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Thread Tools

11-17-2004, 05:04 PM

#1

[B5V6](#)  
4th Gear

Join Date: Nov 2003  
 Location: Hampstead, MD  
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[1.8T Waterpump/Thermostat Replacement](#)

**Disclaimer:** I assume no responsibility whatsoever for damages that an end user may inflict upon their vehicle, themselves or others using information contained herein. Proceed with caution and care when performing modifications to your vehicle. Be advised that making modifications to your vehicle may void your manufacturer's warranty. Follow general safety rules for automotive work. Read and understand the entire procedure before attempting this work.

**Warning:** Wait until engine is cool before starting.

**Those using this writeup in conjunction with a timing belt replacement, skip to step 13 once the upper timing belt cover is removed.**

1. Raise vehicle and support it on jackstands, remove the belly pan, and disconnect battery (ensure you have security code prior to completing this step).
2. Remove the air intake duct, then remove the front turn-signal corner markers. Each is held in by a single catch and they come out easily, without tools. The catch is a white plastic ring attached to a small spring on the back side of the reflector. Grasp the ring with your finger and pull gently back and to the side. Once the rings are unhooked, the reflector assembly slides right out the front. The turn signal bulb and socket will come out with just a push and a twist. Disconnect the headlight wires.
3. Hood latch: The plastic hood-release pull must be disconnected from the hood latch mechanism in order to remove the front bumper cover. Remove the three bumper cover retaining screws shown in the picture below. A plastic cover encloses the hood latch mechanism. Using a knife or a small flat-blade screwdriver, pry up the two small plastic pins that hold it in place, then remove the cover. Using a small flat-blade screwdriver (or two), disconnect the plastic hood-release pull from the latch mechanism. It's a bit of a pain to get off, so be patient.



4. Front Bumper Cover: Remove the screws shown in the following photos.



Carefully slide the front bumper cover forward and off the car. It's not heavy, but you may want a second set of eyes and hands to help you avoid scratching any of the bodywork.

5. (I chose this procedure due to not wanting to purchase the special tool. Both bumper bolts held up very well without bending or damaging any threading.) Front Bumper: While you can leave the bumper on, I think the whole job goes smoother if you get it out of the way (besides, the bumper bolts might come in handy in Step 7). Simply remove the two bumper bolts and pull the bumper off toward the front. The bumper is all-aluminum, so it's not as heavy as it may look. You may notice that each of the bolts is obstructed by the plastic carrier under the headlights. A bit of twisting and prying will pay off here, but be forewarned, getting them back in is actually a little bit harder.



6. Lock Carrier (LC): This part of the body holds the radiator and oil cooler, headlights, horns and some other plumbing, as well as the hood latch. While the LC does not have to be completely removed, it does need to be moved forward several inches to provide the working space needed to change the timing belt. This can be done without draining the radiator, though care must be taken to avoid damaging the various lines that run to it, such as:

- A/C lines to condenser
- Oil lines to oil cooler
- Coolant lines to radiator
- Wires to horns
- Wire to outside temperature sensor

7. Remove one of the four lock carrier retaining bolts on either side of the radiator and replace it with the the bumper bolt removed in step 5.



8. Unbolt the power steering oil cooler line and outside temperature sensor from the front of the LC. Also, remove the small retaining clip that secures the temp sensor's wire. Disconnect the intercooler intake hose from the rigid pipe that forms the bottom of the LC. Place the oil drain pan under the end of the hose before disconnecting it; it is not uncommon for a few tablespoons of oil to pour out of the hose when disconnected. This is a "1.8T thing" and no cause for alarm. If you wish, you may use this opportunity to remove the hose entirely, wipe it out and spray some parts cleaner into the intercooler to dissolve any oil deposits that may have built up inside it.



9. Now that everything that needs to be disconnected is disconnected, start SLOWLY pulling the LC forward, into the service position. Do this carefully, making sure that no hoses or wires get pulled excessively or pinched. You will feel some resistance since you are pulling on the radiator hoses. Pulling the LC forward should give you plenty of working room without your having to disconnect the radiator hoses.

10. Drain coolant from both radiator and waterpump.



11. Remove the cooling fan. The cooling fan clutch does not obstruct removing the waterpump, so it was left in place. V-Belt (a.k.a. water pump belt): Remove the three Allen bolts from the two-piece water pump pulley. Remove the front half of the pulley and the V-belt.

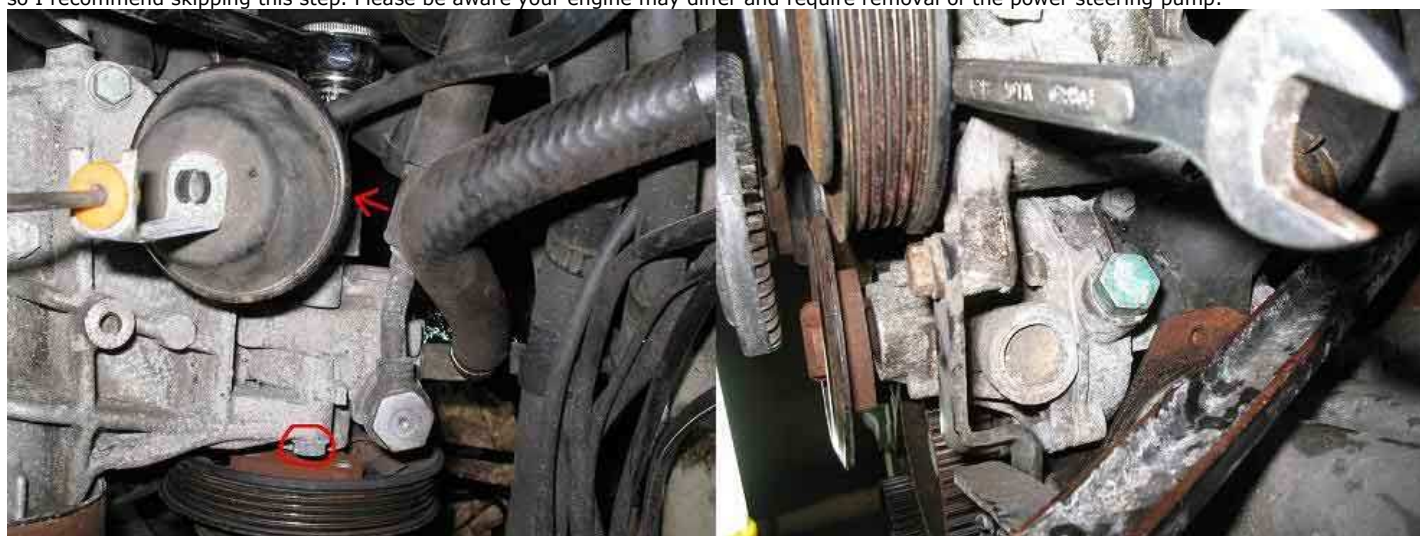
11.1. ATW engines: In order to remove the alternator, you MUST remove the fan clutch pulley to clear the lower alternator bolt. This is done by bracing the fan pulley while turning the allen bolt behind it counterclockwise. Then the lower alternator bolt will be able to come off.

12. Accessory Drive Belt (a.k.a. alternator belt): Using an open-end wrench, rotate the tensioner, remove the belt and slowly release the tensioner. Remove the three bolts holding the drive belt tensioner and remove the tensioner. Remove the upper timing belt cover. Pay attention to how it fits together with the lower cover; this will make reassembly easier.

13. Remove the alternator: Remove the upper allen bolt, and lower nut/bolt combo. Note: The lower bolt is very long, and the oil dipstick may give an issue when removing the lower bolt. Be careful not to break the dipstick sleeve, as I hear they are relatively fragile. Once the bolts are removed, pull the alternator out slowly so you can remove the negative and positive leads. Do not lose the nuts securing them.



14. Remove the power steering pump from the bracket. Do not remove any of the hydraulic lines. Note: I removed all the bolts securing the power steering pump to the bracket. However, the PS pump was so tight, I could not get it to release from the bracket. This did not affect my procedure, so I recommend skipping this step. Please be aware your engine may differ and require removal of the power steering pump.



15. Remove the nuts/bolts from the alternator/power steering pump bracket. Note: Cruise control models may have part of its vacuum system secured to this bracket.



16. Release the hose clamps and disconnect the coolant hoses from the back of the water pump housing and the thermostat housing cover. Note: Using the picture as reference; I removed the hose clamps in these positions due to how easily accessible they are.



17. Pull out the bolts (remembering where each one went, they are different sizes) in the bracket, and remove the bracket and waterpump from the engine block.



18. Using the above picture, remove the bolts securing the plastic thermostat housing to access the thermostat. Once the new thermostat and o-ring have been installed, tighten the housing back down (84in-lb [10 NM]). Now you can remove the numerous bolts securing the waterpump to the housing. Discard the pump and gasket.

19. Installation is in the revers order. Note: when tightening the new waterpump and gasket to the housing, DO NOT tighten one side completely down, then the other side. You want to take your time, and snug one side (hand tight with a socket, no ratchet), then go to the total opposite end. For example, tighten the bottom side with your hand and socket, then skip to the top end. From there I went to one side, then tightened the other side by hand. Do the same until they are all tightened evenly to the appropriate torque setting: 84in-lb (10 NM)

20. Be sure to add fluid. It would be very ironic to complete the replacement of your waterpump only to take a test drive with no coolant in the engine. This would also be a great time to fill the cooling system with water, let the engine run, and drain to remove any particles. Please inform me if there is any additional information that may benefit this post.

*Last edited by B5V6 : 07-04-2005 at 09:31 AM.*



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