

## BLACKHAWK TOOLS PRESENTS

# Capt. Eddie Castelin's Eccentric Chuck

This chuck was developed by Capt. Eddie Castelin, it is not copyrighted, protected. Please feel free to make one for yourself and anybody else.



### Materials needed:

- 3 - squares of corian 8" X 8"
- 1 - strip of corian 2.5" X 8"
- 1 - 3" faceplate to fit your lathe spindle
- 1- ¼-20 X 1" hex head set screw
- 5 - ¼-20 X 2" Thumbscrews
- 1 - section of shaft spindle
- Several ¼-20 flat head stove bolts ½" length - one about 3" long.
- Assorted adhesives and double stick tape for assembly.

Cut two 6" circles out of the corian squares, mark center for future reference.

Mount faceplate to one circle using stove bolts. You will need to drill and tap the holes. Also use doublestick tape for mounting aids. Drill the center of the plate with a ¼" hole for assembly. Drill 4 holes for eccentric adjustment and tap for ¼-20 threads. These will be behind the slide strip, you can wait for that location.

From strip, create a trapezoid with the 2.5" width with 45 degree angle sides. This must be extremely true and straight, parallel. Drill a ¼" hole 3" from one end in the face, centered. This is the pivot and slide strip.

From 3<sup>rd</sup> square, cut two panels with 45 degree edges on one side. These will become the second level from the faceplate.

Using a ¼" X 20 bolt as an assembly tool, anchor the trapezoid, small edge away from the disc, to the faceplate disc (which is attached to the faceplate) Place a strip of wax paper around the strip for spacing.

Using double stick tape, adhere the two panels to the faceplate disc and clamp for 30 minutes with spring clamps. After it has cured, cut off excess material on band saw. Clean and finish in lathe.

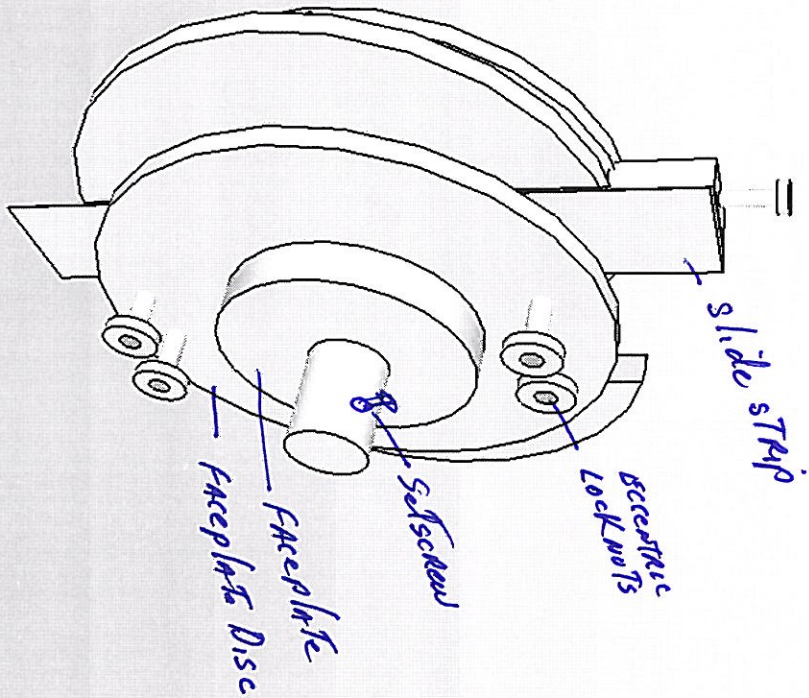
Test the fit by removing the assembly tool and sliding out the trapezoid. If it moves in and out with a little resistance, you're done it right. Put it back in place and drill and tap the two panels to the faceplate disc with ¼ x 20 stove bolts, flat head.

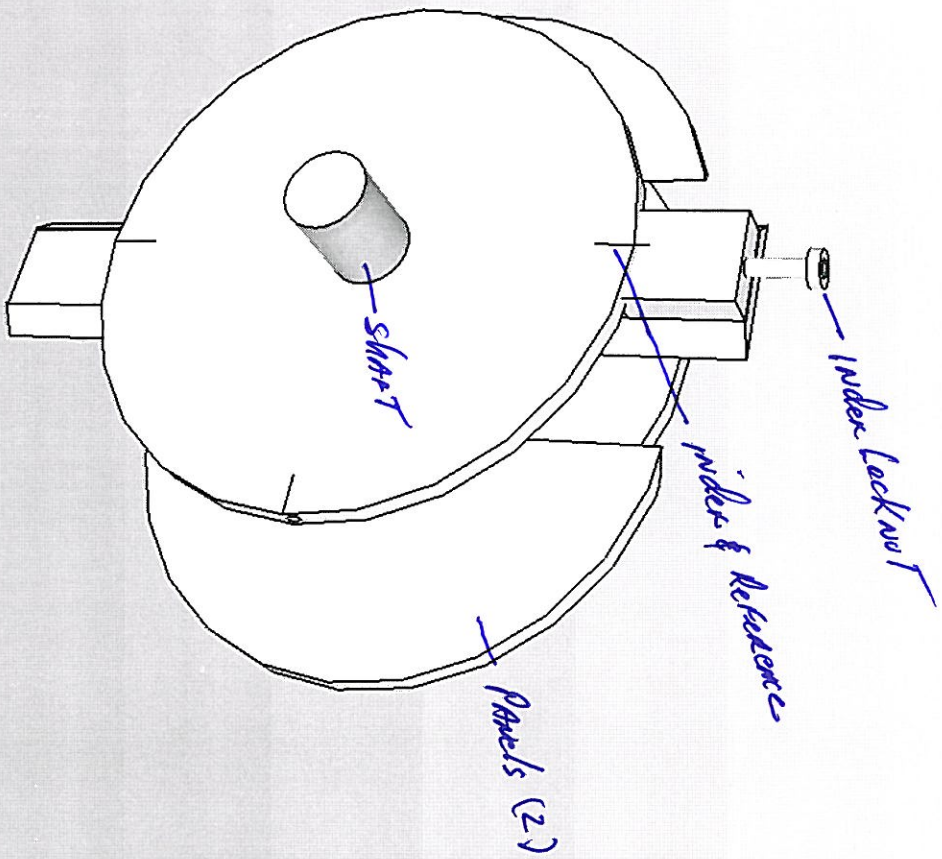
Countersink the wide face of the trapezoid at the hole.

Prep the final disc by drill a ¼ 20 hole in the center of the third disc. Lay out your indexing on the perimeter, I have it laid out for six positions.

Drill a ¼" hole through the 2" section of spindle stock (normally 1" X 8 TPI stock) This must be centered, do it on your lathe. Put this in place with a long ¼-20 flat head bolt through the slide strip, third disc and shaft. Secure with a washer and nylon lock nut. Add the lock block at the head of the slide strip, drill and tap a ¼-20 hole from the top. Mark the reference point on it.

Clean and wax as needed. When you're done, build another and give the prototype to a friend, that's what I did.





Do NOT exceed 4 RPM