

**For use on 10.5mm - 12mm kernmantle rope**

**Methods of use:**

**Controlling a safety rope (lifeline)**

Thread device as shown to the right (fig 1). Hold the tail rope in one hand and the live rope in the other. You should not need to touch the body of the device.

**Paying out** - gently pull the live rope whilst feeding the tail rope into the device. Repeat this action, taking care not to let go of the tail rope at any time. Pulling too hard on the live rope will cause the device to lock.  
**Taking in** - the reverse of paying out. Pull in slack on the live rope whilst pulling out on the tail rope. Once again, take care not to let go of the tail rope at any time.

Never operate the handle whilst in this mode of use. Due to the reduced amount of friction, extra care is required if using 10.5 mm rope for life lining purposes.

**Use as a locking pulley**

Thread the device as shown above (lifeline) and run the tail rope into the required pulley system.

Pulling on the tail rope (via the pulley system) will pull rope through the device. Releasing the load on the tail rope will cause the device to lock.

**Lowering**

Start with the device fully threaded, i.e. with the rope around the upper bobbin and between the pivoting handle section and the brake block as shown in the diagram (fig 2). To lower the load, hold the tail rope firmly, unfold the handle and gently squeeze it towards the body of the device. As the handle is squeezed the rope will start to pass through the device (fig 3). Further movement of the handle reduces the braking action of the lower bobbin and will increase the speed of passage of the rope until the secondary braking system comes into effect. The friction then increases, slowing the passage of the rope. Finally, as the handle is squeezed even more firmly, the rope is brought to a halt as it is pinched between the pivoting handle section and the brake block.

Connect the device to the anchor point and the 'live' rope to the person to be lowered. Before lowering, remove any slack rope from the system by pulling on the tail rope.

**Descending**

Thread and operate the device as for lowering (fig 2). Connect the live rope to the anchor point and the device to the harness. Before descending, remove any slack rope from the system by pulling on the tail rope. It is possible to ascend using the device with an appropriate rope grab and footloop. To ascend - change to lifeline mode (fig 1) then stand in the footloop whilst pulling on the tail rope to remove the slack. Hold the tail rope at all times whilst carrying out this operation.

**Threading the Quadra**

Hold the device so that the handle is on the right hand side and pivot the top plate open. Pass the rope under the lower bobbin and then close the top plate. Position the rope into the notch on the right of the top plate, then pivot the top plate towards the open position, whilst placing the rope into the gap between the lower bobbin and the brake block. The rope should now be in a U shape around the lower bobbin. Pivot the top plate closed. The device is now ready for use as a locking pulley or to control a lifeline (see below). Check for correct threading by pulling sharply on the live rope. The device should lock. It is possible to change the mode of use whilst the device is under load. With the device locked (handle fully out) hold the tail rope and thread or unthread the rope around the upper bobbin as required. With the rope threaded around the upper bobbin and between the pivoting handle section and brake block the device is ready for lowering or descending.

**Never operate the handle while changing from one mode to another**

**Locking off - all methods of use**

It is possible to 'lock off' the device so that the tail rope does not have to be held. This is necessary whenever the user needs to have both hands free. To lock off the Quadra, pass a loop of the tail rope through the attachment connector (fig 5), pass over the top of the device, and position over the body and the handle as shown (fig 6).

**Pre-use check**

The condition of the equipment should be verified before every use. Check for cuts, nicks, deep scratches, wear, abrasion, deformation, evidence of chemical contamination, or anything which might affect strength or correct operation of moving parts. Pay particular attention to the following:

- proper movement of side plates
- security and fixing of all fasteners
- free movement of upper and lower friction pulleys
- return action of spring
- free movement and straightness of handle.
- rear handle stop pin

Do not use the equipment if any doubt exists to its good condition. If doubt exists, remove from service immediately until inspected by a competent person or refer to heightec for guidance.

**Intermittent inspection**

As the pre-use check, with special regard given to components which might be subject to wear or damage, particularly the condition of the friction surfaces and proper function of spring. It should not be necessary to conduct intermittent inspections of pre-packed items of emergency equipment which are stored under correct conditions.

**Thorough examination**

This should be done at intervals no greater than six months. The time, place, inspecting person and results of the inspection should be recorded (see record card on back page). Note should be made of the ongoing condition of the product, together with its suitability for continued use. In addition to the requirements of the pre-use check and intermittent inspection, the product should be particularly examined for:

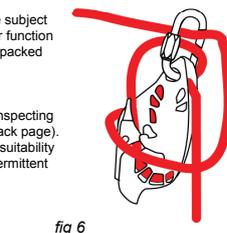
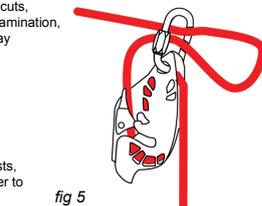
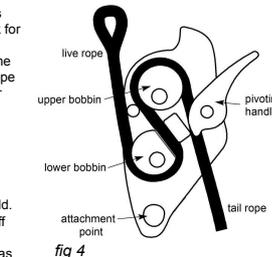
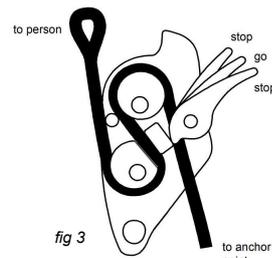
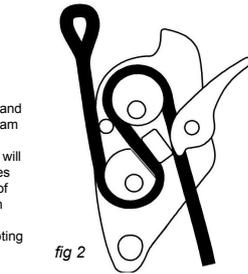
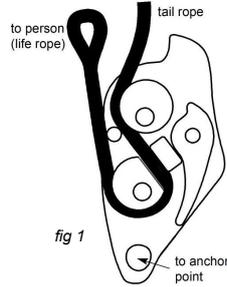
- corrosion
- wear or sharpness of side plates
- play or slackness in pulley spindles
- security of fixings
- rear handle stop pin

If this device has been used to hold any significant fall it should be withdrawn from use and replaced immediately.

Thorough examination of pre-packed items of emergency equipment should take place at intervals no greater than one year.

**Warnings**

Ensure the device is threaded correctly before use (see over). Always hold the tail rope when the device is under load. If it is necessary to let go of the tail rope, first lock off the device as shown above. Take care not to let anything foul the operation of the handle (fingers, clothing). Attach only via the point shown (see over) - it is essential that the attachment connector passes through the holes in both side plates. Never operate the handle without holding the tail rope.



**Intended use**

The Quadra rope device is designed for use with low stretch (EN 1891, type A) kernmantle rope of between 10.5mm and 12mm diameter, for the following purposes:

- to arrest the movement of a safety rope attached to a person
- as a self braking pulley in a hauling system for personnel
- for lowering a person
- descent or ascent of a rope

No other form of use is permitted. In all of the situations described above, it is important that an additional back-up safety system is used, attached to a separate anchor point. The safety system may be controlled by another person, or the user may be attached by a suitable rope grab or fall arrester. This condition may not be possible during situations of emergency, e.g. evacuation.

**Training and competence**

The Quadra must only be used by persons who are competent, trained in its use and familiar with its limitations. Initial training is essential, with regular retraining if necessary, at periods no greater than six months. Training should always be undertaken in conjunction with an additional safety system, attached to a separate anchor point. It is recommended that initial training should take place at ground level to allow familiarisation without risk. Training providers should be able to demonstrate competence and experience of the equipment with which they intend to train.

**Performance with high loads**

The Quadra is designed for use with loads of two persons. Users must be aware however, that such use may create additional hazards because of the high loads which might be placed upon other parts of the system. It is therefore important that when used for loads greater than one person, operators have received appropriate training and have practical experience of this mode of use and the associated hazards. It is especially important to guard against any possibility of high shock loads and/or rope damage. The Quadra is not suitable for use with loads greater than 200kg (such loads will also exceed the SWL of most ropes).

**Material**

All components are made from stainless steel 316 except the upper friction pulley and folding handle section which are made from aluminium.

**Compatibility**

For use only known compatible equipment as described:

- Non-compatible equipment may result in an accident or injury.
- Helmets: It is recommended that this product is used with an appropriate helmet e.g. mountaineering helmet (EN 12492) or industrial helmet (EN 397) with side impact rating and four point chin strap.
- Harnesses: industrial sit harness (EN 813), full body harness (EN 361) or evacuation harness.
- Connectors: must have a locking gate mechanism. Mountaineering connectors (EN 12275) or industrial connectors (EN 362); most locking karabiner or screwlink types will be suitable. Connectors should sit in the anchor point without twisting. Be aware that the gate of some types of locking connector can open accidentally.
- Rope: low stretch kernmantle rope (EN 1891, type A) of between 10.5 mm and 12 mm diameter. Don't use excessively old, stiff, worn or abraded ropes. Edge protection should be used wherever there is the risk of damage to the rope. Note that very new ropes will provide less friction and so need to be 'worn in'. 12 mm rope may only be used for lowering and self locking pulley operations.

11mm rope is recommended for use in all operations.

**SWL statements**

It is difficult to ascribe a 'single' safe working load to this device because of the varied ways in which it can be used. Regardless of the mode of use, the Quadra should never be used with loads greater than 200kg. The following loading characteristics should be noted (all tests carried out on unused low stretch rope to EN 1891).

Under a static load, the locking system of the Quadra will begin to slip at:

Rope Diameter (mm)	Load (kg)
10.5	338
11	333
12	615

With the handle 'open' (i.e. locking mechanism off) and a 20 kg restraint force (grip) on the tail rope, the device is able to control the following loads:  
10.5 mm rope - 130 kg 12 mm rope - 150 kg

The device is capable of withstanding a fall of 1m (factor 1) with 100 kg (in lowering/ descending mode) on 10.5 mm or 12 mm rope. See prEN 12841 for more information about this test.

Check the equipment immediately on delivery and first opening. There are three levels of inspection (periodical examination) which should be undertaken throughout the lifetime of this product. Each type of inspection should be carried out by a person competent at that level. A competent person may be defined as 'someone suitably trained or qualified by knowledge and practical experience to enable the task to be carried out properly'.

**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.

**Hazards**

Do not allow slack rope to develop in any part of the suspension system. When used as a descender, a front harness connection point should be used. Ensure that exclusion zones are used to protect third parties if necessary and that objective hazards are identified before use.

Contamination with oils, lubricants, water or solvents may alter the performance of the device. Behavior will vary according to the age, type, diameter and characteristics of the rope used. Use only ropes between 10.5 mm and 12 mm diameter. Do not use excessively old, worn or abraded ropes.

**Personal issue and traceability**

This device is personal protective equipment. It is designed for use in conjunction with other, compatible items of PPE as described in these instructions. It is preferable for this item to be personal issue. It should be uniquely identified and should be traceable to the original certificate of conformity, with records kept of subsequent use. It is essential that every user is issued with these user instructions. All users must be suitably trained and should be competent to work in situations where a risk of falling may be present. The heightec Group take no responsibility for injury or accident of any kind arising from the use of this product.

Method of threading the rope correctly for lowering, descending:



Method of threading rope correctly for lifeline and raise:

