

Fabrication of Portable Spot Welding Machine

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Abstract: *In decades of years the spot-welding process, with which yearly millions of automobile vehicles are produced, was controlled by current and time. The preset welding time and the current level defined the nugget volume and so the result of the weld. With introducing adhesives and a daily growing number of different kinds of high strength steel new initial conditions for the assembly to be weld are created which makes it more complicate in resolving good welding results. Not only current and time were any longer responsible for the output but more than ever also the welding voltage. The actual voltage to be measured directly between the tips of the electrodes defines together with the actual welding current the process resistance which individually is changing from spot to spot. Because of the loss of measuring cables just to the touching points between the electrode tips and the material to be welded, there was no option known for measuring the exact welding voltage and as a result of this the momentary process resistance. The energy input – and depending on this nugget diameter, volume and technological values – however is the result of current, process resistance and time during the whole process.*

Keywords: Spot Welding, Nugget Volume, Nugget diameter

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