

Device to Measure Stresses by Ultrasounds

- **Fast**

- **Economic**

- **Simple**

- **Transportable**

- **Non
destructive**

Ultrasonic controls and measurements

Measure stresses in mechanical parts and materials to foresee their wear. Therefore you will gain in **quality** and **safety**!

Ultrasonic determination of residual stress is based on the dependence of the propagation velocity of the ultrasonic wave with the stress state in the material. When a material is subjected to stress, there is a variation of the propagation velocity of the ultrasonic wave. Residual stress is generally defined as the internal forces that remain in the mechanical parts when they are not subject to any external force.

The ultrasonic technique can be applied on different types of metal structure:

- heat treatment: quenched, annealed,...
- thermochemical treatment: nitriding, carburizing,...
- with surface treatment: shot peening, laser peening...
- welded, machined, cast...

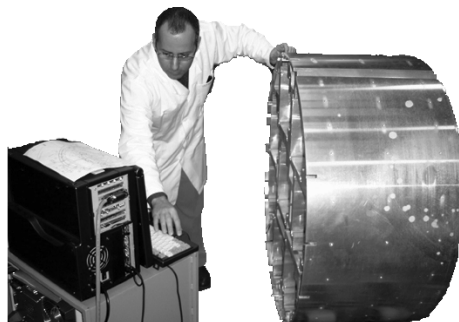
Our activity fields:

- Mechanical engineering - Steel industry
- Aeronautics - Space
- Energy - Nuclear
- Car industry
- Railway industry
- Pipeline - Building trade

ULTRA-RS

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Product Description

- *Fast*
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- *Simple*
- *Transportable*
- *Non destructive*

The device of measurement is composed by an electronic module and by an ultrasonic sensor adapted to the shape of a mechanical part.

The electronic module contains a generator of electric impulsions and a central processing unit in which the capture card is installed. During the starting of the module, all the material starts, and the « Ultra-sys » software, allowing measurements, is launched automatically.

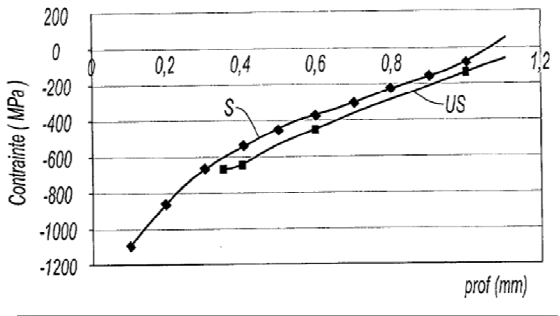


Ultra-sys software

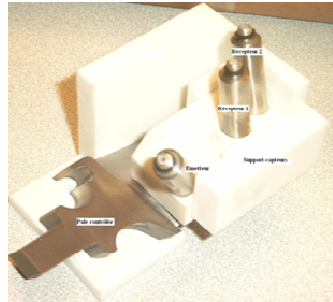
At the beginning of a test, some electric impulsions are emitted by the generator. Then, these ones are converted in ultrasounds and sent in the mechanical part. Arrived at the end, ultrasounds make an echo and go back to the sensor. The ultrasonic signals corresponding to the value of stress are treated and posted on the control screen of the electronic module. All these steps are done in real times, there is no waiting to see the results!

Then, it is possible to save and print a summary of each test to keep a traceability.

Measurement of RS induced by Shot peening



S : Hole drilling method
US: ultrasonic method



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