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FOUNDRAX

Fast, accurate Brinell hardness testing
Production Brinell hardness testing machines
Sentinel, Helios and BRINscan ranges
2025



Foundrax Engineering Products Ltd
Foundrax.co.uk

Welcome to Foundrax

Foundrax offers the highest performance Brinell hardness measurement equipment in the industry; built to thrive in the toughest of industrial production environments. As Brinell test innovators and specialists, we have been meeting our customers' requirements for over 70 years.

The Foundrax Brinell hardness testing range encompasses everything from the smallest accessories to very large, custom-designed machines incorporating the latest version of our revolutionary, automatic, optical Brinell measurement system – the BRINtronic.

For many years we have worked with both national and international bodies, including several primary national laboratories, the British Standards Institution and the International Standards Organisation to advance best practice in metal hardness testing.

The BRINscan, the new Sentinel and the Helios ranges are designed by people who understand your working environment, whether it's a foundry, forge, steelworks, heat-treatment plant or laboratory.

The machines feature heavy-duty construction for optimum reliability, safety and durability. The internal components of the test heads are rated at over 4x factor of safety and most of the body of the BRINscan range is fabricated from 25mm plate. The load cell is custom-designed for Brinell hardness testing and is rated for over 10 million cycles.

We regularly custom-design complex, multi-functional machines around specific components and requirements.

All design, development and manufacturing takes place at our Somerset head office.

The Helios range of production Brinell hardness testers

The Helios range was launched in 2022; designed and engineered to enhance productivity for both in-line and off-line testing of materials. Encompassing the durability, accuracy and repeatability of Foundrax's classic 400 series, with uprated components and software in a re-engineered body, the Helios machines are the ideal choice for general industrial Brinell hardness testing. Power is 110v / 240v.

There are two models in the range – the Helios B and the Helios D. Both machines are fabricated from 12mm steel plate for rigidity and strength. The Helios D features all the above plus an integral, automatic BRINtronic microscope for instant, reliable, repeatable measurement and recording of the results. This ensures that Brinell hardness testing can be achieved quickly and accurately with no operator influence on either the test process or the recording of the results. Both models are available with a powered lead screw for applications where the test components are heavy or high rates of testing are required. The lead screw is anchored to the throat of the machine by a slideway to protect it from accidental damage that could occur due to poor jiggling or incorrect loading of the component.



The NEW Sentinel production Brinell hardness tester

The Sentinel, new for 2024, was designed to offer enhanced robustness and a **fixed anvil and moving test head** to organisations with a significant testing workload, but not one which would necessitate an investment in our ultra-heavy-duty BRINscan. The moving head eliminates the need to manually raise and lower the anvil and the head applies a clamping force, greater than the test load itself, to eliminate any possibility of component movement. The moving head design also allows the incorporation of a conveyor; enabling very heavy and/or unwieldy components to be moved into test position with greatly reduced risk to operators.

The Sentinel is fitted with our Type D, optical test head and industry-leading BRINtronic automatic measurement system as standard. Operator influence is completely removed from the measurement and recording of results, which are obtained instantly.

Apart from the test head and BRINtronic system, which have been field-proven World-wide over the past forty years, the machine was designed 'from the ground up' and features a completely new frame and enhanced firmware. Foundrax's seven decades of accumulated expertise in Brinell testing have informed the design of a machine that will produce accurate, repeatable results, in the rigorous environment of a typical foundry, for many years.



Sentinel Brinell tester with custom-made conveyor (in this case for heavy tubing).

The BRINscan range of heavy-duty inline / offline production Brinell hardness testers

The latest BRINscan model, the MkV, features either the Type B or Type D closed-loop test head and offers heavy duty, rugged reliability with the option of multiple test forces.

The BRINscan was conceived for the most extreme workloads so, for optimum durability, the test force is transferred vertically through the frame, avoiding such force acting through a moment.

The BRINscan range is used in steelworks all over the world and is proven to offer incomparable levels of reliability. Most of the machine body is fabricated from heavy-duty steel plate 25mm thick and will withstand the type of accident that could only happen in a steelworks: One example of the BRINscan was hit by a fork-lift truck and shunted over three metres and through a brick wall but was still in calibration when examined by our engineers.

The latest generation of the BRINscan range, the Mk V, offers fully automatic indentation measurement and recording of test results and is built for the toughest of heavy-duty industrial applications



The machines are designed to clamp the test component with a force greater than the test force, to ensure there is no possibility of movement during the indentation cycle. When working in HBW 10/3000 the clamp force is approximately 3500 Kgf. The test table itself can easily withstand well over 10 tonnes. The machines exceed the requirements of ISO-6506 and ASTM E10 with the Type B and Type D test heads offering near National Standard levels of accuracy and repeatability of force application.

Incredible durability...an extreme case study

This BRINscan Mk III tested every link in every tank track used by the British Army over a 35-year period, with only one breakdown, ever, clocking-up over 30,000,000 cycles. The machine was still working flawlessly when 'retired' as a precaution.



Applications

- In-line testing
- Fully automatic testing without operator intervention
- High-volume, high-speed testing

Features

- Integral automatic BRINtronic microscope for instant, reliable, repeatable results (Type D test head only) that exceeds all international Standards.
- Fixed test table that can support components weighing up to 10 tonnes.
- Independent systems for clamping and indenting so the test force is not influenced by the clamping force.
- 3500kg clamping force through an overhead actuation system ensures no movement of the test component (the clamping system has been field-proven over more than 30 million test cycles).
- ISO 6506 and ASTM E-10 compliant indentation and measurement.
- Unrivalled build-quality; fabricated from 25mm steel plate for rigidity and strength.
- Test forces from HBW 2.5/187.5 to 10/3000.
- Optional Type B or Type D test head.

Benefits

- Fully automatic system gives total independence from operator influence.
- Ultra-rugged; designed for the most arduous production environments.
- Automation enables high-throughput testing.
- Easy to integrate into an automatic line.
- Designed with over six decades of Foundrax Brinell-testing experience and expertise.

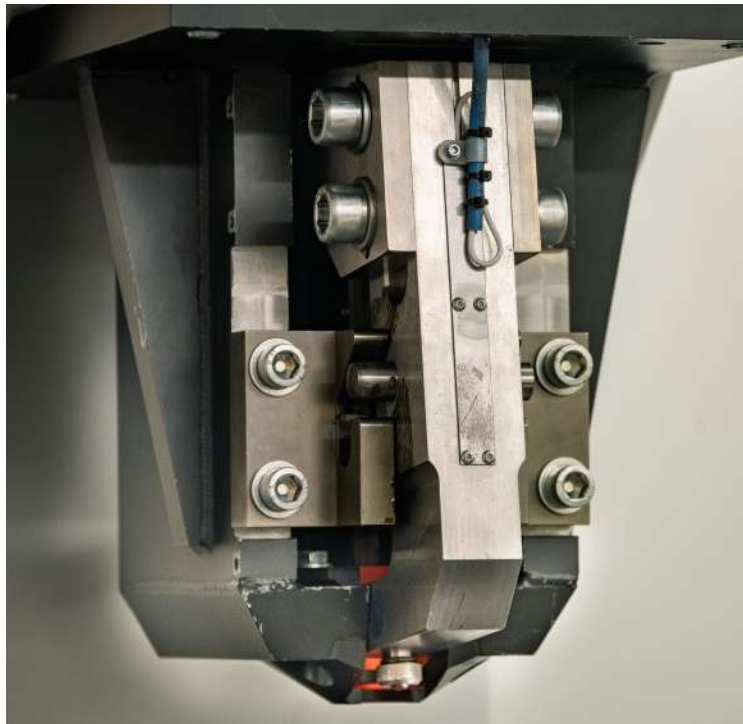
Electrical supply

- 400V AC 50Hz 3 phase + Neutral + Earth 16A max (we can match your plant supply by agreement)

The Foundrax test head - built for millions of test cycles

Foundrax developed its production test heads in the 1980s. Referred to as Type B and Type D, they are capable of performing millions of cycles without breakdown and their zero-compromise design offers 4 x factor of safety. The Type D head incorporates the BRINtronic automatic optical measurement system that revolutionised Brinell testing (see later).

The load cell is purpose-built for the forces involved in Brinell testing. It is not an off-the-shelf model run at excess load.



This test head has performed approximately 300,000 cycles in a UK engineering company. The cover has been removed to show the robust construction.

The BRINtronic system

On the shop floor or in the laboratory, the measurement of the indentation is the key to reliable results. Over 40 years of experience of automatic measurement has refined a proprietary algorithm that makes hundreds of accurate indentation diameter measurements 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 so you don't need to worry about alignment of the grinding marks for reliable results. As it can measure on all normal surfaces, standard reference blocks are all that is needed and the surface preparation required on test materials takes just five seconds of work 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.

Benefits and advantages of the BRINtronic system

- Very low uncertainty of measurement gives reliable, accurate, repeatable results
- Works as well on rough surfaces as on 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)
- Displays results in HBW and mm instantly
- Provides results to 2 decimal places (HBW) and two or four decimal places (mm) as well as batch mean, standard deviation
- Offers 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 batch testing and results can be uploaded live to network for remote selection
- Measures up to 600 diameters to calculate mean — 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 E10-23 and in accordance with user-defined parameters
- Measures indentations from 0.6mm to 6mm
- Software traps prevent incorrect results—an accurate result or no result
- Offers customised 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
- Certified to ISO 6506-2: 2018 and ASTM E10-23 by our UKAS-accredited laboratory

The BRINtronic system is available as a portable stand-alone unit. The latest version, the NEO, is the most compact and lightweight of the range but with a microscope every bit as rugged as its predecessors.



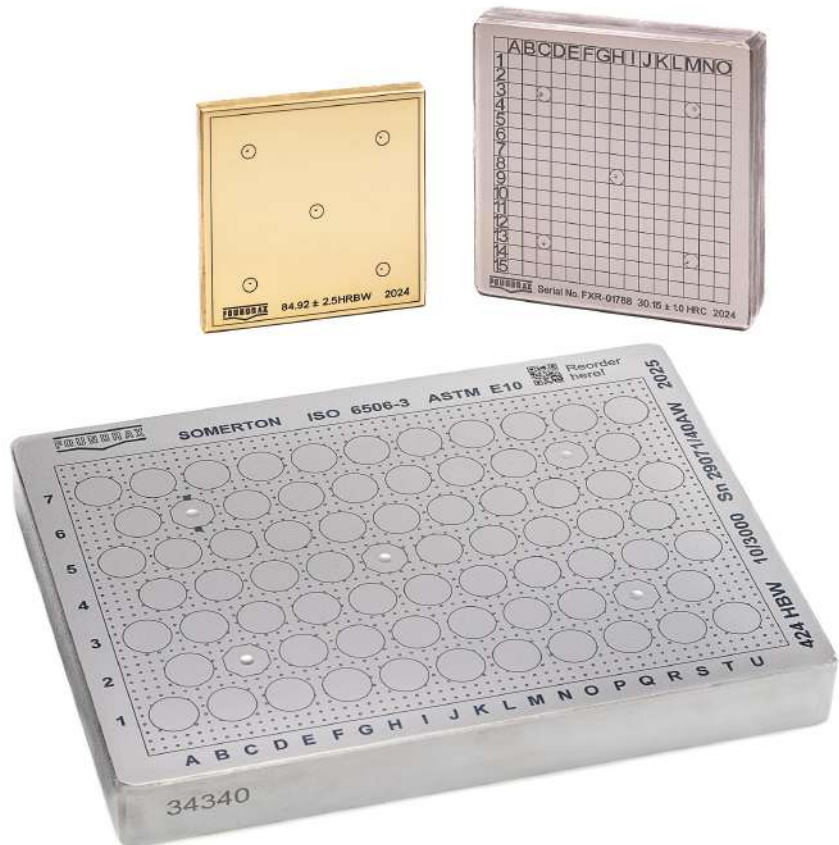
Foundrax hardness calibration blocks

All supplied with certificates of calibration

Foundrax has 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 as appropriate.



- Brinell blocks feature mirror finish for easy indentation.
- Rockwell blocks have mirror finish as standard or surface ground finish to special order.
- 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.

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 nearly 70 years



Innovators and
specialists



Custom designed
machinery

Field-proven durability

Laboratory precision under
steelworks conditions

