



VIGNATE – MI - ITALY

CALIBRATION INSTRUCTION MANUAL

VERIFYING OF CALIBRATION OF MEASURING
INSTRUMENTS IN USE

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CONTENTS

1 - GENERAL

2 - DEFINITION

3 - CONTENTS

3.1 – Expiry of calibration validity

3.2 – Acceptance limits

3.3 – Test report

3.4 – Responsibility

ISSUED BY: QUALITY ASSURANCE

SIGN:

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1 - GENERAL

Technical believes it is appropriate to have a procedure to control the proper and periodic calibration of measuring instruments used to check production quality and conformity.

2 - DEFINITION

None

3 - CONTENTS

3.1 - Expiry of calibration validity

As stated in Calibration Instruction IT01 “Instrument Coding”, each measuring tool is recorded with an identity card, where calibration expiry date is clearly stated.

The expiration period for tools in use is 12 months, starting from the date of the calibration certificate. This date is also shown on the tool label, which can be attached to the tool or its case.

From Calibration Instruments database it is possible to have a list of measuring instruments according to the expiration date so that calibration work can be scheduled.

For instruments whose calibration validity is near to expire, Quality Assurance tries to coordinate with operators in order to test the instruments without affecting their working activities. Instruments calibration tests can be carried out in-house or externally at certified laboratories.

There is a possibility, for organizational or production needs, to use the instrument after the expiration date, up to a maximum of 30 days. In this case, the status of derogatory use is reported in the instrument's identity card.

3.2 – Acceptance limits

The calibration validity limits for each type of tool are defined according to the following table:

Measurement tool	Variance
Vernier caliper usable 150 mm	± 0.03 mm
Vernier caliper usable 300 mm	± 0.03 mm
Outside micrometer	± 0.01 mm
Back square	± 0°15'
Depth gauge	± 0.03 mm
Height gage	± 0.1 mm
Hardness testing machine	± 1.50 HRC
Portable Hardness testing machine	± 0,5 HRC
Dial indicator resolution. 0,01 mm	± 0.015 mm
Dial indicator resolution. 0,001 mm	± 0.002 mm
Plain Plug	Ref. to the construction standard
Plain ring	Ref. to the construction standard
Thread Plug	Ref. to the construction standard

Measurement tool	Variance
Thread Ring	Ref. to the construction standard
Inside micrometer	± 0.005 mm
Micrometer heads	± 0.03 mm
Quick Gauge for Internal Measurement 0,025 mm	$\pm 0,025$ mm
Goniometer	$\pm 0^{\circ}75'$
Quick Gauge for Internal Measurement 0,05 mm	$\pm 0,075$ mm
Manometer	$\pm (\text{precision class} \times \text{scale end})/100$
Surface roughness machine	$\pm 5\%$
Vernier caliper usable 1000 mm	± 0.075 mm
Voltmeter	$\pm (\text{precision class} \times \text{scale end})/100$
Ammeter	$\pm (\text{precision class} \times \text{scale end})/100$
Thickness Gauge	$\pm 5\%$ theoretical thickness value
Thickness Plates	$\pm 2\%$
3D measuring machines	$\pm 5,00$ μm
Thermocouple quenching oven	$\pm 5^{\circ}\text{C}$
Altimeter	± 5 μ (0.005 mm)
Pressure transducer	$\pm 1\%$
Dynamometer	0,02N

The instruments must have test values that fall within the above table in order to be considered valid for their use.

3.3 – Test report

All test reports, both internal and external, must contain the following data in order to be considered valid:

- Test report's identification number and date;
- Instrument's code and description
- Sample instrument's code and description;
- Test results;
- Signature operator and manager.

3.4 - Responsibility

The Quality Assurance is responsible for the management of measuring instruments.