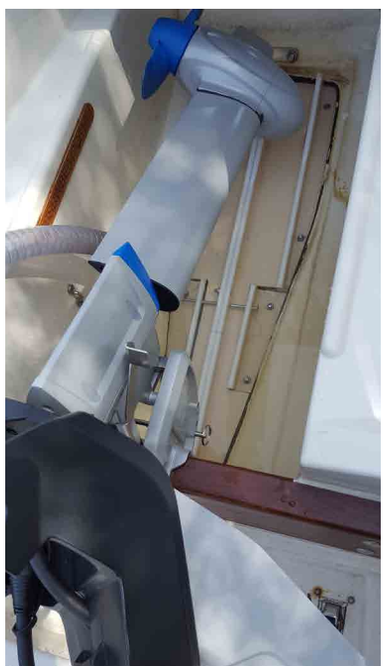
Engine Well modifications for a Swallow Bayraider Expedition and Epropulsion Spirit Plus XS

Having gone through the process of changing my Mariner 6 for an Epropulsion Spirit PLUS XS I wondered about the lamellae and that big two bladed prop, so I took the motor down to boat to sort this out. The prop went down through the lamellae like a knife through butter – but as discussed on the forum, the lamellae

would normally knock the prop flat as it was being raised, and it is wider than the opening in that position. It is said on the forum that you just need to poke a stick down through the lamellae to prod the prop into a vertical position – that worked in the yard but I couldn't see how that would work at sea when you couldn't see the prop. I was also concerned that the sharpness of the edges of the lamellae would scratch the coating of the aluminium alloy shaft – this motor is more like precision engineering than garden machinery. I put my hand through the lamellae and immediately cut my fingers. Replacing the lamellae with a cover plate is much discussed on the forum but most solutions go the 'Full Monty', removing the whole lot. I had another idea - to create a keyhole shaped cut-out and hatch cover just big enough for raising and lowering the motor.



I had some uPVC fascia board used below the gutters in housing. This has a flange all along one edge and I thought this would be useful for mocking up a prototype arrangement, hopefully good enough to last a season until I could prepare a proper job over next winter. I carefully raised and lowered the Spirit's propeller through the lamellae to mark the parts of the lamellae to be cut out and this ended up being a broader section at the back comfortably wider than the motor nacelle, a smaller narrow section for the prop shaft and then a sufficient amount removed at the front to enable the engine to rotate. Flat sections of the uPVC, one each side, were then cut out to support the stubs of the lamellae from underneath and shaped to tie in with the lamellae support frame underneath the boat. (See left). Above the lamellae two flanged sections were cut out for each side and shaped to fit so as to correspond to the opening but set back about 15mm to form a 'shelf' for the cover plate to rest on. The lamellae stubs were then clamped between the top and underneath pieces using stainless steel bolts thus forming a rigid support each side. For the cover plate two flanged sections of the uPVC were bolted back to back and shaped to fit the aperture. The material is sufficiently flexible that when inserted into the aperture it can be pushed down to match the curvature of the hull and a hole drilled for a retaining pin.

An advantage of this method over a full size cover plate is that the keyhole shaped plate is relatively narrow and therefore able to slide more easily into place past the motor nacelle.

Secondly the cover plate is easy to hold by its narrow section and locates easily. Thirdly you can use the cover plate as a poker to prod the propeller into a vertical position to come up through the aperture if needed. Finally the centre part is narrow enough to easily arrange a locating pin.

Our trial with was successful with all turbulence eliminated – better even than the original lamellae. It would be possible to have a slightly shorter version of the cover plate if you wanted to remove all turbulence while under engine.

The uPVC sections attached to the boat might be better replaced with epoxied plywood and faired in better in due course.

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