Tender Mooring Whips instructions for Use

For a mooring setup using whips the following is required:

2x Tender mooring whips (1 pcs. or 2pcs. splitable) + lines
2x Whip sockets or (custom) Whip holders / adapters
providing a *50°angle* (or less when placed on higher decks)
and corresponding socket Ø (no more than 1mm oversized)
2x Sufficiently long mooring lines + bridals if applicable

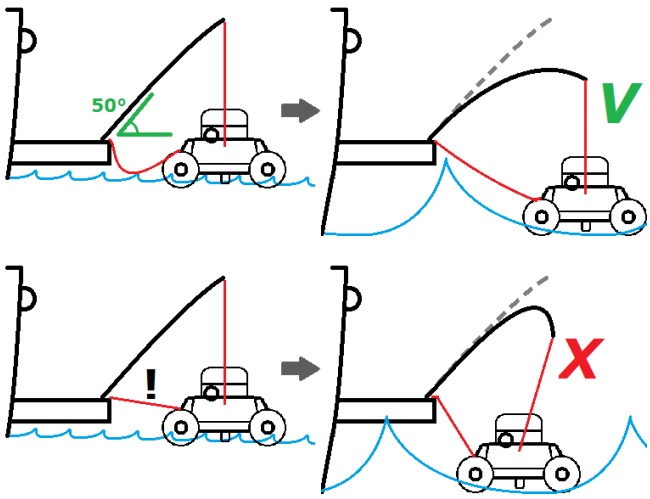
NOTE:

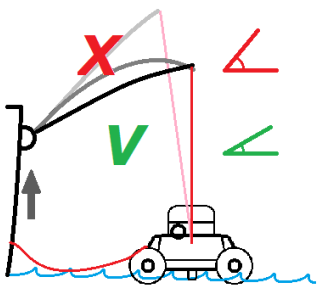
Our carbon whips are designed and tested for use with amplitudes up to 2 meter The use of carbon whips is different from GRP whips that you may be used to, so please read the following instructions carefully in order to avoid over-bending of the whips and be able to profit from them as much and as long as possible.
On the contrary of highly flexible GRP whips our carbon whips will create a strong 'pushing off' effect as soon as being bended. *Hence pre-tensioning a whip more than 0,5m IS NOT NECESSARY !!*

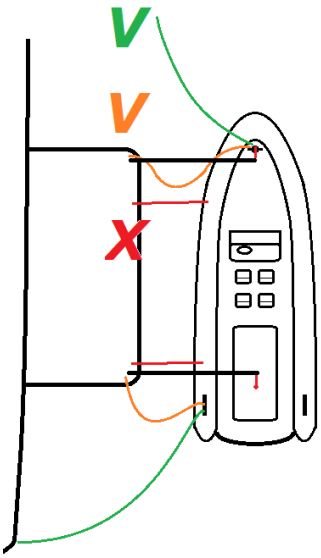
Using the whips;

First of all the spacing between the whips should correspond with distance between the cleats/attachment points on the tender, ensuring that the whips point out perpendicular from the deck area or hull where used.
When using the whips make sure the tender stays below the tip of the whips. In other words the lines towards the tender should be pointing vertically down to the tender attachment points. As the whips are being bended (by down force) the tip will move out causing the tender to travel away from the yacht.
Be aware that in case of swell or wake from passing ships the mooring lines towards the yacht should be sufficiently long in order to accommodate this movement. Restricting this outgoing movement will put a high tension on the mooring lines to the yacht and eventually result in breaking of the whips.
Mooring lines running forward and aft are preferred over the short perpendicular option as they offer more stability and more slack at the same time. Tenders that are sensitive to rolling should be attached on a centre cleat where possible in order to reduce the amplitude that the whip is being exposed to.

DO's and DON'T's:





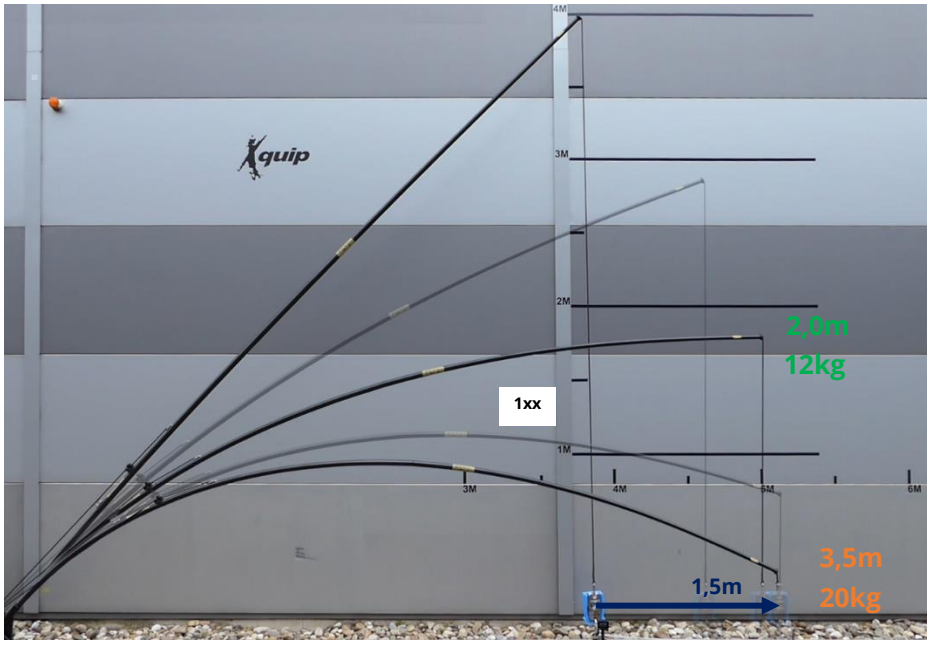


Quality Control testing procedures and loadcase parameters explained:

All our whips are tested @ 3,5m vertical deflection in order to verify bending characteristics and manufacturing consistency. This equals 33-50% from the maximum achieved loads during static (break) load tests and 63-70% of max. static deflection:

Whip length	Safe deflection + load *(vertical, dynamic)*		Test deflection + load *(vertical, static)*		Maximum defl. + load *(vertical, static)*	
4,8m	2,0m	11-15 kg	3,5m	20-24 kg	5,0m	45-55 kg
5,3m		9-12 kg		15-20 kg	5,5m	35-45 kg

Below image shows stills of our vertical load test setup for the 5,3m splitable whip:



*These testing parameters guaranty a safe **dynamic use** with **vertical amplitudes up to 2m**.*

*Note that the **sideways movement** of the tender as a result of vertical movement is as much as **1,5m** and should therefore never be limited!!*

Warranty and test report

In case of doubt or warranty situation, the test report of the load test of each individual whip can be obtained at Xquip on request.