

Contessa 32 Tuning Tips

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The Contessa 32 is certainly one of the success stories of the latter part of the 20th Century, with many boats enjoying close racing in several fleets across the UK. At Quantum Parker & Kay Sailmakers we have spent many years developing what have proved to be fast and easy to trim sails. Many iterations, hours of sailing and testing, and continuous small refinements have gone into making the sails what they are today. This guide offers some initial suggestions as to how to get the most out of our designs and your boat.

As with all tuning guides, this is just that, a guide. This information should not be taken as absolute. It is impossible to sail strictly by the numbers. Trim and tune are dynamic requiring constant changes to get the most from the boat. It is more important to understand the concepts behind tuning, and the effects of the different controls so that you can learn how to shift gears. Keep an open mind and experiment in changing conditions to determine the right combination for the moment, or simply what works for your sailing style. There is no one-way to make your boat go fast. The single most important thing is to recognise when you are slow and to do something about it.

Rig Tune and Basic Set Up

There are two primary goals to achieve in basic set up:

- Centre the mast in the middle of the boat and ensure that the mast is in column athwartships.
- Have the correct headstay tension for the conditions.

With these points in mind, we recommend the following initial set up procedure.

- Step the mast in the middle setting.
- With the forward and aft lowers slack make up the cap shrouds so that they are hand tight.

Centre the mast: pull the main halyard down to the toerail abreast the chainplates and cleat off. The halyard can then be used to measure to same point on the other side of the boat so as to check that the mast is upright in the boat. When you are happy that the mast is upright, chock the mast in the gate. Don't assume that the mast itself is central, double check by measuring to the toerail.

Check the mast rake: this is done by cleating the genoa halyard off so that the bottom of the snap shackle is level with the top of the black band at the gooseneck. Now swing the halyard to the forestay and mark the forestay where the bottom of the halyard shackle is. The distance from this point to the centre of the forestay pin should be around 186cm. If you have an adjustable forestay, this is clearly easy to adjust if necessary. Without an adjustable forestay you can only achieve gross refinements by adding or removing toggles. This will give you your median or 'base' mast rake. Bear in mind that mast rake will affect the balance of the boat and that you may have to adjust your rake accordingly.

Now begin to take up the slack in the forward and aft lowers, a little at a time on each side until they are taut but not tight. Keep checking that the mast is still straight sideways. I prefer to have the forward lowers a little tighter than the aft ones but there are certainly some of the top boats who prefer to have them the other way

around. With the backstay eased the mast should be straight fore and aft, or be set with just a little pre-bend.

Go sailing and check that the spar bends uniformly both fore and aft and sideways, also that the leeward shroud behaves as in 5 above.

Upwind Trim: Headsails

The upwind inventory on the Contessa 32 consists of a No. 1 Genoa, No. 2 Genoa, No. 3 Jib and a No. 4 heavy weather jib. Within this guide I will not endeavour to provide tips for each sail, but will consider the basic tools that the trimmer has at his disposal for any headsail.

Sheet Tension: the genoa sheet is perhaps the most important headsail control and must be played constantly, easing to accelerate, trimming to point. Sheet tension will change with every change in wind speed, but the basic premise is to trim as hard as possible without slowing the boat down. Remember speed first, then point. Adjustments are not as frequent in steadier breeze, but the sheet still needs to be adjusted for changes in wave patters or to duck other boats. Sails can be sheeted harder in flat water than they can be in lumpy seas for the same windspeed. If you are fast, sheet harder, if you are slow, try easing it slightly. In light and medium airs the genoa trimmer should be sat to leeward, and should be constantly monitoring the shape of the genoa relative to the speed of the boat. In 2-5kts of breeze, the foot of the sail should be between 50mm and 100mm from the shrouds, with the leech at the spreader being anything up to 200mm away from the spreader end. Again, as the windspeed increases, so will sheet tension. Fully powered up the sail should be 50-100mm from the spreader tip, towards the tight end of the range in flat water, and further away when it is lumpy. The sail should be fairly loose after a tack and should be sheeted in as the boat accelerates. The trimmer should advise the helmsman as he sheets on, and should let the helmsman know when he is at maximum trim. Do not be afraid to have the foot of the genoa touching the shroud base, but the leech should not ever touch the spreader tips.

Halyard: the basic rule is to use enough halyard tension to just smooth out the wrinkles in the luff. In light airs it is better to have slightly too little tension than too much. This makes the entry finer which will help with pointing, and will also power up the back of the sail. As the breeze increases, you need to use more halyard tension. This will round up the entry which makes the steering groove wider, and will also flatten the exit of the sail, which in turn de-powers it. Care should be taken as the breeze builds as insufficient halyard tension and/or excessive forestay sag will result in the sail being 'too round' which produces excess drag causing the boat to heel over. It is vitally important that your jib halyard is marked so that you can easily re-produce fast settings.

Correct halyard tension: halyard too soft. Max draft is too far aft. Entry is too fine and the back of the sail is too round.

Lead Position: the base setting for the jib lead should apply equal tension to the foot and the leech of the jib. The standard method for determining the median sheet lead position is to head up slowly and watch the luff of the sail. It should luff at about the same time from top to bottom. In the real world the top will break slight ahead of the bottom. If the top breaks too early, and the bottom of the said is strapped to the

shrouds, then the lead needs to be moved forward. If the foot of the sail is very round and well off the shrouds, while the top is in close to the spreader, the lead should be moved aft.

The lead should be moved aft as the sail is sheeted in harder and operates closer to the top of its range. In light conditions, as the sheet is eased, the lead will need to move forward. A useful rule of thumb is that if you are needing to drop the traveller to keep the boat on its feet, then move the lead aft. Similarly, if the genoa is trimmed in normally, the main has been flattened, and there is still excessive backwinding, move the lead aft. Basically, as you become over powered, move the lead aft, and do not worry if the top tell tales don't fly properly as you open the leech up. If your jib is trimmed so that the whole sail is working, but the mainsail is flogging to keep the boat on its feet, ease the jib. Give away the top of the sail to balance the boat allowing both sails to do some luffing.

Forestay Tension: in light conditions you will need more forestay sag to make the genoa fuller and this is achieved through easing the backstay. Similarly, in heavy conditions the backstay is tightened helping to prevent forestay sag. This de-powers the jib and helps pointing. You should be at maximum backstay by the time you get to the top end of the No. 1 genoa.

Upwind Trim: The Mainsail

Mainsail trim has two primary goals. First, balancing speed versus pointing by controlling the twist or how open the leech of the mainsail is. Second, keeping the right amount of overall power, helping to maintain a constant angle of heel and the right amount of weather helm. This section will address adjustments to mainsheet, traveller, outhaul, halyard, Cunningham, vang and backstay.

Mainsheet: like the jib sheet, there is no one magic setting for the mainsheet. It should be adjusted continually with each change in wind speed and/or wave pattern. Basically, increasing mainsheet tension reduced twist and tightens the leech, which makes the boat point, but also slows it down, Easing the sheet induces twist, which accelerated air flow across the sail. This allows the boat to bear away and accelerate. Initially, the main should be sheeted until the top batten is parallel to the boom. At this point the top tell tale will be on the verge of stalling but should be flying about half of the time. Once the boat is up to speed, increase sheet tension until the boat start slowing. Remember, speed first then pointing. The art is to find the delicate balance between speed and pointing, always trying to trim as hard as possible without giving away too much speed.

In light air, the sail will be eased and twisted from the base position. In moderate air the sail will be sheeted hard with the top batten at least parallel. In heavy air the sail should be sheeted as hard as the angle of heel will allow. Bear in mind that in choppy seas, more twist is required to keep the boat moving, and on flat water you need harder leeches for pointing.

Traveller: the traveller serves two functions. Firstly, it controls the booms position relative to the centre line of the boat, and secondly it helps to steer the boat by controlling the helm and angle of heel in the puffs and lulls. To position the boom, set the twist with the mainsheet and use the traveller to put the boom on the centre line for maximum power and pointing. In light air the mainsheet will be eased to

promote acceleration and keep the leech open and the traveller will be well to windward to keep the boom close to the centre line. In moderate conditions small adjustments will be necessary to control helm balance. It is important to dump the traveller quickly when a gust hits and you begin to get over powered, but equally important to pull it back on again as soon as the heel is controlled or the gust has passed. Wait too long and you have missed the opportunity to point once the boat has accelerated. As the wind speed increases the average position of the traveller will be further down the track. In over about 18 knots of breeze you may need to ease a little mainsheet as well. However, before you ease mainsheet in windy conditions you may want to have the vang pulled on hard in order to prevent giving the whole leech away. Think of the traveller as the 'tip meter' once the mainsheet has been set for twist. The traveller should be adjusted with every change in heel or any time the mainsheet is adjusted. The big question is whether to dump traveller or mainsheet in the gusts. Well, both will work. For more subtle changes in wind speed it is probably better to use the traveller to fine tune the helm. This will maintain leech tension and pointing ability. In the big gusts, dumping the mainsheet will get the boat back on its feet more quickly, but be sure to get it back on as soon as possible.

Vang: the vang is primarily an off wind control. It takes over the job of pulling down the providing leech tension when the boom is eased out and the mainsheet no longer controls twist. However, upwind in heavy air the vang should be used to help out eh mainsheet with the job of puling down the boom and maintaining leech tension. If the vang is hard on, the mainsheet can be eased in big gusts without giving up the leech too much, in light air make sure the vang is off using only enough tension to stop the boom from bouncing. In heavy air it may be necessary to ease the vang at the weather mark to assist with hearing away. Easing, the mainsheet may not be enough.

Luff tension (halyard and Cunningham): halyard and cunningham both tension the luff. Initial luff tension should be just enough to smooth out the wrinkles in the front of the sail. Leave a few wrinkles in the bottom third of the sail in light to moderate air. As the breeze increases more luff tension is required to prevent the draft in the sail from moving aft. Use the halyard first, and when the sail is at the black band use the cunningham. Do not under estimate the usefulness of the cunningham, it is one of the primary sail controls that many people choose to ignore. As soon as the boat is overpowered start pulling the cunningham on hard upwind. It is easier to adjust and fine tune the cunningham when sailing than the halyard.

Outhaul: the outhaul controls the depth in the lower third of the mainsail. If you need more helm and feel, ease the outhaul. Power in the bottom of the main will increase weather helm . In very light airs (less than 5 knots) the outhaul needs to be pulled out fairly hard in order to prevent flow separation in the mainsail. If the sail is too full in light airs it will stall. In 5-12 knots the outhaul can be eased slightly to increase power. Once the boat is fully powered with al the crew hiking (normally about 10-12 knot of wind) the outhaul should be maxed out. The outhaul should not be eased much when running, the object is maximum projected area. The outhaul should be eased however if when reaching (unless you are over powered). Make sure that you have the outhaul calibrated so that you can repeat known fast setting (make sure all sail controls are calibrated for the same reason!).

Backstay: backstay tension does two things. Firstly, it will bend the mast (though the

Contessa mast is very stiff, it will still bend around 50mm) which flattens the mainsail and opens the leech up, thus de-powering the sail. Secondly, the headstay gets tighter which prevent headstay sag, which in turn prevents the jib from getting too full as the breeze increases.

Downwind Trim

The key to running effectively is to project as much area to windward as possible away from the mainsail, thus facilitating sailing deep. Do not get pre-occupied with having the clews at the same height as depicted by most sailing guides. You should start by altering the pole height so that the luff of the sail isn't breaking too high or too low. Use the centre seam as a guide to trim, which should be approximately perpendicular to the horizon. If it feels right it probably is right. The Contessa class rules don't allow the use of tweaker lines, for the spinnaker sheets but you can gain some additional control over the leech by sheeting the spinnaker using the lazy guy. This is particularly effective when it is windy and will help to reduce rolling. The main thing when sailing downwind is to make sure the spinnaker is pressured up all the time. The trimmer and helmsman should be talking to each other continually so the helmsman can get the boat really low when he has pressure and he doesn't sail to high when he needs more pressure. Twisting the mainsail will also help you get deep, but at the same time it will make the boat more unstable and less forgiving. Be prepared to adjust the vang continually downwind and sail where you are comfortable. Sailing downwind is at least as tactical as sailing upwind with huge gains to be made by sailing at the right angles on the right shifts. If you tack on shifts going upwind you should gybe on them going downwind.

The crew should be fairly well forward in light air, gradually moving aft and to weather as the breeze builds. The boat should ideally be heeled slightly to weather when going downwind which helps to project the spinnaker and helps the boat to drive off in the puffs. Weight should be shifted to stabilise the boat and promote surfing in heavy air. When it is breezy all the crew should be well aft.

Miscellaneous Tips

Don't hang on the No. 1 genoa too long! Many Contessa sailors tend to use the sail to far up the wind range. You can start thinking about changing to the No. 2 in about 16 knots of true wind.

The backstay should ideally be the hydraulic type rather than the more traditional wheel. This is easier to adjust and is ultimately a fundamental trimming tool.

Although the Contessa is a relatively heavy boat you will still see the benefits in removing all unnecessary items of kit from the boat. Encourage the crew to bring only what they are going to wear. You don't need to have a pair of boots and a pair of shoes on the boat for example. Stow any spare kit, fenders etc over the keel.

Make sure the bottom is clean and smooth. If the boat is anti-fouled, this should be rubbed flat with increasingly fine wet and dry paper. Even if the anti fouling has been rolled on it still needs to be flattened off. The normal 'orange peel' effect that you get from rollers is slow! Do not under estimate how detrimental even a little bit of slime or weed can be to boat speed. Being conservative we might say that having a dirty bottom will slow you down by 0.2 of a knot. This doesn't sound much but it equates to 400 yards an hour. In a two-hour race this is nearly half a mile.

Make sure that all sail controls are visibly calibrated so that you can repeat known fast settings. This includes halyards and sheets.

Similarly, put marks on the spinnaker pole controls so that you can pre-set it accurately before hoisting.

The jib halyard should be the best quality Spectra or Dyneema that fits within the budget. Anything less will just stretch as you try to adjust it as the wind increases. Put a cover over the jib halyard at the point where it goes through the jammer. Maintaining halyard tension is vital when it is windy and most halyards will gradually slip as you progress upwind.

Keep an open mind and do not be afraid to experiment. Perhaps the most important point to recognise is when you are slow, and then to do something about it!

Have fun!