**Subject:** Galling
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**To:** <milkyspit@quarryrun.com>

Scott, I think this is what happened to the 1D light you sent me. I haven't tried to take it apart yet. May be tough.
Lee
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I just experienced my first case of Titanium galling.

For those not familiar with the term, galling is when the threads , male and female, lock together ( cold weld) and do not easily undo without damage. This effect is more prevelant when both parts are the same material, in my case both Ti.

I found out later that this happens more often when both parts are clean and new. In my case, I was 'fitting' two threads that had just been cut on the lathe.
Both parts had been finished, de burred and were spotlessly clean with no lube residue. I was playing around with the fit, and felt that they were a touch tight. I put a bit of hand pressure on while turning and then the threads just 'locked up'.
Luckily these were bare parts and I was able to soak the union in penetrating oil and eventually get the two parts apart with little damage.

I have not read of any problems with finished Ti lights. However until recently there were very few Ti lights out there.

I am lead to believe that the solution is to keep a lubricant on the threads.
Any lube is better than none. Galling needs two clean surfaces and pressure.

There has been lots of 'lube' threads and my intention was not to get into a
"I use this lube and its great" discussion. The key here I think is to make sure that there is adequate lube of some description on Ti threads, particularly those static threads that only get unscrewed once in a while.

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david..... .....
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Yup, galling some parts together is un-fun.

Had it happen with some stainless hardware. IIRC, it was either 3/8 or 1/2 nuts-n-bolts. Most unfun as the parts galled before they snugged up. I -think- we (yes, it took more than one person) finally got the galled parts apart with some big breaker bars. Emphasis on 'breaker' there. Tossed the nut-n-bolt out, and went and got some NeverSeize and made sure to use it on the rest of the stainless hardware!

Clean, smooth, and same alloy is the worst case for galling. Different alloys between the two parts helps to reduce the risk. Lube helps to





reduce the risk. It doesn't happen to just threaded parts, it could be a problem with ANY parts in intimate contact where the metals press/touch just right (or wrong) and basically weld themselves together. Sometimes the loading will overcome the galling and the parts will be 'free' again, but will have transferred some metal from one part to the other to the detriment of dimensions and smooth surfaces.

Stainless, titanium, aluminum, niobium, and other metals are listed as most prone to galling.

IIRC, some early stainless steel semi-auto pistols also originally had issues with galling of the slides and frames.

Yup, galling is not fun.

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Mike