

TKM-459CE

UCI HARDNESS TESTER



High precision hardness tester
TKM-459CE is intended for quick measuring of metal items hardness in laboratorial, manufacturing and field conditions.

Device is intended for non-destructive testing of production quality in metallurgy, mechanical engineering, aircraft, shipbuilding, atomic industry, oil and gas industry.

Hardness tester functions by UCI method (Ultrasonic Contact Impedance)

Impact proof, ergonomic housing (IP 65)



TKM-459CE CONTROLS HARDNESS OF FOLLOWING:

- Carbonaceous and structural steels;
- Items with surface-hardened layers such as cementation, nitride hardening, high frequency current hardening;
- Heat-proof, corrosion-proof, non-corrosive steels;
- Plated coating (chrome), overlaying;
- Items of complicated configuration.

EXPLOITATION ADVANTAGES



- Stable readings independent from force and time of pressing.
- Measurement in hard-to-reach areas (position of probe does not influence the result of measurement).
- Ultra-small control area (from 1 mm).
- Control in slots and blind holes from 5 mm (not provided by rival devices).
- Invisible print on mirror-surface.
- Low sensitivity to the curvative of surface, thickness and weight of product.

FEATURES OF TKM-459CE

1. Impact-, dust- and water- proof housing.
2. Intuitive graphic interface.
3. Bright color graphic display allows working at below zero temperature and stays bright at any lighting.
4. Signalization of exceeding of prescribed readings threshold.
5. Unique system of statistic data processing and averaging of readings.
6. Fast adjustment of readings and programming of additional calibrations to basic scales by 2 or less standard blocks.
7. Flexible device memory for recording of readings and their analysis.
8. Programming of additional scales calibrations by 2 or less standard test blocks.
9. Fast programming of additional scales by 2 to 10 standard test blocks.



HARDNESS TESTERS MODE:

Measurement mode	Readings	Using
By basic scales	Basic hardness units (HRC, HB, HV)	Hardness testing of the bulk of products
By additional calibrations to basic scales	By HRA, HRB, HSD scales and ultimate tensile strength	Hardness testing of high-alloy steels, special cast iron and nonferrous metals
By additional scales	Scales are programmed by the user	Special problems solving

REQUIREMENTS TO CONTROLLED ITEM:

- Items heavier than 1 kg and thicker than 2 mm need no additional preparation;
- Items lighter than 1 kg should be fixed in a vice clamp or on a support plate by fixing paste;
- Items thinner than 2 mm should be fixed in a vice clamp or on a support plate by fixing paste;
- Roughness of controlled surface providing best measurement accuracy is 1.6 RA.



MAIN TECHNICAL PARAMETERS:

Relative average error at regular calibration test with second rate test blocks	3%
Calibration error with the first rate test blocks:	
Rockwell	1.5
Brinell	10
Vickers	12
Spot diameter on the item surface for probe positioning	From 1 mm on flat surface From 5 mm in a slot
Quantity of possible additional calibrations of scales	50
Quantity of additional scales	3
Duration of one measurement	2 seconds
Quantity of measurements for average reading calculation	1-99
Memory capacity, readings	12 400
Maximum quantity of name units of readings generated in memory	100
Quantity of algorithms for known to be false readings during average value calculation	3
Signalization about threshold exceeding	provided
PC Connection	USB
Power Supply	LI-ion accumulator
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...+50 °C
Guarantee period	1 year

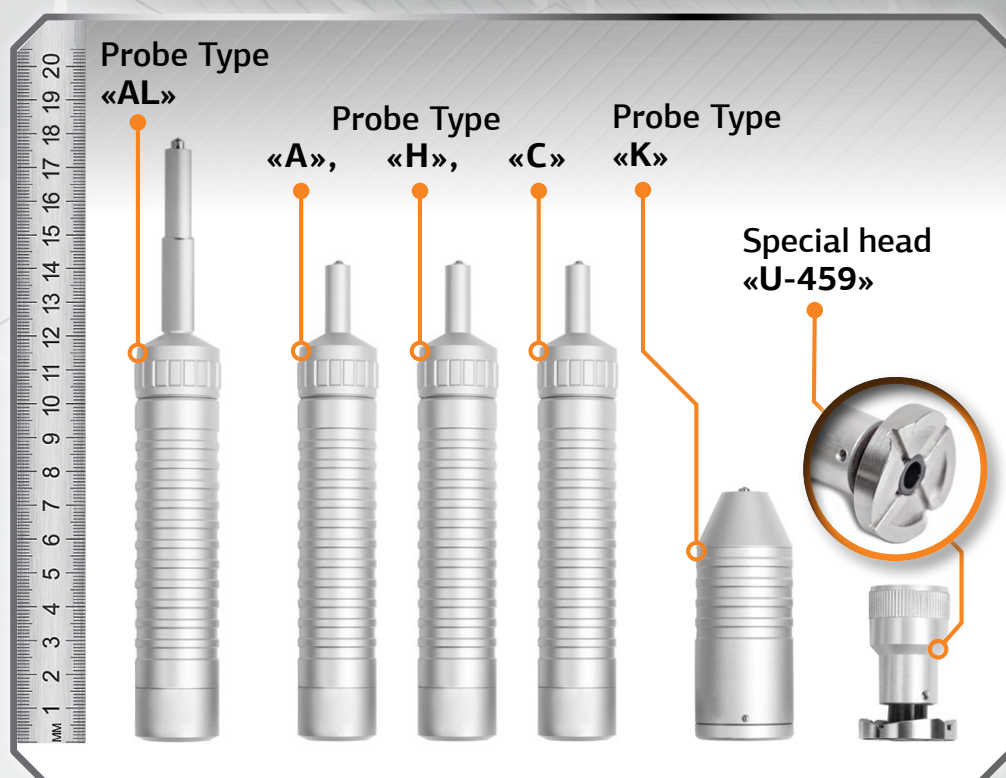
BASIC DELIVERY SET

Elements	Quantity
Electronic unit	1
Accumulator (pre-installed)	1
A-type probe	1
Connecting cable	1
Charger	1
PC cable	1
Soft case	1
Cuff to fix device on arm	1
Bag for carrying and storage	1



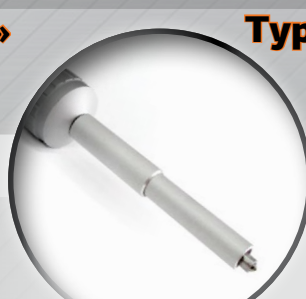
ACCESSORIES

1. Replaceable probes of different construction and load.
2. Special head "U-459" for easier probe positioning on complex surfaces.
3. Connection cables.



PROBES CHARACTERISTICS

Probe Type	Load	Length, mm	Diameter, mm	Application
A	50H (5 kg)	145	26	Solving the bulk of control problems
H	10H (1 kg)	145	26	Galvanic coating hardness control (chrome etc.)
C	100H (10 kg)	145	26	Unprepared surface control
K	50H (5 kg)	76	36	Hardness control in tubes and hard-to-reach spots
AL	50H (5 kg)	176	26	Hardness control in hard-to-reach spots (length of tip 53 mm)



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