Helping hand

From the cockpit to the pulpit, there are devices on the market that can help take the strain out of sailing. Duncan Kent reports

Maybe you want to spend more time sailing single-handed, or perhaps you're reaching the age when winching up the mainsail by hand is starting to take the fun out of a weekend sail. Whichever it is, why not accept a helping hand from Mr Volt?

Kitting out a sailing boat with electric winches and furlers may look to be expensive, but if it keeps you on the water isn't it worth it? In fact quite a few sailors end up moving over from sail to power because they no longer have the physical strength to manually winch in the sheets or haul on the halyards. But the extra cost often works out at considerably more than if they had invested in simply upgrading their sailing yacht.

For instance, a good many manual winches can be electrified by buying a conversion kit (Lewmar, Harken and Andersen all sell manual-electric upgrade kits for their two-speed winches), which often works out costing half the price of a new winch – especially if you're good with the DIY and can modify the drive unit, and install the electrics yourself. The latter is easier than you may think as all the components are supplied, along with full instructions and an easy-to-understand circuit diagram.

To keep costs down people often just convert one halyard winch, usually on the side of the mainsail halyard. Then, with a bit of clever rerouting of the genoa sheets via one or two new turning blocks, you can often use the same winch for hauling in the bulk of the genoa. This is a fantastic help if, like me, you have a huge overlapping genoa. If you're feeling a little flush, why not convert one of the primary winches too?

Andersen does a full range of electric winches and conversion kits

In fact, I've sailed on a boat that had one electric primary, to starboard, that could be used haul up the halyards and take in the port genoa sheet simply by taking one turn around the manual winch and then leading the sheet or halyard onto the powered one. This way, once the bulk of the sheet/halyard has been hauled in, it's easy enough to take another couple of turns around the non-powered winch ready for manual trimming if

Electric windlasses are now commonplace; winches less so

necessary. Depending on your boat's layout, you may want to install a second deck switch so you have a clear view of the headsail on both tacks. The owner had even set it up so he could electrically winch the kedge anchor from the stern – essential when mooring bows-to in a Mediterranean harbour to protect the rudder or for privacy in the cockpit.

Reduce friction

In a similar way to reducing your power consumption before planning a new electrical system, it makes good sense to look at reducing the friction in your sail control systems before considering how best to assist you with the hard graft of winching and hauling.

Boats older than 20 years will probably have outdated blocks with plain bearings, as will many of the newer, lower cost production boats. Just spending a few hundred pounds replacing blocks and travellers with ball-bearing versions can reduce frictional loads by up to 40 per cent. Now ally this with a little thought into how you can reroute lines so as to diminish the angle of turn and maybe even take a turn out altogether where possible, and you could find you need half the elbow grease you did previously to hoist the main or sheet in a genoa.

Then there's the sail plan. Changing to a non-overlapping jib will noticeably reduce the effort required when tacking and you can still save the big genoa for when your kids join you. Besides, with a well-cut jib you'll lose little speed to windward in a good breeze and if you add a furling asymmetric downwind sail you'll notice little difference on a reach too.

Modern yachts frequently sport non-overlapping jibs and sometimes even self-tailing headsails, but this usually means the mainsail is bigger to compensate, thereby increasing the effort required to hoist it in the first place.

Reefing can also be exhausting, particularly if you have a single-line reefing system, as they create a lot of friction due to the reefing lines turning around multiple blocks. If you can, use a two-line system – one line for the luff and another for the leech. Okay, it'll mean a little more string, but it'll need far less winching effort to drop in a neat reef.

Lastly, regular maintenance of deck gear is essential. If you don't service your winches every year, not only will they eventually fail, but also the amount of effort required to operate them will increase until half of your hard work is wasted in turning the winch rather than doing the job. The same goes for electric winches – the increased friction will simply decrease your battery power more rapidly and you risk the circuit breaker cutting out just when you don't want it to, should it become overloaded.

Keep a close eye on any deck switches, too. After a while water can penetrate their seals and if one of these goes faulty there's a danger the winch or windlass might remain on – possibly with disastrous consequences.

The eWincher powered winch handle has a removable Li-ion battery pack

Vertical Antal winch: all are offered with vertical or horizontal drives

Powered winch handles

Before you start planning to upgrade your manual winches to electric, consider the possibilities of buying a powered winch handle instead. Like everything there are pros and cons of course – as with most bits of boat kit – but we have had many boat owners writing to us to say that they've only been able to continue sailing thanks to one of these devices to help them on board.

WINCH	MODEL	RANGE	SPEEDS	RRP FROM	MOD KIT	VOLTS	ORIENTATION
Anderson	E1	28-72	Variable	£2,700.00	All	12/24	Both
Antal	XT-ELH	40-62	2	£2,295.00	All	12/24	Horizontal
Harken	STEA	40-80	2	£2,642.00	Radial only	12/24	Both
Lewmar	EVO	40-80	2	£2,351.00	40-55 only	12/24	Horizontal

The E-Furler comes with all the necessary kit, including a wireless remote

First, the cons: they're not particularly cheap, they need charging regularly and they can be lost overboard if the user is careless or loses their balance. Furthermore, if you're sailing singlehanded it will be much easier and safer if you have self-tailing winches in order to keep both hands on the electric winch handle, as there will be a fair amount of rotational torque once the power really comes on.

The pros: they will effectively electrify every standard top-drive winch on board (although obviously only one at a time) and they don't require you to modify your boat or install heavy-duty power cables as you would need to when fitting an electric winch.

The most popular is the Winchrite (£599, www.winchrite.co.uk), now in its second generation with more power thanks to a greatly improved motor and gearbox and extended charge duration. Yes it's still a little noisy, but then so is any electric winch. Being low-geared for maximum power, they're a bit slow (120rpm), so you might still prefer to pull the bulk of the sheet in by hand before letting the Winchrite take over. It also needs a steady grip to keep it from rotating when under a heavy load.

A recently launched 'power assist' winch

The Winchrite powered winch handle now has more power and longer duration

handle called the ewincher (www.ewincher.com) is a little less bulky and lighter than the Winchrite and, better still, has two-speeds, making it more suitable for hauling in and trimming headsail sheets without needing to resort to hauling the bulk of it in by hand. Shaped more like a traditional winch handle, the ewincher allows the user to winch manually as normal, but then assists when the load really comes on. Alternatively, it can be used purely as an electric winch handle, like the Winchrite. The good news is the 24V battery pack is removable, as with all modern cordless power tools, so you could have a second, back-up power pack sitting on the charger ready for a quick swap out. The bad news is it

The Cranker is a converter that replaces the chuck on a right-angle drill

currently costs close to £2,700, so you really wouldn't want to drop it overboard!

Another alternative is to use a right-angle cordless power drill, although it would need to be very powerful. A popular model is the 28-Volt Milwaukee drill, which has a 16in (40cm) long handle and is available on eBay for around £400, including a single 28V lithium-ion rechargeable battery. You can even buy a purpose-made, 8-point 'winch-bit' or 'Cranker' chuck replacement (www.thecranker.com) for this and other 0.5in (12mm) chuck drills. Spare battery packs and a padded cover are also available, but it only has a 220V AC charger so it can only be recharged underway using an inverter.

A note of warning – both the electric winch and the powered winch handle manufacturers strongly advise you not to use any of these devices for hoisting a crewmember up the mast. This is because they have been known to fail and endanger the lives of the crew being hoisted and others below. I, too, wouldn't condone this practice for my own reasons, but in reality many do use them for just this purpose. If they're sensible they take additional precautions, such as not relying on self-tailing winch jaws to take the strain and attaching a second halyard with

The Milwaukee M28 is the most powerful right-angle drill on the market

WINDLASS	MODEL	RANGE	WATTS	RRP FROM	VOLTS	ORIENTATION
Lewmar	V700	6-7mm	500	£609.00	12	Vertical
Lewmar	V1-6	8-14mm	700-2000	£1,285.00	12/24	Horizontal
Lofrans	Atlas	6mm	600	£599.00	12	Horizontal
Lofrans	Dorado	6-8mm	500-700	£599.00	12	Horizontal
Lofrans	Kobra	7-8mm	500-700	£899.00	12/24	Horizontal
Lofrans	Project	10-14mm	1000-2000	£999.00	12	Vertical
Quick	Genius	6-8mm	500-1400	£699.00	12	Horizontal
Quick	Aleph	8-10mm	700-1500	£869.00	12	Vertical

someone else other than the wincher taking up the slack and belaying it between hauls. Having another person standing by at the main power switch in case it gets stuck on is also a good plan.

Of course, the usual point of not using an external halyard to go aloft counts for both manual and powered winches. If a sheave or bearing breaks on an internal halyard at least you're not going to plummet to the deck!

Electric furlers

In truth, headsail furlers on small to medium-sized sailing yachts shouldn't ever need winching – manually or electrically. If they do then something is usually wrong. Either the swivel bearings are salted up or dried out, the halyard has been hoisted up too hard, or you have halyard twist at the top swivel.

But for those that simply want to ease the amount of physical work involved in sailing, there's no reason why you can't fit an electric furler, or an electric winch that the furling line can reach.

Code-0 and asymmetric spinnaker furlers usually have continuous loop furling lines that can require a crewmember to leave the cockpit.

However, since the advent of small but powerful Lithium-ion battery packs other solutions have been developed. The new, German-made Loop EF1500 E-Furler uses a small 18V Li-ion battery pack to drive an electric furler, designed so that it is all neatly contained within the bowsprit pole itself. It comes with a wireless remote control so the sail can be furled and unfurled from the cockpit and a spare battery can be kept in an onboard charger ready for a quick swap out if necessary.

Lewmar's V1 vertical windlass is very low profile

Anchor windlass

Cruising sailors, both power and sail, have long been aware of the delights of an electric anchor windlass and since the development of the rope/chain combination gypsy, the whole process of lowering and raising the anchor can be automated by remote control from the cockpit.

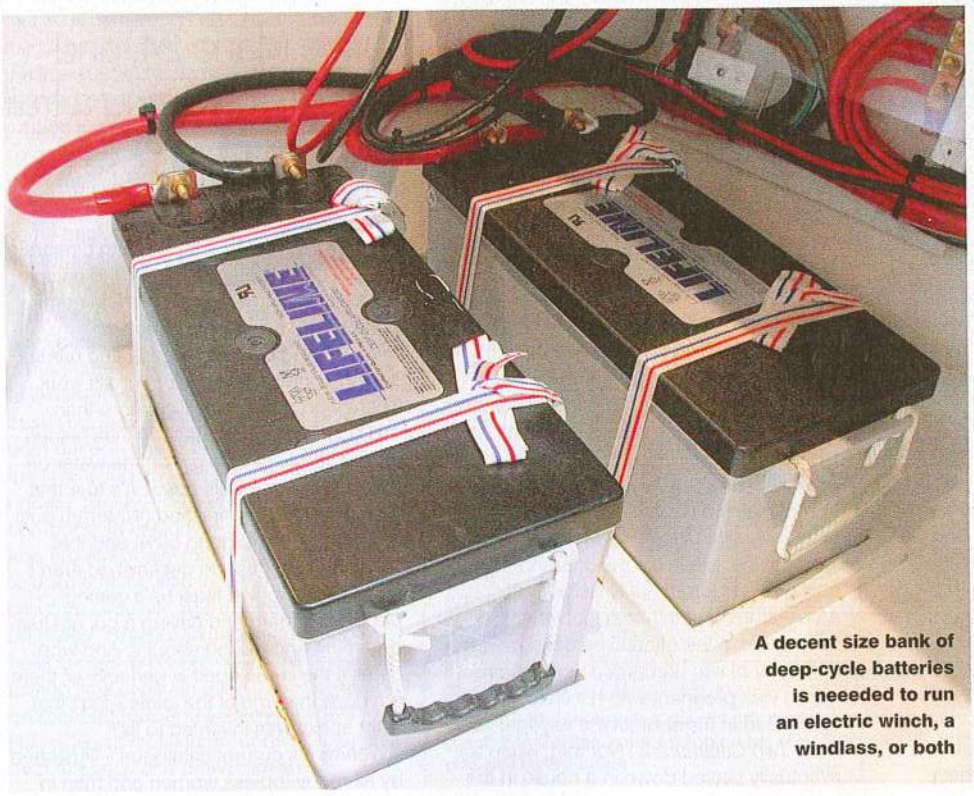
Once again the least expensive way to take the strain out of anchor hauling is to find a mechanical windlass that can accept a standard winch handle and then buy something like the Winchrite to operate it. This saves on the expensive and heavy wiring necessary for a permanent electric windlass and doesn't put so much load on your house batteries.

Power considerations

Whatever way you decide to electrically 'assist' your sailing you'll need to consider the effect on your boat's electrical energy reserves.

An electric winch or windlass draws a serious amount of power when operating, some 80-150A, so make sure your battery banks and circuit protection can cope with this.

While adding an additional battery to the service bank is easy, keeping it fully charged is less so. Boats that have more than one deep-cycle battery need a proper charging regime – usually in the form of a smart alternator regulator and/or more powerful alternator. But along with more Amps going in and out comes the need for better monitoring and overload control, with careful thought given to the safety of the electrical system. Using wires that are too small in diameter not only lowers the voltage available to the device, but also increases the risk of fire on board should any of the wires overheat.



A decent size bank of deep-cycle batteries is neeeded to run an electric winch, a windlass, or both