

# DISASSEMBLY INSTRUCTIONS

FOR MECHBOX VER. 2

AS SEEN IN:

COLT M16-A1 AND COLT XM-177E2



ALSO FEATURED IN:

M16-A2, MP5-A4, MP5-A5, MP5-SD5, MP5-SD6,  
CAR-15, G3-A3, G3-A4, G3-SG1, HK51 & MC-51.

This document was originally published on "Airgun Custom Parts Catalog '98" by Seibido Mook in Japan. It has been translated by Francis Zhou (Skyfire) at his spare time. Since the translator wasn't a Japanese native speaker, please be advised that the content of this document may not completely reflect that of the original.

Modified to .pdf by Kim Flügel/Kilgore Surfteam 22/2/2000

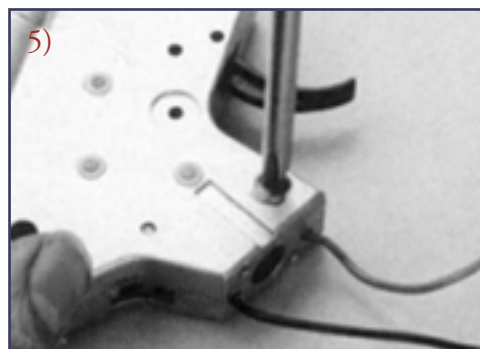
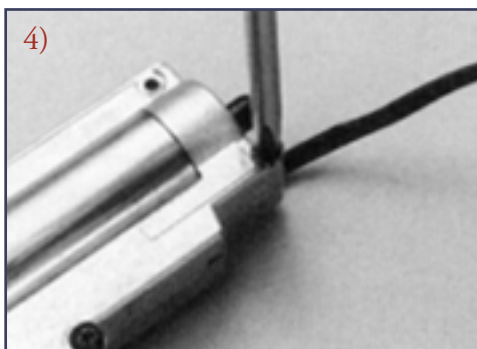
EXTRA FEATURE:  
"THE SERVICE HISTORY  
OF THE M16 RIFLE"

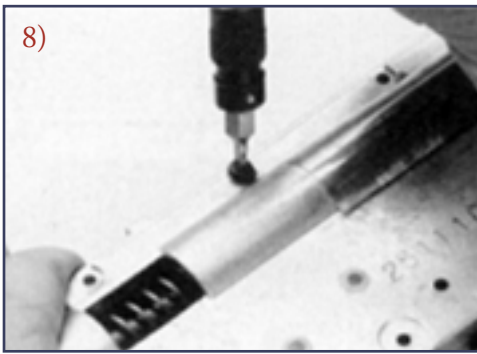
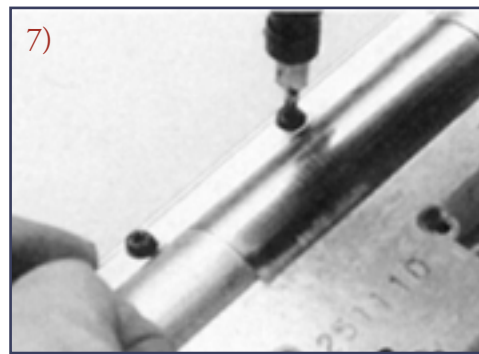
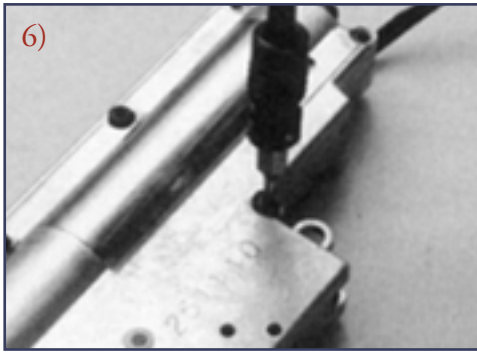
## TOKYO MARUI AEG MECHBOX VER. 2 DISASSEMBLY INSTRUCTIONS



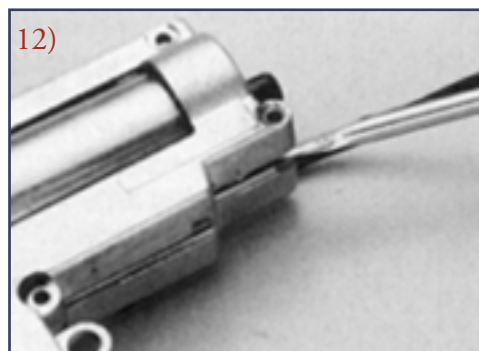
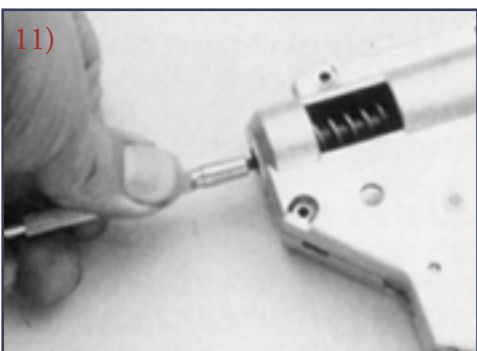
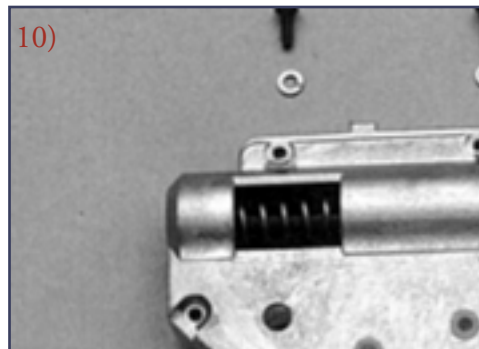
1) Tokyo Marui makes 4 types of mech boxes for it's AEGs (now five including the UZI), the one shown in the picture to the left is version 2. The basic dis-assembly steps for all mech box is the same, so after going through the process for version 2, you should be able open up the other models accordingly.

2) 3) 4) 5) 6) 7) 8) 9) There are a total of eight screws that holds the mech box together. Take them out in order of the pictures. Four of them are normal philips head, the rest four screws are six sided special ones, you'll need a torx wrench for them. You'll know which screw is which after you look at the picture. BTW, a torx wrench is required for mech box disassembly. If you don't have one, pick it up at your local hardware store NOW.





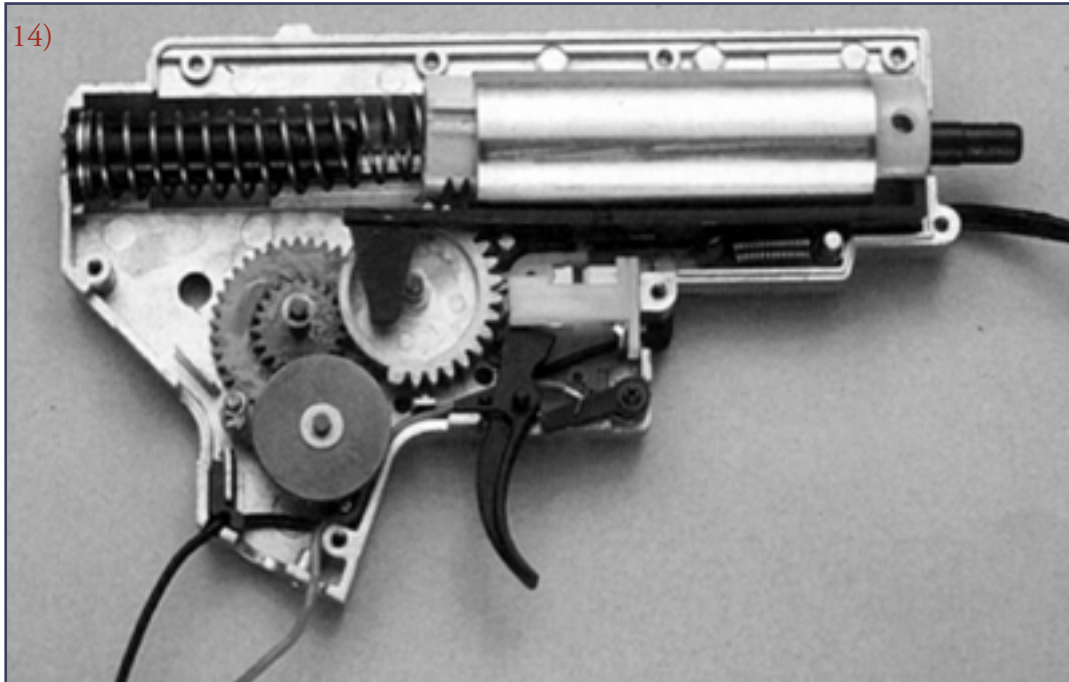
10) Now that all eight screws had been taken out, the mech box can be opened right away. But before you do that, make sure you remember the order of the screws. Not only the length matters, but the presence of a washer is also very important here. Arrange them in order and put them somewhere out of the way, else you may be really sorry later on for not listening to me.



11), 12), 13) Opening the mech box isn't as easy as simply taking out the screws. You should use a flat screw driver to separate the two halves little by little. First of all, insert a precision screw driver into the rear hole and press down on it to hold the spring guide in place. Then use a flat screw driver to pry the front part open. It's OK to press down on the rear part fairly hard, since you don't want the spring to fly out. I find it also helps to use your finger and press down on the cylinder when taking the top half off.



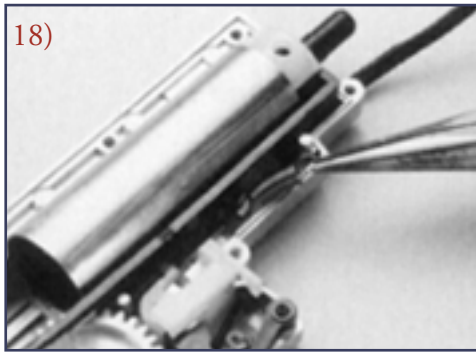
14) The relationship between the inner parts becomes fairly apparent after you open up the mech box. If you have this photo printed, it'll be easy to disassemble the mech box even without the instructions. Of course, it helps even more to remember it all. (back to step 27)



15) First of all, let's take the spring out. The spring is always under some tension, so it'll push backward once you take the spring guide out of place. So be careful when you take it out and don't let it fly all over the place.



16) The piston will come out too, since it's attached to the spring. There's a lot of grease on it so make sure you've got some tissue paper. When you put everything back together, it's better to apply grease again.



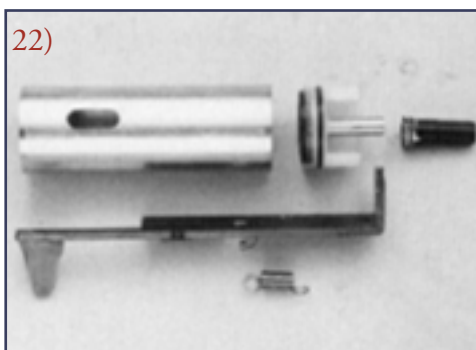
18) After the cylinder and spring assembly is removed, there's nothing left that'll suddenly jump out, so from here on you can take it easy.

19) Now you can separate the cylinder from the tappet plate. Don't worry, nothing'll fly out this time.



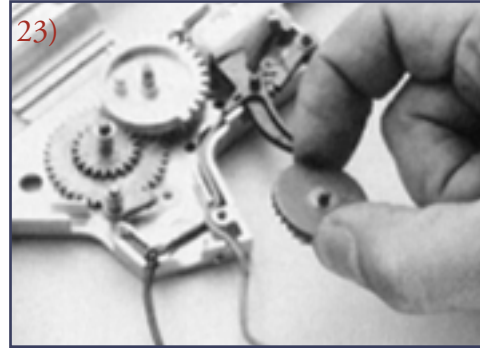
20) The tappet plate holds the nozzle in a slot. There are a lot of custom parts for these two, choose the one that fits your need the best.

21) The cylinder head can now be separated from the cylinder. There's also grease sticking to these parts, so think about where to put them. Tons of custom parts are available for these, again, choose the ones that suits you the best. Apply a think layer of low viscosity grease when you re-install these parts.



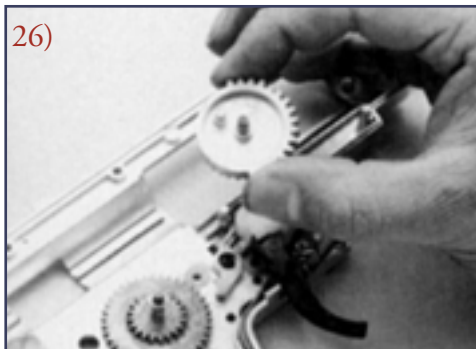
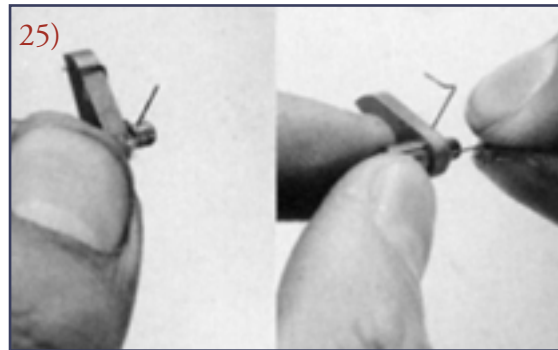
22) Cylinder related parts will affect power, range and accuracy the most. There are as many custom parts here as there are custom gears. As I emphasized before, use the set that suits your need the best.

23) After taking out all the air piston related parts, gears are the next. Start by taking out the top most bevel gear. Since it merely sits on the other gears, this is a no brainer.



24) The small part shown on the picture is the anti-reversal latch. If this part is absent, all parts in the mech box may be damaged due to reverse movement. Absolutely do not forget it when putting everything back together.

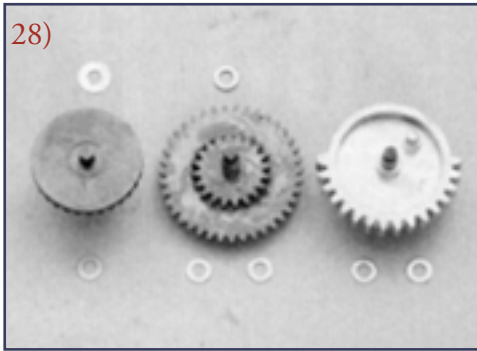
25) There's a spring on the anti-reversal latch. It's better to remember how it's attached to the latch, or, if you understood how every thing works in conjunction, you can automatically figure out how it goes on.



26) Now is the time to take the sector gear out. This gear is where the energy created by the motor is finally delivered to the piston. If you want to replace it with custom parts, make sure you also replace the piston with the one that fits this gear. (ie, helical vs. all helical/normal)

27) The disassembly is mainly finished after you take out the spur gear. It's always good to remember the order of these items. Of course, in case you got confused, [image 14](#) should help out. Of course, you'll need to apply grease when putting the gears back in. Recent technological advances produced some very efficient grease, which not only reduces friction between the gears, but noise as well. Check with your local hardware or hobby stores.





28)

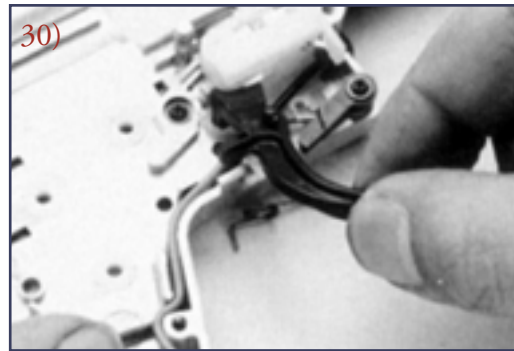
28) These three gears moves the most inside an AEG. Again, tons of custom gears exist, choose the one that fits your needs the best. Some gears will reduce the ROF in order to compress stiffer spring. Just don't forget to apply grease when you reinstall them. Also, depending on the gear and bushing combo, you'll need different number of shims. Usually the gear's installation manual will

mention shim placement. If not, you'll have to try different configurations and find the optimal setting (a time consuming process).

29), 30) You can also simply pull out the trigger unit from the mech box. There's a spring attached on the reverse side, don't lose it.



29)

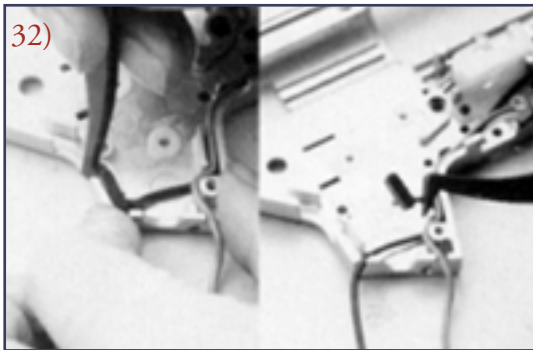


30)

31) Leftside view of the trigger. If you can't remember how the spring goes in, take a look at this picture so you can place it back in correctly.



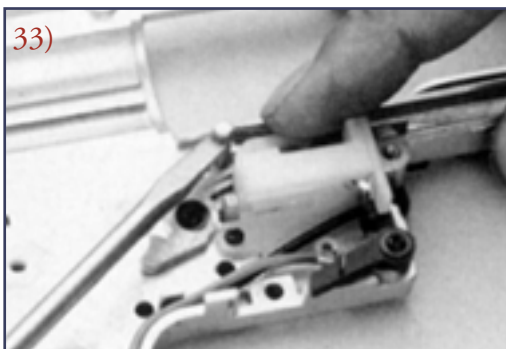
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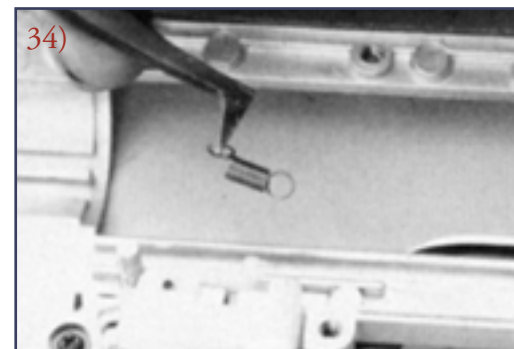
32)

32) To fully take everything apart, you can also take out this cord stopper. The cord leads to the switch box. Use a pincer to take out the stopper.

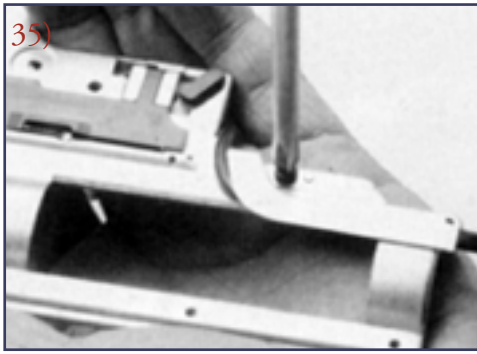
33), 34) Before taking out the switch assembly, first remove this spring here. Since it's very small, pay close attention to it. A screw driver is usually good for this.



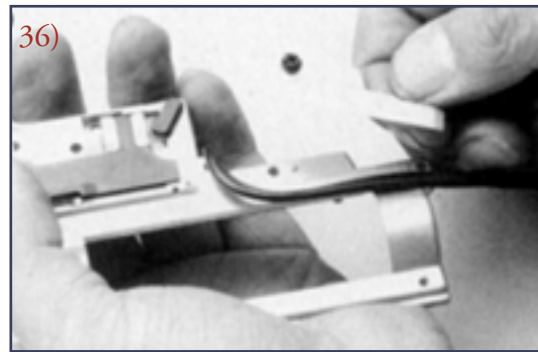
33)



34)



35) Flip the mech box over and remove the small screw shown in the picture.



36) This plate is only held to the mech box by one screw, so just pull it out after you remove the screw.



37) The switch assembly is also held by only one screw. In this case, use a precision screw driver to remove it.

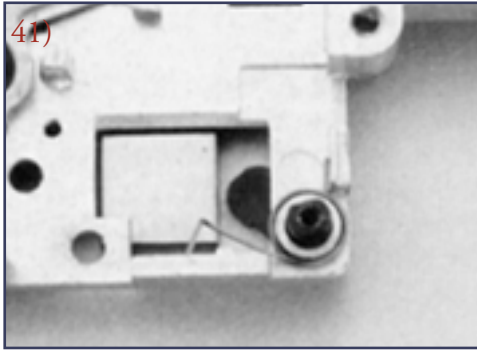


38) Now you can remove the switch assembly. AEGs need internal lubrication, but make sure that no lubrication, regardless whether it's grease or silicon oil, gets into this assembly. Also, you can't take this unit apart. However, electrical grease can be applied here.

39) You'll need a philips head screw driver in order to remove the stopper arm. Since the screw is quite small, use a precision screw driver.



40) This is the correct setting position of the stopper arm.



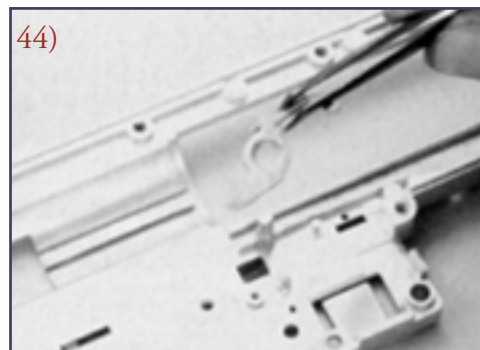
41) It's better to understand how the stopper arm spring works. When the spring is installed, the stopper arm should be pushed in the counter clockwise direction. If you think about how each part works when taking them a part, it's easy to understand their essential function

42) Take out this latch, seen from the outside of the mech box. This unit is necessary for semi-auto action. If it's damaged or forgotten while re-assembling, you won't be able to shoot in semi-auto mode. So check it regularly.



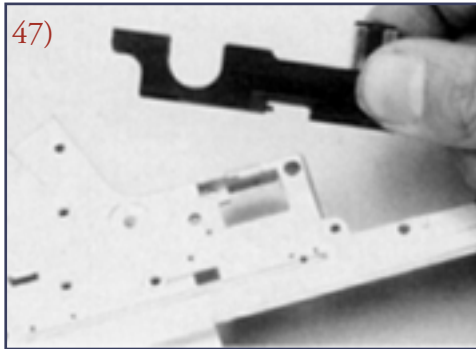
43) Use a philips head screw driver to remove the semi-auto cut off lever. Everything needs to be able to move freely when putting them together back into the mech box, this lever is no exception. You should make sure the lever can move freely when putting it back in. Don't forget to apply some grease here as well.

44) You can now remove the cut-off lever. It's fairly small, but essential for proper operation, so make sure you don't forget to re-install it.



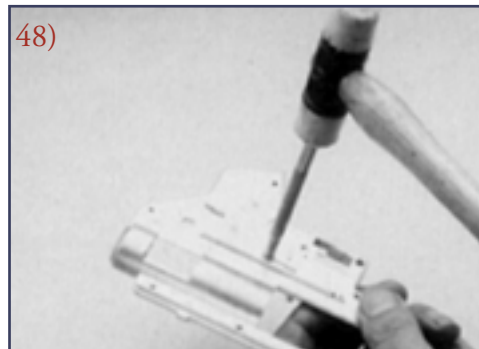
45) The selector plate spring is very small, use a pincer to remove it. When taking every thing apart, pay special attention to small parts, since all parts are necessary in order for the mech box to work properly.

46) Now simply slide the selector plate out. This is a key part in firing mode selection.

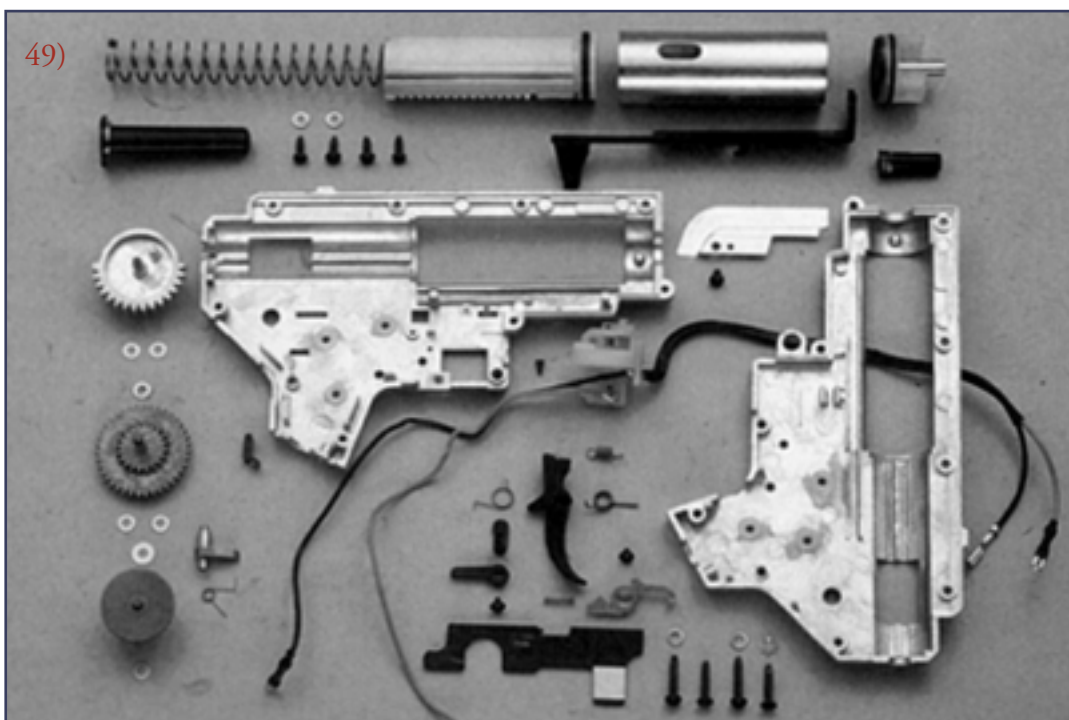


47) The picture shows the removed selector plate. Disassembly is pretty much over upto this point, except perhaps one final step.

48) The bushings can be removed by simply knocking them off as shown in the picture. This is usually the first thing that should be replaced when customizing an AEG. Usually, ball bearing replacements work best.



49) The completely disassembled mech box.





Eugene Stoner(1922 - 1997)  
The designer of the M16 rifle

The operational debut of the M16 appeared to go quite well when the rifle was first issued to troops in the battle in the Ia Drang Valley of Viet Nam in early November, 1965. Lieutenant Colonel, later Lieutenant General, Harold G. Moore Junior reported "brave soldiers and the M16 brought" the allied victory. But as the number of M16s "in country" increased, so did the reports of their failure in combat. In May, 1967, one Marine wrote home about it:

"I just got your letter today aboard ship. We've been on an operation ever since the 21 st of last month. I can just see the papers back home now-Enemy casualties heavy, Marine casualties light. Let me give you some statistics and you decide if they were light. We left with close to 1400 men in our battalion and came back with half. We left with 250 men in our company and came back with 107. We left with 72 men in our platoon and came back with 19. I knew I was pressing my luck. They finally got me. It wasn't bad though, I just caught a little shrapnel. I wish I could say the same for all my buddies.

...believe it or not, you know what killed most of us? Our own rifle. Before we left Okinawa, [we] were all issued this new rifle, the M16. Practically everyone of our dead was found with his rifle torn down next to him where he had been trying to fix it. There was a newspaper-woman with us photographing all this and the Pentagon found out about it and won't let her publish the pictures. They say that they don't want to get the American people upset. Isn't that a laugh?"

The pictures Catherine Leroy took were published in Paris Match magazine, causing an uproar. But the problems were solved within six months and the M16/M16A1 proved Eugene Stoner designed an excellent rifle: rugged, durable, reliable and accurate. Once redeemed, the M16 went on to be adopted by many police tactical forces in the United States and by other nations, most notably Canada, as the C7 rifle. Despite predictions of disaster in desert conditions, the M16 family performed flawlessly in the Persian Gulf War. In its new guise, the M4/M4A1 carbines serves with American Special Operations Forces, most notably the U.S. Army Rangers, Marine Force Recon and the U.S. Navy SEALs. And the Army has begun general issue of the M4/M4A1 to main force units, like the 82nd Airborne and 101st Airborne. The M4/M4A1 carbine is replacing the M16A2 and sometimes the M9 Beretta pistol in the troops' hands because the rifle gives up little to its larger parent in terms of range and lethality while being much handier and more compact.

Given the current economic and political conditions in the United States, along with no great national security threat due to the collapse of the Soviet Union, the service life of the M16 weapon series may (will probably) surpass the record currently held by the M1903 Springfield rifle.

