

A Guide to the Drilling, Reaming, and Broaching a Bolt Action Receiver at Home



By Raymond Benwood

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Warning

At the time of the writing of this Book it was legal to make a firearm for personal use, provided the individual is not prohibited from doing so by Federal, State, or Local laws. Some States may have a prohibition on certain features or types of firearms a person may own.

It is up to the builder of any type of Personal Use Firearm to know and follow such law as may apply to them in the Jurisdiction in which they live. If in doubt, I encourage you to seek legal advice.

The Information presented here represents the knowledge and abilities of one man. Therefore, be advised that neither the author nor his family assumes any responsibility for the use or misuse of information contained in this book.

This book contains information that requires skills and knowledge of machine tools and their usage that would be of danger to an untrained or unskilled person. Therefore the information contained in this book is for information and education purposes only.

The author of this book is not a lawyer, therefore any references made by the author too any law does not represent legal advice.

For the sake of clearing up confusion on the home building of a Personal use Firearm, I have included a page from the web site of the BATFE along with their web address. As stated earlier at the time of the writing of this book building a Personal Use Firearm is legal. (Web page was saved early in 2006)

<http://www.atf.treas.gov/firearms/faq/faq2.htm#a7>

(A6) Does the GCA control the sale of firearms parts? [\[Back\]](#)

No, except that frames or receivers of firearms are "firearms" as defined in the law and subject to the same controls as complete firearms. Silencer parts are also firearms under the GCA, as well as under the National Firearms Act (NFA). Certain machinegun parts, such as conversion parts or kits, are also subject to the NFA.

The GCA generally prohibits the transfer and possession of large capacity ammunition feeding devices manufactured after September 13, 1994. "Large capacity ammunition feeding devices" are those that can accept more than 10 rounds of ammunition. [18 U. S. C. 921(a)(3), (24), and (31), 922(w), 27 CFR 178.11 and 178.40a]

(A7) Does the GCA prohibit anyone from making a handgun, shotgun or rifle?

[\[Back\]](#)

With certain exceptions a firearm may be made by a nonlicensee provided it is not for sale and the maker is not prohibited from possessing firearms.

However, a person is prohibited from making a semiautomatic assault weapon or assembling a nonsporting semiautomatic rifle or nonsporting shotgun from imported parts. In addition, the making of an NFA firearm requires a tax payment and approval by ATF. An application to make a machinegun will not be approved unless documentation is submitted showing that the firearm is being made for a federal or state agency. [18 U. S. C. 922(o), (r), (v), and 923, 27 CFR 178.39, 178.40, 178.41 and 179.105]

(B5) Are there certain persons who cannot legally receive or possess firearms and/or ammunition? [\[Back\]](#)

Yes, a person who –

(1) Has been convicted in any court of, a crime punishable by imprisonment for a term exceeding 1 year;

(2) Is a fugitive from justice;

(3) Is an unlawful user of or addicted to any controlled substance;

- (4) Has been adjudicated as a mental defective or has been committed to a mental institution;
- (5) Is an alien illegally or unlawfully in the United states or an alien admitted to the United states under a nonimmigrant visa;
- (6) Has been discharged from the Armed Forces under dishonorable conditions;
- (7) Having been a citizen of the United states, has renounced his or her citizenship;
- (8) Is subject to a court order that restrains the person from harassing, stalking, or threatening an intimate partner or child of such intimate partner; or
- (9) Has been convicted of a misdemeanor crime of domestic violence cannot lawfully receive, possess, ship, or transport a firearm. A person who is under indictment or information for a crime punishable by imprisonment for a term exceeding 1 year cannot lawfully receive a firearm. Such person may continue to lawfully possess firearms obtained prior to the indictment or information. [18 U. S. C. 922(g) and (n), 27 CFR 178.32(a) and (b)]

Introduction



What started out as an unpleasant trip to the funeral home in the early 1990's has turned into an obsession. It all started when family members began to reminisce about a family member that had worked as a cowboy in a western Rodeo show in the early 1900's. Like many family members listening to the tales of long lost relatives, I tried to pay attention to every detail.

This receiver was built with the tools and techniques discussed in this book

After I got home I had the opportunity to talk to my father about his grandfather and the gun work that he had done. Perhaps the most fascinating part of the conversation came when my father began to describe some of the gun work that had been done by his grandfather. Drilling gun barrels by hand with bits that were homemade, making gun parts that were first scribed onto a piece of steel, then cut out with a hacksaw and then shaped with a file.

Then the conversation exposed the revelation that has lead to this book and my interest in home gun building. My father began to describe some of the tools that he remembered his grandfather had made and used some 60 years before, single and multiple point cutters that were used to cut groves in guns. To this day I don't think my father realized what those tools really were, they were broaches. My father had described to me the broaching of a bolt action receiver and the making of a gun barrel by his grandfather without realizing it. It must be noted that my father was just a child at the time and did not understand what he was seeing.

Today we gun owners are lucky, we have modern firearms made from modern steels. Parts made by computer controlled machines, manufacturing large quantities of high quality interchangeable parts.

Lucky, well yes we have the benefit of modern steels and the quality of modern manufacturing, but my father, grandfather and great grandfather could buy guns through the mail, No background checks, No forms to fill out, nothing. To my way of thinking that is Freedom, something that we as a nation and people have lost.

In my opinion ever since the passage of the 1968 Gun Control Act, gun ownership in this country has come with permission slip. Homebuilding is not a way to bypass the law but does allow an individual some limited protection against future confiscation by building their own personal use firearm. Under the current law a person may build a firearm for personal use, but that firearm may NOT be sold nor can a firearm be built for another person other than the builder. The said firearm may be transferred upon the death of the builder, but again not sold. There maybe more to the current law, but that is my understanding.

After September 11th, 2001 I began to hear about builder squads, groups of people that shared the cost of tooling and then built their own AR15's. The more that I looked into homebuilding; I discovered web sites and a whole industry supplying the home gunsmith and builder. I soon learned that many different types of firearms were being made; AR15's, 1911's, AK47's, single shots, and even 50 calibers.

Now if you are building a semi-auto rifle, pistol or a shot gun there are some rules that must be followed on the amount of imported parts that can be used. I won't cover that here because we are not building a semi-auto or shot gun, therefore the imported parts rule does not apply.

Now I am not a lawyer and I am not giving legal advice, but a rifle must have a barrel that is rifled and is at least 16 inches long. I suggest you never use a barrel less than 16.5 inches long. It's also my understanding that a rifle must be at least 26 inches in length overall. My suggestion is to make something close to a full size rifle or carbine and not try to test the law. I prefer carbines or what's called a scout rifle, they're around 38-40 inches in length.

Tools and Equipment

The biggest challenge to homebuilding firearms for the novice, is the investment



in Machine Tooling and other equipment that is necessary to build firearms. Naturally if you wanted to build just one firearm, the cost would be prohibitive. However if you are wanting to build more than one firearm or are wanting to repair, maintain, or sporterize firearms the cost factor changes dramatically. Let's say you're a person that likes old guns and just wants to make general repairs or change barrels.

Above is a homemade action wrench used for Mauser and Springfield bolt action receivers. Such a wrench is necessary when replacing or installing a Barrel on a rifle. It's also the action wrench used for the bolt action that is discussed in this book.

On some old bolt actions, this alone can justify the purchase of a lathe large enough to handle barrel work. What about repairing old or obsolete firearms, firearms old enough that parts are no longer available, this type of work can justify the purchase of a Milling Machine.

Many homebuilders make the holding fixtures, barrel vises, and action wrenches that they need to work on their firearms. They also porting gun barrels, rethreading, installing choke tubes, making firing pins the list goes on and on.

One of the main objectives of this book is to encourage and strengthen a second amendment culture in this country. I strongly encourage every reader to learn how to maintain and repair your firearms, to the very best of your abilities. I realize that the vast majority of people in this nation will never be capable of making their own personal use firearm, so it's up to those who can to keep homebuilding alive.

To determine what you need to buy first depends on what type of work you want to do. Barrel work will require a lathe that is large enough to handle both the length and diameter of the barrel. I know of many people that buy these little 7x10 or 7x12 lathes, but for legitimate barrel work there just too small. Another size of lathe that is often bought are these little 9x20 lathes made in China or Taiwan, again they are closer to the length that is needed but lack the slower speeds for threading, they also come with very small chucks. Now do not confuse these little imported lathes with lathes like the South Bend or other older USA made lathes. A 9x30 South Bend or Sheldon lathe has the slower speeds necessary for barrel work and have a reputation of quality built over decades. However for building the Mauser type receiver in this book, it will require a lathe that can handle at least an 8 inch 4 jaw independent chuck to accommodate the eccentric turning for the 3rd locking lug for the Mauser design.

There are many sizes and brands of lathes in the market place, 12x36, 13x40 and 16x40 will be some of the sizes that you will run across in selecting a lathe. I personally suggest you purchase a 13x40 lathe; this size is capable of handling a 10 inch, independent 4 jaw chuck. If you are a shopper of these wholesale and freight discount tool suppliers, it's possible to buy a 13x36 or 13x40 lathe for less than \$3000.00. Now if \$3000.00 scares you, you can buy a 12x36 lathe for \$2000.00 that can still handle a minimum 8 inch, 4 jaw chuck. Now there is the possibility that someone makes a 10inch 4 jaw chucks for a 12 inch lathe it may cost extra, but it may save you \$700-800 bucks, so shop around.

What about used lathes? Used lathes are just that, used. If you could find a good used USA made lathe that is not worn out and comes with good chucks and some tooling like cutters or a taper attachment for half the price of a new lathe then buy it.