



## **JSail Guide – A few tips from FORCERACING**

This guide aims to help you to get the maximum speed out of your sail in all wind conditions. This guide is quite technical and pitched to quite a high level.

The first thing we must understand is that there is no magic formula that achieves maximum performance from our sailing. The correct setting of the sail depends not only on the wind and waves but also on the sailor's weight, strength and technique.

Every sailor is different, and every day we face different wind and sea conditions, we must understand how the different controls we have on board work and how they affect the sail; to find the perfect combination that will make us faster. The constant adjustment of the sail to the changes of conditions is the key to maximize our speed.

### **CHOOSE YOUR SAIL**

Dinghy sailing is more or less the same: for light weights, flatter sails are faster. You need power if you're a stronger sailor. You can also choose a sail for your peak regatta – if it is a predominantly light wind venue, maybe the red is a better sail for that regatta or a strong wind venue, then the blue could be the better choice.

The **Classic RED** is the most powerful sail, the **Classic BLUE** is a medium sail and the **Classic GREEN** is an excellent sail for those with less experience or who are very small.

There are also two types of cloth available the plain cloth and the squared cloth. The plain cloth is a stable longer lasting cloth, where as the square cloth is slightly lighter, and could be better at a lighter wind venue.

### **CONTROLS:**

**Sprit:** The sprit tension is the control that we will re adjust most frequently with different winds. The sprit tension is very important on the J Sail, as the design concept of the sail is that it is designed with a rounded leech, so an over tightened sprit is not fast on a J.

Something to consider is that when sailing we have two winds: the prevailing wind and the gusts. We should always adjust the sprit tension to the prevailing wind and when the gusts blow we should see some creases on the sail as if the sprit was not tight enough. **ALWAYS SET UP FOR THE PREVAILING WIND.**

There is something very important that we must know: the sprit is the control that has more influence on the leech. This is very important to understand, especially when we sail in very light or strong winds.

If the sprit is too tight, it will cause excessive leech tension. This is the worst thing that can happen to us in light winds. Always make sure that in light wind the sprit is quite weak. Even a small fold due to being too loose could improve the speed at extremely light conditions.

In case of very strong winds, when you are over powered, (This wind strength is different for each sailor depending on your weight, strength and technique) you should reduce the sprit tension in such a way that appears a fold on the sail, as if the sail was divided into two halves. The look is not very elegant, but the sail works perfectly in all directions. Just relax and enjoy



the speed you'll get from this! However if you have to set up like this too frequently you should ask yourself if a less powerful sail wouldn't be better for you.

In the moderate wind when you want power make sure the sail looks perfect upwind with no creases at all, unless a bigger gust comes along.

**Vang:** The vang is another control that controls the leech of the sail. Again it is imperative not to over tighten the vang in light winds (set the vang up for downwind tension only in lighter conditions).

The vang keeps the leech tension when in the gusts we ease the mainsheet upwind; or (and most importantly) when we go downwind the vang tension keeps the leech trimmed so there is not a "big balloon" in the leech. Downwind the top batten and the boom want to be at the same angle.

When we go windward the vang often doesn't have any tension (the vang is loose)... in this case the leech is controlled by the main sheet.

In case of upper medium and strong winds we tighten the vang enough to keep the boom to the correct height even when we ease the mainsail in the gusts.

**Outhaul:** Controls the depth of the sail in the lower part of the sail. The outhaul also controls the amount of leech round in the bottom of the sail, the more you ease the outhaul the more rounded the leech becomes.

**Recommended tension:** When the outhaul is loose, the vertical folds should just appear. It is important that the boom ties are tied to 8-9mm of the boom. In flat water and moderate wind it is preferable to have the outhaul eased, to gain height from rounding up the bottom leech. When it is difficult to keep the boat flat in strong wind, we must tighten the outhaul to flatten the sail. Tight outhaul means pulling on as much outhaul as possible, then pulling it on some more!!!

When it is extremely light wind we need the outhaul firm (not tight like explained above). This is so the wind can flow over the sail.

Otherwise set your outhaul up so if you need power have the outhaul eased, and if you are at you maximum power pull the outhaul on.

**Rake:** With mast rake we will get reasonably technical but we will also give you some "base" settings. Measuring rakes from boat to boat and mast to mast is all slightly different as mast steps are a few mm different and every mast is a mm or 2 different as well. Rake should mainly depend on the feel of the boat – not the number that you have been told! A number is just a number at the end of the day!

Mast rake of 2850mm is the base measurement – if you're slightly lighter try it back at 2820mm – 2830mm, if your heavier 2870mm has also worked. Read below on what you should be "feeling" on the water and what you change.

- We must be sailing upwind on starboard tack, to avoid the sprit interference. We are trimming the boat fore and aft and having the boat flat. The boat must be perfectly flat, not healing at all (remember that the maximum speed going upwind is always like that).



- All the controls (vang, sprit, outhaul, cunningham) must be correctly adjusted to the current conditions and the telltales perfectly oriented. If the rudder is heavy (weather helm), you need to put the rake forward. If there is no feeling at all in the rudder then rake the mast back. The other way to test how rake should be is by: letting go of the tiller to see what happens; If the boat luffs too quickly we must move the mast forward. If, by contrast, the boat wants to go downwind, we must decrease the rake of the mast. Repeat this operation until the boat luffs gently. This is the **balance** we want.

In case of light wind the correction will be very little, but in medium or strong wind days we need to rake the mast forward to compensate for mast bend. By doing this we balance the centre of effort. We must maintain this balance in any wind conditions, and that is only achieved by modifying the rake in the described way. It should not give us fear of having to give many turns in the cockpit. The only target is the balance.

For curiosity, when we are back onshore, you should measure your rake you were sailing with, just to check what the rake was. Sometimes the numbers will surprise you..., but if the boat was balanced, that was the correct rake at that time (which does not mean that it will work the same in the next regatta, it has to be readjusted again to gain that balance).

However in very strong wind you should set your rake up so the mast is raked back to 2820mm as a starting point. Remember to still do the same technique to get the boat balanced and feeling good!

### **The sail height limiters:**

**Height Control:** It controls the sail height. In case of low wind the sail must be as high as possible (without touching the upper limit of the measurement stickers); in case of strong wind the sail should be as low as possible (without touching the lower limit of the measurement stickers). This is the diagonal rope at the top of the mast.

**Lower (or cunningham):** It controls the luff tension. The cunningham, which has to be always installed, has to be adjusted in the following way: Have your rope set up that 0 turns is your very tight - very windy setting – you should get a drum tight twang on your luff. It takes a bit of time to set this rope up so it is the exact right length. Then you count the number of turns you have in your rope for the different conditions. When you are not full powered it is good to have this setting loose (maybe about 4 twists in the rope), then in the moderate to strong you have the luff firm and in the very strong wind you have this setting tight (0 turns).

**Main sheet:** This not only determines the sail angle, but also has a huge influence on the leech when we go upwind. This means that whenever we sheet in or ease it, we adjust the sail angle against the wind, but also change the leech tension.

The mainsheet is the sail control we are always holding and also is the control with the biggest influence over the sail. The j sail is quite easy to trim when you are used to what you are trying to achieve with trimming the mainsheet.

With the sail being a rounded leech sail, you do not need to over trim the sail to gain your height. Let the sail breathe and let the sail do its work to gain you pointing. In the lulls be active by letting the sail out a little, bearing away to gain speed before trimming back in again for pointing. Look at your leech telltale and see what it is doing when you are going fast. In chop and



extremely light conditions make sure you do not over trim the sail. If you are unsure on sail trim, ease the sail a little, get your speed up then go for pointing again.

Make sure you have a nice long stop to your mainsheet block so you have less actual heavy mainsheet rope in your boat that is wet!

#### **Sail ties:**

#### **MAST TIES:**

1<sup>st</sup> Fit the sail as always, leaving all the mast ties loose except the top and the goose neck ones, which should have a distance of around 2mm from the mast and sail.

2<sup>nd</sup> Tighten the mast ties so they are around 1mm from the mast, and all ties are even.

If you are searching for power when it is windy and your mast is bending, then the best thing to do is to tie all the corners of the sail on, put some sprit on and pull the mainsheet on to bend the mast. Then tie the luff of the sail up so the luff is straight even though the mast is bending, this will power you sail up. \*Please note only try this if you are still searching for power in stronger winds, once the mast starts bending more, and remember the maximum you can tie the sail from the mast is 10mm – so do not risk it.

In this way we allow the mast to bend as much as it needs without altering the sail shape.

It is not necessary to readjust the ties to different wind conditions (except for what is explained above)...

#### **BOOM TIES:**

The maximum the sail can be tied from the boom is 10mm. It is best to then tie the sail at 8 to 9mm to be within the rule. For very big regattas to be safe, super glue the knots together to avoid a penalty from the measurers (1mm is not worth a penalty).

### **FINAL BOAT PREPARATION**

The fine sail tuning needs to be done while sailing, when we know the real wind and wave conditions. You can readjust the outhaul, the sprit, the vang, the rake and the cunningham on the water. You must ensure that the boat has enough power to pass through the waves and that the boat is going fast! You need to test your set up before the race to get the boat tuned for the race conditions.

#### **Get 100% of your sail:**

Are we getting the most out of our sail?

As we mentioned earlier there is no magic formula to prepare a sail. Then, how can we know if we prepare perfectly the sail for the different conditions? Seeing the evidence from speed testing is the answer. The best and the only way to see if your sail needs adjustments is testing your boat speed with other sailors who have a similar level. It is very important that during the tests, the changes are introduced one by one and tested several times before the next change.



If you introduce several changes at the same time you will never know which of them have really affected the speed.

Forceracing would like to thank Eduard Rodes a Spanish coach and J Sail Spanish importer for the base of this tuning guide. Forceracing would also like to thank the J Sail team in Poland for their help and development of these sails.

Good luck!

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