

S-X RACING

AFTER SAILING

To save time rigging next session, take note or mark off successful downhaul and outhaul settings so they are easy to repeat. It is not necessary to release VTC Cam or SBT batten tension once they are properly adjusted. Release the outhaul and remove the booms, then release the downhaul and pull out the mast. Shake off the sand, roll tightly, and store in the sail bag.

SAIL MAINTENANCE

- ⚙ Monofilm is susceptible to UV degradation from sunlight, store your rigged sail out of direct sunlight whenever possible.
- ⚙ Avoid rigging on hard or abrasive surfaces.
- ⚙ If left rigged all day or overnight, release the downhaul.
- ⚙ When on the beach, secure your sail from blowing away.
- ⚙ Shake the sand off before rolling up your sail at the beach. Rinse the sail with fresh water occasionally, including inside the mast sleeve, to avoid salt and sand buildup.
- ⚙ To prevent creases in the monofilm, roll your sail on the tube it came on, or roll it tightly and store where it won't get flattened.
- ⚙ Repair tears promptly through a qualified sail repair person. 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.
- ⚙ Avoid getting sand or dirt inside the mast sleeve and batten pockets. This reduces sail performance by increasing friction and wear of the VTC Cams on the mast.



S-X RACING

assembly

tuning

mast compatibility

booms

board size

fin size

wind range

mast-step position

RIGGING & TUNING GUIDE

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SAILWORKS

S-X RACING

Welcome to S-X Racing - a brand new ultimate performance racing sail from Sailworks. S-X is an entirely new design, re-engineered in virtually every significant feature:

- ⚙️ new VTC Cam (Variable Tension Camber) adjustable passive roller camber system
- ⚙️ new SBT streamlined Screw Batten Tensioners
- ⚙️ new sizes
- ⚙️ new panel layout
- ⚙️ new tension and shaping concept.

S-X stands for Sailworks' tenth (X) version of a racing sail. Sailors familiar with previous Syncro, Syncro Pro or Syncro Pro II models will notice a change in tensioning and rig balance. Every sailor will appreciate our two new time savers: VTC Cams and SBT's, that only need adjusting the first time you go sailing. After that, just put the sail on the mast, attach the booms and go! We recommend softer masts for the S-X than for previous Sailworks racing sails. Most S-X sizes rig on the next softer and also shorter mast.

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A FEW NOTES ON TUNING

To get the most out of your new S-X Racing, consider not only the sail tuning advice, but also the board, fin and mast position recommendations. The S-X has been designed and tested with state of the art boards and fins. To fully realize the potential of the S-X sail, the entire package of board, sail and fin must be optimized. All the guidelines given here are based upon use by a "typical" sailor (63 - 86 kg / 140 - 190 lb.) with advanced to expert windsurfing ability. Sailors heavier than our average should consider using the next larger sail, or in some cases stiffer masts. Sailors lighter than our average should consider using a smaller sail. These equipment guidelines are not the only equipment options possible, but they do represent the parameters under which the S-X Racing sails were developed and tested. The ideal component size for a given sail size is the median of the range listed. The wind range given for each sail size represents the use of the recommended light wind settings to achieve the low end range, and the use of the recommended high wind settings to achieve the high end range. Ideal settings for the average weight sailor are in the middle of the ranges given.

ASSEMBLY AND RIGGING

- 1 USE THE RIGHT MAST** For best performance, use the Sailworks' mast that the sail was designed for. Otherwise, choose a mast that matches the recommended mast compatibility. Pay particular attention to the mast length and IMCS stiffness required to be compatible with the shaping and tension profile. Your mast must be within this range regardless of the brand or model. Note that **not** all sail sizes will work on the same mast. As a rule, larger sails need longer and stiffer masts, while smaller sails require shorter and softer masts.
- 2 SET THE HEADCAP LENGTH** The S-X Racing sizes 5.6, 5.2 and 4.8 are fitted with adjustable headcap systems. All other sizes are closed head or fixed length. The headcap system consists of a stem headcap (male) which fits into a socket mast tip plug (female). If your mast does not have this type of mast plug, replace it with one of the two diameter mast plugs provided. Adjustable head: check the luff length of your sail and compare it to your mast length. If your mast is shorter than the luff length, adjust the headcap extension strap to position the headcap close against the top of the mast sleeve. If your mast is longer than the luff length, estimate the amount of mast that will extend out the top of the mast sleeve (roughly mast length minus luff length), and adjust the strap so that the top of the headcap is this distance away from the top of the mast sleeve. Never use both mast base extension and headcap strap extension. Instead, minimize the amount of mast extending out the top of the sail by shortening the headcap strap.

Variable Tension Cams (VTC)



3 INSERT THE MAST Push back the boom opening flap between the two diamond-shaped cutouts in the mast sleeve. Insert the mast up the mast sleeve, out through the lower cutout and back in through the upper cutout.

Try to keep the VTC Cams on the mast, but do not worry if they come off the mast - keep inserting the mast. Any VTC Cams that have come off the mast can easily be re-seated once the boom is attached and outhaul pulled. Pull the sail down the mast in sections by working the mast tip to the top of the luff before pulling the tack of the sail down to the base of the mast. Check that the stem headcap is properly seated completely into the mast tip plug.

4 ATTACH THE MAST BASE Your downhaul system should have a low friction 6:1 purchase. Keep the downhaul line looping in the same direction each time you feed it through the Power Block and through your base pulley. Don't cross the lines, as this increases the line friction and will make the downhaul harder to pull. Do not fully downhaul the sail yet; leave the mast sleeve at the boom opening loose for easier boom attachment.

5 ATTACH THE BOOMS Adjust your boom to the length specified for the sail. Attach the boom at chest height on the mast. Be careful not to attach your booms too high in the boom opening - you must allow for the sail to be downhauled further. Lace the outhaul through the clew grommet, and pull the outhaul completely so the sail is very flat. This setting - loose downhaul and tight outhaul - makes it very easy to adjust the VTC Cam tension or put the VTC Cams back on the mast, if necessary. If the VTC Cams have come off the mast, ALWAYS open the zipper when attempting to re-seat the cam onto the mast.

6 ADJUSTING THE VTC CAMS IMPORTANT: Do not attempt to adjust the VTC Cams with the downhaul tensioned - release the downhaul before adjusting the VTC Cam. For each VTC Cam, open the zipper and locate the adjustment buckle. Pop open the adjustment buckle by pulling the webbing tail upward. The buckle has a tight "snap-fit" into the side of the cam and does take some force to open or close. This is normal. To tension the VTC Cam, pull the webbing strap forward (toward the mast) while at the same time pushing the batten down and back from the mast with your other hand (see photo). As you push down on the batten, work the slack webbing free by pulling the strap forward then back a couple times. **Correct VTC Cam tension should tension the mast sleeve snugly without impeding rotation.** Once you've positioned the VTC Cam, close the buckle firmly by snapping it into the side of the VTC Cam. It will snap into place, flush with the side when closed. Once the VTC Cam tension is set, it is not necessary to adjust it for each session! **DO NOT TRY TO CLOSE THE ZIPPERS UNTIL THE SAIL IS FULLY DOWNHAULED - DAMAGE TO THE ZIPPER CAN RESULT.**

7 DOWNHAUL THE SAIL Pull the downhaul until the horizontal wrinkles across the leading edge disappear. Close the zippers. If you can't close the zippers, you've tensioned the VTC Cams too far. Refer to the Tuning section for each size for more details about downhaul settings.

8 SET THE OUTHAUL Follow the instructions included with the adjustable outhaul system for set up and use. Release any outhaul tension and allow the sail to relax naturally to its fullest depth. First time users may need to push once on one of the batten ends as this helps the sail "set" to its fullest shape. Pull just enough outhaul tension to lift the sail up off the boom tube and tighten the clew patch area. This is a **neutral** all-round outhaul setting. Remember to readjust outhaul when changing downhaul or VTC Cam tension.

9 TENSION THE BATTENS The battens are tensioned using the hex-key tool found in a pouch above the tack handle. Insert the hex-key into the cap screw inside the batten tensioner at the end of the batten. Turn the hex-key to the right to tighten. Tension the battens just until the wrinkles across the batten pockets disappear. Note that wrinkles across the mast sleeve are removed by adjusting the VTC Cam tension. Once the batten tension is set, it is not necessary to adjust it for each session! **CAUTION: DO NOT OVER-TENSION THE BATTENS - POOR ROTATION, EXCESSIVE FOIL DEPTH AND DAMAGE TO THE SAIL CAN RESULT.**

Screw Batten Tensioners



*Your S-X Racing sail is now assembled.
Next, please refer to the tuning and rig balance advice
for each sail size on the following pages.*

S-X RACING

The downhaul controls the sail's shape and performance. You can expand the S-X's wind range significantly by simply adjusting your downhaul. Begin by tuning the downhaul and outhaul to the ideal (median) settings shown in the table. As mentioned on page 2, these are the optimum settings for an "average" size sailor to achieve peak performance and range. From the median settings you can adjust for more low end power OR increased top end stability and control. Low end and top end require polar settings, therefore improving one will naturally compromise the other.



- ⚙️ Very powerful in light wind conditions while having a wide wind range.
- ⚙️ Draft profile cut at about 40% aft for early fin loading, quick acceleration and immediate upwind drive.
- ⚙️ Soft, forgiving, easy to handle, very responsive to changes in wind pressure.
- ⚙️ Enhanced upwind drive with power to pinch up for position or foot off for speed.
- ⚙️ Finely tuned progressive twist profile is very efficient at gliding through lulls.

- ⚙️ Requires large, high volume slalom board and large, high aspect fin.

Note that the luff and boom dimensions given 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 which are best for you. • Luff dimensions are measured around the luff curve from the mast tip to the center of the tack pulley. Boom dimensions are measured from the back of the clew to the front of the mast at the middle of the boom opening. • All mast curve specifications are CONSTANT CURVE. • These equipment guidelines are not the only equipment options possible, but are representative of the parameters under which the S-X Racing sails were developed and tested. • Ideal settings are in the middle of the ranges given.

MID - RANGE (IDEAL)

Set the downhaul and outhaul to the median settings noted: the leech will be loose down to the #4 batten; outhaul is neutral when released (neither negative or positive, neutral is just enough to lift the sail off the boom); mast step at the median setting noted.



LOW END

Downhaul set at lower range setting (up to 2cm less); leading edge will be fuller for more power; leech will be tighter for better pumping; less overall rig tension for more responsiveness. Horizontal wrinkles will appear in luff when pumped, leech will be loose only along very edge, just down to #3 batten. Outhaul loose: neutral to 1 cm negative (pushed in). Move the mast step further back to hold the sail more upright and reduce wetted board surface for quicker planing. Use a large fin for more lift.



HIGH END

Downhaul at upper range settings (up to 2cm tighter); leading edge will be flatter for less power; leech will be looser for better efficiency and lower center of power; more overall rig tension for more stability. Leech will be loose down to #5 batten, the looseness extending into the seams. Outhaul pulled: neutral to 1 cm positive. Move the mast step further forward to increase sail rake and to hold the board down to the water. Use a smaller fin for less lift.



sail size	median luff		median boom		btns	VTC cams	weight		ideal sailworks mast			other mast compatibility		wind cond. (knots)		board sizes		fin sizes		mast step position	
	cm	feet	cm	feet			kg	lbs	MODEL	MCS	IMCS	LENGTH	IMCS RANGE	low	high	cm	feet	cm	inches	cm	inches
7.6	522	17'2"	213	7'0"	8	4	5.15	11.3	XR-490	26.0	30.0	500	27.0 - 33.0	10	24	282 - 300	9'3" - 10'0"	40 - 44	15.7 - 17.3	132 - 142	52 - 56
8.0	532	17'5"	222	7'3"	8	4	5.35	11.8	XR-490	26.0	30.0	500	29.0 - 35.0	8	22	282 - 300	9'3" - 10'0"	40 - 48	15.7 - 18.9	132 - 142	52 - 56
8.4	543	17'10"	228	7'6"	8	4	5.50	12.1	XR-490	26.0	30.0	500	29.0 - 35.0	6	20	282 - 300	9'3" - 10'0"	42 - 48	16.5 - 18.9	132 - 145	52 - 57

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- ⚙️ Very stable in over powered conditions while maintaining softer responsive feel.
- ⚙️ Lean and efficient draft profile is easy to control and very slippery when powered.
- ⚙️ Enhanced upwind drive with power to pinch for position or foot off for speed.
- ⚙️ Fully optimized progressive twist profile provides superior handling at high speed.

MID - RANGE (IDEAL)

Set the downhaul and outhaul to the median settings noted: the leech will be loose down to the #4 batten; outhaul is neutral when released (neither negative or positive, neutral is just enough to lift the sail off the boom); mast step at the median setting noted.



LOW END

Downhaul set at lower range setting (up to 2cm less); leading edge will be fuller for more power; leech will be tighter for better pumping; less overall rig tension for more responsiveness. Horizontal wrinkles will appear in luff when pumped, leech will be loose only along very edge, just down to #3 batten. Outhaul loose: neutral to 1 cm negative (pushed in). Move the mast step further back to hold the sail more upright and reduce wetted board surface for quicker planing. Use a large fin for more lift.



HIGH END

Downhaul at upper range settings (up to 2cm tighter); leading edge will be flatter for less power; leech will be looser for better efficiency and lower center of power; more overall rig tension for more stability. Leech will be loose down to #5 batten, the looseness extending into the seams. Outhaul pulled: neutral to 1 cm positive. Move the mast step further forward to increase sail rake and to hold the board down to the water. Use a smaller fin for less lift.



Note that the luff and boom dimensions given 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 which are best for you. • Luff dimensions are measured around the luff curve from the mast tip to the center of the tack pulley. Boom dimensions are measured from the back of the clew to the front of the mast at the middle of the boom opening. • All mast curve specifications are CONSTANT CURVE. • These equipment guidelines are not the only equipment options possible, but are representative of the parameters under which the S-X Racing sails were developed and tested. • Ideal settings are in the middle of the ranges given.



sail size	median luff		median boom		btns	VTC cams	weight		ideal sailworks mast			other mast compatibility		wind cond. (knots)		board sizes		fin sizes		mast step position	
	cm	feet	cm	feet			kg	lbs	MODEL	MCS	IMCS	LENGTH	IMCS RANGE	low	high	cm	feet	cm	inches	cm	inches
6.8	499	16'4"	198	6'6"	8	4	4.80	10.6	XR-460	25.0	25.5	480	24.0 - 30.0	14	28	275 - 290	9'0" - 9'6"	34 - 40	13.4 - 15.7	129 - 140	51 - 55
7.2	512	16'10"	206	6'9"	8	4	4.95	10.9	XR-490	26.0	30.0	500	27.0 - 33.0	12	26	285 - 300	9'4" - 9'10"	36 - 42	14.2 - 16.5	132 - 140	52 - 55

S-X RACING

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- ⚙️ Intended for speed reaching performance in light to moderate conditions.
- ⚙️ Emphasis on efficiency and acceleration with maximum lift and minimal drag.
- ⚙️ Soft and forgiving to pump, easier to handle, very responsive to changes in wind pressure.
- ⚙️ Finely tuned progressive twist profile is very efficient at gliding through lulls.

- ⚙️ The 6.4 size has more emphasis on power and acceleration than the 6.0 size. Requires floaty slalom board.

MID - RANGE (IDEAL)

Set the downhaul and outhaul to the median settings noted: the leech will be loose down to the #3 batten; outhaul is neutral when released (neither negative or positive, neutral is just enough to lift the sail off the boom); mast step at the median setting noted.



LOW END

Downhaul set at lower range setting (up to 2cm less); leading edge will be fuller for more power; leech will be tighter for better pumping; less overall rig tension for more responsiveness. Horizontal wrinkles will appear in luff when pumped, leech will be loose only along very edge, just down to #2 batten. Outhaul loose: neutral to 1 cm negative (pushed in). Move the mast step further back to hold the sail more upright and reduce wetted board surface for quicker planing. Use a large fin for more lift.



HIGH END

Downhaul at upper range settings (up to 2cm tighter); leading edge will be flatter for less power; leech will be looser for better efficiency and lower center of power; more overall rig tension for more stability. Leech will be loose down to #4 batten, the looseness extending into the seams. Outhaul pulled: neutral to 1 cm positive. Move the mast step further forward to increase sail rake and to hold the board down to the water. Use a smaller fin for less lift.



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sail size	median luff		median boom		btns	VTC cams	weight		ideal sailworks mast			other mast compatibility		wind cond. (knots)		board sizes		fin sizes		mast step position	
	cm	feet	cm	feet			kg	lbs	MODEL	MCS	IMCS	LENGTH	IMCS RANGE	low	high	cm	feet	cm	inches	cm	inches
6.0	469	15'5"	184	6'0"	7	3	4.20	9.2	XR-460	25.0	25.5	430	21.0 - 26.0	18	32	265 - 280	8'8" - 9'2"	28 - 32	11.0 - 12.6	129 - 137	51 - 54
6.4	484	15'11"	191	6'3"	7	3	4.40	9.70	XR-460	25.0	25.5	480	24.0 - 30.0	16	30	270 - 285	8'10" - 9'4"	30 - 35	11.8 - 13.8	129 - 137	51 - 54

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- ⚙ Intended for reaching conditions at high speed. Used in high winds and bumpy seas.
- ⚙ Very stable in over powered conditions while maintaining softer responsive feel.
- ⚙ Fully optimized progressive twist profile provides superior handling at high speed.
- ⚙ Larger sizes emphasize speed; smaller sizes emphasize control. Soft and forgiving in strong gusts.

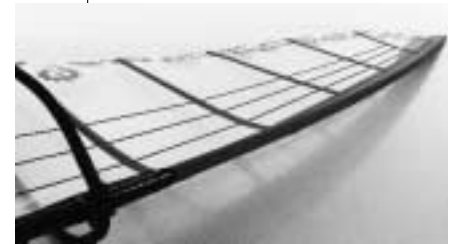
MID - RANGE (IDEAL)

Set the downhaul and outhaul to the median settings noted: the leech will be loose down to the #3 batten; outhaul is neutral when released (neither negative or positive, neutral is just enough to lift the sail off the boom); mast step at the median setting noted.



LOW END

Downhaul set at lower range setting (up to 2cm less); leading edge will be fuller for more power; leech will be tighter for better pumping; less overall rig tension for more responsiveness. Horizontal wrinkles will appear in luff when pumped, leech will be loose only along very edge, just down to #2 batten. Outhaul loose: neutral to 1 cm negative (pushed in). Move the mast step further back to hold the sail more upright and reduce wetted board surface for quicker planing. Use a large fin for more lift.



HIGH END

Downhaul at upper range settings (up to 2cm tighter); leading edge will be flatter for less power; leech will be looser for better efficiency and lower center of power; more overall rig tension for more stability. Leech will be loose down to #4 batten, the looseness extending into the seams. Outhaul pulled: neutral to 1 cm positive. Move the mast step further forward to increase sail rake and to hold the board down to the water. Use a smaller fin for less lift.



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sail size	median luff		median boom		btns	VTC cams	weight			ideal sailworks mast			other mast compatibility		wind cond. (knots)		board sizes		fin sizes		mast step position	
	cm	feet	cm	feet			kg	lbs	MODEL	MCS	IMCS	LENGTH	IMCS RANGE	low	high	cm	feet	cm	inches	cm	inches	
4.8	420	13'9"	160	5'3"	7	3	3.65	8.0	EPX-400	25.0	19.0	430	18.0 - 23.0	24	38	250 - 270	8'3" - 8'10"	26 - 28	10.2 - 11.0	128 - 137	50 - 54	
5.2	437	14'4"	168	5'6"	7	3	3.90	8.6	XR-430	24.0	21.5	460	19.0 - 26.0	22	36	260 - 275	8'6" - 9'0"	26 - 30	10.2 - 11.8	128 - 137	50 - 54	
5.6	453	14'10"	176	5'9"	7	3	4.05	8.9	XR-430	24.0	21.5	460	21.0 - 26.0	20	34	260 - 275	8'6" - 9'0"	26 - 30	10.2 - 11.8	128 - 137	51 - 54	