Printing and Assembly Guide for the XD Pistols

by AWCY? ARMORY

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Overview

The XD full size grip fits both Service and Tactical parts kits, utilizing the cheap and available OEM magazines. The platform and AWCY? have much more to offer and we hope to share that with you soon.

Warning

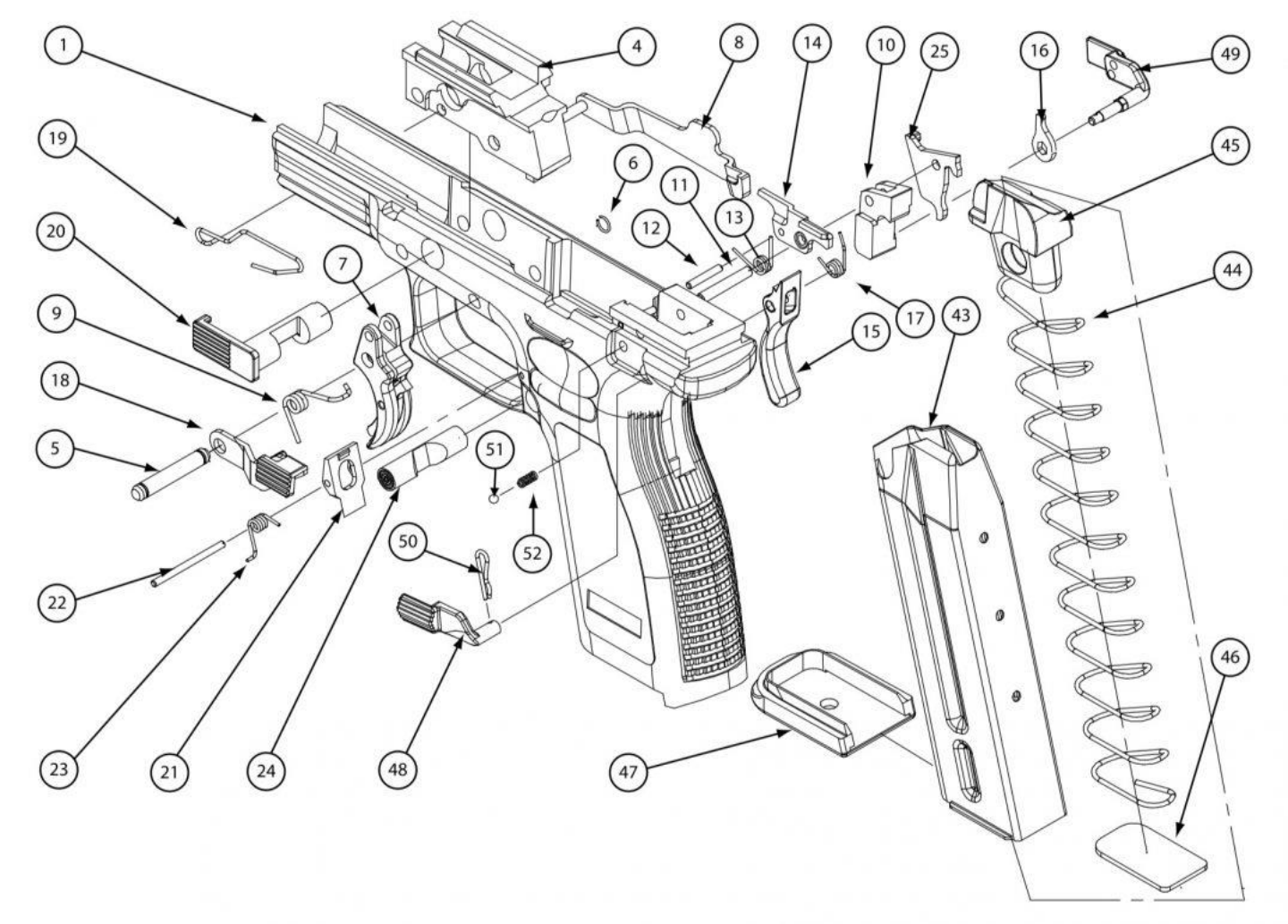
You are assembling a firearm, there are risks involved. YOU are responsible for your actions and components you print.

AWCY? XD-9/40 frame and assembly guide is compatible with the XD Service and XD Tactical in 9mm, 40 S&W and should work with a .357 Sig. The XD-45 and compact variants of the XD line require a different frame. Due to minor changes from the HS product line, compatibility between HS 2000 and Springfield Armory's XD line is unverified and may not be safe or reliable. The end user should do extra research and use caution before attempting to assemble this frame with HS 2000 components.

Parts Kit and Inventory

In order to complete an XD frame you will need a complete parts kit. Your primary source of parts will be from new or used firearms. This guide and frame are intended for the XD Service and the XD Tactical frame chambered in 9mm, 40S&W, or .357 Sig. If your kit is chambered in 45acp this frame is not compatible. Variants like the XD Mod.2*, XD(M) XD(S) and XD(E) WILL NOT FIT. If you purchased your parts kit from a vendor who disassembles firearms you will need to confirm you're not missing components. Compare your kit to the following parts diagram to ensure you are not missing any major parts. These usually can be obtained through various sources. The diagram on the next page illustrates a few components that will not come in your kit. #6 is a spring clip that is embedded into the frames at the factory, these are not easily removable and are omitted; this is not an issue. There are two of pin #5, ensure you have two matching pins as one may show more wear from being the pivot point of the trigger. Finally, #16, #48, #49, #50, #51, and #52 are all parts only present in the thumb safety version and are not required or usable with this frame.

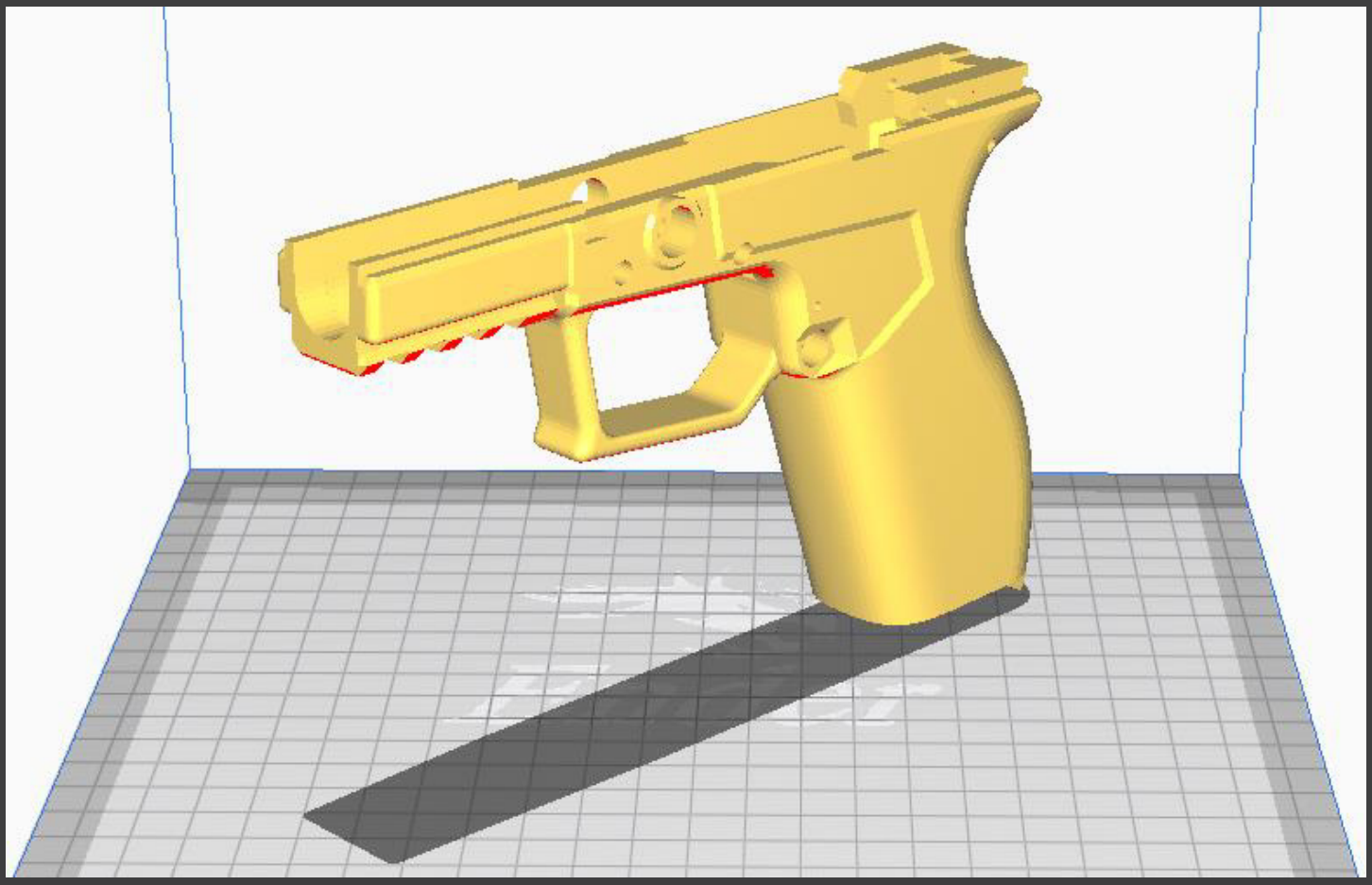
*The XD Mod.2 Subcompact while not identical does fit and function in the XD Subcompact frame.



Tools for Assembly

Necessary:
- Small hammer with a nylon or brass head
- Roll punch set (common 9 piece sets have the necessary sizes)
- Tweezers for fiddly parts
- Bench block (printed, a roll of tape, or scrap 2x4 with a 3/4in hole drilled in it works fine)

Recommended:
- Small rod to make a slave pin for the magazine catch - 1.6mm (1/16in) diameter and 11mm long (approximately) made of aluminum, steel, or brass rod
- Various grits of sand paper
- Needle files to clean up the magazine catch area and other (can use sandpaper and a dowel)



Printer Requirements

You should have a printer that is in good working order and is calibrated to produce dimensionally accurate prints. Improperly sized parts can result in a firearm that may not function or could discharge unintentionally.

Printing

This guide was written for a model printed in standard orientation (see above) using recommended settings for the filament used. PLA Plus at 4 Walls with 99% infill, and tree supports were used for this build.

Frame Prep

Following this guide on preparing your frame for assembly will help identify trouble areas before you encounter them and reduce frustration or accidental damage to the frame.

It's important to clear all of the holes in the frame of support material before you attempt to install components, as they can cause additional friction or cause pins to go in at an angle which can result in the inability to fit some components. Take care not to ream holes too large. You want to keep the sear pocket between the rear printed rails and the locking block pocket clear of any supports or support remnants.

Non-upright prints create their own challenges. If you printed your frame pointed up or down your rails will have ridges that can result in a tight or rough fit with the slide and locking block. Start by fitting these components with no other components installed. The locking block should fit snugly and not be too difficult to remove. The pin holes for the locking block and trigger should line up. If they do not, sand the high spots on the frame, gradually test fitting these components every so often to check the fitment. The takedown lever will be a good measurement aid in seeing if the locking block is sitting correctly. The rear rails are mostly for alignment and filling the gap in the rear of the slide and are not load bearing for the slide itself.

Pre-fitting pins (optional) - once you're comfortable with the sear block sitting properly and you're able to insert and rotate the takedown lever without substantial force, it's time to prepare all of the pin holes for assembly.

These pins are retained by friction and right off the printer they will have a nice tight fit which is expected of printed XD frames. To make assembly easier when dealing with small components it's best to insert all of the frame pins first to ensure the holes are proper. To do this, we will use our soft head hammer and roll punch set.

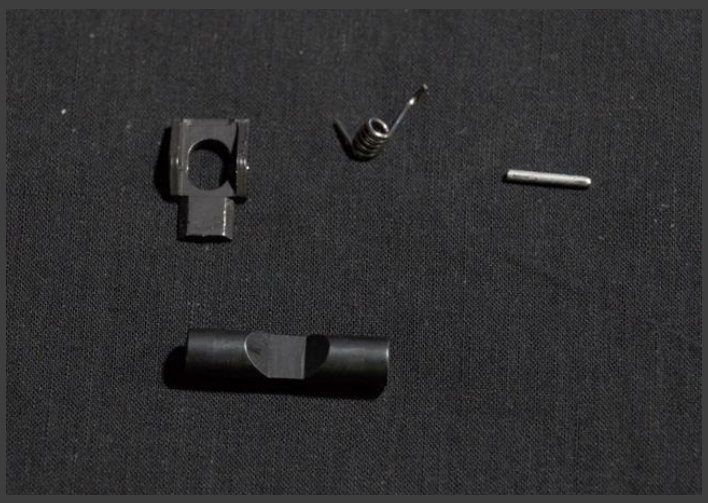
Only insert the pins, do not attempt to place any components in at this stage. If you want to send it, skip to the next section. Using your hammer and bench block, place the frame on the bench block and drive each pin into its appropriate location. The force required is minor, you do not need to send the pin to the afterlife. Start with light taps gradually increasing in force until the pin goes in. After its insertion use a roll pin punch of a slightly smaller size to drive the pin out the other side. This will form the hole to the correct size and make the component install easier. This may also reveal any accuracy or layer adhesion issues in your print when working with the rear sear area.

When installing the magazine release button, it is recommended you smooth the lower front portion of the rounded area. Recommended tools are a set of needle files or sandpaper (120 or 220 grit) and a small dowel (one smaller than the magazine release button). You will want to smooth out the front area on both sides of the button to reduce sticking of the magazine release button. This should be a very minor adjustment - something you may not need to do - but something to consider if you find your magazine catch feels "sticky."

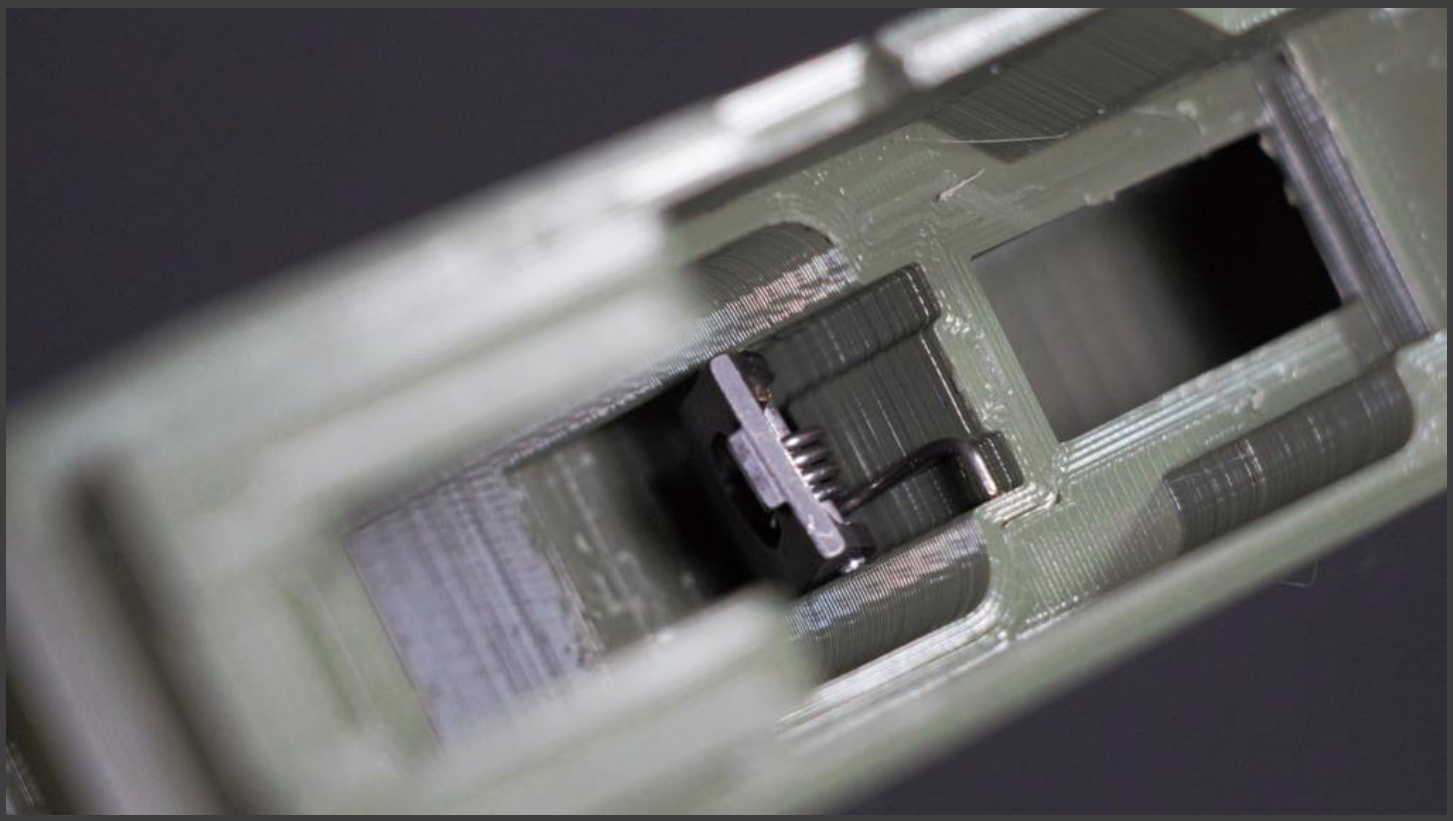
Component install

It's time to insert parts into the frame. If you didn't heed the warning about the pin test fit and are just going to send it, good luck. Components should be installed in the following order or else you'll find you can't fit your fingers in the frame to reach some tiny stupid thing. It's also advised to clean your parts before installing them to ensure no random grit or poverty spray paint job is causing you to have a stuck pin and a bad day. The magazine catch is trivial once you've got it down but the first few times may make you want to throw the build in the trash can.

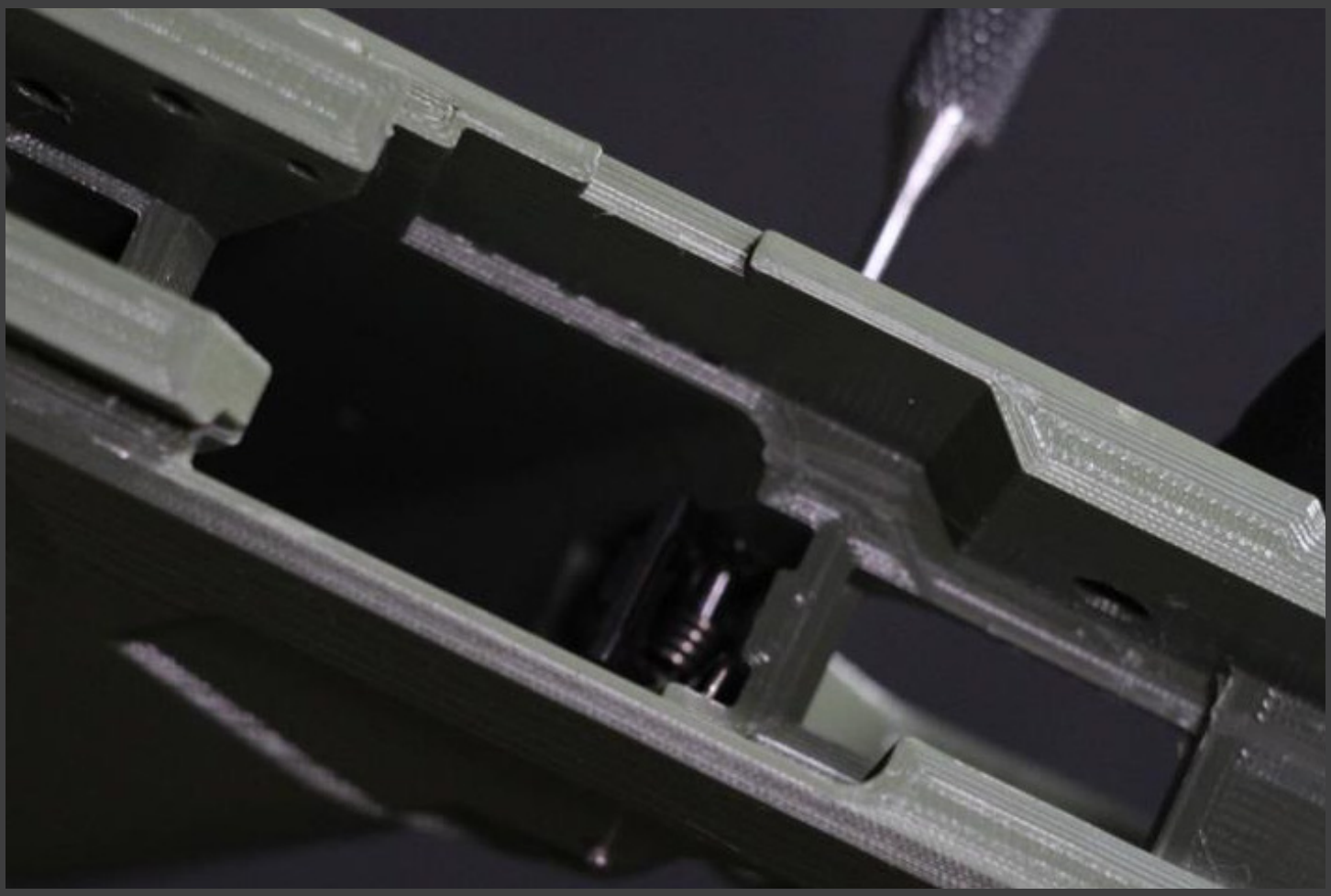
We're going to start by using a slave pin that will keep the magazine catch and spring together for the first part of the install. This can also be done with a second roll pin punch that is smaller than the magazine catch spring but it takes more patience.



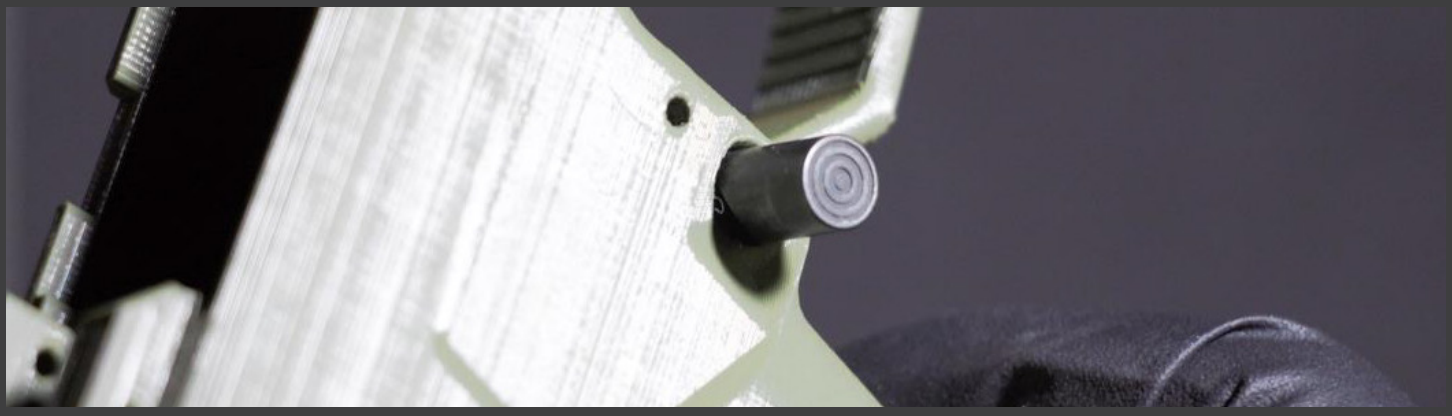
Insert the magazine catch and spring into the magazine well with the nub end sticking up and toward the magazine cavity.



From there, use a 5/64 roll pin punch and insert it through the left side of the frame as shown below (as if you were holding it and aiming forward, going through the hole in the frame, spring, and catch), knocking your slave pin out the right side (bottom side in the picture).



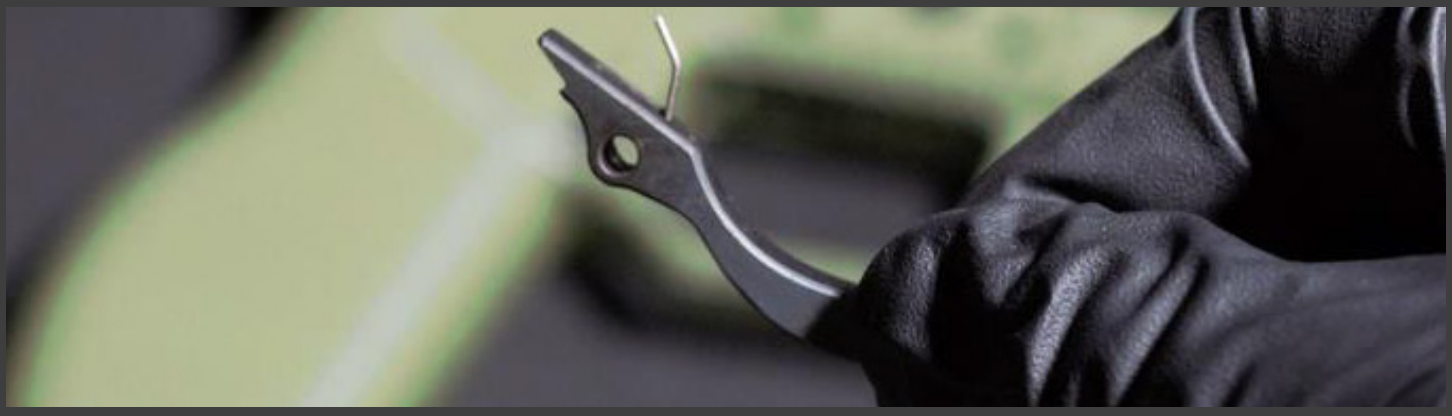
The magazine catch should be resting entirely on the roll pin. From here we will attempt to get the pivot pin started from the right side. Resting your frame on its left side, loosely hold the roll pin punch to keep the catch in place while you start inserting the pivot pin. You will want to drive it slowly, looking inside the mag well from the top to check that it's making it through the magazine catch and spring. Continue driving it in all the way. To insert the button, we will start by driving the pin out from the right side of the frame while keeping the pin seated in the left side of the frame as well as both sides of the spring and catch.



Using a roll pin punch to lift the catch (it will tilt sideways a bit) we can insert the release button from the right side. Check alignment as you attempt to drive it in, some force may be required but this should not need to be struck by the hammer. Once fully inserted we will drive the pin back into the right side of the frame.

Test your magazine catch for function with an empty magazine. If it sticks, you may have to follow the prep instructions to smooth out the front side of the hole. Installing the catch the second time usually goes a little more smoothly.

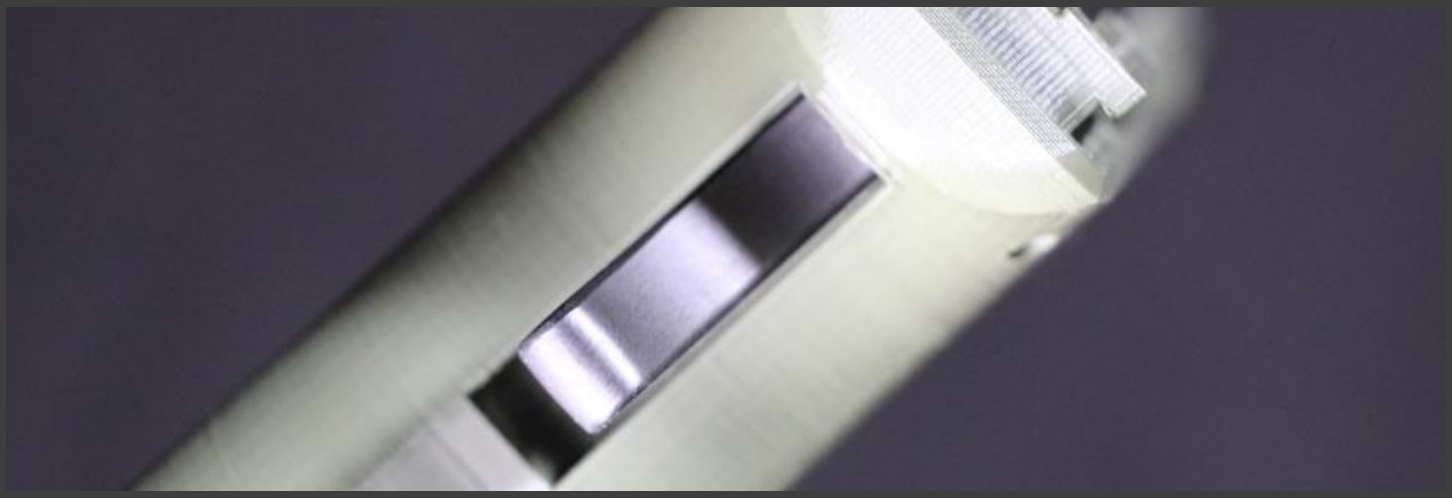
The Grip Safety may be something you're not fond of, but it's a part of this firearm as a drop safety, and more importantly as a sear overtravel stop; the firearm will not work without it. Installation will be annoying the first time but it should be less so than the magazine catch. Like the component before, this pin is best started from the right side. The pin has a left and a right side, you will notice a groove in the pin. The short side goes to the left of the frame. Insert the spring into the grip safety and offer it up to the frame, and we'll use a 3/32 roll pin punch to hold this in place.



The grip safety spring will sit inside of the grip safety, be careful when you insert it so you dont drop or lose it.

The grip safety pin, notice the groved section is biased toward one side.

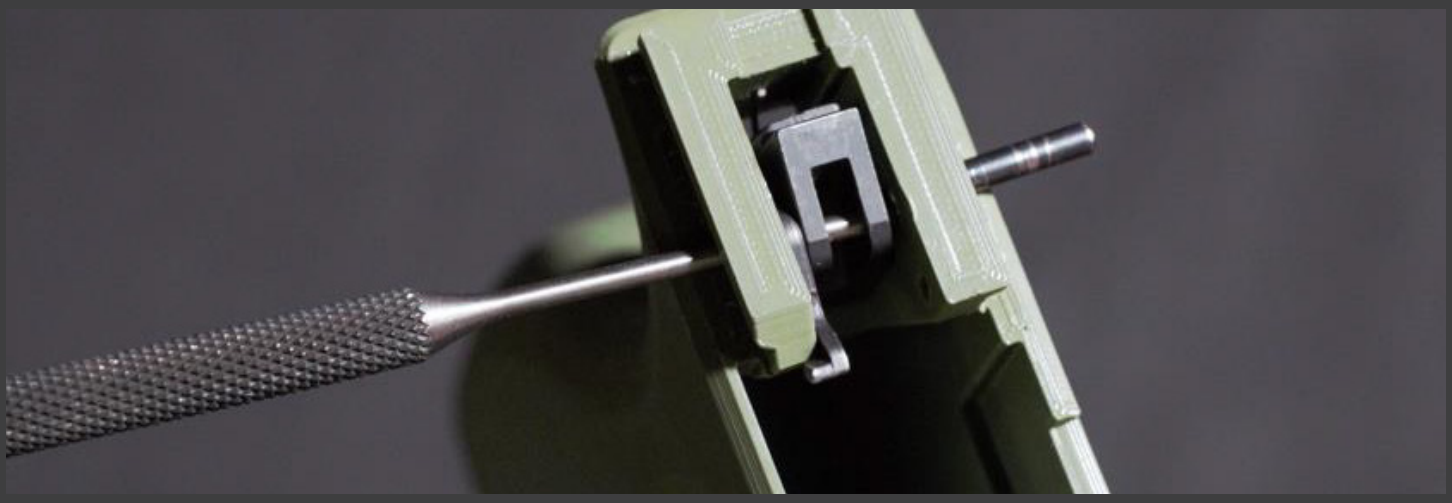
The pin needs to clear the bent wire in the spring so this may take some force.

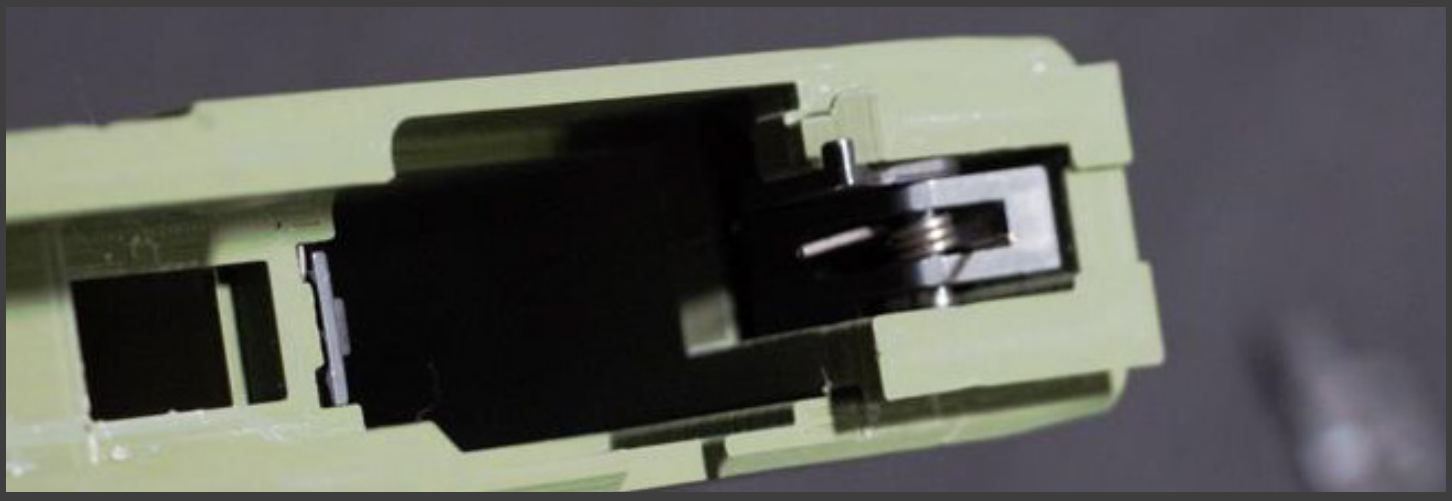


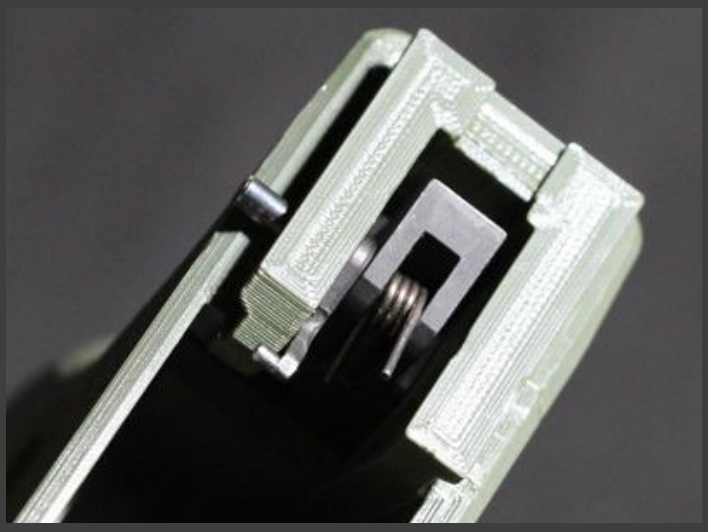
Now we will slowly drive this pin through the frame. You may need to use your roll pin punch to correct for the spring trying to move the grip safety sideways. Continue until the spring has made it all the way through. The groove indicated earlier determines where the grip safety sits in its recess. You may need to adjust it left and right for proper fitment using your roll pin punch, if it drags or sticks it's too close to one side or the other. The grip safety should be loose in the pocket with no bidning.

The sear and reset need to be installed next, we're going to deviate by installing this pin from the right side. To begin we're going to pair the sear and striker safety lever as pictured below and insert them into the frame using our 5/64th inch roll pin punch from the left side to hold them in place. You will need to hold the grip safety in during this install to give you room to manipulate these parts.

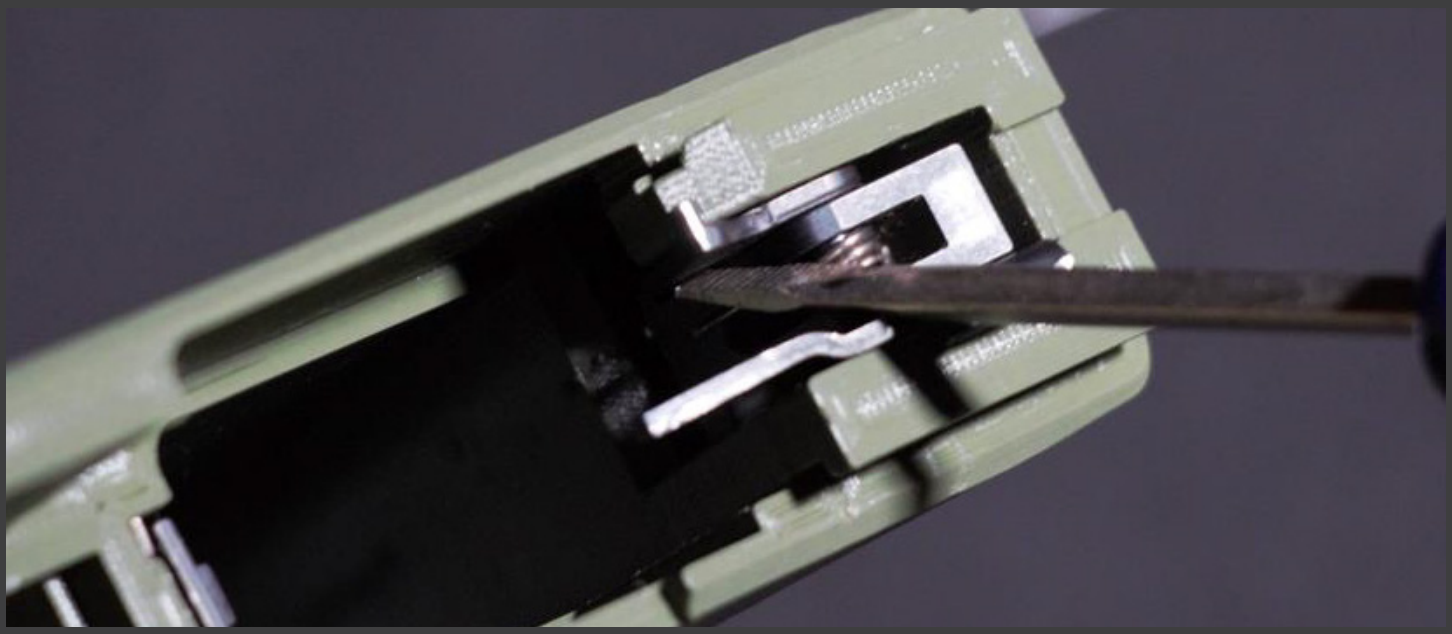
Begin driving this pin in until the pin can support both parts but does not extend into the center of the sear. We now want to insert our sear spring and continue driving the pin to the other side of the sear, but before going all the way to the frame we want to insert our ejector.





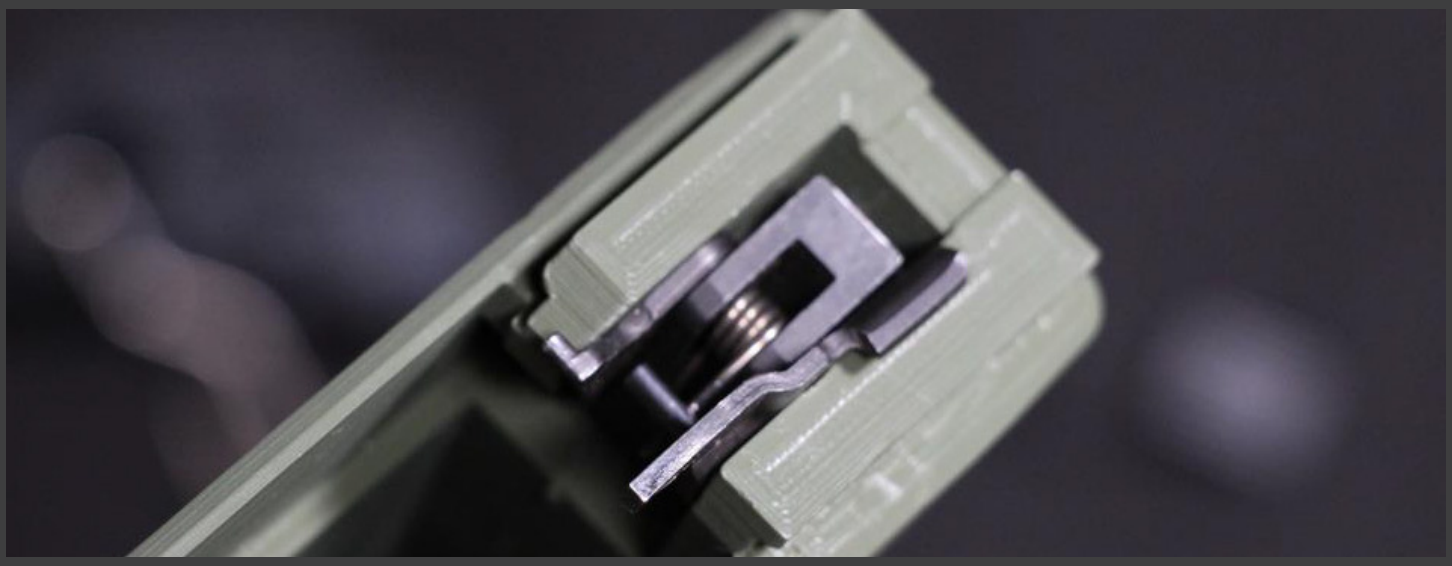


Hammering these pins does cause the frame to pinch slightly, this will make things tight and gritty. Using something to release this pinching will help make your sear movement feel smooth and free. Remember to only press against the metal parts to avoid gouging the plastic frame.



Next is the front pin for the ejector to keep it in place and retain the sear spring. This pin is supposed to be very tight, be careful inserting this pin or attempting to make it easier to insert as if it gets loose you may see this pin walking out toward the inside of the firearm causing you a bad day. If you think this is happening you might consider experementing with a small amount of CA glue.

There is no hole on the opposite side to help support you. Line up the hole on the ejector and the pin hole in the frame and drive it through; this area is fragile so keep your taps light and accurate. Once you have your pin driven half way through, you'll want to try to tease the springs up and over the top to provide tension on the sear. This can be annoying but there is a sweet spot where you have enough room to use tweezers, a punch, or a screwdriver to flick them around the edge and still have them rest on the top. From there you will drive the pin further in so that it no longer protrudes out the left side but not too far so that it collides with the striker safety.



The Trigger must go in before the sear block. Use the hook at the rear of the bar to grab under the striker safety nub that pulls on the sear. Then seat the trigger in the trigger hole on the frame. (The example shows the slide lock installed; however, this may be easier to install/align after you have inserted the action block)

Action block rail combo is up next, if you prepped your frame and checked that this fit prior to assembling any components this should sit in nicely. This installs best when it is parallel to the frame so the rear component perfectly sits inside of the trigger cutout on the frame. The spring must be on the action block before installing it in the frame.

We're going to insert the takedown lever with the lever pointing at the 6 o'clock position and then rotate it to the 9 o'clock position. It should go in almost all of the way. While applying a light pressing force to the pivot of the lever, rotate it to the 12 o'clock position and it should seat nicely, locking into the spring.

This is simply a case of lining up the pins; due to the size of these pins and their chamfer this is the easiest part of the build. To aid in its install you can use a 5/32 roll pin punch to align all of the components including the slide stop and trigger.

Repeat these steps for the front pin.

Congratulations!!! Gold star for the hammer wielding human, you might have assembled a firearm.

DO NOT INSTALL THE SLIDE YET! FUNCTION TEST FIRST.

Function Test

An assembled frame is great but does it work!? Check to ensure the sear lowers when you pull the trigger, if it doesn't and your dumb ass installs the slide you will have to remove the trigger pins and then break the polymer rear rails to get the slide off and be forced to print a whole new frame.

If it doesn't drop, find out what is binding or stuck. Your grip safety is either not getting far enough out of the way (indicating your printer isn't calibrated correctly) or your sear mechanism is jammed up on something and you need to fix that before proceeding.

If it goes up and down like a happy little sear, you can install the slide. Flip the take down lever into the 12 o'clock position and slide the slide assembly onto the frame.

If your slide hits the ejector, striker safety lever, or the pins on your frame, check that they are installed properly. Cycle the slide back and forth with the grip safety depressed, the grip safety will actually prevent the slide from moving if it's not depressed. Does the slide drag or bind? This could be the sign of a misaligned rail/locking block or the result of a bad print.

Insert an empty magazine and see if the slide locks back. If it doesn't, ensure the magazine is fully seated and locked in. Next, make sure your slide lock is interacting with the magazine. If all parts are as expected and it doesn't lock back you may have an issue with dimensional accuracy on your print. If it locks back, eject the magazine and move on to the dry fire testing.

If you can cycle your slide easily then you will want to continue testing by dry firing. Use snap caps if you have them. Cycle it several times to ensure the firing pin drops and resets when cycled. Identifying problems before you to go live fire will help you avoid a bad day or a short range trip.

Live fire - It's always best to start off slow when testing a new printed frame, start with a single round in a magazine and make sure it fires. Does the single round lock the slide back and allow it to lock open? If it does, great. If it doesn't, try to figure out why. Was something dragging and keeping the slide from utilizing its full travel? Did you have your thumb on the slide release? Was the magazine properly seated? Figure that out before proceeding. If all is good, then move on to two rounds. If any issues arise attempt to diagnose why. Diagnosing a failure to feed issue is beyond the scope of the build guide. Once you have it feeding properly slowly expand to 5, 10, and then a full magazine. If you end up with an out of battery detonation, it sucks less if there's no chain reaction.

Special thanks to the AWCY? closed beta team for assisting in this build with their time and resources.