

J-80 Tuning Guide & Worksheet

To start with the J-80 has been around for over 20 years. A lot of the tuning Guides and information is developed by sailors for the boat they race. Here is a guide that should be used to help you focus on what is important, and develop tuning to get the most out of our sails. Keep in mind that there are currently 3 different manufactures of the J-80. They are commonly referred to as the US Boat, the French Boat, and the Chinese boat. All three boats seem to be competitive. There are also 2 different spars, the Hall mast and the Sparcraft mast.

Headstay: There have been adjustments made on the method of measuring the headstay and what the length should be. For each boat there is a variation. Hopefully this will help you get close to ideal. Mast rake is very critical for getting the best all-around performance from your J/80. Because of the differences in the measurement from the black band to the mainsail halyard sheave box, combined with slight variances in the total length of masts, we have determined that mast rake should be (checked) measured from the bottom of the black band at the top of the spar to the closest point at the middle of the stern. . The mast rake test should measure 37' 4.5". See the document for mast rake test.

For the French boats an additional and easy measurement for rake is to take the jib halyard and mark it at the top of the black band at the gooseneck. Then take the halyard and ark it forward to the headstay and make a mark. The distance from that mark to the top of the bow of the boat, bent around the roller furling drum, should be 5'10". That measurement will develop a very close measurement on the mast rake test.

Partners: We raced with the partners in the standard location with the standard plastic chocks around the mast. Partners are centered in the mast slot, and cannot be adjusted during a regatta.

Mast step: For the US & French boats move the aft side of the mast (at the step) to 9.5" forward of the bulkhead. This will allow your mast to develop around 2" or 50 mm of prebend.
For the Chinese boat set the mast (at the step) to 10.25" forward of the bulkhead. This should develop the same prebend of 2" or 50mm.

Now we are ready to center the mast and tighten the shrouds. For tension setting on the rig we use a **Loos Pro model PT2 for all the shrouds.**

Take a tape and measure from your tack fitting on your headstay to the rail on either side of the boat 9.5' 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 10 turns. Loose gauge should read 24.

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 , Loose gauge should read 10.

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, Loose gauge should read 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.

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Butt	Mast	TWS	Uppers	Inter	Lowers	Uppers	Inter	Lowers	PreBend
Inches	Rake	Knots	Units	Units	Units	Turns from	Turns from	Turns from	
from	Test					Base	Base	Base	
Bulkhead		5	12	6	5	-4	-2	-2	2.5"
US		6	17	9	12	-2	-1	-1	2.5"
&		8	17	9	12	-2	-1	-1	2.5"
French		10	24	10	16	0	0	0	2"
9.5"	37' 4.5"	12	24	10	16	0	0	0	2"
		14	28	11	22	2	1	1	2"
Butt		16	28	11	22	2	1	1	2"
Inches		18	30	12	25	4	2	2	2"
from		20	30	12	25	4	2	2	2"
Bulkhead		22	32	14	27	6	3	3	2"
Chinese		24	32	14	27	6	3	3	2"
10.25"		27+	34	16	30	8	4	4	2"

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.

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