

### Brinell Hardness Tester iBrin-410E



iBrin-410E adopts the motorized test force application without weights, and uses 0.5% accuracy compression sensor to feedback and the CPU control system to automatically compensate the test force lost during the testing.

The test force and dwell time can be directly set on the keyboard with reliable repeatability, precise reading and easy operation. It can work with Brinell image automatic measuring system.

#### Application range:

Suitable for cast iron, steel products, nonferrous metals and soft alloys etc. Also suitable for some non-metal materials such as rigid plastics and bakelite etc.

#### Technical Specification:

Model	iBrin-410E	
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N
Test Range	8-653HBW	
Hardness Reading	Check Hardness Table	
Microscope	20x Reading Microscope	
Resolution	5 $\mu$ m	
Dwell Time	0~60s	
Vertical Space	220mm	
Throat	135mm	
Power Supply	AC220V/50Hz/1Ph, AC110/60Hz/1Ph	
Execute Standard	ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2	
Dimension	545×235×755mm, Packing Dimension: 650×435×1025mm	
Weight	Net Weight: 130kg, Gross Weight: 160kg	

#### Packing List:

Name	Qty	Name	Qty
Instrument Main Body	1 set	20x Reading Microscope	1 pc
$\Phi$ 2.5mm, $\Phi$ 5mm, $\Phi$ 10mm Ball Indenter	each 1 pc	Large Plane Test Table	1 pc
Small Plane Test Table	1 pc	V-shaped Test Table	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Usage Instruction Manual	1 copy	Power Cable	1 pc
Anti-dust Cover	1 pc	Brinell Hardness Table	1 copy

### Digital Brinell Hardness Tester iBrin-411D



iBrin-411D adopts the motorized test force application without weights, and uses 0.5% accuracy compression sensor to feedback and the CPU control system to automatically compensate the test force lost during the testing.

With external digital measuring microscope, no need to check Brinell table nor inputting the diagonal of the indentation, directly show hardness value, test force, dwell time and indentation length on LCD.

As long as press the eyepiece button after measuring the indentation length, it can automatically get the hardness value and shows on the screen, with precise reading and easy operation.

#### Application range:

Suitable for cast iron, steel products, nonferrous metals and soft alloys etc. Also suitable for some nonmetal materials such as rigid plastics and bakelite etc.

#### Technical Specification:

Model		iBrin-411D
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf,
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N
Test Range		8 - 653HBW
Hardness Reading		LCD Display
Microscope		20x Digital Measuring Microscope
Resolution		1.25 $\mu$ m
Dwell Time		0~60s
Vertical Space		220mm
Throat		135mm
Power Supply		AC220V/50Hz/1Ph, AC110V/60Hz/1Ph
Execute Standard		ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2
Dimension		545×235×755mm, Packing Dimension: 650×435×1025mm
Weight		Net Weight: 130kg, Gross Weight: 160kg

#### Packing List:

Name	Qty	Name	Qty
Instrument Main Body	1 set	20X Digital Measuring Microscope	1 pc
$\Phi$ 2.5mm, $\Phi$ 5mm, $\Phi$ 10mm Ball Indenter	each 1 pc	Large Plane Test Table	1 pc
Small Plane Test Table	1 pc	V-shaped Test Table	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Fuse 2A	2 pcs	Power Cable	1 pc
Anti-dust Cover	1 pc	Usage Instruction Manual	1 copy

### Digital Brinell Hardness Tester iBrin-412C



iBrin-412C Digital Brinell hardness tester apply the load cell control system, with 0.5‰ accuracy compression sensor to feedback and the CPU control system automatically compensate the test force lost during the testing.

Indentation can be directly measured through digital measuring eyepiece, LCD shows the test force, indentation length, dwell time, test number, date and time on the large screen.

Press eyepiece button can automatically get the hardness value and shows on screen.

Test results can be saved for reviewing or be printed out by the built-in printer, and with RS232 interface for connecting to the computer.

Support optional video measuring device and CCD image automatic measuring system.

#### Application Range:

Suitable for cast iron, steel products, nonferrous metals and soft alloys etc. Also suitable for some nonmetal materials such as rigid plastics and bakelite etc.

#### Technical Specification:

Model		iBrin-412C
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N
Test Range		8~653HBW
Hardness Reading		LCD Display
Conversion Scale		HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N,
Data Output		Built-in Printer, RS232 Interface
Microscope		20x Digital Measuring Eyepiece
Resolution		1.25μm
Dwell Time		0~60s
Vertical Space		225mm
Throat		135mm
Power Supply		AC220V/50Hz/1Ph, AC110V/60Hz/1Ph
Execute Standard		ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2
Dimension		545×235×790mm, Packing Dimension: 650×435×1060mm
Weight		Net Weight: 130kg, Gross Weight: 160kg

#### Packing List:

Name	Qty	Name	Qty
Instrument Main Body	1 set	20x Digital Measuring Eyepiece	1 pc
Φ2.5mm, Φ5mm, Φ10mm Ball Indenter	each 1 pc	Large Plane Test Table	1 pc
Small Plane Test Table	1 pc	V-shaped Test Table	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Fuse 2A	2 pcs	Power Cable	1 pc
Anti-dust Cover	1 pc	Usage Instruction Manual	1 copy

### Efficient and Reliable Brinell Indentation Measurement System

iBrin-T1a/b Brinell Indentation Measurement System with advanced visual technology to shoot the indentation by CCD camera lens, recognizing and measuring the diameter of the indentation automatically on laptop, and show the Brinell hardness value of the workpiece on the display directly.

It is usually used on site together with Brinell hardness test equipment. Measurement process efficient, simple, and reliable.



#### Technical Parameters:

Resolution: 1024 x 768

Accuracy: ±1% HBW (HBW10/3000)

Hardness Range: 8 -650HBW

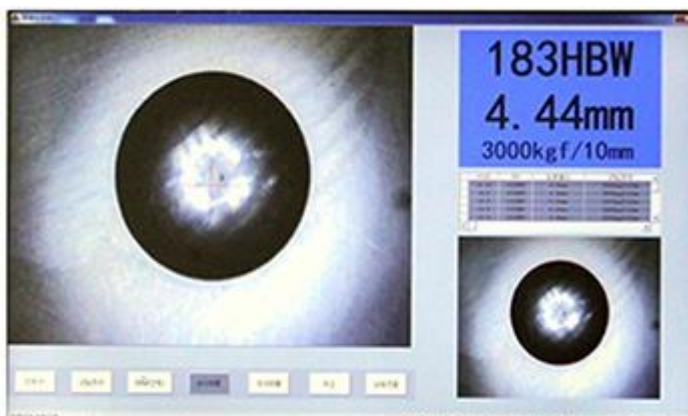
Field of View: 9.46 x 7.04mm (iBrin-T1a)  
4.73 x 3.52mm (iBrin-T1b)

#### Features of Brinell Indentation Measurement System:

- ▶ Excellent Image Processing technology, 100% recognition rate for indentations on various surface finishing.
- ▶ Manual and automatic recognition available, with manual rarely used.
- ▶ Clear and sharp image from special designed annular light source and high-grade lenses, contrast is fantastic.
- ▶ Magnets inlaid camera can stick on work piece, without support and easy to move.
- ▶ Simple users interface and easy to use.
- ▶ Historical data automatic saving, available for review.
- ▶ Works in combination with any Brinell hardness tester.

#### Models

- ▶ iBrin-T1a: for use with 10mm ball indenter, 3000/1000/500kgf test force, measuring range: 2.4-6mm
- ▶ iBrin-T1b: for use with 5 and 2.5mm ball indenter, 750/250/125/187.5/62.5kgf test force, measuring range: 0.6-3mm



Simple Operation Interface



Combination with Brinell Hardness Testers

### Automatic Turret Digital Brinell Hardness Tester iBrin-413Z



- 1, Motorized turret, installed 3 indenters (Dia 2.5mm, 5mm, 10mm) and 2 objectives (1X, 2X).
- 2, Pre-set the dwell time of test force and regulate the luminosity of light source;
- 3, Automatically display the testing indentation length, hardness value and testing numbers;
- 4, Support hardness Conversion;
- 5, Test results can be saved for reviewing or be printed out by the built-in printer, and with RS232 interface transfer to computer.
- 6, optional video measuring device and CCD image automatic measuring system.

#### Technical Specification:

Model		iBrin-413Z
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N
Test Range		3.18~653HBW
Loading Method		Automatic (Loading/Dwell/Unloading)
Hardness Reading		LCD Display
Conversion Scale		HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T,
Data Output		Built-in Printer, RS232 Interface
Turret		Automatic (Three Indenters, Two Objectives)
Objective		1X, 2X
Eyepiece		20X
Total Magnification		20X, 40X
Resolution		1.25 $\mu$ m, 0.625 $\mu$ m
Dwell Time		0~60s
Vertical Space		260mm
Throat		150mm
Power Supply		AC220V/50Hz/1Ph, AC110V/60Hz/1Ph
Execute Standard		ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2
Dimension		535×260×890mm, Packing Dimension: 820×460×1170mm
Weight		Net Weight: 150kg, Gross Weight: 180kg

#### Packing List:

Name	Qty	Name	Qty
Instrument Main Body	1 set	20× Digital Measuring Eyepiece	1 pc
1×, 2× Objective	each 1 pc	Φ2.5mm, Φ5mm, Φ10mm Ball Indenter	each 1 pc
Small Plane Test Table	1 pc	Large Plane Test Table	1 pc
V-shaped Test Table	1 pc	Power Cable	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Usage Instruction Manual	1 copy	Anti-dust Cover	1 pc

**Automatic Turret Brinell Hardness Tester iBrin-414T**

iBrin-414T Three indenters digital Brinell hardness tester adopts precise structure design and the load of test force is controlled by the sensor, which makes the whole structure compact and loading of test force stable and exact.

All the parameters can be showed and set on the touch screen with easy operation.

The test process is controlled by CPU, using automatic switching between the objective and the indenter.

The location of switching adopts mechanical and electronic double matching, makes the location precision more high.

The instrument has 10 steps test force and 13 kinds of Brinell testing scale for arbitrary selection; With three indenters and two objectives, all can be used for measurement, automatic recognition and shifting between the objectives and the indenter;

Pre-set the dwell time of test force and regulate the luminosity of light source; Automatically display the testing indentation length, hardness value and testing numbers; Conversion scales of different kinds of hardness;

Test results can be saved for checking or be printed out by the built-in printer, and with RS232 interface for connecting to the computer.

Available to install optional video measuring device and CCD image automatic measuring system.

**Application range:**

Suitable for cast iron, steel products, nonferrous metals and soft alloys etc. Also suitable for some nonmetal materials such as rigid plastics and bakelite etc.

**Technical Specification:**

Model	iBrin-414T	
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N
Test Range	3.18~653HBW	
Loading Method	Automatic (Loading/Dwell/Unloading)	
Hardness Reading	Touch Screen Display	
Conversion Scale	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T, HS	
Data Output	Built-in Printer, RS232 Interface	
Turret	Automatic Turret (Three Indenters, Two Objectives)	
Objective	1x, 2x	
Eyepiece	20x	
Total Magnification	20x, 40x	
Resolution	1.25 $\mu$ m, 0.625 $\mu$ m	
Dwell Time	0~60s	
Max. Height of Specimen	260mm	
Throat	150mm	
Power Supply	AC220V/50Hz/1Ph, AC110V/60Hz/1Ph	
Execute Standard	ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2	
Dimension	535×260×890mm, Packing Dimension: 820×460×1170mm	
Weight	Net Weight: 150kg, Gross Weight: 180kg	

**Packing List:**

Name	Qty	Name	Qty
Instrument Main Body	1 set	20x Digital Measuring Eyepiece	1 pc
1x, 2x Objective	each 1 pc	$\Phi$ 2.5mm, $\Phi$ 5mm, $\Phi$ 10mm Ball Indenter	each 1 pc
Small Plane Test Table	1 pc	Large Plane Test Table	1 pc
V-shaped Test Table	1 pc	Power Cable	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Fuse 2A	2 pcs	Anti-dust Cover	1 pc
Usage Instruction Manual	1 copy		



**Automatic Lifting Digital Brinell Hardness Tester iBrin-416A**

iBrin-416A equips with three indenters and 2 objective which adopts casting shell with strong rigidity and precise structure design, the load of test force is controlled by the sensor, which makes the whole structure compact and loading of test force stable and exact.

The test process is controlled by CPU, and apply motorized turret. The location of switching adopts mechanical and electronic double matching, makes the location more precision.

With built-in panel computer, it makes the parameter setting and results display directly, also avoids the stimulation and visual fatigue of the light source of the eyepiece, and reduces the measuring error.

After selected the scale, the instrument will automatically select the corresponding indenter and objective, it shows the clear image of the indentation and automatically measures, which realizes the fully automation of the Brinell test.

**Main Features:**

1. With 10 level test forces, 13 Brinell hardness scales, suitable for different kinds of metal materials;
2. With three indenters and two objectives, no need to change the indenters when testing different samples; with rigorous optical structure and high magnification, it makes the indentation observed clearly;
5. It adopts the integrated design of hardness tester and panel computer; With Windows 7 operating system, it has all functions of computer;
6. With CCD image measuring system, touch screen operating and displaying, it can preset the test force dwell time, adjust intensity of light source, show the indentation length, hardness value, test range and test number etc.;
7. The software has the function of calibration, manual fine tuning and set up and down limit etc., which ensures the accuracy of measurement;
8. Conversion scales of different kinds of hardness;



9. Test result can be saved as WORD or EXCEL report and can be printed out;

10. With USB port, VGA interface and network interface, it can connect to the internet and other devices for more optional functions.

**Application range:**

Suitable for cast iron, steel products, nonferrous metals and soft alloys etc. Also suitable for some nonmetal materials such as rigid plastics and bakelite etc.

**Technical Specification:**

Model	iBrin-416A		
Test Force	kgf	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf	
	N	612.9N, 980.7N, 1226N, 1839N, 2452N, 4903N, 7355N, 9807N, 14710N, 29420N	
Test Range	3.18~653HBW		
Loading Method	Automatic (Loading/Dwell/Unloading)		
Hardness Reading	Indentation Displaying and Automatic Measuring on Touch Screen		
Computer	CPU: Intel I3, Memory: 2G, SSD: 32G		
Conversion Scale	HV, HK, HRA, HRB, HRC, HRD, HRE, HRF, HRG, HRK, HR15N, HR30N, HR45N,		
Data Output	USB Port, VGA Interface, Network Interface		
Turret	Automatic Turret		
Objective	1x, 2x		
Total Magnification	20x, 40x		
Resolution	1.25μm, 0.625μm		
Dwell Time	0~95s		
Max. Height of Specimen	260mm		
Throat	150mm		
Power Supply	AC220V/50Hz/1Ph, AC110V/60Hz/1Ph		
Execute Standard	ISO 6506, ASTM E10-12, JIS Z2243, GB/T 231.2		
Dimension	600×330×890mm, Packing Dimension: 820×460×1170mm		
Weight	Net Weight: 150kg, Gross Weight: 180kg		

**Packing List:**

Name	Qty	Name	Qty
Instrument Main Body	1 set	1x, 2x Objective	each 1 pc
Φ2.5mm, Φ5mm, Φ10mm Ball Indenter	each 1 pc	Small Plane Test Table	1 pc
Large Plane Test Table	1 pc	V-shaped Test Table	1 pc
Fuse 2A	2 pcs	Power Cable	1 pc
Hardness Block 150~250 HBW 10/3000	1 pc	Hardness Block 150~250 HBW 5/750	1 pc
Inner Hexagon Spanner	1 pc	Anti-dust Cover	1 pc
Usage Instruction Manual	1 copy		

### Low Load Automatic Turret Digital Brinell Hardness Tester iBrin-417L



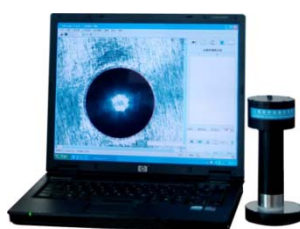
- iBrin-417L is a half automatic and intelligent Brinell hardness testing machine, it adopts the pressure sensor to replace the traditional quality weight, this innovative design makes the instrument more accurate;
- iBrin-417L selection of testing force and dwell time is controlled and monitored on the front panel, it is automatic during the process of loading, dwell and unloading;
- iBrin-417L adopts digital Brinell microscopes with adjustable LED illuminator, it doesn't need the operator to read the detail length of indentation, it only needs operator to aim the D1, D2 diagonal of indentation and press the length key twice above the Microscope, then the built-in computer can compute the Brinell scale and display the final testing result on LCD display automatically;
- iBrin-417L doesn't need the operator to read the detail diameter of indentation and check the Brinell testing table, it improves the testing speed and accuracy of hardness testing obviously.

**Standard Delivery:**

Instrument Main Body	Ø5mm Ball Indenter	Ø200mm Flat Anvil
10x Digital Microscope	Ø2.5mm Ball Indenter	Ø 40mm V-shape Anvil
Objectives 5x	Ø1mm Ball Indenter	Level Screw
Objectives 10x	Hardness Block HBW/30/1	Power Cable
Accessories Box	Hardness Block HBW/62.5/2.5	Instrument Manual



Brinell Indenters



Brinell Measuring Software



Hardness Blocks

**Technical Specifications:**

Model	iBrin-417L			
Testing Force	49.03N,61.29N,98.07N,153.2N,294.2N,306.5N,612.9N			
	5Kgf, 6.25Kgf, 10Kgf, 15.625Kgf, 30Kgf,31.25Kgf,62.5Kgf			
Testing Range	(8~650) HBW			
Loading Control	Automatic(loading, dwell, unloading)			
Lens & Indenter Switch	Auto-Turret			
Magnification of Objective	Observation:5x/10x & Measurement: 5x/10x			
Magnification of Eyepiece	10x Digital Eyepiece			
Measuring Range	0.6~1.5mm			
Resolution	0.5 $\mu$ m(5x) 0.25 $\mu$ m(10x)			
Dwell Time	0~95s			
Hardness Value	Manual Measuring, Auto reading;Auto Measuring Auto Reading			
Max of Height of Specimen	170mm			
Instrument Throat	130mm			
Power Supply	AC220V/50Hz; 110V/60Hz			
Instrument Dimension	535x225x580mm			
Gross/Net Weight	75kg / 50kg			
Execution Standard	ISO 6506, ASTM E10 – 12, JIS Z2243, GB/T 231			
<b>Accuracy of Brinell Hardness Testing</b>				
Hardness Range	Max. Tolerance		Repetition	
HBW $\leq$ 125	$\leq\pm 3.5\%$		$\leq 3.5\%$	
125 < HBW $\leq$ 225	$\leq\pm 2.5\%$		$\leq 3.0\%$	
HBW > 225	$\leq\pm 2.0\%$		$\leq 2.5\%$	
<b>Brinell Scales</b>				
Diameter of ball Indenter	Brinell Scales			
5mm	HBW5/62.5			
2.5mm	HBW2.5/62.5	HBW2.5/31.25	HBW2.5/15.625	HBW2.5/6.25
1mm	HBW1/30	HBW1/10	HBW1/5	