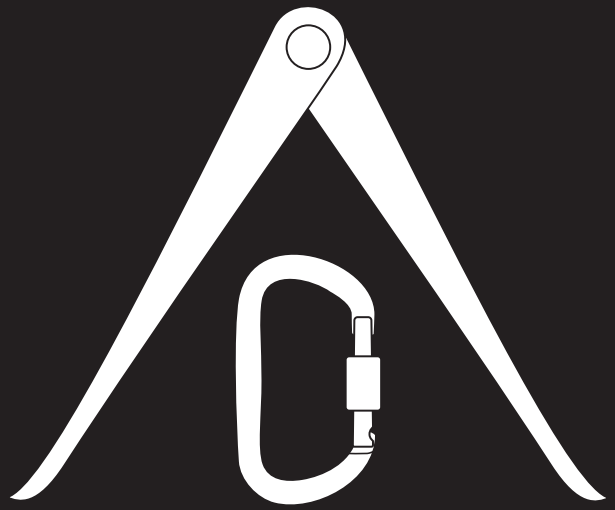
Climbing Technical



Climbing Technical is driven by James Smith, he has worked around the world across multiple Working at Height Industries. As well as working as an arborist James has over 10 years experience within the film industry as a stunt rigger and performer working in New Zealand, Fiji, China and India. Regardless of industry or setting his primary concern has been the safety of others while at height and the duty of care that comes with it.

Climbing Technical's design and illustration side has grown out of the documentation that James found was lacking within the film industry and difficulties in conveying the often complex nature of rigging setups. When looking at the user instructions that came with climbing and rigging equipment he saw an example of how illustration could be used to communicate how systems worked and worked on creating a system which replicates and expands on this. The result is Climbing Technical and the extensive library of resources that the company can now draw on to help communicate working at height systems with people regardless of ability, language or experience.

A full list of projects that Climbing Technical has been involved in is available on request. Pricing of projects is done on a job by job quote basis that is tailored to each companies needs and budgets.

Samples:

i: Single Rope 2,3,5:1 System Illustration

ii-iii: Educational Articles samples

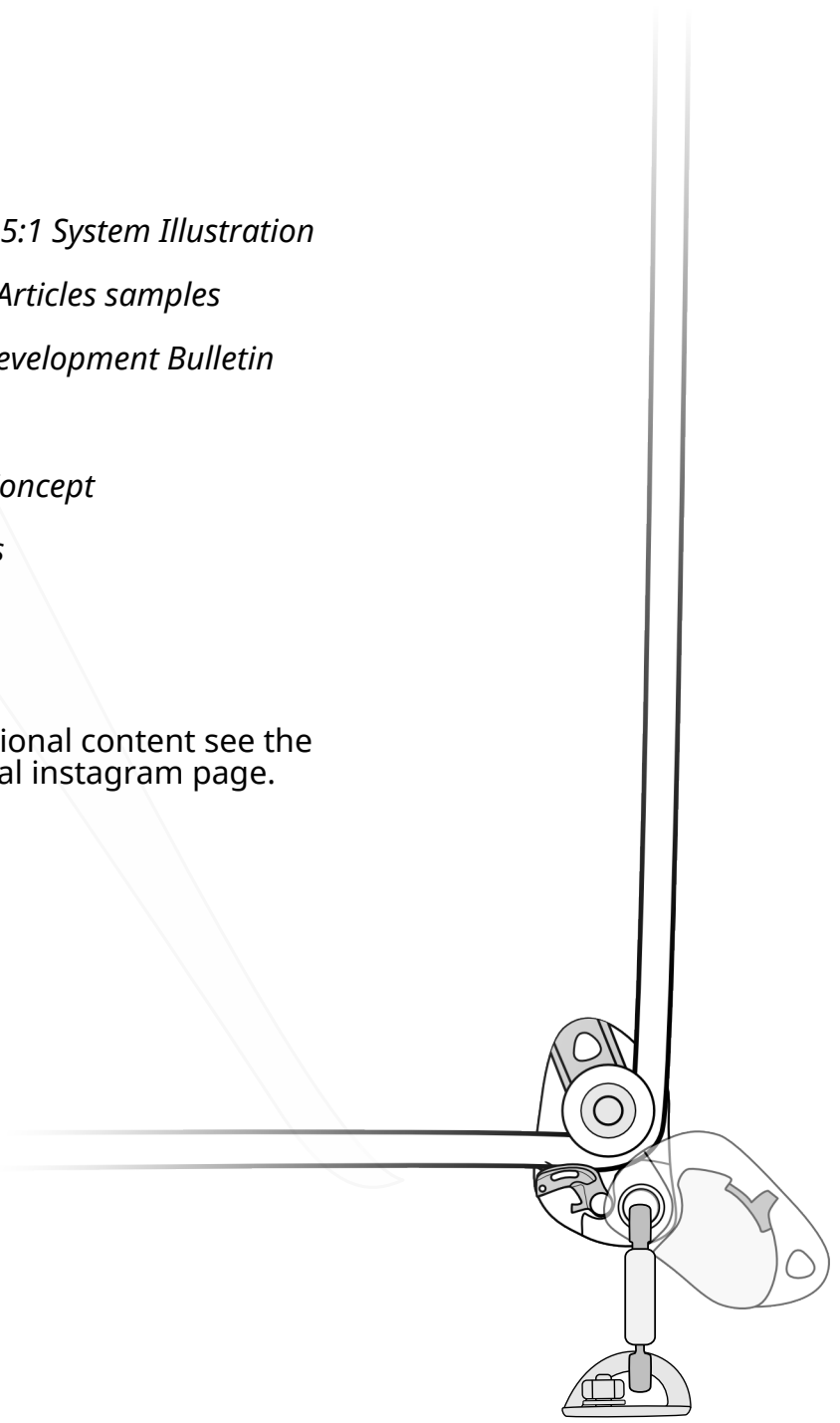
iv: Professional Development Bulletin

v: Client Work

vi: User Manual Concept

vii: Other samples

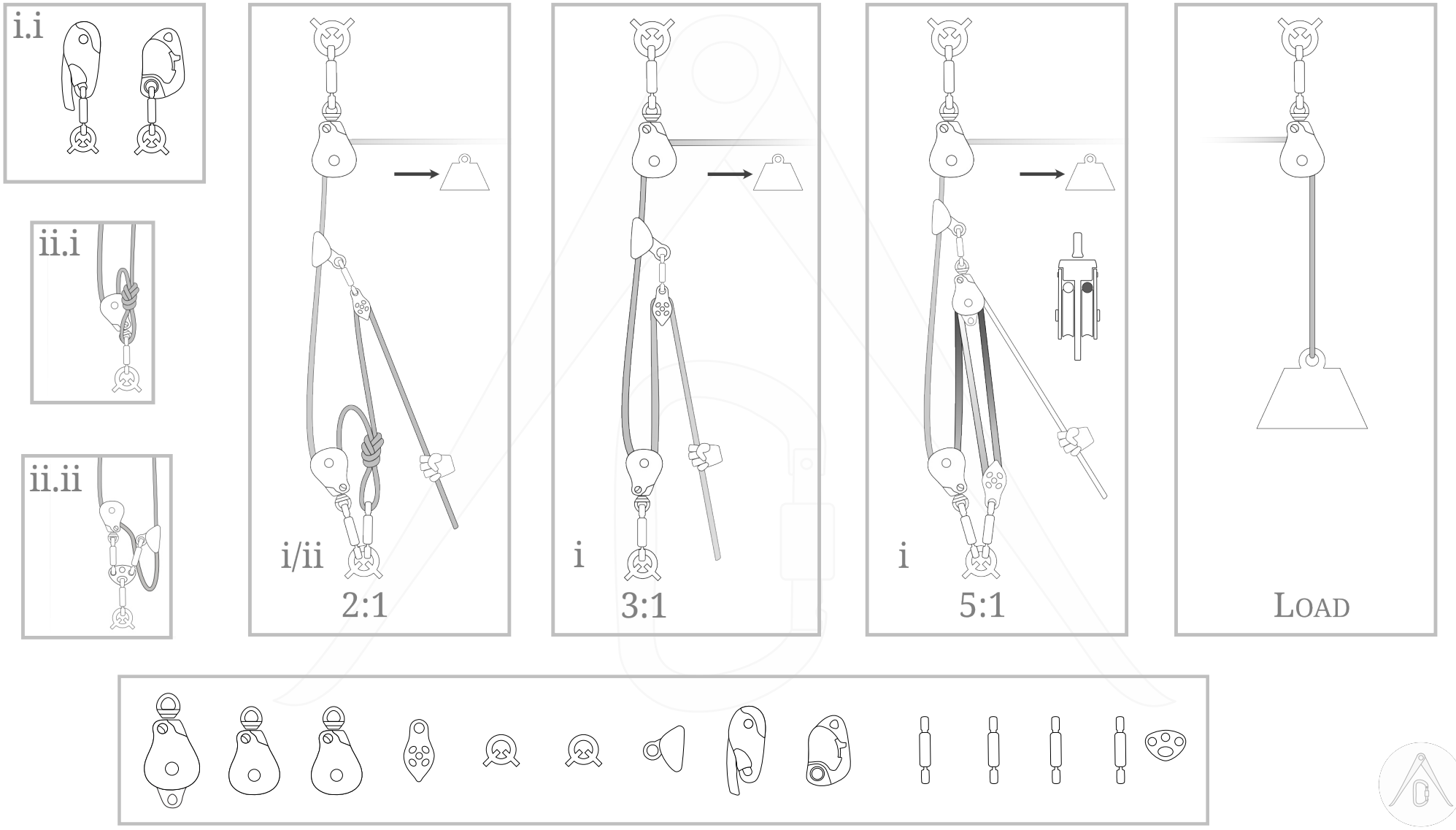
For more educational content see the climbing.technical instagram page.



i. Rigging Illustration Sample

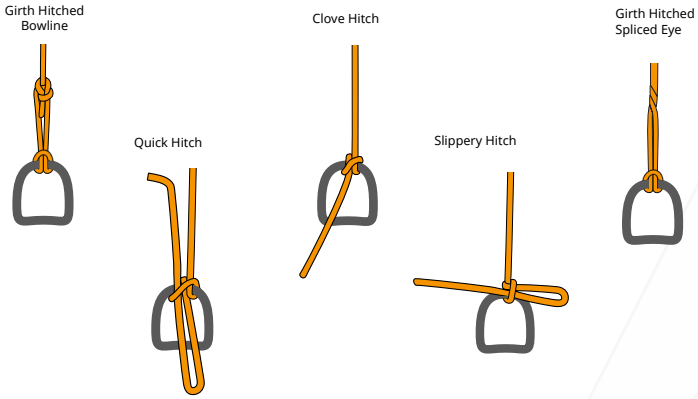
Single Rope 2:1/3:1/5:1 System

Action: A single rope system allowing changes between a 2:1, a 3:1 and a 5:1 mechanical advantage system



Front Threading a Cambium Saver (Easier with a Slim Splice)

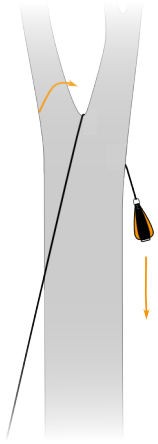
Step 1: Tie the throw line onto the throw bag. Common methods include:



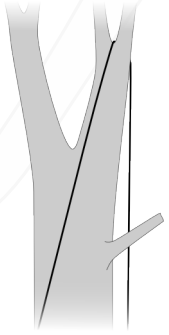
Step 2: Install the throw line and bag over the TiP branch and then isolate that limb.

Use of a powered access device such as a big shot or air cannon may be appropriate if needing a high anchor point.

Isolating a branch



Isolating the branch (ii) refers to manipulating the throw line so that it follows an uninterrupted path from the ground up and over the branch and back down without crossing over any other branch or obstacle. It is not possible to remotely install a cambium saver if the line is not correctly isolated.



None Isolated

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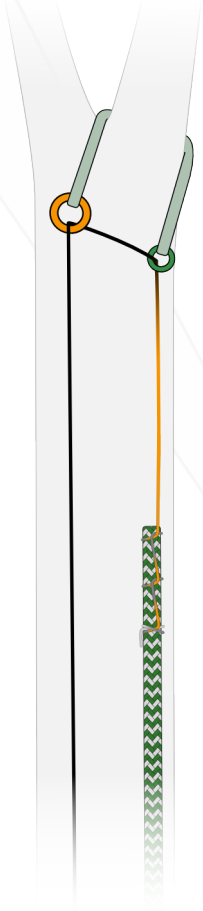
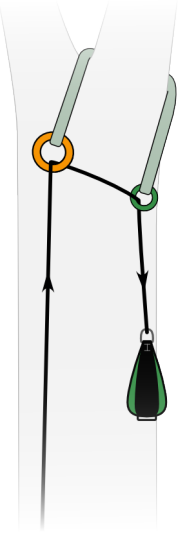
Step 7: Now that the cambium saver is installed you can lower the throw line and bag to the ground.





Step 8: The climber's access line can then be tied to the throw line and pulled through the cambium saver. Unlike the previous method the climbers line is tied on from the non eye end. A good method for this is several half hitches with a clove hitch to secure the tail. It is important to set these reasonably tight to ensure a secure connection.

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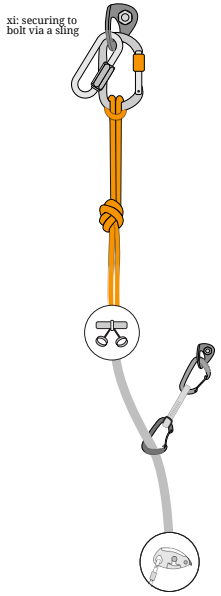
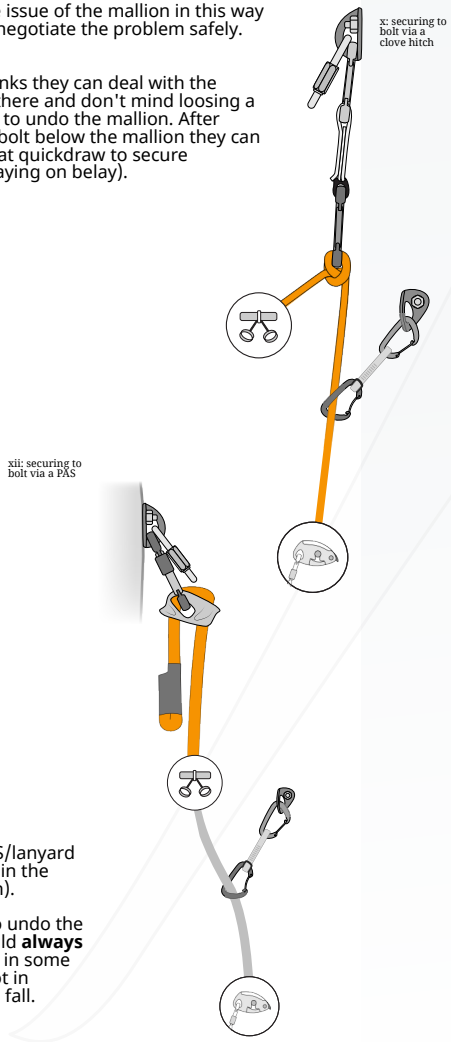
By dealing with the immediate issue of the mallion in this way the climber should be able to negotiate the problem safely.

Alternatively, if the climber thinks they can deal with the mallion themselves then and there and don't mind loosing a clean ascent they can attempt to undo the mallion. After clipping the quickdraw to the bolt below the mallion they can clove hitch themselves into that quickdraw to secure themselves to the bolt (but staying on belay).



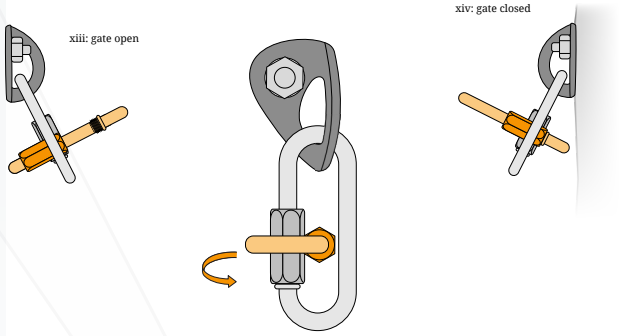


Another option is to use a PAS/lanyard or sling to secure themselves in the same way (behind the mallion).

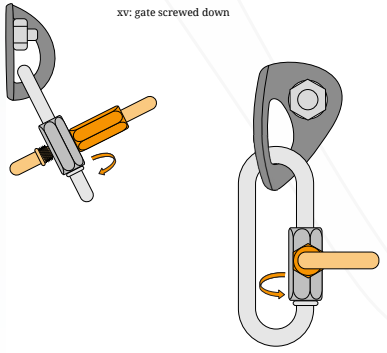
If the climber does attempt to undo the mallion themselves they should **always** secure themselves to the wall in some manner to ensure they are not in danger of a possible factor 2+ fall.

The best tool to undo a seized mallion is a suitably sized wrench or spanner, however in it's absence a second mallion may be used instead. There are a variety of options to achieve this.

Option 1: By wedging the octagonal gates of the two millions together so that they rest against each other and then using this to apply leverage to the closed mallion. This can either be done with the gate open or closed. While a closed gate is going to take longer to implement it does adds security to the exercise as it means if hands slip then the loose mallion won't be dropped.



Option 2: By placing the seized gate of the offending hardware between the top of the thread of their mallion and then screwing their gate down onto the seized gate. This method works especially if the mallions are of different sizes.

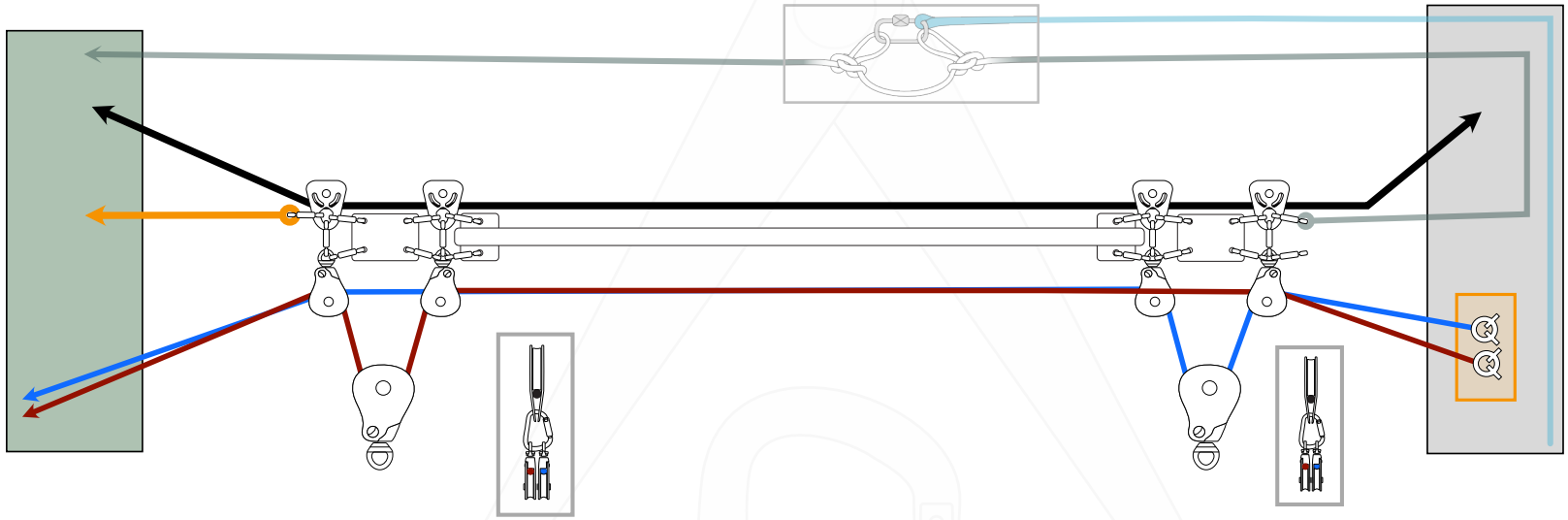


Options which have the gate closed are preferable when using gloves or the hardware is slippery to prevent hardware being dropped.

30/1/22 After Action Report - Ref: PV Shoot

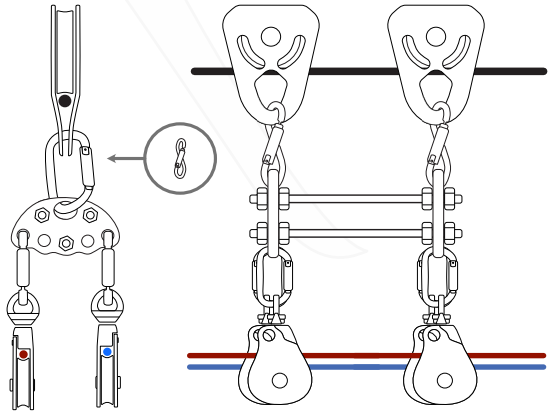
Skate: See fig 3 for recommended changes. The internal 2:1s were found to be too far apart and meant that as the payload was raised to the max height it became exponentially harder in last 20% of the move as the angle flatted out. Furthermore by not hard locking the components together this meant they would move and settle which created lag in the system.

fig 3 (consult page 3 of PV Rig Plans for full plan)

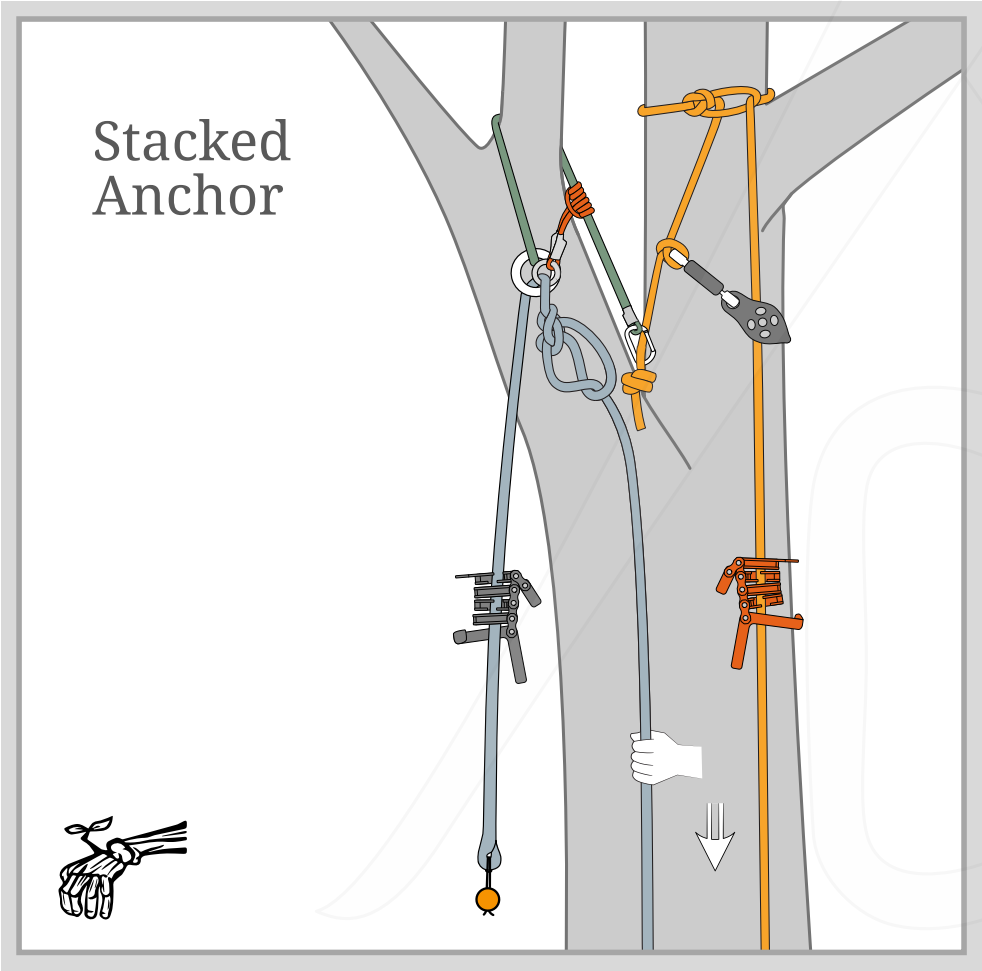


Wear began to occur on the ISC RP069s (tension line). Initially it was postulated that this was due to "worble" in the lines and the sheave rubbing on the internal cheek walls. However upon closer inspection it became apparent this was due to the Omni blocks used as threading aids for the elevation lines inverting in between the side plates and rubbing. In future a proper integrated skate system could prevent this or a system similar to figure 4.

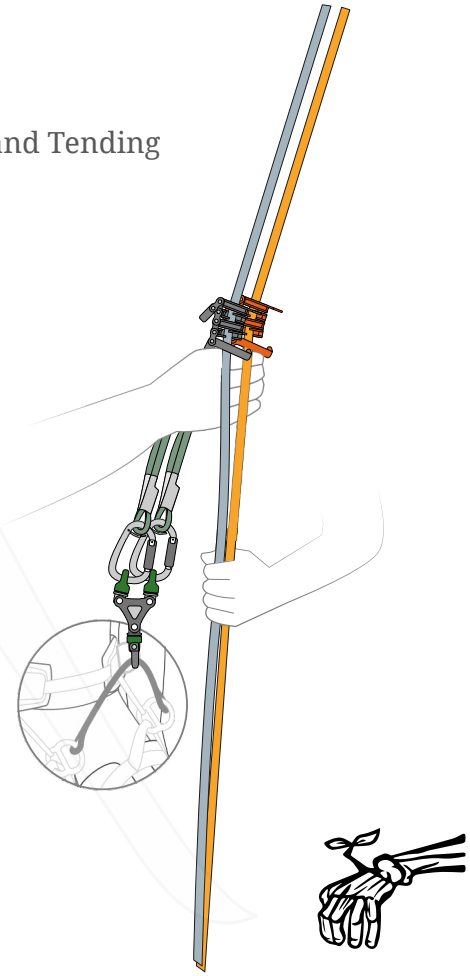
fig 4



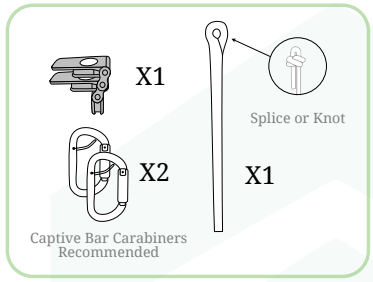
The other mitigation measure could be to have a redirect point and the anchors for the elevation lines to be lower than the skate height as in fig 3, noted in the yellow box . The downward force should then keep the threading pulley loaded downwards. While this means at the end of the travel the payload would climb, it will be climbing anyway due to the tensioned high-line.

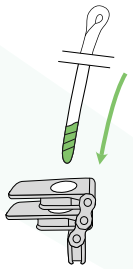


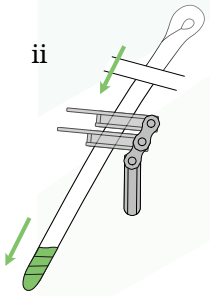
Hand Tending

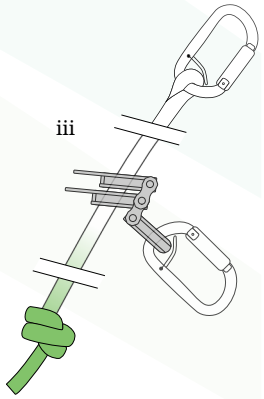


3 Setup



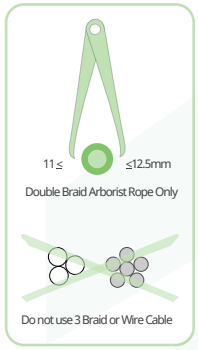


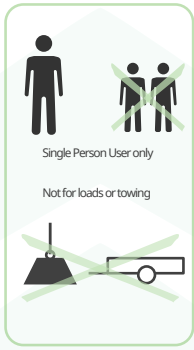


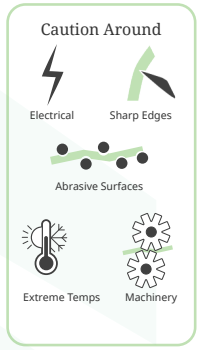


A Stopper Knot (such as a Double Fishermans) is required at the tail end

6 Warnings





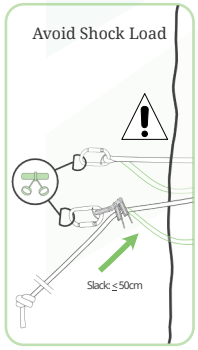


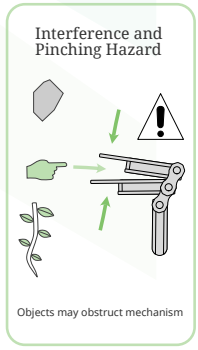
Rope Selection

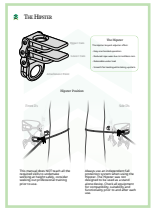
Use only 11-12.5mm (7/16-1/2" low stretch, tight sheath braided ropes compliant with ANSI Z133 standards.

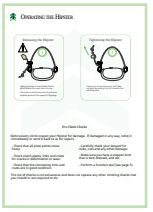
Recommended ropes include:

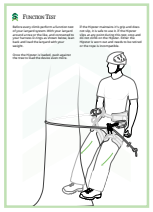
- Samson 7/16" Velocity
- Sterling Scion Blue 11.5mm
-Teufelberger Tachyon 11.5mm

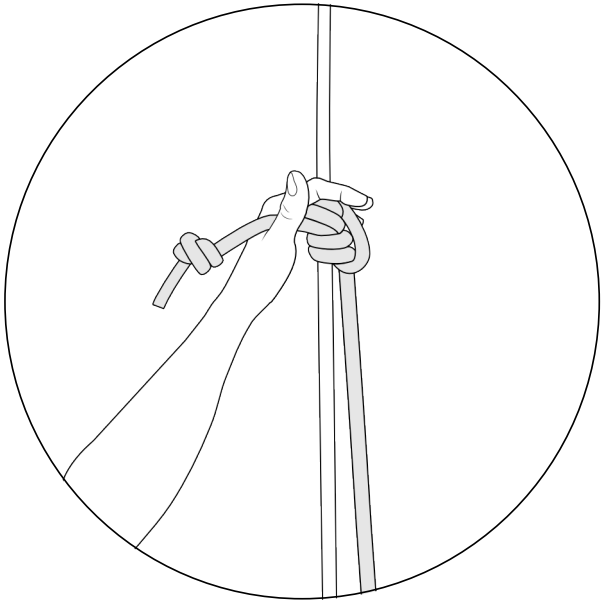


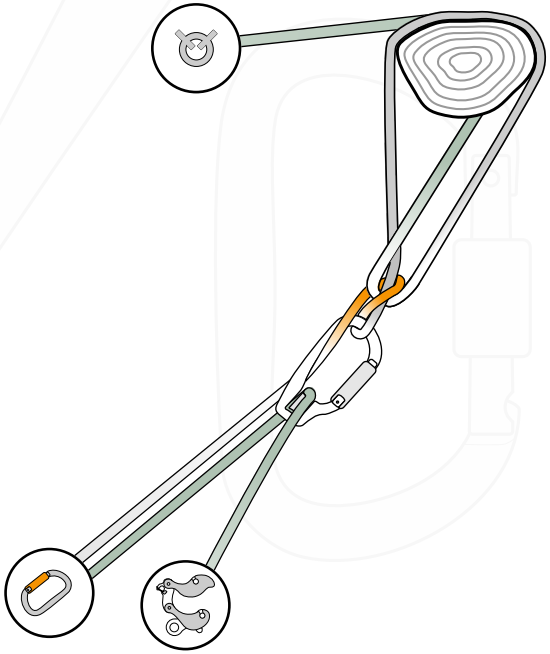


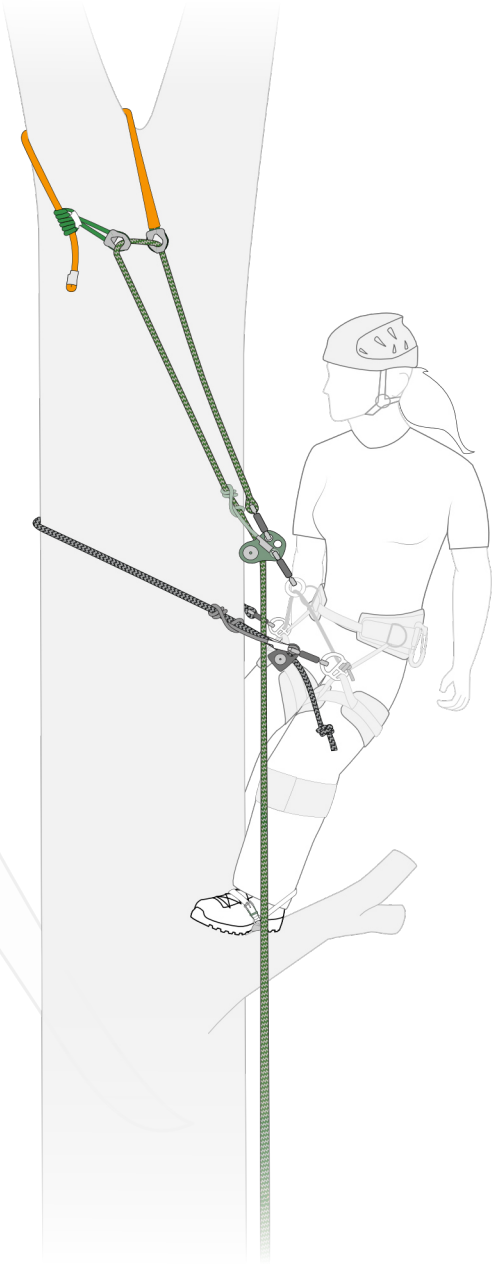












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