

BLAU PARTS®

PLEASE READ THE FOLLOWING BULLETIN BEFORE CONTINUING WITH YOUR TIMING BELT REPLACEMENT



Bulletin: 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 Robert Bentley 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 failing 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.

Flushing 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.

BLAU PARTS®

Guidelines For Installation Of Your Audi / VW 2.0T (FSI) Timing Belt Kit

Applies to Part Number : GH21130

! CAUTION !

Performing Work on Your Automobile Without Having Proper Knowledge, Mechanical Ability or the Proper Tools and Safety Equipment, CAN CAUSE SEVERE INJURY OR DEATH !

BLAUfergnugen! Inc. recommends you have an A.S.E. Certified Technician install your parts to ensure your safety.

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

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.

PLEASE NOTE: The proceeding instructions are only a basic outline of you timing belt replacement. Complete step by step instructions on the engine motor mount bracket and engine disassembly are under development and coming soon!!

- 1) Remove all decorative engine covers.
- 2) Drain all remaining coolant from the engine block by removing the oil cooler coolant hose located above the oil filter and also the furthest away from the front of the vehicle.
- 3) Locate the radiator drain screw at the lower front drivers side of the radiator. Drain the coolant from the system into a suitable drain pan. **(Image 1)**

Disassembly and Removal of old timing belt components:

- 4) Remove Serpentine belt by using a 17mm open end wrench. Rotate tensioner in a clockwise direction to release the belt tension and remove belt. **(Image 2)**
- 5) Remove the serpentine belt tensioner by removing (3) 13mm bolts holding the serpentine belt tensioner in place. **(Image 2)**
(Torque spec 16 ft lbs) **Note: directions of engine lift bracket so installation is correct.**
- 6) Remove upper timing belt cover. There are (2) t-30 torx and (5) 10mm fasteners holding this cover in place. **(Image 3)**
(Lower 10mm fasteners not pictured.)



Image 1



Image 2



Image 3

Guidelines For Installation Of Your Audi / VW 2.0T (FSI) Timing Belt Kit Continued.....

- 7) Loosen vibration damper fasteners but do not remove. Counter hold crankshaft with 19mm 12 point socket, and using 6mm allen loosen the (6) fasteners. **(Image 4)**
- 8) Rotate engine until timing marks align. The camshaft has a line on the sprocket that needs to align with the timing arrow on the timing belt backing cover. The crankshaft has a line on the vibration damper that needs to line up with the small indentation in lower timing belt cover. Its best to feel this indentation with your finger as it is harder to see with the eye. **(Image 5 and 6)**
- 9) Remove (6) vibration damper fasteners and pull off vibration damper pulley. **(Image 4)**
- 10) Remove lower timing belt backing cover. (2)10mm bolts **(Note: At this time its also good to mark the crank pulley with a paint marker as to be sure your timing marks stay lined up during your disassembly and assembly.)**



Image 4



Image 5



Image 6

- 11) Loosen 13mm timing belt tensioner pulley nut and slide old timing belt off of the water pump and fully remove timing belt. **(Image 7)**
 - 12) Remove all old timing belt components. Such as idler tensioners, tensioner pulley and water pump. **(Image 7)**
- Camshaft Seal Removal and Installation:**
- 13) Loosen cam sprocket bolt two turns using cam sprocket counter holding tool 3036. Just loosen cam bolt but do not remove the bolt at this time. **(Image 8)**
 - 14) Using cam sprocket puller tool T40001 pop cam sprocket off as this is a tapered shaft and remove sprocket. **(Image 9)**
 - 15) Remove cam seal by using cam seal tool 2085. Inspect the camshaft for a possible groove from the old seal wearing on camshaft. Lubricate the sealing lip of the new seal with fresh motor oil, then use tool T10071/3 gently tap new cam seal into place. If a groove existed, recess the new seal a few additional millimeters so that it rides on new surface area.
 - 16) Reinstall the cam sprocket and torque to 48 ft lbs.

(Reassure the cylinder head is at TDC)



Image 7



Image 8



Image 9

Guidelines For Installation Of Your Audi / VW 2.0T (FSI) Timing Belt Kit continued.....

Crankshaft Seal Removal and Installation:

17) Use special tool 3415 along with a 19mm 12 point socket remove lower crank toothed pulley's main bolt. Remove toothed pulley. Use care to not rotate crankshaft away from timing marks.

18) Using tool 3203, remove lower crank seal. Inspect crankshaft for possible groove from where the old seal rubbed on the crankshaft. Lubricate the sealing lip of the new crank seal with clean motor oil. Using tool T10053, gently tap new crank seal into place. If a groove existed, recess the new seal a few additional millimeters so that it rides on a new surface area. **(Image 10)**

(Important: Do not rotate or turn the crank shaft at this time and reassure the crankshaft is at TDC)

19) Re-install toothed belt pulley using tool 3415 and torque bolts to 66 ft lbs + 1/4 turn.



Image 10

Thermostat Removal and Installation:

20) Remove the coolant manifold located just below the driver side cylinder head. Be prepared to use a catch pan for a small amount of coolant left within this manifold even after draining the coolant system.

21) Remove the old thermostat noting its orientation. Some thermostats may be difficult to remove because of the bond that can establish between dissimilar materials over time. A tap with the handle end of a small hammer may be in order.

22) With thermostat removed, thoroughly clean out the recessed area where the new thermostat mates to the block.

23) Install the new thermostat in the original orientation.

24) Reinstall the coolant manifold and torque to spec - Torque spec for these fasteners is 7 ft lbs

Installation of Tensioners, Water pump and Timing Belt:

25) Clean machined area where the water pump will mate with engine block. Install the new improved water pump by turning all water pump fasteners equally snug by hand and then slowly and evenly torque the fasteners to 7 ft lbs.

26) Install lower fixed tensioner idler and torque to 25 ft lbs. **(Image 11)**

27) Install upper fixed tensioner idler and torque to 18 ft lbs. **(Image 11)**

28) Install tensioning pulley and leave nut finger tight at this time. Make sure when installed tensioning pulley that the backing plate is in the round machined area in the cylinder head. **(Image 12)**



Image 11

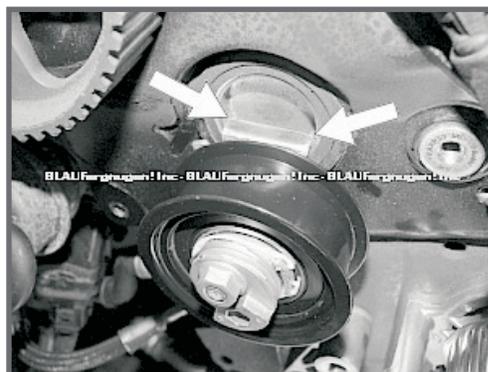


Image 12

Guidelines For Installation Of Your Audi / VW 2.0T (FSI) Timing Belt Kit continued.....

29) Install timing belt by placing it around the lower half of the crankshaft pulley then upward around the cam pulley and water pump and lastly slide belt under the upper fixed tensioner idler. Make sure the timing belt is evenly around all the tensioners and pulleys.

30) Set timing belt tension by placing hex key into eccentric rotating eccentric clockwise tensioning the timing belt until small notch on tensioner is positioned above tab then release tension from the timing belt. This will allow the timing belt to fully mate to all the tensioners and into the teeth of the cam and crank pulleys. Set timing belt tension by placing hex key into eccentric rotating eccentric clockwise tensioning the timing belt until the small notch on the tensioner is positioned above tab and torque 13mm nut to 17 ft lbs.

(Image 13)

31) Rotate engine in clockwise direction 2 full revolutions listening and feeling for any interference. Then re-check the cam and crank timing marks. If timing marks seem to be a tooth off on timing make adjustments where needed. Also check the tensioner tension and make sure the small notch on the tensioner is positioned above tab. If needed r-set tension as outlined in step 30.

Wrap Up:

32) Turn engine over by hand two full revolutions and verify that there is no interference. By turning the engine over by hand two full revolutions this will allow the hydraulic damper to set the correct timing belt tension.

33) Bring # 1 cylinder of engine to top dead center and verify all timing marks align properly as outlined earlier.

34) Install the lower timing belt cover. **Important: Apply Loctite to these fasteners when reinstalling.**

35) Install vibration damper and torque fasteners to 15 ft lbs.

36) Locate any components removed not specifically addressed in this guideline and reinstall.

37) Review each step found in this set of guidelines to ensure each component has been addressed properly and has been re-fastened to specification.

Cooling System Filling:

38) Make sure the radiator drain knob is tight.

39) Fill the coolant expansion tank slowly with a 50/50 mix of coolant/antifreeze and water.

40) Loosen coolant hose at the heater core on the driver side of the battery and pull back hose just enough so the bleeder hole on the hose is no longer sealed.

41) Fill expansion tank until it escapes from the coolant hose hole or until all the air has fully been relieved from the coolant system.

(Image 14)

42) Install your coolant expansion tank cap, start your engine set heater controls to high and allow the engine to warm until the radiator fans cycle at least once or until you are sure the thermostat has opened. You can safely bring the engine up to around 2000 RPM to quickly develop heat in the engine in order for the thermostat to open.

If the coolant expansion tank fluid level goes down while you are running the engine, turn off the vehicle and carefully remove the coolant expansion tank cap. Re-fill with coolant to the max line and re-start the engine and let warm again until the radiator fan cycles

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



Image 13



Image 14