



THE ENGINEERING EXCELLENCE BEHIND AFFRI



TKX LIGHT

PORTABLE HARDNESS TESTER FOR METALS

TKX Light is a portable hardness tester that provides fast and accurate measurements in Rockwell, Brinell, and Vickers hardness values, **both inside and outside your production department.**

Application range

- It has been designed to test a wide range of materials, including:
 - Chrome-plated surfaces
 - Nitrided surfaces
 - Aluminum, brass, copper, bronze
 - Metallic wires
 - Hard and soft steels

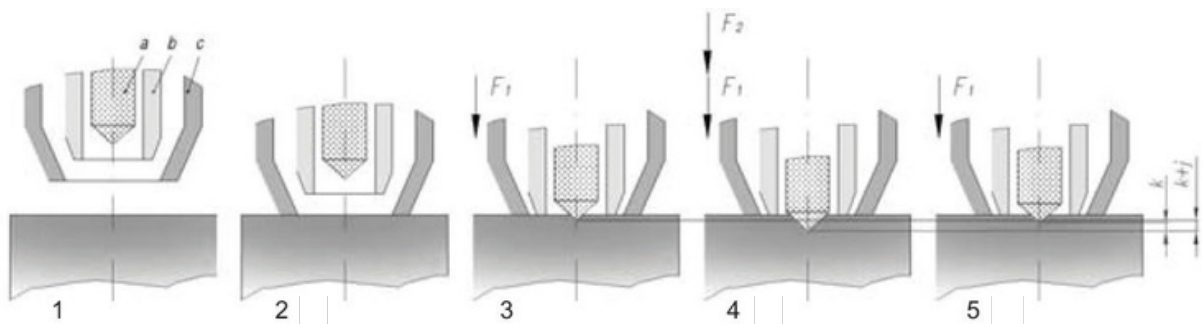
This is made possible by the diamond indenter, ensuring precise hardness readings on all surfaces.

- Its ergonomic design facilitates **testing on samples of various shapes and sizes**, including finished and assembled components. In fact, it has been designed to measure any geometry, **even the most difficult-to-reach areas** such as internal surfaces of castings and finished housings.

How to use

- 1 Select the desired hardness scale;
- 2 Place the instrument on the test surface and apply light pressure;
- 3 The hardness value is displayed directly on the console.

Operating principle



TKX Light does not operate on a rebound principle but uses a static load, thus ensuring a true measurement of material indentation.

The instrument performs the hardness test in a few simple steps:

- 1 Idle condition – The indenter tip (A) is retracted from the reference position.
- 2 Clamping of the test piece – Once the probe is positioned on the test surface, the component is preliminarily secured via the base (c) to ensure proper seating and stabilization of the test specimen.
- 3 Preload application – By applying a slight force on the probe, the diamond indenter (A) comes into contact with the test piece. The preload force (F_1) is thus applied.
- 4 Test load application – The instrument applies the test force (F_2), generating the indentation.
- 5 Hardness value reading – At the end of the test, the instrument—thanks to its electronics—determines the actual penetration depths “a” and “b”, unaffected by movements, deflections, or vibrations.

Management Software

- Ability to set test tolerance limits, as well as maximum and minimum values, with temperature monitoring
- Storage capacity of up to 3500 tests, thanks to the microprocessor-based control system, with the ability to generate statistical comparison reports
- The console can be directly connected to a computer via the RS232 interface or to a printer for data export and test report printing.
- Ease of use, lightweight design, and versatility are ensured by the instrument’s ergonomic design.

INSTRUMENT APPLICATION RANGE

SHORE D		0-100		Rigid and hard materials, synthetic materials, aluminum, acrylics, thermoplastics, printing rollers, etc.
HRA		20-88		Hardened steels, surface-hardened or thin sections. Carburized components and surface treatments.
HRC		20-70		For hardened steel, nitrided and carburized components, rollers, and tool steels.
HR30T		29-82		Same as HRG-B-E-F scales, for thinner sections.
HRB		20-100		For mild steel and non-ferrous metals.
HB5		15.9-109		For aluminum, soft aluminum, bronze, and brass.
HB10		31.8-218		Pure aluminum, copper, and brass.
HB30		95.5-653		For hardenable and hardened steels, heat-treated products, and deep-drawing strips.
HV1		4.90-2967		For all materials
HR15N		70-94		For hardened steel, nitrided and carburized components, rollers, and tool steels.
HR45N		20-77		Same as HRA, for thinner sections.
HR30N		42-86		Same as HRA, for thinner sections.
HK (Knoop)		355.7-3979		For non-ferrous metals, select the load according to the specimen thickness.
R-TENSILE MODULE N/mm ²		270-800		
HZA		0-250		

TECHNICAL DATA

OPERATING PRINCIPLE

Rockwell

APPLICATION RANGE

All types of metals

MINIMUM MEASURABLE THICKNESS

48.70 μm (0.002 in.)

TYPE OF MECHANICS

High-precision measurement with static load

INSTRUMENT RESOLUTION

0,1 HRC

INSTRUMENT REPEATABILITY

± 0.4 HRC

REFERENCE STANDARDS

DIN 50157-1 / DIN50157-2 / ASTM E110 / ASTM E3246

ELECTRONICS TYPE

16-bit microprocessor, interfaceable with external devices

TEST FUNCTIONS

Scales, timer with audible signal, tolerances, correction factor, statistics (average)

SYSTEM FUNCTIONS

Date/time, contrast, data transfer speed, backlight mode, integrated temperature sensor (range from -10°C to $+45^{\circ}\text{C}$), battery level, calibration

DISPLAY

Backlit 128×64 graphic LCD with user-friendly interface

RESULT STORAGE

Yes, up to 3500 tests organized into 10 folders

STATISTICAL FUNCTIONS

Yes

STATISTICAL DATA

Tolerance limits, maximum value, minimum value, average value, temperature, date, and time.

TEST REPORT PRINTING

Yes, with optional printer

BATTERY LIFE

8 hours of continuous operation

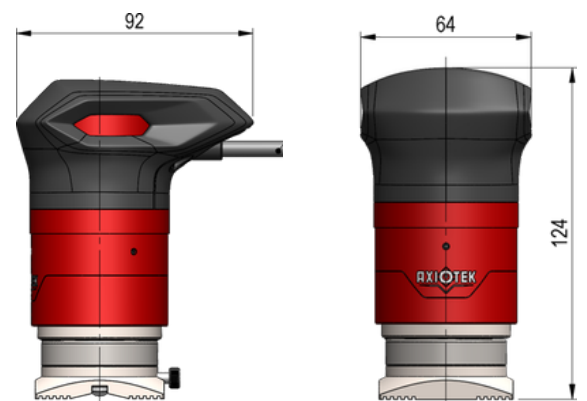
POWER SAVING

Yes, standby after 5 minutes of inactivity

POWER SUPPLY

7.2 V Battery

OVERALL DIMENSIONS



- Carrying case

1



Solid-machined base with a 120° V-support, enabling hardness testing on extrusions or components with helical surfaces (e.g., taps, drill screws), with diameters ranging from 10 to 110 mm.



Solid-machined base with 120° V-support, enabling hardness testing on round surfaces up to a maximum diameter of 200 mm.



Solid-machined base with three equidistant support points, enabling hardness testing on round components with diameters ranging from 200 mm up to 2000 mm.

Test report to have all test data readily available.

[illegible]

ONE INSTRUMENT, COUNTLESS
APPLICATIONS

Interchangeable Base

The support base is easily interchangeable, allowing it to adapt seamlessly to any geometry.



Sliding Portable support

Pair your TKX Light portable hardness tester with the convenient sliding support. **This allows you to achieve maximum repeatability and accuracy** in hardness testing, while minimizing operator influence during test execution.

This is ensured by the correct perpendicular alignment between the indenter and the test specimen, the uniform application of the test force, and the system that **controls the proper positioning of the support on the workbench.**

Application Range

A useful laboratory accessory for performing hardness tests on **small components with complex geometries.**

Thanks to the anvil kit, it is possible to perform tests on round, cylindrical, flat, and hollow components.

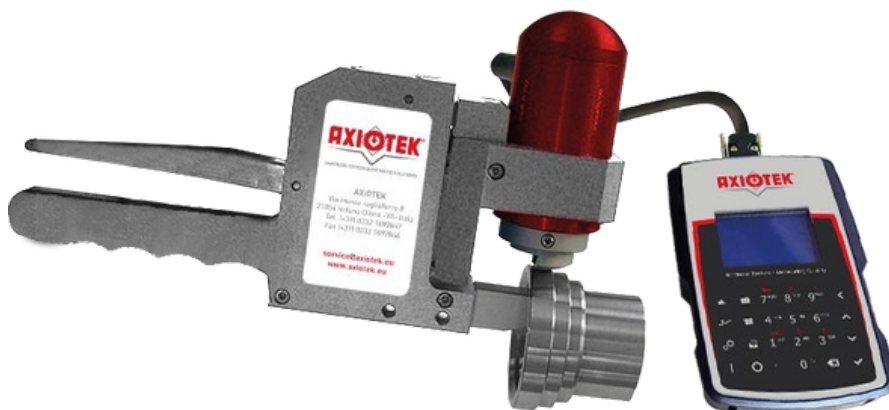
Clamp support

Practical and easy to handle, the clamp structure enables portable measurements on objects of any shape, especially those that are more difficult to test—such as spring wire.

For smaller components, a special anvil kit can be installed to facilitate test execution, **providing greater stability and improved ergonomics.**

How does it work?

- 1 Insert the measuring probe into the clamp cavity
- 2 Position the device on the specimen to be tested
- 3 Start the test cycle





Service & Maintenance

Designed around your needs

Our generational experience, based on over 60 years of field work, allows us to answer any question or concern you may have.

Our highly strategic location enables us to support the maintenance of your instrument efficiently, providing fully Made in Italy spare parts with fast delivery times.

Why choose us?

- ◉ We guarantee **100% Italian quality**
- ◉ **We believe in true innovation:** listening to your needs and designing a hardness tester that meets them
- ◉ **We promote empathetic design,** ensuring usability and seamless interaction with measuring instruments
- ◉ **We are pragmatic and results-oriented:** everything we design and manufacture is the result of years of research, study, and testing
- ◉ **We support you step by step,** offering guidance tailored to your application needs



OFFICES

Via Monte Tagliaferro 8,
21056 Induno Olona
(VA) - ITALY



PHONE

+39 0332 1892847



EMAIL

sales@axiotek.eu



WWW

www.axiotek.eu

AXIOTEK® is a registered trademark owned by Axiotek S.r.l. | AFFRI® is a registered trademark used under license. Axiotek S.r.l. designs and manufactures products bearing the AXIOTEK® and AFFRI® trademarks as an authorized manufacturer. This document is protected by copyright laws. Any reproduction, even in part, is prohibited without authorization. The information provided is for illustrative purposes only.