

Installation Instructions for Harrison Design Ejectors

These instructions will show you how to fit and install the Harrison Design Extreme Service Ejector to a properly manufactured 1911 pistol. It is assumed that you already know how to disassemble and reassemble your 1911 pistol, possess common gunsmithing hand tools such as files, stones, magnifiers, etc. and know how to properly employ them.

WARNING!

Before beginning to work on your pistol, unload it by removing the magazine, *then* remove any ammo from the chamber. Inspect the chamber and magazine well to insure all ammo has been removed, *then* put all live ammo in another room.

Use safety glasses as you will be dealing with springs under compression.

BEFORE YOU GET STARTED

You will need a good light, a magnifier, tools necessary to detail strip your pistol, and assorted files and abrasives to do the fitting with. Note that all directional references, (up, rear, left, right, etc.) are given assuming you are holding the pistol (and any part in question) as if it were being fired.

REMOVE OLD EJECTOR

1) Disassemble the frame to the point where the only small parts left on the frame are the ejector, plunger tube and grip screw bushings. With the frame resting on a 1911 bench block, use small steel hammer and a 1/16" steel pin punch to remove the ejector cross pin. If the pin will not move after a few good hammer raps, it may be stuck in the frame or have loctite on it. I use a small butane micro torch to heat the back wall of the mag well where the cross pin is located. Heat until you see wisps of smoke coming from the pin area. It takes about 500° F. to break the adhesive bond. **Do Not** keep beating on a pin that won't move, you will mushroom the end and **you will be screwed**. Get professional help, if you can't get your pin out.



2) Once the pin is out, remove the ejector by pulling it straight up and out of the frame. Most ejectors will be tight in the frame. **Use caution** during removal because it is possible to break off a stud and leave it stuck in the frame. Some ejectors have a slot on the underside that can be used to gently pry up the ejector. That can work okay to start it moving, but I prefer to use my vise with smooth steel jaws and grab the sides of the ejector in the vise jaws, so that the vise has the largest "bite" possible, tighten securely and then using a nylon hammer, I tap against the frame rail just forward of the ejector nose while pulling the frame away from the ejector with my hand. If it doesn't start moving right away, heat the ejector and frame as you did with the pin.



Prep and Fitting the Extreme Service Ejector

3) After the ejector is out, clean out any oil, crud, grease from the frame and holes and scrape off any old loctite. Clean out the frame stud holes using a 1/8" drill in the front and an .096" drill in the rear. Try to install each stud of the Exact-Fit ejector one at a time. They will normally be tight in an in-spec frame. I fit the legs by holding the ejector body in the vise and using a 1/4" wide x 12" long strip of 320 emory strip, I shoe-shine around each pin, checking fit as I go, one pin at a time only. When the legs are sized to fit in the holes, then you need to be sure the ejector will fully bottom out and sit flat against the top of the frame. If you can see daylight under the ejector and gentle taps with a nylon hammer won't fully seat it, you most likely need to deepen the chamfer at the mouth of each stud hole. **Do this one stud at a time.** Once both studs will go in full depth and the body will seat against the frame with no light gap, then you are ready to fit the cross pin. It is also possible that your frame has shallow stud holes and this is where the ejector is binding. Measure the depth and either deepen the holes, or shorten the studs as needed.



Prep and Fitting the Extreme Service Ejector (continued)



Cutting the Pin Notch

With the ejector in place and fully seated, insert your 1/16" pin punch into the cross pin hole until it contacts the front ejector stud, then give it a couple of taps with a hammer to make a mark on it. Repeat from the other side of the frame, so you have a location mark on each side of the front stud showing where the pin notch should be cut. Hold the ejector in your vise, nose up so that the front stud is exposed and file a groove with a round needle file where indicated by the marks made earlier. Be careful not to let the notch get cut too low on the stud, or it will either hold the stud up off of the frame, or it will leave it loose.



Same thing for cutting the groove too large/deep – the ejector will be loose. To really know where I am filing, I use a 10x Coddington magnifier (available from MSCDirect.com) to view my progress in creating the groove. Periodically, reinstall the ejector in the frame and look into the cross pin hole from the LH side of the frame against a light. You can see how you are developing the groove in relationship to the hole and adjust the groove position and depth as needed to make the groove line up with the hole. Be careful reinstalling the cross pin. If the pin gets tight when it engages the stud, do not try to force it the rest of the way. Remove the pin and ejector, inspect with the magnifier and file a stroke or two where you see contact being made. If you try to force it in, the pin may become stuck and you will have a real mess to try to fix. I prefer to install the cross pin from right to left, so it is deep into the hole before it gets to the stud. But you can put it in either way.

Fitting the Ejector Body

After the ejector and cross pin are fitted to the frame, install the slide and check for contact between the ejector body and the ejector track in the slide. Look from the back of the slide at a light and you can easily see if you have anything close. If you have contact between the ejector and the slide or the firing pin stop, remove the ejector and file down any interfering surface until the slide runs freely.



If you are installing an ejector with a long extended nose, like a 9mm or maybe a Commander, you need to check for clearance between the underside of your ejector nose and all of your magazines that are used with that pistol. Install a couple of fired cases in the mag and insert it until it locks into the mag catch. Hold up on the bottom of the mag until it is as far into the frame as it will go and see if you have any contact between either the case, it's rim or the feed lip on the magazine. If you do, file a chamfer on the bottom inside corner of the nose until you reach a point where you can slip in a business card while pushing up fully on the magazine. You can't let the mag contact the ejector nose, or it's possible that the nose can be bent upwards and it will drag on the inside of the slide. This is especially important on 9mm guns.

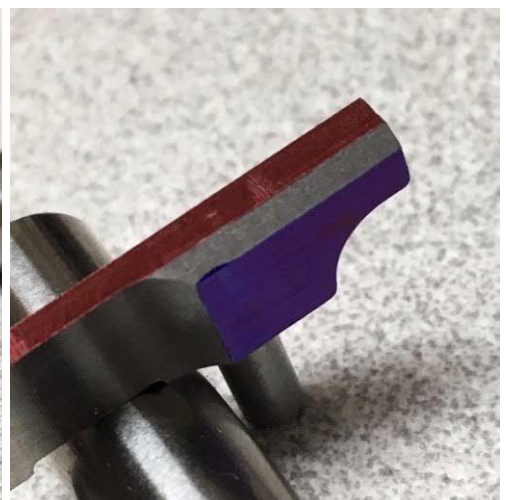
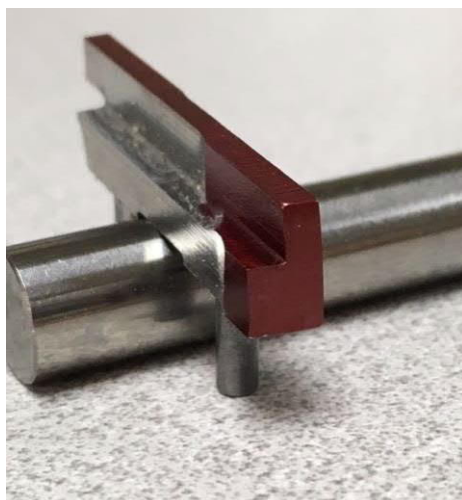


Adhesives

I prefer to use a very small amount of red Loctite 262 to mount the ejector. I always wait until after test firing is complete and refinishing is done before using an adhesive. I only use a tiny drop in the stud holes and none at all on the cross pin. In fact, I blow it out of the cross pin hole after the ejector is seated and before the pin is installed. I install the cross pin from right to left, so it will push out any residue left. Wipe off all excess that has oozed out and let the frame set **overnight** before you assemble the pistol. It is no fun to realize the next day, that you have glued the slide, trigger or hammer to the frame!

Fitting Exact-Fit Ejectors to the Slide

The pictures below show the areas that you would expect to have to fit to your slides ejector track. They are shown in red and are intentionally left oversize from the recognized range of dimensions that are commonly found in the ejector track of the average 1911 slide. The surfaces colored with red ink (top of ejector, rear of ejector and the “stair step” on the outboard side) are arranged in a staggered manner so that you only encounter them one at a time, as you fit them to the ejector track in your slide. The inboard side colored blue is not a fitting point necessarily, but you should check for any contact there and relieve it as needed. The fitting pads are to be fitted in the following sequence – top, upper side on the stair-step, the center flat section of the stair step and the lower side of the stair step. Be sure you check for clearance with your firing pin stop in place and relieve it as necessary. Once you have these four fitting surfaces done, assemble the frame, slide and barrel with bushing & slide stop and file/sand the rear of the ejector flush with your slide & frame.



Fitting Methods

After the ejector is correctly installed on the frame, paint the fitting surfaces with a colored marking ink, like DyKem or use a Sharpie pen. I personally prefer no ink, but a freshly bead blasted ejector as the matte surface makes it easy to see contact for me.

Install the slide onto the frame and run it to the rear, until you make contact with the ejector nose (most likely on the top of the ejector. Once you have found the point of contact, (and don't let yourself be fooled by either glare or not using a good Magnifier) you can either file it down, or machine it down, if you have a mill. It's just a matter of cut or file, recoat with ink, bring the slide into contact with the ejector to get another contact point spotted in, then cut or file again. I would caution you against the temptation of using a hammer to strike the slide. If you feel the need, use something light and non-marring.

Once you have just enough removed from the point of contact, run the slide to the rear until you hit the next fitting pad (should be the upper side pad on the stair step) and repeat the cut, ink, examine contact process until you move on to the next pad in sequence. Once the slide will go all the way on freely, ink everything one last time and check again to see that nothing rubs. Now install your firing pin stop in the slide and test for contact between it and the ejector. If you find any, it will usually be at the top of the ejector. I prefer to remove the contact from the FPS rather than the Ejector, just be careful to preserve the radius in the inside corner of the FPS which prevents a stress riser.