

INTRODUCTION TO FILING TECHNIQUES

Introduction to filing is designed to give you the information you will need to practice filing before you attend my 1911 pistolsmithing school. The biggest problem you will encounter in my school is filing surfaces of the parts that you are fitting accurately so that they will fit correctly. By practicing and learning the techniques of filing you will greatly enhance your ability to concentrate on learning all of the tasks of building a custom 1911 instead of trying to learn to file at the same time.

You will need to build or purchase a good solid bench that will not wiggle when you are filing. You will need to bolt the bench to the wall and floor to keep it from moving during filing. The height that you set the bench top to is extremely important to proper filing. The piece that you will be filing should be placed at the same level, as your forearms would be when you stand with your feet shoulder width apart with your arms at your side with your forearms and hands extended parallel to the floor. This means that the top of the vise on your bench should be at this level. So, you will need to purchase a good bench vise before you build or buy your bench so that you can determine the proper height of the bench top.

Now, let's talk about vises. The old adage, "you get what you pay for", definitely holds true when you are purchasing a vise. I recommend that you buy the best vise you can afford. Two very good vise manufacturers are Wilton and Record. They are both available through MSC Supply Company. The Record is an English made vise and I believe the best buy for the money. The Wilton top grade machinist vises are quite expensive. You need to buy a vise that has jaws that are at least 4" wide but 5" to 6" is better. The vise must have a swivel base that can be locked down securely. The heavier the vise is the better as it resists movement.

Ok, let's assume that you have your bench and your vise has been mounted to it so you are ready to go. Now we need to discuss the file and accessories. You need to purchase an 8", 2nd cut mill file made by the Nicholson file company. Do not purchase any other brand of file. They just won't stay sharp as long or file as well. You must also purchase a good file handle for your file. Never ever try to file without a handle on your file. Not only will you not have good control of the file, you can jam the file shank through the palm of your hand if the file sticks to the work piece while you are filing. You can permanently damage your hand if this happens. You will also need to purchase a file card. This is a special wire brush made to clean the metal chips from the teeth of your file. If you get a metal chip

caught in the teeth of the file, the metal chip will cut a gouge in the part that you are filing each time you take a stroke with the file. You will also need some common black board white chalk. You coat the file teeth with the chalk and this keeps the metal filings from sticking in the file teeth.

The next item you need to find is some metal to practice filing on. I recommend that you buy several pieces of 1" round cold rolled mild steel 11/8" long. You can find this steel at any machine shop. You can use round cold rolled mild steel in 1/2", 3/4" also. You will just have a smaller piece when you get done filing.

I want you to make your piece of round stock into a cube. Now you will need to do some calculations to determine exactly what size of cube you can make out of the piece of round stock that you have based on the diameter of the round stock that you have. Once you have determined the size of the cube you can make, you can get started filing.

The object of this practice filing is to teach you how to file flat and perpendicular to another surface. A cube has 6 sides that are either parallel to the opposite side or perpendicular to the others. The filing that you will be doing when fitting a match barrel will require that you be able to file fit a surface that has to be square, flat and perpendicular to another surface. It is recommended that you be able to file well before you attack your \$200 Bar Sto Match Barrel in the class!

You will need to place the flat ends of your piece of round stock in your vise jaws to start filing the first flat on the round surface. Remember, you will have to keep each of the 4 flats that you file at a perfect 90 degrees to the flat ends of the piece of round stock that you started with. Once you have filed 4 perfect flats that to make your cube you then have to file the two end flats so that the end flats are the same size as the 4 flats you filed into the round surface.

Trust me this exercise will take you many hours of filing to complete. You should not file for more than 30 minutes at a time. Your muscles will become tired and you will begin to make mistakes.

You must develop the technique of keeping your file parallel to the work piece at all times. You will have a tendency to want to roll your file up hill at the beginning of the stroke and down hill at the end of the stroke. This error in technique will result in a convex surface instead of a flat surface.

Another trick you must master is picking up your file at the end of each stroke high enough, while you are returning the file to the rear for the next stroke, so that you can observe the file marks that you made during your last file stroke. By observing where your last file marks are you can make a determination on how accurate the surface is to flat and where your next file stroke must be to make a correction if needed. I know that this sounds really hard but you will catch on quickly after you have practiced awhile.

You must also remember that the file only cuts on the forward stroke. You must pick up your file when returning it to the rear for the next stroke. If you try to file on the backstroke you will dull the teeth of your file very quickly.

Well, there you have it, all you ever needed to know about learning how to file. Actually, I have just touched on the subject. I could probably write a 100 more pages on the subject and still not cover it all. And, I am sure that there are others who know much more on the subject of filing than I do.

Remember, take your time, analyze what you are doing to correct your mistakes, and have fun learning something and trying to be good at it. I guarantee that this practice will pay off in spades when you come to my 1911 school.

Best regards,

Bill Laughridge

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