



PROJECT GUIDE

Suggested Skill Level:
Intermediate

HOW TO DRILL A CUBE IN CUBE

Create a fascinating cube in a cube with this step-by-step guide, perfect for refining precision drilling techniques. This project highlights accuracy and careful depth control, resulting in a visually striking and skill-building piece. Here's how:

MATERIALS & TOOLS

- NOVA DVR Voyager 18" Variable Speed Drill Press (SKU 58000)
- NOVA Drill Press Fence System (SKU 9037)
- 3" cube of Mahogany
- 2" diameter Forstner bit
- Straight Edge
- Center Finder
- Awl

1. Preparing the Block

Begin with a square block of wood, marking an X in one corner of each face to maintain drilling consistency. Then, find and mark the center on one face only.

- This guide uses a 3-inch square Mahogany block.
- Using the center mark, align a fence and stop block on the drill press table for accuracy. The NOVA Drill Press Fence System is used in this project.



(Refer to Pictures 1-4 for setup visuals)

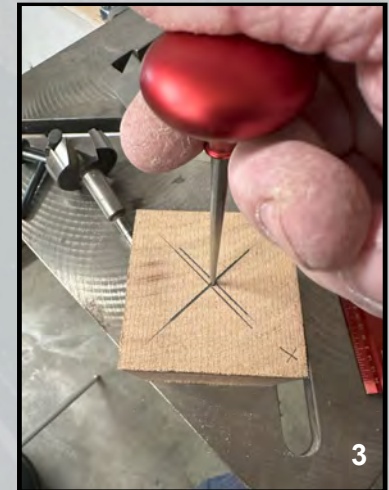
2. Setting the Drilling Depth

Using a Forstner bit, drill a shallow circle on the centered face, approximately 1/16 to 1/8 inch deep.

To determine final drilling depth, use a straight edge to draw a reference line intersecting two of the centering marks.

This line represents the approximate depth needed for the internal cube to be released.

(See Pictures 5-7 for depth reference.)



Instructions by:

Jeff Hornung

Artist and Owner of

The Walnut Log Studio
and Supply:

<https://thewalnutlog.com/>



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3. Drilling the Cube Faces

Set the depth stop on the drill press according to the measured depth (from step 2). The manual stop on the NOVA Voyager is used here, though the digital stop could also be set via the MENU button on the control panel..

- Drill to depth on all six faces, ensuring the X is consistently oriented to maintain alignment.
- If the internal cube is not yet free, slightly adjust the depth stop and drill each face again.
- Avoid drilling through completely to minimize tear-out on the inner cube.



(See Pictures 8-9 for guidance.)

4. Releasing and Finishing the Inner Cube

Once close to fully drilled through, carefully cut any remaining wood fibers with a sharp craft knife to free the internal cube.

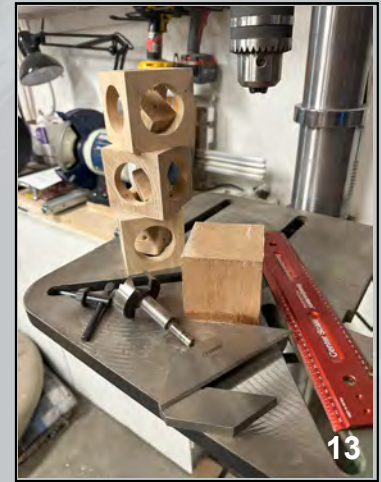
- Use a disc sander to smooth the six cube faces.
- Sand the drilled holes and internal cube edges by hand for a clean finish.

(See Pictures 10-12 for final steps.)

(See Picture 13 for finished product.)



Get your NOVA Tools for this Project:



SKU 9037 - Drill Press Fence System

Pro-Tips from a Turner for Success:

- Ensure the Forstner bit is sharp for clean, precise cuts.
- For smoother drilling, use a slightly higher speed—900 RPM on the NOVA Voyager is effective.
- If the bit stops or slips, check the collet tightness and consider increasing the speed to maintain smooth drilling. The NOVA Voyager DVR Drill Press makes speed adjustments simple.
- Take your time while drilling—the bit can get hot, so steady, controlled drilling helps prevent overheating and ensures better results.

SKU 58000 - Voyager DVR 18" Variable Speed Drill Press

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