



One Design

For any question you may have on tuning
your Penguin for speed, contact our
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**Penguin
Tuning Guide**

NORTH SAILS

Penguin Tuning Guide

Congratulations on your purchase of your North One Design Penguin sail. The following tuning guide is meant to be a good starting point in setting up your boat. Depending on your total crew weight, wind strength, sailing style and sea conditions, you may have to alter your rig slightly.

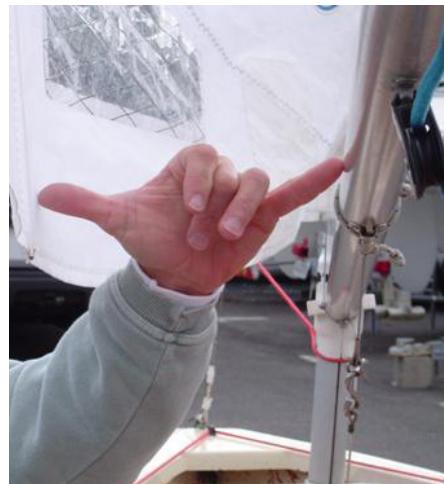
Onshore Adjustments

1. Set the mast butt position 21-23" from the Centerboard pin for older wood boats (Horners, Wrights, Beatons, Salentines) and 27-29" for newer Fiberglass or wood boats (Burtis, Freedom, Austin).
2. Step the mast and hoist a tape on the main halyard to its normal locked position.
3. Measure the rake of the mast to the top of the transom. This number should be close to 19'8" for the newer boats and as far forward as 19' 10" on the older wood boats. Remember the goal to set the mast up in the boat so that when sailing with the main trimmed properly and the boat at the proper heel the helm should be nearly neutral. Too much weather helm would warrant moving the mast farther forward in the boat... too little, or lee helm would indicate a bit more rake.
4. Set the shrouds and forestay "snug" so that just gentle pressure forward is necessary to hook the headstay. As a visual guide for proper rig tension, the leeward shroud should become slack at 4-5 mph. Once set this rig tension is proper for all wind strengths.

Now put on the sail and go sailing.

OUTHaul

There are a couple techniques used to gauge the outhaul adjustment. Perhaps the most precise is to measure from the back of the mast to where the aftermost edge of the sail would line up on the boom. For lighter winds or when more power is needed set your outhaul tension so this number is close to 99". In more breeze, or flatter water set closer to 101" Another method is to measure the horizontal distance between the sail and the center of the boom. In all conditions set the outhaul tension so that this distance is about 6-8". A "high-tech" double check is to use the width of the hand from the end of the pinky to the thumb as a guide.



Note: If your mast is fairly bendy, easing the outhaul will allow the sail to maintain the necessary fullness as the mast bends and pulls the depth out.

Inversion wrinkles (diagonal wrinkles in the lower 1/4 of the main indicating the mast is bending and maximum bend has been achieved) should develop in all mains/masts in 10mph of breeze. If these wrinkles appear earlier, ease the outhaul slightly. If they seem to develop in wind above 10mph, pull more outhaul.



CUNNINGHAM

In lighter winds, be sure to leave slight wrinkles all along the luff from head to tack. Adjust as the breeze increases until in heavier breeze the luff is almost smooth. Be sure that your boom's ability to be pulled below the band is restricted so that the luff wrinkles are easy to maintain in lighter winds.

VANG

In heavy winds pull the vang hard to help flatten the main and depower the boat. Tension the vang to the point where the inversion/ overbend wrinkles are evident

NORTH SAILS

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and fall halfway back on the boom. Try to maintain the top batten parallel to the boom and the top telltale flowing. Downwind, and upwind when not overpowered, be sure to ease the vang so that proper mainsheet tension (and added "twist") is developed.

MAINSHEET

Play the sheet to keep the leeward telltales flying in light air. Tighten the vang only in hiking conditions enough so that the boom doesn't lift when the sheet is eased. When overpowered, play the sheet to keep the helm balanced and the boat flat. In choppy conditions play the sheet to keep the boat powered up. In conditions where acceleration is important, ease the sheet so that the upper batten is angled outboard from parallel to the boom ("twist") and be conscious of driving the boat slightly lower.

TRAVELER

Set your traveler height so that the boom falls directly over the corner of the transom when the mainsheet is trimmed properly. The block should be close to 10-12" above the transom. The block will be positioned laterally about 12" below centerline except when overpowered at which time the traveler should be allowed to drop as far to leeward as possible.

HEEL

In **very light air** heel about 15 degrees. In winds above 3-4mph, try to sail the Penguin with the windward chine just clearing the water- about 5-8degrees. Downwind, sail the boat heeled to balance the helm. With the board up dead

downwind, heel the boat to windward until the helm is completely balanced.

WEIGHT PLACEMENT UPWIND

Ideally the fore and aft placement of the crew in all conditions will place the "knuckle" of the bow just kissing the water. Position the skipper and crew on opposite sides of the thwart and as close together when on the rail. When sailing in choppy, breezy conditions both should slide aft about 10".

In light winds with the crew to leeward, the skipper should slide forward a few inches to nearly on top of the thwart, still maintaining the bow just touching the water position.

WEIGHT PLACEMENT DOWNWIND

Maintain a fore and aft position to keep the boat on its lines. In breezy conditions, and especially when it is puffy, slide aft about a foot. In light winds, slide forward and again, be sure to heel the boat for proper neutral helm balance.

Good sailing and when you have any questions please give us a call.

Sail Care

Your North Sails are constructed out of the best materials on the market today. We make sure of this by testing every roll of cloth we use. Through proper care and maintenance your sails will give you the performance you have come to expect from a North Sail.

The most important factor for a long life for your sails is to watch them for signs of wear and tear in high load and chafe areas. Be sure to wash the sails off with fresh water and dry the sails thoroughly before storing. A dry, mild climate is best. Excessive heat can cause problems with the sails due to the possibility of shrinkage. It is best to roll the mainsail and jib.

Contact North Sails

For tuning information and complete details on how to setup your Penguin sails contact the North Penguin experts listed on the cover of this guide.

Good Sailing!

NORTH SAILS

Penguin Tuning Guide

NORTH SAILS ONE DESIGN QUALITY CONTROL CHECK

Penguin

MAINSAIL	
Corners	
Cunningham	
Luff Telltales	
Numbers	
Battens	
Leech Telltales	
Insignia	
North Logo	
Bag	

Checked by: _____

Date: ____ / ____ / ____