

## Tuning Guide - H-Boat

### Introduction

The purpose of this tuning-guide is to give our clients in the H-Boat class some guidelines on how to get the most out of their North Sails. The tuning guide is made by Herluf Jørgensen and Theis Palm.

Follow the guidelines, but always experiment and try finding your own trim. The weight of the crew, the balance of the boat, the stiffness of the mast together with specific local wind and sea conditions all have influence on the fastest and final trim.

### Mast Trim

Before stepping the mast in the boat, some very important measurements have to be made to follow this tuning guide.

1. The length and angle of the spreaders are important to the shape of the main, because they help to control the bend of the mast and thereby the tension of the forestay. The length of the spreaders is measured from the side of the mast to where the shroud passes the spreader. It is measured along the middle of the spreader (Fig.1).

Next, put two tape marks on the spreaders at respectively 44 and 54 cm from the side of the mast. These are used to trim the jib.

2. Lead the upper shrouds and forestay along the mast, the upper have to be out of the spreader tips. Pull them as hard as you can and put a mark on all three wires at the height of the black mark at the gooseneck. These three marks are now used to check if the mast is straight from side to side in the boat, and to check the mast rake. The mast is then stepped.

3. The foot of the mast is placed so that the distance between the centre of the forestay pin to the front edge of the mast is 2,42 m.

4. Control that the distance from the top of the gooseneck mark to the deck measured along the side of the mast is 54,8 cm. Any possible difference should be adjusted when setting the forestay in the next step.

5. The mast rake is set so that the distance from the mark on the forestay to deck measured along the forestay is 1,35 m.

6. Now that the correct mast rake has been set, control that the mast rest on the full surface. If this is not the case, the pressure on the rig will become uneven and the forestay unsteady.

7. The marks on the top shrouds (from step 2) are now used to control if the mast is placed in the middle of the boat. This is done best by measuring the distance from the mark to the deck. This should be the same on both sides.

8. Rig tension is somewhat difficult to define, because not everybody has the same meter to measure and even the same type of gauge can measure differently. We have used a Loos Gauge type PT-1 M. See the H-Boat On the Water Tuning Guide.

9. The bottom shrouds are tensioned, so that the mast is completely straight in the boat up to 20-22 knots. From here on tighten them till the mast drops 5-10 cm off to leeward at the forestay fixture - the exact measure depending on crew weight.

### Mainsail

1. The mainsheet is the most important factor when trimming the main. Even minor adjustments can have a big effect on speed and pointing. If the sail is sheeted hard the leech will close more and increase rudder pressure, but the pointing ability will be improved. This can be used in middle air and flat water as long as the boat can be hiked flat. In light wind the mainsheet is eased so that the tell-tale by the top-batten flies straight aft. In heavy winds the mainsheet is pulled very tight and the H-boat Tuning guide backstay is pulled until the boat becomes light on the rudder again. As the waves increase more twist is needed to facilitate steering. At the same time it improves speed and hereby pointing. As a thumb rule trim the aft part of the top-batten parallel to the boom in all wind strengths.

2. The outhaul is also an important factor when trimming as it controls the draft in the bottom of the mainsail. In light winds (0-4 knots) the sail should be 3 cm from the mark. In a little more wind (4-10 knots) about 1,5 cm from the mark and in more wind than this pull the sail all the way to the mark.

3. Avoid using the cunningham in light winds. In middle winds pull only so much so that the wrinkles disappear. In winds above 14 knots pull the cunningham hard to open the leech and the draft forward.

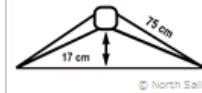


Fig.1

#### 4. Traveller

Adjustment of the traveller affects rudder pressure and depends on the crew weight. The traveller is adjusted so that the boom - as long as possible- is kept parallel to the centerline. This is to keep maximum distance between the main and the jib. As the wind increases and the backstay is pulled let the traveller to leeward until the boat is balanced and light on the rudder.

5. The backstay has two functions: To control mainsail depth and to control forestay sag. This means that a tighter backstay flattens and opens the mainsail, gives less forestay sag and hereby a flatter jib. We have put marks on our backstay every 5 cm, so we can return to good trim after mark roundings etc.

6. The kicking strap is used upwind in heavy winds to bend the mast and hereby opening the sail in the bottom part. It also keeps the leech from opening too much when easing the mainsheet in the gusts. Never use the kicking strap upwind in less than 16 knots. Remember always to ease the kicker before going downwind to prevent the boom from breaking. When reaching, set the kickingstrap so that the aft part of the top batten is kept parallel to the boom.

### Jib

#### 1. Lib Lead

As a general rule set the jib lead at a distance of 2,88 m from the forestay pin to the center of the block. The jib shall luff evenly along the luff of the sail. This means that the telltales should break evenly. If the waves are big in more than 6 knots move the lead 1-2 "holes" forward and if the wind is less than 6 knots up to 5 "holes" forward.

#### 2. Sheet Tension

To trim the jib, use the marks set on the spreaders. In wind strengths that are less than 6 knots use the mark at 54 cm from the mast in more wind use the inner mark (44cm).

#### 3. Halyard tension

Never overtighten the halyard as this will move the draft to far forward. Pull as much as to remove the creases, but not more. In light winds leave some creases at the luff as this will cause the draft to move aft, thereby increasing depth.

### Spinnaker

The height of the spinnaker pole on the mast should be 1,50 m over the cabin top roof. The pole is kept horizontal in most conditions. This makes it possible to take full advantage of the whole pole length, keeping the spinnaker as far away from the other sails as possible. Our GRADIENT spinnaker is designed for this.

In light winds the pole height is adjusted to keep the clews at the same height to get the best angle of attack on the windward leech and keeping the leeward leech open.

In heavy winds on a tight reach, the spinnaker pole should at no time be closer to the forestay than 60 cm to prevent the boat from coming out of control.

If you have any questions regarding trim or H-Boat sailing in general, please contact

**Theis Palm**

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### Good luck on the water!

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**H-Boat On the Water Tuning Guide**



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