

Restan - MTS3000

Automatic System for Measuring Residual Stresses by the Hole Drilling Strain Gage Method



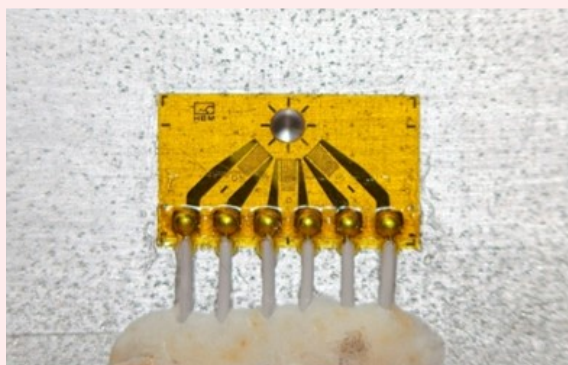
What is

Restan (Residual Stress Analyzer) - MTS3000 is an automatic system to measure **residual stresses** on different kinds of materials, both in the lab and on site. It's composed by a **me-
chanical**-optical device and an **electronic** system with calculation **software**.

The instrument is used to perform simple and precise tests by the **hole-drilling strain-gage** method with an high-speed air turbine (400,000 rpm), in compliance with the **ASTM E837** standard for residual stress measurements.



How it works



Restan - MTS3000 is **completely automatic**, fast to use and suitable for both laboratory and field applications.

The hole is made in **step by step** mode, with choice among several test configurations. At the end of each step, the deformation values of the strain gages are **recorded** and then used for the residual stress calculation.

The tests can be made in accordance with the ASTM E837 standard for uniform and non-uniform stress distributions, up to a maximum depth of **2 mm**.

With a suitable acquisition strategy (fine hole drilling) and an appropriate **calculation method** (Integral, Schwarz-Kockelmann, HDM), it is also possible to get the residual stress variation in the depth just some microns below the surface.

Short overview about the system on mts3000.com/video_mts.asp or on SINT Technology YouTube channel

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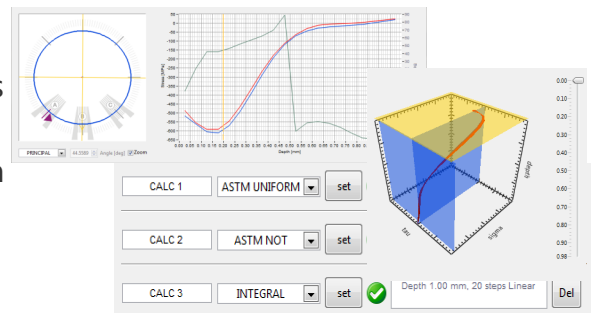
✓ Advantages

A residual stress usually facilitates crack propagation and therefore reduces the fatigue life of a mechanical component.

The Restan - MTS3000 is a valid help to prevent similar failures, allowing accurate residual stress analyses at moderate costs.

Further advantages of the system are:

- Fully automatic test, from the set-up to the back-calculation
- Automatic and precise determination of the starting point by electric contact
- **High speed** drilling by air turbine or electric motor - no stress added during the test
- Possibility to test **metallic, plastic and composite** materials
- Completely compliant to ASTM E837, the only complete **standard** on residual stress measurements available in the world
- Suitable for both **lab and field tests**
- **Personalization** / custom versions available
- Possibility to measure near corners and walls
- Plasticity correction and uncertainty analysis available
- Live technical **support** and web **seminars** on request



Sectors



Aerospace



Automotive



Energy



Oil & Gas



Forging / Foundry



Production Control