

Chinese Pistol Timer “Kit” Instructions

Doug White

For International shooting, especially slow fire events like Air or Free Pistol, many shooters like to have a timer on the shooting bench to keep track of the remaining firing time. However, the total time required for these events exceeds the 99 minute range of most cheap digital timers.

There is one model of timer available from several vendors on eBay that is both very inexpensive, and can time up to 100 hours. They run practically forever off of a standard AAA battery, so you don’t have to deal with button cells. If you go to <http://www.ebay.com>, and search for “digital kitchen count down up timer”, you will get several hundred options. To thin this down, select the check box on the right that says “eBay Top-rated sellers”, and then use the “Sort by” pull down menu (near the upper right) to select “Price + Shipping: lowest first”. You should find a large number of listings for a timer that looks like the one shown in Figure 1. Many of them sell for \$1!



Figure 1: \$1 Chinese digital timer

These are shipped directly from Hong Kong, and the “small packet” shipping to most of the globe is \$2.79. Note: If you want more than one, they can’t combine shipping. Each one is shipped separately, but for a total cost of \$3.79, they are still a very good deal. I purchased a dozen of them for the college team I help coach, and they arrived individually over several days. Shipping took a couple of weeks. They don’t come with any instructions, but most of the operation is pretty straightforward. It took me a while to figure out that the RESET button only works if you press it twice quickly.

The reason I call these a “timer kit”, is that all of them have the same problem: you can’t install the battery! Fortunately, this is easy to fix if you are at all handy. The problem is that the screws they use to hold the circuit board in place are “washer head” screws, and the timer was probably not designed with those in mind. The “washer” part of the screw head sticks into the area where the battery goes, and at best would damage the label on the battery if you forced a battery in place. Most of the timers would probably break the case if you managed to get the battery in. Figure 2 shows the problem in detail.

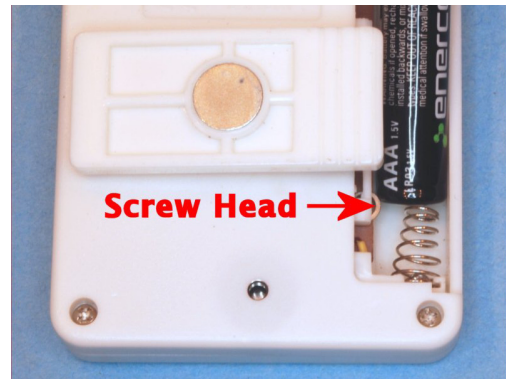


Figure 2: Screw & battery interference

The first step is to remove the back cover. It’s held on by four small Phillips head screws, one in each corner. Use the best #0 Phillips screw driver you have. The heads of many of the screws are a little chewed up, and you don’t want to make them any worse than they already are. Once the screws are out, lift the back cover off gently. The alarm buzzer fits into a circular hole molded into the back cover, and the buzzer may come off attached to the cover. It should come free quite easily, but you don’t want to stress the buzzer wires.

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Take an extra-fine tip marker, and mark the part of the two circuit board screws where they stick out too far into the battery compartment (see Figure 3). It's best to remove and modify the screws one at a time to make certain they go back into the same holes. It's also a good idea to check the battery wires, especially the yellow one on the minus terminal. Figure 3 shows where the wire was crimped against the bare leads of the small black device by the back cover. This would probably lead to a short eventually, and the wire should be re-routed before the cover is installed.

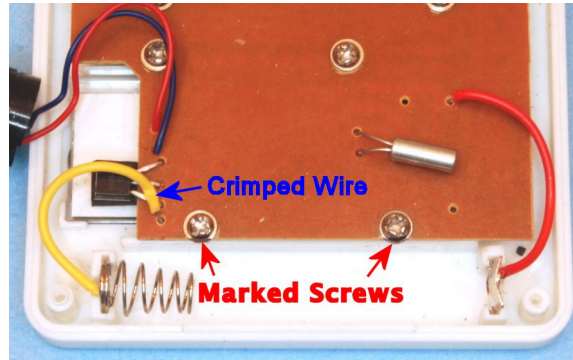


Figure 3: Marking screws & wiring check

Take a scrap of soft wood, like pine, and use a sharp awl to make a small starter hole for the screws. Remove the first screw, and install it in the board just far enough so it won't twist (see Figure 4). Now, you need to remove the marked rim of the screw. You could do this with a small file, but if you have a small hand grinder like a Dremel Moto-Tool, it goes very quickly. I used a Dremel with an abrasive cutoff disk, and it takes only a few seconds to trim each screw (see Figure 5). You mostly want to grind off the washer part, but it doesn't hurt to cut slightly into the rounded head of the screw. Be careful when removing the screws from the block. If you rush things, they can still be quite hot, and you don't want to drop them.

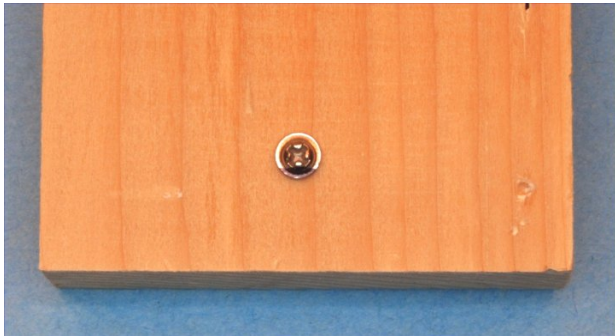


Figure 4: Untrimmed screw with marking



Figure 5: Screw head after trimming

Re-installing the screws takes a light touch. You want to make sure the screws find and follow the original threads in the plastic. They should go in very easily. If you feel any resistance, back the screw out until you just feel it “drop” in to the thread. That should ensure that it will pick up the original threads. Once both screws are reinstalled, check that a battery can fit in the compartment without hitting the screw heads (see Figure 6).

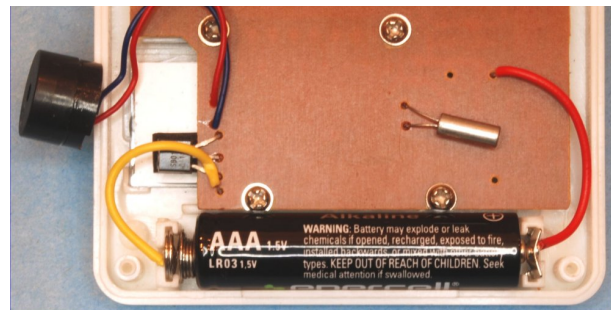


Figure 6: Battery fit check

At this stage, the timer could be reassembled, but I also wanted to reduce the volume of the alarm. Some shooters find it disturbing if someone's timer goes off while they are shooting, and I at least wanted to tone it down to the point where it wouldn't startle anyone. If you don't want

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the alarm at all, it's easy enough to cut the wires & remove it entirely at this juncture. I found that I could mute the alarm considerably by placing a small piece of masking tape over the top of the buzzer (see Figure 7). The buzzer is shown in the orientation required to get the cover back on, with the two wires dropping down in the upper right corner of the cutout in the circuit board. It can take a little fussing to get the buzzer back in the hole in the rear cover. I propped the buzzer on the edge of the front case long enough to get the buzzer started into its hole, and then shifted the rear cover so the four corner screw posts snapped into place. Re-install the screws and you are pretty much good to go. Once I had things figured out and set up, it took me about six minutes to complete the entire process on each timer.

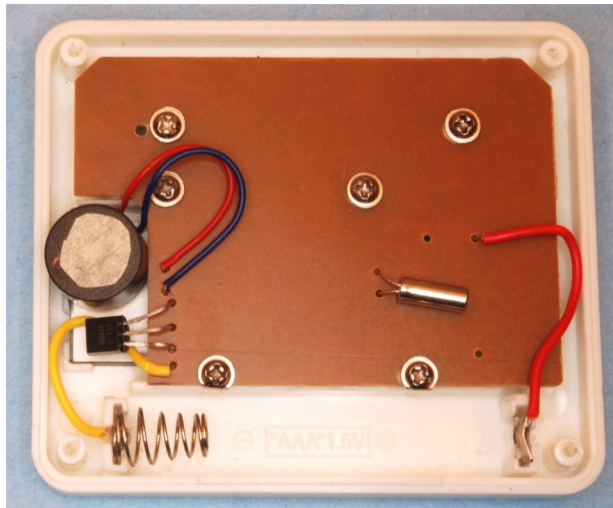


Figure 7: Buzzer muted with masking tape

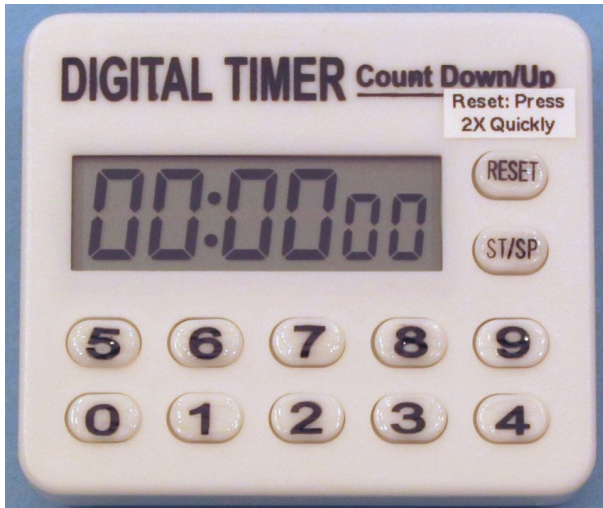


Figure 8: Final ruggedized assembly

That is about all most people will want to do. Because these are for a college team, I wanted to ruggedize them a little further. I also didn't want every student struggling to figure out the RESET button the way I did. I made up a label for that, and put a thin coat of clear epoxy over the painted button markings. The final version is shown in Figure 8.