FREE VYRCO RESOURCE

Replacement component: verify before installation

Guide and record for checking identity, interfaces, and evidence without assuming equivalence from appearance.

Intermediate level | Mold, machining, metrology, purchasing, and quality technicians.

Compare the documented requirement, removed component, and replacement candidate before modification or installation. Helps stop variant mix-ups; it does not certify interchangeability or release the mold.

Original general guidance from VYRCO for mold components such as pins, inserts, guides, bushings, and interlocks. Each family and part number retains its own dimensions, tolerances, materials, treatments, coatings, and instructions.

Before declaring that a replacement is equivalent

1. Preserve identity and position

Assign an ID to the removed component and record mold, revision, location, side, orientation, and function. Preserve the label, marking, packaging, photographs, and as-received condition. Do not mix similar-looking parts during comparison.

2. Define the current requirement

Reference the drawing, bill of materials, manual, order, or catalog with its revision. Copy critical characteristics and criteria exactly; do not reconstruct a specification solely from a worn, broken, or previously modified part.

3. Verify the exact candidate

Record manufacturer, full part number, variant, lot, and applicable document. Within one pin family, MISUMI warns that a representative tolerance may change with diameter or length; the exact product page must be consulted. [MISUMI-EP]

4. Compare attributes and interfaces

Review documented dimensions and tolerances, material, hardness or treatment, coating, head geometry, radii, thread, orientation, mate, retention, motion, and special features. DME's published interchangeability for certain interlocks is a product-specific claim, not a claim for every standard part. [DME-IL]

5. Plan the verification

Define the method, instrument, location, and criterion before measuring. Link each result to its evidence. NIST explains that traceability belongs to a measurement result and does not by itself guarantee fitness for purpose. [NIST-TR]

6. Separate fitting, testing, and release

Record authorized machining or adaptation as a new condition without erasing the as-received state. Document assembly, interference, motion, and authorized functional testing. Every deviation, acceptance, or release requires an owner and documented criterion.

1 / Identity, requirement, and candidate

BLANK TEMPLATE. One record per component and position; fictional example kept separate.

Record ID / date / owner / status
Mold / revision / position / side / orientation
Removed component: ID / manufacturer / number / marking
Drawing or bill of materials / revision / applicable characteristic
Function and interfaces: guide / shutoff / ejection / retention / other
Removed-part photographs and evidence / location / custodian
Candidate: manufacturer / full number / variant / lot
Catalog, data sheet, or certificate / revision / date / location
Required material / treatment / hardness / coating / source
Authorization to verify or adapt / owner / limits

Distinguish catalog data, drawing specification, measurement, and observation. Enter undocumented when a property is missing; do not turn appearance, color, or magnetic attraction into conclusive material or treatment identification. Keep blank originals and work on a copy.

2 / Comparison, assembly, and decision

BLANK TEMPLATE. One record per component and position; fictional example kept separate.

Critical characteristic / nominal / tolerance / unit / source
Removed: result / method / instrument and ID / condition
Candidate: result / method / instrument and ID / condition
Head, shoulder, radius, length, thread, or orientation / evidence
Interface: bore, pocket, retainer, or mate / evidence
Special feature: vent, flat, groove, coating, or other
Authorized modification / before-after / drawing or program / author
Controlled assembly / freedom of motion / interference / evidence
Authorized functional test / condition / result / restrictions
Decision: held / accepted / rejected / deviation / approver

Distinguish catalog data, drawing specification, measurement, and observation. Enter undocumented when a property is missing; do not turn appearance, color, or magnetic attraction into conclusive material or treatment identification. Keep blank originals and work on a copy.

Original FICTIONAL example

Invented situation

Fictional mold DEMO-REP, revision R-A; ejection position E06. The removed component receives ID OLD-DEMO-06 and the candidate NEW-DEMO-06. Every name, code, and event is invented.

Apparent match

The candidate package states a fictional nominal P = 6.00 mm and length 120 mm. The removed component appears to have the same nominal diameter. This match does not establish tolerance, material, head, treatment, functional length, or equivalence.

Available documentation

The fictional bill of materials only says PIN-E06; the variant suffix is missing. The candidate has catalog DEMO-CAT-R2, but the current mold drawing and the certificate associated with fictional lot L-DEMO-22 have not been located.

Hold point

No machining or installation occurs. The candidate remains identified and segregated because the full number and dimensional criterion are missing. The removed component is not measured to invent the specification: it may be worn or modified.

Next check

Request the current drawing and bill of materials, confirm the variant through the authorized source, and prepare a measurement plan for the identified characteristics. New results retain method, instrument, unit, and available uncertainty.

Provisional closure

Status: HELD - equivalence not established. Material, hardness, treatment, tolerance, interchangeability, and production fitness remain undeclared until evidence and authorized approval are available.

Primary sources and scope

Sources accessed: 2026-10-22

MISUMI-EP - Straight Ejector Pins

The official page compares straight-pin variants and warns that displayed tolerance values are representative and that the range varies with shaft size or length; it directs users to each product's catalog page. It supports verifying the exact number and document, not copying its values to a generic replacement.

Open primary source

DME-IL - Mold Interlocks

The official sheet states independent replacement for specified DME interlock families based on their manufacturing and tolerancing, and publishes product-specific numbers, materials, treatments, and instructions. It shows that interchangeability is a documented family-and-variant property, not a universal assumption.

Open primary source

NIST-TR - Metrological Traceability: Frequently Asked Questions and NIST Policy

NIST explains that metrological traceability is a property of a measurement result, requires a documented chain of calibrations contributing to uncertainty, and does not by itself guarantee fitness for purpose. It limits conclusions from this record; it does not certify user measurements.

Open primary source

Limitations and hold points

- Does not prescribe dimensions, tolerances, fits, materials, hardness, treatments, coatings, torque, or machining parameters.

- Does not identify material or treatment from color, spark, magnetism, appearance, or one isolated measurement.

- Does not assume that parts with the same nominal, family, CAD, or appearance are interchangeable.

- Does not authorize grinding, cutting, welding, fitting, assembly, or testing in a moving machine or mold.

- Does not establish regulatory or legal compliance. Deviation, acceptance, and release belong to the authorized person.

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