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# MODULE Q

## Welding machines for resistance welding

Errors and test connections



## Errors and test connections

- Errors joints are evaluated based on their character and their causes.
- E.g. for spot weld joint to be welded lens trueing have approximately the same diameter as the electrode, and to be symmetrical.
- Height lens should be at least 30% but not more than 70% of the thickness of the two sheets to be welded.
- Imprinting after the electrodes have to be regular and very shallow.
- These common errors can be caused by the deficiency or excess energy.



## Errors and test connections

- ▶ Contention It has dimensions insufficient or irregular lens, or only a diffusion joint.
- ▶ Too much small diameter electrodes, a relatively large pressing force, or very soft welding mode may cause additional errors.
- ▶ Other errors may unbalance the lens and the footprint is caused by poor contact of the electrodes, cracks in the lens, as a result of using quenchable material and hard mode.
- ▶ Other errors can be caused by dirt, low pressure, poor touchdown.



## Questions to ponder

1. What are the main parts of resistance welding machines?
2. What are performance resistance welders?
3. As can be divided according to an embodiment the welding machine for spot welding?
4. What are the main parts of spot welders?
5. Nature for seam welding machines.
6. How do they work for projection welding machines?
7. What materials are manufactured for resistance welding electrodes?
8. Describe maintenance electrodes for spot welding.
9. What are the possible errors in spot welding?



## Recommended literature and information sources

- ▶ AMBROŽ, O. A KOL. *Technologie svařování a zařízení: učební texty pro kurzy svářečských inženýrů a technologů*. Ostrava: ZEROSS, 2001, 395 s. Svařování. ISBN 80-85771-81-0.
- ▶ BERNASOVÁ, E. A KOL. *Svařování*. 1. vyd. Praha: SNTL, 1987. ISBN 04-221-88.
- ▶ KUBÍČEK, J. DANĚK, L. KANDUS, B. *Technologie svařování a zařízení. Učební texty pro kurzy svařovacích inženýrů a technologů*. Plzeň: ŠKODA WELDING, s. r. o., 2011, 242 s.