CROSS TUNING GUIDE

I) Setting the Downhaul When You HAVE the Correct Ezzy Mast:

a) First, check that the length of your Ezzy mast falls within the recommended lengths (chart 1).

b) If your mast is **LONGER**, move the downhaul gauge **DOWN** by the difference.

c) If your mast is **SHORTER**, move the downhaul gauge **UP** by the difference.

Note: Use the factory drawn medium line on the sail as your reference.

d) Then, downhaul your sail until the calibration mark lines up with the bottom of the mast (Fig. 1).

e) Refer to Fig. 2 for which line to use of the downhaul gauge.

Additional Information:

- We have set the adjustable head cap to its shortest setting. **Do not re-adjust the head webbing.**

- Do not over-downhaul when setting for regular windsurfing. Too much downhaul will make the sail unstable and also lack power.

- Foiling requires a flatter sail because you sail closer to the apparent wind. This means you will downhaul and outhaul more when you are rigging for foiling, compared to rigging for windsurfing.

- See Chart 2 for additional tuning tips.

	Ezzy Mast Bottom (cm)	Ezzy Mast Top (cm)	Total Length (with mast plug) (cm)
2.8	315	340	315.5
3.4	315	340	315.5
4.0	340	370	355.5
4.7	370	400	385.5
5.2	400	400	400.5
5.7	400	430	415.5
6.7	430	430	430.5
8.0	460	460	460.5

Chart 1: First choice mast combinations and lengths.

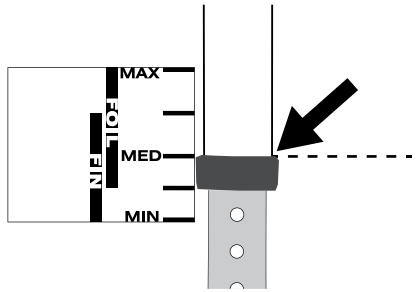


Fig. 1: Downhaul until the calibration mark lines up with the bottom of the mast.

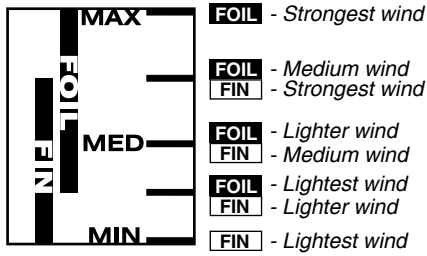


Fig. 2: Downhaul Gauge with suggested settings.

II) Setting The Downhaul For A Second Choice Mast

a) First, make sure you have NO outhaul.

b) Then, downhaul until the looseness on the leech extends to the four dots printed on the upper leech of the sail (Fig. 3).

c) This is the medium wind setting.

d) Next, move the downhaul gauge so that the medium mark of the gauge lines line up with the bottom of your mast (Fig. 1).

e) The downhaul gauge is now positioned correctly. From now on, to set your downhaul, just downhaul until the the gauge lines up with the bottom of your mast.

Note: When observing the looseness at the dots, the sail must have no outhaul. Once you apply outhaul the leech tightens and the dots are no longer relevant.

Additional Information:

- See Fig. 2 for an suggestions on which line to use of the downhaul gauge.

- See Chart 2 for trouble-shooting.

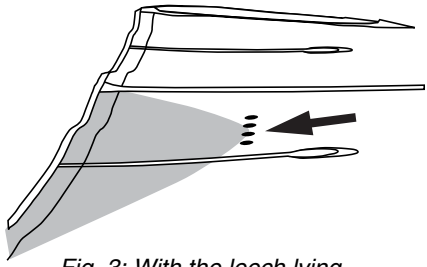


Fig. 3: With the leech lying on the ground and no outhaul, downhaul until the looseness extends to the four dots.

Feeling While Sailing	Adjust Downhaul	Adjust Outhaul
Unstable	+2 mm	+2 cm
Back Handy	0 to -2 mm	+2 cm
Stiff, front handy	0 to +2 mm	0 to -2 cm
Lacks power	-2 mm	-2 cm
Too much power	+2 mm	+2 cm
Feels Heavy	+2 mm	0 to +2 cm

Chart. 2: Tuning at the beach.

III) Tension the Tack Strap

a) The tack strap requires a lot of tension. Its purpose is to tension the foot and add shape to the bottom of the sail. It also lowers the sail's center of effort. When properly tensioned, the tack strap will improve your sail's performance and handling.

You always want a lot of tension on the tack strap.

b) Tension the strap until you see a wrinkle extending out from the tack, see Fig 4.

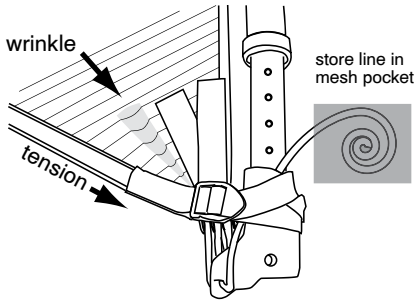


Fig. 4: Tension tack strap and store downhaul line in mesh pocket.

IV) Setting the Outhaul

The Cross requires positive outhaul (Fig. 5).

The three cords sewn at the clew indicate how much positive outhaul is needed for varying wind conditions. The longest cord shows the maximum outhaul for strong wind; the shortest cord indicates the minimum outhaul for light wind and the middle cord shows a medium outhaul setting.

Follow these steps to set the outhaul:

a) First, correctly set the downhaul.

b) Next, release all outhaul tension.

c) Make sure the battens are all rotated under the mast.

d) Then, gently pull on the outhaul cord and set your boom to the end of the cord (Fig. 6).

e) Finally, outhaul your sail to the end of the boom (Fig. 7).

Additional Information:

- When setting your boom to the cord, don't pull the clew.

- We suggest starting with the medium length cord. If you feel over-powered (back-hand pressure), increase the outhaul about 1 to 2 cm. If you feel under-powered, reduce the outhaul by about 1 to 2 cm.

V) Tensioning the battens

Use the tensioner key that is stored in the pad of the sail and tension the battens until you eliminate any vertical wrinkles that extend out from either side of the batten pocket (Fig. 8).

Note: Your battens have already been tuned by us in the factory and most likely will not need further tuning. Be careful not to over-tension your battens.

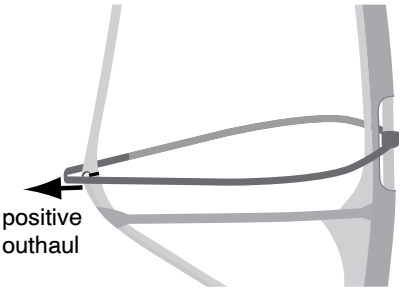


Fig. 5: Positive outhaul

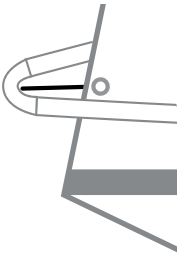


Fig. 6: Adjust the boom length to the outhaul cord.

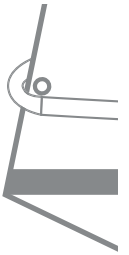


Fig. 7: Outhaul to the end of the boom.

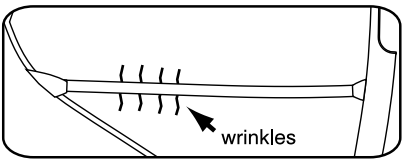


Fig. 8: Tension the battens until there are no vertical wrinkles on either side of the batten pocket.

VI) Sail Care:

- To avoid mold and mildew, dry your sail thoroughly before storing it.

- Creasing damages the sail cloth. Avoid creasing your sail when rigging and de-rigging.

- Sunlight kills all sail cloth. Keep your sail out of the sun when not sailing.

- Don't rig on sharp objects.

- After rolling the sail, tuck the pad so it rests along the sail, wrap the tack strap around the pad and the sail, then attach the velcro (Fig. 9).

- Insert your sail sleeve-end first into the sail bag (Fig. 10).

- Never store your sail upright resting on the clew.

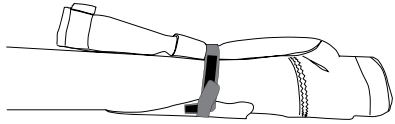


Fig. 9: After rolling, tuck the pad, then wrap with the tack strap and secure the velcro.

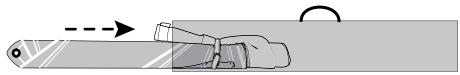


Fig. 10: Insert with the sleeve-end first into the sail bag and store horizontal.

VII) Basic Theory Relating to Outhaul and Downhaul:

- Adding downhaul, in addition to loosening the leech, moves the **draft back** because it flattens the luff.

- Adding outhaul, in addition to flattening the sail, reduces tension along the luff and moves the **draft forward**.

It is important to adjust the downhaul and outhaul together.

1) If your sail feels unstable, give a few millimeters of downhaul and a few centimeters of outhaul.

2) If your sail feels stable, but has back-hand pressure, give a couple of centimeters of outhaul until the back hand pressure goes away.

3) If your sail feels "stiff" and wants to pull you forward, release some outhaul and possibly increase the downhaul.

4) If your sail lacks power, reduce downhaul and outhaul.

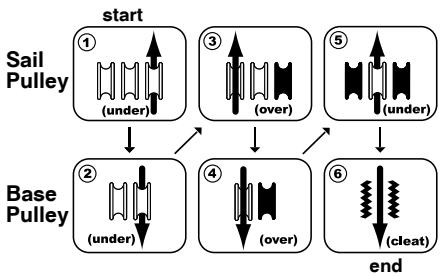


Fig. 11: Threading the tack pulley for a Chinook-style extension.