

M8 MISSION CRITICAL SMOKE SIGNAL DEVICE

A DO-IT-YOURSELF KIT Rev 2.5



Mixture Filling & Assembly Instructions

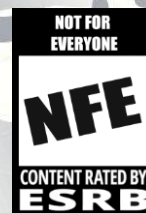


Video Instructions On YouTube

A product exclusively by
NFE Tactical LLC



www.nfetactical.com



M8 Mission Critical Additional Items

Items you will need



Coffee Grinder



Pocket scale



Metal Spoon
or spatula



Fuse



Compound Pliers



Paraffin Wax
Pellets



Red Loctite
271



Single burner
Cooktop



Small 5-6" pot



Potassium
Nitrate
(Technical Grade)



Sugar



Federal GM200M
Small Pistol
Match Primers

! SAFETY FIRST

It is highly recommended to use a respirator when handling potassium nitrate. Over exposure may lead to respiratory issues.



Disclaimer

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M8 Mission Critical Kit Components

Kit will contain 4X
cans of a single
type



M8 Mini MC 4X



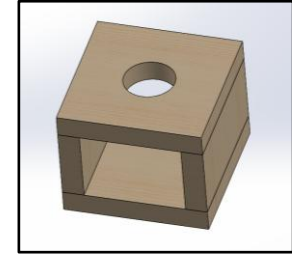
M8 MC 4X



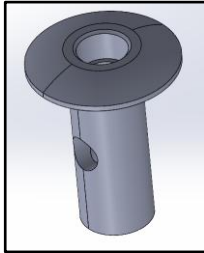
M8 2.0 MC 4X



M8 Max MC 4X



M8 Mini Filling
Fixture



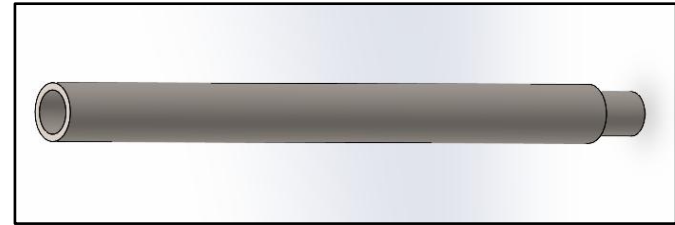
Primer Insert 4X



Silicone Plug 1X



Clear Mixing cup
4X



Steel Core Rod
1X



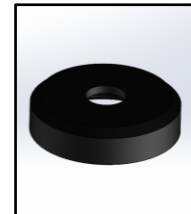
1g Super Glue
4X



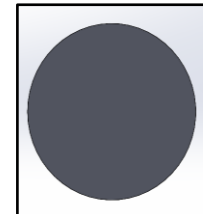
Alcohol Swabs
4X



Funnel 1X



Can Cap 1X
Appearance may
vary.



Vinyl Sticker 4X

M8 Mission Critical Mixture

**This mixture to be used
by Certified
Pyrotechnicians only**
Other smoke mixtures can
be substituted.

Items you will need in this section



Pocket
scale



Metal
Spoon



Non-Scented
Candles



Potassium
Nitrate
(Fireworks Grade)



Sugar



Clear Mixing cup

1

Place a cup on the scale and hit tare. This will zero out the scale, so the measurement is accurate.

2

Using the spoon, place **60 grams of potassium nitrate** into the cup. Do a little at a time to reach 60 grams. Set this cup aside.

3

With a new cup on the scale, using the spoon, place **30-45 grams of sugar** into the cup. Do a little at a time to reach the desired amount. Set this cup aside

More sugar produces a faster/hotter burn

4

Put **40-50 grams of wax** into the cup and set aside. **Start with 40 grams of wax. The composition when mixed with the other ingredients should resemble a slushy. You can add more wax while mixing.**

Try to stay within +/- .5 - .8 grams. Any extreme deviation from the above amounts will result in an undesired result.

Mixture amount listed above
1X mixture for M8 Mini
2X mixture for M8
4X mixture for M8 Max

For the M8 2.0 use
-2X 67g Potassium nitrate
-2X 42g Sugar
-2X 45g wax

Items you will need in this section



Coffee
Grinder



Single burner
Cooktop



Small 5-6" pot

5

Take your potassium nitrate and sugar and combine them in the coffee grinder. Mix for 1-2 minutes while tapping the sides, shaking it, turning it upside down, ensuring the mixture is even. These grinders are good, but a lot of the powder falls below the blade. When this is complete place the mixture into an empty cup and set aside.

6

Plug in your cook top with the pot on the burner and set to the lowest setting. Dump your wax into the pot and melt. Stir with a metal spoon so all the chunks melt faster.

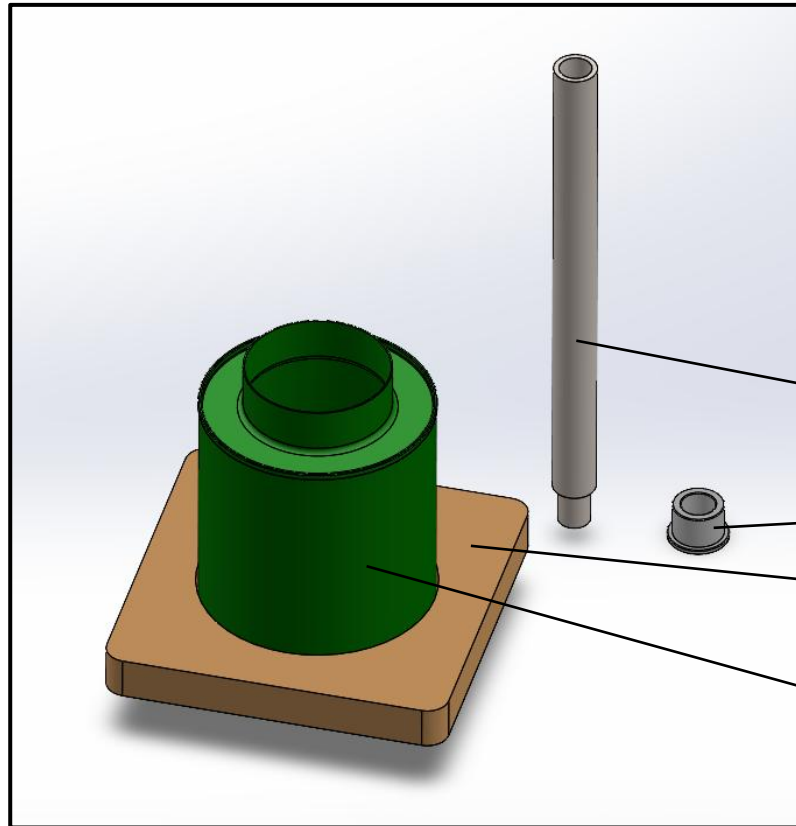
7

When the wax is completely melted, dump your potassium nitrate and sugar mix into the wax. Using the metal spoon stir the mixture until the combined powder is fully coated. This mixture we **DO NOT** want to caramelize like other recipes so you may have to turn off your heat to prevent this. Stir until smooth.

8

Once the combined mixture of potassium nitrate and sugar is coated with melted wax, the mixture should form a slurry or a smooth wet paste. Turn your burner low and let sit while you prepare for pouring. Turn the burner on again to keep warm if you need to.

M8 Mission Critical Filling



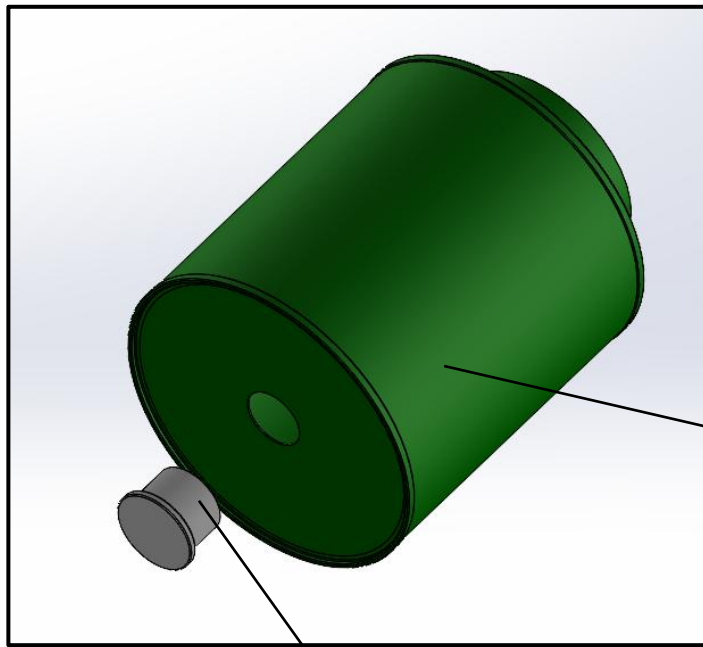
Each kit comes with one wooden fixture to hold the can in place during mixture filling. The kit also includes a silicone plug and steel core rod.

Steel Core Rod

Silicone Plug

Wood Fixture

Can (Smoke Device body)



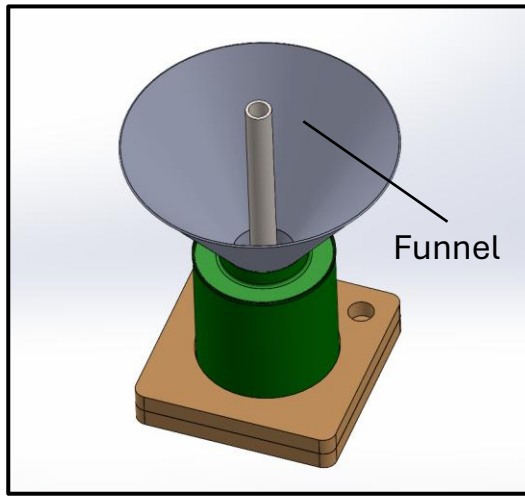
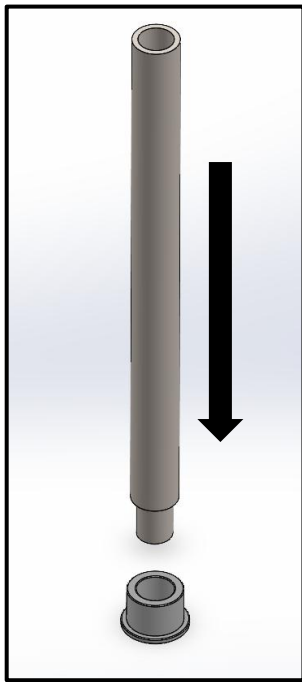
9

Install the Silicone plug in the bottom end of the can. Make sure the plug is seated all the way in to ensure a good seal.



Can (Smoke Device body)

Plug



10

Place the small end of the steel core rod into the inside of the expansion plug. Place the funnel on top of the opening of the can. Pour the smoke mixture into the funnel and push down, if necessary, with a spoon.

11

Remove the funnel.

12

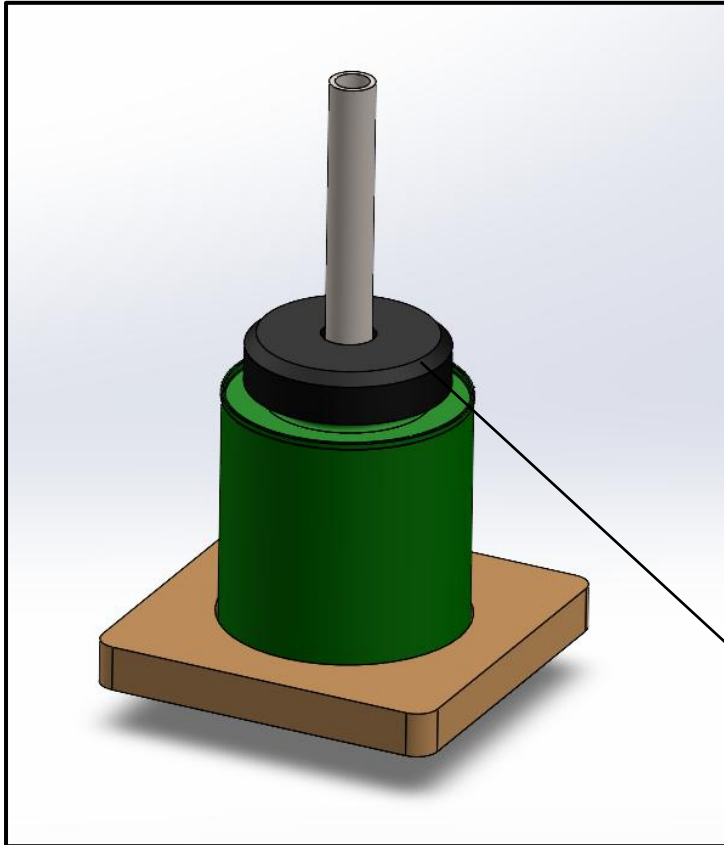
Keeping the can held down flat, jog the fixture back and forth to get the hot mixture to level out.

13

Make new mixture of potassium nitrate, sugar and wax. Repeat steps 1-13.



For the M8 2.0
DO NOT fill past the
internal threads of the can



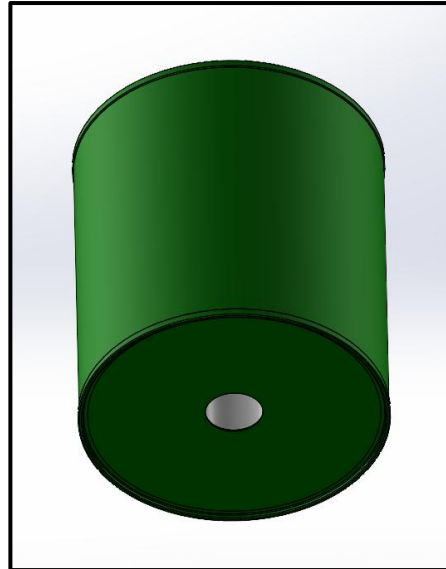
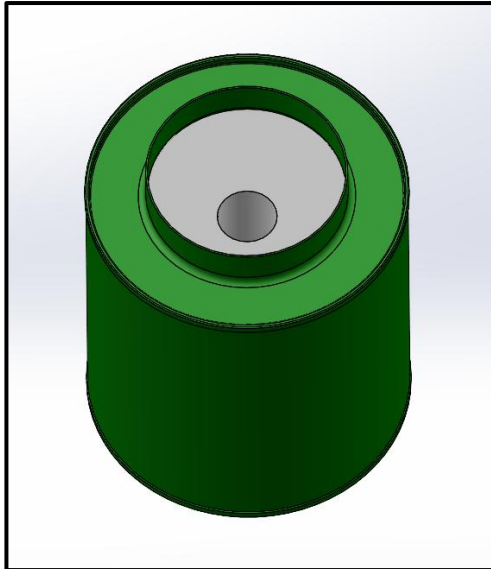
14

Install the plastic can cap with the steel core rod still inside. The cap will help keep the steel core rod centered.

15

Place in freezer for 45min to 60min. Air cooling can be done but cooling times may vary.

Can Cap



16

When the mixture has completely cooled, remove the steel core rod, the expansion plug and can cap. If the steel core rod is stuck, use a heat gun and let the heat transfer from the top of the steel core rod down to the bottom. Do not aim the heat towards the mixture inside the can. Vise Grip plyers can be used but it will damage the metal. Do not put the damaged end inside the can when you make more.

Repeat the whole process for the other cans provided in the kit.

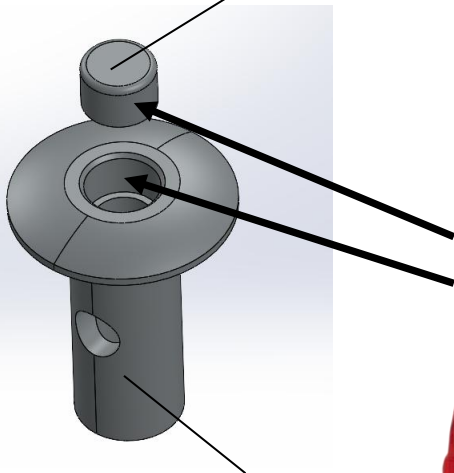
The mixture when cooled is ready to use.

M8 Mission Critical Primer Insert Installation



Wear safety glasses during this operation from accidental primer strike

Small Pistol Primer



Primer Insert



The kit contains 4X Primer Inserts. Small pistol primers will have to be bought from your own supplier. **It is highly recommended to purchase the NFE Tactical Primer Press for this operation.** Other methods may be used but is not advised.

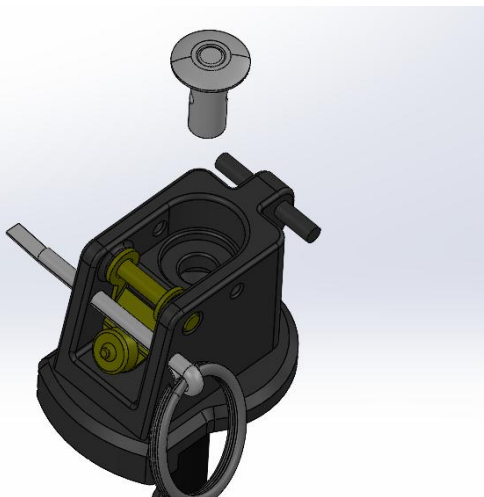
Only use new pistol primers like CCI or Remington Match Grade. Failure to do so may result in failure to ignite

Put a light bead of Red Loctite around the primer or the hole of the primer insert and press the primer flush with the top of the primer insert.

The next two pages covers the use of the Primer Press



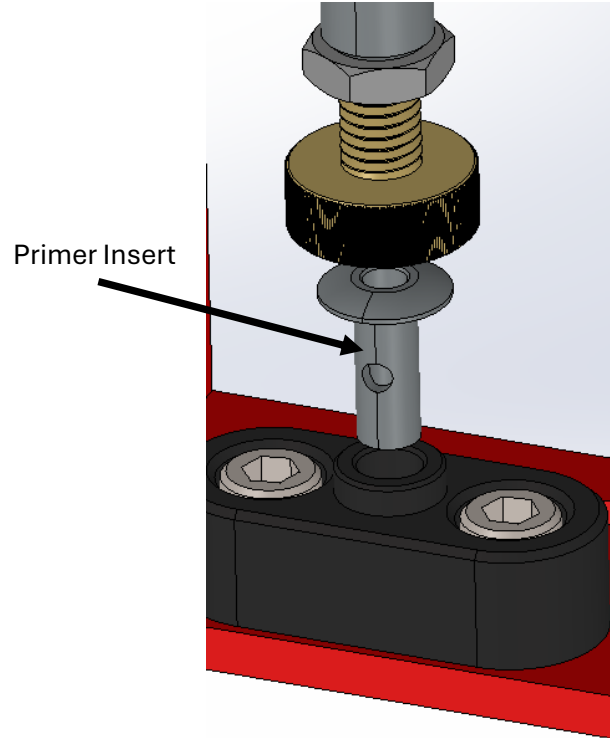
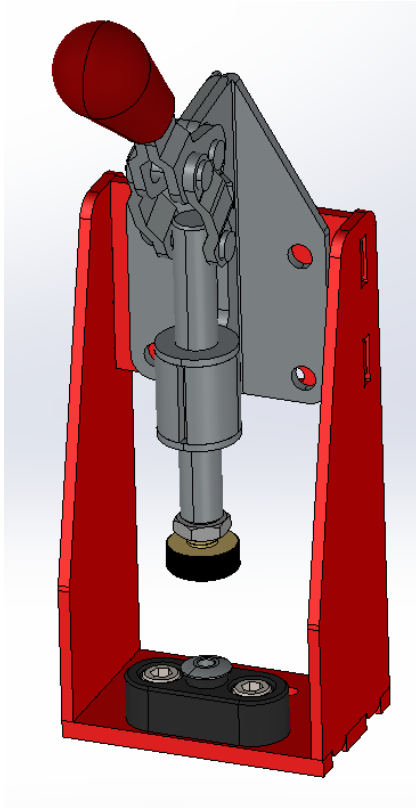
WAIT A FULL 24 HOURS FOR THE LOCTITE TO CURE BEFORE USING



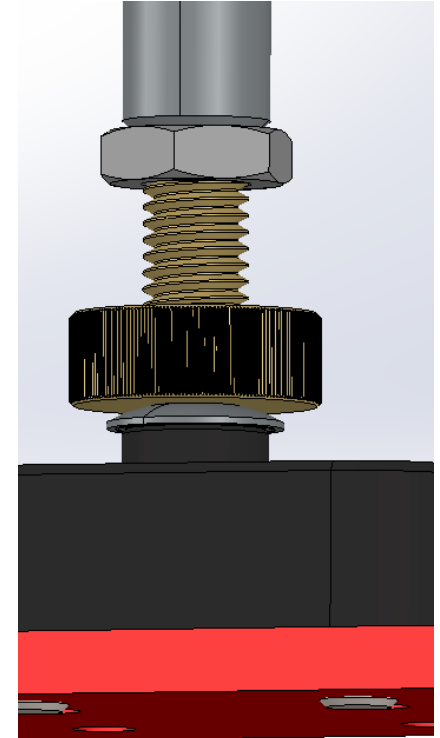
Pull back the spring loaded striker and insert the striker safety pin. Once the striker is retained, install the primer insert assembly into the head. Make sure the primer insert slides over the fuse. You may use silicone to retain it into the head.

M8 Mission Critical Primer Press

Exclusively designed for the M8 Mission Critical



Place the Primer Insert into the die.



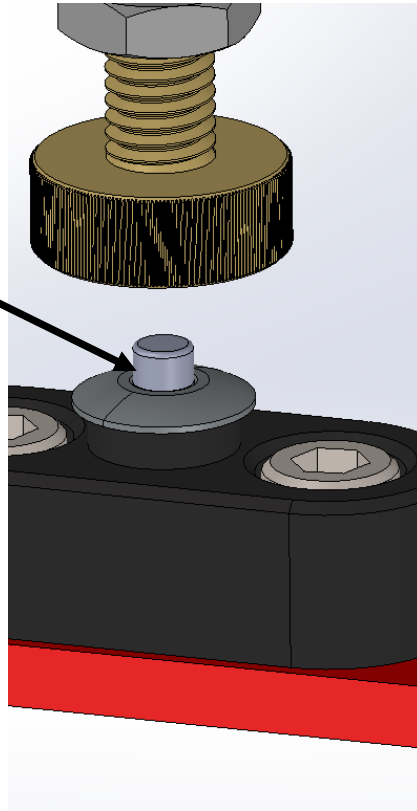
Adjust the punch tip to bottom out on top of the primer insert. The red lever should be all the way down with no further travel

M8 Mission Critical Primer Press

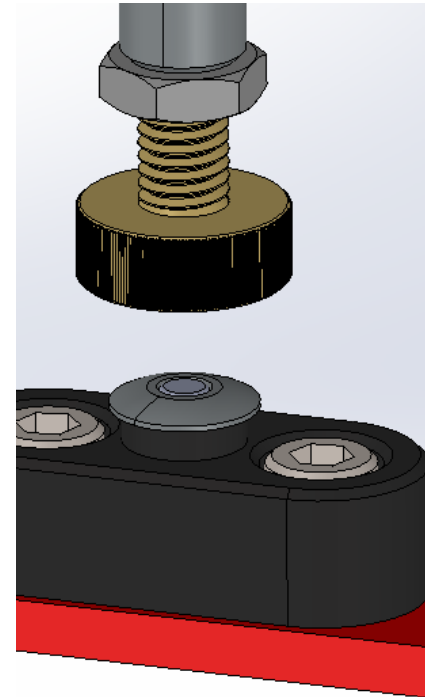
Exclusively designed for the M8 Mission Critical



You may opt out of using Loctite but the primer may pop out during ignition at a high velocity.

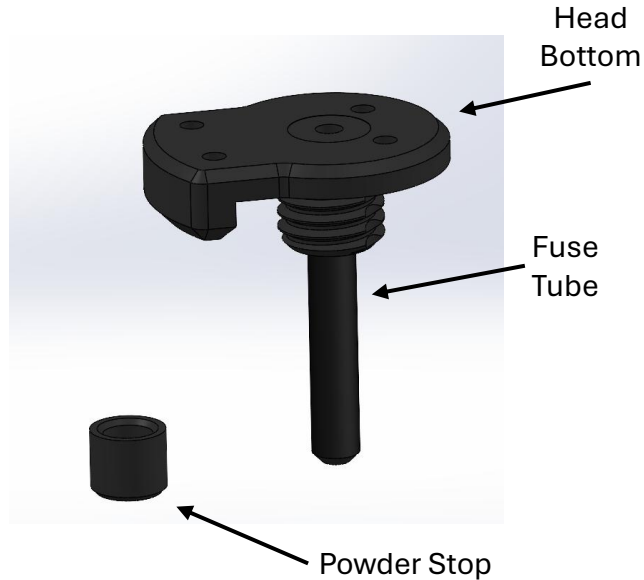


Put red Loctite on the primer
And place on top of the hole
of the Primer Insert. Wipe away
excess Loctite inside the hole
after pressing the primer.

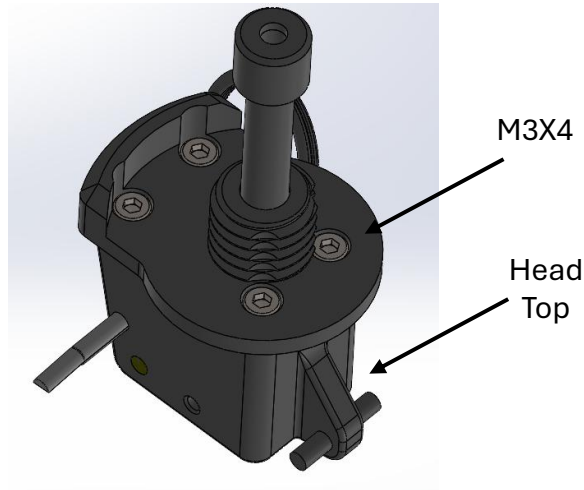


Press the primer into Primer Insert
until the press has no more travel.
This will set the primer to the correct
depth and not put excessive force
on the primer

M8 Mission Critical Head Assembly



Step 1 – Insert the fuse tube into the head bottom. Glue the powder stop to the bottom of the fuse tube.



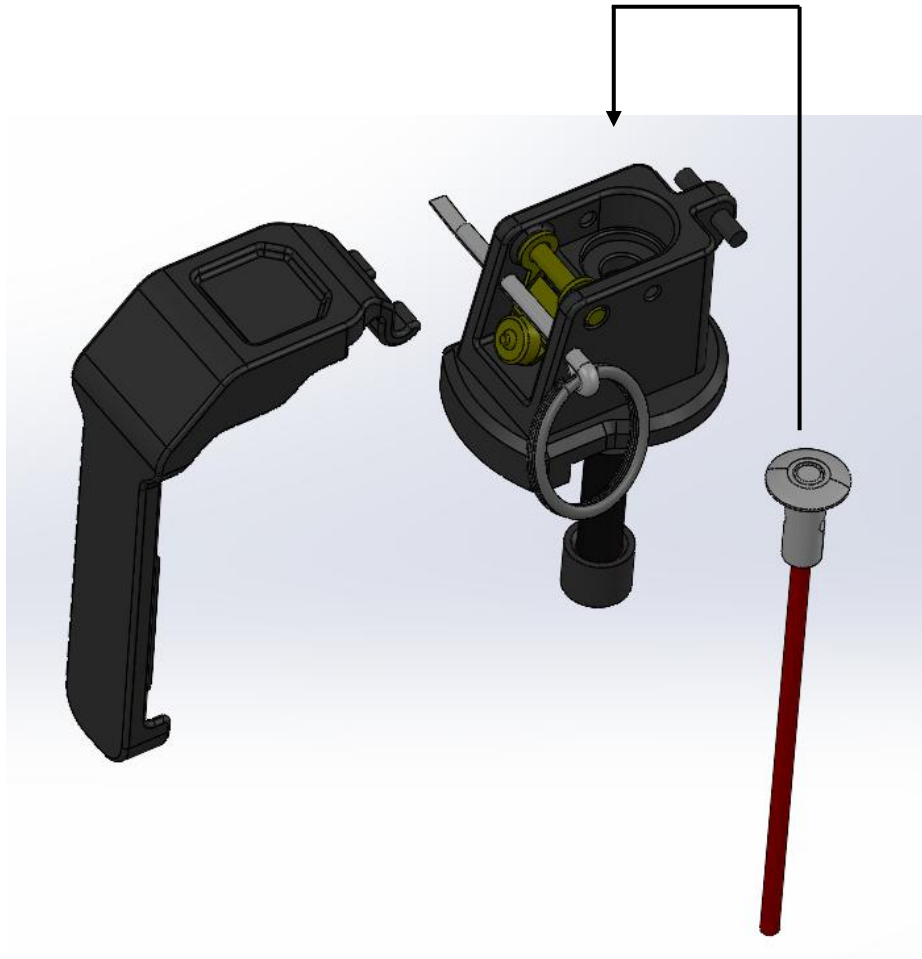
Step 2 – Use the supplied M3 screws to secure the head bottom with the head top.



Step 3 – With your choice of delay safety fuse, crimp the bottom of the primer insert onto the fuse **IN A CIRCULAR PATTERN**. The tip of the fuse should be positioned at the bottom of the vent holes. The crimp should be a cone shape holding the fuse in place. Super glue can be used but do not get glue on the tip of the fuse.

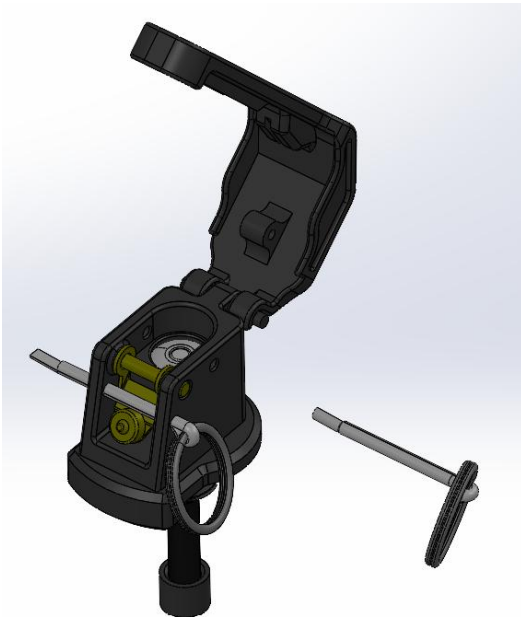
M8 Mission Critical Disposable

Head Assembly

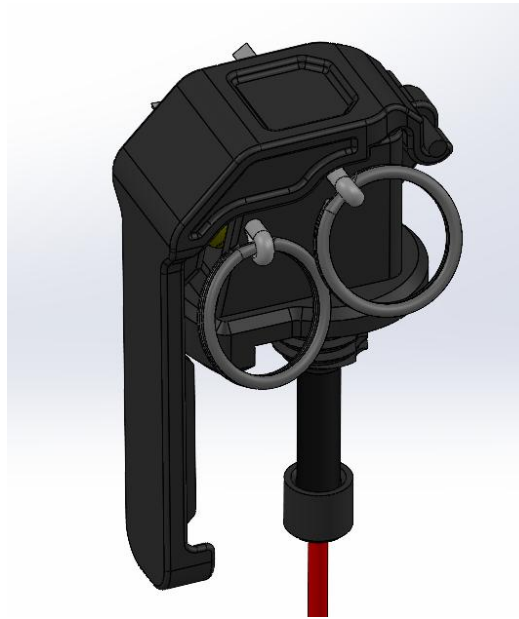


Step 5 – Insert the primer insert and fuse tube into the head. You can use a small amount of silicone or super glue under the brim to attach it into the head.

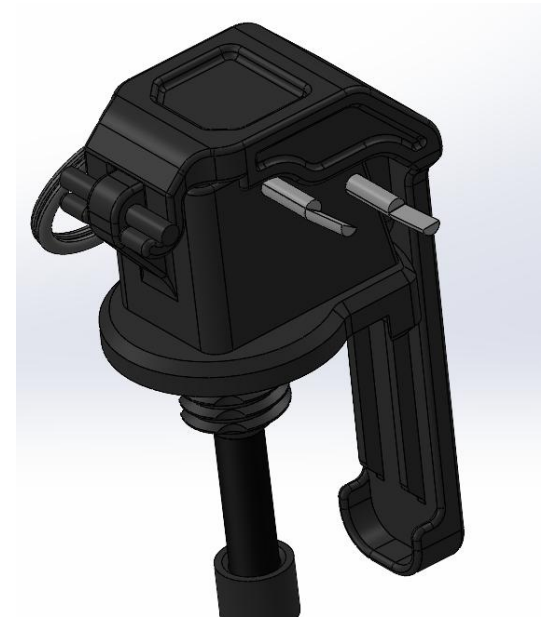
M8 Mission Critical Spoon Installation



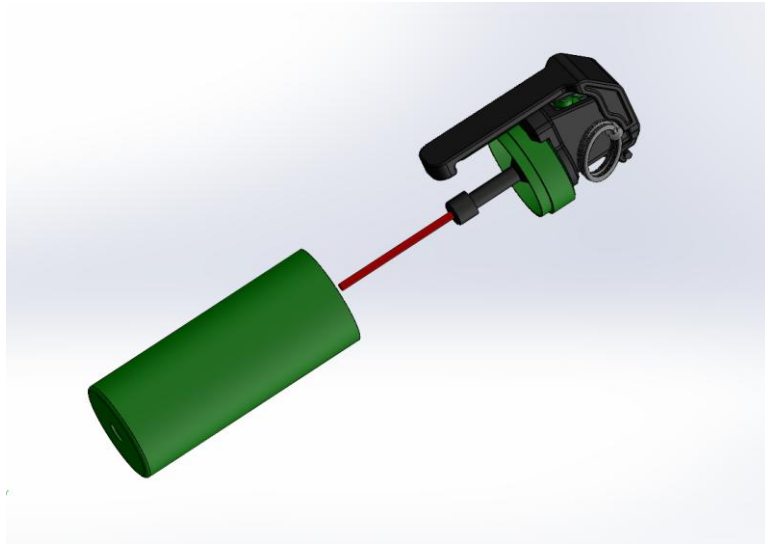
Hook the spoon under the pin in the front of the head assembly. Rotate the spoon downwards.



Insert the pin through the hole on the side of the head assembly and through the hole on the spoon.

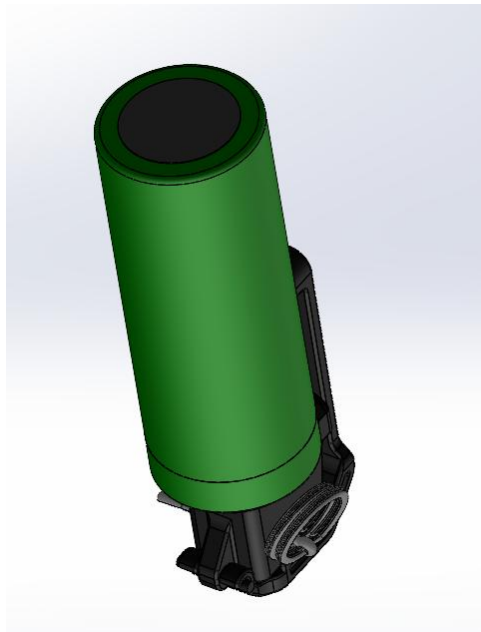


Using needle nose pliers, bend the longer section of the pin downward on a 45 degree angle.



Reinstall the head onto the can

NOTE: For the M8 2.0 and M8 Mini cans, use a small dab of anti seize on the threads to prevent lock up.



Make a mix of 75% Potassium Nitrate and 25% sugar. Loosely fill through the hole in the bottom of the can. Brush away excess mixture, wipe with alcohol wipe and place supplied sticker on the bottom.

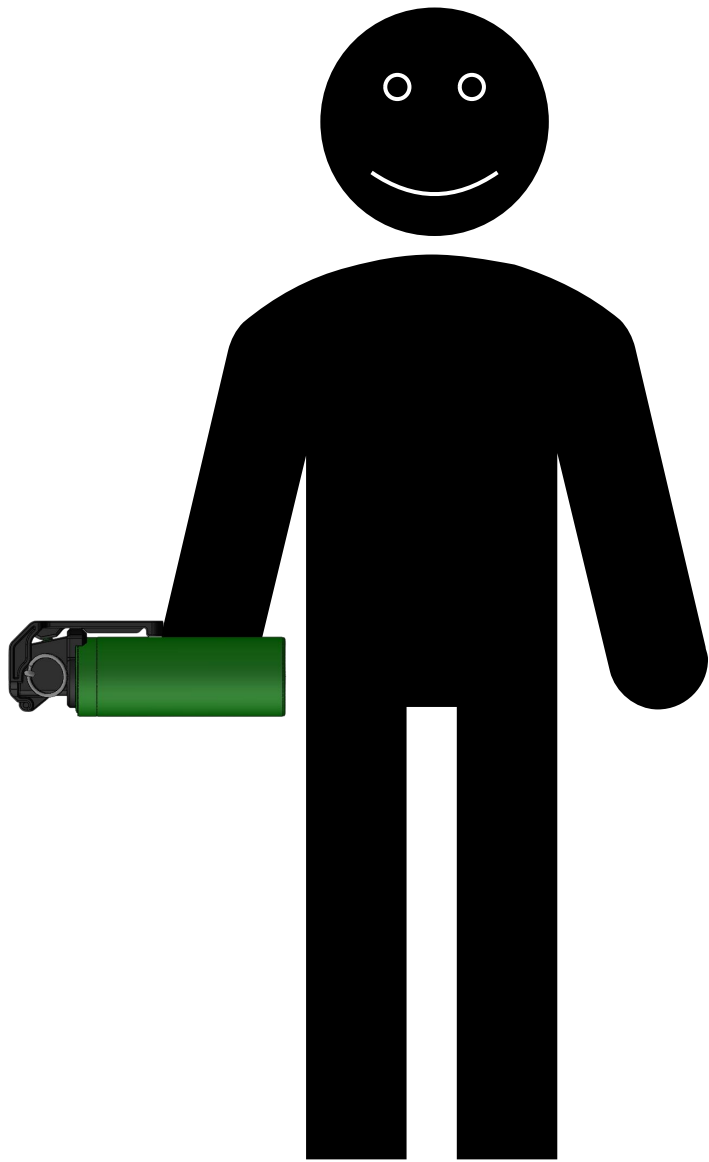


SAFETY FIRST



Using primers as a stage one ignition source has a success rate of 99.997%. A primer uses a small “explosive” charge to set off a secondary ignition. Using a primer as an ignition source although reliable has its safety drawbacks. The primer could have potential to injure from spall. Always wear safety glasses and proper PPE when using NFE Tactical Products.

Mechanics gloves and Safety glasses are highly recommended when using



ALWAYS HOLD THE HEAD AWAY FROM YOUR BODY WHEN THROWING



Homemade smoke devices must be used the day of construction or it becomes a regulated explosive and you must abide by all requirements from the ATF.

Before you pull the pin, some safety needs to be considered.

- Always hold the smoke device with the top and bottom facing away from you.
- Never point it at anyone and do not have it on an angle towards yourself.
- Hold the spoon of smoke device with your arm extended with your dominant hand.
- Pull the keyring with your opposite hand.
- Immediately throw the smoke device to a safe distance.
- The reaction of the mixture is hot. Do not throw it any area that can catch fire, or you don't want burned.
- Wait 20 minutes before picking up spent smoke device
- Have fun!