



TECHNICAL BULLETIN

Model/Derivative:

Rover 75, Rover 75 Tourer diesel

MG ZT, MG ZT-T diesel

Nº: TB0090 Issue 1

Date: 12.02.2003

Section: ENGINE MANAGEMENT

Title:

MAF SENSOR CONTAMINATION - WATER SHEDDER

Affected range:

All diesel engine vehicles up to VIN RJ 268923 (introduction of water shedder described later)

NOTE: Following the above introduction, a shortage of components resulted in a range of vehicles not having water shedders fitted. This vehicle range was from RJ 274477 to 277737. From RJ 277738, shedders have been fitted to all vehicles.

Description:

The reported symptoms are likely to be: **'Engine loses power or Engine runs rough'**.

This condition can be caused by contamination of the Mass Air Flow (MAF) sensor (previously reported with Technical Tip TT0001 dated 03.08.01). Contamination can occur where the vehicle has been driven for extended periods in extreme motorway spray conditions. The fan atomises the spray which then allows it to pass through the air filter. Small quantity of dissolved chemicals from the road surface can pass through the air filter and become attached to the hot film of the MAF sensor. Over a period of time the amount of contamination increases to such an extent that the air mass information fed back to the ECM becomes increasingly inaccurate.

This bulletin describes the fitting of a water shedder to deflect water spray away from the cold air intake duct. The water shedder has been fitted to all diesel engine vehicles from the VINs detailed above.

Action required:

1. Confirm with T4/TestBook that contaminated MAF sensor is the cause of condition.
2. Fit water shedder part number PHL000010 to the underside of bonnet locking platform.
3. Fit exchange MAF sensor.

Detail:

Confirming cause of condition

1. Connect T4/TestBook.
2. Select 'System Diagnostics'
3. Select 'Engine Management' (T4/TestBook will read the ECU type)
4. Select 'Real Time Display' to open 'Overview'
5. Before checking Airflow figure you must ensure that the EGR is switched off. To achieve this, raise the engine speed to 1500 rpm for between 10 and 20 seconds then allow to idle whilst monitoring the Airflow figure. A figure less than circa 300 mg/fire will be seen initially, the EGR valve will then close and the Airflow value should rise. This higher figure should be used as a comparison to the figures below. A correctly functioning (clean) MAF sensor will produce the following values:

Comparison values:

- Airflow at idle - between 440 and 500 mg/fire (EGR off) – see example 1
- Airflow at 3000 rpm - between 650 and 720 mg/fire – see example 2

Conclusion:

- Airflow values are outside limits, this indicates MAF sensor contamination.

NOTE: If Airflow value is significantly lower at idle, ensure that EGR valve has closed (see 5 above).

Example 1 (engine at idle)

OVERVIEW			
Coolant Temp + 51.05 °C	Inlet Air Temp +31.75 °C	Airflow 496.8 mg/ltr	Manifold Pressure 98.5 kPa
Low press. Rail 371.3 kPa	High press. rail 28659 kPa	Reg. curr. 0.654 A	Engine Speed 787 rpm
Pedal 1 Demand 0.733 Volts	Pedal 2 Demand 0.371 Volts	Sensor Supply 1 5.010 Volts	Sensor Supply 2 5.010 Volts
Battery Voltage 14.31 Volts	Capacitor 1 79.1 Volts	Capacitor 2 28.8 Volts	

Example 2 (engine at 3000 rpm)

OVERVIEW			
Coolant Temp + 61.25 °C	Inlet Air Temp +28.75 °C	Airflow 713.0 mg/ltr	Manifold Pressure 142.5 kPa
Low press. Rail 356.8 kPa	High press. rail 61412 kPa	Reg. curr. 1.053 A	Engine Speed 3000 rpm
Pedal 1 Demand 1.363 Volts	Pedal 2 Demand 0.684 Volts	Sensor Supply 1 5.010 Volts	Sensor Supply 2 5.010 Volts
Battery Voltage 14.43 Volts	Capacitor 1 80.4 Volts	Capacitor 2 28.8 Volts	

6. MAF sensor malfunction is confirmed if the Airflow value readings obtained are above or below the limits described. Replace MAF sensor and fit water shedder to prevent a re-occurrence of condition.
If Airflow value readings are within limits, the MAF sensor will not require replacement. Fit water shedder only.

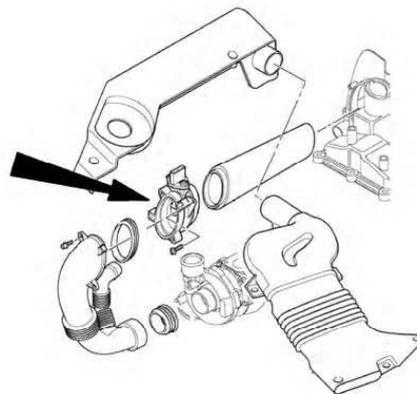
Replacing MAF Sensor (if required)

1. Remove engine acoustic cover (repair number [12.30.50](#)).
2. Remove air intake duct and air cleaner element (repair number [19.10.10](#)).
3. Remove the MAF sensor from the air intake assembly, repair number [19.22.38](#) refers (for location, see illustrations 3 and 4).
4. Fit exchange MAF sensor MHK101130E and re-assemble in reverse order.

3



4

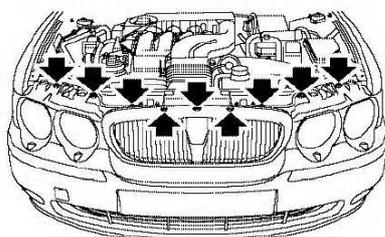


Fitment of water shedder

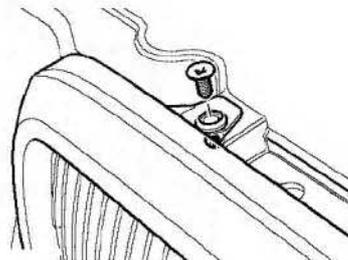
1. *Rover 75 (Saloon & Tourer)*: Remove the 9 upper screws securing the front bumper to the bonnet locking platform (illustration 5). Remove the 2 scrivenets securing the front grille to bumper and remove grille (illustration 6).

MG ZT / MG ZT-T: Remove the front bumper and protect from damage. (repair number [76.22.72/40](#)). Unlike the Rover 75, the grille cannot be removed on the MG ZT derivatives.

5



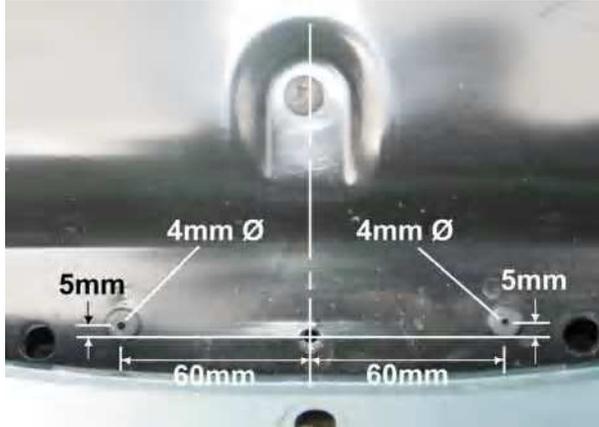
6



2. With the front bumper pulled and held forward (Rover models only), make 2 marks on the bonnet locking platform where the water shedder fixing holes are to be drilled. Referring to illustration 7, measure 60mm to the left and 60mm to the right of the centre line then 5mm back from the bumper fixing holes as indicated, mark where lines cross.

NOTE: The illustration shows a later stage with pop rivets fitted.

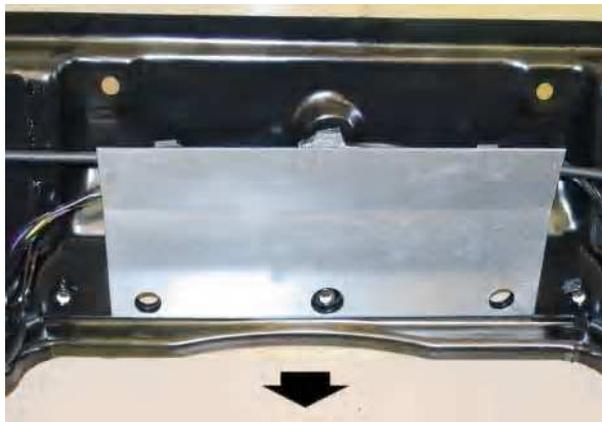
7



3. Drill 2 X 4mm Ø holes in the bonnet locking where marked.
4. Touch in bare metal where drilling took place with anti-corrosion primer.
5. Referring to illustration 8, position water shedder (part number PHL000010) under the bonnet locking platform with its 3 large holes facing the front of the vehicle and the deflector section facing the engine and pointing down (the arrow in illustration indicates front of vehicle).

NOTE: The plate has been designed to locate below the existing platform wiring and clips. The large central hole in the shedder locates around the bumper fixing weld nut on the underside of platform.

8



6. With water shedder held in position by hand, mark through the drilled holes in the bonnet locking platform.
7. Remove shedder and drill 2 X 4mm holes where positions were marked.
8. Re-position the shedder and hold in position against the underside of the bonnet locking platform. Ensuring that wiring is not trapped, rivet the shedder in position using 2 X 4mm pop rivets.
9. Refit grille (Rover models) or bumper (MG models).

Road test

Re-test vehicle on road to confirm that vehicle performance is now satisfactory.

Parts information:

- PHL000010 Plate – Water Shedder
- 4mm pop rivets (2 off required) Obtain from local sources
- MHK101130E Sensor assembly - airflow - exchange (MAF)

Warranty information:

Use complaint code 7W2U

Fit water shedder and replace MAF sensor (includes T4/TestBook test routine)

Use S.R.O.: 19.22.88/35

- Time allowance: 1.20 Hrs (Rover 75 & Rover 75 Tourer)
- Time allowance: 1.60 Hrs (MG ZT / MG ZT-T) includes bumper remove for access

Fit water shedder only (includes T4/TestBook test routine and assumes no fault is found with MAF sensor)

Use S.R.O.: 19.22.88/36

- Time allowance: 0.70 Hrs (Rover 75 & Rover 75 Tourer)
- Time allowance: 1.10 Hrs (MG ZT / MG ZT-T) includes bumper remove for access