



Precision



**Automatic Brinell
Hardness Tester**
PMI-3000A

**Electric Brinell
Hardness Tester**
PMI-KB-3000E

Precision Measuring Instruments Co.



Automatic Brinell Hardness Tester PMI-3000A

The Brinell hardness testing creates the largest indentation comparing all other hardness testing methods. It is able to reflect the comprehensive features of the material, and is unaffected by the micro structure and inhomogeneous of the specimen. So it is with high precision and widely used in industry such as metallurgy, forging, casting, unhardened steel and nonferrous metals, as well as in the laboratories, universities, and scientific research institutes.

PMI-3000A Tester conforms to:

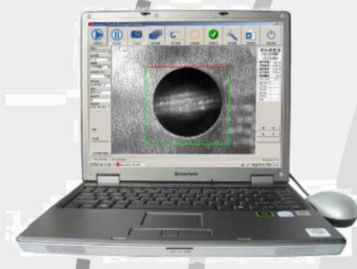
- ISO6506 Metallic Materials-Brinell Hardness Test
- ASTM E-10 Test Method for Brinell Hardness of Metallic Materials



Scheme 1
Connect to desktop PC

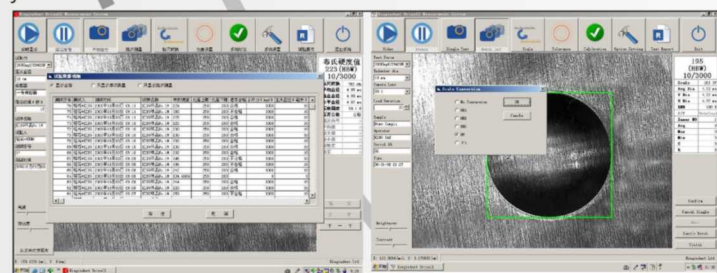
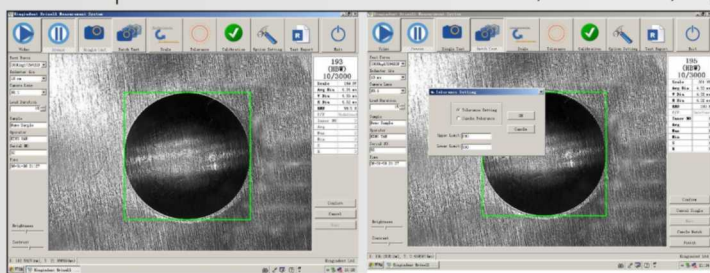


Scheme 2
Connect to laptop PC



Specification:

- Innovative closed-loop technology. The tester incorporates the latest load cell technology. The test load is applied via a closed-loop control unit with a load cell, a DC motor and an electronic measurement and control unit. The result is highly accurate measurements at all test loads up to 0.5%. The common load overshoot or undershoot as known from traditional dead weight, or open-loop, systems is eliminated. The absence of mechanical weights not only eliminates friction problems but also makes the equipment less sensitive to misalignments caused by vibrations.
- The whole weight of the tester is 50% less than the traditional dead weights type tester.
- Test load selection by keyboard and LCD screen. No need of handling heavy weights or cleaning the messy oil.
- Fully automatic test cycles. The hardness Tester features a fully automatic test cycle, load application, holding, unloading, is performed fully automatically. This greatly improves reproducibility of test results since operator influence is eliminated.
- Selectable dwell times by screen. The indenter, load, and other test information are showing clearly on the large LCD screen.
- The directions for 0.102F/D2 ratios selecting according to the materials and hardness range can be showing on the screen.
- Equipped with the special Brinell indentation measure system which can measure the Brinell indentation accurately, quickly, reliably. It is a new measuring method by using CCD camera to capture the indentation image, instead of reading diameter from optical microscope by operator then calculating the test value.
- The PMI-3000A tester can connect any PC with USB port and running the SPC software, then the special software supplying simplest operation as following.
- Both single testing and batch testing mode are available.
- Tolerance setting, distinguishing and alarming
- Statistics values such as Max, Min, Avg, R and S are available
- Convert test result to other scales, such as HRC, HRB, HRA, HV, etc
- All test results and indentation images are saved automatically
- Software update freely
- Test report created in Microsoft EXCEL format, can be edit, copy, print as you will.



Electric Brinell Hardness Tester

PMI-3000E

The Brinell hardness testing creates the largest indentation comparing all other hardness testing methods. It is able to reflect the comprehensive features of the material, and is unaffected by the micro structure and inhomogeneous of the specimen. So it is with high precision and widely used in industry such as metallurgy, forging, casting, unhardened steel and nonferrous metals, as well as in the laboratories, universities, and scientific research institutes.

PMI-3000E Tester conforms to:

- ISO6506 Metallic Materials-Brinell Hardness Test
- ASTM E-10 Test Method for Brinell Hardness of Metallic Materials



Specification:

- Innovative closed-loop technology. The tester incorporates the latest load cell technology. The test load is applied via a closed-loop control unit with a load cell, a DC motor and an electronic measurement and control unit. The result is highly accurate measurements at all test loads up to 0.5%. The common load overshoot or undershoot as known from traditional dead weight, or open-loop, systems is eliminated. The absence of mechanical weights not only eliminates friction problems but also makes the equipment less sensitive to misalignments caused by vibrations.
- The whole weight of the tester is 50% less than the traditional dead weights type tester.
- Test load selection by keyboard and LCD screen. No need of handling heavy weights or cleaning the messy oil.
- Fully automatic test cycles. The hardness Tester features a fully automatic test cycle, load application, holding, unloading, is performed fully automatically. This greatly improves reproducibility of test results since operator influence is eliminated.
- Selectable dwell times by screen. The indenter, load, and other test information are showing clearly on the large LCD screen.
- The directions for 0.102F/D² ratios selecting according to the materials and hardness range can be showing on the screen.
- 20X Microscope with LED lighting source make the indentation more distinguishable and improving the measure accurate.

Standard configuration

Host machine	1
Standard block 125-350HBW10/3000	1
Standard block 125-350HBW10/1000	1
φ 10mm Tungsten Carbide Ball indenter	1
Mounting screws for indenter	1
Screwdriver for indenter mounting	1
Flat anvil	1
"V" shape anvil	1
20X microscope	1
Power supply wire	1
Dust cover	1

Optional accessories:

Standard blocks of other value
φ5mm Tungsten Carbide Ball indenter
φ2.5mm Tungsten Carbide Ball indenter
φ10mm Tungsten Carbide Ball
φ5mm Tungsten Carbide Ball
φ2.5mm Tungsten Carbide Ball

PMI-3000A

Technical data

Loads : 3000kgf (29400N), 1500Kgf (14700N), 1000Kgf (9800N), 750Kgf (7355N), 500Kgf (4900N), 250Kgf (2452N), 187.5Kgf (1839N), 125Kgf (1226N), 100Kgf (980N), 62.5Kgf (612.9N)

Load dwell duration: 2s~99s, can be set and stored

Tungsten Carbide Ball indenter: 10mm

Measuring range: 3.18HBW~658HBW

Accuracy of indentation measuring: $\pm 0.5\%$

Accuracy of Brinell Hardness Value:

Hardness Range(HBW)	Error (%)	Repeatability(%)
≤ 125	± 2.5	≤ 3.0
$125 < \text{HBWd} \leq 225$	± 2.0	≤ 2.5
> 225	± 1.5	≤ 2.0

Max measurable height: 200 mm

Max measurable depth: 140 mm

Dimensions: 530mm×260mm×750mm

Power supply: 220/110 V, 50/60 Hz, 4A

Weight: 120kg

Standard blocks: 125-350HBW10/3000, 125-350HBW10/1000

PMI-KB-3000E

Technical data

Loads : 3000kgf (29400N), 1500Kgf (14700N), 1000Kgf (9800N), 750Kgf (7355N), 500Kgf (4900N), 250Kgf (2452N), 187.5Kgf (1839N), 125Kgf (1226N), 100Kgf (980N), 62.5Kgf (612.9N)

Load dwell duration: 2s~99s, can be set and stored

Tungsten Carbide Ball indenter: 10mm,

Measuring range: 3.18HBW~658HBW

Magnification of the microscope: 20X

Resolution capability of the microscope: 0.005mm

Accuracy of Brinell Hardness Value:

Hardness Range(HBW)	Error (%)	Repeatability(%)
≤ 125	± 3.0	≤ 3.0
$125 < \text{HBWd} \leq 225$	± 2.5	≤ 2.5
> 225	± 2.0	≤ 2.0

Max measurable height: 230 mm

Max measurable depth: 140 mm

Dimensions: 530mm×260mm×750mm

Power supply: 220/110 V, 50/60 Hz, 4A

Weight: 120kg

Standard blocks: 125-350HBW10/3000, 125-350HBW10/1000



Precision Measuring Instruments Co.

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