

## Gear & Safety Warning

# Slackline Webbing Tie-off recommendations

April 2018, v1

Authors and Review:: Oliver Ross, Philipp Gesing, Thomas Buckingham

## Introduction

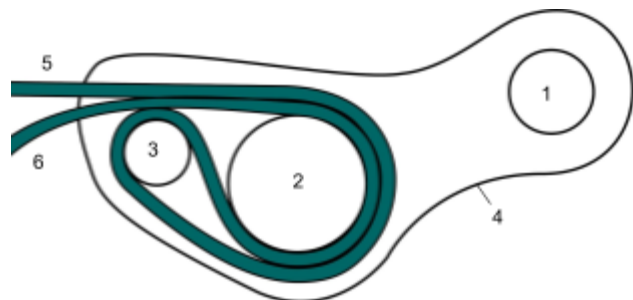
A crucial step in rigging most slacklines is doing a tie-off with the free strand or webbing tail coming out of the webbing locker (weblock) or ratchet.

Over the past years several incidents have occurred that nearly lead to injury or line failure - where a simple tie-off could have prevented the incident completely. Additionally, in approximately half of the known partial highline failure incidents, the webbing tie off was the first point in the system to engage and prevent full failure.

Unfortunately, up until now, only some manufacturers state these crucial elements of rigging in their gear and slackline set manuals/videos. We hope this document raises more awareness amongst slackliners and producers on these topics.

### Webbing lockers (=weblocks) terminology:

1. Rear Attachment
2. Center Diverter / Barrel
3. Pin Lock / Front Pin
4. Side plates
5. Load Strand
6. Free Strand / Webbing Tail



## Problem description

With the trend of low-tension systems (e.g. Rodeolines, Longlines, Waterlines, Highlines) it is important with weblocks to tie off the loose end in order to prevent:

### *Webbing slippage in the weblock:*

The tie-off prevents the loose webbing end in single wrap configuration from getting sucked into the weblock due to slippage (see "[Webbing slippage in low-tension highlines](#)", P. Gesing et al. 2015), potentially inducing or accompanied by a "tail walk" (as introduced by Charles Chater) leading to failure of the friction based locking of the webbing (See "[Webbing Slippage Warning in Weblocks](#)", T. Buckingham et al. 2018). The tie-off hereby should not be able to cinch the closing knot too tight, so that it can be opened after loading.

## Selected Incidents

We selected a few incidents collected through the ISA SAIR System to show the relevance of these tie-off methods. Please note, there are many more known incidents than listed here:

- 2016 - **Brazil**: The loose webbing end (1m) was left hanging on a highline, causing the webbing to slip in the weblock. The webbing slipped through completely and the slackliner fell to the backup line.
- 2016 - **France**: On a 70m polyester highline, a tailwalk started, with the webbing ending up frayed:



*Pictures by Sangle Dessus-Dessous*

- 2017 - **Netherlands**: On a 140m polyester highline with about 3kN tension, a tailwalk was induced, with the weblock failing completely. The slackline slipped 30cm through the weblock until the backup knot engaged.

## Solution

### *Slippage tie-off:*

Webbing slippage in webbing lockers is minimised by knotting the loose end of the webbing in a manner that it is slightly taut between the weblock and the tie-off. As soon as the webbing starts to slip, it will immediately be caught by the tie-off and it should be possible to easily open it afterwards. We call this a *slippage tie-off*.

Slipping and tailwalk of webbing in weblocks can be prevented by designing specialised webbing lockers for low-tension slacklines. However, this will require time for manufacturers to create and test new weblock designs. For now we recommend slippage tie-offs on current weblock models.

*Some procedures described here might not apply to a specific product or are not recommended by a specific manufacturer. In case you are unsure on how to proceed, please always contact the weblock manufacturer directly.*

## Slippage tie-off description

The specific slippage tie-off depends on the weblock. In general if no tie-off method is specified by the manufacturer, we recommend the following:



Loose tail is hanging down



Feed bite through rear of weblock



Feed bite through the shackle, make sure the webbing lies flat against the lowest webbing layer



Wrap bite around the shackle once



Wrap bite around the shackle a second time



Feed bite through both wraps to finish knot

If you use a different slippage tie-off, make sure the loose webbing tail..

- ..lies flat and straight in relation to the weblock to prevent tailwalk
- ..is slightly taut and **not** loose anymore
- ..is immediately caught if the webbing starts slipping

**Remember! When rigging a highline, always account for the possibility of a mainline failure. Have a plan for how to rescue an injured or unconscious highliner and keep all necessary rescue equipment on hand.**