



Rupert Holmes on furling, propulsion and gauges

Choosing headsail furling systems

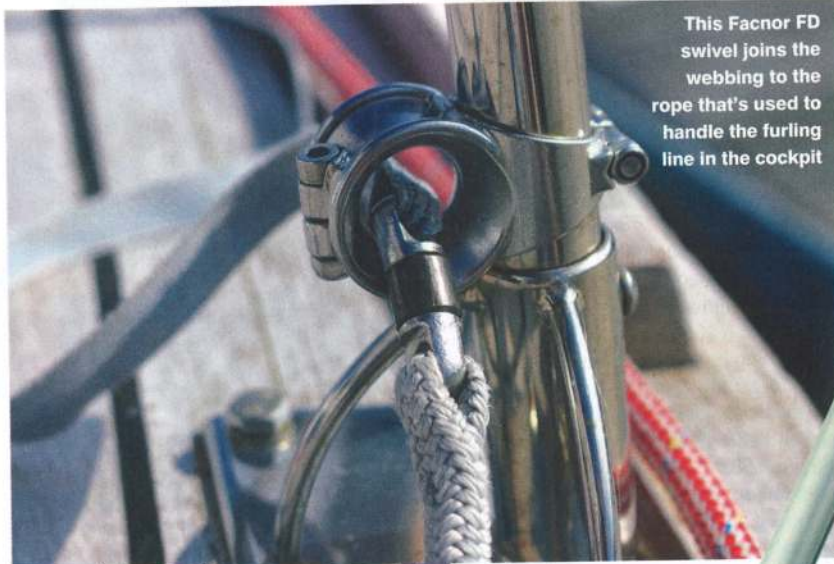
Roller furling systems are ubiquitous, yet anyone who has to replace a damaged or worn-out system is faced with a bewildering range of options. Granted, you could opt for the nearest like-for-like replacement, on the basis perhaps that there's not likely to be much wrong with a system that has lasted for 20, 30 or even 40 years.

However, that may mean you're buying a more expensive system than necessary. For example there's little point in paying a premium solely to get a double luff groove and removable drum if you never race fully crewed. Having said that, twin grooves may be useful for setting twin poled out headsails for cruisers intending to cross the Atlantic. Equally, automatically choosing a like-for-like replacement may mean you miss out on more recent developments that can improve sail shape and reliability.

Recent development

One of the more interesting of these is the Facnor FD (flat deck) that uses webbing at the drum rather than rope. This allows for a lower-profile drum that increases the luff length of the sail, making it more efficient. It also increases the mechanical advantage (ie leverage) when you first start furling, so the operation requires less effort. The way the webbing leads onto the drum all but eliminates the risk of over-riding turns if the sail is unfurled too fast. Yet at the cockpit end you handle a rope of a comfortable diameter, as with any other system. And the Torton bearings require no maintenance other than regular rinses with fresh water.

These benefits mean that over the past five or six years it has become standard fit



This Facnor FD swivel joins the webbing to the rope that's used to handle the furling line in the cockpit

Rupert Holmes



ABOVE Facnor FD uses webbing to furl rather than rope

on many new yachts, particularly in the performance cruising sector. Having used one myself for the past six years the only downside I've found is the need to replace the furling tape – usually every two or three years.

Seldén's Furlex systems are well proven and, like the Facnor FD, start by taking bulk out of the middle of the sail, which helps improve shape when it's part reefed. The fourth generation version is 8% lighter, reducing weight aloft, and comes in five sizes for boats from 18ft up to 30 tonnes displacement. It's also available in electric and hydraulic models and with a below-deck drum.

Harken's systems for boats from 22-80ft are also now in their fourth generation and feature

ABOVE Plastimo 609 for boats from 20-30ft
ABOVE LEFT Latest generation of Seldén's Furlex 304S for boats up to 15 tonnes displacement

large, low friction bearings along with independent tack and head swivels that allow the middle of the luff to furl first for an improved sail shape. The company has recently added Ocean furlers to the range, which have a single groove round foil that makes for easier furling at the expense of a marginal aerodynamic loss when the sail is fully unfurled. Ocean units also have a fixed tack swivel and drum that cannot be removed for racing.

I've also used Plastimo's units, which have proved reliable over many years and can make a good budget option. They are available in three sizes to suit boats from 14-36ft, with the largest retailing at well under £1,000.



Facnor FD in use

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Partially reefed genoa with poor sail shape



However good your furling gear, it's no secret that a deep reefed genoa will tend to set with a very inefficient shape. By the time a 130% or 140% overlapping headsail has been reefed down for strong winds a lot of the luff length is lost, which markedly reduces the sail's efficiency (for more on sails see page 58).

In addition, the typical heavy UV strip on the luff and leech mean these areas gather bulk fastest as the sail is progressively reefed further and further. This leads to a very deep shape in the middle of the luff, which leads to excessive heeling and weather helm.

Of course the effect can be reduced to some extent with foam (or rope) luff padding, furling systems that roll the centre of the sail first, and high tech sails with minimal stretch, but even then it can't be eliminated in a deep reefed sail.

Twin forestays

Large bluewater yachts, typically those over 45ft, often have twin forestays with a genoa on the outer one and a smaller, higher aspect non-overlapping jib on the inner, with both set on roller furling gear. This is an excellent arrangement that gives a large sail for light airs and reaching, plus one that will set efficiently in stronger winds and that's easy to sheet in when short tacking.

Some new smaller performance cruisers have a similar arrangement, but use a free-flying furling sail on a halyard lock instead. This means it can be rigged easily when needed, but is out of the way for the rest of the time.

Both these options would be clunky and expensive to retrofit on a smaller boat, but it's relatively easy and inexpensive to replicate a similar set up using a removable Dyneema inner forestay. Seldén sells a sensibly priced fitting for the mast for exactly this purpose.



Seldén's Inner forestay fitting can be used with existing spars

The loads at the deck end of such a system should not be underestimated – on a 35ft boat a safe working load of several tonnes may be needed. Therefore, simply bolting a fitting through the deck won't suffice. If you're lucky enough to have a suitable bulkhead just back from the main forestay that can be used for a chainplate. Alternatively, the deck fitting can be tied down to a fitting on the stem and tensioned using a bottlescrew or suitable purchase system.

There are two options for tensioning the stay on deck. The neatest and cheapest is to take a 2:1 purchase back to a coachroof winch. This also has the advantage of making it easy to set the inner forestay up at sea and the jib can be hanked on in advance so that it's ready for use.

The other route is a large Highfield lever or adjustable bottlescrew – Seasure and Wichard respectively both have products for this purpose. However, these can be difficult to fit when the boat is pitching in waves, so are best set up before leaving port on a breezy day.

This stay can be used for a hanked-on heavy weather jib (the size of a J3 or J4), or a storm jib. If having a new sail made, it's worth specifying it with extra reinforcement and a slab reef, which makes it easy to change down to a storm jib size sail without going onto the foredeck.

ePropulsion pod drive

Electric pod drives are an interesting option if you're considering an all-electric boat, or one with electric propulsion and an efficient range-extender diesel generator.



As the pod is slung under the hull, like a saildrive, it frees up a huge amount of interior space. Immersing the motor in water is also beneficial, as this keeps it cool.

A final advantage is one of efficiency as no gearboxes are needed to turn the drive through 90° angles. This will translate to a greater range, although the advantage is relatively small.

ePropulsion's latest pod drive is a 10kW unit that weighs only 39kg. It's designed to replace diesel engines of up to 30hp and is ideal for sailing craft of up to 35ft. Twin pods can be fitted to larger vessels, with the associated gain in manoeuvring. Price: POA.

■ epropulsion.uk

Tank gauges for easy installation

Many older boats lack gauges for water, fuel and black water holding tanks, or have unreliable units. Given the amount of work required to fit and wire in conventional gauges it's not surprising this rarely makes the 'to-do' list.

However, Gobius has a neat solution with its Pro series of Bluetooth tank sensors, distributed in the UK by LeeSan. These stick to the outside of a tank and measure the fluid level by periodically vibrating the tank wall. An accelerometer built into the sensor measures the vibrations caused by the force and an algorithm calculates the fluid level.

Sensors interface with iOS and Android apps to display tank levels without any wiring. Alternatively they can be connected to an NMEA2000 network, enabling fluid levels to be shown on any suitable instrument display or MFD. Price: from £186.

■ leesan.com

