

Methodology for Stanchion Base Bedding

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Deck

Notes

To both provide a solid epoxy plug and a water barrier for the holes, each hole in the deck should be filled and re-drilled.

Method

1. Remove stanchion and then the stanchion bases. Save the old screws; they will be useful to help align the new holes later on. This is a good time to clean and polish the stanchion bases. Clean out the socket and remove all old bedding material from the base. I have found that brush cleaner is a good solvent for helping to remove old dried bedding.
2. To prevent any water entry to the deck core the exposed core must be sealed with epoxy.
 - a. Drill out holes to ½" or greater. Even better would be to drill up from the bottom with a hole saw being careful to not drill through the deck.
 - b. Check that the core is dry. Clean with acetone.
 - c. Clean and tape off the underside of the holes. I find that 3M Scotch™ brand packaging tape works very well.
 - d. Using an acid brush or other small brush, paint a light coating of un-thickened epoxy inside each hole. Be careful not to loosen the tape underneath.
 - e. Fill with West System Epoxy thickened with 406 filler. The epoxy should be thick but still pourable. Carefully pour the thick epoxy so as not to leave a bubble or void in the hole. "Puddle" the hole with a small sharp stick (a shard off the tongue depressor works great) to encourage any bubbles to migrate to the top.
 - f. If the surface level drops after filling it is either because your tape failed and the epoxy is dripping from the bottom of the hole, or there is a void in the core. If it's a void, keep filling until it stops. Sometimes after the first set of the epoxy it needs topping off. The surface of the fill should be a slight dome above the hole.
 - g. When the epoxy filler has reached the "hard cheese" stage, slice it off flush with a sharp flat knife.
3. When the epoxy has become hard you can then re-drill the holes.
 - a. I strongly recommend using a drill guide made from 2" thick Starboard™. This has to be accurately made on a drill press so the holes are perfectly square. Use one of the stanchion bases as a template in making the drill guide.
 - b. Using the drill guide, drill one hole, put a machine screw in to hold it in place. Drill the diagonal opposite hole. Put a second machine screw in to hold it in place (don't bold the screws down, they are just used as aligning rods). Drill the next two holes.
 - c. Use a countersink to bevel the edge of the holes. This allows bedding to form a bead (like an O-ring) when the machine screws are tightened.

Backing Plates

Notes

1. Adding backing plates is better than using fender washers. The backing plate spreads the and hopefully keep the stanchion base from working as much. Stainless backing plates would be

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- better but harder to work and more expensive. Aluminum is just fine as a backing plate material provided an anti-seizing compound like TefGel™ or Lanacote™ are used.
2. Aluminum backing plates, 1/4" x 3" x 3" are used to spread load
 3. Alignment is always difficult so a threaded plate is not feasible. In some cases where it would be impossible to reach, it is possible to use two rectangular backing plates approximately 5/16 x 1" x 3" with threads would be a good option.

Method:

1. Using the same Starboard™ drill guide, drill 1/4" holes at opposite corners of the backing plate.
2. Enlarge the holes to 17/64" or 9/32".
3. Dry assemble each stanchion base and backing plate with two 1/4-20 (NC) Phillips pan head machine screws. For metric bolts use #6 x 60mm.
4. Drilling from the top, use a 1/4" long bit (hangar bit) and drill the remaining two holes in the backing plate. Alternatively, just use the bit to mark the remaining holes and drill them later. If drilling through the deck, enlarge the holes slightly (17/64" or 7/32") after removal.
5. Remove the plates. Using a permanent marker, write on each plate its orientation and location so it can be re-installed in the same position.

Bedding

Notes

- I've thought about using EPDM washers, but this time I used Sikaflex 295-UV². I like 3M 4000 but 3M5200 would be the best sealant to use. In a situation like a stanchion which has little other support than the base the adhesive properties of the sealant are important.
- The idea is to allow a reasonable amount of bedding to act as a gasket. Problems occur when bedding is applied and the assembly immediately tightened. This leaves a thin layer of compound with no elasticity, lowered adhesion, and no thickness to absorb any motion. The seal then breaks and water wicks its way into the holes by capillary action. With the "fill and re-drill" method any water will end up inside the boat and not in the core, but you still want to try to avoid this.

Method

1. We do not want a fillet of sealant which will catch dirt. Cleaning the squeeze-out with solvent is messier and time-consuming. It is better to mask off the base of the fitting.
2. Mask off the stanchion base tightly with blue masking tape. The tape can be applied under the edge of the fitting and then trimmed with a razor knife.
3. Apply liberal bedding compound on the deck and bottom of the stanchion base and around (but not in) the holes
4. Use a couple of the old bolts (you weren't going to re-use them were you?) to align the stanchion base.
5. Allow to set until mostly cured. This might take a day or more depending on the bedding compound used.
6. Pull out the alignment bolts after the first day.
7. Trim compound with a knife and peel back the masking tape. Fastening

Method

1. Chase the holes with the long 1/4" bit if too much bedding has accumulated.
2. Using a tongue depressor or stick, smear bedding compound on the upper half of each machine screw and twist the screw into the hole to spread out the goo.
3. Apply anti-seizing compound in each hole in the backing plate. Also apply it around each hole on the bottom of the plate.

² 3M products are not available where I am now.

4. You will need an assistant at this point to hold the machine screws from rotating and being pushed up.
5. Install the backing plate.
6. Fasten with stainless flat washers (smooth side against the plate) and Nylock nuts (or regular nuts with a lock-washer). Start by tightening diagonal screws. Work your way around each plate gradually increasing the torque. Have your assistant watch for “squeeze-out”; if this occurs you will need to stop and allow more drying time.