

Recoil Spring Compression Tool

By Jay DIY

I have struggled with the recoil spring on my Model of 1928A1C Thompson Sub-Machinegun (TSMG) every time I clean it. I have often thought, "There should be an easier way to get the spring in and out of the TSMG". Well, necessity being the mother of invention, I set upon the task. In my engine rebuilding experience I have used a valve spring compression tool as part of valve removal. Since that tool is sort of a big set of pliers, I tried using a large pair of slip joint pliers to make a tool for the TSMG. Using a couple of flat washers and some small square steel tubing, I fashioned two removable ends that could be placed on the jaws of the pliers. I removed the trigger frame from the



TSMG and laid the receiver upside down in front of me on a table, barrel pointed away. By sliding the ends over the recoil spring and squeezing the handles, you could compress the spring. It was not real easy though, and you had to watch that the pliers did not slip off. With the spring compressed, I would slip a retainer pin in the hole in the pilot buffer. I then would reposition the pliers and compress again, removing the retainer pin and re-inserting it to let more spring be compressed. Two to three cycles of this activity would remove all pressure from the pilot buffer. I made a special retainer pin out of brass wire that has a chamfered point and a 1/2 inch offset in it. The offset permits the pin to pass under the bolt assembly slightly for easier removal of the

pilot rod. However, a couple of problems became obvious. The jaws of the pliers do not remain parallel throughout their motion and the removable ends were rather bulky. Since I had a pair of



cheap pliers that I should have thrown away long ago anyway, I decided to try a more permanent but sleeker form of the implementation. By cutting a slot in the end of some brass strap and brazing it on to the jaws of the pliers, the tool was much less bulky. I used brass to prevent scratching the spring and resulting in its' failure. It worked better but the lack of parallel jaw faces still was a major obstacle to ease of use. An attempt to incorporate a small hinge on one of the jaws to address the parallel issue, did not work out either.

Throughout this development phase I had been trying to make a tool that compressed the spring to the point that there was no pressure when removing the pilot rod. But maybe removing a lot of the pressure would be good enough! With this in

mind, I took the pliers apart. Using just the straighter half of the pliers, I placed it over the pilot rod near the hole for the retaining pin. With the TSMG restrained against my abdomen, I pulled back as far as I could (to compress the spring), and inserted the retainer pin. To my great pleasure, I could now very easily remove the pilot rod! Just one compression stroke was certainly a huge improvement over the pure manual "hands only" approach. With a bit more effort, I repeated the compression two more cycles. I could get the spring compressed to where there was no pressure on the pilot rod when removing it. It was some strain, though, to get it compressed to this point.



Close-up: End of Modified Pliers

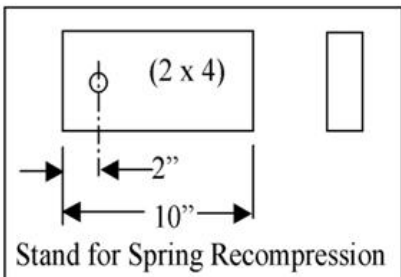
Getting the spring out, however, is just half of the battle. Putting the spring back in can be even tougher. I tried the half-pliers tool on the pilot rod while the rod was unrestrained on the table and it was kind of like catching the proverbial "greased pig". The answer was to restrain the little oinker on a stand. I got a piece of 2" by 4" lumber and cut it to 10" long. Next I drilled a 23/64" hole in the 4" face,

approximately 2" from one end. With the 2 by 4 lying flat on the table and the end of the pilot rod (that protrudes from the rear of the

TSMG) inserted into it, I put the spring on the rod and tried my luck. I oriented the stand lengthwise with the hole away from me and slipped the tool onto the spring/rod combination near the retainer-pin hole. I could easily compress the spring once and insert the retainer pin. Further compression cycles were possible, but harder.



Conclusion: I found that one compression was enough to easily get the pilot rod both out of, and back into the Thompson. This simple tool would be a good addition for anyone that is the least bit handy in making such things.



Stand for Spring Recompression