

the gecko



Designed by Ehdrien

To build your Gecko you will require the following hardware:

--Tubes--

1 Plunger tube: 71mm long section of 27mm ID, 30mm OD aluminium tube

2 Barrel: 10cm length of 13mm ID, 16mm OD aluminium tube (5/8" outer diameter barrels also fit).

One end of the barrel should be chamfered using a round file to allow for the darts to be inserted into the barrel easier.

3 Plunger rod guide/brace: 40mm length of 17/32" brass

--Springs--

4 Main spring is a Retaliator spring. 9KG is the recommended spring weight for the 13mm ID barrel. (averages ~125fps)

5 Catch spring: 18mm long, 5mm OD

(any spring with similar dimensions should be sufficient)

6 2x extension springs: 25mm long, 5mm OD

(any spring with similar dimensions should be sufficient)

--O rings--

7 2x 21mm ID, 27mm OD, 3mm thickness

8 1x 10mm ID, 15mm OD, 2.5mm thickness

--Plunger head padding--

~20mm diameter circle of 3mm thick padding

(silicone/rubber is suggested, Felt pads are acceptable,

Foam pads are not recommended)

--slide lock pin--

10 1mm diameter x 15mm length pin.

--Fasteners--

M3 socket head cap screws:

2x M3x6mm

11 2x M3x8mm

6x M3x12mm

4x M3x16mm

1x M3x20mm

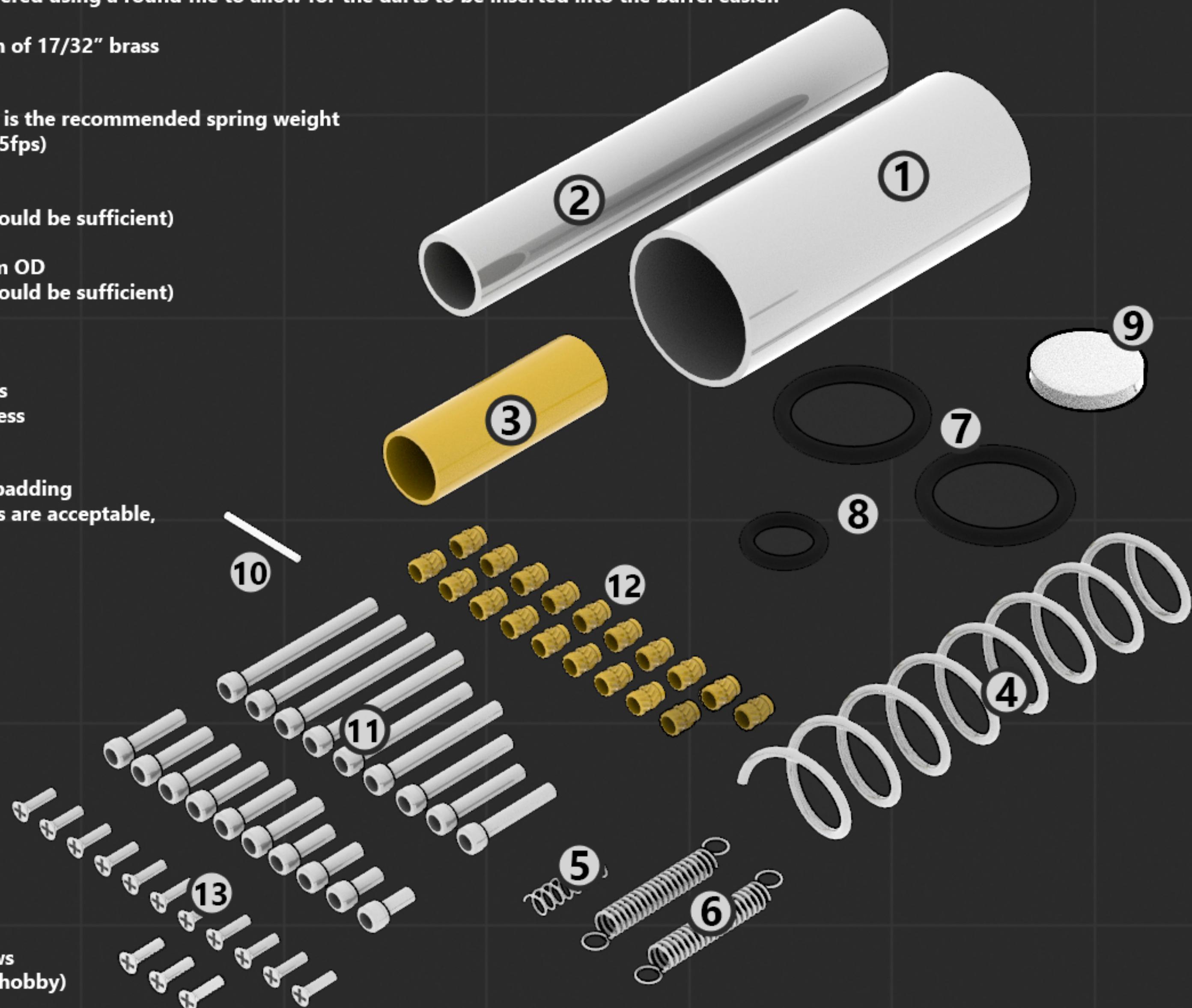
2x M3x25mm

4x M3x30mm

12 19x M3x5mm brass threaded inserts

13 14x M2x5mm countersunk head screws

(known as "motor screws" in the Nerf hobby)

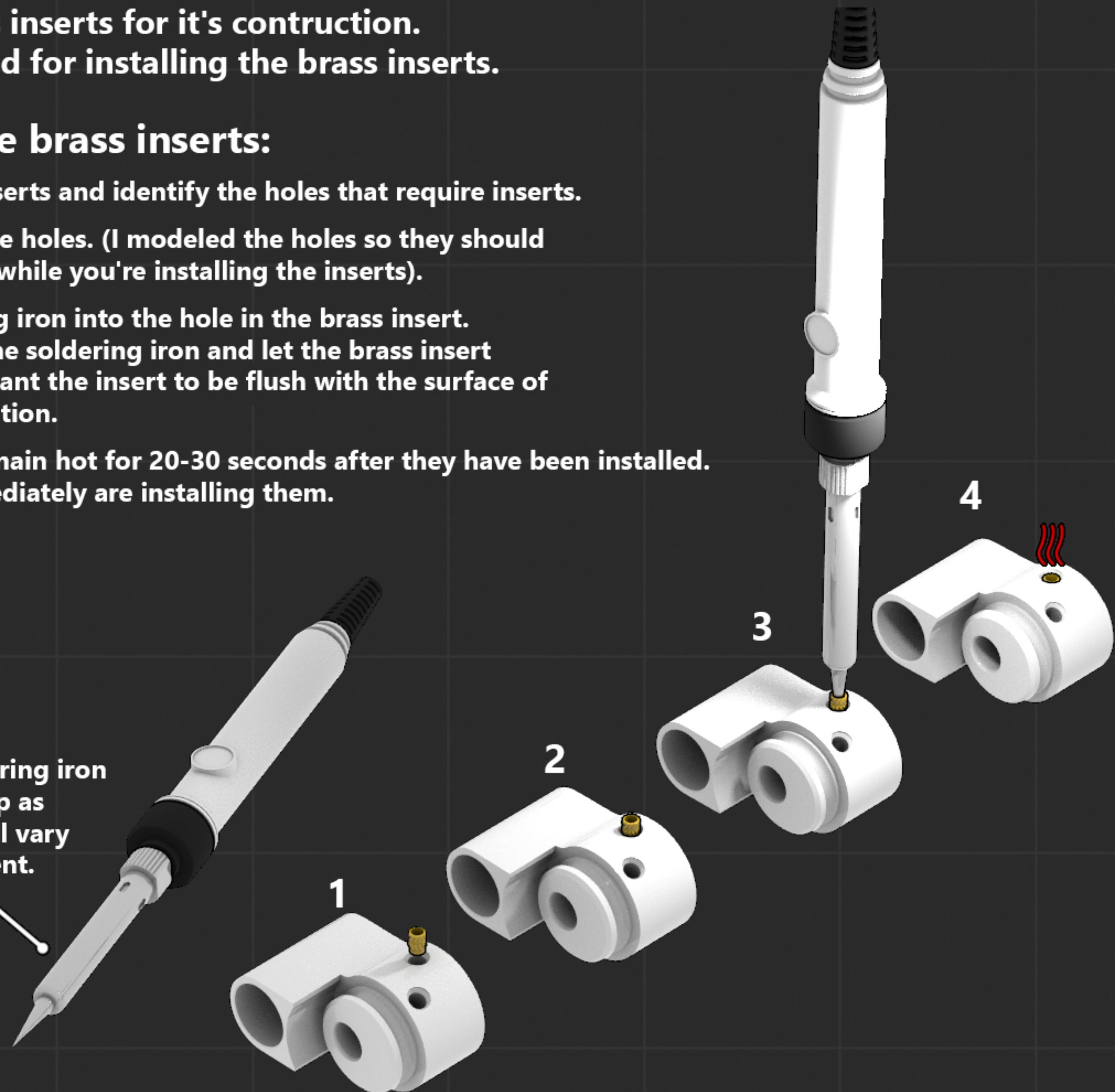


This blaster uses M3 brass inserts for it's construction.
A soldering iron is required for installing the brass inserts.

Steps for installing the brass inserts:

1. Find the parts that require inserts and identify the holes that require inserts.
2. Place the brass inserts into the holes. (I modeled the holes so they should loosely hold the inserts in place while you're installing the inserts).
3. Place the tip of your soldering iron into the hole in the brass insert. Apply very light pressure with the soldering iron and let the brass insert melt its way into the part. You want the insert to be flush with the surface of the 3D printed part after installation.
4. **CAUTION:** The inserts will remain hot for 20-30 seconds after they have been installed. Avoid touching the inserts immediately are installing them.

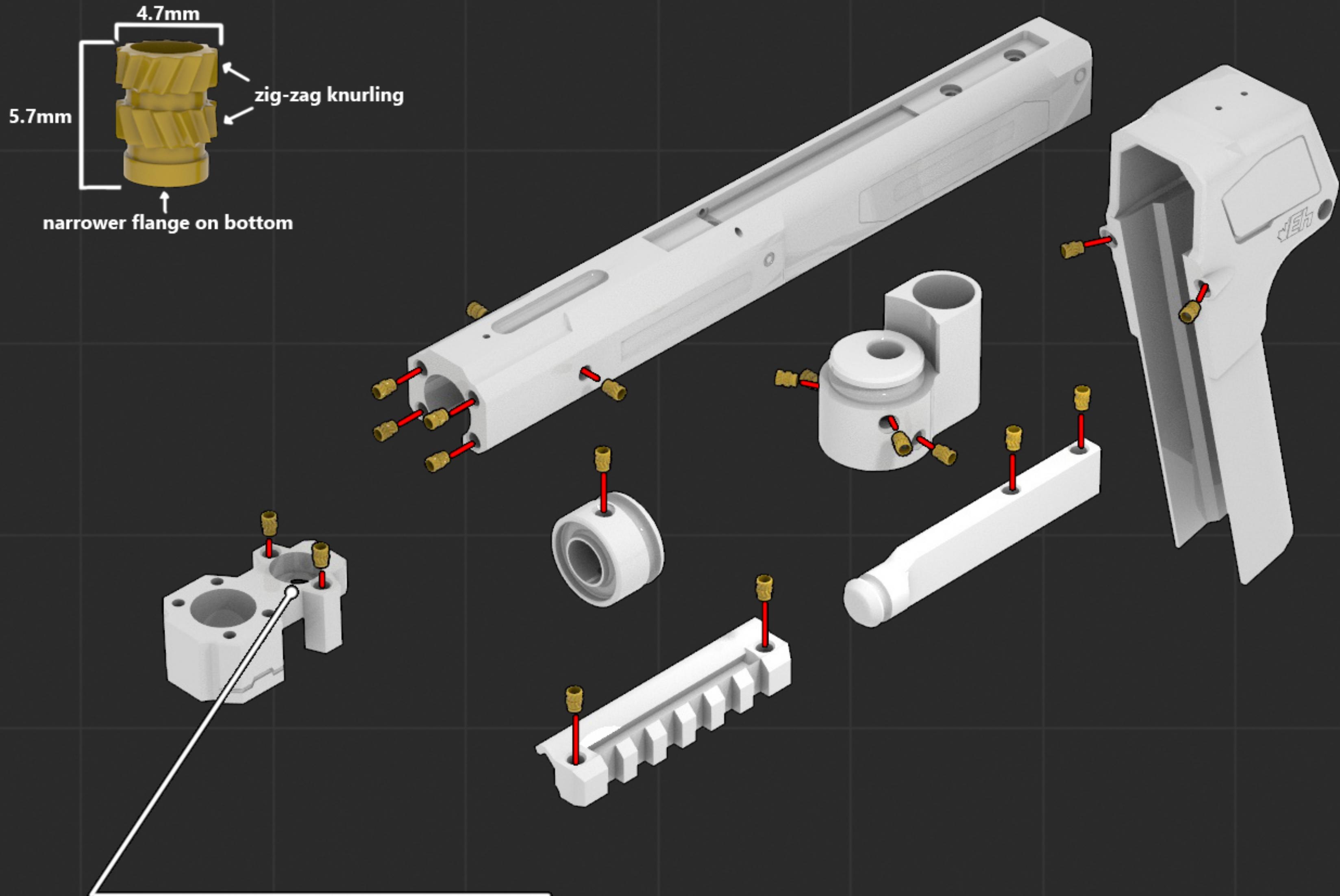
The temperature of your soldering iron should be set to the same temp as your printer's hot end. This will vary based on your choice of filament.



Note:

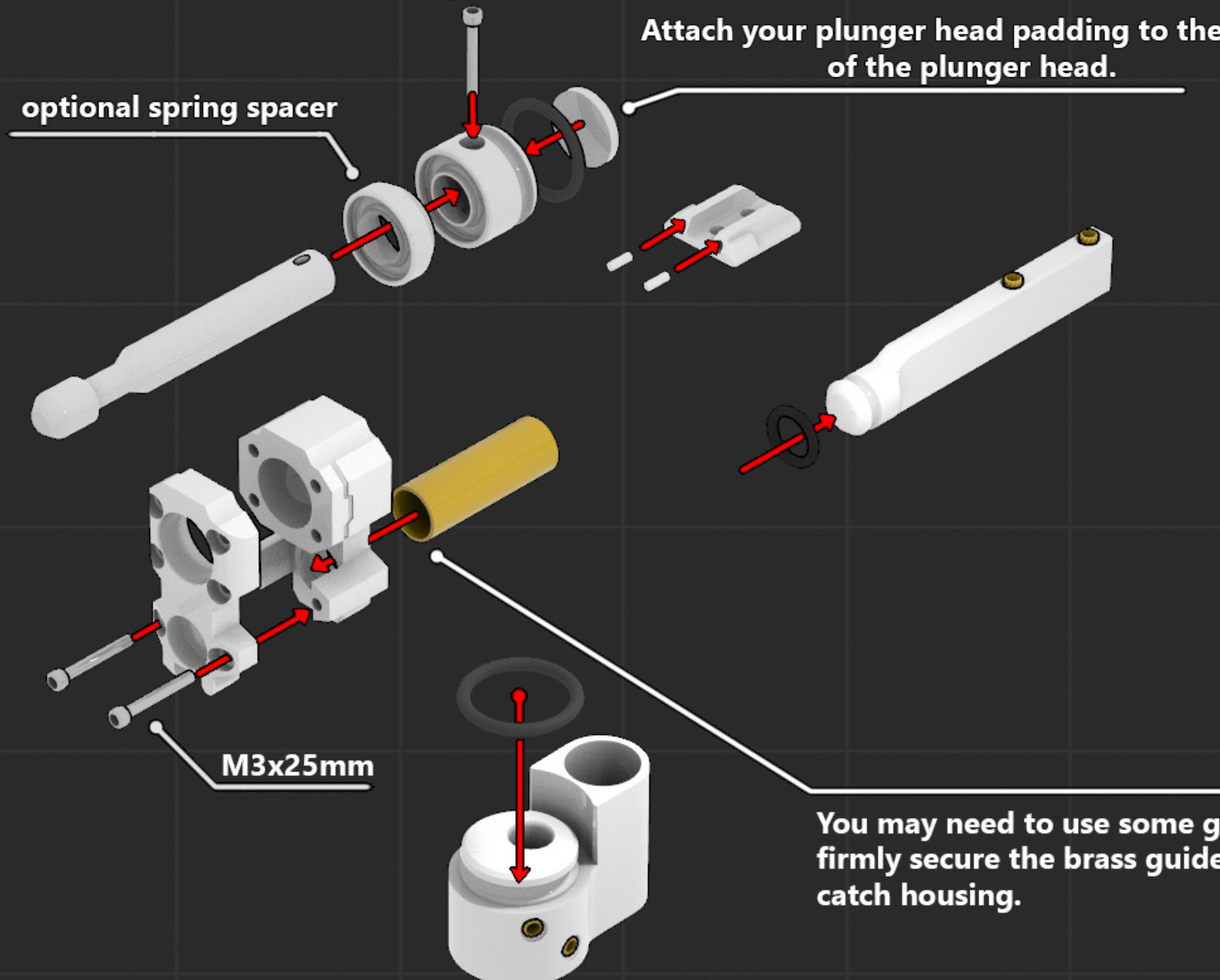
There are a few different styles of M3 brass inserts available for purchase. These are the particular style I used when designing the Gecko.

Use your soldering iron to install all 20 brass inserts.

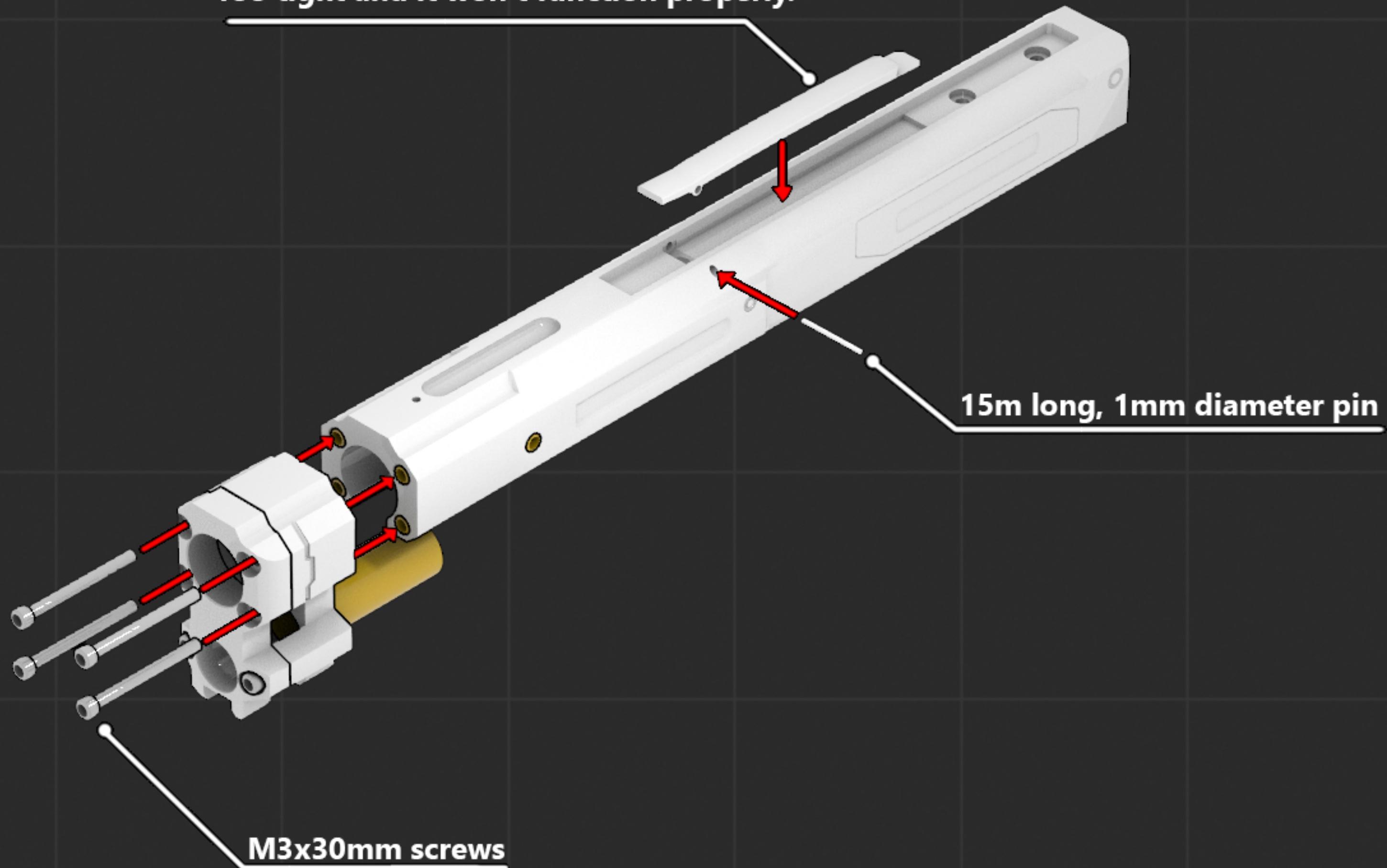


The walls next to these two inserts are very thin. If inserting the brass inserts causes the plastic to bulge you may need to grab the 17/32" brass tube (from the next page) and shove it into the hole on the rear of the catch housing to squish the still hot/soft plastic back into shape.

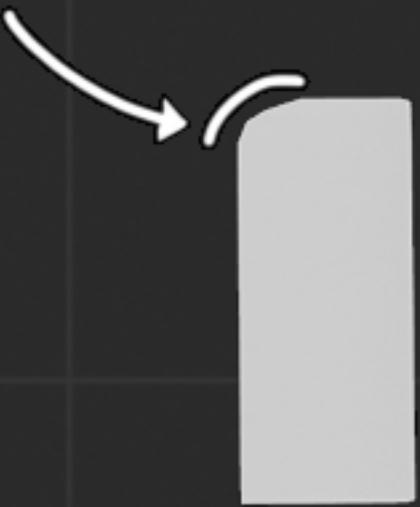
**Line up the hole in the plunger rod with this bolt hole.
Use a M3x20mm screw to secure the plunger rod in place.**



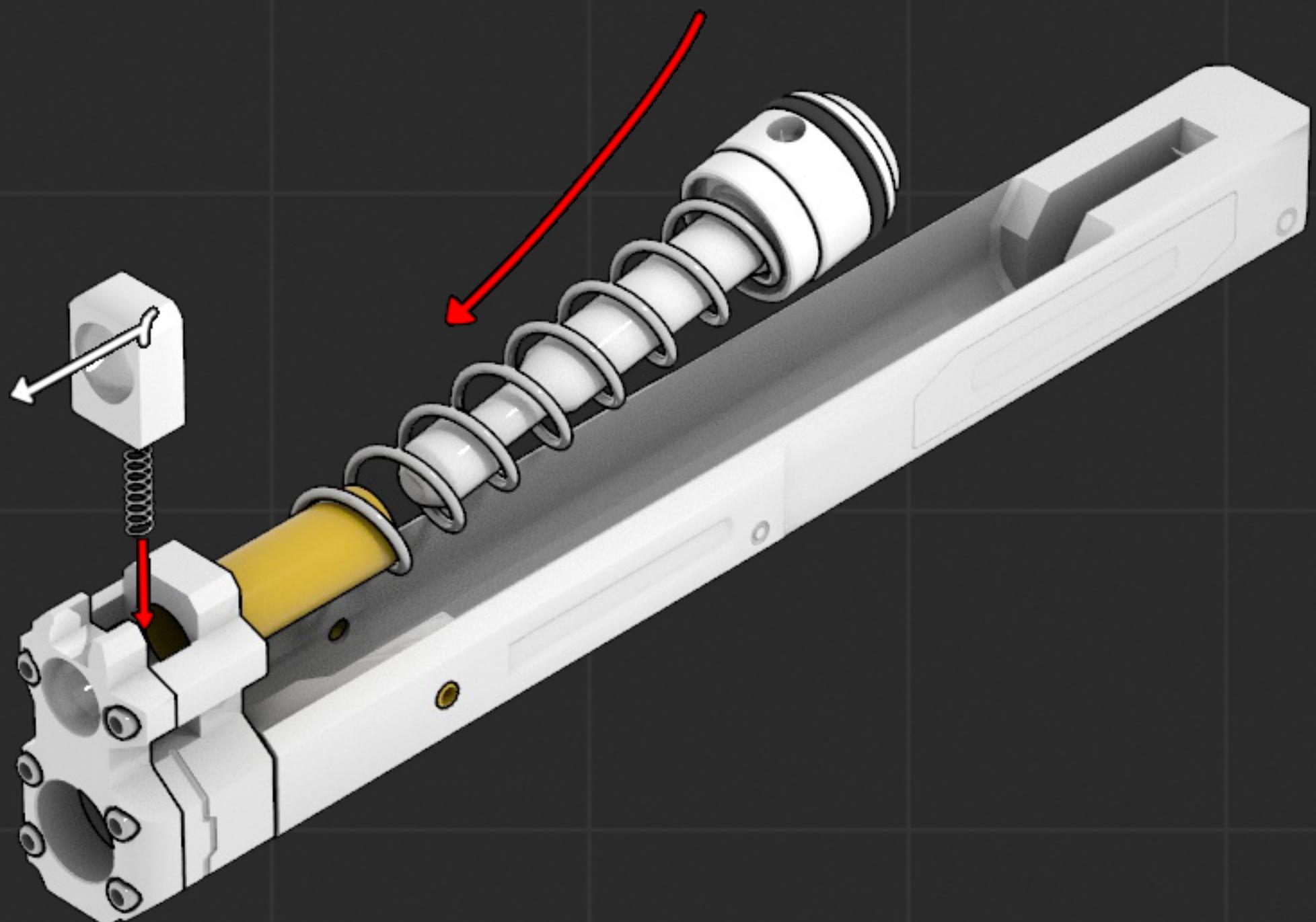
**Slide lock needs to be a loose fit.
Too tight and it won't function properly.**



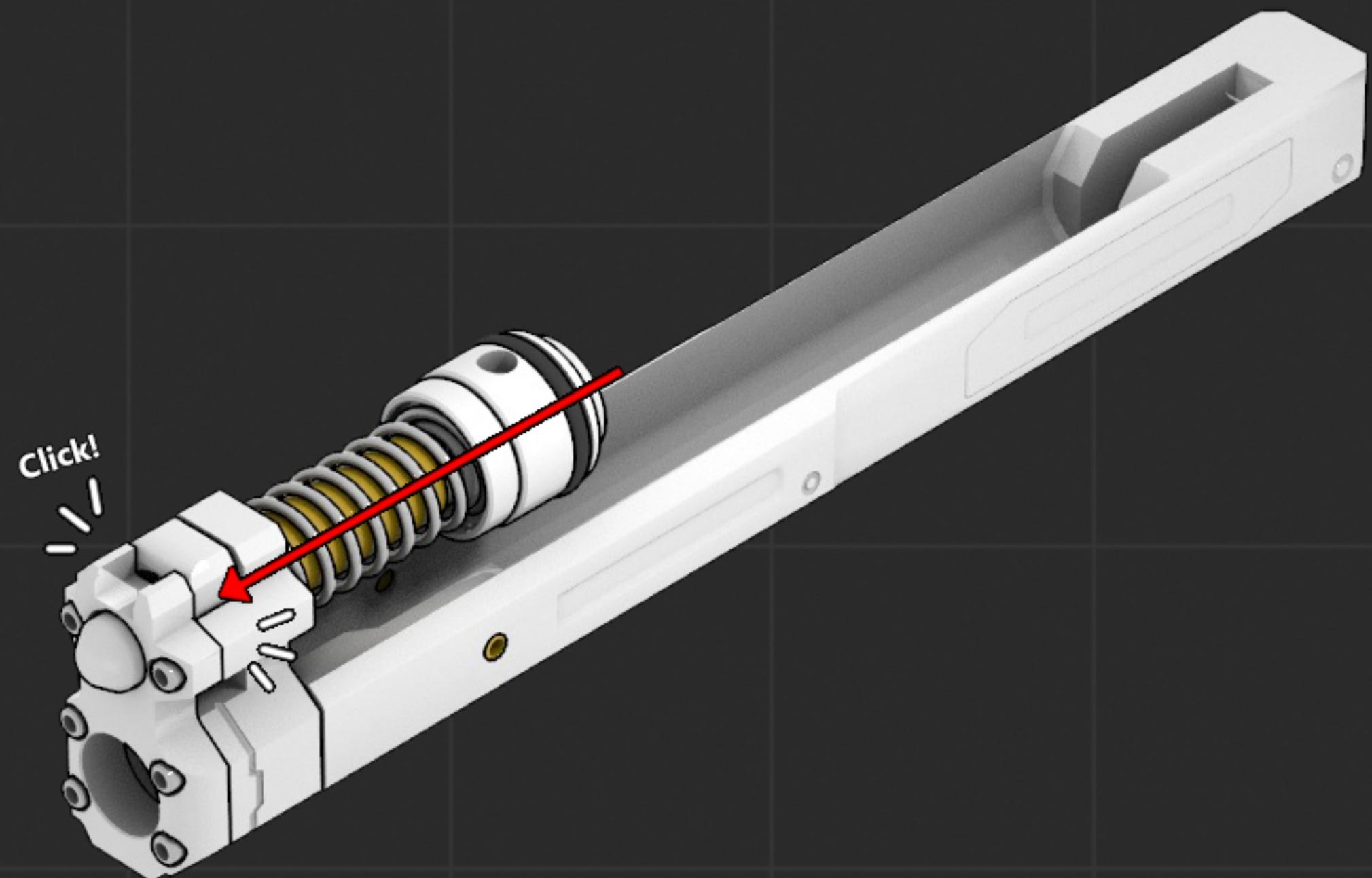
**Curved corner on the catch
faces towards the front**



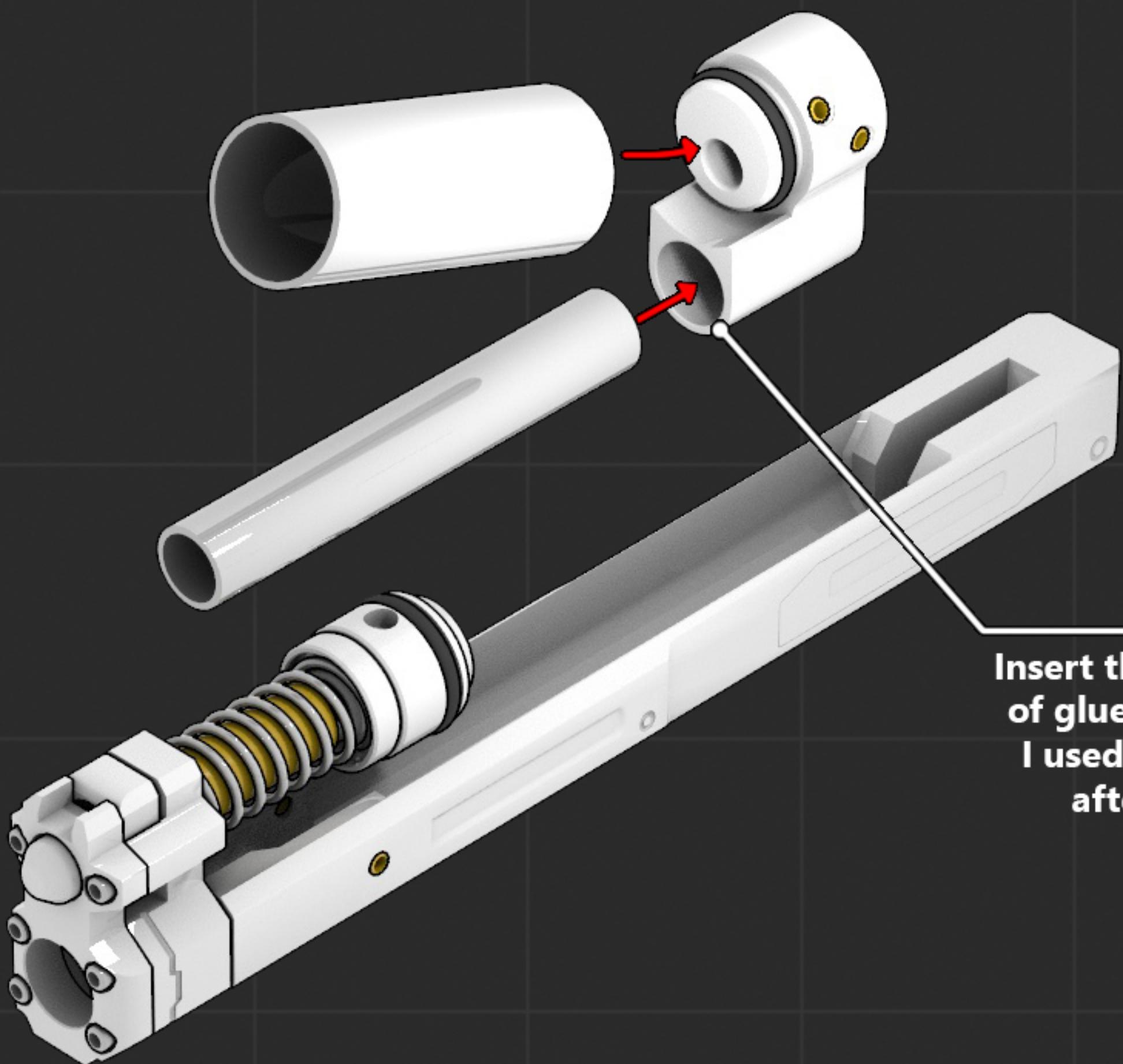
**Install the spring and plunger
onto/into the brass guide tube.**



**At this stage of the assembly I personally find it's easier to prime the plunger.
This will hold the catch and catch spring in place as well as keep the
main spring out of the way while you work on the rest of the build.
You will need to be careful NOT to press on the catch for the remainder
of the assembly if you choose to follow this advice.**

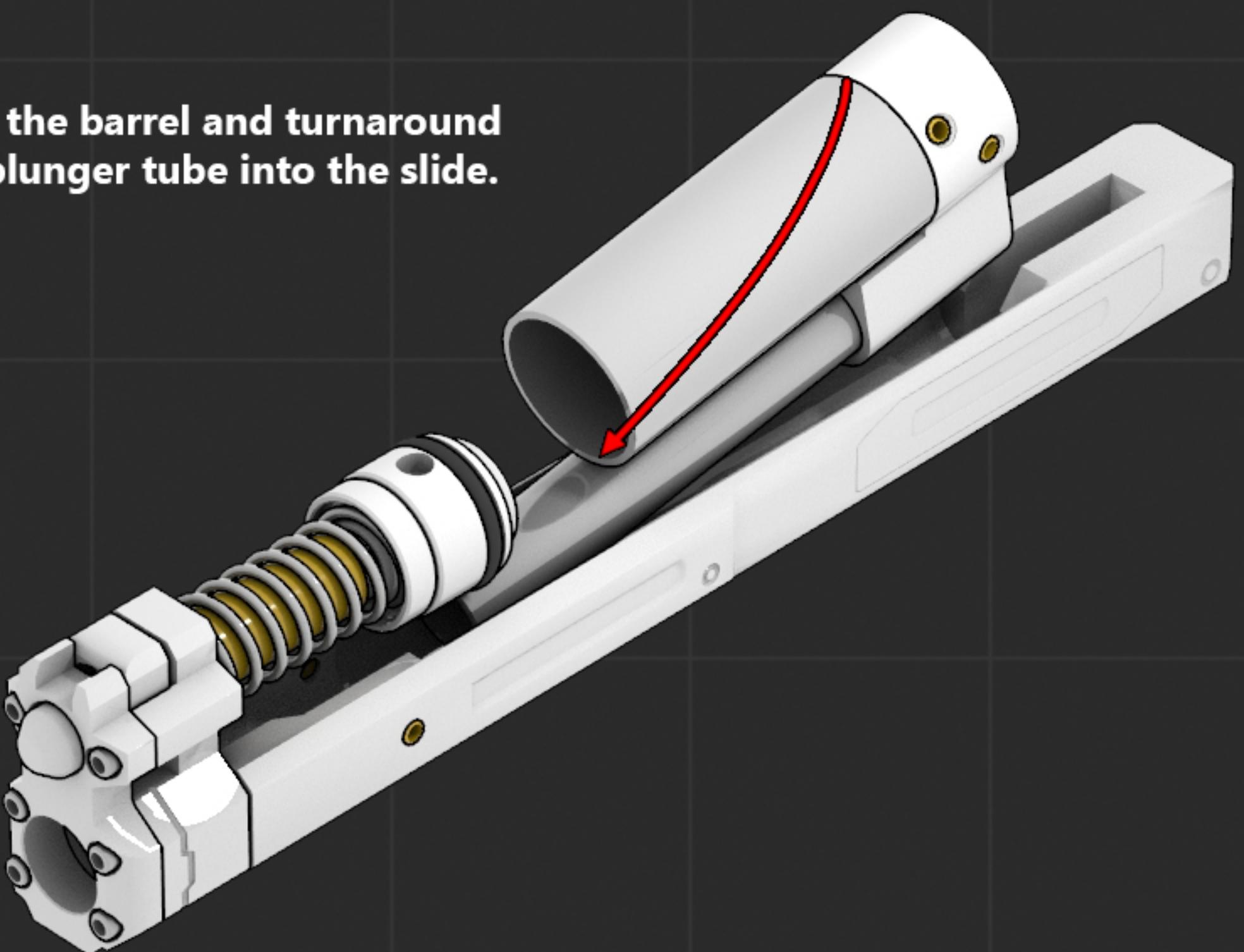


Lube the plunger tube and push it onto the turnaround.



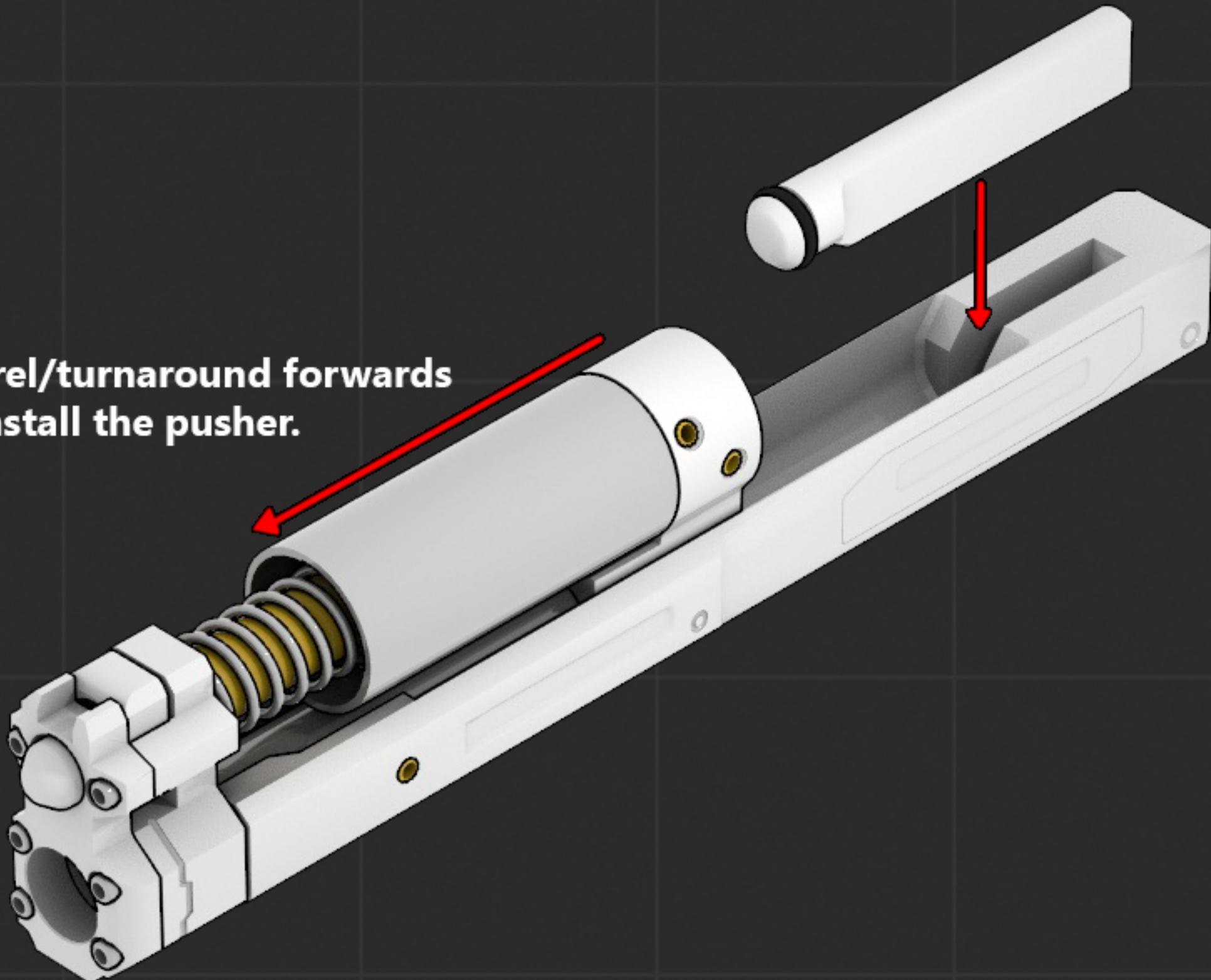
Insert the barrel into the turnaround. Use a small amount of glue in order to form a seal between these two parts. I used "E6000" for this since it's a glue that is rubbery after it dries(this should help make a good seal).

**Insert the barrel and turnaround
and plunger tube into the slide.**



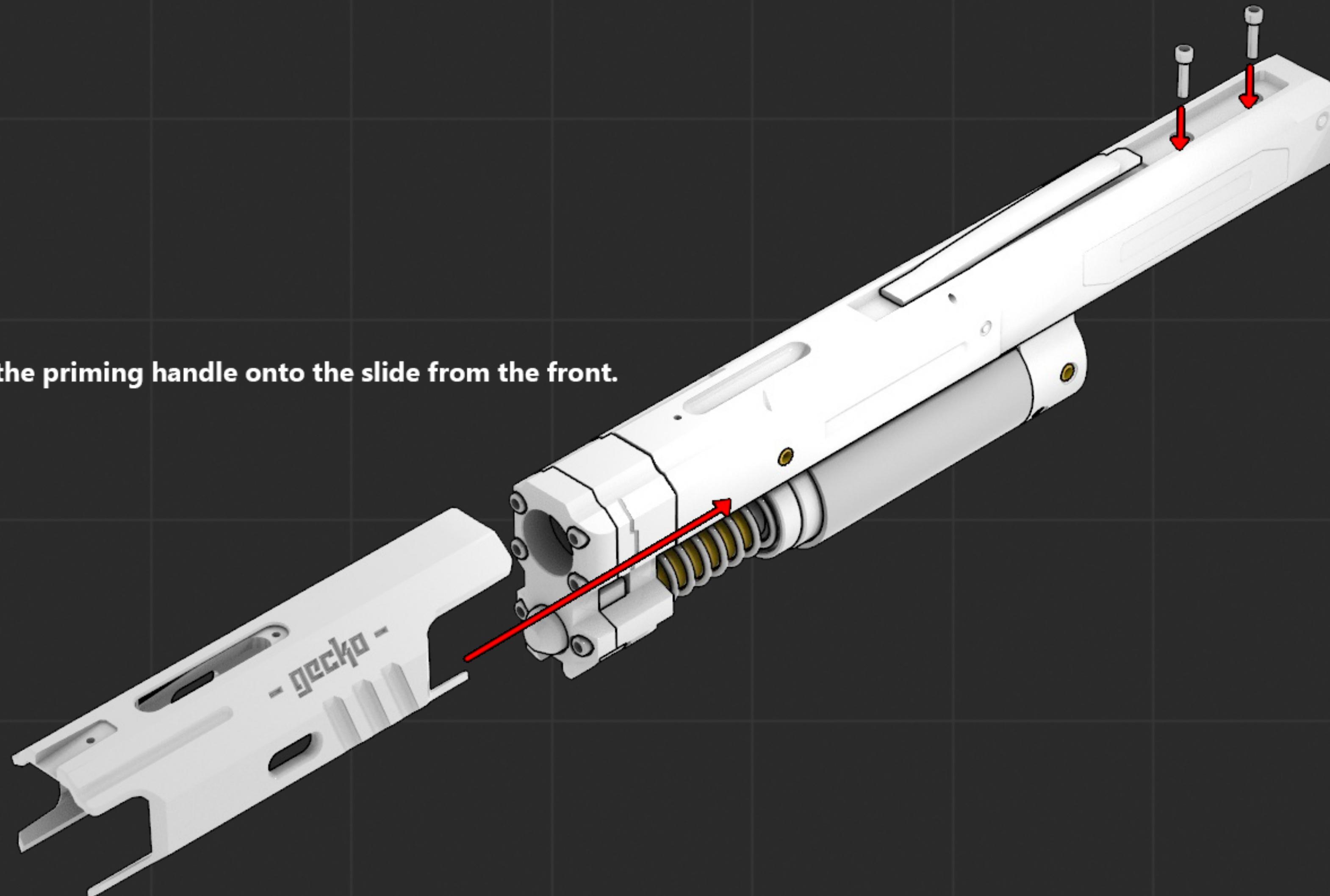
Place the pusher into the slide.

**Slide the plunger tube/barrel/turnaround forwards
to make room to install the pusher.**



Thread two M3x8mm screws into the pusher.

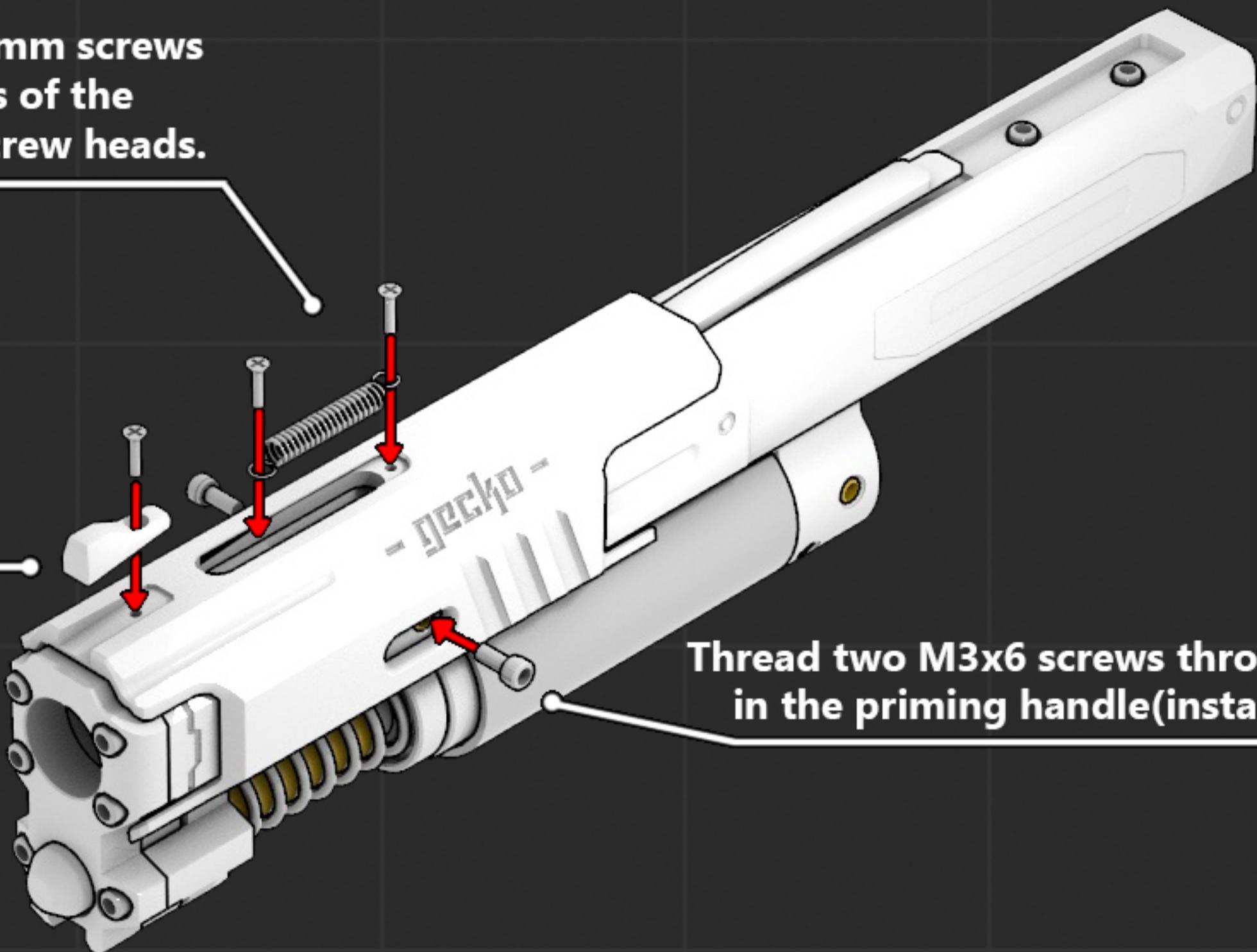
Slide the priming handle onto the slide from the front.



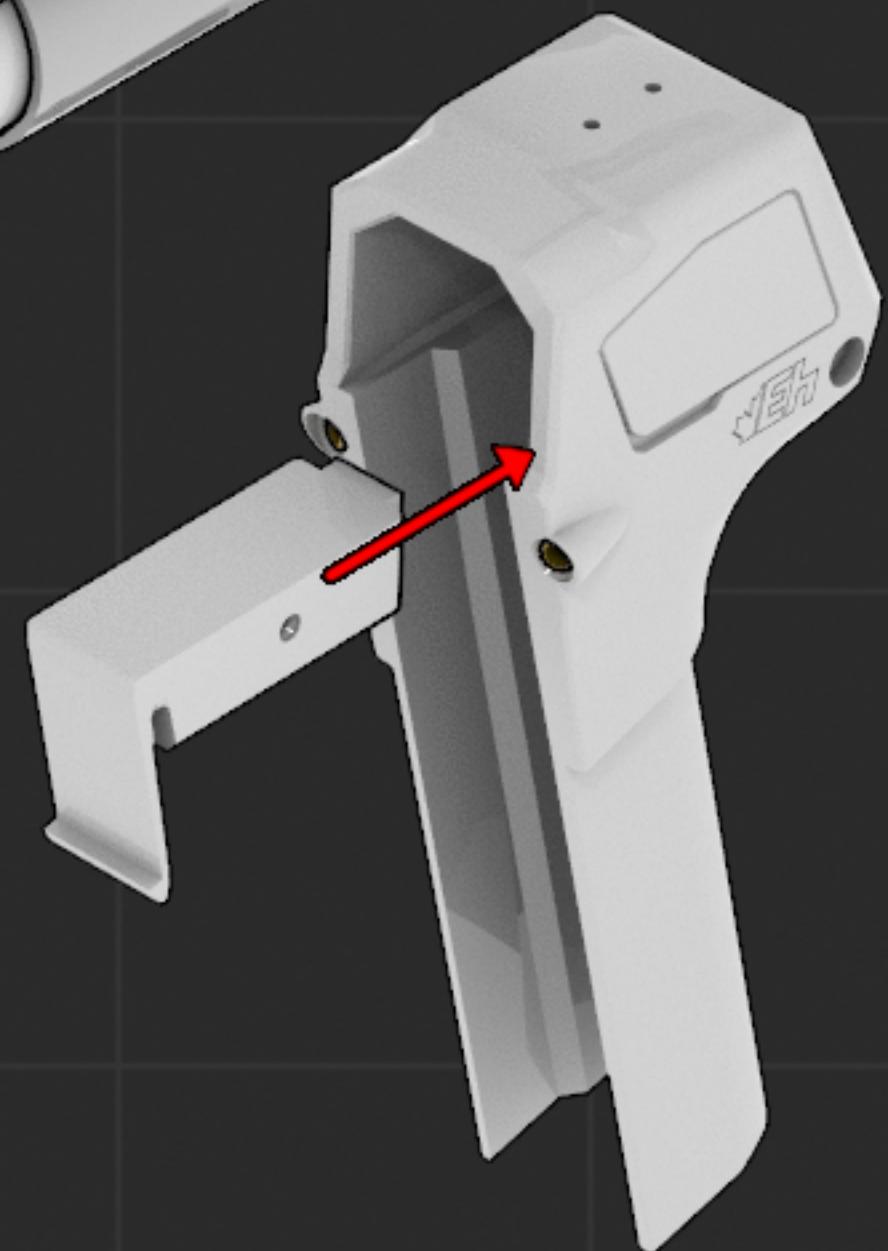
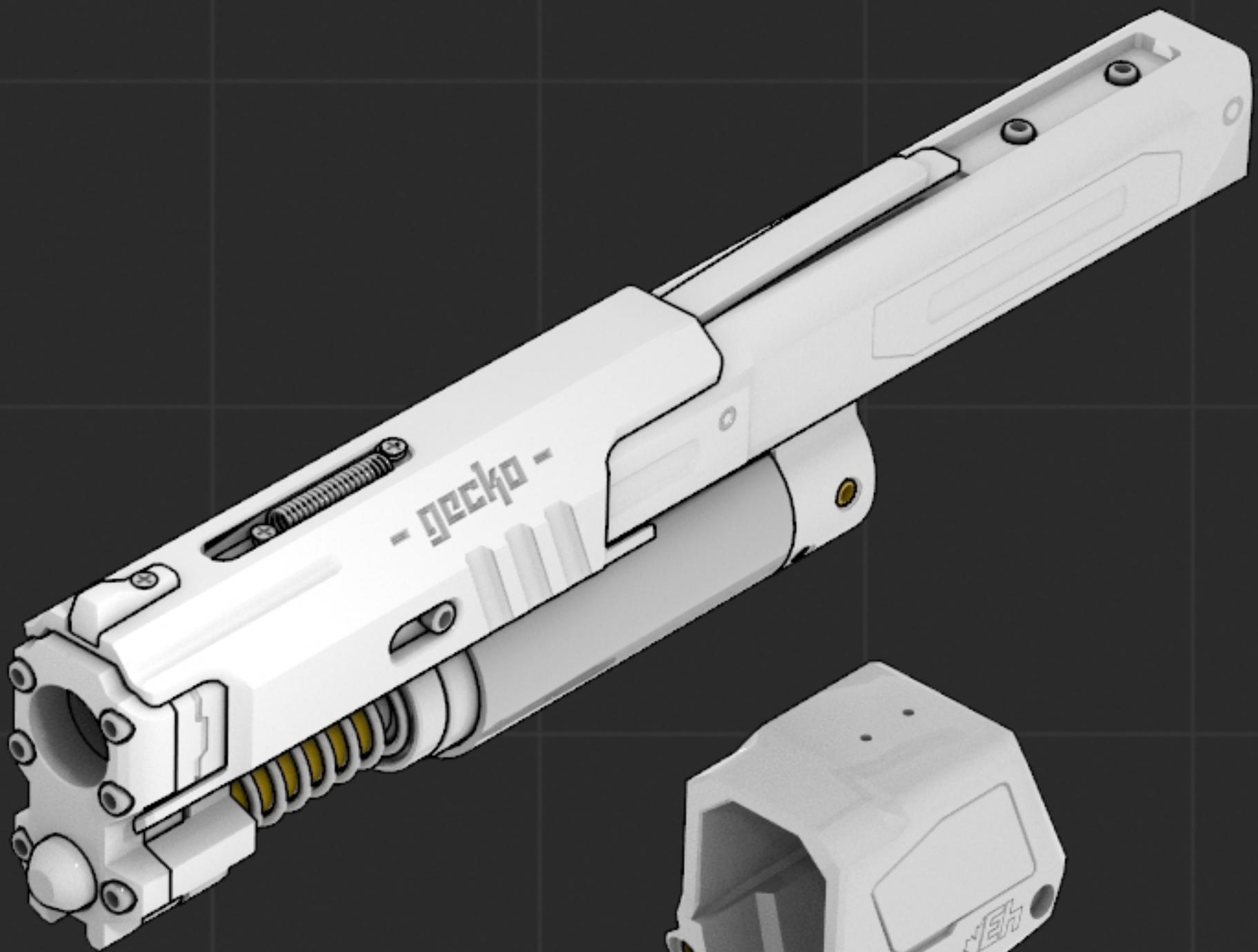
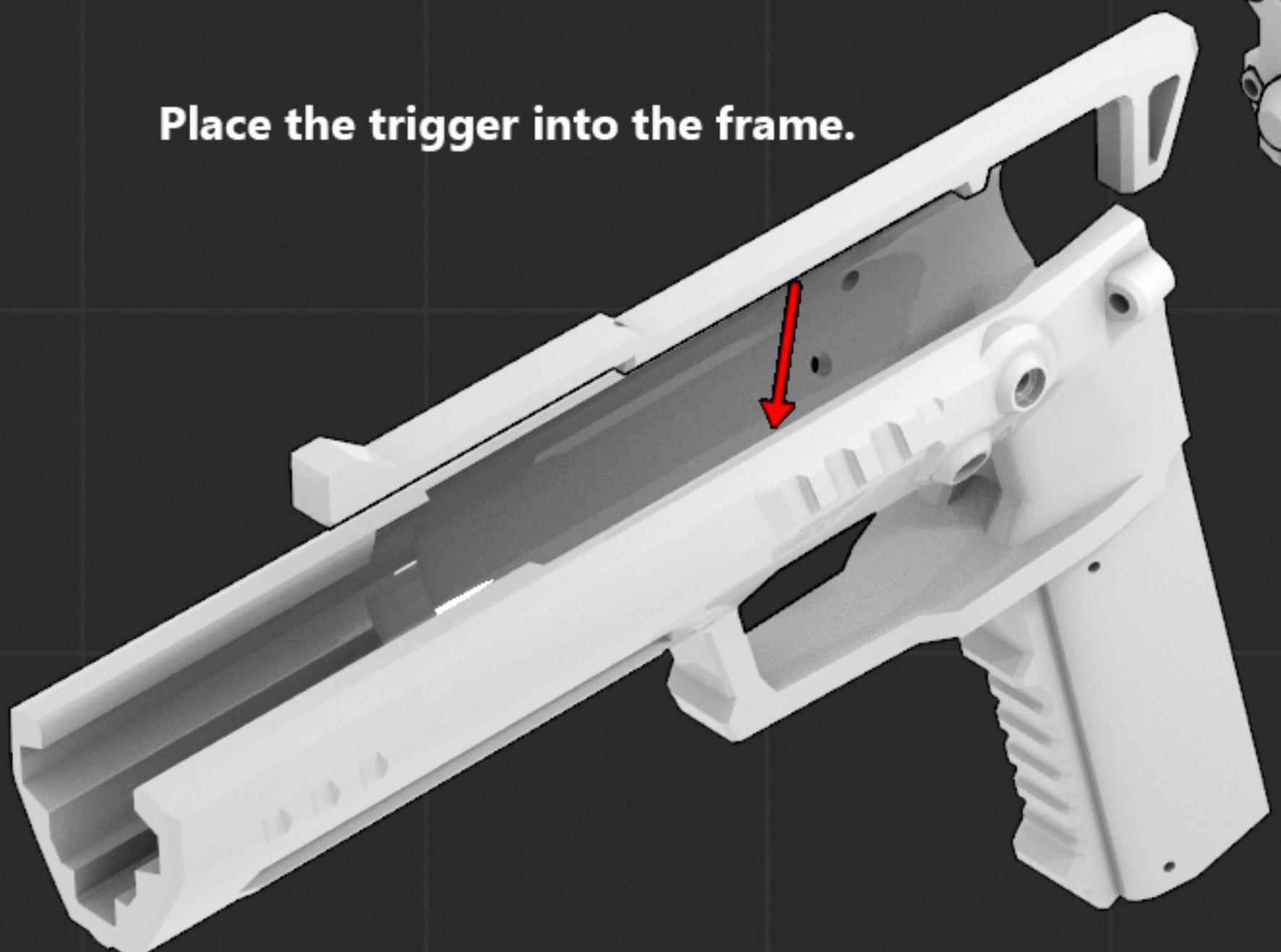
**Partially screw in two M2x5mm screws
so you can loop the ends of the
extension spring onto the screw heads.**

**Use one M2x5mm screw
to install the front sight.**

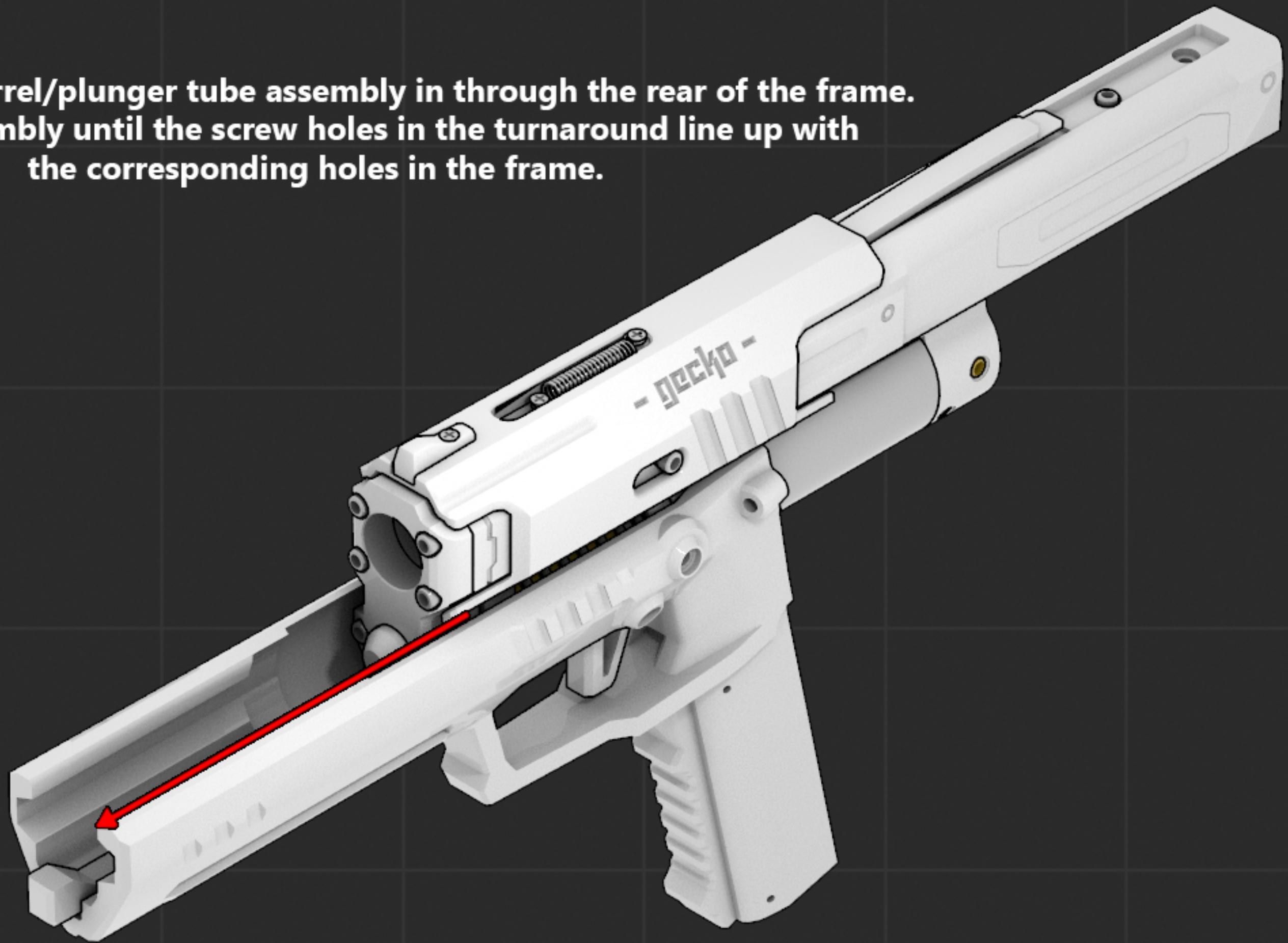
**Thread two M3x6 screws through the oval holes
in the priming handle(install on both sides).**



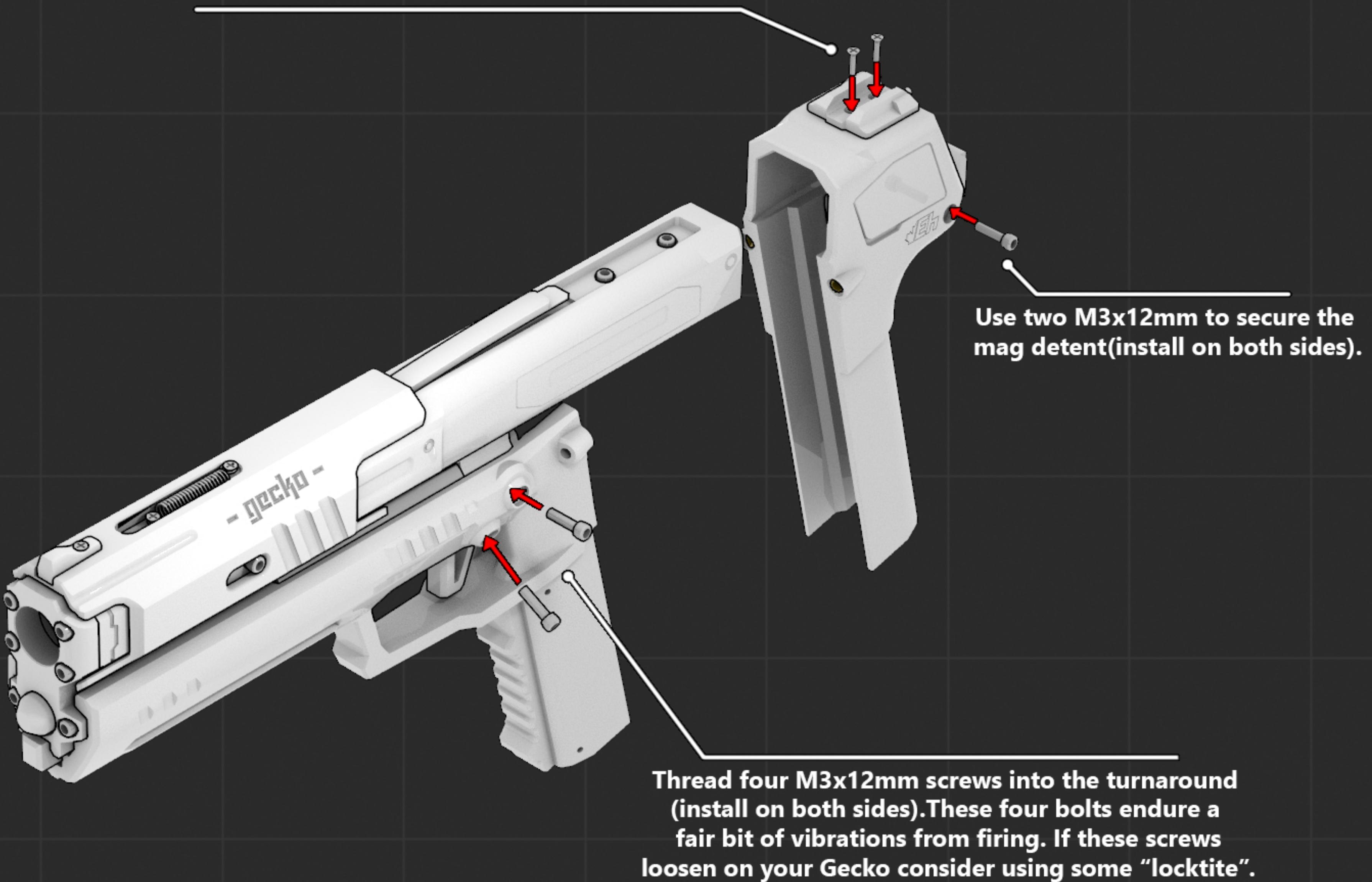
Place the trigger into the frame.



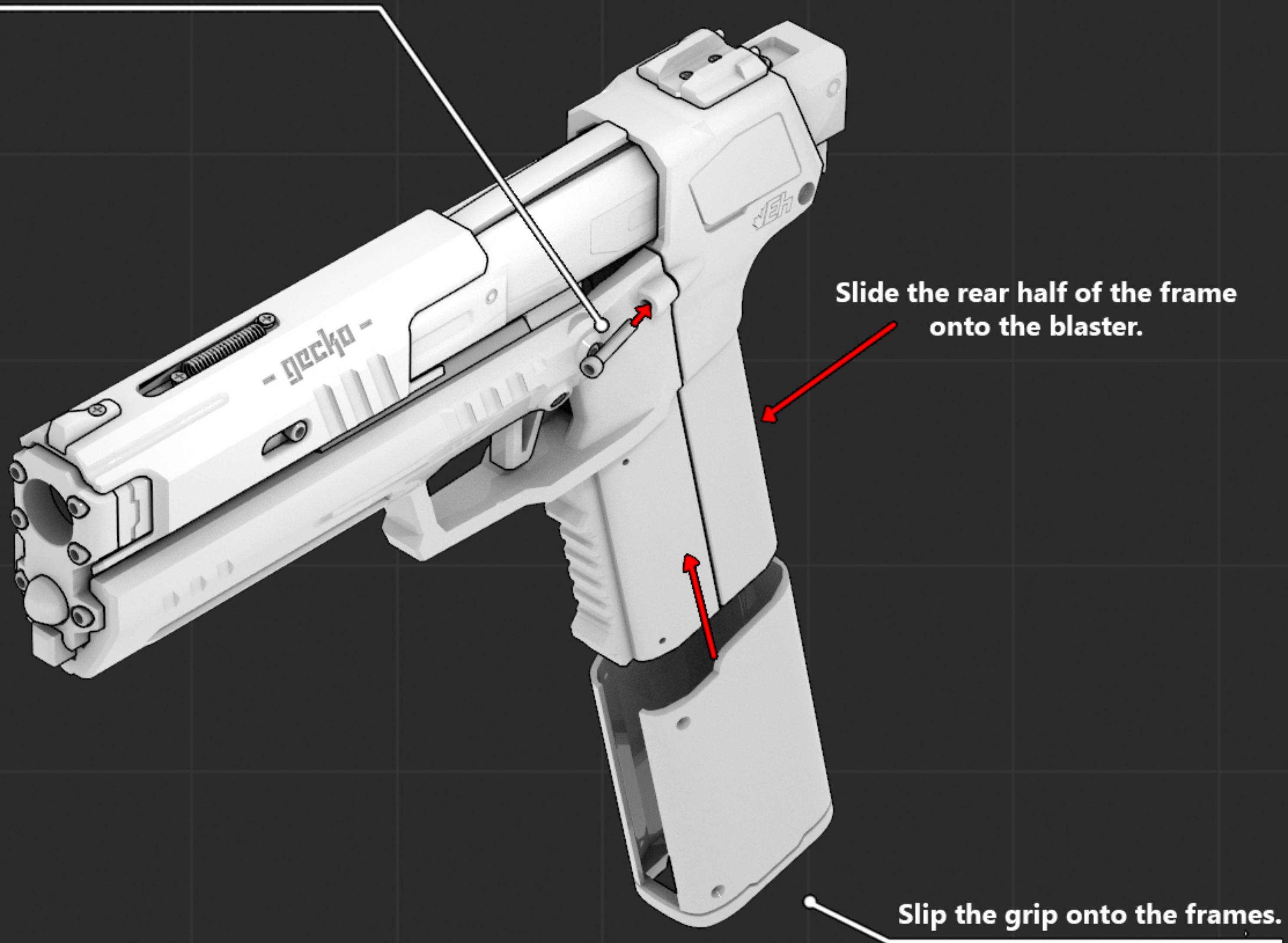
**Slide the slide/barrel/plunger tube assembly in through the rear of the frame.
Slide the assembly until the screw holes in the turnaround line up with
the corresponding holes in the frame.**



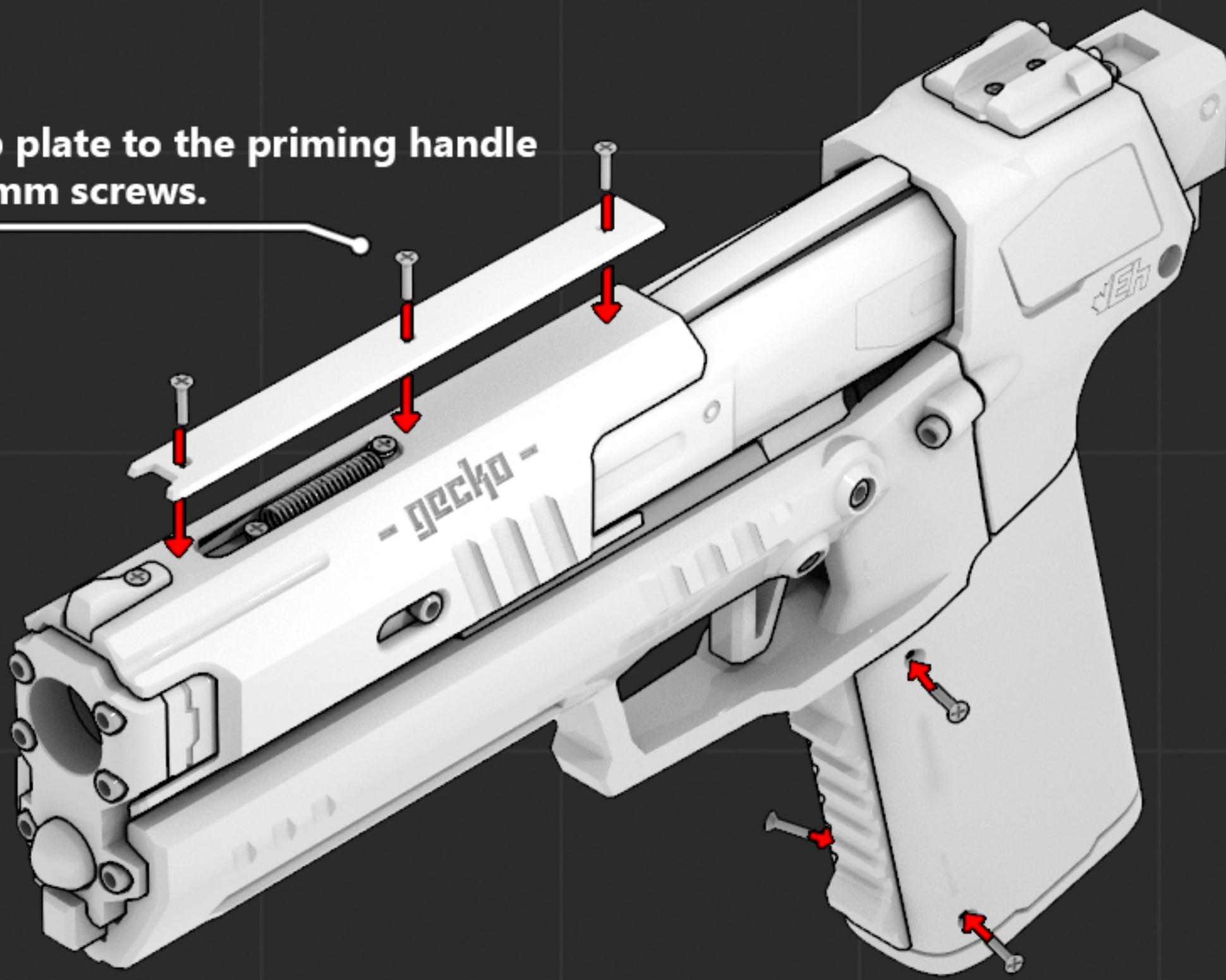
Use two M2x5mm screws to install the rear sight.
Optionally, the rear sight can be swapped with a section of picatinny rail.



Use two M3x16mm screws to bolt the two halves of the frame together.

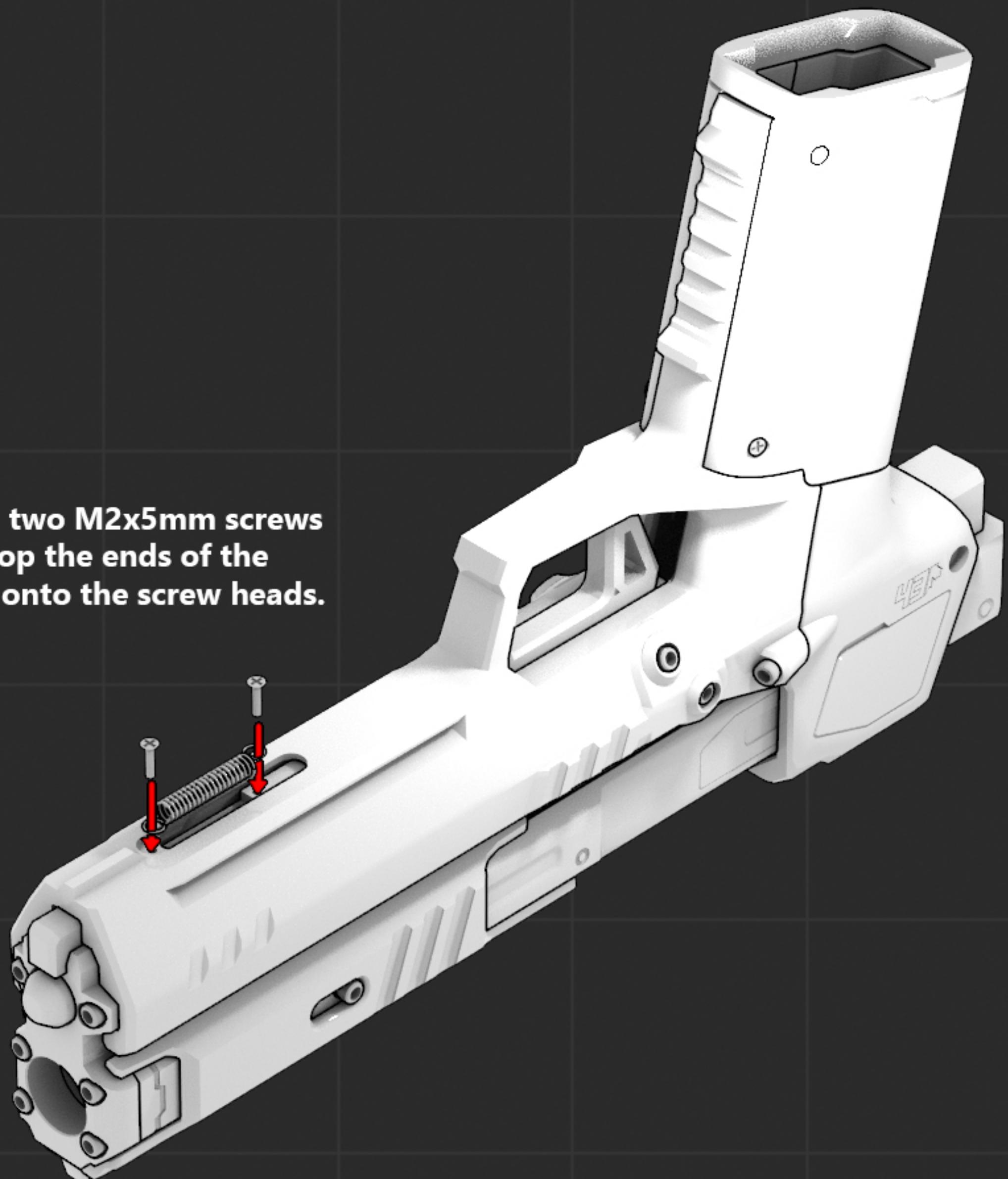


Attach the top plate to the priming handle using 3 M2x5mm screws.

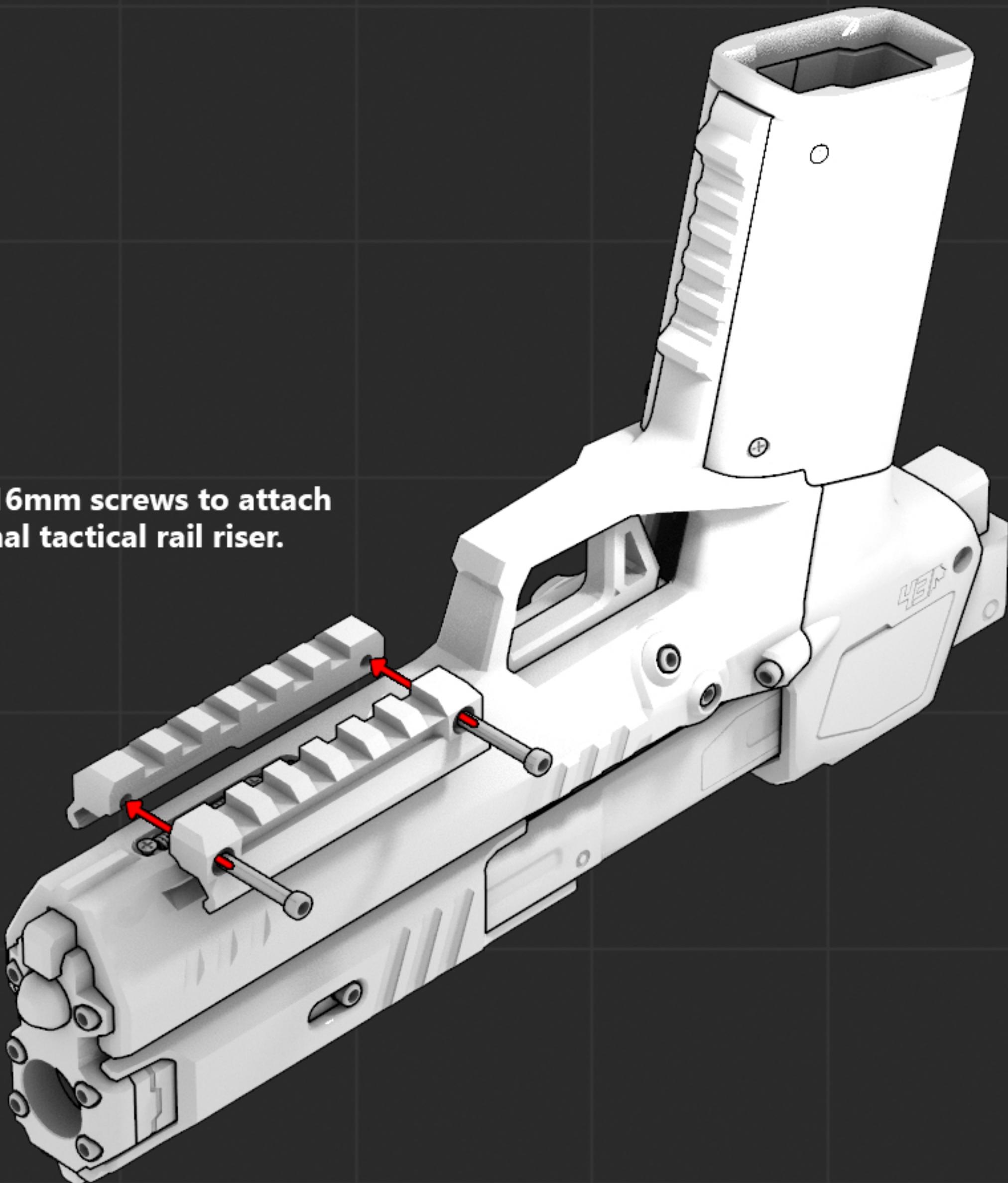


Secure the grip to the blaster with four M2x5mm screws.

**Partially screw in two M2x5mm screws
so you can loop the ends of the
extension spring onto the screw heads.**



**Use two M3x16mm screws to attach
the optional tactical rail riser.**



In order to build a magazine you will require this additional hardware:

1x constant force spring (known/sold as a “drum spring” in the Nerf hobby)

3x M3x12mm screws



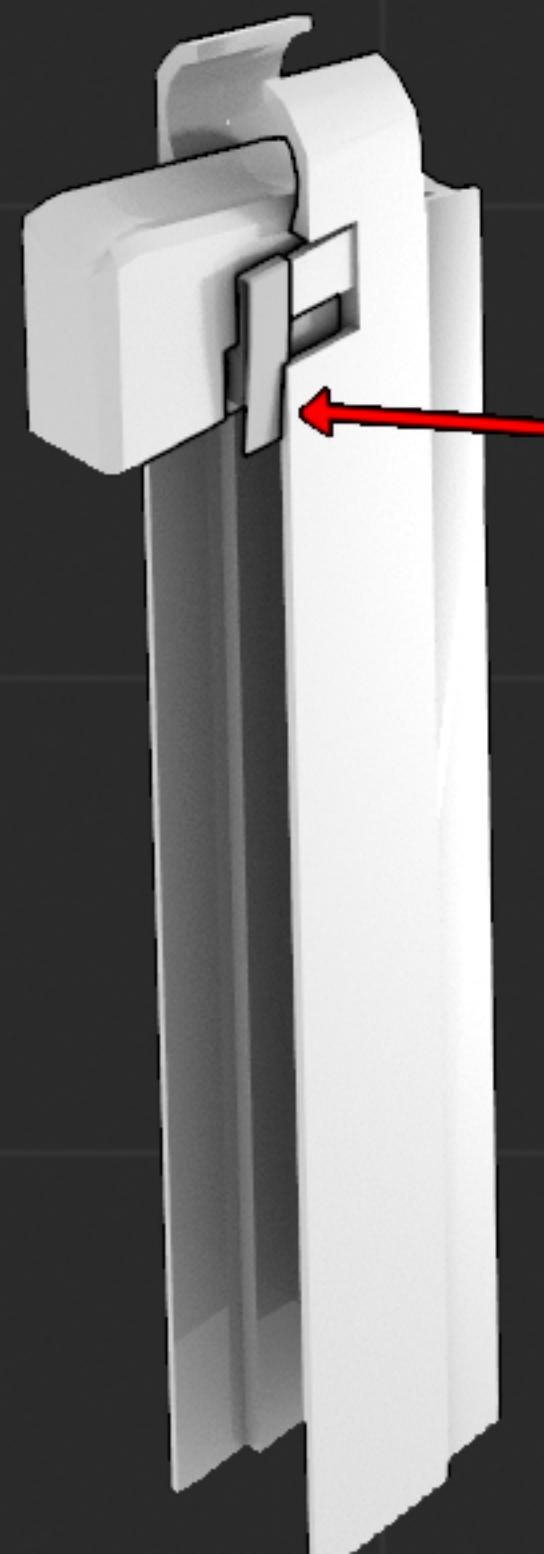
Place the cylindrical portion of the drum spring into the groove under the follower.



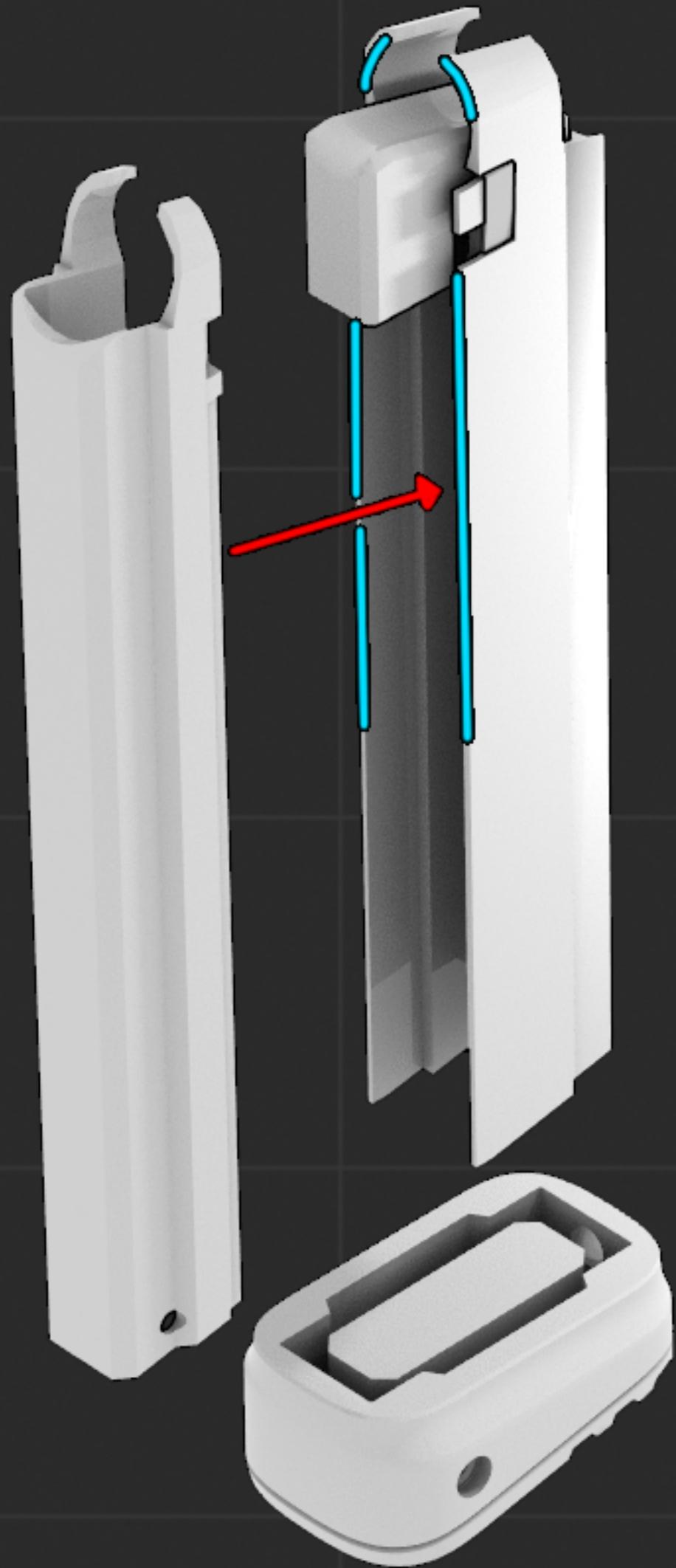
Slip the tail around the rectangular peg on the magazine.



Make sure to tuck the tail of the spring inside the magazine.



Glue the two halves of the magazine together by applying a small amount of CA glue on the areas highlighted in blue.



Slide the mag into the slots in the base.



Secure the base to the mag with three M3x12mm screws.

