

VX One Tuning Guide

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This guide for the VX One has been developed through extensive testing, tuning, and practical racing experience by some of the top sailors in the country. New changes in the class and developments in sailcloth and sail design technology continue to bring about improvements in the VX One's performance, and North Sails is an important part of these innovations.

While we can't guarantee you immediate victory on the race course by following this guide, we can assure you that you'll be taking a big step in the right direction!

BOAT SETUP

Step Position



The mast butt should be in the pin the 3rd hole from the aft end. Make sure you are in compliance with class rule: C.9.3Mast Centering

To aid in centering the mast laterally in the boat, place a pencil mark just in front of the shrouds on one side of the shear line. Measure from that mark to the front of the boat and make a mark the same distance from the bow on the opposite side of the boat. Then hoist a

tape measure on the jib halyard and measure to these pencil marks. Adjust the upper shroud lengths correspondingly on each side of the boat until the mast is centered. Be sure to adjust the lower shrouds as well, maintaining a straight mast (sighted up the back of the mast).

Base Mast Tune Setup

To set the base rig tune, use a PT-1 Loos Tension Gauge to check tensions on the cap shrouds and lowers. First adjust the uppers to 28 on the tension gauge. (The check stay should be slack throughout the cap and lower shroud setup process.) Then set the lower shrouds to 11. (Be sure to go back and double check the uppers and then the intermediates in the process because they will both change when you tension or de-tension one of them.) Finally, once the uppers and lowers are set, tension the check stays with the tension gauge on the lower shroud. You are looking to tension the check stays until they start to affect the tension gauge reading on the lower shroud. If you measure the check stays with the tension gauge once they are set, they should register about a 6.

Check that you have developed the proper pre-bend in the mast (positive bend) by pulling the main halyard taut to the gooseneck. The distance between the back of the mast and the main halyard at the spreaders should be close to 2.25”.

Adjusting the Rig

For lighter winds, you need to loosen your rig tension to allow for more headstay sag, which will create a more powerful jib. The lightest wind settings should be 2 steps down on the tuning chart at the end of this tuning guide. This chart generally follows a 2:1 ratio of turns for the caps:lowers.

In heavier winds (above 19 knots), much more tension is needed to maintain proper forestay sag and mast bend. In the 19-20 knot breeze range, the upper shrouds should be tensioned to 3-4 steps up on the chart. Note that the 2:1 ratio shifts here to a 1:1 ratio.

ON THE WATER

Tuning References

The visual method given here is our suggested way to set your shroud tension for all crew weights and in all wave and breeze conditions. We feel that it is not only a relatively simple technique to use, but also the most accurate way to achieve proper and consistent rig setup in the VX One.

Set your rig tension so that the leeward upper shroud just starts to appear slack – not sloppy, but just not taut. Start out close to the upper shroud tension suggested in the chart below for your best guess of the present wind velocity. When sailing upwind under proper sail trim, watch the leeward upper shroud, and if it has a great deal of “wiggle” (more than a 1/2” back

and forth), tighten both sides equally until the leeward upper is again just starting to go slack. If the breeze lightens, or you start out too tight (no wiggle at all), back off both uppers equally until a slight wiggle just appears.

The lower shroud tension is checked by trimming the main and jib to the proper position upwind and looking up at the main. Sheet the main about a 3-5 clicks of the mainsheet block tighter than what your normal sailing position should be. If the lower shrouds and the check stays are correct, you should see overbend wrinkles in the main that start just below the spreaders and go towards the clew. If the wrinkles start above the spreaders, your lowers are too loose. If they start well below the spreaders, your intermediates are too tight. The wrinkles should extend from the luff of the sail just above the check stays about 50% of the way back towards the clew. If they extend farther than that, your check stays and lowers are too loose. If they extend only 30-40% of the way back, your check stays and lowers are too tight. In full cunningham conditions, it may be hard to see the overbend wrinkles, so try letting the cunningham off a little to get an idea of where the wrinkles are.

MAIN TRIM

Mainsheet

Trim the mainsheet hard enough to make the top batten parallel to the boom. You can check this by sighting from underneath the boom on a lateral plane. Once you've accelerated and you want to point higher, trim harder to cock the top batten slightly to windward. We generally recommend sailing with the top leech telltale stalling 75% of the time. In flat water, you can trim harder, but in light air and choppy water, you'll need to ease the mainsheet (there should be no vang) to twist off the top of the main so that the top batten is eased open about 5-7 degrees from parallel. In heavy air, the mainsheet is the gas pedal. It isn't important to keep it in tight and stall the telltale; it is more important to use it to control the boat's heel angle. If you are heeling more than 5 degrees, ease the main, flatten the boat, and then trim back in. At times, you might find that the main is over the leeward corner of the boat. That's OK if the boat is flat.

Downwind, you are looking to once again be using the main to keep the heel of the boat correct. In light air, you want to have the main eased enough so that with any more ease it would be luffing because of the spinnaker. When in doubt, tighter is better than looser, and you should always feel pressure in the mainsheet.

Outhaul

You can use the outhaul for power in the bottom of the mainsail because outhaul tension primarily adjusts the shape in the main's lower third. A looser outhaul increases lower leech "hook" and adds fullness. This can aid pointing ability as well as increasing power. A tighter

outhaul flattens the lower sections of the main, which helps to minimize windward helm and reduce drag. Remember that in flat water and light winds a flatter sail is fast, whereas in chop, a slightly fuller sail is needed to give the necessary punch.

A good guide for tensioning the outhaul is the distance between the side of the boom and the middle of the foot of the main. In heavy winds, the outhaul should be tensioned tightly so that there are about 1-2 finger widths between the boom and the middle of the foot of the main. In choppy conditions or when power is needed, ease the outhaul so that there is about a 3-finger gap. Never have the outhaul any looser except while sailing downwind, at which time it can be eased so that there is about a 4-4.5 finger gap.

Cunningham

The main cunningham is used to position the draft of the sail. Aim to keep the maximum draft point close to 40-50% back in the sail (sighting from luff to leech). In up to 10 knots of breeze, you need very little cunningham. In 11-12 knots, use just enough cunningham to remove many of the wrinkles in the main. And as winds rise above 12 knots, progressively tighten the cunningham to remove all the sail's wrinkles (a smooth luff) and maintain proper draft position in the top of the sail.

Downwind, the cunningham should be off completely.

Vang

The boom vang is a critical control in heavy air because it helps to hold the boom down and maintain leech tension when the main needs to be eased. This helps the boat point upwind. In light air, the vang should be just snug until the boat is consistently heeling more than 5-7 degrees. As soon as you start having to ease the main, the vang should be pulled tighter and tighter the farther out the boom is off centerline. Max vang occurs when you can't pull it any farther and the boat is heeling more than 5-7 degrees with the boom over the boat's leeward corner.

Downwind, the vang should be eased so that the top of the sail is twisted and the leech telltales are flying 100% of the time. The windier it is, the more vang you should be easing downwind.

JIB TRIM

Jib sheet

Proper jib trim upwind has one of the greatest effects on speed and pointing. Usually, the biggest mistake most VX One sailors make is over trimming the jib sheet. This sheet is normally trimmed so that the middle batten is straight aft parallel to the boat's centerline. In light wind and/or sloppy conditions, ease the jib sheet so that the middle batten is angled

outboard 5-7 degrees. Also, in breezy conditions, ease the sheet for more twist in the leech. Generally speaking, the jib leech telltale should be flying but just about to start stalling. In the bigger breeze, however, this telltale will be less likely to stall because the jib is eased. Note that trimming the jib harder for short periods of time (where the middle batten is slightly hooked to windward of parallel to the centerline) is only effective in “ideal” boat-speed conditions (medium winds and flat water) because it narrows your steering “groove.” In heavier air, if the main is luffing in order to keep the boat flat, the cause generally isn’t from the wind coming across the boat, it is from the wind coming off the jib. If the solution of dropping the jib car to leeward in the puff isn’t effective at stopping the main from luffing because the car is consistently more than 75% of the way down the track, the jib sheet might have to be eased slightly to twist the top of the jib open. Once the main is trimmed back in, the jib sheet can be trimmed in as well.

Downwind, the jib should be furled in only the lightest of breeze. As soon as you are moving well, the jib can be out with the sheet eased. A good rule of thumb is to trim the jib sheet so that the middle telltales on the luff of the jib are trimmed correctly. This means that the bottom ones might be too tight, and the top might be luffing, but the trim is optimal.

Halyard

The jib halyard tension is key in the VX One and should be played constantly, especially in puffy conditions. For light and medium breeze conditions, the jib halyard should be set so that slight wrinkles emanate from the luff, extending back no farther than the first radial panel in the sail. As the breeze increases, these wrinkles will become less and less visible as the halyard tension is increased, and they should disappear at about the same time you are halfway into the vang. As the wind continues to increase, use more and more jib halyard tension. To get maximum tension for survival conditions, turn the boat downwind, and the middle crew should then pull the jib halyard as hard as possible.

Clewboard

The starting jib clew position (called the “standard position”) should be the 4th hole from the bottom of the clewboard. In lighter air, you might use the 5th hole from the bottom, and in heavier wind, you might use the 3rd hole. The clewboard position is not the main driver of jib shape as much as the sheet tension is.

Car

The jib car should be high enough on the track that in normal sailing conditions, with the jib trimmed correctly, you just start to see a little bit of backwind on the luff of the main. This is about 5-7 degrees from centerline for light-air conditions. In heavier wind conditions, you should move the car down 2-3 degrees more to stop the backwind, but you should also rely

on easing the jib sheet. Sailing with the jib car all the way down for prolonged periods of time to stop backwind in the front of the main is not fast, but it can be dropped to leeward for 1-2 seconds to stop the main from luffing and recover from major puffs.

SPINNAKER TRIM

The general rule of spinnaker sheet trim is to allow 3-4" of curl in the luff of the spinnaker. In light air, the sheet should be being played constantly. In heavier air, you will find that the sheet is more constant, and the curl is dictated by the driver turning the boat up and down to make the heel angle correct.

The most important trimming technique in light air is to concentrate on good communication between the helmsman and the spinnaker trimmer. The goal is to sail as low as possible while still maintaining good pressure on the kite and good boat speed. When the puff hits and the boat accelerates, use that speed to head further downwind. Once the puff subsides, you will have to turn back up to power the boat back up. An easy way to monitor this is to assess the tension on the sheet. It's important not to sail too high, which translates into longer distances, but also don't sail too low, or you'll sacrifice boat speed. It is important to remember that the fastest way to sail downwind in a VX One is with a constant apparent wind angle. This means that when the boat is going faster, the true wind can be further behind the boat, and when the boat is going slower, the true wind must be further forward on the boat.

GENERAL BOAT TRIM

Upwind

The fastest way to sail the VX One upwind is with 5-7 degrees of leeward heel and with the windward jib luff telltale at 45 degrees up while the leeward luff one is streaming straight back. In light air, you might have both telltales streaming, while in heavy air, you might have the windward one lifting straight up, but no more than that. Keeping the boat moving fast is critical because that makes the foils work more efficiently and translates into height. The harder you hike, the faster you go, but at some point you just can't hike any harder. That's the time when you will have to start easing the sails to keep the boat flat. Once again, the temptation may be to pinch to keep the boat flat, but that's simply not fast! Even at the same point as the boats around you, you can still be slower than they are. Match their speed before you match their angle. With increased boat speed will come more lift from the foils and therefore more point.

Downwind

Downwind, you should sail the boat with 5-10 degrees of heel. Be very conscious of crew weight placement fore and aft. In light air, you should try to sit far enough forward that there is smooth water coming out from behind the boat, not gurgling water. In heavy air, you should sit farther back once you're on a plane to keep the bow out of the water. You are looking for the bow to be consistently 4-6" out of the water in heavy breeze.

The VX One is a blast to sail. So as always, don't forget to have a blast out on the water!

WIND SPEED Knots	CAP SHROUDS (# of turns from base)	INTERMEDIATE SHROUDS (# of turns from base)	CHECK STAYS (# of turns from base)
0-8	-3	-2	0
8-10 (BASE)	BASE (28 on PT-1)	BASE (11 on PT-1)	BASE (6 on PT-1)
10-12	3	3	0
12-14	6	4	0
14-18	10	8	0
18-22	12	10	0
22+	15	12	0

CREW WEIGHT: 430 lbs

SHEETING ANGLE Knots	DISTANCE FRM CENTERLINE (# of turns from base)
5 degrees	193
SWEET SPOT	260
7.5 degrees	290
10 degrees	386