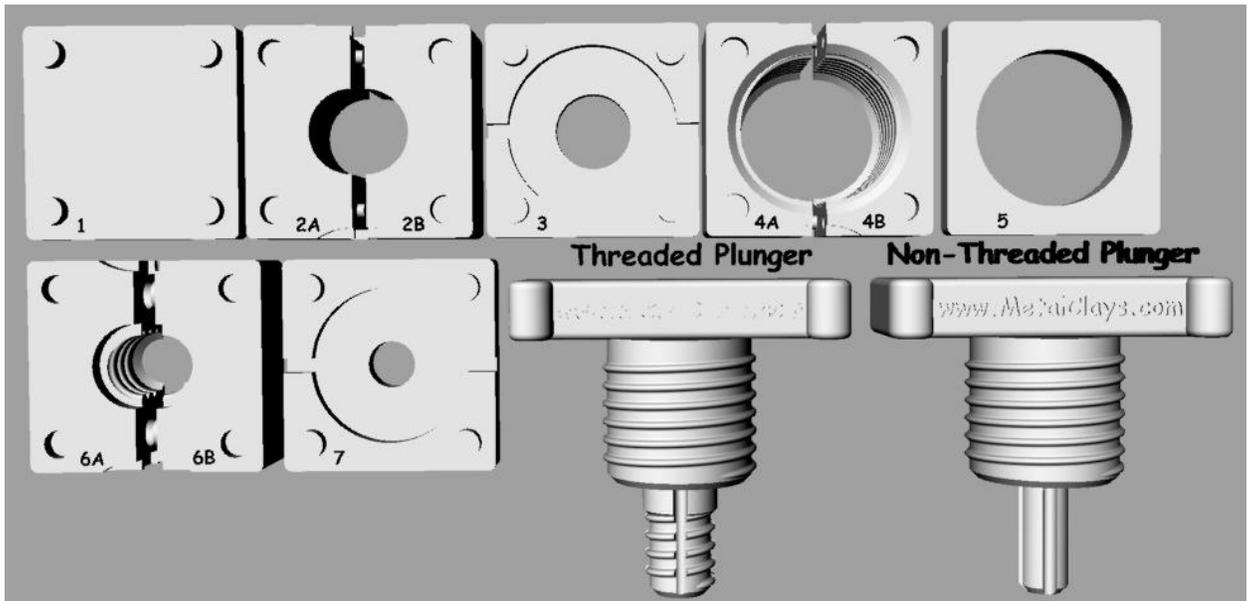


## Threading Tool Instructions - 7/17/2013

Please note: The actual use of this tool is much easier in practice than to explain. We do suggest watching [video](#) in combination with these instructions. Once the concept is understood making the rough parts will really be a matter of few minutes.

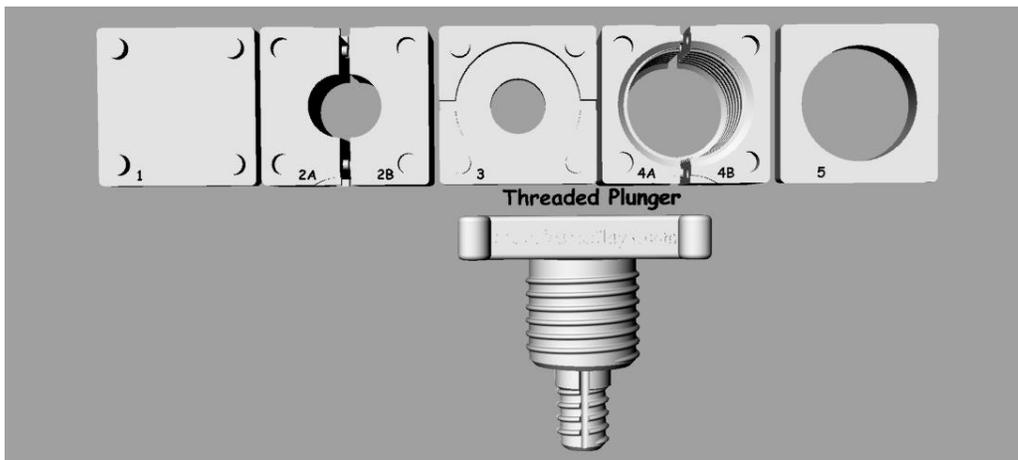
1. This tool is available in 3 sizes. Gray 16mm, Pink 12mm, Green 8mm.
2. Each size consists of 12 pieces.



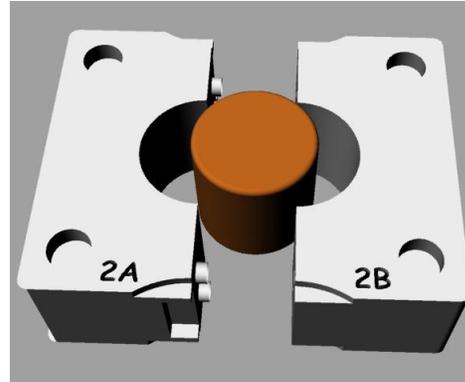
3. Thoroughly lubricate all parts

### Making Female Threaded Part

4. Our first part(Female) will use these pieces 1, 2A & 2B , 3 , 4A & 4B , 5 and Threaded Plunger. Set these aside in numerical order

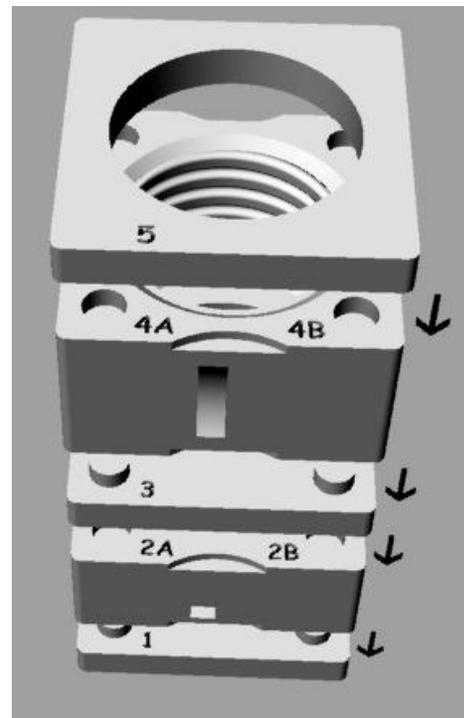


5. Taking piece **2A & 2B**, assemble and pack center hole with clay (shown in brown). Make sure to fill the whole hole.

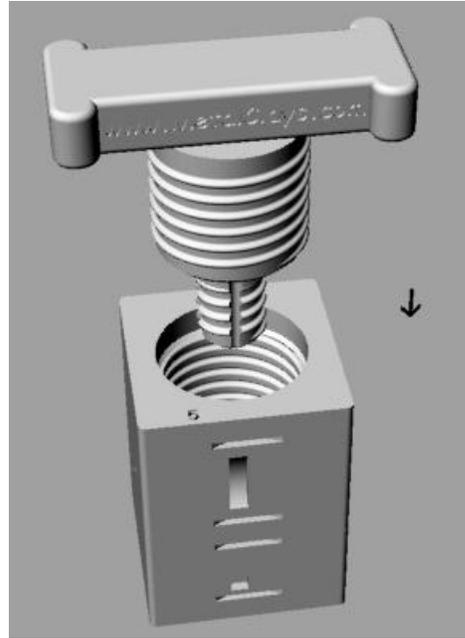


6. Now take **2A & 2B**

- A. and snap onto **1**
- B. Now snap **3** on top of these
- C. Take **4A & 4B** snap together and place on top of **3**
- D. Take **5** and snap onto **4A & 4B**



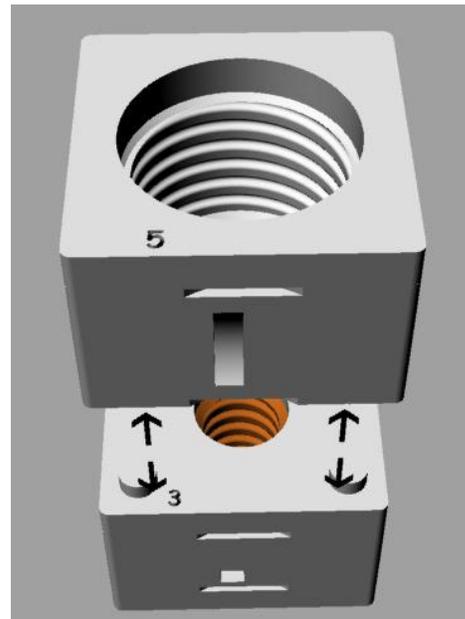
7. With box assembled and Threaded Plunger slowly screw plunger into box. While screwing in plunger in firmly hold box with downward pressure towards work bench. We want to avoid layers splitting as we extrude clay. DO NOT over tighten. You should just screw until you feel resistance.



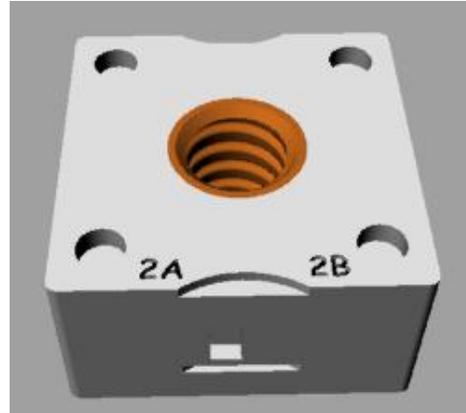
8. Now unscrew plunger. Make sure you remove it straight.

9. Remove in one piece, parts **1**, **2A & 2B** and **3** from assembled box. You should now inspect the threads by holding at angle to light and turning. You are just looking for consistent impression and free of loose clay.

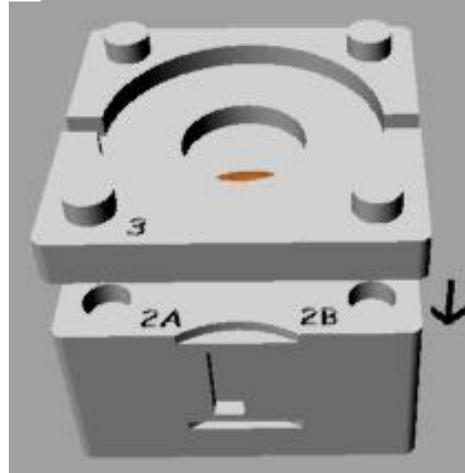
**Please note** that you can reassemble and screw plunger in gain to a fix problem. Just make sure you clean plunger of loose clay before. In any case do not proceed if there is obvious defect in threads.



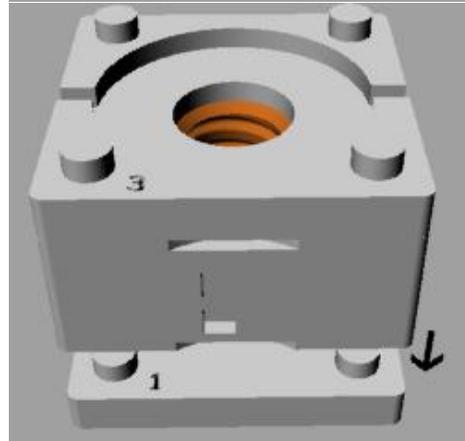
10. Now slowly remove **3** from **2A & 2B**.  
Once removed clean edge with  
exacto knife. Trim from center out as  
not to damage threads. After cleaning  
it should look like this picture.



11. Place **3** back on to top of **2A & 2B**  
and **1**.

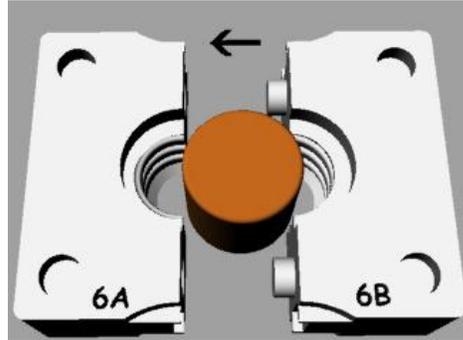


12. Now remove bottom piece **1** and  
place **2A & 2B** and **3** on hot plate for  
20 minutes



## Making Male Threaded Part

13. Taking piece **6A & 6B** assemble and pack center hole with clay (shown in brown). Make sure to fill the whole hole.



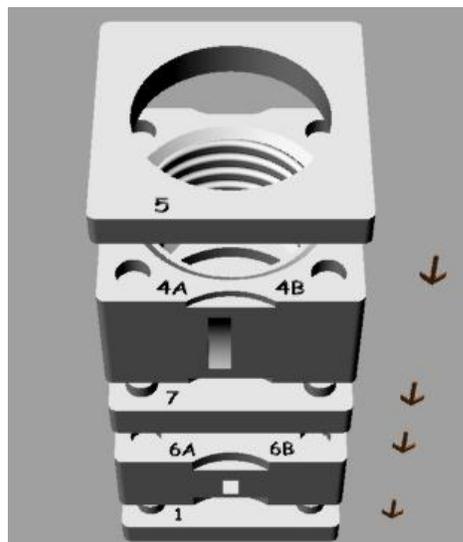
14. Now take **6A & 6B**

A. and snap onto **1**

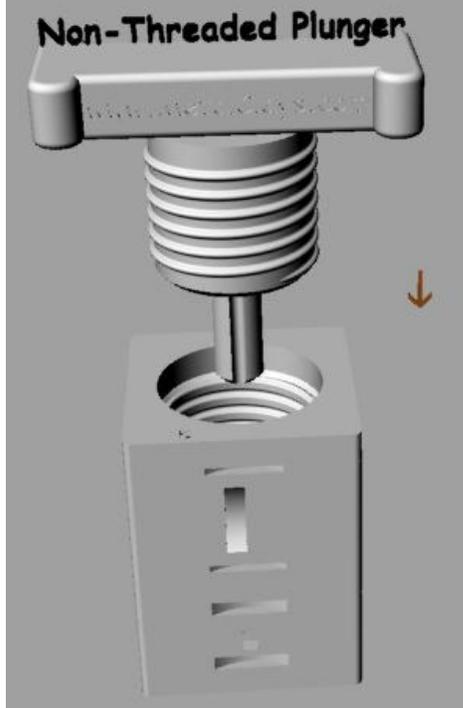
B. Now snap **7** on top of these

C. Take **4A & 4B** snap together and place on top of **7**

D. Take **5** and snap onto **4A & 4B**

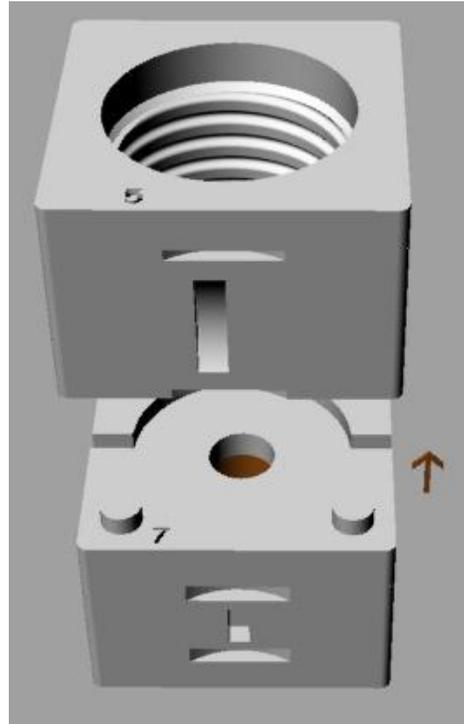


15. With box assembled and Non-Threaded Plunger screw plunger into box. While screwing in plunger in firmly hold box with downward pressure towards work bench. We want to avoid layers splitting as we extrude clay. DO NOT over tighten. You should just screw until you feel resistance.



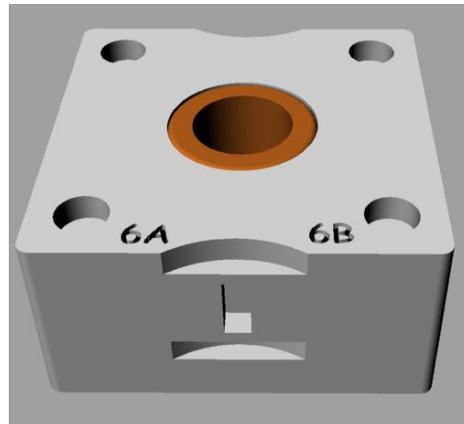
16. Now unscrew plunger. Make sure you remove it straight.

17. Remove in one piece parts **1** , **6A** & **6B** and **7** from assembled box.



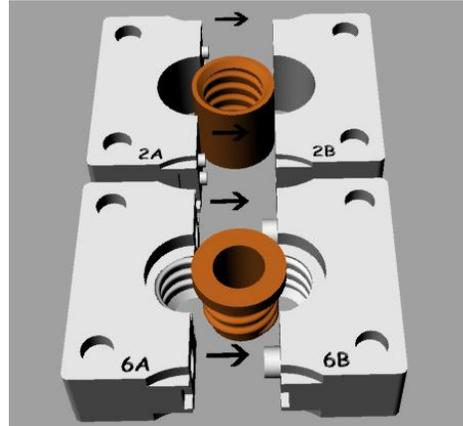
18. Now slowly remove **7** from **6A** & **6B**. Once removed clean edge with exacto knife .After cleaning it should look like this picture.

Now place on hot plate for 20 minutes



## Opening Molds

19. After 20 minutes parts **2A & 2B** and **6A & 6B** can be opened. You may have to remove part **1** from **6A & 6B** before separating this one.

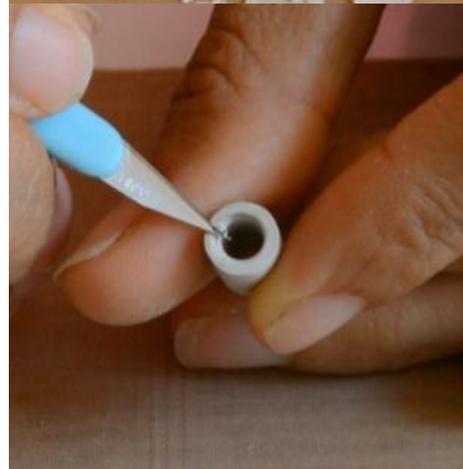


20. Place both pieces back on hot plate for 20 minutes.

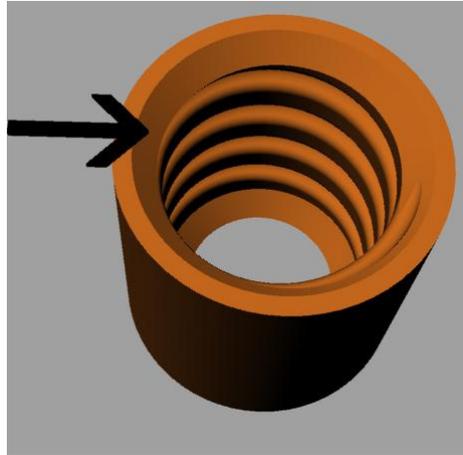
21. After drying cleaning mold parting lines from pieces.



22. Using female part carve opening wider at slight angle. This will make engaging threads easier.



23. The opening should look like this after



## Mating Threads

### !!!Important!!!

The following should be taken more as techniques than step by step instructions. At this point we have female and male parts that will not just screw together. This is due to various reasons such as shrinkage, friction and otherwise the in precise nature of metal clay. What is important is the goal which is to widen the hole in the female part and sand down the male part enough to slowly begin to screw parts together.

### Technique 1 - Sandpaper

This is the main technique that will be used throughout the mating process.

1. Start by cutting 2 small pieces of sand paper. Roll first piece with rough side sticking out. You should use 1200 to 2500 grit to start with.



2. Insert this rolled sandpaper in female part and spin part to sand



3. Take other piece and wrap around male part using 2 fingers to keep tight while spinning male part with other hand



4. Repeat this process until you can just start to screw threads together. Also you can come back to this process at any time you feel necessary to complete fitting. The important thing is to sand and test in small increments. As you get more comfortable coarser sandpaper will certainly speed up process.

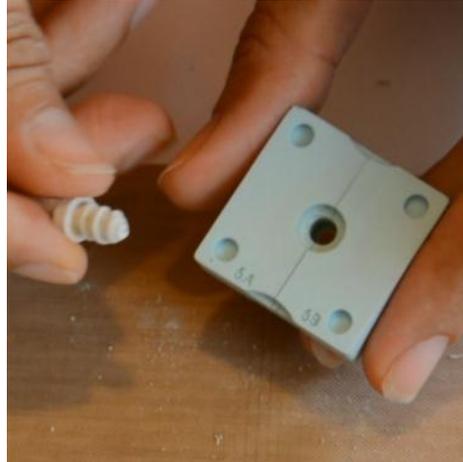
#### **Technique 2 – Mold Fitting - Optional**

This technique should only be used once sand paper technique has been completed enough that you can do the following without cracking your piece. This is optional step but it does a really good job at cleaning dust out of female part

1. Use Threaded Plunger to slowly and carefully screw into female part. Take small steps and frequently remove and clean clay dust off.



2. Use part assembled part 6A & 6B to slowly screw male part into. Once again open and clean clay dust out frequently.



### **Technique 3 – Final Fitting**

After sanding has gotten you to the point that you can start to screw pieces together the following should be used to create final and precise fit. Worth mentioning is the need to keep both female and male threads clean of built up dust. A technique for this follows after this one.

1. Using your hands carefully start to screw parts together. This should be done in small increments moving further each time. Your threads should be cleaned of dust frequently during this process. It is suggested to mark piece with pencil so you can gauge your progress. If you feel like you reach a point that you cannot go further without breaking stop and return to sanding technique then repeat this process. Continue until you have paper thin seam in between.



### **Technique 4 – Keeping threads clean**

It is really important to keep threads clean during process. Failure to do so will result in a buildup that will taper or destroy threads on male piece. Silver clay is pretty forgiving but powder clays must be watched as they fall apart and pack threads quickly.

1. Using [dental pick](#) or small modified paperclip gently run pick tip along groove to loosen pack dust. Blow out or taps out loosened dust.



## Firing

Once your pieces fit smoothly together you can cut, carve and integrate into your projects as you see fit. Your threaded parts should be integrated by joining dry pieces together. Female and Male parts can be fired separately and I am almost positive together though we have not tested this way.

During firing there will be shrinkage that may make screwing together tight. After removing binder just work pieces back and forth several times to loosen up. Once done you should have a near machine precision screw system.

Video can be found at this URL

<http://youtu.be/AuxtaXFzIzU>

Any questions can be sent to [sales@metalclays.com](mailto:sales@metalclays.com)