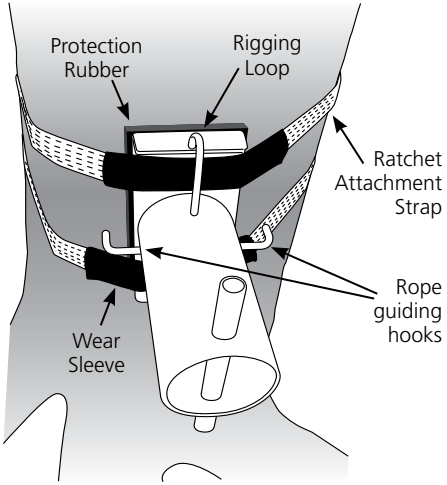
Pro Climb Rigging Bollard

USER MANUAL

Introduction

The Pro Climb Rigging Bollard (PCRB) is a friction device used in tree work for lowering tree sections like branches and trunk wood. Loads should not exceed 1000kg. The PCRB is designed with a safety factor of 5:1, in line with international user standards. To allow the user to use their preferred rope type, we have designed the PCRB with an enlarged drum of 140mm in diameter. This allows the use of ropes that are up to 35mm in diameter without going under a 4:1 bend ratio. The enlarged drum guarantees that all rope diameters and types will run smoothly around it in all rigging situations. The enlarged drum also cools faster due to the greater surface area.

If you are not dismantling the tree, we advise you use the PCRB with the tree-protection rubber. This rubber plate will prevent damage to the tree while rigging. In a dismantling situation, when lowering heavy wood, it is good practice to cut a notch into the tree to minimise the movement of the PCRB.



Picture 1

There are two ratchet-attachment straps used to secure the PCRB to the tree, each with a breaking strength of 6000kg. The bottom ratchet-attachment strap carries 95% of the load. The top ratchet-attachment strap is a safety and positioning strap and is designed to prevent the bollard from flying into the tree in case the bottom strap fails. To even out the wear on the straps it is good practice to swap the straps around after each use. (Please ignore the 2500kg printing on the ratchets). These ratchets were designed for truck tie downs. The trucking industry uses a different design factor for their safety ratings. Due to cost reasons, we are not yet able to produce specific ratchets for the tree industry, but we are working towards this.

The rigging loop on top of the bollard has a safe working load of 500kg with a 2:1 safety factor. It is designed for non-shock loading applications only, like pre-tensioning rigging ropes or lifting applications.

Two-man setup

When you have two people attaching the PCRB to a tree, it is easiest if one person holds the PCRB to the tree while the other person sets the first ratchet-attachment strap.

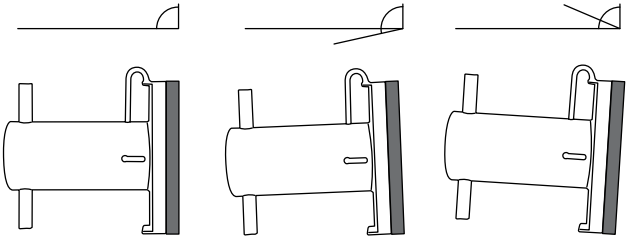
Once the first strap is set, the second strap can easily be secured by one person. It is best to set the top strap first (picture 2). Make sure that the black wear sleeve is set across the bollard and that the strap runs underneath the rigging loop.

Picture 2

When looking at the ratchet-attachment straps you will see that one side of the webbing has black stitching. When mounting, this stitching should be on the outside and facing away from the tree. Try to place the ratchets of the attachment straps opposite the bollard around the back of the tree trunk in order to minimise the risk of damaging the ratchets.

Picture 3

It is important to set the bollard in a manner that the drum is level or lightly tipped to the ground. If the drum is tilted upwards, the rope can overrun itself and jam.



OK OK **NO!**

One-man setup

To setup the PCRB on your own, it is easiest to use a rigging rope, a carabiner, and a prussic.

First, tie the rigging rope around the tree with a running bowline at head height.

Secondly, tie a prussic onto the rigging rope tail hanging down, and then attach the PCRB via a carabiner to the prussic (picture 4).

The PCRB can now be positioned without continuing to hold on to it. From here, follow the steps that are provided above in the two-man setup section.

Picture 4

Belaying with the PCRB

Belaying loads with the PCRB is very easy. The rope is placed behind one of the rope guiding hooks, guided underneath the drum and then around the drum.

This action is repeated as often as necessary to control the load. After each lowering operation, it is good practice to switch the direction of the wrapping of the rope to prevent pig-tailing.

As a simple rule;

"When placing the rope behind the right rope guiding hook, wrap the rope clockwise around the drum. When placing the rope behind the left rope guiding hook, wrap the rope counter-clockwise around the drum."

Picture 5

Picture 6

Pre-tensioning the rigging rope

It is often good to pre-tension the rigging rope to reduce the shock loading of the rigging system or just to minimise the stretch in the rope.

An easy way of doing this is by attaching a pulley via a prussic to the sharp end of the rigging rope (rope end going up into the tree). You can then belay the rigging rope with one wrap on the PCRB and run the tail of the rope through the pulley to create a three-to-one advantage.

By pulling down on the rope tail, the rigging rope will tension. After you have tensioned the rope, you can grab the rope tail that is going up to the pulley and place further wraps on the bollard.

Picture 7

It is important to take the pulley and the prussic off the rope before you start lowering.

Lifting loads with the PCRB

To lift loads with the PCRB, you will need a prussic and pulley tackle. First, you should belay the rigging rope onto the PCRB with up to three wraps, depending on the weight of the load that you are going to lift.

From there, you can connect the pulley tackle to the rigging loop, via a prussic, to the sharp end of the rope. You can push the prussic higher with a pole, so that you have more room to pull.

By pulling down on the pulley tackle, you will create slack around the drum of the PCRB. You need to pick up this slack by pulling on the tail of the rigging rope.

Lifting loads is best done with two people. However, by using self-blocking pulley tackle systems it can easily be done by yourself, provided you have the proper experience.

When the load is lifted into the right position, you can then tie off the rope to the PCRB and remove the prussic and pulley tackle. Now you are ready to lower the load to the ground.

Picture 8

Using the PCRB in a sky-line and speed-line scenario

There are several ways to use the PCRB in sky-line and speed-line scenarios. We will mention two different scenarios here. To discuss further options, please feel free to contact us at Pro Climb.

The simplest method is using the PCRB as a speed-line anchor. In this setup, you attach the PCRB to a nearby tree that you would like to use as your speed-line anchor. By using the tree-protection rubber you will not damage the tree being used as your anchor.

At the same time, you can use the pre-tensioning method to reduce the slack in the speed-line. In this scenario, when using the pre-tensioning method, it is important to remember that the rigging loop is only designed to bear the full force of 500kg in a straight upwards pull. A side pull should not exceed 150kg force.

The second scenario involves a sky-line. Here you can use two PCRB's which are attached to the base of the tree. One PCRB can then be used to anchor the sky-line and the other can be used to lower the load into the sky-line.

By using the pre-tensioning and lifting techniques described earlier, the sky-line can be tensioned after the load has been caught in the lowering rope. This will prevent shock loading of the sky-line.

Max. Load: **< 1000 kg**
Safety Factor: **5:1**
Drum Ø: **140 mm**
Max. Rope Ø: **35 mm**
Rope Bend Ratio: **4:1**

Please note: All techniques described here are recognised and approved working methods of the arboricultural industry. It is important to learn and trial these techniques in a safe environment. Professional tree rigging is dangerous work that needs experience and training. This manual is designed to show possibilities, but is not intended to replace proper training.

Please feel free to contact us with any feedback and/or questions you may have.

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