

Hurricane SX (Tuning Guide)



(for the 'Fat Head' main and new class rules 2009)

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Welcome to the New Rules Fat Head HSX!



My hope in writing this tuning guide is that the fleet sails faster and continues to spread the wealth as we learn how to get every extra knot out of the boat! When you pick up a useful tip, post it on the forum. <http://hurricane59.myfreeforum.org/>

Whilst there are a lot of numbers and settings in this guide, please treat them as a 'bench mark' only, they are a good way to 'get you into the right ball park' but the fastest way to sail is developing your own feel for the boat....PRACTISE like Elvstrom said, time on the water is the only way.

The Hurricane remains an incredibly smooth, strong, beautifully balanced and stable performer with bursts of acceleration and far higher top speeds than ever before.

The mast is very much up to the job and so long as you ease the downhaul before the kite goes up and you watch how the mast section is coping as you drive the boat hard. You can play the main sheet without fear of breaking the mast downwind.

When its windy with big waves downwind, make sure your foot strap is on the back corner, put your crew in it and put the hammer down, this is where the fun begins! But don't forget, only move back as the boat needs it to ride up and through the waves, go back too early and the boat will drag its stern!

You will certainly find that you will need to relearn many of your sailing techniques in order to get the most out of this new boat. Forget the settings used for the previous 'pin head' sail this boat needs an entirely new rule book.

I hope you enjoy this guide.

The Hurricane remains, quite easily the best value fast catamaran on the market, nothing comes close!

Mast Setup

(NB: this is for a 'soft' or slightly newer mast sections, generally from sail number 400 upwards, for the stiffer masts you may want to add additional rake for increased thrust.)

Diamond spreader rake

Before the mast goes up, you should set the spreader rake. The amount of fore and aft rake (or angle) in the spreaders defines how easily the centre section of the mast bends as the mast is loaded with diamond, then downhaul and finally mainsheet tensions.

Make sure that you measure the spreader arms independently, to ensure that they are both at the same angle fore and aft, they should also bisect the angle where the spreader end meets the diamond wire.

Alan and I are both 12 stone and run 40mm of rake as measured in the photo. As a basic rule, if you are heavier than us you will want to decrease the spreader rake, if you are lighter than us you will want to increase it.



Diamond wire tension

Probably the most critical piece to get right when you are sailing, without this the boat won't accelerate cleanly and you'll be fighting the main, regardless of how much downhaul you use.

For our crew weight, we found that in Force 7-8 we wind the diamond tension on to 42 on the loos gauge, there will be about 1cm of unused thread at the top of the bottle screw. NB: this translates to 42mm of prebend in the mast measured at the spreader attachment point. (pull the main halyard tight, touching the end of it to the mast foot)

We re-adjust this each time the wind strength drops by 2 beaufort levels approximately, the fine tune is done by feel.

So, Force 7-8 +8 turns, Force 5-6 +6 turns, Force 3-4 +4 turns, Force 1-2 +2 turns. The diamond tension minimum is around 25 on the loos gauge, this is what I refer to as zero turns.

Think of diamond tension as a course tune, then on the water you should use downhaul as medium tune so that when you get it right you will be playing about 1-2ft of mainsheet, fine tune. (With the occasional gusts which are beyond the mean gust requiring more ease than this)

We use a small adjustable spanner tied to the tramp and a small snap shackle through the bottle screw to stop it releasing when its not supposed too!



One rusty spanner, fits the bottle screw perfectly and the snapshackle stops it unwinding accidentally, you can easily adjust this between races.

NB: this is maximum diamond tension, any more is for the brave.

Mast Rake

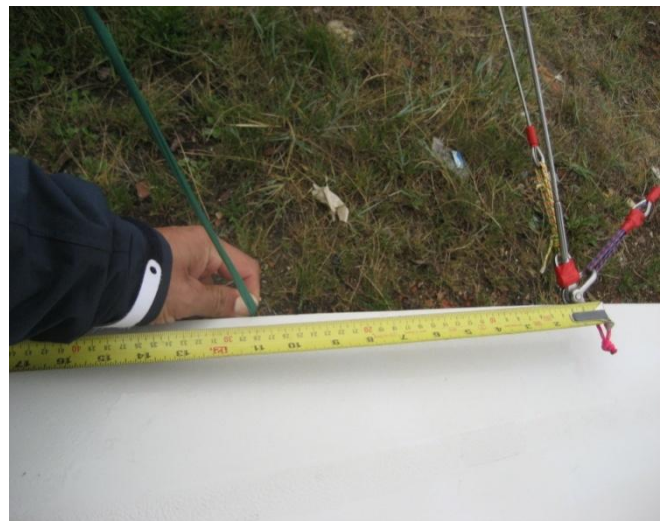
We found that we had to bring the rake back from our old settings. The Hurricane while relatively long at 5.9m is a relatively fine entry bow and upwind the bow ride height is key.

We found that the 'pink' water line on 'The Presidents' is the bench mark. Upwind, it should be slightly below the surface in light to moderate wind with flat water and should gradually lift as the wind and waves build, allowing the hull to accelerate. The max point being the 'turn of the bow' should sit just above the water in extreme conditions, but no more.

We found that this means the upwind crew position is further back than our previous habits, with Alan typically standing with his back foot on or near to the shroud (which is actually mid-centreboard, perfect!), as the breeze really builds his feet were either side of the shroud plate.

We found that 28cm of mast rake meant that the boat will accelerate nicely without any tendency to drop the bow in too far hence slowing the boat down. Obviously if you have differing weights to us, you will need to adjust our numbers slightly to suit your needs. Rake further if lighter, or go more upright if heavier.

To measure the rake, take a trapeze line and add a short piece of rope to it. Take a mark at the stern.



Then without moving your grip, take it to the front and measure the distance from the aft edge of the deck to where your grip just touches the inner front edge of the deck.

For us its 28cm.

Rig Tension

An easy one. We set the rig in most conditions to 30 on the loos gauge. With the clevis pins on the shrouds its not easy to alter the tension in a fine tune way.



Spinnaker Gear Setup

Spinnaker Pole setup

(Before setting up the spinnaker pole, stand the mast up and apply rig tension) The spinnaker chute has to be one of the easiest to hoist from I have ever seen. The tactic compass sits perfectly behind the forestay and out of the way of the jib. (Bracket available from Andy Webb awsailboats.co.uk)

Note how the spinnaker pole is tied close to the bottom of the forestay. (a small strong shackle is supplied as standard)



The main thing here is to ensure that you have a nicely pre-bent pole. The pole is absolutely up to the job, but if the bow bridles are too loose, you will have a folding pole very quickly! As we discovered at Grafham in 2008!

The test is to stand so your view is just like the photo. Then ask your crew to lift the boat (from the spinnaker pole end) so that the bows just lift away from the launching trolley. If the pole is straight at this point, it will break when you sail in strong winds.



Our measurements (assuming that your rake is set like ours) are: 174cm from pole end to bridle tang.



Don't forget we all have one design kites so the hoist height is the same. This simple approach will not work entirely on other spinnaker set ups, ie the sport kite.

However the principles remain the same, the main one being that the distance between the pole end and mast head turning blocks should be approx 8cm shorter than the luff length of the spinnaker. (measuring between the bearing surfaces of the blocks and bearing surfaces of the spinnaker eyes respectively.)

The hoisting rule here is, when its windy or you are on a close reach, halyard goes all the way up. In light conditions ease it 6inches, this helps to bring the spinnaker round in front of the boat a little better and makes its easier to trim.

Tip: mark the halyard at the spinlock jammer so that your crew has an easy confirmation that the spinnaker is all the way up!

Spinnaker Sheet turning blocks

I'll cover the set up in three steps. Ratchet block positioning, sheet block positioning and re-siting the sheet block cleat which controls the sheet block position.

Spinnaker sheet Ratchet block positioning



The ratchet block has a small self tapping screw into the beam to its port side. This prevents the block sliding over to the trampoline and getting caught up. It also leaves the rotation cleat fixed to the deck, clear to operate cleanly.