

WIND RANGE

- Downhaul controls the rig tension and the twist profile. More downhaul tightens the sail and induces more twist, which is good for overpowering 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 leech between the top two battens. Remember that when you increase down haul, you will usually have to increase out haul as well. Never rig the sail with excessive down haul and little out haul. 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 repower faster.

CONDITIONS

- In strong side shore, side-off shore wind & 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.
- For wave riding and jumping, where you will be sailing at some extreme reaches off the wind, you will want to reduce the chance of getting back-winded. Increase the amount of out haul to flatten the sail.

SAIL MAINTENANCE

- The beauty of the Super Freak 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. The PVC window will fog if rolled up with fresh water and stored. If this happens, rig 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 fresh water rinse your sail. Most urban water has mineral deposits that dry as white spots on the sail and are difficult to remove without abrasion. Salt water will leave a slight film which will not permanently adhere to the PVC window.
- Use household glass cleaner and clean towel to restore perfect clarity to your PVC window.
- Avoid rigging on hard or abrasive surfaces.
- Always store your rigged sail out of direct sunlight. UV degrades sailcloth more than any other factor. PVC is only slightly effected 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.
- When storing your rolled sail vertically, in the bag, be sure the sail stands on the sleeve end of the sail.

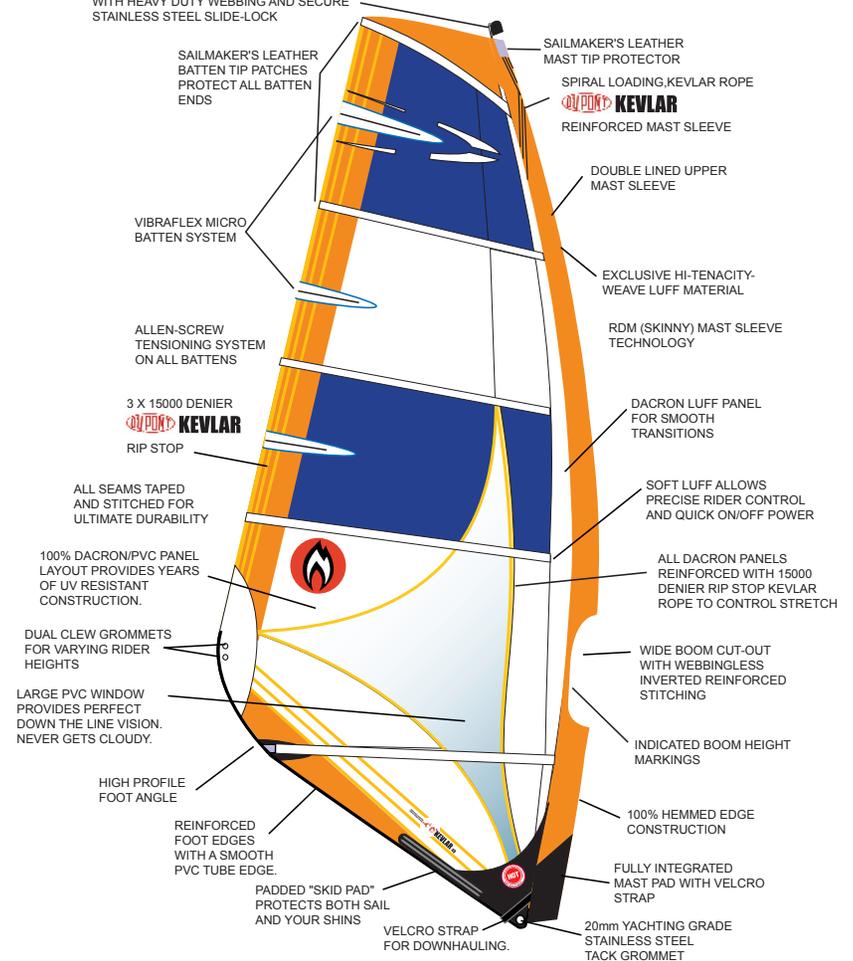
Size	Luff Min.	Luff Max.	Boom Min.	Boom Max.	Recommended Mast	# Battens	Weight Kg	Weight Lbs	Mast Alternatives			
									340	370	400	430
3.5	357	359	144	146	340/27/15	5	2.84	6.25	RDM	RDM	RDM	
4.2	399	401	152	154	370/27/17	5	3.00	6.60	RDM	RDM	RDM	
4.5	407	409	160	162	400/26/19	5	3.15	6.94		RDM	RDM	RDM
4.7	410	412	160	162	400/26/19	5	3.05	6.72		RDM	RDM	
5.0	420	422	165	167	400/26/19	5	3.29	7.24		RDM	RDM	
5.3	420	422	176	178	400/26/19	5	3.40	7.50		RDM	RDM	
5.5	435	437	177	179	430/25/21	5	3.49	7.70		RDM	RDM	RDM
5.8	438	440	183	185	430/25/21	5	3.70	8.15				

Note: Alternative masts smaller than ideal mast will require a longer 45cm mast extension.

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

Super Freak rigging & tuning guide Semi-soft enduro

REMOVABLE VARIO-TOP HEADCAP SYSTEM WITH HEAVY DUTY WEBBING AND SECURE STAINLESS STEEL SLIDE-LOCK



THE RIGHT MAST

The Super Freak sail has been designed to function on both an RDM (Skinny) mast as well as 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, truer wave specific feel. The standard diameter mast will change the Super Freak's character to a more stable bump and jump feel. The specific mast requirements for each sail-size are printed directly on the sail bag and along the length of the sails bottom batten. 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. Inherently there will be a slight difference between the characteristics of the Super Freak sail when using different mast brands regardless of their identical-stated IMCS stiffness. The Super Freak has been designed to function well on most mast brands. However we have found the best wave/high wind performance from an RDM mast produced by the following brands: Powerex, No Limits, Technolimits and Fiberspar. **For your safety and your sail's durability we highly recommend that you use an RDM mast when sailing in or around breaking waves.**

RIGGING YOUR SAIL

1. INSERT THE MAST

Insert the mast as far as you can from the bottom of the sail. Do not force the mast to the top of the sleeve via the boom opening as this unnecessarily wrinkles the sail. Keep all battens rotated to the underside of the mast. You should be able to insert the mast approximately 75% of the way before it stops. Insert your mast extension. Thread the rope on your mast extension through the tack grommet (see photo A below). Stand on mast extension and pull on the rope. You now have a 2/1 purchase to force the mast up to the top of the sleeve.

In specific sizes the Super Freak has been designed with a vario-top for use with masts longer than the sails stated luff length. Reference the above photos for adjustment instructions.



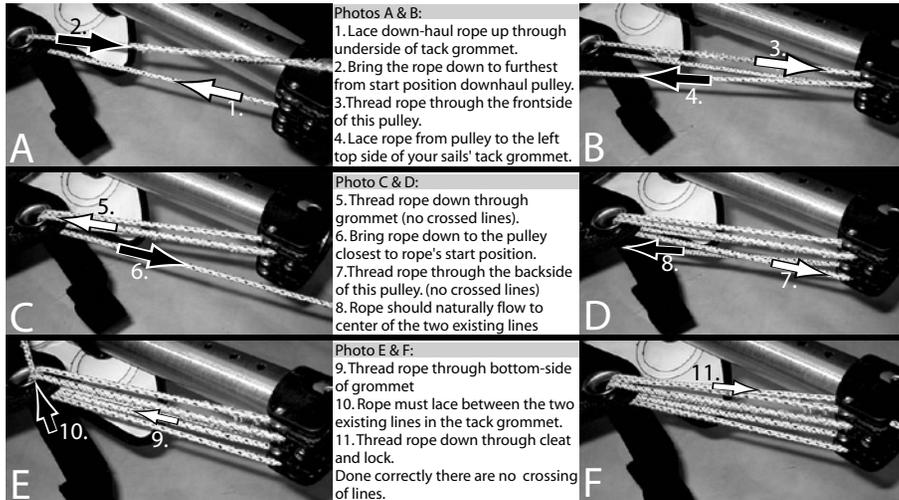
Vario Top Cap System



Fixed Top Setting

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 down haul line through the grommet as illustrated. It is imperative you learn the correct lacing as it allows correct rigging and tuning and extends the rope life. You may choose to down haul completely or partially at this time. It may be easier to attach the boom (depending on boom brand) before down hauling 100% at this time.



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 readjust it after the sail is fully rigged for your custom requirements. Be careful not to attach it too high in the boom opening - you must account for the sail to be down-hauled 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 DOWN HAUL

The downhaul controls the sail's shape and performance. Discover its effect by pulling and slowly releasing the line. Use a down hauling tool so the line is easier to over tension. Watch the change in depth and tension of the leading edge (front Ω 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 optimum downhaul setting gives a tight luff, while the leach between the top two battens should become loose (see photos on following page of the correct leach looseness).

On sails with a vario-top, once you are familiar with the correct downhaul settings, recheck the head cap length vs. the mast extension height. If necessary readjust these so that the tack grommet sits very close to the mast base cleat, and the amount of mast extending out of the top of the mast sleeve is minimized by shortening the mast base.

SUPER FREAK DOWN HAUL TENSION

The Super Freak is unique in the sense that the downhaul of the sail cannot be immediately visualized by referencing 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, reference the specific mast length specifications for your sail size. Set your mast extension to the appropriate length (i.e. A 5.0 Super Freak requires 21 to 23 cm if extension when using a 400 mast). Once the mast extension has been inserted into the mast and the down haul rope has been properly threaded proceed to downhaul the sail as far as possible. Note that due to the mast curve down hauling this sail does require muscle work. We recommend the use of a downhaul winch.

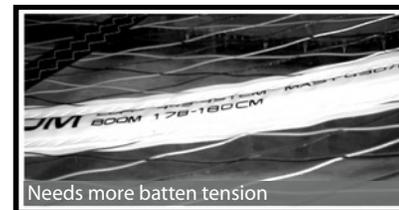
At this time, be sure that the second batten down from the top is pulling away from the mast, not pushing towards it. Once the sail has been appropriately down hauled according to the sail specification, proceed to complete the out haul settings as described in stage 6 of this manual.

As a final test of the down haul, 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 (which should twist away while you pull the sail towards you).

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

5. TENSION THE BATTENS

The battens are tensioned using an Allen-key tool 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 reflection, with no vertical wrinkles in the sailcloth along the entire length of the battens. **NOTE: DO NOT OVER TENSION THE BATTENS AS POOR ROTATION, EXCESS FOIL DEPTH AND DAMAGE TO THE SAIL CAN RESULT.** The batten tension may need to be retightened 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.



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. Less outhaul makes the sail fuller and more powerful for reaching, but it will also be harder to control when over-powered or sailing upwind. For upwind sailing or well-powered conditions, more outhaul tension will improve performance by making the sail flatter and tighter. Whenever you increase or release downhaul, realize that the outhaul tension is also changed and may need to be adjusted as well.

TROUBLE SHOOTING

What to do when the sail seems to pitch you forward to the front of your board.

- Increase the down haul tension, and or pull a bit on the outhaul to stabilize the sail shape better.
- 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, smaller sizes set up further forward.

If you are experiencing excessive backhand pressure.

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