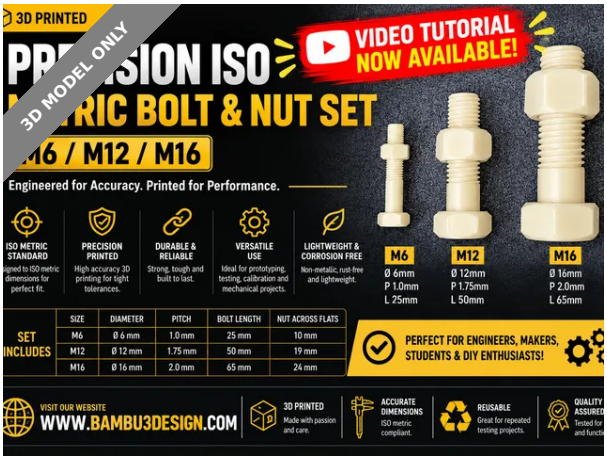


Precision ISO Metric Bolt & Nut Set (M6 /M12 /M16)

Bambu3Design

VIEW IN BROWSER

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Summary

Functional M6, M12 & M16 metric bolts and nuts, optimized for FDM printing. Ideal for thread testing and calibration.

Hobby & Makers > Tools

Tags: 3d nut functional print printer nuts test no calibration mechanical engineering and hex screw printing bolt thread metric accuracy tolerance printable parts threads bolts supports threaded dimensional bambu3design

This project includes three fully functional ISO-style metric bolt and nut pairs:

- M6*30
- M12*40
- M16*50

Each size has been optimized and tested for smooth thread engagement after FDM printing.

The M6 version is designed for high-resolution printing (0.08 mm layer height recommended) to achieve sharper and more accurate thread geometry. Larger sizes (M12 and M16) print reliably at standard layer heights while maintaining strong and clean thread profiles.

Design Features

✔ True metric thread proportions
✔ Smooth screw engagement without excessive force
✔ Clean hex head geometry
✔ Optimized tolerances for FDM printing
✔ No supports required

This set is ideal for:

• Thread accuracy testing
• Printer calibration
• Dimensional verification
• Mechanical design practice
• Functional assembly demonstrations

Recommended Print Settings

• Print bolts vertically for best thread definition
• M6: 0.08–0.12 mm layer height
• M12 / M16: 0.16–0.2 mm layer height
• 3–4 perimeters for strength
• PLA works well; PETG improves durability

For best surface quality and thread clarity, printing each object separately (Print by Object mode) is recommended.

This is not a decorative bolt set — it is a practical thread performance benchmark for FDM printers.

I’ve made a video showing how I designed and modeled this set. Check the link below to see the full process.

https://www.youtube.com/watch?v=WekRlxlPJac

Model files



bambu3design.3mf

Other files



bambu3design.zip

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