

# 470 TRIMMING NOTES



**Toni Tió Sails/Quantum Sp:**

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## Toni Tió/Quantum Sails.

### 470 Sail trim and tuning guide

How to get the best out of your new Toni Tió/Quantum 470 sails

#### MAST STEP

The first consideration is the position of the mast step. It should be placed at a distance of 455 mm to 499 mm measured from the centreboard screw to the centre of the mast, depending on wind conditions. In strong winds the mast step should be moved forward, in order to move the sail centre of effort ahead, thus relieving windward helm. In case you should give lee helm, the mast step should be moved towards the back of the adjustment. Lowering the centreboard will also assist in producing a fine light and balanced helm at the tiller.

#### RIG TENSION

Modifying the rig tension will change the forestay sag (Jib Shape), the mast rake and the mast pre-bend (Main shape).

Less rig tension will produce a deeper jib shape, giving more power with less pointing. Also you will have more mast side bend (Opening the main Leech)

Settings:

( all values are taken in stay side )

WINDSPEED	SUPERSPARS	LOOSE A	PT -1
0-5 knots	34-35	40-41	32-33
6-16 knots	36-38	41-43	33-35
Over 17 Knots	33-35	39-41	31-33

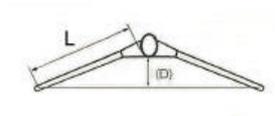
#### SPREADERS

There are two variables to consider, length and deflection. Length is measured from the side face of the mast to the shroud. Deflection is measured from an imaginary line joining the shrouds at the end of the spreaders to the after end of the mast.

### Length

Length (L) is normally determined by the crew's weight, shorter for a light crew, longer for a heavy crew. Short spreaders will allow the mast to bend sideways, opening the upper part of the main sail.

Up to 460 mm for a light crew, and 485 mm for a heavy crew. A good length for the spreaders would be 470 mm.

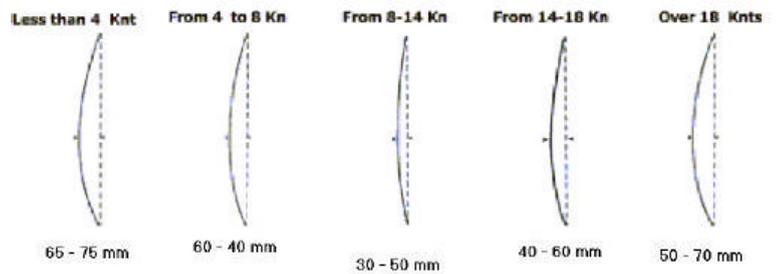


### Deflection

The deflection of the spreaders controls the mast curvature. This bend should follow the luff shape of the mainsail. The deflection should be between 13-16cm, with no mast chocks (see drawing above distance "D").

Another system to control the Spreader's Angle is measuring the pre-bend of the mast. Using the main halyard with enough tension to keep it straight from the top till the lower mast band, measure the distance from the halyard till the mast back at the spreaders level. That has to be done with the rig sailing tension, rake and without chocks:

Settings:





## CHOCKS

The chocks allows to control the mast bend depending on sailing conditions. This is crucial for controlling the power of the rig.

In light wind and flat sea no chocks are needed. Sometimes (from 0 to 4 Knots) it is necessary to pull the mast forward. This way the mainsail will present a better profile to the wind and the leech will open.

The table below shows the amount of tension needed from a neutral base point

WINDSPEED	CHOCKS
0-4 Knots	Pre bend
5-9 Knots	15 -35 mm
10-14 Knots	20- 30 mm
+ 15 Knots	15- 25 mm (depending on the kicking strap tension)

## MAST RAKE

The mast rake is set with the rig tension adjusted to the conditions and without chocks. The tape measure is attached to the main halyard and hoisted to the upper most point where the mainsail can be set, the measurement of the sail is to the top centre of the transom.

WINDSPEED	MEASUREMENT
0 - 10 knots	6,74 - 6.71 m.
10 - 17 Knots	6,71 - 6.68 m.
17 + knots	6.68 - 6.61 m.

For more information do not hesitate to contact the one design dept. at [tonitio@quantumsails.com](mailto:tonitio@quantumsails.com)

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