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Technical Bulletin

SOFIM 2.4 / 2.5 / 2.8 Diesel engines

GATES REFERENCE :	**5039 (K01), 5113 (K01), 5334XS (K01), 5335XS (K01), 5495XS (K01)**
MAKE :	Fiat / Iveco / Opel / PSA / Renault
MODEL :	Various
ENGINE :	2.4 / 2.5 / 2.8 / D, TD, DTi, DTic, Dci, JTD, HDi (all 8 valves)
ENGINE CODE :	Various

We have noticed that, from time to time, problems occur during the installation of the idler/tensioner pulley on this engine family. Incorrect handling/installation can lead to premature failure.

1) Tips for installing the pulleys:

- Always remove rust or remaining grease from the axle/back plate before assembly (orange arrow). If you fail to do this, you will push all the dirt to the bottom of the back plate and you create a build up of debris, which will damage the bearing, due to misalignment or create a false tightening torque.

- Always install the bearing by pushing on the centre part of the bearing (✔)
- Never force the idler over the axle by pushing on the outside of the bearing (✘). See Fig. 1 and 2

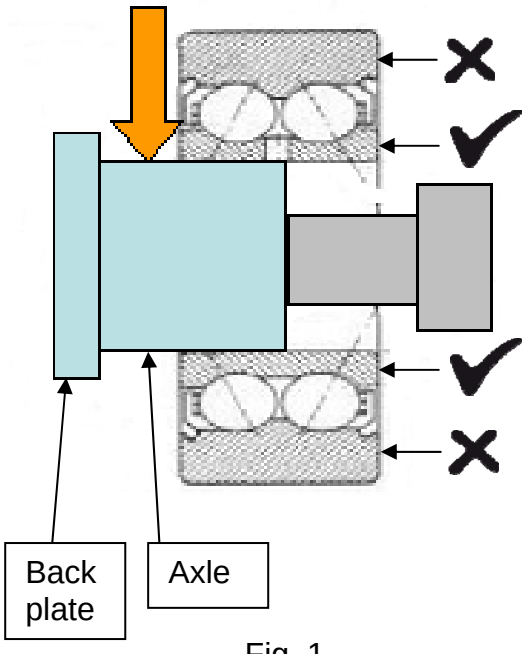

Fig. 1

Fig. 2

This would lead to misalignment of the bearing and its ultimate destruction. It also could lead to the seal coming loose, leading to loss of grease, and dirt coming into the bearing.

Misalignment will also lead to the belt coming in contact with the back plate. This will leave a rubbing mark on the back plate (Fig. 3).

Fig. 3

Rubbing mark

- Always check the play between the axle and the bearing. If there is excessive play, replace axle/back plate
- Always apply the OE recommended tightening torque; it is very important as it determines the preload of the bearing.
- Always use fixing glue in order to avoid the bolt/nut coming loose due to vibrations and thermal expansion/contraction of the different metal parts (if the bolt/nut loosens, the bearing falls apart) (See Fig. 6).

Attention:
- A correct tightening torque on a badly positioned bearing or a dirty axle will result in a failure.
- The tension on the belt also affects the performance of the idlers on this engine. Use Gates STT-1 sonic belt tension tester for correct belt tension setting.

2) Results of wrong installation method:

Figure 4: Bearing balls rolling outside their track due to misalignment and incorrect torque setting
Figure 5: Abnormal rotation of the interior rings through incorrect tightening.

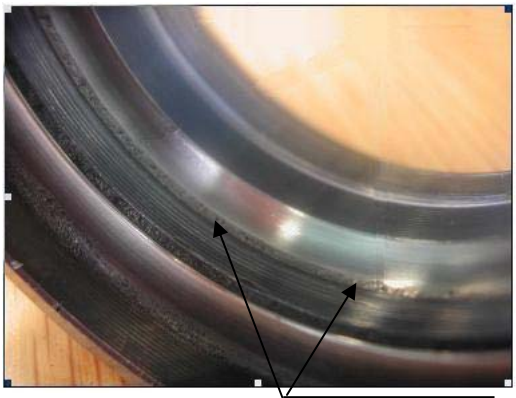

Fig.4

Ball traces

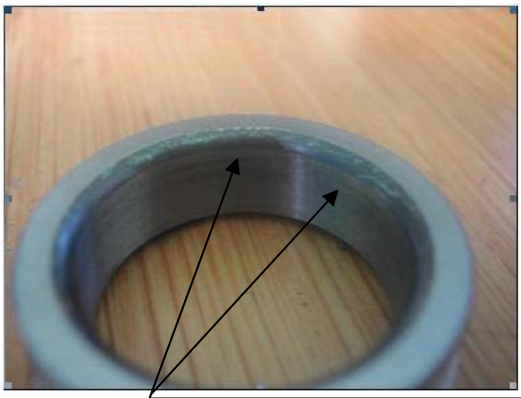

Fig.5

Abnormal rotation traces

Figure 6: Too low tightening torque will lead to the bearing falling apart.
Figure 7: Deformation of the balls because of excessive temperature, resulting from too high tightening torque.

Fig. 6

Fig. 7

Figure 8: Seal has come out of the bearing and ball cage has been destroyed.
Figure 9: One often can find balls in the lower engine compartment. Remove all debris from the drive system

Fig. 8

Fig. 9

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