

SB20 Tuning Guide

There are no hard and fast rules on set up as two very good sailors may have very different sailing styles that justify different set ups, but generally the following notes and tips will get you in the zone of where you need to be to be competitive. You can then fine tune your own tuning template based on your own experiences and sailing style.

Jerry Hill's Tuning Guide

| Wind speed knots | 0-5 knots | 6-8 knots | 8-14 knots | 14-17 knots | 18-25 knots | 25 knots + |
|---------------------------------|--|-------------------|----------------------------|------------------------------------|---------------------------------|-----------------------------------|
| Main shroud tension (Loos PT-1) | base - 3 turns | base - 2 turns | 38 | base + 1 turn | base + 2 turns | base + 3 turns |
| Lowers tension (Loos PT-1) | base - 1 1/2 turns | base - 1 turn | 35 | base + 1 turn | base + 2 turns | base + 3 turns |
| Topmast shrouds | Hand tight when backstay tension "firm" | | | | | |
| Gooseneck shrouds | Loose | Hand tight | Hand tight + 2 turns | Hand tight | Loose | Loose |
| Pre bend | 90 mm | | | | | |
| Backstay | Loose | Loose | Loose | Play | Hard | Hard |
| Traveller | Boom on centreline (traveller to windward) | Boom on cenreline | Traveller 10cm to windward | Traveller up to to 20cm to leeward | Traveller up to 30cm to leeward | Centre traveller & play mainsheet |
| Mainsheet | Light | Medium | Very hard | Play | Play | Play |
| Kicker | Loose | Loose | Snug | Snug | Hard | Loose |
| Cunningham | None | None | None | Snug | Hard | Hard |
| Outhaul | Tight | Tight | Tight | Tight | Tight | Tight |
| Jib twist | A lot | Medium | Minimum | Medium | Medium | A lot |
| Jib trim | soft | Medium | Hard | Hard | Hard | Hard |
| Jib car | 1st hole | 3rd hole out | 3rd hole out | 5th hole out | 7th hole out | 10th hole out |

Thoughts on Sheet Control

Sail controls

Traveller
Not user-friendly, so many use mainsheet to control angle of attack and vang to control twist in medium winds and above. In light winds, pull traveller right up to keep boom on centreline while maintaining twist. Top telltale flying all the time. In sub-powered conditions, play main and traveller to keep boom on centreline with top telltale streaming 75 per cent (flat water) to 90 per cent (very bumpy) of the time.

Outhaul
Easing outhaul increases fullness in base of main. Ease 25mm max in medium-wind lumpy conditions. Don't ease offwind if there is any possibility of forgetting to pull it on before the leeward mark.

Vang
Controls twist and flattens lower third of mainsail. In powered-up conditions and above, control twist with vang, pull traveller to windward and react to gusts with mainsheet. As wind increases, increase vang tension in line with backstay and cunningham.

Cunningham
Flattens top of mainsail and cleans up lower half of mainsail. Adjust in line with backstay.



Thoughts on Mast Control

Lowers (D2) – These work to straighten the lower half of mast. Ease lowers in lighter winds to allow the mast to bend. Easing lowers in sub-powered conditions allows a little mid-mast sag, which holds the topmast straighter sideways.

In stronger winds, wind on the lowers in proportion with backstay tension coming on. This allows you to flatten the top of the main and to induce twist, without starving the lower third of the mainsail through overbend.

Gooseneck lowers (D1) –

These straighten lower quarter of mast and prevent the vang overbending the lower panel.

Adjust gooseneck lowers in line with lowers, so they are hand tight with no sailing loads. This ensures a nice smooth bend profile.

Topmast shrouds – These stop the mast inverting offwind. They also hold the topmast up sideways in sub-power conditions. Set these so they just go slack on the dock when you pull in 1m of backstay control line. Make sure they both go slack at the same time.

Shrouds – First adjust the shrouds from side to side to get the hounds directly above the mast base. Check this with no tension in lowers, by swinging a weight off the jib halyard down to each shroud plate. Once the hounds are central, wind on equal turns to get to the 'light' tension setting on the tuning matrix.

Then wind on lowers, periodically sighting up mast to check spreader bracket is in column. Adjust with individual lower tension until lowers are set to base setting. Shrouds should now be close to base.

Increase shroud tension as breeze increases to reduce jib sag, decrease in lighter winds to induce sag and deepen the front of the jib.

Backstay – Bends mast, flattening mainsail and straightens forestay, flattening jib entry. Use backstay to depower when boom approaches gunwale as breeze increases.

Ease backstay downwind, but don't ease it right off to the knot in a breeze. Give mast a little bit of backstay support when windy.

Jib halyard

High jib is equivalent to jib car forward: reduces jib twist and increases depth at base. Low jib twists jib, opens slot and flattens base.

Generally, set jib halyard so that middle of foot is 35mm from deck with jib cunningham just taking out 'scallops'.

Mark the forestay with tape approximately 400mm from tack, with a corresponding reference mark on jib to aid consistency.

Jib cunningham

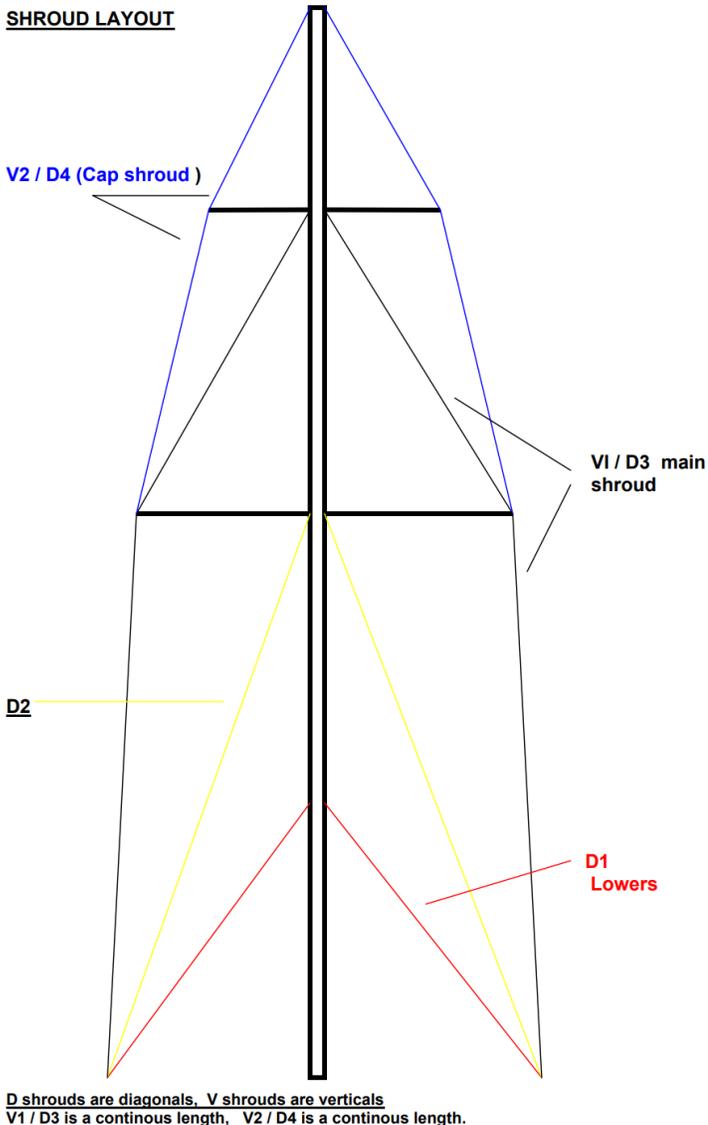
Increase jib cunningham in stronger winds to pull base of jib lower and twist and flatten.

Decrease cunningham in light winds so you can ease jib sheets without excessive twist.



More thoughts on mast control

SHROUD LAYOUT



Think of V1/D3 and D2 as opposing forces: increase V1/D3 tension and the mast bends more; increase D2 and the mast is straightened. Increasing rig tension therefore does not change the amount of prebend but reduces the effect of increasing backstay tension on the main and reduces jib luff sag. A rough guide to rig tension would be to have the leeward shroud just slack in all conditions, provided that this is achieved with no lateral bend. The main reason to reduce rig tension in light airs is to increase jib luff sag.

The optimum rig tension will allow the sails to adapt equally as the wind increases, i.e., jib luff sag will reduce in increasing breeze, therefore flattening the jib, and moving the draft aft, and the mast will bend more having the same effect on the main. The trick is to keep the two sails changing in unison. For example, if rig tension is too low, then pulling the backstay to reduce jib luff sag will bend the mast to much and cause the main to invert. The mast will also compress more and so jib luff sag will not later much. Net effect: jib too full, main too flat.

As the backstay gets tightened this will cause increase twist and flatten the top 3rd of the mainsail. It is probably right to increase mainsheet tension at this point to counteract some of the increased twist. The principal aim of using backstay is to reduce jib luff sag and depower the jib.

In general, it is probably better to tune the rig to the lulls as it is easier to depower in gusts than it is to increase power in lulls.

Main control: in general, a more twisted main will allow rapid acceleration (ie good in a steep chop), but a closed leech will allow better pointing. Therefore, as breeze increases in flat water then the mainsheet tension should be kept tight, but traveller dropped down to leeward. In a chop it is better to keep traveller up to weather slightly and play the mainsheet.

The vang predominantly causes mast bend in the lower part of the mast and flattens the main dramatically in its lower third and should be used early on as the breeze increases. There is no logic to having the D1s with any tension on them as this would prevent mast bend at this level. The vang would then predominantly close the leech, which is probably more effectively achieved with main sheet tension. Perhaps they should be tightened in heavy breeze to allow the backstay to have more effect on rig tension.

The jib halyard remains a powerful part of the jib depowering plan: perhaps best to think of it as a way of reducing the depth of the lower third of the jib – as breeze increases, lower the jib, which has the effect of opening the leech of the jib will allows increased jibsheet tension to close it again, with the net effect the same as moving the jib cars aft.