



## TECHNICAL BULLETIN

**Model/Derivative:**

Rover 25 / MG ZR EMCVT Automatic  
 Rover 45 / MG ZS EMCVT Automatic  
 MG TF EMCVT Automatic

**No:** TB0116 Issue 2

**Date:** 24.03.2004

**Section:** TRANSMISSIONS

**Title:**

EMCVT PRIMARY BEARING REPLACEMENT

**Affected range:**

Vehicle with EMCVT automatic transmissions

**Description:**

Two new special tools have been made available to replace the EMCVT primary bearing. For more information on the tool part numbers and order information, see Special Tools Bulletin STB0023.

Refer to **Parts Information** below for the necessary parts required.

**Bulletin re-issue information:** Additional part added to Parts Information list

**Action required:** (for detailed procedure – see page 2)

Refer to the symptoms and checks described later in this bulletin to confirm condition, If it is considered that primary bearing requires replacement, proceed as follows:

- Check Prior Consultation status to see if prior authority is required before starting repair.
- Obtain special tools required – refer to Special Tools Bulletin STB0023 issue 2
- Refer to workshop manual repair procedure 44.36.14 (see attachment)

The workshop manual will be updated to include this procedure at the next RAVE release. An advanced copy of this information is included with this bulletin.

**Parts information:**

TZZ000100 Primary Bearing  
 TYG000270 Bolt – M6x8 (4 required)  
 TYX000140 O-Ring oil pump (2 required)  
 TYF000170 Belleville washer (1 required)  
 TYX000150 O Ring - primary cover to transmission - 177.47mm x 2.62mm (1 required)

**Warranty information:**

Use Complaint code: 4T3K

Use S.R.O.: 44.36.14

Time allowance: 1.60 Hrs (Rover 25 / MG ZR)

Time allowance: 1.40 Hrs (Rover 45 / MG ZS)

Time allowance: 1.80 Hrs (MG TF)

**Detail:**

The primary bearing on EMCVT gearboxes can now be replaced, this will reduce the need to replace gearboxes in the event of primary bearing wear. Refer to workshop manual repair number 44.36.14 for full replacement information. An advanced copy of this information is included with this bulletin.

**IMPORTANT:**

This repair must only be carried out when the condition has been investigated and confirmed, see 'EMCVT Primary Bearing Diagnostic Advice' below.

'EMCVT Primary Bearing Diagnostic Advice'

*Symptoms:*

The noise is usually described as a deep whine or drone from the gearbox area.

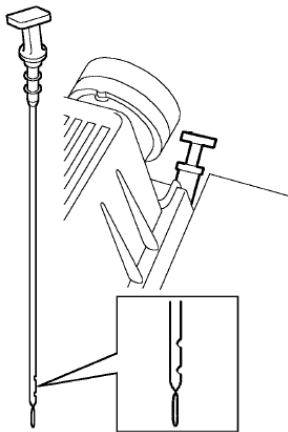
*Pre checks:*

Check oil level at normal operating temperature and with vehicle on level ground. If oil level is incorrect, top-up and recheck.

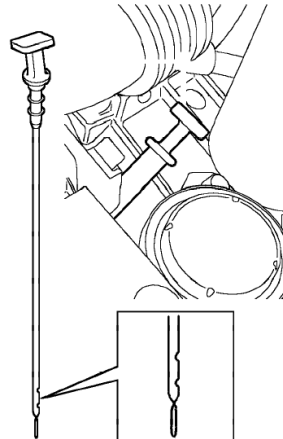
Check and top-up procedure:

1. With engine running at idle speed and handbrake applied, select 'P' or 'N'. Withdraw dipstick and wipe blade with clean cloth.
2. Re-insert dipstick fully, withdraw and check fluid level which must be maintained between minimum and maximum marks on dipstick.
3. Switch off engine and top-up to maximum mark if required.
4. Refit dipstick.

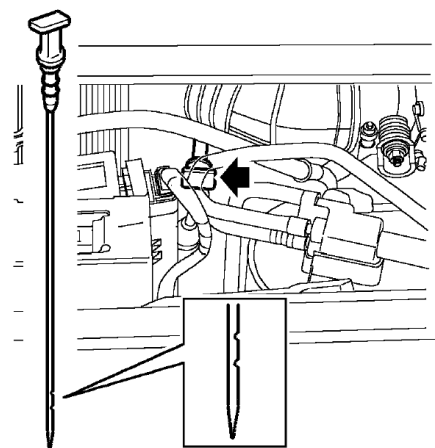
**Rover 25/MG ZR**



**Rover 45/MG ZS**



**MG TF**



*Road test:*

- Is noise present as soon as vehicle moves away in 'D' or 'R'?
- Drive vehicle at a steady 30mph in 'D' then select 'Sport' mode. Engine speed will rise by 700 – 800 rpm. Does the noise increase with change in engine speed?
- Is noise present with vehicle stationary?

The cause will be primary bearing if:

- Noise occurs as soon as vehicle moves away in 'D' or 'R'.
- Is NOT audible when vehicle is stationary in any selector position.
- Increases with engine speed when selecting 'Sports' mode.

**NOTE:** Confirm that noise is actually originating from the gearbox and not from a wheel bearing or the engine area.

**EMCVT Transmission oil**

The only oil approved for use in EMCVT transmissions is Esso EZL 799 (also known as Esso CVT fluid). This oil is available from XPart in 20 litre drums under part number XPT001000OF.

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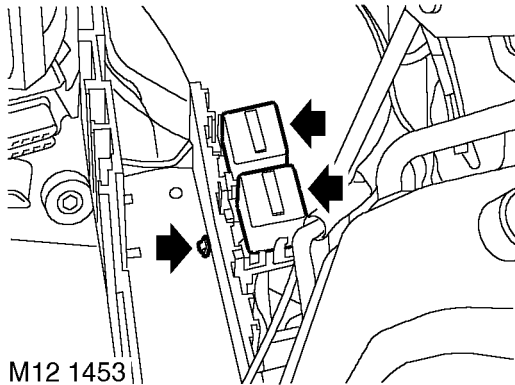
## BEARING - PRIMARY

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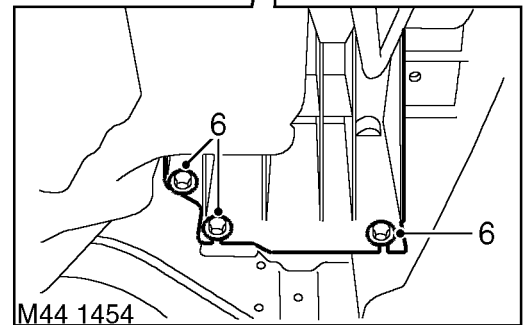
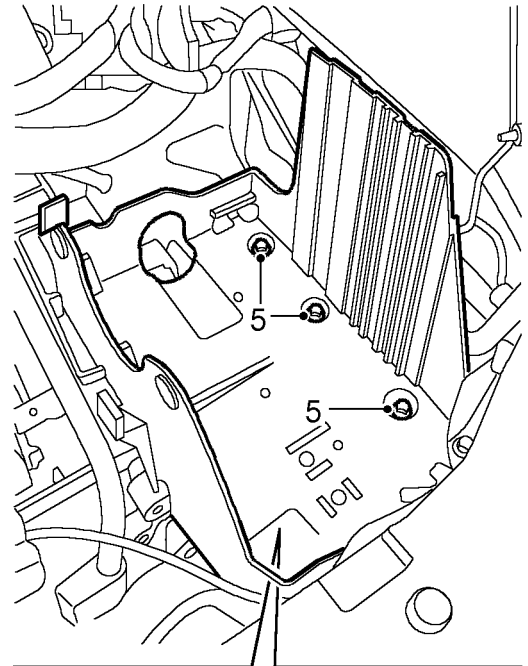
🔑 44.36.14

### Remove

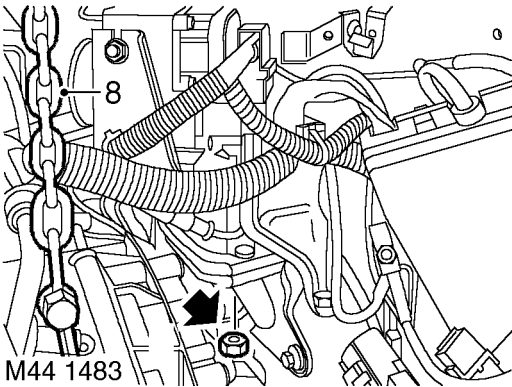
1. Remove air cleaner. See **ENGINE MANAGEMENT SYSTEM - MEMS, Repairs.**
2. Remove ECM. See **ENGINE MANAGEMENT SYSTEM - MEMS, Repairs.**



3. Release 2 relays from battery carrier and position aside.
4. Release clip securing ABS ECU multiplug to battery carrier.

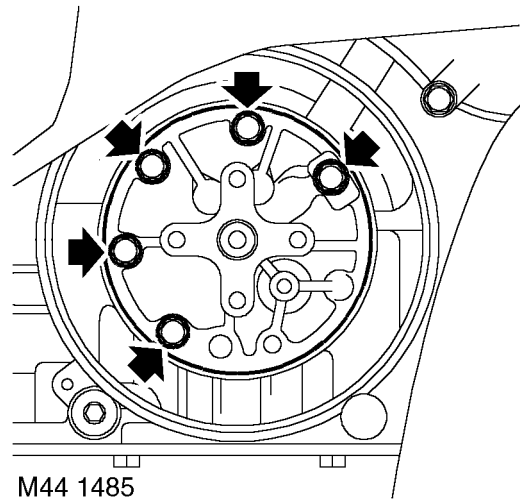


5. Remove 3 bolts securing battery carrier to body.
6. Loosen 3 bolts securing battery carrier to body and remove carrier.
7. Remove gearbox primary cover. See **AUTOMATIC GEARBOX - 'EM-CVT', Repairs.**



M44 1483

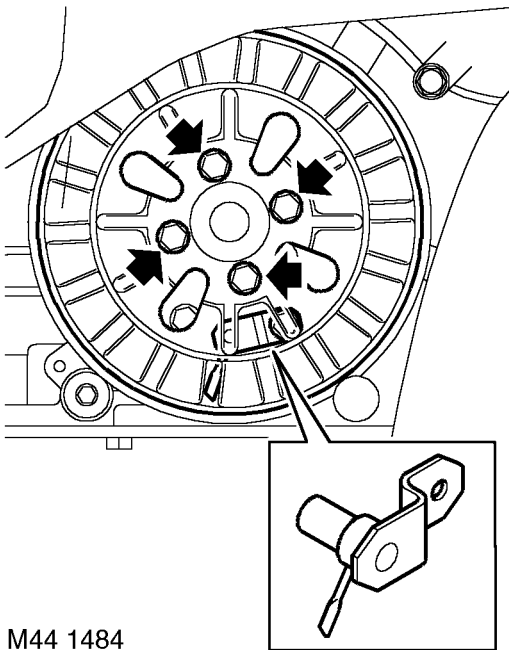
8. Connect hoist to gearbox lifting bracket and support weight of engine/gearbox.
9. Remove nut securing LH gearbox mounting to bracket.
10. Lower engine/gearbox sufficient to gain access to primary housing.



M44 1485

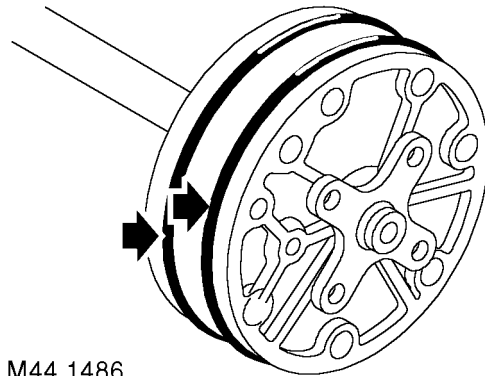
14. Remove 5 remaining bolts securing oil pump.
15. With care, using 2 levers, positioned 180° apart, remove oil pump.

*NOTE: To prevent damage to primary housing, place 2 pieces of wood between levers and primary housing when removing oil pump.*



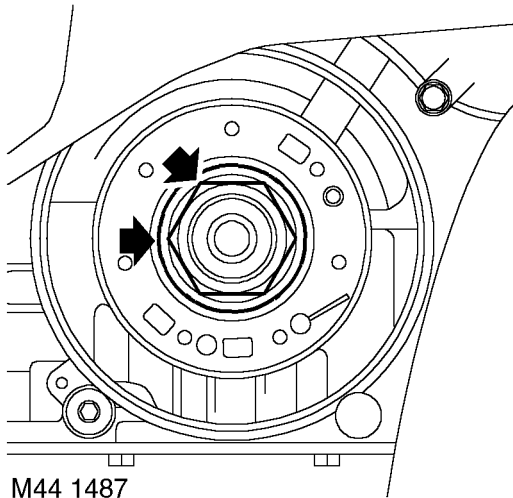
M44 1484

11. Remove and discard 4 bolts securing engine pitot chamber to oil pump drive.
12. Rotate pitot chamber sufficient to remove lower RH oil pump bolt which secures the engine pitot tube.
13. Rotate pitot tube 180° anti-clockwise and remove pitot chamber, collect pitot tube.



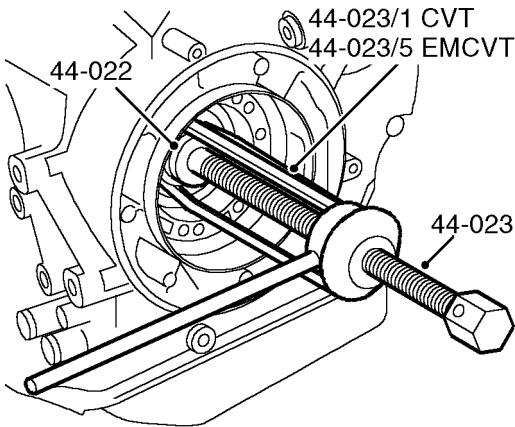
M44 1486

16. Remove and discard 2 'O' rings from oil pump.



M44 1487

17. Remove and discard Belleville washer.
18. Using a 46mm impact socket **44R028** remove primary bearing nut.  
*NOTE: Initially start to undo nut in the minimum position of the impact wrench, increase torque until nut is released.*
19. Using a small screwdriver, lever out seal from primary bearing.

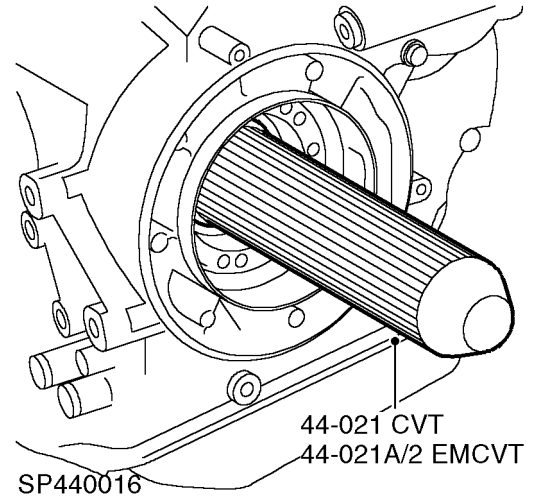


SP440017

20. Position thrust button **44-022** into primary shaft.
21. Assemble **44-023** underneath the exterior ring of primary bearing and use **44-023/1** for CVT and **44-023/5** for EM-CVT.
22. Tighten centre bolt of **44-023** and remove primary bearing.

### Refit

1. Clean primary bearing bore and shaft.
2. Clean sealant from threads in oil pump drive shaft and clean oil pump housing.
3. Position primary bearing, numbers on bearing facing outwards.



4. Drift in primary bearing using **44-021** CVT and **44-021A/2** for EM-CVT.
5. Fit and tighten nut using an air impact wrench for sufficient duration until a minimum torque of 180 Nm is achieved.
6. Fit new Belleville washer.
7. Lubricate and fit new 'O' rings to oil pump.
8. Position oil pump into gearbox, aligning feeder and pitot tube channels.
9. Fit 5 bolts and tighten in a diagonal sequence to 10 Nm.
10. Lubricate and fit new primary cover 'O' ring to gearbox housing.
11. Position pitot tube in oil pump, fit pitot chamber ensuring pitot tube is located in oil pick-up channel in pitot chamber.
12. Rotate pitot chamber sufficient to align pitot tube, fit remaining oil pump bolt and tighten to 10 Nm.
13. Align pitot chamber to oil pump drive, fit new bolts and tighten to 10 Nm.
14. Fit primary cover. See **AUTOMATIC GEARBOX - 'EM-CVT', Repairs.**
15. Raise engine/gearbox with hoist to align gearbox mounting to bracket.
16. Fit new Nyloc nut securing gearbox mounting bracket to engine mounting and tighten to 160 Nm.
17. Release hoist from lifting bracket.

18. Fit battery carrier and tighten 6 bolts securing carrier to body to 10 Nm.
19. Fit ABS ECU multiplug to battery carrier.
20. Fit 2 relays to battery carrier.
21. Fit ECM. See **ENGINE MANAGEMENT SYSTEM - MEMS, Repairs.**
22. Fit air cleaner. See **ENGINE MANAGEMENT SYSTEM - MEMS, Repairs.**
23. Top-up gearbox fluid. See **MAINTENANCE.**