Mercedes-Benz

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Date: May 2006
Order No.: S-B-15.40/58
Supersedes:
Group: 15

Revision:

SUBJECT: **MODEL 164.186/175**
Test and Inspection of Charging System Regulator

During testing of returned alternators (that were replaced under warranty) it has been determined that many alternators are being replaced when only the (replaceable) regulators are found to not be functioning.
Therefore, in the event a charging system test determines the need to replace a nonfunctioning regulator; replace the regulator (independently from alternator).
Note:
• Regulators installed on water cooled alternators and those installed on model 199 alternators are not replaceable.
• For regulator test and inspection instructions refer to Subject A.

A. Test and inspection of charging system regulators
1. Refer to T-B-15.40/57 for charging system testing instructions.
2. For instructions on replacing nonfunctioning regulators for model 164 refer to WIS group: 15.40.
   Note: (when referring to WIS instructions for replacing regulator)
   • Ensure defective regulator is inspected (refer to Subject D, step 3) prior to replacing.
   • Ensure circuit 30 systems are reinitialized and fault codes are erased (refer to refer to Subject D, steps 8 and 9).
3. After removing a regulator that has been tested and found to be not functioning, it must be visually inspected.

D INSPECT AND REPLACE REGULATOR

Note:
Regulator replacement procedure below applies to Bosch alternators. For regulator replacement procedure on alternators from

other manufacturers refer to WIS group: 15.40.

Note: (when refering to WIS instructions for replacing regulator):
• Ensure defective regulator is inspected (refer to step 3 of this section) prior to replacing.
• Ensure circuit 30 systems are reinitialized and fault codes are erased (refer to steps 8 and 9 of this section).

Figure 11

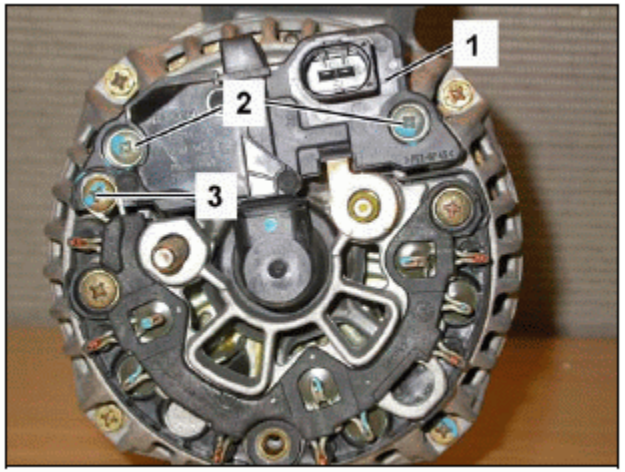

Figure 12

1. Remove the two nuts (1, Figure 11) from studs and one Philips head screw (2); remove the plastic cover from the rear of the alternator.
Note:
Observe which nut is removed from either stud.

2. Remove three Philips head screws (2, 3, Figure 12); remove voltage regulator (1) from the alternator.

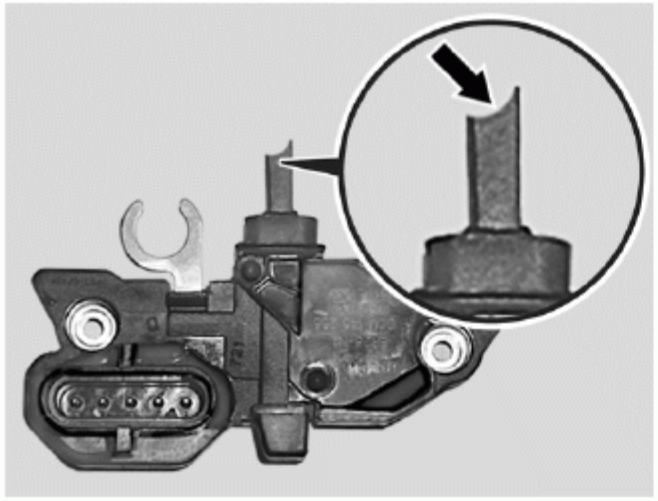

Figure 13

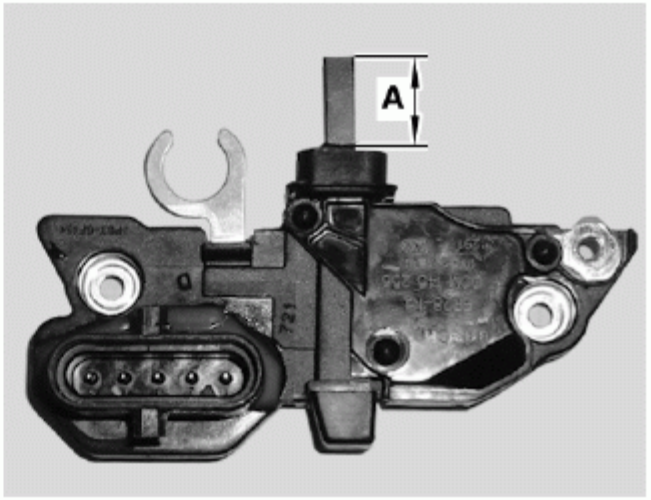

Figure 14

3. Inspect wear shape (arrow, Figure 13) of carbon brushes:
   If brushes have worn at an angle (arrow), alternator bearing damage is indicated and the alternator must be replaced. If brushes wear is normal, continue with regulator replacement.
   Note:
   Minimum regulator brush dimension (A, Figure 14) = 5 mm.

4. Install new voltage regulator (1, Figure 15) and torque Philips head screws to:
   - (2) = 2.0-2.4 Nm
   - (3) = 1.0-1.4 Nm

Caution!:
- Ensure the carbon brushes (arrows, Figure 16) are not damaged during the installation procedure.

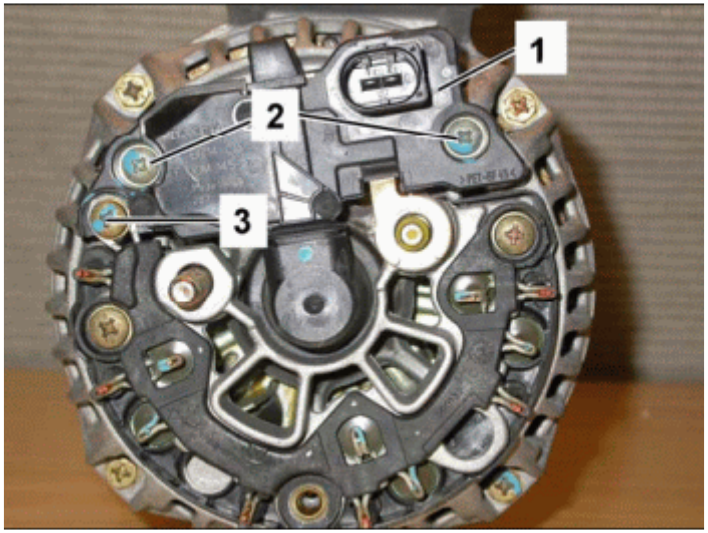

Figure 15

5. Install the plastic cover on the back of the generator and torque the Philips head screw (2, Figure 11) to: 2.2 - 2.6 Nm and the two nuts (1) as follows:
   • On long stud: 29.0 - 32.0 Nm
   • On short stud:11.0 - 13.0 Nm
6. Reinstall the alternator in reverse order

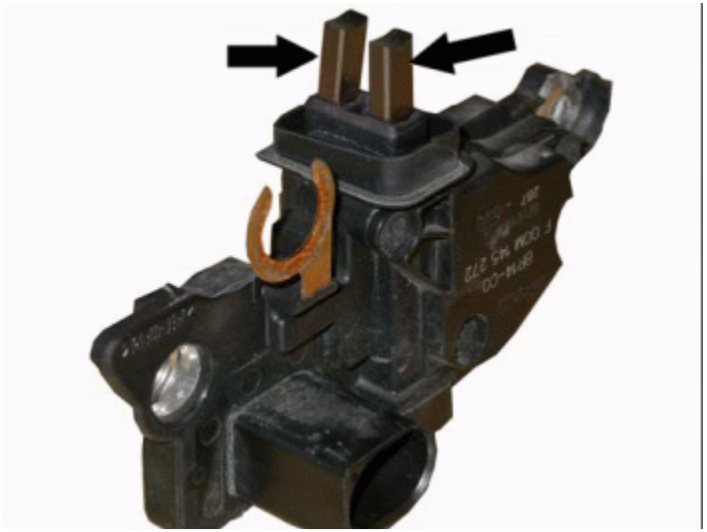

Figure 16

7. Reinstall components in reverse order.
8. Reconnect battery cable to negative battery terminal, reinitialize vehicle systems (e.g., steering angle sensor, power windows etc.); refer to WIS: AR00.19-P-0200GZ
9. Connect SDS and erase any faults that may have been stored.

Note:
Refer EPC for replacement part numbers.