Improved Piranha Cutter

Features:

Precision Machined all Stainless Steel Construction!
Compact size- 3/8"x about 1-5/8"
Lightweight- about 16gms
Uses a specially designed line cutting piston as the powder measure!

Parts List:

SS Housing
SS Line Cutter/ Piston/Powder Measure
Specially Designed SS Cap Screw
004-70 Small Black E-match sealing O-rings
006-70 Green Cutter O-rings
Hard Black 006-90 O-rings
Waxed Cotton Cord
Kevlar Cord & Connectors for Lanyard
1 - 1/16" Long Allen wrench for disassembly
Cotton Swabs (Q-tips)
Powder Measure Vials
TR Lube & E-match sealing putty

(Dual Piranha Line Cutter Kit Shown)

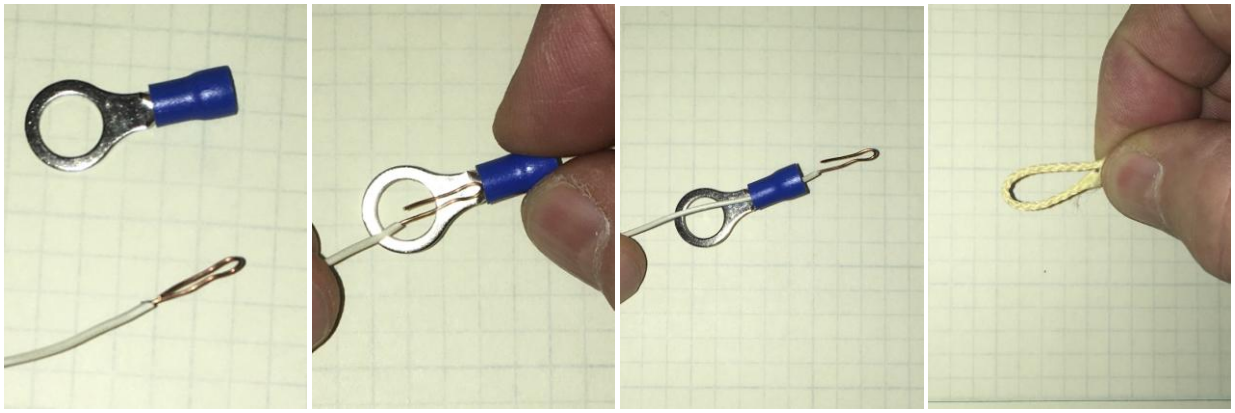
12-2024 Updated User Instructions

Note: These instructions are written for "rocketry folks" and it is assumed that all directions will be closely followed. If you are not a "rocket" guy or gal or you do not feel that you can follow these directions exactly, please do not use this device!

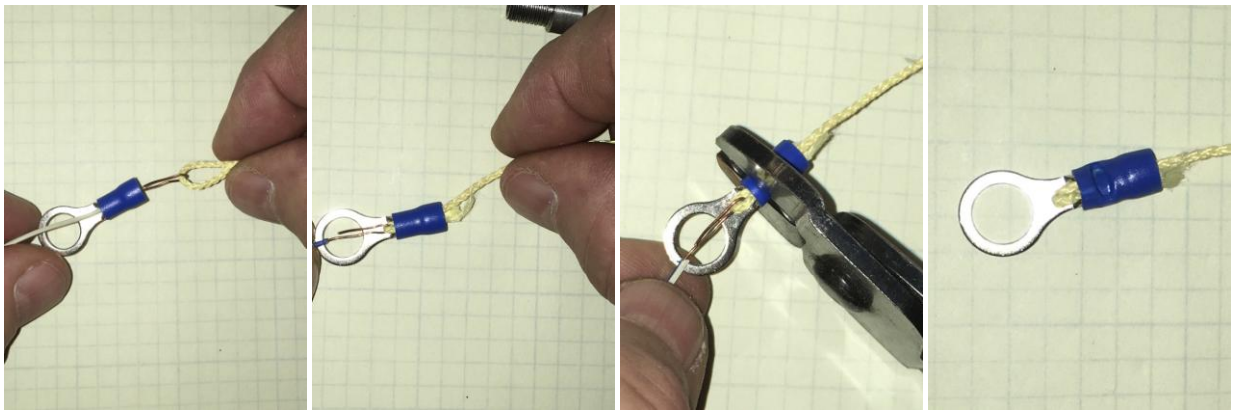
Step 1 - Prepare the Cutter Lanyard

If the e-match is prepared and installed properly, a lanyard is not necessary. This said, a lot of folks like the security of having a lanyard on their cutter.

Strip about an inch or more of insulator off an old e-match wire. Fold the copper wire back on itself.
Feed the folded wire into one of the supplied terminal rings.
Fold a piece of the supplied Kevar lanyard cord as shown.



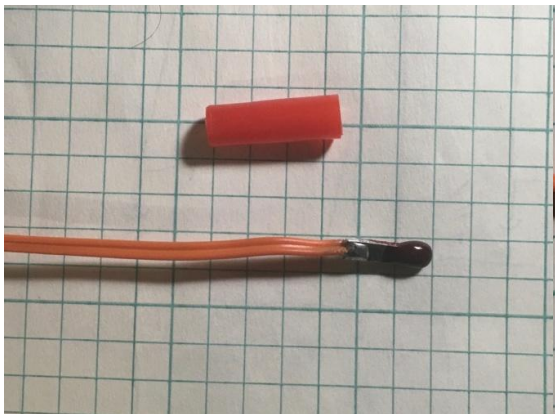
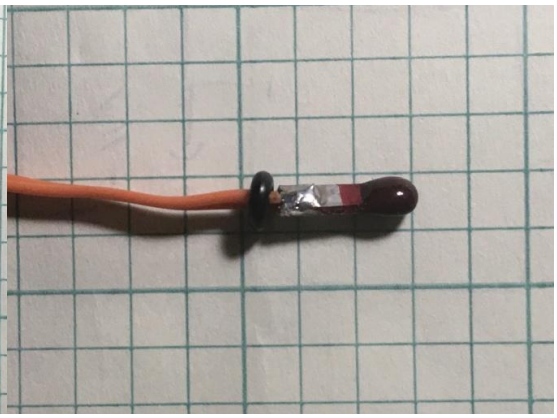
Slip the Kevlar cord around the bent copper wire
Gently pull the wire until the loop of the Kevlar cord is clearly visible.
Securely crimp the connector onto the Kevlar.
Remove the wire and your lanyard is ready for use.
Note: The supplied Kevlar cord is to be cut in half as there is enough cord for both cutters.



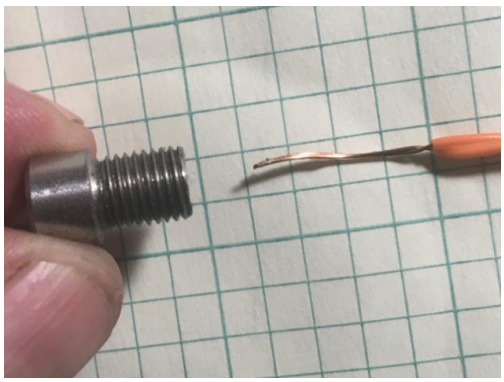
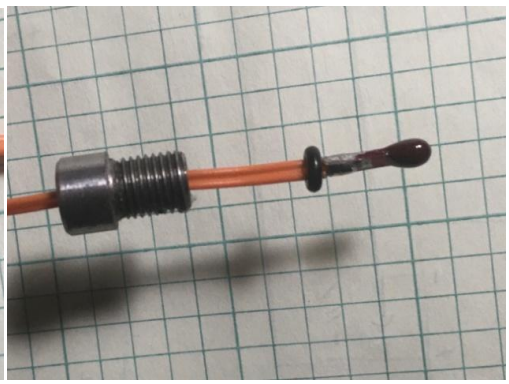
Step 2 - Prepare the E-match/Cap Screw

Using the supplied lube, thoroughly lube the Custom Cap Screw
(**Hint:** Don't be stingy with the lube and don't substitute other lubes!)


Remove the protective plastic cover from the e-match
Slide one of the small black o-rings over the wire and up to the e-match head

Slide the wire into the lubed Cap Screw to about 3/4 inch or so of the o-ring touching the cap

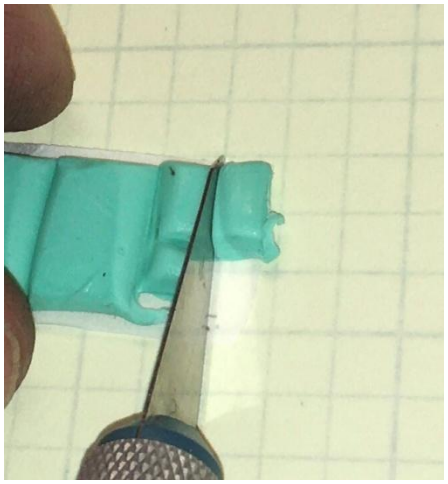



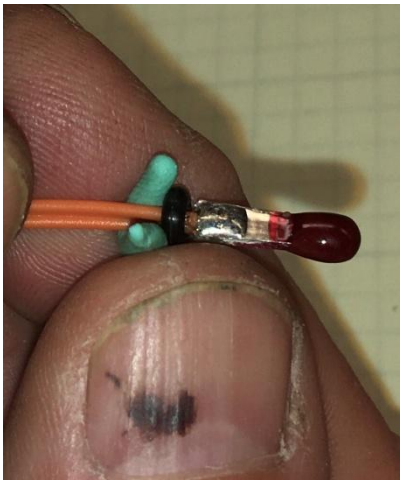
Step 3 - Sealing the e-match in the Cap

Sealing the gasses in every Tinder Rocketry device, with the exception of the original Tender Descenders, **is very important**. Traditionally e-matches have been "potted" or sealed in charge cups using epoxy. More recently, a new and **significantly better** method has been developed. As a result, I no longer recommend nor will I explain how to use epoxy to "pot" an e-match into a charge cup!

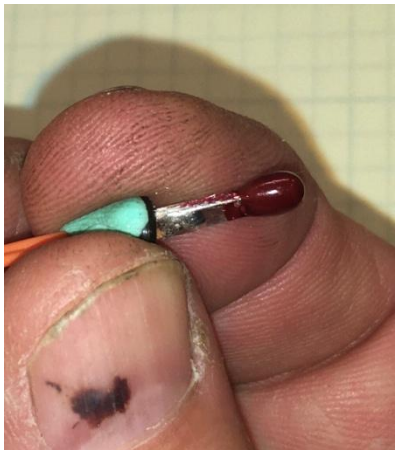
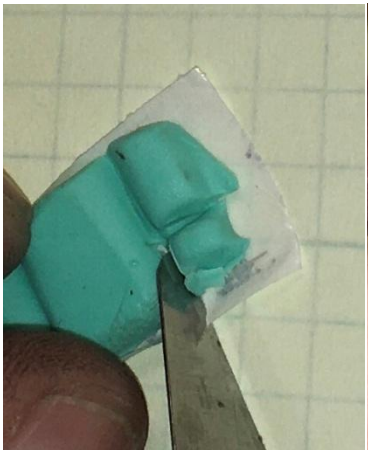
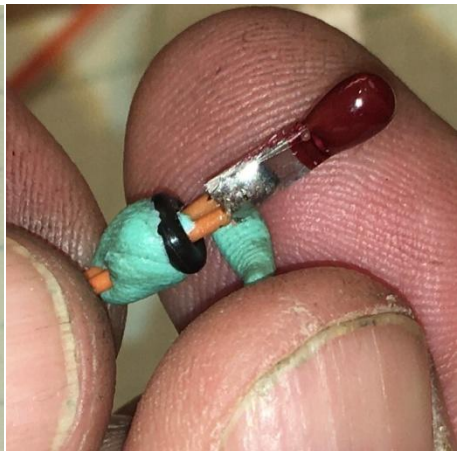
Poster Putty/Mounting Putty
Sealing Method for sealing the Cap

Prepare the e-match with an o-ring and lube the cap as outlined in Step 2 on page three.
With a hobby knife cut one of the "squares" into quarter sections
Remove one of those quarter sections and roll it in your fingers
Fold the putty around the wire below the o-ring



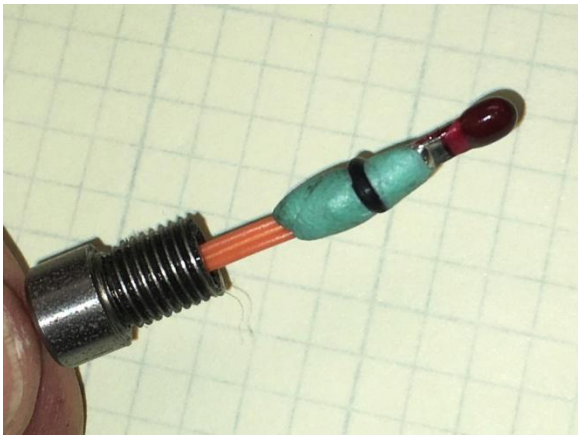
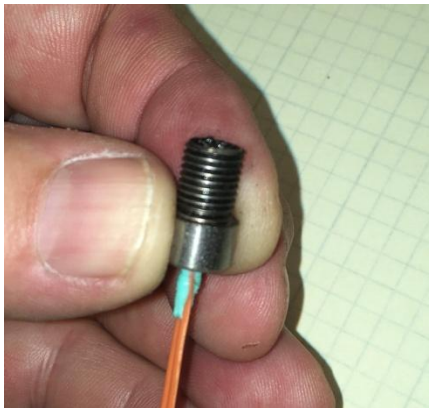


"Roll" the putty covered wire/o-ring in your fingers
Cut one of those quarter sections in half, roll in your fingers and apply it to the top side of the o-ring

Roll the whole thing in your fingers so that you have putty completely encircling the wire on both sides of the o-ring and so the putty sticks to the e-match wire.

Gently pull the e-match wire until the e-match head is about flush with the mouth of the cap
Note: You may have to tug on the wire and wiggle the wire while tugging to get it seated properly, this is ok. You may also very likely see the putty ooze through the wire hole along with the wire, this too is ok and expected.
Now is a good time to place the lanyard on the cap, then set the cap assembly aside.

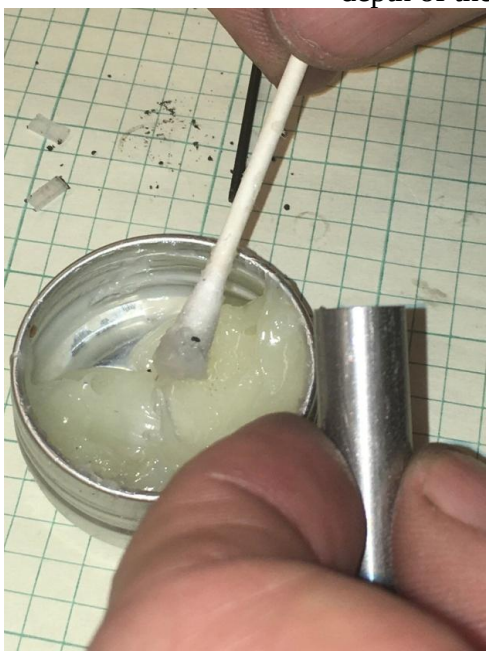





Note: The Putty Method of sealing the e-match has been tested at room temp, at about 0 F and over 140 F and it has been found to seal very well every time in this device! This said, some oozing of the putty is to be expected when the device fires!

This poster/mounting putty can be found on Amazon or at your local hardware store as well as the "Support Parts" page of the Tinder Rocketry website.

Step 4 - Prepare the cutter body

Wipe a reasonably generous amount of the supplied lube into the mouth of the cutter body to the full depth of the cutter body.




Check to make certain the larger hard **BLACK** o-ring is at the bottom of the cutter body
The supplied Allen wrench works well for this. Insert the wrench to the bottom the cutter body.
"Feel" the bottom of the cutter body... do you feel metal or hard rubber?


If the larger hard **BLACK** o-ring is needed, you can seat it with a 3/16" Allen wrench
Note: You must NOT use the **soft green** o-ring for inside the cutter body!
You must NOT use any o-ring that you buy at your local hardware store for use inside the cutter body!
Use ONLY the supplied HARD BLACK o-ring!
NOTE: This o-ring does not need to be removed and may not ever come out, it may be reused almost indefinitly. The reason to check for the o-ring is in case it fell out while cleaning.
The o-ring is shipped pre-intalled.

Step 5 - Add powder to the Cutter/Piston

Note: This kit comes with extra **green** o-rings for the cutter/piston. You may never need to replace this o-ring! Only replace this o-ring if the installed o-ring becomes severely damaged (Unlikely).
Replacing this o-ring will be VERY challenging and is NOT recommended!
Notice that the actual cutter has a larger cavity machined into one end.
Completely fill this cavity with 3F or 4F black powder or BP substitute in the 3F AKA pistol granulation. "Tamp" the powder down a bit then remove the excess. Do not add extra powder.
Drop the powder filled cutter into the Cutter body and carefully press into the cutter body mouth about 3/8". Try to avoid getting any powder in the threads! If you do, final assembly will be more difficult.

VERY IMPORTANT Note:
Do not ever use smokeless powder in this cutter! (Or any Tinder Rocketry device) **Use black powder or black powder substitutes such as Triple Seven or Pyrodex P ONLY!** The powder from a "disassembled bullet" is NOT black powder! The powder from a "disassembled fire cracker" is NOT black powder! (I tell you this because a few customers have used these with bad results!)




Step 6 - Finish Assembling Cutter

Keep the cutter body held down on a flat surface to avoid disrupting the powder and getting it in the threads.

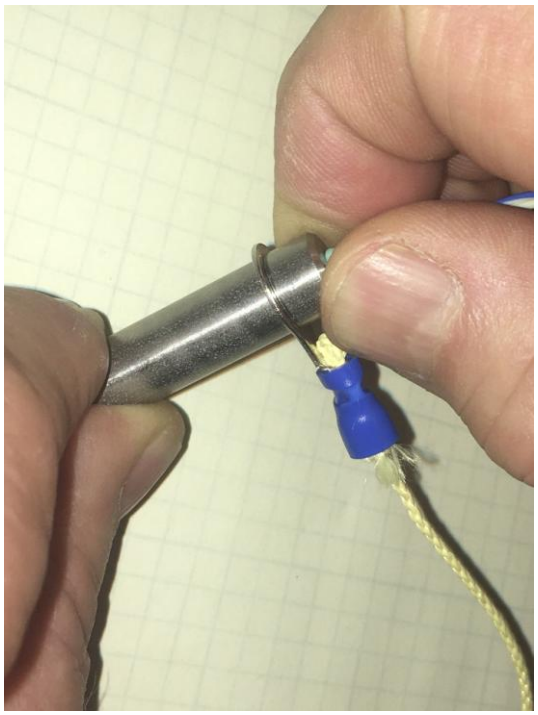
Insert pre-assembled Cap Screw Assembly into the body and tighten while continuing to hold the cutter body down on a flat surface.

Tighten hand tight only.

The all new and improved Piranha cutter is ready to be used.

You may use it right away or keep it in your go box.

Note: If loaded exactly as directed, the e-match wire can act as a lanyard. If desired, you may want to use the lanyard you made in step 1, as pictured below.



Plain talk about Pyro Powder

Black Powder (BP) or BP substitutes in the 3F (fffG) or "pistol" granulation (Also 4F) are to be used in the Piranha.

As BP becomes more difficult to find, be assured that BP substitutes such as Triple Seven (Made for BP pistols) or Pyrodex P (Made for BP pistols), work very well in the new and vastly improved Piranha cutter where they did not work in the old design. Please note that since the amount of pyro powder is determined by the precisely machined cavity in the cutter/piston, no weighing of this minuscule amount of pyro is needed. And also note that BP or the BP substitutes are all measured by volume, not by weight. (They do have different weights for a given volume)

Under no circumstance should you ever use smokeless powder in this cutter!

Do not use smokeless powder in any Tinder Rocketry device for that matter!

Use black powder or black powder substitutes such as Triple Seven or Pyrodex P ONLY!

The powder from a "disassembled bullet" is NOT black powder!

The powder from a "disassembled fire cracker" is NOT black powder.

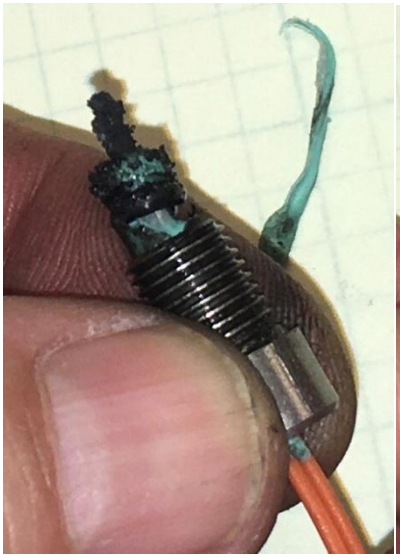
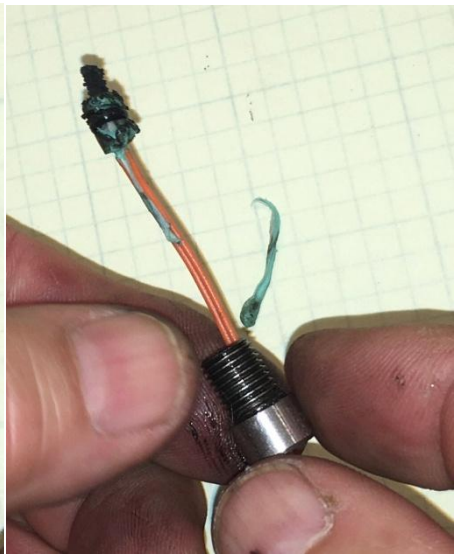
Much to my surprise, I have found that a few people have used these other pyro powders with bad results. **Please do not use any pyro powder other than BP or the BP substitutes listed above!**

After use Disassembly & Cleaning

Step 1 Disassemble/Remove Spent E-match

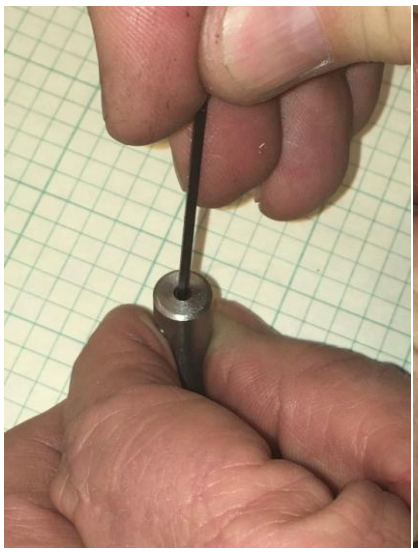
(These instructions assume that you sealed the cap with Putty.)
(Best practice is to wear Nitrile gloves before disassembly and cleaning!)

Clip the wires leaving about 2 inches and remove the cap from the cutter.
Grasp the cap in one hand and the wires in the other and push. Best to hold the wires close to the cap.
Pull the remaining wire out with your fingers or hemostats.

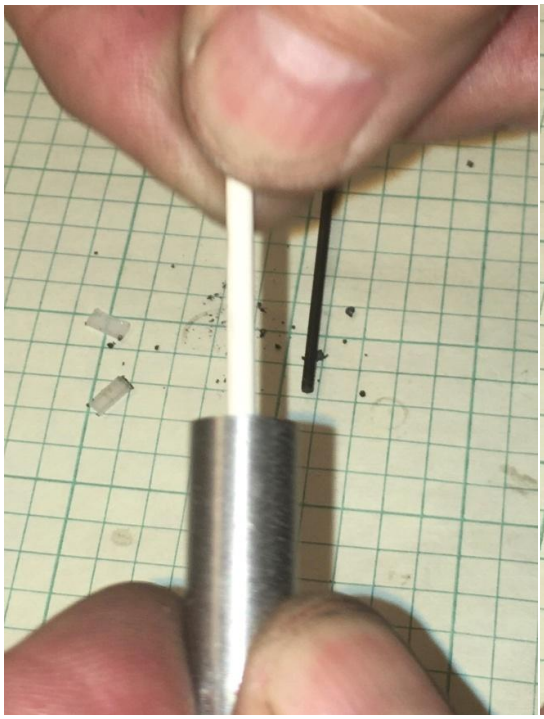
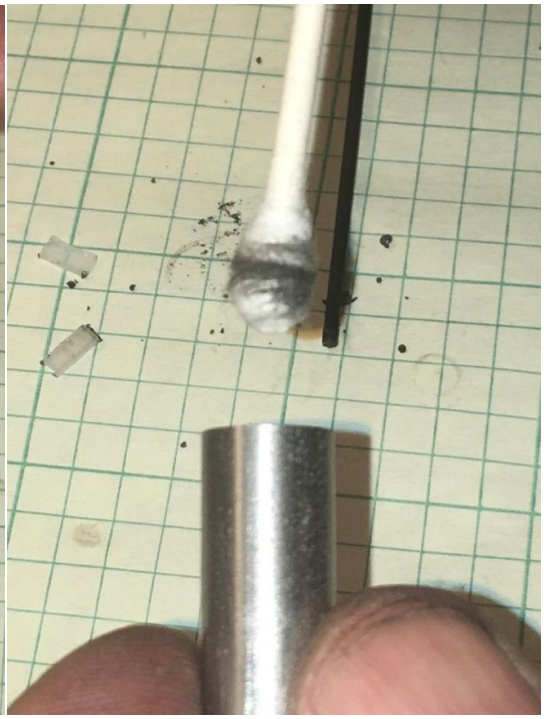
Step 2- Finish Disassembling the Device

Disassemble completely (Try not to remove the o-ring that is inside the SS Housing).
Use the supplied Allen Wrench to push out the Cutter piston from the cutter body.
Sometimes the cutter/piston is slow to move, immersing the body in warm water may help. Also, pushing from one end then the other may allow for movement. Normally, if the supplied lube was used as directed, this thing comes apart with relative ease.



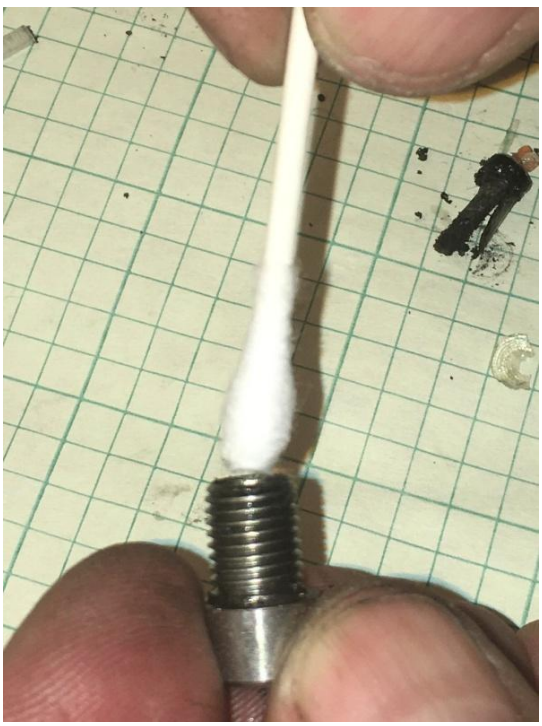
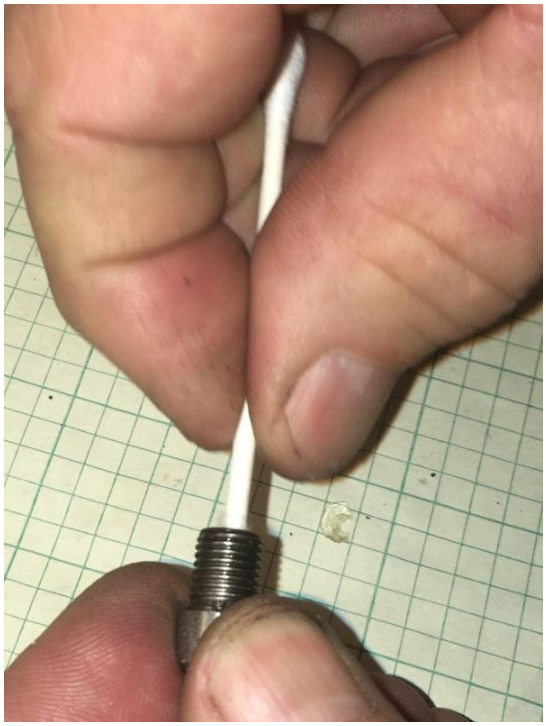

Step 3 Wash, Dry & Lube

Wash all parts in soapy hot water
Swab the inside of Piranha body with cotton swab while still wet
Swab again to dry and remove remaining residue
(Do not be surprised if some of the dirty the lube is still in the threads after washing with soapy water, this is GOOD! The discolored lube will help with sealing the device upon next use!)

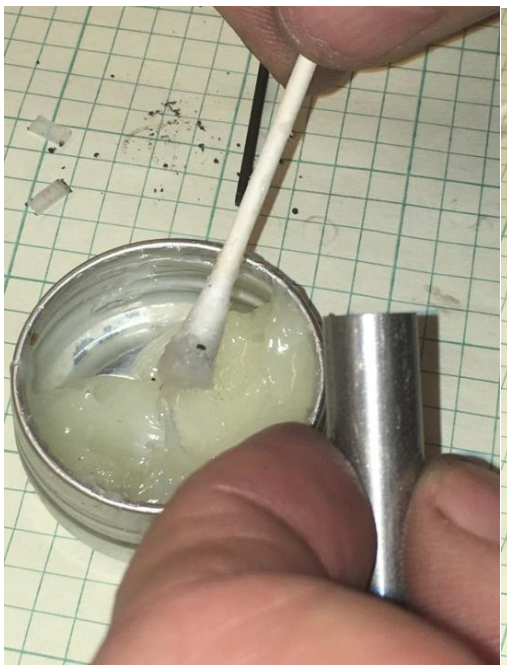
Roll a paper towel to a point to thoroughly clean Cutter/piston cavity. The powder residue will be stubborn to remove, soapy hot water will help. You may need to repeat this several times.
Note: The cutter cavity need not be absolutely clean but MUST be absolutely dry before use!


Use cotton swab to thoroughly clean the inside of the Cap while still wet
Use cotton swab again to dry and remove remaining residue
(Do not be surprised if the lube is still in the threads after washing with soapy water, this is ok, expected and actually good)

Step 4 Lube and re-assemble for later use

Make sure all parts are completely dry before re-assembly!
Use a reasonably **generous** amount of the supplied lube and wipe the inside of the cutter body.




Use a reasonably **generous** amount of the supplied lube and wipe the inside of the Cap.
DO NOT lube the cutter/piston, keep it free of lube (Mainly it's the pyro cavity we want free of lube).


Insert the cutter/piston back into the body and reinstall the cap to keep all components together.



Final note:

This device has been specially designed and manufactured to the highest standards to do a job and do it well. I have gone to great effort to explain how to use this most excellent little device! If this device is used exactly as described, you can expect it to work 100% of the time, 100% as expected!

Contact me if you see or feel that there have been omissions or if you still have questions.

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