FOUNDRAX

The 2022 range of Robus bench-top Brinell hardness testers

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UKAS CALIBRATION

Foundrax Engineering Products Ltd

Foundrax.co.uk

Introducing the latest generation of our Robus bench-top Brinell hardness tester. Sleek design and field-proven mechanics combine in a machine of industry-leading reliability.

70 years of industrial pedigree stand behind this formidable hardness tester: as with every Foundrax machine it is built to give year after year of trouble-free service. Component reliability has been confirmed through bench trials of over 100,000 cycles.

This is a machine intended for the shop floor; not just the lab.

There is a x4 safety factor and virtually no hysteresis even under the full 3000kg load.
Force application is monitored 125 times per second and controlled using our proprietary algorithms (developed for the proven and highly successful Type B and Type D test heads - used across the Globe in the most demanding industrial conditions) to give potentially National Standard Calibration machine levels of accuracy and repeatability on a daily basis. Force application is smooth and reliability excellent throughout the force range, with no risk of overshoot or undershoot and no need for special adjustment.

The Robus is entirely designed and built by Foundrax in the UK.

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There are two models, the Robus B and the Robus D:

The Robus B is a rugged, state-of-the-art, indentation-only machine. It is designed for use with the customer's existing Brinell microscope and is equally at home on the shop floor or in the laboratory.

The Robus D offers identical capabilities to the Robus B *plus* a BRINtronic Brinell microscope (on a 1m, armoured cable) for automatic indentation measurement, offering supreme accuracy and convenience at a truly competitive price.

The Robus range beats the force accuracy requirements of the standards by up to ten times – better than 0.1% in most cases. To do this it uses load cells custom-designed for us for long life and accuracy – not off-the-shelf cells run over-force, just because it's cheaper, and over-stressed as a result.

Both models feature a simple, icon-driven, touch screen interface – operator training takes just a few minutes.

High accuracy and low uncertainty of measurement means you have more confidence in the quality of your results.

The Robus B maintains the best of its predecessor's field-proven components for optimum reliability, with an improved control system for even better repeatability and durability.

The Robus D incorporates an automatic Brinell measurement unit. This supremely accurate system significantly exceeds the requirements of the standards, and operator error is virtually eliminated. Indentation measurement (reporting to 4 decimal places) takes a matter of seconds.

BRINtronic automatic Brinell microscope

The integrated BRINtronic featured in the Robus D offers internal image analysis, diameter measurement and hardness calculation from an external modular microscope on a 1 metre, armoured, power and data cable. The microscope unit is suitable for indentations made either with 5mm or 10mm indenters or with 2.5 or 5mm indenters. Each microscope has a unique internal identification, allowing the Robus D to automatically select the calibration data appropriate to whichever microscope is fitted.

The BRINtronic system

On the shop floor or in the laboratory, the measurement of the indentation is the key to reliable results. Almost 40 years of experience of automatic measurement has refined an algorithm that makes hundreds of accurate indentation diameter measurements every time on surfaces with only minimal preparation. Quicker surface preparation means lower costs and higher productivity.

The BRINtronic system features a simple, intuitive, icon-driven interface and is quick to move between test screens, batches and alternative test parameters. It will automatically evaluate the quality of the surface preparation and warn the user if it is not good enough (although this is very unusual). It can summarise the batch reports with or without individual test results, including displaying the batch size, batch mean, standard deviation and the number of high and low rejects. The system is fully networkable and can communicate with a remote computer and upload / download batch data.

The BRINtronic demonstrably finds the indentation more effectively and the edge more reliably than any other automatic Brinell microscope. It recognises and ignores noise from grinding marks across all normal industrial test surfaces; you don't need to worry about alignment of the grinding marks for reliable results. It can measure on all normal surfaces so you can use normal reference blocks (no need for special ones) and it requires only about four seconds of surface preparation with a hand grinder.

Comprehensive software traps protect you from false results. The BRINtronic will warn the operator if there is an issue and will refuse to publish a result on those exceptionally rare occasions where there is significant doubt – ensuring *all* measurements you record are reliable and providing unparalleled confidence to both you and your customers.

No adjustment so no risk of error and no frequent reverification

The BRINtronic gives a level of accuracy, reliability and repeatability of results that is the industry benchmark and requires only annual reverification. Removing any need for the operator to make adjustments to the type of illumination (for example switching between ring light illumination and overhead lighting) eliminates the risk of incorrect measurements as a result of setup error and thus the requirement for frequent reverification in order to meet The Standards.

The BRINtronic will do all this without any adjustments to lighting or changes of lens

The software features numerous traps and self-checks in order to ensure that the measurements it uses to define the indentation are validated in a number of independent ways. The principle behind the design is that the system gives you the right answer or no answer and that, in the very rare event of doubt, the answer is either withheld or the operator is clearly warned (for example if the measurement is attempted on an unprepared surface) and even then the result should only vary by one or two points from the optimum. The BRINtronic optically measures the indentation under the toughest industrial conditions and the user-friendly software gives the operator warnings if any parameters are in doubt.

The advantages and benefits of the BRINtronic system

- Very low uncertainty of measurement gives high confidence — reliable, accurate, repeatable results
- Works as well on rough surfaces as mirror finishes
- Operator-independent results, whoever is operating, and no operator adjustments required
- Quick changeover between batches and parameters
- Surface preparation evaluation and warning (if required)
- Ovality detection in accordance with user-defined parameters
- Displays results in HBW and mm instantly
- Provides results to 2 decimal places (HBW) and four decimal places (mm) as well as batch mean, standard deviation
- Batch summary reports (batch size, batch mean, standard deviation, number of high and low rejects) with or without individual test results
- Multi-language user interface
- Single tests or tests in batches
- Uses up to 600 diameters to calculate the mean — even in the worst cases it will still use approximately 50.
- Will refuse to give an answer if insufficient diameters can be measured
- Detects and highlights ovality as required by ASTM E10-18
- Measures indentations from 0.6mm to 6mm
- Software traps prevent incorrect results—an accurate result or no result
- Upload results live to network, set up batches for operator selection remotely
- Cutomise your batch parameters and reports
- Easily integrated into production quality control systems
- Measures indentations made on all materials to which the standards are relevant
- Simple icon-driven software
- Tailored support—special requirements are easily catered for
- UKAS certified to ISO 6506-2: 2018 and ASTM E10-18

Specifications

Test height:	320mm
Throat:	140mm
Nett weight:	140Kg approximately (D and B models)
Electrical supply:	100-240V AC 50-60Hz single phase
Standard equipment:	10mm , 5mm and 2.5mm indenters as required
Testing table:	160mm diameter

Available HBW test scales

HBW 10/3000	HBW 5/750	HBW 2.5/187.5
HBW 10/1500	HBW 5/250	HBW 2.5/62.5
HBW 10/1000	HBW 5/125	
HBW 10/500		
HBW 10/250		
HBW 10/100		

All specifications correct at the time of publication. Foundrax Engineering Products reserves the right to change machine specifications without notice.

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Foundrax hardness calibration blocks

All supplied with UKAS certificates of calibration

Foundrax have been making hardness reference blocks for longer than any other UK manufacturer. We offer a wide range of Brinell and Rockwell blocks and were the first to achieve UKAS accreditation for Brinell blocks.

We continue to invest in our block production capabilities and remain at the forefront for quality and value.

Blocks exceed the requirements of BS EN ISO 6506 / ISO 6508 and ASTM E10 / E18-20 as appropriate.

- Brinell blocks feature mirror finish for easy indentation.
- Rockwell blocks are available in standard and premium ranges.
- Custom grid, standard grid or no grid options.
- Extremely accurate manufacturing capability gives high confidence in results.

Contact Us

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Foundrax was established in 1948 and is the only company in the world to truly specialise in Brinell hardness testing equipment and accessories. We invented commercial automatic Brinell measurement and were the first company to be officially recognised for the manufacture of Brinell Reference Blocks in the UK. We have manufactured several National Standard Calibration machines and production machines which have performed tens of millions of tests (over 30 million in one case). Our equipment is used in 46 countries around the world and 94% of our customers say they would recommend us.

The Foundrax range includes everything from reference blocks, portable Brinell hardness testers and National Hardness Standard Calibration Machines through to heavy duty, fully automatic production machines which operate 24/7.

Not only is our equipment used in several National Metrological Institutes providing National hardness standards, but it is also found in steelworks, foundries, forges and heat treatment plants around the world and in many other industries besides.

UKAS accredited

Supporting the Brinell test globally for 60 years

Innovators and specialists

Custom designed machinery

Field-proven durability

Laboratory precision under steelworks conditions