

TKM-459CE

UCI HARDNESS TESTER

Manufactured in compliance with DIN standard



High precision hardness tester TKM-459CE 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



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), overlying;
- Items of complicated configuration.

EXPLOITATION ADVANTAGES



- Stable readings independent from force and time of pressing the probe to the surface.
- Hardness 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 "plug and play" 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.
6. Fast adjustment of device readings by one or 2 standard test blocks.
7. Intellectual averaging of readings.
8. Flexible device memory for recording of readings and their analysis.
9. Programming of additional scales calibrations by 2 or less standard test blocks.
10. 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 1.6RA



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 | 12400 |
| 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 |
| Weight of electronic unit | 0.3 kg |
| Weight of A-probe | 0.15 kg |
| Operating temperature range | -15...+50°C |
| Guarantee period | 2 years |

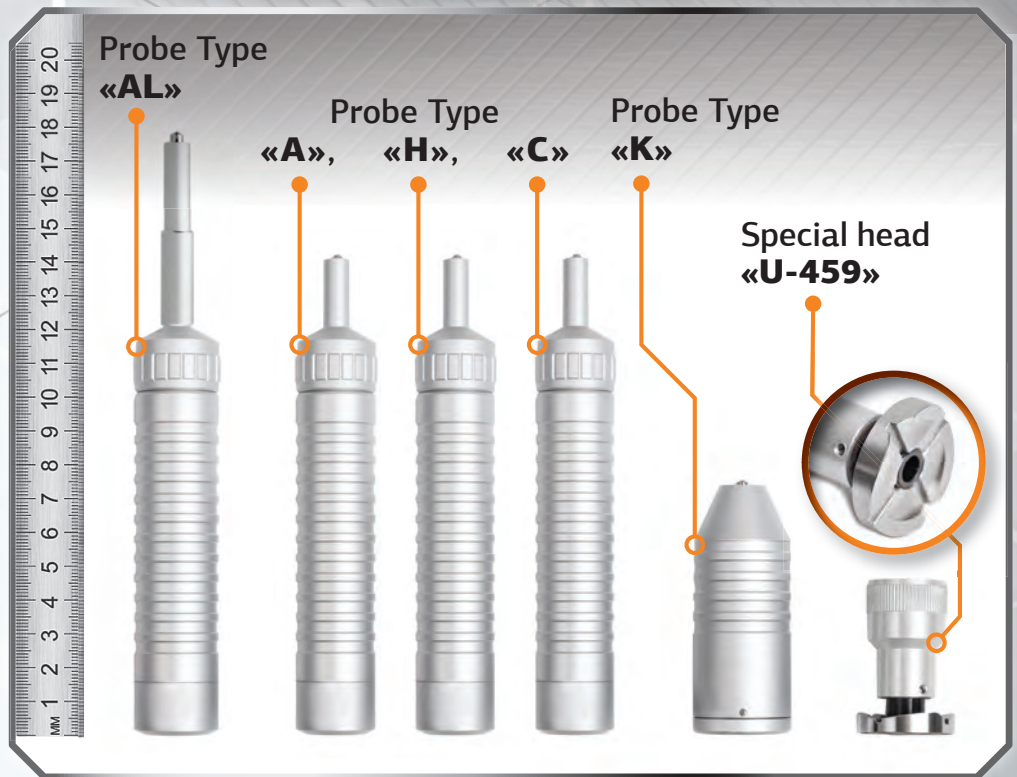
BASIC DELIVERY SET

| Elements | Quantity |
|------------------------------|----------|
| Electronic unit | 1 |
| Accumulator (pre-installed) | 1 |
| A-type probe | 1 |
| Connecting cable | 1 |
| Charger | 1 |
| CD with software | 1 |
| Operation manual | 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. Special control samples made of different materials.
4. Stand intended for controlling of small and thin items.
5. 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) |

