

1994 Audi UrS Serpentine Belt Tensioner Rebuild (AAN Engine)

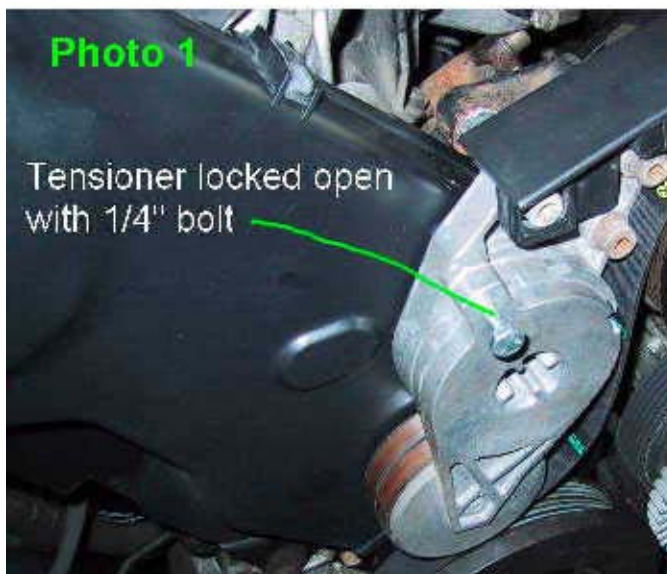
The serpentine belt tensioner on the AAN engine is available as a dealer-only part for mega \$\$\$\$. As these engines are getting up in age and operating hours, the bearing in the tensioner is approaching the end of its service life. It is possible to rebuild the tensioner for mini \$ by replacing the bearing.

The original bearing used in this tensioner was a NTN 6203 LH or NTN 6203 LHA (later versions). The LH and LHA suffix identifies it as a high temperature bearing (service up to 250 °F). NTN only supplies these bearings in Europe – they are not available in North America.

The tensioner sits right behind the radiator in the hot air flow, so a high temperature bearing is required. I used a SNR 6203.FT150 bearing (rated to 150 °C or 300 °F) to rebuild my tensioner. The bearing cost was CDN\$26.

A description of the method I used to rebuild the tensioner from the engine on my 1994 S4 is noted below:

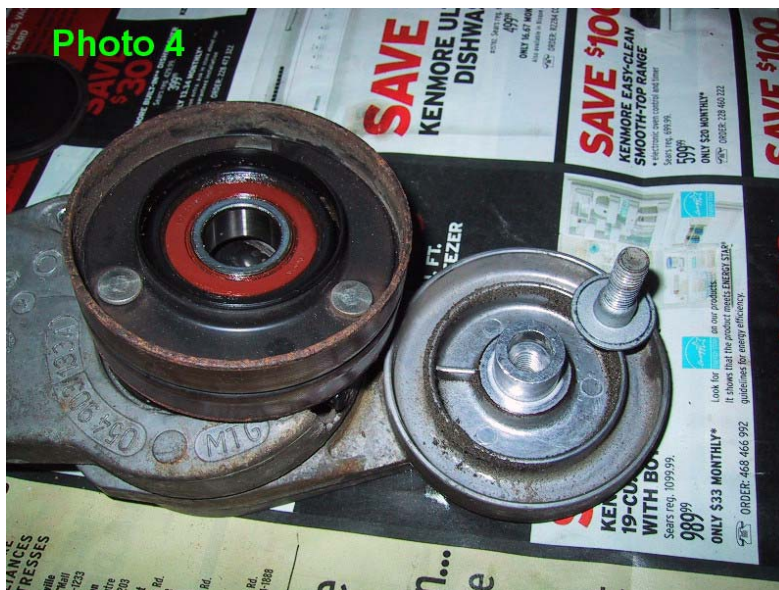
1. Swing back the tensioner to remove tension from the serpentine belt and lock it in the open position by sliding a ¼ " bolt through the locking holes (see Photo 1). Remove the 3 Allen head bolts (6 mm Allen wrench) securing the tensioner to the block and remove the tensioner. It is easier to remove the belt guard with the tensioner – to do this you will also have to remove the 5 mm Allen head bolt at the other end of the guard.



2. Clean up the tensioner and carefully inspect the aluminium body for cracks, particularly around the spring housing. Some of these units have failed due to fatigue fractures in the housing. If the unit is cracked, replace the entire unit with the dealer part (oh my aching wallet!). On these engines, fragments of a failed serpentine belt have a way of magically getting inside the timing belt covers and breaking the timing belt, which ends up much more expensive than a new tensioner (think 20 bent valves).
3. Pop off the plastic dust cap on the tensioner roller (see Photo 2) to access the Torx bolt (T40) securing the roller to the tensioner body (see Photo 3).



4. Remove the Torx bolt and the roller (see Photo 4). The roller comes off easily; it is not pressed on to the shaft.



5. The roller is made of 3 pieces – a ring that takes the dust cap and two roller halves (see Photo 6). The entire assembly is riveted together. Each half is flanged over the bearing, so the bearing cannot be pressed out –

the roller has to be split apart. Match-mark the roller halves and ring so the bolt holes will line up when you go to put it back together.

6. Drill out the riveted ends of the rivets with a 5/32 " drill (see Photo 5). Punch the rivets through and remove the ring. Mark the side of the roller the ring was on for re-assembly. Split the halves by driving a sharp low-tapered tool between them (I used a sharpened screw driver I had laying around in my chisel drawer). A cold chisel will not work – the taper on the blade has too great an angle.



7. Drive (or press) the old bearing out of the roller half it is in. Drive the new bearing in to one half, align your match-marks, and drive the other half of the roller on. This can be done (carefully) with a light hammer. Make sure you always hammer (or press) on the OUTER bearing race.
8. Install the ring and re-assemble the roller. If you have the proper size rivets, you can re-rivet it. I didn't, so I used #10 machine screws. Note that the tensioner housing has a rib cast in it (see Photo 7). This interferes with the dust cap ring and keeps Hans from putting the roller on backwards. It also interferes with the nuts on the assembly screws, and means the screw heads have to be on this side with the nuts on the dust cap side. This also has the advantage of being able to visually check the nuts whenever you remove the tensioner. I used Loctite blue on the screws and staked the ends – you don't want this coming apart (see Photos 7 & 8).



9. Mount the roller on the tensioner body, use Loctite on the Torx screw, snap on the dustcap, & the job is done. Tell your S.O. how much money you just saved (see, all those tools WERE a good investment!).

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August 3, 2004