

P 3121

Ultrasonic testing instrument for non-destructive
hardness depth testing of heat-treated parts



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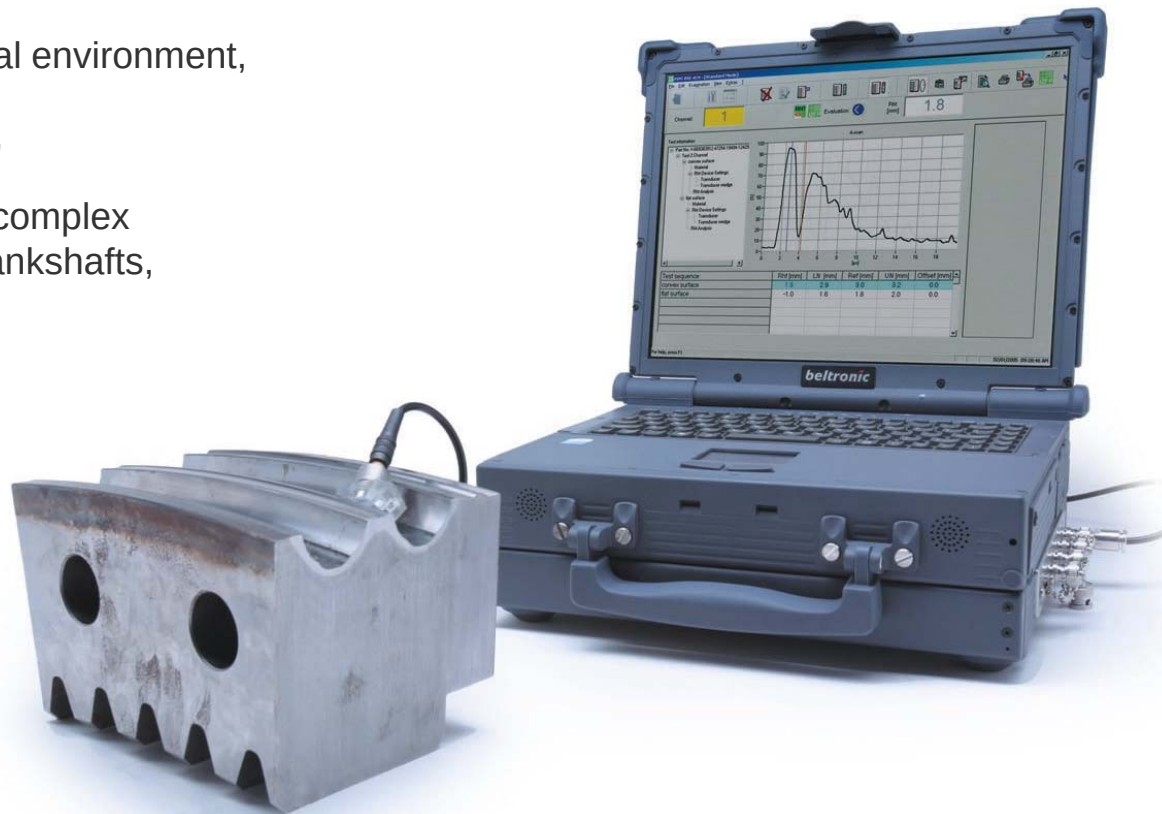
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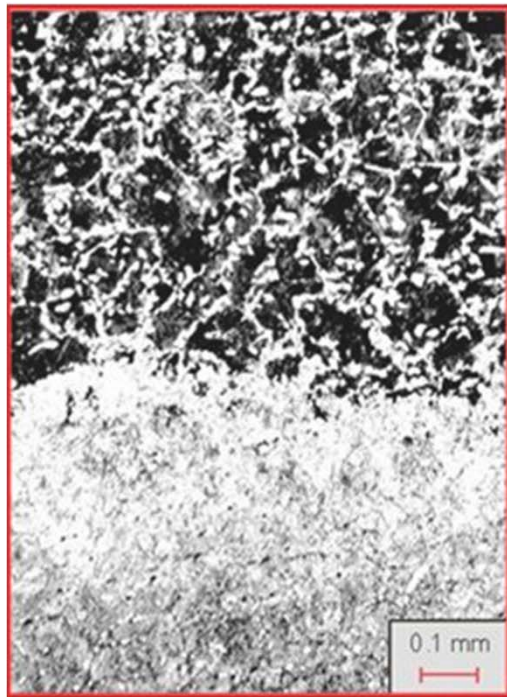
Hardness Depth Testing of Heat-treated Parts

- Non-destructive testing with ultrasonic backscattering technique,
- portable testing system,
- designed for tough industrial environment,
- 4-channel ultrasonic board,
- Also suitable for testing of complex geometries for example crankshafts, gears,...
- optional automated testing.

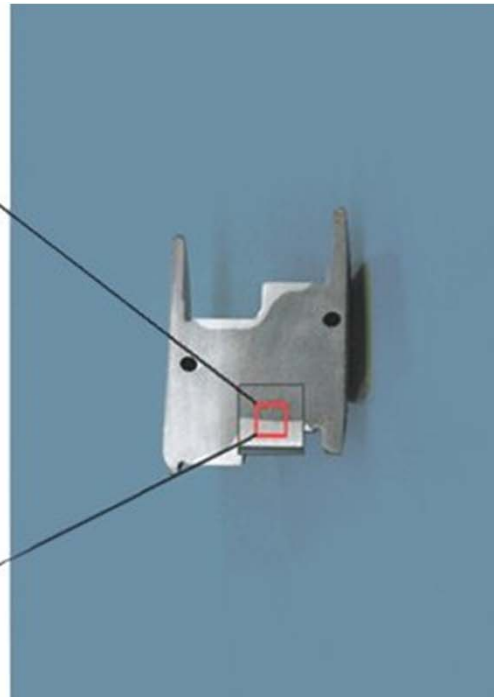


Microstructure of Hardened Parts

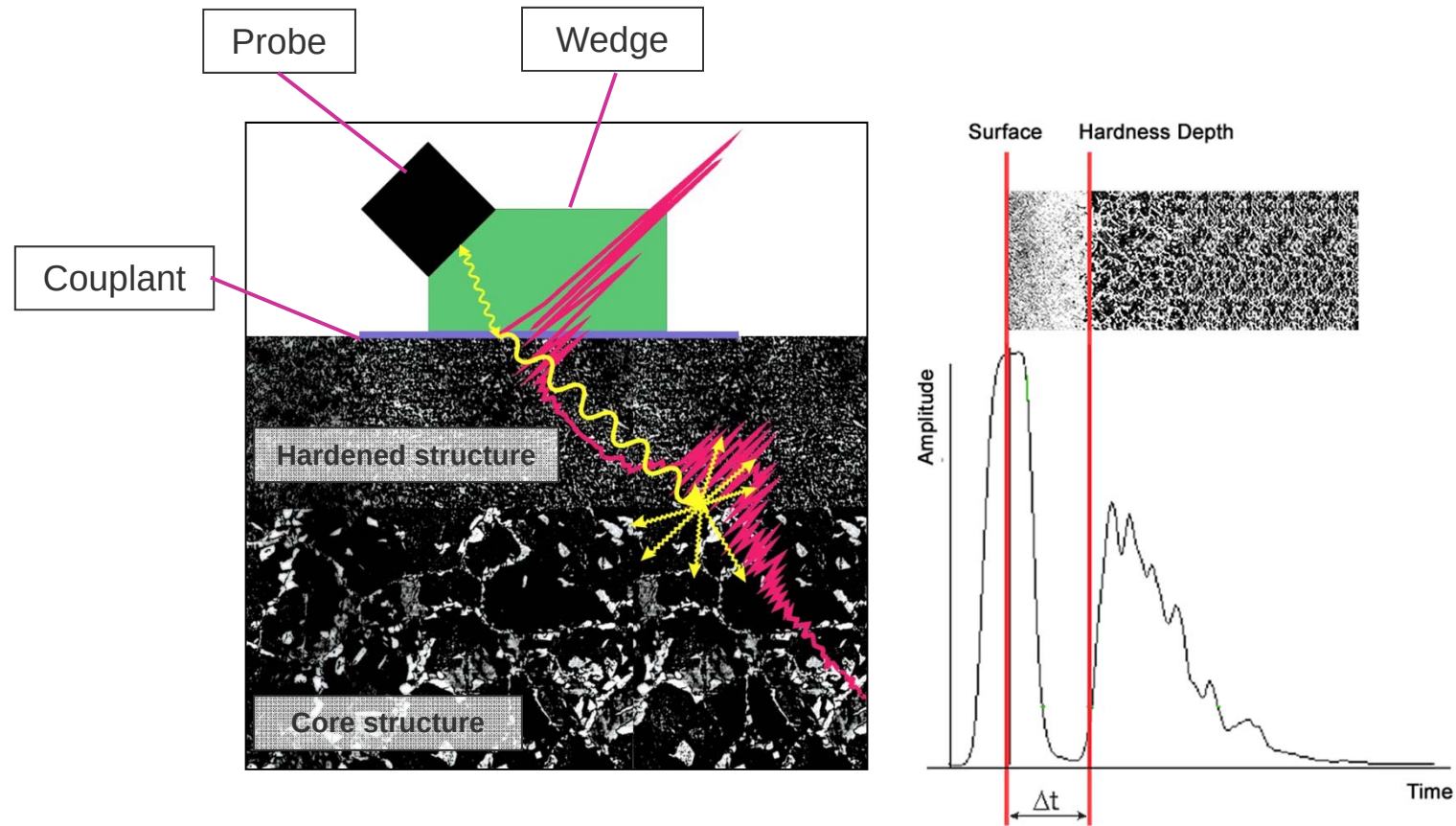
Microstructure



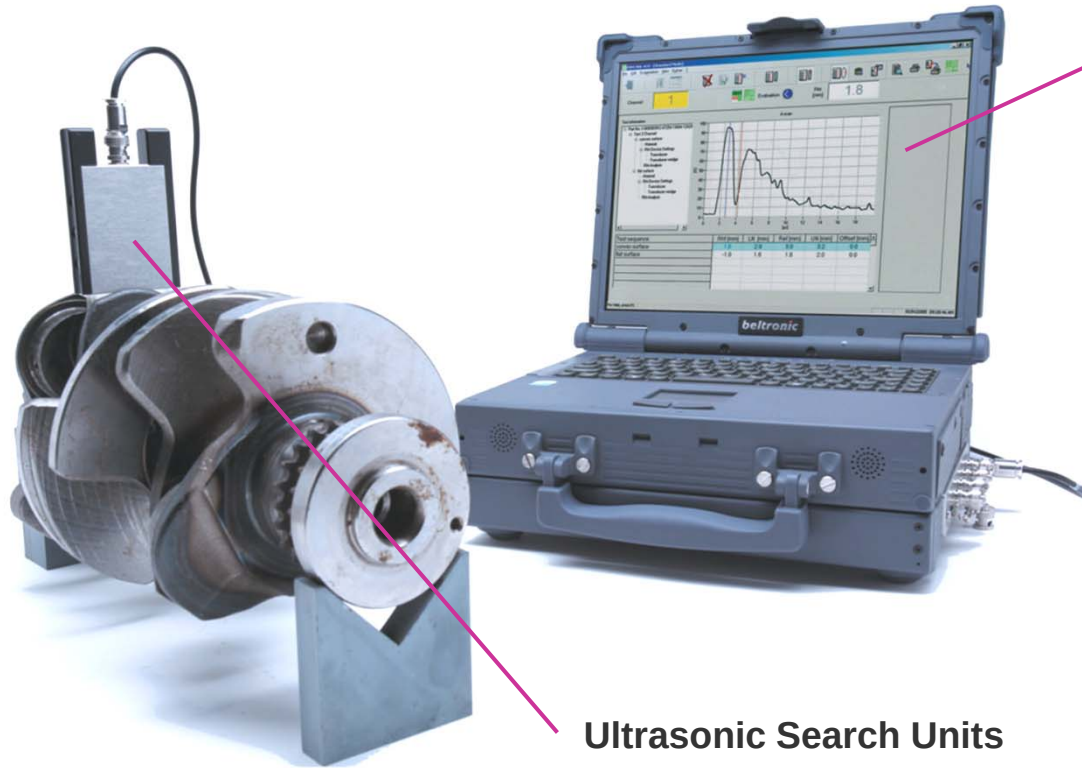
Macrostructure



Ultrasonic Backscattering Technique



System Components



Industry Laptop including:

- Ultrasonic electronics (analog and digital).
- PINT Rht software.
- Up to 4 probes can be connected.
- Windows 7, XP
- DVD writer.
- Standard connectors like USB, etc.

Ultrasonic Search Units

- Coupling wedge.
- Ultrasonic transducer
- RF transducer cable

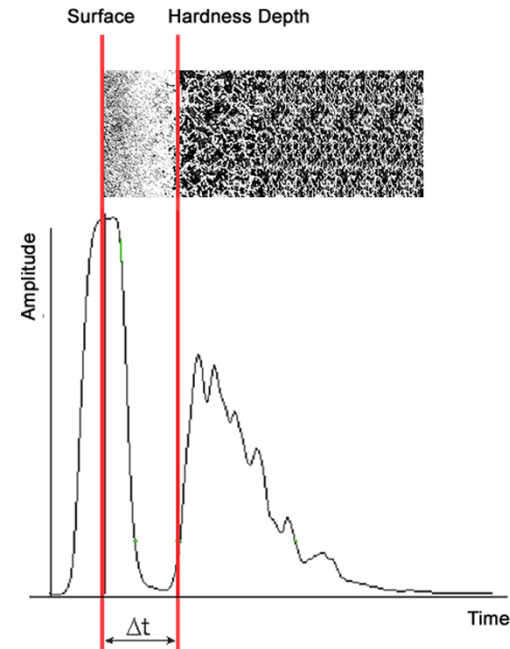
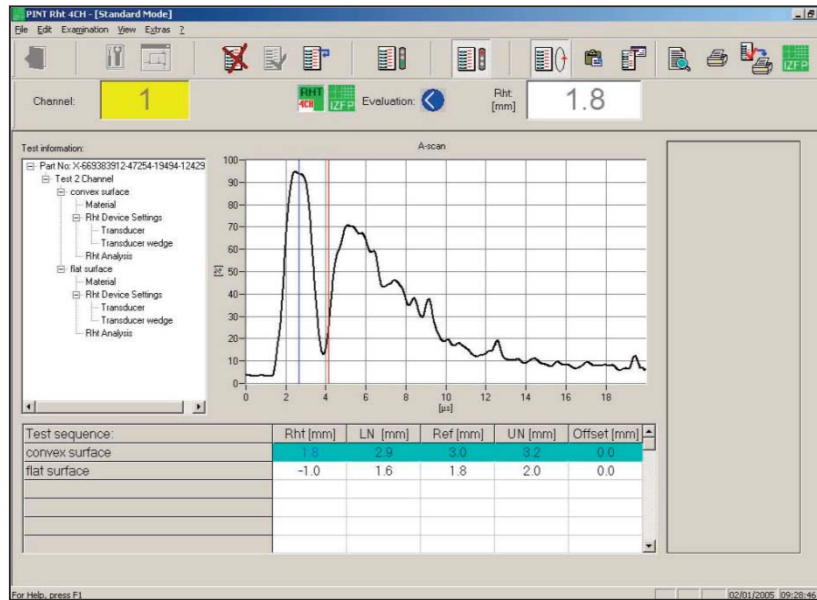
Optional

- Touch-screen
- Wireless LAN

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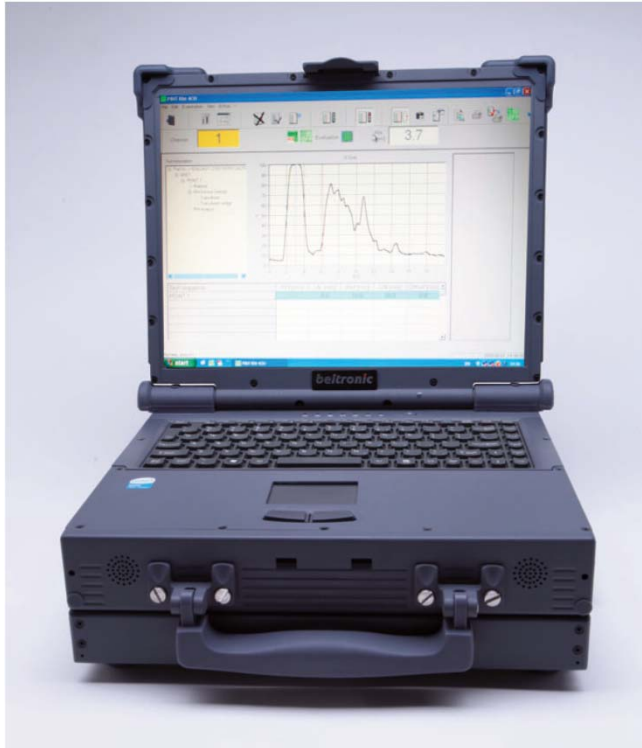
Hardness Depth Tester P3121

PINT Rht Software



- Creation of master records and databases for components, probes, wedges, testing staff, testing settings, etc.
- Testing modes for routine-, reference-, individual-, series- and sample-testing.
- Data export.
- Online data visualization (A-Scans)
- Printing and transmitting of testing results

Industry Laptop and Hard Case



Industry Laptop
(IP54, MIL-STD-810F certified)



Hard case with foam interior

Coupling Wedges



Standard design:
Flat, convex, concave



Custom design:
Double sensors with housing

Accessories

Probes: 2 available models

20 MHz, diameters: 6 mm or 11 mm



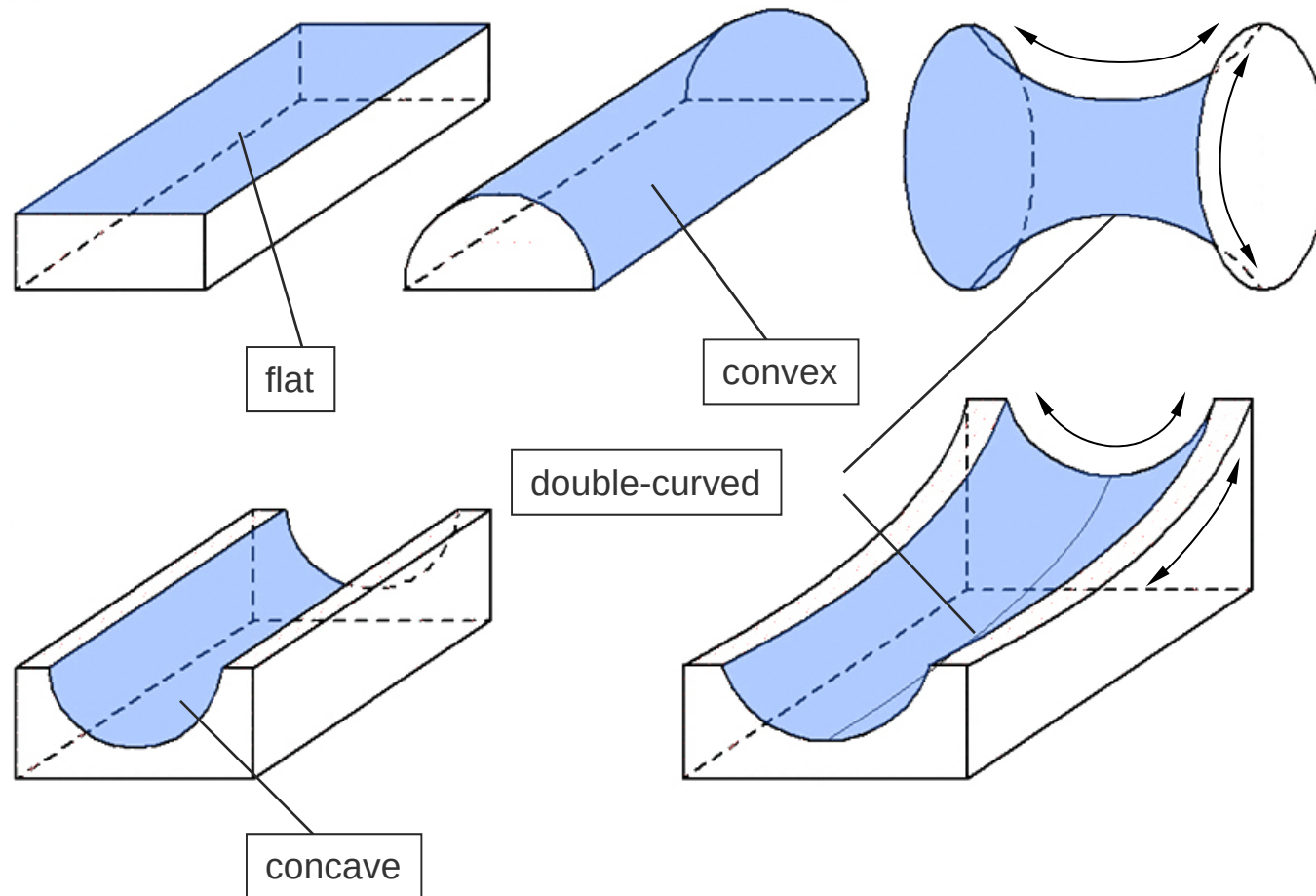
RF transducer cable



USB pedal



Typical Inspection Geometries



Usage Examples



Hardness depth testing of heat-treated parts such as:

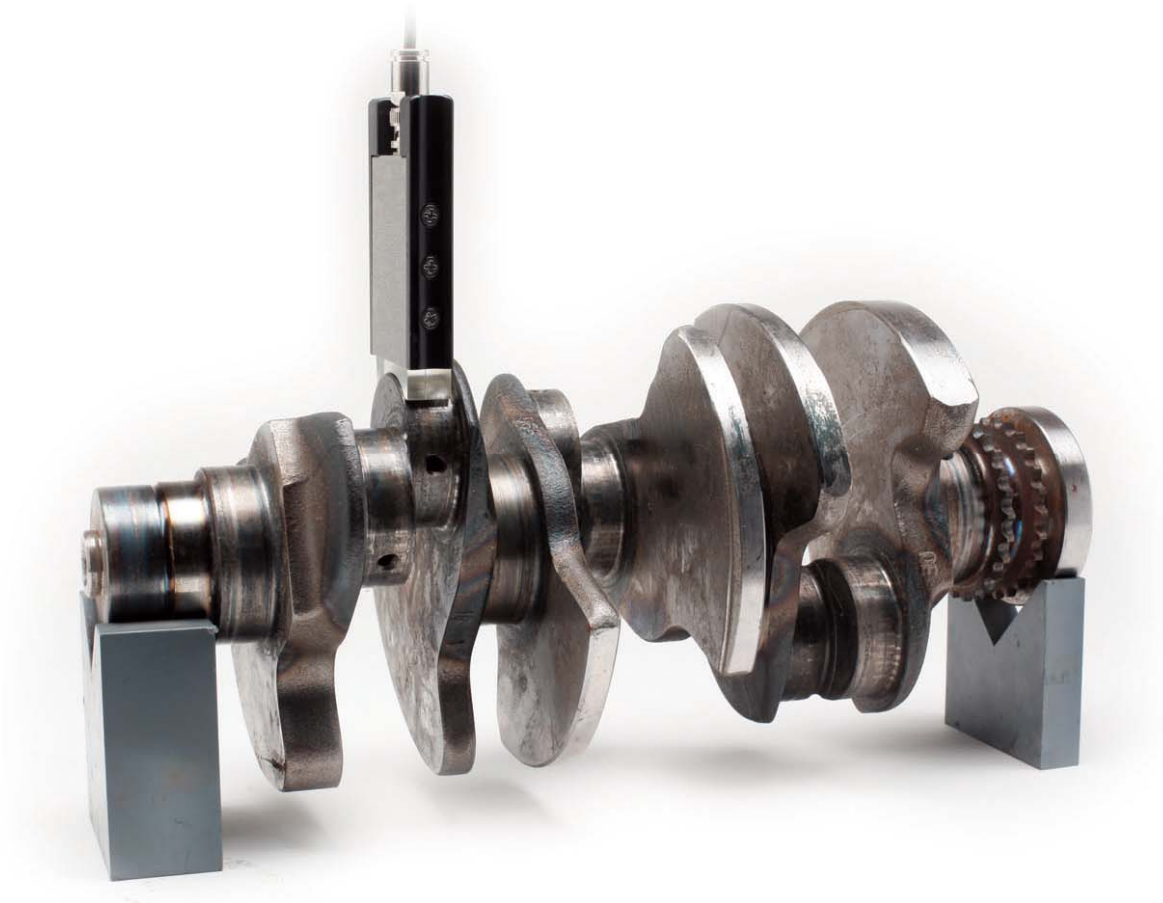
- large-diameter slewing rings,
- crankshafts,
- tooth systems,
- spindles,
- and many more...

Usage Example: Large-diameter Slewing Rings



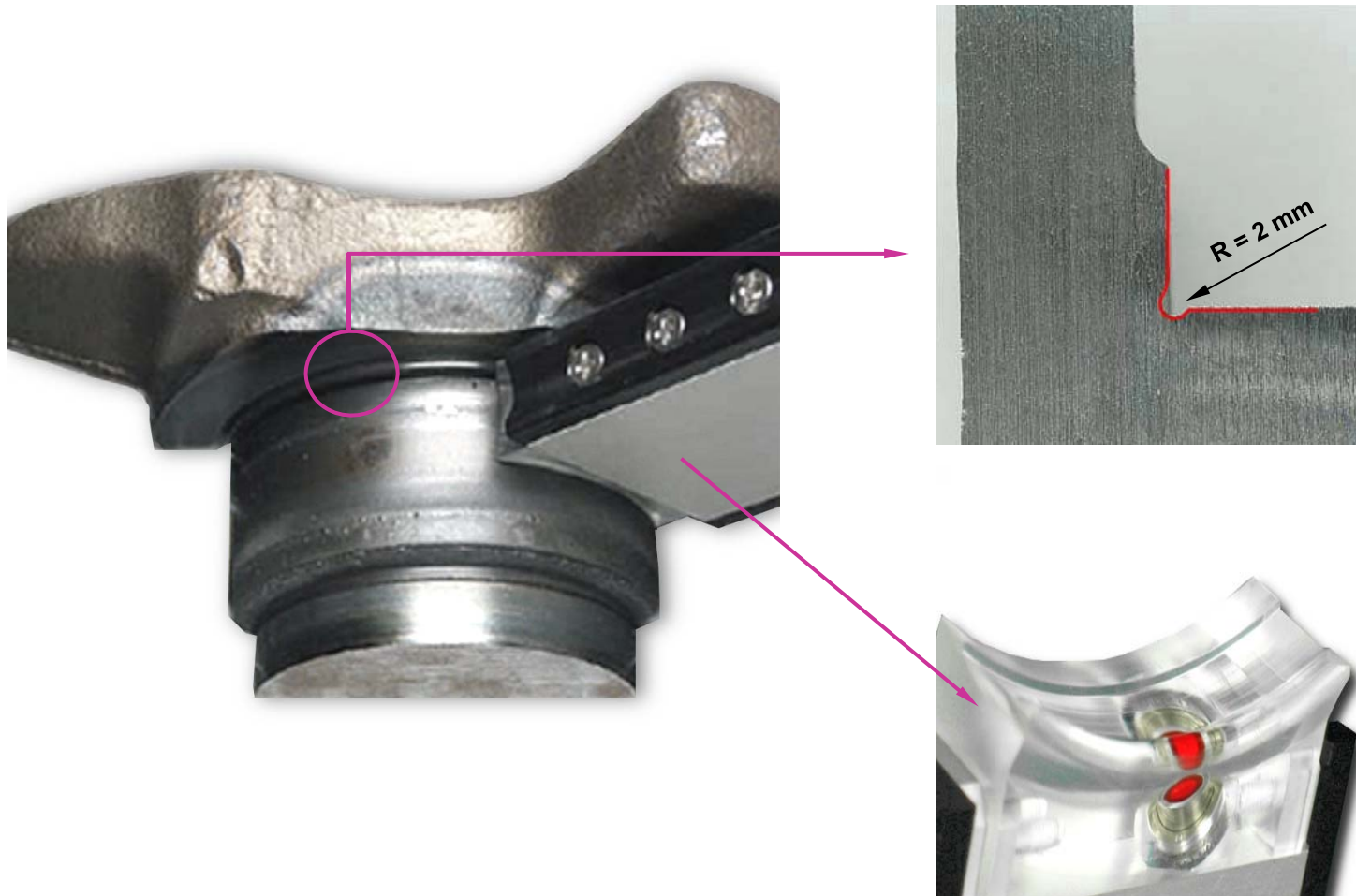
Testing the **pitch surfaces of the rolling element** (flat or curved), the **tooth flanks** and **bottom lands**.

Testing Examples: Crankshafts



Testing the **flange / pins, journals** und **fillet radii**.

Usage Examples: Testing of Fillet Radii



Usage Examples: Testing of Tooth Systems



Testing of **tooth systems**: top and bottom lands and **tooth flanks**.

Usage Examples: Testing of Spindles and Threads



Usage Examples: Testing of Fillets and Bearing Surfaces



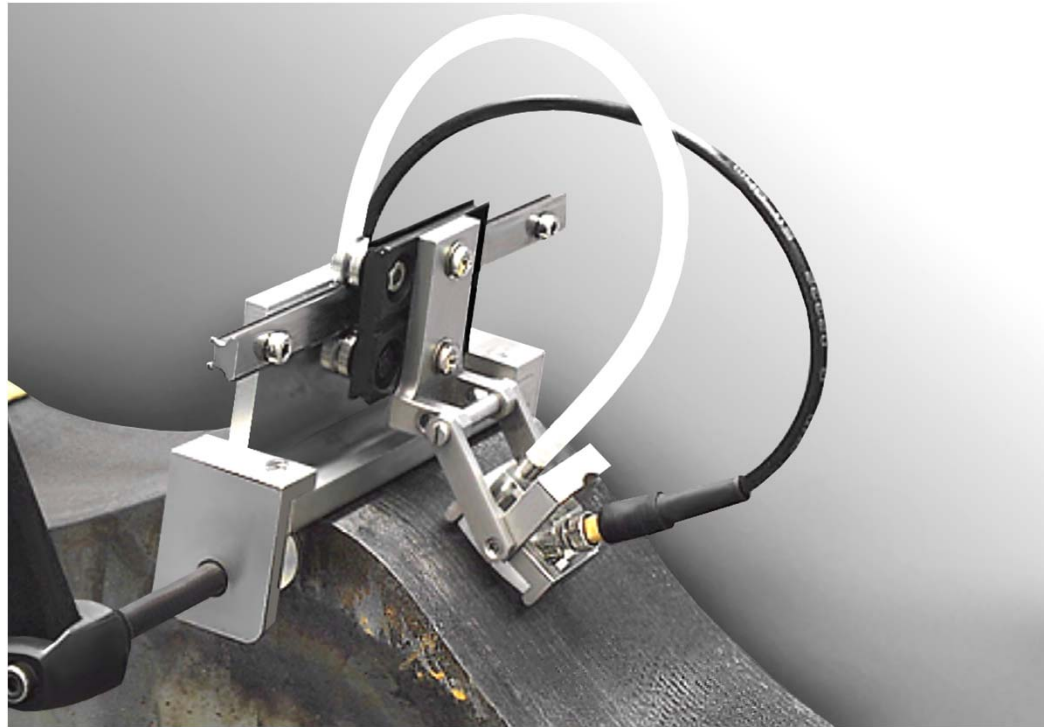
Usage Examples: Testing of Spline Shafts



Width = 1.5 mm

Measurement on the top of splines

Usage Examples: Sensor Manipulation



Sensor manipulation in case of testing **curved surfaces**.

Usage Examples: Wedge for Several Probes



Wedge for 2 testing points

Usage Examples: Handling Equipment



Semi-automated testing of crankshafts

Usage Examples: Handling Equipment

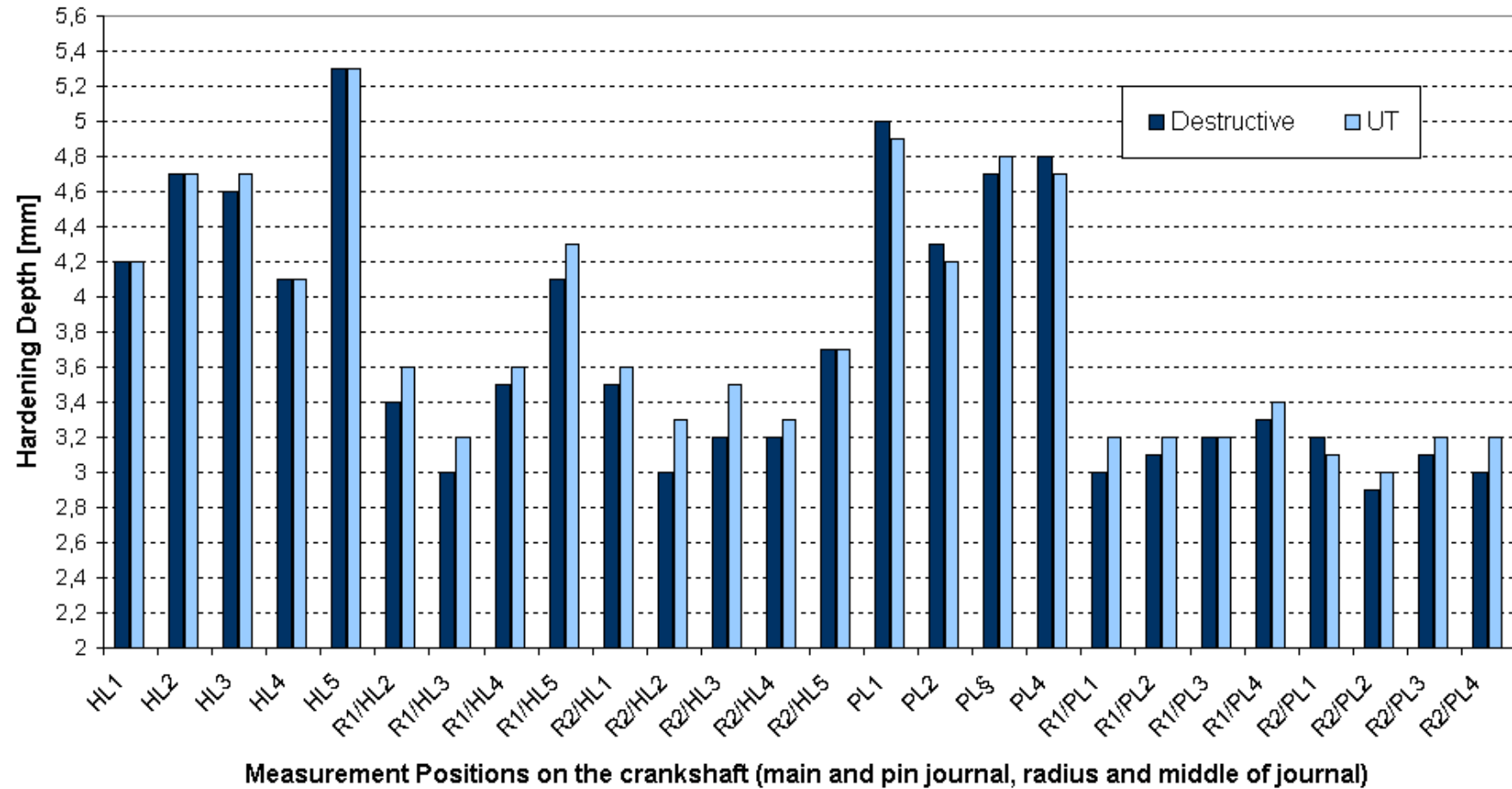


Sensor units with housing

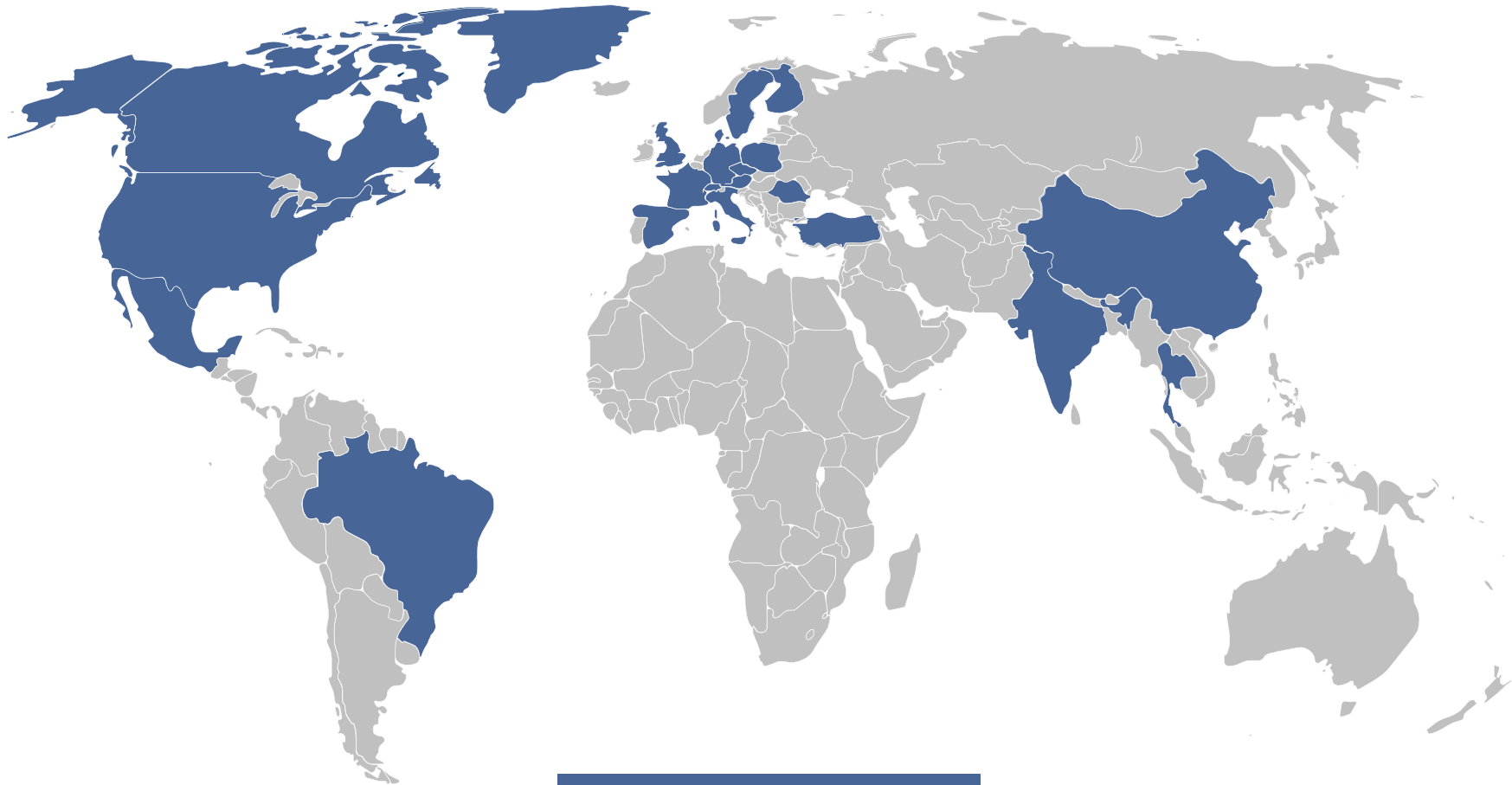
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Hardness Depth Tester P3121

Validation



Worldwide Sales and Services



Sales worldwide: 171

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References (extract)





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Many thanks!