



Improved **Piranha** Cutter

Features:

Precision Machined all Stainless Steel Construction!

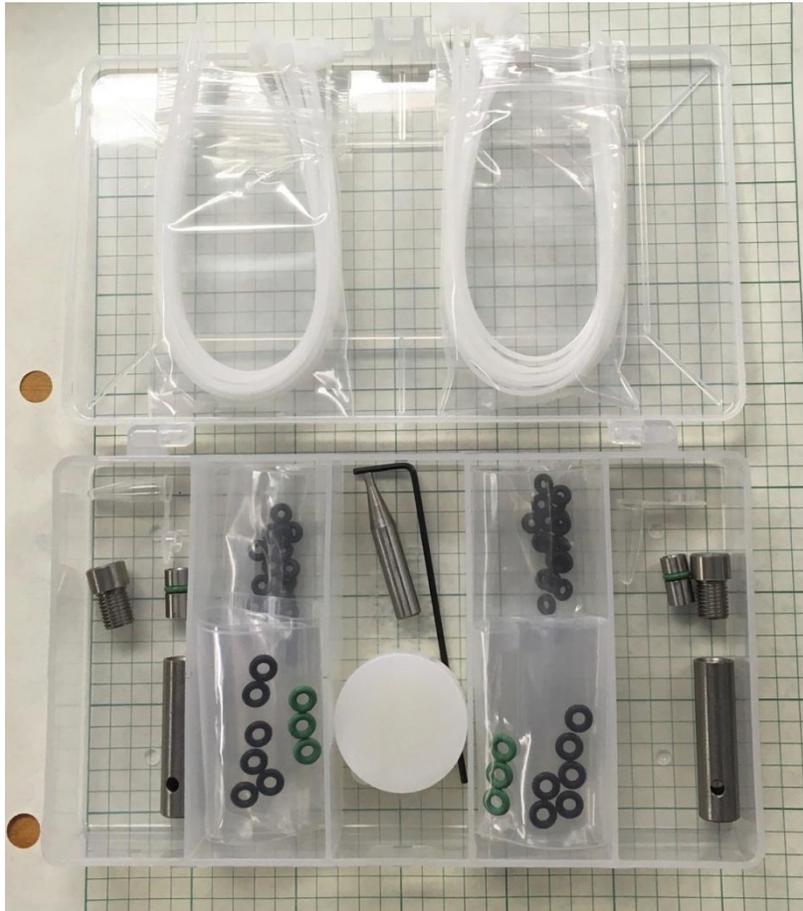
Compact size- 3/8" x about 1-5/8"

Lightweight- about 16gms

Uses a specially designed line cutting piston as the powder measure!

Parts List:

- 1-SS Housing
- 1-SS Line Cutter/ Piston/Powder Measure
- 1-SS Specially Designed Cap Screw
- 1-pk 004-70 Small Black O-rings
- 1-pk 006-70 Green O-rings
- 1-pk Hard Black 006-90 O-rings
- 1 - pk Zip-ties (Cable ties)
- 1 - 1/16" Long Allen wrench for disassembly
- Small punch for disassembly
- Cotton Swabs (Q-tips)
- Powder Vial
- 1 - Container TR Lube



(Dual Piranha Line Cutter Kit Shown)

7-10-22 Updated User Instructions

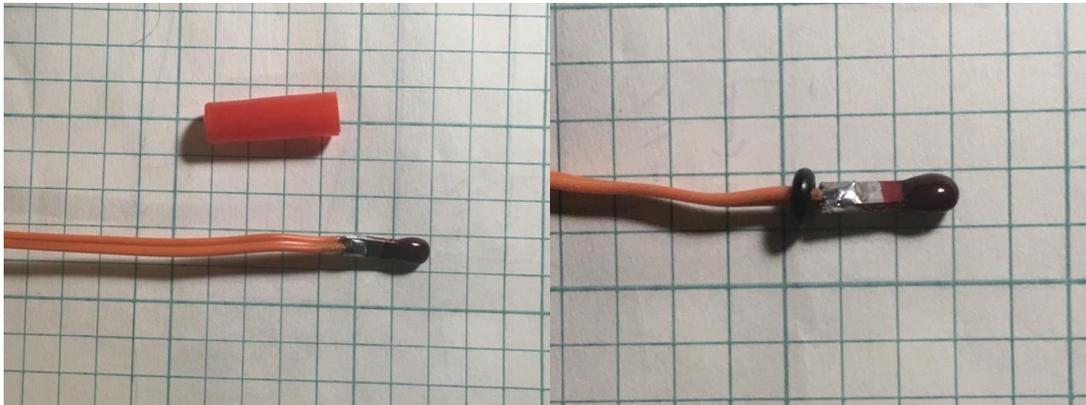
Note: These instructions are written for "rocketry folks" and it is assumed that all directions will be closely followed. If you are not a "rocket" guy or gal or you do not feel that you can follow these directions exactly, please do not use this device!

Step 1 - Prepare the E-match/Cap Screw

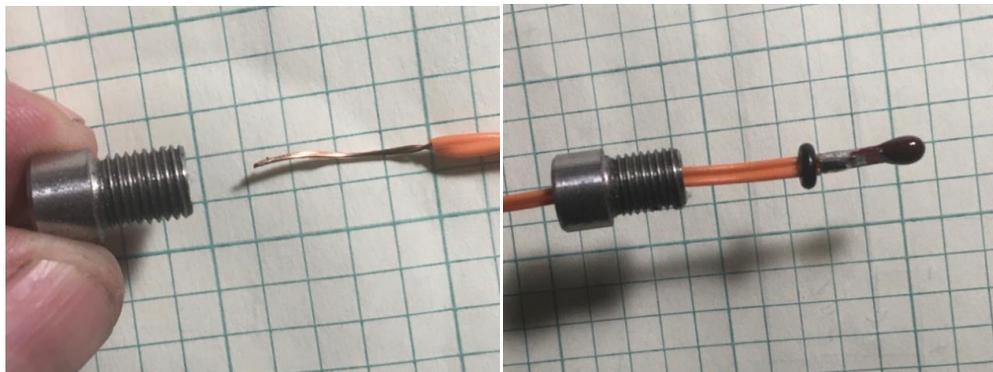
Using the supplied lube, thoroughly lube the Custom Cap Screw
(**Hint:** Don't be stingy with the lube and do not substitute other lubes!)



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 2 - Sealing 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, two new and significantly better methods have been developed. All three sealing methods are outlined below and you are strongly encouraged to read through ALL of the sealing methods AND cleaning instructions before choosing a sealing method.

Traditional Epoxy Sealing Method

Add a dab of quick set epoxy to the wire on both sides of the o-ring

Pull the e-match wire so that the e-match is entirely inside the cap.

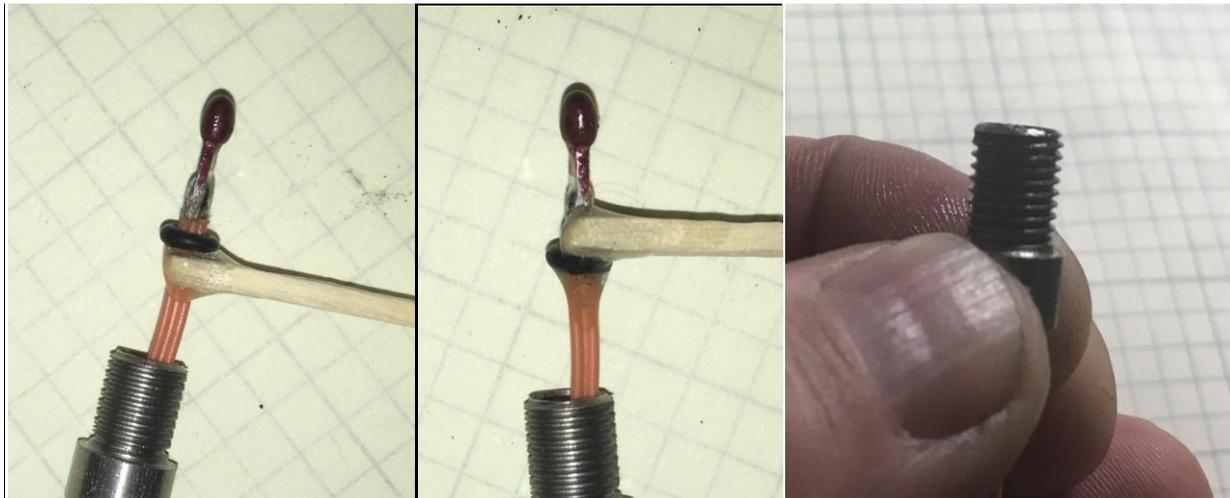
(Note: If you cannot do this you probably have epoxy residue left inside the cap from previous use.)

Remove the e-match and see below under cleaning as to how to remove this epoxy residue)

Use Q-tip to wipe any excess epoxy away from the threads and set aside, **hanging from the wire**, to cure overnight.

IMPORTANT: Make certain that you use enough epoxy so that it oozes out the wire hole when the wire is pulled!

Also very important: make certain that you allow even this quick set epoxy to fully cure overnight! Failure to allow full cure of the epoxy may result in this device spitting the wire, shooting out burning powder and will reduce the cutting power of this device!



While sealing e-matches with epoxy is simple and effective, the down side is that the epoxy must fully cure before use, making the device a once per day proposition...which brings us to a second method of sealing the device...

Hot Glue Sealing Method

Prepare the e-match with an o-ring and lube the cap as outlined in Step 1 on page two.

Add a dab of hot glue to the wire on both sides of the o-ring

Pull the e-match wire so that the e-match is entirely inside the cap

Note: The glue gun must be up to temp before use. The hot glue must be applied and the e-match seated in the cap fairly quickly, as the hot glue will want to cool and set, making pulling the e-match entirely into the cap difficult. That said, this method is both simple, quick and does seal very well.



Sealing the e-match in the cap using hot glue is easy, fast and seals very well. The only down side is that at a launch, it is often not convenient to find the 120 VAC that most glue guns like to run on.

Which leads us to yet another method of sealing the e-match inside the cap...

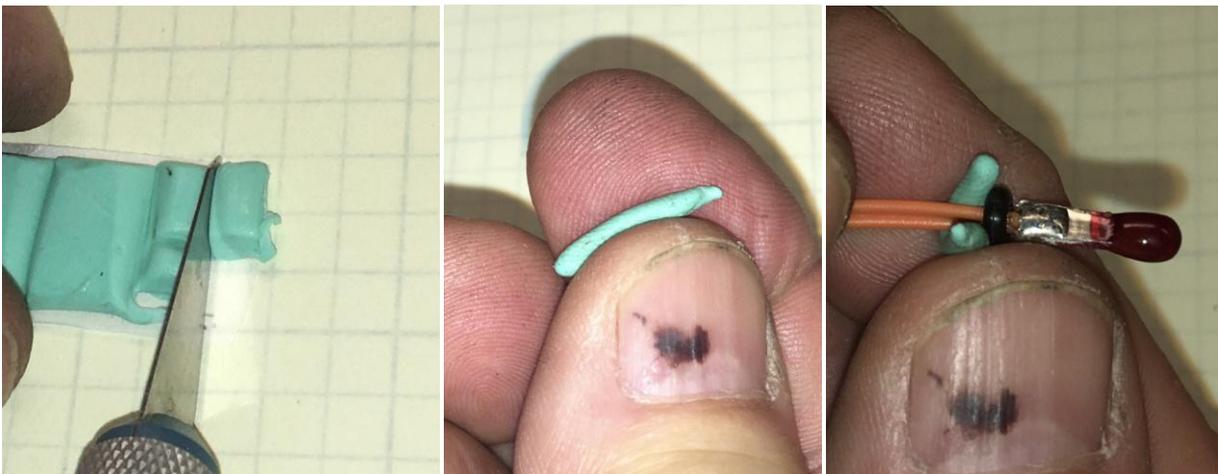
Poster Putty/Mounting Putty AKA: Putty Sealing Method

Prepare the e-match with an o-ring and lube the cap as outlined in Step 1 on page two.

With a hobby knife cut one of the "squares" into quarter sections

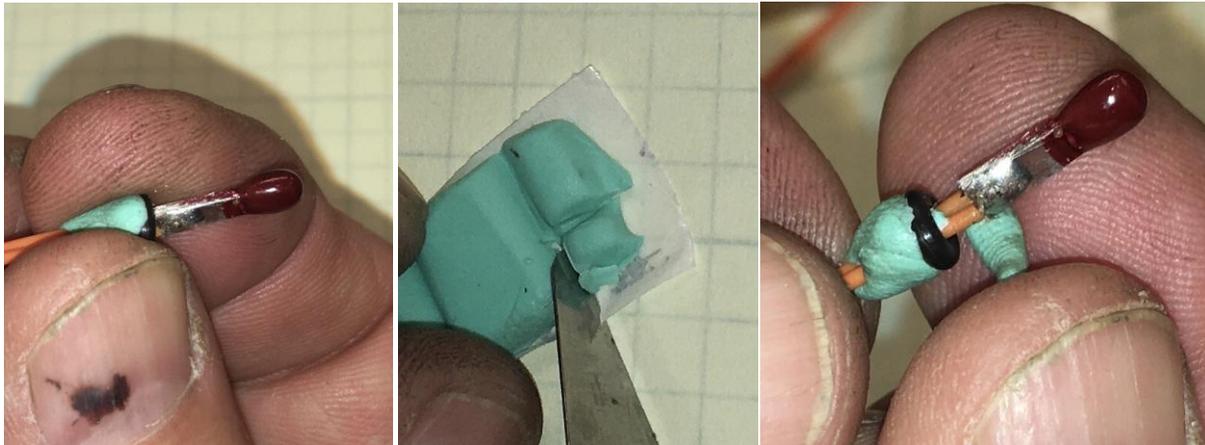
Remove one of those quarter sections and roll it in your fingers

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

Gently pull the e-match wire until the e-match head is about flush with the mouth of the cap

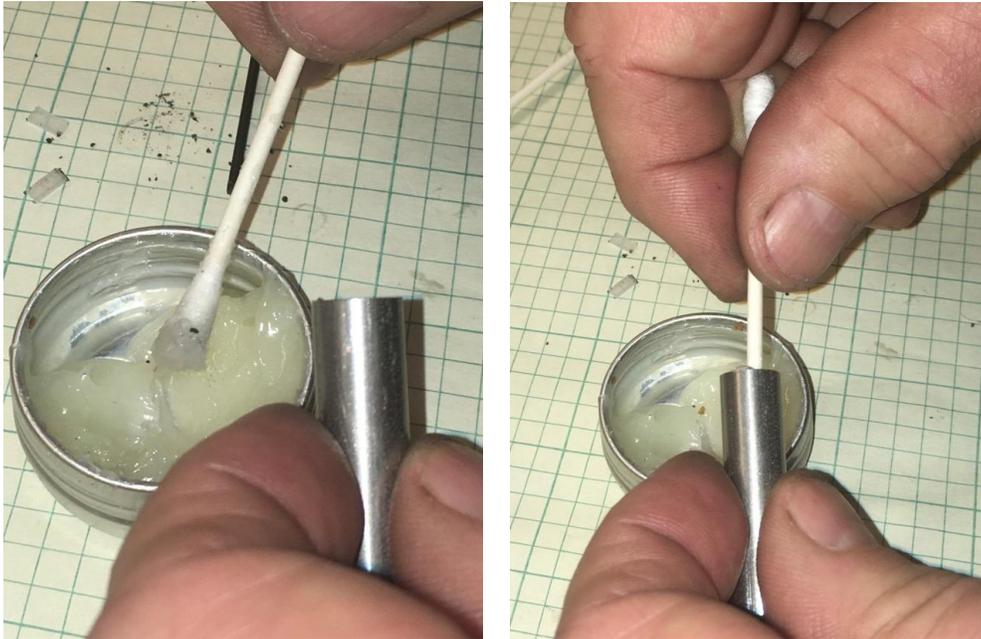
Note: You may have to tug on the wire and wiggle the wire while tugging to get it seated properly, this is ok. You may also very likely see the putty ooze through the wire hole along with the wire, this too is ok.



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.**

Step 3 - Prepare the cutter body

Wipe a 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!

NOTE: This o-ring does not need to be removed and may not ever come out, it may be reused almost indefinitely. The reason to check for the o-ring is in case it fell out while cleaning.

The o-ring is shipped pre-installed.



Step 4 - 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 or 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 5 - Finish Assembling Cutter

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

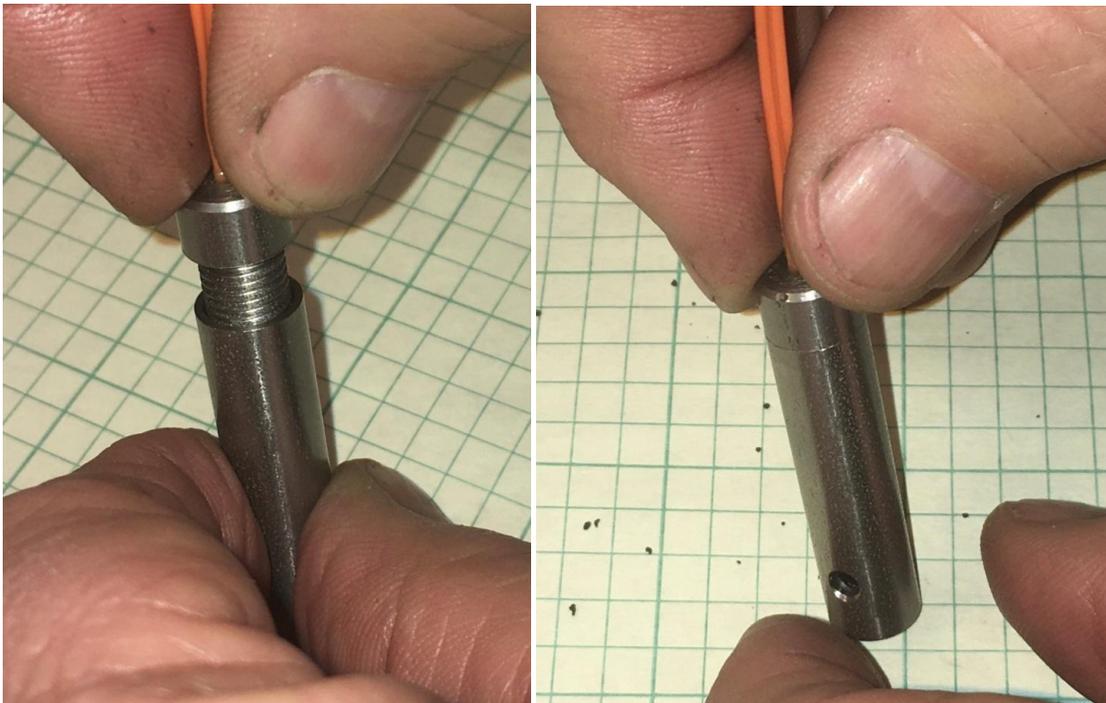
Insert pre-assembled Cap Screw Assembly into the body and tighten while continuing to hold the cutter body down on a flat surface.

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 also use a length of Masons Twine (Or thin Kevlar cord) tied to the Cap Screw neck prior to assembly as an additional lanyard.



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

The method you used for sealing the e-match in the cap will determine the method and difficulty of removing the spent e-match. Choose from the list below and skip to that section:

Step 1-E if you sealed the cap in the traditional manner, with **Epoxy**

Step 1-HG if you sealed the cap with **Hot Glue**

Step 1-P if you sealed the cap with **Putty**

Step 1-E Disassemble/Remove Spent E-match

(Use these instructions if you if you sealed the cap in the traditional manner, with Epoxy.)

Clip the e-match wire as close to the surface of the cap as possible.

Using a sharp side cutter (Such as the Xuron 2175 Maxi-Shear Flush Cutter on Amazon) is advised.



Use the supplied punch to free the spent e-match, o-ring and epoxy

Place the cap back into the cutter body and screw it at least halfway back in to help you hold the cap.

Center the punch on the clipped wires

Tap gently with small lightweight hammer to gain movement of the spent e-match.



The design of the punch will only allow some movement of the spent e-match. You will need needle nosed pliers or hemostats to grab the protruding spent e-match or simply push it out with the supplied Allen wrench.

If the Cap was well lubed as instructed prior to loading, the e-match, o-ring and epoxy will all come out together and entirely with relative ease.



If there is epoxy still in the cap, you will need to obtain a 7/32" drill bit (Good idea to have one of these drill bits on hand anyway) and holding the drill bit in your hand only, twist it inside the cap to remove the remaining epoxy.

NOTE: If there is epoxy still in the cap, it **MUST** be removed prior to reloading the device or the e-match will not properly seat!



Step 1-HG Disassemble/Remove Spent E-match

(Use these instructions if you if you sealed the cap with Hot Glue.)

Clip the e-match wire as close to the surface of the cap as possible.

Using a sharp side cutter (Such as the Xuron 2175 Maxi-Shear Flush Cutter on Amazon) is advised.

Remove cap, and with the supplied punch, push the wires

If proper lube was used, the wires will push with ease, then can be pulled out with your fingers

(Probably should wear gloves as it is messy!)

If the ENTIRE e-match assembly does not come out when pulled, use the supplied Allen wrench to push it out. If the cap was lubed prior to assembly this whole process is incredibly easy!



Step 1-P Disassemble/Remove Spent E-match

(Use these instructions if you sealed the cap with Putty.)

Remove the cap **without** clipping the wires.
With your fingers, peel the putty back and remove it from the wire
Grab the wire with your finger and push it out
Pull the remaining wire out
Tell yourself how easy that was!



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 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!)

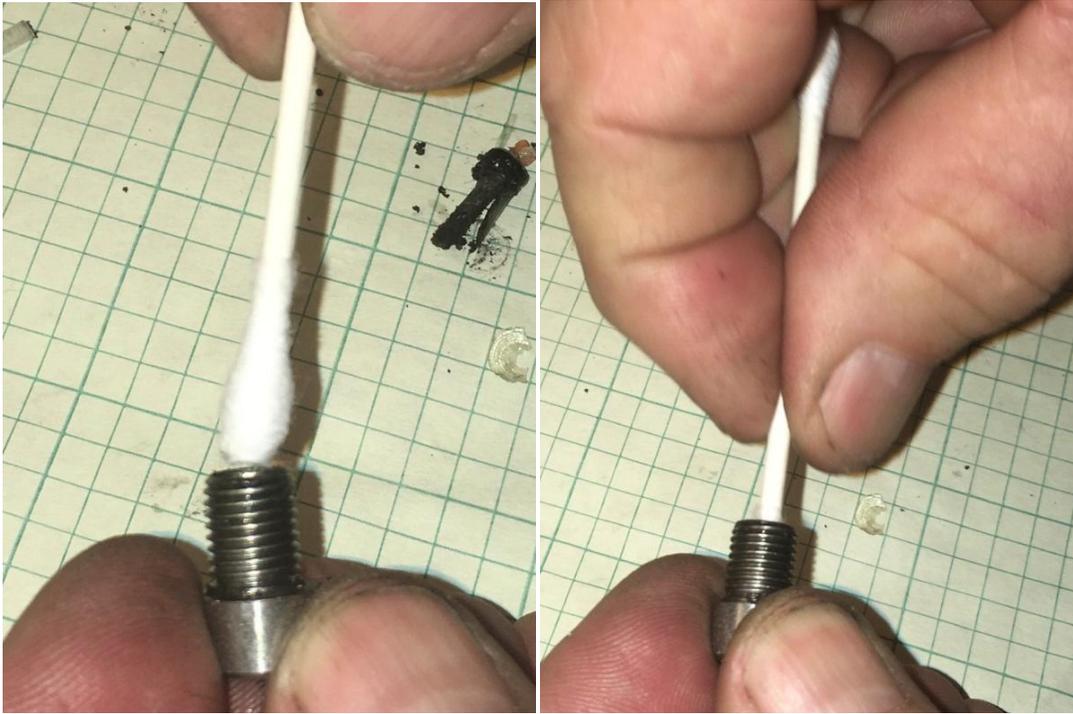


Roll a paper towel to a point to thoroughly clean Cutter/piston cavity. The powder residue will be stubborn to remove, soapy hot water will help. You may need to repeat this several times.

Note: The cutter cavity need not be absolutely clean but **MUST** be absolutely dry before use!

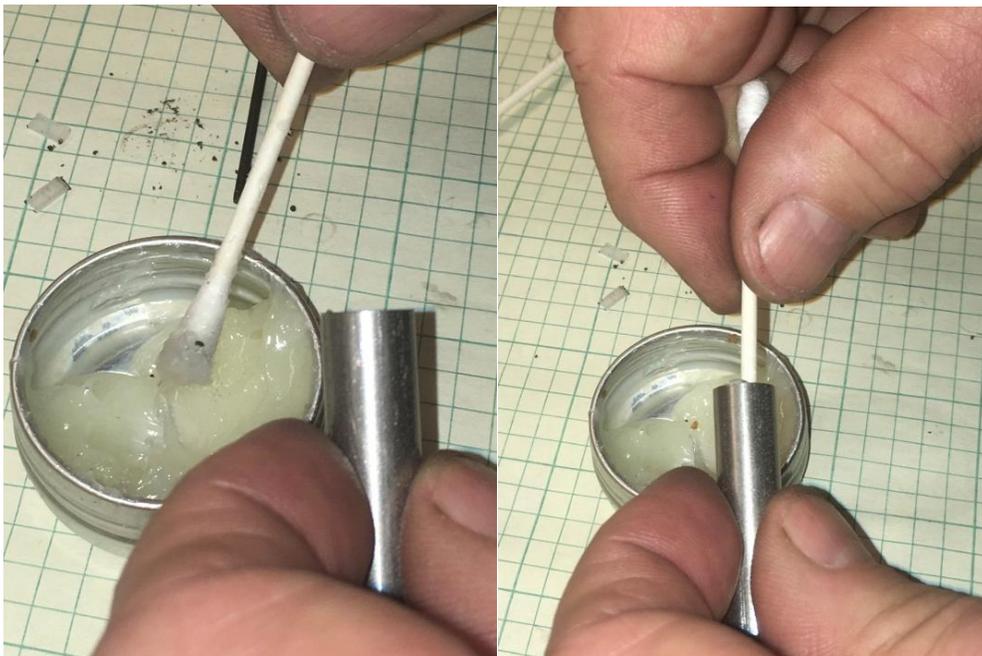


Use cotton swab to thoroughly clean the inside of the Cap while still wet
Use cotton swab again to dry and remove remaining residue
(Do not be surprised if the lube is still in the threads after washing with soapy water, this is ok,
expected and actually good)



Step 4 Lube and re-assemble for later use

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



Use a **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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