North Sails Albacore Tuning Guide

Introduction

The settings in this guide will help you get the most out of your Albacore North Sails. As always experimentation and documenting will enhance your specific boat. The weight of the crew, the balance of the boat, the stiffness of the mast and local wind and sea conditions will impact your tuning. This guide was developed with the Superspar M2 mast and B2 boom.

Boat Set-Up: Foils

The basic hull and foil set up is similar for most Albacore builders and sails. Typically the centerboard is moved as far aft in the boat as the rule allows. The minimum allowable distance from the transom to the leading edge of the centerboard when lowered 90° to the hull is 2600 mm measured along the curve of the hull. It is normal to have the board within 15mm of this measurement.

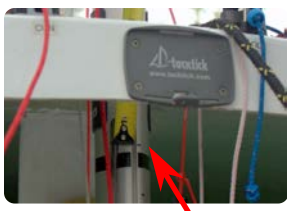
It is increasingly common to rake the centerboard forward in flat water and in winds less than approximately 12 knots. Ensure the board can do this and that the 90° position is clearly marked and visible inside the boat. The trend is also to have flexible centerboards that have good gust response and give a slight gibing effect when raked forwards in light to moderate winds.

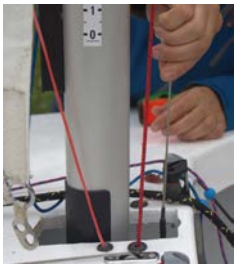
Make sure that the centerboard and rudder are aligned. With the mast off and the boat upside down, stand behind the boat and sight along the foils. If they are not aligned, normally the rudder has to be moved to bring the foils into alignment.

Mast Butt Position and Rake

The maximum forward position of the mast butt is 3350 mm measured from the aft face of the transom to the fore side of the mast at the foot. 3335 mm is the recommended starting point for North sails. This will provide sufficient pre-bend without compromising the ability to ram the mast far enough aft to allow the boom to pivot around the leeward shroud while sailing downwind.

The most robust measurement for rake is to mark the mast at the hull sheer line. Put a straight edge across the partners aft of your mast and measure down the shear line on both sides of the boat. Use the hull skin to deck intersection. Calculate the average of those two. Place a mark on your mast that same average distance down from the top deck. Disconnect the bottom of the headstay and swing it to the mark you just made on your mast. Mark the headstay at that point. (extend with line if necessary). Replace the headstay back to the bow. Hoist the jib and tighten the halyard just enough to take the slack out of the shrouds. The mark on your headstay measured to the top surface of the deck at the bow should be about 6”. If it is not you may need to move your shrouds up or down to achieve the 6". This is your max forward light air setting. In winds above 15





knots it is common to pin the shrouds down one pin from this position. Above 20 knots two pins is common.

North Sails

North Albacore Sails are cut to be powerful. Both main and jib have a fair amount of depth which is needed for superior downwind performance. In order to achieve superior upwind performance proper mast bend is required. The objective is to add just enough bend to keep the leech tell-tales flickering while in full power mode, and then as much bend as is required to flatten the sails in stronger winds. Bend is achieved primarily with boom vang, but pulling the mast forward at the partners, easing the jib halyard, and lots of main sheet all contribute to mast bend.

Pre-bend

A system to increase the bend of the mast at the partners is very important. A strut is the preferred method because it it raises the fulcrum where the bend occurs, but a simple tackle system at the partners will suffice. In most wind conditions upwind the mast must be pulled forward or "pre-bent" so that it resides about 1” -2” from front of the partners. In very light winds the mast will have to be bent all the way to the front of the partner to open the leech. In strong winds the mast should be allowed to bend to within 0.5” of the partner (any more than that and you risk over-bending and damaging the mast when you ease the head-stay). In light winds the mast will be fully pre-bent while reaching. The amount of pre-bend is gradually reducing as the wind increases. The correct time to reduce the pre-bend can be hard to judge, however if the mast is not pre-bent enough, the luff of the main is too full and the leech ticklers are difficult to fly all at the same times as the ticklers 1/3 back from the luff. When this is correct, all ticklers can be flown.

Spreaders

A good way to check the spreaders is to set the mast at the max forward, light air position. There should be zero shroud deflection in any plane (I.E. totally straight shrouds with no deflection at the spreader tips). Put your eye close to the chainplate and sight up the shrouds. This should produce a spreader length of about 15-15.5” and a sweep of approx. 7” (Standard spreaders have to be shortened to achieve this). This position is a good starting point for crew weights of up to 360 lb. Above this consider increasing the length of the spreaders by 0.5-1”.

Jib Sheeting Position

A good way to start is to fold the jib head to the jib tack and mark the mid-point of the luff. Then draw a line on the clew patch from this point to the clew of the jib. By eye extend this line down to the jib track. Experience has shown that the best light/moderate jib lead position is about 4-6” aft of this point. Further forward of this and the lower third of the jib can get too full. As the wind increases the jib car needs to be moved aft. In very strong winds this sheeting position can be as much as 10” aft of the starting position. This will flatten the foot of the jib and open the leech. It is important not to over-sheet the jib so that

the main is backwinded, or, the jib leech tell tail is stalled. The jib height must be adjusted so that the foot of the jib is in full contact with the foredeck upwind. The jib height can be adjusted through the lashing of the sail to the wire at the head. It is a good idea to raise the jib in light air to get extra sail area, and lower it in heavy air to keep the foot touching the deck when the jib car is moved aft.

Main/Jib Cunningham

The function of the cunningham is to move the point of max depth forward, or aft in the sail. Tightening the luff pulls the max depth forward. Maintain the max depth of the main just forward of half way. The more the mast bends the more Cunningham will be required. The jib max depth should be further forward about 1/3 of the way back from the luff. (like an airplane wing) It is important that the jib and main cunningham are released off wind.

Outhaul

The North main is powerful at the foot so it is important that this

is restrained upwind. In very light winds the outhaul is pulled so that the foot is taught. Above 15 knots it is pulled very tight. When reaching the outhaul needs to be eased. Maximum power is approximately 2-3” of release on the outhaul. This will be sufficient to open the foot of the main.

Jib Halyard Tension

In light winds upwind, the jib halyard is often set to allow for about 2” of sag at the mid luff. This should provide great speed and a wide groove. Tightened a little to improve pointing or slackened a bit to increase speed. Limiting Jib wire sag to about 2" upwind is important until the wind becomes overpowering. Above this, the sag is less important because the jib halyard is let off to increase mast bend and rake. It is a good idea to mark your halyard adjuster to know where your rake is. Check the section above "Mast Butt Position and Rake". Mark your halyard adjuster on the mast at a point where you achieved 6” of rake. Then make a scale on it in 1" increments. 8-10" of rake is common at the upper wind ranges. The halyard is loosened, the vang is tightened and the shrouds are pinned down. While reaching the jib halyard is eased to achieve 2-4” of jib wire sag. Many of the top boats have a system to tension the fore-stay while reaching in light to moderate conditions. With this applied, the halyard can be loosened to give jib luff sag and a powerful jib without affecting the mast bend control.

Vang

The vang is completely loose in light winds. As the wind increases a little use the vang to keep the top batten parallel with the boom. More and more vang is used as the wind builds. Once you are both hiking a harder vang will bend the mast and depower the sails. It is a sensitive control and too much vang can lead to a sail with too tight a leech, or too flat a main. Too little

vang can lead to too deep a main, or too much twist. Correct vang adjustment and appropriate jib halyard are critical to maintaining good balance and the right amount of power. When reaching the vang is used to keep the top of the main from getting too loose. Good reaching speed is obtained with constant adjustment of vang and deck level mast bend in response to the changing conditions. Try to keep all of the main ticklers flying.

Wing on Wing

When wing on wing, it is important to get the boom out as close to 90° as possible, and the jib foot snug. With this in mind, the jib halyard is loosened off by at least 6" and the mast rammed all the way to the back of the partners. It is common to let the jib halyard off to give 8"+ of jib wire sag. Above 6-8 knots get the jib out and away from the mainsail. Normally the centerboard is fully in the case and the boat is heeled to windward. Vang should be set to give just a small amount of leech twist as can be seen from the photo.

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North Sails Albacore Tuning Matrix

True Wind Speed	0-7	7-11	11-16	16-20	20+
Center Board	forward	forward	forward	Vertical	slightly aft
Shrouds	0	0	1 pin down	2 pins down	2 pins down
Jib Wire	6" rake	6" rake	6-7" rake +	7-9" rake	-9-10" rake
Jib Sag	1.5"	1.5"	1.5-2.5"	2.5-4"	4-6"
Jib Cars	0	0	back 2-4"	foot is tight	same as 16-20, eased
Outhaul	just snug	snug	tight	very tight	very tight
Pre-Bend	100%	1-2" from partner	1.5" from partner	.5"	.5"
Cunningham	draft 50% of cord	draft 50% of cord	tight	very tight	very tight
Vang	loose	top batten parallel	enough to de-power	until main inverts	until main inverts +