EZ ELECTRIC POWER STEERING

INSTALLATION MANUAL

Ferrari Testarossa

CONTENTS

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.

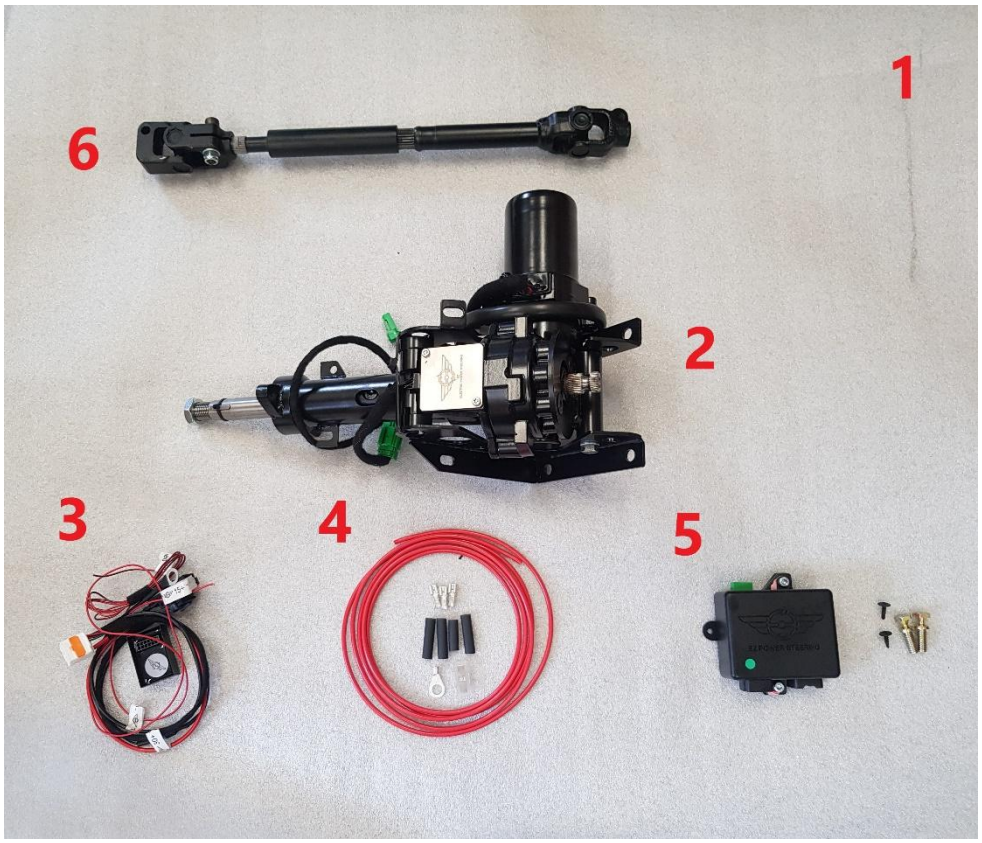
Before installation, compare the EZ POWER STEERING column with the original column. Check that the dimensions are the same. Also fit the steering wheel to the column.

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.

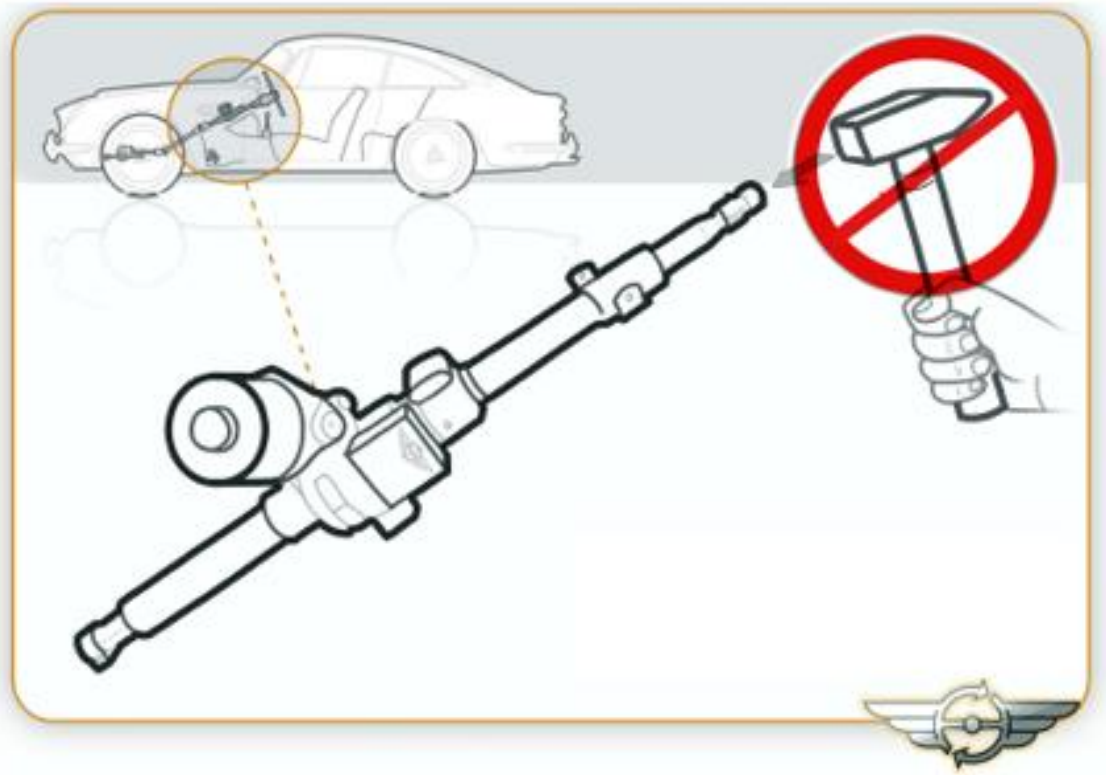
If you think that any changes are needed in this manual, we would like to receive your pictures and comments. With your feedback we can improve our manuals!

OVERVIEW OF THE KIT

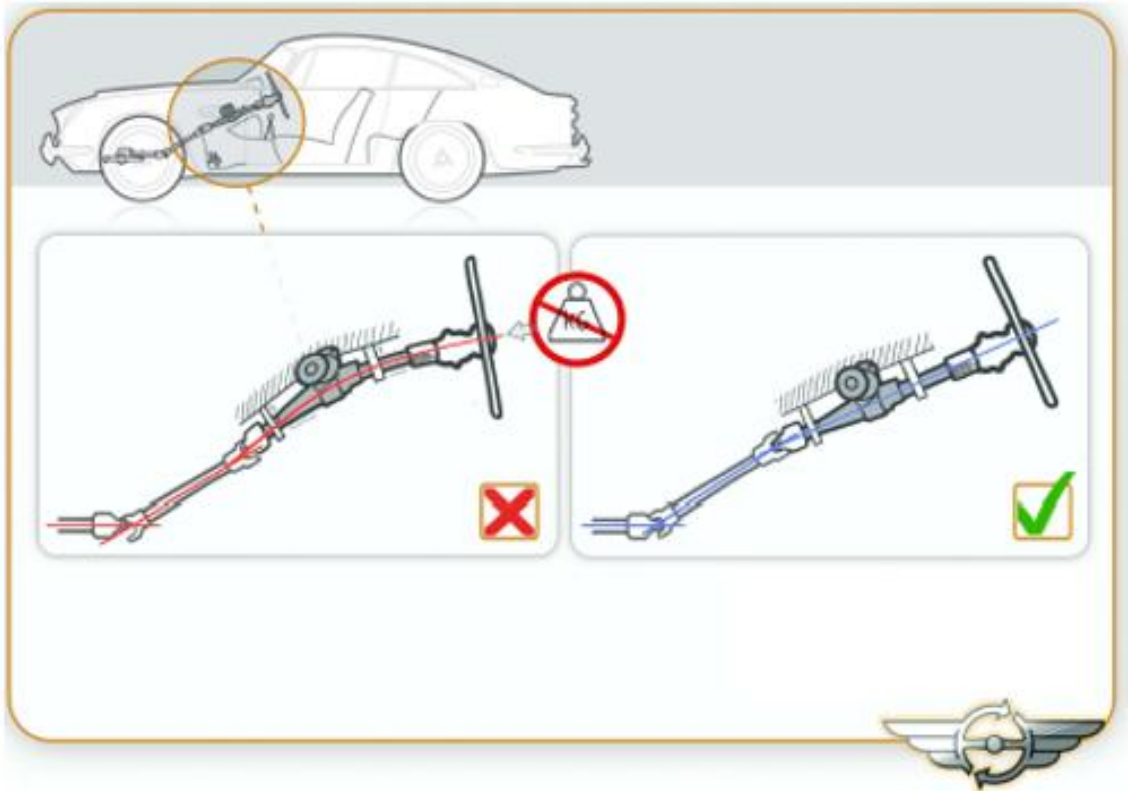


EZ-FTR-1. Complete set
EZ-FTR-2. Power steering unit
EZ-FTR-3. Wire harness including controller
EZ-FTR-4. Power supply cable
EZ-FTR-5. ECU
EZ-FTR-6. EZ- steering shaft, this replaces the original steering shaft

INSTALLATION



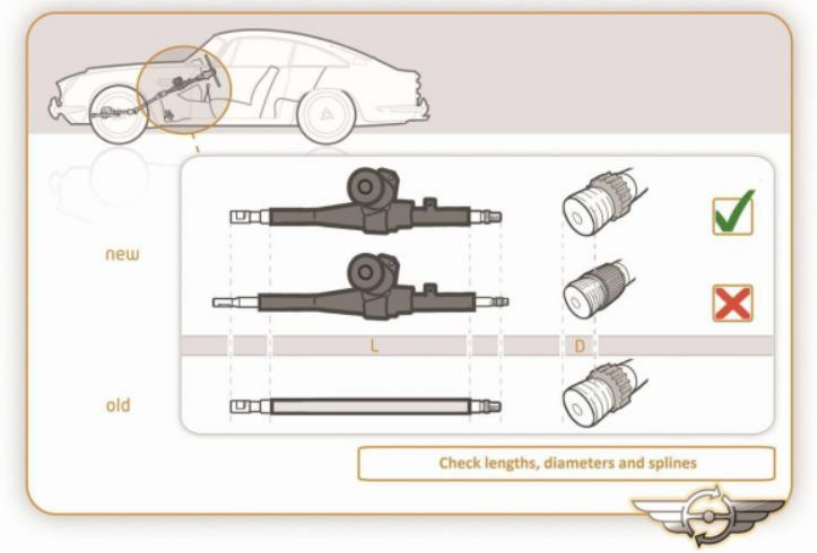
Never hit the input shaft with an object during or after installation. This can negatively affect the sensors.



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

Check length, diameter and splines

Compare the EZ Power Steering Column (EZ-unit) with the original steering column before installing it. The total length of the EZ unit may differ slightly from that of the original steering column to make installation easier. 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:

	strength class 8.8	strength class 10.9	strength class 12.9
Bolt M6	11	16	19
Bolt M8	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.

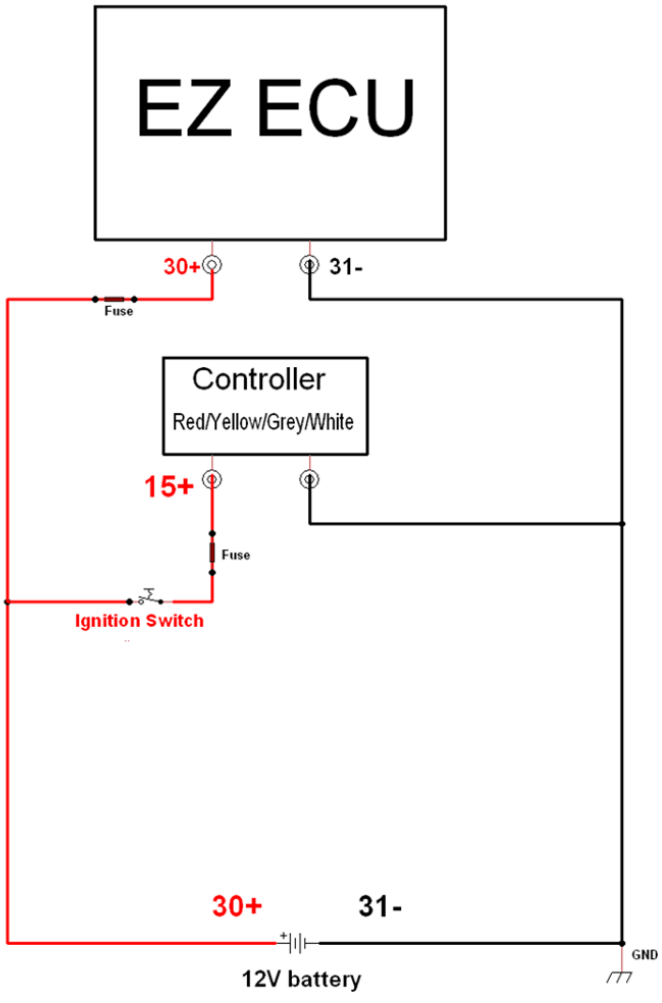
Voltage

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

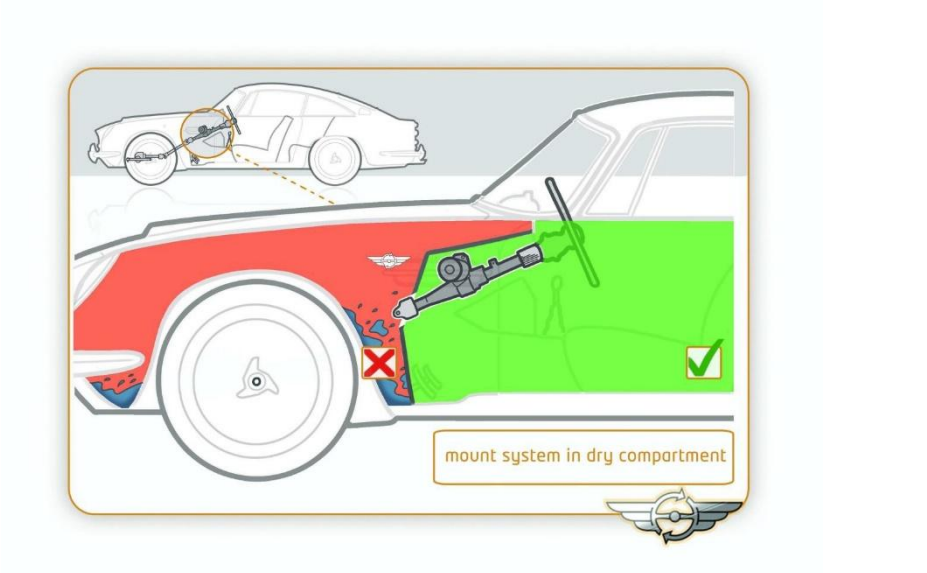
The thin red wire is ignition switched (15+) and should be connected to a fused contact switched power supply. Check the voltage between the ignition switched plus against earth, with switched on ignition, this must be at least 11,5 Volt. If it drops below this the electric power steering will switch 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



The EZ unit, wiring loom, ECU and other electric components may not be exposed to high temperatures (60 degrees centigrade or higher) or a wet environment

Step 1.

Inspect the tyre pressure and test drive the car. Check that the steering wheel self-centers. Exeman that the steering and instruments are not defective. If everything this is in order, proceed with the conversion..

Step 2.

Find a fused power supply switched via the ignition. This is necessary for the power supply of the EZ powersteering unit (see step 22). The switched power supply can either be taken from the ignition switch or from the fuse box. Then disconnect the battery negative terminal lead..

Step 3.

Align the steering system to its neutral position and mark this position on the steering shaft at the firewall.

Step 4.

Remove the leather protection from the steering column.

Step 5.

Remove the steering wheel: remove the small outer bolts first to get access to the central mounting bolt.

Step 6.

Remove the steering column covers to get access to the steering column switches. Then remove the switches.

Step 7.

Remove the tension pin from the height adjustment system from the original steering column.

Step 8.

Remove height adjustment pin and let the column pivot at the lower mounting points to get access to the connectors.

Step 9.

Disconnect the connectors and remove the lower mounting bolts. Remove column afterwards

Step 10.

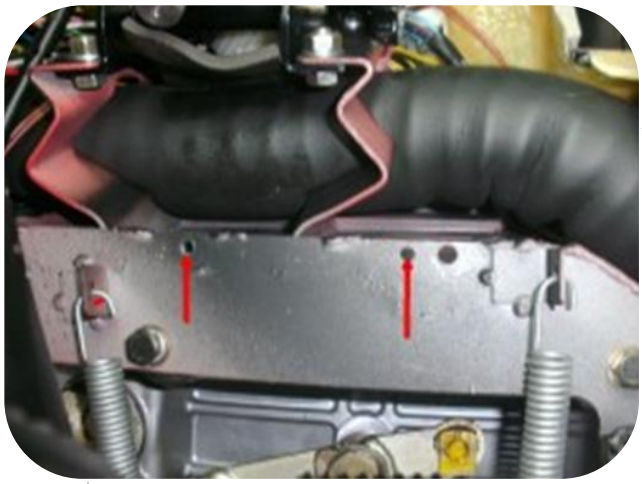
Remove the original mounting brackets on both sides.

Step 11.

Remove the original ignition lock from the original steering column and fit it to the power steering column.

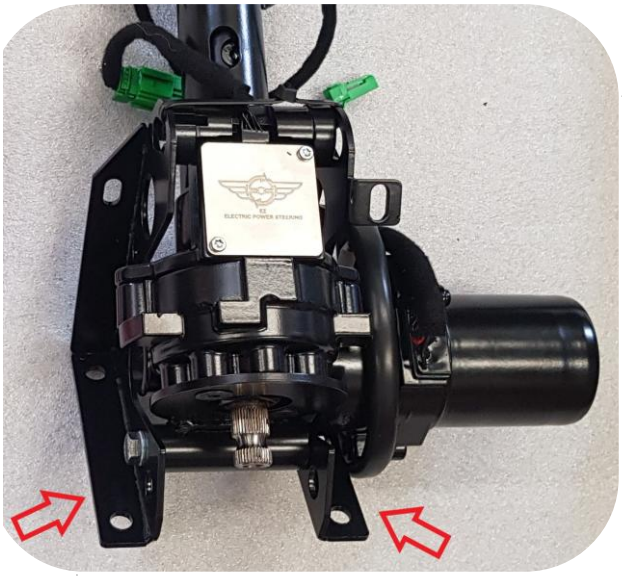
Step 12.

In some cases, it's necessary to remove a small piece from the dash. See the photo for the cutting line, which is marked in red.



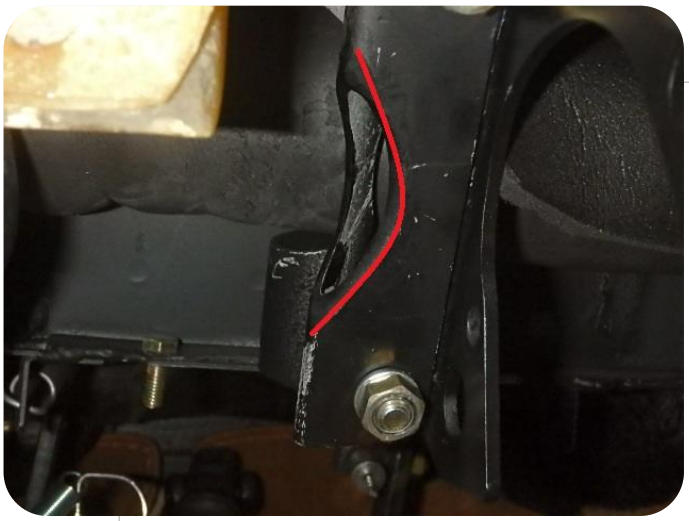
Step 13.

Drill 2 holes to fit the ECU. Use the ECU as a template.



Step 14.

First disassemble the mounting plates of the EZ powersteering unit and then install these mounting plates in the car.

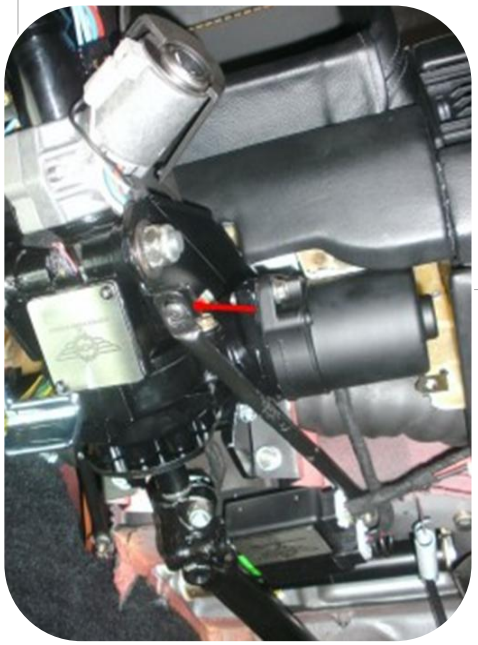


Note

Sometimes it is necessary to make a recess in order to make maximum use of the height adjustment.

Step 15.

Fit the universal joint from the EZ-steering shaft to the unit and fit the lower mounting bolts. Let the unit pivot at the lower bolts to get access to the connectors. Reconnect them and raise the unit to the right position to fit the height adjustment bolt.
CAUTION: watch the connectors while raising the unit. This is a tight fit.



Step 16.

Bend the long end from the right-side mounting bar to a straight position and fit the bar to the unit.

Step 17.

Fit the steering column switches to the power steering unit.

Step 18.

Fit the steering column covers and the steering wheel.

Step 19.

Connect the black wire (31-) to a suitable earth point.

Step 20.

Connect the speed signal wire (red/black) from the power steering harness to the speed signal wire from the car (red/black). Isolate the wires afterwards.

Step 21.

Connect the thick red wire (30+) from the fuse holder directly to the positive battery. It is advisable to extra isolate the wire.

Step 22.

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

Step 23.

Nicely fit all wires underneath the dash. Refit the leather dash cover.

Step 24.

Connect the black wire (31-) to a suitable clean ground.

Step 25.

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 making steering movements. After switching off the ignition a click is heard again after about 3 seconds. The system is now switched off.

Step 26.

Take a test drive and check all systems again.