

# Business Development

## European Aftermarket



Technical Bulletin

### Subject:

### Installation of tensioner used in PowerGrip® Kits K015543XS, K025543XS and K015559XS

#### Introduction

Through our experience with product claims in the field we have learned that many failures associated with these kits are due to wrong installation of the tensioner.

#### Product specification

The tensioner (Gates ref. T43062) in these kits has a metal pulley. It has been upgraded in the course of 2004 in line with OES evolutions. In some cases you may still find an old model mounted on the engine, which is slightly different than the latest version delivered in our kits.

The new tensioner with OE ref. 038109243N replaces following OE references; 038109243 and 038109243G.

In Fig. 1 you can see that only the new version has a crosshatch belt wear indicator (see also Fig. 4). This section indicates when the timing belt is worn out and when it needs replacement.

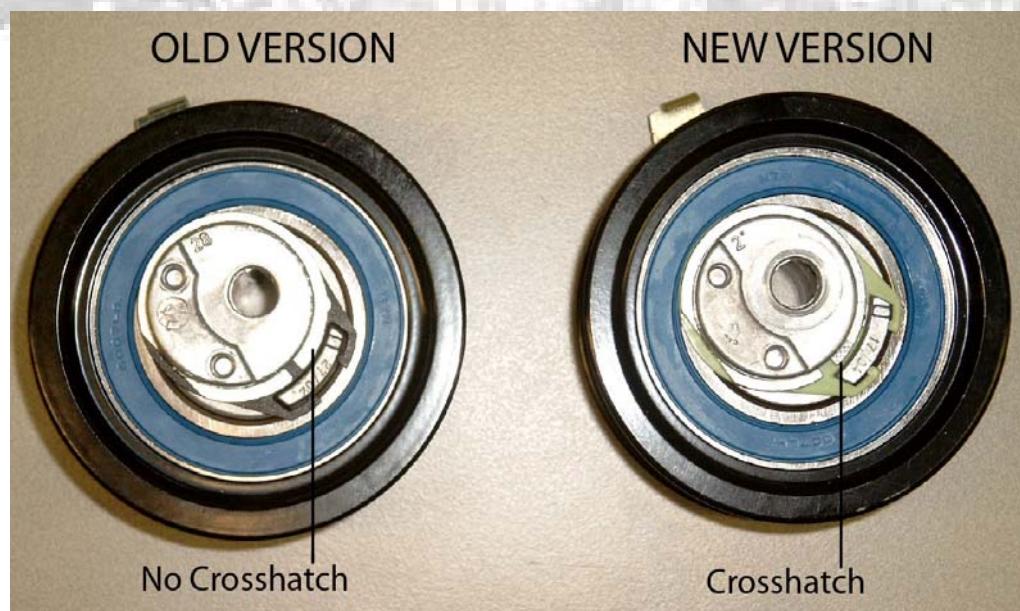


Fig. 1

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In Fig. 2 you can see that the new tensioner also has a shorter spacer. However, the distance between the engine block and the pulley remains the same.

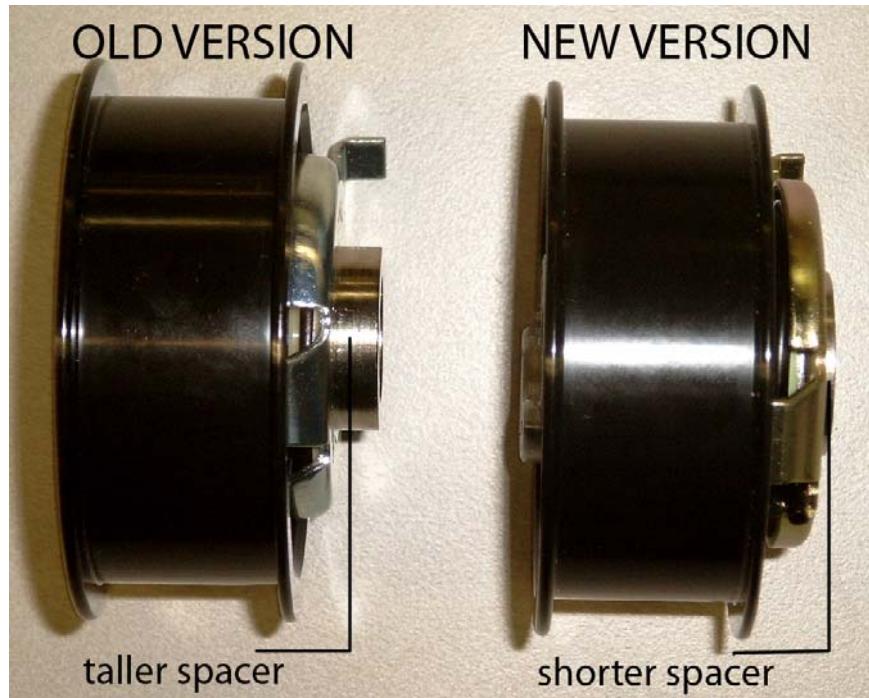


Fig. 2

### Guidelines for installation of the new tensioner

Before replacing the timing belt and tensioner, following points should be respected:

1. engine must be at room temperature
2. engine must be put at Top Dead Centre (TDC)
  - there is a timing mark on the flywheel which can be viewed from the top through a window in the gearbox housing
  - injection pump has to be blocked with a pin
  - vacuum pump has to be removed to fit the locking tool to block the camshaft
3. you must always turn the engine clockwise!

### **Setting the tension**

When the new tensioner is installed, verify that the index tab is located and properly seated in the slot (Fig. 3 and Fig. 4). Use the special tool to tension the tensioner and turn clockwise until the pointer lines up perfectly in the window, between the lines A and B. You can use a mirror to properly see this in the engine compartment. Now tighten the bolt at 23Nm.

Now you **must** rotate the engine two revolutions clockwise and then re-check the tensioner pointer. **Do not skip this step!**

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When after two engine revolutions the pointer is between lines A and B and the index tab is **in** the slot and pushing against the **right hand** side (Fig. 3 and Fig. 4), only then the tensioner is perfectly positioned.

If the pointer is not well positioned, the mechanic should restart the tension-setting procedure completely.

**When you are in the tension-setting, never turn the tensioner anti-clockwise!**

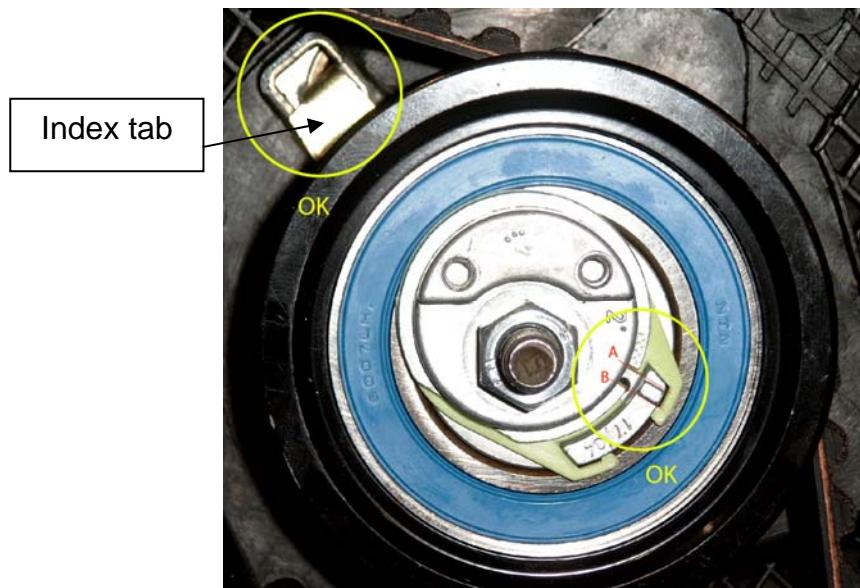


Fig. 3

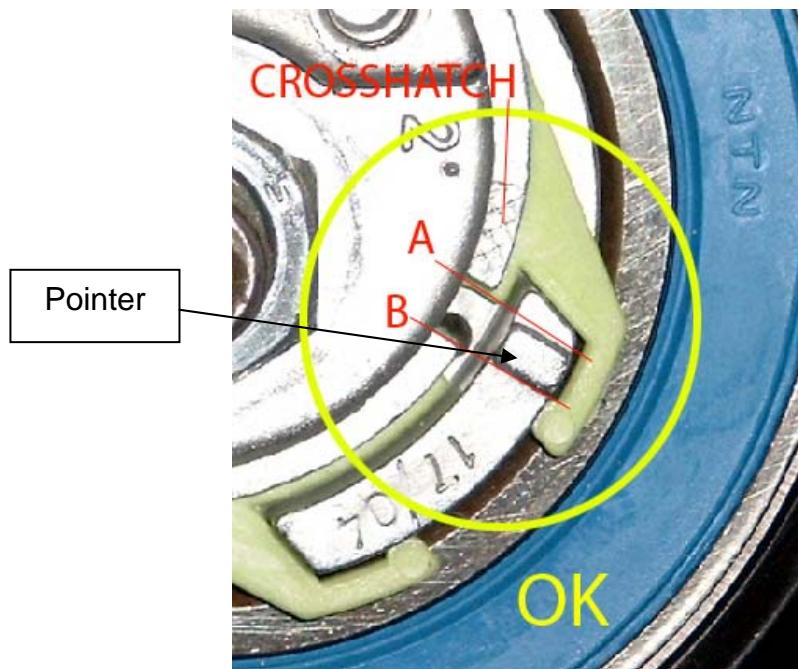


Fig. 4

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### Possible errors

Fig. 5 shows one of the common errors. Pointer is perfectly positioned between lines A and B but the index tab is not OK. The index tab is in the slot but is not pushing against the right hand side of the slot. The reason for this is that the tensioner was moved anti-clockwise during the tensioning process.

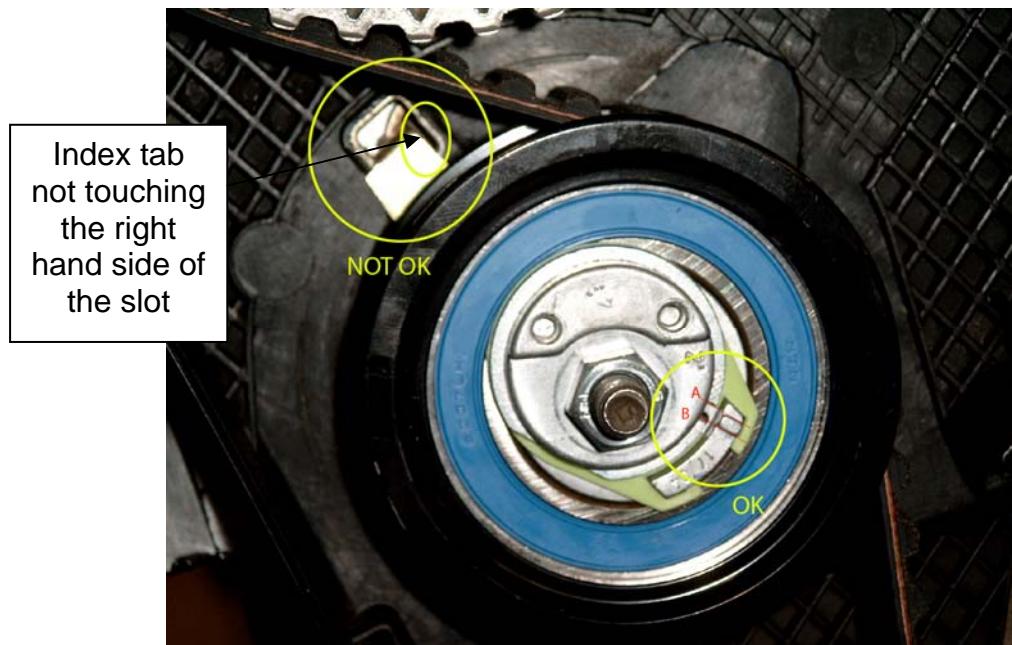


Fig. 5

A second possible error can be seen in Fig. 6. You can see that the pointer has not passed line A and is in front of the crosshatch. This means that the belt will have a too low tension.

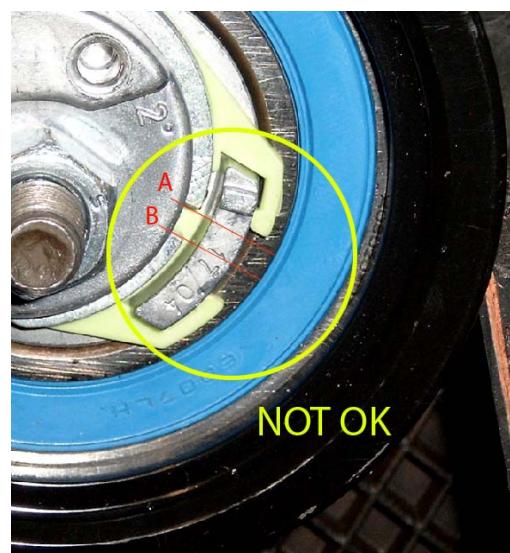


Fig. 6

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A third installation error is shown in Fig. 7. The pointer has passed line B, this means that the belt will be tensioned too much.



Fig. 7

In Fig. 8 you can see a fourth error where the index tab is not locked in the slot although the pointer is perfectly positioned between lines A and B. This way the belt will lose its tension once in operation.

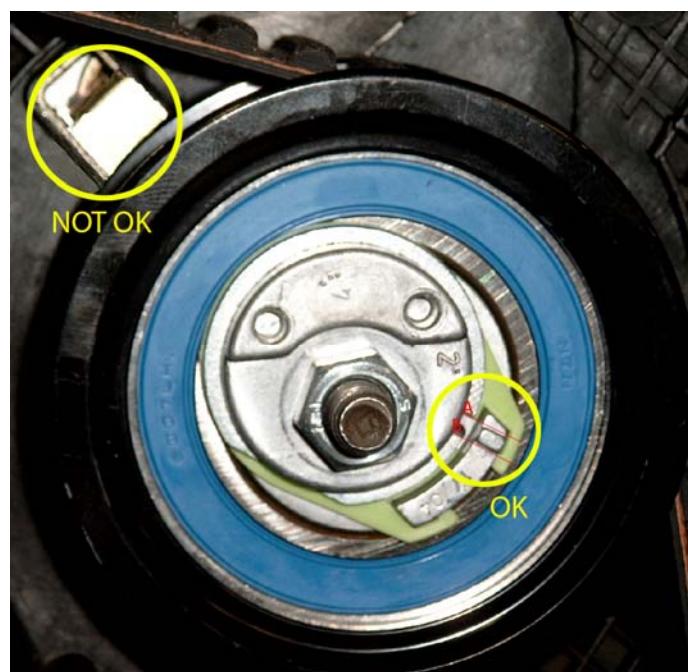


Fig. 8

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You can see the marks on the engine caused by this type of wrong fitment in Fig. 9. In this case you will also see that the index tab on the tensioner is slightly bent over.

Marks on  
engine  
caused by 4<sup>th</sup>  
error type

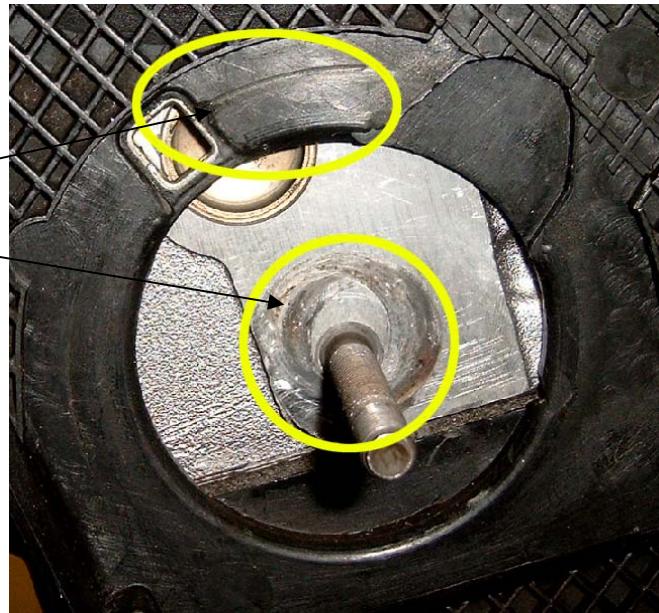


Fig. 9

**When the vehicle is released with a wrong positioned tensioner, severe engine damage will happen sooner or later.**

We can not stress enough how important it is to follow all the steps in the process of installing this tensioner without skipping one of them. It is better to lose 5 minutes at the installation then to lose an entire engine in the end.

In technical bulletin N°2 we already explained the difference between the belts 5543XS and 5559XS. Please refer to our application catalogue to find the correct kit for your application.

Should you have any further questions or remarks, please don't hesitate to contact us.

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