



fig. M4C 250 G3-E without nose cone

**M4C 250 G3-E**  
**M4C 750 G3-ER**  
**M4R 250 G3-Jom**

**Fully automatic  
hardness testing  
machine with  
cross slide**

**EMCO-TEST**  
YOUR FACTOR OF SAFETY.

# 4-fold testing expertise!



## Fully automatic multiple sample testing

- hardness testing on 15 bar steels
- software-designed sample specific magazine
- fully automatic test run without nose cone in HV 100
- predefined test point pattern
- variable number of samples



## Evaluation of 6-fold Jominy samples

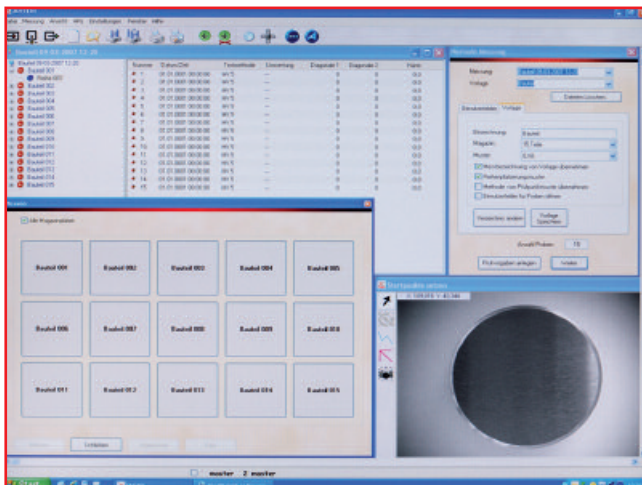
- evaluation of 6-fold Jominy end quench tests
- test series can be designed freely acc. to industry standards
- after testing all samples are reversed and tested on the rear side
- report evaluation of both series includes mean value display

## Easy operation

Limited precision of repeat measurements is no longer a problem with EMCO-TEST hardness testing devices due to highly sophisticated software solutions. We guarantee maximum precision measuring and indentation evaluation based on software-controlled operation of hardness testing devices and high-performance image analysis systems. Our devices provide individually defined test processes according to your needs, from setting individual test points and fully automated

test procedures to determining defined test points in a coordinate system. Ecos offers users countless possibilities to enhance test procedures and measurement series, and results through image and documentation functions.

- Operator groups with different user rights can be freely defined and selected
- Statistical evaluation of readings and test series
- Manual repetition of indentation measurements



Multiple samples can be created clearly

## Measurement turret



The 5-fold measurement turret for penetrators and lenses allows fully automatic testing for a variety of test methods.

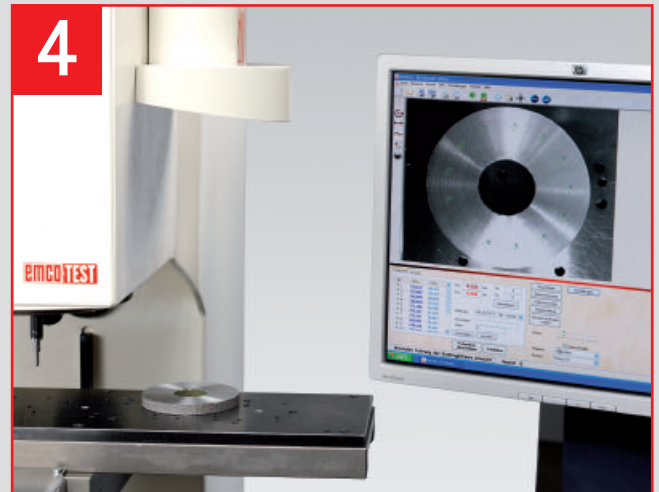
Included in M4C 750 G3-ER

# Daily, multiple and flexible testing.



## Multiple samples with different test heights

- hardness testing on 10 steel sections
- test point definition via test point editor
- sample height is sensed via nose cone
- fully automated test procedures in HBW 2.5/187.5
- test results presented in a report



## Live image overview camera

The high resolution live image overview camera has lenses enabling a macro view of approx. 100 x 140 mm of the work piece. Furthermore, this technological advantage ensures that test points can be set up and saved easily, as can test patterns and test series such as welding tests. The overview image can be fed into the test report.

## Available test methods

### Vickers

EN ISO 6507, ASTM E-92

- HV 1
- HV 2
- HV 3
- HV 5
- HV 10
- HV 20
- HV 30
- HV 50
- HV 100

### Rockwell

EN ISO 6508, ASTM E-18

- HRA
- HRB
- HRC
- HRD
- HRE
- HRF
- HRG to HRV
- HR15-N/T/W/X/Y
- HR30-N/T/W/X/Y
- HR45-N/T/W/X/Y

### Brinell

EN ISO 6506, ASTM E-10

- HBW 1/1 - 2.5
- HBW 1/5
- HBW 1/10
- HBW 1/30
- HBW 2.5/6.25
- HBW 2.5/15.62
- HBW 2.5/31.25
- HBW 2.5/62.5
- HBW 2.5/187.5
- HBW 5/25
- HBW 5/62.5
- HBW 5/125
- HBW 5/250
- HBW 5/750

### Knoop

ISO 4545, ASTM E-384

- HK 1

### Plastic testing

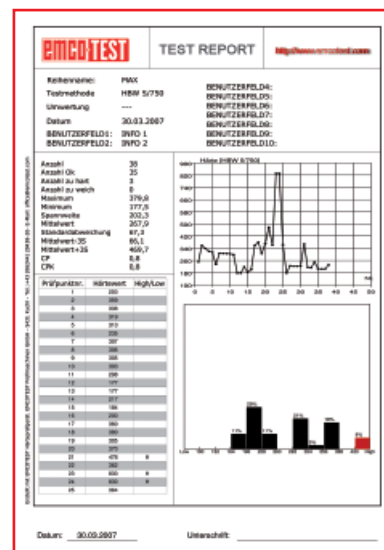
EN ISO 2039-1 (DIN 53456)

- Ball penetration hardn.

■ M4C 250 G3-E ■ M4C 750 G3-ER ■ M4R 250 G3-Jom

## Data management

Nowadays, the availability of test results in your business' central database is indispensable for meeting modern quality assurance standards. EMCO-TEST software solutions facilitate the display of all hardness testing data in an ASCII format, thus enabling processing and archiving for a wide variety of applications.



- Protocol generator for the creation of test reports
- Export function with freely definable data fields to export/import figures to other applications
- Set-up of result data bases, statistical evaluations and reading change records

# Technical Data Overview.



|                                 | M4C 250 G3-E   | M4C 750 G3-ER  | M4R 250 G3-Jom  |
|---------------------------------|--|--|---|
| <b>Test loads</b>               | 9.8 - 2450 N (1 - 250 kgf)                                     | 29 - 7350 N (3 - 750 kgf)                                      | 9.8 - 2450 N (1 - 250 kgf)  |
| max. component height           | 205 mm   | 160 mm   | 205 mm  |
| max. throat depth               | 190 mm   | 190 mm   | 190 mm  |
| max. component weight           | 20 kg  | 20 kg  | 20 kg   |
| <b>Test anvil</b>               |  |  |   |
| Drive (Z-axes)                  | DC-motor   | DC-motor   | DC-motor  |
| Cross slide drive (XY-axes)     | step motor controlled  | step motor controlled  | step motor controlled   |
| Dimensions                      | 505 x 150 mm   | 505 x 150 mm   | 505 x 150 mm  |
| Traverse path (XY-axes)         | 350 x 140 mm   | 350 x 140 mm   | 350 x 140 mm  |
| <b>Nose cone</b>                |  |  |   |
| Drilling                        | 18 mm  | 19 mm  | 8 mm  |
| Support dia.                    | 28 mm  | 30 mm  | 15 mm   |
| <b>Camera &amp; lighting</b>    |  |  |   |
| High resolution 1/2" camera     | 1024 x 1280 pixel  | 1024 x 1280 pixel  | -   |
| Available lenses                | 40x / 70x / 130x /<br>320x / 640x / 1200x                      | 50x / 70x / 130x /<br>320x / 640x / 1200x                      | -   |
| Overview camera (field of view) | approx. 100 x 140 mm   | approx. 100 x 140 mm   | -   |
| LED-lighting                    | 0 - 12 mA  | 0 - 12 mA  | -   |
| <b>Software</b>                 |  |  |   |
| Software                        | ecos BASIS<br>ecos IMAGE<br>ecos MULTIPLE TEST SPEC.           | ecos BASIS<br>ecos IMAGE<br>ecos MULTIPLE TEST SPEC.           | ecos BASIS<br>ecos JOMINY   |
| Software (optional)             | ecos HOST ACCESS STAND.<br>ecos HOST ACCESS OPEN<br>ecos CHD-C | ecos HOST ACCESS STAND.<br>ecos HOST ACCESS OPEN<br>ecos CHD-C | ecos HOST ACCESS STAND.<br>ecos HOST ACCESS OPEN<br>ecos JOMINY MULTIPLE TEST |
| <b>Dimensions</b>               |  |  |   |
| Machine (W x H x D)             | 280 x 1055 x 720   | 280 x 1055 x 720   | 280 x 1055 x 720  |
| Machine base                    | 750 x 465 x 720  | 750 x 465 x 720  | 750 x 465 x 720   |
| Weight (machine)                | approx. 200 kg   | approx. 200 kg   | approx. 200 kg  |
| <b>Electric connection</b>      |  |  |   |
| Power supply                    | 230~1/N/PE<br>110~1/N/PE                                       | 230~1/N/PE<br>110~1/N/PE                                       | 230~1/N/PE<br>110~1/N/PE  |
| max. mains voltage deviation    | +6/-10 %   | +6/-10 %   | +6/-10 %  |
| Frequency                       | 50/60 Hz   | 50/60 Hz   | 50/60 Hz  |
| Power consumption               | max. 600 W   | max. 600 W   | max. 600 W  |
| Fuse rating at 230 V            | 2.5 A/T  | 2.5 A/T  | 2.5 A/T   |
| Fuse rating at 110 V            | 5 A/T  | 5 A/T  | 5 A/T   |

Machine is supplied with correct CE-housing.

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