Before Tuning...

Mast Rake

Mast rake will affect helm balance and sail force. When you feel overpowered, you should rake the mast aft to de-power. It makes less overlap between main and jib. Doing so will:
1. Increase mast bend
2. Reduce heeling moment
3. Balance helm from resulting flatter mainsail shape
4. Increase the forestay angle makes the forestay tighter

But with too much aft-rake in full power condition, you will lose the power, speed and height. If your crew weight is light or you use a hard mast, you will meet overpowered condition in lower range than standard, so you must rake the mast further aft and more earlier.

To set up the mast to measure the rake, you should be using standard rig tension, the deck chock loose, and the tape measure at the mainsail maximum hoist position by the rule. The rake is measured to the top of the transom on the centreline.

Rig Tension

Why is rig tension required?
1. To transfer wind pressure of sails to the hull sensitively.
2. Prevent forestay from sagging.
3. To control the mast bend which affects the mainsail shape.

If rig tension is loose,
1. Unstable rig leads to loss of force.
2. Jib sail will get deeper and attack angle will become wider which can reduce pointing.
3. Can not control mast bend.

Measurement:
Set the Rig Tension as Sailing Condition and release the Puller, then measure the distance of (D).

Prebend

Pre-bend is defined by mast step position, spreader, and rig tension. If prebend is small at light and heavy wind conditions, it results in loss of speed from too much deeper sail shape and less leech twist (high drag & sideforce.)

Appropriate pre-bend may be changed by main sail design stiffness of mast and crew weight. For a soft mast or heavy weight team, you should set a small pre-bend. For stiff mast or light weight team, you should set more pre-bend.

Measurement:
Mast Pre-bend is measured using a stringline on the aft face of the mast touching the back of the track at the mainsail luff black bands. The measurement position is at the spreader position.
Sail Trim

In under 10knots of wind, you need to keep the boom completely at center. This makes a big difference in pointing angle.

For the regular trim, Keep the exit of the top batten parallel with the boom (fig1). For the better pointing in flat water in under 10kt of wind, top batten points a few degrees windward of parallel with boom, and the red leech ribbon on the top batten is stalled as much as 50% of the time so that you can go higher with the same speed.

In this condition the wrinkles at the half bottom of the luff is important to make the entry finer so that you can point higher without backwinding even the jib is trimmed tight. (you can see the details of how to control the wrinkles properly in "Bolt Rope Instruction" in our web page)

Outhaul

Outhaul controls the depth of a third bottom of the main. By easing it, it create more return at the bottom and weather helm which makes you easier to point higher. For the rough condition 1-15cm easing it works to get extra power to go through the wave.

Cunningham

When you pull the cunningham, the draft position will be moved forward and the leech will be opened giving a flatter shape. As the wind increases, there is a tendency that the draft will move aft. So you should pull the cunningham to get the proper draft position. In maximum wind condition, you must pull the cunningham harder.

Jib Tack

Jib Tack tension is very significant to control the entry angle and sag of the fore stay in vang-on condition. SS-B4 jib has fuller entry, so is required to leave some wrinkles to make the entry finer in light wind. So for the flat water more wrinkles, and for the choppy sea less wrinkles or just remove it. When the wind picks up to 12 knots of wind, you need to be tightened until the wrinkles disappear. The key is you can pick up comfortable entry angle by control the jib tack tension according to the jib design and sea condition.

Jib Lead

You will have one proper position for 1-11kt of wind as the regular position where you can hold the boom at center. (In very light wind 1-3kts it would be better to move 2-3 cm back from the regular position) As soon as the boom position becomes off center consistently, top leech has to be opened with flatter shape. Basically when you put the pins position down, you need to move back or hold it depends on the height of the jib.

Peak Rope

When you set up the jib, you need to adjust the peak rope so that some part of the foot touches the bow deck slightly when the jib is trimmed properly in 8-9knots of wind. (Deck sweeper) Photo 1

If you hoist the jibsail higher, it makes more gap between the sail foot and deck. Wind which flows under the jib foot is turbulent and causes loss of efficiency. At the proper, it makes the most effective sail area.

With hard on conningham, it works as it increases the mast bend at the top section. It makes not only the sail shape at the top section flatter, but also increase the mast tip side way bend when boom goes out. So it plays a role of mast bend control when you hard on it. This is very important to depower or decrease impact of gust.

Tack Rope

Hold at distance of 20mm from the back side of the mast in all the wind, you get the authoul tighter when wind picks up, the space of off-set gets wider, so pay attention to keep the same space of 20mm.

For the out-groove mast like Gold spar, Z spar, you need to add extra space which is the width of the groove.