

# Vickers Hardness Testing HV-112/113/114/115

## Series 810

- A wide range of test force from 1.961 N to 490.3 N is available for measuring various types of specimen.
- The load dwell time can be set in 1 second increments between 5 and 99 seconds.
- A measuring resolution of 0,1  $\mu\text{m}$  is provided that allows small indentations to be measured with high precision.



| Model                       | HV-112                                                                   | HV-113                                                                   | HV-114                                                                   | HV-115                                                                   |
|-----------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
| No.                         | 810-163D                                                                 | 810-981D                                                                 | 810-165D                                                                 | 810-985D                                                                 |
| No. UK only                 | 810-163E                                                                 | 810-981E                                                                 | 810-165E                                                                 | 810-985E                                                                 |
| Test force range            | 1.961 ; 2.942 ;<br>4.903 ; 9.807 ;<br>24.51 ; 49.03 ;<br>98.07 ; 196.1 N | 1.961 ; 2.942 ;<br>4.903 ; 9.807 ;<br>24.51 ; 49.03 ;<br>98.07 ; 196.1 N | 9.807 ; 19.61 ;<br>29.42 ; 49.03 ;<br>98.07 ; 196.1 ;<br>294.2 ; 490.3 N | 9.807 ; 19.61 ;<br>29.42 ; 49.03 ;<br>98.07 ; 196.1 ;<br>294.2 ; 490.3 N |
| Control unit                | Touch-screen type                                                        | Touch-screen type                                                        | Touch-screen type                                                        | Touch-screen type                                                        |
| Video monitor               | -                                                                        | 9" B&W                                                                   | -                                                                        | 9" B&W                                                                   |
| Indenter / Objective turret | Motor driven                                                             | Motor driven                                                             | Motor driven                                                             | Motor driven                                                             |
| Indenter mounts             | 1                                                                        | 1                                                                        | 1                                                                        | 1                                                                        |
| Objective mounts            | 2 (measurement)                                                          | 2 (measurement)                                                          | 2 (measurement)                                                          | 2 (measurement)                                                          |



### Control unit

- Back-lit LCD graphic display for Indentation size (D1 and D2)
- Hardness value and scale
- Number of measurement points
- Test conditions (HV/HK indenter type, test force, load dwell time),
- GO/NG tolerance judgement,
- Cylindrical and spherical surface compensation offset
- Remote control of power turret
- Conversion to other hardness scales
- Statistical processing

## Specifications

|                        |                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------|
| Loading accuracy       | $\pm 1\%$                                                                               |
| Load control           | Automatic (load, dwell, unload)                                                         |
| Load dwell time        | 5-99 s (1 s increments)                                                                 |
| Max. specimen height   | 210 mm                                                                                  |
| Max. specimen depth    | 170 mm (from the centre of the indenter shaft)                                          |
| Observation by         | Micrometer eyepiece                                                                     |
| Lens system            | 10X, 20X                                                                                |
| Magnification          | 100X, 200X                                                                              |
| Optical path           | Split two ways for video monitoring and photography                                     |
| Resolution             | 0,1 $\mu\text{m}$                                                                       |
| Data output            | RS-232C, Digimatic code (SPC) and Centronics                                            |
| Power supply           | 100/120/220/240V AC, 50/60Hz                                                            |
| Dimensions (W x D x H) | <b>Main unit :</b><br>245 x 515 x 770 mm<br><b>Control unit :</b><br>165 x 260 x 105 mm |
| Mass                   | <b>Main unit :</b> 50 kg                                                                |

## Standard accessories

| No.      | Description                              |
|----------|------------------------------------------|
| 19BAA110 | Plastic cover                            |
| 19BAA114 | Power cord                               |
| 810-039  | Flat table $\varnothing 64$ mm           |
| 810-040  | V-anvil $\varnothing 40$ mm, $120^\circ$ |
| 810-041  | V-anvil $\varnothing 40$ mm, $90^\circ$  |
| 810-617  | Objective 10X                            |
| 810-618  | Objective 20X                            |
| 810-086  | Digital microscope (for HV112-114)       |
| 19BAA445 | Camera-Adapter for CCD-Camera            |

Hardness test block 700 HV, diamond indenter and split level are standard accessories.

## Optional accessories

| No.     | Description                         |
|---------|-------------------------------------|
| 810-640 | Vibration damping stand             |
| 810-012 | 50 x 50 mm travel XY stage          |
| 810-037 | Round table $\varnothing 180$ mm    |
| 810-038 | Round table $\varnothing 250$ mm    |
| HPHK    | Diamond Knoop indenter              |
| HPHV    | Diamond indenter (UKAS certificate) |

## Objectives

|         |               |
|---------|---------------|
| 810-616 | Objective 5X  |
| 810-619 | Objective 50X |

## Vices

|         |                               |
|---------|-------------------------------|
| 810-016 | Vice, max. 45mm groove width  |
| 810-017 | Vice, max. 100mm groove width |

Hardness test blocks 200 HV, 300 HV, 400 HV, 500 HV, 600 HV, 700 HV, 800 HV and 900 HV are optional accessories.

Diamond indenters are optional accessories.

For a list of computer accessories, refer to HM-211/221 series.



Hardness Testing Machines brochure on request