EZ ELECTRIC POWER STEERING

INSTALLATION GUIDE

Jaguar MK II

Content

The Product

Thank you for choosing an EZ ELECTRIC POWER STEERING product for its quality, it's performance, type approval and its straightforward assembly. Since 2006 we have been manufacturing complete steering columns with integrated electrical assistance. All columns are tailor made for each type of car and we have over 200 different types in stock. For more information about our products (power steering systems and replica steering wheels) or to place an order, visit our website www.ezpowersteering.com or send an e-mail to info@ezpowersteering.nl. If you have any questions of a technical nature please contact workshop@ezpowersteering.nl.

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This manual should be read carefully to avoid errors. Check whether all parts of the set are present. This can be done on the basis of the picture in this manual. Before installation, compare the EZ POWER STEERING column with the original column. Check that the dimensions are the same. Also fit the steering wheel to the column.

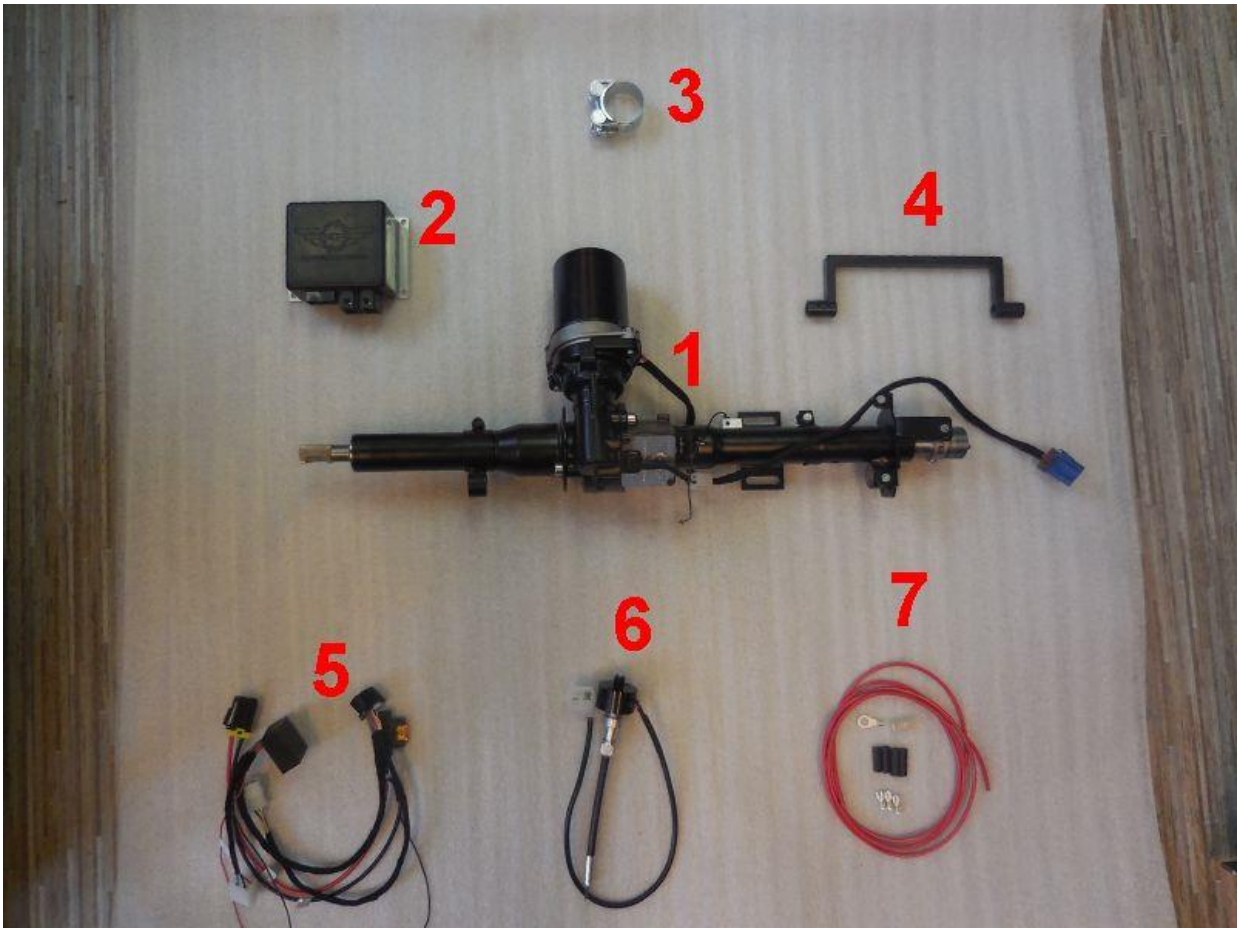
If you do not have the skills or tools to perform the installation, have it performed by a professional. EZ POWER STEERING cannot be held liable for incorrect installation or self-inflicted damage.
The manuals are generally based on a left-hand-drive vehicle. In most cases, the right-hand drive version is the mirror image of the installation of a left-hand drive vehicle.

If you think that any changes are needed in this manual, we would like to receive your pictures and comments. With your feedback we can improve our manuals!

Contents of the set

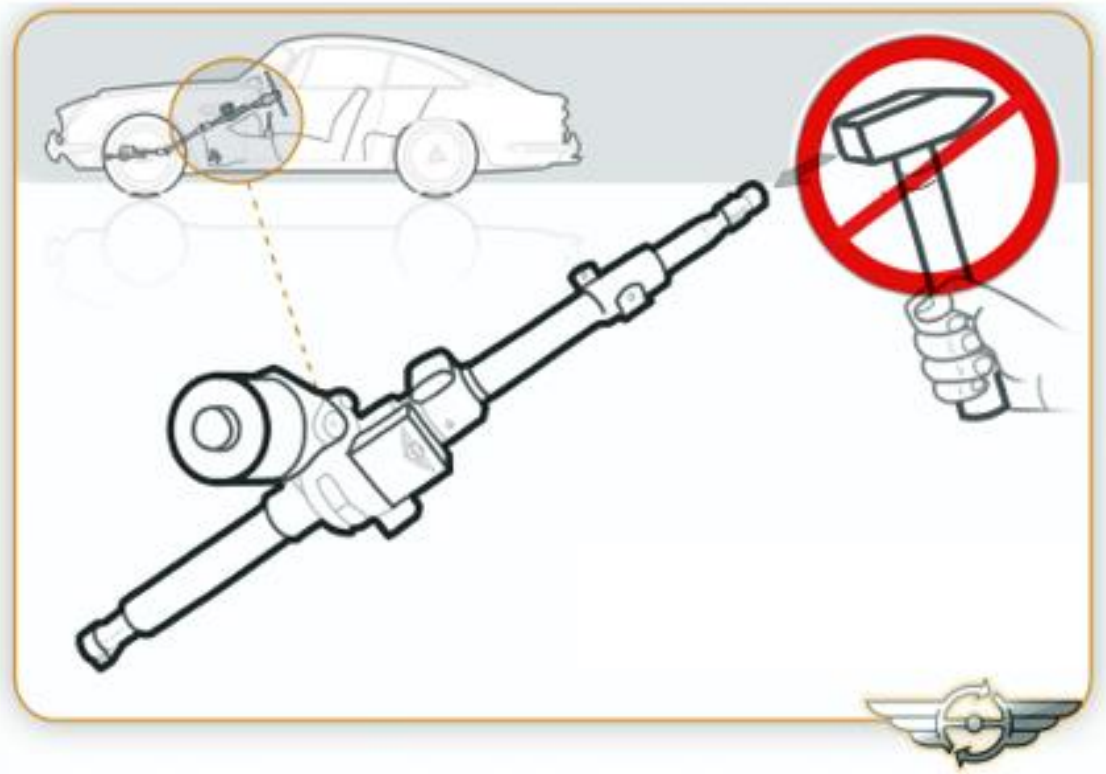
Pay attention!

Part number 4 is only available with the machine with a long shift rod

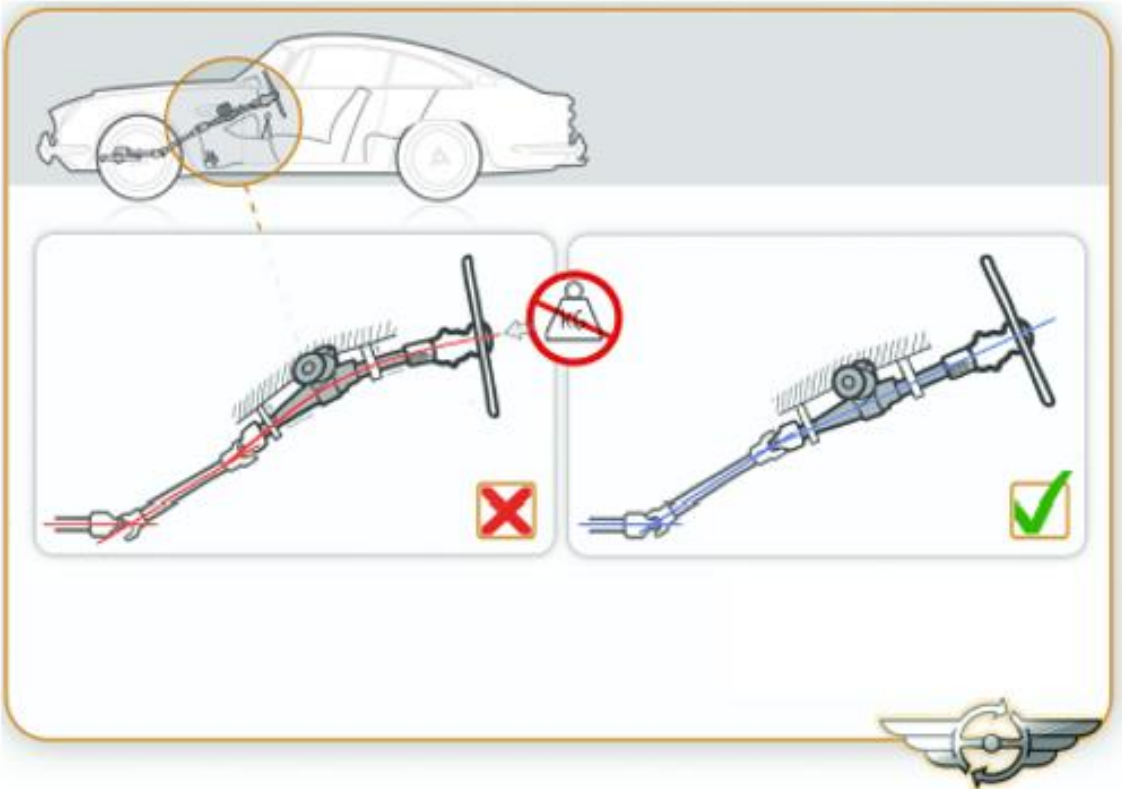


Before and after assembly

Installation



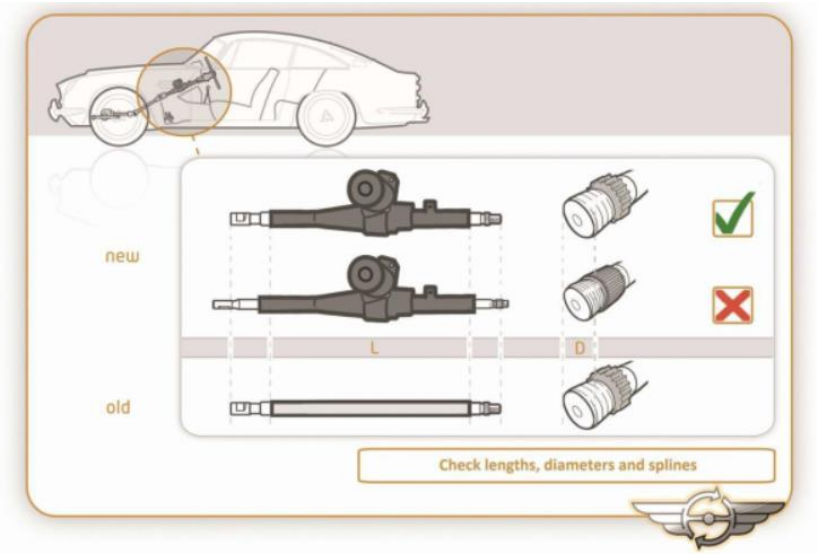
Never strike the input shaft with an object during or after assembly. This can adversely affect the sensors.



The steering system must always be properly aligned and mounted without tension.

Check length, diameter and splines

Compare the EZ Power Steering Column (EZ-unit) with the original steering column before installing it. Check if the splines on the top and bottom, the diameter of the steering tube and the length of the column are all the same as the original steering column. When in doubt you can use the original steering wheel to check the top splines for fit. Never hammer on the steering shaft of the EZ unit!



In the car industry its common to have some small tolerances in spline connections. In very exceptional cases connecting a new shaft from the EZ-unit in the original (old) U-joint could cause a tight fitting. This is sometimes relatively easy to solve by sanding only about 0,2mm (0,007 inch) in the inner part of the U-joint and also the spline on the output shaft on the EZ-unit.

Torque tightening values in Nm.

When the new steering column is being fitted hand tighten all the bolts and check if everything turns smoothly before tightening to required Torque, use torque tightening table below:

	Alu	8.8	10.9	12.9
M6	6	11	16	19
M8	15	27	40	47

The system works with a torsion bar into the unit, this measures the amount of torque/load on the steering shaft while steering, the torque sensor measures this and sends a voltage to the ECU. The ECU uses this signal together with the speed signal to control the electric motor from the EZ-unit

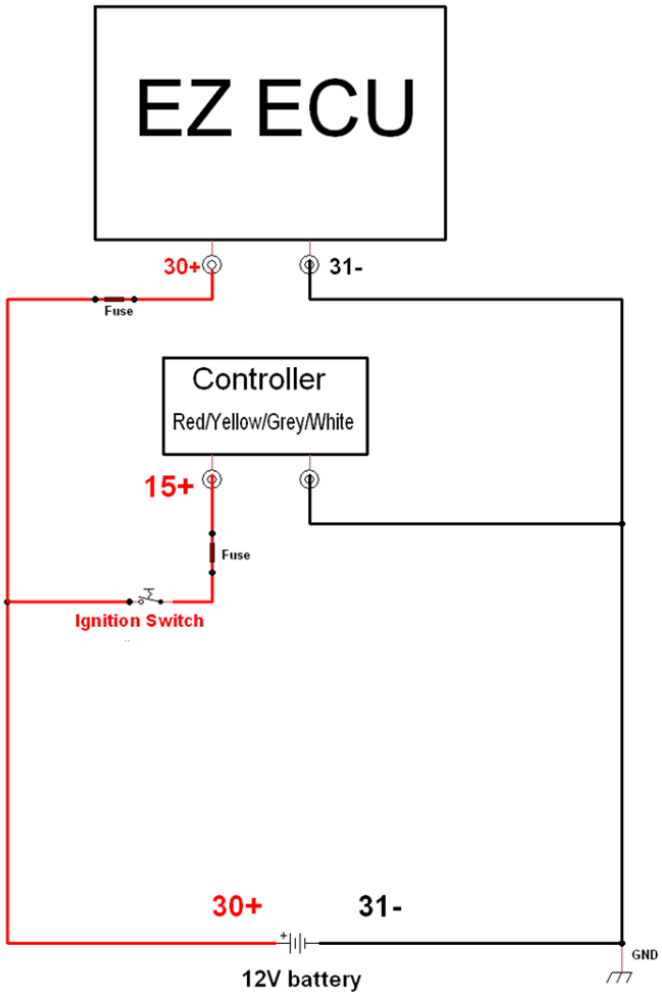
Voltage

The basic EZ-unit, is a 12V system with negative earth! There are extra wiring sets available, so that the kit will work with a 6V or 24V system and/or positive earth. Check your vehicle setup before fitting the EZ-unit.

The red supply wire (30+) has to be connected directly to the starter relay or the plus terminal of the battery and fused with the supplied 40 Ampere fuse.

Connect the black ground wire (31-) cable eyelet to a suitable earth point (not to the column). If you have a positive earth car (Plus battery terminal connected to the chassis) ensure that you have the correct wiring loom with additional relay

The thin red wire is ignition switched (15+) and should be connected to a fused contact switched power supply. Check the voltage between the ignition switched plus against earth, with switched on ignition, this must be at least 11,5 Volt. If it drops below this the electric power steering will switch off. (When this happens during driving, the vehicle will drive similar as before the EZ conversion).



Be sure to measure the voltage under load (with other electrical devices switched on like: cooling fan, windshield wiper or electric window defroster, etc.) and with running engine.

If needed there are electronical devices available, to maintain the correct ignition switched voltage above 11.5V!

Also a simple test of the electronics is to check if you hear a click after switching on the ignition, another click should be heard after 1 or 2 seconds after switching off the ignition.

Step 1.

Check the tire pressure and take a test drive with the car. Check whether the steering wheel returns to the straight-ahead position. Check whether the controls and instruments are defective. If all this is in order, then proceed with the conversion.

Step 2.

Find a fused power supply connected via the contact. This is necessary for controlling the EZ power steering unit (see point 17). For this, if present, dismantle the bottom plate under the dashboard, the switched power supply can either be removed from the contact lock or the start button. Then disconnect the earth cable from the battery. Make a choice before installation, or put the wheels and steering wheel in the straight-ahead position, mark this position and continue with the conversion. Or determine the center of the wheelhouse by dividing the number of steering turns, from full left to full right, by two and adjust the wheel alignment after installation, if necessary.

Step 3.

Remove the horn cap and the steering wheel.

Step 4.

Remove the housing from the steering column.

Step 5.

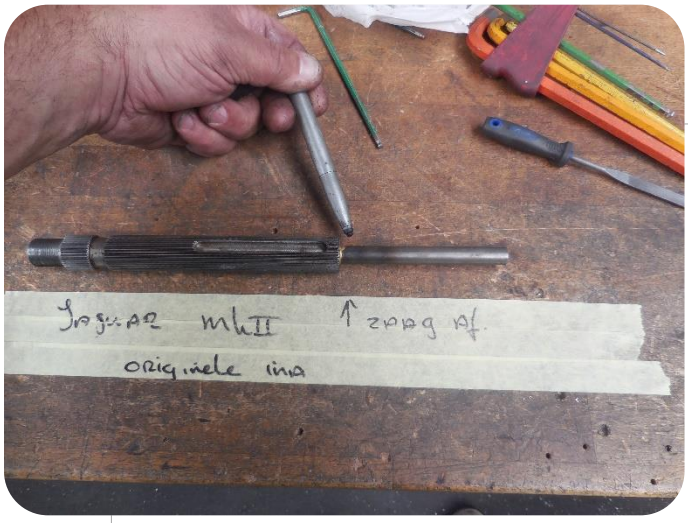
Remove the steering column switches from the original column.

Step 6.

Remove the trim on the bottom of the dashboard.

Step 7.

Disassemble the fixing bolts and the clamp from the original steering column together with the universal joint in the engine compartment. The column can then be deleted.



Step 8.

The sliding shaft must be cut to length.

Unscrew / deburr the rear of the sliding shaft.

Step 9.

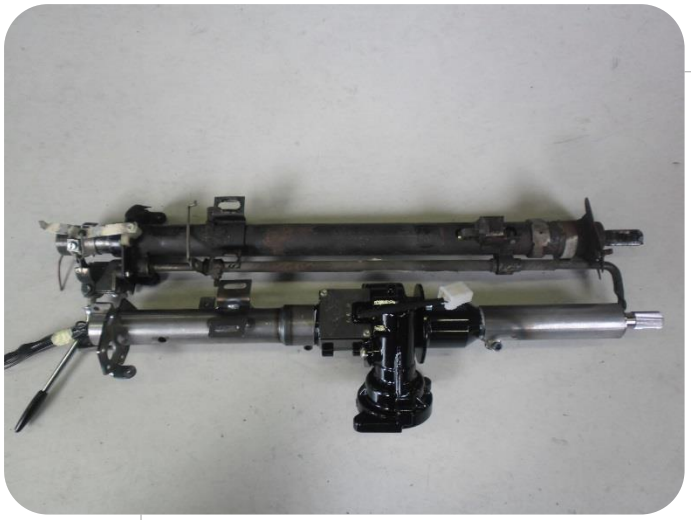
PAY ATTENTION! Extra Scooters must be taken with these types.

For an MK2 RHD / LHD automatic transmission with a long switching rod, do Step 10.

For an MK2 RHD / LHD machine with a short switch position, do Step 11.

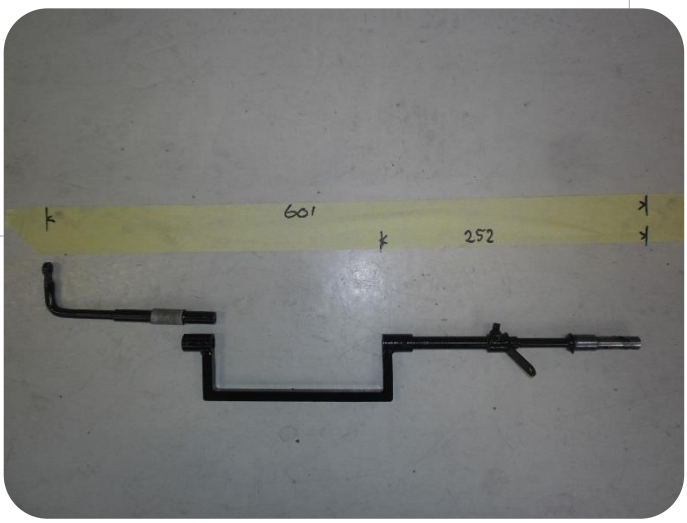
For an MK2 RHD do Step 12.

For an MK2 LHD, the procedure continues with Step 13.



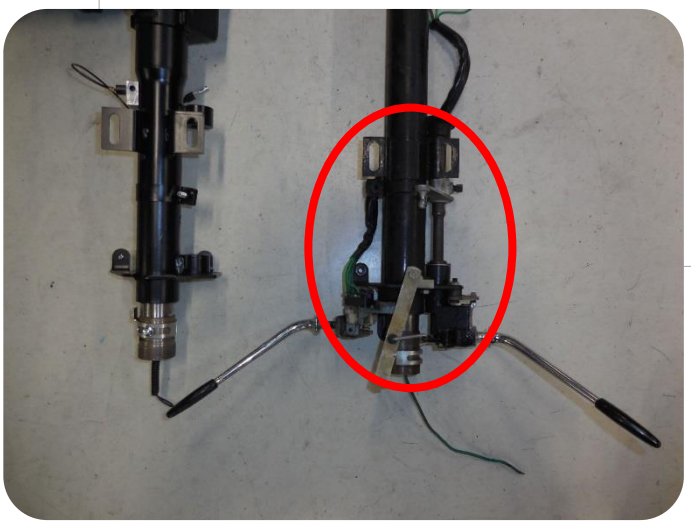
Step 10.

The long shift rod does not fit on the new EZ unit, so there is an adapter with which you can make the original shift rod suitable for the EZ unit. See the photos and sizes on the photo how to cut.



Step 11.

With the short shift rod there is a mechanism on the steering rod that must be transferred from the original column to the EZ column. It is about the mechanism and wiring that is circled in red.

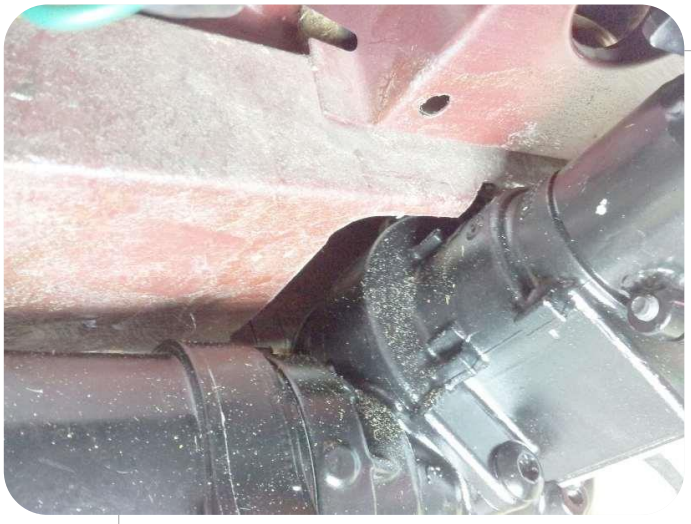


Step 12.

With the RHD a different hole must be cut than with LHD, it does not matter whether the machine is automatic or manual. The hole that needs to be cut can be seen on the photos.

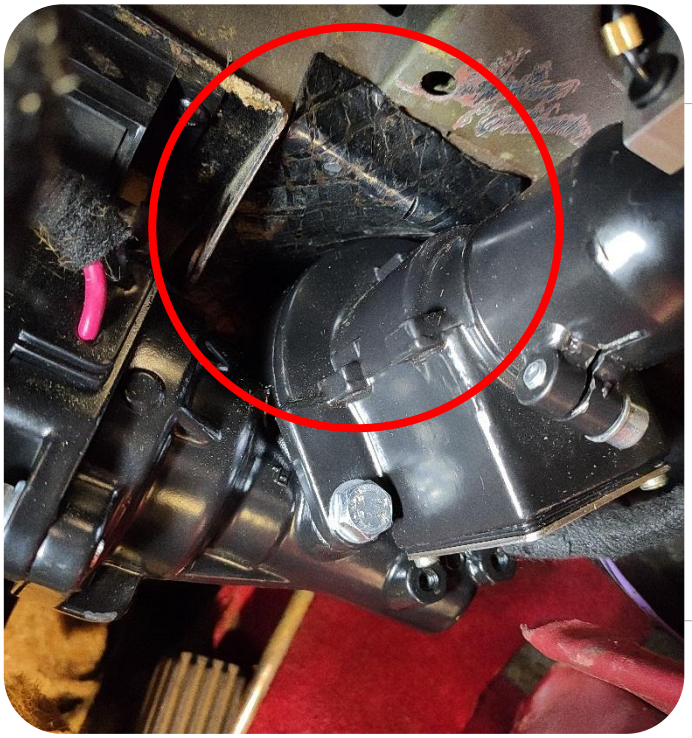
Step 13.

To provide enough space for the electric motor, a part of the ventilation duct must be removed under the dashboard. The electric motor can be mounted in the vacated space during installation. Mark the section to be cut according to the example photo and then saw this section out. This applies to LHD.



Step 14.

Use the EZ unit to check whether the saw is properly cut, do this with RHD and LHD. This photo applies to an LHD. NOTE: if the speed-dependent option has been chosen, mount the sensor between the KM counter and the cable. Do this before the EZ unit is installed.



Step 15.

Use a punch plate to seal the hole in the ventilation duct. This is to close the channel.

Step 16.

Connect the thick red wire (30+) through the fuse holder, directly to the battery plus (12V). It is a good idea to insulate the wire with an extra heath shrink.

Step 17.

Connect the thin red cable (15+) to a fused contact-switched plus. See Step 2.

Step 18.

Connect the black ground wires (31) to a suitable ground point on the body.

Step 19.

Connect the speed sensor to the EZ cable harness, making sure that the wire colors in the plug correspond (yellow / green. Blue, brown.).

Step 20.

Mount the steering wheel with horn cap and trim on the underside of the dashboard.

Step 21.

After switching on the ignition a click can be heard from the ECU, the system is now operational, check this by making steering movements. After switching off the ignition, another click is heard after approximately 4 seconds. The system is then switched off.

Step 22.

Mount the steering wheel of the car again, do not forget the two loose conical rings. Or mount the handlebar at the position of the center of the wheelhouse and adjust the wheel alignment where necessary. Or mount the handlebar in the marked straight-ahead position. Take a test drive and check all systems again. Also check if the position of the steering wheel is correct, if not adjust it. Then connect the horn switch to the horn wire of the EZ unit. Mount the horn switch back in the steering hub with the locking screws. Note, make sure that there is sufficient length on the horn wire for adjusting the steering wheel.

Step 23.

The end result.

Left for LHD.

Right for RHD.