



## Steps for Making a Cryptex

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- 1) Decide what code you want for your Cryptex. This will determine how many rings you will need.
- 2) Make the inner and outer tubes, whether from wood, PVC pipe or any combination so that the inner tube fits inside the larger tube and easily spins without a lot of extra play.
- 3) Round off a piece of wood that will be used for the rings and end pieces. It needs to be  $\frac{3}{4}$ " – 1" larger than the outside diameter of the large tube. Allow  $\frac{5}{8}$ " for each ring, 2- $\frac{1}{2}$ " for each end then add 2" for the length.
- 4) Start making the rings.
  - A) Use a Forstner Bit to rough out the center and use a badan or cutoff tool to trim the inside to fit the outside of the large tube.
  - B) After fitting the tube 1"-1- $\frac{1}{4}$ " in the end, cut a  $\frac{3}{16}$ " x  $\frac{3}{16}$ " notch on the inside corner to accommodate the lock pin.
  - C) Measure  $\frac{1}{2}$ " back from the face and cut off ring. Repeat these steps until you have all working rings plus 2 stationary rings.
- 4) Make end pieces.
  - A) Cut remainder of wood in half for the end pieces.
  - B) Mount each one and rough cut the desired shape of each end piece but Do

Not Part Off.

- C) Cut a groove in the flat face of each end piece and glue the tubes on.
- 5) While glue is drying cut a 3/16" perpendicular notch on the inside of each ring.
  - 6) After glue dries set rings on large tube and cut tube off at end of rings. Draw 2 parallel lines along the of the tube 3/16" – 1/4" apart. Cut and remove this sliver to within 1/2" or less of the end piece.
  - 7) Cut small tube so that when installed in large tube end piece just touches end of large tube. Draw a single horizontal line along the length of the small tube
  - 8) Install 1 ring on large tube with groove toward end piece. Insert small tube completely and with the ring held tight against the large tube end piece drill a 1/8" hole on small tube line. Add 1 ring and repeat previous steps. Repeat until all rings have been installed and holes drilled.
  - 9) Cut 1/8" dowel rod 3/4" long and however many holes that you drilled in the small tube and glue them into the holes flushing the dowel on the inside.
  - 10) Mount the large tube and end piece on lathe. Set all rings on the large tube with the notches aligned with the slot in the tube. Using a piece of cardboard secure the rings to keep them from turning and index the rings making sure the ring notch is centered between two index marks. The two fixed rings just get an index line on each side of the notch.
  - 11) Permanently mark each index line. Permanently mark the indexed spaces with whatever numbers, letters or symbols making sure that your code figures are over the notch in each ring. The two fixed rings just get an arrow pointing toward each other.
  - 12) Install the rings back on the tube aligning the notch with the slot and sand the pins on the small tube until they just fit inside the rings and it slides completely in and the rings will turn locking the tubes together.
  - 13) Sand and part off end pieces.
  - 14) Now we can glue the fixed rings in place aligning the notches with the slots securing the working rings on the tube. Be sure not to glue the working rings by allowing the glue to run in the process.
  - 15) Use a wax or oil to finish and your Cryptex is ready to go.



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