



Ensign Tuning Guide

Rig Set-Up

Ensign setups vary quite widely from boat to boat. So while there are some numbers that one can use when tuning an Ensign, there are some other areas where this is definitely not the case. However, there are some simple visual reference points that one can use to get in the ballpark. The following guide will speak to both points.

Mast Butt

1) Before making any adjustments to your Ensign tuning, it is important to make sure that the boat's mast butt is solid, and not rotten. A soft mast butt can be the root of many tuning errors.

2) In general, one should start with the mast butt in a position which stands the rig straight up and down in the boat (this should be sighted from the dock). With the headstay "loose" as described below, the mast will move aft slightly (rake) when the mainsail is up and drawing, and press against the back hole through the deck (inducing slight prebend).

This is a good starting point for tuning, but the butt should be moved to correct any helm the boat has, moving the butt forward if the boat has leeward helm, and aft if the boat has windward helm.

Shroud Tension

Headstay - The headstay measurement should be just about 26' 3". This is about ¾" short of maximum tension for the headstay. If you have problems powering up in light air or chop, then the headstay should be loosened a bit to induce a bit more jib luff sag and give the boat more power. Keep in mind that the headstay is not readily adjustable, and when it is changed, it will alter shroud tension and mast rake, so it is a good idea to have only one headstay setting. If sailing a lot in flat water, or in a place that generally has breeze, the headstay length of 26' 3" should be fine. If sailing a predominantly light air venue, or a place with lots of chop, a slightly looser headstay may be better.

All shroud tuning numbers should be taken with a Model A Loos Tension Gauge.

Upper Shrouds – 32

Forward Lowers – 24

Aft Lowers – 8 ("hand-tight" see note C)

A) This should keep the mast straight side to side until around 12 knots, after which the top of the mast should fall off to leeward. If the mast is not falling off to leeward in more than 12 knots, then try experimenting with looser upper shrouds.

B) Once the shrouds are tensioned, very little rake should be noticeable, if any at all without the Mainsail up and drawing. However, the mast should be pressed against the aft side of the mast partners once the main is up and drawing. This will allow one to induce prebend and mast rake with mainsheet tension.

C) The forward lowers are used to prebend the rig slightly. The aft lowers are used to keep the rig from bending too much only as backstay is applied. So the number of 8 on the Loos gauge is optimal for most breeze (anytime the boat is not overpowered). In heavy air however, when you have a lot of backstay on, you might want to put as many as three turns on the aft lowers to keep the mast straighter. It is very important to remember to wind these turns back on as breeze increases though.

Mainsail Trim

- 1.) The mainsheet should be trimmed so the top batten, or draft stripe, is parallel to the boom.
- 2.) The traveler should be set up to pull the boom up to the centerline of the boat for optimal pointing.
Keep in mind, Ensigns like to be sailed as flat as possible in heavy air. The traveler should be dropped to depower when necessary. Also, the boat can be steered quite effectively with the traveler. For example, when ducking a boat (slightly), dropping the traveler will help reduce helm and cause one to do the maneuver while steering less.
- 3.) The backstay should be loose in lighter air and start getting pulled on as all the crew starts to “hike”. The more backstay that is applied, the tighter the headstay gets, and the more the mast bends. Both of these depower your boat to help keep it flat. If you are using a lot of backstay just re-read note C on aft lower shroud tension.

Genoa Trim

- 1.) The foot of the sail should always be touching the shrouds at the deck. In moderate breeze (7 – 13 knots), the sail should be trimmed 2” off the spreader. If the genoa is hitting the shrouds and the sail is more than 2” from the spreader tip, then the car should be moved forward, if the opposite is happening, move the car aft. Once you find the “sweet spot” for the car, where the foot of the sail is touch the shrouds, and the upper portion of the sail is 2” off the spreader, place a mark on the deck. This is the genoa car setting until the boat becomes overpowered.
- 2.) In light air, the car should not be adjusted from the moderate breeze setting, but the sail should be eased to allow one to power up the boat. This will require one to foot a bit going upwind.

- 3.) It is important to depower with the mainsail first (as opposed to the genoa), by playing the traveler. Once the mainsail traveler is all the way to leeward, and one has to depower further, the genoa car can be pulled back (this is the only time one should deviate from the marked genoa car setting mentioned in note #1). This allows the sail to twist more, and sit further off the spreaders while still keeping the foot at the shrouds. PLEASE NOTE: The foot of the genoa should definitely always be at the shrouds. It is a common mistake to sail with the genoa undertrimmed when over powered. The foot needs to stay in, and one should depower ONLY by twisting the top of the sail. That said, by this point, one should consider switching to the number 2 or blade.
- 4.) Another adjustment one can make to depower the genoa in heavy air is to tighten the headstay, by putting turns on at the turnbuckle.

Blade Trim

- 1.) Maximum trim (point mode) is with the leech 2” inside the spreader tip, max ease (foot mode) is ½” inside the spreader tip.
- 2.) Lead placement – Set the leads up so the blade has a relatively rounded foot and a not too open leech to start. The lead can be moved back as breeze increases to induce twist in the top of the sail, just as we suggest above with the genoa.
- 3.) Since our blades are designed to be maximum size they are expected to rub against the forward lower. We also expect for the blade to be used in heavy air, where the headstay should be a little shorter, reducing headstay sag and moving the leech further away from the forward lower.

As with any boat, it is important to experiment a bit to figure out what works best. Also keep in mind that we are available at Quantum Sails to help you in any way we can. Please do not hesitate to call us with any questions regarding your Ensign tuning. Good luck and fast sailing!

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