

The resistance welding of a contact to a backing gives a strong metallurgical joint whereas rivetted assemblies rely on a mechanical joint.

High rates of production can be obtained from welding machines in which the contact material is presented in wire form to the backing, welded in situ, cut to length and forged or spun to final shape. The backing material is fed as continuous strip beneath the welding fixture and may be formed and shaped in-line with the welding machine or produced as pie-contacted coils to be formed into individual components as a separate process.

The method depends on fusion of the interface between contact and backing by resistance heating the combination under pressure. The use of advanced electronic controls in the resistance welding machines gives assemblies with consistent high-quality joints at economical production rates. The welded joints retain good strengths even under conditions of repeated temperature cycling where riveted assemblies could deteriorate due to the stress of differential expansion and contraction.

The range of contact materials is restricted to ductile materials with good welding characteristics such as silver, silver-copper and silver-nickel.

Contact materials which are resistant to welding in service like silver-cadmium oxide, silver-tin oxide and silver graphite cannot be produced by this method. They must be provided with a weldable carrier layer beneath the contact facing and are therefore tape-welded.

Similarly, noble metals based on platinum, palladium or gold are generally produced by the tape-welding route for reasons of economy.