



TUNING GUIDE

MIRROR NEW RIG by Ross Kearney, 2011 Mirror World Champion

Sails: Pinnell & Bax

Crew Weight: 16-17 stone

Inside transom to aft of mast step = 2129mm

The boat builder should position the centreboard as far aft as possible under Class Rules.

All measurements for rake are taken from the top of mast to top of transom. Pull a tape to 4m 22 measuring to top of the gooseneck giving datum point; now measure to top of transom to gain a rake measurement.

This ensures a constant top of mast point, transferable from boat to boat.

Fairleads

Bearing point between fairleads 715mm

Bow to bearing point of fairlead 997mm (taken to outside edge of the middle of the bow)

Tack of jib should be raised or lowered according to wind conditions use the top of the gun haul as a datum point.

Downhaul (Cunningham) 2 to 1 cleat on boom, place a pulley above the gooseneck on mast.

Outhaul 6 to 1 cleat on boom

Kicker 4 to 1 Cascade leads to the centre of the boat.

Spinnaker pole height

Bow of boat to bearing point of pole end 1430mm

Pole eye on mast 1070mm up

Mast Rake

Gaff rig - There is only one way to measure mast rake accurately and this is with a tape measure from the top of the mast to the transom. To do this in the Mirror you need to tighten the forestay so there is 180lbs of rig tension. Turn the boat on its side and measure the distance from the pin that holds the main halyard sheave in the top of the mast to the top of the transom (on the outside). This gives the mast rake. Try to sail with a mast rake of between 3540mm and 3570mm.

Bermudan rig – Pull a tape measure up the mast until the tape reads 4m22 to the top of the black band by the gooseneck. This creates a datum point so every boat can be measured the same. Now swing the tape to the back of the boat, on top of the transom along the centre line. The distance to the top of the transom should be 5010mm. With the mast raked to the correct position tension the forestay until there is 160lbs (15 on Super Spars gauge) On the shroud

To increase the rake move the shrouds down a hole in the chain plates (which gives a smaller number because the mast is raked backwards and the mast top is closer to the transom). To decrease rake move the shrouds up a hole in the side chain plates (this gives a bigger number). When over powered rake back half a hole to 4990mm and Tension to (18 on Super Spars gauge)

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Wind Speed (Knots)	0-4	5-9	10-14	15-19	20-24	25+
Mast Rake	5010	5010	5010	4990	4990	4990
Rig Tension (Shrouds.Lbs Super Spar Gauge)	15	15	15	18	18	18
Kicker	Loose	Loose	Quite Tight, Top Tail Stalling	Tighter	Lots	Lots
Reason	No	No	A bit	Yes	Yes	Loads
Reason	Top tell tale should be stalling 30% of the time			To control twist and blade out mainsail		
Outhaul	Tight creases along foot	Tight no creases	Loose a 15cm gap	Tighten	Tighten	Tight
Downhaul	None	None	None	Slight	On hard with increasing wind	On hard
Jib Height	One finger	Two fingers	Two fingers	Two fingers	One finger	Low as possible
Jib Sheet Tension	2" off tight	1" off tight	Tight	Tight	Tight	East to foot

N. B. Mast Rake is critical, so lighter crews may have to Rake earlier (14-15 knots)