

SSSzar V3 VZ61 Super Safety System

Designed by Remnants



Description

This system uses a custom, remixed Czar V3 lower receiver, which houses a super safety trigger housing, along with a printed trip bar. Standard non-super safety AR15 triggers can still be used. All original Hoffman Tactical designed super safety components work with zero modifications (fire control group, cam and lever), with one caveat. If you are going to use an original lever, it needs to be made out of metal. If not, it won't last more than 100-200 rounds before issues start to arise. As a result, a VZ61 specific lever is included. If you are going to be printing a lever out of polymer, it is recommended that you use the one included. This lever is slightly longer and more in line with the bolt within the upper, reducing wear on the component. Within the beta, the lever and trip bar were tested up to almost 1000 rounds in PLA plus with minimal wear, though a filled nylon is recommended if printed.

As a side note, the VZ61 style grip (two-piece design) included in the original Czar V3 release had a lot of surfacing issues. It was cleaned up and made into a one-piece design, as well as made slightly shorter, closer to the length of the original VZ61 grip. This is included with the other files here as well.

Forced Reset Triggers are not Machine Guns, but there has been much controversy surrounding them, and you should exercise caution regardless. Also, these lower receivers are not compatible with the original LPKs. The original legal brief and SS documentation are included in this package for reference.

Hardware Requirements

- One 1/16" Diameter, 3/16" Long Roll Pin
- One M3x8mm Screw (specific head type doesn't matter)

No other hardware is required, excluding the standard super safety components.

Recommended Tools/Items

- Wire Cutters
- Gun Oil

Recommended Slicer Settings

- Material: PLA+ or Filled Nylon
- Nozzle Temperature: 210C-230C for PLA+
- Bed Temperature: 50C-60C for PLA+
- Fan Speed: 80 percent cooling
- Nozzle Size: 0.4mm
- Filament Size: 1.75mm
- Layer Height: 0.16mm-0.2mm

- Walls Line Count and Upper/Lower Layers: 8
- Infill: 100 percent

Components:

- **SS Trigger Housing** – Tree support recommended, brim, support blockers (within small roll pin hole), infill direction: 0 degrees
- **SS Trip Bar** – No support, brim, support blockers (within roll pin cutout), infill direction: 0 degrees

For the super safety cam and lever, refer to the read me from Hoffman Tactical. In regards to the Czar V3 frame, there are a few changes/recommendations from the original read me. A few recommended slicer settings are listed below:

- **Czar V3 Receiver** – Tree support recommended, brim, support on build plate only, infill direction: 0 degrees

Refer to the original Czar V3 read me for everything else.

NOTE: All components when opened in the slicer are already in the proper orientation.

Assembly

The first thing to start out with is the one piece of hardware not needed on the original Czar V3 receiver, which is the M3x8mm screw listed above. The area directly to the right of the ejector had to have material cut away for the trip to actuate back and forth properly. As a result, this area is much weaker and can have a tendency to crack at the layers due to impact from rounds onto the ejector without reinforcement. Due to this, a hole was created for this screw to clamp the layers together. Before installing any of the other VZ61 components, thread this screw into that hole, as seen in the figure below:



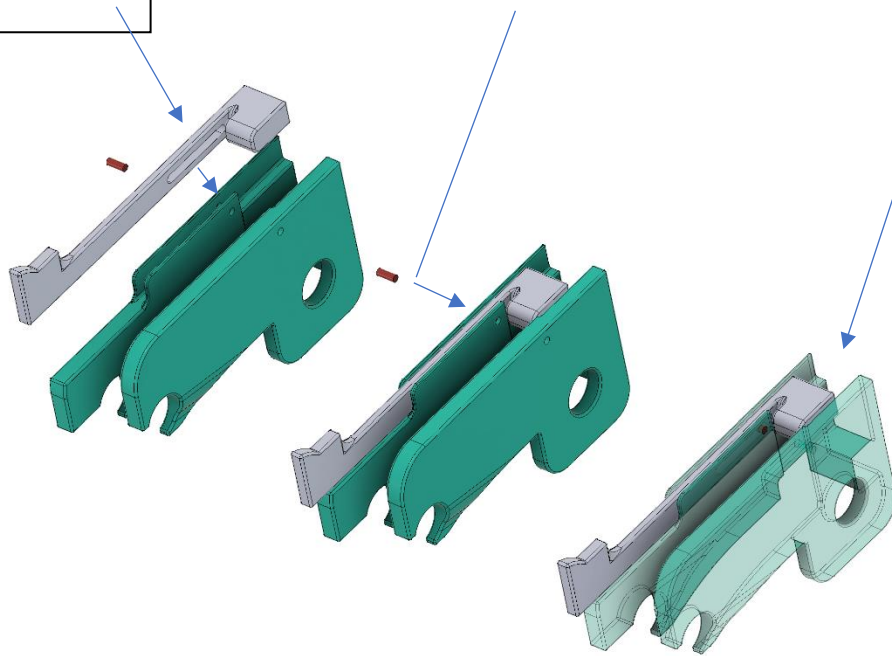
Figure 1: Reinforcement Screw Installed

There may be polymer chips as a result within the mag release hole, so be sure to clean this out after doing so. You may now proceed to install the other standard VZ61 components.

Orient your trip bar where the slot in the bar will align with the pinhole in the housing

Insert the roll pin into the housing and through the trip bar

Your assembled housing should look like this:



The super safety system is very simple, with the roll pin being the only non-printed component needed specifically for the Czar V3 remixed lower. It is recommended that the bottom surfaces of the trip bar, as well as the top surfaces of the housing that it interacts with be oiled before assembly. This will ensure the trip bar is able to move back and forth as smoothly as possible. Once this is done, take the roll pin and line up the hole in the housing on the right side with the cutout area of the trip bar. Due to how small the roll pin is, it is recommended that you carefully hold it with wire cutters to press it into place. The hole on the left side of the housing is just to help remove the roll pin with a punch if needed. The fully assembled housing can be seen below:



Figure 2: Assembled Housing

Before installing the assembled housing within the lower, ensure that the super safety cam hole on the housing is cleaned out properly. The cam should be able to freely rotate with little to no snagging.

Assembly of this within the lower receiver is very straightforward. Once the fire control group is installed in the lower receiver, press the assembled printed system within the lower. You will need to slightly lift the rear of the housing to ensure the cutout on its front side can slip in place, properly interacting with the hammer's cylindrical extrusions on either side. Refer to the figure below for this step:



Figure 3: Installing Housing into Lower

Once this is done, ensure both the housing cam hole and the lower receiver safety hole are lined up. You may now install both the cam and the super safety lever. Ensure that the hammer is cocked back and that the super safety lever is in front of the trip bar. You can finish the lower receiver assembly by installing the pistol grip. Refer to the figure below to see the fully assembled lower receiver:

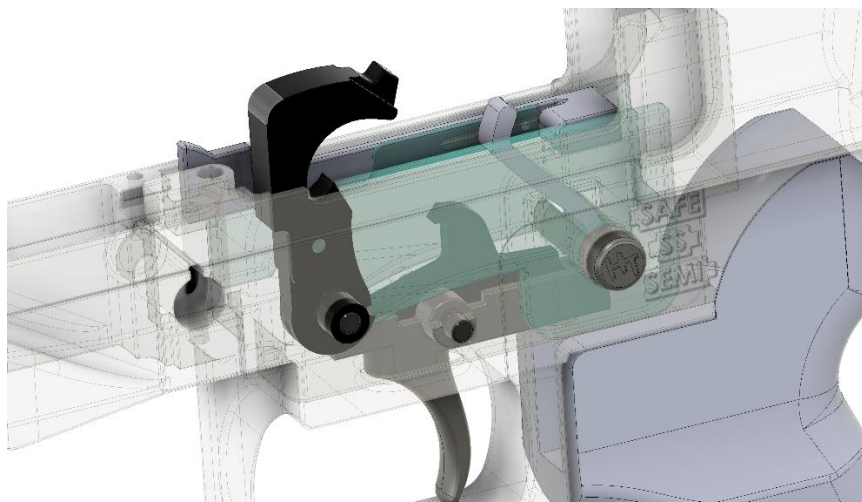


Figure 4: Fully Assembled Lower Receiver

Once this is done, all that is left to do is installation of the upper receiver. In order to properly install the upper receiver so that there isn't interference with the trip bar, you will need to slightly tilt the upper back, and pull the bolt backwards. See the figure below:



Figure 5: Installing Upper Receiver onto Lower

You will know if you did this correctly you are able to charge the weapon after the upper is fully installed. Ensure everything functions properly, with the cam rotating backwards with the bolt, as well as the hammer not being able to drop until the bolt is back forward. If you are going to dry fire the Czar V3, I recommend that you do so with the firing pin removed. This can be done quite easily and will save you from having to buy a replacement (can be bought on Czech Point USA).

I have broken a few firing pins from doing so, as it wasn't designed to be able to handle the force from an AR15 hammer and spring when dry firing.

Troubleshooting/Tips

VZ61 magazines can be somewhat finicky and occasionally lead to FTF (failures to feed). I recommend that you strip down the magazine, clean it, and apply a thin coat of oil to the spring and internals. This should ensure it runs as smooth as possible, reducing chances of the spring getting caught up during feeding.

Another thing to consider is the type of ammunition used. The VZ61 was originally designed with the European 7.65 browning round in mind. These European loads run hotter than a lot of standard 32 ACP ammunition found in the US and can also be dimensionally slightly different. I recommend that you use this instead (FMJ specifically), to reduce any ammunition issues. The lighter loads can occasionally lead to FTE (failures to eject). I specifically recommend a 73gr projectile, which has around 157 ft-lbs of energy (such as Norma, S&B, Fiocchi), compared to weaker loads with a 71gr projectile with around 130 ft-lbs of energy. You can experiment with different types of ammo, but I would avoid using flat nose and hollow points, as these types have both been known to give issues in the VZ61 as well.

My last recommendation is to give a fully loaded magazine a few taps on the rear, similar to what is recommended to be done with older steel AR15 magazines. This will ensure the rounds are seated properly.