

Principles of Crimping Technology

Turned Contacts - 4-Indent crimp

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3. TURNED CONTACTS – 4/8-INDENT CRIMP

3.1 GENERAL



Turned (or machined) contacts are used in power and control lines in multi-pole plug connections. A classic turned contact is found, for example, in mains plugs via which a toaster or a coffee machine draws its current.

Turned contacts are machined from solid rod and are always the “closed barrel” type, meaning that the area where the wire will be inserted forms an unbroken, 360 degree cylinder.

Fig.: Turned contacts. Left: socket. Right: contact pin. (Source: Amphenol-Tuchel Electronics)

They come in different shapes and sizes and are primarily used where quality requirements are very high, such as in the military, aerospace and medical markets. Applications for the machined contacts range from computer interface connections to flexible production lines in the automotive industry.

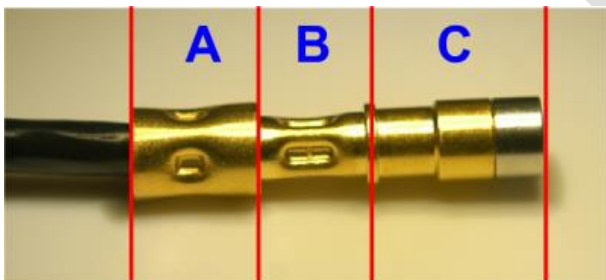
Turned contacts are characterized by special processing criteria:

- Consistent crimp quality guarantees constant contact resistance.
- High corrosion resistance due to quasi cold welding.
- Processing of different conductor cross-sections can be realized with only one contact type.

Turned contacts are mostly processed in a closed frame crimp tool with 4 indenters that leave an 8-indent impression (4 or 8 dents) in the crimp area. To make it easier, we will subsequently call it “4-indent crimp”.

When processed in a tool with open frame, it’s generally a square crimp shape, sometimes a square shape with two additional indents or (much rarer) a B-crimp shape.

3.2 CONTACT SHAPE



(A) The insulation fixation serves as relief for the wire crimp area. Turned crimp contacts are available with and without insulation fixation.

(B) The heart of the crimp connection, the wire crimping area.

(C) The contact area is designed according to the application. Basically, in a connection of crimp contacts, one is designed as a (male) pin contact and the mating connector as a (female) contact socket.



Important for crimp connections without insulation support(A): The crimp connection must be structurally protected against mechanical loads via the connector housing and/or the device housing directly after the connector housing. In the connector housing, this can be done by means of strain relief, in control cabinets or other component housings by means of appropriate fixation of the wires, e.g. by means of cable ties.