

Ross Coin Punch Alignment Card – (Ross CPAC)

*The Ross CPAC was designed as a simple yet extremely accurate coin ring maker's tool to aid in punching a hole in the center of a coin. **New TEXTURED look and feel.***

IMPORTANT! Please take a few moments to read and familiarize yourself with this entire Instruction Manual before attempting to use the Ross Coin Punch Alignment Card. I have answered probably 99% of all the questions you might have within these instructions.

IMPORTANT! - All damages or injury as a result of using the Ross CPAC, are the total responsibility of the purchaser/user.

IMPORTANT! - Always wear protective eye/face gear and clothing when using the Ross CPAC in any press either Arbor or Hydraulic.



The Ross CPAC is intended to be used in conjunction with ordinary Punch and Die Sets. Two of the most popular would be the 9-piece Punch and Die set from Harbor Freight, or the Pepetools Premium Disc Cutter 196.10N. There are other disc cutters, some made by Swanstrom, which should work as well. These punch and die sets are typically used with a hydraulic press, an arbor press or perhaps a heavy weighted hammer. I **DO NOT** recommend using a heavy hammer because there is a greater chance of the punch (or coin) bouncing and causing an off-center hole or damaging the Ross CPAC or the Punch and Die set. **Please note that the beveled end of the punch is UP and the flat (sharp) end of the punch is down and firmly seated on the surface of the coin.**



Using the Ross CPAC

Each Ross CPAC is intended to align a specific size of punch, in the center of a specific size of coin.

Using the Ross CPAC is a simple procedure.

- Orient the CPAC so the “coin” hole is facing up, and the (smaller) punch alignment hole is facing down.
- Insert your coin into the coin hole on that side of the Card. (Note: The size of the coin hole is machined so that a freshly minted coin will fit snug in the hole.)
- Turn the Card over and place it under the top plate or cover plate of your chosen Punch and Die set.
 - **Note that the combined thickness of your coin, when inserted into the CPAC may exceed the spacing between the top plate and the die plate of some Punch and Die sets.** If this occurs, you will need to disassemble the top plate from the die plate and insert an extra spacer washer OR TWO. When reassembling the top plate, be sure you properly align it with the holes in the die plate. Insert several of the punches through the top plate and insure they drop freely into the die plate. Then tighten the hold-down screws and check the clearance and alignment a second time.



•Insert the appropriate size of punch through the top/cover plate and while slowly moving the card around, feel when the punch may be inserted into the Punch hole of the Card. **THIS STEP IS CRITICAL! IF THE PUNCH IS NOT SEATED ON THE SURFACE OF THE COIN; BUT ON THE PLASTIC CARD, THE PUNCH WILL TAKE A BITE OUT OF THE PLASTIC AND RUIN THE CARD.** Check one last time to be sure the punch is sitting ON TOP and AGAINST the coin.

•With the Punch seated against the coin, the Card is now captive in the die set. Carefully place the die and punch into the appropriate press, and punch the hole in the coin.

- Remove the die set from the press. If the punch is stuck in the coin, you will need to use a slightly smaller punch on top, and drive the original punch through and out the bottom of the die.
- Remove the Ross CPAC from the die set and remove the coin from the card. Each card has a small 1/8" hole at the edge of the coin hole. If the coin is stuck in the coin hole, simply push the coin out with the end of a ball-point pen, inserted into the hole. The pen point is smooth and will not harm the coin because very little force is needed to dislodge the coin.

What if the Coin fits Loose in the Card?

All coins produced by a mint, start out with a Diameter of a certain size. This Diameter is known as the nominal size or Diameter of the coin, as it comes from the mint. If a coin has been in circulation for a length of time, often the coin will become worn and the Diameter will be slightly smaller than the Nominal or Original Diameter. When this happens it is entirely possible for that particular coin to fit somewhat loosely in the Ross CPAC. In

fact, when the Card is turned over to be placed in the Die, the coin may fall out of the hole. If this happens, merely place a small bit of tissue paper (just slightly larger than the coin hole Diameter) over the hole before pushing the coin into the hole. The extra thickness of the tissue paper should make up the difference in Diameter and allow the coin to be held snugly in the Card.

How Close to Dead Center does the Hole Need to Be?

In general practice, it has been my experience that if the resultant hole is punched slightly off Dead Center by 10 or 15 thousandths of an Inch (0.010" or 0.015" or 0.4 mm) – the coin can still be folded into a ring with no adverse effect. If the hole is off by more than that amount, I generally recommend filing or sanding the edges of the hole until it is more evenly CONCENTRIC with the outside diameter of the coin.

Factors that WILL Affect the Accuracy of the Punched Hole

In order to fold and fabricate a flat coin into a resultant ring, the initial hole should be punched as near "Dead Center" as possible. However, there are many variables involved when punching the hole in the coin, and they can all influence how accurately the hole might end up. The Ross CPAC is only ONE of those variables. I personally check the accuracy of each custom made Ross CPAC before it is shipped to the customer, and guarantee the Concentricity of the holes in the Alignment Card to be 0.005" or better. Please be aware, I cannot guarantee the resultant accuracy of the punched hole in the coin because there are several other factors involved.

Here are some of the other variables that WILL influence the accuracy of the punched hole:

- Accuracy of the punch and die set metal pieces (the punch diameter size and the hole in the metal die plate).
- Accuracy of the punch alignment plate over the die. Some of these plates are plastic while others are metal.
- Sharpness of the punch. A dull or worn punch will adversely affect the accuracy of the punched hole.
- **Punch inserted WRONG, with the beveled side down!** (Doing this can damage the card and your punch and die components.)
- Alignment of the Press Ram to the Press Base Plate, where the punch and die set is located.
- Surface of the Press Base Plate. If the surface of the Press Base Plate is not smooth and even, the bottom of your punch and die set will not be even with the applied force from the Press Ram.
- Surface of the bottom of the Press Ram. If the end of the Press Ram is uneven it may apply force to the Punch that is tilted and cause the Punch to move through the die unevenly, thus affecting overall accuracy.

Harbor Freight Set is Economical but Low Quality

The Harbor-Freight 9-piece Punch and Die Set is fairly inexpensive, but it also is known for having loose tolerances. **The holes in the plastic top plate allow the punch to move slightly from side to side and this causes the punch to be tilted ever so slightly – and can cause off-center holes. To remedy this problem, most users will slip a small rubber O-ring over the punch and down against the top plate. You might also wrap a small amount of paper around the punch as you insert it into the top plate.** Either of these remedies can eliminate the excess slop of the punch in the top plate, and can improve the quality and accuracy of the punched hole. **And, just as a reminder...**

ALWAYS place the punch in the die with the **BEVELED end up**, and the **FLAT (sharp) end down and firmly against the surface of the coin**.

Some users have also noted the punches seem to dull quickly. No doubt this is also a function of what kind of metal you punch and what thickness it is. Sharp punches are necessary for accurate punching, so it may be necessary to sharpen the H-F punches more often than some others.

Quality Control and Card Accuracy

All of the Ross Coin Punch Alignment Cards are inspected for Coin Diameter accuracy and Concentricity of the Coin Hole with the Punch Hole. Although highly unlikely, if you receive a Card that you measure and find that it is out of tolerance; please contact me (sam@rosscoinrings.com), and explain the problem to me. You must return the Card to me, so I can determine why the Card is out of tolerance. If the Card was not damaged through negligence, the Card will be replaced at No Charge.

Specifications and Accuracy

Length: 2-3/8" Width: 2-3/8" Thickness: 0.120" (approximately 1/8")

Material: ABS (*Acrylonitrile Butadiene Styrene*)

Concentricity of Alignment Card: The Coin Hole Diameter and the Punch Hole Diameter will be Concentric at 0.005" or better; when calculated as: $C = (\text{Max Dim} - \text{Min Dim}) / 2$.

Concentricity of Punched Hole in Coin: It is impossible to guarantee how close to "exact center" the hole will be in the punched coin because it will depend on several factors besides just the Concentricity of the Alignment Card itself. Please see the Section above (*Factors that WILL Affect the Accuracy of the Punched Hole*) where I list those other factors.

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Technical Support

Before and after the sale Technical Support is provided for the Ross CPAC.

Telephone: (641) 854-2434 or **Email at** sam@rosscoinrings.com

I am not always in the shop, so if I do not answer your call, please leave your name and number and a brief message and I will return your call at my earliest convenience (usually the same day).

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