

Shifting cable exchange – bar end shifter

In this manual we will present how to attach a new shifting cable to an Efneo GTRO gearbox with a bar end shifter. To change the cable, the gearbox can be installed on a bike, you don't even need to take the chain away (we made photos with a gearbox that is put on a table, but this is not necessary).

Please, see the description of all the gears:

- When gearbox is in the 1st gear, we can move the round aluminium case cover in both directions freely. No resistance.
- When gearbox is in the 2nd gear, clockwise rotation of the aluminium cover causes counterclockwise rotation of the chainring.
- When gearbox is in the 3rd gear, clockwise rotation of the aluminium cover causes counterclockwise rotation of the chainring, only **faster** than in the 2nd gear. Please, switch between gears 2nd and 3rd few times, to make sure, they are different!

You will use the following tools – a 2mm flat screwdriver and Allen keys 4mm & 6mm:



When you open the package, the gearbox will look like below. Please, check function of gear 2 and all the gears in general – play with the gearbox a little bit, to learn, how it works, before you start the assembly process:



Switch to gear 3 for the starting assembly process:



If necessary, please, rotate the black pipe, to see bolts:



Unbolt the steel wire (bolts should stand about 2mm out; you can also take them out completely).
Please, do not touch bolts marked with a red square:



When taking the steel wire out, you may notice some resistance – this is due to bolts deforming the steel wire:



Next, you take the steel wire out from the shifter:



Take the shifter away:



If you change the housing, please, see the manual showing, [how to install the end caps](#) (black plastic caps on the photo above) properly. If you do not follow this manual, housing may not go till the very bottom of the cap – when housing gets deeper later on, you will need to adjust gear position again.

Now, you will put the shifter inside of the handlebar:



Take the bolt out from the shifter:



After you took the bolt out, shifter should be disassembled to this state:



Put the shifter base part inside of the handlebar (warning! some aluminum bars may be too small!):



Bolt it counterclockwise:



Put the lever and bolt back:



Set it to the position of gear 3:



Install the steel wire back:



Push the steel barrel inside of the shifter lever; barrel cannot be loose:



Push the steel wire inside of the black pipe and further inside of the brass element. Bolts in the brass element should stand out enough to allow the steel wire to get in:



Push the steel wire further and take it gently out with a screwdriver:



Be sure to pull the steel wire all the way out; make sure it is not loose anywhere:



Check, if plastic cap sits deep in the inline adjuster (marked with a red arrow) - it cannot be loose here as well. Later, bolt the wire, but not too strongly (it is advisable to check the gear function first):



Please, set shifter lever position for gear 2 as shown below and check function:



Please, set shifter lever position for gear 1 as shown below and check function:



If you do not have three different gears, you can use this inline adjuster for regulation; it is sometimes necessary to use this regulation to find the proper position of gear 2:



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If all the gears work properly, bolt the wire strongly in the brass element. However, please, **do not cut** the excess of steel wire before you make a **road test**; leave at least few cm. After you make a road test, you can cut the steel wire (short enough that it does not stand out of the niche inside of the brass element).

Lastly, rotate the separator in a way that the separator cutout faces towards the bicycle frame (so that dirt from the front wheel does not get inside and for higher aesthetics) or downwards (if no dirt from the front wheel can get inside). Check, if gears work properly again. If switching gears is a problem, you may need to cut some of the steel wire fibers or rotate the pipe to a different position.

If you experience any problem in the process of cable change, please, ask a professional workshop for help or contact us at wiktor@efneo.com (if photos would make communication easier, please, put them into email).