

## Quantum Sails : J-105 Tuning

Old Class rule: 7.4 *To control mast rake, the headstay system length, measured between the centerline of the headstay pin on the mast to the intersection of the stem line and the sheer line at the bow, shall not be greater than 13035mm (42.767') nor less than 12985mm (42.60').*

Above is the old class rule for headstay length, the headstay should be 0 to .75" short of maximum. If your headstay has to be lengthened, add a toggle to the headstay at the top of the headstay. You want the tack of the jib to be as low as possible. The key to headstay length is to have helm or feel in light winds. But at the same time not have too much helm in over 10 Knots of breeze. If the headstay is too long, the Jib will tend to get too round, and you will have trouble getting the boat up to speed in winder conditions.

For Quantum Main move the mast step 9.5" forward of the bulkhead. This measurement is taken along the floor of the Head area and starts on the forward face of the fiberglass floor pan. This will allow your mast to develop around ½" of prebend.

The easiest way to check mast butt position is to check your mast pre-bend with the forestay set. With normal shroud tension, your spar should have ½" or slight pre-bend. If your spar has reverse bend, then you have placed your butt position too far forward. If your spar has more than a ½" of prebend, then you would want to move the butt forward until pre-bend comes down to ½". Mast butt position is very critical.

Now we are ready to center the mast and tighten the shrouds.

Take a tape and measure from your tack fitting on your headstay to the rail on either side of the boat 15' back. Then attach a 30 LB weight on your jib halyard and let it hang over the side. The weight should hang so that the halyard rubs against the rail at the mark you just made. Now mark the halyard at the rail of the boat. After you made the mark on one side, pick up the weight and do the same on the other side. If the mast is centered, the mark on the halyard should hit the rail the same on either side of the boat. Your upper shrouds should now be hand tight with the mast centered. Now tighten the uppers 7 turns. The tension on a loose gauge should be around 44.

After the uppers are adjusted tighten the intermediates hand tight and sight up the back of the mast to insure that it is straight. Adjust the tension until the mast is straight from side to side. The Intermediates can now be tightened 2 ½ full turns. The tension on a loose gauge should be around 12.

After the intermediates are adjusted, tighten the lowers hand tight and sight up the back of the mast to insure that it is straight. Adjust the tension until the mast is straight from side to side. The lowers can now be tightened 1 ½ full turns. The tension on a loose gauge should be around 16.

The mast should now be ready for sailing. The Rig should be adjusted for conditions that you face. Below is a chart of how I would adjust the rig for different conditions. The settings listed below are changes I would make from the settings listed above. In essence these are the changes you would want to make for a given condition.

<b>Knots</b>	<b>0-5</b>	<b>6-10</b>	<b>11-15</b>	<b>16-20</b>	<b>20+</b>
<b>Uppers</b>	35	38	44	50	54
<b>Intermediates</b>	0*	7	12	20	26
<b>Lowers</b>	0*	7	16	20	26

- 1 turn off 6-10 knot setting,

The key to the rig tension is to not have the leeward shrouds loose in over 10 knots of wind. So if we are sailing and see that they are loose we will tighten them until they are snug. Keep in mind that you want to tension both side equally. Again the key is that you tighten until the leeward side shrouds just come straight and are not loose. When sailing in lighter winds, under 5 knots, it is OK to have loose lowers and intermediates. This will allow the middle of the mast to sag to leeward and power up the main.

Good Luck, & Sail Fast,

Kerry Klingler

