



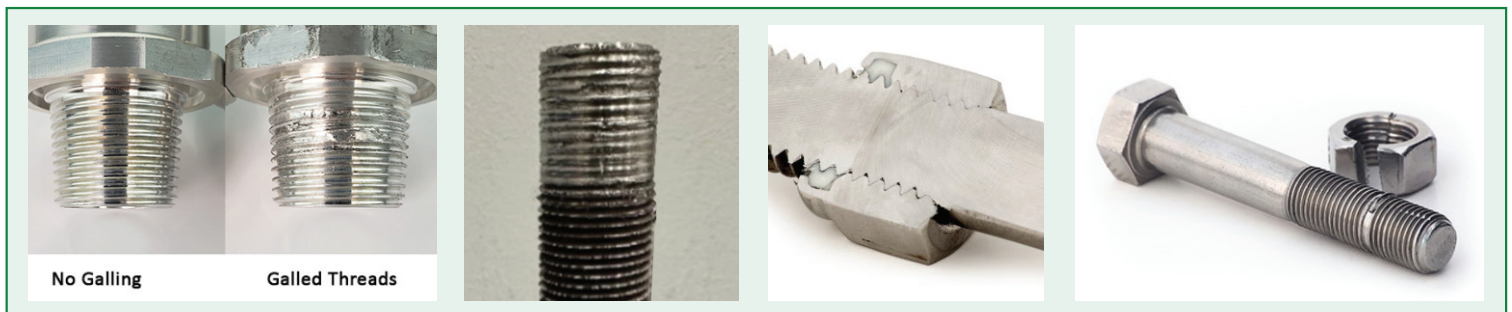
## Why Are CTR's Fan Stack Bolts and Nuts Superior To Our Competitors?



**At CTR, we've engineered a solution to one of the most frustrating fan stack assembly and maintenance challenges**

### Bolt galling...

We pair silicon bronze bolts with stainless steel nylock nuts. We have eliminated the metal-on-metal seizure that plagues our competitors' traditional all-stainless steel nut and bolt configurations.



### Understanding Galling in Fan Stack Hardware

During fan stack installation, nylock nuts are commonly used to prevent loosening due to operational vibration. While these nuts effectively maintain tension, they create a critical problem during assembly: As the nut rotates on the bolt, the friction generates intense heat. This heat and the mounting pressure trigger a destructive chain reaction in stainless steel hardware, causing these surfaces to weld together. The threads become permanently bound, fusing the nut and bolt into a single piece. This is known as galling.

### The result?

You end up with damaged hardware, difficult installation and removal, and costly, time-consuming maintenance.

### The True Cost of Traditional All Stainless Steel Hardware

- Extended installation time due to tedious threading requirements
- A messy molybdenum-based anti-seize compound needs to be used
- Increased maintenance complexity
- Risk of damaging hardware during disassembly
- Increased labor costs for both installation and maintenance



## The CTR Silicon Bronze Hardware Solution

CTR's engineering team implements a proven metallurgical principle: dissimilar metals resist galling. Our hardware creates superior connections by using silicon bronze bolts with stainless steel nylock nuts. The natural lubricity of silicon bronze prevents galling during assembly and maintenance, eliminating issues common with traditional stainless steel hardware. Installation is faster, too—our hardware is compatible with impact drivers, significantly speeding up the assembly process.

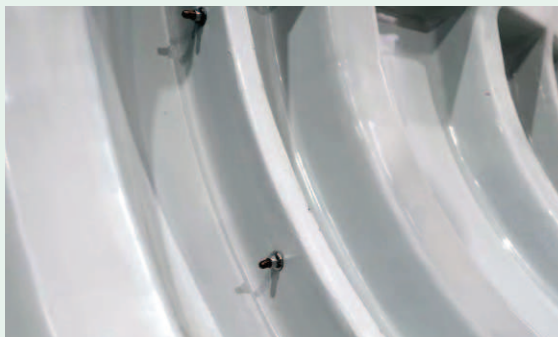


### Why Silicon Bronze?

- Use of an impact driver for quicker installation
- Excellent corrosion resistance
- Quick and easy installation without anti-seize compound
- Natural galling resistance with stainless steel
- Long-term reliability
- Trouble-free disassembly for maintenance

### The CTR Difference

While competitors continue to use all-stainless hardware and rely on messy coatings to prevent galling, CTR's silicon bronze solution provides a cleaner, more



reliable, and more cost-effective approach. Our commitment to innovative engineering solutions means you decrease the man hours needed for fan stack installation.



Contact us to see the complete study



Call us, email us, or visit our website today!

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