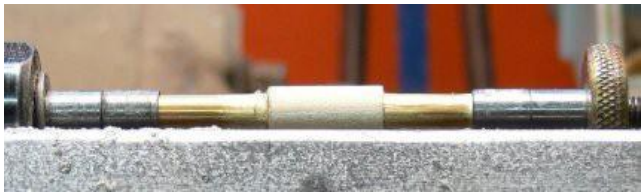
Completing the Parker refill bullet tip assembly

I use the interior pieces from a Cigar pen kit for the working portion of this tip assembly. Roughen the surface of the lower tube and glue into the bullet, I use thick CA, so that 11/16 inch of the tube extends out of the bullet. This length is based on using a tracer round. If you are using a different type of round, then you will need to determine how much extension is required so the overall length is the same as the tube and tip of the cigar kit. Do not insert the tube and try to wick the CA into the joint as some of the CA will run out the bottom and clog the tip hole requiring you to ream out the hole again. The cigar kit uses a threaded fitting pressed into the lower tube which the transmission is screwed onto. The outer diameter of this fitting is too large to fit into the neck of the casing and needs to be turned down. Originally, I turned away most of the shoulder but had to use a portion of the upper tube for the flange to ride against for strength. Now I only turn away enough of the flange to allow it enter the neck easily. Press the fitting into the tube until the flange is seated against the tube. Then install the refill and screw on the transmission. Continue with 'Making the dowel insert for the Parker refill'.

Turning down the flange

Completed bullet tip assembly for the Parker refill

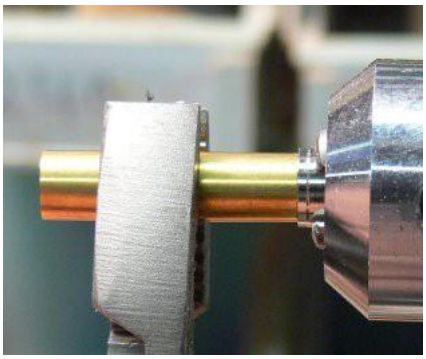
Completing the Cross refill bullet tip assembly



I use the interior pieces from a slimline pen kit for the working portion of this tip assembly. Take a ½ inch dowel and cut off a piece ¾ to 1 inch long. Drill a center hole with a 7 mm drill bit. Roughen the surface of one of the tubes and glue into the dowel leaving a little more than ½ inch protruding from the end. Mount the tubed dowel on the lathe and turn to 3/8 inch diameter so that it is a **snug** fit in the bullet. If the tube is not centered in the bullet, the bullet will wobble when retracting and extending the refill which will cause it to bind. Press the dowel/tube into the bullet so that ½ inch of the tube extends beyond the bullet. The lengths stated are based on using a tracer round. If you are using a different type of round, you will need to determine the required lengths so the overall length is the same as the tube and tip of a slimline kit. Drizzle thin CA onto the end of the dowel, but not too much. The CA will soak into the wood and bond to the bullet. If too much is used some will run out the other end and clog the tip. Press in the transmission until the center of the groove is even with the end of the tube. Install the refill and continue to 'Making the dowel insert for the Cross refill'.

Completed bullet tip assembly for the Cross refill

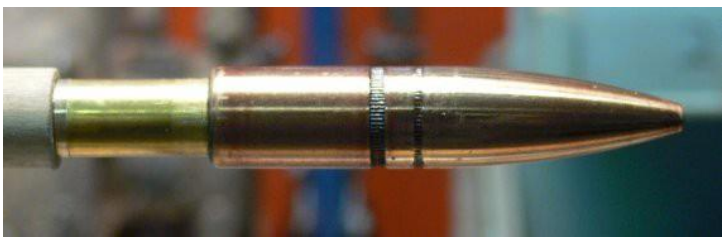
Making the dowel insert for the Parker refill



You are going to need the 'cap' tube which engages the transmission. On the kits I have it already has the cap fitting, clip and cap attached to it. If yours doesn't, you can skip this part. If it does, it needs to be separated. To do this, unscrew the cap and remove the clip. Place the fitting in a drill chuck and pull the tube out by wiggling it with a pair of pliers. A slight dent or out-of-roundness in the tube is not a problem as long as it can still engage the transmission.

Take a length of ½ inch dowel and insert it into the casing as far as it will go. The end should bottom out on a tapered surface near the base which centers the dowel. Mark the end of the neck on the dowel and remove the dowel. Place the completed tip assembly alongside the dowel with the mark lined up with the wider groove on the bullet. This is where the end of the neck will be when completed. You can choose to expose more or less of the bullet by placing the dowel mark where you want the end of the neck to be. Mark the dowel with the location of the backside of the flange. Cut the dowel at this mark. This represents the length needed to correctly position the bullet tip in the final assembly. Mount the dowel in a centering chuck and drill a hole through it with an "O" size drill bit. Then drill a 3/8 in diameter recess about ¼ inch deep.

Press the cap tube into the insert so the end of the tube is even with the bottom of the recess. Drizzle a little thin CA on the wood surrounding the tube to bond it in place. Take a short length of 3/8 inch dowel and glue it into the recess to seal it off. Cut the dowel flush with the end of the insert. Test the fit by inserting the tip assembly to verify that it seats flush with the insert and the transmission rotates freely. If not, enlarge the diameter or length of the hole as



needed. There is no problem if the insert is a little off-center with the tip assembly since the end of the insert will be centered in the neck in the next step. Continue with "Completing the casing'.

Making the dowel insert for the Cross refill

Take a length of ½ inch dowel and insert it into the casing as far as it will go. The end should bottom out on a tapered surface near the base which centers the dowel.

Mark the end of the neck on the dowel and remove the dowel. Place the completed tip assembly alongside the dowel with the mark lined up with the wider groove on the bullet. This is where the end of the neck will be when completed. You can choose to expose more or less of the bullet by placing the dowel mark where you want the end of the neck to be. Mark the dowel with the location of the backside of the flange. Cut the dowel at this mark. This represents the length needed to correctly position the bullet tip in the final assembly. Mount the dowel in a centering chuck and drill a hole through it with a 7 mm drill bit. Then drill a 3/8 in diameter recess about ¼ inch deep.

Glue the remaining tube into the insert so the end of the tube is even with the bottom of the recess. Take a short length of 3/8 inch dowel and glue it into the recess to seal it off. Cut the dowel flush with the end of the insert. Test the fit by inserting the tip assembly to verify it seats flush with the insert and the transmission rotates freely. If not, enlarge the diameter or length of the hole as needed. There is no problem if the insert is a little off-center with the tip assembly since the end of the insert will be centered in the neck in the next step. Continue with "Completing the casing'.

Completing the casing

Verify that the length of the insert is correct by fully seating the tip assembly into the insert and inserting this combination into the casing. The amount of the bullet showing will be the same as the end result. If you want more or less of the bullet to be exposed then adjust the length of the insert before proceeding. Remember, the back plug is only ¼ inch long. Do not take too much off this end or the epoxy that holds the insert in will be forced up into the tube and interfere with the refill. Remove the insert and tip assembly keeping them together as a single unit. Mix about 4 cc of epoxy (about 1/6 of a typical package of epoxy) and place it in the bottom of the casing. If any gets on the neck area it MUST be removed before continuing. Push the insert and tip assembly into the casing so that the end of the insert reaches the bottom of the casing. You can see your progress by observing how much of the bullet is exposed. Let stand until cured. The tip assembly will center the insert's tube. The picture shows how the Cross insert looks when properly aligned in the casing, the Parker insert will be a little lower. The amount of epoxy used should be sufficient to permanently hold the insert in place. But if you want extra support, stuff small bits of paper towel around the insert and soak with CA to form a bridge. When all is fully cured, test the operation of the pen. If there is any binding when extending or retracting the refill, sanding the inside of the neck or the outside of the bullet BEHIND the insertion point will provide additional clearance.