

electronics

Cleaning your Connectors

By Bill Howard

Remember when Mom used to make you clean behind your ears? Well, maybe not, but anyway, with electronic equipment — cleanliness is very important for keeping your electronic stuff working properly, particularly those pesky little electrical contacts with their gold pins and supposedly “waterproof” connectors.

Even the best of them will suffer the consequences of oxidation. Manufacturers of electrical connectors try to slow the oxidation process by coating the connector pins with gold, silver, or palladium alloys. That helps, but it doesn't stop oxidation, it just slows it down.

So, what are the consequences of oxidation? you ask. Good question! Intermittent problems are usually the first sign that your electrical connections are beginning to suffer from the effects of oxidation. Maybe that chartplotter doesn't come on when you press the button, or you are getting reports of bad audio, or weak signal on your VHF radio, or that switch that doesn't always work. It could be that you have to wiggle some wires to make something work. Oxidation in the connectors could be the problem.

Sure there can be other causes of poor electronic performance, but with the shop rates for electronic equipment repairs, checking for and eliminating oxidation as a possible cause is very cost effective.

Craig Labs has a nice product called DeoxIT that comes in various size spray cans, wipes, etc., and they do a fine job of both cleaning and protecting electrical contacts. I was having an intermittent power up problem on a piece of electronic equipment and after treating the connector with DeoxIT the problem was solved.

The box had a three-pin “waterproof” power connector with gold plated pins that looked as clean as the day it was made. If I pulled out my trusty microscope, maybe I could have seen the contacts actually had a coating that was just bad enough to cause problems. Must not have had my microscope with me that day, but trust me. After a quick spray on both sides of the connector and after putting the connector back together, the intermittent problem was gone.



Sure there are other “contact cleaners” on the market. Many of them are just repackaged rubbing alcohol. I picked DeoxIT because it is formulated to dissolve oxidation, increase current

carrying capabilities and provide continuous protection on metal surfaces from wear abrasion and atmospheric contamination. That last part about continuous protection on metal surfaces is important. This can be true on other electrical connections as well, such as boat trailer light connectors.

Now a word from your friendly safety person: **TURN OFF THE POWER** before you clean the connections! Geeshh, what were you thinking?

So now you are on a mission to clean every connector in sight. Hold on! How do we make sure that the connectors all get put back where they belong? Most manufacturers of electronic equipment try to outdo each other with their strange and unique connectors. Some screw or twist off, others may have a tab that has to be released before you pull the connector.

Polarity is a big issue

Take a moment to look at how the connector is supposed to come apart and don't try the brute force approach that might break one of these almost irreplaceable little jewels.

Next, if you have two or more identical connectors, just do one at a time and replace each one as you finish. Having a picture never hurts, and you might find one in the equipment manual, or just grab your handy cell-phone camera and take a picture for posterity (Posterity said she has room for a few more pictures).

Polarity is a big issue with electronic equipment connectors, and by that I mean that the pins in the connectors need to align when you put the connector back together, the same way they were aligned when you took it apart. Many connectors will only allow you to reinsert the connector one way,



so be careful and don't force the issue. Oh, and don't forget to wash behind your ears. ↓

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