

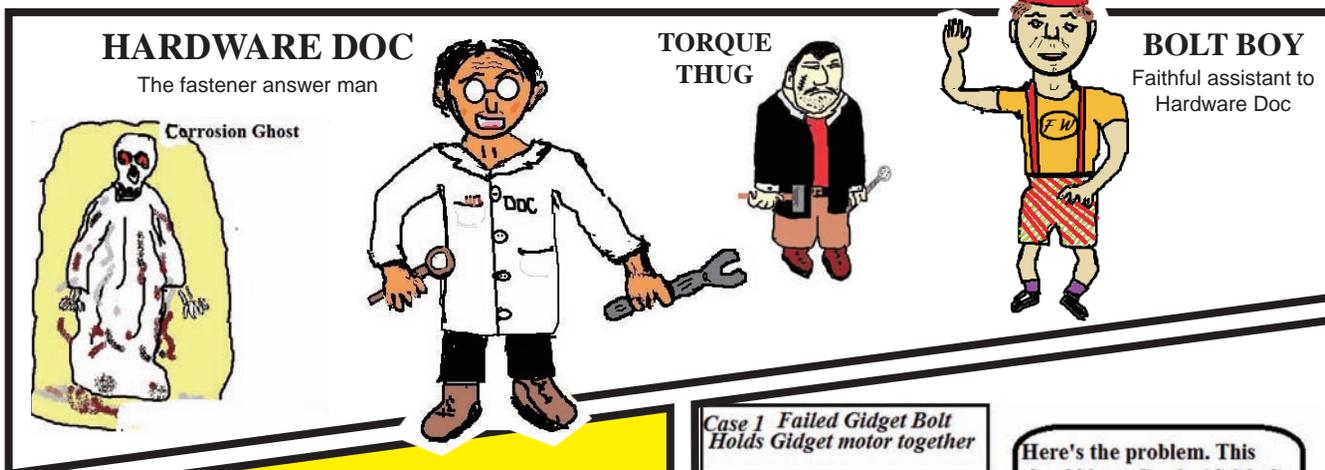
Fastener Comics

扣件漫画专栏

This occasional cartoon will run as cases are presented to Hardware Doc. Send your problems to this magazine and Doc, and his companion Bolt Boy will help in the fight against the foes of good practice: Torque Thug, Corrosion Ghost, The Fatigue Fiend and the other gremlins of fastener correctness. (This cartoon column is the first and innovative cooperation between Fastener World Magazine and Thomas. E-mail your fastener questions for Hardware Doc to design@fastener-world.com.tw)

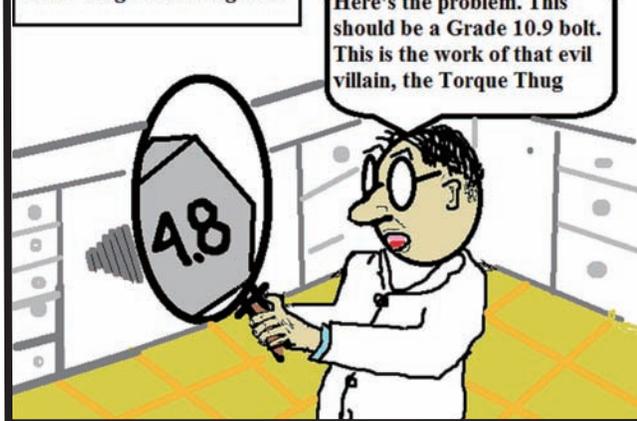
Case: Bolt Failure 螺栓失效案例

Illustrated by Thomas Doppke



The Adventure of Hardware Doc and Bolt Boy
The dynamic duo takes on the foes of correct fastening as they solve failures and point out incorrect practices in attachment engineering and assembly procedures.

Case 1 Failed Gidget Bolt Holds Gidget motor together

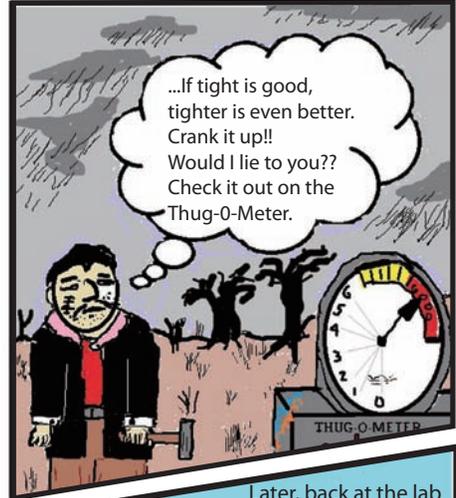


1. Match strength needed to bolt strength available. Use proper Grade parts.
2. Torque to value bolt is capable of obtaining. Low values for soft parts, higher grades for harder.
3. Beware of Torque Thug. He will try to get you to use wrong part by pointing to cost and other advantages.
4. Examine failures closely. Necking indicates torque too high for bolt used.
5. Check Standards for values of bolt grades. 4.8 is 40% of 10.9

THE FURTHER ADVENTURES OF HARDWARE DOC AND BOLT BOY IN THEIR FIGHT AGAINST THE FORCES OF FASTENER EVIL

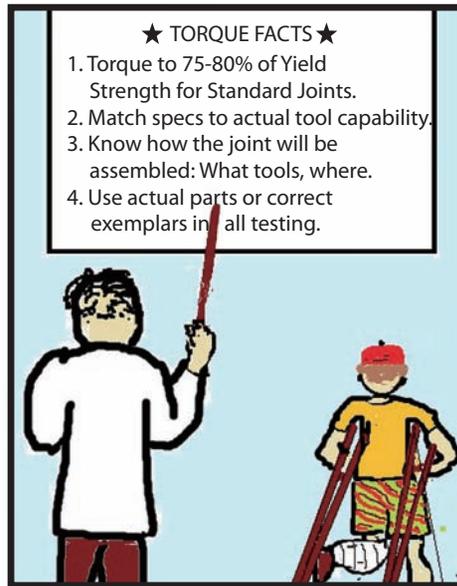
Case 2. Stripped and failed bolts which had only a moderately high torque specification thought to be acceptable by the client

We come upon Hardware Doc talking with the client, Mr. Dean Chang



Case: Over-Torque

扭矩过度案例



Case: Galvanic Corrosion

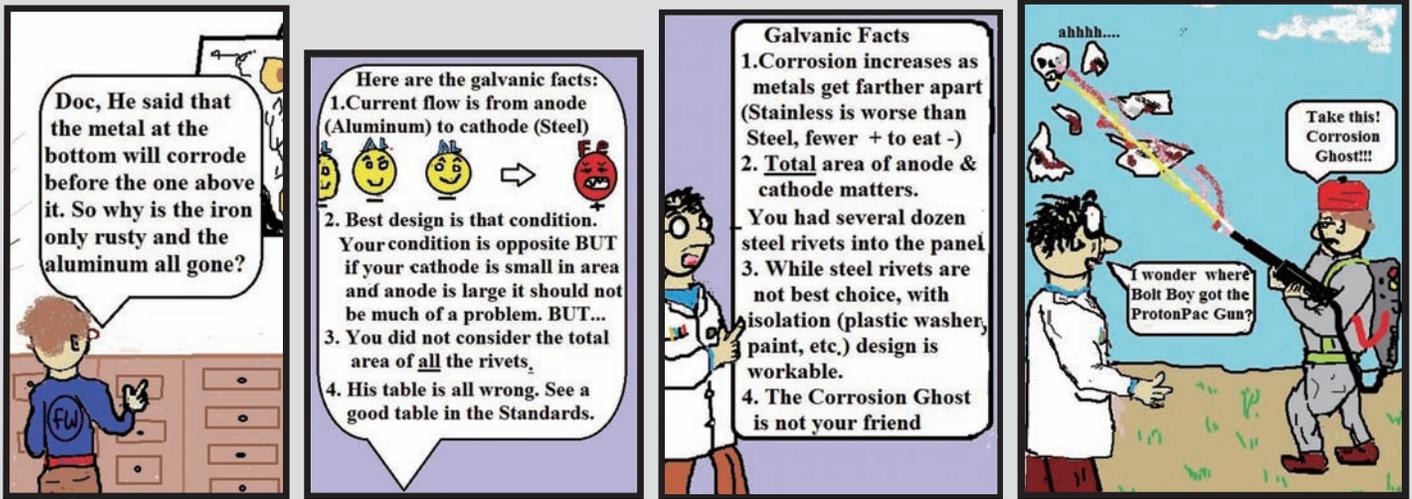
电镀腐蚀案例

The Further Adventures of Hardware Doc and his faithful sidekick, Bolt Boy

Case 3. The side panels of an aluminum truck trailer are severely corroded. Major damage and customer complaints cause the client to ask for help from the Hardware Doc.

Hardware Doc is examining the sample that was submitted by the client, Dean Chang.





Case: Stress Corrosion

材质应力腐蚀案例

The Adventures of Hardware Doc and his Sidekick, Bolt Boy, in their continuing battle against the Forces of Bad Fastener Technology.

Today, They are looking at a cracked plastic panel caused by a screw. What ever could be the problem??

