CHECKING FOR THE AGING CONDITION OF ALUMINUM COMPONENTS LIKE WISHBONES

Aging condition of aluminum wishbones is hard to detect visually or chemically. SIGMATEST correlates conductivity with aging time reliably.



THE CHALLENGE

In the production of aluminum suspension components such as wishbones, the aging (precipitation hardening) process is crucial for achieving the required mechanical strength. However, components in different aging states appear identical visually and chemically. Conventional methods such as color-changing paint dots are inaccurate and prone to disturbances, while destructive laboratory testing is costly and time-consuming. Reliable in-line verification is therefore a major challenge.

THE SOLUTION

Electrical conductivity varies depending on the aging condition or hardness of the aluminum alloy. The SIGMATEST which uses eddy currents, is used to measure electrical conductivity. Defined reference samples are used to establish the conductivity window for acceptable process states. Once set up, measurements can be performed quickly and directly in production or incoming inspection.



THE RESULT

The aging condition is verified non-destructively and within seconds. Process deviations are detected early, enabling corrective action before defective components reach assembly. The solution supports fast testing, cost reduction and, if required, enables 100% inspection of safety-critical aluminum parts.

FOERSTER

SIGMATEST



Portable conductivity meter for fast and reliable testing of non-ferromagnetic metals

SIGMATEST TCM



Electrical conductivity measurement of non-ferromagnetic metals

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