



*One Design*

For any question you may have on tuning your Jet 14 for speed, contact our Jet 14 expert listed below:

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## **Jet 14 Tuning Guide**

### Dear Jet 14 sailor:

Many thanks for choosing North Sails for your Jet. We share your enthusiasm for this great boat! We wish you many happy seasons of racing your boat and hope that whenever you have any questions about making your boat go fast that you will give us a call or drop us a line. We are always pushing to make our sails faster, longer lasting and easier to use and we always welcome your comments.

In this tuning guide we have tried to introduce a healthy dose of "why" we do certain things and what we are looking to accomplish with certain settings.

You will find that the settings on your particular boat will vary a bit from the numbers given here. The important thing is to keep an open mind and a sensitive touch on the tiller. With a bit of practice and by following the principles outlined on the next few pages you should find yourself going faster and getting the best performance out of your boat and North Sails.

Good Luck and Good Sailing!!

### Basic Rig Setup

With the mast down, we want to adjust our spreader length and angle. These two things determine how much the mast will bend, and how easy the boat will be to power up in light air and depower in heavy air. Before stepping the mast check the following items:

#### SPREADER LENGTH

This dimension, measured from the side of the mast to where the shroud intersects the spreader. For most boats this length is 17 1/4". The length of the spreader affects the side-to-side bend of the mast primarily. After stepping the mast and going sailing you will want to sight up the back side of the mast and make sure it is straight side to side from the deck to the hounds. This is very important: if the mast is sagging to leeward in the middle, shorten the spreaders until it is straight. If the mast bows to windward in the middle make the spreaders longer until the mast is straight.

#### SPREADER ANGLE

The angle of the spreaders affects how much the maximum mast bend will be. Heavier crews will want a stiffer mast and lighter crews will want a softer mast. The starting point for the adjustment on this setting is where the shroud is not deflected out of straight between the chainplate and the hounds. Heavier crews may set their spreaders so the shroud is slightly deflected forward (1/4 - 1/2 ") while lighter crews may deflect the shroud aft (1/4"). Check to make sure that the sweep aft on each spreader is the same so that the mast bends consistently from side to side. Another good check on spreader sweep is the spreader tip to tip measurement from shroud to shroud. This measurement should be close to 32" ..... farther apart for heavier crews and closer together for lighter crews.

#### MAST BUTT LOCATION

The mast butt position is measured from the center of the centerboard pin

to middle of the mast. The best starting point is 19 3/8". Moving the mast butt forward will reduce prebend while moving it aft will induce prebend ( important in "encouraging" proper mast bend in light winds.) We strongly suggest using the keel stepped mast as it makes the development of proper prebend/mastbend much easier.

#### SHROUD ATTACHMENT LOCATIONS

For most boats position the shrouds close to 72" aft of the jib tack. This will help the main go out further downwind and allow the mast to bend easier fore and aft while providing more sideways stability. Different shroud positions will require different spreader settings to achieve the same mastbend from boat to boat.

#### MAST RAKE AND RIG TENSION SETTINGS

To start, attach a 25' tape measure to your main halyard and pull and lock the halyard in the position where the main would be hoisted to the top band. If it is pulled all the way up the measurement will be too long. Measure down to the top of the transom.

In medium winds ( 5-10mph) with the rig tensioned to 150 lbs ( by the jib halyard and measured on the shrouds), we suggest setting up your shrouds so the rake is close to 20' 8". In winds of 10-15mph, tension the rig to 180lbs and check that the rake is close to 20' 8 1/2". In winds of 15 plus tension your rig to 200lbs. In winds below 5mph set your rig tension to 80lbs. Lighter rig tension in lighter winds will allow more headstay

sag and therefore make the jib a bit more powerful.

**Check your Prebend:** At your medium wind setting your mast should develop approximately 1/2-3/4" of positive prebend. Sight up your mast's luff slot to check this. Pull your main halyard ( or the tape measure if you're checking your rake) along the backside of the mast and view the distance between the halyard and the back of the mast.

**Block your mast,** or set your restricting lines to lock the mast in place at this 1/2-3/4" prebend position.

**Sight up the backside of the mast** and make sure the mast is perfectly straight side to side when the rig is tensioned in medium winds. If it is not you will need to check that the mast is centered in the boat...or more important centered through and above the mast partners at the deck. You may find it necessary to adjust the shrouds on one side and add to the other to make the mast straight. The mast should be shimmed snugly side to side at the deck (yet still able to move freely fore and aft).

Now you are set up to go sailing in moderate breeze. The first thing to do when you go sailing is to again doublecheck the mast bend side to side. Sight up the back of the mast on both tacks and make sure the mast is straight from the deck to the hounds. If it sags to leeward shorten the spreaders. If it pops to windward lengthen them. This is critical to good boat speed.

With the boat hiked flat you want to have an absolutely neutral helm in the boat. You should just need finger tip pressure to hold the tiller. If the boat has lee helm consider raking the mast back. If it has weather helm raking the mast further forward may be in order.

## Main Trim

### MAINSHEET:

The mainsheet is the throttle on the Jet and must be adjusted regularly to keep the boat going at top speed. The idea is to keep the top batten on the main parallel to the boom at all time and in under 7 knots of wind have the top telltale flying 70% of the time. If the telltale flies constantly the main is too loose. If it stalls all the time it is too tight. Trimming the main is a constant exercise in easing and trimming as the wind increases and eases.

In above 10-12 knots of wind the top telltale will fly all the time and the top batten should be nearly trimmed parallel to the boom.

### CUNNINGHAM

The main cunningham controls the fore and aft position of the draft in the sail. Keep it loose until you begin to be overpowered and then tighten it to open the leech of the main by moving the draft forward in the sail. In light winds there should be 6-8" wrinkles perpendicular to the luff from head to tack. As the wind velocity builds the cunningham will be tightened until the wrinkles are minimized to just the lower 1/4 of the main. In breeze

above 18mph the luff should be nearly smooth.

### OUTHHAUL

In all but the very lightest conditions the outhaul should be tight when sailing upwind. In very light winds the outhaul will be eased until the foot is smooth and the shelf foot open about 1" in the middle of the boom. Downwind ease the outhaul about 2-3" to make the bottom of the main more powerful and to open up the shelf foot in the bottom of the sail about 3-4" in the middle of the boom.

### BOOM VANG

The boom vang is used to hold the boom down when the mainsheet is eased and to bend the mast and depower the main in a breeze. Leave the vang completely slack until overpowered. Then take the slack out of it so that when a puff hits the main can be eased slightly with out losing leech tension. As the breeze picks up more (until constantly overpowered and the sheet is always eased) trim the vang much harder. This bends the mast and flattens the main and lets you play the mainsheet in the puffs with out loosing main leech or jib luff tension. The idea is that in very heavy winds, the vang is set hard enough that the mainsheet acts like a traveller and the need for an actual traveller is eliminated.

Downwind, you want to use the vang to keep the top batten parallel to the boom. Ease the vang substantially before reaching the weather mark to make sure you don't break your mast or boom in a breeze. In some conditions, mostly light air and flat water, the vang can be quite loose

with the top batten outside of parallel, which allows you to sail a bit by the lee. However be carefull! In heavy air this makes the boat unstable and can result in the dreaded "death roll".

### TRAVELER

Many skippers in the Jet have eliminated the traveler, relying on vang tension to keep the main trimmed properly. With vang sheeting you tighten the vang to keep the boom down and the tension on the leech when the mainsheet is eased. For sure vang sheeting eliminates another the need for the traveler...just be sure you have a powerful, easily adjusted vang. For those boats using a traveler, as the breezes builds and the boat gets overpowered it is helpful to drop the traveler until the helm of the boat is neutral and the boat is flat.

### Jib Trim

#### SHEET AND LEADS

To help judge the trim of the jib your North Jet jib has a leech telltale 1/3 of the way down the leech. The sail also comes with a trim line on the clew. To start set the jib lead so that the sheet is lined up with the trim line on the clew of the jib. From there you will want to fine-tune the lead so that the telltales on the luff of the jib break evenly (watch through spreader window). Move the lead forward if the top luffs first. Move the lead back if the bottom luffs first. In heavy winds move the lead aft up to 2".

Although many Jet sailors measure and set their leads by measuring from the tack to the sheet bearing point on the lead ( should be close to 82"), remember that slight differences in rake, jib lead position vertically and actual lead fittings make it difficult for this measurement to be accurate. The trim line is always accurate.

If it practical for you to move your leads laterally so they are 32" apart you will find better performance. Some Jet sailors have moved their leads as close as 29" apart. Tighter inboard leads allow the jib to be trimmed more eased at times without sacrificing pointing. This trim is more forgiving to steer yet still high and fast.

After getting the lead position correct, we want to trim the jib in so that the telltale on the leech is just on the verge of stalling. You will need to adjust the tension on the jib sheet constantly as the wind builds and eases to keep the telltale just on the edge of stalling.

#### JIB CLOTH

The jib cloth tension should be tightened just enough so that there are always very slight wrinkles in the luff of the sail. In very heavy wind you will want to add tension and make the luff of the jib smooth to open the leech of the sail.

### Spinnaker Trim

Always sail your North spinnaker with a 6" to 12" curl in the luff. Careful concentration is necessary. Use short, smooth, in and out motions on the sheet

to keep the spinnaker trimmed correctly. Try to keep from jerking the sheet when the spinnaker begins to collapse! Set the pole so it is nearly perpendicular to the wind. A telltale on the topping lift a foot up from the pole works great as a reference.

Keep the clews even at all times through adjustments to your topping lift (pole). If the top of the spinnaker breaks high first, lower the pole. If the bottom luff breaks first raise the pole slightly. In light puffy conditions the pole height will be adjusted nearly as much as the sheet and guy!

### 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.

#### MAINSAIL

When hoisting and lowering the sail try to minimize the amount of creasing or wrinkling of the sail. Every time the sail

gains a crease the cloth breaks down that much faster. Always have someone contain the leech and luff during these procedures. The battens can be left in the sail without any problems. Be sure to roll the sail down the leech so that the battens will not twist. This could cause damage to the battens.

### **JIB**

Roll the jib keep parallel to the seams.

### **SPINNAKER**

The spinnaker is fairly straight forward. Be sure to repair all tears and pulled stitches. Folding the sail when storing is best.

## **In Closing**

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This tuning guide was compiled with the help from many National Champions' assistance and represents the latest thinking on sailing a Jet 14 fast. Thanks especially to Brent Barbehenn!

Please give us a call if you have any questions. We look forward to helping you get the most from your new North sails. Good Luck!

## **Contact North Sails**

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For tuning information and complete details on how to setup your Jet sails contact the North Jet 14 experts listed on the cover of this guide.

Good Sailing !

Many thanks for purchasing North Sails.

### NORTH SAILS ONE DESIGN QUALITY CONTROL CHECK

#### Jet 14

MAINSAIL		JIB	
Corners		Corners	
Cunningham		Wire	
Royalty		Telltails	
Numbers		Royalty	
Battens		Leech telltales	
Leech Telltales		North Logo	
Insignia		Bag	
North Logo			
Bag			

Checked by: \_\_\_\_\_

Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_