FREE VYRCO RESOURCE

Before measuring: review your instrument

Guide and pre-use record for dimensional measurement of mold components

Level: Intermediate | Mold, machining, quality and metrology technicians. The designated technical authority makes the decision.

Record evidence that the documentation, instrument and required checks were reviewed before recording results for a component.

One record per instrument and job. For dimensional measurement of components away from moving equipment. This record does not certify or calibrate an instrument or authorize part release.

Calibration, checking and adjustment

Calibration relates indications to reference values and uncertainties. Verification checks evidence against requirements; adjustment changes indications. Setting zero is not a complete calibration. [S3-S5]

The label does not decide for you

Traceability is a property of a result. On its own, it does not guarantee fitness for a particular measurement need. [S1]

Manufacturer-specific guidance

For micrometers, Mitutoyo discusses model selection, thermal equilibrium and face cleaning. Follow the applicable manual; this guide sets no time, temperature or cleaning-product requirements. [S2]

How to use this guide

1. Define the job. Link the component, drawing revision, feature and units. Identify who approves the method and applicable requirements. If a requirement is missing, record it as pending rather than assuming a value.

2. Identify the equipment. Record the actual ID and model. Link the manual, calibration record and control status. Note restrictions or missing documents without altering labels or dates.

3. Document the selection. Record the approved rationale for the range, resolution and method for this feature. A display with enough digits does not, by itself, provide that rationale.

4. Record preparation. Note the visible condition and preparation performed according to the manual. Separate observations from hypotheses. Do not open, repair or adjust the instrument to complete this record.

5. Perform only authorized checks. Identify the procedure, reference, readings and documented criterion. A zero check, where applicable, does not demonstrate performance across the entire range.

6. Close the review before measuring. The responsible person records the decision for this job and any limitations. Leave use pending if questions remain. Then link this record to dimensional results; it is not part acceptance.

Original VYRCO guidance. The applicable manual and approved procedure take precedence.

Pre-use review record

Record evidence and references, not just checkmarks. Use: documented / pending / not applicable with a reason.

Record / date / responsible person	
Component / drawing / revision / feature / units	
Instrument / ID / model / range / resolution	

Review item	Status and document reference	Evidence / result / limitation
Requirements and method / Document and revision; applicable criterion; approving authority.		
Instrument control / Calibration record / restrictions / status in your control system.		
Selection for this job / Documented rationale for range, resolution and method.		
Preparation and condition / Manual; permitted actions; observations; recorded conditions.		
Authorized check / Procedure; reference and ID; readings; criterion and result.		
Questions and follow-up / Missing information / action / owner / closure evidence.		

Documented decision for this job / responsible person / date / link to dimensional record

Pending does not mean acceptable. Closing this record does not release the part or replace applicable authorization.

Fictional example, from opening to closure

All identifiers, people and documents in this case are fictional. They represent no plant data, manufacturer data or actual calibration.

Request

Record DEMO-PRE-01. Component DEMO-INSERT-A, drawing DEMO-DWG-A, revision B. An external feature is to be measured. The proposed instrument is DEMO-MIC-01.

Finding

The label is legible, but the attached file belongs to DEMO-MIC-02. The link between the calibration record and the proposed instrument has not been demonstrated.

Record entry

Instrument control: PENDING. Evidence: instrument and document IDs do not match. This does not establish that the instrument measures incorrectly.

Proposed action

Request the correct record or an authorized alternative. Fictional owner: Reviewer A. Leave use for this job pending until the decision is documented.

Example closure

Reviewer A receives the matching documentation, completes the reviews and records a decision with the applicable references. If a check criterion is still missing, the record remains pending. No satisfactory result is invented.

Mistakes this record helps prevent

- Treating the component tolerance as if it were the instrument acceptance criterion.

- Confusing display resolution with result uncertainty.

- Deleting a finding when a corrected document arrives: retain the link to closure.

ES / EN

Comprobación previa	Pre-use check
Instrumento de medición	Measuring instrument
Registro de calibración	Calibration record
Regla de decisión	Decision rule
Pendiente de revisión	Pending review

Sources, scope and version control

Accessed October 10, 2026. Primary references are linked; their manuals are not redistributed. Explanations and layout are original, not official translations or certification by the cited organizations.

S1 / NIST - Metrological Traceability: FAQs and Policy

3.2(5), 5.1.1, 5.1.4 | Traceability belongs to a result and does not, by itself, demonstrate fitness for use. It supplies no numerical criterion for this template.

https://www.nist.gov/metrology/metrological-traceability

S2 / Mitutoyo - Quick Guide to Precision Measuring Instruments

PG11 / General notes on using the micrometer | Micrometer-specific context: selection, thermal preparation and care of measuring faces. It does not replace the actual model manual.

https://www2.mitutoyo.co.jp/eng/useful/E11003/pageindices/index13.html

S3 / JCGM - VIM3: calibration

2.39 | Conceptual distinction between calibration, adjustment and verification; not a calibration procedure.

https://jcgm.bipm.org/vim/en/2.39.html

S4 / JCGM - VIM3: verification

2.44 | Verification requires evidence against specified requirements. It provides no acceptance requirements for a particular instrument.

https://jcgm.bipm.org/vim/en/2.44.html

S5 / JCGM - VIM3: adjustment

3.11 | Adjustment changes system indications. It authorizes neither adjustment nor substitution for calibration.

https://jcgm.bipm.org/vim/en/3.11.html

Application limits

- The responsible person defines requirements, checks, references, decisions and authorization. No maximum errors, resolution-to-tolerance ratios, calibration intervals or universal conditions are specified.

- If damage, inconsistent documentation or an unsatisfactory check is found, follow your approved organizational procedure. This resource does not define repair, adjustment or recalibration.

- Uncertainty evaluation and component acceptance require their own method. Use VYRCO dimensional record 05 to link results after the pre-use review.

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