



*One Design*

## Scorpion Tuning Guide

Mast: Selden Cumulus / Super Spar M7+

Mast Foot: 2795mm (From aft transom to aft face of the mast foot)

Spreader Length: 372mm (From the outside of the shroud perpendicular to the bearing surface of the mast track)

Spreader Deflection: 148mm (From the centre of the straight line drawn from tips of the spreaders to mast)

Wind Speed	Light 1-6 Knots		Moderate 7-13 Knots		Heavy 14-20 Knots		20 Knots +	
	Flat	Choppy	Flat	Choppy	Flat	Choppy	Flat	Choppy
Mast Rake (Ft + Inches)	22' 8"		22' 2"		21' 8"		21' 4"	
Mast Prebend	10mm		10mm		10mm		10mm	
Rig Tension (Pro Loos Gauge)	25		25	28	28		30	
Cunningham	None		Take out minor creases		Lower the cunningham block further by 30mm		Very Hard	
Outhaul	Hard	Ease 20mm	Hard	Ease 20mm	Hard		Very Hard	
Kicker	Take up slack		Keep top tell-tale flying 90%		Hard		Hard	
Flattener	None		None		Half on		Touching the boom	
Jib Sheeting	2000mm		2100mm		2200mm		2300mm	
Centreboard	Leading edge vertically down		Raise 1-2"		Raise 3-4"		Raise 5-6"	

To measure mast rake, send a tape measure to the top of the mast on the main halyard and measure 18' to the top of the lower black band, lock this off and then swing the tape measure to the inside edge of the transom on the floor.



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One string raking rigs are much more adaptable to conditions from that of tradition rigs. With the one string system, the mast rake is a setting that can be adjusted easily whilst sailing. The boat should be set up bolt upright with 22' 8" of rake in light airs and should be gradually taken back when the breeze starts to build and you are unable to hold the boom on the centreline (this will vary on the crew weight) As the breeze starts to build and more rake is applied, the kicker will need to be adjusted accordingly. In moderate to heavy airs it will be near impossible to keep the boom on the centre line when sailing upwind, apply kicker to keep the boom the same height when the mainsail is eased in gusts to keep the boat flat. Try and keep the outside end of the boom inside the back quarter of the boat whilst sailing upwind. Use the numbers in the tuning matrix as a guide, as these will vary slightly from boat to boat.

Kicker controls the amount of twist that is in the mainsail. If you have a traditional system as appose to a 'prodger' then this will also help bend the lower part of the mast and which will help to flatten the mainsail. In the light airs the kicker should be applied so the slack is taken out which will stop the boom from rising up when tacking and keeping power when exiting the tack. The kicker will need to be adjusted when more rake is applied to try and keep the same leech profile.

The mast prebend is the distance measured between the main halyard and the mast track at spreader height when the rig is in place and under tension with the halyard tale tight up against the mast track at the goose neck. This measurement is kept the same throughout the wind range.

The Cunningham has two effects; moving the draft forward and bending the top half of the mast. In light airs no Cunningham should be applied so it induces small amounts of speed creases, as the breeze builds and you're looking to de-power, start to take out these creases gradually. Before the outhaul is applied, make sure that the tack ring is kissing the top of the boom (fully down).

The flattener is a second eyelet in the clew of the mainsail that is only used when crews struggle to get underneath the boom when tacking upwind when the mast is fully raked back. Therefore this should only be used when fully raked back.

Jib sheeting in the tuning matrix is measured from the bearing surface of the pulley on the jib car track to the centreline of the inside edge of the transom. As the mast is raked back the jib cars will need to be move forward to control the leech twist on the jib, if you follow the tuning matrix as a guide then you should fine. The upper part of the slot should be kept as narrow as possible to get the most out of the rig.

This is purely a tuning guide and has been prepared to help you get the most out of your North Sails as quickly as possible. Some of these numbers will differ from boat to boat. Feel free to modify and experiment in small steps to find what suits you best. If you find settings that really work well, mark these clearly and please keep us informed.

**Good Luck on the Water!**