GP14 Technical - Tuning

This tuning guide is reproduced courtesy of Richard Estaugh and Speed Sails.

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This tuning information is only a guide and some boats/helmsmen will require slightly different measurements. You must also make sure that everything in the boat works properly.

Measurements

Mast Rake

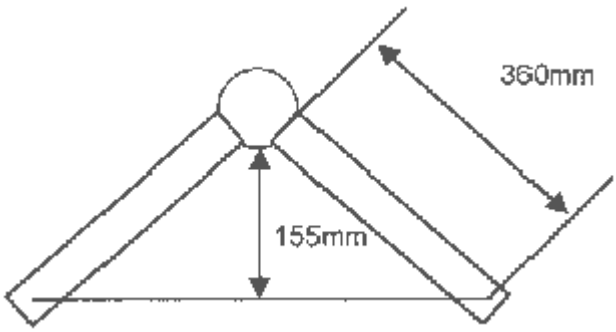
Mast rake should be 21ft 10ins. Attach a tape measure to the main halyard and measure 18ft to the black band at the gooseneck level, then swing the tape to the transom and measure to the top of the transom using 400 lbs. of rig tension.

Rig Tension:

Light winds:	350 lbs. measured on the shroud
Medium winds:	400 lbs. measured on the shroud
Heavy winds:	440 lbs. measured on the shroud

Spreaders

Length: 360mm Deflection: 155mm



Pre-bend: 3/4" with no genoa on the boat, once the genoa is hoisted and the rig tension applied at 400 lbs. the mast should be straight.

Mast Heel: 2835mm back of transom to bearing surface of back bolt in mast step.

How to Achieve the Measurements

Spreaders

The length of the spreader is taken from the sidewall of the mast to the shroud. The deflection is taken by placing a

straight edge from the shroud and then measuring from aft face of the mast to the straight edge.

Mast

The measurement of 2835mm is taken through the transom flap from the back of the transom to the bearing surface of the rear bolt. Make sure the tenon sits snugly in the mast step. Now hold the mast about 1/3" to 1/2" of the way out of the gate, then attach the shrouds. This will get you very close to the correct rake. Make sure that you have a very strong mast gate. You should now have about 3/4" of pre-bend. Measure this by pulling the main halyard tight and hold it next to the gooseneck. The distance at spreader height between the main halyard and the back of the mast should be 3/4".

Now hoist the Genoa and apply 400lbs of rig tension. Measure this using a rig tension gauge on the shroud at the same height each time. If you now pull the main halyard tight to the gooseneck there should be virtually no gap i.e. a straight mast.

Mast Rake

This is where it is important to remember that the measurements are only a guide as the rake measurement can vary from 21' 9" to 21' 11". It is important to make sure to set the tape measure to 18ft at the lower black band, by using the main halyard rack, every time you check your mast rake.

Rig Tension

This should be easy to adjust. I feel the best place to locate this control is on the centreboard capping. The tension should only be adjusted according to changes in wind strength and not according to the leg of the course.

The majority of sailing will be done with a tension of 400lbs in a Force 2 to 4. Below force 2 reduce the tension to 350lbs and in almost flat calm conditions down to 300lbs.

Above a Force 4 increase by small amounts to 440 lbs. **This does put a lot of strain on the boat so if you have an older boat be careful. If in doubt use a lower rig tension**.

The Genoa

The tack of the genoa should be as low down as possible, which normally means connected directly to the bow plate fitting. This is done to make sure that there is as small a gap as possible between the bottom of the genoa and the deck.

You should now find that the clew of the genoa will be about 3" from the fairlead if the mast rake, spreaders and rig tension are correct. This is true for most makes of boats and masts, however there can be exceptions.

The sheeting angle on the genoa is also very important. If the line of the genoa sheet is extended it should follow the pencil line on the genoa that goes through the peaks of the stitching. This will mean you are virtually bisecting the angle formed by the leech and foot, but sheeting slightly more down the leech. I use this setting in light and medium conditions and move the fairlead back one hole in a Force 4 and above and back two holes in very windy weather. As the leech of a GP 14 is fairly weak, the actual sheet tension when on the wind has a big influence on the slot, particularly in light winds.

Once you are both leaning out then the genoa sheet should be sheeted as tight as possible, as the wind drops and the crew starts to move into the boat then the sheet should be eased, but only by about 1/4" at a time. The sheet should only be eased about 2" between fully in and fully out.

I position my fairlead tracks right in the middle of the deck.

The Mainsail

One of the most important settings for the mainsail comes when the sail is first hoisted and that is the luff tension. In light winds the sail should not be pulled right up to the black band, but set about 3/4" below, this is so that small

creases are visible all the way up the luff coming out of the mast. If a ridge of cloth forms just behind the mast the sail has been hoisted too high. It is better to have not quite enough luff tension than too much as the cunningham can always be used. Once the wind is above a Force 2 the sail should always be hoisted to the black band.

The Kicking Strap

All the controls are important but the kicking strap has the greatest effect on boat speed. The purchase should be about 16:1 and certainly no less that 8:1 and the control lines should lead to the side decks.

A tell tale has been positioned on each batten pocket and these are vital to the correct use of the kicker, particularly in light winds. The top tell tale is by far the most important and most of the time the bottom two can be ignored.

Every effort should be made to keep the top tell tale flying all the time. I find the best thing to do is pull the kicker on until the top tell tale disappears behind the mainsail and then ease the kicker until it reappears, for most conditions you will have the correct settings. When using this method to set the kicker on a reach and a run you will probably find that you use a lot less kicker than you used to, this is fine in light winds, but can make the boat unstable in strong winds.

Once the wind strength is above a Force 3 the tell tales will fly constantly no matter how much kicker you put on. The best guide I find is that if you feel the boat is under powered then you probably have too much kicker on. If you are not pointing and are struggling to hold the boat upright then you need to apply more kicker. Once the wind strength is approaching a Force 5 then it is just a case of using as much kicker as you can.

The Cunningham

The cunningham is a control not given a lot of use. I always like to see a few creases coming out of the mast at right angles in all winds. As the wind increases just use enough cunningham to stop the creasing becoming excessive.

The only time a lot of cunningham should be used is in very windy weather. This control should also be led to the sidedecks.

The Outhaul

The outhaul control I still have fixed to the boom but have a 4:1 purchase. I keep the outhaul pulled out tight at all times when on the wind except in a lumpy sea in about a Force 2 when I ease it about 1". On the reaches I ease the outhaul about 1 1/2" to 2"; but no more as you then start to lose sail area presented to the wind. On the run I again keep the outhaul pulled well out. The only exception is on a close spinnaker reach when I would let the outhaul out by slightly more than 2".

The Spinnaker

The head of the spinnaker should be flown about 3" away from the head of the mast and this should be done by putting a stopper knot in the spinnaker halyard.

Because of the size of the spinnaker there is no advantage to be gained from sheeting to the transom, in fact I find the extra sheet more of a disadvantage. I put the fairlead at the widest point on the boat.

The spinnaker pole height control is led to the side of the centreboard case just forward of the thwart so that it can be easily reached by both helm and crew, The height of the pole is rarely moved once it has been set so that the clews of the spinnaker are level. The only exception to this is when the wind drops to very light and then the pole is lowered to encourage the spinnaker to set.

The actual system used for hoisting and lowering the sail is really a matter of personal choice. The system I use is just a straight forward one to one purchase, however people are using a 1:1 outside the boat with a 2:1 inside.

Good sailing

| Contact | Back to Top |