

Choose, Install, and Use A Roller Furler

By Alex and Jack Wilken

Taking the time to hank on or feed a headsail into a groove on a foil can be both time consuming and require additional hands. Changing headsails for heavy weather can also be challenging, especially since this can be the most dangerous time to go forward. A roller furler can make all of this headsail handling easier and safer.

There are many kinds of furlers: for mains, headsails, and spinnakers, sometimes utilizing electric or hydraulic aids. In this article, we will cover how to select a manual roller furler for a headsail, how to install it (note that variances in design may change the progression of installation steps) and some of the tips for making the most of it. Many sailors may hire a professional to complete this install, but if you're the DIY-type, you can do this on your own.

Selection: The first consideration is how do you plan to use your furler? Are you racing or cruising? Cruising furlers tend to be heavier and often cheaper, and they usually shorten the sail by raising the tack to accommodate the drum (Figure 1). If you are racing, then you likely care about the luff length of your headsail and may choose a low profile furler, or even an underdeck furler. Some roller furlers



Figure 1: This roller furler has long plates raising it above the anchor, which plus the drum raises the tack by more than a foot.

have removable drums that leave a racing foil for a full hoist headsail. Others have continuous furling lines in order to shorten the drum (Figure 2).

The size of your boat is the next consideration. Manufacturers carry a range of furling units that specify the intended boat size for each model. In selecting a unit, take into account that there is room for the drum diameter and a reasonable location for the fairlead for the furling line on your boat. Identifying such restrictions and resolving them before you purchase the unit and attempt installation can save you a headache.

Purchasing: Once you have selected your roller furler, find a reliable, local dealer, if possible. Having good customer support can be essential going forward. Each manufacturer tries to ensure appropriate fit and components by requiring a list of measurements before purchasing. The measurements include the length of the headstay, its diameter, and the clevis pin diameter. You should download the installation manual for your unit and read it thoroughly, too, so there aren't unpleasant surprises.

The method of connecting the furler to the tack needs to be determined before purchase. This is because the orientation of the clevis pin varies, as does the available space above it. Additionally, you need to know much clearance is needed below the unit for anchors and other gear (Figure 1). Once you have done this and consulted with your local dealer and/or the manufacturer, you can order the roller furler and the additional parts required.

Pre-installation: Unless the headstay is nearly brand new, you should probably replace it as part of installing the roller furler. Once the furler is installed, there will be no way to inspect the headstay without taking it down and removing the aluminum extrusion. When measuring the headstay, it is important to measure pin to pin; but before you measure,

make sure the rig is properly tuned (reference our article on mast tuning in the June 2013 *48° North*). Accurate pin-to-pin measurement will require someone to go up the mast and hold the tape measure at the top while their collaborator pulls it tight at the bottom. The saying "measure three times, cut once" is of particular importance here, and threetimes may not even be enough!

You can also remove the headstay to measure it. If you do so, tie one (or more) halyard forward to keep the mast up. If you are going to remove the headstay to measure it, make sure you mark the position of the turnbuckle so you can get it back to its original length.

Different furling units will require different attachments at the bottom of the headstay. Some require that all the parts be slid over bare wire before a mechanical fitting is installed as the attachment point. Others can be installed over a marine stud (this is discussed in our article, "Replacing Your Standing Rigging" in the June 2016 issue of *48° North*). Whatever the method, it must be included in the plan.

Most headsail halyards are rigged so that they are very nearly in line with the headstay, since this is preferable for hoisting a full luff headsail. If the angle is too flat or the distance from the halyard swivel to the halyard block is too long, this will cause the halyard to wrap around the headstay fouling the whole system. To prevent this, you will either need to make sure that the swivel is close enough to the block as to not allow this, or install a halyard preventer to keep it from happening (Figure 3).

Reread the installation instructions for your unit so they are clear in your mind. If you are more visual, you can find installation videos for almost all roller furlers. Get all the tools you need together. Figure out where you will assemble the furler, often on the dock



Figure 2: A continuous line furler allows the drum to be shorter "A," than a standard drum furler "B."

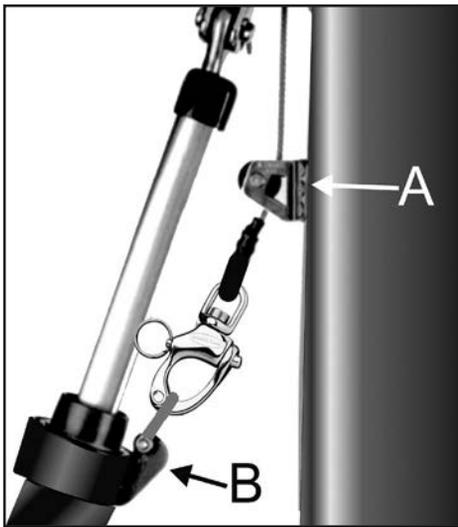


Figure 3: The halyard retainer does not allow the halyard to wrap around the headstay "A," by keeping the top of the halyard swivel "B" against the mast.

next to the boat. If the dock is cement or another rough, abrasive surface, you will need to have a way of protecting the furler from getting scratched. Also, if the mast is up, you need to consider how you will lift it up to the attachment point. This is normally done with a headsail halyard. Make sure you have enough hands to hoist the assembled unit while protecting it and the boat. You will need someone up the mast to attach it, someone to haul it up, and at least one more depending on size to control the lower end as it is being lifted.

Installation: Lay out the headstay and roller furling components in your assembly area. Follow the instructions for calculating the length of the foil. When measuring the length of the turnbuckle, make sure it is in the middle of its adjustment range so that you have the maximum flexibility. Cut the last extrusion piece to length based on your calculations. Make sure that the top extrusion piece is longer than 18 inches, because you do not want the halyard swivel to be riding directly on a joint (Figure 3). If the cut piece is shorter than 18 inches, swap it with a longer piece from lower down.

Lay out the extrusion pieces next to the headstay and reconfirm the length with the cut piece. If you are installing a mechanical fitting at the bottom, you can now cut the headstay to the exact length if you left it a little long.

Follow the installation instructions for your furler to assemble the unit.

Install the mechanical fitting if needed. Once it is assembled, get ready to hoist the headstay and furler. Slacken the backstay so that it is easier to attach the headstay. Hoist the headstay and furler up the mast and attach it at the top first, then at the bottom. Bend all cotter pins in the clevis pins to secure the headstay, then adjust the turnbuckle to the proper length and secure it with cotter or ring pins. Finish any additional installation steps. To install the furling line, see our article "Controlling the Control Line" in the August 2012 *48° North*.

Uses: A roller furler can be used in a variety of ways beyond the simple setting and striking of sail.

If you don't wish to use your engine to get away or return to the dock or a mooring, or can't because it is broken down, the roller furler is a great asset. You can unfurl enough sail to catch the wind so as to provide steerage and work the boat away. Conversely, when trying to get the boat to the dock, you can keep enough sail area to maintain steerage until you can work the boat against the dock.

Another use is full or partial furling to assist when you are tacking

or jibing with a big headsail or a headsail and staysail. It is difficult to get a full headsail around a forestay when tacking or jibing.

One of the most valuable uses of a roller furler is roller reefing. In increasing wind, it is normally best to depower the mainsail first by the normal means: flattening the sail, moving the traveler to leeward, and reefing the main. If the boat is still over-powered, you can roller reef your headsail instead of swapping it out. If you roller reef, it is normally best to roll up almost all of the sail and leave only a small triangle unfurled. Because sails are not flat, if more than a small amount is unfurled, it will have a deeper draft which will increase power for its area.

Roller furling has been continually improving since it was first implemented. This improvement is self-perpetuating, because roller furling makes it easier to sail, so we go sailing more. As we sail more, we learn how to make sailing and technology more enjoyable and more functional.

Jack and Alex Wilken are experienced boat builders, cruisers, and USCG Captains. They own Seattle Boat Works.



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