



## **IMPORTANT SERVICE INFORMATION**

### **DMF - NOISES WHEN STARTING THE ENGINE, WHEN TRAVELLING OR WHEN SWITCHING OFF THE ENGINE**

**TEC-SX-298-9-2015**

Unusual noises when starting the engine, when traveling or when switching off the engine are often associated with a possible dual-mass flywheel (DMF) defect. However, the noises are actually caused by sources of error in the periphery of the DMF.

#### **Noises when starting the engine**



Fig. 1. Ground connection prior to cleaning: Poor connection



Fig. 2. Ground connection following cleaning: Good connection

#### **Possible complaints:**

- Noises (e.g rattling, chattering, etc.) from the DMF/Clutch/Transmission area when starting the engine.
- The starting process takes longer than usual.
- The engine does not run smoothly directly following the start.



#### **NOTE**

A high voltage drop when starting the engine causes the failure of electronic components and generates entries in the error memory.

#### **Possible error causes:**

- Battery is insufficiently charged, damaged or defective.
- High contact resistances on the electrical connections in the electronic circuit belong to the starter and the alternator.
- Starter damaged or defective. Collector smeared due to insufficient current consumption.



#### **NOTE**

The starter no longer achieves the speed as specified by the vehicle manufacturer (> 300 rpm) to start the engine. The engine starts with an insufficient starter speed and consequently causes excessive vibrations in the DMF area. Over an extended period of time, the vibrations lead to the failure of the component.



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##### **Possible remedy:**

- Check the condition of the battery. Where necessary, charge or replace the battery.
- Check electrical connections between the battery, starter, alternator and the body. Where necessary clean (e.g. Technolit cleaning kit) or replace the electrical connections.
- Tighten the electrical connections with the tightening torque stipulated by the vehicle manufacturer and protect against corrosion.
- Check the condition of the starter. Where necessary, service or replace the starter.



##### **NOTE**

Cleaning the electrical connections in the electric circuit belonging to the starter and alternator minimises voltage loss and improves the current consumption of the starter. The smeared collector belonging to the starter will burn itself free once again after a few starting processes. The starter speed will reach the speed stipulated by the vehicle manufacturer (> 300 rpm) once again.

#### **Noises when traveling**



Fig. 3. Unit-injector element coked

##### **Possible complaints:**

- Rattling or bucking during acceleration when under high engine load.
- Engine not running smoothly.
- Insufficient damping of the engine vibrations causes noises in the transmission area.



##### **NOTE**

Combustion misses may also occur when dealing with Otto engines. When dealing with diesel engines, noticeable problems can occur in terms of the setting of idling noise.

##### **Possible error causes:**

- Otto engines: Errors in the mixture preparation in the ignition system etc.
- Diesel engines: Coked injection elements, errors in the injection system etc.
- Driving at extremely low engine speeds.



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#### **Possible remedy:**

- Repair the injection system.
- Repair the ignition system.
- Check the software status and where necessary, update it.
- Drive the vehicle according to the operating instructions of the vehicle manufacturer.



#### **NOTE**

Test drive together with the customer in order to diagnose the problem.

#### **Noises when switching off the engine**



Fig. 3. Flap belonging to the exhaust-gas recirculation valve (EGR valve) coked

#### **Possible complaints:**

- Noises (e.g. rattling) or reverberation when switching off the engine.
- Short, hard impact from the DMF/Clutch/Transmission area when switching off the engine.
- Rattling or chattering from the transmission area.

#### **Possible error causes:**

- Shutoff flap vacuum pressure supply insufficient.
- Shutoff flap mechanically blocked.
- Exhaust-gas recirculation valve (EGR valve) is stuck or coked.



#### **NOTE**

Due to the design, an insufficient stop of the air supply when switching off the engine leads to a further compression of the springs in the DMF. This causes vibrations when switching off the engine and as a consequence, noises in the driveline.



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**Possible remedy:**

- Check the vacuum system and where necessary, repair it.
- Check mechanical components for free travel and function and where necessary, replace them.



**NOTE**

Check the electrical shutoff flaps and the EGR valves using a suitable diagnostic unit.