



USER INSTRUCTIONS

The Rotor is a constant rate descender which will automatically control the speed of descent without intervention from the user. If required, the speed may be controlled manually by holding the tail rope and using the additional friction. At loads of greater than 140kg more friction can be obtained by using both friction points. It functions in either direction and may be used in any orientation, e.g. passive (device to anchor) active (device to user/casualty).

It is approved to EN12841:2006 (C) for loads up to 140kg, including wet and cold conditioning to -4°C. It can be used for loads greater than this (see below) but this is not part of the approval. Also conforms to EN1496(A) and EN341(1A) see limitation for rescue descent performance. NOTE: Rescue is outside the scope of EN12841 and the CE/UKCA marks.

The maximum rope length (and therefore single descent) is 500m. The maximum total distance for a given load is shown below, this can be achieved with multiple smaller descents up to the maximum shown.

Maximum descent performance

Load (kg)	Total distance (m)	Speed (m/s)
30 (min rated load)	21,000	0.52
100	6,300	0.66
140 (max rated load)	4,500	0.75
200	500 (single descent)	0.91
250 (max rescue load)	220 (single descent)	1.69

If your application does not fall within the parameters above, contact heightec.

EN1496/EN341: For rescue use only, not for lifting or lowering loads.

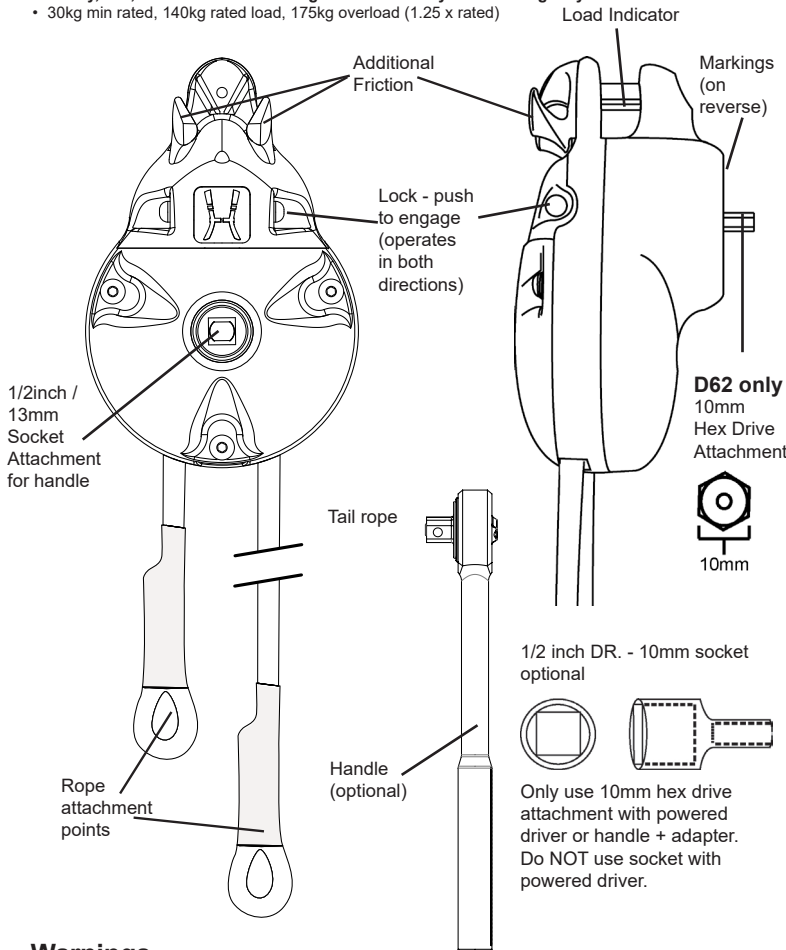
Rescue Lifting Performance, demonstrated for conformity. (*including wet conditioning)

- 30kg min rated load*, 140kg rated load, 215kg overload* (1.5 x rated)
- 300kg max rescue load (D62 only)
- Distance of lift limited by user (manual lift) or driver / batteries specified (eg. 78m @ 215kg using 2 x 5ah batteries)

Rescue Descent Performance

D61: dry, wet, wet + cold conditioning to -4°C. D62: dry conditioning only

- 30kg min rated, 140kg rated load, 175kg overload (1.25 x rated)



Use

Evacuation

- Attach the device or rope end to a suitable anchor point - see 2a overleaf, above the chosen descent path. Suitable lanyards conforming to EN358, EN354, and EN362 may be used to allow separation of users / space for life vest inflation when used.
- Attach the rope end or device, to the harness (a full body or sit harness is recommended, an emergency harness/rescue strop may be used for evacuation purposes).
- Throw the rope to the ground - (check it reaches) or ensure rope is long enough and in a container attached to user.
- Remove any slack rope between the harness and the device/anchor point by pulling the tail rope.
- Load the system and descend - it is not necessary to hold or operate any part of the rotor or rope during descent.
- For additional descents connect to the other end of the rope and repeat as above (only passive mode).

Descending / Rescue down

- Attach the rope to a suitable anchor point.
- Attach the device to the harness - suitable lanyards may be used to allow separation of users.
- Remove any slack rope between the harness and the device / anchor point.
- Place the tail rope through the additional friction, both friction points may be needed for loads greater than 140kg.
- Load the system and descend controlling the speed with the tail rope.
- If a hands-free stop is required during descent, apply tension to tail rope until descent stops and engage lock. To release lock, lift slightly using handle (or powered driver) as detailed in lifting.

Lifting

- Attach the device or rope end to a suitable anchor point, above the chosen lifting path.
- Attach the rope end or device to the casualty harness.
- Engage the lock. (To lift on the right hand rope push the right hand lock button and vice versa).
- Fit the handle to front face socket (or rear hex driver attachment via 10mm socket. D62 only or powered driver). Ensure both lock and handle ratchet (or powered driver) are engaged in the same direction of movement.
- Operate the handle (or powered driver) until the desired height has been reached.
- Maintain tension on tail rope whilst lifting.
- Maintain communication with the rescuer while lifting.

Ascending / Rescue up (D62 only when used with powered driver option)

- Attach the rope to a suitable anchor point above. Choose ascent path.
- Attach the device to the harness - suitable lanyards may be used to allow separation of users.
- Operate handle (or powered driver) as directed in lifting use section, ensure ratchet lock is engaged
- Tail rope must be kept under tension whilst ascending. To minimise slip/rope damage and ensure the rope exits the device efficiently
- Lifting / ascending puts much greater strain on the rope and device than descent, and may cause rope damage with high loads or repeated use.

Changing from Lift to Lower / Ascent to Descent

Place tail rope through one or more additional friction points, apply load on handle / powered driver and disengage lock. Whilst holding tail rope firmly release handle / powered driver until load is held by the device/tail rope. DISENGAGE THE HANDLE (remove powered driver) and then lower, controlling the speed manually with the tail rope.

Note

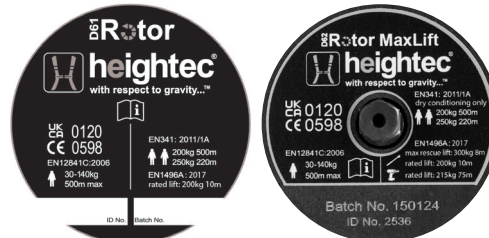
Always use suitable locking connectors. The Rotor may be used on its own for evacuation or rescue. However, a suitable backup system (e.g. EN 12841 type A device) should always be used during training or other non-emergency use (either evacuation or descent). Users should be competent (see 1 and 5a overleaf) or, for evacuation use, following clear emergency protocols.

Only use the rope supplied fitted to the Rotor. Thorough examination, servicing, repair or rope replacement may only be carried out by heightec. If the Rotor is retired from use ensure it cannot be re-used, e.g. by cutting the rope. The small load indicator pin in the attachment point will bend at a load of approximately 70kg, indicating the device has been used.

The Polyamide rope supplied with the Rotor has the following properties (as defined by EN1891):

- Sheath slippage <40mm
- Elongation <5%
- Mass of outer sheath 39%
- Mass of core 61%
- Total Mass per m 61g
- Shrinkage <6.5%

Product Markings Example



Beware hazards below

Only use this rope

xxxm heightec **

xxxm - rope length in metres
 ** - year of rope manufacture

Warnings

- When the device is used for lowering, the handle / powered driver will rotate if left attached. Always remove the powered driver when lowering/descending. Switch the ratchet direction on handle to prevent rotation, or remove.
- The device may become hot during use and could damage the rope or other textile items if left in prolonged contact.
- If left installed or stored at the point of use it should be protected from the environment.
- The Rotor is not suitable for fall arrest.
- Beware hazards below and above.
- Secure separate items to prevent drop objects e.g. handle / powered driver

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.

Anchorage 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