

50 BMG Cartridge Pen Instructions

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These instructions guide you through the creation of a 50 BMG cartridge pen. This project is suitable for a turner with intermediate level skills.

Required Materials:



This kit consists of a once-fired 50BMG caliber brass case and a matching copper-jacketed bullet. Both pieces have been drilled out and powder-coated. Neither piece is usable for reloading.

To complete this pen, you will need a cigar pen kit. One tube, coupler, transmission, refill, spring, and part of the finial will be used. The other parts will not. You will also need a gap-filling glue such as 5-minute 2-part epoxy and a glue suitable for the tube such as CA glue (superglue).

No special tooling (only that needed for ordinary penturning) is required.

Step 1 – Turn down the coupler:

The picture on the right shows two cigar-pen couplers. The one on the left is unmodified. The one on the right has been turned down so that it will fit into the mouth of the 50BMG case.

This can be done by mounting the coupler on a standard pen mandrel and removing brass from the center ring with a scraper or parting tool. Some cigar pen couplers don't quite fit on the mandrel and need to be reamed out with a 1/4" drill bit first.



Step 2 – Shorten one of the tubes:



At the top of this picture is a cigar pen nib with lower tube attached. Below it is a 50BMG bullet with tube.

You need to shorten one of the tubes such that it and the bullet come out to the same length as the kit nib and tube (typically 3.065"). This can be done using a tube cutter, a pen mill, by parting the tube on the lathe, or with a disk sander.

The exact length tube needed may vary from bullet to bullet. The goal is to get the overall length the same as the kit parts. If you happen to cut it a bit short, don't worry. You can compensate for that in the next step.

Step 3 – Glue the tube to the bullet:



Press the modified coupler into the shortened tube and screw on the transmission. Insert the refill and test-fit the parts. With the refill extended, it should look like the above picture. If everything fits, glue the tube in place using CA glue. **Do NOT use CA accelerator.** Accelerator will damage the powder-coat finish on the bullet.

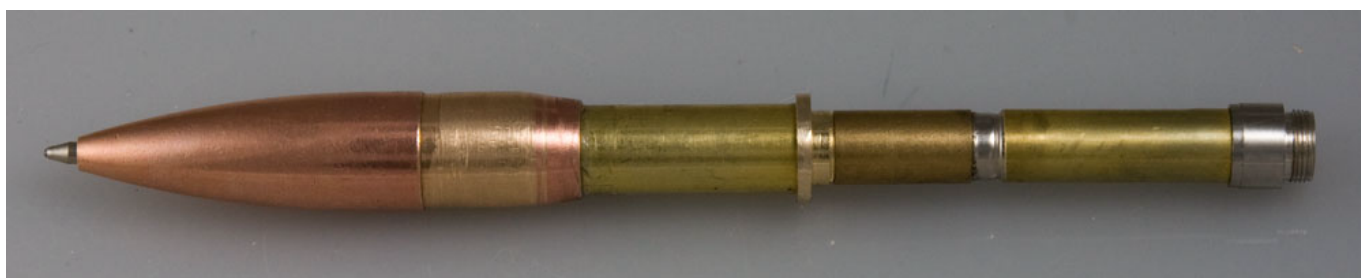
Tip: Put the glue on the tube, not inside the bullet. If you put the glue in the bullet, it will tend to clog the interior. Insert the tube with a twisting motion to spread the glue around and wipe away the excess. Hold the pieces together at the correct length until the glue sets. Then unscrew the transmission and remove the refill. Let the parts sit overnight for the glue to fully cure.

Step 3 – Shorten the finial tube:



The 50BMG case is not quite long enough for the cigar pen mechanism, so it needs to be shortened. Unscrew the finial cap and remove the clip. Shorten the brass tube on the finial insert as shown in the picture to the left.

The exact length is not critical, except that the tube must not be too long. The tube needs to be 1 inch long (or a little shorter).



When the entire mechanism is assembled, it should look like the picture above. Note how the finial insert looks on the transmission when it is pressed all the way on. The brass tube fully engages the transmission and the press-fit part touches the end of the transmission inside the tube.

Step 4 – Glue the mechanism to the case:



Drop the mechanism into the case to make sure it fits properly. The end should slip into a recess drilled into the inside of the case head. The bullet should come to rest on the case mouth and turn freely.

If everything fits, mix up a small amount (about 2cc) of epoxy and pour it carefully into the case. Don't use too much. If the level of epoxy in the case reaches the transmission, it may interfere with pen operation. Be careful not to get epoxy on the inside of the case mouth or you may glue the bullet in place. If any epoxy does get on the case mouth, wipe it away thoroughly. I do not recommend CA glue nor polyurethane glue (a.k.a. Gorilla Glue). CA glue is brittle and may break apart over time. Polyurethane glue expands while curing and can contaminate the transmission.

Insert the mechanism to the desired depth and wait for the epoxy to set. The pen should now operate by twisting the bullet. Unscrew the bullet, remove the refill, let it cure overnight, and then reassemble.

Sometimes, the completed pen squeaks when twisting the bullet. If that happens, wax the bullet and/or the inside of the case mouth lightly.

Your 50BMG pen is now complete.

These instructions are located at:

http://supplies.littlerivercrafts.com/50BMG_Instructions.pdf

The 50BMG cartridge and other cartridges for pen turning can be purchased at:

<http://supplies.littlerivercrafts.com>

Rifle cartridge pen kits are available in several calibers, including 5.56 NATO, 308 Winchester, 30-06 Springfield, 300 Winchester Magnum and 338 Winchester Magnum, and 50BMG. Cases are available in regular or nickel-plated brass. Cases and bullets are already drilled to accept the appropriate refill and are seated to appropriate dimensions. Cartridges are powder-coated for maximum durability.

Special orders are welcome. I can make custom cartridges in other calibers, for other kits, and with other finishes as needed. If you have any questions, please don't hesitate to ask.

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