SERVICE BULLETIN:

Subject: Prevent Premature Water Pump Failure!

BLAUFergnugen! Inc. recommends that an Audi Vw Factory Trained ASE Certified Technician install your parts to ensure your safety. Always read the factory service manual safety instructions and guidelines.

ALWAYS WEAR SAFETY GLASSES AND OTHER SAFETY ITEMS WHEN PERFORMING THE FOLLOWING WORK!

Installers Responsibility:

Blauparts recommends that installers take the necessary time to thoroughly follow the steps outlined in this bulletin to prevent future labor costs, as well as any inconvenience after the installation of the water pump included in this timing belt kit. It has been noted that due to time constraints, inconvenience, and profit, many individuals and mechanics alike, do not take the extra time needed to thoroughly flush the entire vehicle cooling system prior to the installation of the new water pump. Just draining the cooling system and refilling the system is not enough! Premature water pump failure (water pump seals and bearings) can occur because of failure to take the time to flush the entire cooling system and its related components. Often when problems arise, such as a coolant leak, the new water pump is blamed as the cause when in fact the opposite is true. It is usually because the installer has neglected to follow these steps listed below.

Flush the Cooling System:

It is imperative that the cooling system be thoroughly flushed of all accumulated silt and sediment build up, including all aftermarket cooling system additives, or stop leak products that may have been added to the cooling system, past or present. This would entail flushing the radiator, engine block, heater core and hoses etc. Use Only Tap Water to flush the entire cooling system. DO NOT USE Cooling System Flush Products since many contain muriatic and/or other acids. Remnants of such acids left in the cooling system can cause your new water pump to prematurely fail.

Water Pump Installation:

Take extra time in cleaning the water pump gasket/o-ring mating surfaces. Make sure the surface is free of all old gasket material and corrosion build up before installing your new water pump. It may be necessary to use a light abrasive scuff pad or razor blade. Gasket sealing agents should NOT be used if your water pump includes a paper gasket. If the water pump mounting surface area on the engine block is thoroughly cleaned, smooth and free from old gasket debris, gasket sealing agents (Form a Gasket products in gel or spray forms) are not needed. Sealing agents vary in composition and intended usage, and when used in conjunction with paper gaskets may affect the paper gaskets’ long term ability to compress and/or perform its sealing function. Appropriate gel like gasket sealing agents should only be used in the case of severe pitting of the engine block surface whereby an even and smooth mounting surface for the water pump is not attainable. Double check all water pump mounting bolts for tightness. A loose or missing water pump or thermostat housing bolt can result in a leak and falsely attributing the water pump as defective.

Filling the Cooling System:

IMPORTANT: Read the Warnings on the antifreeze coolant bottle, improper use is HARMFUL or FATAL. Use only Audi, Vw G-12 antifreeze coolant which was included in your timing belt kit. These bottles contain coolant that is concentrated. You must dilute the coolant. Mix 50% coolant with 50% DEIONIZED WATER. DEIONIZED WATER IS PREFERRED. However, if it is not available use distilled water. DO NOT MIX TAP WATER with new coolant if at all possible. Tap water varies in Ph and mineral content and depending on these factors, can adversely effect your new water pump and other cooling system components.

Water Pump Break in Period:

All water pumps are inspected and air pressure tested at the factory for any leaks. However, new water pumps do have a break in period. It is not uncommon for a new water pump to have some seepage of coolant from the discharge hole below the water pump pulley shortly after start up. This is because the unique seal material in the new water pump is designed to ‘bed in’ as the impeller shaft spins. Slight weeping or dampness from or around the discharge hole or cap is allowable for at least 100 miles after installation and should not be attributed as a defective water pump.

Maintenance:

Mixing other brands of unauthorized antifreeze coolants with the approved G-12 antifreeze coolant included in your new timing belt kit can also cause an adverse chemical reaction to G-12 coolant, causing the coolant to gel and clot. This can damage the new water pump, plug the cooling system, and weaken other plastic cooling system components such as, the radiator and plastic coolant hose connections.

Environment:

Be environmentally responsible. Dispose of the old anti freeze coolant properly.

Page 1
Guidelines For Installation Of Your Audi 3.0 Timing Belt Kit

Applies to Part Number : GH21119

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The following information is simply a guideline and is not intended to replace the official Bentley Factory Manual. Always refer to the factory manual for proper installation and safety guidelines.

1) After following and completing bumper cover removal guidelines, remove all decorative engine covers.

2) Use an 19mm wrench to remove the accessory belt by rotating the belt tensioner clockwise.

3) Drain remaining coolant from the engine block by removing the rearmost oil cooler coolant hose located just above your oil filter.

4) Use the correct size 6 point allen wrenches to remove the spring loaded accessory belt tensioning device.

5) Remove the various plugs and wires as well as the throttle body intake pipe from the air box. Remove the air box.

6) On the coolant expansion tank, disconnect the bleeder hose closest to the firewall, as well as the sensor plug on the bottom of the tank. Remove the fasteners and place the tank off to the side.

7) Unplug the ignition coil harnesses and remove all of the ignition coils. Remove the oil dip stick tube and pull loose the crankcase breather vacuum hoses on the back side of each valve cover. Remove both driver and passenger side valve covers.

8) Remove coolant pipe running in front of the passenger side timing belt cover.

9) Remove upper timing belt covers.

10) Rotate engine clockwise until both the intake and exhaust cam lobes on cylinder 3 of the passenger side cylinder head are pointing upward or uniform with each other. At the same time you should be able to see timing marks that line up on the ribbed belt pulley and the lower timing belt cover. Check fitment of cam locking tools #T40030 onto the passenger and driver side camshafts. If the taper to the camshaft and cam tool #T40030 do not line up, rotate the engine one more full turn and re-attempt. (Remove cam lock tools #T40030 as these will be reinstalled in a latter step.)

(Image 1)

11) Use the correct sized 6 point allen wrench to remove the crank lock plug and install crank locking pin tool # T40026. This plug is located under the driver side motor mount bracket, just above the sub frame. To access this area, you may need to remove the auxiliary water pump. Only install the crank lock pin when you are confident that the engine timing marks all line up correctly.

12) Remove the (8) fasteners holding the serpentine belt pulley to the crankshaft. Some models will have a thrust washer between the ribbed belt pulley and the crank pulley. If your vehicle is equipped with a thrust washer, you need to make sure it is re-installed.

13) Remove the power steering pulley with special tool #3212.

14) Remove lower timing belt cover.

15) Gently pry to remove all securing rings on the camshaft bolt caps, then pry out the caps themselves. Have a rag available because excess oil will drain from the cam bolt ports.
16) Loosen center camshaft pulley bolts about two full turns but do not remove. (*Allow the tensioned timing belt to counter hold the camshafts sprockets when loosening.*)

17) Place cam locking tools #T40030 into position on passenger and driver side camshafts. (*The main purpose of this tool is to hold the camshafts in position to achieve proper timing. Tools #T40030 are not intended to be used for heavy loosening/torquing of camshaft bolts.*)

18) Using an 8mm allen wrench, turn the timing belt tensioner counter clockwise to compress the hydraulic damper enough to slide special pin tool #T40011 into small hole found in damper. This pin will release the tension from the timing belt.

19) Loosen and remove the eccentric pulley.

20) Fully remove your old timing belt.

21) If you are replacing the water pump at this time, you must remove both of the passengers side camshaft pulleys. Mark each pulley as each pulley must be returned to its original location. Next, remove the idler roller and bracket to access and remove the (3) fasteners retaining the rear timing belt cover. Remove the rear timing belt cover. Then, remove (3) fasteners from the power steering pump bracket in order to access the uppermost water pump bolt. Finally, remove the old water pump and thoroughly clean the gasket mating surface on the engine block.

22) Install new water pump and reassemble components removed in step 21 with the addition of the new idler roller and bracket, but leave the camshaft timing pulleys off for step 23 below.

Torque listing for above components:
- Water pump -7 ft lbs - Rear timing belt cover-7 ft lbs - Idler roller bracket-7 ft lbs - Idler bracket roller-18 ft lbs

23) The cam seals on 3.0L engines are very reliable, replace cam seals only if leaking. Starting on the passenger side, use special tool # VW681 to remove both front camshaft seals. Do not scar the camshafts. Inspect both camshafts for any damage or grooves where the old seal engaged the camshaft. With a cotton rag clean and then lubricate the sealing lip of new seals with clean motor oil, and then use special tool # T10053 to gently press new seal into place. If a groove existed in the camshaft, recess the seal a few millimeters deeper so that it rides on a new mating surface. Install passenger side camshaft pulleys onto the proper camshaft as marked earlier and leave the center bolts hand tight. Repeat procedure for the driver side camshaft seals. Use care throughout the above step that neither camshafts have accidentally rotated or cam timing will need to be realigned.

24) Replace crank seal. With crankshaft lock tool # T40026 still in place from step 11, use a 1/2" breaker bar with 12 point 24mm socket to remove the main crankshaft bolt, then remove the toothed pulley. Use tool # 3203 to remove the lower crank seal. Inspect Crankshaft for any damage or possible groove where the old seal engaged the crankshaft. Lubricate sealing lip of the new seal with clean motor oil, then with tool # 3265, gently press new seal into place. If a groove existed in the crankshaft, recess the seal a few millimeters deeper so that it rides on a new mating surface.

25) Reinstall crankshaft toothed belt pulley and tighten to 148 ft lb + ½ turn

26) Install the new eccentric pulley and leave fasteners hand tight until a later step.

27) Install the toothed belt tensioner. Torque spec: 21 ft lbs for bracket to block and 16 ft lbs for tensioner to bracket.

28) Install timing belt by sliding it onto all the pulleys evenly.
29) With special tool # 3387, turn the eccentric pulley in a clockwise direction until handle of the wrench is exactly centered with the pulley of the water pump. Hold special tool #3387 firmly in place and torque center bolt to 33 ft lbs.

30) Use an 8mm allen wrench to apply counterclockwise tension to timing belt tensioner lever in order to remove the tool #T40011 retaining pin from the hydraulic damper.

31) With a torque wrench and 8mm allen socket, load the tensioner in a clockwise direction to 7 ft lbs. This will allow the hydraulic damper to extend out and apply the correct tension to the new timing belt.

32) With cam and crank locking tools still in position, use special tool # T40028 to properly set exhaust variable valve timing. Insert special tool over the top of the passengers side exhaust cam pulley nut, and turn clockwise to 8 ft lbs, then lightly tighten cam bolt to 15 ft lbs. Proceed to the driver side exhaust cam and perform the same procedure. When the variable valve timing cam sprockets have been set lightly tighten intake cams to 15 ft lbs.

33) Remove camshaft Tools #T40030 and torque all (4) camshaft pulley bolts to 73 ft lbs, then reinstall camshaft front bolt caps with new o-rings and securing clips. (Allow the tensioned timing belt to counter hold the camshaft sprockets when tightening.)

34) Remove crank locking pin # T40026.

35) Rotate the engine by hand clockwise two full revolutions and re-examine timing marks on all camshafts in comparison with crankshaft timing mark. Review step 10 to see how the marks are to be aligned.

36) Reinstall the crank locking hole plug into the side of the engine block and torque to 18 ft lbs.

37) Reinstall both valve covers, ignition coils, harnesses and oil dip stick. Torque specs: Valve covers - 7 ft lbs

38) Reinstall all timing belt covers. Torque specs: 7 ft lbs

39) Reinstall power steering pulley. Torque spec: 18 ft lbs

40) Reinstall ribbed belt crank pulley. Torque spec: 18 ft lbs

41) Reinstall ribbed belt tensioner and belt. Torque spec: (1) large upper fastener - 30 ft lbs and (2) small lower fasteners 18 ft lbs.

42) Locate any components removed not specifically addressed in this guideline and re-install, then review each step found in this set of guidelines to ensure each component has been addressed properly and has been re-fastened to specification.

43) Locate and loosen coolant bleeder screw located on the pipe next to the power steering pump.

44) Slowly fill the coolant expansion tank with a 50/50 mixture of coolant and distilled water until it flows from the bleeder hole in the above bleeder screw, then tighten the bleeder screw.

45) Loosen the clamp on the coolant hose that runs up to the heater core. Pull the hose back until the small bleeder hole located near the end of the hose is no longer sealed. (Image 2)

46) Continue to fill the coolant expansion tank with a 50/50 mixture of coolant and distilled water until it flows from the bleeder hole in the above heater core hose.

47) Push heater hose back into place and re-affix clamp.

48) Top off coolant level to the max mark of the expansion tank and install the expansion tank cap.

49) Set heater controls to the maximum heat position and start the engine.

50) Elevate engine RPM to around 2000 rpm for approximately 3 minutes, then allow engine to idle until the lower coolant hose on the radiator is hot.

51) Turn engine off.

52) When engine has cooled re-check coolant and add as needed.

Guidelines For Installation Of Your Audi 3.0 Timing Belt Kit

IMPORTANT !!!! If your timing belt tension was not properly applied or if you need to release your timing belt tension you will need to reset or compress the hydraulic tensioner damper. To avoid premature damage or failure of your hydraulic tensioner damper and tensioner pulley please follow the steps listed below.

1) Avoid an OVERABUNDANT amount of pressure when compressing the hydraulic tensioner damper.

2) Compress the hydraulic tensioner damper in a slow manner taking in upwards of 2-5 minutes to do so.

3) Always compress the hydraulic tensioner damper on the vehicle as outlined by your factory Bentley manual.

4) Do not mar the piston shaft of the hydraulic tensioner damper as this will render the hydraulic tensioner damper useless. (example: using pin tool T40011)

5) Install locking pin or locking plate when in compressed position.

6) Set timing belt tension and timing of engine as outlined in your corresponding instruction form.

(Failure to comply with these steps will damage your hydraulic tensioner damper and or pulley.)

(Failure to heed this bulletin can cause the timing belt to skip a tooth result in catastrophic engine damage)

Image 2
Guidelines For Audi A6 1998-04 Front Bumper Removal

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The following information is simply a guideline and is not intended to replace the official Bentley Factory Manual. Always refer to the factory manual for proper installation and safety guidelines.

1) Elevate vehicle on an automotive lift or proper jack stands and remove the lower splash pan.

2) Unplug the lower fog lights and horns. You will be able to access the electrical plugs from behind the bumper cover. There are a total of two horns, one on each side, located just above the fog lights. (Image 1)

3) Pinch off the vehicle end of the headlamp washer hose and remove the plastic clip. This hose is located on the drivers side of the vehicle just in front of the windshield washer tank. (Be careful not to break or destroy the clip as it will need to be reused) (Image 2)

4) Locate and remove any fasteners from each inner fender liner, just in front of each tire. (Image 3)

5) Locate and remove the (6) 10mm nuts that hold the bumper cover ends to the inner fenders. These fasteners are located behind the bumper cover, inside the forward edges of the inner fenders. (Image 4)

6) Remove the lower passenger and driver side bumper grilles, then locate and remove the fasteners located in the top of each grille opening (one fastener per side). (Image 5)

7) With a firm grip, pull forward and outward on the bumper cover on each side of the vehicle. Use care while slowly working your way to the middle of the bumper cover, then fully remove the bumper cover. (Image 6)
8) Remove the upper and outermost fasteners located near the bumper shock brackets on each side of the vehicle. Then, thread tool 3369 or GH29151 / 3411 into those same threaded holes. When tool #3369 or GH29151 / 3411 is in place on each side of the vehicle, remove the fasteners from bumper shock brackets. (Image 7)

9) Locate and remove the (2) fasteners that hold the air box intake to the radiator valance. Pull upward on the duct closest to the air box and then remove the duct.

10) Locate and remove the (4) upper radiator valance fasteners located at the forward fender edge on each side of vehicle. (Image 8)

11) Locate and remove the (2) fasteners holding the lower front edge of fender to the radiator valance. These fasteners are located just under the headlamp on each side of the vehicle. (Image 9)

12) Remove the engine bay seal that runs across vehicle from fender to fender along the front side of the engine bay.

13) Locate and remove the (2) fasteners that hold the power steering cooler tube in place. This cooler is located directly in front of the radiator/AC condensor. Let cooler tube hang free, but take care that it does not get damaged.

14) Drain the coolant from the coolant system into a suitable drain pan. Note the following drain methods or locations by engine:

   - 2.8L Engines - You must remove the lower radiator hose located on the lower passenger side rear of the radiator by pulling up on the radiator hose clip, then pull straight back on the hose being very careful not to crack the radiator.
   - 2.7T Engines - Unscrew the radiator drain screw located on the lower drivers side front of the radiator.
   - 3.0L Engines - Unscrew the lower radiator hose drain plug located at the lower, passenger side rear of the radiator on the hose.
   - 4.2L Engines - Unscrew the radiator drain screw located on the lower drivers side front of the radiator.

15) Remove the upper and lower radiator hoses by gently prying on the removal clip integrated into the hose clamp with a screw driver blade.

16) Slide the entire front radiator and support assembly forward along the previously installed special tools # 3366.
Guidelines For Audi A4 2002-05 Front Bumper Removal (+06 Cabriolet)

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The following information are simply guidelines and are not intended to replace the official factory manual. Always refer to the
factory manual for proper installation and safety guidelines.

1) Elevate vehicle on an automotive lift or proper jack stands and remove the lower splash pan.
2) Remove t-25 torx from each fender well. (1 on each side) These will be hidden behind the fender liner on the forward lower edge. (Image 1)
3) Remove fasteners holding the bumper cover to the forward fender edge. There are a total of (3) 10mm fasteners on each side of the bumper cover. You will have to access these fasteners from the back side of the bumper cover. The passenger side is more difficult to get to and may need to be accessed through the fender well. (Image 2)
4) Unplug the two bumper cover harness plugs located at the drivers side of the bumper cover. (Image 3)

5) With proper hose crimping tool pinch off headlight washer hose closest to the tank. Unplug the headlight washer hose by pushing inward on the plastic clip and pull hoses apart. (Image 4)
6) Remove side bumper grilles by gently pulling outward.
7) At the lower side grille openings locate and remove the fasteners located in the top of each grille opening (one fastener per side). (Image 5)
8) Gently pull outward and remove bumper cover placing it off to the side.
9) Locate the radiator drain screw at the lower front passenger side of the radiator. Drain the coolant from the system into a suitable drain pan. When completed reinstall drain screw. (Image 6)
10) Install bumper support tools 3411 into threaded holes next to bumper shocks. (Image 7)
11) Remove (6) fasteners from radiator valance as pictured. (Image 8 and 9)
12) Remove (6) bumper shock mounting fasteners. (Image 7)

13) On turbo charged models loosen hose clamps at intercooler crossover pipe just under the radiator and remove or slide hoses off pipe. It is recommended to cover the ends of the intercooler crossover pipe as to not allow anything to drop into the pipe. (Image 10)
14) Disconnect radiator hoses from radiator by prying upward on the spring clips and pulling outward on the hoses. Be very careful not to crack plastic ends. (DO NOT PULL UPWARD OR DOWNWARD ON RADIATOR ENDS AS THIS WILL DAMAGE YOUR RADIATOR.)
15) Slide out radiator valance into the service position. If there is any engine harness binding remove any clips, tie straps, or other fasteners from the harness to allow enough excess harness when the radiator valance is pulled outward.

(ALWAYS MAKE SURE HOOD LATCH IS IN WORKING ORDER BEFORE YOU CLOSE THE HOOD OR YOU WILL NOT BE ABLE TO GET YOUR HOOD OPEN!)