

Rig a Flying Scot – Introduction

This rigging guide has 9 illustrated steps. Rigging a Flying should take no more than 20 minutes once you have experience. Please read the introduction- the steps are then listed below.

- Step 1: Preparation
- Step 2: Raising the Mast
- Step 3: Halyard Winches & Forestay Tension
- Step 4: The Boom
- Step 5: Boom Vang
- Step 6: Rudder
- Step 7: Mainsheet
- Step 8: Trailer & Launching
- Step 9: Hoist & Sail



The following instructions are written with the assumption that the boat is rigged as the basic Flying Scot as is delivered from the factory today. Some options or accessories may make the rigging of your boat different from what is described here. We have also made minor changes to the rig over the years and have had several licensed builders, so your boat- even if it is the original factory rig- may not be exactly as described here. Moreover, owners typically alter some or all of the rigging over time so you may not find your boat is rigged exactly as described if it has had previous owners.

The Flying Scot can be rigged equally well on her trailer or in the water, and while it is more commonly done on land, the choice can be left to the dictates of circumstances. If it is to be done ashore with the trailer attached to the car, be sure the boat is level both fore and aft and laterally and is headed into the wind. Raising the mast becomes much more difficult if the boat is not level and if the wind is from the side. Be sure your trailer is attached to your car and that the bow is secure to the trailer before you climb on board. The trailer has a light tongue. If you put your weight aft of the axle when the trailer is unhooked from the car, the boat will tip backwards, which could cause you to lose your balance.

Note: If you need sailing/boat terms defined, please see (and print) our Glossary!

Rigging your Flying Scot isn't complicated if you follow these nine easy steps:

Step 1: Preparation

Cast off the mast tie-downs, remove the tie-down strap, and clear the cockpit and seats by removing or stowing the boom and any other gear. With the mast lying in the carrying forks, uncoil the shrouds and forestay, being exceedingly careful not to kink the cables at the swaged end fittings. One kink soon will result in broken strands and cable. Make sure the main halyard is shackled within reach, preferably to the spinnaker eye. Now is the time to install the spinnaker halyard and masthead fly, if one is to be used.

IMPORTANT: Watch for overhead power lines and tree limbs, they are your greatest hazard. Unfortunately, they are common around ramps and launching areas.

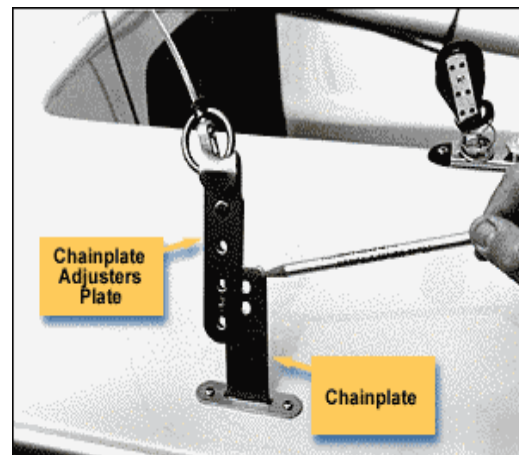
Attach the main shrouds to their respective chain plate, spinnaker hook on the outside, inserting clevis pin from the outside in, with the safety pin inside, adjuster plates straddling the chain plate. The two most common attachment positions for the adjuster plates are:

1. The middle of the open holes in the shroud adjuster plates to the top hole in the chain plate.
2. The bottom hole of open holes in the shroud adjuster plates to the bottom hole in the chain plate.

Note: if more adjustment is needed, new boats have two holes at the top of the shroud to help fine tune the boat. This is only necessary if racing at a high level.

Step 2: Raising the Mast

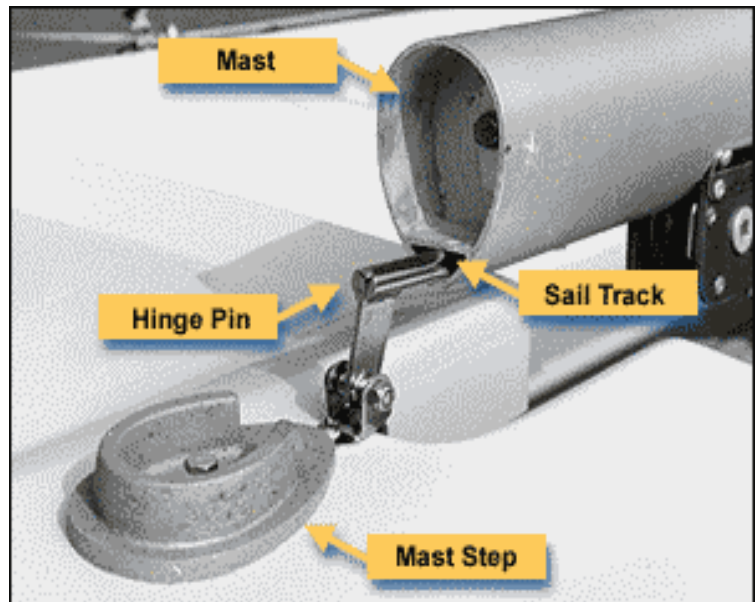
There are a number of methods used in raising the Flying Scot mast. Some owners apparently like to make it a community project with as many as six persons all pulling in different directions. Some seem to have a masochistic compulsion to make the job as difficult as possible. We, who have done it, and seen it done, thousands of times, can only recommend what we have found to be the simplest, safest, and easiest method. Our method is best done with the assistance of a helper, but the mast can be, and often is raised by one person alone.



DOUBLE HANDED

Slide or lift the mast aft until you can insert the mast hinge pin into the sail track.

1. Slide the mast forward until the mast hinge pin reaches the stop in the sail track.
2. Free the jib halyard, extend it fully for use in raising the mast.
3. One person should stand on the ground and get ready to attach the jib halyard to the bow eye. If this person would like to help lift the mast, the simplest method is for he or she to attach a line to the forestay and lead it through the bow eye. When they pull on this line to help raise the mast, they are pulling on the centerline. For more leverage, it is also common practice to attach the trailer winch to the forestay with a small piece of line. The person on the ground can then do most of the lifting with the winch once the mast is lifted a few feet off of the horizontal.



Note: *The helper should be on the ground pulling from a point on the centerline. The lifter will walk the mast up from the floor. Push smartly and keep it moving smoothly.*

CAUTION: Be sure to use an extra piece of line to secure the boat to the trailer before unhooking the winch from the boat.

Note: *It is important to pull from a point on the centerline. Pulling on the jib halyard from a side position on the ground will cause too much side pull and should be avoided. You may need to experiment to see what works best for you.*

CAUTION: Be sure not to wrap the wire around the hand. This could cause a serious injury if the mast slips.

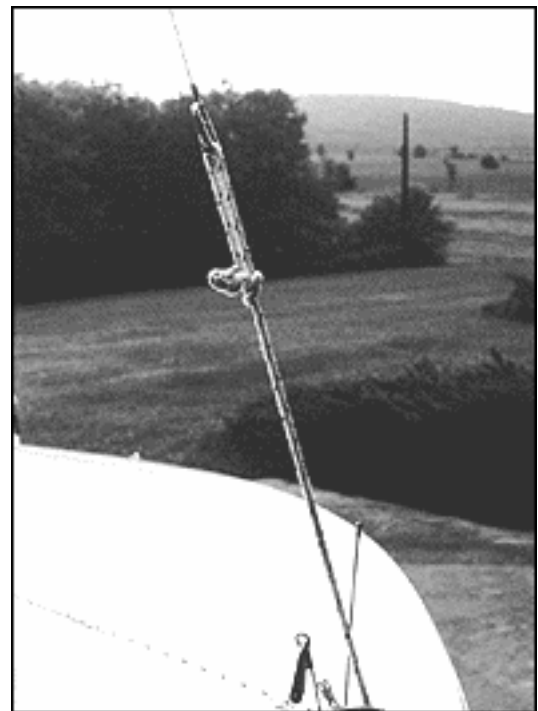
4. The other person should be the tallest and strongest of the two.
5. Make sure the shrouds and forestay are untangled, on deck and unable to catch on anything.
6. He or she should stand on the floor of the cockpit, take the mast with both hands and lift it above his or her shoulders.
7. Step under the mast and push it up, walking it up in one motion while straddling the centerboard trunk. The mast hinge pin will guide the butt of the mast onto the step as long as you prevent the mast from rotating side to side.
8. Push forward on the mast against the shrouds. If you push smartly and keep it moving, you will find this not at all tough to do.
9. When the mast is up, the forward person should secure the jib halyard shackle to the bow eye while the aft person pushes forward on the mast.
10. Tighten the jib halyard as explained in the next step (3) and the mast is now secure being held by the two shrouds and the jib halyard.

SINGLEHANDED

1. Slide back on the stern fork or lift the mast aft until you can insert the mast hinge pin into the sail track.
2. Slide the mast forward until the mast hinge pin reaches the stop in the sail track.
3. Free the jib halyard, pull enough halyard from the halyard winch spool to allow the jib halyard shackle to be even with the bottom of the mast and then lock off the jib halyard.

(See Step 3: for an explanation on the use of the halyard winch.)

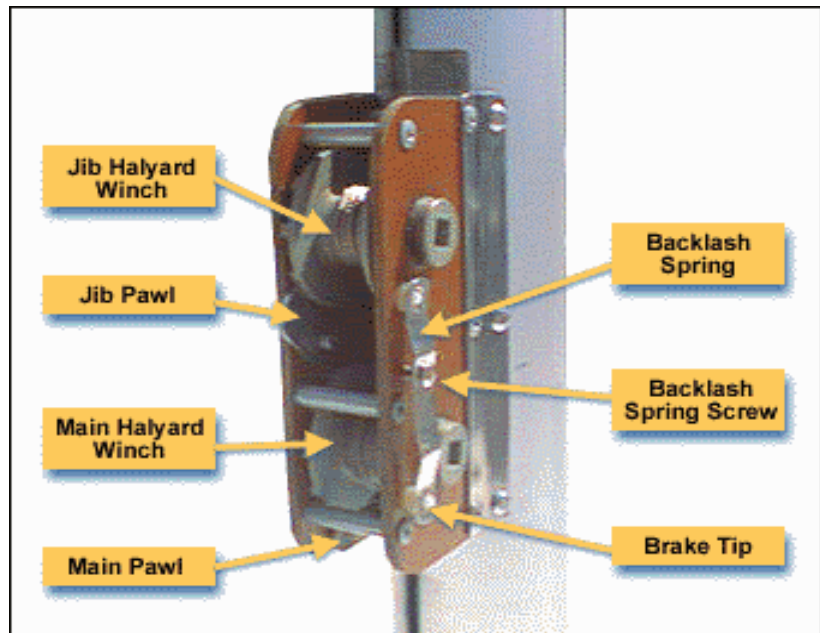
4. Lead a low stretch line forward and tie it to the bow eye, tying the other end to the jib halyard shackle.
5. Walk the mast up as described above in the double-handed section. Hold the mast steady with one hand.
6. With your free hand, crank the slack out of the line that is tied to the jib halyard. Crank it as tight as possible, keeping one hand on the mast until the halyard is locked off. By cranking it as tight as possible, it will be easier to attach the Forestay in the next step.



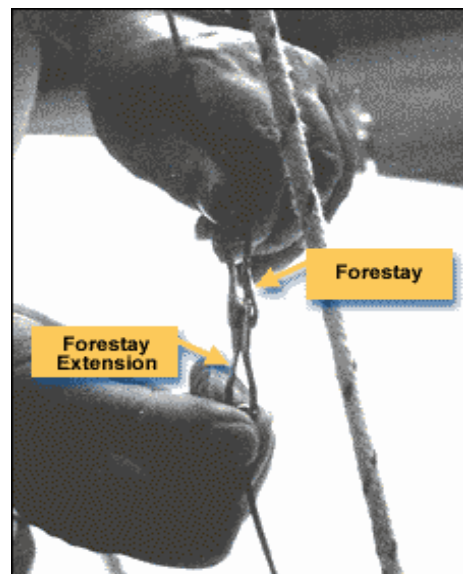
Step 3: Halyard Winches & Forestay Tension

The halyard winches should always be operated from the starboard side. They should be lubricated periodically with a touch of light grease (a small tube of Super Lube is provided with new boats) in each of the bearings. They should turn freely, but not backlash when you drop the sails. If they squeak or squawk, they need lubrication. If they backlash, tighten the screw on the flat spring on the starboard side of the halyard winch as needed.

The winch cranks are purposely made of aluminum alloy to serve as shear pins to protect the winch from over-tensioning. They are very strong if used properly but will break with too much force. Remember, never leave the winch crank in the halyard winch, and always carry at least one spare in the locker!



IMPORTANT: The only time you will shackle the jib halyard into the bow eye will be in raising or lowering the mast. At all other times when the jib is not in use, the jib halyard should be secured to the jib tack shackle with tension applied. Using the winch crank, tighten the jib halyard winch (the upper spool in the halyard winch) by turning the winch crank clockwise.



When the jib halyard is tight, push the pawl into the spool to lock the halyard winch. This should pull the mast far enough forward for you to connect the forestay to the forestay extension at the bow by placing one of the fork fittings completely inside the other. Insert the clevis pin and secure with the cotter pin and tape. Release the tension on the jib halyard and remove the jib halyard shackle from the line or bow eye and attach the jib halyard shackle to the jib tack shackle.

Note: Tighten the jib halyard winch with reasonable tension and lock the halyard winch. Care should be taken to keep some tension on the jib halyard when the boat is in storage.

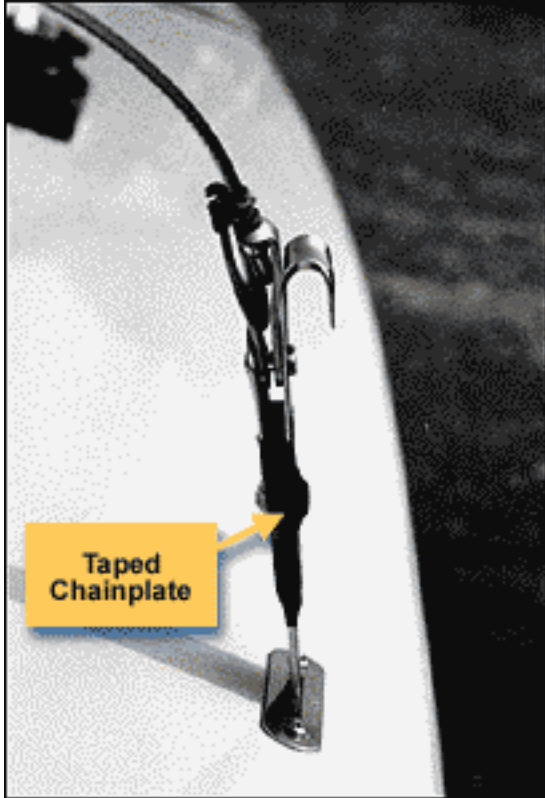
What to do if the forestay does not reach the forestay extension at the bow:

1. Pull up on the forestay extension to be sure it is fully extended and that the toggle plate is free.
2. If less than an inch is needed, try to put more tension on the jib halyard with the halyard winch or by pulling 90° on the tightened jib halyard.
3. Look aloft to where the forestay attaches to the mast to be sure it isn't fouled or looped over itself.
4. Check to be sure the shroud adjuster plates are set to the proper holes and are the same on both sides.
5. Go to the bow under the foredeck and find where the forestay extension connects to the hull via a forestay turnbuckle. Undo the safety wire and then loosen the forestay turnbuckle so that forestay extension will reach the forestay. Connect the forestay to the forestay extension as described above.

Note - This forestay turnbuckle requires a minimum of 5 full turns to insure adequate strength. If you are not sure about the number of turns you have on the forestay turnbuckle, loosen it until it comes apart and then assemble it with a minimum of 5 full turns.

6. After connecting the forestay to the forestay extension, loosen the jib halyard so that the weight of the mast is on the forestay. Finger-tighten the forestay turnbuckle as tight as you can and secure it with the safety wire. If you are careful to always attach the shroud adjuster plates to the same hole, this adjustment should not be necessary in the future.

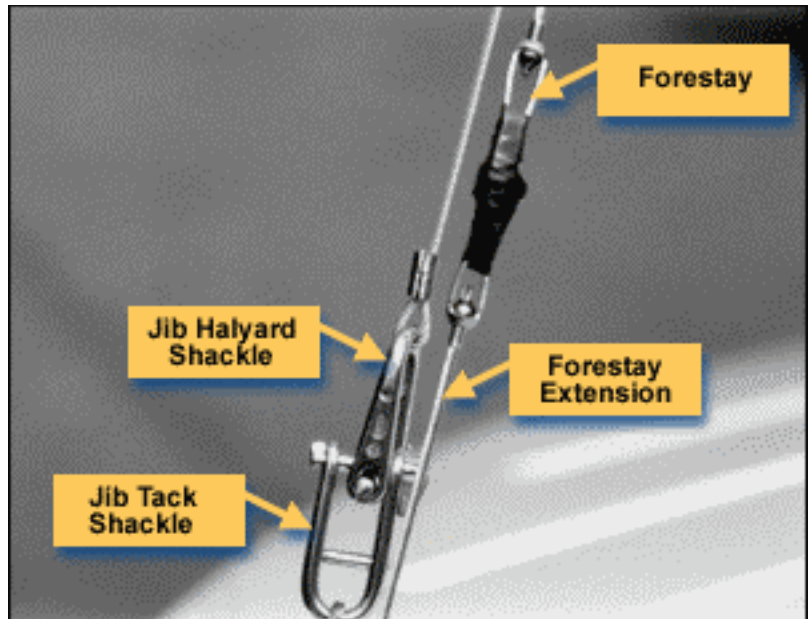
Note: If the forestay will not reach the forestay extension with the forestay turnbuckle fully extended, you can either adjust the shrouds to extend them and allow the mast to be pulled further forward or extend the forestay extension with a forestay adjuster plate available from Flying Scot, Inc.



Taped Chainplate

Taping your pins: Once you have the pins and fasteners securing the shrouds, they should be taped. This not only assures their security, but also prevents the spinnaker from getting caught and ripping.

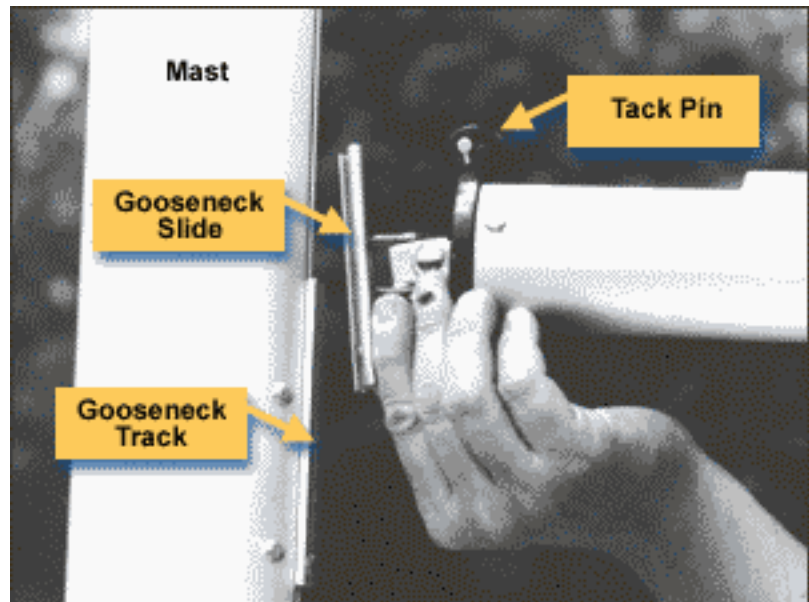
The forestay extension for the forestay and the forestay extension for the jib tack shackle are attached to the hull at the bow under the foredeck. They are attached via a toggle plate that allows the strain of the mast to be carried equally by both the forestay and the jib halyard.



Step 4: The Boom

1. To install the boom put the boom crutch through the center deck plate making sure that the bottom of the boom crutch rest in the socket on the floor.
(The optional side mountings are generally used only when the boat has to be steered).

2. Set the boom in the boom crutch, slide the gooseneck down over the short track on the mast until the locking pin snaps into the hole on the bottom of the track.



Note: Because the boom is made to roller reef, you can rotate the slide in the gooseneck by pulling out on the slide. This may be necessary if you find the locking pin on the slide to be on the top side of the boom instead of the lower side.

Step 5: Boom Vang

Attach the boom vang, double block, S hook to the vang bail located on the underside of the boom approximately 47" from the forward end with the open side of the S facing forward.

Note - Boats built prior to 1999 may have a track and slide or a shackle and eye arrangement instead of the S hook and bail.

The vang line should not be adjusted or cleated until after the mainsail is hoisted.

Warning: The purpose of the vang is to keep the boom from rising up in strong winds. It tightens as the boom goes out. Since little tension is needed when the boat is close-hauled, we suggest merely taking up the slack and cleating the line after the mainsail is hoisted. If it would be set hard, when the boat is close-hauled it could develop enough tension as the boom goes far out to tear things apart or break the mast or boom. It must be used with discretion, with just enough tension to prevent the boom from riding up.

Technical Tip: When Racing, more vang can be advantageous in big wind, and it should be constantly trimmed in puffy conditions. Pull the vang on in the puffs, and ease it in the lulls, but never forget to ease it before bearing off. We suggest practicing the vang work. Practice easing it before bearing off and practice windward mark rounding where easing the vang is one of the steps. The boat holds up wonderfully in big wind, as long as the vang is properly used. It must be eased before rounding the windward mark or bearing away for any reason.

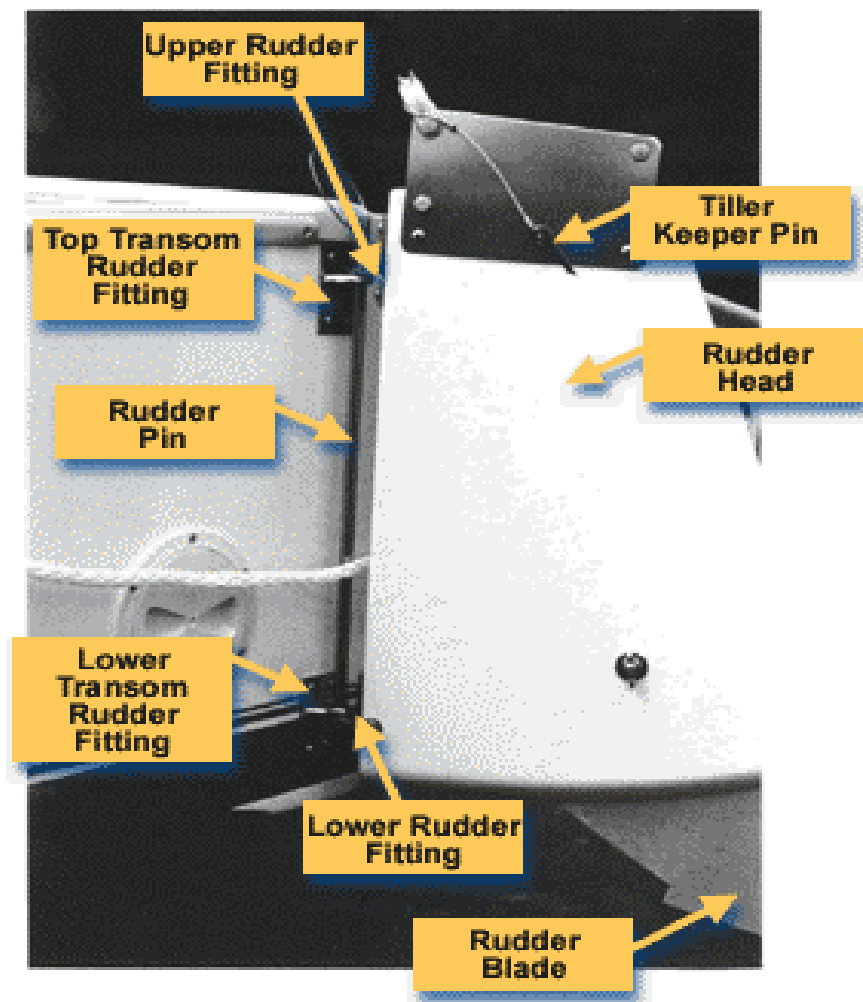
Step 6: Rudder & Tiller

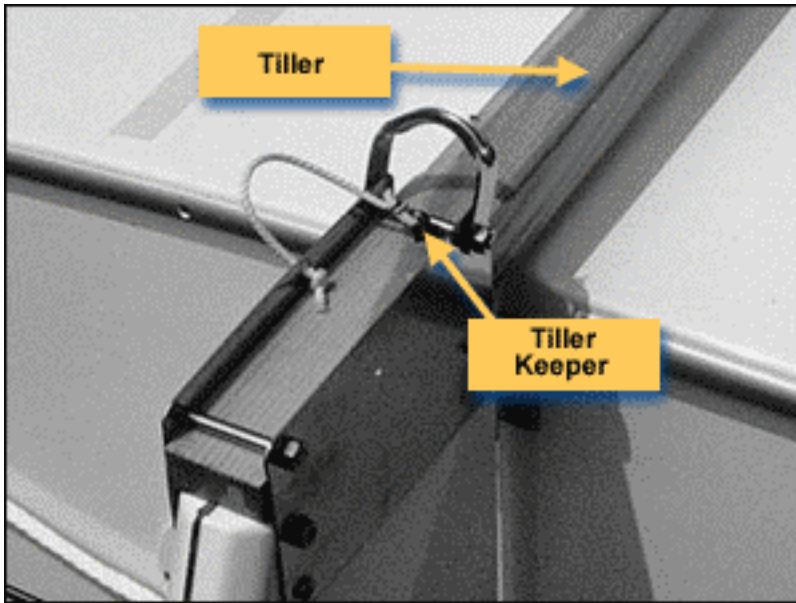
The rudder may be installed prior to launching the boat. Be sure to lift the rudder blade and to install the tiller and secure it at center to help the boat roll in straight off of the trailer.

Note - New boats have a tiller tender to help hold the tiller.

1. To install the rudder, use your right hand to lift the rudder pin just enough to clear the lower rudder fitting.
2. Insert the rudder pin into the top transom rudder fitting, sliding the rudder and rudder pin down until the upper rudder fitting rests on top of the upper transom rudder fitting.
3. Align the lower fittings so that the lower rudder fitting is under the lower transom rudder fitting and slide the rudder pin all the way through.
4. Next, insert the tiller into the rudder head and secure it with the tiller keeper pin.

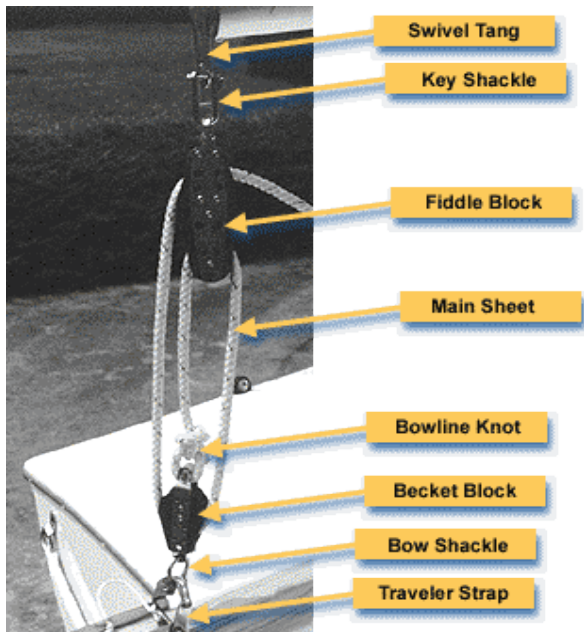
IMPORTANT: Remember that the lower fitting on the rudder must be under the lower fitting on the transom to lock the rudder in place!





Installing the rudder and tiller with boat in the water: Many prefer to install the tiller as a last step after the mainsail has been hoisted.

To install the rudder while the boat is in the water, stand on the starboard side of the aft deck, holding the rudder with two or three fingers of the left hand through the aftermost bolt of the head. Lift the rudder pin part way and install the rudder as described above.



Step 7: Mainsheet

In the picture to the left the mainsheet is rigged for big breeze.

In light to medium winds, you should increase the feel of the sheet by tying it off to the fiddle block instead of the becket. This effectively decreases purchase but increases feel.

The single becket block is to be permanently shackled to the stainless-steel traveler strap on the rudder head using the screw pin bow shackle provided. We recommend leaving the mainsheet shackled to the rudder at all times to help prevent loss of the rudder if it is dropped during installation.

After the rudder has been installed, the fiddle block should be secured to the swivel tang on the end of the boom using the key shackle. If the mid-boom block has not yet been installed, it should be shackled to the bail at the center of the boom using the screw pin D shackle provided. Use a bowline to tie one end of the mainsheet to the becket on the lower block on the rudder head. The mainsheet is then led up through the small, lower sheave on the end-boom fiddle block from back to front. It is then led down to the sheave on the becket block on the rudder head from front to back. Now lead the mainsheet through the large, upper sheave on the fiddle block from back to front.

Step 8: Trailering & Launching

Now your Flying Scot is rigged and sitting on her trailer. The next step is to launch and go sailing!

IMPORTANT: Before you do anything, look around to see that you do not have tree limbs or power lines in the way of the mast.

Many ramps have power lines and lights so fishermen can launch before dawn. Wires can be very hard to see and are the most common cause of mast or rigging breakage and are the most serious hazard to your life. Look up and check that your launch path is clear. While it is not as critical as watching for power lines, it is comforting just the same to put in the drain plug before launching. This little caution will keep the boat dry while sailing.



While the boat is still hooked to the trailer, back it into the water until the trailer license plate is halfway submerged. The hubs of the wheels should remain dry.

You should also have a line attached to your boat before you launch her. Many sailors have launched, watched the boat roll off the trailer only to find she had no bow line and was drifting away. The line should be long enough to let the boat roll off the trailer, and to guide her to a nearby dock, or bring her back to shore. trailer in too deep will allow the stern of the boat to float too soon and may cause the boat to go off of the trailer at an angle that could damage the boat.

Be sure the emergency brake is set; the bow line is attached to the bow eye and the drain plug is in. If the rudder is installed, be sure to lift the blade to the full-up position and secure the tiller at center to help the boat roll in straight. Disconnect the trailer winch line from the bow and give the boat a good hard shove to get her started moving. The boat should roll straight back until it is in the water and free of the trailer. Once floating, secure her to the dock, and remove your car and trailer from the ramp, so others can launch.

IMPORTANT: Keep your hands and fingers out of the winch and clear of a free spinning winch handle!

When hauling the boat out of the water, make sure your winch line is securely fastened to your bow eye and the boat is lined up with the center of the trailer. When cranking the winch, stand out of the way of the handle, and out of the way of the line. You do not want to get hit by a broken strap. This strap should be constructed of a low-stretch material so that if the strap fails, it will not snap back with a lot of stored energy that could cause damage or injury.

To haul the boat out, back the trailer into the water so that the license plate is two thirds to fully submerged and bring the boat to the back end of the trailer. You should walk out on the trailer catwalk with winch line in hand. Hook the line into the bow eye and center the boat on the loading guide roller. Walk back to the trailer winch keeping tension on the line at all times so that the boat stays centered on the roller. If there is a crosswind, a second person in the boat might paddle to keep the boat lined up with the trailer. If the wind is strong, this person can hold the boat straight with a long line from shore to the spinnaker fairlead. The loading guide roller may come in contact with the bow a few inches above the waterline, but the boat will climb up onto the roller when you begin pulling with the winch. Crank away smartly with the trailer winch and the boat should climb on the trailer with ease.



IMPORTANT: Hauling and launching will require only half the effort if you keep the bearings of the rollers and the winch well lubricated with frequent applications of oil.

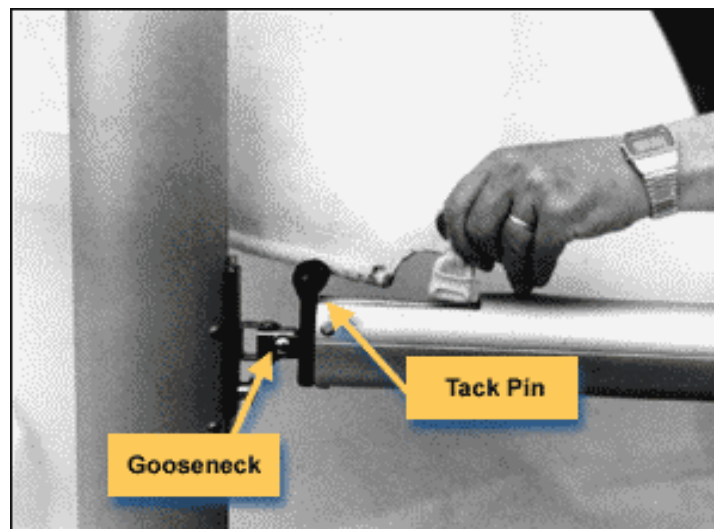
In order to keep your trailer working well, you should periodically oil the rollers, winch, and coupler. Your lights will be virtually trouble-free if you disassemble each light and coat all of the metal parts with Vaseline to prevent corrosion. It also helps to coat the wiring plug as well. Your tires should be inflated to fifty pounds with seventy to eighty foot-pounds of torque on the lug nuts/bolts. You should frequently inspect the trailer for loose fasteners and cracked or worn parts

Step 9: Hoist & Sail

Next step: you are ready to finish rigging the boat and hoist the sails.

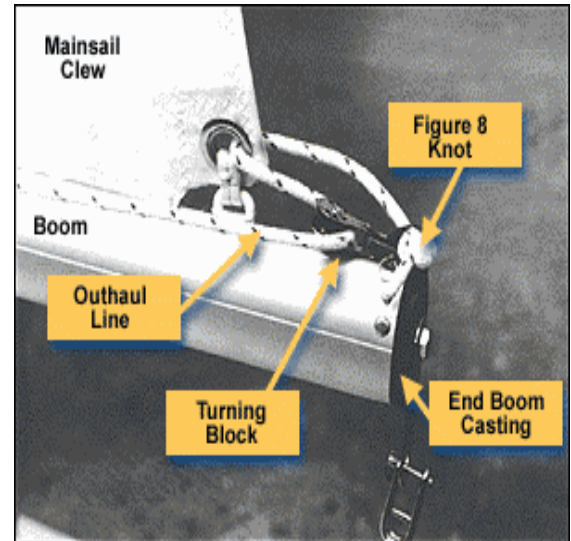
Now that you have your Flying Scot in the water, tie her to the downwind (leeward) side of the dock with the bow line and let the stern free so that the boat will always be pointed into the wind. Now it's time to bring aboard your gear. Stow the anchor in the anchor holder if the boat is so equipped with the line attached. The paddle can be stored in the paddle holder under the port foredeck if the boat is so equipped. Otherwise, it can be stored on the floor under the starboard foredeck. If you are using the spinnaker, stow the spinnaker pole on the forward starboard side as well. Life jackets and such should be stowed under the aft deck.

Dump the mainsail from its bag, gather the foot of the sail and put it on the foredeck.

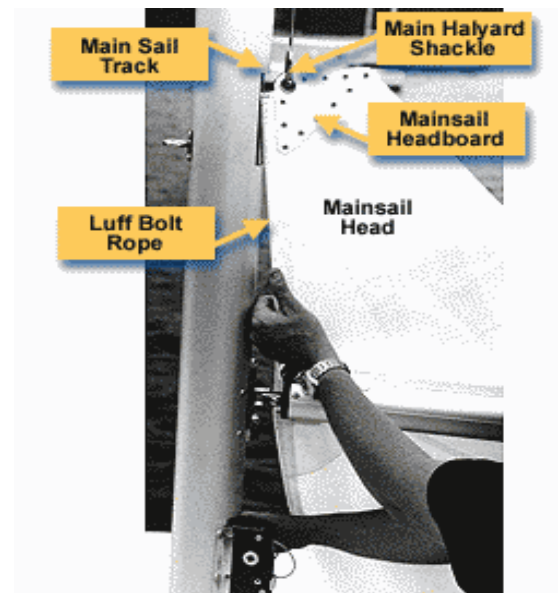


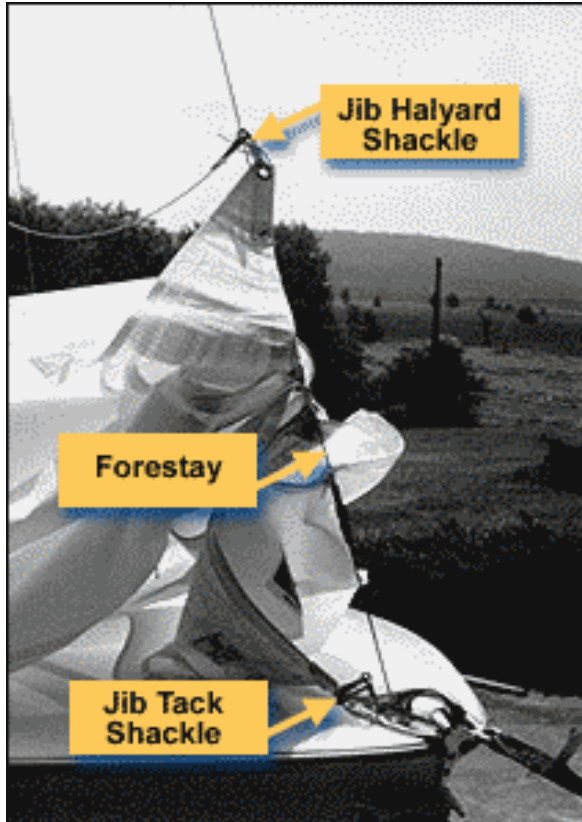
Start by opening the tack pin in the gooseneck fitting and inserting the clew of the mainsail into the boom sail track with the bolt rope running between the horns of the tack fitting. Walk the sail aft while guiding the bolt rope into the sail track then be sure to secure the tack pin through the sail's tack grommet. If the outhaul line is not on the boom already, lead one end from back to front through the aluminum cleat mounted midway back on the underside of the boom. The line then is led forward through the turning block on the port side of the boom from bottom to top. The outhaul line then travels aft through the turning block shackled to the end boom casting from port to starboard. Lead the line forward through the clew grommet in the mainsail from port to starboard.

Finally, the outhaul line travels aft again and is dead ended through the open hole in the boom end casting with a figure eight knot. Tension the outhaul line so that the wrinkles are pulled out of the foot of the mainsail and cleat the line. You can keep the tail of the line out of the cockpit by tying it off with a slip knot to the long part of the outhaul line between the turning block forward and the turning block at the end boom casting. When you de-rig the boat, you can leave the outhaul line rigged by undoing the figure eight knot, pulling the line clear of the sail, and then putting it back through the hole in the end boom casting and securing it with a figure eight knot.



Shackle the main halyard to the headboard and insert the luff bolt rope into the sail track on the mast. Use the halyard winch to hoist the sail enough to take out all slack in the main halyard and start the sail up the mast. Be sure to keep the top batten pocket within your reach. Lock the halyard winch and insert the short battens into the top and bottom batten pockets. Install the two long battens into the middle pockets.



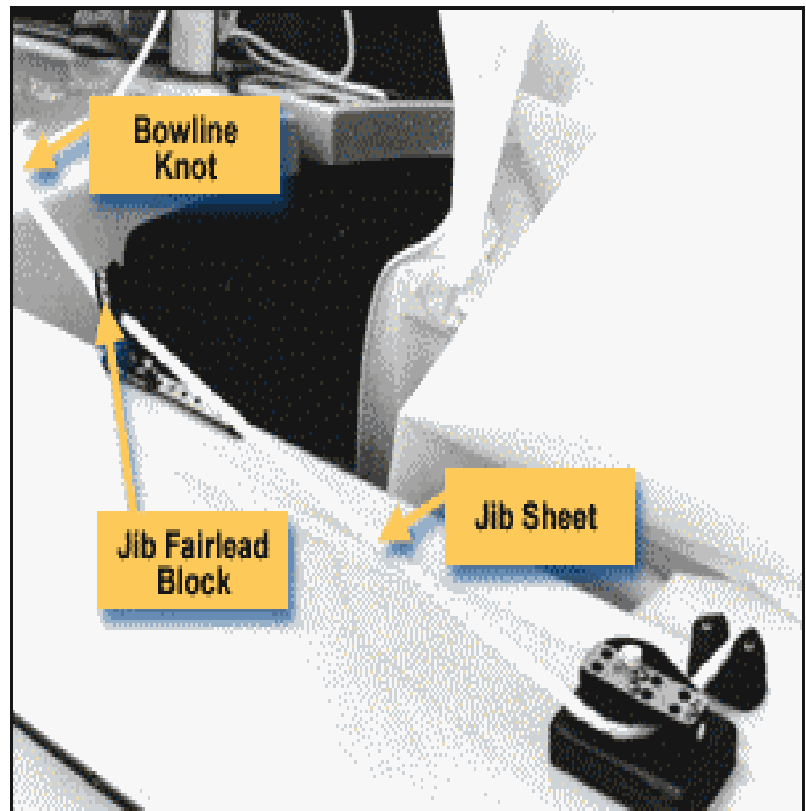


Trick of the trade: Racers like to place the forestay through the jib tack shackle, when shackling the jib tack, so that the jib is held in the centerline.

Attach the jib, starting at the bottom with the tack shackle and work up by snapping the jib to the forestay and attaching the jib halyard shackle to the head. The jib sheet should be attached to the jib by tying a bowline with a small loop to the clew with the two legs of the bowline being equal length.

Run the ends of the jib sheet inside the shrouds, through the jib fairlead blocks and then through the ratchet blocks from the outside in on each side. Be sure to tie a figure eight knot near each end to prevent the sheet from being pulled back through the blocks.

When everything has been rigged and you are ready to get underway, hoist the mainsail using the lower halyard winch spool in the halyard winch. Remember to insert the winch crank from the starboard side and turn the halyard winch clockwise to hoist the sail. Continue until the wrinkles in the luff are pulled out and the headboard is about 2 - 3 inches from the masthead sheave at the top of the mast. Set the pawl in the lower halyard winch spool to lock the halyard winch. The boom will have been lifted clear of the boom crutch. Remove the boom crutch and store it under the aft deck. Install the tiller if it has not yet been done and check the mainsheet to be sure it does not have any unexpected tangles or knots.



IMPORTANT: DO NOT hoist the mainsail as hard and high as it will go! There must be space between the headboard and sheave, or you will break the halyard. Remember, only hoist the headboard 2 - 3 inches from the masthead sheave.



Keep tension on the sails when raising them. When lowering the sails, release the lock on the spool and then take the winch handle out before pulling the sails down.

Hoist the jib using the upper halyard winch spool in the halyard winch. Remember to insert the winch crank all the way in from the starboard side and turn the halyard winch clockwise to hoist the sail. It is best to hold tension on the jib halyard while hoisting by pinching the halyard wire between your thumb and forefinger where it exits the sail track on the starboard side just above the boom.

Hoist the jib using the upper halyard winch spool in the halyard winch. Remember to insert the winch crank from the starboard side and turn the halyard winch clockwise to hoist the sail. It is best to hold tension on the jib halyard while hoisting by pinching the halyard wire between your thumb and forefinger where it exits the sail track on the starboard side just above the boom. Wind the halyard holding this tension until the sail is nearly all the way up and you are ready to tension the halyard. (NOTE - Winding the halyard wire on the halyard winch with tension will make lowering the jib easier and it will also extend the life of the wire.) Finish hoisting the jib by tensioning the halyard with enough force to lift the toggle plate (located under the foredeck at the bow) to a position that is approximately level. (See Figure 3D)

It's now time to lower the centerboard and rudder blade and cast off. Happy sailing!