

Resistance Welding--Monitor Checksheet

Tech Note 005



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| | Before Welding | During Welding | After Welding |
|---------------------|---|--|---|
| Force | Force-triggered current firing to replace "squeeze time" | Detect over force condition that may cause a cold weld | Insure proper follow-up has occurred |
| Current | N/A | Normally controlled by weld controller | Monitor actual results during weld: -- RMS current for AC -- Peak for DC or CD |
| Displacement | Check initial thickness -- Part stack-up -- Missing or wrong nut -- Electrode wear | Possible monitor of expulsion | Monitor Set-down -- Initial - final thickness -- Strong indication of weld nugget formation -- Detects cold welds or expulsion |

| | Parameter too small/low | Parameter too large/high |
|---------------------------|---|---|
| Force | -- Creates high resistance and heat -- Produces expulsion or flash -- Results in large set-down | -- Creates low resistance -- Produces cold weld with small nugget -- Results in small set-down |
| Current | -- Produces cold weld with small nugget -- Results in small set-down | -- Creates expulsion or flash -- Results in large set-down |
| Time | -- Produces cold weld with small nugget | -- Nugget diameter exceeds electrodes producing expulsion -- Metal forges out around electrodes -- Creates poor weld metallurgy -- Shortens electrode life -- Produces large set-down |
| Electrode Diameter | -- High current density -- Produces expulsion -- Accelerates tool wear | -- Mushrooming reduces current density -- Produces cold weld/small nugget -- Results in small set-down |