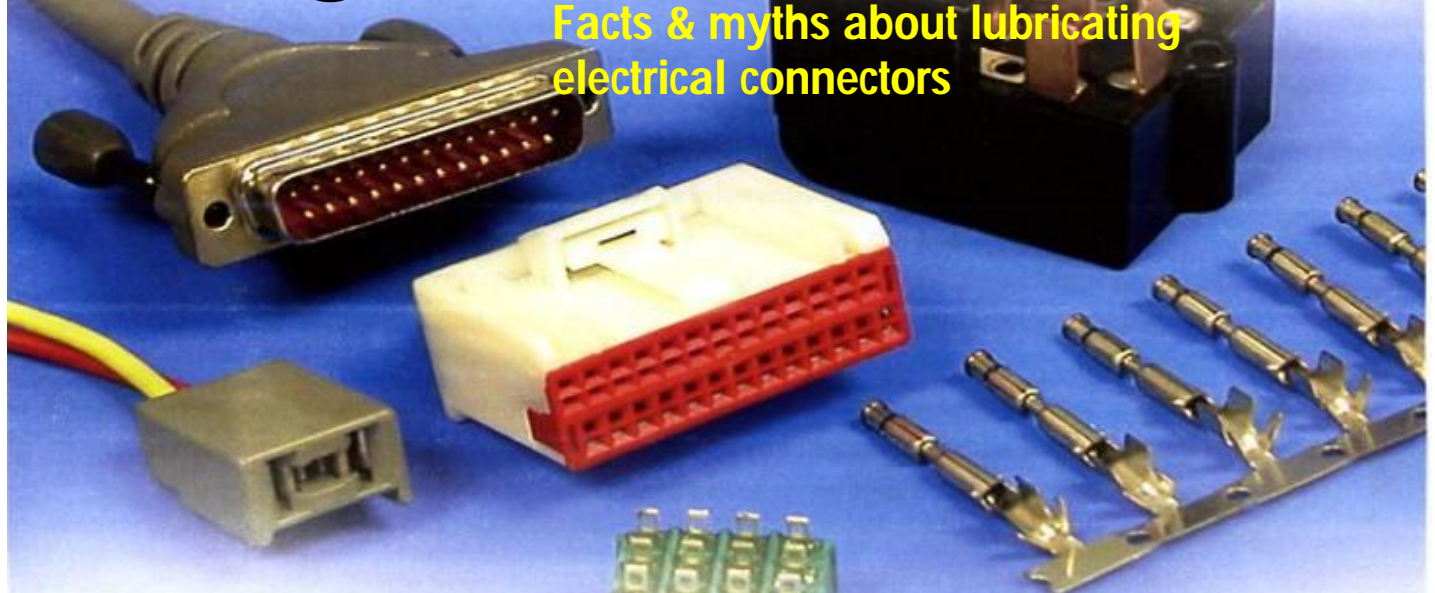


Why contralube?

Facts & myths about lubricating electrical connectors



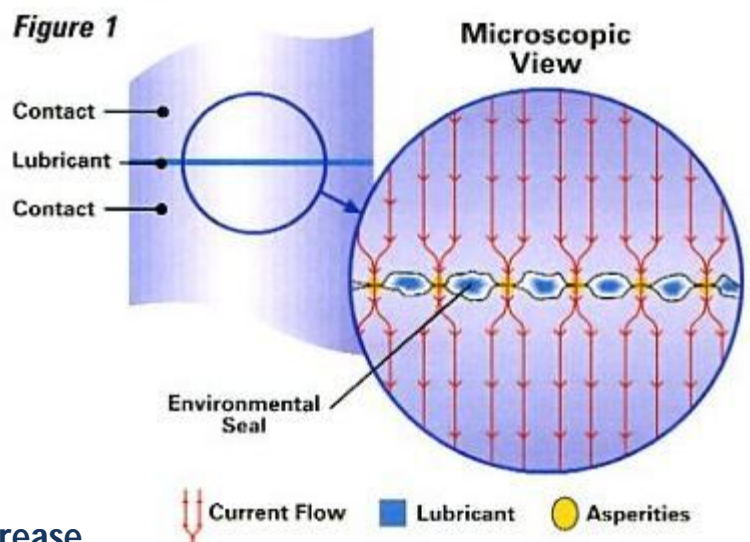
Wondering if you need a synthetic grease for you electrical contacts and connectors? Here are some facts and myths to help you make your decision. If added cost is a concern, keep in mind that lubricating a large terminal with a premium synthetic grease costs just a few pence.

Myth 1 – Grease attracts dirt

Magnets attract, greases don't. Dirt does stick to grease, but that means the grease is doing its job. Contralube creates an environmental barrier, so dirt and moisture stay away from the contact surface. Without this protection, contact metals oxidize more quickly.

Myth 2 – Lubricants interfere with conductivity

Tests on lubricated and nonlubricated connectors show virtually no difference in contact surface resistance. A contact surface is a series of microscopic peaks and valleys – like a mountain range. Current flows through the peaks (*Figure 1*) – the mountain tops, known as asperities. A contact lubricant fills in the valleys, protecting the metal from oxidation and is squeezed out of the asperities, allowing the current to flow.



Myth 3 – Gold-plated contacts don't need grease

Contact manufacturers typically apply a thin gold plating on top of a metal connector like tin or copper. The plating is microscopically porous and can easily be scratched and damaged, even during initial mating of the contacts. Over time, oxides of the exposed metal connector below the gold plating will 'ooze' through the pores of unlubricated gold plating and cause open circuit resistance. A thin film of lubricant, which cost far less than a thicker layer of gold, seals those pores and guards against scratches and metal oxidation.

Fact 1 – Lubricants prevent corrosion

Without lubricant protection, contact metals are extremely susceptible to corrosion. Lubricants seal contacts from oxygen, moisture, aggressive gasses and other hostile elements. In applications where the connector is exposed to the elements, filling the connector housing with grease before mating is also recommended. The grease acts as a back-up environmental seal.

Fact 2 – Lubricants lower insertion force

A thin film of lubricant reduces mating force by as much as 80 percent. For multi-pin connectors or connectors in hard-to-reach places, low insertion force ensures solid connections and efficient assembly.

Fact 3 – Lubricants dissipate the effect of micro-motion

Contact metals are subject to fretting/vibration corrosion – abrasion resulting from low amplitude vibration caused by motion or thermal expansion and contraction. Abraded metal can build up and break the connection. A lubricant minimises metal-to-metal wear, protecting the contact from corrosion.

Fact 4 – Lubricants save money

Lubricants improve the performance and extend the operating life of electrical contacts. Consequently, connector lubricants reduce the amount of faults, extend the life of electrical connections and so reduce the frequency of repairs required.

For more information

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