

EZ ELECTRIC POWER STEERING

INSTALLATION INSTRUCTIONS

JAGUAR XK150





CONTENTS

The Product	1
Contents of the set	2
Before and after installation	3
Installation.....	4



THE PRODUCT

Thank you for choosing an EZ ELECTRIC POWER STEERING system for its quality, certification and easy assembly. Since 2006 we produce complete steering columns with integrated power steering. All columns are tailor-made for each type of car and we already have 200 types in stock! For more information about our products (power steering systems and replica steering wheels) or to place an order, please visit our website www.ezpowersteering.nl or send an e-mail to info@ezpowersteering.nl. If you have any questions about the installation, please contact us at workshop@ezpowersteering.nl.

Version C1.3

Date 03-02-2022

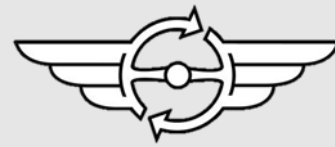
This manual should be read carefully to avoid errors. Check whether all parts of the set are present. This can be done on the basis of the picture in this manual.

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



EZ-XK150-1. EZ unit.

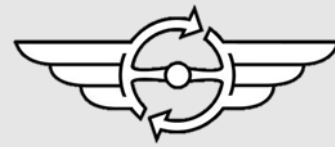
EZ-XK150-2. Speed sensor.

EZ-XK150-3. ECU

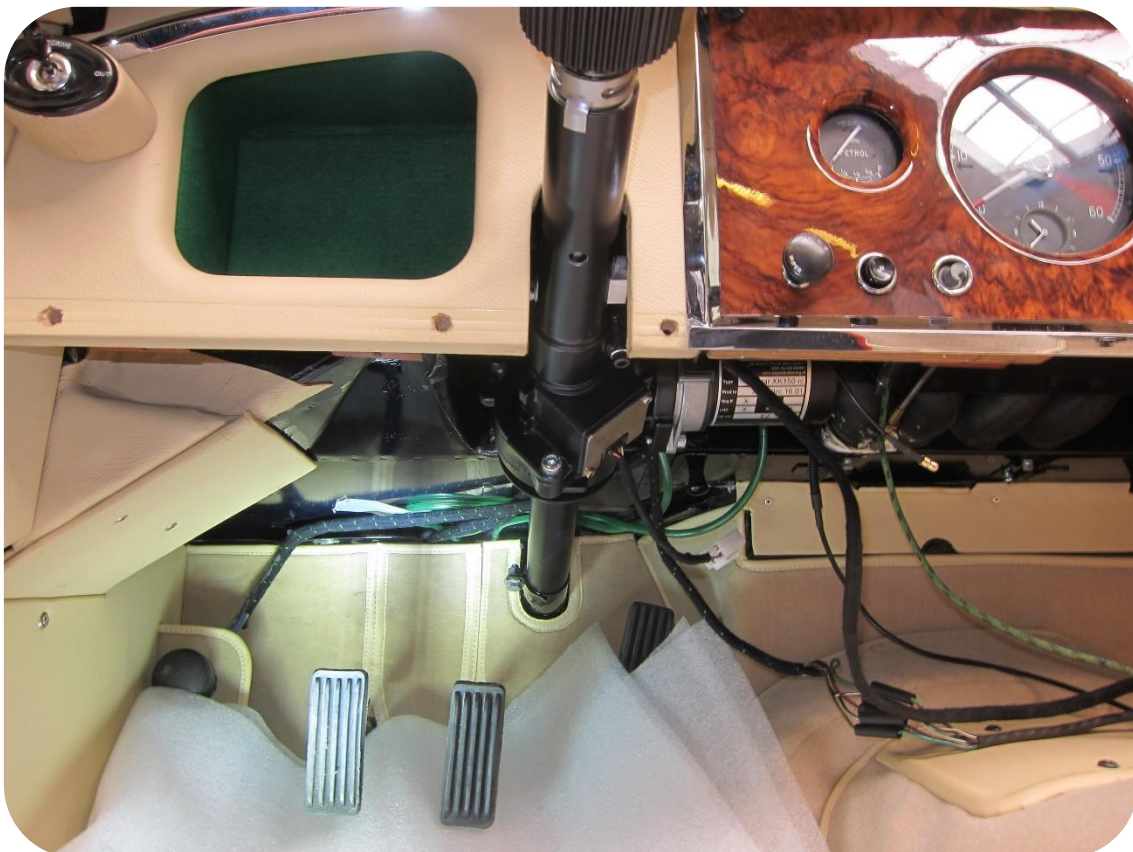
EZ-XK150-4. Power supply cable 6 mm²

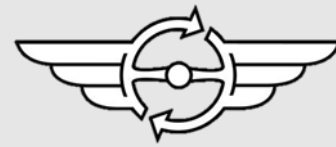
EZ-XK150-5. Shims + bolt M8x25

EZ-XK150-6. Wiring harness + controller + floating fuse holder

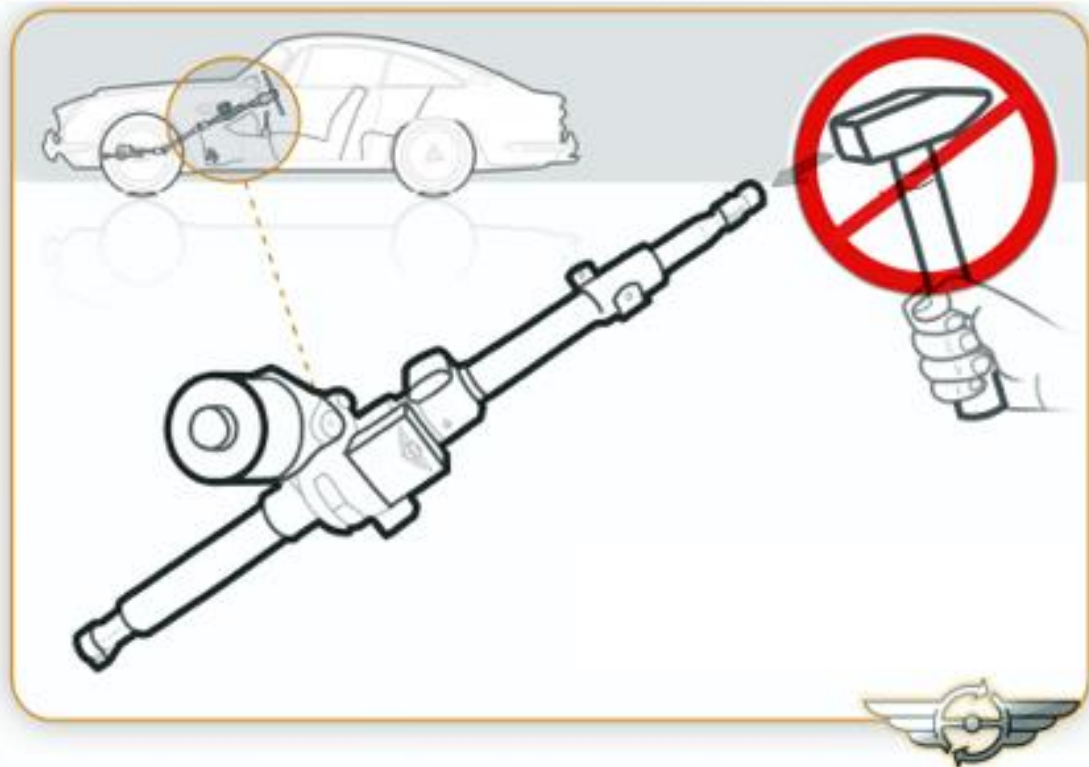


BEFORE AND AFTER ASSEMBLY

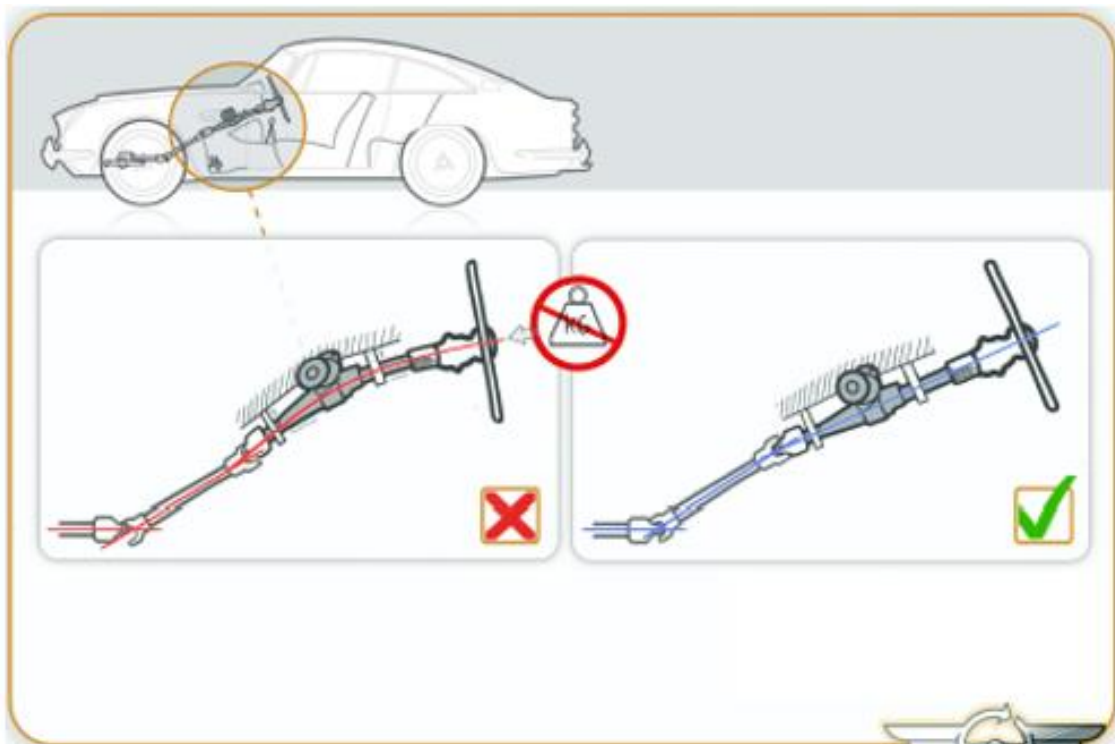




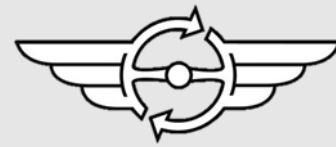
INSTALLATION



Never hit the input shaft with an object during or after mounting. This can negatively influence the sensors.

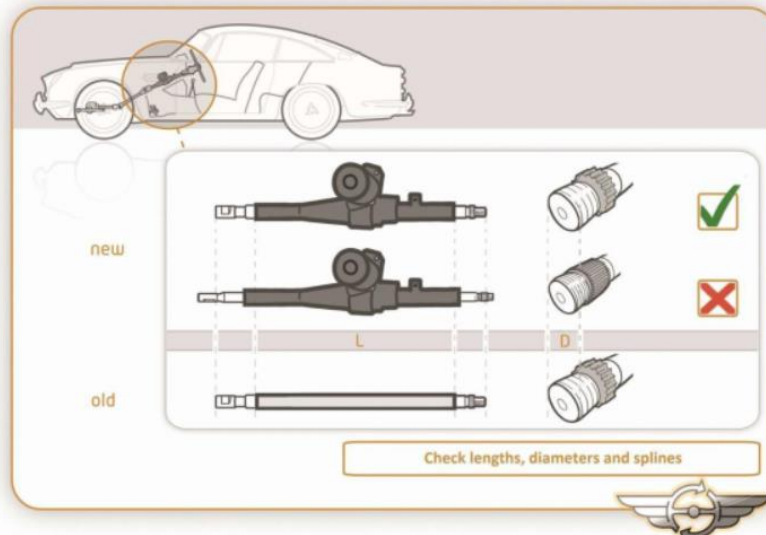


The steering system must always be properly aligned and installed tension-free.

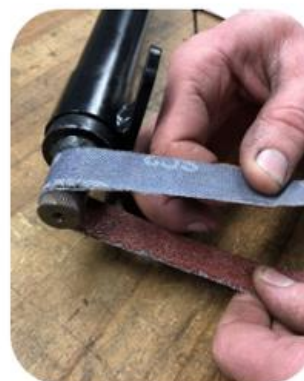


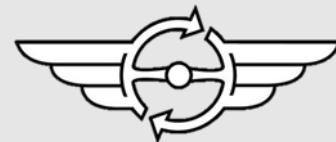
Check length, diameter and splines

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.

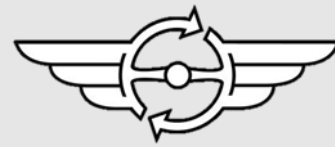
When the new steering column is being fitted hand tighten all the bolts and check if everything turns smoothly before tightening to required Torque, use torque tightening table below:

	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.



Step 1.

Check tyre pressure and test drive the car. Check that the steering wheel returns to the straight-ahead position. Check that the steering and instruments are not defective. If all this is in order, proceed with the conversion.

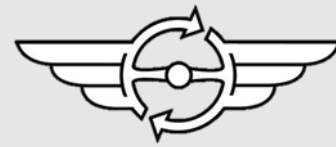
Step 2.

Find a power supply switched via the ignition. This is necessary for the power supply of the EZ powersteering unit (see point 26). The switched mode supply can be taken from the ignition switch or the start button. Then disconnect the battery negative terminal lead

Step 3.

Loosen the four screws in the steering wheel hub to remove the horn switch. Also disconnect the corresponding cable.





Step 4.

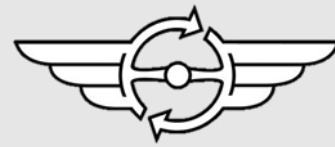
Loosen the locking tab washer under the steering nut and unscrew the steering nut. Dismantle the steering wheel from the original steering column (note the two loose conical rings). The spiral spring can then also be removed.



Step 5.

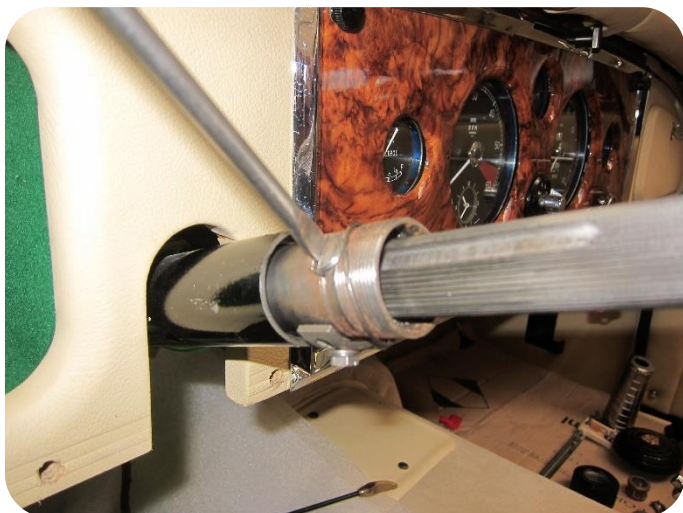
Dismantle the knurled locking nut, the clamping collet and the indicator switch from the column.





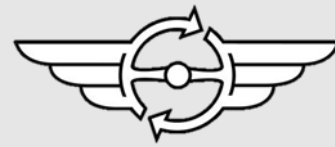
Step 6.

Remove the chrome trim strip from the bottom of the dashboard, remove the nuts from the rear. Then dismantle the self canceling ring from the steering shaft.



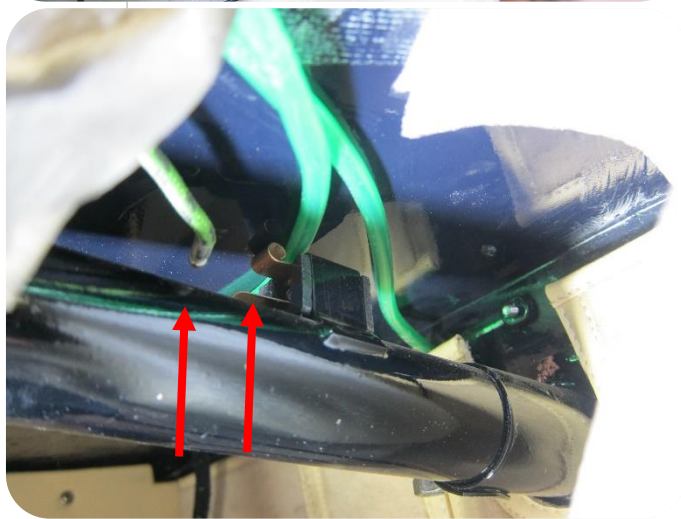
Step 7.

First remove the locking clip, then remove the locking bolt from the steering shaft.



Step 8.

Dismantle the adjustable steering shaft, and be careful with the horn wire.

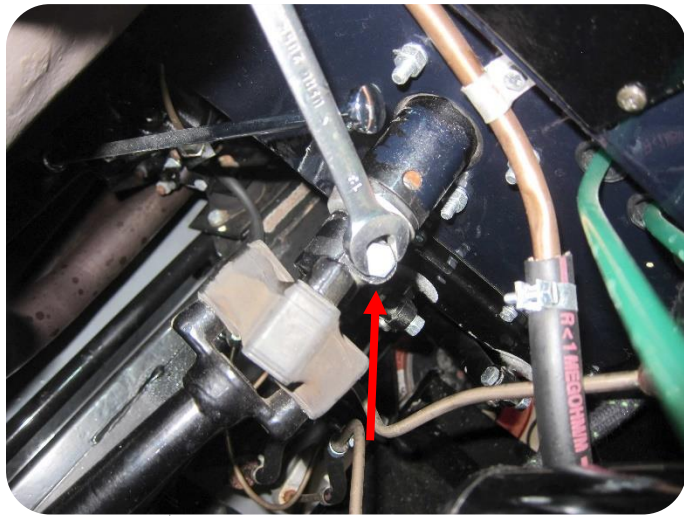
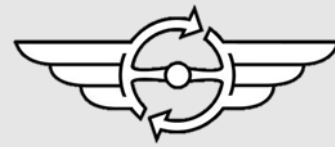


Disconnect the horn wire from the steering column.



Step 9.

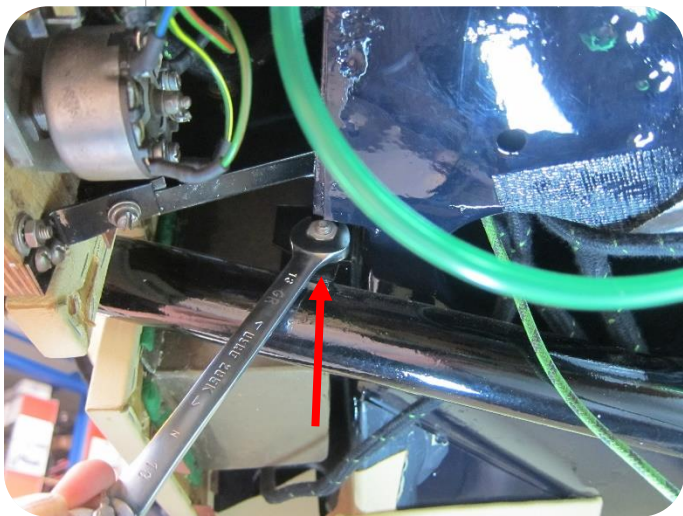
Remove the lower clamping bolt (at the bottom against the bulkhead) from the original steering column.



Step 10.

In the engine compartment, remove the bolt of the splined coupling for the rubber donut. Check the condition of the rubber. If necessary, replace it before proceeding with the assembly of the EZ unit.

Then dismantle the upper mounting of the original steering column. Now the original column can be dismantled in its entirety.





Step 11.

It is possible to fit the speed sensor without removing the speedometer. Detach the speedo cable and fit the speed sensor to the back of the odometer. The speedo cable is screwed to the back of the sensor. Make sure that the speedo cable is properly aligned with the speedometer, route the cable without any tight bends to assure a smooth operation of the speedometer

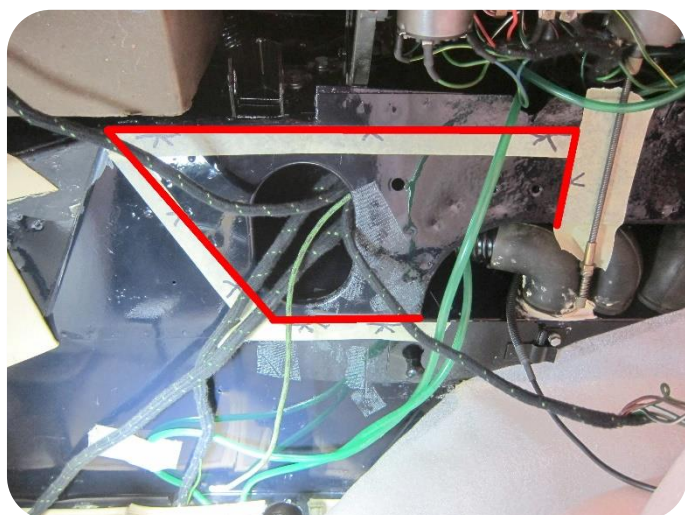
Step 12.

ATTENTION!

For an XK150 with a Fresh Air Heater **LHD** go to steps **13** and **14**.

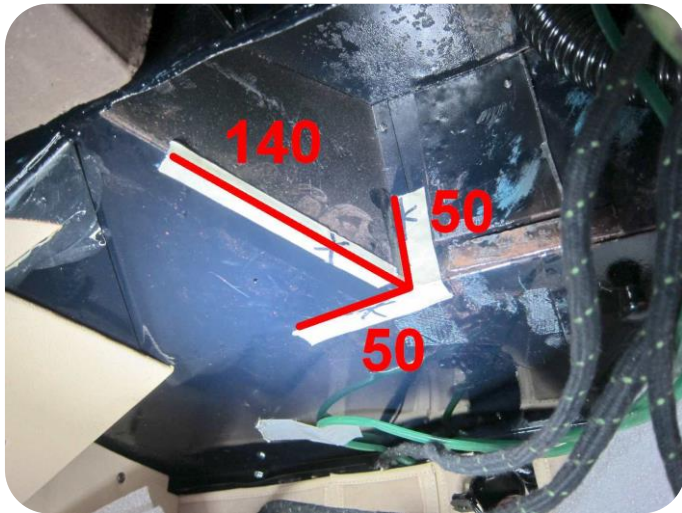
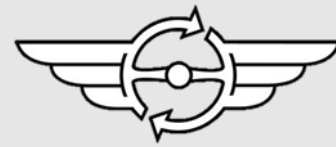
For an XK150 with the Regular Central Heater **LHD** do step **15**.

For an XK150 **RHD** go to step **16**.



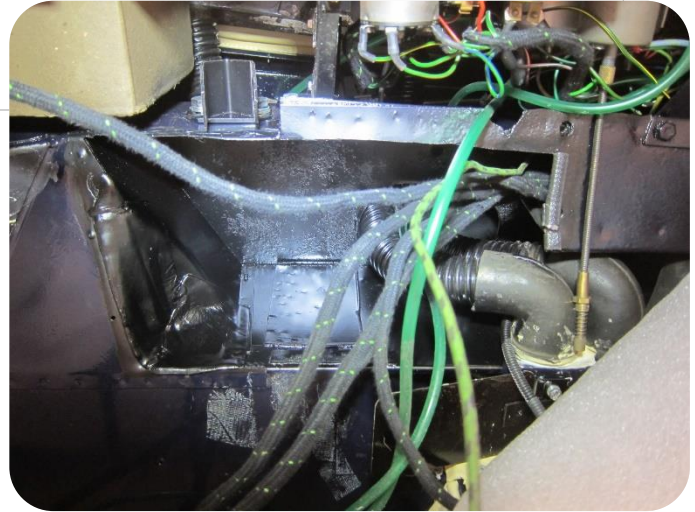
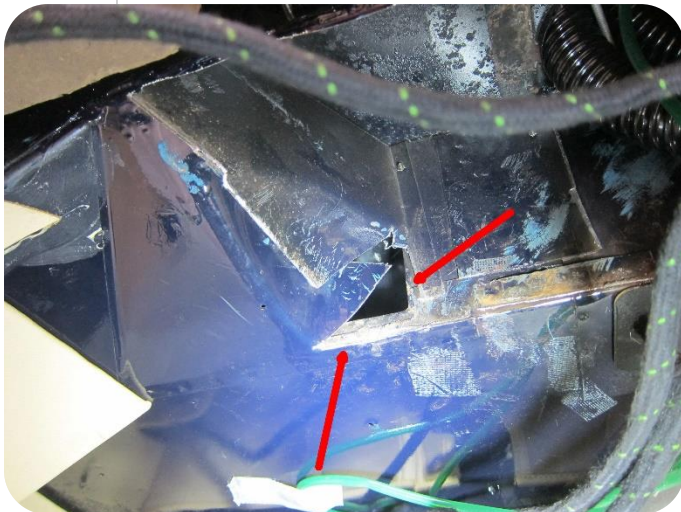
Step 13. (XK150 fresh air heater LHD)

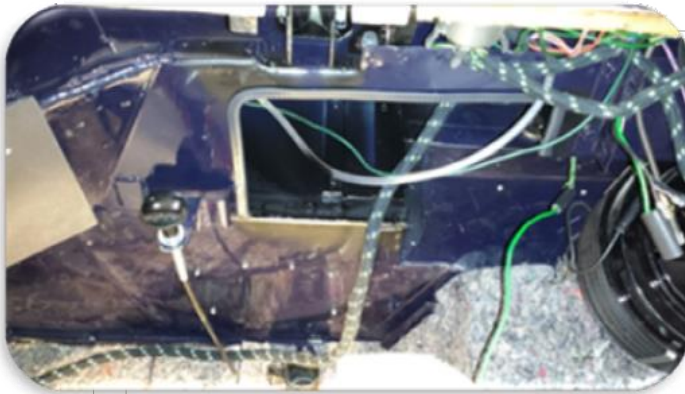
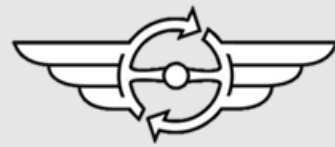
In order to create enough space for the electric motor of the EZ unit, part of the sheet metal under the dashboard has to be removed. Mark the area to be removed according to the picture on the left and cut it out. Take care not to damage any cables or pipes. Then mark the vertical part according to the sample picture on the left and cut this part out as well.



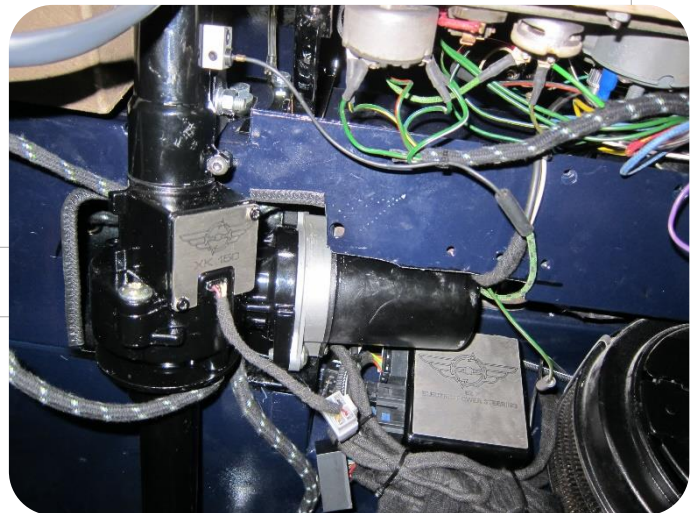
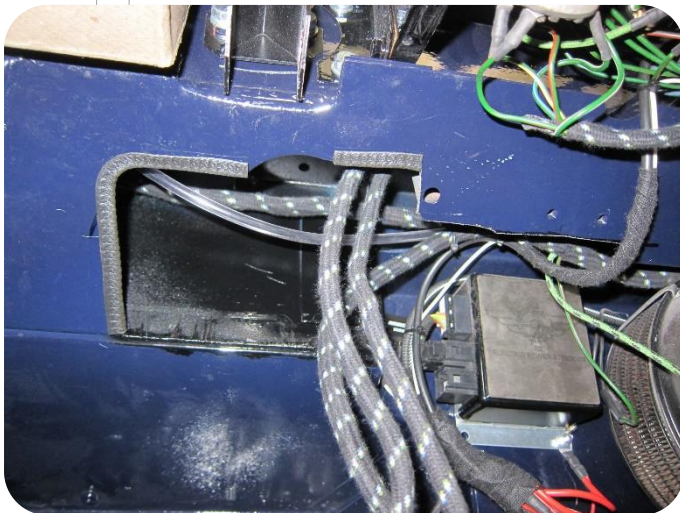
Step 14. (XK150 fresh air heater LHD)

Then make three cuts, see the picture for more clarity. After this, the sheet metal can bend inwards. Saw in the notches 140mm and 50mm in length. Make sure that the heater motor is still able to rotate freely. Then place a self-adhesive insulation mat over the opening. This is necessary for the proper functioning of the heater/ventilation.





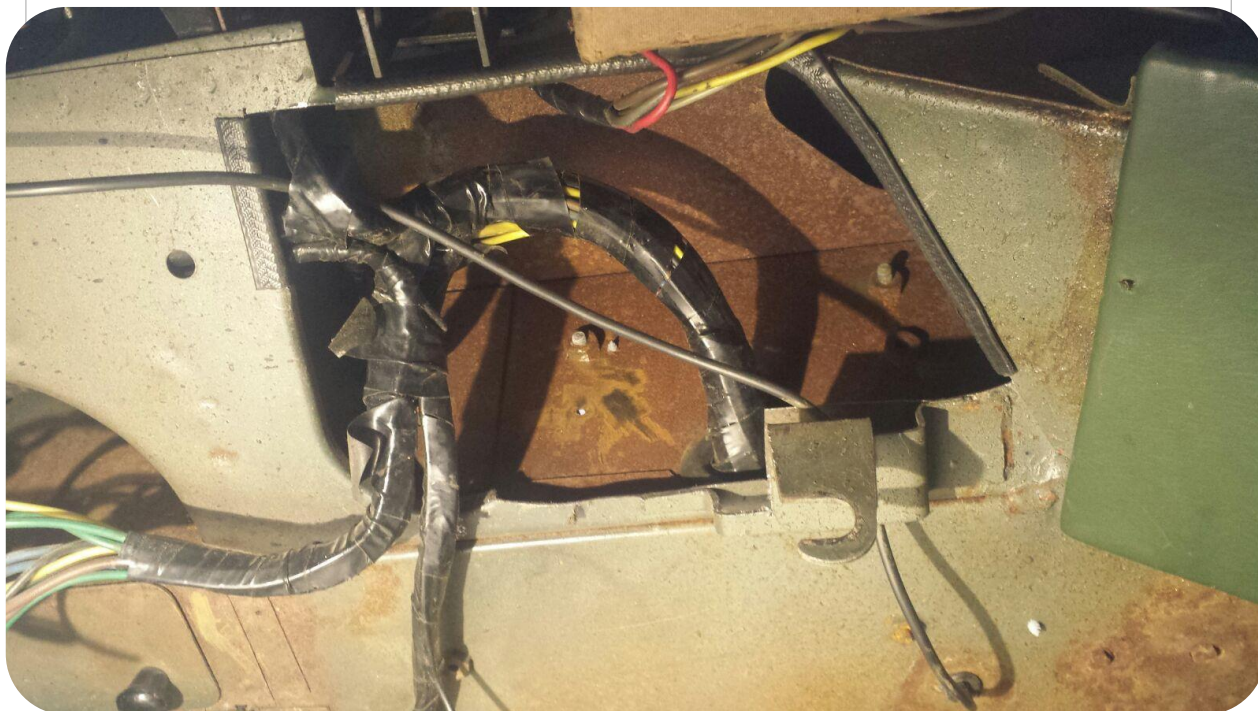
Stap 15. (XK150 regular central heater LHD)
Zaag weg wat nodig is om de EZ-unit te laten passen. Voor het voorbeeld kan je de foto bekijken. De EZ unit motor moet naar rechts wijzen.

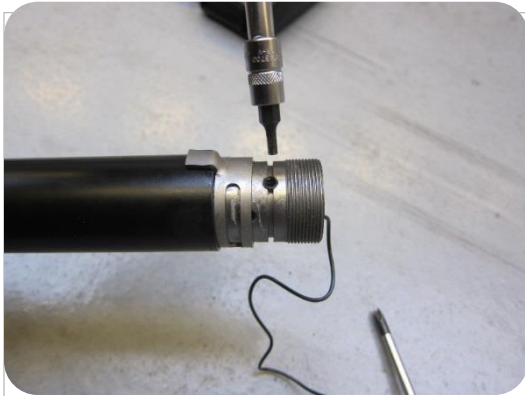
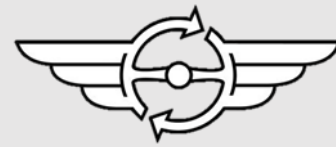




Step 16. (XK150 RHD)

Cut away what is necessary to fit the EZ power steering unit. For an example, look at the picture. The electric motor must point to the right.



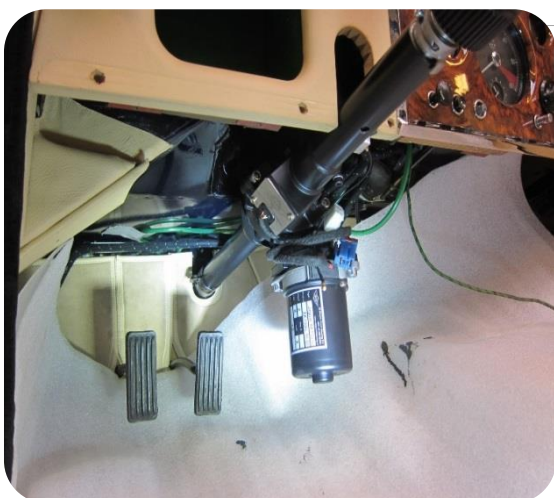


Step 17.

Remove the grub screw from the steering shaft of the EZ unit. Slide the original upper steering shaft in to the EZ unit. Check whether it slides smoothly. Use some lubricant if necessary. Also make sure that the horn wire is not damaged during assembly. Mount the grub screw with Loctite®.

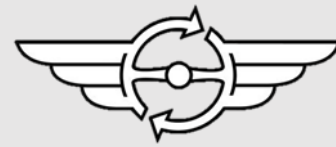
Do not over-tighten the grub screw, otherwise the shaft will not slide smoothly.

Then mount the clamping collet and the knurled nut on the EZ unit. Loosen the upper clamping bolt of the EZ unit before mounting the EZ unit. (see step 20)



Step 18.

Install the EZ unit, insert the output shaft through the bulkhead and into the splined coupling during installation. Pay attention to the position of flat side of the output shaft in relation to the bolt hole of the splined coupling! Then install the upper bolt of the steering column together with the bolt of the splined coupling, do NOT fully tighten them yet!



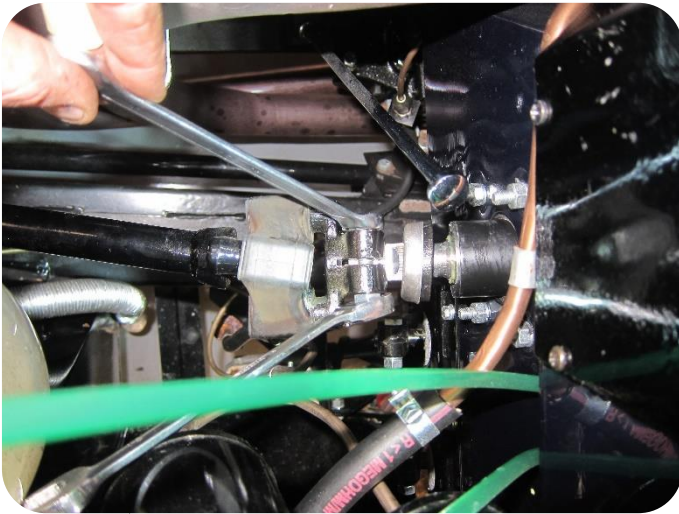
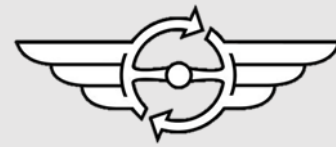
Step 19.

Fit the shims and M8x25 bolt supplied into the original clamp at the bulkhead, do NOT tighten this bolt yet!



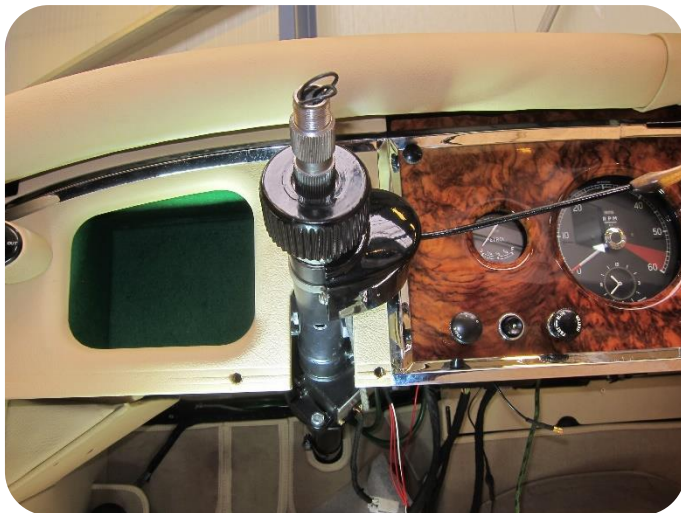
Step 20.

Turn the unit to the correct position. After this, retighten the clamping bolt of the EZ unit which hold the electric motor in position. Then push the column as high as possible into the fitting of the dashboard. Also press the column as deeply as possible into the clamp in the engine compartment. This usually creates just enough space to mount the ECU between the dashboard and the electric motor. After this, the upper mounting bolt and the lower clamping bolt at the bulkhead can be tightened.



Step 21.

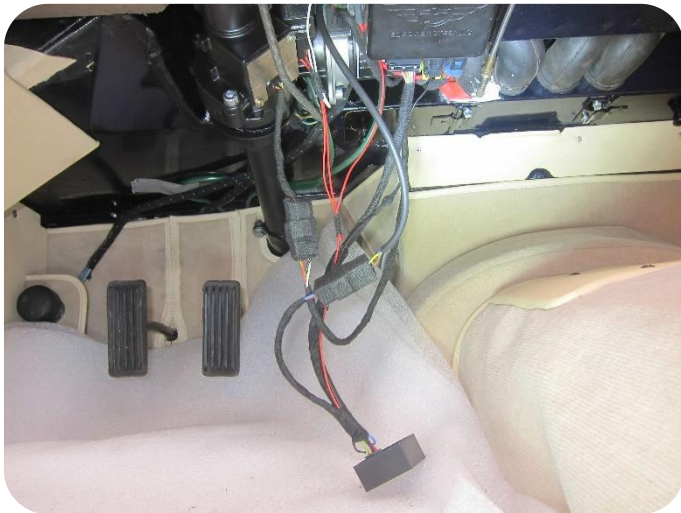
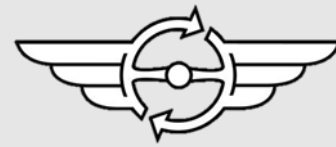
Then tighten the bolt of the splined coupling in the engine compartment.



Step 22.

Mount the indicator switch to the EZ unit. After a test drive (straight ahead position of the steering wheel), adjust the position of the indicator canceling ring in a so called 9-clock position when the front wheels are pointing straight ahead. if necessary. Find a suitable location for the ECU and mount it. Keep in mind that the lower (dashboard) cover still needs to be mounted (if applicable).





Step 23.

Connect the EZ harness to the ECU. Also connect the already mounted speed sensor connector to the EZ harness.

Step 24.

Connect the original horn wire to the spring-loaded contact of the EZ unit.

Step 25.

Connect the thick red wire (30+) from the fuse holder directly to the positive battery terminal or to the starter relay on the firewall. It is advisable to insulate the wire with an extra heat shrink.

Step 26.

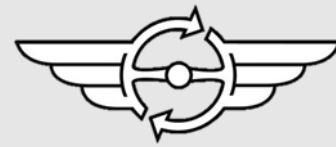
Connect the thin red wire (15+) to a contact switched power supply (see point 2)

Step 27.

Connect the black wire (31-) to a suitable clean ground/ negative earth point.

Step 28.

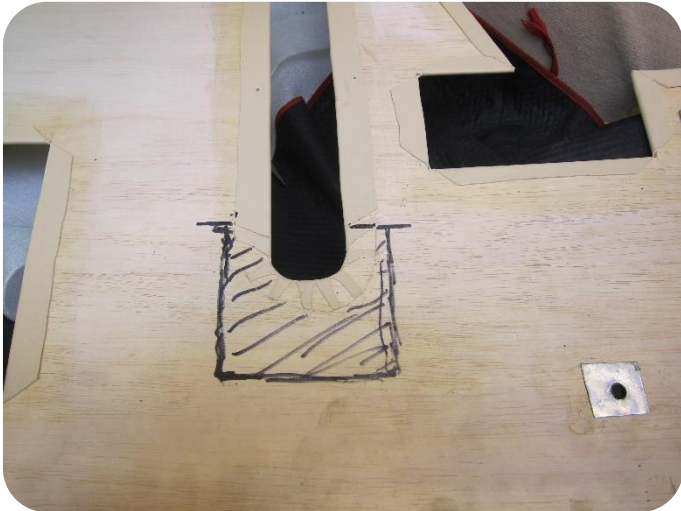
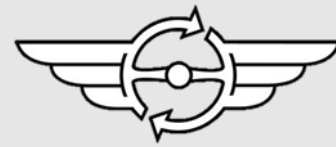
Mount the steering wheel. Re-connect the previously disconnected battery negative terminal lead. After switching on the ignition a click can be heard from the ECU, the system is now operational, check this by turning the steering for lighter movement. After switching off the ignition a click is heard again after about 3 seconds. The system is now switched off.



Step 29.

Fit the spiral spring around the steering shaft and fit the chrome trim strip previously removed to the dashboard.





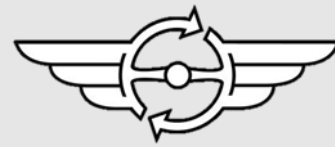
Step 30.

If applicable, the lower dashboard cover may need to be altered to provide room for the EZ unit. See photos on the left for more clarity. Use, for example, a Stanley knife to alter the bottom plate. Try not to damage the lining.



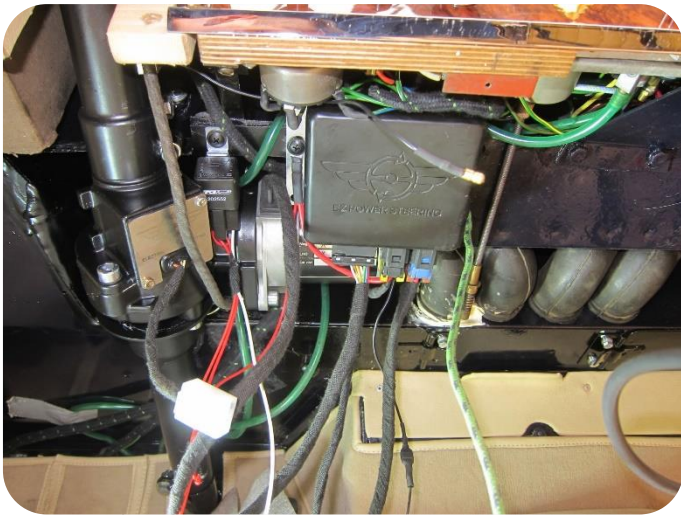
Step 31.

Mount the lower cover under the dashboard. Due to the alteration, the padding on the lower plate can form around the EZ unit.



Step 32.

Take a test drive and check all the systems again. Also check if the position of the steering wheel is correct, if not, adjust it. Connect the horn push to the horn wire of the EZ unit. Install the horn push back into the steering hub with the grub screws. Make sure that the horn wire is long enough for the steering wheel adjustment.



Step 33.

The end result.