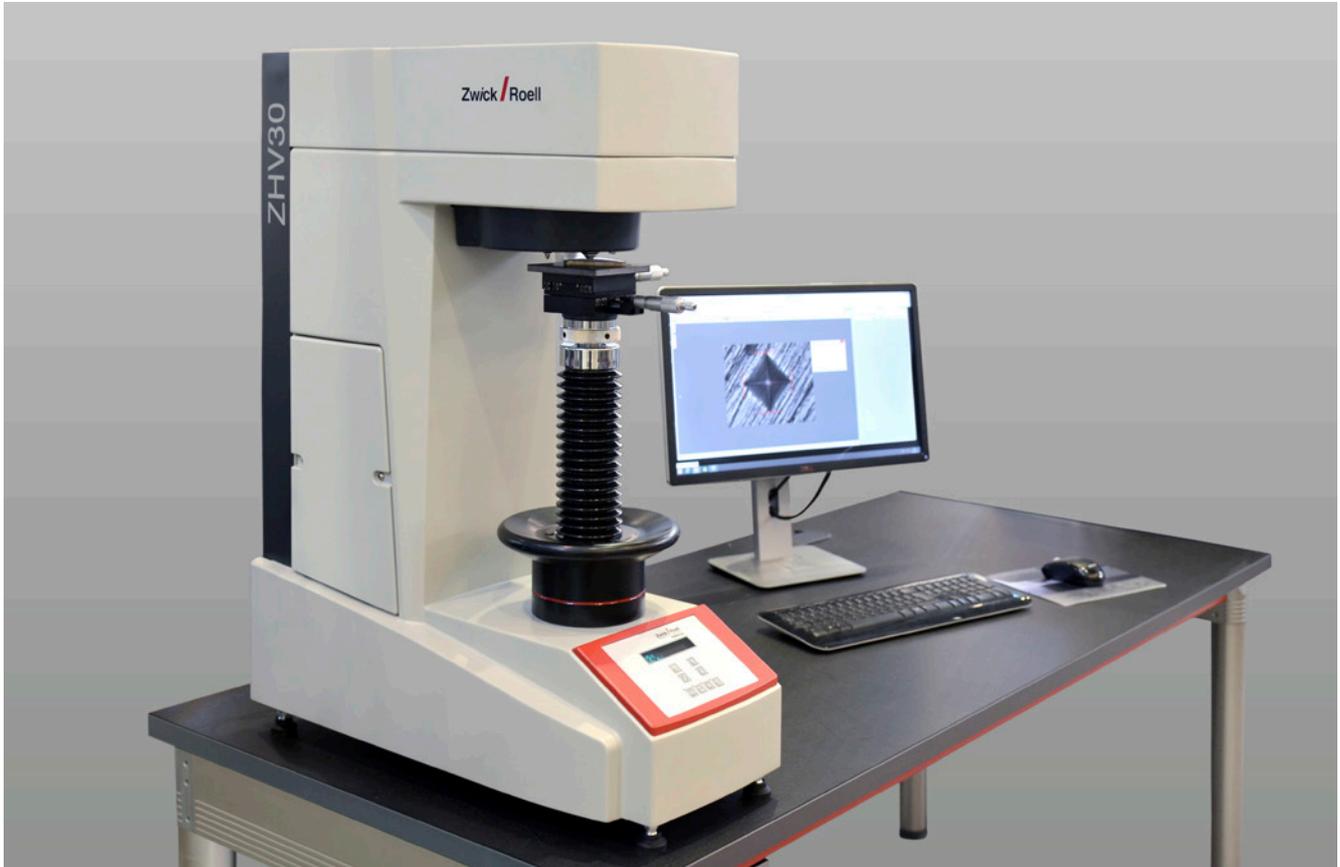# Product Information
## ZHV30 Vickers Hardness Tester - from manual to fully automatic



### Range of application
Can be used for the optical hardness test methods Micro and Macro Vickers, Knoop and Brinell to the following standards:
- **Vickers** hardness acc. to ISO 6507, ASTM E92 and ASTM E384
- **Knoop** hardness acc. to ISO 4545 and ASTM E384
- **Brinell** hardness acc. to ISO 6506 and ASTM E10

### Advantages/features
- Load steps with motorised load change: 0.2, 0.5, 1, 3, 5, 10, 30 (kgf)
- Motorised turret allows automatic test sequence when changing indenter and lens position
- Capable of fitting one indenter and up to four objective lenses simultaneously
- Dead weight load application, provides long term test force stability and repeatability
- Variable dwell times, 5 ... 60 seconds
- Individual setting of illumination for each objective lens

Software controlled variants for **semi- to fully automatic hardness testing systems** provide the further features:
- Operation and control of the hardness tester via High Definition software (HD)
- 1.3 megapixel USB camera
- High-resolution overview image of specimen surface via scan function (stitching) [1] with 2.5 x objective lens
- Easy positioning of test points in the overview image
- Automatic indentation measurement with illumination and shadow correction removes operator influence in determining hardness values
- Motorised x-y table with 100 mm x 60 mm travel
- Automatic effective case depth determination

[1] Function not availble in the US

# Product Information

## ZHV30 Vickers Hardness Tester - from manual to fully automatic

### High Definition Testing Software

When a hardness testing solution which delivers reliable, accurate and repeatable test results is needed, choose from the HD line of macro and micro hardness testing solutions - field-proven systems, offering beyond comparison capabilities and fully ASTM E 384, ISO 6507 and ISO 4545-compliant.

### Precise positioning

With its image of the entire specimen (Mosaics) and its annotation tools, HD Software enables you to position indents precisely where they are required.
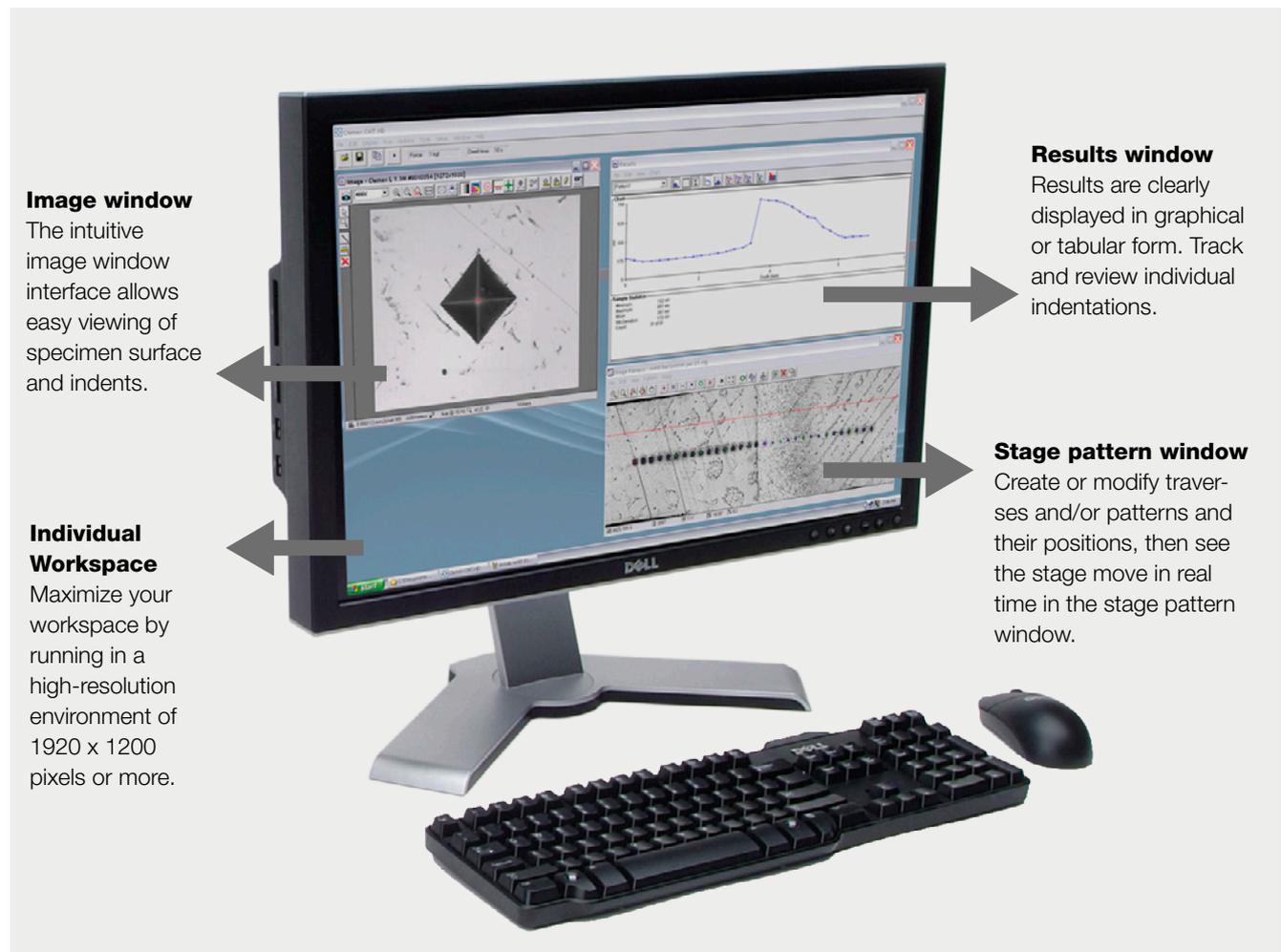
### Precise, reproducible measurements

The high image resolution of the HD Software allows measurement of indents to be precise and reproducible.

### Enhanced productivity

The HD Software combines ease of use, reliability and auto-calibration, minimizing the subjectively associated with human intervention. The system can run autonomous for hours without interruption.

### Sophisticated reporting

The results are automatically transferred via data interface from HD software to testXpert III - the testing software for all Zwick testing machines and instruments. According to your requirements the reports are now generated.



**Image window**
The intuitive image window interface allows easy viewing of specimen surface and indents.

**Individual Workspace**
Maximize your workspace by running in a high-resolution environment of 1920 x 1200 pixels or more.

**Results window**
Results are clearly displayed in graphical or tabular form. Track and review individual indentations.

**Stage pattern window**
Create or modify traverses and/or patterns and their positions, then see the stage move in real time in the stage pattern window.
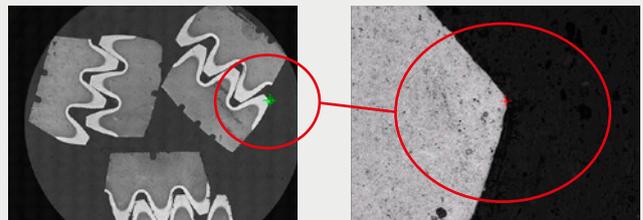
# Product Information

## ZHV30 Vickers Hardness Tester - from manual to fully automatic

### Step 1: Set the entire specimen

Place the specimen in the specimen holder and - with one click - build a mosaic image of the specimen and set reference points for more traverses using annotated tools.
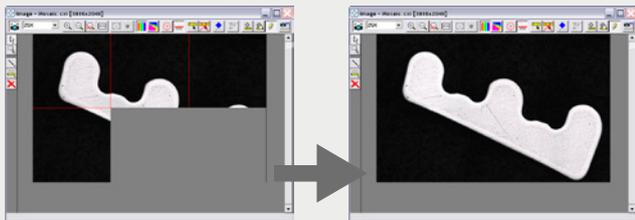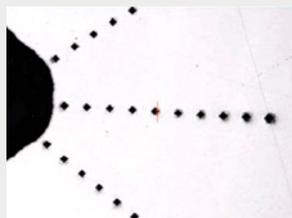


Building mosaic image to a complete image



Precise positioning at any magnification
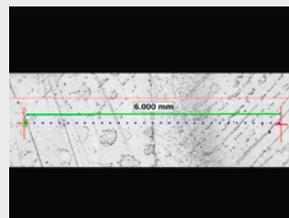
### Step 2: Set-up traverses/patterns

Open, modify, or create new traverses/patterns using reference points or lines. Traverses and patterns can be individually adjusted.
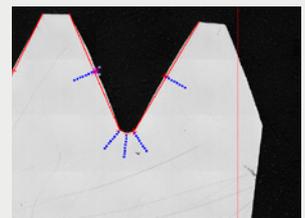


T-Bar rotation tool



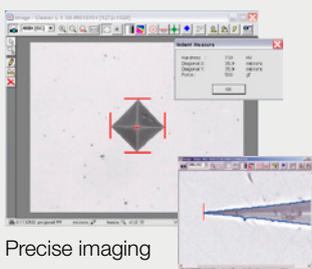Three traverses perpendicular to edge
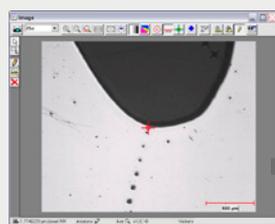


Traverse centred in weld sample



Five traverses perpendicular to the edge of the gear
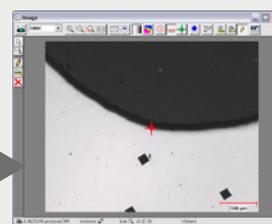
### Step 3: Click & walk away

HD Software intelligently follows the predefined patterns, indents the specimen, focuses if needed, measures and generates data dynamically. Everything is automated, freeing users for other tasks.



Precise imaging
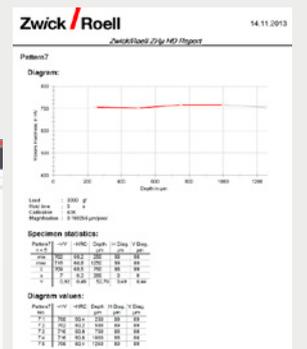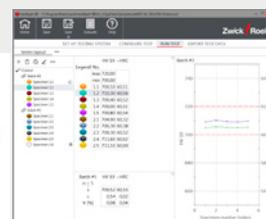


with 2.5 x objective lens



with 10 x objective lens



with 40 x objective lens

### Step 4: Get results

Review results in graphical and/or tabular format. Export results to the spreadsheet application of your choice, or to **testXpert III** for creating and printing standard or customized reports.

## Product Information

ZHV30 Vickers Hardness Tester - from manual to fully automatic

| Type | ZHV30-M manual | ZHV30-S semi-automatic | ZHV30-A fully automatic |
|---|---|---|---|
| Test loads | 0.2 ... 30 kgf | 0.2 ... 30 kgf | 0.2 ... 30 kgf |
| Display | integrated display | PC monitor[1] | PC monitor[1] |
| Data entry | integrated keyboard | PC keyboard[1] | PC keyboard[1] |
| Focussing | via hand wheel | via hand wheel | motorized |
| Optics | Measuring microscope | USB camera with HD connection | USB camera with HD connection |
| HD-Software | - | **ZHµ.HD-S:**<br>• Auto indentation measurement<br>• Manual effective case depth determination | **ZHµ.HD-A:**<br>• Auto indentation measurement<br>• Autom. effective case depth determination<br>• Sample scanning and stitching capability |

| | |
|---|---|
| Test area  (height x depth) | 250 x 150 mm |
| Dimensions (H x W x D) | 850 x 300 x 650 mm |
| Weight | 50 kg |
| Power supply | 3 A single phase, 240/120 V switchable |
| Inclusive instruction manual | |

[1] PC, monitor and keyboard already included in scope of supply.

### Accessories

| Description | Item number |
|---|---|
| Vickers indenter | **2111218** |
| Knoop indenter | **2111219** |
| Ball indenter 1 mm Ø (UKAS certified) | **2111264** |
| Indenter holder (one required for each indenter) | **2111217** |
| Objective lenses   2.5-times | **2111210** |
| Objective lenses      5-times | **2111211** |
| Objective lenses   10-times | **2111212** |
| Objective lenses   20-times | **2111213** |
| Objective lenses   40-times | **2111214** |
| Objective lenses   50-times | **2111215** |
| Objective lenses   40-times      Long working distance | **2112291** |
| Objective lenses   50-times      Long working distance | **2111259** |
| Objective lens holder (one required for each objective lens) | **2111209** |
| 70 mm diameter flat anvil | **2111157** |
| Hardness comparison plates on request, e.g. plate with 540 HV 1 | |

| X-Y tables | Item number |
|---|---|
| Manual X-Y table 100 x 100 mm with 50 x 50 mm travel; with manual micrometers | **2111222** |
| Manual X-Y table 100 x 100 mm with 50 x 50 mm travel; with digital micrometers | **2111221** |
| Manual X-Y table 100 x 100 mm with 25 x 25 mm travel; with manual micrometers | **2111224** |
| Manual X-Y table 100 x 100 mm with 25 x 25 mm travel; with digital micrometers | **2111223** |
| Manual single axis table with 25 mm travel; with manual micrometer | **2111226** |
| Manual single axis table with 25 mm travel; with digital micrometer | **2111225** |
| Motorised X-Y table 185 x 135 mm and 100 x 60 mm travel | **2111227** |
| Motorised X-Y table 350 x 218 mm and 200 x 100 mm travel | **2111229** |