Evolution Sails Y Flyer Tuning Guide **Spring 2024**

Congratulations on your purchase of Evolution Y Flyer sails! We have worked hard to provide you with fast, easy to trim, and the most durable Y sails possible.

This guide for the Y has been developed through extensive testing, tuning and practical racing experience by some of the top Y Flyer sailors in the country.

Please read through these tips and set your boat as close to the suggested numbers as possible. While we cannot guarantee immediate victory by following this guide, we can assure you that you will be taking a big step in the right direction!

Please feel free to call on any of your Evolution Y Flyer team with any questions about the setting up, trimming and care of your new Evolution Sails. We are always glad to help!

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Before the mast is stepped

Grab your tools

You will need a 50' tape measure, a sharpie, electrical/ rigging tape, a PT-1 Loos Tension gauge (this is the newer black gauge and is much more consistent that the older silver Model A).

Set the mast butt position.

Set the butt position ay near max aft at 16' ½" from the back of the mast to the middle of the centerboard pin. Turner Boats are set at this point.

Set your spreader position

For the new Selden Epsilon mast:	20 ½ "spreaders- wire to inside edge	36 ½"- 37" tip to tip
For the W-2 mast:	19 ¼ "spreaders	35 "– 36" tip to tip
For the bendier masts (DP1, Super Spar)	18 ½" spreaders	37 ½" -38" tip to tip

Our Suggested Tuning "Style"

There have been many popular, and fast, tuning set-ups sailed by Y Flyer sailors over the years.

Though your new Evolution Y sails will perform well under any tuning numbers, we suggest the style of a very tight rig (initially set up with the rig under tight tension without the jib up), with prebend "tuned" in the mast. There is only 1 snap at the head of the jib which will allow for the jib halyard to be eased downwind with the pole up for maximum extension and projection. This system also allows for easy adjustment to the jib halyard tension upwind effecting both the shape of the jib (through headstay sag) and the main (through mast bend). A Powerful low stretch jib halyard (using Dynema or 1/8" wire or similar) is important. Some Y Flyer sailors have added a lever to their headstay so the initial tensioning the rig is easy.

We suggest NOT adding a bungee cord "retractor" on your forestay so that it is easier to read the tension on the jib halyard when sailing upwind. The forestay will actually go slack in medium/heavy winds.

Other than adjustment to the jib halyard tension, slight lower shroud adjustments and normal sail settings, little needs to change to sail at top speed in all conditions!

However, if you and your boat want to sail another style, we are glad to accomadate and add snaps to the entire luff of your jib if necessary.

Please don't hesitate to reach out with any questions!

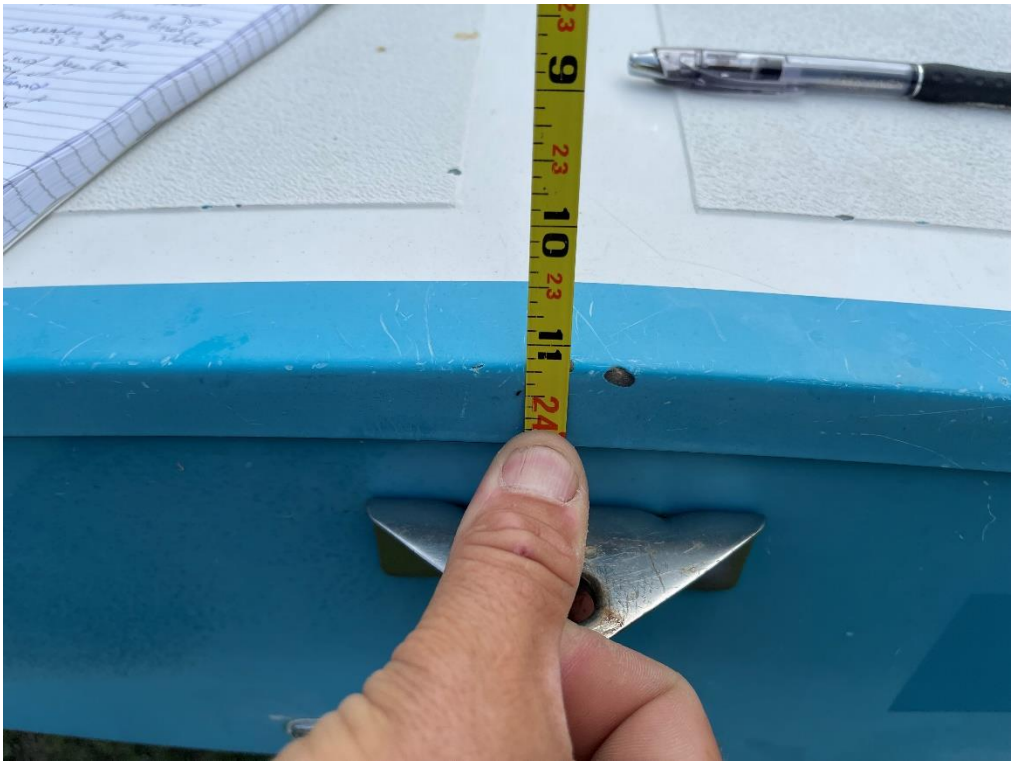
Step your Mast.

Check your rake, lateral straightness, and rig tension.

Hoist a 50' tape measure on your main halyard and set your halyard lock so that when it is fully hoisted and fixed (hooked, cleated, tied) the tape will measure 20' 8" at the top of the lower black band at the gooseneck (See picture). This will ensure when you measure your rake below, your measurement starts at the right place for more accuracy.

Set your rig up so that with the forestay set and locked, your upper shrouds tensioned to 280-290 lbs. (23 on the PT-1 Loos Gauge), and the lower shrouds very loose (no tension at all at this stage).

Your rake measurement should be 23' 10 ½"- 23' 11 ½ "with the tape on your main halyard measured pulled aft to the joint of your aft deck and transom in the middle of the transom.



Your mast's prebend should be 1"- 1 ¼ "checked by pulling your main halyard (or the tape measure) down to your gooseneck (as shown above) and checking the distance from the wire/tape to the back of the mast at the spreaders.

Check your mast's lateral straightness by sighting up the back of the mast with the lowers still quite slack. If your mast was straight before you stepped it and shows a bow or curve now, it very well may not be centered in the boat. Check lateral position in the boat with the main halyard and measure down to the chines below the upper chainplate on either side. If the mast is within ½"' side to side, that's plenty acceptable.

"**Tension" your lower shrouds** so that there is equal "wiggle" of 1-2" in each shroud. Sight up the mast and double check the mast is still straight and again, that each shroud is equally slack. The lower shrouds should be barely slack, but NOT affect the side bend in the mast.

When sailing, **your lowers** should be just tight enough to keep the mast straight laterally and in column. The lower shroud tension, especially if too tight, can also greatly influence and inhibit fore and aft mast bend which is so crucial as described later in the guide. The leeward side will always be slack when sailing upwind.

Hoist Your Jib

Many Y Flyers have different jib/bow stem fittings where the jib luff wire attaches at the tack. Different heights can affect the height of the jib and how its sits on the deck of the boat. Your Evolution jib is fit with lashing at the head that attaches the luff wire to the sail. Loosening this lashing will allow the jib to slide lower on the wire and sit lower on he deck. This would be ideal for jib wire attachments where the wire is higher off the deck. Conversely, tightening the lashing will raise the jib off the deck. We attempt to preset your jib lashing so that most tack setups are correct, but if your jib skirt position on the deck is higher than that in the picture above, do not be afraid to adjust the lashing. Just tape it up before you race!

Tension your jib halyard in light winds (under 5mph) so that the jib luff will sag to leeward of the tight forestay when sailing close hauled by 3-4" gauged in the middle of the luff. This added sag in the jib luff will provide the added fullness to help the boat sail more powerful. The extra fullness in the jib entry will also help make the boat more forgiving to steer.

For **medium winds** tension your jib halyard until the rake at the transom reads 24'0"- 24' ¼", the shrouds read 325lbs and the prebend is 1 ¾.

For **heavy winds** tension your rig so the rake is 24' 1", the shrouds will read 390 and there is 2" of prebend.

On the water and sailing

Main Trim.

Mast Bend and top performance

Now that we have our spreaders set, our rake and rig tension properly positioned, there is the correct prebend, our main should show the telltale signs of a properly tuned rig-and ***Overbend wrinkles,*** an important telltale sign the boat/mast is set up properly.

These wrinkles will emanate from the mast just below the spreader and angle towards the clew. In light winds they will just be apparent, in medium winds they will be clearly visible and angle back halfway back in the vision windows along the foot. In big breeze, with maximum vang tension, the overbend wrinkles will slide aft to the back edge of the window while the Cunningham tension will be near maximum. If in heavy winds if the overbend wrinkles run well past the back edge of the windows, simply tighten the lower shrouds slightly as that will pull the middle of the mast aft and control/restrict the mast bend.

Left (light winds) and right (heavy winds) are examples of perfect mast bend and overbend wrinkles for the conditions.

Outhaul Tension

The outhaul will set the fullness in the lower section of the mainsail. To gauge proper outhaul tension, pull the outhaul so that there is maximum a 1 ¾-2” gap between the side of the boom and the shelf foot seam near the center of the foot. Once overpowered and maximum boom vang is applied, the outhaul will be pulled tight enough that the shelf seam is flush against the side of the boom. Note that it is easy to over tension the outhaul and only in the heaviest winds will there ever be a crease in the sail from tack to clew. If the outhaul is too tight, pointing ability will suffer, too loose and the main will stall.

On a reach ease the outhaul so the shelf seam is a few inches off the side of the boom (not more!). Dead downwind the outhaul should be left in the upwind position.

Unlike the Vang and Cunningham, the outhaul is not as dynamic an adjustment that is necessary to constantly adjust.

Boom Vang Tension

Downwind, set your boom vang tension so that the upper batten is angled slightly outboard from parallel to the boom. When set properly the leech telltale should fly straight off the leech. The vang deserves constant attention downwind.

Upwind, when overpowered, the vang is tensioned quite hard. The tension not only allows the boom to move sideways when the mainsheet is eased, but more important, the heavy vang tension will bend the mast, induce overbend wrinkles, flatten the sail, and help balance the helm- and boat. It is one of the more dynamic adjustments on the Y Flyer and in puffy, breezy conditions the vang should be constantly adjusted.

Traveler adjustment

In ***heavier winds/puffs*** the traveler should be considered a rough trim to help balance the boat (actually the helm). The traveler will be eased to leeward as much as 18-20" and the mainsheet played to fine tune the balance and heel. In lulls, the traveler will be quickly pulled back up, all the while adjusting the mainsheet.

While constant adjustment to the mainsheet is always imperative, it is unusual that a super active traveler is near as critical.

However, in light winds, it is important to pull the traveler to weather of center to keep the boom near centerline while maintaining proper mainsheet and sail trim. Having your teammate lean in and gauge the position of the boom is a huge help. It will not be unusual, especially in the lightest of winds, to see the traveler car to windward of centerline nearly 18". Never sail with the boom itself above centerline.

Cunningham Tension

The Cunningham is the most under-utilized adjustment on the Y Flyer yet deserves to be one of the most dynamic. The Cunningham plays an important role in positioning the draft in the main. Tighter, will move the draft (maximum depth) further forward, while an eased Cunningham will allow the draft to move aft. In theory, every time the mast bends (when the vang and/or mainsheet is adjusted) the Cunningham should be adjusted to match. More trim, more mast bend, will relate to more Cunningham tension.

While the drat position should be near 45-48% aft, it is difficult and unnecessary to truly gauge it. Instead look to have a smooth luff (few wrinkles) from the head to the spreaders in all but the lightest wind- when there will be wrinkles all the way along the luff, or in the heaviest breeze when the total luff will be nearly smooth except for the previously described overbend wrinkles.

But it is important to ease the Cunningham totally downwind!

Mainsheet tension

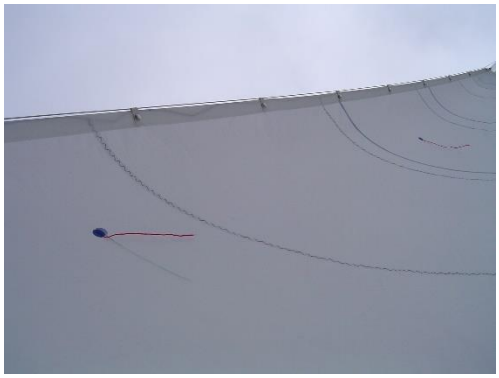
The most dynamic trimming tool on the Y Flyer by far is, of course, the mainsheet. It not only controls the angle of the battens and the leech profile, but it also bends the mast and balances the helm/boat. Proper mainsheet trim is determined by the angle of the top batten, and of course, feel.

In flatter water and ideal boat speed and pointing conditions, the sheet will be tensioned so the upper batten can be hooked to windward as much as 15 degrees. The upper leech telltale will be stalled nearly 80% of the time, (thus is not an ideal tool to help set mainsail trim upwind in our opinion).

Instead, feel becomes the best indicator. If the helm feels "loaded" with excessive weather helm (tug on the tiller), ease the sheet quickly. If the boat feels balanced and powered up, do not hesitate to trim the sheet harder and allow the boat to climb. Of course, in light winds and lumpier conditions being gentler and easier on the sheet is in order. Be sure to ease to accelerate.

Anticipation is crucial and being ready to ease before a wave and/or puff makes a big difference.

Jib Trim.



Steering.

The "groove" refers to that area where the boat feels the most comfortable sailing upwind. The lower end of the groove, when both the windward and leeward jib luff tell tales flow, is when the boat is building speed and power. Acceleration, punching through waves, rolling out of a tack are all times when both telltales should stream.

When the boat is at speed, the windward telltale will lift and indicates the boat is steering the middle of the groove. See the picture to the right.

In breeze, or when the boat is overpowered and has more power than speed, steer higher for brief periods of time to burn that power with both telltales stalled and at times, the luff actually breaking/luffing.

However, the boat will never sail in one area of the groove for long. The boat should constantly be steered up in puffs, down in lulls, waves and all the while the mainsheet is played to maintain the balanced helm.

Sheet tension

The goal in a well-trimmed jib is a symmetrical slot between the jib and main. The top batten will usually angle outboard from parallel to centerline in all conditions but medium wind and flat water.

However, we strongly suggest focusing on the telltales on the leech of the jib that are sighted through the spreader window. When the jib is trimmed properly these telltales will flow straight off the leech (unlike the main leech telltale!).

We urge you to trim until the jib leech telltales start to stall and then ease back out until they just flow. You may find you are able to trim harder than you have previously and find better height and speed!

But remember, when building speed, accelerating, sailing in challenging conditions (like big breeze and heavy chop), ease your jib sheet so the sail is well twisted, and the telltales clearly flow.

Jib Cloth/Cunningham Tension

In light winds pull your jib cloth/Cunningham so there are very slight wrinkles along the luff. As the breeze builds, tension the cloth more until in heavy winds, the luff is completely smooth

Jib Lead position

Your Evolution jib has a trimline drawn on the clew. Position your jib lead so the jib sheet is an exact extension of the trim line. To eyeball this alignment, lay a piece of line or straight edge on the sheet to check it is straight. But using the trimline will ensure your lead is precisely in the correct spot no matter what type of jib lead block set up you have or the rake of your mast. The jib lead (where the sheet turns through the lead/block) should be 13 ½" – 14" off centerline.

Jib Halyard Trim downwind.

Using the suggested tuning system allows the jib halyard to be eased downwind when the pole is up so that in effect, the jib responds much like a spinnaker. When the halyard is properly eased the wind will flow backwards into the sail from the leech creating a faster and more efficient downwind shape. With the halyard eased as much as 12-18", the pole can be squared much further aft, creating the reverse flow (see the telltales in the left picture. Sorry the wind is so light!) and project much more area. Be sure to 1) pull down the windward barber hauler to minimize the possibility of the whisker pole bouncing or skying 2) ease off the jib cloth as soon as the pole goes up.

Good luck and enjoy your Y Flyer sailing! Please contact us with any questions!