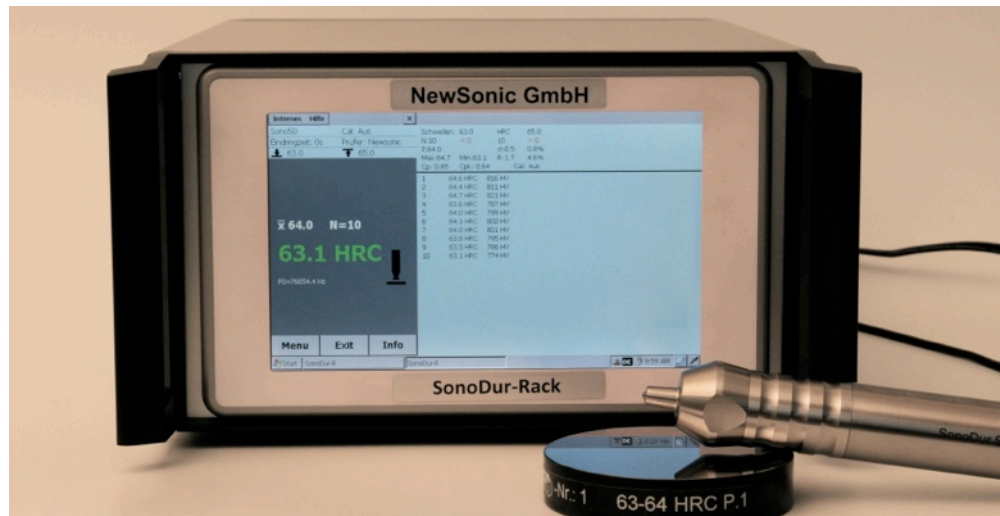
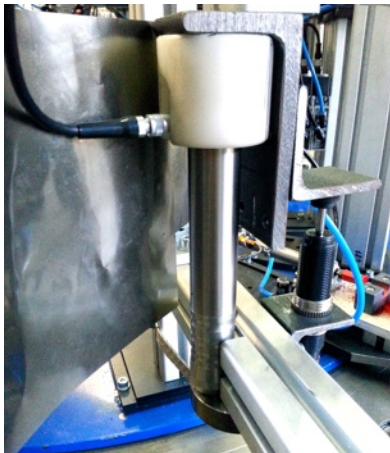


SonoDur-R: Fully Automated UCI-Hardness Testing



Current results
and historical
data at a
glance

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



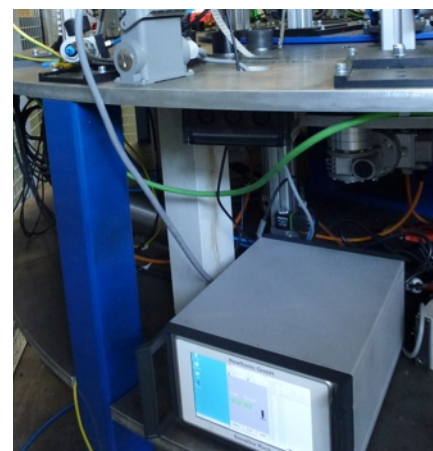
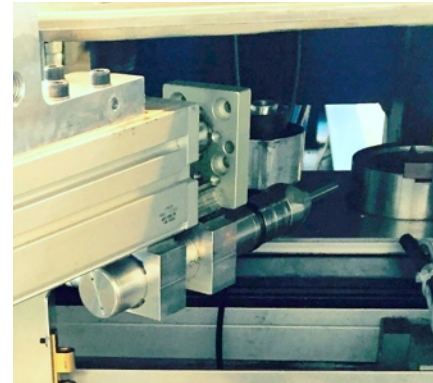
- High measuring rate (approximately one measurement per second)

- Highly reliable potential-free 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 SONO-10H (HV1), SONO-50H (HV5) and SONO-100H (HV10) for continuous work

- 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)



SONO-100H (HV10) on safety critical parts for cars

Technical Data SonoDur-R „Rack“

Measuring Specification	
Measuring principle	UCI Method, corresponds to DIN 50159, 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 (0.8 kgf) Handheld Probes: 10N (1 kgf), 49N (5kgf), 98N (10kgf) (Other test loads on request)
Hardness scales and range accord. to standard conversion tables Note: Conversions are acc. to ASTM E140-12b ^{E1} (2013), EN ISO 18265-2014, and DIN 50150-2000 (solely table 1, low-alloyed steel). Conversions into tensile strength for 98N (10kgf) test load only.	Vickers HV 10 – ca. 2000 Brinell HB 76 – 618 Knoop HK 87 – 920 (ASTM only) Rockwell HRB 41 – 105 Rockwell HRF 82,6 – 115,1 Rockwell HRC 20,3 – 68 Rockwell HRA 60,7 – 85,6 Rockwell HRD 40,3 - 76,9 (EN ISO 18265 only) HR45N 19,9 – 75,4 Tensile Strength MPa (N/mm ²) 255 – 2180 (EN ISO 18265 only)
Measurement uncertainty	< 3% of the average out of 5 measurements relative to the plate value
Relative repeatability	< 3% (range relative to the average out of 5 measurements on reference block 300HV using motor probe 8.6N)
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 Motor probe Handheld probe L-Handheld probe	Instrument ca. H/B/T 132,55 x 235,54 x 313,5mm (360mm with handle) Ø38mm, L=190mm (free length oscillation rod ca. 32,5mm) Ø25mm, L=176mm (free length oscillation rod ca. 12,5mm) Ø25mm, L=207mm (free length oscillation rod ca. 34mm)
Weight	Instrument ca. 3400gr Handheld probe ca. 280gr Motor probe ca. 370gr
Instrument	
Processor and Memory	ARM11@ i.MX35 / 128MB SDRAM / 256MB Flash / micro SD Card up to 32GB
Operating system	Windows CE 6.0 R3 English
Power Input	12VDC – 24VDC // 6 W
Display Size (Inch/mm) Luminance	TFT-Display 800x480 Pixel with LED-Backlight Touch-Screen 7.0/ 178 400cd/m ²
Interfaces Probe Digital Input / Output Communication	Lemo ERD.0S.304, 5V Signal Level 37 pos. D-Sub, galvanic isolated, max. voltage 36VDC 1x USB Type B, RS232 (automatic measurand output)
Dust/Water-splash proof	IP20
Instrument Language	German, English, more on request