

Glock Grip Reduction & Custom Beavertails

by: Eric Kiesler



Factory Glock 17, shown center, and its frame-altered brothers. At top, aggressive grip and triggerguard modifications tailored to the owners liking using a roll-on type bedliner. At bottom, a less noticeable, but still custom grip reduction and texturing job using spray-on bedliner.



Examine all aspects of the frame before starting the bedding project, especially the critical areas like the cavity that houses the trigger mechanism housing.

Every now and again, the Brownells Tech Staff comes across a new and exciting customizing technique that not only enhances the form, fit or function of a firearm, but also is simple to do and doesn't break the bank. Reducing the grip and/or adding a beavertail to a Glock pistol is one of those techniques. The process involves filling the cavity behind the magazine well and reducing the factory grip arch for a tailored fit to your hand, ultimately improving your accuracy. Adding a more pronounced beavertail is also possible by creating a simple mold. Both techniques require a few inexpensive gunsmithing supplies and common shop tools; the rest is all creativity and attention to detail. Let's get started...

As with any project, SAFETY comes first! Remove the magazine and open the slide. Verify the pistol is unloaded. Then, carefully remove the slide assembly and strip the frame of all internal components.

Examine the bare frame, and make a mental note of the cavity that houses the trigger mechanism housing and ejector. When it comes time to grind, you must avoid contact with this recess or risk ruining the frame. The same holds true for the trigger housing pin recess. Stay clear of it with your grinding device. Finally, look over the area behind the magazine well where the reduction will take place. Insert the trigger assembly housing back into the frame and note how much space it occupies.

Use a good quality degreaser, such as TCE Cleaner Degreaser, [#083-060-024](#), to flush out the frame. Pay special attention to the frame recess you want to fill and reduce. Scuff up the interior of the recess with course grit sandpaper as thoroughly as possible. You may even wish to prod and poke the interior surfaces a few dozen times with a triangular needle file to really dig into the polymer and provide the bedding compound more surface area on which to bind. Flush again with degreaser to remove any residual debris.



Fill the entire trigger mechanism housing recess with clay to block the flow of bedding compound.

Shape some modeling clay, #046-100-002, to resemble the trigger mechanism housing, and push it into the housing recess. Make sure the clay gets pushed far enough below the trigger housing pin hole and lower portion of the housing recess.

If you don't fill the entire frame cavity where the trigger mechanism housing resides, you could inadvertently fill the frame with bedding compound and ruin it. Cover the trigger housing pin with release agent and allow it to dry. Use a small punch to remove the clay from the trigger housing pin hole, and install the trigger housing pin.



Outline the desired contour for your reduction grind with masking tape.

Next, use masking tape on the outside of the frame to outline the contour of the reduction grind. Make sure your tape line does not overlap the critical recesses of the trigger mechanism housing and mag well. As mentioned previously, you want to avoid grinding into these areas of the frame.



Insert a piece of cardboard or wood to prevent bedding compound from entering the magazine well.

A half moon is molded into the rear wall of the magazine well to help you remove non drop-free magazines. Cut a piece of stiff cardboard or wood the same width and length as the magazine well to act as a barricade between this notched area and the cavity behind the mag well. Tape this piece to the back side of the magazine well, allowing it to stick out the bottom 1/2-inch or so. Apply a liberal amount of release agent to the portion around the notch that will contact the bedding compound. This step allows you to fill the cavity flush with the bottom of the frame. You will still be able to use non drop-free mags, but if you don't like the potential of slightly slower mag removal, you can always reconstruct the original thumbhole recess with a rotary grinding tool.

Both Acraglas, #081-003-002, and Acraglas Gel, #081-014-004, will provide excellent bedding material for the reduction project, and each has its advantages. Glas allows more control in achieving the perfect "pouring" consistency by allowing the addition of floc. Gel, on the other hand, responds a little better to the texturing process if you chose to go that route. If you choose the Gel, have a large syringe, #081-100-650, on hand to inject the bedding mixture.

Mix enough bedding compound to fill the void behind the magazine well. If using Acraglas, add just enough floc to slightly thicken the mixture while maintaining a liquid consistency. Match the color of the frame as closely as possible by adding a bit of black die. Don't worry if it's not a perfect color match. Any shade variance can be concealed at the time of texturing.



Fill the grip recess with bedding compound.

Place the frame upside down in a padded vise or use some modeling clay to hold it on the bench. Slowly pour or inject the bedding mixture into the frame as a narrow stream. Once completely full, hold any vibrating device, such as a vibrating engraver or vibratory tumbler, against the frame. This will chase any air bubbles to the surface. Any inclusions you find after the grinding operation can be filled with additional bedding material. Just to be safe, allow the bedding compound 72 hours to cure.

After the bedding compound has cured, it is time to grind. A 2-inch belt sander with 320 grit belt is the optimum tool for shaping the new grip, as it grinds at about the right pace. Put on your eye protection and dust mask and have at it, making sure to take small bites while keeping the frame in motion. Stop frequently, and look at the frame from different angles to be sure it is even. Most shooters prefer an ambidextrous grind but, if you like, you could bias the grind to be left- or right-hand specific. Once again, be extra careful not to grind past the masking tape or you could ruin the frame.



A custom beavertail adds a nice touch.

If merely reducing the grip does not satisfy your urge to customize, you can always add a "beavertail" extension to the Glock. This technique was perfected by another member of the Brownells team and adds a nice touch to a custom Glock frame.



For a beavertail, take two sticks of modeling clay and knead them together. Form the clay into a block that's larger than your desired beavertail. This will be used to construct your mold. Invert the pistol frame so the magazine well faces up. Press about 1-inch of the rear frame into the clay to create an indentation. Use your thumb, a pencil eraser or other tool of choice to impress the crude, oversized shape of a beavertail into the modeling clay. Make the beavertail larger than desired, as it will need to be shaped and smoothed to perfection later. It might be necessary to remove some of the excess clay in order to form a tail that meets your liking. In addition, make sure the sides of the mold are high enough to form a good dam for the bedding compound.

Construct a clay mold to form the beavertail extension.

When satisfied with your mold, carefully remove the frame from the clay to prevent distortion of your new creation. As before, I promote good bedding-to-polymer adhesion by scuffing up the area of the frame at the point where the beavertail will attach. Give the frame one last degreasing to remove any residual oils left by the clay, then fit it precisely back into your mold. Make absolutely sure there are no gaps between the internal workings at the top of the frame and the bottom of your mold. This will prevent any unexpected seepage into the inner frame.

Although either Acraglas or Acraglas Gel will work, I recommend using the Gel and a syringe to fill the beavertail mold. The Gel is much easier to work with in this area of the frame due to its thicker consistency. Fill the mold, taking care not to introduce any air bubbles. After everything sets up, remove all traces of clay from the frame. Put on your eye protection and mask again. Use a rotary tool equipped with a drum sander mandrel to sculpt the beavertail to your liking.

Once you have shaped the grip to your satisfaction, it will be time to deal with the exterior frame finish. Many competitive shooters prefer a much coarser surface texture than provided by the factory. It's really for you to decide how to personalize your handgun. If you want maximum coarseness, get out your wood burner and your creativity. All you need to do is grind the tip of the wood burner to suit your taste. For example, a truncated cone tip pushed into the grip yields an extremely aggressive texture. Be creative and keep in mind, it's only a Glock. You can't make it any uglier! Besides, all Glock owners know, "form follows function!"

After texturing, it's time to put on the final touch. This last step will add a "gripable" surface, as well as hide any color variance between the frame and bedding compound. This also works great if you have opted not to go after the frame with the wood burner.

Go to your local "mart" or automotive parts shop and buy a can of spray- or roll-on bedliner. Some of our staff prefers the roll-on type, because it produces a heavier gripping surface when applied with a foam roller or sponge. You might wish to experiment a bit on a piece of cardboard to determine what looks best. Always follow the mixing instructions on the can, but disregard the application instructions.

Before applying the bedliner compound, mask all areas on the frame where you don't want coverage, especially the magazine well and top of the frame. Trim the tape as necessary with a sharp Exacto knife. I like to coat the beavertail area and you can trim the masking tape for a virtually stock appearance.



Spray, blot or roll on the bedliner to create a tough, textured surface.

If using the spray-on compound, secure the frame to a dowel rod by wrapping tape around the dust cover/equipment rail of the frame. Then apply the liner at a distance by spraying lightly in quick spurts to obtain nice, even coats. A sponge or foam roller works well as an application tool if using the roll-on liner. You can put it on thick for a heavy duty, high-texture grip or keep it light for a more factory appearance. Two to three applications of liner will generally do the trick.

Before the compound dries completely, carefully remove the tape to avoid peeling off the liner. This is especially important if you use the roll-on type liner. If you wait until the liner is completely dry, use the Exacto knife to score the edge of the tape as you pull it off.

Finally, extract all modeling clay from the frame, and reassemble the pistol. Perform a final safety check and inspect the fit of the magazine. If everything is in order, head for the range and see how much better you shoot!