

# TEQTO

teqto.pro

## TQ PORTABLE HARDNESS TESTERS

Portable high precision hardness testers TQ intended for quick measuring of metal items hardness in laboratorial, manufacturing and field conditions.

The device performs non-destructive quality control of products in metallurgy, mechanical engineering, aircraft construction, nuclear industry, oil and gas industry.

Portable Hardness testers is intended to be used for hardness measurement of carbon construction steels in basic hardness scales — Brinell (HB), Rockwell (HRC), Vickers (HV), Shore (HSD).



### ▶ TQ CONTROLS HARDNESS OF FOLLOWING:

- ▶ Carbon and structural steels as well as other fine-grained materials
- ▶ Heat-resistant, corrosion-resistant, stainless steels
- ▶ Non-ferrous metals and alloys (aluminium, bronze, brass)
- ▶ Various types of cast iron
- ▶ Items with surface-hardened layers (cementation, nitride hardening, high frequency current hardening)
- ▶ Electroplated coating (chrome, copper, nickel, zinc, tin)
- ▶ Items of complex configuration (gear teeth, shafts, pipes of any diameter, grooves, blind holes)
- ▶ Thin-walled and small-sized items
- ▶ Heavy and big items with rough surface

## UCI HARDNESS TESTER TQ-4C

Hardness tester functions by UCI method (Ultrasonic Contact Impedance)

- ▶ Invisible print on mirror-surface.
- ▶ Ultra-small control area from 1 mm.
- ▶ Hardness measurements in slots and blind holes from 5 mm.



## REBOUND (LEEB) HARDNESS TESTER TQ-3C

Hardness tester functions by Leeb method

- ▶ Control area from 7 mm.
- ▶ Low sensitivity to curvature and roughness of surface.
- ▶ Hardness measurements heavy and big items with rough surface.

## COMBI HARDNESS TESTER TQ-4COMBI

Hardness tester functions by UCI and Leeb methods

- ▶ Wide range of controlled metals and alloys.
- ▶ Hardness measurement in hard-to-reach areas (position of probe has no impact on the results of measurement).
- ▶ Wide range of accessories.



## ► FEATURES OF HARDNESS TESTERS TQ



1. Impact-, dust- and water- proof housing (IP 65).
2. Intuitive interface.
3. Bright color display allows to make measurements at below zero temperature.
4. Unique statistical data processing system.
5. Fast calibration of device scales with one or two standard test blocks.
6. Programming of additional calibrations for scales of hardness tester with one or two standard test blocks.
7. Fast programming of additional scales with two to ten standard test blocks.

## REQUIREMENTS FOR THE OBJECTS OF CONTROL

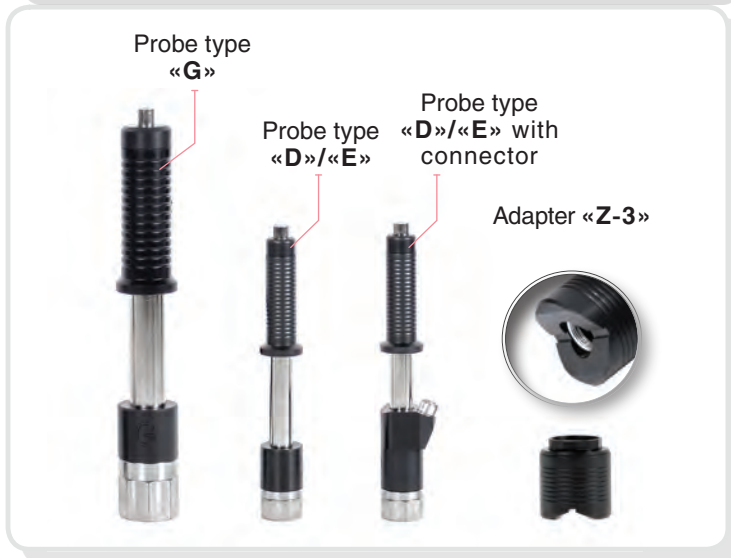
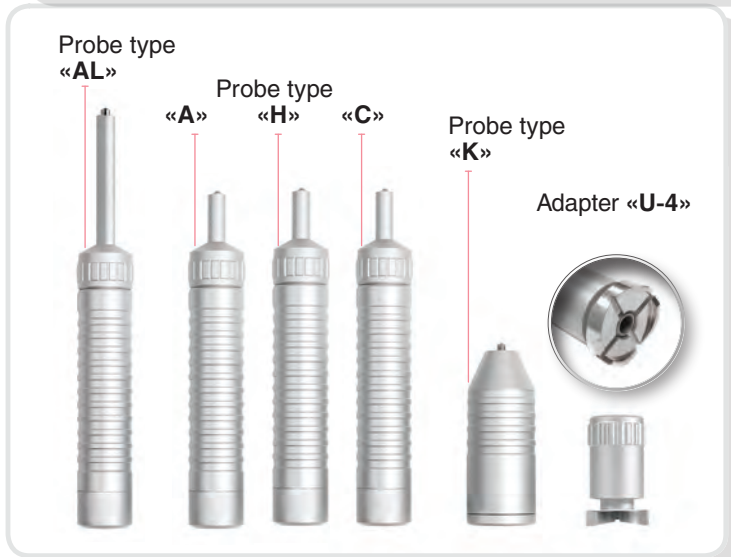
Object parameters	Hardness tester TQ-4Combi		Additional preparation
	Hardness tester TQ-4C	Hardness tester TQ-3C	
Min weight, kg	1	3	Items with less weight should be fixed in a vice clamp or on a support plate by fixing paste.
Min thickness, mm	2	6	Items with a smaller thickness should be fixed in a vice clamp or on a support plate by fixing paste.
Max roughness of controlled surface, Ra	3,2	7,2	Items with increased roughness: - clear the control area; - when measuring, use a higher number of averagings.

## ► MAIN TECHNICAL PARAMETERS

Hardness testing ranges:	
Rockwell	20-70 HRC
Brinell	90-450 HB
Vickers	240-940 HV
Relative average error at regular calibration test with second rate test blocks	3-5% depending on range
Quantity of possible additional scales calibrations	5 for each scale
Quantity of additional scales	3
Duration of the measurement	2-3 seconds
Memory capacity	at least 10 000 readings
PC connection	USB
Power supply	Li-ion accumulation battery
Dimensions of hardness tester electronic unit	121x69x41 mm
Weight of electronic unit	0.3 kg
Operating temperature range	-15 ... +35 °C



## PROBES CHARACTERISTICS



Probe type	Length/ diameter, mm	Application
<b>UCI method</b>		
«A» HV5	145/26	Solving of main hardness testing tasks
«H» HV1	145/26	Hardness testing of electroplated coating (chrome, copper, nickel), thin-walled and small-sized items
«C» HV10	145/26	Hardness testing of items with unprepared surface, large items and heavy-duty equipment
«K» HV5	76/33	Hardness testing of inner surface of tubes, tanks and other hard-to-reach areas
«AL» HV5	190/26	Hardness testing in hard-to-reach areas as pinholes, grooves, in-between gear teeth zones (length of tip 65 mm)
<b>Leeb method</b>		
«D»	138/21	Solving of main hardness testing tasks with surface roughness less than 3.2 Ra
«E»	138/21	Control of items with a hardness of more than 450 HB
«G»	200/29	Control of items with a hardness of less than 450 HB. Hardness testing of high structure inhomogeneity items with surface roughness up to 7.2 Ra

### ► BASIC DELIVERY SET

1. Electronic unit with accumulation battery
2. Standard probe
3. Connecting cable (for Hardness tester TQ-4C and Hardness tester TQ-4Combi)
4. Charger
5. Software on CD
6. PC cable
7. Soft case
8. Operating manual
9. Cover to fix device on arm
10. Bag for carrying and storing

### ► ACCESSORIES

- Replaceable probes of different construction
- Adapter "U4", Adapter "Z3" for easier probe positioning on complex surfaces
- Connection cables

