

Service Information

Brakes

For safety reasons, the parking brake cannot be activated for as long as the EMF control unit is in installation mode. If the EMF button is pulled, the EMF indicator lamp in the instrument cluster will flash yellow.

The exact procedure for bedding-in the service brakes is described in the Repair Instructions. The instructions must be followed exactly.

Adaptive M Chassis and Suspension

For standardization reasons, the continuous electronic damper control on the E89 is simply referred to as EDC.

A detailed functional description of the EDC can be found in Background Material E65 Dynamic Driving Systems from April 2001.

Dynamic Driving Systems

Cruise control with brake function is described in detail in the Participant's Manual E90 Dynamic Driving Systems.

Dynamic driving switch

The yellow DSC indicator and warning lamp and the DTC button have new symbols. Beginning with the F01/F02, these new DSC symbols will replace those previously used.

Replacing an EPS System

The EPS components consisting of steering torque sensor, EPS control module unit, electric motor with position sensor, reduction gear and steering rack form a single unit (often referred to as "EPS steering rack assembly") that can only be replaced as a complete unit. To do so, the unit has to be disconnected from the track rods and the lower end of the steering column.

After a new EPS steering rack is fitted, a front wheel and tracking alignment check is required. The commissioning sequence involves coding the EPS to match the vehicle model and the diagnosis function for learning the end-stop positions.

Intelligent Alternator Control and EPS

Detecting statuses involving high EPS output and raising the electrical system voltage constitute a control cycle that is completed within 2 seconds at most. As it is also an infrequent situation, it is unlikely that it will be the subject of customer complaints.

If a particularly observant customer complains of momentarily reduced power steering assistance, this control cycle may possibly be the cause. If there are repeated complaints, performing a diagnosis on the power supply is advisable.

Active Steering Wheel Reset

If a customer complains of the car "pulling to one side" the possible causes to be considered include not only a mechanical problem with the suspension/steering but also a signal or communication fault between the EPS and the steering column switch cluster/steering-angle sensor. In such a situation, the EPS is unable to provide the active steering wheel return function and this may be perceived by the customer as the vehicle "pulling to one side".

Therefore, before checking the wheel alignment, the EPS fault memory should be checked and, if necessary, the stored testing sequence followed in order to make certain the signal from the steering-angle sensor is present.

Protection Against Overload

The EPS reduces the power steering assistance in overload situations. If customer complaints are received, the customer should be questioned as to the situation in which the symptoms occurred before commencing any repair work.

If necessary enlighten the customer as to the way in which these protective functions operate.

Shutdown in the Event of Faults

The loss of power steering assistance in the event of faults constitutes an intended system response on the part of the EPS.

Although such a response may be slightly unnerving for the driver, the vehicle remains fully steerable with greater physical effort.

Electrical Connections

If the EPS steering rack assembly has to be replaced, only the power supply and bus connection have to be disconnected and not the connection for the steering torque sensor.

If a customer complains of inadequate power steering assistance, it can be due to a voltage drop across the power supply connection.

Therefore, in such cases the power supply connection should be checked for corrosion.

Step-down Gear

If a defective gaiter is discovered, it should be replaced so as to prevent water entering the steering gear. At the same time as replacing the gaiter, the water drain valve at the lowest point of the reduction gear should also be replaced and is included in the repair kit.

Corrosion on the moving parts of the steering gear does not normally result in heavy steering. Instead, corrosion is frequently a cause of noises from the steering mechanism.

If customers complain of loud steering noises and if they are definitely attributable to the EPS steering rack, the complete EPS steering rack assembly must be replaced.

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