January 2023 Newsletter “Motor Mount Installation”

Photo Essay: Motor Mount Installation

Motor mounts play a vital role in the propulsion system scheme; they represent the only link between the thrust created by the propeller, and the vessel itself. In essence, the vessel’s hull is being pushed through the water, via the motor mounts. A failure of a mount or mounts, could lead to a severe misalignment between the transmission output, and the propeller shaft’s, couplings, which in turn can lead to transmission bearing wear, seal failure and even shaft failure.

In addition to transmitting propeller thrust to the vessel, motor mounts also perform two other duties; they absorb vibration and torque, and they enable alignment via their adjustment nuts. The flexible medium sandwiched between a mount’s base and its stud enable it to achieve the former, while the latter allows for vertical adjustment. Mount bases typically incorporate slotted fastener holes that allow for lateral adjustment.

The decal affixed to this mount provides vital information about its adjustment and installation, including and especially the maximum allowable free stud length between the top of the mount and the bottom of the adjustment nut. If this distance is too great, the leverage a stud can cause it to fracture; it is a defect I encounter frequently. Finally, the instructions also guide the installer regarding the torque that must be applied to the locking nut. Bravo to this manufacturer for providing clear instructions, which can’t be

lost, and which will ensure long and reliable service from this motor mount.

Ask Steve

Hello Steve,

I read your article on fuel tank installation and the need for improved design to prevent tank failure. I am looking at older 80’s and 90’s vintage 32 – 38 ft trawlers. I notice Bayliner has a high rate of fuel tank corrosion and cracking. Is there a particular yacht designer with a better track record for fuel tank longevity? I understand that at some point all entry level yachts will need a tank replacement. But some may have better support or installation methods than others.

Roger M. Chrappa

Roger:

It’s difficult for me to point to specific builders whose tank installations may meet my requirements, and ABYC Standards, as these can vary from model year to year. It is for that reason that I instead spell out the requirements in the fuel tank design and fuel tank installation articles.

I can point out, as one consistent example, Hatteras was a leader in many boat building techniques; among production domestic builders, they pioneered fiberglass fuel tank fabrication, I have accessed and cleaned 30-year-old Hatteras tanks, that were, once cleaned, as good as new. Fiberglass is an ideal material for diesel fuel tanks for this very reason, they are renowned for their longevity. Of course, the tanks design must incorporate other features, which are detailed in the aforementioned articles, to get a passing grade from me.

Hello Steve,

First off, a big thanks to you for your invaluable contributions to boaters by way of articles and comments!

I recently bought a KK42#140 and the bottom was found to have blisters during survey. Upon sandblasting the blisters were under the gelcoat, so the bottom has been peeled and repaired by reglassing all the wet/blistered spots. The boat is now drying up at Cracker Boy Ft. Pierce with periodic steam wash and pressure washing. I am considering adding fiberglass to the entire bottom and wanted to know if whether to go with epoxy or VE resin. The contractor is suggesting using epoxy.

Thank you.

Sincerely,

Raju Venkatraman

Raju:

You may not like what I am about to say…

Having undertaken scores of blister repairs in my career, and having researched and written extensively on the subject, I do not believe bottoms can be "dried". There is no scientific evidence that drying a "wet" fiberglass bottom results in long-lasting prevention of future reoccurrence of osmotic blisters. If for no other reason, no outfit I know if offers a meaningful warranty against blister re-formation after drying. The yard I managed, which undertook many osmotic blister repairs, offered a 10-year warranty, one on which we never had a claim. Our repair approach involved peeling *all* water/osmosis-affected laminate from the hull, whether or not it had blisters, then replacing the same laminate/fabric schedule, using vinylester resin.

If the bottom was “peeled and repaired” then drying, if that were an effective approach, should not be necessary, unless only blistered areas were repaired.

I would not add fiberglass to any bottom unless an equal amount has first been removed. If you were to add/replace fiberglass, my preference would be vinyl ester resin, as it is generally easier to work with than epoxy, albeit less friendly to applicators. After its application the bottom would then be faired with a VE fairing compound, epoxy primed and anti-fouled. In order to provide an effective barrier against osmosis, assuming the material beneath is dry, you would need to apply a minimum of 1/10” of laminate.

More on osmosis prevention and repairs here and part II here.

Steve,

Hope all is good with you.

I’ve been considering HullShield or SoniHull for our 44 DeFever, based on some glowing testimonials I’ve read. I would love to have an expert’s opinion, however, that these things work and are not snake oil. I always check your site to see if you’ve weighed in on any topic before writing you and hope I didn’t miss something this time.

We hope to move our boat from TN to FL this winter so marine growth is on my radar.

Any thoughts/experience you have would be much-appreciated.

Thanks,

Ian McLeod

Ian:

Based on feedback from my clients, while some of the

ultrasonic anti-fouling systems do make a measurable difference, none can take the place of anti-fouling paint. They are more of an augmentation and extension of conventional anti-fouling. It depends a great deal on how often the vessel is used and where it used and berthed, clearly warmer waters are more challenging for growth.

If you are considering a system, before making a decision, I'd recommend talking to a few users, preferably with a similar vessel/hull, and used in a fashion that is similar to yours.