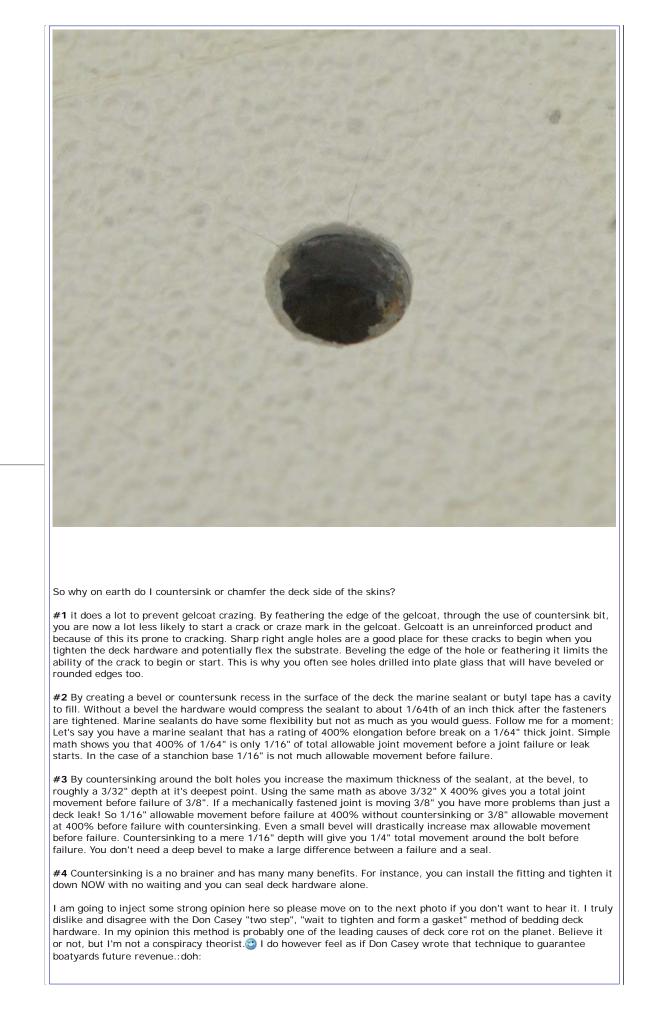
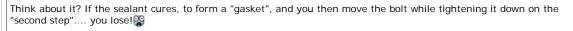


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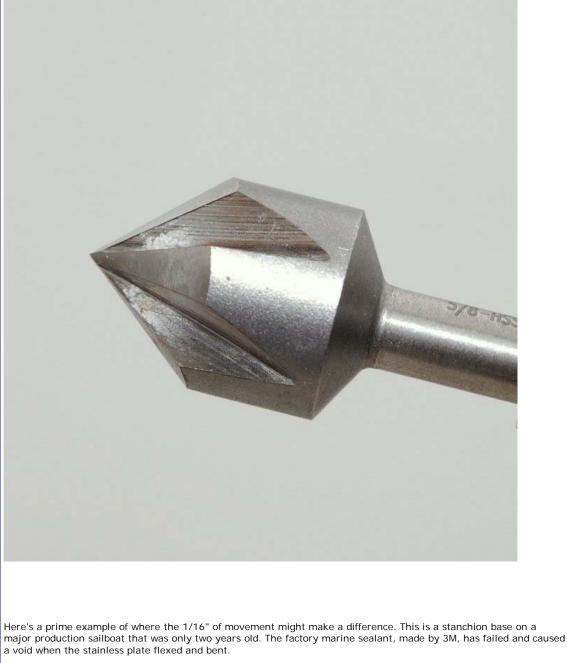


If you create a gasket too thick, and then can't get the mechanically fastened hardware tight enough against the deck because of compression resistance, the hardware will move, and also fail, so again.... you lose!:cussing:

Sorry, I mean no disrespect to Mr. Casey, and he writes some excellent stuff, but this method is perhaps some of the worst advice I've ever read in any sailing/boating related book. I have witnessed far too many cases of core rot due to poorly executed professional and DIY "two step" bedding installations than I would have liked to.

So where did I lean this very simple countersinking method? Hinckley Yachts. Hinckley, Morris and other top quality builders have known this secret for years but many of the big production builders are still either too cheap or just don't know about it, which I find very hard to believe. Sure this extra step takes all of about 30 seconds per stanchion but apparently it's too much "extra" work for most production builders.

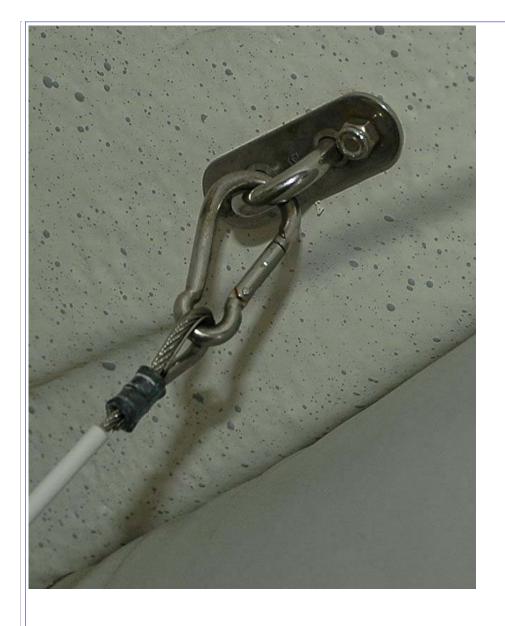
OK I'm done with my rant...for now...



This is another reason I prefer cast stainless or aluminum stanchion bases as they do not flex like plate stainless does. On top of the stanchion base bending this manufacturer also does not countersink the deck holes, which in this case resulted in wet deck core in under two years! Had the deck penetrations been properly countersunk there is a very high probability that this leak never would have occurred despite the cheesy quality of the stanchion base.







Okay, okay still not convinced? Here's how the pro's do it. I took this photo at Morris Yachts of a brand new Morris during the deck hardware installation. These four holes are for the Dorade box on an M-36.

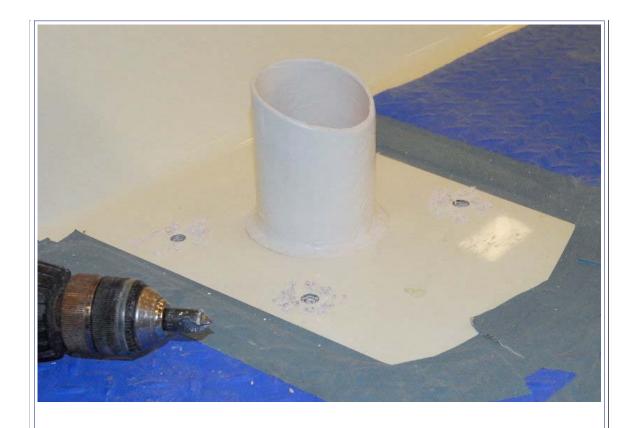
It is utterly reprehensible to me in this day and age that the production builders are so bent on saving \$0.02 that they won't take the extra 30 seconds needed to properly install deck hardware. It took this Morris Yachts craftsman less than 30 seconds, including installing the countersink bit into the chuck, to bevel these holes. 30 seconds!!!!!!

How many Pearson, Catalina, Hunter, Beneteau or other mass produced boats do we see or survey annually with wet decks? LOTS!!! How many Morris, Hinckley or other top builders using proper installation methods do we see with wet decks. Hardly any! Hundreds of thousands of boats with wet core over 30 extra seconds per fitting, if that. Ridiculous really...:cussing:

Rant over.....



Four properly countersunk deck penetrations on a brand new Morris.



Okay, back on track.. For this illustration I also slightly beveled the piece of polycarbonate:



Step 2 - Wrap Bolt Heads - You'll want to rip off a small piece of butyl and knead it into a string then wrap the underside of the bolt or machine screw head.



Step 3 - Press the through bolts into deck hardware with some good pressure.

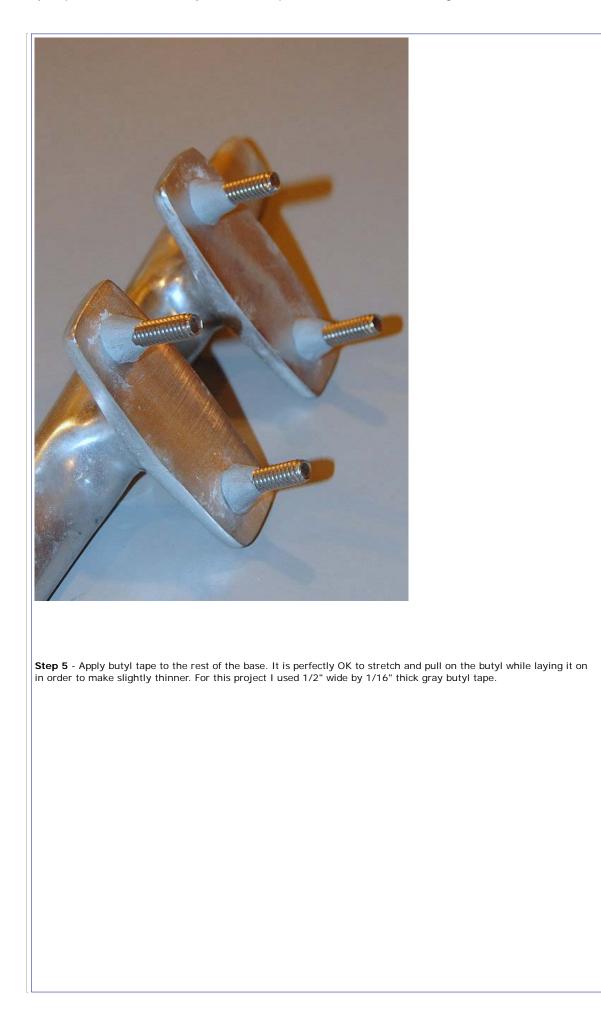
First though make sure the hardware is clean, Acetone works well, but if Silicone was previously used you'll really want abrasives as Acetone won't touch dry silicone contamination.

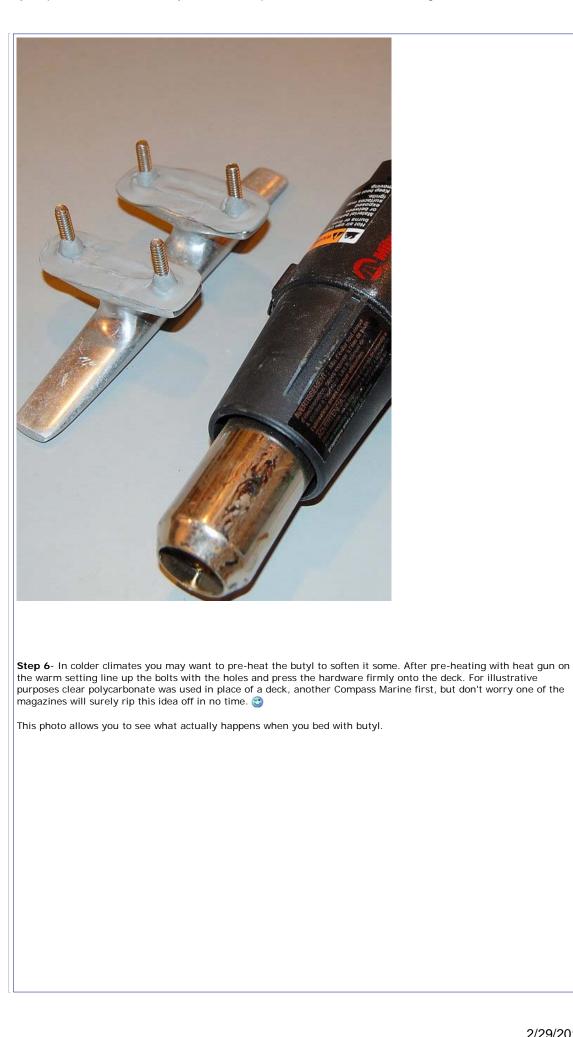
Gelcoat silicone contamination is a whole other subject for a whole other day. Please avoid silicone except for certain tasks involving plastics that requite its use.

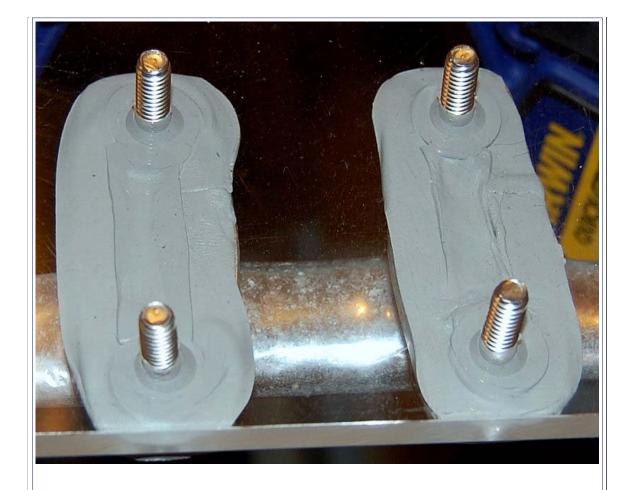


Once the bolt heads are wrapped and pushed through, flip the hardware over.









Step 7 - Install the backing plates, in this case I just used fender washers, and begin to tighten. Please use suitable backing plates. These fender washers would not be the best choice in a stanchion or deck cleat as they are far to thin and a little on the small side diameter wise for a cored deck.

You will be best to have two people or a good way to keep the bolt from moving. Ideally you do not want the machine screw or bolt to spin, but if you absolutely have to, you can slightly soften the butyl with a q-tip and some mineral spirits and go for it.

Tighten the hardware a little bit at a time as the butyl will ooze out slowly because the consistency is quite thick. Tighten, let sit, tighten, let sit etc. etc.. When little to none squishes out & the bolt & nut become tight you can stop. If you have a wood deck core DO NOT crush it by over tightening, better yet bore out some core and pot the hole with thickened epoxy.

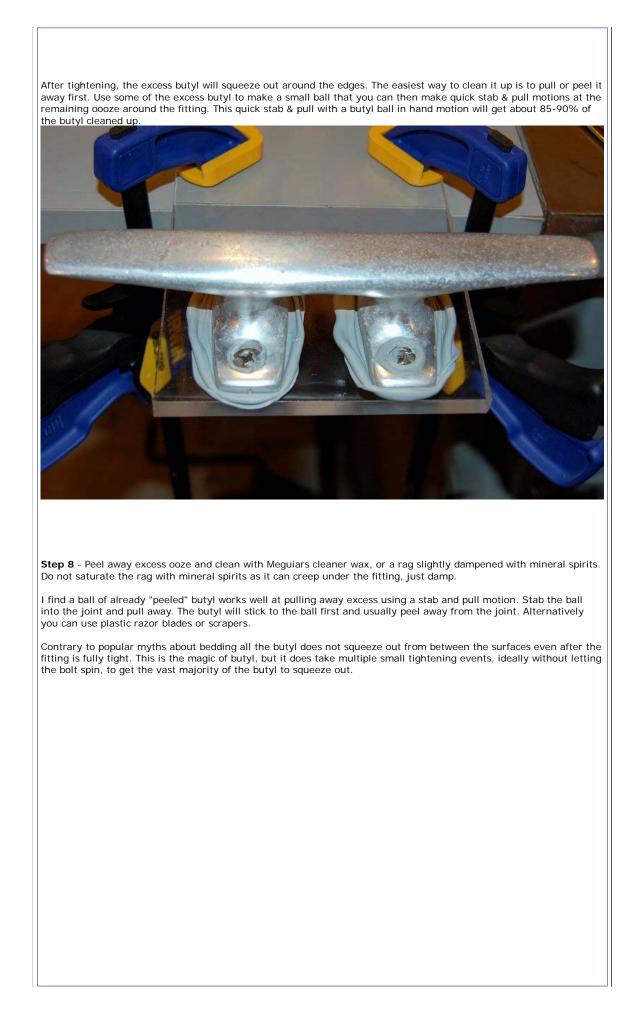
Here, I have taken pictures of the underside when tight.



As I mentioned in the last photo please use properly sized backing plates. This is a prime example of DIY boat work gone bad. Ouch!! This stanchion base had NO sealant of any type installed, not polysulfide, not a polyurethane not butyl and not even the dreaded silicone.

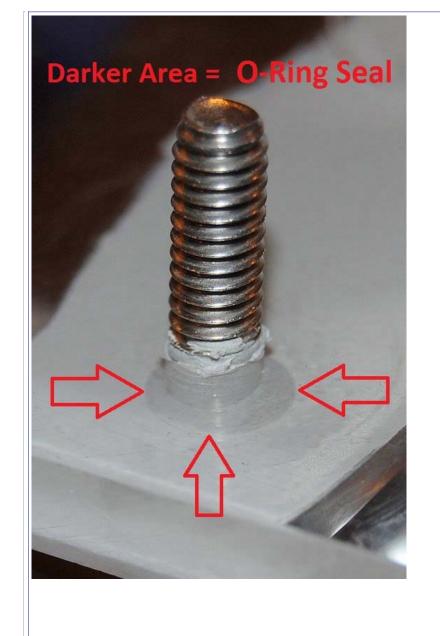
As a result of this unbelievably poor installation the core turned to mush. The thin fiberglass deck skins, combined with dinky little washers, could not withstand the forces applied on the 24" lever attached to the stanchion base, and rip!:doh:







This is the view after tightening to full tight, and then removing the nut and washer. You can see how well it actually seals, and that it does NOT all squish out, as rumored to for years, if you tighten to full tight. You can also see the o-ring seal of thicker butyl created by countersinking & the butyl cone. The butyl o-ring created by countersinking the deck side is evidenced and can be seen by the darker colored ring of butyl around the bolt.



This is the gray butyl tape I use. It is 1/16" thick by 1/2" wide. It makes an excellent bedding compound.

Many builders used to use butyl tape, CS Yachts and many others did, but they all stopped because butyl in a production environment is significantly more labor intensive despite being a better mouse trap.

The benefits of butyl tape are numerous:

#1 It never hardens and remains at the same thick consistency for well over 30 years.

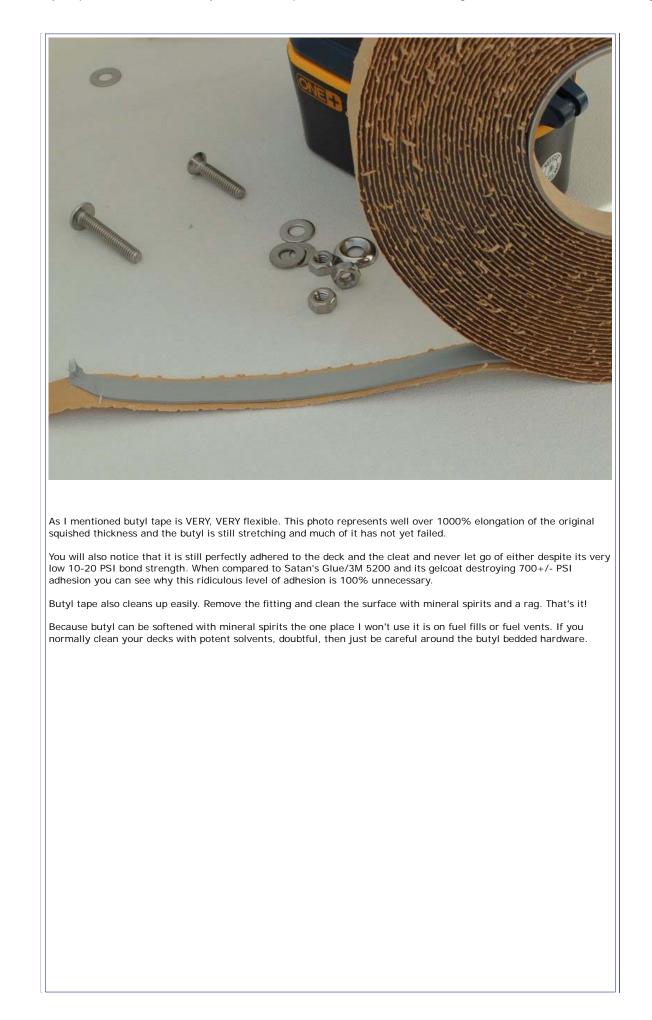
- **#2** Because it never hardens it always remains flexible.
- #3 It is multiples more flexible than a cured polyurethane.

#4 It sticks extremely well to clean gelcoat, plastic, aluminum, bronze or stainless.

#5 It's NOT a glue, and for through bolted deck hardware you do NOT need a glue. This thinking I know is contrary to the brain washing we have received by the polyurethane marketers like 3M, but it's true..

#6 You can easily remove hardware bedded with butyl tape in the future without destroying your decks.🙂

#7 When you open a \$16.00 - \$20.00 tube of Satan's Glue or similar, and don't use it all, it quickly goes bad and gets hard. Butyl tape can still be used ten + years later. I bought two cases back in 1997 or 1998 and was till using those rolls this past spring with no problems what so ever. That is a HUGE cost savings..





This cleat had been bedded 29 years prior to this photo with butyl, and frustratingly, with no beveling of the holes. Despite the lack of countersinking/beveling it was used for 29 years covering over 50k+ nautical miles and never once leaked a drop. Butyl is an exceptional sealant and the deck, even after 29 years and 50k+ miles, was still 100% bone dry, not delaminated and confirmed dry with a moisture meter and soundings.

You can see the pure white core and no signs of moisture damage.



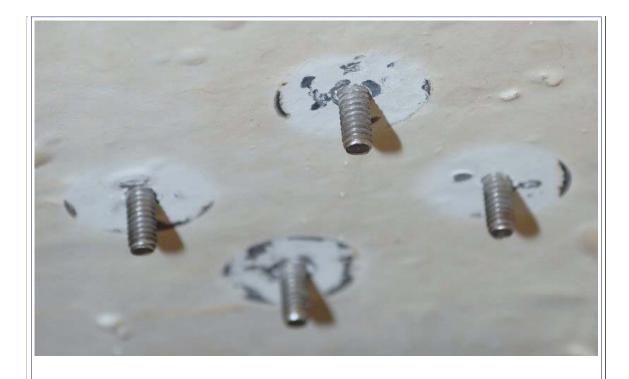
Anyone who has been around boats for a long time knows what the back side of a deck looks like when the backing plates come off and the fitting has been leaking. Trust me, it looks nothing like this. Butyl tape, a deck cleat that sees tremendous loads, no countersinking and yet 29 years of service later and BONE DRY! No rust, no brown goo, no signs of any leakage.

I re-bedded much of a 2005 Catalina in 2006 and the vessel already had multiple deck fitting leaks. This is 100% inexcusable on a 1 year old vessel! Properly installed butyl tape, in my humble opinion, is a far superior deck sealant than any of the polysulfides or polyurethanes currently marketed for above deck applications.

Though with either butyl, polysulfides or polyurethanes they will all work very, very well IF properly installed. "IF PROPERLY INSTALLED" being the key words and properly includes countersinking the holes.

All deck hardware will eventually need re-bedding no matter how good your sealant is. Why make things more difficult than they have to be in the future by using Satan's Glue (AKA 5200) that has a 700 PSI bond strength? Why do this when a product with just 10-20 PSI will achieve at least the SAME and more often BETTER results or outcomes without all the headaches.

Keep in mind that 3M 5200 can actually bond to the gelcoat more strongly than the glecoat is bonded to the fiberglass substrate! Unnecessary bond strength? Absolutely! Think about this, the Satan's Glue marketing mavens at 3M have probably driven millions of dollars in repair revenue for boat yards and have actually spawned & supported an entire business dedicated selling polyurethane/ 3M 5200 removal products! Again, ridiculous!:doh: This level of adhesion is 100% unnecessary.

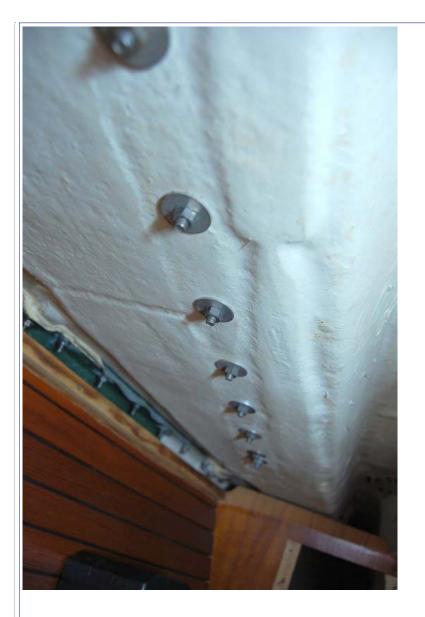


Just one last bit of evidence as to why I prefer butyl tape for deck hardware over Satan's Glue or its extended family of misfit relatives.

This is the genoa track on our CS-36T as photographed at year 31. The track is still bedded with the original butyl tape she left the factory with in 1979. The track, 31 years later, is still BONE DRY, does not leak and has not leaked in 31 years and 50,000+ nautical miles. We run a 150 genny most of the year, just as the previous owner did so this track sees some heavy loads.

I've seen some less than 4 year old boats bedded with Satan's Glue or its relatives dripping wet with rust stained bolts and wet core at year four and sometimes earlier.

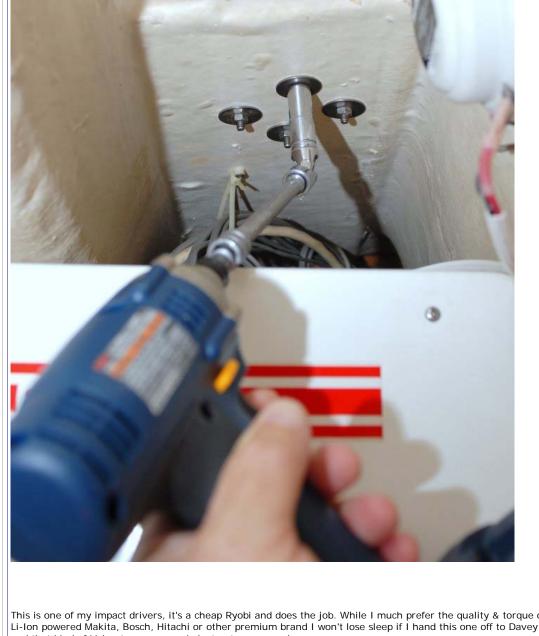
This genny track was installed without countersinking the holes. Just an aluminum genoa track bedded with butyl tape in 1979. Bevel the holes and it will probably go 70 years without a leak.. 🙂



Just a quick tip on removing hardware. A cordless impact driver can make short one person work at removing the nuts on the inside of the boat.

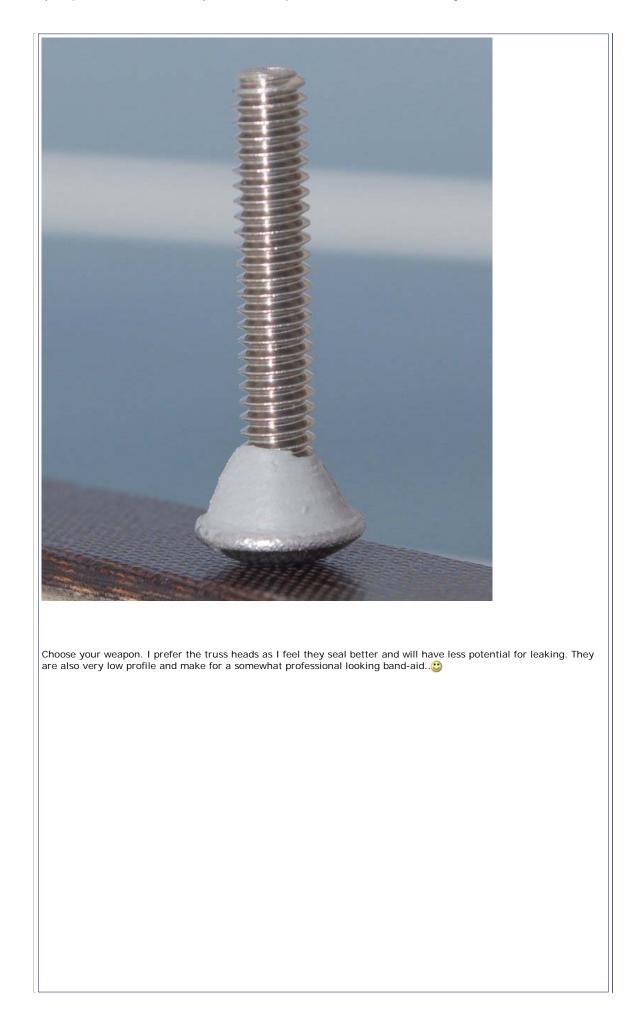
For stanchions and other hardware I often re-install them with hex head bolts rather than Phillips or slot headed screws. This allows me to tape a wrench to the deck using Gorilla Tape to keep it from moving then hit the inside with the impact driver, wrench or socket wrench. If you use the impact driver to re-install pleas DO NOT over do it. These tools are powerful and fast. I would advise against the use of one for re-installing the hardware until you know you are competent with it.

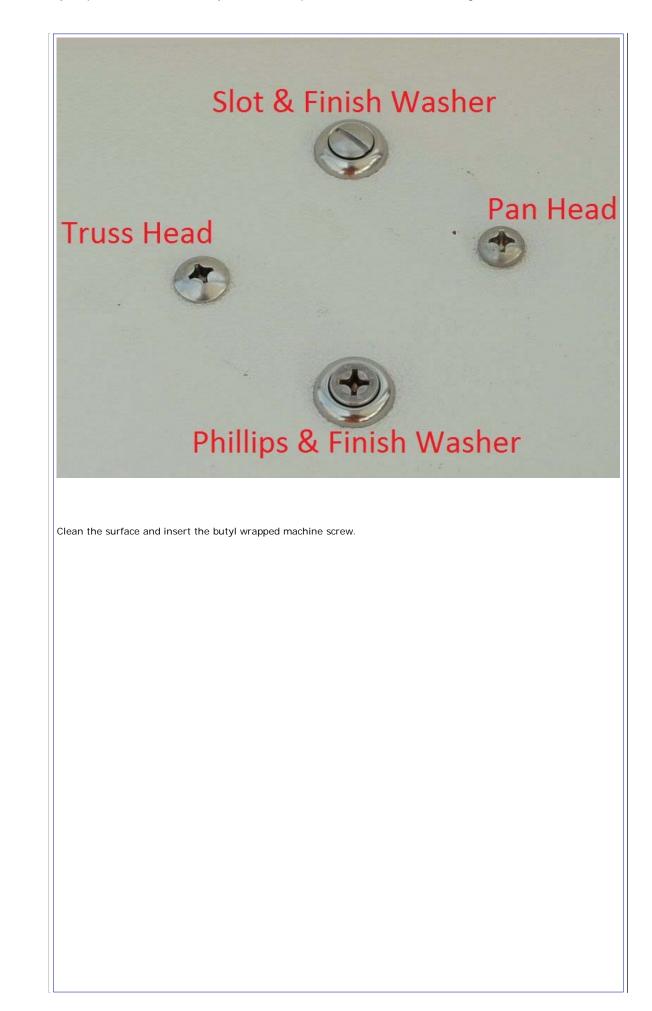
Impact drivers work via hundreds of rapid fire quick impacts or beats per minute sort of like a machine gun. These small, short, very fast beats or impacts will almost always break a nut free from one side without even using a wrench or screw driver on deck.

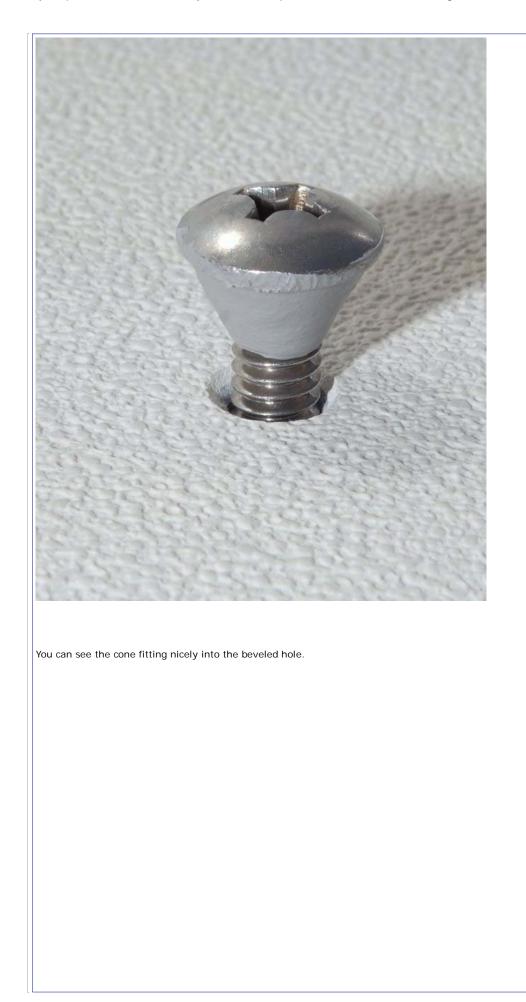


This is one of my impact drivers, it's a cheap Ryobi and does the job. While I much prefer the quality & torque of a Li-Ion powered Makita, Bosch, Hitachi or other premium brand I won't lose sleep if I hand this one off to Davey Jones and that kind of Li-Ion torque power is just not necessary here..











Have one person hold the screw head with a screw driver to keep it from spinning then go below and install the nut and washer and tighten it down.

I will leave you with some general rules I follow for bedding deck hardware:

#1 SEALANT ON DECK - Don't bed or use sealant on the inside of the deck. If it leaks you WANT to know about it. By sealing the backing plate side or the inside of the boat you can force the water into the core, if its not sealed. You can also cause any trapped water to become starved of oxygen. This can lead to pitting or crevice corrosion of the stainless bolts potentially leading to a catastrophic bolt failure. Only seal the deck side.

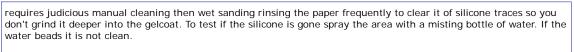
#2 TIGHTEN ONCE - Whether you use butyl or a tube type sealant Please do not listen to the old wives tale about letting sealant cure and then tightening it a second time. While in "theory" this sounds all warm and fuzzy, but the raw reality of the real world is that this is a disaster waiting to happen. There is a much easier way!

Countersink the deck hole and tighten it ONCE. As I ranted about above, the "let cure, tighten twice" advice is perhaps the absolute worst advice ever foisted upon the unsuspecting boating community.

Messed up attempts at this method run rampant and this has perhaps been the cause of more deck leaks than if you were to use Swiss cheese to bed your fittings. Though I strongly suspect Swiss cheese might actually work better. I have had a moisture meter on lots of DIY and "professionally" bedded "tighten twice" boats and there is huge correlation to "tighten twice" and wet decks, HUGE.

#3 SILICONE - Avoid silicone! There are only two situations where silicone should be used and that is for bedding acrylic dead lights or plastic fittings that are damaged by polysulfides or polyurethanes such as Beckson products. Dow 795 or similar should be used for acrylic ports/dead lights.

Silicone contamination of gelcoat is very, very real. It is nearly impossible to clean and remove silicone from gelcoat and auto body products intended for metal are not safe for gelcoat. To effectively remove silicone from gelcoat



A friend owned a mid eighties Catalina where the previous owner had used silicone to bed the chain plates. Even after re-bedding they leaked every year for about four years straight. He had even resorted to tenacious glues like 3M 5200, still it leaked. He finally called me to discuss it and we simply masked off the surrounding areas with 3M film tape and ground and sanded away the silicone contamination. The chain plates have been dry since. Lesson learned, the silicone must be COMPLETELY removed before any re-bedding.

If you think you've cleaned dry silicone with Acetone, De-Bond or any of the other products folks claim have worked guess again. Over many years I have tried nearly every chemical under the sun to remove silicone contamination and the only thing that works is a thorough manual cleaning and sanding. If you want to almost guarantee that the fitting will leak the next time you re-bed then go ahead and use silicone.

Please, if anyone knows of a product that will remove dried silicone from gelcoat let me know. As of yet every "sure fire" silicone remover touted to me has failed miserably, including De-Bond.

#4 CLEAN - When bedding hardware clean everything. The deck the hardware the bolts the heads of the bolts etc.. Bolts especially still have cutting oils and residue from machining on them so if you want a good seal clean, clean, clean...

#5 Tube Caulks - When you need to use a tube caulk for deck fittings choose one with LOW ADHESION. Polysulfides like Life-Calk are generally the lowest in adhesion but Sikaflex 291 @ 260 PSI and 295 UV @ 160 PSI are both less than 3M 4200 @ 300 PSI or 3M UV 4000 @ 300 PSI and a better choice IMHO. I generally prefer Sikaflex 295 UV for deck stuff and Sika 291 for below water, both 295 UV and 291 are polyurethanes with a 500% elongation rating.



After many requests I finally found an excellent quality butyl tape for marine applications. You can buy it here:

Bed-It Marine Sealant Tape

Cherp, LemonHead, Southron Spirit and 1 others like this.

-Maine Sail / CS-36T	
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	Join Date: Nov 2000 Location: San Juan Islands., WA, USA
jrd22 o Courtney the Dancer	Posts: 2,663 Rep Power: 12
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04-05-2010	# <u>3</u> (<u>permalink</u>)
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I might add that on a hot summer day butyl tape can be brutal to work with becaus above do not use the black butyl tape as it will stain your boat.	se it stretches so easy. As said
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Roof Repair, Roofing Supplies, Roofing Materials, Waterproofing, Fasteners and Sealants	
Product ID: TAPE-5697 Product Name: 3/8" Wide X 3/32" Thick X 50 Ft. High-Temp. Butyl Rubber Sealing Tape Special Attributes (if any): Price/Each: \$2.49	
love to sail, coming from a Swordboat capt's loin one would think I'd of caught the bug long before his ones for you Bisque(My Father may he RIP)	now! Oh well,
Now If I could only stay away from working on the damn things I could sail more! To view links or images in signatures your post count must be 10 or greater. You currently have 0 posts.	

Current boat -1985 c-30 TR DONE!! after two new engines and too much labor she floats sails and steams				
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Question: Say you're bedding a 6 foot long genoa track, do you think it practical to preinstall a				
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" there is much you could do at sea with common sense and very little you could do without Capt G E Ericson (from "The Cruel Sea" by Nicholas Monsarrat)	it"			
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Sailingdog Telstar 28	Location: New England Posts: 43,315 Rep Power: 10			
While their prices are reasonable, their shipping rates are obnoxiously high I would not use Quote:	them.			
Originally Posted by degreeoff <i>I found a killer deal on above mentioned tape I will share for those wishing to buy</i>				
Roof Repair, Roofing Supplies, Roofing Materials, Waterproofing, Fasteners and Sealants				
Product ID: TAPE-5697 Product Name: 3/8" Wide X 3/32" Thick X 50 Ft. High-Temp. Butyl Rubber Sealing Tape Special Attributes (if any): Price/Each: \$2.49				
Sailingdog				
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Telstar 28 New England				
You know what the first rule of sailing is?Love. You can learn all the math in the 'verse, but you t a boat to the sea you don't love, she'll shake you off just as sure as the turning of the worlds. Love k her going when she oughta fall down, tells you she's hurting 'fore she keens. Makes her a home.	keeps			
—Cpt	. Mal Reynolds, Serenity (edited)			
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