

CR 914 Initial Setup and Tuning Guide

(Note: this document has been revised frequently. But you can always find the most recent version posted in the Members Area of the class website, at www.cr914class.org)

The following step-by-step procedures for getting the tuning of your new CR 914 “in the ballpark” are based on tuning data published by Chuck Winder in issue 9 of the *CR 914 NEWS*, Geoff Becker’s Tuning Guide in issue 35 of the *NEWS*, and the tuning seminars presented by Dave Ramos at the 2005 and 2006 Larchmont Spring Invitationals and published in issue 51 of the *CRonicle*.

Adjusting the Rudder

Turn on your transmitter and boat electronics (always turn on the transmitter first and turn it off last, to avoid the risk of damaging your servos). The transmitter **rudder joystick** will center itself. Now center the rudder fine-tune control on the transmitter.

Check the position of the **steering servo arm**. It should be at 3-o’clock. (the bow is 12 o’clock). If not, remove the screw and adjust it to that position with the radio on.

Looking at the **rudder** from astern, see if it is parallel with the keel. If not, carefully disconnect the steering connector rod and adjust the plastic ball joint pieces on the ends (screwing the ball joint pieces clockwise will shorten the rod.) Your goal is for the rudder to be perfectly aligned with (parallel to) the keel with the rudder joystick and fine tuning controls centered when you are done.

Standing Rigging

Start by adjusting the **jib boom downhaul slide** (where the jib boom is tied down to the deck) so it measures approximately 2-1/2" inches from the forward end of the jib boom (dimension A on the diagram). Do not glue. Then adjust the **jib boom downhaul line** so there is about 1" between the deck surface and the boom’s centerline (dimension B).

Next, loosen the shrouds slightly and the jib halyard and forestay quite a bit. Now adjust the **backstay** so the distance from the bottom edge of the transom to the junction of the mast-top crane with the cylindrical portion of the mast top fitting (part 20) is 54-1/16" (dimension C). Hold the top of the mast forward while adjusting and making this measurement so that the length is set with the backstay taught. Now adjust the **forestay and jib halyard** so they are equally tensioned and moderately taught. Recheck dimension C when you are done.

Next, adjust the **lower shrouds**, centering the lower mast section port to starboard so the mast is parallel to the keel, and make them taught.) Now adjust the **intermediate and upper shrouds** so that the mast is straight when

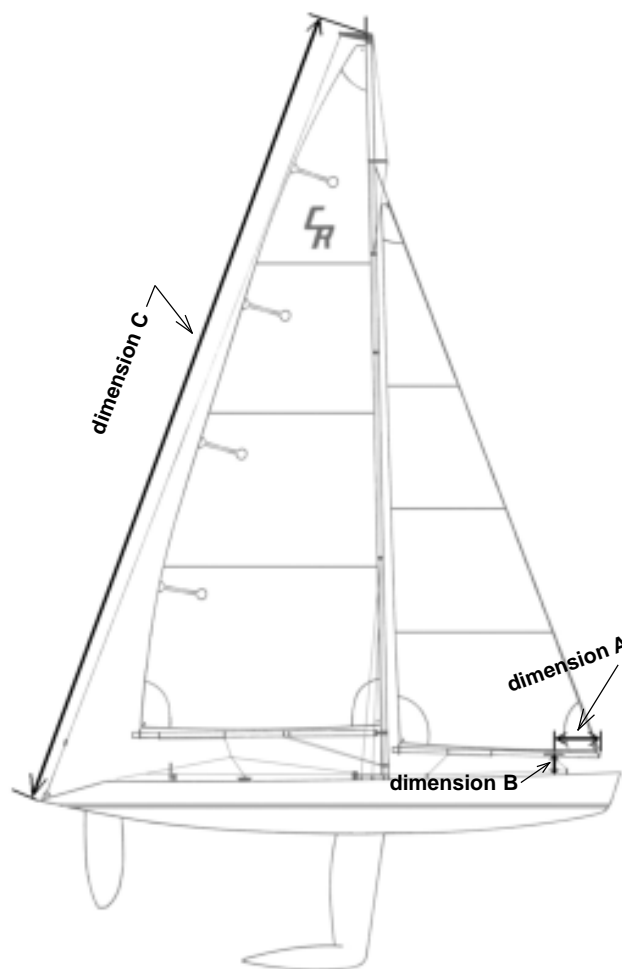
viewed down from the top. These shrouds should be snug but not too tight.

The **jumper stays** can be installed permanently and with no adjustment. If you do this make them as taught as possible. Some sailors use a slide ring to tighten both jumpers. Cut one hole off a spare bowsie or use two holes from a spare servo arm, and run the jumpers through the holes in this adjuster. Set the adjuster close to the top of the mast before tying off the jumper stays as taught as possible. If more tension is necessary, simply slide the adjuster down.

Your mast should now be plumb, (no list to either side), properly raked (fore and aft) and perfectly straight.

Running Rigging

With your transmitter and boat electronics turned on, move the **sail joystick** and its fine-tuning slider to their fully trimmed-in positions. The arm on the sail trim servo should be at about 11:00 to 11:30 relative to the bow.



Two Terrific Tuning Tips

Buy a 1/4" steel measuring tape (a Stanley "PowerLock" 10' tape is ideal). With colored permanent markers mark the tape with a green line at 53-7/8", a black line at 54-1/8" and a red line at 54-3/8". When the wind is strong adjust mast rake (dimension C) to the red mark; when it's moderate use the black mark, and when it's light use the green one.

Cut 3/4" x 1-1/2" pieces of moderately coarse wet sandpaper and fold them into squares, with the grit facing inward, or cut up an old mouse pad. Pinch those slippery Spectra lines in one of these wedges to get a firm grasp on them when you adjust your bowsies.

Now adjust the **common sheet in the cockpit** so the knot connecting it to the split jib/main sheets is just forward of the deck exit turning block on the aft port deck. The knot should not enter the block.

Next, adjust the fore-and-aft piece of the **three-part mainsheet bridle** so the center of the ring is 7-1/4" to 7-1/2" aft of the mast. Now adjust the port and starboard parts of the bridle so the ring is centered, 1/8" to 1/4" below the mainsheet string-loop "block" on the boom when the boom is centered. The ring should be directly under the block. If it isn't, readjust the bridle or, if the block is not attached to the boom at a point where the mainsheet can lead straight vertically from the block to

the bridle ring, detach the the string block from the boom and build a new one at the proper location.

Now, with the the sail joystick in the full-in position and the fine tune control on the transmitter centered, move the **mainsheet attachment point** on the boom so the boom is tightly centered with no strain on the servo (at the point where the servo just stops humming). When the sail is under load from the wind, it will ease towards the gunwale.

Next, adjust the **jibsheet attachment point** on the jib boom so the aft end of the jib boom is pointing at the lower shrouds.

Now adjust the **main and jib outhauls** so the distance from the belly of the draft (curvature) of the foot of the mainsail to the boom is about 1-1/4" and about 1" for the jib.

Finally, adjust the **boom vang** so it is barely taught. Moderately firm pressure with your finger under the aft end of the boom should lift it about 1/16". In heavy winds, make it slightly (about 1/8") slack.

Voilà! Your boat is now tuned for moderate air and should sail well, without excessive weather helm or significant lee helm, in nearly all conditions. To optimize performance in light and heavy air, you can make the adjustments shown in the table below.

CR 914 Tuning Table

Wind strength	Moderate	Strong (>13 kts)	Light
Mast rake (dimension C)	"neutral" (54-1/8")	forward (54-3/8")	back (53-7/8")
Lower shroud tension	no slack	no slack	tight
Backstay and headstay tension	++	+++ (“high C”)	+ (barely taught)
Outhaul settings (mainsail draft – slightly less for jib)	mid (~1-1/4")	out (~3/4")	in (~1-1/2")
Cunningham tension	no slack	minimally tight	slack
Boom vang tension	++	+ (1/8" slack)	++
Main boom tip	out ~2"	out ~3"	out ~1" to 2"
	(distance from centerline, with sails filled)		
Jib boom angle from centerline	out ~10° (points at lowers)	out ~11° (points at int. shrouds)	out ~10° (points at lowers)