

# RETRO!

no-cam slalom

## TROUBLESHOOTING

**Problem:** "I keep getting slammed forward; the sail seems to pitch me to the front of my board."  
**Solution:**

- Move the mast step forward to give more leverage over the rig.
- Pull the downhaul more, or pull a bit on the outhaul to stabilize the sail shape better.

**Problem:** "I can't pull the downhaul very far."  
**Solution:**

- Check the mast requirements printed on the sailbag; your mast maybe too stiff or too long for the sail.
- Make sure the downhaul lines are not crossed through the pulley.
- Make sure your line diameter isn't too thick or too worn.
- Try using a tool (easy-rig) to get a better hold on the line.
- Extend the mast base further.

**Problem:** "My battens don't rotate very easily."  
**Solution:**

- Check batten tension; excessive batten tension may restrict proper rotation
- Check your downhaul; you may not have enough.

**Problem:** "I can't get planing when I know I should be."  
**Solution:**

- Ease the downhaul. Too much downhaul flattens the foil and loosens the leech, which gives you more control in heavy wind, but less power in light wind. Releasing some downhaul will move the draft forward and up. This gives more depth and more power in lighter wind.
- Ease the outhaul. Too much outhaul will flatten the sail and take power away, which is good for high wind control but bad for light wind power.

**Problem:** "My Back arm gets tired and I am having a hard time sheeting in."  
**Solution:**

- Your over powered, you may need a harness line adjustment or add some 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..

**Problem:** "My front arm gets tired and I feel like I am going to get launched forward all the time."  
**Solution:**

- 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.

## 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.



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## RIGGING AND TUNING GUIDE

# SAILWORKS

# RETRO

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## The future (and past) is NOW!

We're confident you'll be thrilled with your new RETRO, no matter what level you're sailing. The RETRO is highly adjustable, so please follow the steps in this rigging guide.

The RETRO lives up to the Sailworks tradition of performance, durability, power and smoothness. Time saving features that get you on the water faster are a huge bonus:

- Power Block triple pulley at tack for easy 6:1 downhaul purchase
- Streamlined Batten Tensioners (SBT's) - set it, forget it!
- Wide boom opening
- Low mast sleeve taper for easy mast insertion and downhauling.

The RETRO gives you instant power to light your board on fire; no waiting for puffs to get you going. It's light and easy to pump in light wind, yet adaptable to a wide range of downhaul and outhaul adjustments for stronger wind conditions. With heaps of torque and power through the wind range, and its incredibly light, responsive feel, the RETRO delivers an unsurpassed combination of power and control. Its narrow RAF luff sleeve ensures effortless waterstarts and silky smooth jibes. RETRO's reaching speed is competitive with cambered sails, yet it "powers-off" quickly for easy handling in tacks and jibes.

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RETRO RAF SLALOM - specifications										
dimensions					mast requirement					
size m2	optimum luff (cm/ft)	optimum boom (cm/ft)	weight (kg/lbs)	# btns	ideal mast	MCS curve %	IMCS stiffness	alternative mast	MCS curve%	IMCS stiffness
4.5	422/13'10"	154/5'1"	3.30/7.25	5	EPX 400	12.0	18.0	430	12.0	18 - 23
5.0	440/14'5"	163/5'4"	3.50/7.75	6	XR 430	12.0	21.5	460	12.0	18 - 23
5.5	455/14'11"	173/5'8"	3.65/8.00	6	XR 430	12.0	21.5	460	12.0	22 - 25
6.0	471/15'5"	182/6'0"	3.80/8.50	6	XR 460	12.0	25.0	430	12.0	22 - 25
6.5	487/16'0"	190/6'3"	4.00/9.00	6	XR 460	12.0	25.0	490	12.0	25 - 30
7.0	501/16'5"	197/6'6"	4.15/9.25	6	XR 490	12.0	30.0	460	12.0	25 - 30
7.5	516/16'11"	206/6'9"	4.40/9.75	6	XR 490	12.0	30.0	480	12.0	25 - 30
8.0	531/17'5"	214/7'0"	4.55/10.00	6	XR 490	12.0	30.0	500	12.0	28 - 30
8.5	545/17'10"	222/7'3"	4.70/10.25	6	XR 490	12.0	30.0	500	12.0	28 - 30

## FIRST TIME RIGGING

### USE THE RIGHT MAST

One of the most important parts of your rig is the mast, specifically its curve and stiffness and how closely these parameters match the sail. The mast acts quite literally as the backbone of the rig and it governs the sail's performance.

The mast requirements for the RETRO are printed on the sailbag and at the tack of your sail. Listed on page 1 is a broader range of mast specifications (length and stiffness) necessary for compatibility 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.

The RETRO's 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 feel, consider using the next mast softer or shorter listed in the table. Note that the luff and boom lengths printed on the tack are intended as a guide to rig assembly and sail trim. Depending on the rig components you choose, these may not always correspond exactly to the settings that are best for you. We measure boom length from the front of the mast at the middle of the boom opening, to the back of the clew. We measure luff length from the top of the mast sleeve, around the front of the mast curve to a point opposite the pulleys of the Power Block.

### SET THE HEADCAP LENGTH

Sizes 7.0 and larger have closed heads, so no adjustment is necessary. Sizes 6.5 and smaller have 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, adjust the strap so that the top of the headcap is 1-2 cm shorter than the difference away from the top of the mast sleeve.

*"Get ready, this sail pulls!"*  
Bruce Peterson



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## 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 sleeve before pulling the tack 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 completely before downhauling.

### 2 INSERT THE MAST BASE

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

### 3 ATTACH THE BOOM

If you plan to use the on-the-fly adjustable outhaul system enclosed, set that up now. Follow the instructions enclosed with the adjustable outhaul for setup and use. Adjust your boom to the length specified for the sail. Attach the boom to the mast at the middle of the opening and re-adjust it after the sail is fully rigged. Be careful not to attach if 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. Specifically 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 RETRO Settings Chart). A good reference point is the curved leech seam between the top two battens. If the looseness falls 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 Power Block tack pulley 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 and 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. Now pull the outhaul a minimum of 3.0 cm (1 1/4 inch) 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 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 over-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 has also changed and may need to be adjusted too.

## TUNING FOR WIND RANGE

Please refer to the RETRO Settings Chart on pages 5 & 6.

**Light wind** (under-powered conditions)

- **Less downhaul**, to increase foil depth for more power; to tighten the leech for better pumping; and to reduce twist and increase power in the upper part of the sail.
- **Less outhaul**, for more depth. A looser outhaul moves the center of effort (power) further back, which facilitates early planing.

**High wind** (over-powering conditions)

- **More downhaul**, to tighten and flatten the leading edge of the sail. This lowers the center of effort and gives the sail more twist.
- **More outhaul**, to flatten the overall foil depth and reduce power. This will tighten the sail and improve top end handling and control.



You can expand the Retro'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.

**R E T R O S E T T I N G S**

**LEECH TWIST PROFILE**

**MINIMUM**



**CROSS SECTION PROFILE**

**Minimum Settings**

- Light wind/underpowered
- Flat water
- Downwind sailing
- More power, less control



**Full Entry**

**DOWNHAUL**

**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

**OUTHHAUL**

**Minimum Outhaul**

- Boom length becomes shorter
- Pull the outhaul approximately 1.5 cm from neutral deep foil
- Deeper foil



**OPTIMUM**

**Optimum Settings**

- Steady/Moderate wind
- Choppy water
- All-round sailing conditions
- Power and control



**Lean Entry**

**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
- Lean foil



**MAXIMUM**

**Maximum Settings**

- High wind/overpowered
- Upwind sailing
- More control, less power



**Flat Entry**

**Maximum Downhaul**

- Leech is loose past curved seam between top two battens
- Flatter foil
- More twist
- Heavy wind - more control
- 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

*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 they are easy to repeat next session. Mark the settings with a waterproof marker right on your equipment.