

Mercury Tuning Guide

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Introduction

Class champions Don Whelan and Doug Baird have provided the following tuning guides for your review. Talk to five Mercury sailors and you will get five different opinions as to what is “right”. Don and Doug have demonstrated what is “right” with the multiple gold class emblems on their sails over the years, but even they don’t agree on everything. So use this information as a starting point for getting you close and then start experimenting. Your sailing style is not the same as Doug or Don so use this as a *guide*, not a hard and fast rule as the only way.

Whelan Set Up:

Mast Step

The mast butt should be at the forward most position in the step, as described in article 3, section 7a of the MCYRA measurement specifications, 65 $\frac{3}{4}$ ” aft of the foremost point of the stem. To check measure aft 65 $\frac{3}{4}$ ” from the foremost point of the bow, then put a square down to mast step. The forward side of the mast should be as close to this point as possible, but not be forward of this point. If it is forward, this is illegal, and should be corrected.

Rake

One way to set the rake uses the jib halyard. With the mast up, take the jib halyard and lead it down to the deck. Tie it off so the tip of the shackle just touches the deck with a little bit of tension. With the same tension, swing the halyard out to the forestay and mark the forestay where the tip of the shackle touches it. Mark that position on the stay and measure from the deck up to that point. The distance should be 14 –14.5”

Another method is to use a plumb bob. Tie to the main halyard, and let the forestay out until the plumb bob is between 15 and 17” aft of the mast, measuring from the aft face of the mast. (Editor: boat should be level on the waterline.)

Upper Shrouds

The upper shrouds should be set so the mast is straight as possible, sideways, in the boat. Ideally, the tension should be loose enough to pin the upper shrouds to the chain plates when setting up. If you can’t achieve this setting, then loosen one turnbuckle to pin it, but reset it to the same place.

Lower Shrouds

The lower shrouds will seem very loose, when setting up, but wait until you go sailing, to see how the mast sets up. In the downwind position the lowers

should be released far enough, so the mast goes forward to the front end of the deck opening and angles forward.

The forward face of the mast partner should be the minimum distance from the bow as described in Section 7b, of the MYCRA measurement specifications. It is a good idea to set the mast in the downwind position, while on the trailer, to be certain the backstay goes out far enough and the lowers release far enough, to put the mast in position. If the upper shrouds are too tight, they will restrict the mast from going forward, so be aware of this.

Jib Leads

Measuring across the cockpit, the tracks should be approximately 35“ apart. This would be about as far inboard as the tracks could be on a molded deck, and as far in as you want to go.

Sailing

Upwind Shroud Settings

Check the upper shrouds and make any adjustments to get the mast as straight as possible, sideways. With the upper shrouds set, adjust the lower shrouds so the mast is straight side to side, in medium breeze of 8–10 knots. This setting should make it look like the uppers are a little tight in less wind, and have the top of the mast starting to fall off in heavy wind.

Backstay Upwind

In light to medium wind, say up to 12 knots, the backstay should be loose or barely snug. Even in stronger wind the backstay should not be pulled on very hard, just snug. Most of the mast bend is coming from the sheet tension. Over tightening the backstay will generally cause the boat to lose pointing ability, regardless of how much crew weight you have. If in doubt, ease some backstay.

Ram

In general, the mast ram should hold the mast steady at the deck. In light – moderate wind, and lumpy water, it may be good to pull the mast aft some at the deck, to help maintain power in the mainsail. In heavier wind, the mast ram can be eased, or allow the mast forward a small amount to create some pre bend.

Cunningham

Pull the cunningham enough to take out most luff wrinkles. If any thing favor a few wrinkles. If the wind lightens be sure to ease the Cunningham.

Outhaul

I have developed any specific numbers for outhaul reference. Use the outhaul to develop power in the main, keeping it loose in lighter air and tightening it as the wind increases, up to the maximum as the boat is over-powered

Mainsheet and Traveler

This is a trial and error exercise, but in general keep the traveler on centerline when you can. As the wind increases start to move the traveler to leeward. At some point you may also need to ease the mainsheet slightly to de-power the mainsail. The traveler should find its furthest outboard position at about 14-18 inches below centerline in heavy wind. All this can vary with crew weight and sea conditions.

Jib Trim

Like the main Cunningham, do not over tighten the jib luff. In moderate wind, pull it just tight enough to remove the most of the wrinkles. In heavier wind, pull the luff tight enough to remove wrinkles. If any doubt, ease the luff off, and re-tension.

In general sailing upwind, watch for these problems:

In light-medium wind be careful not to overtrim both sails. This will slow the boat and prevent pointing.

Downwind sailing

As soon as you turn downwind, set the pole first. The skipper should ease the backstay and the mast ram, while the crew eases the lower shrouds. The backstay should be out far enough to allow the mast to angle forward without any fore and aft bend, as described above. It is a good idea to mark the backstay tail with tape so you get the same setting each time.

Vang

Watch the vang tension closely downwind. In the puffs pull some vang on, and ease it in the lulls. Too much vang tension will slow the boat down quickly.

Baird Set Up:

Assumptions:

Forestay intersection with the deck is as far forward as possible. (I.E., Not more than two inches from the forward most point of the bow.) Forestay intersection with the mast is at the highest allowable. (I.E., 15'9" above the deck.) Base of the mast is located as far forward as possible. (I.E., 65" aft of the bow.) Deck opening starts at 63 1/8" aft of the bow and ends at the "normal" distance from the bow as on all fiberglass boats. The mast, at the deck, is controlled as to forward and aft movement during sailing. (I.E., a ram or limiter of some sort.) The purpose of this adjustment is to limit the forward and aft 'pumping' motion of the mast at the deck. Backstay is adjustable and the intersection point with the deck is within two inches of the transom.

Upper shrouds at the deck are at the extreme outer limits of the deck.

Upper shrouds at the mast intersection are above the forestay intersection.

Lower shrouds at the deck are at the extreme outer limits of the deck.

Mast Rake: On the Trailer:

Measure the rake by tying a plumb bob (or wrench etc.) to the main halyard. Let the forestay out until the plumb bob is between 15" and 17" aft of the after face of the mast at the deck. There should be no tension on any shroud except the forestay at this point.

On the water:

Go sailing with this rake and make sure the boat sails with a minimum of weather helm with the traveler halfway out to the rail. For those who vang sheet, let the boom out so the extension of the boom is 6" to 8" outside, or beyond, the leeward corner of the transom. Making sure that the mainsail has a gentle curve to it. No straight leaches or hard leaches. The boat should sail it's self with almost no weather helm. If the boat has too much weather helm, take some rake out of the boat, if the boat heads away from the wind, add more rake. Do not add or remove more than two inches of rake at a time.

After this test, you should sail the boat with the selected rake with the traveler where you would normally sail the boat for a while. You should find that the boat heads up in the puffs, and has a very slight weather helm under normal conditions.

Shroud Tension: On the trailer:

Take in the upper shrouds until they hold the mast perpendicular, with no side bias. The tension should be tight enough to keep the mast from moving but not so tight so you cannot remove and install the pins that connect the shrouds to the turnbuckles.

Adjust the lower shrouds so they make a 2" diameter circle when you test them for tightness.

On the water: Only adjust the lowers, not the uppers! Check to see that the mast is straight. In light wind (2-6 knots) the mast should be straight or the uppers could seem a little tight. (very slightly!) In medium wind (7-12 knots) the mast should be very straight. In heavy winds (15+ knots) the mast should be straight with the tip only slightly falling off.

Jib lead position:

The jib leads should not be more than 35" apart across the boat. It is preferable that they be closer to 33" apart. The distance aft from the forestay will vary from jib to jib. The best method to arrive at the starting point for this measurement is to pull the jib in to the position of highest sailing (closest to the wind). At this point the leach and foot should be equally taught. With the leach a gentle curve and the foot a gentle curve also. In more wind the leads will normally be moved back a little and in lighter winds slightly forward.

Do not attempt to sail with either or both sails trimmed very flat (I.E, Leach stretched or flattened into a straight line) in any other than heavy winds. The boat will stop faster with this type of sail set than by any other means. You can literally set the sails properly for power, then drag your foot in medium and light winds and be faster than with a too tight set to your sails!

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