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23/10/08

Technical Bulletin

Timing belt/kit installation on GM (Isuzu) 1.7D engines

| | |
|-------------------------|---|
| GATES REFERENCE: | 5563XS/K015563XS/K025563XS/K035563XS |
| MAKE: | CHEVROLET, OPEL, VAUXHALL |
| MODEL: | Astra, Combo, Corsa, Meriva, Tour, Zafira |
| ENGINE: | Isuzu 1.7 DTI |
| ENGINE CODE: | A17DT, A17DTR, Y17DT, Y17DTH, Y17DTL, Z17DT, Z17DTH, Z17DTR |



Questions and returns out of the field teach us there are still a lot of doubts on the contents/installation of this belt/kit, so we believe it is useful to launch a new bulletin on this engine.

This replaces Technical Bulletin N° 009.

Apart from the fact that 2 different tensioners have been installed over the life of the engine, the installation procedure and tension setting is very critical on this application.

Tensioner difference:

Up to engine nr 328703 (last 6 digits) the initial tensioner (Fig. 1) was installed. From engine nr 328704 this tensioner was replaced by the new version (Fig. 2). For the 1.7 D engine, OE does not allow to use the old tensioner version anymore.

That is why our kits only contain the new tensioner.



Fig. 1 OE ref. 5636724



Fig. 2 OE ref. 5636739



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Main differences in composition and application:

|  |  |  | + |  |
|---|---|---|--|---|
| K015563XS | 5563XS |  | | I-> eng nr 328704 |
| K025563XS | 5563XS |  |  | ALL engines |
| K035563XS | 5563XS |  |  | ->I eng nr 328703 |

As the initial tensioner base plate was sitting under one of the legs of the engine support bracket (Fig. 3), K015563XS can only be used from engine nr 328704 on.

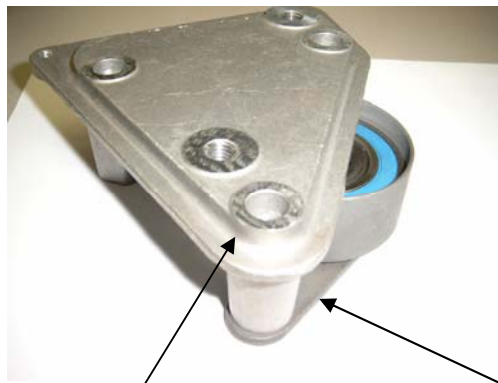


Fig. 3



Fig. 4

| | |
|------------------------|------------------------------|
| Engine support bracket | Base plate initial tensioner |
|------------------------|------------------------------|

K025563XS is supplied with a washer to compensate for the shorter leg of the early engine support bracket (Fig. 4), and a stud which is needed to hook the new tensioner spring on (Fig. 5). This K02 can always be used: up to engine nr 328703, using the washer and the stud; and from engine nr 328704 without the washer and the stud.

K035563XS is supplied with the new OE engine support bracket, with 3 legs of the same length. This kit can be used up to engine nr 328703.



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Installation/Tensioning:

This engine is VERY sensitive to wrong tension. Because of this, the installation/tensioning procedure must be followed strictly and precisely. Failure to do so will most certainly result in an idler failure.

Important – before starting the procedure:

Engine must be cold.

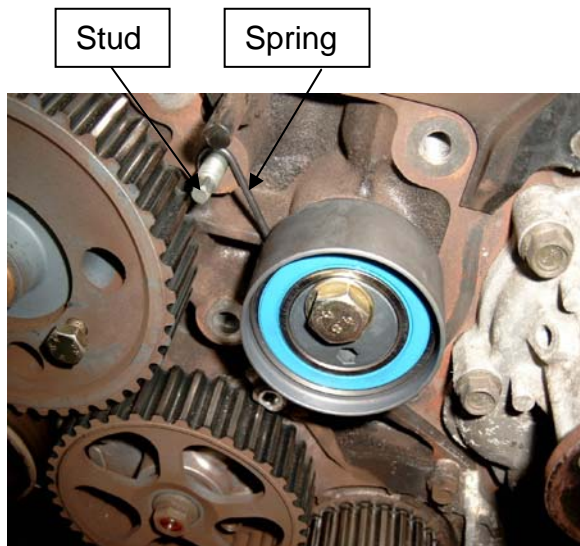
Put engine at Top Dead Centre (TDC).

Block the camshaft pulley (M6 bolt at 8 o'clock) and the injection pump pulley (M8 bolt at 5 o'clock).

Engine has to be supported and engine support bracket taken away.

A) Engines with the initial tensioner type (Fig 1) installed:

- 1) Remove old tensioner, spring, idler and belt
- 2) Install new idler and bolt
- 3) Insert and torque (18,6 Nm) stud at the right hand side of the injection pump pulley (Fig. 5)



- 4) Install new coil spring tensioner (spring over stud, bolt hand tight); make sure tensioner is sitting perfectly against engine block. If not, the spring could end up between the tensioner and the engine block, creating a serious tensioner misalignment (see Fig. 6)

Fig. 5

- 5) Rotate tensioner anticlockwise (Allen key) till Allen key hole is in +/- 5 o'clock position
- 6) Tighten bolt
- 7) Install new belt. Belt has to be taut on the left hand side (non-tensioner side) of the engine
- 8) Loosen tensioner bolt, allow tensioner to apply tension, torque tensioner bolt (49 Nm) **while holding tensioner in place with Allen key***
- 9) Remove camshaft and injection pump blocking bolts
- 10) Rotate engine (as prescribed by the manufacturer) via crankshaft, check TDC; loosen tensioner bolt, torque tensioner bolt (49 Nm) **while holding tensioner in place with Allen key ****
- 11) K025563XS: stick the washer (Fig. 4) on the bottom engine support leg (using fixing glue), in order to avoid losing the washer when loosening the support bracket bolt later.
K035563XS: install new bracket
- 12) Re-install other removed parts



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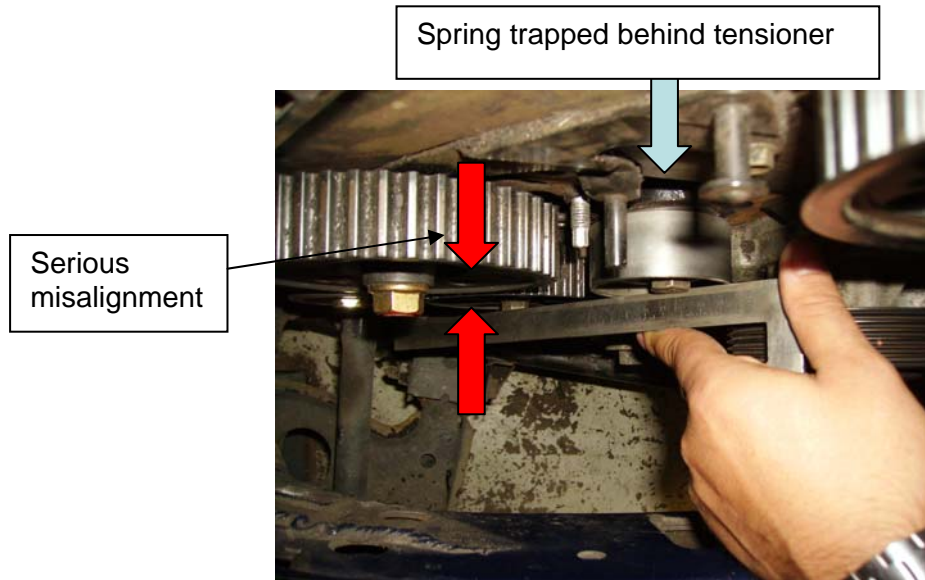


Fig. 6

B) Engines with a coil spring tensioner (Fig. 2) installed

NOTE : the installer does not need the stud and the washer for this version

- 1) Remove old tensioner, spring, idler and belt
- 2) Install new idler and bolt
- 3) Install new coil spring tensioner (spring over stud, bolt hand tight); make sure tensioner is sitting perfectly against engine block. If not, the spring could end up between the tensioner and the engine block, creating a serious tensioner misalignment (see Fig. 6)
- 4) Rotate tensioner anticlockwise (Allen key) till Allen key hole is in +/- 5 o'clock position
- 5) Tighten bolt
- 6) Install new belt. Belt has to be taut on the left hand side (non-tensioner side) of the engine
- 7) Loosen tensioner bolt, allow tensioner to apply tension, torque tensioner bolt (49 Nm) **while holding tensioner in place with Allen key***
- 8) Remove camshaft and injection pump blocking bolts
- 9) Rotate engine (as prescribed by the manufacturer) via crankshaft, check TDC; loosen tensioner bolt, torque tensioner bolt (49 Nm) **while holding tensioner in place with Allen key****
- 10) Re-install other removed parts

Important – during the procedure

*** If the tensioner is moving even a little during the tightening of the bolt, this change in position will be translated in an exponential change of belt tension.**



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** After completing step 10 of the installation in procedure A), or step 9 in procedure B), it is highly recommended to check the tension in span **T**, (see drive system layout below - Fig. 7) using the Gates Sonic Tension Tester STT-1.

To do this, enter the code 3618 in the STT-1 (ensure chip version 006 is installed) and measure in the normal way. If the tension is too high then the tensioner should be completely released and tensioning procedure repeated until the green light is obtained.

If the tension is too low then it will be necessary to assist the tensioner spring with the Allen key; until the green light is obtained.

Under **no other** circumstances should one assist the tensioner.

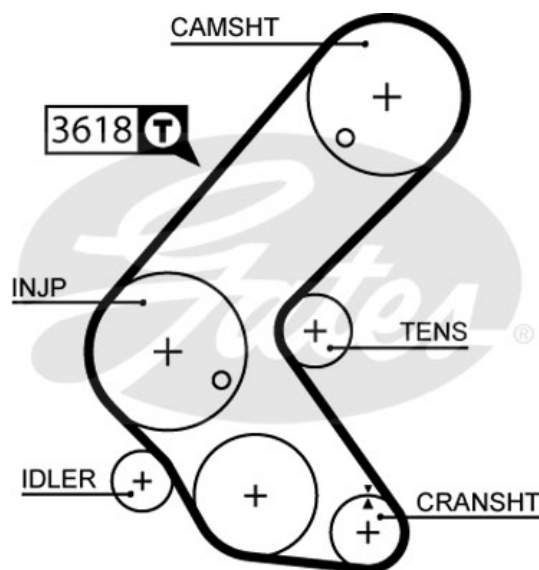


Fig. 7

Failure to observe this procedure could result in the belt tension being too high leading to an overload of the guide pulley, between the oil pump and injection pump, usually causing the idler pulley to collapse (Fig. 8) and leading to severe engine damage.



Fig. 8

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