

TUNING TIPS FOR ALL CONDITIONS

WIND RANGE

- Downhaul controls the rig tension and the twist profile. More downhaul tightens the sail and induces more twist, which is good for overpowered conditions; less downhaul softens the sail and allows less twist, which is good in light wind and makes pumping more efficient. Recognize downhaul tension by noticing the looseness of the leach between the top two battens. Remember that when you increase downhaul, you will usually have to increase outhaul as well. Never rig the sail with too much downhaul and little outhaul. This will result in rough power delivery and a "heavy" feel.
- Outhaul controls the depth of the foil. Use less outhaul in lighter winds to allow the sail to be fuller. In stronger winds more outhaul will flatten the sail, reducing power, for more control. For upwind sailing or overpowered conditions, more outhaul tension will improve performance by making the sail tighter and more stable. This setting also suits the sailor who enjoys transition tricks and maneuvers, allowing the sail to de-power and re-power faster.

CONDITIONS

- In strong side shore, side-off and bumpy conditions, where you need a lot of control, you won't want the most powerful setting. Set the downhaul a little tighter and the sail will feel smoother and more controllable

SAIL MAINTENANCE

- The beauty of the SuperFreak sail is that it requires nearly no maintenance. Feel free to wrinkle, crush, tie down, or beat your sail: it will not mind. The following are some simple tips for general longevity.
- When feasible, let your sail dry before de-rigging. If the sail is rinsed with fresh water the PVC window will fog if the sail is rolled and stored without first drying. If this happens, rig the sail and leave outdoors. The fog will fade away in a few hours or less. If rolled wet with salt water the PVC window is unlikely to fog.
- Do not feel the need to rinse your sail with fresh water. Most urban water has mineral deposits that dry as white spots on the sail and are difficult to remove without scratching the sail. Salt water will leave a slight film which will not permanently adhere to the PVC window.
- Use household glass cleaner and a clean towel to restore perfect clarity to your PVC window.
- Always store your rigged sail out of direct sunlight. UV degrades sailcloth more quickly than anything else. PVC is only slightly affected by UV degradation.
- Repair tears promptly with a qualified sail repair person. Stickers do not adhere well to the Dacron material and will not suffice as a temporary repair device.
- Do not use solvents for cleaning near seams, as this will dissolve the seam tape adhesive. Use water and mild soap. To remove tar spots or sticker adhesive residue use a citrus-based cleaner.

SIZE	LUFF		BOOM		RECOMMENDED MAST	WEIGHT Kg	WEIGHT Lbs	MAST ALTERNATIVES							
	MED	MAX	MED	MAX				310	340	370	400	430	460	490	
2.9	325	327	136	138	310/23/12	2.9	6.4	RDM	RDM						
3.2	349	351	136	138	340/24/13	3.0	6.7	RDM	RDM						
3.5	361	363	144	146	340/24/13	3.2	7.0	RDM	RDM						
3.7	369	371	145	147	340/24/13	3.4	7.4	RDM	RDM						
4.0	383	385	151	153	370/25/16	3.4	7.5	RDM	RDM						
4.2	389	391	152	154	370/25/16	3.4	7.5	RDM	RDM						
4.5	405	407	155	157	400/26/19	3.5	7.6	RDM	RDM						
4.7	411	413	166	168	400/26/19	3.5	7.7	RDM	RDM						
5.0	415	417	168	170	400/26/19	3.6	8.0	RDM	RDM						
5.3	424	426	175	177	400/26/19	3.7	8.2	RDM	RDM						
5.5	437	439	176	178	430/27/23	3.8	8.4	RDM	RDM						
5.8	440	442	179	181	430/27/23	3.8	8.5	RDM	RDM						
6.3	452	454	192	194	430/27/23	4.0	8.8	RDM	RDM						
6.7	457	459	194	196	430/27/23	4.1	9.0	RDM	RDM						
7.0	490	492	192	194	460/25/25	4.2	9.2						460	RDM	
8.0	505	507	218	220	460/25/25	4.3	9.4						RDM	490	
9.0	530	532	237	239	490/25/28	4.3	9.5						520	490	

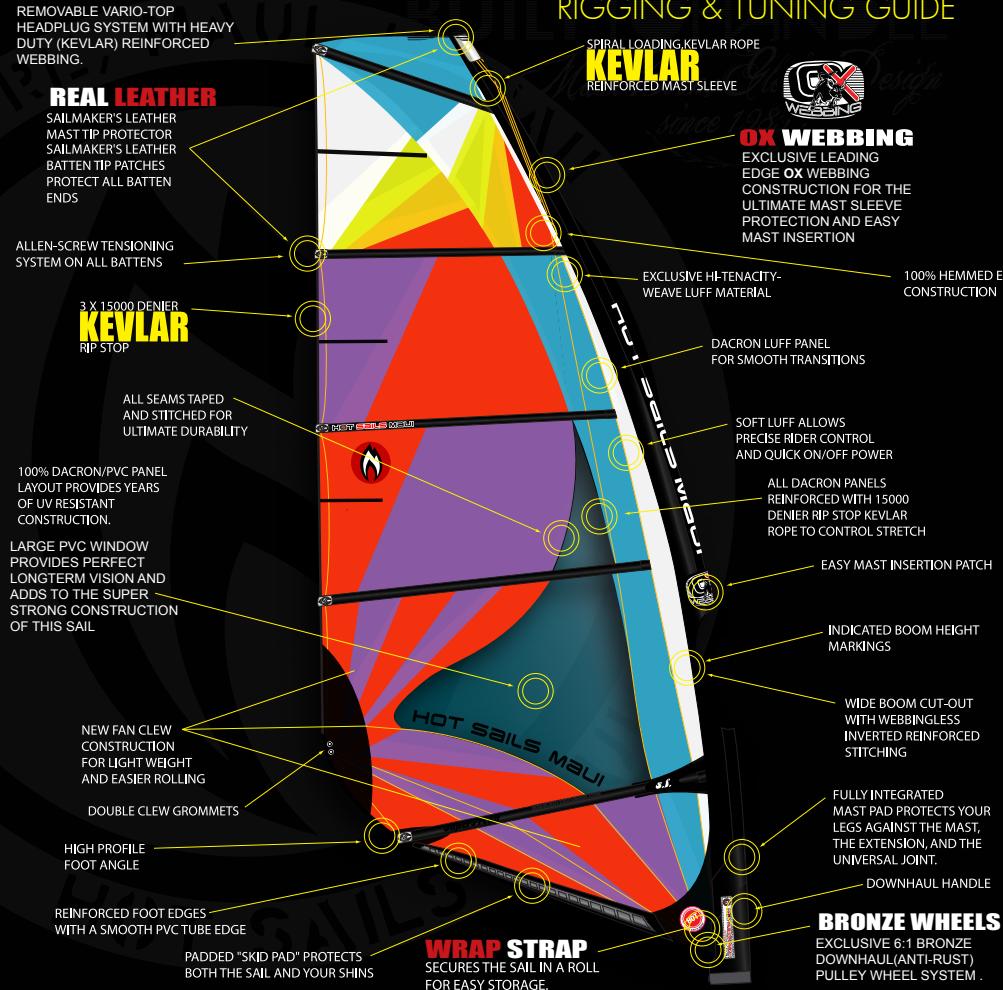
NOTE: Alternative masts shorter than ideal mast will require a 45cm mast extension

RDM = Skinny Mast
SDM = Standard diameter Mast
RDM IDEAL MAST
RDM ALTERNATIVE MAST
RDM POSSIBLE MAST / NOT IDEAL

CROSSOVER

HOTSAILSMAUI

RIGGING & TUNING GUIDE



THE RIGHT MAST

The SUPERFREAK sail has been designed to function on both an RDM (Skinny) mast as well as on a standard diameter mast. The performance of the sail is different when using each style mast. In general, the RDM mast will move the draft slightly further back in the sail, giving it a looser, wave specific feel. The standard diameter mast will change the SUPERFREAK's character to a stable bump and jump/slalom type feel. The specific mast requirements for each sail size are printed directly on the sail bag as well as on the closure strap at the bottom of the mast pad. On the last page of this instruction manual you will also find a more detailed range of mast compatibilities for each sail. Your mast should be within this required range to achieve optimum performance from the sail. There will be a slight difference in the characteristics of the SUPERFREAK sail when using different mast brands regardless of their identical stated IMCS. The SUPERFREAK has been designed to function well on most mast brands but for the best possible performance use our HOTROD RDM mast.

For your safety and your sail's durability we highly recommend that you use an RDM mast when sailing in or around breaking waves.

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RIGGING YOUR SAIL

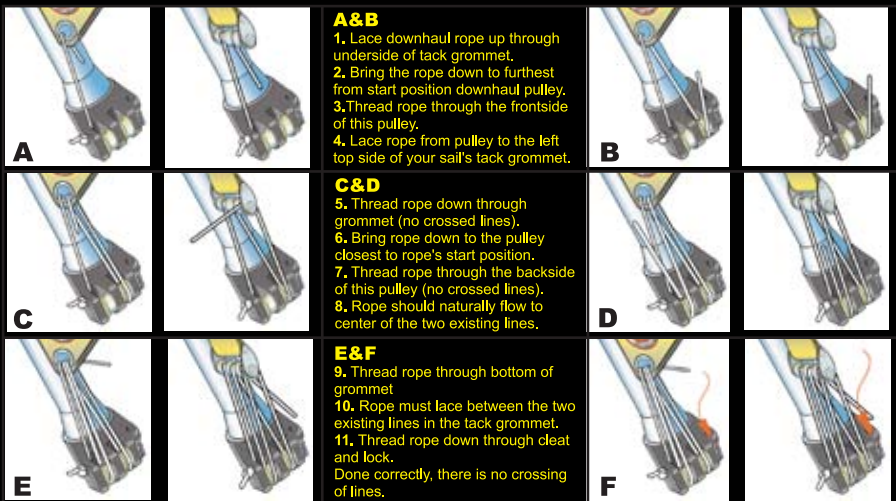
1. CHOOSE MAST HEAD SYSTEM

Most sizes have a fixed webbing head, but some sizes are supplied with the option of a fixed pin for the recommended mast or a fixed length extension loop to use an alternate longer mast. To install the loop extension first unscrew the screw in the top of the mast tip pin and remove the pin by unhooking the two side loops. The fixed loop is then installed by passing the loop through the single rear loop and then back through itself. The mast should be inserted in front of the single rear loop and the pin inserted into the hole in the mast tip plug (see photos below). Insert the mast from the bottom of the sail. Keep all the battens under the mast. Pull the sail from the bottom to avoid wrinkling the sail. Ensure the mast passes in front of the rear loop.



2. INSERT THE MAST EXTENSION

If your mast is shorter than the sail's luff length, estimate the amount of mast base extension needed by subtracting the mast length from the luff length. Your downhaul pulley system should have 6:1 purchase and enough line to make lacing easy. If you are not using a pulley hook, lace the downhaul line through the grommet as illustrated below. It is imperative that you learn the correct lacing as it allows for easy rigging and tuning and also extends the rope's life. You may choose to downhaul completely or partially at this time. It may be easier to attach the boom (depending on boom brand) before downhauling 100%.



3. ATTACH THE BOOM

Adjust your boom to the length specified for the sail. The first time you rig your new sail, attach the boom to the mast at the middle of the boom opening and re-adjust it (for your custom requirements) after the sail is fully rigged. Be careful not to attach the boom too high in the boom opening - you must account for the sail to be downhauled further. Lace the outhaul through the clew grommet, and pull the outhaul completely so the sail is flat, using the recommended boom length

4. TUNE THE DOWNHAUL

The downhaul controls the sail's shape and performance. Discover its effect by pulling and slowly releasing the line. Use a downhauling tool so the line is easier to overtension. Watch the change in depth and tension of the leading edge (front 1/2 of the sail), and the flattening and loosening of the head area (upper leach) as more downhaul is applied. Notice the rotation of the batten tips near the mast. Also notice the change in the angles, or twist, of the upper battens. Twist is cut into the sail, but is ultimately controlled by the downhaul tension. More downhaul induces more twist; less downhaul allows less twist. Twist improves sail efficiency by lowering the center of effort and making the sail easier to control.

The SuperFreak is unique in the sense that the downhaul of the sail cannot be immediately visualized by looking at the top leach of the sail. The Dacron panels inherently will disguise the leach looseness or twist until the sail is in active use.

To achieve the correct downhaul setting, look at the specific mast length specifications for your sail size. Set your mast extension to the appropriate length (e.g. a 5.0 SuperFreak requires 22cm to 24cm of extension when using a 400cm mast). Once the mast extension has been inserted into the mast and the downhaul rope has been properly threaded, downhaul the sail as far as possible. Note that due to the mast curve, downhauling this sail does require muscle work. We therefore recommend the use of a downhaul winch.

At this time, be sure that the second batten down from the top is pulling away from the mast, not pushing towards it. Once the sail has been appropriately downhauled according to the sail specification, proceed to complete the outhaul settings as described in stage 6 of this manual.

As a final test of the downhaul, once you are confident that your outhaul has also been correctly adjusted, lift your sail into sailing position and pull firmly on the boom to simulate a gust hitting your sail. While making this movement with the sail, pay attention to the action in the upper third of the sail's leach (it should twist away while you pull the sail towards you).

If you feel that the sail is pulling you forward while sailing, it is a clear indication that you need to downhaul the sail more. Simply adjust your extension to the next longer setting and re-downhaul your sail. Over time and with use, the SuperFreak sail will stretch slightly, requiring you to adjust your rig settings - in general these settings will require 2cm to 5cm of extra downhaul and outhaul.

5. TENSION THE BATTENS

The battens are tensioned using an allen key found affixed to the opening end of the sail bag. Insert the allen key into the adjustment screw inside the batten-tensioning shaft at the leach end of each batten. Turn the allen key to the right (clockwise) to tighten. Tension the batten only until the wrinkles across the batten pockets disappear. Look for a continuous smooth shape to the sailcloth next to the batten pocket (see photo). You should see a smooth surface, with no vertical wrinkles in the sailcloth along the entire length of the battens. **NOTE: DO NOT OVERTENSION THE BATTENS AS POOR ROTATION, EXCESS FOIL DEPTH AND DAMAGE TO THE SAIL CAN RESULT.** The batten tension may need to be re-tightened after one or two uses as the sail sets its final shape, but once the batten tension is set, it is not necessary to release the batten tension ever.



Needs more batten tension



Correct Batten tension

6. BALANCE THE OUTHAUL SETTING

Check the foil depth by pushing on the sail area under your harness lines. Under pressure, the sail will increase in depth as the battens pull back from the mast. When luffing or without pressure, the sail will flatten. With less outhaul the sail will be fuller and more powerful for reaching, but it will also be harder to control when overpowered or sailing upwind. For upwind sailing or well powered conditions, more outhaul tension will improve performance by making the sail flatter and tighter. Realize that whenever you increase or release downhaul, the outhaul tension will be changed and may need to be adjusted as well.

TROUBLE SHOOTING

What to do when the sail seems to pitch you forward.

- Increase the downhaul tension, and/or pull a bit on the outhaul to stabilize the sail shape.
- Check your harness line balance point: If the sail loads one hand or the other unevenly, move your lines in the direction of the load. Note that your harness lines will not balance in the same position on the boom for every sail size - the larger sails set up further back, and the smaller sizes set up further forward.

Excessive backhand pressure.

- Pull some more outhaul to move the draft forward. You may need to move your harness lines back.
- Check your settings. An extreme downhaul setting with very little outhaul moves the draft back, causing you to use your back arm more to compensate.