

Kemp Sails

Trimming the headsail

Once you've bought your new sails from Kemp, we want you to get the best from them, which is why we've produced this trimming guide. We hope you find it useful.

Whether your headsail or mainsail is bigger, it's generally best to start the trimming cycle from the bow and work aft, since the headsail's shape has a direct bearing on the wind flow across the mainsail. But before going into detail on how to achieve the perfect shape, let's look at the four principal tools you have at your disposal: sheet tension, sheet lead position, backstay tension and halyard tension. On some boats, only the first is ever adjusted, but the others also have a major part to play. So, what do they all do?

The backstay controls forestay tension which, in turn, largely determines how full the sail is. Ideally, your backstay should have an adjuster (not just a bottlescrew, which is difficult to adjust under way). If it doesn't, you must make sure that your backstay is tight enough to stop the headstay from sagging too much in fresh conditions. Sufficient tension not only improves speed and pointing ability, but helps you sail more upright, reduces unfair strains on the rigging terminals, and ensures smoother operation of the roller reefing gear.

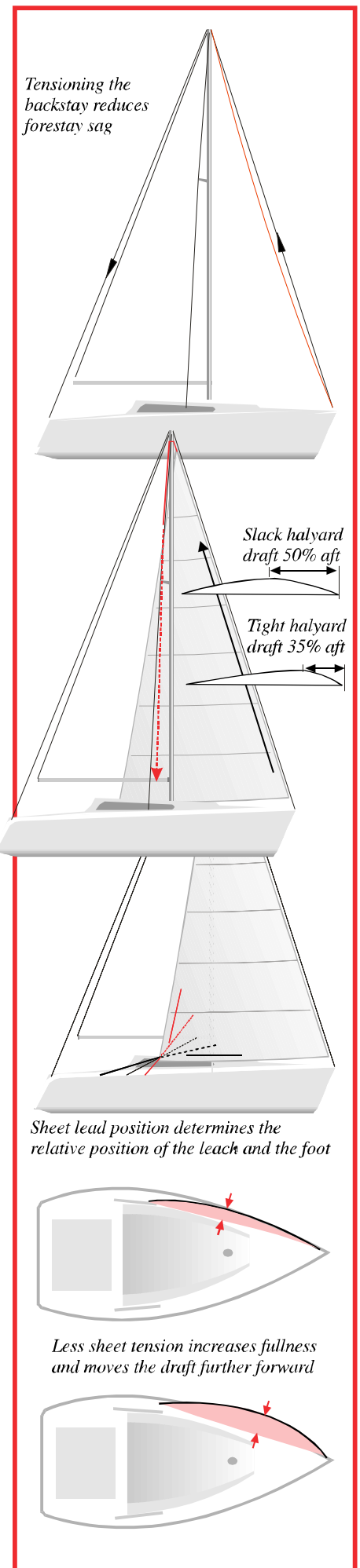
Halyard tension moves the draft (the deepest point of the sail) forward and aft. On a sail with camber stripes (like Kemp's Performance Cruising range), it's easy to judge the draft position by lying on the foredeck and looking up the sail. Broadly speaking, it should be about 40% of the way back from the luff, though the exact position depends on the conditions. In any event, it should never be beyond 50% though it may have stretched further back on your old sails.

Apart from moving the draft forward, halyard tension also flattens the sail. But if you've tensioned the halyard for stronger winds, don't forget to slacken it before furling the sail away.

The **sheet lead position** is primarily responsible for controlling the sail's *twist* - the relative tension of leech and foot. Some boats have tackles led back to the cockpit so you can move the genoa cars along the tracks without going up on deck, but usually you have to slide them forward and back by lifting the plunger. With most roller genoas, it's best to adjust the lead position whenever you wind or unwind more than a roll or two.

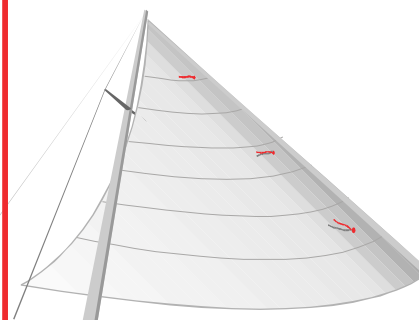
Sheet tension does more than simply pull the sail in when you're going upwind! It affects the sail's fullness (more tension makes it flatter) and draft position (less tension moves the draft forward).

Setting up the rig is also important in helping you achieve best results from your new sails. Essentially, the mast needs to be central and straight athwartships, with the right amount of pre-bend (fore-and-aft curve) and rake recommended by the builder or designer. Enough rig tension is crucial too - the leeward cap shroud should never be waving around in the breeze. The world's best sails won't do their job efficiently if the rig isn't set up properly!

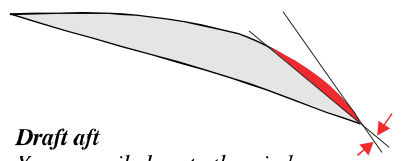




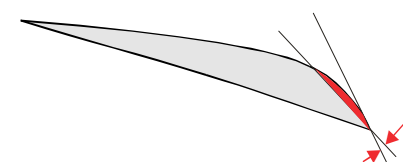
Top telltale lifts
Leech too slack - move car forward



Bottom telltale lifts
Leech too tight - move car aft



Draft aft
You can sail close to the wind,
but pointing too high loses drive in a
large area of the sail.



Draft forward
You won't be so close winded, but the
sail is more tolerant.

Start by going out on a nice day! Not only is it easier to get to know your sails in moderate conditions, but it's kinder not to set them for the first time in a Force 6.

Step 1: Getting started

Sailing upwind in 10 - 14 knots of breeze, sheet the sail in until the leech is just off the shrouds. And look up to make sure that it's not hard against the spreaders. In light airs, ease it a little further.

Step 2: Check the telltales

Several sets of telltales are fitted to all Kemp headsails and tell you whether the wind is flowing smoothly across the luff. You're aiming to have all of them, on both sides of the sail, streaming together - but it's not always easy.

Your first check is to luff gently from a close-hauled course while watching the *windward* telltales:

- If the *top* telltale starts lifting first, the sail has too much twist, i.e. the leech is too slack because the sheet lead is too far aft. Move the car forward along the track.
- If the *bottom* telltale starts lifting first, the sail has too little twist - move the car aft.
- When they all lift together, you've got it right. After that, you only need watch the bottom one while sailing.

Other telltale signs

- If the leeward telltales are lifting, you either need to ease the sheet or sail closer to the wind.
- If the windward ones are lifting, you should sheet in or bear away.
- In strong winds when you're beginning to get over-powered, you'll probably need the windward telltales lifting slightly all the time.
- When a flat-cut roller genoa is fully open, you may only be able to get the leeward telltales flying by pointing too high. This will slow you down, so you'll probably have to sail with them lifting in order to generate any power.
- Once you've freed away from a close-hauled course, the top of the sail will tend to twist open so the top telltales will no longer stream.

Step 3: Adjust the fullness

In light to moderate winds - especially in a chop - you need a relatively full sail for power. That means minimal backstay tension to induce some forestay sag, and not too much halyard or sheet tension either. If you find you're not moving, try letting everything off a little!

When the breeze picks up, you need less power or you'll be sailing on your ear with terrible weather helm. The problem is that the extra wind pressure increases forestay sag and makes the sail fuller. So, to flatten it, wind down the backstay, increase the halyard tension and sheet in harder. You may also need to move the car back a hole to flatten the foot and 'de-power' the top of the sail.

Step 4: Adjust the draft position

Draft position plays a major part in determining pointing ability and ease of sailing. Moving it forward (increasing halyard tension) means you won't point so high, but reduces the heeling force in fresh conditions. The boat will also be more forgiving to sail, especially in a chop. So, if you just can't get those telltales to settle no matter how hard you concentrate, make the sail a little rounder in the luff by tensioning the halyard.



Kemp Sails

Trimming the mainsail

Because the mainsail has the wind channelled around it by the jib or genoa, it's sheeted closer to the boat's centre-line. Since this narrower angle produces greater power and heeling force, the exact position of the boom is crucial. So too is the shape of the leech, which largely determines the weather helm (you need a little) and pointing ability.

As we did with the headsail, let's start by looking at the trimming tools. There are more of them this time: the mainsheet, traveller (if you have one), backstay, kicker or vang, halyard/cunningham, and clew outhaul.

The **mainsheet** is the primary control on most boats, being largely responsible for the boom's angle to the centre-line. It also plays an important role in determining leech tension when sailing to windward - by pulling the boom down - and is best used in conjunction with a traveller.

The **traveller** gives you infinitely more control over the mainsail's shape. For example, in light airs you need the boom on or close to the centre-line for optimum pointing, but the only way to achieve this without a traveller is by tensioning the sheet so much that you pull the leech down and stall the sail.

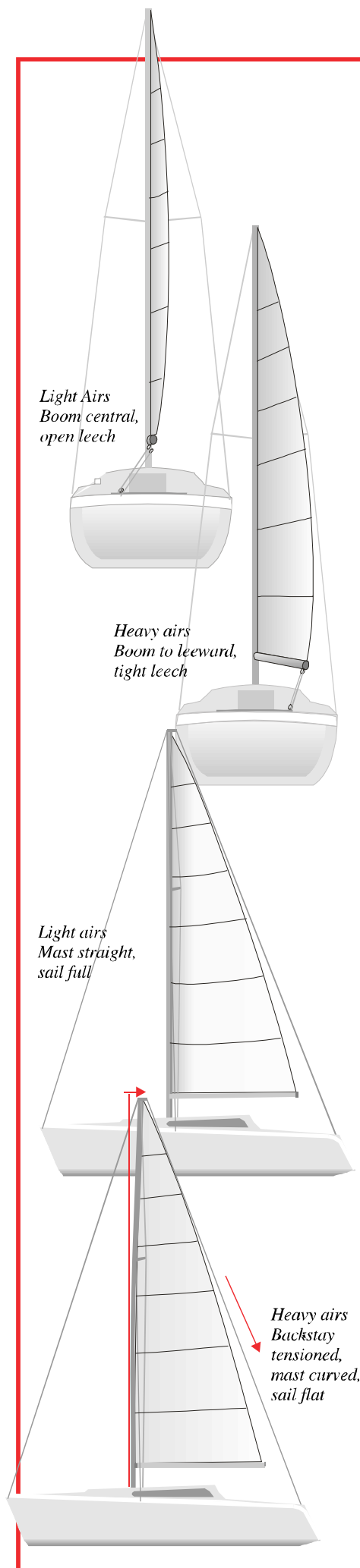
By bringing the traveller to windward, you can keep the boom in the middle with minimal sheet tension. Conversely, in strong winds you need more leech tension but a greater angle between the boom and the centre-line - so keep the sheet tight while easing the traveller to leeward. What's more, playing the traveller is much easier in gusty conditions than continually easing the sheet and pulling it back in.

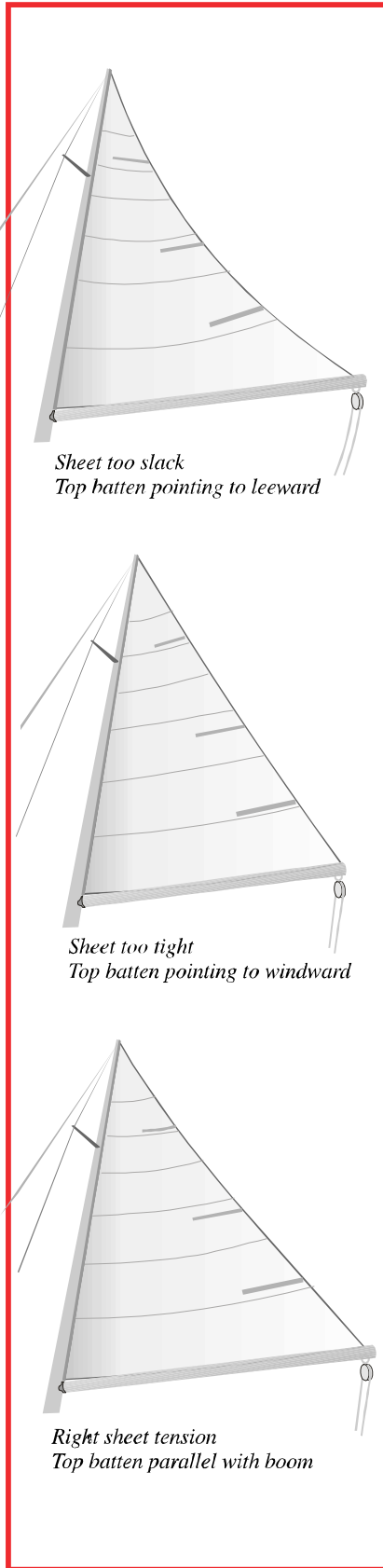
The **halyard and cunningham** work together to alter the draft position and fullness. Once you've hoisted the sail, it's simpler to control luff tension using the cunningham (optional on Kemp's Coastal sails, and standard on the Performance Cruising and Cruismaster ranges).

The **clew outhaul** acts, in some ways, rather like the genoa sheet - only this time it doesn't affect the sail's angle to the centre-line. But slackening it increases the sail's fullness and moves the draft further forward, as well as closing the upper leech.

The **kicker** has a number of jobs, the most important of which is holding the boom down offwind when the sheet has been eased. To windward, it's usually over-ridden by the mainsheet if you have a traveller, but otherwise assumes an important role in maintaining leech tension in stronger winds.

The **backstay** has more effect on bendy fractional rigs than masthead rigs - particularly those on cruising boats with stiff, well-stayed sections. Mast bend is like forestay sag in reverse: tensioning the backstay will induce a forward bend into the mast, flattening the sail by increasing the distance between leech and luff. It also opens the leech to help the air escape. Tightening the backstay will help flatten and de-power both the headsail and mainsail together in fresh conditions.





Kemp's step-by-step guide to mainsail trim

The extent to which each of the controls will affect your sail depends on several factors. A loose-footed mainsail, for example, is more responsive to outhaul tension than one with a foot-rope, while the shape of a fully-battened main is less easy to adjust than that of a conventional, soft-battened sail.

When you're out for the first time with your new sail - preferably in 10 - 14 knots of wind and flat water - go through the following trimming process to set it up.

Step 1: Sheet in

Bring the boom on to the centre-line by pulling the traveller a little way to windward and using moderate sheet tension. You won't get it central without a traveller, so don't try.

Step 2: Check the top batten

To see how much sheet tension you need, sheet in until the top batten is parallel with the boom. If it's pointing to windward, you've over-sheeted and the leech is too closed. If it's pointing to leeward, sheet in harder. When you've got it right, the telltale on the top batten should be streaming *most* of the time - all the time means the leech is too open, so you want more sheet tension. On the other hand, if it's stalled most of the time, ease the sheet slightly to open the leech.

Step 3: Adjust the fullness and draft position

In a certain wind strength, the boat will become over-powered and you'll need to flatten the sail to stay at a comfortable (and efficient) angle of heel.

- Tension the backstay (this mostly effects the top section of the sail).
- Tension the clew outhaul (primarily affects the bottom third).
- Tension the halyard or cunningham (moves the draft forward, flattens the sail and opens the upper leech).

In lighter winds, the opposite actions are needed. If the boat feels sluggish and under-powered, loosen everything off a little.

Step 4: Balance the helm using the traveller

Leaving the other settings as they are, now it's time to make sure the boat's comfortable to steer. This is best done with the traveller, easing it to leeward if you're carrying excessive weather helm, and bringing it up the track if there's lee helm. But take care never to have the boom more than an inch or two to windward, and then only in light conditions.

If you don't have a traveller, you'll have to ease the sheet when the wind picks up. But tension the kicker first; that way, the leech will stay tight as you drop the boom to leeward. Compensating for lack of a traveller in light airs is more difficult, unless you have an alternative attachment point for the mainsheet.

Adjusting the traveller will also affect the heel angle - so, once you've been through the trimming cycle, experiment with all the settings together to see which combination gives the best results.

A word on interaction ...

Having set up both sails, consider the 'slot' effect between the two. You should just see the first signs of back-winding in the mainsail when sailing to windward in moderate conditions. If it's excessive, the slot is too narrow - make it wider by flattening the sails, easing the headsail an inch or two, or pulling the traveller further up. If there's none, try making the opposite adjustments.

