

SW9 and SD9 Assembly Guide

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SECTION I: INTRODUCTION

The SW9, the precursor to the SD9 series of pistols, is a basic polymer-framed striker-fire pistol introduced by Smith and Wesson in 1994 as an answer to Glock's own polymer pistols.

FreeMenDontAsk (FMDA) released his frame for the S&W SD9 early in 2020, and quickly followed up with a Glock-magazine compatible frame.

The SD9 and the SW9 differ in that the former has an enhanced rear fire control group with built in rails, while the SW9 doesn't. In fact, the SW9 has an *atrocious* trigger, with a stiff pull and hardly a tactile return.

Many home gun hobbyists have, unfortunately, bought an SW9 kit thinking it would be compatible with the SD9 frame, only to have to go out and spend some more money to find a dwindling supply of SD9 rear fire control modules. The rail spec I designed rectifies two problems with an SW9 parts kit:

- Limited SD9 rear fire control quantities
- DIY specs for if you come across a SW9 kit

(I myself was a victim to this misconception that the SD9 frame was compatible with the SW9.)

Fortunately, the rail designs are very simple. If you can make the SD9 front rail blocks, the rear SW9 rails are just as easy, if not simpler, to make.

I hope you find this release useful, and that you never have to rely on this gun's terrible trigger for any kind of life-or-death situation.

Vinh Nguyen

(While this guide is written for the SW9, it will also satisfy assembling an SD9 as well, because the pistols are so similar.)

SECTION II: TOOLS AND SHOPPING LIST

To assemble this firearm, you will need the following tools:

- Gunsmithing Punch Set
- Stick Files
- Flathead screwdriver

You can check out a comprehensive shopping list for future projects too, at www.vinhstoolbox.com.

SECTION III: PARTS KIT CHECKLIST

In order to successfully build your SW9 or SD9, you will need the following parts that specifically pertain to the firearm.

In this guide, we will be assembling the SW9 that uses the SW/SD magazines, but the steps are the same for all variants of the firearm.

PARTS

A complete parts kit should compose of the following:

- Slide assembly with barrel
- Trigger assembly with trigger bar and trigger return spring
- Slide lock
- 2x pins for the rail blocks
- Trigger pin
- Magazine release and spring
 - Be sure to procure the right magazine release for the frame variant you are using
- Rear fire control module
- Ejector
- Takedown lever
- Takedown lever retention spring

RAILS

- Front rail module (SD9/SW9 compatible)
- Front rail pin
- Rear rail plates (if building an SW9)

MAGAZINES AND ACCESSORIES

Don't forget you will also need:

- Magazine – Be sure to procure one for the frame variant you are using
- Holster (if you intend to carry)

BUILDING A SW40 OR SD40?

You *must* use the Glock-magazine variant for the SW and SD pistol frames. A SW/SD magazine in .40 S&W is just too thick for the frame and is not compatible.



SECTION IV: ASSEMBLY

In this section, we will cover the settings you should print your frame and assembling it.

SAFETY FIRST

Putting a gun together is no joke. Firearms are dangerous tools that must be treated with care and respect. **You are responsible for your safety, and those surrounding you** when you work with or operate firearms. Fellow developers or engineers cannot be responsible or liable for what you do or don't do.

As a general reminder, here are some rules to keep in mind:

1. **Always treat a gun as if it is loaded.** Remove the magazine and check the chamber yourself to verify the gun is unloaded.
2. **Keep your firearm always pointed in a safe direction.** Never point your gun at anything you don't intend to destroy.
3. **Be aware of what is in front and behind of your target.**

But specifically, for working on your firearm, you should remember the following too:

1. **Keep live ammo away.** Use snap caps or dummy rounds to verify function of your firearm. Never keep live ammo around your workspace, and certainly never mix them with your dummy ammo.
2. **A clean gun is a safe gun.** Never leave your firearms uncared for to foul or dirty up. Debris can cause malfunctions, which can be dangerous.
3. **Always read and follow directions.** Don't ignore a warning or follow instructions out of order.
4. **Use prudent judgement.** If something doesn't add up- use common sense. Stop, inspect, and re-evaluate your previous actions and procedures.

INSTALLING THE MAGAZINE RELEASE BUTTON

Insert the magazine release spring.

A starter punch (1/16th) or some short, but narrow pliers work well.



Insert the magazine release into the geometry and test the fitment of the magazine release.



Using a flathead screwdriver, navigate the spring into the pocket of the magazine release button.

You want to make sure that the button can go in and out smoothly, without friction.



Insert a magazine and see if it fits and locks. Use the magazine release button to remove it.

It should insert without hassle. It may not necessarily drop free though- sand the magwell if you want it to.



INSTALLING THE FIRE CONTROL ASSEMBLY



Insert the rear fire control module.

(Don't forget to attach the ejector to it!)



(SW9 ONLY) Insert the rear rail pieces.

The longer rail goes on the left side, and the shorter rail to the right.



Pin the rails and rear fire control module in place.



Insert the “hook” of the trigger bar up and into the fire control module.



Disengage the shoe safety and slip the trigger through the hole in the frame.

Be sure the trigger return spring is attached to the trigger bar.



Place the slide lock to the left of the trigger.



Insert the locking block on top of the slide lock and trigger.



Using the trigger pin, pin the locking block, trigger, trigger return spring, and slide lock in place.

The trigger pin should be inserted from the right-hand side of the frame, with the short end of the pin going in first.



It may be helpful to use a punch to keep the trigger return spring taut as you push the trigger pin through.

INSTALLING THE TAKEDOWN LEVER AND FRONT RAILS



(SW9 ONLY) Flatten out the takedown lever spring, but not completely.



Place the straight end of the takedown lever spring into the recess in the front of the frame.



Insert the takedown lever spring.



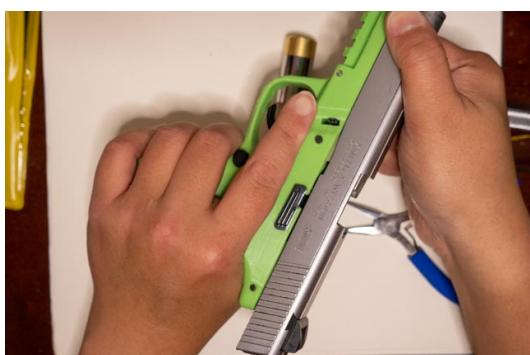
Insert the front rail block.



Pin the front rail block into place.



Place the slide assembly onto the frame.



Charge the slide to secure it into place. Be sure the takedown lever engages.



Insert the magazine and proceed to function check steps!

FUNCTION CHECK

Verify your firearm works by evaluating each of the following functions.

BE SURE YOUR GUN IS STILL UNLOADED.

Check that your chamber is empty, and that there are no rounds in the magazine.

- Testing the last-round hold-open
 - o Pull the slide back on an empty magazine.
 - o The slide should be held open.
- Charging the gun and testing the trigger
 - o Pull the trigger.
 - o The firing pin should fire.
- Testing the trigger reset
 - o With the trigger held back, pull the slide back. Gently release the trigger until you feel a tactile click (or an audible one).
 - o The trigger has reset.

When you have completed the function check, the assembly process is complete.

Be sure to remove your magazine and store your firearm in a secure and safe place.

SECTION V: TROUBLESHOOTING

You may encounter certain problems with your firearm either during usage or assembly.

- The trigger is atrocious and stiff. There is no audible or tactile reset.
 - **I'm sorry.** That's how it is on the SW. On the SD, less so...
- Takedown lever keeps falling out the side.
 - **Did you bend out the spring enough?** The spring should be taut and aggressively pushing the takedown lever upwards.
- My trigger is "dead" when I try to pull it. There is tension when I pull back indicating that the sear and striker is interfacing, but the striker ultimately never slips.
 - I've only seen this on some rear sear cages. You will need a rotary tool with a sanding bit to use on the sear housing. **Begin by taking off a few thousandths of an inch at the top tip of the sear** (NOT THE STRIKER) perpendicular to the frame, re-assembling the slide, and trying your trigger again. Repeat this process until you have a successful strike.
- Why is it that my trigger isn't resetting? It's like it's binding or scraping on something.
 - I found this happens when the sear and trigger bar are bone dry. **Drop a dab of gun oil** where the two parts interfaces in the sear housing and try to get a reset again.
- My striker is stuck- how do I get it to "fire"?
 - If your trigger is "dead" after cocking, you will need to manually **disengage the sear with a thin punch or screwdriver** coming into the rear of the frame where the slide and frame meet.