

REVOLUTION SR4

QUICK RIGGING GUIDE

- Roll out sail • Slide mast in
- Check headcap is seated properly and mast is fully joined
- Look at conditions - light or strong wind?
- Downhaul to maximum setting and ease up to your setting according to conditions
- Attach boom • Outhaul to suit conditions • Check batten tension
- **Go Rip!**

SAIL MAINTENANCE

- Let your sail dry before de-rigging.
- Shake the sand off before rolling up your sail at the beach, as this will extend your sail's life considerably. Rinse the sail with fresh water occasionally, including inside the mast sleeve, to avoid salt and sand buildup.
- Avoid rigging on hard or abrasive surfaces.
- If left rigged all-day or overnight, release the outhaul and downhaul.
- Store your rigged sail out of direct sunlight. UV degrades monofilm.
- To prevent creases in the monofilm, roll your sail on the tube it came on, or roll it tightly and store it where it won't get flattened.
- Repair tears promptly through a qualified sail repairperson. Make temporary repairs to the monofilm with Mylar packing tape or a sticker on both sides.
- Do not use solvents for cleaning near seams, as this will dissolve the seam tape adhesives. Use water and mild soap.
- When on the beach, secure your sail from blowing away.
- Avoid getting sand or dirt inside the mast sleeve and batten pockets. This reduces sail performance by increasing friction and wear on the mast.
- Loosen the batten tension if you are not going to use the sail for an extended period.



REVOLUTION SR4

RIGGING & TUNING GUIDE



Welcome to the Revolution...

SAILWORKS

REVOLUTION SR4

FIRST TIME RIGGING

C O N T E N T S

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Welcome to the Revolution.

We are confident that you will be thrilled with your new Revolution SR4 in any type of water or wind conditions, from bump & jump blasting to down-the-line wave sailing. The Revolution SR4 is highly adjustable, so you can easily tune the rig balance to your sailing

style and the conditions you sail in. Follow this rigging guide to maximize your windsurfing experience!

The Revolution SR4 has new features that make it easier to assemble and use:

- New streamlined SBT's (Screw Batten Tensioners) for faster rigging and a cleaner leech - set it and forget it.
- A mast sleeve that's wider and tapers less, making it easier to insert a mast. This extra sleeve width also keeps the foot batten from hanging up on the mast in transitions and makes rotation smoother.

USE THE RIGHT MAST

One of the most important parts of your equipment is the mast, and its stiffness. The mast acts quite literally as the backbone of the rig and it's extremely important to the correct sail performance.

The mast requirements for the REVOLUTION SR4 are printed on the sailbag and at the tack of your sail. Listed on page 1 is a broader range of mast specifications describing the mast lengths and stiffness (IMCS #) necessary to be compatible with the shaping and tension profile of your sail. Your mast MUST be within this required range, regardless of the brand or model. Note that NOT all sail sizes work on the same mast. As a rule, larger sails need longer and stiffer masts while smaller sails require shorter and softer masts.

Two common problems are:

- Using too long, or too stiff a mast. This restricts wind range by over-tensioning the sail.
- Using too short or too soft a mast. This also restricts wind range by insufficiently stabilizing the sail.

USE A MAST DESIGNED FOR SURF SAILING IF YOU WILL BE SAILING IN OR NEAR BREAKING WAVES!

Note: The REVOLUTION SR4 sails are designed and balanced on specific Sailworks masts to suit conditions typical for the "average" size sailor (140 -190 lb/63 - 86 kg). If you are lighter than this average, or prefer a softer handling, consider using the next mast softer or shorter listed in the specification table. Note that the luff and boom dimensions listed are intended as a guide to rig assembly and sail trim. Depending on the rig components you choose, these dimensions may not always correspond exactly to the settings which are best for you. Boom length is measured from the front of the mast at the middle of the boom opening to the back of the clew. Luff length is measured from the top of the mast sleeve, around the front of the mast curve to a point opposite the center of the tack grommet.

SET THE HEADCAP LENGTH

The Revolution SR4 is fitted with an adjustable headcap system. This allows for masts longer than the sail's luff length. Check the luff length of your sail (printed at the tack and on the sailbag), and compare it to your mast length. If your mast is shorter than the luff length, adjust the headcap extension strap so the headcap is as close to the top of the mast sleeve as you can set it. If your mast is longer than the luff length, estimate the amount of mast that will extend out the top of the sleeve (mast length minus luff length). Adjust the strap so that the top of the headcap is 1-2 cm shorter than this distance away from the top of the mast sleeve.

REVOLUTION SR4 - specifications
dimensions mast requirement

size m2	optimum luff (cm/ft)	optimum boom (cm/ft)	weight (kg/lbs)	# btms	ideal mast	MCS curve %	IMCS stiffness	alternative mast	MCS curve%	IMCS stiffness
3.0	338/11'5"	130/4'3"	2.40/5.25	4	EPX 400	12.0	18.0	430	12.0	18 - 22
3.4	360/12'2"	136/4'6"	2.55/5.50	4	EPX 400	12.0	18.0	430	12.0	18 - 22
3.8	385/13'0"	144/4'9"	2.70/6.00	4	EPX 400	12.0	18.0	430	12.0	18 - 22
4.2	408/13'10"	151/5'0"	2.90/6.25	4	EPX 400	12.0	18.0	430	12.0	18 - 22
4.6	426/14'5"	160/5'3"	3.25/7.00	5	EPX 430	12.0	21.5	460	12.0	21 - 26
5.0	444/15'0"	167/5'6"	3.45/7.50	5	EPX 430	12.0	21.5	460	12.0	21 - 26
5.4	454/15'4"	175/5'9"	3.60/8.00	5	EPX 460	12.0	25.0	430	12.0	21 - 26
5.8	467/15'10"	181/6'0"	3.75/8.25	5	EPX 460	12.0	25.0	430	12.0	24 - 26

REVOLUTION SR4

RIG ASSEMBLY

1. INSERT THE MAST

Pull the sail down the mast in sections using the tack handle and working the mast tip to the top of the luff before pulling the tack of the sail all the way down to the base of the mast. Try to keep the battens all rotated to the under-side of the mast. Check that the headcap is seated completely onto the mast and that the two-piece coupling of the mast is joined properly before downhauling.

2. INSERT THE MAST BASE

Estimate the amount of mast base extension needed by subtracting your mast length from the luff length of the sail. Your downhaul pulley system should have 6:1 purchase and enough line to make lacing easy. Lace the downhaul line through the tack grommet. Keep the line looping in the same direction each time you feed it through the grommet and through your base pulley. We recommend coming up through the grommet and lacing counter clockwise through your base pulley. Try not to cross the lines, as this increases friction and will make the downhaul harder to pull. Do not fully downhaul the sail yet - leave the downhaul just "hand-tight".

3. ATTACH THE BOOM

Adjust your boom to the length specified for the sail. If you are in doubt where to set the boom, attach it at the middle of the opening and re-adjust it after the sail is fully rigged. Be careful not to attach your boom too high in the boom opening - you must account for the sail to be downhauled further. Also be careful not to pinch the mast sleeve under the boom clamp. Lace the outhaul through the clew grommet, and pull the outhaul completely so the sail is flat using the recommended boom length.

4. TUNING THE DOWNHAUL

The downhaul controls the sail's shape and performance. Discover its effect by pulling and slowly releasing the line. Use an easy-rig or downhauling tool so the line is easier to pull hard. Watch the change in depth and tension of the leading edge (front 1/3 of the sail), and the flattening and loosening of the head area (upper leech) as more downhaul is pulled. Also notice the change in the angles, or twist, of the battens; the top batten should open to leeward the furthest-called "progressive twist". 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 a lean (not full) entry, and the leech area between the top two battens should become loose (see Revolution SR4 Settings Chart on pg.5/6). A good reference point is the curved leech seam between the top two battens. If the looseness stops at this line, you have the medium or optimal downhaul setting. If the looseness falls about 5 cm short of this seam from the leech side, you will have the minimum setting. If the looseness extends forward past the seam, you will have the maximum setting. This looseness is normal and is necessary to allow the sail to twist open properly.

Once you're familiar with the correct downhaul setting, re-check the headcap length vs. mast base 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 the top of the mast sleeve is minimized by lowering the mast base.

5. TENSION THE SBT'S (Streamlined Batten Tensioners)

The battens are tensioned using the hex-key tool found under the strap above the tack handle. Insert the hex-key into the cap screw inside the SBT at the leech end of each batten. Turn the hex-key to the right (clockwise) to tighten. Tension the battens JUST until the wrinkles across the batten pockets disappear. Look for a continuous smooth shape to the sailcloth next to the batten pocket (see photos). You should see

a smooth reflection, with no wrinkles in the sailcloth alongside the battens. CAUTION: DO NOT OVER-TENSION THE BATTENS - POOR ROTATION, EXCESSIVE FOIL DEPTH AND DAMAGE TO THE SAIL CAN RESULT. Replace the hex-key tool back in its pocket above the tack handle. Once the batten tension is set, it's not necessary to adjust it for each session. **Set it, forget it!**



Needs more batten tension



Correct batten tension

6. BALANCING THE OUTHAUL SETTING

Release any outhaul tension and allow the sail to relax naturally. Pull the outhaul a minimum of 3.0 cm (1 1/4") from this neutral position. Check the foil depth by pushing on the sail area under your harness lines or standing it up in the wind. 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 will make 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 over-powered conditions, more outhaul tension will improve performance by making the sail flatter and tighter.

TUNING TIPS FOR CONDITIONS AND RANGE

(please refer to REVOLUTION SR4 Optimum Settings Chart pg.5/6)

CONDITIONS

- In side shore, side-off shore waves or bumpy conditions, where you need a lot of recovery balance, you won't want the most powerful setting. Set the downhaul a little tighter than the optimum setting, and the sail will feel smoother, softer and more controllable over the bumpy conditions (much like tuning the sail for stronger wind conditions, allowing the sail to twist more).
- For wave riding and pulling fat moves, where you will be sailing at some extreme reaches off the wind, you will want to reduce the chance of getting back-winded. So, you can increase the amount of outhaul to flatten the sail. At this setting, the batten just above the boom clears the mast without touching it.
- On flat water, the downhaul can be eased up to give the sail more power, and you can use a little less outhaul tension, moving the draft forward in the sail. At this setting, the batten just above the boom should touch the mast (lean entry), but should not extend forward of it. This will let the sail fill up with wind when under power, because the battens will have enough slack to pull away from the mast, giving the sail a deeper foil.

WIND RANGE

- More downhaul induces more twist, which is good for overpowering conditions; less downhaul allows less twist, which is good for light wind and makes pumping more efficient. Recognize twist by noticing the rotation of the batten tips around the mast in the head of the sail and the looseness in the leech between the top two battens.
- Outhaul controls the depth of the foil. Less outhaul for less wind creates more power by allowing the sail to be fuller. In stronger winds, more outhaul will flatten the sail for more control. For upwind sailing, or overpowered conditions, more outhaul tension will improve performance by making the sail flatter and tighter. This setting suits a sailor who likes to attempt transition tricks and other slick maneuvers, allowing the sail to luff and re-power faster.
- Whenever you increase or release downhaul, keep in mind that you changed the outhaul tension, as the two are closely inter-related.

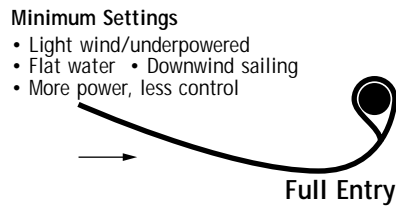
Note: These are general reference points to aid you in rigging your new Revolution SR4. But, your best test for the optimum setting is to rig it and go sailing! Use the above as a starting point and try different settings until you find what works best for you. Experiment with over-downhauling by about 2 1/2 cm (1"), and releasing tension to get the downhaul to the setting you want.



LEECH TWIST PROFILE



CROSS SECTION PROFILE

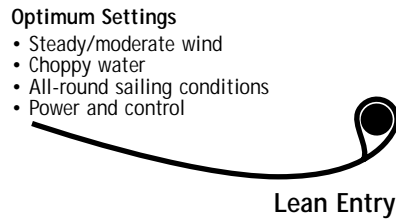


DOWNHAUL SETTINGS

- Minimum Downhaul**
- Leech is loose behind curved leech seam between top two battens
 - Deeper foil
 - Less twist
 - Full entry - batten tip above boom sits beside mast, but doesn't extend past it

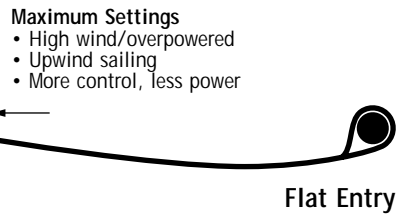
OUTHAUL SETTINGS

- Minimum Outhaul**
- Boom length becomes shorter
 - Pull the outhaul approximately 1.5 cm from neutral
 - Deeper foil



- Optimum Downhaul**
- Leech is loose just to curved seam between top two battens
 - Lean foil
 - Moderate twist
 - Lean entry - batten tip above boom sits at center of mast

- Optimum Outhaul**
- Boom at referenced length on tack
 - Pull the outhaul approximately 3 cm from neutral
 - Lean foil



- Maximum Downhaul**
- Leech is loose past curved seam between top two battens
 - Flatter foil
 - More twist
 - Flat entry - batten tip above boom sits behind mast

- Maximum Outhaul**
- Boom length becomes longer
 - Pull the outhaul approximately 5 cm from neutral
 - Flatter foil

You can expand the REVOLUTION SR4's wind range significantly by adjusting the downhaul and outhaul. **IMPORTANT: Downhaul and outhaul tension are closely interrelated. Whenever you pull or ease the downhaul, you inversely affect the outhaul tension, so readjustment of the outhaul may be required.**

Getting the most from your gear

- If it doesn't feel right, it probably isn't. A well-tuned rig should be effortless to sail. Don't be afraid to make changes and explore different settings.
- When you have found settings - (boom length, mast base length, boom height, mast step position, downhaul and outhaul position)- that feel balanced, record the position of each adjustment so that good settings are easy to repeat next session. Mark the settings with a waterproof marker right on your equipment.

TROUBLESHOOTING

- Q.** How do I know how much downhaul to give the sail in light-wind wave sailing?
- A.** You don't want to pull too much downhaul making the leech the very loose, as this is a heavy wind setting. The ideal light wind setting should have a little tension in the leech with a little bit of looseness near the top of the sail, with only a little bit of outhaul. This will give the sail more foil and more power for lighter wind.
- Q.** How does the downhaul affect the outhaul; why do I need to adjust both?
- A.** When you downhaul a sail, you are essentially bending the mast into the curve of the sail's mast sleeve. As you pull more downhaul, the clew moves away from the mast, increasing the boom length. As you ease off the downhaul, the clew moves towards the mast, decreasing the boom length.
- Q.** What is the proper amount of batten tension?
- A.** The proper batten tension is just enough to get rid of any wrinkles in the batten pocket and any waves in the monofilm adjacent to the batten pocket. If you have too much tension on the battens they will not rotate properly. Check tension before your second sailing session, as new sailcloth will have "set", or stretched slightly.
- Q.** How do I rig my sail for bump & jump conditions?
- A.** For bump & jump conditions you will want to set you sail up to get the most amount of power and twist for control in gusts and chop. To do this you can pull the downhaul to the optimum setting noted in the chart above, and pull the outhaul just enough to give the sail tension without getting rid of the foil or depth.

- Q.** What do I do if I keep getting backwinded when wave sailing?
- A.** You can try to flatten the sail more by pulling the outhaul and downhaul, so the batten above the boom clears the mast. If the foil is too deep it will backwind as you change your reaching angles on a wave. A flatter sail will be more controllable in wave sailing but will not be as powerful to get up on a plane.
- Q.** My back arm gets tired and I am having a hard time sheeting in.
- A.** You're overpowered, or you may need to move your harness lines back, or simply pull some more outhaul to move the draft forward. An extreme downhaul setting and very little outhaul moves the draft back causing you to use your back arm more to compensate.
- Q.** My front arm gets tired and I feel like I am going to get launched forward all the time.
- A.** Check your harness line balance point: when you are hooked in, see if you can lift your hands off the boom. If the sail moves to the front or the back of the board, try moving your lines the other way. Or try to increase your downhaul tension (moving the draft back) and do not touch the outhaul (it automatically gets looser by pulling the downhaul. *Increasing* the outhaul would move your draft *forward*). This is where you can really relate the two settings and find the perfect balance.