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. Lessening the downhaul also makes pumping more efficient. Recognize downhaul tension by noticing the looseness of the leach between the top three 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 too 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.
- 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 backwinded. Increase the amount of outhaul to flatten the sail. At this setting (on a standard diameter mast) the batten just above the boom easily clears the mast without touching it.
- In lighter wind, ease up both the downhaul and outhaul to give the sail more power. At this setting, (on a standard diameter mast) the batten just above the boom should touch the mast while in transition, but should not extend more than 50% forward of the diameter of the mast.

SAIL MAINTENANCE

- 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, but won't adhere to the monofilm. Occasionally wash your rigged sail with warm water and dish soap and a cotton towel. Dry with a soft cotton towel for best results.
- Use household glass cleaner and clean towel to restore perfect clarity to your PVC window.
- If left rigged for extended periods of time, keep full tension on sail settings.
- Always store your rigged sail out of direct sunlight. UV degrades Xply® more quickly than anything else. PVC is only slightly effected by UV degradation.
- Have tears repaired promptly by a qualified sail repair person. Make temporary repairs with clear mylar packing tape or a sticker applied to both sides of the damaged area.
- 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, be sure the sail stands on the sleeve end of the sail.

SIZE	LUFF MED	LUFF MAX	BOOM MED	BOOM MAX	RECOMMENDED MAST	# BATTENS	WEIGHT Kg	WEIGHT Lbs	MAST ALTERNATIVES 340	370	400	430
3.3	344	346	137	139	340/24/13	5	3.00	6.61	RDM SDM	RDM SDM	RDM SDM	
3.8	368	370	146	148	340/24/13	5	3.20	7.05	RDM SDM	RDM SDM	RDM SDM	
4.3	395	397	155	157	370/25/16	5	3.50	7.71		RDM SDM	RDM SDM	RDM SDM
4.5	404	406	158	160	400/26/19	5	3.60	7.93		RDM SDM	RDM SDM	RDM SDM
4.8	416	418	162	164	400/26/19	5	3.70	8.15			RDM SDM	RDM SDM
5.0	417	419	169	171	400/26/19	5	3.80	8.37			RDM SDM	RDM SDM
5.3	426	428	176	178	400/26/19	5	3.90	8.59			RDM SDM	RDM SDM
5.5	439	441	178	180	430/27/23	5	4.00	8.81			RDM SDM	RDM SDM
5.8	447	449	183	185	430/27/23	5	4.20	9.26			RDM SDM	RDM SDM
6.3	463	465	191	193	430/27/23	5	4.30	9.50				

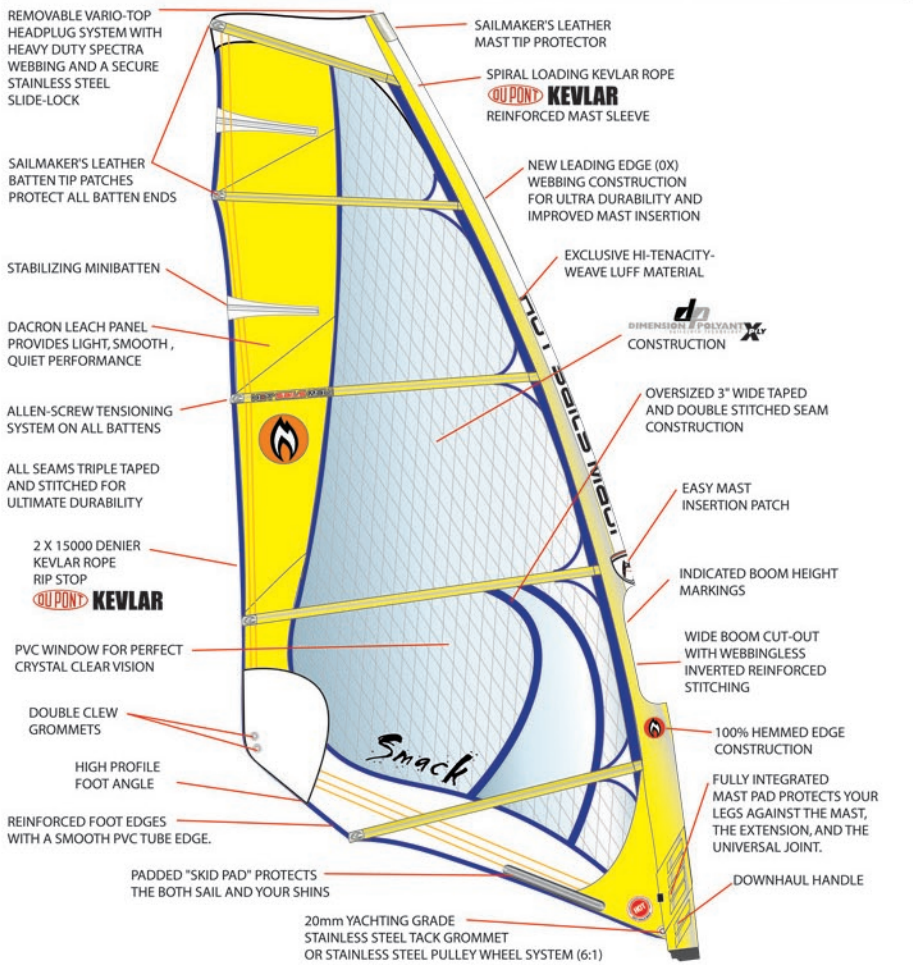
NOTE: Alternative masts shorter than ideal mast will require a 45cm mast extension

RDM = Skinny Mast
SDM = Standard diameter Mast

RDM SDM IDEAL MAST RDM SDM ALTERNATIVE MAST RDM SDM POSSIBLE MAST / NOT IDEAL

Smack HOT SAILS MAUI
rigging & tuning guide

SUPER DUTY WAVE - 100% XPLY / PVC



THE RIGHT MAST

The SMACK 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, wave specific feel. The standard diameter mast will change the Smack'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 sail's 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. There will be a slight difference in the characteristics of the SMACK sail when using different mast brands regardless of their identical stated IMCS. The SMACK 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: Hot Sails Maui (HOT ROD), Powerex, NoLimitz, Technolimits and Fiberspar.

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

RIGGING YOUR SAIL

1. INSERT THE MAST

Insert the mast, from the bottom of the sail, as far as you can. Do not force the mast from 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.

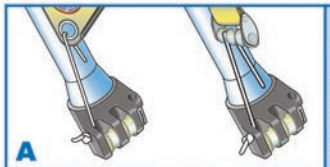
Vario Top Cap System

Fixed Top Setting

In certain sizes the SMACK has been designed with a vario-top for use with masts longer than the stated luff length. See the adjacent photos for the adjustment instructions.

2. INSERT THE MAST EXTENSION

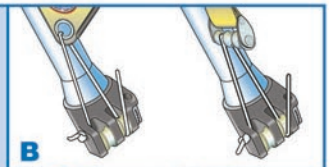
If your mast is shorter than the sail's luff length, estimate the amount of mast base extension needed by subtracting the mast length from the luff length. Your downhaul pulley system should have 6:1 purchase and enough line to make lacing easy. If you are not using a pulley hook, lace the downhaul line 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%.



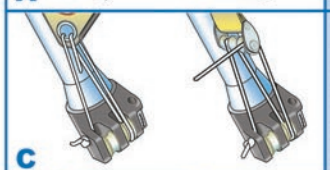
A

A&B

1. Lace downhaul rope up through underside of tack grommet.
2. Bring the rope down to furthest from start position downhaul pulley.
3.Thread rope through the frontside of this pulley.
4. Lace rope from pulley to the left top side of your sail's tack grommet.



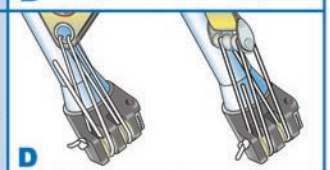
B



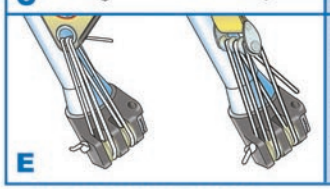
C

C&D

5. Thread rope down through grommet (no crossed lines).
6. Bring rope down to the pulley closest to rope's start position.
7. Thread rope through the backside of this pulley (no crossed lines).
8. Rope should naturally flow to center of the two existing lines.



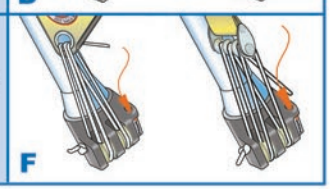
D



E

E&F

9. Thread rope through bottom of grommet
10. Rope must lace between the two existing lines in the tack grommet.
11. Thread rope down through cleat and lock.
Done correctly, there is no crossing of lines.



F

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.

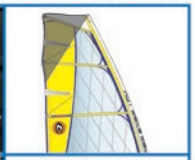
4. TUNE THE DOWNHAUL

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 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 and allows the leach between the top three battens to come loose. See photos on the next page for the correct leach looseness.

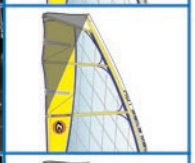
On sails with a vario-top, once you are familiar with the correct downhaul settings, re-check the head cap length vs. the mast extension height. If necessary, re-adjust these so that the tack grommet sits very close to the mast base cleat, and the amount of mast extending out of the top of the mast sleeve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

DOWNHAUL GAUGED BY THE AMOUNT OF LEACH TWIST

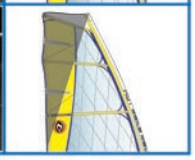
MINIMUM DOWN HAUL



MEDIUM DOWN HAUL

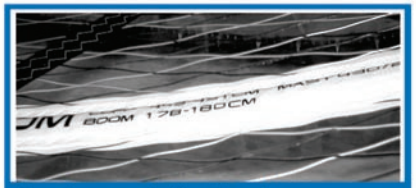


MAXIMUM DOWN HAUL



5. TENSION THE Bbattens

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 reflection, 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

Release any outhaul tension and allow the sail to relax naturally. Now pull the outhaul a minimum of 3.0cm (1 ° inches) from this neutral position. Cleat off the outhaul line. 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, but it will also be harder to control when overpowered or sailing upwind. For upwind sailing or overpowered 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.