IAA 2016: Leoni to push forward magnetic pulse crimping

Tubular Neutral Junction as the future solution for Aluminium-Copper assembly – exhibited on booth C37 in hall 13

Nuremberg, 6 September 2016 – Leoni, the leading European provider of cables and cable systems to the automotive sector and other industries, reinforces its research on the magnetic pulse crimping (MPC) in collaboration with the company BMAX, a global leader of magnetic pulse based systems for mass production. The focus is on using MPC as new process to get a robust and reliable interconnection between aluminium wire and copper terminals: The Tubular Neutral Junction (TNJ) is the first solution available derived from using MPC.

MPC is a technical and economic alternative to mechanical crimping and ultrasonic welding, based on magnetic deformation generated by the discharge of stored electrical energy. During the process, electrical energy is converted into electromagnetic fields leading to a high-speed impact between both metallic assembly partners**.** This extreme speed and impact induce a severe plastic deformation and thus create the robust interface between aluminium and copper using a tubular neutral junction element. This interface is the connection to vehicle standard components such as terminals and connectors.

The MPC process cycle time is similar to mechanical crimping or ultrasonic welding. Moreover no mechanical contact with workpieces is necessary that avoids surface contamination, tooling marks and the wear-out of MPC tools. The MPC power interconnection offers two different design solutions that are both a robust electrical and physical connection. Both junction designs, TNJ and DDNJ (Deep Drawing Neutral Junction), provide a reliable connection via the aluminum cable and prevent galvanic corrosion. As a result any available terminal can be connected to a wiring harness.

Leoni has also developed solutions using aluminium wires connected to copper terminals by ultrasonic welding or tin soldering plus crimping for power cables. These solutions are already in mass production. For tubular terminals and high power junctions, MPC will be a valuable connection technology for Leoni’s customers.

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☞ *Related illustration material can be downloaded next to this release at* [*https://www.leoni.com/en/press/releases/details/iaa-2016-leoni-to-push-forward-magnetic-pulse-crimping/*](https://www.leoni.com/en/press/releases/details/iaa-2016-leoni-to-push-forward-magnetic-pulse-crimping/)

About the Leoni Group

Leoni is a global supplier of wires, optical fibers, cables and cable systems as well as related services for the automotive sector and further industries. Leoni develops and produces technically sophisticated products from single-core automotive cables through to complete wiring systems. Leoni’s product range also comprises wires and strands, standardised cables, special cables and cable system assemblies for various industrial markets. The group of companies, which is listed on the German MDAX, employs more than 76,000 people in 32 countries and generated consolidated sales of EUR 4.5 billion in 2015.



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