

High-end Vickers/Knoop testers ranging from HV0.005 to HV50

The Tukon 2100 tester is ideal for quality assurance, quality control, research and development and metallurgical departments. It can be used to monitor hardness during development, fabrication, heat treatment and the performance analysis of a variety of products and components.

The WILSON design team has used its rich experience to create the industry standard for accuracy and repeatability in hardness testing. The Series 2100 closed-loop control electronics system instantly measures and controls the force applied to the specimen, resulting in unmatched accuracy.

State-of-the art sensors and closed loop control technology combine to make the Tukon 2100 the most precise, consistent and accurate instrument for hardness testing. The system is built around precision force sensors and electromechanical drive systems to produce the most repeatable, error-free and accurate test results.

The Tukon 2100 has a five position turret that can be custom configured to meet your individual requirements and budget. Start off with the Tukon 2100 base frame and then build up your own tester by filling the five positions with additional load cells or objectives, or leave them empty and upgrade later. The Tukon 2100 is entirely modular and can be easily upgraded at your facility with most options.

Superior Test Control

Traditional hardness testing systems use 'open-loop' design, which lack the ability to measure and ensure that proper loading conditions have been achieved. The Tukon 2100 uses 'closed-loop' control technology to constantly measure and control the force applied to the sample. The dramatically improved accuracy and flexibility leads to a nearly unlimited selection of test loads and loading/ unloading rates for virtually any test condition imaginable.

Superior Accuracy

One of the many sources of inaccurate results is the improper application of the test force. Traditional systems have mechanical components that can wear over time, resulting in overshoot and higher than expected loads. The result is potentially, inaccurate hardness readings. The control system in the Tukon 2100 virtually eliminates overshoot through sophisticated algorithms that detect contact with the surface and anticipate the maximum desired test load.

Superior Repeatability

Accurate results depend on the ability to produce consistent, repeatable test conditions. The Tukon 2100 is in a class by itself in this category by virtue of the control it has over loading rate, dwell time and unloading rate.

Superior Productivity

Since the application and removal of the test loads are fully automatic, repeatability is excellent, testing time is reduced, and throughput is increased. As a result, costly and time consuming rework is eliminated. An optional multi-mount clamping fixture is also available for specialized applications to further increase the productivity and throughput of a Tukon 2100 microhardness test system. When used with DV-TESTOR computerised system, up to six mounts can be programmed to automatically indent and read individual hardness data in one continuous event. Utilizing its pre-set load and program features, the system will automatically indent at designated surface locations. Once the indent operation is complete, the automated image analysis function performs indentation readings along the traverse of each of the mounted samples. As a result, operator time is reduced to the set up of blocks and the recall of pre-programmed indent and measurement patterns, eliminating time associated with manual operation, leading to greater testing efficiency and productivity.



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Features

Indenter mounted directly on load cell - improves accuracy and repeatability of results

Exclusive turret design – choose from a selection of indenters, load cells and objectives to suit your application

Easy to use, adjustable, ergonomic, backlit user interface

Precision X-Y stage for precise positioning of samples

Test control panel with high speed jog, ultra fine focus and light control



Technical specs

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Model	2100 low load	2101 high load	2102 low & high load
Loadcell	10N	500N	10N & 500N
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.3, HV0.5, HV1	HV0.3, HV0.5, HV1, HV3, HV5, HV10, HV20, HV30, HV50	from HV0,01 to HV50
Test loads	10 - 25 - 50 - 100 - 200 300 - 500 - 1000gf	0.3 - 0.5- 1- 3 - 5 - 10 - 20 - 30 - 50kgf	from 10gf to 50kgf
Test force selection	Automatic		
Accuracy conform to	EN-ISO 6507, ASTM and JIS ±1.5% < 200g, ±1% > 200g		
Load control	Automatic (loading/dwell/unloading)		
Loading speed	Variable, user defined		
Load duration (Dwell time)	0,1 to 99 sec (ASTM E384 10 sec)		
Eyepiece	Dual line filar eyepiece with 10x Digital Encoder		
Resolution	0,03µm @ 500x		
Turret	5 position; Manual or Motorized rotating		
No. of objectives	4 objectives		3 objectives
Objectives	4x, 10x, 20x, 40x, 50x, 60x, 80x, 100x		
Total magnification	40x, 100x, 200x, 400x, 500x, 600x, 800x, 1000x		
Z-axis movement	Jogspeed 500mm per min & Fine Focus		
Optical path	2-way permanent : eyepiece/camera		
Light source	12V 30W Halogen lamp		
Light filter	Green, Blue, grey and Polarized		
Optical functions	Field aperture, numerical aperture (variable)		
Display	Length of diagonal, hardness converted value, test force N, kg		
Result display resolution	0,1HV or 0,1HK		
Hardness value	5-digit		
Diagonal length	4-digit (D1, D2)		
Memoy	1000 results		
Output	Adjustable bi-directional RS232C, I/O Port TTL		
Statistics	No., highest/lowest hardness, average, S.dev., range, real time after each test		
Conversion	Rockwell, Superficial Rockwell, Brinell, Tensile		
Maximum specimen height	101mm (4.0 inches)		
Depth from the centreline	165mm (6.5 inches)		
XY stage (optinal)	90 x 90mm (3.5in x 3.5in)		
Dimensions	25,4 x 25,4mm (1 inch)		
Travel range	0.025mm (0.001in)		
Minimum reading	Range: 10 to 38°C (50 to 100F)		
Operating temperature	10% to 90% non condensing		
Humidity	952mm, 330mm, 597mm (37.5in, 13.0in, 23.5in)		
Dimensions	68kg (105lbs)		
Weight	100-240V AC, 60/50Hz, 340 Watts		
Power supply			

