



STAR TUNING GUIDE

Wind Speed	0-3 kts	4-6 kts	7-10 kts	11-14 kts	15-18 kts	19-21 kts	22+ kts
MAST TUNING							
Forestay Length	37.5" (950mm)	37.25" (945mm)	37.25" (945mm)	37" (940mm)	37.25" (945mm)	37.5" (955mm)	37.5" (955mm)
Upper Shroud (PT-2)	24	23	23	24	24.5	24.5	25
Lower Shroud	28.5" (72.5cm)	28" (72.5cm)	28.5" (72.5cm)	+ 1 FACE	+ 2 FACE	+ 3 FACE	+ 4 FACE
Upper Intermediates	74.5mm	74.5mm	74mm	74mm	74mm	74mm	73mm
Spreaders	5.25" (134mm)	5.25" (134mm)	5.25" (134mm)	5.25" (134mm)	5.25" (134mm)	5.25" (134mm)	5.25" (134mm)
SAIL CONTROLS							
Outhaul Tension (From Band)	1" (2.5cm)	1-1.5" (2.5-3.5cm)	1.5" (1.5cm)	.5-1" (1-2.5cm)	max	max	max
Main Cunningham	None	None	Half wrinkles	No Wrinkles	<-- As Needed to Depower -->		
Mainsail Topbatten	L (+ 0)	L (+ 2)	L / H (+ 4)	H (+ 5)	H (+ 6)	H (+ 8)	H (+8)
Jib Tack Height (est.)	1.5" (40mm)	1.5" (40mm)	1.5" (40mm)	1" (25mm)	1" (25mm)	1" (25mm)	1" (25mm)
Downwind Shroud Car/Lever	W off L on	W off L on	Both off	W on L off	Both on	Both on	Both on

*The above recommendations are based on max crew weight and new/lightly used sails

Forestay Length	Mark Intersection of top of black band/forestay. Forestay length should allow boom height near "2 blocked" with mainsail leech neither shut down or too open
Mast Step	Measure from back edge of the mast to vertical intersection with transom; suggested base = 14' 10.5" (4.535m) depending on hull manufacturer; Leading edge of the black band on the boom should line up w/ transom; Mast step moves forward 1 pinhole to release helm load in stronger breeze
Spreader Sweep	Use 3mm Allen tool turning clockwise to reduce sweep & counterclockwise to gain, use half-turn incre increments. Sight to ensure equal straightness with batten at mast butt. Spreader mark should be 18" (46cm) from mast centerline
Upper Intermediates	0.6mm to 1 full rotation. Higher # represents more depth in upper half of main.
Upper Shroud	+ 1 full rotation (6 FACES) = +1 Loos Guage. Settings measured with either 5 or 10 units on upper backstay, no ram tension. Metal rollers will read 1 # higher than plastic rollers. Matrix set for plastic rollers.
Lower Shroud	Measure 36" (91cm) above black band with tight bungee pulling lowers
Mast Ram	Only ever engaged upwind in 0-4 kts to flatten main and induce headstay sag
Mast Lever/ Shroud Car	Downwind control; W = windward L = Leeward. Goal is to induce side bend in light air VMG conditions so main doesn't get too deep. Once breeze is strong enough to engage vang (~10kts), Leeward can be released to improve mainsail shape.
Mainsail Top Batten	Light ("L") (+ # turns) = 180NT (Non-Tapered) Batten; Heavy ("H") (+ # turns) 200NT (Non-Tapered) Batten. Optional: use Heavy Batten for all conditions for simplicity and lighter teams (turns remain the same)
Upper Backstay/ Check stay	Use upper backstay in light air only as needed to control the amount of headstay sag and to open leech at top batten. Checkstay to be tightened as breeze gets over 6 knots, only in moments that require more power in mainsail or temporary pointing. Careful - tightening checkstay will tension forestay and depower jib by removing headstay sag. As both skipper and crew start hiking, both checkstay and upper backstay can be tensioned together to keep mast bend uniform. As breeze increases into 12+ use them together to eliminate any overbend wrinkles or inversion in main. In pure hiking conditions, boat will accelerate best with firm headstay tension - achieved with tight upper and check backstays. Boat is balanced and rake correct when you have enough range on both stays. If too much upper backstay relative to check, rake needs to be eased. If too much checkstay is on relative to upper, rake needs to be shorter.
Jib Model (J6/J8)	Baseline J6 = 86.5" (220cm)/ J8 = 87" (221cm) Measured from forestay to bearing point of jib sheet block while car is in upwind position. Jib should always be touching foredeck to create deck-sweep effect
Jib Car	14" (35.5cm) out from centerline of mast, Released 2" (5cm) to leeward in 18+ kts



Paul Cayard & Frithjof Kleen (2025 Star World & 2026 Bacardi Cup Champions) at 2026 Bacardi Cup (Photo: Hannah Lee Knoll)

Who We Are Doyle One Design sails are constructed at our loft in Marblehead MA, USA by a team of experienced & passionate sailors. Doyle's expert One Design Sailmakers prioritize consistency & attention to detail, maintaining the highest industry standards in cloth and construction methods. As avid one design sailors, we recognize the importance of reliability in our sails, which is why we place such emphasis on producing sails of the highest quality, every time.

This tuning guide was prepared by Tomas Hornos and Jud Smith – Doyle Sails One Design, Salem MA. If you have questions regarding the information presented in this tuning guide, or questions pertaining to your One Design Star Sails, Please contact Tomas or Jud by phone or email at:

+1 (781) 771 - 7206 | Tomas@DoyleSailsOneDesign.com