

Making a "Cube-In-A-Cube-In-a-Cube"

1. Start with a 3" cube – preferably a **hard-wood** species ...
2. On ONE of the END-grain sides, draw an "X" from corner to corner to establish the EXACT center of the cube ... **(See Photo #1)**
3. Using an awl, press the point into the wood exactly where the lines cross ...
4. For the LARGER cube, put a 1-7/8" Forstner bit into your drill press and lower it to where the center spike of the bit goes into the hole you just made with the awl...(Drill press should be **OFF**) ...
5. Keeping the bit pressed into the wood, set a fence up against the back face of the cube, ensuring that it is **TIGHTLY** up against the fence and is set "Square" – Lock down the fence ...
6. With pressure **STILL** being held onto the cube, set a "Stop-stick" against one side of the cube – this will ensure that the cube doesn't torque out of position when you start drilling your holes. You can now release the downward pressure of the Forstner bit onto the cube....
7. **THIS step is IMPORTANT for the continuity of hole placement on EACH face of the cube** – With the cube still pressed up against the fence and "Stop-stick", mark a small "x" on the upper LEFT corner, near the fence ... now, pull the cube back and flip it over FORWARD (Away from you) and, again, mark an "x" in the upper left corner – repeat this process 2 (two) more times. Then, **TURN** (slide) the cube **CLOCKWISE** 1 (one) face, and flip it **FORWARD** (Towards the fence) 1 (one) face, and mark an "x" in upper left corner – now, flip the cube, **AGAIN, FORWARD** 2 (two) more times, and mark this last face with an "x" ... These marks will, visually, help you keep the cube oriented correctly....
8. Turn the cube over so that the ORIGINAL, large "X" marked end-grain face is facing **UP**, with the small "x" up against the fence and the cube held **FIRMLY** against the fence and the Stop-stick. **Set the drill press to its SLOWEST speed.** Turn on the drill press and **SLOWLY** depress the bit into the cube for a depth of about 1/16" ... **(See photo #2) ... NOTE: EVERY time you drill, you create chips and sawdust that MUST be removed from fence & "Stop-stick area) ...**
9. Pull the cube back and, using your square, draw a line across where the circle of the Forstner bit intersects the diagonal "X" line. **(Note: it is only necessary to draw a line on this ONE face) ... (See photo #3)**
10. Flip the cube on its side, keeping the line you just drew in the upper corner, Depress the Forstner bit until it reaches the REFERENCE line, then, back it off

about 1/32" and set your drill press plunge depth. You will "TWEAK" this depth setting in later steps. ... (See photo #4)

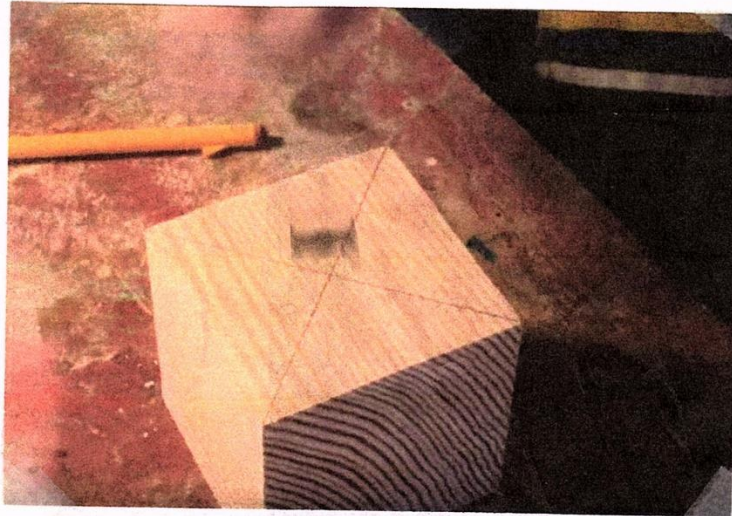
11. Pull the cube away from the fence and RE-DRAW your "X" from the SAME corners so you can REPEAT the above processes to make the SMALLER, INNER CUBE using a 7/8" Forstner bit
12. Repeat steps #8, #9, & #10 (only this time with the 7/8" bit), (photos #2 & #3),

You are now ready to start making your "Cube-In-A-Cube-In-a-Cube"

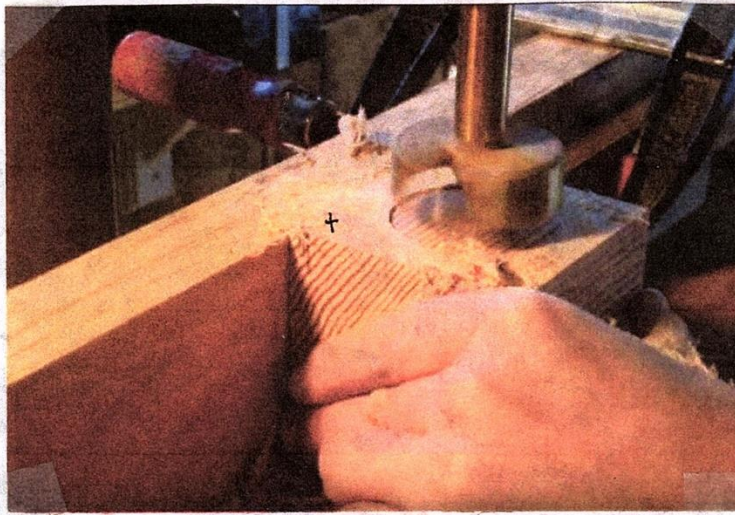
13. Starting with the ORIGINAL, end-grain face up, and the cube held FIRMLY against the fence and the Stop-stick, SLOWLY plunge the 7/8" bit into the cube for a few seconds – then retreat the bit to give it a chance to cool – then, slowly plunge & retreat the bit until you reach the desired depth. Pull the cube back and rotate it FORWARD 1 (one) face with the small "x" up against the fence, applying pressure against the fence AND the "Stop-stick" and, again, SLOWLY plunge & retreat the bit until the proper depth is reached. Repeat this cycle 2 (two) more times, then pull the cube back & turn (slide) it CLOCKWISE 1 (one) face and FLIP it FORWARD 1 (one) so that the small "x" is against the fence. With the cube held FIRMLY against the fence & "Stop-stick", REPEAT the plunge/retreat sequence to the desired depth. Pull the cube back and FLIP it FORWARD 2 (two) times and repeat the plunging/retreating to depth. Now, go back to the beginning of THIS step and VERY SLOWLY and with light pressure, repeat this section until the SMALL, inside cube is ready to break FREE at the corners (See photo #5 – LARGER cube shown for clarity)
14. Using a SHARP knife, such as an X-Acto blade and/or an X-Acto saw blade, cut the corners free on EACH face of the inner cube. Then sand the 6 (six) cube EDGES using fingernail filing EMERY BOARDS and/or small, thin craft files on FLAT surfaces and corners and a round, rat-tail file for all the round surfaces. **Note: This is tedious work!** When this is completed you are ready to tackle the LARGER inside cube.
15. Now REPEAT procedure in step #13, this time using the 1-7/8" Forstner bit...
16. When you have finished sanding your Cube-In-A-Cube-In-A-Cube to your satisfaction, use whatever you prefer to put a finish coating on it.

GOOD LUCK! ... Len Saunders

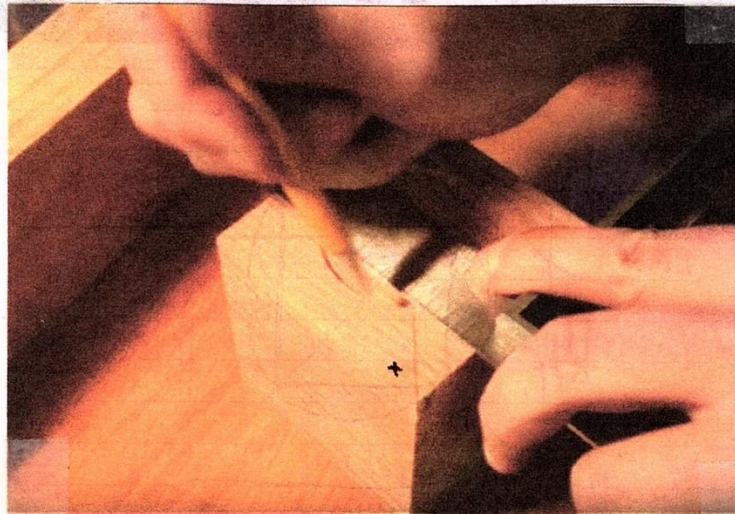
#1



#2



#3

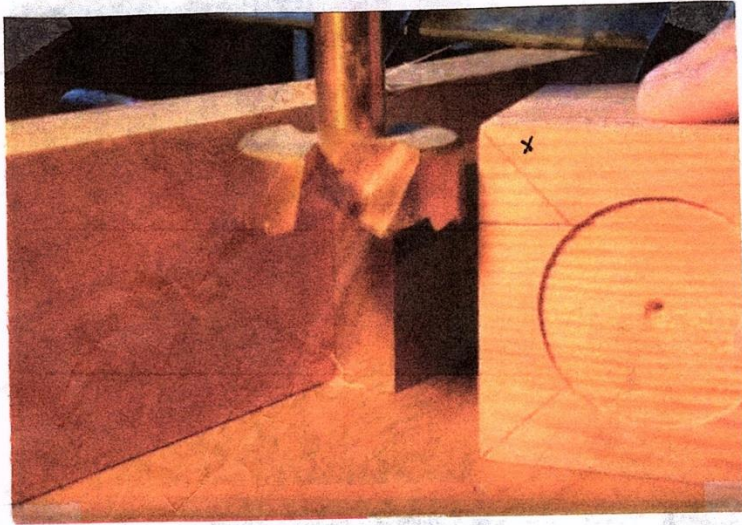


Note:
LARGE hole
Shown for
Clarity

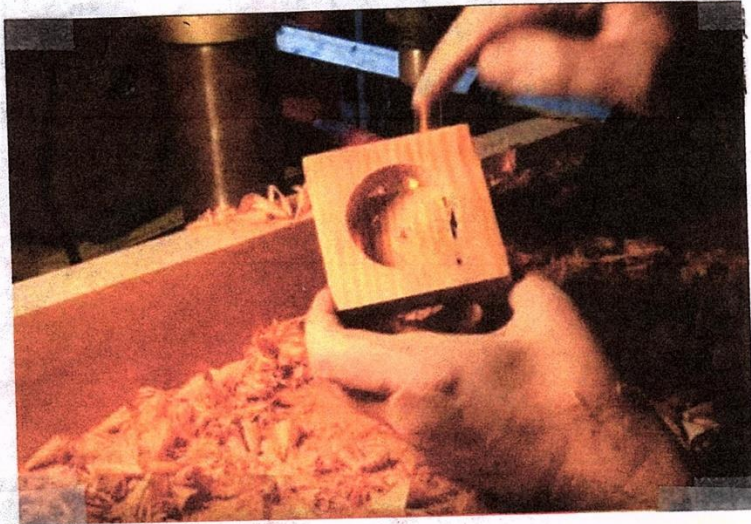
(OVER)

(3 of 4)

#4

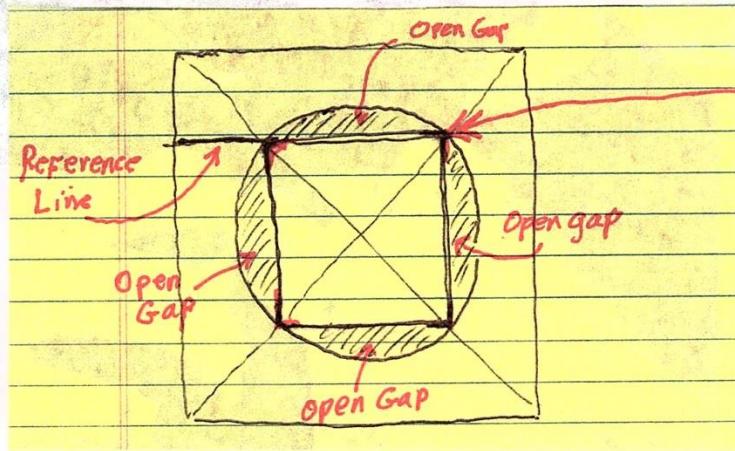


#5



Drill down
Until the cube
corners are
ALMOST FREE
on all 4 Side

#6



Cut the inner
cube corners
Free on all 4
Sides

(4 of 4)