

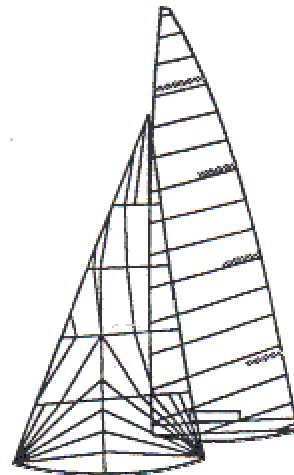
X-99 Tuning Guide



NORTH SAILS

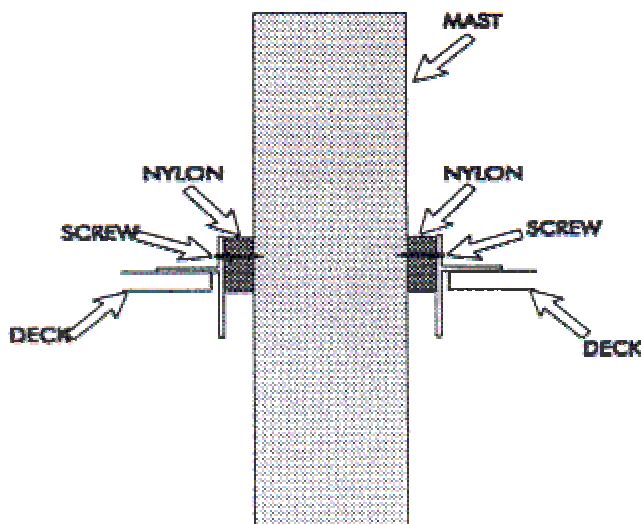
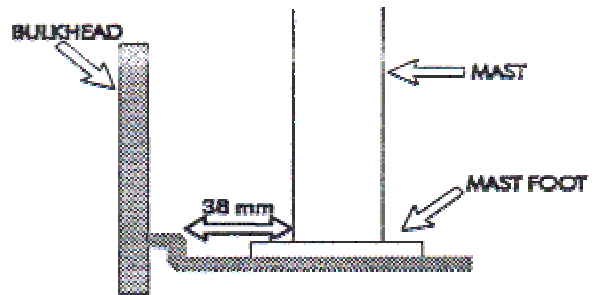
By North Diamond Sailmakers A/S, Denmark
and X-Yachts A/S, Denmark

To help you get most out of your sails we have put together this X-99 tuning guide for you as a reference and a useful starting point.



I. MAST TRIM

1. The mast foot is placed in a distance of 38 mm from the fiber glass inner section.
2. The forestay wire is held along the mast and marked at the black mark at the goose neck. This mark is the point of reference for the mast rake.
3. The mast rake is determined by measuring from the mark on the forestay to the center of the pin; this should measure 2260 mm as a basis.
4. The mast is measured when it stands straight athwartships and the upper and lower shrouds are tightened by hand, the middle shrouds are loose.



5. When the mast is straight, it is pinned down with a piece of nylon which is screwed through the mast collar so the mast is centered in the boat.
6. When the mast is fixed at deck level the upper and lower shrouds are tightened on a of 8:7; the middle shrouds just give a bit of support.
7. The fine tuning takes place during sailing: up to 6 m/sec the mast is totally straight, at more then 6 m/sec the mast starts falling slowly to leeward.
8. Sailing in less than 3 m/sec the mast is raised a bit, but this means the upper, lower and middle shrouds need adjusting. As this is quite a lot of work when the wind conditions shift often, we normally keep the same mast rake during all wind conditions.

II. SAIL TUNING

1. Mainsail (VM-5)

When you are sailing upwind, the mainsail should be trimmed with the traveller in the middle.

You must sheet the main so hard so that the upper tell tale is hidden on the back of the leech.

The 3 lower tell tales are blown straight from the battens. If you do not put enough sheet load in the main, you risk making the main too hollow and the pressure on the rudder gets too great and, therefore, the boat drifts off.

The adjustable running backstays are set just hard enough to make the wrinkles from the clew to the spreaders disappear. This also causes the tension from the runners to be transmitted directly to the forestay and, therefore, the profile of the sail is kept in the front of the headsail.

The middle shroud position on the genoa sheet track is to be at the bulkhead of the cabin as you get a good angle on the mast.

Sailing with the spinnaker you loosen the outhaul to have enough mainsail depth in the bottom. The kicking strap is tightened until the 2 upper battens do not "tip over" the upper shroud.

In light airs you sheet to the middle or just to windward of the traveller. The foot is eased so there is a lot of camber in the sail, the same with the cunningham. The halyard is loose, just enough tension as necessary to make the small wrinkles at the mast disappear. The running backstay is also loose and there is no tension on the checkstay and top mast stay.

In medium airs you sheet in to the middle of the traveller. The outhaul is tightened until near the black mark on the boom. Cunningham adjusts the camber. The halyard tension is close to the black band at the top of the mast. The backstay has medium tension, the checkstay has a bit tension to stabilise the mast curve. The top mast stay is loose. Kicking strap is only used reaching or running.

In heavy airs you sheet 15 cm down on the traveller. Outhaul is set at maximum to the black mark, cunningham adjusts the camber. Halyard max to the black band, the backstay is set to maximum. The checkstay still adjusts the mast curve, therefore it is tensioned a little. The mast top stay is loose. Kicking strap is only used reaching or running.

2. Genoa 1 (VG-6)

In light airs (0-3 m/sec) you sheet approximately 20 cm from the top spreader and 15 cm from the upper shroud at the foot. The halyard is set so the wrinkles are just removed.

In medium airs (3-8 m/sec) you sheet approximately 15 cm from the top spreader and 5 cm from the upper shroud at the foot. Halyard tension as much as necessary to remove the wrinkles.

In heavy airs (8- 12 m/sec) you sheet 15 from the top spreader and to the upper shroud at the bottom. Halyard tension precisely as much as you need to remove the wrinkles.

If you are sailing in varying conditions it is very important to trim the backstay constantly for providing maximum power to the genoa.

While beating with a no. 1 genoa it is also very important to always trim the backstay to the desired tension and afterwards adjust the genoa halyard.

18-20 knots of true wind is the maximum for the no. 1 genoa, although this depends on the waves; at higher wind speeds you should change to the jib.

3. Jib (VJ-4)

Due to the profile and the size the new jib is very suitable from 16-18 knots of true wind and upwards. It is essential that the halyard tension is set as hard as it is necessary to keep the camber permanent in the front of the sail. Otherwise you risk moving it backwards and the jib gets a flat entry and backwinding the main with too low a halyard tension. Regarding the sheeting, the wind and wave conditions are decisive as to how much power you wish to have in the jib.

At 12- 15 m/sec you sheet to the top spreader. The foot has an even curve from the forestay to the sheeting point. You sheet in the first holes of the genoa track. Halyard tension precisely as much as you need to remove the wrinkles. Sheet so hard, so the leech just touches the downer shroud at the leech line stop, close to the velcro tape.

In heavy conditions (15-20 m/sec) you sheet 10 cm from the top spreader. The foot is tight from tack to clew. You sheet 1 or 2 holes back on the genoa track. Halyard tension precisely as much as you need to remove the wrinkles.

4. Spinnaker (VSM-5 and VSI-4)

We have changed the opinion of many people by sailing with the max class spinnaker that is used both as a reaching and running spinnaker. We have designed a special running spinnaker with a big head, lots of broad seaming in the middle and big shoulders SQ VQU really can run "dead downwind" with the sail. The spinnaker pole is at 900 on the mast in medium airs, to avoid the spinnaker being covered by the main and becoming ineffective. Leeward barberhaul is tensioned until there is 10- 15 cm between the spinnaker sheet and the mainsail boom.

While reaching with the little class spinnaker (VSI-4) the spinnaker pole must not come closer to the forestay than 15-20 cm, otherwise you risk that the spinnaker flying to leeward the centre line and dragging the boat to the side instead forward. This often happens due to the running backstays being loosened before the spinnaker is set and therefore loosens the forestay.

In light conditions (0-3 m/sec) the spinnaker pole is in the lower eye of the mast, under 2 m/sec you can optimise your sailing angles with the small spinnaker (VSI-4).

When gybing in heavy airs you loosen the kicking strap 10 cm to protect the mast and the rig.

You have to work a lot with the kicking strap while reaching to avoid too much pressure on the rudder and therefore luffing.

The new spinnaker design has become fuller to avoid a "nervous" sail which collapses at the tiniest change of the wind or trim.

The fuller design also makes it possible to use the spinnaker in light airs where you can reach for a maximum V.M.G. Remember to lower the pole to tension the windward leech. It is much easier to keep the small spinnaker flying than the large, which, due to its width, often will collapse.

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