

STAMPING TECHNOLOGY WITH ELECTRICAL CONTACT FUNCTIONS



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DODUCO manufactures precision stamped parts incorporating electrical contact functions. These can be welded, brazed, riveted, electroplated, or produced from semi-finished contact materials. Depending on customer requirements we supply stampings as individual parts or in strip form. DODUCO has also comprehensive competence and facilities to design and build high quality tooling. By combining all the above technologies and adding for example thread-forming into progressive dies we can offer high level economic and complex solutions to our customers.

Welded stamped parts

Resistance welding is an economic joining process for contact materials to base material. Two basic processes are used in contact welding: individual contact pieces are welded onto solid or pre-stamped carrier strips or the stamped contact parts are manufactured from semi-finished strip with already pre-attached contact material. During welding of contact pieces the contact material is attached from either profiles (tapes), wire segments or in tip form.

Depending on the application different contact materials are used which base on silver. To utilize the most reliable and economical manufacturing process the contact materials usually have an easily weldable backing. This can be nickel, copper-nickel or a thin brazing alloy coating of CuP 284 for example. Besides this the backing side is frequently designed with weld rails or pyramidal pattern.

Riveted stamped parts

The use of contact rivets as well as the insertion of wire segments with subsequent coining into rivet configurations – wire staking – are mechanical contact attachment processes. Both methods have their own specific advantages. Using composite or trimetal contact rivets allows limiting the precious metal usage according to the requirements of the switching function. In wire staking the usage of precious metal is higher while the attachment process can be run at significantly higher manufacturing speeds.

One determining factor for selecting the most economical process is the requirement on contact material volume. If the contact components are, for example, to be used in hybrid electrical applications, i.e. for very low as well as higher electrical loads, contact rivets can additionally be electroplated with gold. Using gold electroplated solid or composite contact rivets is in this case the most advantageous process.

Stamped parts with semi-finished contact strips

Stamped parts from semi-finished contact strip are economically produced from a continuous strip. Contact materials are usually based on silver. Copper and copper alloys are the base layer strips of choice.

Stampings from clad materials

Sometimes contact applications come with different requirements, e.g. a thicker precious metal layer or other design features. Therefore it might be recommended to start with a toplay clad strip into a progressive stamping tool.

Contact Materials

The SAXONIA Group supplies an extensive portfolio of silver-based contact materials for a wide range of industries and applications, e.g.

- Silver and silver alloys
- Silver-nickel: Ag/Ni
- Silver-metal oxides: Ag/SnO₂, Ag/ZnO
- Silver-graphite: Ag/C
- Refractory silver materials: Ag/W, Ag/WC, Ag/WC/C



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