

Grip Fitting 101

One of the biggest questions asked in shooting is how a grip should feel and what to look for in a grip. Every shooter will hold his or her grip a little differently and will have a differing opinion on what constitutes a well-fitting grip. If you look at the commercial ergonomic grip makers like Morini, Rink, Vitarbo and Hoffman, you'll notice they all have common lines that fit every person's hand. These lines should be the same for everyone. They are just in different places on the grip. A lot of people think that only a grip maker or wood worker can fit a grip, but with some knowledge on what to look for, even the novice shooter can get his or her grip to fit better.

In international shooting, the pistols are allowed to have ergonomic grips with shelves. These grips can be purchased from any of the major gun parts suppliers in the United States. A shooter should try to buy a grip that fits his or her hand fairly well so all that needs to be done is some fine refining. For example, for me, a medium Morini grip fits pretty well. Morini makes guns, but also makes grips for many different models of pistols. Because of this, my Morini, Walther, Steyr, and even my Smith and Wesson all have Morini medium grips. All I have to do is make the same small adjustment on all of my grips to make them feel the same. After all, consistency is the key in our sport. If the grip is the same from one gun to the next, then scores should also be more consistent.

There is not a grip out there that fits perfectly all of the time. I will say it again; there is not a grip out there that fits perfectly all of the time. There are grips that fit pretty well most of the time. Due to temperature, water retention, humidity, and many other physiological factors that are over my head, your hand will change in the grip from day to day. A grip that feels perfect on any given day will only stay perfect in those exact conditions. Any other day, with different conditions, it will feel different. Hopefully, not much, but there will always be a small difference.

When you fit a grip, give it some time. A good rule of thumb is to get an idea of exactly what you want to change on the grip and why you want to make the changes. Make sure you understand how each change is going to change other lines on the grip. Take a few days and change the grip. Shoot with the grip for several months. Your hand was used to the previous grip, even if it was a poor grip. Any change will feel different, and many times it will even feel wrong and uncomfortable, even though the grip is a better fit. Many shooters will change a grip only to change it back a few days later. In this case, it was either a bad idea in the first place to make the changes, or you did not give your mind enough time to get used to the changes. There are many shooters that have gone to great grip makers like Vitarbo, Hoffman or Morini and gotten a grip made. They pay good money for the grip only to grind it back to the way it was before they went. Have Vitarbo, Hoffman and Morini lost their touch and become unable to fit a grip anymore? No. The individual did not understand the change or did not give himself or herself enough time to get used to it.

When you fit a grip, do not be afraid of grinding too much or putting filler in the wrong place. Filler comes back off, and ground off parts can be filled back in. The materials you need to fit your grip better are filler, wood remover, a grip, and safety equipment.

Filler comes in many different shapes and sizes. Some examples are Bondo, A +B, Morini wood filler, or plastic wood. I like to use a product called quick steel. It is a

lot like A+B which is sold by Champion's Choice and other stores. Quick steel is a two part putty that when mixed in equal amounts is like using clay to fill in where you want it. Then, it dries hard and adheres well in about 5 minutes. It is easy to buy at Wal-Mart or any automotive store. I like it better than Bondo because it is stiff like clay and you can put it on the pistol, put your hand in the grip, and let it dry. It will be ready in five minutes. Then, you can start working on another part of the grip. Filler, like Bondo, is more of a liquid and makes a mess if you put your hand in it to form. Bondo has also been known to give people burns. If you can't put your shooting hand in the grip to form it, then it takes a little more imagination and skill to put the grip lines in the right place.

I have seen some people use clay or mole skin to adjust their grips. Both of these items have their place in grip building. Clay is nice to put on to see if you would like to make your grip a certain shape. If you have little experience in fitting grips, this can aid your decision as to what to finally do. Clay should not be a permanent fix because it is not solid and will squish out, eventually destroying that consistency you are striving for. Mole skin works well if several people are using the same grip, or if the grip does not belong to you and the owner does not want you to change his grip. Mole skin will also help in the decision making process as to what changes to make to the grip. Mole skin should not be used for a permanent fix due to its squishy nature. If your hand sweats, moleskin will change shape and compress. Either one of these reasons will cause inconsistency in your grip. Shooting well is all about being consistent. Keep your sights aligned and until next issue, **STAY ARMY STRONG!**

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When I refer to a wood remover, I am talking about a Dremel tool, a file, sand paper, a chisel, a rasp, or anything else that could remove wood and filler in a tight curved spot. I like to use a Dremel because of its versatility. A Dremel can be bought at any home improvement store. The speed can be varied to grind hard wood, soft wood, and the filler of your choice. The Dremel bits that I prefer are the Dremel course sanding drums. There are two sizes which help when you have a different radius. Another bit I use is the cut-off disk for cutting the fine line in grip halves. This is used to get your grip back apart after you have filled across the grip seam. This is normal to do and a cut-off disk works well to make a new seam.

As I have already written, try to start with a grip that already fits pretty well. When you buy a new pistol, almost all of them come with different sized grips. You need to make sure you tell the dealer what size grip you would like on your new pistol. You may also need to ask if they charge extra to put a different grip on the pistol. If you are buying a used pistol, many times it is easier in the long run to just buy a new grip that is close to the right size instead of trying to add four pounds of filler to that large grip when you have an extra small hand. The opposite can happen by taking too much support off a grip when trying to fit your large hand into a small grip. Pilkguns is set up on the range at every National Championship with all different types and sizes of grips. They would be happy to help you find what you are looking for. Even if you don't buy a grip from them, you will know which grip fits better.

The last and most important thing you need to fit grips is safety equipment. Safety glasses are a must when working with Dremels or any other tools that put wood chips or filler into the air. The next piece of equipment you will need is a mask. Breathing that much dust is not good for your lungs. When grinding on filler, remember that it is a chemical. If it can give you burns on your skin, just think about what it can do to your lungs. Some people react differently to the fillers. I have seen some pretty bad chemical burns from Bondo when people put the Bondo on the grip, and then stuck their hand in the Bondo until it dried in order to get the lines correct. If you are going to do this, I would suggest wearing disposable gloves. Ear plugs help when using a Dremel if nothing more than to help keep your sanity. It would seem that something harmless like fitting a grip would not need so much safety equipment, but you are handling some potentially hazardous tools and chemicals.

Before I get into the fitting of the grip, I want to go over some vocabulary that will help describe parts of the grip so it will be easier to follow what I am describing on the grip. Every hand has these parts in one shape or fashion. Obviously, if you are missing a finger or have bent fingers or some other difference in your hand, your grip will have to be adjusted to meet the difference. Starting from the wrist and moving to the finger tips, the main parts in the grip are as follows. The palm shelf is where your hand sits on the pistol. The thumb rest is where your thumb sits on the pistol. The crotch is under the rear sight where the web between your thumb and index finger is. The palm ridge line is, if you look at the middle of your palm, the line from your wrist towards your fingers. The ball is best described as if you face your palm up and cup it. The deepest

part of the cup will be a ball on the back side of the grip. Moving towards the fingers is the valley where the meat right below your fingers forms a valley in the grip. Next, there is the finger ridgeline where the fingers and the palm meet. Between your middle finger and trigger finger is the middle finger shelf. Finally, there is the finger grooves with the three segments of the fingers being the lower segment, middle segment, and tip segment of the fingers. The trigger finger is not part of the grip, but will be covered when the actual fitting is being described.

The idea when making a grip is to have the pressure coming straight back into the crotch and straight forward into the middle segment of the fingers. Everything else on the grip is touching, but not giving any pressure. The idea here is that the more surface area that is touching the grip, the less you actually have to squeeze the grip. So, if you put a big wad of filler on the ball or the finger ridgeline, this is going to make your hand push sideways on the grip causing misalignment of your sights. The ball and the finger ridgeline are major indexes to make sure you have a consistent grip. They should be felt in the hand, but should not be so huge that it is causing misalignment in the sights.

The other thing to pay attention to is the balance of the pistol since all pistols are front heavy to some degree or another because of the barrel. The weight of the pistol is supported by the middle finger shelf and the rear of the palm shelf. If there are no gaps between the hand and the grip, then there will be more friction and surface tension causing less grip pressure and less pressure on the middle finger shelf and the rear of the palm shelf.

When a grip is made, you need to start at the back and work your way around to the front. First, you need to ensure that the grip is not too long. The grip has to fit in the box and cannot come past the break in the wrist to be legal. The further the grip comes back, the more support it gives you. Adding to the back of the grip can be easily done by simply gluing a small piece of wood to the back of the grip and grinding off to the existing contours of the grip. Then, using a sander, grind the back down until it is legal. The break of the wrist is considered front of the wrist bone or the first crease in the underside of the wrist moving from the hand to the wrist.

Next, you will want to fit the crotch. Your hand should be as far into and up in the grip as possible without cutting the frame. The closer the chamber is back in your hand, the less recoil you will feel. The lower the chamber is in your hand, also the lower the recoil. Even for Free pistol or Air Pistol, this is important so it will help in the follow through to tell if you are manipulating the trigger correctly. If it would be able to cut a cross section of the crotch, most grips would be in the shape of a u. If you look at your web between your trigger finger and your thumb, this shape is a v. While you are fitting the crotch so your hand is up and into the pistol, also reshape it from a u to a v. What I look for to make sure I have a v and not a u is if you start to grind through the grip and can see either side of the frame, then you are closer to having a v.

The next step is to move the palm shelf. This is usually the first thing done because of the ease in moving it. The problem comes when the shelf is raised all of the way and the hand is still not touching the shelf. The impulse is to add filler at the top of the grip in the crotch in order to get a tight fit. This just ruined the fitting of the crotch that you did in the previous paragraph. Adding filler to the top moves your hand down which increases recoil and your area of movement. If you cannot move the shelf high

enough to give a snug fit, then expand the slots that the palm shelf screws move up and down in. This will allow you to move the shelf up to the correct position.

The next step to work on is the position of the hand wrapped around the grip. Ideally, a straight line should be drawn down the barrel and continue down your arm. This is a comfort thing and many people differ on how far around their hand holds the pistol. It has been my experience that Bullseye shooters have a tendency to wrap their fingers further around the grip. If this fits the way you hold the grip, then more filler needs to be added to the rear of the grip where the palm touches.

The thumb shelf should fit naturally. The thumb should have a place to lay and give support without using muscle to hold it there. Since everyone has a different curved thumb, the thumb rest is a personal fit.

Working from the rear of the grip around to the fingers brings us to the palm ridge line and the ball of the grip. If you look at your hand, the palm ridge line is the line that goes from your wrist and goes towards your fingers. The ball is at the end of this line. Looking at your hand the ball will be reversed as to how it is on the grip, and is a depression. Most commercial grips already have this line and a minor adjustment to fit it to your hand is needed. The easiest way to fit this part is to add filler to the grip and grab the grip starting from the back with the hand getting as high and into the grip then reaching around with the fingers. From now on, this is how you should grab your pistol to ensure you have a consistent grip every time. If done correctly with filler you should see a knuckle looking feature on top of the ball. This is the tendon for the middle finger which also happens to be the deepest part of the ball. To know if you have added enough filler, you should not feel the ball. The ball is on the side of the grip. If the ball is too large then you will feel it push into your hand and this push will cause sight misalignment. If you feel a gap where the ball is, then you have not added enough and the ball will not be a proper index to make sure you have a proper grip. A good way to tell if the ball is in the right spot is to hold the pistol for at least an hour without taking your hand out of the grip. When you do take your hand out of the grip, there should be a red mark in the deepest part of the ball on your hand. If this red mark is not in the deepest part then you need to move the ball to the deepest spot.

The next index is the finger ridgeline. The valley under your fingers goes along with the finger ridgeline. The finger ridgeline is easy to set, and next to the ball, is the best index to make sure your hand is in the same place on the grip every time. To make the ridge line simply add filler in a line between the middle finger shelf and the palm shelf. After filler is added grab the pistol from the rear going forward again. The filler should be where your fingers and palm meet. The mistake people make here is to make this ridge too pronounced. This ridge is on the side of the grip, and if you make it large, then it will push your hand to the side causing sight misalignment. Again you should not feel this ridge. If you feel it, then too much filler has been added. If you feel a gap, then not enough has been added.

After the finger ridgeline has set, adjust the valley. The valley is the area between the finger ridge line and the ball. All that is needed is to take away enough wood so that your hand is not squished into the grip. Stay away from making this valley too deep because this will give the same problem as having too pronounced of a finger ridgeline.

Last on the grip are the fingers. To keep the grip pressure going front to rear, the fingers need to be placed so that the middle segment of the middle finger and ring finger

are perpendicular to the axis of the barrel. The finger tips should be given a place to lie, but not a place to push into. If the middle segments of the fingers are correctly placed, the fingertips will be pushing from the side causing sight misalignment. So, like the thumb, the finger tips just lie there, but do not add pressure. The pinky finger hardly ever fits because on most people, it is too short. In order to remove enough wood to fit the pinky, you would be grinding the frame. Just give the pinky a good natural place to lie that won't give any unwanted pressures to the grip. Some grips have ridgelines between every segment and every finger such as a Steyr air pistol. These ridgelines are fine to have, but are not needed. Since our hands expand and contract every day, these ridgelines will usually be in a different place every day. For example, if your hand expands 1 millimeter every day, then each finger will expand 1 millimeter giving you r fingers an overall expansion of four millimeters compared to the 1 millimeter of your hand. If you think your grip feels different from day to day, your fingers definitely will. If you have finger ridgelines, keep them dull so you can barely feel them.

The middle finger shelf hardly ever has to be adjusted, but some people need to move their middle finger closer to the trigger. This means you need to make this shelf thinner. The middle finger shelf should also extend all the way over the top of the middle finger since this is one of the two spots that the weight of the pistol is supported.

After the grip has been fit to your hand, then adjust your trigger. The tip segment of your trigger finger should be placed on the trigger shoe so that the segment is perpendicular to the barrel axis when the second stage of the trigger is being taken up. This will help to pull the trigger straight back. If you have poor trigger squeeze, it will effect your sights less if the trigger comes straight back. Some people like none of their trigger finger touching the grip and some like the bottom segment of the trigger finger touching the grip. This is personal preference and is up to the individual.

Fitting a grip can feel like a daunting task. If you know what to look for, every grip can be personalized. It takes time to get it right when you are making your first attempt. Be patient and stick to the basic principles given here. By doing this, you can make it easier to shoot tens. Remember, most points are lost in the execution of good sight alignment and smooth trigger squeeze. A proper fitting grip will help, but there have been great shooters who shoot great scores with substandard grips by just holding hard and squeezing smooth.