided overleaf.
Connectors: EN 362 2004 Connector - Locking karabiner.
Gloves: the use of suitable work gloves is recommended.

The Duck is a non-aggressive device and during correct operational use it will not damage ropes. In emergency deployment (see 'Deployment' section) with the exception of very minor glazing a properly used Duck-R will lock on to the Back-Up rope without causing serious damage to itself, its lanyard, karabiners or to the Back-Up rope. The user is responsible for ensuring the combination of all components in the rope access system do not adversely affect the performance of any item with due regard to all user instructions.

5 INSTALLATION

Always install the Duck-R from a position of safety or when two additional safety systems are in place.

NEVER USE ROPE ANCHORS AT AN UN-PROTECTED EDGE OR BELOW USER.

Good Anchors Above user **Good Anchors Away from Edge** **Dangerous Anchors Too Low - do not use**

Legend: ANCHOR = ⊕ Duck-R = ⊖ EVO = ○

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6 STAGES OF INSTALLATION

- Push the cam through the device body to the opposite side and attach the lanyard karabiner; this helps to prevent dropping the device.
- Attach the device on to the rope with the 'Arrow' pointing in the direction of the rope's anchor.
- Remove the lanyard karabiner and allow the cam to return through the device body.
- Attach the lanyard karabiner to the connection point, check that the karabiner gate is fully closed and locked.

7 OPERATIONAL CHECK - FUNCTION TEST

Move the device along the rope and check that it stays in position, then with one hand holding the lanyard or cows-tail, pull down vigorously to verify that the device locks on to the rope.

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8 POSITIONING

At all times that the user is stationary the Duck-R should be positioned as high as possible. The Duck-R must always be above the descender or chest ascender and never below its lanyard/cows-tail attachment point (FF1).

Ascent
To move the Duck-R up the rope, hold the lanyard or karabiner - do not hold the device.

Descent
To move the Duck-R down, pull the Positioning Cord. Holding of the Cord should only be done to move the Duck-R down the rope. Users must not hold the Positioning Cord at any other time. In normal use the Duck-R should not be moved down simultaneously whilst controlling a descent device or when performing any other activity. If users need to operate both the descent device and the Duck-R simultaneously, for example to clear an obstacle in descent, then they should first: carry out a function test of the descent device, ensure that the descent is planned and of very short duration, and ensure that they are prepared to let go of the Duck-R Positioning Cord immediately.

WARNING

If users keep hold of Positioning Cord the device will not function. Users must release their hold of the Cord immediately if anything unexpected occurs. At all times check the lanyard is not caught on obstacles and that it will not come in to contact with sharp edges, heat, tools or any other source of damage.

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9 OPTIMUM POSITION

Keep it High High is Safe **Keep Control Take care** **Take Action move Duck UP**

DO NOT Hold the rope above the Duck-R **DO NOT hold or Squeeze the Duck-R** **DO NOT allow any slack in the rope above the Duck-R**

Legend: ANCHOR = ⊕ Duck-R = ⊖ EVO = ○

10 REMOVAL FROM ROPE

To remove from the rope - disconnect the karabiner, pass the Cam through the body and re-connect the karabiner before pulling the device from the rope.

WARNING

Never leave the Duck-R on a rope with the karabiner attached to the Cam when it is pushed through the body.

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11 SLOPING SURFACES

Keep Duck-R high on inclined plane **Keep Duck-R away from body**

Ensure that nothing will affect the function of the Duck-R. Keep the device high and to one side of the user. Devices trapped between sloping surfaces and the user (or anything else) may not function properly.

12 WIND & OBSTACLES

Wind
The effect of Wind can create additional slack rope above the Duck-R, this must be managed at all times. It may be necessary to add friction to the Back-Up Rope below the Duck-R or pull rope through at work zones to partially load the device.

Rope Obstacles
Great care is required if there are any devices, knots or other obstacles attached to the Back-Up Rope within 3m below the Duck-R. In these circumstances the Duck-R must be kept as high as possible with less than 10cm of slack in the lanyard or cows-tail until the obstacle is dealt with.

Attention to wind speed.

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13 CLEARANCE DISTANCE - ROPE STRETCH

< 20cm slippage >1m Fall + >20cm slippage serious fall + excessive slippage

14 EXAMPLE BASED ON 10% ELONGATION

Additionally uncontrolled downward movement will occur due to the elongation of the Back-Up Rope during loading. This should be assessed for the particular rope being used but a minimum of 10% elongation should be expected. The amount of elongation will depend on several factors including:

- Elongation Properties of the particular rope used;
- Length of rope between the Duck-R and the rope anchorage;
- Knot tightening;
- Weight of user;
- Amount of slack in cows-tails/lanyards;
- All other factors that must be determined by the user;

On long ropes the elongation will be many meters.

Clearance - The clearance distance must be carefully assessed for all situations. At work positions when the device is positioned high and there is less than 10cm slack in the Lanyard or Cows-tail there will be very little slippage (e.g. a 100kg user less than 20cm). Additional slackness in the connecting lanyard increase slippage.

C - Clearance
C = D x 10% + 2m

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15 DEPLOYMENT

WARNING

The body of the Duck-R must NOT be squeezed or the Cord pulled to de-weight a loaded or partially loaded Duck-R

Accidental Deployment
It is essential that all users are competent in the techniques required to overcome accidental loading. If accidental loading occurs during ascent, first check the ascent equipment, then continue ascending until the Duck-R is no longer under any loading. If loading occurs during descent, first check the descent equipment, then use techniques to complete a short ascent of the Working Rope until the Duck-R is no longer under any loading. Any other accidental loading should be assessed and appropriate methods used to overcome the loading. At all times two safety systems must be in place.

Deployment
If failure of the Working system e.g. Working Rope failure or user detachment from the Working Rope, occurs and the user becomes suspended on the Back-Up Rope, the user and work colleagues must consider the planned procedural options available with regard to all factors of the actual event. These options may include amongst others:

- The deployment and use of a new Working Rope;
- The rescue by a colleague using new ropes;
- The use of the Back-up Rope to attach escape equipment (descender or ascenders) for the user to evacuate on the single Back-up Rope;
- Other techniques.

All emergency actions should only be carried out following a risk assessment of the situation. During emergency deployment of the Back-up system any downward movement of the user will be determined by several factors: back-up rope stretch, cows-tail stretch, knot tightening and device slippage. With the exception of very minor glazing a properly used Duck-R will lock on to the Back-Up Rope without causing any damage to itself, lanyard, karabiners or the Back-Up Rope. Following any Emergency Deployment all equipment must be removed from service for inspection by a competent person.

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16 GENERAL INFORMATION

Rope Condition: wear, wetness and contaminants will affect the performance of the Duck-R. Some rope conditions will make positioning of the Duck-R more difficult. Others e.g. oil & grease will affect the device's ability to perform - Back-Up may not be provided. The effective operation of the Duck-R should be monitored and checked in all conditions. Where any performance doubt exists, the Duck-R should not be used.

Sea Water: it is essential that this Duck-R is cleaned as soon as practicable after each exposure to sea water or saline environment.

Chemical reagent: avoid contact with any substance or material that may cause corrosion or other damage to the device. If contact occurs consult expert advice as to damage and cleaning requirements. Inspect prior to any re-use.

Maintenance: the Duck-R is not user maintainable with the exception of disinfection, cleaning and lubrication as detailed below.

Disinfection: following any contamination of the source of the contamination should be determined and advice obtained as to suitable disinfecting procedure. After disinfection the device should be re-cleaned. Sterilisation may be required.

Cleaning: If soiled rinse in clean warm water of domestic supply quality (maximum temperature 40°C) with mild detergent at appropriate dilution (pH range 5.5 - 8.5). Dry naturally away from direct heat sources. To remove grease use a detergent that has properties that do not affect the metal spring, body, cam or nylon cord.

Lubrication: lubricate the cam with WD40 ensuring free movement of the cam. Wipe off the excess. This should be carried out after cleaning.

Lifespan: it is very difficult to define the safe lifespan due to varying use and storage conditions and may be as little as one use, or even earlier if damaged (e.g. in transit or storage) prior to first use. For the product to remain in service it must pass a visual and tactile examination. Maximum lifespan: 10 years from 1st use. Maximum Cam wear 1.5mm.

Obsolescence: this device may become obsolete before the end of its lifespan. Reasons for this may include changes in applicable standards, regulations, legislation, development of new techniques, incompatibility with other equipment etc.

Transportation & Storage: after any necessary cleaning store unpacked in a cool, dry, dark place in a chemically neutral environment away from excessive heat or heat sources, high humidity, sharp edges, corrosives or other possible causes of damage. **Do not store wet.**

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