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TKM-459CE combi

COMBINED HARDNESS TESTER

Portable precision device with brand-new software.

Now your capabilities in non-destructive hardness testing of different metal items are almost unlimited.

Applying TKM-459CE combi you receive all advantages of UCI and Leeb methods of metals and alloys hardness control.

DEVICE IS USED TO CONTROL HARDNESS OF FOLLOWING:

- Carbon and structural steels as well as other fine-grained materials
- Hard-surfaced items (cementation, nitride hardening, high frequency current hardening)
- Heat-resistant, corrosion-resistant, stainless steels
- Non-ferrous metals and alloys (cast iron, aluminium, bronze, brass)
- Electroplated coating (chrome, copper, nickel, zinc, tin), overlaying
- Items of complex configuration (gear teeth, shafts, pipes of any diameter, grooves, blind holes)
- Thin-walled and small-sized items
- Large items and heavy-duty equipment (gas pipelines, rails, construction elements)

ADVANTAGES

- Wide range of metals and alloys.
- Stable measurements with no impact from force and time of pressing the probe to surface.
- Low sensitivity to curvature and roughness of surface.
- Hardness measurement in hard-to-reach areas (position of probe has no impact on the results of measurement).
- Wide range of accessories.

FEATURES OF TKM-459CE combi

1. Impact-, dust- and water-proof housing.
2. Intuitive "plug and play" graphic interface.
3. Bright color graphic display allows to make measurements at below zero temperature.
4. Signalization about exceeding of prescribed measurement threshold.
5. Unique statistical data processing system.
6. Fast calibration of device scales with one or two standard test blocks.
7. Flexible device memory for readings recording and analysis.
8. Programming of additional calibrations for scales of hardness tester with one or two standard test blocks.
9. Fast programming of additional scales with two to ten standard test blocks.

REQUIREMENTS FOR THE OBJECTS OF CONTROL

Preparation	UCI method	Leeb method
Need no additional preparation	Weight 1 kg or more Thickness 2 mm or more	Weight 5 kg or more Thickness 6 mm or more
Need to be fixed on the base plate	Weight less than 1 kg Thickness less than 2 mm	Weight less than 5 kg Thickness less than 6 mm
Roughness requirements	0.8 - 3.2 Ra (depending on probe)	3.2 - 7.2 Ra (depending on probe)

DELIVERY SET

Elements	Quantity
Electronic unit with accumulation battery	1
A-type probe	1
D-type probe	1
Connecting cable for A-type probe	1
Charger	1
PC cable	1
Soft case	1
Cuff to fix on arm	1
Bag for carrying and storing	1

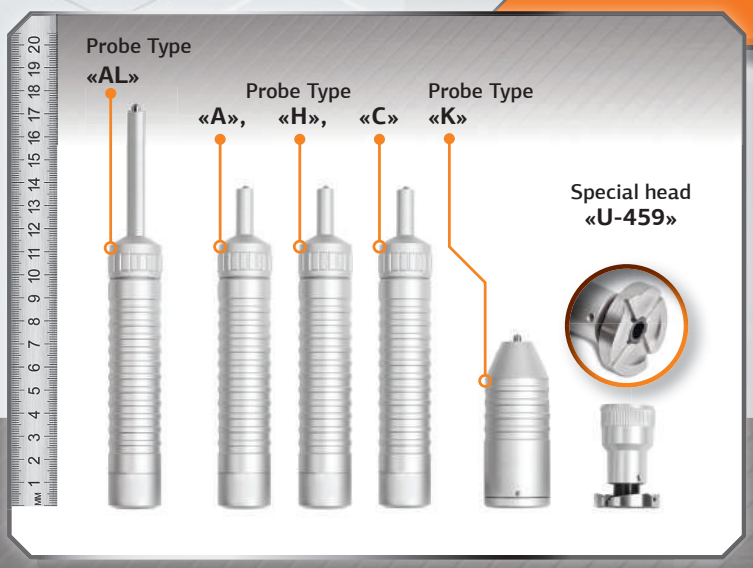
ACCESSORIES

1. Replaceable probes of different construction and load.
2. Special heads to facilitate positioning of the probe on complex surfaces.
3. Connection cables.

MAIN TECHNICAL PARAMETERS

Accuracy	3-5 % depending on range
Hardness testing ranges:	
Rockwell	20-70 HRC
Brinell	90-450 HB
Vickers	240-940 HV
Quantity of possible additional scales calibrations	5 for each scale
Quantity of additional scales	3
Duration of the measurement	2 seconds
Quantity of measurements for average reading calculation	1-99
Memory capacity	12400 readings
Maximum quantity of named blocks of readings generated in memory	100
Quantity of algorithms to discard known to be false readings during average value calculation	3
PC connection	USB
Power supply	Li-ion accumulation battery
Dimensions of hardness tester electronic unit	121*69*41 mm
Weight of electronic unit	0.3 kg
Weight of A-probe	0.15 kg
Operating temperature range	-15 ... +35 °C
Guarantee period	1 year

PROBES CHARACTERISTICS



UCI method

Probe type	Length, mm	Diameter, mm	Application
A	145	26	Solving of main hardness testing tasks
H	145	26	Hardness testing of electroplated coating (chrome, copper, nickel, zinc, tin), thin-walled and small-sized items
C	145	26	Hardness testing of items with unprepared surface, large items and heavy-duty equipment
K	76	33	Hardness testing of inner surface of tubes, tanks and other hard-to-reach areas
AL	190	26	Hardness testing in hard-to-reach areas as pinholes, grooves, in-between gear teeth zones

Leeb method

Probe type	Length, mm	Diameter, mm	Application
D	138	21	Solving of main hardness testing tasks with surface roughness less than 3.2 Ra
G	200	29	Hardness testing of high structure inhomogeneity items with surface roughness more than 7.2 Ra
E	138	21	Probe with polycrystalline indenter made of cubic boron nitride to test materials with high hardness

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