

FreeCAD parametric tap-test blocks

CAD-012 / REV A / 2026.09.01

A tap-test block can compare printed hole sizes or thread behavior, but it is not a calibrated thread gauge.

STATUS	Recovered/Partial
CLASSIFICATION	CAD
MATERIAL	CAD / AUTOMATION
DISPOSITION	PUBLIC / RECOVERED/PARTIAL
CATEGORY	CAD / Scanning / Automation
RECORD TYPE	how-to

GOAL

Run the first test described in this guide and record the result for freecad parametric tap-test blocks.

SOURCE STATE

New reference guidance; not a recovered test result

EQUIPMENT

- FreeCAD
- Representative test model
- Measurement or inspection method

METHOD / STEPS

1. Define block size, spacing, edge distance, hole diameter, depth and label values in a parameter table.
2. Create a constrained base sketch and pad it. Place hole centers from the same parameter table.
3. Choose plain pilot holes for actual tapping tests, or explicitly modeled threads for a printed thread trial; do not mix their labels.
4. Recompute, label each hole and export only the final body. Print a small set of diameter offsets and compare using the intended tool.

THINGS TO WATCH FOR

Cosmetic threads may not export to STL. Small printed threads differ from machined threads, and printer shrinkage invalidates a nominal gauge claim.

FIRST TEST / WHAT TO RECORD

Each physical hole maps to a recorded nominal size, offset and test result.

RESULT / WHERE THIS STANDS

Each physical hole maps to a recorded nominal size, offset and test result.

TROUBLESHOOTING

- Cosmetic threads may not export to STL. Small printed threads differ from machined threads, and printer shrinkage invalidates a nominal gauge claim.

SPECIFICATION

TOOL PATH	FreeCAD
DELIVERABLE	HOW-TO
VALIDATION	Representative model / known dimension
STATUS	Recovered/Partial

DEVELOPMENT HISTORY

2026.09.01 / Rev A

Imported as an independent manifest record; public copy keeps uncertainty visible.

REFERENCE NOTES

FreeCAD reference (https://wiki.freecad.org/PartDesign_Hole).

HOW-TO SOURCES

FreeCAD reference

https://wiki.freecad.org/PartDesign_Hole

RELEASED MATERIAL / SOURCE LINKS

cad-012-public-summary.txt

PUBLIC SUMMARY / RECOVERED NOTES

<https://u225x.com/downloads/manifest-records/cad-012-public-summary.txt>

RETURN TO THE LIVING RECORD

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This PDF preserves the public notes at this revision. Visit the record for updates and attached images.

<https://u225x.com/record/CAD-012>