ZF Aftermarket Knows the Right Path for Replacing Steering Pumps

- **A Step-by-Step Guide to Steering Pump Replacement**
- **TRW Steering pumps with jumper cable are suitable for every car model**

Electro-hydraulic power steering (EHPS) is an electrically assisted power steering system from which combines the advantages of electronically controlled, demand-based steering with robust hydraulic actuation. Comprising a compact motor pump unit and conventional rack-and-pinion steering, the system operates independently of the combustion engine, which helps to reduce the vehicle's fuel consumption. The TRW steering system also provides more comfort, and greater precision. In addition, it can be easily replaced if needed; workshops just need to keep a few criteria in mind.

If the turning wheel is difficult to turn or the power steering pump develops a leak or loses its ability to circulate fluid properly, it will need to be replaced. ZF Aftermarket experts describe a straightforward procedure for replacing the EHPS pump.

First of all, the workshop has to ensure that the ignition is switched off and wear protective glasses and clothes suitable to the job. After reading the fitting instruction for details, enclosed in the box, the mechanic has to compare the new pump with the one fitted to the car, checking that all connections and mountings are identical.

Depending on the vehicle, a jumper cable may be required to adapt the connectors on the new pump to those of the vehicle wiring loom on later vehicles.

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ZF Aftermarket recommends to remove as much hydraulic fluid as possible from the pump reservoir. Unscrew the high pressure outlet pipe union and pull the pipe from the pump, catching any released fluid on a white cloth or paper towel for inspection. If the fluid contains dirt or metal swarf the system should be completely flushed. The next steps should be carried out in the same way: Remove the clamp from the return line using suitable pliers and pull the line from the pump reservoir. Unscrew the three mounting bolts, manoeuvre the pump out of its bracket and disconnect the electrical plugs – the pump can now be removed from the vehicle. Inspect the connector on the vehicle harness to ensure there are no signs of corrosion due to water ingress.

ZF Aftermarket stresses the importance to compare the electrical socket on the new pump with the plug on the vehicle wiring loom. If they match, the mechanics connect the plug directly to the socket on the pump. Later models have a different connector configuration and in this instance, the wiring jumper delivered with the pump must be installed. Connect the jumper between the socket on the pump and the plug on the vehicle wiring loom, and secure its earth cable to the earthing point adjacent to the pump installation. Remove any corrosion from the earthing point first, and use a new screw to ensure sound electrical contact. When the new pump is installed in its bracket and secured with the original mounting bolts, the mechanic torques them to the vehicle manufacturer's specification. Reconnect the return hose to the pump reservoir and clamp in place, then connect the high pressure outlet pipe and torque the union nut to its specified value.

With the pump in position and all connections made, the system can be refilled and bled. The mechanics has to remove the filler cap from the pump reservoir and fill to the MAX level mark with the vehicle manufacturer's recommended new hydraulic fluid. Afterwards, he raises the vehicle until the wheels are clear of the ground, starts the engine and immediately rechecks the fluid level in the reservoir, as it may drop quickly. With the engine idling, slowly turn the steering wheel 10-15 times from left to right without reaching the steering limit. Keep a check on fluid level at all times, then top up to the MAX mark and replace the

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reservoir cap when bleeding is complete. Don't forget to check for leakages of the hydraulic system. It is important to clear any diagnostic fault codes before coding the new pump to the vehicle. From the diagnostic menu, load and activate the map corresponding to the vehicle. Finally, take the vehicle for a test drive.

With TRW steering racks, pumps and column drives fitted in one-in-three European vehicles, and a quarter of vehicles throughout the world, the workshop is always on the safe side when a steering system needs to be replaced. ZF Aftermarket offers this broad portfolio into the independent aftermarket always combined with the necessary technical information.

Caption:
A TRW steering system provides more comfort, and greater precision. In addition, it can be easily replaced if needed.

Photo: ZF

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of 146,000 with approximately 230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services in the automobile, truck and industrial technology sectors.

With integrated solutions and the entire ZF product portfolio, the ZF Aftermarket Division of ZF Friedrichshafen AG guarantees the performance and efficiency of vehicles throughout their life cycle. Its combination of established product brands, digital innovations, customized products and services, and a worldwide service network has made ZF a sought-after partner and number two in the global automotive aftermarket.

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