

FEATURED PRODUCT

**STA-DRY® S7™
Swivel Socket**

- Socket swivels 80° side to side (40° each way), following the tractor
- Automatic disconnect feature eliminates damage to all components
- STA-DRY® weather resistant housing
- Features the Phillips STA-DRY® QCS2® assembly and boot for quick socket service



VISIT US ON THE WEB
AT

www.phillipsqwiktechtips.com

TO BE ADDED TO OUR
MAILING LIST AND
FOR ALL
PAST ISSUES

Copper and Water – A Bad Combination for Your Electrical System

Part 2 of 2

In last month's article we conducted the wire wicking experiment. We learned that moisture and contaminants can enter your electrical system much faster than one would think, and before you know it you have a problem. In our wire wicking experiment, the salt water moved through seven inches of wire in less than 24 hours. But how much farther could it have traveled if the wire was longer AND it had been placed in an environment with varying temperatures that would expand and shrink the copper? This is why it is so important to maintain your vehicle, especially when it comes to the electrical system.



24 hours into wire wicking experiment

How to combat moisture in regards to your electrical system

Keeping your truck on the road as long as possible is the goal in this industry. Downtime equals money lost. And corrosion can be one of the main contributing factors to a down truck needing service. There are thousands of electrical connections on a truck, and running a diagnostic to find a broken connection can be extremely time consuming and costly. While a lot of fleets will spec parts such as brakes, axles and landing gear, they don't always spend enough time spec-ing the electrical system. You should always specify premium wiring systems and sealed wiring connectors. Once you have the best possible wirings system in place on your vehicle, you will need to take the

necessary precautions to keep corrosion out.

Any open connection on a tractor-trailer is susceptible to moisture and contaminants. One of the weakest points of the tractor-trailer is the seven way connector. SAE designed the seven-way electrical connection to be open and compatible. Unfortunately this design also allows for moisture and contaminants to enter rather easily. However, this is not the only point of entry for moisture and contaminants to enter. Junction boxes, battery terminals, anywhere there are wire splices – these are all gateways for moisture and contaminants to get in. So, as a reminder, taking the following preventative measures can help keep your truck on the road longer.

- Protect battery posts and terminals with anti-corrosive spray.
- Check ground power source: Always make sure ground leads directly to the negative battery post. Grounding to the chassis or engine will lead to corrosion, poor contacts and faulty electrical operations.
- Rotate electrical assembly plugs: Swap plug ends from tractor to trailer side every six months to safeguard against uneven wear.
- Wash away build-up: Significantly reduce magnesium and calcium chloride build-up during cold weather by frequently washing equipment. Do not power wash as water can be forced into areas and cannot escape, leading to corrosion.
- Clean connectors: Every 6 months use a plug and socket brush with water, (NOT SOAP), to clean connectors.
- Grease plugs and sockets: After every cleaning, re-apply dielectric grease on plug and socket pins to keep the connection properly sealed.
- Inspect cables and wires for road hazard damage: Replace or repair any damaged items.
- Be cautious of soaps containing degreasers: When degreasers come in contact with electrical connections, it increases the corrosion reaction. Do not leave soap residue on electrical connections.
- If you must repair wiring harnesses, or any kind of wiring, use shrink terminals.
- Avoid probing through insulation to test wiring: This opens up an avenue for damaging chemicals to start corrosion.



- Any open connections on a tractor-trailer need to be properly sealed at all times to avoid corrosion.
- Always specify premium wiring systems and sealed wiring connectors.
- Follow the preventative measures above to help combat corrosion in your electrical system.

**Phillips Industries, to the best of our knowledge, has compiled the information contained herein from what it believes are authoritative sources and that the information is correct as represented to us. This information is not to be taken as representation for which Phillips Industries assumes legal responsibility.*