

## MS-2a BRINELL INDENTATION MEASUREMENT SYSTEM



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## 1. Technical Parameters

		10mm ball	5mm ball
Diameter Measurement	Testing Range	2.4–6mm	1.2–3mm
	Test Resolution	0.001mm	0.001mm
	Accuracy	± 0.4%	± 0.8%
	Repeatability	0.4%	0.6%
Hardness Measurement	Testing Range	16HBW–650HBW	16HBW–650HBW
	Accuracy	± 0.8%	± 1.6%
	Repeatability	0.8%	1.2%
Camera	Image Resolution	1600 × 1200	
	Field of View	8mm × 6mm	
	Dimension	Φ52x133mm(outer diameter x height)	
	Net Weight	385g	
Hardware Requirements	CPU: Basic frequency >2G (recommend)		
	Internal storage: Capacity >2G (recommend)		
System requirements	windows XP sp3 or windows7, Windows8, Windows 10		

## 2. Installation

Double click the “Indentation Measuring System.exe” (As shown in figure 1) Go to next step you will see the installation interface as shown in figure 2

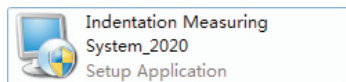


Figure 1: Installation Document

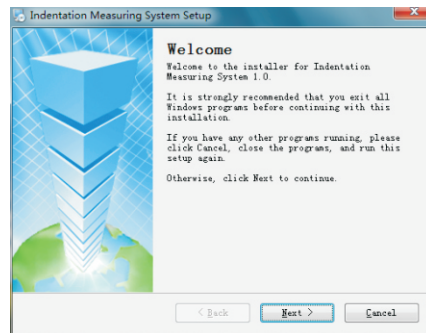


Figure 2: Installation Interface

And then go to next step you will see figure 3 installation interface

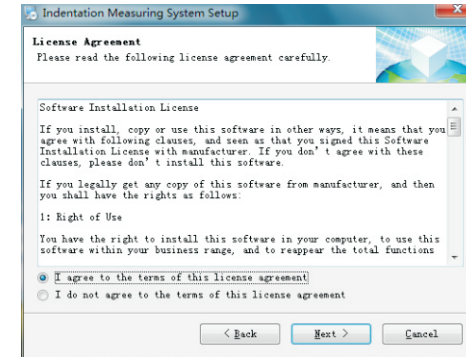


Figure 3: Installation Interface

Agree with the License Agreement, and always next step until there is a icon of Indentation Measuring System (as shown in figure 4). Installation complete.

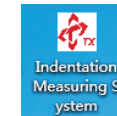


Figure 4: Installed exe. File

## 3. Operation Methods

First to insert the camera(dongle), and then double click the shortcut of “Indentation Measuring System.exe” to enter into this system.(as shown in figure 5)

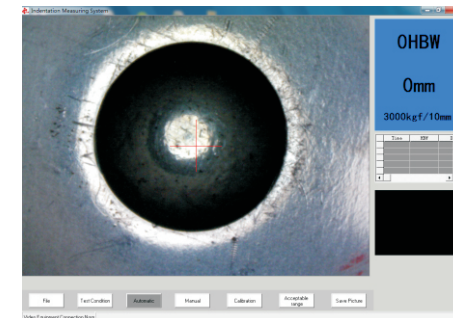


Figure 5: Software running interface

**Attention: It must choose the test condition for first using, otherwise it will affect the accuracy of the measurement result.**

### 3.1 Measurement

#### 3.1.1 Automatic Measurement:

If the “Automatic” button is in gray color (as shown in figure 5), the machine is under automatic measurement condition now. Otherwise, click this button to enter into automatic measurement status. Using the camera aims to the indentation (move the reticle near the aperture of the image), and then press the button on the camera, you will see the diameter of the indentation and the hardness value automatically on the right side of the screen (as shown in figure 6).

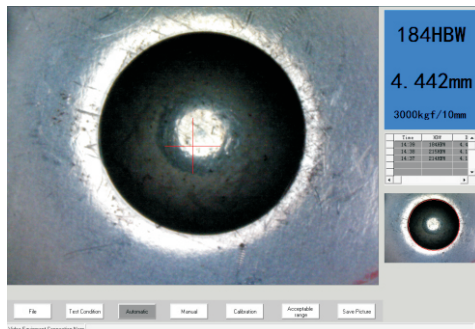


Figure 6: Automatic measurement result

#### 3.1.2 Manual Measurement:

If “manual” button shows “three points” or “four lines”, it is in manual measurement condition. If not, click “manual” button, choose “three points” or “four lines” in sub-menu to enter into it. Under “manual” condition, first press the button on the camera, the video will convert into an image. Mark three points or four lines on the image, the diameter of the indentation and measurement value will show automatically on the right of software. After finishing one time measurement, press the button again to back to next testing. (As shown in figure 7 and figure 8)

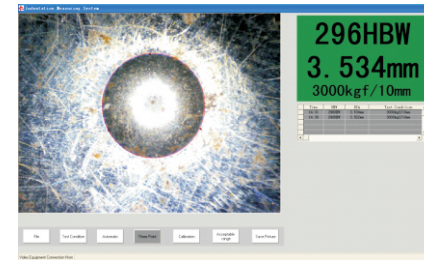


Figure 7: three points testing

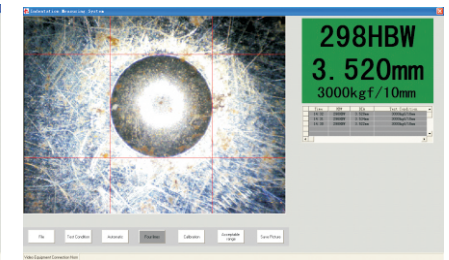


Figure 8: Four lines testing

### 3.2 Calibration

Click “calibration” button, the condition for both the diameter of the indentation and measurement value will change into gray color on the right of software. Changing the diameter of indentation or the hardness value can realize calibrate function. After calibration, click “finish” button. (As shown in figure 9)

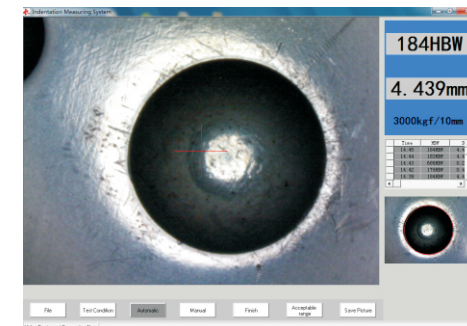


Figure 9: Calibration Interface

### 3.3 Acceptable range

The acceptable range can be set by user: If within acceptable range, the hardness value in green color (as shown in figure 10); If exceed it, in red color (as shown in figure 11); If not set acceptable range, the default value is in blue color (as shown in figure 12).

Setting method: click “acceptable range” button, fill into upper limit of acceptable range; and fill into lower limit of acceptable range; click “acceptable range” button again to finish setting.

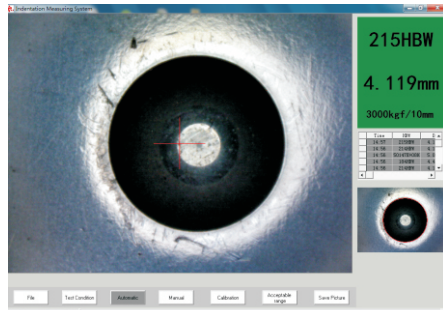


Figure 10: within acceptable range in green

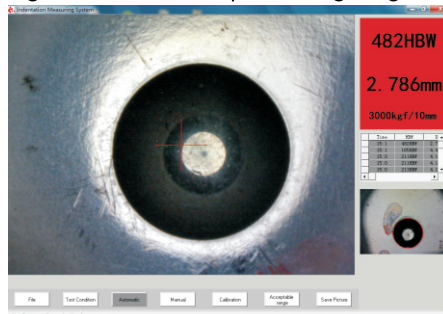


Figure 11: out of acceptable range in red

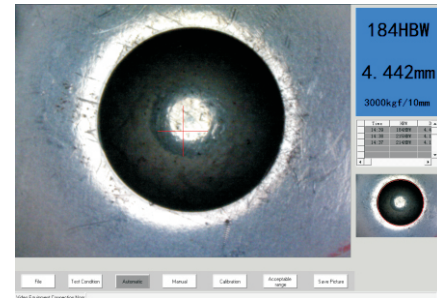


Figure 12: no acceptable range set in blue

### 3.4 Storage

It can store the testing value in the history data folder according to testing date. Please install excel in your computer in advance. (As shown in figure 13)

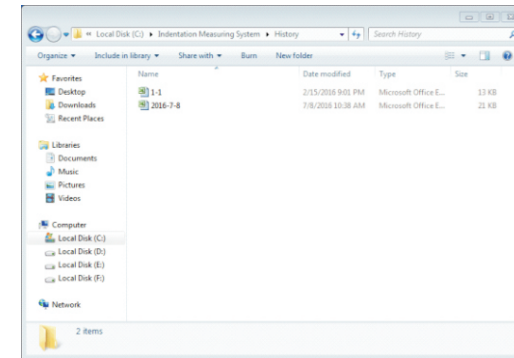


Figure 13: storage of testing result

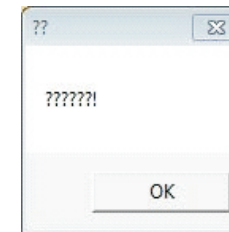
### 3.5 Save picture

If the image cannot be identified by this software, please click “save picture”

## 4. Some error hint and solution

4.1 Failure of reading the software (as shown in figure14).

If it shows this figure, please check if you insert the camera(dongle) rightly.



4.2 No video connection(as shown in figure 15).

If it shows this figure, please check if you connect the camera(dongle) rightly.

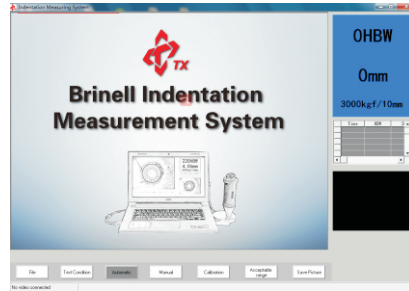


Figure 15: no video connection

## 5. Attention

5.1 Please disable the antivirus program when install or during using this software.

5.2 Please disable the local camera when using this software.

Method:

Click “My computer” — “property” — “device manager” — “vision facilities” — click “name of vision facilities(forbidden)” .

## 6. Standard assembly

Camera

Standard test block 2 pieces

Suitcase

Documents

## 7. Optional assembly

7.26mm ball indenter(**test condition**)

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