

Assembly Guide - Etchells Boomvang Lever

written by Andrew Palfrey - May 2020

Overview

Thanks for the purchase of the Boomvang Lever. It is a very efficient, low maintenance, economic and easy-to-fit system. The benefits include very low levels of friction, which is important. We need the vang to release easily in light winds, whilst also being simple to pull-on when it is windy and the boat is “on the edge” downwind.

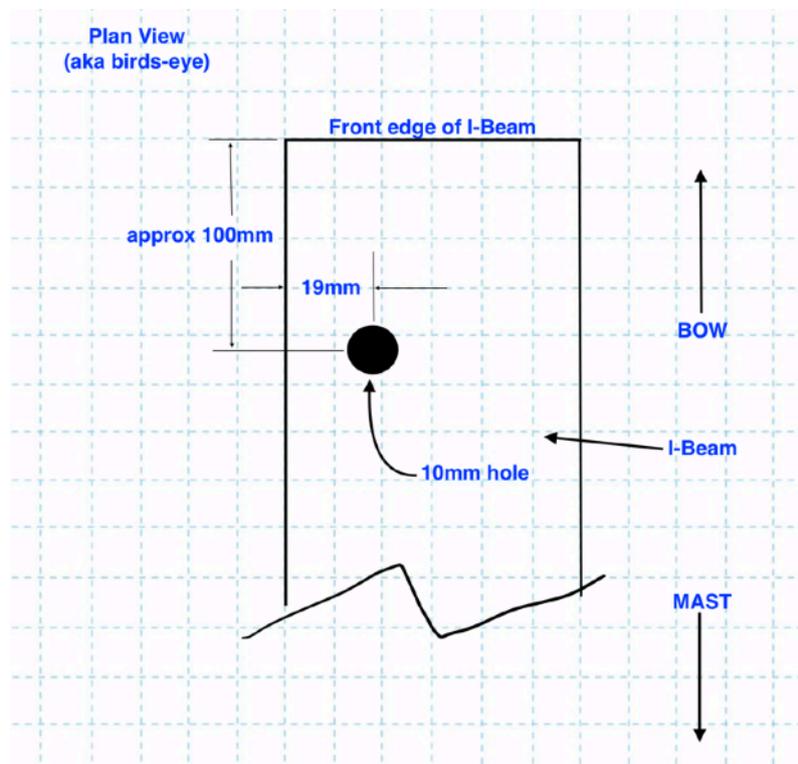
You’ll notice some of the language I use in this guide is ambiguous. This is done purposely, as there are many different rigging options available, depending on where your existing hardware might be.

Good luck with the install - please do not hesitate to pose any questions to me on dog@sailing.dog or +44 7913 926 603

STEP 1 - fitting the Lever to the I-Beam

Drill a 10mm diameter mounting hole in the I-Beam as shown here. The fore-aft measurement of 100mm is nominal. Depending on existing hardware you have in your boat, the measurement can be as little as 30mm, or as far back as approx 60mm in front of the mast step assembly. But 100mm is a good place if you have a blank canvas to work with.

Then simply bolt the Vang Lever in place. The curved edge of the lever should face forward, with the short side being on the port side of the yacht. The blue plastic side is down (sandwiched between the two aluminium surfaces). Ensure the Nyloc nut engages properly to lock the nut onto the thread. Tighten so all wobble is removed, but not so tight the lever cannot be moved easily.



STEP 2 - The turning block for the vang-strop coming from the deck

You will need a turning block to direct the vang strop from its vertical orientation (just behind the mast) to its horizontal orientation (as it travels from the turning block to the lever).

This block is extremely highly-loaded. I would recommend a Harken 304 wire-block, mounted on a forged 5mm saddle (eye-strap).

The saddle should be bolted to the I-Beam, approx 50mm behind the mast step and approx 12mm in from the port-hand edge of the I-Beam. Ideally the eye-strap will be angled slightly off the centreline of the yacht and aligned with the end of the lever (with the lever positioned in the middle of its travel).

It is important the block is located as low-down to the top face of the I-Beam as possible. If the turning block is too high, it can generate an off-axis load onto the lever and the lever can bend or deform. Aim for the line to be 25mm MAXIMUM above the top surface of the I-Beam. In my boat, I remove the shackle and pin that is supplied with the Harken 304 block and simply replace it with a 6mm bolt and nyloc-nut (which passes thru both cheek plates of the Harken 304 and the saddle).

Step 3 - The strop system from the Boom to the Lever

The Lever provides a very efficient ratio of approx 4 to 1. I would recommend remaining with the 2:1 set-up above deck (between the boom and the mast), which most Etchells are equipped with. So... the amount of leverage delivered to the long-end of the lever is effectively 8 to 1.

Note: You may see photos of examples where I (among others) tried a 1 to 1 single strop from the boom to the lever. It was not ideal for two reasons - firstly the strop was chafing out very quickly, where it went through the ferule on the mast (to direct it vertically below deck) and secondly, the load on the turning block was massive.

If you are making up a new strop, I would recommend 5mm dyneema-core line.

When attaching the strop to the lever, fit a 6mm shackle to the hole on the lever. Use a smooth forged shackle, as opposed to a pressed shackle with hard edges. I would recommend splicing the 2:1 strop to a length as follows: *when the end of the boom is resting on the deck and the lever is positioned with the long (starboard) side all the way aft, the strop is approx 75mm short of the shackle.*

Then simply lash through the eye splice and shackle with 4 to 6 falls of 3mm dyneema line. With the boom and the lever positioned as noted above, you can make this lashing taut. This is a good go-to length. If there is stretch after the first use under load, simply re-lash a little tighter.

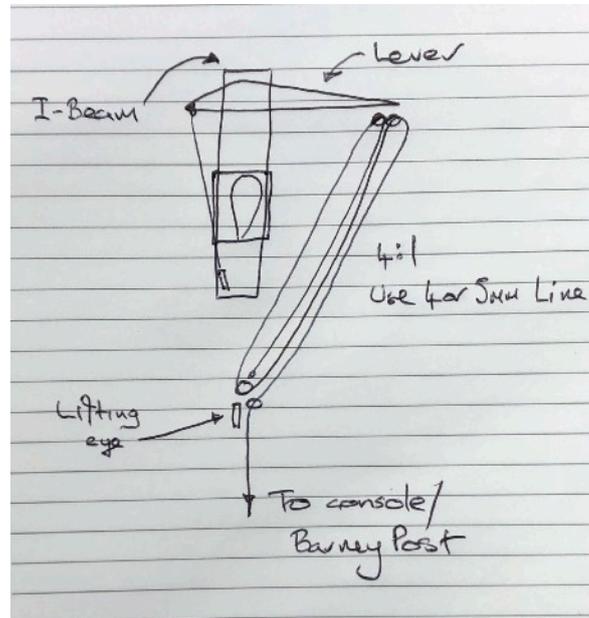
Step 4 - The purchase system

I have tried many purchase combinations over the past 3 years since coming up with this system. I have settled on a purchase system of 4 to 1, which provides an overall ratio of 32 to 1. This allows the vang to be eased in the lightest of winds. But also for it to be pulled-on easily in a breeze.

So, getting to it...

The simplest way to do this is to attach a double block to the end of the lever. Using "Micro" or "Series 29" sized-blocks is fine. Again, as mentioned above, fit a smooth shackle to the hole in the end of the lever. A 5mm shackle will be fine on this side, as loads are reduced. Then lash the double-block onto the shackle, so that under load, it will align easily with the sheaves being in a horizontal plane. I like the lashing method, as it allows the block to articulate.

Then lash a single-becket-block and an additional single-block to the forward lifting eye in the bilge area of the boat. Refer to the (very) rough sketch below for details of how the system can run. You may have seen pictures on my site, where I have attached the aft blocks to the floorboards, out to the side of centreline. This is because our bilge pump is mounted in the way of the direct line from the lever end to the forward lifting eye.



In summary, there are many ways to skin the same cat. This guide is written to help you avoid some of the pitfalls and to provide the basic tips on what to look for.

Please do not hesitate to ask questions or to provide feedback.

Good sailing,

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