

## Lost Wax Casting Clips and Center Bands – IAP Activity

Bruce Robbins (brobbins629)

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This is intended to be a beginner's lost wax casting activity for those pen makers interested in learning by experiencing one method to design and make components. My hope is that if you choose to participate, you will end up with 1 or 2 unique silver pieces that you can incorporate into your pen design. From there, it's up to you.

The first thing you will need is some jewelers wax. This comes in various sizes, shapes and hardness.



The blocks in the foreground can be used for carving or turning. The solid tube is a good choice for center bands. The assortment of blue wires can be used to form 3 dimensional shapes. I get mine from [www.riogrande.com](http://www.riogrande.com) but there are many other sources including ebay. Google is your friend. Mike (mredburn) has also offered to supply small starter kits.

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**Matt™ Ring Tube No Hole** made in USA

Item Number: 700710

Regarded by many wax designers as the best carving wax available anywhere, Matt™ waxes are formulated to the demanding specifications of professional wax carvers. Pre-milled and trued to minimize preparation time, each is specially formulated to meet a variety of carving needs. Matt waxes are always true, square and clean, making it easy to produce exceptional wax carvings. Available in three hardnesses: • Green—rigid, excellent for detailed carving or milling; melt temp. 230°F. • Purple—all-purpose, good for chip-carving; melt temp. 225°F. • Blue—Bendable (a 1/8" piece can bend up to 90°); melt temp. 200°F.

**Specifications:**

6" L x 1-5/16" diameter (152 x 33mm) solid purple tube.
Purple, Solid Tube
Brand Matt™
Material Purple
Country of origin USA
Catalog page 2010 Tools and Equipment Catalog p.485

Select Material: Purple

Quantity Break*	Selling Price
1 - 2	\$6.95
3 - 5	\$6.25
6 - more	\$5.65

\*Priced individually  
\*Deeper price breaks will be reflected in your shopping cart.

Done Internet

Solid tube from Rio Grange web site – I use both purple and green

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**Matt™ Wax Slice Assortment** made in USA

Item Number: 700514

Regarded by many wax designers as the best carving wax available anywhere, Matt™ waxes are formulated to the demanding specifications of professional wax carvers. Pre-milled and trued to minimize preparation time, each is specially formulated to meet a variety of carving needs. Ordinary carving waxes may have distorted surfaces or out-of-true corners and edges, and may contain pits or air bubbles. Matt waxes are always true, square and clean, making it easy for you to produce exceptional wax carvings. Available in three hardnesses: • Green—rigid, excellent for detailed carving or milling; melt temp. 230°F. • Purple—all-purpose, good for chip-carving; melt temp. 225°F. • Blue—Bendable (a 1/8" piece can bend up to 90°); melt temp. 200°F.

**Specifications:**

3-1/8" x 1-7/16" (79.38 x 36.5mm) slices; thickness varies; 1-lb. (2.2kg) box of green wax
Green
Brand Matt™
Material Green
Country of origin USA
Catalog page 2010 Tools and Equipment Catalog p.489

Select Material: Green

Quantity Break*	Selling Price
1 - 2	\$14.40
3 - 5	\$10.70
6 - more	\$12.35

\*Priced individually  
\*Deeper price breaks will be reflected in your shopping cart.

Qty:  **ADD TO CART**

Done Internet

Wax assortment – can be used for both clips and center bands – enough to share with a friend!

Look at several jewelry supply sites for what may work best for you.

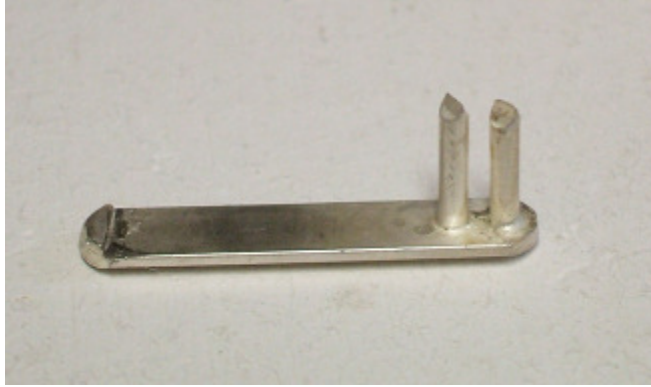
**Center bands** If all you want to make are a few center bands, get a hard solid round piece (no holes in the center). You can easily make 10 or more with one piece. For simple ones, I make some bushings from whatever material I have around and turn them on a pen mandrel. If you want to embellish, get some soft wax, die cut a design and CA them on. Or carve a design in

them. For those who want to thread before casting, that is definitely possible, though you will probably have to chase the threads after casting. Some shrinkage will occur.

In the picture below on the left are 3 pieces still in wax, in the center 2 pieces as received from the caster, and on the right some finished pieces. More on the finishing later. Note that some of these are straight through on the inside, some have a recess for a tenon and one has internal threads.



**Clips** The most difficult part of a clip is coming up with an attachment method. I have used or seen, single pins, multiple pins, washer style, glue to a piece of a kit clip, small screws etc. The next hardest question is how thick. For starters, I would recommend .060 to .080" but I have done thicker and thinner. Depends on how flexible you want it, whether or not you can harden it and other design factors. All I can say is don't worry about your first one. It's a learning experience. The type of wax for clips is dictated by the design. Most of my clips are carved from hard or medium hard wax, but I have also made some from soft wax wires. There are plenty of assortment packs. Find a friend and share.



2 pin attachment example



Washer style attachment



Cutting out pattern with jeweler's saw



Hand carved with Xacto knife and needle files





Carved this one, then used blue wire to wrap handle and top

### **Tools**

For center bands turned on the lathe, any turning tool will do. You will find wax one of the easiest materials to work with.

For hand carved clips I've used Xacto knives, dental picks, very cheap carving tools, and old files. An economy wax file is handy to have but most coarse files will work to get you started if you need to thin out or file away an area. A jeweler's saw and wax blades are a nice to have as well. Alcohol lamps and wax pens used to heat weld wax pieces together are nice to have but are not necessary to get started. A candle and/or CA can be made to work almost as well. After this trial, if you like doing this, there are plenty of tools to spend your money on. Improvise!!

**Tip #1** Try to make to surface quality of what you making as close to what you want the final object to be. If there's a scratch in the wax it will be in the silver. It can be removed, but usually it's easier to do it in the wax. Sand, burnish, file, etc.

**Next step:** When you have finished your pieces, send me a pm for my address (but not before Thanksgiving). I think my biggest problem may be trying to keep track of which pieces belongs to who, so when you send them to me please include all your information including real name, screen name, address, and if possible a picture of the pieces.

I will be sending these to [www.cranstoncasting.com](http://www.cranstoncasting.com) to be cast with sterling silver. Visit the site to see what they do.

Given the interest expressed, I will probably send these out in several batches so don't worry about trying to meet a certain date. When I have 15-20 pieces I will send out the first batch, but expect it will be mid January or later for the last.

I won't have an exact cost for the casting until they are done, but expect it to range from \$5-15 labor plus the cost of silver. Silver weighs about 10 times as much as wax and costs about \$30 ounce if you want to estimate. Unless you have a very big piece, labor is usually more than silver. Shipping and PayPal will add a few dollars. Everything will be charged at my cost.

**Finishing** When the pieces are returned from the caster, they will not be all shiny and ready for assembly. In order to cast, sprues need to be added. They will be cut off close to your pieces, but need to be filed or turned off. Additionally, there will be some fire scale on the pieces which needs to be sanded or polished off. For your first pieces, I think you can get an acceptable finish with sanding and micromesh. If you want shiney like in the jewelry store, think about investing in a flexible shaft machine and some buffing wheels or a rotary drum polisher. There are as many ways to finish silver as there are to finish pens and just as many opinions. I usually finish with a flex shaft machine using tripoli and red rouge. Only advice I will give here is not to mix your buffing wheels from your wood and plastic pens and your metal.



Center band with sprues needing filing



Front and back of clip as received from caster.