



PERFORM THE PROCEDURE OUTLINED IN THIS SERVICE INFORMATION ON ALL AFFECTED VEHICLES THE NEXT TIME THEY ARE IN THE SHOP FOR MAINTENANCE OR REPAIRS.

SUBJECT

Service Action: Replace SMG Hydraulic Unit Electric Motor on M5 Vehicles

MODEL

E60 M5 with S85

SITUATION

Carbon brushes of the electric motor for SMG hydraulic system may wear prematurely. This condition may cause a failure of the motor, resulting in insufficient hydraulic system pressure.

Fault codes related to low hydraulic pressure will be stored in SMG control unit (e.g. 4F42, 4F43, 4F40), and a transmission warning will be displayed in the Check Control. Gears may not be selected or changed. If SMG transmission is stuck in any gear, the engine can not be restarted.

Customers will be mailed letters notifying them of the need to have the work in the Service Action performed. A copy of the customer notification letter is attached.

AFFECTED VEHICLES

This Service Action involves M5 vehicles with S85 engines which were produced from 01/25/2005 up to 01/23/2006.

In order to determine if a specific vehicle is affected by this Service Action, it will be necessary to utilize the "Service Menu" of DCSnet (Dealer Communication System) or the Key Reader. Based on the response of the system, either proceed with the corrective action or take no further action.

The Chassis Number Ranges listed below are **only** for informational purposes and are not to be considered as the only deciding factor.

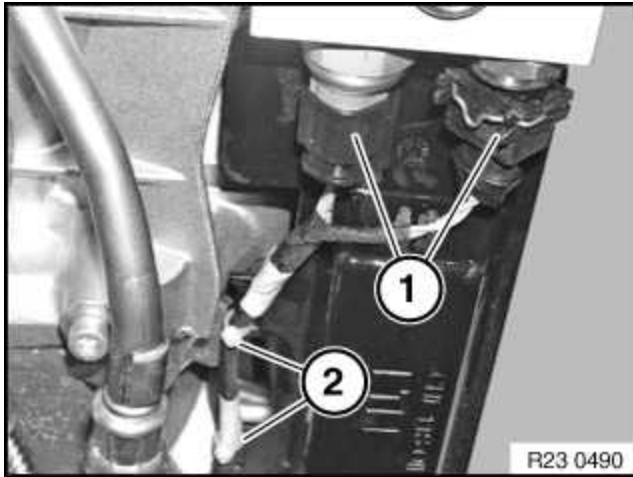
| Model | Chassis Number Range |
|-------|----------------------|
| M5 | B581047 – B582710 |

CORRECTION

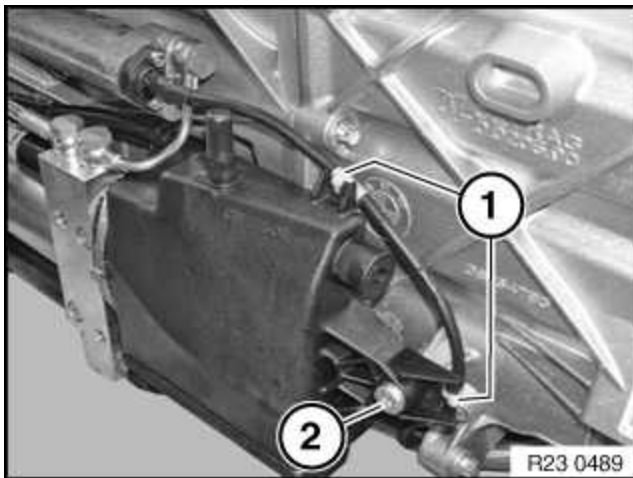
On the affected vehicles, replace the electric motor of the SMG hydraulic pump according to instructions provided (RA 23 42 020).

1. Prior to any work on SMG hydraulic system, the operating pressure must be reduced through the test plan "**Replacement and repair S2360_S3SRV**"; then selection (4) "**Hydraulics**"; then selection (3) "**Before working on the hydraulic system – pressure reduction**" found in "Service Functions"/ "SMG transmission control".
2. Remove the SMG pump relay (K6318, black) located in the E-box. The K6318 relay should not be reinstalled until the repair procedure is completed. Disconnect battery negative cable.
3. Remove underbody protection at the front (RA 51 47 490), and at the rear (RA 51 47 4910).

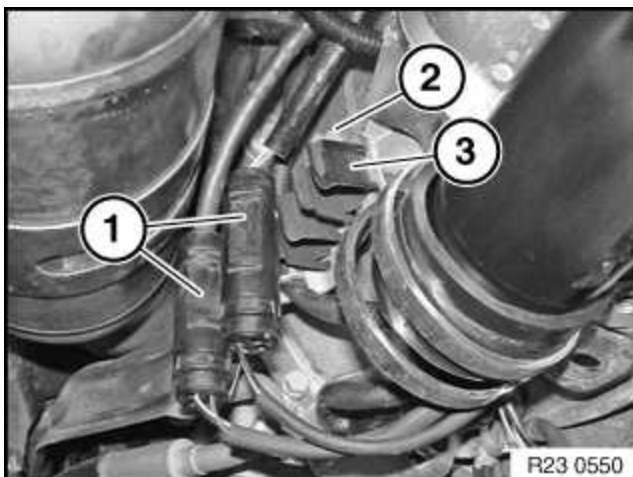
4. Remove reinforcement plate (RA 31 10 010).
5. Remove complete exhaust system (RA 18 00 020).
6. Remove transmission cross member (RA 22 31 050).
7. Remove propeller shaft (RA 26 11 000). Lower transmission and support it by the appropriate transmission jack.



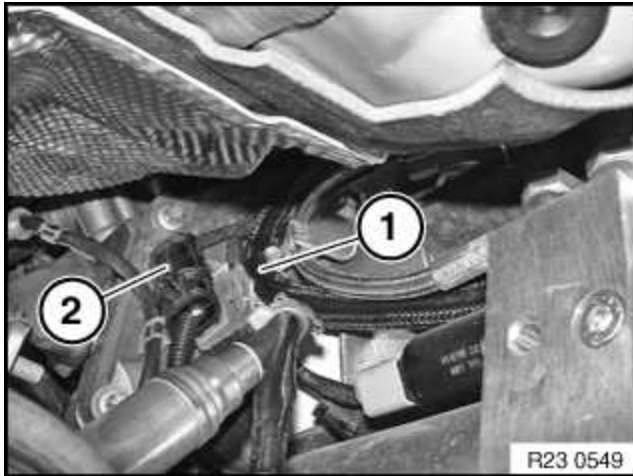
8. Disconnect both connectors (1) at the bottom of SMG transmission hydraulic unit.
9. Release cable ties (2) of the SMG harness.



10. Release cable ties (1) of clutch cylinder harness.
11. Remove torx bolt (2) at the hydraulic fluid reservoir.

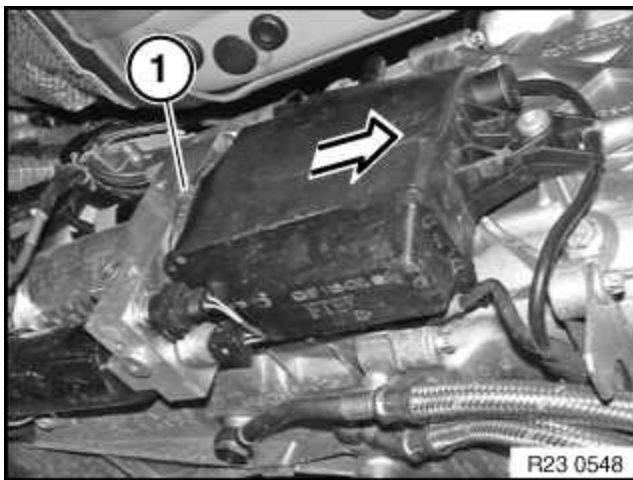


12. Unclip oxygen sensor connectors (1), release nut (2) and remove bracket holder (3) to gain an access hydraulic accumulator bracket.



13. Working in the area above hydraulic unit motor, unclip fluid return line (1) from the bracket holder.

14. Unlock and disconnect SMG electric motor connector (2).



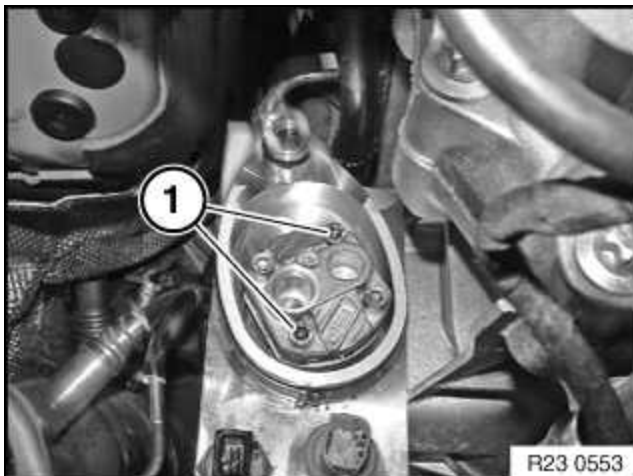
15. Release clamp (1) between hydraulic unit and fluid reservoir.

NOTE: Do not disconnect fluid return line at the reservoir.

16. Using an appropriate container for collecting of escaping fluid, carefully detach reservoir from the hydraulic unit and secure it (with wire tie) to the transmission.

Note on re-installation:

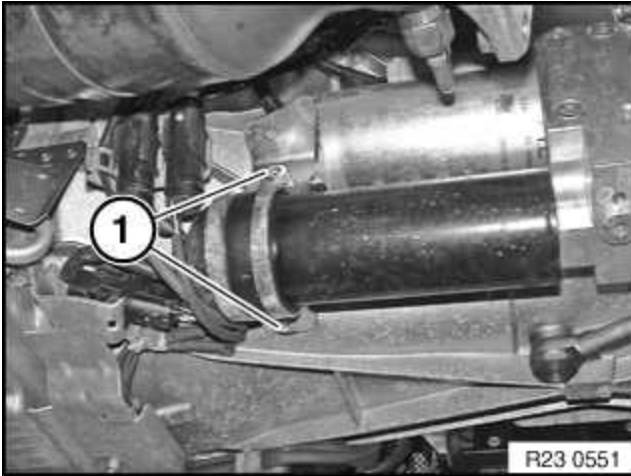
Install new clamp and reservoir o-ring provided in the motor repair kit (P/N 23 01 7 841 032).



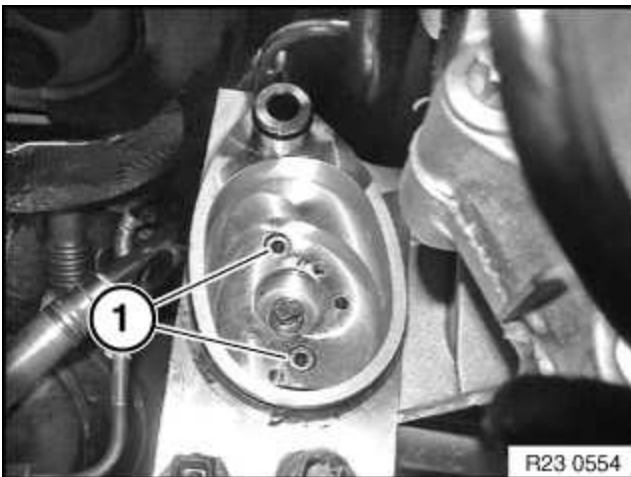
17. Release two M5x40 Allen head screws (1) of the hydraulic pump, as shown on the illustration. Gently (using small screwdriver) pry-out the pump out of the housing.

Note on re-installation:

Use new M5x40 Allen screws provided in the motor repair kit (P/N 23 01 7 841 032). Torque to 6 Nm.



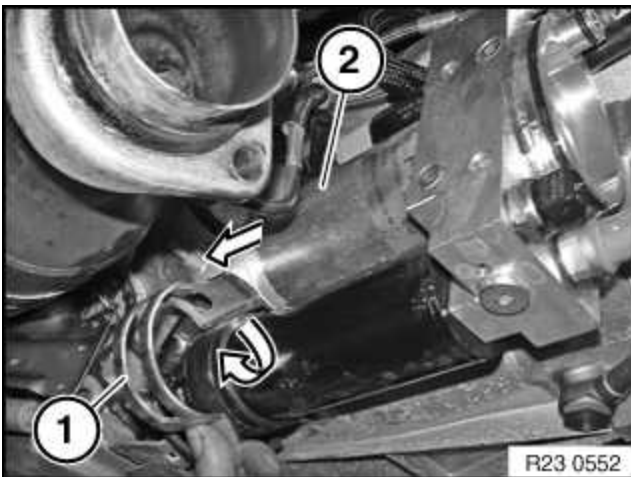
18. Release two Torx M8x25 bolts (1) of the accumulator bracket.



19. Remove two M5x20 Allen head bolt (1) holding motor to hydraulic unit housing.

Note on re-installation:

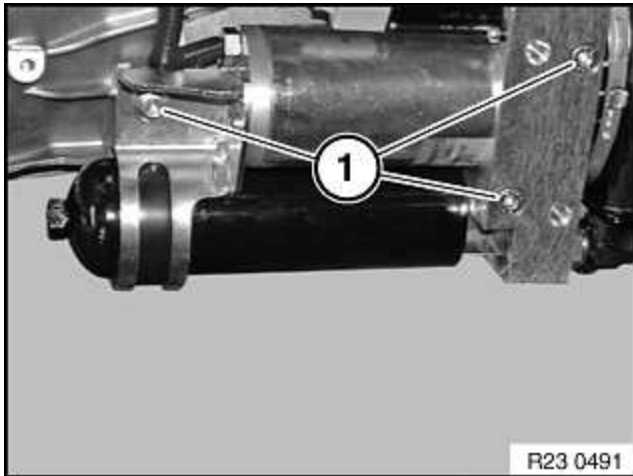
Use new M5x20 Allen screws provided in the motor repair kit (P/N 23 01 7 841 032). Torque to 6 Nm.



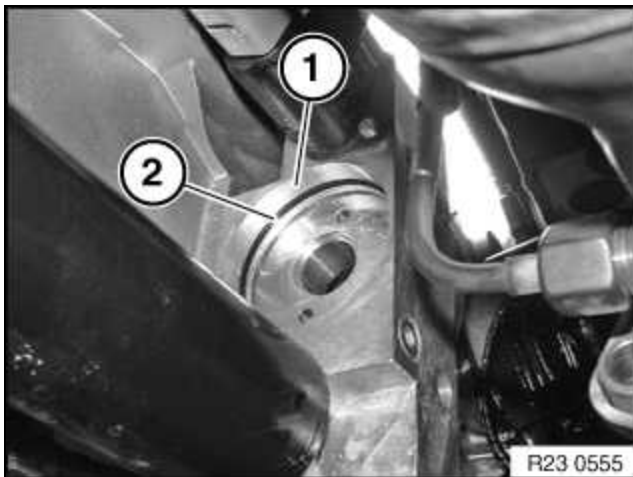
20. Release (bend) accumulator retaining clip (1) and move electric motor (2) forward, to separate it from the hydraulic unit housing.

Important Note:

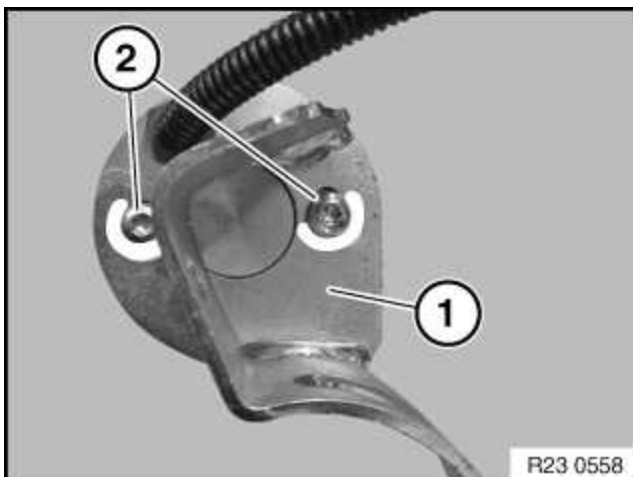
In some cases, in order to remove accumulator bracket with motor, it will be necessary to remove two M8x80 Allen head bolt (# 1 on the pump housing) and to release clutch slave



cylinder fluid line. Then, the complete hydraulic unit can be moved towards the rear, allowing forward motor movement. When reinstalling, also replace two sealing washers (P/N 23 01 7 838 941) for clutch cylinder high pressure line.

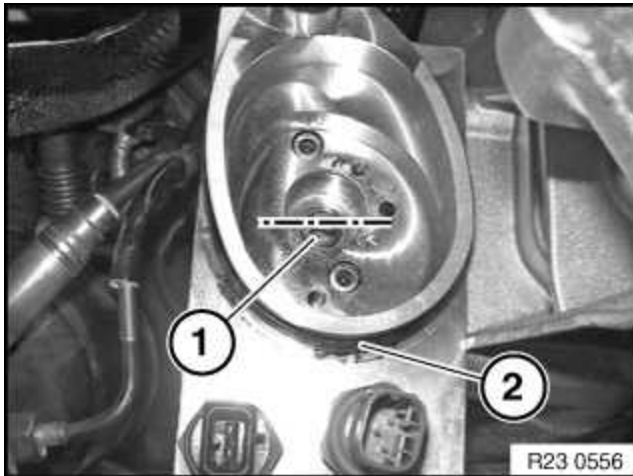


21. Using paper towel, clean inside surface (1) of pump block.
22. Install a new o-ring (2), and coat it with petroleum jelly prior to motor installation. Both o-ring and jelly are provided in the motor repair kit (P/N 23 01 7 841 032).

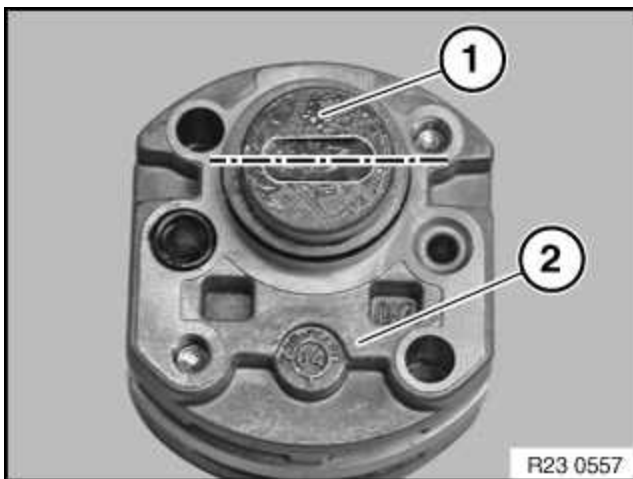


23. Install bracket holder (1) at the back of the new electric motor using two M5x12 Torx screws (2) provided in the motor repair kit (P/N 23 01 7 841 032). Torque to 5 Nm.

24. Reinstall new electric motor into unit housing. Make sure that motor's drive shaft (1) is aligned horizontally.

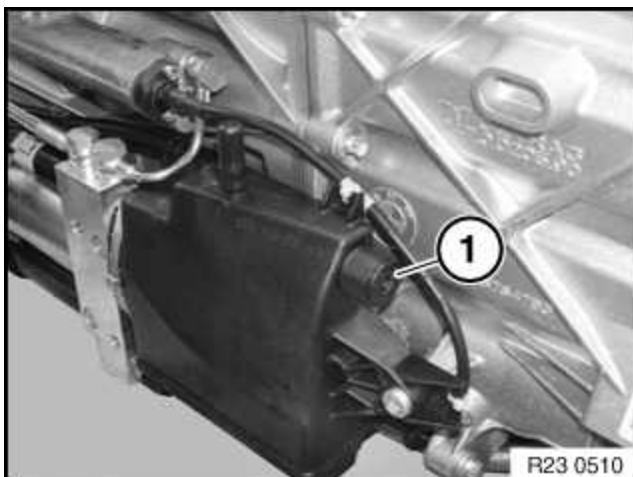


25. Use new M5x20 Allen screws provided in the motor repair kit (P/N 23 01 7 841 032). Torque to 6 Nm.



26. Install a new greased coupling element (1) from the repair kit to oil pump (2), and make sure to align it horizontally to the electric motor drive shaft.

27. Install oil pump to electric motor drive shaft; a clicking noise should be heard when the coupling element snaps into motor drive shaft.



28. Reconnect battery.

29. Release screw (1) on the side of the fluid reservoir.

30. Using a special tool P/N 83 30 0 493 337 (Cartool P/N 002 080), top up the hydraulic fluid level with Pentosin CHF (P/N 82 11 1 468 041).

31. Connect vehicle to DIS/GT1 tester. From the **Service Functions** select **SMG Transmission**, and **Replacement and Repair S2360_S3SRV** test module, then:

- Select: **(4) Hydraulics**,
- Select: **(4) After working on the hydraulic system (bleeding)**,
- Then perform only one service functions:

2. Bleeding, clutch slave cylinder

Important:

It is not required to perform a test module for bleeding of the actuator block, even DIS/GT1 recommends it.

Re-insert K6318 hydraulic pump relay only when prompted by test module request.

32. Reduce operating pressure again through the test plan "**Replacement and repair S2360_S3SRV**"; then selection (4) "**Hydraulics**"; then selection (3) "**Before working on the hydraulic system – pressure reduction**". Check the fluid level again, and add some if needed.

Note:

This step is particularly important when there is too little of the hydraulic fluid in the system.

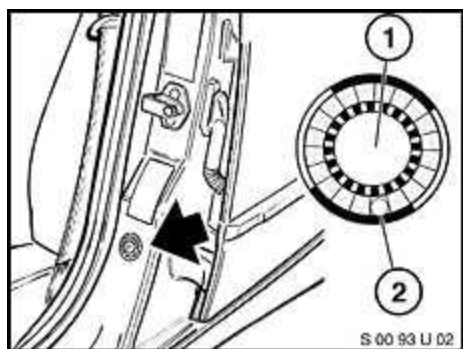
33. Reinstall exhaust system using new hardware (P/N 11 62 7 832 535 – two sealing rings; P/N 26 12 7 536 563 –three M12x1.5 self locking nuts; P/N 18 30 1 317 898 – four M10 hex nuts).

34. Reinstall al previously removed components.

PARTS INFORMATION

| Part Number | Description | Quantity |
|-----------------|---------------------------|----------|
| 23 01 7 841 032 | Electric motor repair kit | 1 |
| 26 12 7 536 563 | M12x1.5 self-locking nut | 3 |
| 11 62 7 832 535 | Exhaust sealing ring | 2 |
| 18 30 1 317 898 | Hex M10 nut | 4 |

LABEL INSTRUCTIONS



This Service Action has been assigned code number **495**. After the vehicle has been checked, and corrected if necessary, obtain a label (SD 93-320) and:

- emboss your BMW dealer warranty number in the middle of the label (1);
- punch out code number **495** printed on the label and,
- affix the label to the **B** pillar as shown.

If the vehicle already has a label from a previous Service Action/Recall Campaign, affix the new label next to the old one. Do not affix one label on top of another one because a number from an underlying label could appear in the punched-out hole of the new label.

WARRANTY INFORMATION

Covered under the terms of the BMW New Vehicle Limited Warranty.

Defect Code **00 23 22 01 00**

| | | |
|------------------|--|----------------------------|
| Labor Operation: | 00 57 039 | Replace SMG electric motor |
| Labor Allowance: | 39 FRU | |
| Sublet 4 | Topping hydraulic fluid with Pentosin CHF 11S | \$4.00 |

ATTACHMENTS

view PDF attachment [B230107Customer_Letter.](#)

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