

EZ ELECTRIC POWER STEERING
INSTALLATION MANUAL
PORSCHE 911 (WITH AIR CONDITIONING)





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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 custom 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, 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.

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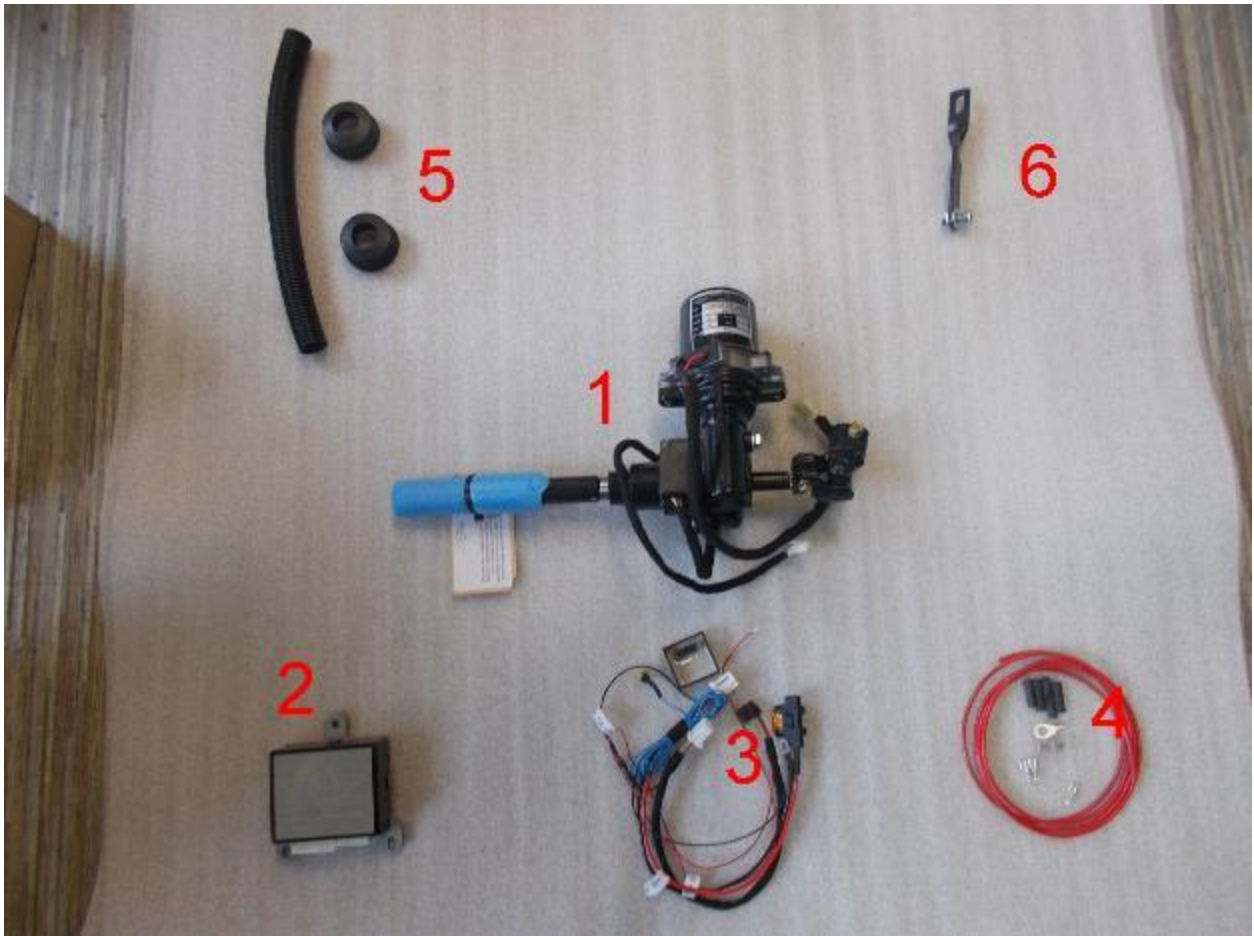
This manual should be read carefully to avoid errors. Check whether all parts of the set are present. This can be done on the basis of the picture in this manual. Before installation, compare the EZ POWER STEERING column with the original column. Check that the dimensions are the same. Also fit the steering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



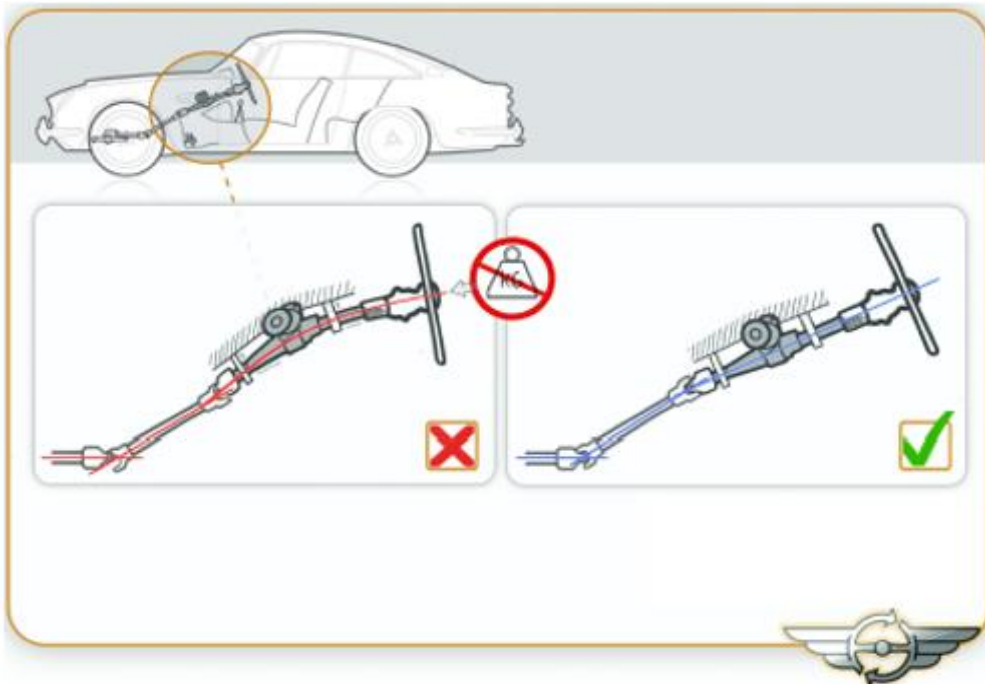
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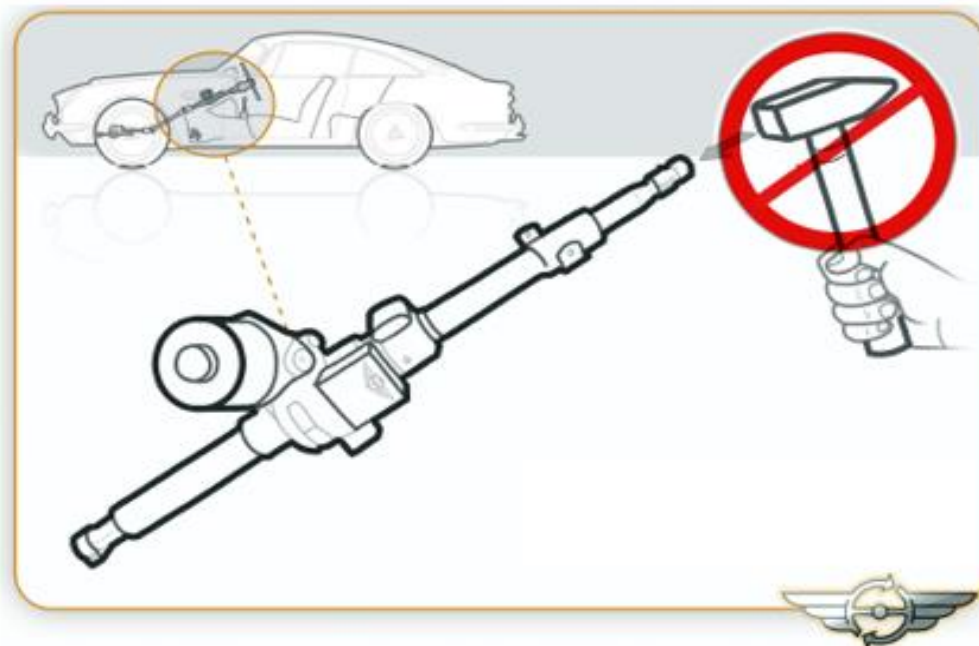
1. Ez powersteering unit
2. EZ ECU
3. 3 Cable harness
4. Power Cable (30+)
5. Thin stove hose
6. Mounting bracket



INSTALLATION



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

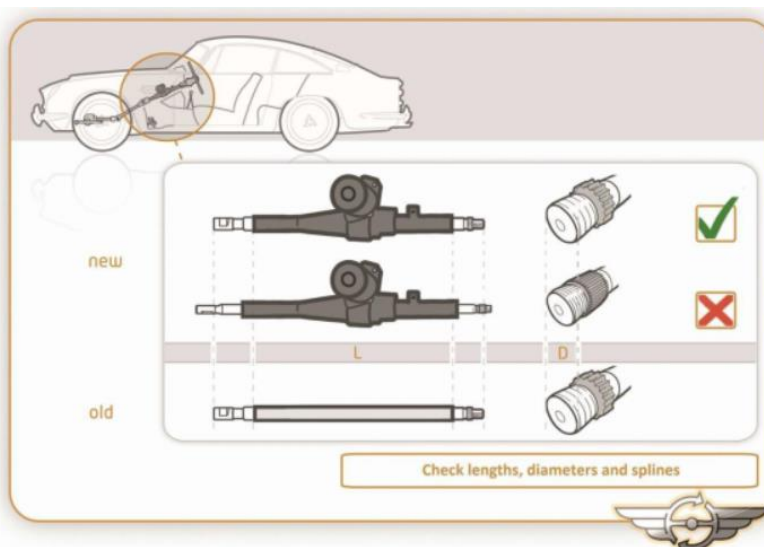


Never strike the input shaft with an object during or after assembly. This can adversely affect the sensors.

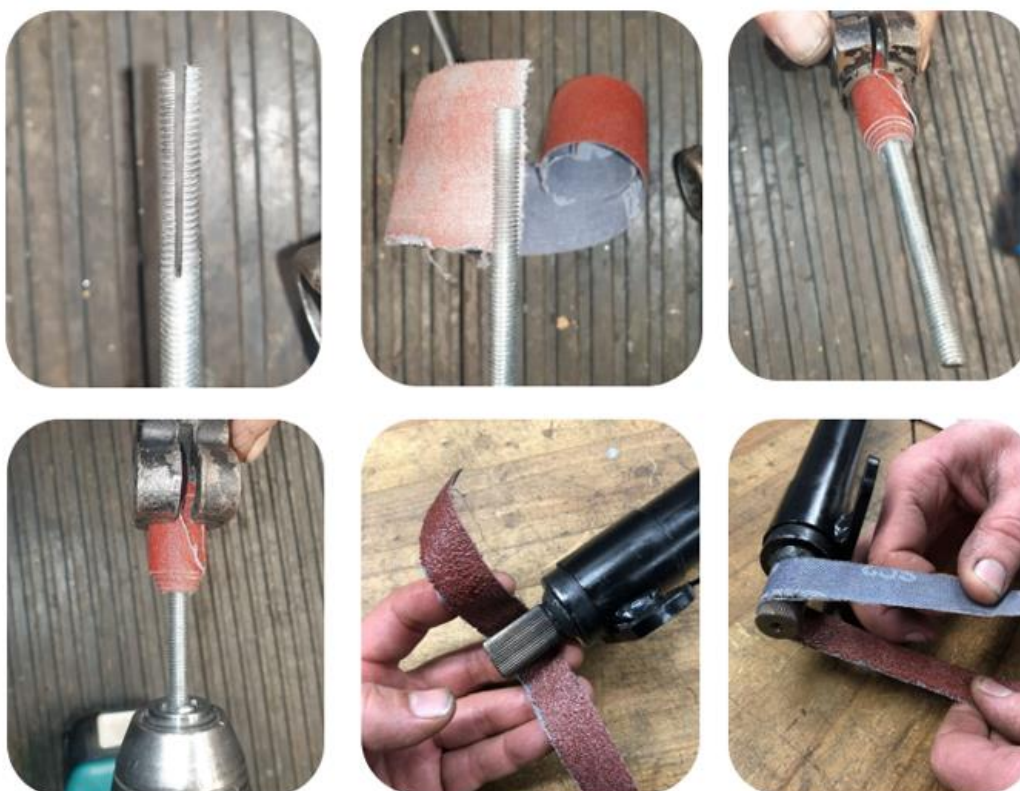


Check length, diameter and splines

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 faulty. If all this is in order, proceed with the conversion...

Step 2.

Remove the carpet from the trunk. Locate a contact switched 12V plus, use the eighth fuse counted from the driver. Check it! Make sure this wire is mounted on the fused side (usually at the bottom) mark this side (see point 22). After this, disconnect the ground cable from the battery and put the steering in the middle position.



Step 3.

Then dismantle the protection plate behind which the stove body is mounted. This plate is attached with 4 bolts.



Step 4.

Disconnect the stove hoses and control cables and plug connection from the stove unit. Then disassemble the manifold (see photo). This is attached with 1 screw (it is clamped at the back).



Step 5.

Dismantle the grille under the windscreen, it is attached with 4 screws.



Step 6a.

The stove unit itself is attached with 2 screws (under the grate). After removing these screws the stove unit can be dismantled.

To make the disassembly of the whole stove unit easier, it is possible to first remove the motor (it is attached with 2 screws).



Step 6b.

Stove unit removed.



Step 7.

Dismantle the protective cover over the steering shaft. This is mounted with 2 clips. Before reassembling it, it must be adjusted (see item 27).



Step 8.

Check that the steering is in the centre position, mark this position on the steering rack. Remove the lower bolt from the universal joint.



Step 9.

Dismantle the original mounting bracket. It is attached with 2x M8 bolts.



Step 10.

Remove the bolt from the upper universal joint. The upper universal joint remains in the car. The lower universal joint can now be removed with the steering axle itself.



Step 11.

Disassembled steering axle with universal joint.



Step 12.

In order to obtain space for the EZ unit, excess material must be removed. Use the supplied jig and the EZ unit to determine how much should be removed. It is possible that, in addition to the jig, another part may need to be removed in order to place the unit free of stress.



Step 13.

Remove the electric motor from the EZ unit. This to make it easier to fit it into the car.



Step 14.

After this a recess should be knocked to provide enough space for the EZ unit. Use the EZ unit to determine the correct location. See picture as an example.

TIP: Use a spherical hammer.



Step 15.

The EZ unit is provided with different colour markings to mark the angular rotation of the universal joints. This depends on the universal joint used by Porsche. There are 2 versions, see item 15. The type of universal joint mounted in the car determines which colour marking is used.



Step 15a.

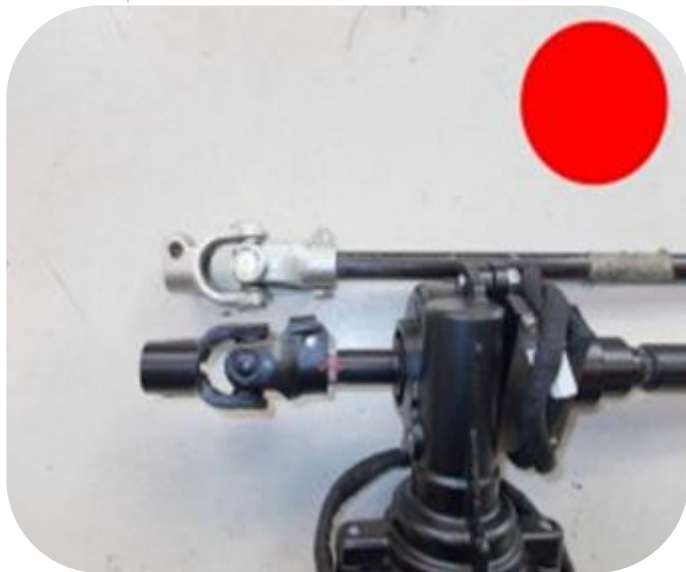
Steel crosslink.



Step 15b.
Cast iron cross joint.



Step 16a.
If a steel universal joint is fitted, use the yellow markings. Make sure that these correspond to the coupling on the EZ unit.



Step 16b.

If a cast iron cross joint is fitted, use the red markings. Make sure that these correspond to the coupling of the EZ unit. The red marking is 9 teeth compared to the yellow marking.

In this case it is necessary to move the handlebars 90 degrees.

The input shaft may vary in length. Be sure to pull out the shaft carefully, otherwise you may damage the sensor. If you accidentally pull it out completely, make sure the two points are aligned when you replace it.



Step 17.

Mount the EZ unit in the car. Check again that all markings are in line and that the EZ unit does not touch the body anywhere. Do not forget to re-attach the mounting bracket (point 9) and cross couplings.



Step 18.

In order to secure the mounting strip, a hole must be drilled. Mount the mounting strip to the EZ unit and use it to determine the position of the hole. Mark this position and then drill the hole ($\text{Ø}8.5\text{mm}$). Then secure the mounting strip with the supplied bolts. This strip is necessary to absorb the reaction forces of the unit. Then mount the electric motor on the EZ unit.



Step 19.

Mount the EZ ECU on the brake fluid holder and connect the EZ wiring harness to the ECU.



Step 20.

Connect the thick red wire (30+) via the fuse holder to the battery plus.



Step 21.

Connect the thin red wire (15+) to a contact switched 12v plus. Normally this is the eighth fuse from the driver's side. (Check this). Make sure that the 15+ is connected to the fused side (see point 2).

Step 22.

Connect the black wire 31 to a suitable ground point.



Step 23.

Remove the odometer from the dashboard, it can normally be pushed out of the dashboard. This is mounted in a rubber and can therefore be a bit stuck.



Step 24.

Connect the blue cable of the EZ Unit to the electronic speed signal (31B).



Step 25.

Install the odometer in the dashboard, making sure that the blue wire is not caught between the wiper mechanism.



Step 26.

Mount the stove house with accessories in the car.



Step 27.

Mount the thinner stove hose, some adjustments need to be made.

Step 27a.

Saw off 2.5cm of the tube (see photo 27).



Step 27b.

Slide 1 of the supplied adapter rubbers into the manifold piece.



Step 27c.

Mount the other rubber adapter in the original hose.



Step 27d.

Now mount the thin hose in both rubber reducers (see picture). It now fits between the EZ unit and the heater unit.



Step 28.

Mount the grille under the windscreen.



Step 29.

Before reassembling the protective cap, it must be shortened so that it connects to the EZ unit. Tighten the protective cap with cable ties.



Step 30.

Secure all cabling and mount the protective plate behind the stove body. A recess must be made in this protection plate to allow space for the electric motor. See photo as an example. When this is done, the carpet can be placed back in the trunk.

Step 31.

Connect the ground cable to the battery min. After switching on the ignition, a click can be heard from the ECU, the system is now operational. Check this. The system switches off slowly, this is noticeable by the click that is audible a few seconds after switching off the ignition.

Step 32.

Test drive the car and again check all systems for proper functioning.

