

SonoDur-R

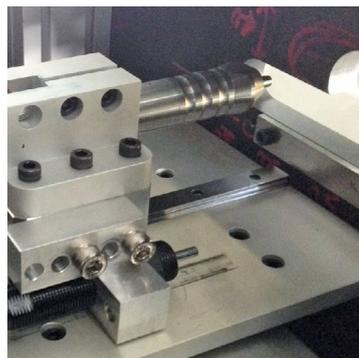
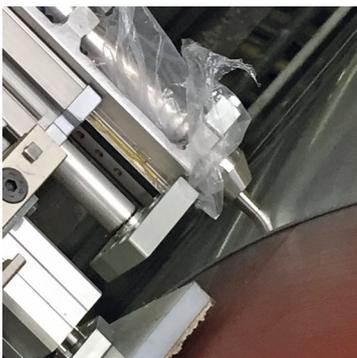
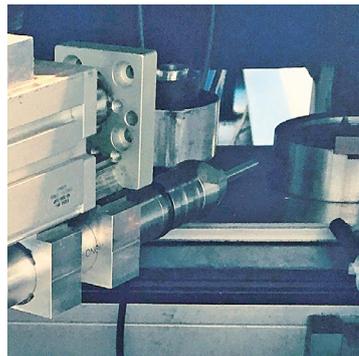
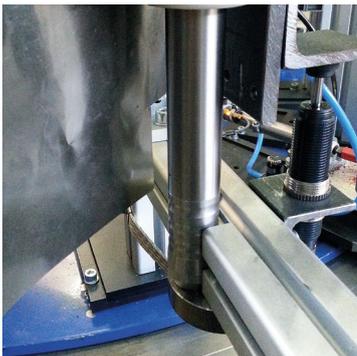
Fully Automated UCI-Hardness Testing



Current results and historical data at a glance. Many possibilities for data transfer and process control via standard interfaces.



Designed for nonstop operation in production lines for mass produced parts with a massive amount of measurements



- High measuring rate (approximately one measurement per second).
- Highly reliable potentialfree digital contacts for full remote control of the unit and for controlling of sorting bridges via SPS.
- Fast pay-back of investment due to unparalleled long time performance handheld probes like SONO-10H (HV 1), SONO-50H (HV 5) and SONO-100H (HV 10), motor probes with test loads between 1 N (HV 0,1) and 8,6 N (HV 0,8) and the new mobile test stands SONO-S with 10 N (HV1) through 100 N (HV10) for continuous work.
- Remote control and automatic measurand output (RS232) with each reading.
- One unique comprehensive and proven operating scheme and system concept stands for the SonoDur-Family (touchscreen, USB, nearly unlimited storage of data).

Technical Data SonoDur-R "Rack"

Measuring Specification

Measuring principle	UCI Method, corresponds to DIN 50159-1,-2, ASTM A1038		
Test indenter	Vickers diamond 136°		
Test loads Newton scale (1kgf = 9.81 N)	Motor probes: 1N (0.1 kgf), 3N (0.3kgf) and 8.6 N (0.9 kgf) Handheld Probes: 10N (1 kgf), 30N (3kgf), 49N (5kgf), 98N (10kgf), (Other test loads on request)		
Hardness scales and range (according to relevant standards), in this case table A1 respectively T1, T2 (low alloy steel). Different measuring ranges are valid for other materials. When exceeding the limits the conversion range will be extended. The calculated values are highlighted in red besides the original data in HV. Note: Conversions are acc. to latest ASTM E140-12bE1 (2013) und EN ISO 18265:2014. Conversions into tensile strength: 98N (10kgf) test load only.	Vickers Brinell Rockwell Rockwell Rockwell Rockwell Rockwell Rockwell (EN ISO 18265 only) Rockwell Knoop (ASTM E140 only) Shore (ASTM E140 only) Tensile strength	HV HB HRB HRC HRE HRF HRA HRD HR45N HK HS MPa	10 – 1999 (9999) 76 – 618 41 – 105 20,3 – 68 70 – 108,5 82,6 – 115,1 60,7 – 85,6 40,3 – 76,9 19,9 – 75,4 87 – 920 34,2 – 97,3 255 – 2180
Measurement uncertainty*	< 4 % (HV5, HV 10). Other test loads and ranges see DIN 50159.		
Relative repeatability*	< 5 % (HV5, HV 10). Other test loads and ranges see DIN 50159.		

* exceeds DIN 50159, dependent on test load and range. Specifications are valid for 5 measurements using Vickers reference blocks and according to test conditions given in standard DIN 50159.

Mechanical and Environmental (Instrument and probe)

Operating Temperature	Probe: 0 °C to ~ + 50 °C
Storage Temperature	- 20 °C ~ + 70 °C
Humidity	Max. 90 %, non-condensing
Dimensions	Instrument ca. H/B/T 132,55 x 235,54 x 313,5 mm (360 mm with handle)
Motor probe	Ø 38 mm, L = 190 mm (free length oscillation rod ca. 32,5 mm)
Handheld probe	Ø 25 mm, L = 176 mm (free length oscillation rod ca. 12,5 mm)
L-Handheld probe	Ø 25 mm, L = 207 mm (free length oscillation rod ca. 34 mm)
Weight	Instrument ca. 3400 g, Handheld probe ca. 280 g, Motor probe ca. 370 g

Instrument

Processor and Memory	ARM11® i.MX35 / 128 MB SDRAM / 256 MB Flash / micro SD Card up to 32 GB
Operating system	Windows CE 6.0 R3 English
Power Input	12 VDC – 24 VDC // 6 W
Display	TFT-Display 800 x 480 Pixel with LED-Backlight Touch-Screen Size (Inch/mm) 7.0/ 178, Luminance 400 cd/m2
Interfaces	Probe
	Lemo ERD.0S.304, 5 V Signal Level
	Digital Input / Output
	37 pos. D-Sub, galvanic isolated, max. voltage 36 VDC
	Communication
	1x USB Type B, RS232 (automatic measurand output)
Dust/Water-splash proof	IP20
Instrument Language	German, English, Polish, more on request