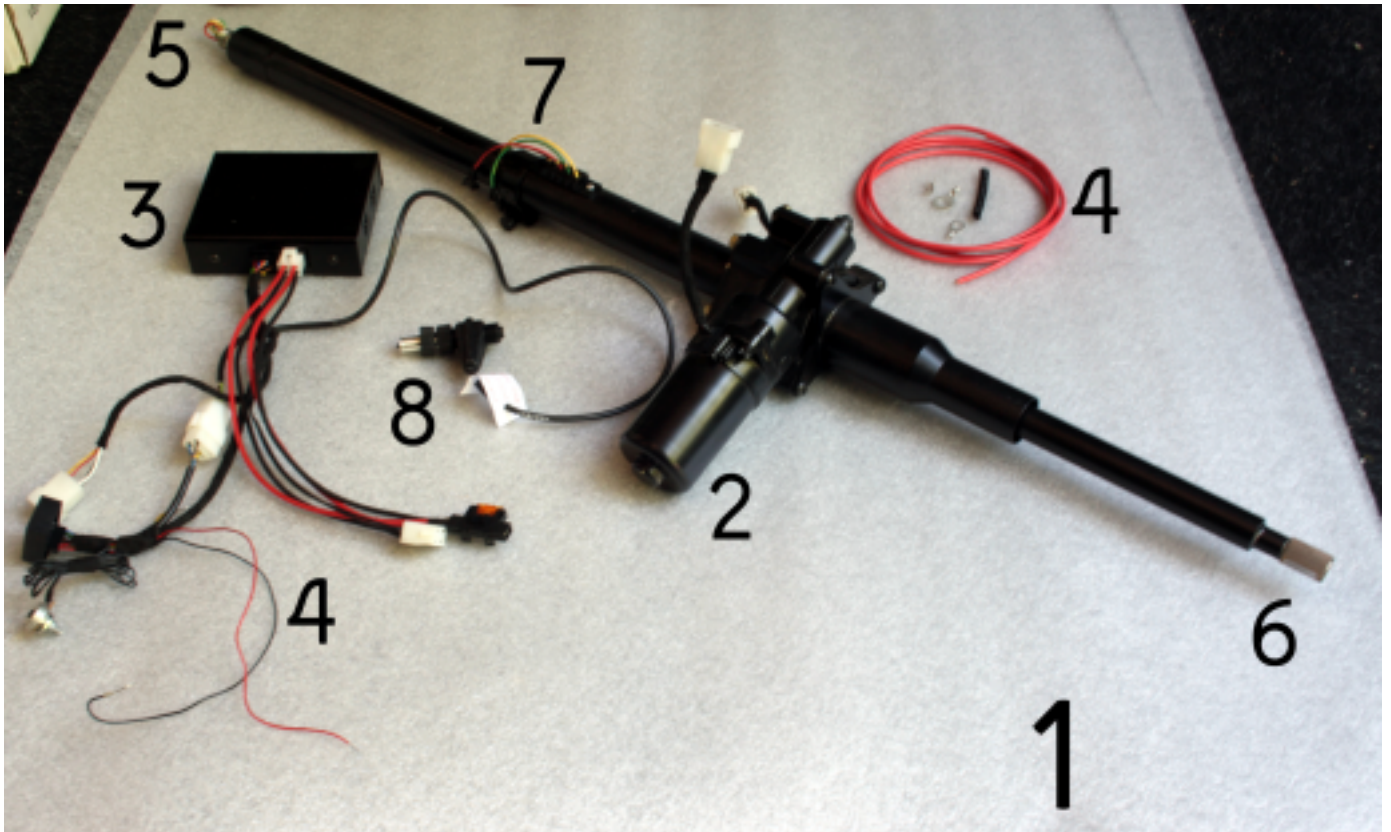


EZ ELECTRIC POWER STEERING



INSTALLATION MANUAL MERCEDES-BENZ 190 SL (W 121 B II)

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EZ-M190SL-1. EZ Powersteering, complete set

EZ-M190SL-2. Electric motor

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EZ-M190SL-8. Speed sensor

1. Take the car for a test drive. Check the functions of the indicator switch, horn and high beam switch. If everything functions correctly, proceed with the conversion.



2. Put the steering wheel in a straight ahead position. Mark this position on the steering box and the steering shaft (see picture). If available, the steering box can also be blocked with an original pointed bolt to lock the steering in the middle position..



3. Find an ignition switched 12V plus wire and mark this. Subsequently, remove the earth cable from the battery.



4. Remove the center cap of the steering wheel. Use a small allen key and press the cap out through the hole in the back.



- 5a. Screw off the center nut and remove chrome signal ring.
- 5b. Remove the indicator switch off the steering column (American version).
- 5c. Remove the steering lock (when applicable).



6. Remove the mounting bolt from the universal joint in the steering department. Loosen the steering wheel from the steering axle, but don't remove it yet.



7. Pull the steering tube out of the universal joint by means of the steering wheel. Pull the wiring loom out of the steering tube and steering box and re-route it through the firewall to the area under the dashboard.



8. Remove the steering wheel.



9. Loosen the clamps on the steering tube clamp on the firewall.



10. Remove the omega shaped bracket around the steering tube, under the dashboard. Please note, there is a rubber in between!



11. Open the top part of the air filter housing. Remove the bolt and replace it for a longer one (M6 x 25 mm).



12. Place the ECU. Attach the base plate to the bolt from the air filter and to the bolt which retains the wiring.

13. Connect the thick red wire (30+) through the fuse holder directly to the battery plus.

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



15. Connect the thin red wire (15+) to an ignition switched 12v plus (see point 2).



16. If necessary, loosen the banjo bolt from the brake booster to rotate the vacuum line from the brake booster. By doing this, you will create space for the assembly of the EZ steering column.



17a. Install the speedsensor behind the speedometer (only at a 34mm diameter steering column)

17b. At a 38mm diameter steering column an universal speedsensor is used. This is installed in the speedo cable. See last page from the manual.



18. Ask a second person to assist and place the EZ steering column in the car. In case of a LHD car, place the engine in the right direction, towards the center console.

19. Place the heatshrink over the input shaft and leave it (do not heat it yet!) (see photo).

20. Slide the lower part of the input tube (with triangular flange) with clamp, on the shaft coming out of the EZ steering column. Do not fasten it yet.

21. Put the long input shaft with wiring through the dashboard and put this on the splined shaft coming out of the power steering unit. Take the key out of the original steering shaft and mount this in the EZ input shaft. Ensure that the blocking bolt is still in the steering box or that the markings are still aligned. Put the steering wheel on the input shaft and ensure that it is in the straight ahead position (don't forget to slide the input shaft through the steering lock when applicable!)

22. Slide the input shaft on the EZ steering column. Remove the steering wheel and the key.



23. Mount the three allen bolts/grub screws in the input shaft. Slide the heatshrink over the grubscrews and use a blow dryer to shrink the rubber.

24. Slide the lower part of the input tube down on to the power steering unit and fit the three bolts holding the triangular flange to the unit.



25. Slide the upper part of the input tube through the dashboard into the already fitted lower input tube. Do not tighten the clamp yet.



26. Put the omega shaped clamp back on the input tube and under the dashboard. Do not fasten the clamp yet. Do not forget to place the rubber back.

27. Mount the steering wheel on the input shaft, temporarily. Adjust the space between the steering tube and the steering wheel.

28. Tighten the bolt in the U-joint, put the clamp back on the firewall, fasten the clamp on the steering tube and the omega shaped clamp under the dashboard. Tighten the steering lock (where applicable) and tighten the steering wheel.



29. Mount the springloaded contacts in the aluminum holder so they align with the copper rings. DO not overtighten the grub screws, it must be possible to pull the wire and hear it snap back due to the spring.



30. Use a Multimeter to determine the positions of the wires of the horn, indicator power, Left and Right. The Ground wire is no longer necessary, insulate it.



31. Mount the signal ring. Note the order of the connecting parts!

32. Mount the switch on the steering column.

33. Fit the horn button on the steering wheel.

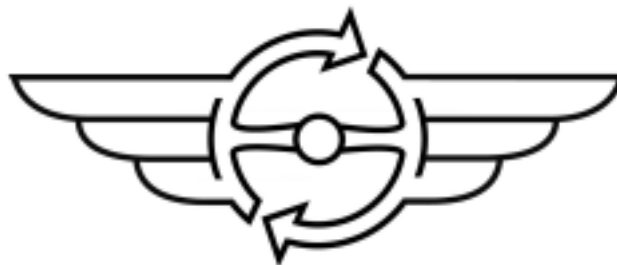
34. Connect the connectors to the computer.

35. Make sure the sliding contacts are free and not hindered by other cables.

36. Connect the ground cable to the battery.


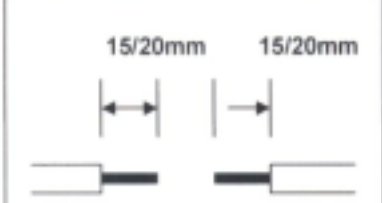
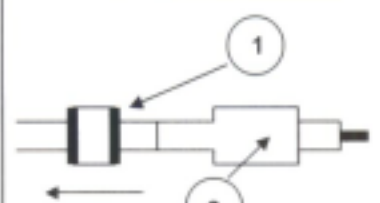
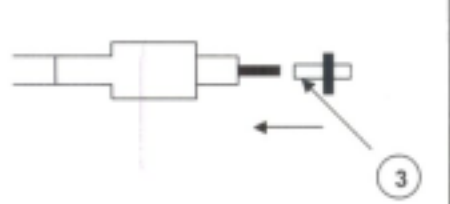
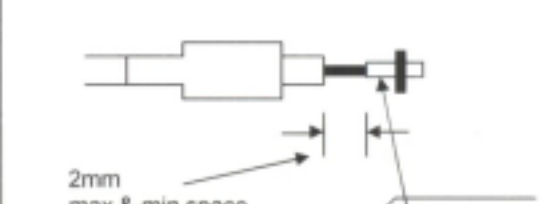
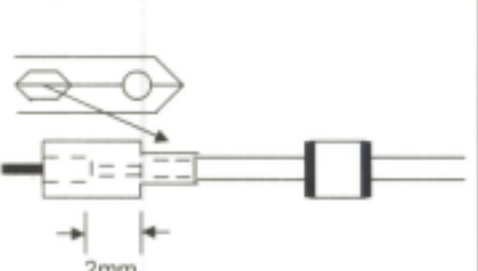
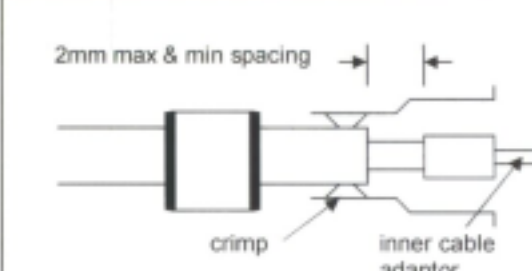
37. Turn on the ignition. The ECU should make a 'click' sound. The powersteering is now operational. Check this! After turning off the ignition it takes about 3 seconds before it makes a 'click' sound. Check this as well.

38. Take a test drive with the car. Check the functions of the indicator switch, horn and main beam. Check if the steering wheel comes back in a straight ahead position. Check if the power steering is speed-dependent: the power decreases progressively as the speed increases.



The unit is designed to operate in-line with commonly used automotive speedo cables. The Hunter universal transducer offers equipment manufacturers and retrofit workshops a highly reliable rotary transducer with excellent mark space ratio and at a competitive price.

INSTALLATION

 <p>Fig. 1</p>	 <p>Fig. 2</p>	 <p>Fig. 3</p>
<p>Select suitable position on speedo cable in engine bay. Cut through both inner and outer cables using a fine tooth hacksaw (32 teeth/inch) is recommended).</p>	<p>Cut back outer cable 15mm from the cut ends, leaving inner cable showing. Ensure that inner cable is not withdrawn from its location at speedo head and gearbox, otherwise it could be cut too short.</p>	<p>Slide unit (1) and sleeve (2) over the outer cable away from the cut ends.</p>
 <p>Fig. 4</p>	 <p>Fig. 5</p>	
<p>Slide the drive pin (3) over the inner cable.</p>	<p>Crimp the unit on to the inner speed cable using the small crimping head on the crimping pliers.</p>	
 <p>Fig. 6</p>	 <p>Fig. 7</p>	
<p>Slide sleeve forward until it sits 2mm away from the outer cable. Crimp on to outer cable using large slot on pliers.</p>	<p>It is essential when crimping the ferrule to the outer cable that there is a space between the rear face of the brass drive pin and the cut end of the outer cable. The cross section above shows the correct fitting when the nut is tightened on the transducer. Note: any rubbing of the rear face of the adaptor and the cut end of the outer cable will cause speedo flickering and eventually inner cable failure.</p>	