Guide to AEG gearbox shim mounting

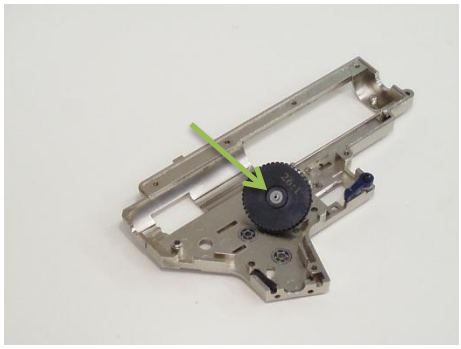
Shim kits – 16646 - 17106

Procedure for mounting gears correctly in AEG gearbox

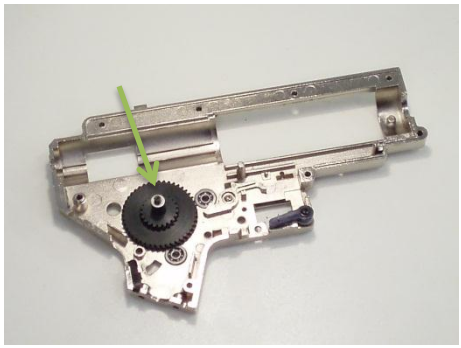
1. This guide shows the basic steps to correctly mounting gears in an AEG box, using the shim sets – 16646 and 17106. The procedure here is shown with a Version 2 gearbox with ball bearing, but applies to all versions and any type of bearings. There is no definite measures, amount of shims or standard for this, since dimensions between gearbox types, versions and brands vary! This also applies to the gears. This means that no mounting of gears are the same.

2. For your own convenience its recommended to implement the remove parts such as:
    a. selector plate, spring, piston, cylinder, tappet plate reversal latch and maybe switch and wires :
    b. Especially the selector plate is good to remove, because you have to access the gears from outside the box

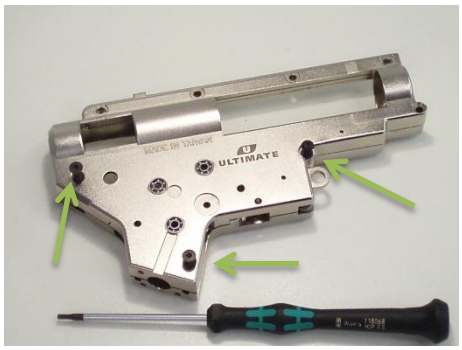
3. The spur gear is the first gear to be mounted
    a. Place between 0.2 – 0.4 mm shims on the left side
    b. Depending on the with of the box and bearing type this may vary, to get the gear centered in the box
    c. Usually 0.2 with metal bushings and 0.4 with ball bearings



4. Filling the gap between spur gear and right side of gearbox
    a. Place the spur gear in the bearing
    b. Use approx. 0.4 mm shims on the right side
    c. Depending on the with of the box and bearing type this may vary
    d. Usually 0.4 with metal bushings and 0.6 with ball bearings



5. Test the gap
    a. Close the gearbox with the 3 shown screws
    b. It is important to screw the box together
    c. Some gearbox sides can be a little crocked when not firmly pressed together, so do not just hold the two parts with your hand.



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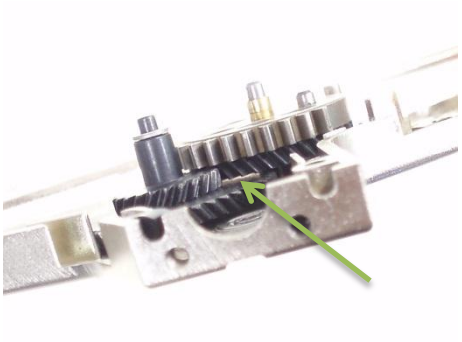
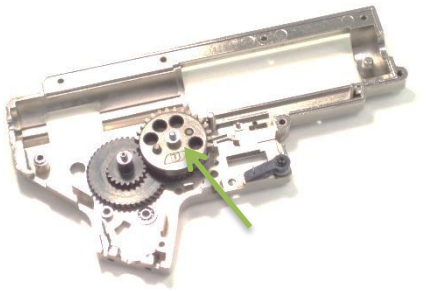
6. Test the veil/gap between box and gear
    a. Hold the box horizontal and
    b. From underneath press only on the gear axle
    c. There should be a slight movement of the gear (up and down), but not more than 1/10 mm. Preferable so little that you can feel it, but not see it.
    d. If there is no movement at all, you run the risk of lateral pressure on the bearings, which can lead to the gear sits to tight between bushings or will destroy the ball bearings

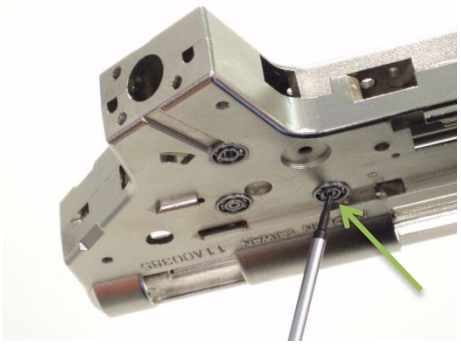
7. Mounting of sector gear
    a. Place just enough shims on the left side of the gear, to lift it away from the spur gear.
    b. You should be able to see the gap between the gears
    c. The gap should be as small as possible but still visible
    d. Distance should not be more than approx. 1 mm.
    e. When installing 40:1 or other extreme gear types, then check that they run freely from gearbox parts, such as the square switch stop.



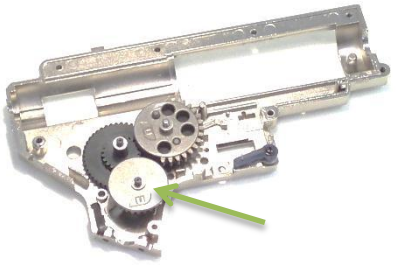
8. Filling the gap between spur gear and right side of gearbox
    a. Use approx. 0.5 mm shims on the right side
    b. Depending on the with of the box and bearing type this may vary
    c. Usually 0.4 with metal bushings and 0.6 with ball bearings
    d. Now close the gearbox with the 3 screws



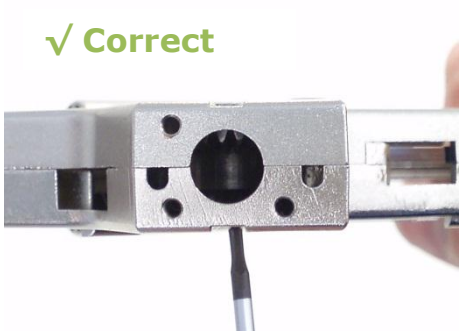
9. Test the veil/gap between box and gear
    a. Hold the box horizontal
    b. From underneath press only on the gear axle
    c. There should be a slight movement of the gear (up and down), but not more than 1/10 mm. Preferable so little that you can feel it, but not see it.
    d. If there is no movement at all, you run the risk of lateral pressure on the bearings, which can lead to the gear sits to tight between bushings or will destroy the ball bearings



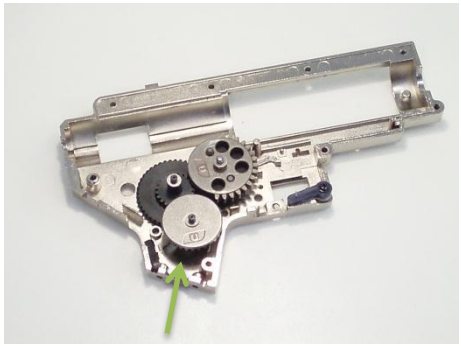
10. Mounting of bewel gear
    a. Place 0.2 mm shim on the right side of the gear
    b. Note that we start with the right side on this gear
    c. Now close the gearbox with the 3 screws



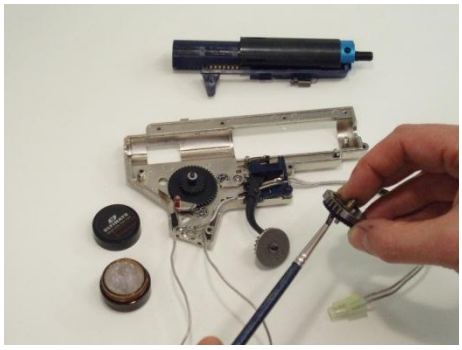
11. Test the placement of the bewel gear
    a. Hold the box horizontal, and from underneath, keep pressing the gear up against the right side, while looking straight into the motor hole.
    b. You should be able to se the entire tooth's on the gear, but not the bottom of the gap between tooth's.
    c. On the 3 pictures you can see the difference between correct and wrong placement
    d. This off course is not a very precise way to do it, but with the many different box types and different gears, this is unfortunately the best way there is. You might experience that you have to repeat this step, by opening the box once more after completion.



12. Filling the gap between bewel gear and left side of gearbox
    a. Use approx. 0.5 mm shims on the left side
    b. Depending on the with of the box and bearing type this may vary
    c. Usually 0.4 with metal bushings and 0.6 with ball bearings
    d. Now close the gearbox with the 3 screws
    e. Now test the veil/gap between box and gear just as you did with the spur and sector.



13. Assembling the gearbox
    a. Carefully take the 3 gears out one at the time, keeping the shims in place on the gears
    b. Now you can assemble the box with switch and other parts.
    c. When you grease up the gears, you can use the grease to keep the shims in place, when you replace the gears in the box.
    d. Mind that you do not have any lose shim lying inside the box before you close it up.



14. Final adjustment
    a. The final adjustment is done on the motor set screw
    b. Adjusting is done by finding the setting where the gears make the least noise, when you pull the trigger
    c. Listen to the gears if it is pleasant sound or screaming.
    d. If its not possible to find a setting with a reasonable sound, you will have to repeat step 10.
    e. It is possible to test the gearbox with only the grip mounted
    f. If a good sound is achieved – then you are done ☺