

TUNING....WHAT TOOLS DO I NEED

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I get emails every once in a while (like today) asking “what tools do I need to do a home tune” so I thought I would make some suggestions here. Again... may help reduce my email load....

The number one thing that you need if you are working with a springer and most gas rams is a spring compressor. With most guns, it is essential and although with some guns, you can get by without one, it's best to be safe and not get hurt or hurt someone else. And believe me, you can be severely injured if something lets go. This is especially true if you are installing a new spring. It's not worth taking a chance. And when you make one, just be sure that you build strength into it. There are several of them posted on the forum in various places and also in the library. Do a search.

The one other tool that I highly recommend and is just a good all-around tool to have around the house is a Dremel Tool. It is very versatile, not that expensive with all kinds of attachments available for them. I also recommend the cable attachment for them as you can be much more precise. For deburring, I recommend using the “Blue” (they make a pink and blue one) the chain saw sharpening stones. They do a fantastic job.

Now let me make a point here. When you use a Dremel Tool you must take care. Run at a medium to medium high speed and go slow (but not too slow) and easy. The one thing about using a Dremel Tool is that you can create a lot of damage very quickly if you are not careful or it gets away from you. I would suggest that you do a little practicing on some odd pieces of metal just to get the feel of it before working on your gun. Rough edges will make it jump or dig in. Just feather the surface you are working on.

If you don't have a Dremel, you can accomplish the same things with good metal machine shop type files. It just takes longer. You should have a small round file, half-round file and a flat file. You don't want large files but rather medium and or small files. About 6- maybe 8 inch at most. Don't buy cheap files either. They won't hold up, will wash out quickly and be dull in no time. Buy good files like Nichole's or some other name brand. They are a little more money but worth it. A little advice here.... do not use them on wood.

The above are probably the most important tools that many of you may not have around the house but very useful for things other than airgun work.

The next item if you really want to do a good job is a Brake Cylinder Hone with 220 then 400 grit stones for cross hatching the compression chamber. Do not use anything above 400 grit stones as you do not want a highly polished surface in this area. If you are honing a cylinder using a leather seal, you will want to use 600 grit stones for a highly polished cylinder.

Hones are inexpensive and do a great job. If you have a mechanic friend he will probably have one as they are a pretty common tool. Keep in mind if you purchase one that they come in both 2 stone and 3 stone. You will want to use the three stone one as it will have three points of contact in the cylinder and it will provide a centered and more even machining job and is much easier to control. You will want to grind the stone mounts down flush with the stone so that it will reach the bottom of the cylinder too. You will also have to make an extension so that it will reach the bottom. I made mine from the stiff PVC tubing for a toilet or sink water inlet. Use a soapy water solution as a lubricant, hone the compression area in an up and down manner to create a cross hatch pattern. Use a low speed. It will be a lot easier to control the hone at a lower speed.

In lieu of the cylinder hone, you can use a wooden dowel that has been slotted in the center on one end so that you can use 400 grit wet/dry sand paper or emery paper and chuck it up into a drill. The one advantage of the dowel over the cylinder hone is that you can use it the whole length of the action whereas with the hone, one must be careful not to withdraw it up past the cocking slot and it get caught in the slot and break the stones.

One other thing that is vitally important to have is eye protection and should be used anytime you are grinding or cutting and especially when using your Dremel Tool. Those tiny metal particles will hurt you and can cause extensive eye damage.

That's about all you need as far as the basic special tools are concerned. But let me say this. If you have more than one or two guns and plan on doing your own work, invest a little money and time. It will pay you great dividends, do a much better and professional job in the end and save you a lot of time and aggravation.

Now the run of the mill bench tools most of which many of you will have around the house.

A good set of standard slot screw drivers

A good set of Phillips screw drivers

(Buy good screw drivers and this will save you from stripping the heads of your screws)

A couple of those small shirt pocket screw drivers (standard and Phillips)

A Torx #25 screw driver. (used on many stocks today)

A good needle nose pliers

A good pair of regular pliers

A set of drift punches

A center punch

A set of Allen wrenches both metric and SAE

A pointed punch (or nail set punch)

A bench vise is a big help if feasible. Just like a third hand at times.

A small light hammer

A standard hammer

A rubber hammer

A 3/8 inch electric drill

220 grit wet/dry sandpaper or emery cloth

400 grit wet/dry sandpaper or emery cloth
A magnet

Another good thing to have around is a digital caliper for measuring and comparing.
Wooden dowels of various sizes

Cups or containers to put your parts in cuz ya don't wanna lose 'em

Clean rags

A good surface (a work bench preferably) to work on with rubber matting

There are other tools that you might think of but these will pretty much cover it. And you don't necessarily need all of the above tools and can get by without some of them or improvise but if you have the above tools, you are pretty well equipped and will be able to do most simple mods needed and able to do a good tune job. Then all you need is nerves and experience..

The only other thing that you should have on hand before you start is all of the lubes that you will need and your replacement parts. There is an article on my website on the "Airgun Info" page as well as in the GTA library under the "AG Maint/Lube/Tuning Guides Including Springer's And PCP's" category called "All About Lubricants" and from there you can determine what you need to have on hand. One of the best pieces of advice that I can give a person about lubing their gun is "more is not better". When lubing your gun, use the lubes sparingly. Less is better.

On my website there is an article that I published 8 or 10 years ago regarding tuning the B-19 and Gamo guns and all of the clones of them including many of the Crosman guns. Although it is an old article, all of the principles regarding tuning an airgun will still apply.

http://www.charliedatuna.com/airgun_docs/B19%20Super%20Tune.doc

There are also some tune guides for several guns in the GTA library as well as on my website on the "Airgun Info" page.

<http://www.charliedatuna.com/Airgun%20Info.htm>

Hope this helps all of those that want to get into the innards of your gun...be careful and have fun.

God Bless all of you

CHARLIE