BRINELL HARDNESS · AUTOMATIC MEASUREMENT

See the indentation, read the hardness.

Point the camera at the indentation and press a button. Diameter, Brinell hardness, OK/NG judgment and even the report — all finished on a single PC beside the tester.

XTMeasure-HB 27 Brinell Hardness Automatic Measurement Software



Auto detect
Measures D1 and D2 along the real edge of the indentation

Manual measurement
Two line pairs or a 2-point circle, calculated live as you drag

Reports
Straight to Excel, PDF or Notepad

4 languages
한국어 · English · 日本語 · Español

WORKFLOW

Measure with one click, confirm with your eyes.

No complicated setup — just match the test conditions. The result found automatically is drawn on the image, so you can see at a glance that it is right.

01
Make the indentation
Make it on the tester as usual and point the camera at it. Image files work too.

02
Auto detect or manual
One click on Auto detect, or set the on-screen lines or circle to the edge of the indentation.

03
Results and report
Diameter, hardness, judgment and converted values appear and collect in the results table and statistics.

Auto detect
Finds the indentation from the image alone and fits an ellipse along its real edge — D1, D2 and the mean diameter in one go.

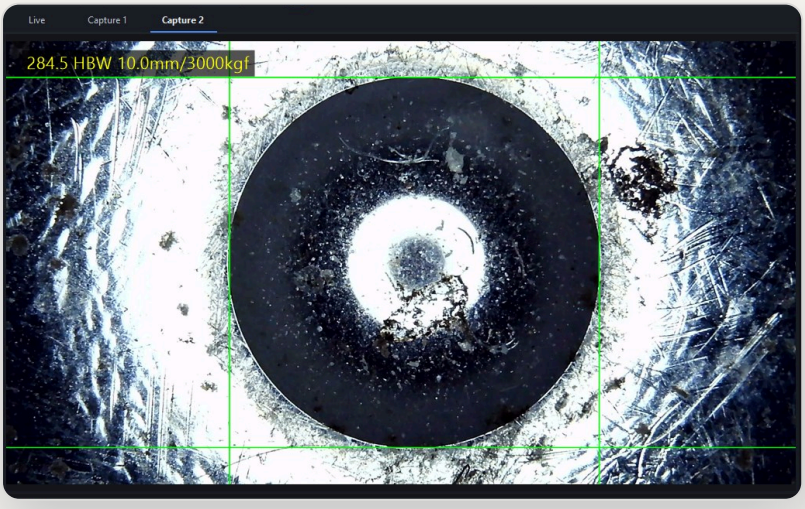
Manual measurement
Two vertical and horizontal line pairs, or a 2-point circle. Diameter and hardness change live as you drag.

Easy calibration
Enter the true diameter or the hardness of a reference block. Stored per camera, resolution, ball and force; new conditions inherit the previous value.

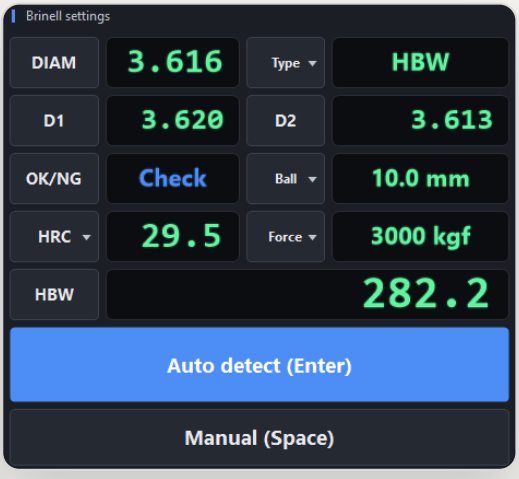
From image files, too
No camera needed: open PNG, JPG, BMP or TIF images and measure them the same way.

Judgment and conversion
Set an OK range for instant judgment. Values such as HRC come from conversion charts you can edit yourself.

Capture and annotation
Every measurement leaves an image with the result drawn on it, ready for annotations: text boxes, arrows, shapes, scale bars.



Capture tab after a manual measurement — result text and detection lines drawn on the image.

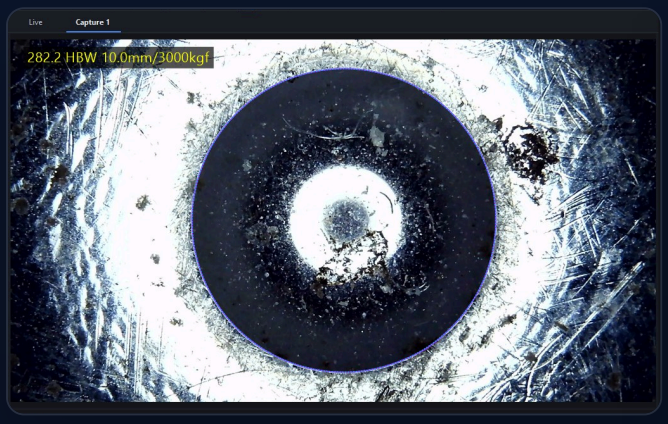


Brinell settings — diameter, D1·D2, hardness, judgment, test conditions

TWO WAYS TO MEASURE

Fast when automatic, precise when you look.

If the indentation is clear, use Auto detect; if it is blurred or deformed, set the lines yourself and check. The results of both methods collect in the same table and report.

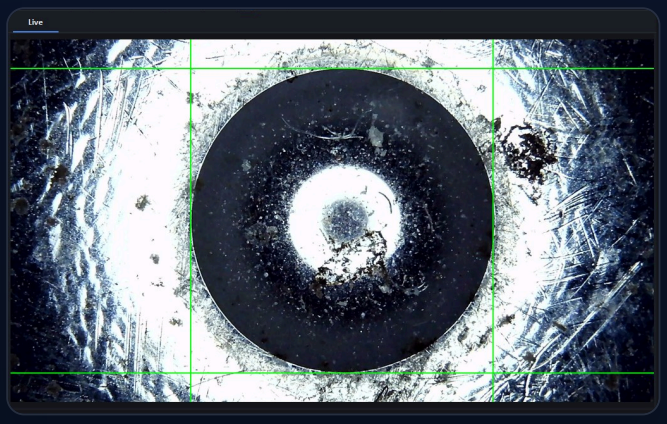


AUTO DETECT

Auto detect

One click (or Enter) finds the indentation and opens the image with the result drawn on it in a new tab.

- Purple solid line = real edge, blue dotted line = measured ellipse
- Where the two lines part, the indentation is deformed
- Set the size to look for with the search range



MANUAL

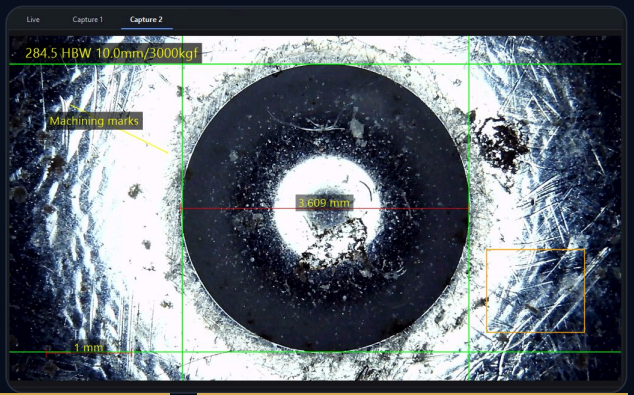
Manual measurement

Drag the two pairs of lines on screen to the edge of the indentation, and D1, D2 and hardness change live.

- Choose the lines input or the 2-point circle input
- Zoom in to set the edge precisely
- Check at the same position right after Auto detect

A record in every capture tab

Each measurement leaves an image with the result text and detection lines drawn on it in a new tab and saves it to a file automatically. Annotations such as text boxes, arrows, shapes and scale bars can go straight into the report.



Detection lines are locked

Lines drawn by the measurement cannot be selected or deleted, so they never drift from the result.

Result text is protected

The text can be moved and styled, but its content cannot be changed.

Your own annotations stay free

Select, move, rotate, change properties, delete — even undo.

CALIBRATION & ACCURACY

Numbers you can trust, built on the basics.

It follows the standard formula and the standard way of measuring the indentation, and calibration takes a single entry.

The indentation is not a perfect circle

The standards use the mean of two diameters at right angles, D1 and D2. XTMeasure-HB also fits an ellipse along the real edge in Auto detect to get D1 and D2, and measures them directly with a vertical and a horizontal line pair in manual measurement.

D1 · D2
Two diameters at right angles, measured separately

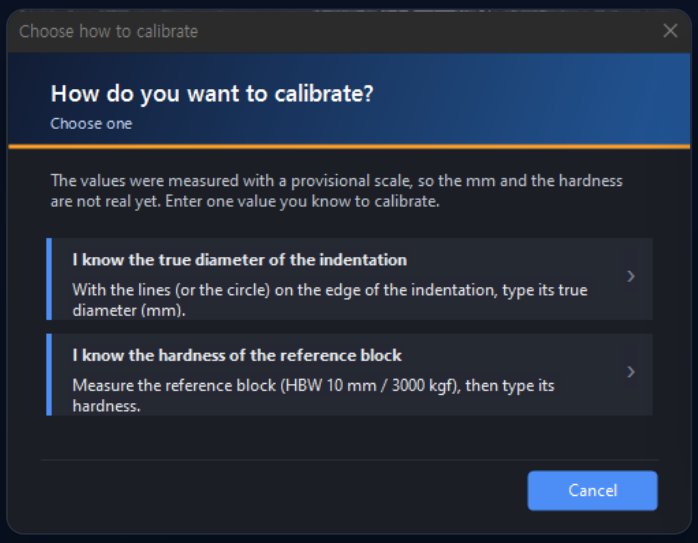
DIAM
Mean indentation diameter of the two

HBS / HBW
Brinell hardness calculated from the test conditions

OK / NG
Instant judgment against the range you set

Calibrate only when you need to

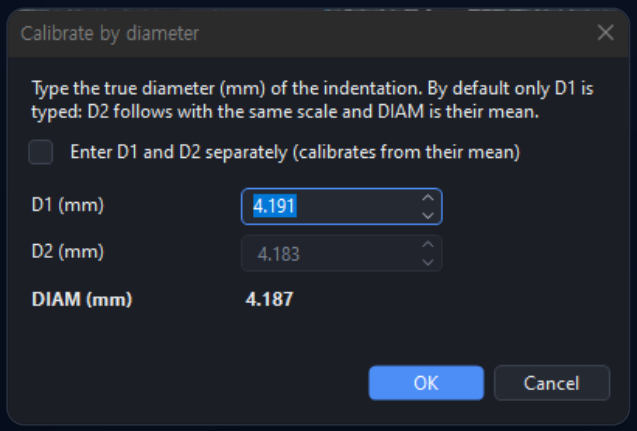
Measure right away on a provisional scale; those values are clearly marked 'Uncalibrated'. For real values, calibrate with one of two methods.



Choose how to calibrate

One entry

Enter the true diameter (mm) and the scale is set; results already measured on the provisional scale are recalculated with the new scale. Stored separately for each camera, resolution, ball size and test force.



Calibrate by diameter

STANDARD

ISO 6506-1 · ASTM E10 formulas followed

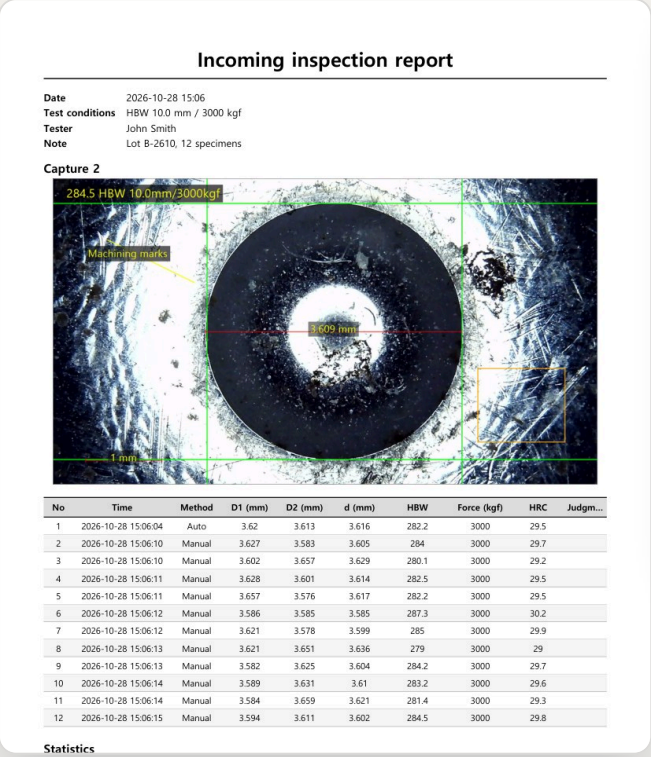
Brinell hardness is calculated from the test force, ball diameter and indentation diameter, and if the indentation diameter falls outside 0.24–0.6 of the ball diameter you are told to check the test force.

$$HB = 2F / (\pi D (D - \sqrt{(D^2 - d^2)}))$$

RESULTS & REPORT

Your measurements become the report as they are.

Results are organized in a table, statistics and a histogram, and you can export them to Excel or PDF in one go — with the tester, notes and images included.



Incoming inspection report

Date 2026-10-28 15:06
Test conditions HBW 10.0 mm / 3000 kgf
Tester John Smith
Note Lot B-2610, 12 specimens

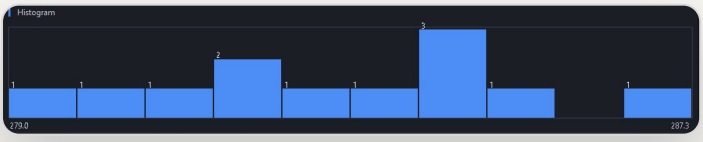
Capture 2

No	Time	Method	D1 (mm)	D2 (mm)	d (mm)	HBW	Force (kgf)	HRC	Judgm...
1	2026-10-28 15:06:04	Auto	3.62	3.613	3.616	282.2	3000	29.5	
2	2026-10-28 15:06:10	Manual	3.627	3.583	3.605	284	3000	29.7	
3	2026-10-28 15:06:10	Manual	3.602	3.657	3.629	280.1	3000	29.2	
4	2026-10-28 15:06:11	Manual	3.628	3.601	3.614	282.5	3000	29.5	
5	2026-10-28 15:06:11	Manual	3.657	3.576	3.617	282.2	3000	29.5	
6	2026-10-28 15:06:12	Manual	3.586	3.585	3.585	287.3	3000	30.2	
7	2026-10-28 15:06:12	Manual	3.621	3.578	3.599	285	3000	29.9	
8	2026-10-28 15:06:13	Manual	3.621	3.651	3.636	279	3000	29	
9	2026-10-28 15:06:13	Manual	3.582	3.625	3.604	284.2	3000	29.7	
10	2026-10-28 15:06:14	Manual	3.589	3.631	3.61	283.2	3000	29.6	
11	2026-10-28 15:06:14	Manual	3.584	3.659	3.621	281.4	3000	29.3	
12	2026-10-28 15:06:15	Manual	3.594	3.611	3.602	284.5	3000	29.8	

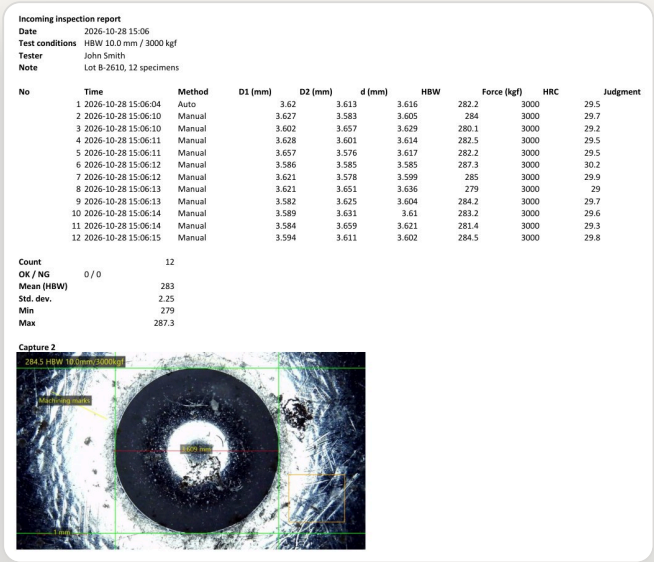
Statistics

PDF report

Images, results table, statistics and histogram in one document. With many result rows it continues over several pages with page numbers.



Histogram — the distribution of the values at a glance



Incoming inspection report
Date 2026-10-28 15:06
Test conditions HBW 10.0 mm / 3000 kgf
Tester John Smith
Note Lot B-2610, 12 specimens

No	Time	Method	D1 (mm)	D2 (mm)	d (mm)	HBW	Force (kgf)	HRC	Judgment
1	2026-10-28 15:06:04	Auto	3.62	3.613	3.616	282.2	3000	29.5	
2	2026-10-28 15:06:10	Manual	3.627	3.583	3.605	284	3000	29.7	
3	2026-10-28 15:06:10	Manual	3.602	3.657	3.629	280.1	3000	29.2	
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8	2026-10-28 15:06:13	Manual	3.621	3.651	3.636	279	3000	29	
9	2026-10-28 15:06:13	Manual	3.582	3.625	3.604	284.2	3000	29.7	
10	2026-10-28 15:06:14	Manual	3.589	3.631	3.61	283.2	3000	29.6	
11	2026-10-28 15:06:14	Manual	3.584	3.659	3.621	281.4	3000	29.3	
12	2026-10-28 15:06:15	Manual	3.594	3.611	3.602	284.5	3000	29.8	

Count 12
OK / NG 0 / 0
Mean (HBW) 283
Std. dev. 2.25
Min 279
Max 287.3

Capture 2

Excel report

Title, test conditions, results table and statistics as a sheet. Choose only the columns you need and edit as you like.

Results table	One row per measurement: method (auto/manual), diameter, hardness, force, converted value, judgment
Statistics	Count, OK/NG, mean, standard deviation, min, max, range
Conversion charts	Convert to other scales such as HRC. Add and edit charts yourself
Auto save	Captured images and reports are saved to date folders without asking

SYSTEM

Recommended OS	Windows 10 (64-bit) .NET Framework 4.8
Recommended PC	Intel Core2 2.8GHz or higher Memory 8GB or more
Display	1920 × 1080 or larger recommended
Connection	USB 2.0 or higher (USB 3.0 recommended)

CAMERA & IMAGE

Camera	Windows standard (WDM) USB camera e.g. 6.3 megapixel D630
Resolution	Around 1920 × 1080 recommended Choose a size the camera supports
Image files	PNG, JPG, BMP, TIF
Image saving	PNG, JPG, BMP

MEASUREMENT

Method	Auto detect · Manual measurement (lines / 2-point circle)
Test conditions	HBS (steel ball) · HBW (tungsten carbide ball) Ball 10 · 5 · 2.5 · 2 · 1 mm, standard forces or your own
Results	D1 · D2 · DIAM · hardness · converted value · OK/NG
Conversion	Conversion charts (HRC etc.), add and edit

OUTPUT & LICENSE

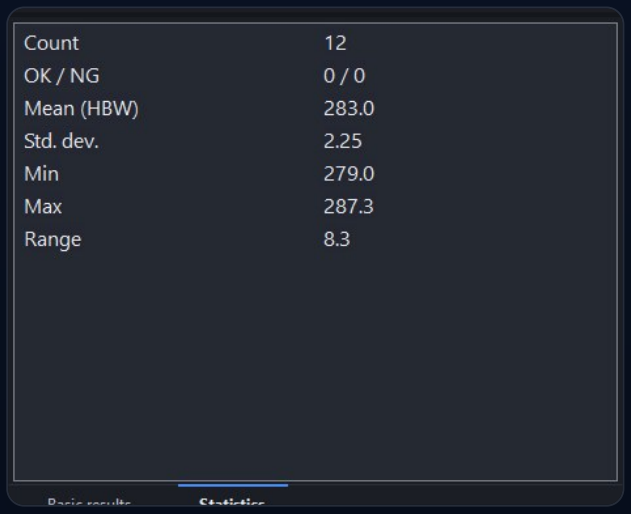
Reports	Excel · PDF · Notepad
Annotations	Text box, point, line (arrow), shapes, arc, scale bar, length
Languages	한국어 · English · 日本語 · Español
License	USB license key

ALWAYS AT HAND

Beside the tester, the same way for everyone.

Menus and help come in four languages. A user manual (PDF) comes with the program, so even a first-time user reaches the first measurement by following the Quick start.

한국어 · English · 日本語 · Español



Statistics tab — count, OK/NG, mean, std. dev., min, max, range

CONTACT

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