TEST REPORT 06E 109 217 / 218 H – V10-3166 & V10-3167

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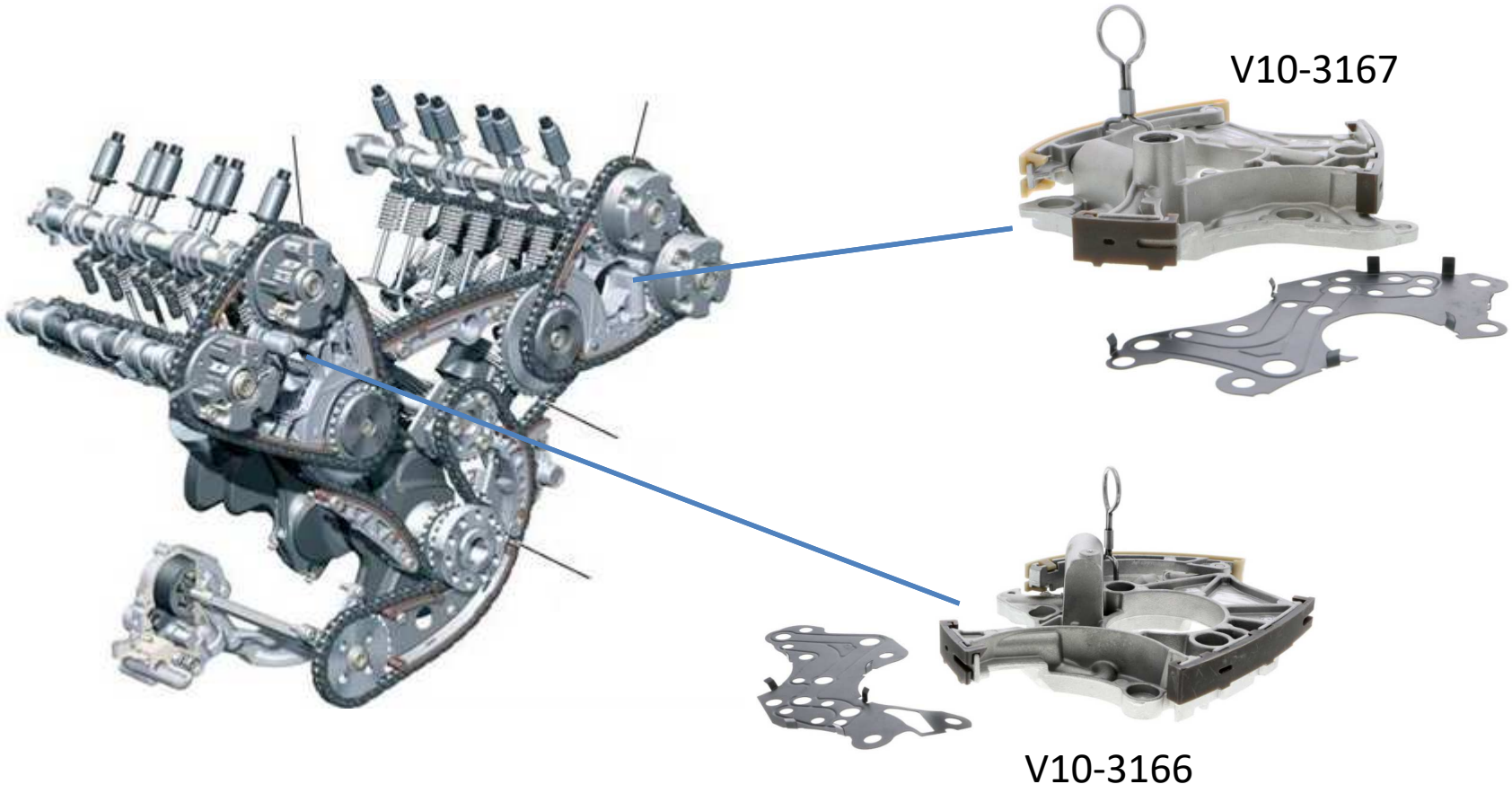

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PROBLEM

PROBLEMS:

„the unit is defective, the timing chain is supposed to tention kept jumping from the pulleys when turning the engine over by hand. Used dealer unit worked perfectly".

„Not enough tension to hold chain“

„Lost tension and collapsed“

„Bad out of box, would not build oil pressure“

„tensioner jumps“

„rail fell off“

…

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CLAIMED SAMPLE TESTING

Possible reasons for the tensioner not being able to tension appropriately:

- REASON 1: the initial tension of the spring inside the piston might be less than OE
- REASON 2: the surface of the piston or inner bore of the housing is scratched / damaged and causes that the piston seizes and cannot put tension on the rail and chain
- REASON 3: the maximum lift of the piston of the VAICO tensioner might be less than OE
- REASON 4: different diameters of the piston and the bore might cause that too much oil can run through the space between so that the tensioner looses oil and tension pressure on the guide rail
- REASON 5: the oil tube leading oil pressure to the piston might be blocked or not drilled through so that no oil or less pressure reaches the piston

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CLAIMED SAMPLE TESTING – REASON 1

REASON 1: The initial tension of the spring inside the piston might be less than OE

TEST METHOD: we removed the pistons from the tensioners and checked the pressure of the inner spring.

RESULT: OE and VAICO have the same pressure and will provide the same inital tension on guide rail and chain . All returned samples show perfect performance for the spring and its initial tension

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CLAIMED SAMPLE TESTING – REASON 2

REASON 2: The surface of the piston or inner bore of the housing might be scratched or damaged and causes that the piston seizes and cannot put tension on the rail and chain

TEST METHOD: moving the piston inside the housing and removing it to check for scratches and damages

RESULT: None of the returned claim samples has surface damages on the piston or housing, the pistons can be moved in the bore easily and smoothly.

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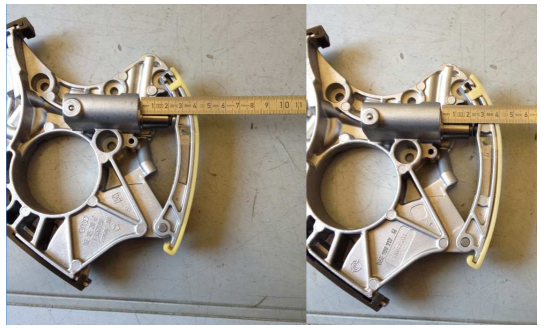
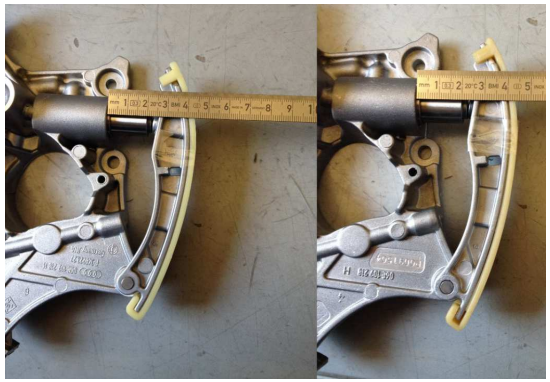
CLAIMED SAMPLE TESTING – REASON 3

REASON 3: The maximum lift of the piston of the VAICO tensioner might be less than OE

V10-3166:



V10-3167:



TEST METHOD: checking the position and distance after removing the locking key to check whether the piston brings the guide rail into correct position after mounting it and removing the key lock

RESULT: OE and VAICO tensioners have the same maximum lift. All returned items have the correct maximum lift values like OE and our inventory:

V10-3166 = 40 mm

V10-3167 = 43 mm

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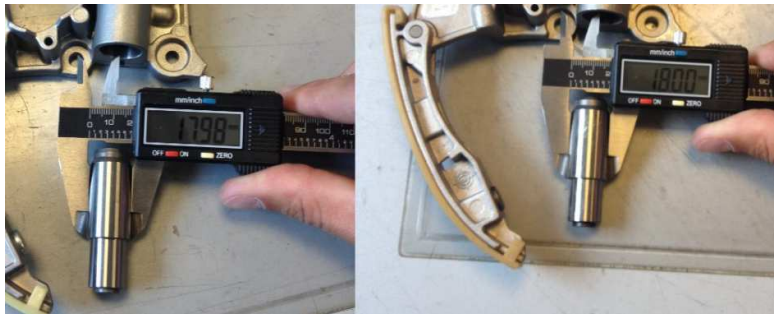
CLAIMED SAMPLE TESTING – REASON 4

REASON 4: Different diameters of the piston and the bore might cause that too much oil can run through the space between so that the tensioner looses oil and tension pressure on the guide rail



TEST METHOD: comparing diameter of bolt and bore to genuine to check the space between

RESULT: The space between for OE is 0,07 mm and VAICO is 0,03 mm so that lower oil pressure on the VAICO piston cannot be the reason for too less tension. All returned samples show the same measures

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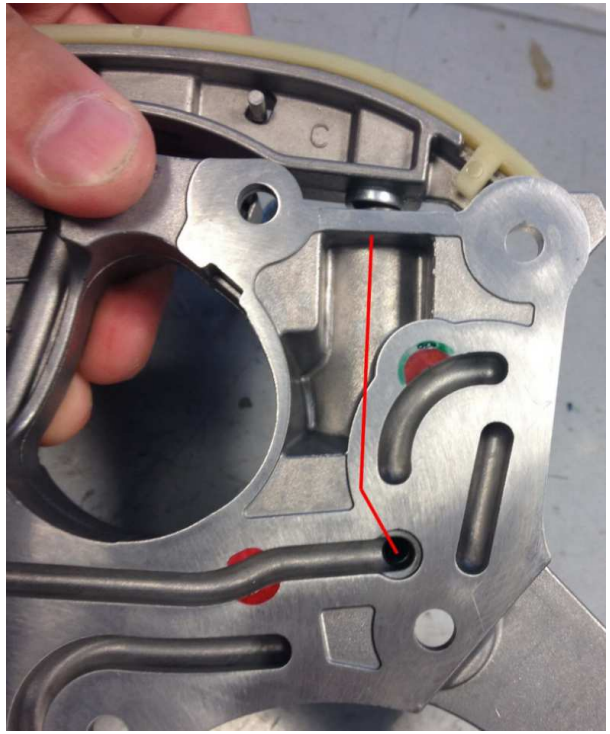
CLAIMED SAMPLE TESTING – REASON 5

REASON 5: The oil tube leading pressure oil to the piston might be blocked or not drilled through so that no oil or less pressure reaches the piston



TEST METHOD: pressing the piston into the housing of the tensioner to check noises and air flow if the oil tube is blocked

RESULT: none of the returned tensioners has a blocked or not completely drilled oil tube so that the tensioners can build up correct tension if the oil pressure on the car is correct and all oil lines to the tensioner are clean and free.

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CONCLUSION & SUMMARY

All returned claim samples do not show any problems why they should not build up correct tension, so that they cannot be the reason why the workshops have so much problems with them.

Our main problem to analyze what went wrong is that we do not have further information, for each claim sample and cannot relate the claim reasons to the returned parts one by one. Further information like, how many miles did they run and what was replaced in addition to the tensioners, are missing. Another question is how the workshops diagnose the tensioners as faulty on such a complex chain drive system? Did they check if the valve timing is correct?

In Germany our wholesale customers reject workshop claims directly if they cannot provide documents which verify that the installation was made according to the car manufacturer instructions. How do you handle this?

Some of the returned samples have other claim reasons like „defective part, rail fell off, defective as received, bad out of box“ which might be caused by transport damages or single production mistakes. These parts will be credited in the regular way.

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SOLUTION

… but why do your customers have these „**tension**“ problems:

To understand what went wrong we checked the engine details and how these parts are mounted in the workshops…

Main problem of all Audi 3.2 FSI engines is that the chains are mounted on the backside between engine and transmission so that you have to remove the complete engine to mount a new full timing chain kit with all chains, tensioners, rails etc. like shown in the following video https://www.youtube.com/watch?v=6haUb4T5UG0. In addition to that, this engine has massive problems with lengthened chains so that they have to repair it quite often.

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SOLUTION

A lot of workshops try to solve noise problems in the chain drive system of these engines much cheaper by replacing only the tensioner like shown on the following video https://www.youtube.com/watch?v=ZAWsKChptvU

Between minute 35 and 45 you can see that this guy mounts a new tensioner with the old chain and old camshaft adjusters. If the old chain is already lengthened you can imagine that a new tensioner cannot build up enough tension. With a new chain there won´t be any problems.

Now you might say that your customer said the problem was solved buy using a new genuine tensioner but we made the experience that workshops tell you like this to get back their money. They won´t tell you that they also used a new chain during the second installation.

Yesterday we got the information that offical AUDI workshops replace chain, tensioner and adjusters only together. Replacing only the tensioner might work for some engines but it is not the correct way for a professional repair.

So we think a lot of your sold tensioners are used for this low budget repair and some of your customers try to get their money back if it does not work. Because then they have to mount a full kit and do not need the single tensioners anymore.

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SOLUTION

Another problem for these units is dirty oil. Two of the returned claim samples were driven with very old and dirty oil like shown on the following pictures where the little oil strainer was already full of dirt.

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SOLUTION

Some workshops do not understand how these tensioners works

Claim Reason example:

„the unit is defective, the timing chain is supposed to tention kept jumping from the pulleys when turning the engine over by hand. Used dealer unit worked perfectly".

First of all, this mechanic does not seem to know that this tensioner works with oil pressure, testing the open system by turning the engine by hand works only with the initial tension of the spring of the tensioner piston. If he turns it the wrong way round he can also take the pressure away from the tensioner. For this claim I am 100% sure that this car had a lengthened chain and that he mounted only our tensioner in step 1. After having no success I am sure he also changed the chain as well, used another tensioner and wants to get his money back for the one he bought from you.

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SOLUTION

So what can you do to avoid paying for problems because of unprofessional repairs of the workshops

Let the workshops show you the mounting invoice to the car owners and reject claims directly when…

… they did not use a new chain

… they did not use new adjuster units

… they did not made an oil change after installing the new chain and tensioner

… tensioners and their strainers look dirty like on the picture before