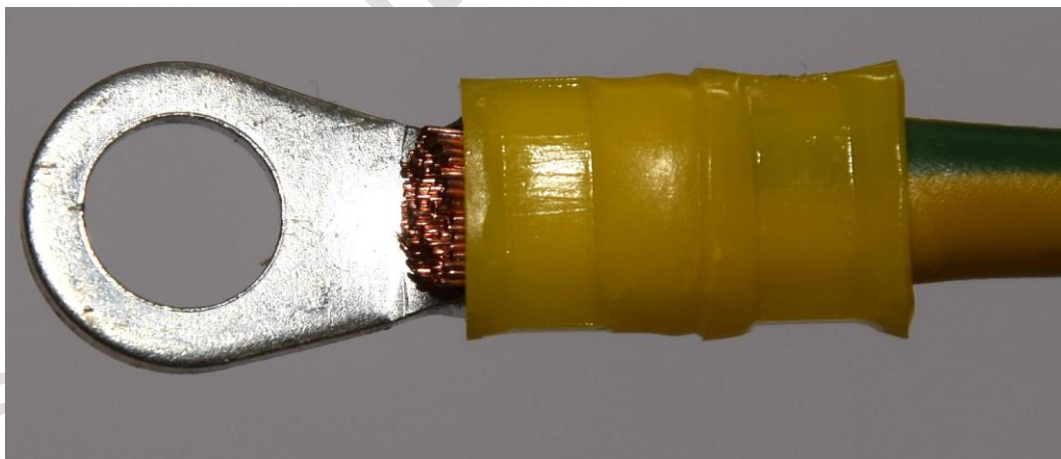


Principles of Crimping Technology

Insulated Cable Lugs

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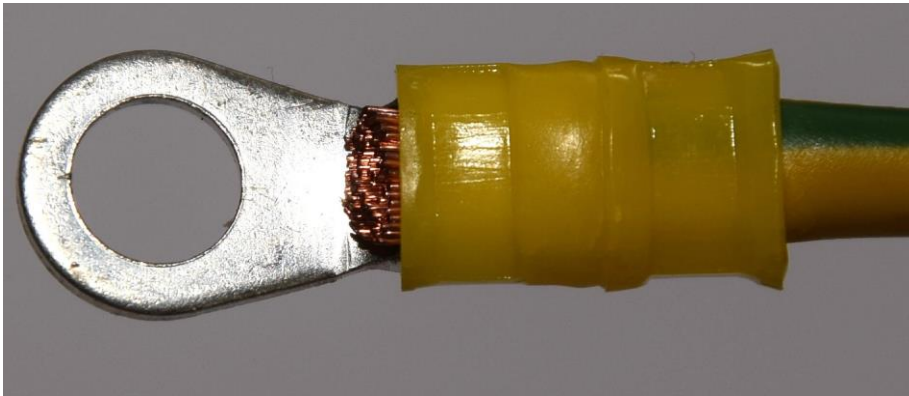
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3. INSULATED CABLE LUGS

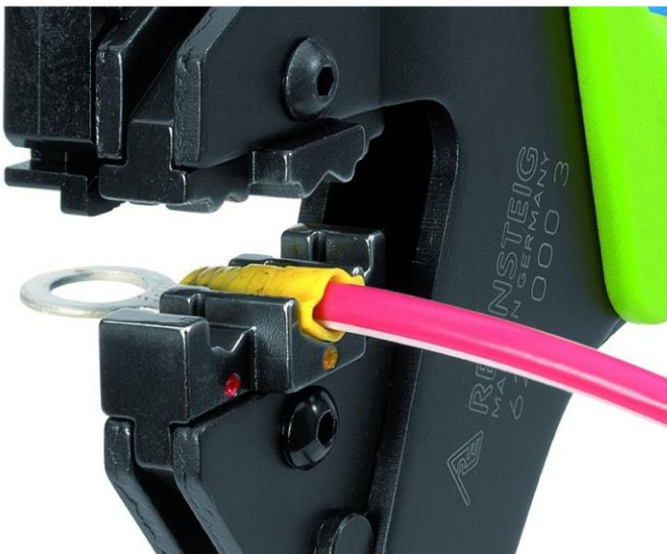
3.1 PROCESSING METHODS

- (1) Partially insulated crimp cable lug
- (2) Fully insulated crimp cable lug
- (3) Partially insulated crimp cable lugs on strip (taped)



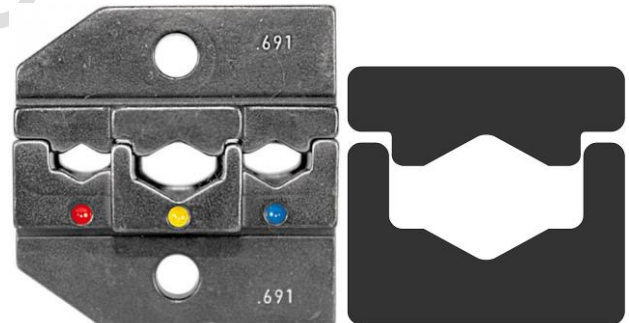
Crimped partially insulated crimp cable lug

3.2 HAND CRIMP TOOLS AND DIE SETS



The individual contacts are processed with special hand crimping pliers.

Picture left: Dies in a hand crimping tool for processing partially or fully insulated crimping cable lugs.



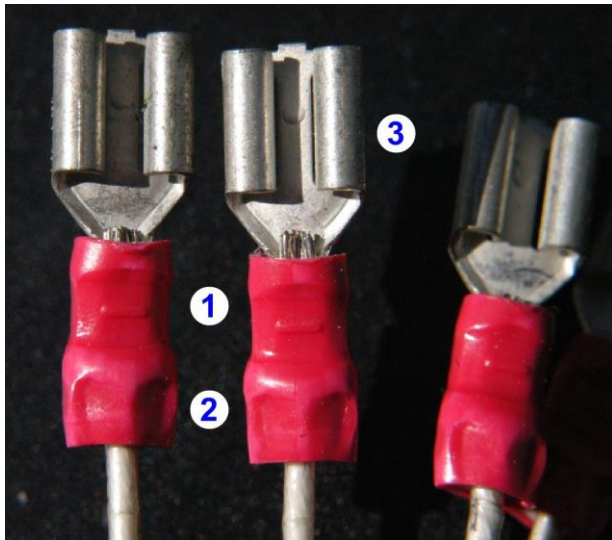
Contour of the crimp die in the area of the insulation crimp for insulated crimp contacts with insulation fixation.

3.3 CRIMP APPLICATORS

Fig. right:
Crimp applicator for taped pre-insulated crimp terminals for use with standard crimping machines or fully automatic crimping machines.



3.4 COMPRESSION VIA THE INSULATION SLEEVE



- (1) Wire crimping area
- (2) Insulation fixation
- (3) Contact area

To create crimp connections that are insulated directly after crimping without any additional steps or materials, is the basic idea of this crimp form.

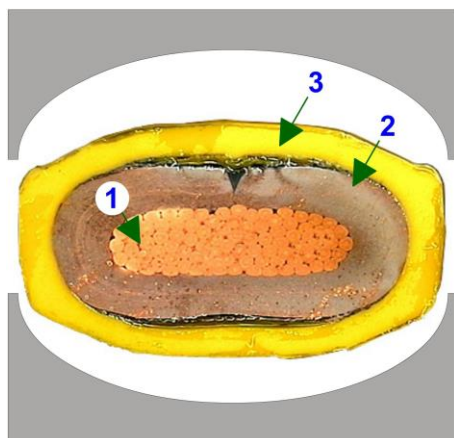
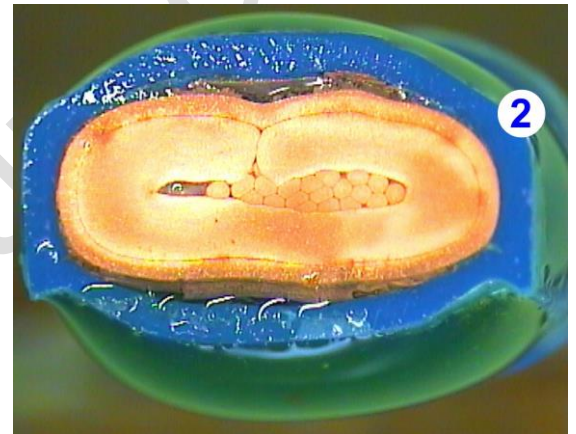
Constantly increasing quality requirements for crimp connections and the demand for 100% reproducibility in production are increasingly displacing this contact form. In addition, the cross-sections are being reduced more and more and, associated with this, smaller and smaller contact forms are required, which can no longer be realized with pre-insulated crimp contacts.



Important: The requirements for the mechanical and electrical properties of crimp connections with pre-insulated crimp terminals are identical to the requirements for open crimp terminals!

During the creation of the crimp connection, the deformation of the wire crimp flanks takes place via the insulation (2) of the cable lug. The plastic of the insulation material transfers the force of the closing dies to the crimp flanks. Depending on the hardness of the plastic, more or less force is transmitted and the conductor is crimped to a greater or lesser extent.

The plastic of the insulation sleeve must be hard enough to ensure compression of the conductor and must not break in the process. Changes in the ambient temperature must not adversely affect the properties of the insulation sleeve. This means that the properties of the insulation have a direct influence on the electrical and mechanical properties of the crimp connection.



The typical die shape for pre-insulated crimp sleeves is an oval crimp.

- (1) Conductor
- (2) Crimp barrel (wire crimp)
- (3) Insulating sleeve

Another major disadvantage of this contact form is that the insulation is connected to the contact and prevents the crimping area from being visible. With the partially insulated crimping cable lug (1), the positioning of the stripped wire can still be checked to a certain extent. With the fully insulated crimping cable lug (2), this is no longer possible.

The insertion of the wire is done "blind" and can no longer be controlled after crimping! Since these contacts are often used in conjunction with hand crimping pliers, the "reproducibility" of the quality with this type of contact material greatly depends on the experience and skill of the operator.

