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Technical Bulletin

VAG 1.9, 2.0 TDI – Auxilliary drive.

GATES REFERENCE :

T38306/5PK1435

MAKE :

Audi, Skoda, Volkswagen

MODEL :

A4, A6, Bora, Golf, Passat, Superb

ENGINE :

1.9 TDI, 2.0 TDI

ENGINE CODE :

AJM, ATJ, AVB, AVF, AUY, AWX, BGW, BHW, BPZ, BSS, BSV



Questions and returns out of the field teach us there are a lot of possible issues with this drive, so we believe it is useful to launch a Technical Bulletin on it.

This drive is working under very demanding conditions: heavy loads, lots of vibrations, small alternator pulley, etc. This, together with possible installation issues, can lead to several problems.

The layout of the drive is shown as the alternator drive in Fig. 1. As this is a demanding drive, the alternator pulley is of the overrunning (free wheeling) type and the crankshaft is equipped with a Torsional Vibration Damper (TVD).

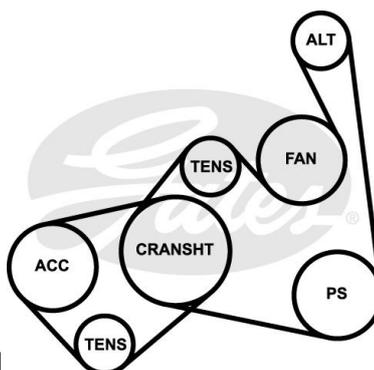


Fig. 1

There are two root causes for early failure: drive component malfunction and incorrect tensioner set up. A combination of both will drastically reduce the time to failure.

An Overrunning Alternator Pulley (OAP) which is not working properly will create even more belt vibrations and noise. This can lead to excessive wear of the fixing hole at the top of the hydraulic actuator. (Fig. 2)



Fig. 2



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This play can become enormous, leading to the tensioner body touching the tensioner pulley, causing a lot of noise. In its extreme form the tensioner body will even get grooved, because the pulley is "grinding" it. (Fig. 3)



Fig. 3

In new condition, the free space between pulley and tensioner is 5 mm. (Fig. 4)



Fig. 4

You can check if the OAP is working properly:

A) with belt installed: one has to be able to turn the inside fan blades of the alternator clockwise.

B) with belt removed: turn the pulley hard by hand in the clockwise direction. Immediately turn the pulley in the other direction. The inside fan blades of the alternator have to keep running in the clockwise direction. If they do not (and stop directly), this means the pulley is out of order.

Also a hydraulic actuator does wear out: oil leakage and internal wear will result in insufficient damping, abnormal vibrations and noise.

The crankshaft damper (TVD) not working properly will in most cases have excessive drive vibrations and noise as result.

It is therefore essential that the complete drive is checked regularly. We recommend replacing the belt, tensioner, OAP and TVD at the same time.





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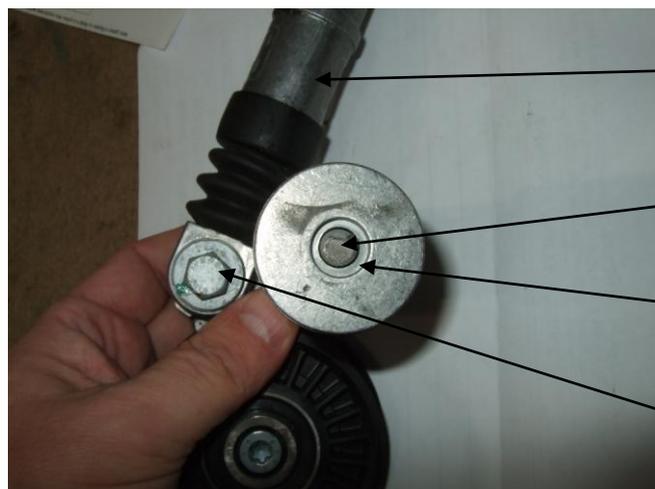
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Also the installation torque of the tensioner mounting bolts is critical. Failure to apply the correct torque will usually lead to the central mounting bolt shearing.



Hydraulic actuator

Broken bolt shaft

O-ring position

Possible excessive wear of the fixing hole

Fig. 5

Bolts on this tensioner should be torqued to 25Nm. In order not to influence the torque of the central bolt, make sure that the o-ring is sitting correctly in its foreseen location. (Fig. 6)



O-ring in correct position

Fig. 6



Fig. 7

Also make sure the hole in the alternator bracket is free of rust, dirt and grease, as this again could influence the bolt torque.

If the mounting bolts are too tight it will distort the mounting bushing, preventing the hydraulic actuator to pivot on the mounting bolt. All forces are therefore transmitted to the central mounting bolt, which eventually shears.

A too low torque on the central bolt will lead to the load/vibrations being absorbed by the bolt shaft, also resulting in a bolt rupture (Fig. 7).

We hope this information will avoid field problems in the future.

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