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Today's Posts



Do-It-Yourself H.Q.

Share your DIY projects or ask questions about how to fix something on your own. Help fellow Bimmerfest members improve your wrench turning skills! All BMW DIY tips, tales, and projects discussed inside. Learn to work on your <u>Car</u> and know the right BMW parts you will need!

Calendar







Thread Tools ♥ Display Modes ♥

#1

Search

Join Date: Jun 2009 Posts: 21 Mein auto: 2006 330i Sedan View My Garage

DIY: 2006 330i Water Pump and Thermostat Replacement

Well, I searched through this site before undertaking this project but didn't find much that would help me. So I took pictures along the way. Hopefully this will help someone else in the future. This job relates specifically to 2006 330i Sedan with Sport Package and Automatic Transmission.

First, let me start by telling you a local shop quoted me \$2200 (including parts) to replace what they deemed after diagnostics was a bad water pump and thermostat. I bought the parts from my local dealer for about \$700 and did it myself. After reading through the very lacking BMW instructions my local shop was nice enough to print out for me, I decided someone really needed to put together a little more detail for those of us who haven't been classically trained in the BMW repair arts.

It always takes me longer to get the dang thing apart than it does to put it back together. MOST of the taking apart time is going to get the right tools. So here's a list of the tools you will need for this job:

T-20 & T-25 Torx Drive VE12 Torx Socket 8mm and 10mm sockets and drive Flathead Screwdriver **Needlenose Pliers** Floor Jack and Stand Ziploc Bag Basin to catch antifreeze

2 Gallons Antifreeze (It's important to use the correct antifreeze - I used Zerex G-05 Formula Phosphate Free)

For this job I used the following BMW Parts:

11 51 7 586 925 Water Pump

11 53 7 549 476 Thermostat

11 51 0 392 553 Aluminum/Magnesium Screws

Obviously, make sure you are getting the correct parts for your particular model of car by verifying with your dealer.

Now, let me give you the instructions I received for Removing and installing/replacing the Water Pump (N52) because I think they are SO descriptive:

Remove and dispose of coolant Disconnect Water Hose (1) Disconnect plug connection (4) Release Screws (5)

Installation Note: Replace Aluminium Screws.

Assemble Engine

Venting instructions must be observed without fail.

I don't know about you, but that really didn't help me at all. There was a picture of the water pump and numbers that corresponded to 1, 4 and 5, similar to 1297a, but I didn't even know where the water pump was. And just how in the heck do you remove the coolant? Well, rest easy my friends, hopefully I can answer all those questions and more in the following DIY!

1. Remove Coolant.

OK, what they don't tell you is you have to remove the skid plate underneath the car in order to get to the little valve that you unscrew to drain the coolant.

(I jacked it up from the drivers side first, which I found gave me a little more room to slide back and get the skid plate screws in the middle of the car.)

*Remove 2 skid plates. There is a smaller one in the front, directly under the radiator. Another larger one goes back to about the middle of the car. I took them both off for easy access. You'll need your 8mm socket to remove the screws.

Once you get both the skid plates off, you should see a blue valve on the drivers side of the radiator on the bottom. See picture 1290a. There is also a metal housing (purple arrow in picture 1298a) you should see above that blue valve. It's held in place with a screw to the fan shroud. (Refer to the purple arrow in the picture FanHousing for location.) You'll need to remove that screw and put it in your Ziploc bag. You

^{*}Set the parking brake on your car - you don't want it moving.

^{*}Jack up the car. See Picture 1328a for the jack point if you don't know where it is.

can't remove the fan without first unscrewing this!!

*Place your coolant catch basin underneath the blue valve, Unscrew the valve and drain coolant. (At this point, I jacked up the other side of the car - it helped the coolant go to the side with the drain and gave me more room where I would be working - the pump is on the other side of the engine.)

Now, something else they don't tell you is you're going to need to remove the fan assembly. It's relatively easy, but of course there are multiple steps.

- *Remove the two screws holding the plastic piece above the radiator with a T-20 Torx drive they are located where the red circles are in picture 1333a. Place those screws in your Ziploc bag!
- *Push in the tabs on the other end of that piece, there's one tab on each side see picture 1324a.
- *Remove the bolts that hold down the plastic air filter housing with a 10mm socket refer to picture 1327a. This will allow you to get at the hose underneath it a little easier.

Now a little note on the hoses. They are held on in one of two ways - with the good old fashioned hose clamps and all you need is a flathead screwdriver to remove those. The other hoses have nifty plastic fittings held on with a metal clip. Take a look at picture 1332a. The yellow circle shows the plastic fitting connected with the metal clip - shaped like a horseshoe. If you look in what would be the middle of the "U" you'll notice it is sticking up a little bit for you to grab it with some pliers. You could slide a screwdriver under there too, but I like the pliers in case it gets away from me. Remove the clip and the hose should slide off of it's mate. Another $\frac{\text{cool}}{\text{I}}$ thing you should notice is there are little notches in the hose fitting and alignment ribs on the mate, so you can't put it on wrong. Nice German engineering there. Once you get the hose off, I like to put the clip back in its grove so it doesn't get lost. Make sure the end is hooked in its notch and the other end should snap into place.

- *Remove the hose refer to yellow circle in picture 1298 for location. Leave the other end connected, it shouldn't be in the way.
- *Disconnect the power from the fan. (Top right side of fan refer to picture 1326a.)
- *Unclip the hose running along the top of the radiator. (Left side of clip is in picture 1331)

Now take a look at the FanHousing picture. There is a T-25 screw (green circle) and two tabs underneath the housing (blue circles) that will need to be released first. (If you look at picture 1321, that's what you'll seed from underneath the car.)

From the top, look down the right side of the housing. You will see a tab (red circle in FanHousing picture). Push the top of that tab towards the front of the car to release it and you should be able to slide the whole fan unit straight up. There are two guide tabs on the left (orange circles) you will need to make sure they slide into the guides when you are replacing the fan.

- *Remove Screw
- *Release tabs underneath housing
- *Press tab on right of fan housing to release and slide the whole unit straight up.

OK, now is a good time to take out your brand new water pump and thermostat. Let's take a look at the Thermostat first, since that's what I removed next.

Refer to picture 1301a. The thermostat is held in place with two 10mm bolts that are screwed in through mounts on the water pump. In pictures 1297a and 1301a they are both marked with #3. In picture 1320 you will see the bolts going through the water pump mounts and into the water pump, shot from underneath the car. Zoom out a little and you see picture 1316a with those bolts removed (3). The water pump and thermostat are connected via a hose that plugs into port (1a). The electrical sensor plugs into (6).

REMOVE THERMOSTAT

*Release hose clamp at (1a) & (2) and detach coolant hose.

(Be careful, there will be coolant in these hoses that will drip on you. Slide that basin over! If your clamps were put on my the same Nazi that put mine on, they will be almost impossible to get at with any size or shape of screwdriver. This is where swearing seems to help a great deal. Go through all of them until you find the one that helps you get the clamps removed.)

- *Remove clip and detach coolant hose at (4) & (5). (Remember to snap those clips back on so you don't lose them!)
- *Disconnect plug connection at (6)
- *Remove bolts at (3)

Before removing the Water Pump from your car, refer to picture 1297a. The Water Pump is electronic. I had trouble finding it because I thought is was belt driven and couldn't find it behind any of the pulleys. This is also why it comes in the space-age electrostatic bag! Our water pump is held in place with those three fancy Aluminum/Magnesium (picture 1303) screws you bought replacements for - marked with (5).

Two of them are relatively accessible from underneath (refer to picture 1316a & 1318a). The third one you can get to from the front - good thing you took that fan off, huh? These are all removed with a VE12 Torx socket - See picture 1337. There is an electrical plug (4) , also seen in picture 1318a. Port 1a connects with port 1a on the Thermostat. More on port 1b in a minute.

REMOVE WATER PUMP

- *Release Hose Clamp at (1a) & (1b) and detach coolant hose (picture 1319a)
- *Disconnect plug connection at (4) (pictures 1318a & 1297a)
- *Release 3 screws (5) (pictures 1316a, 1318a and 1297a) Don't forget the one at the front, sorry no picture for that one.

Great, you've got everything off! This was the 4 hour point for me. Now time to put it back. Make sure you have your hose clamps in place and clips in their grooves BEFORE you slide hoses back on!! And for God's sake, situate the hose clamp screws so they are easy to access - not like they undoubtedly were when you were taking them off!

Get the water pump into place and slide (1b in picture 1313a) into the short little hose. I made the mistake of getting the pump in place and bolting it down before connecting this hose. It was trapped in between the opening and something else and I didn't have space or leverage to get it out. I made the mistake so you don't have to. Slide that hose on and THEN get the super light Aluminum Magnesium screws in place.

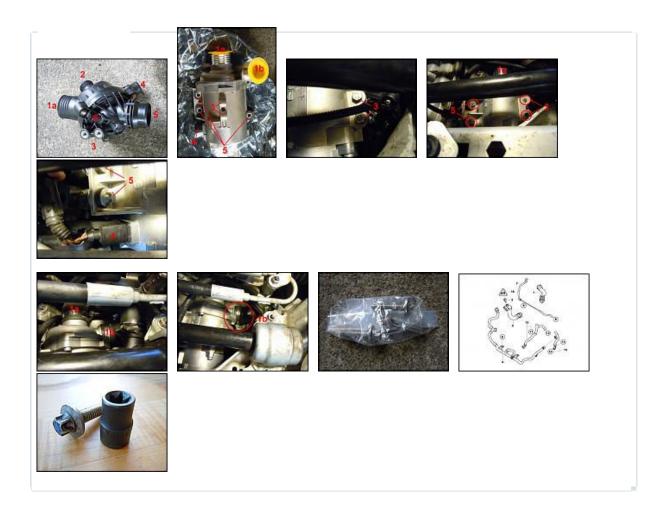
Now just go back and hit all the * in reverse order. The nice thing about the hoses with the clips is you know they are on all the way when you hear the clip *click* into place.

Don't forget to ADD COOLANT.

Start your engine and check for leaks.

Hopefully this will save someone else some time and money! Good luck!!







2006 330i Sedan; Titanium Silver Metallic/Black Dakota Leather/Walnut Trim; Premium, Sport and Cold Weather Packages; On Board Nav & iDrive; Bluetooth

Mods done: Installed BMW iPod Interface Rear Fog Light Switch Mod Installed Sunglass Holder

Last edited by noslodot; 11-13-2010 at 09:10 AM. Reason: Further clarification on tools needed



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□ 11-16-2010, 06:09 PM

#2

Kelly325I Registered User Location: fayetteville ar

Join Date: Nov 2008 Posts: 5 Mein auto: bmw 325i View My Garage

Nice job! I wish that someone had done something like this for the 1990 325i. I just had to pull the water pump on it and for the most part it was very similar to this. As it stands, I am going to have to pull the thermostat housing off as well. If you have an 325i e30 don't get too excited, the differences are enough to mess you up. However you've definitely put haynes and chiltons to shame here.



■ 12-02-2011, 07:07 PM

#3



Location: NY

Join Date: Dec 2011 Posts: 2 Mein auto: 530i View My Garage

E60 2006 530i N52 Engine Water Pump & Thermostat Replacement

I did the same job on an E60 2006 530i N52 Engine. I rearranged the instruction from **noslodot** for easier reading. I also put the names of the pictures right on the pictures for easier reference.

I am adding the following notes and instructions for same job in the E60 2006 530i N52 Engine:

- 1. I couldn't find the blue valve as mentioned by **noslodot**, so I just drained the radiator valve. Its a small red knob located on the bottom left hand corner of the radiator, if you are facing the front of the car.
- 2. The fan is easier to remove than as described by **noslodot** for his 2006 330i. You do not need to remove any hoses to remove the fan in the E60 N52 engine. If you are facing the front of the car, the fan has a hook on the right hand side that can be folded in. Once you fold in this hook and detach the hose at the bottom of the radiator, the radiator can be pulled straight up and out.
- 3. I needed a 3 inch extention drive
- 4. Remember to bleed your car before starting the engine.

Here is **noslodot's** original instruction, rearranged for easier reading.

TOOLS:

- 1. T-20 & T-25 Torx Drive
- 2. VE12 Torx Socket
- 3. 8mm and 10mm sockets and drive
- 4. Flathead Screwdriver
- 5. Needlenose Pliers
- 6. Floor Jack and Stand
- 7. Ziploc Bag
- 8. Basin to catch antifreeze
- 9. 2 Gallons Antifreeze (It's important to use the correct antifreeze I used Zerex G-05 Formula Phosphate Free)

BMW Parts:

- 11 51 7 586 925 Water Pump
- 11 53 7 549 476 Thermostat
- 11 51 0 392 553 Aluminum/Magnesium Screws

Dealer Instructions:

- 1. Remove and dispose of coolant
- 2. Disconnect Water Hose (1)
- 3. Disconnect plug connection (4)
- 4. Release Screws (5)
- 5. Installation Note: Replace Aluminum Screws.
- 6. Assemble Engine
- 7. Venting instructions must be observed without fail.
- There was a picture of the water pump and numbers that corresponded to 1, 4 and 5, similar to 1297a

DIY Instructions:

- 1. Remove/Drain Coolant
- a. Remove the skid plate underneath the car in order to get to the little valve that you unscrew to drain the coolant.
- b. Set the parking brake on your car you don't want it moving.
- c. Jack up the car. See Picture 1328a for the jack point if you don't know where it is.
- o (I jacked it up from the drivers side first, which I found gave me a little more room to slide back and get the skid plate screws in the middle of the car.)
- d. Remove 2 skid plates. There is a smaller one in the front, directly under the radiator. Another larger one goes back to about the middle of the car. I took them both off for easy access. You'll need your 8mm socket to remove the screws.
- e. Once you get both the skid plates off, you should see a blue valve on the drivers side of the radiator on the bottom. See picture 1290a.
- o There is also a metal housing (purple arrow in picture 1298a) you should see above that blue valve. It's held in place with a screw to the fan shroud. (Refer to the purple arrow in the picture FanHousing for location.) You'll need to remove that screw and put it in your Ziploc bag. You can't remove the fan without first unscrewing this!!
- f. Place your coolant catch basin underneath the blue valve, Unscrew the valve and drain coolant. (At this point, I jacked up the other side of the car it helped the coolant go to the side with the drain and gave me more room where I would be working the pump is on the other side of the engine.)
- 2. Remove Fan Assembly?
- Now, something else they don't tell you is you're going to need to remove the fan assembly. It's relatively easy, but of course there are multiple steps.
- a. Remove the two screws holding the plastic piece above the radiator with a T-20 Torx drive they are located where the red circles are in picture 1333a. Place those screws in your Ziploc bag!
- b. Push in the tabs on the other end of that piece, there's one tab on each side see picture 1324a.
- c. Remove the bolts that hold down the plastic air filter housing with a 10mm socket refer to picture 1327a. This will allow you to get at the hose underneath it a little easier.
- 3. Disconnect Hoses
- Now a little note on the hoses.
- o They are held on in one of two ways -
- with the good old fashioned hose clamps and all you need is a flathead screwdriver to remove those.
- The other hoses have nifty plastic fittings held on with a metal clip.
- o Take a look at picture 1332a. The yellow circle shows the plastic fitting connected with the metal clip shaped like a horseshoe.
- o If you look in what would be the middle of the "U" you'll notice it is sticking up a little bit for you to grab it with some pliers. You could slide a screwdriver under there too, but I like the pliers in case it gets away from me
- o Remove the clip and the hose should slide off of it's mate.
- o Another cool thing you should notice is there are little notches in the hose fitting and alignment ribs on the mate, so you can't put it on wrong. Nice German engineering there.
- o Once you get the hose off, I like to put the clip back in its grove so it doesn't get lost.
- o Make sure the end is hooked in its notch and the other end should snap into place.

- a. Remove the hose refer to yellow circle in picture 1298 for location. Leave the other end connected, it shouldn't be in the way.
- b. Disconnect the power from the fan. (Top right side of fan refer to picture 1326a.)
- c. Unclip the hose running along the top of the radiator. (Left side of clip is in picture 1331)
- 4. Remove Fan Assembly continued?
- Now take a look at the FanHousing picture. There is a T-25 screw (green cirlce) and two tabs underneath the housing (blue circles) that will need to be released first. (If you look at picture 1321, that's what you'll see from underneath the car.)
- From the top, look down the right side of the housing. You will see a tab (red circle in FanHousing picture). Push the top of that tab towards the front of the car to release it and you should be able to slide the whole fan unit straight up. There are two guide tabs on the left (orange circles) you will need to make sure they slide into the guides when you are replacing the fan.
- a. Remove Screw
- b. Release tabs underneath housing
- c. Press tab on right of fan housing to release and slide the whole unit straight up.

Overview of Thermostat and Water Pump:

- Refer to picture 1301a. The thermostat is held in place with two 10mm bolts that are screwed in through mounts on the water pump.
- In pictures 1297a and 1301a they are both marked with #3.
- In picture 1320 you will see the bolts going through the water pump mounts and into the water pump, shot from underneath the car.
- Zoom out a little and you see picture 1316a with those bolts removed (3).
- The water pump and thermostat are connected via a hose that plugs into port (1a). The electrical sensor plugs into (6).

5. REMOVE THERMOSTAT

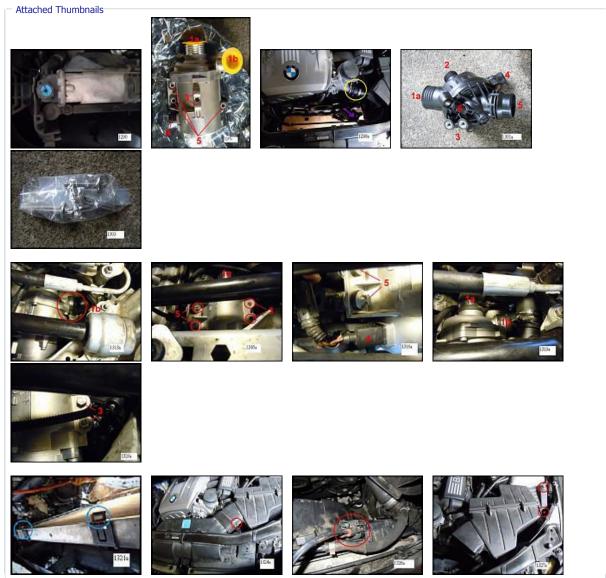
- a. Release hose clamp at (1a) & (2) and detach coolant hose.
- o Be careful, there will be coolant in these hoses that will drip on you. Slide that basin over! o If your clamps were put on mine by the same German that put mine on, they will be almost impossible to get at with any size or shape of screwdriver. This is where swearing seems to help a great deal. Go through all of them until you find the one that helps you get the clamps removed
- b. Remove clip and detach coolant hose at (4) & (5). (Remember to snap those clips back on so you don't lose them!)
- c. Disconnect plug connection at (6)
- d. Remove bolts at (3)

6. REMOVE WATER PUMP

- Before removing the Water Pump from your car, refer to picture 1297a. The Water Pump is electronic. I had trouble finding it, because I thought is was belt driven and couldn't find it behind any of the pulleys. This is also why it comes in the space-age electrostatic bag!
- Our water pump is held in place with those three fancy Aluminum/Magnesium (picture 1303) screws you bought replacements for marked with (5).
- Two of them are relatively accessible from underneath (refer to picture 1316a & 1318a).
- The third one you can get to from the front good thing you took that fan off, huh?
- These are all removed with a VE12 Torx socket See picture 1337.
- There is an electrical plug (4), also seen in picture 1318a.
- Port 1a connects with port 1a on the Thermostat. More on port 1b in a minute.
- a. Release Hose Clamp at (1a) & (1b) and detach coolant hose (picture 1319a)
- b. Disconnect plug connection at (4) (pictures 1318a & 1297a)
- c. Release 3 screws (5) (pictures 1316a, 1318a and 1297a). Don't forget the one at the front, sorry no

picture for that one.

- 7. Now Put Everything Back
- Great, you've got everything off! This was the 4 hour point for me. Now time to put it back.
- Make sure you have your hose clamps in place and clips in their grooves BEFORE you slide hoses back on!!
- And for God's sake, situate the hose clamp screws so they are easy to access not like they undoubtedly were when you were taking them off!
- 8. Install New Water Pump
- a. Get the water pump into place and slide (1b in picture 1313a) into the short little hose.
- o I made the mistake of getting the pump in place and bolting it down before connecting this hose.
- o It was trapped in between the opening and something else and I didn't have space or leverage to get it out. I made the mistake so you don't have to.
- o Slide that hose on and THEN get the super light Aluminum Magnesium screws in place.
- 9. Now just go back and hit all the * in reverse order.
- The nice thing about the hoses with the clips is you know they are on all the way when you hear the clip "click" into place.
- 10. Don't forget to ADD COOLANT.
- 11. Vent/Bleed
- 12. Start your engine and check for leaks

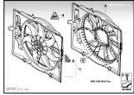














□ 05-03-2012, 11:31 AM

ey2001 🕥 Registered User Location: LA

how would you know if the Thermostat is bad too?

#4 Join Date: Jul 2008

Posts: 10 Mein auto: 525 View My Garage



□ 05-03-2012, 05:42 PM



Registered User Location: NY

#5 Join Date: Dec 2011

Posts: 2 Mein auto: 530i

Well, when I was looking into this, the dealer told me the thermostat has a sensor and thus if it is bad, then you will get an "Check Engine" light.

The water pump does not have a sensor attached to it, so no "Check Engine" light.

If you are doing a DIY, it's best to change both, because they are attached to one another.



□ 05-06-2012, 03:10 PM

gobbell1 🔘 Registered User Location: Memphis

#6 Join Date: Feb 2012

Posts: 26

Mein auto: 2006 330i Sport View My Garage

Kudos to all those who contributed to this post. the info really helped me with this procedure. its not difficult, just takes a while to get access to the thermostat.

Just replaced my thermostat on my 2006 330i E90 (N52) and I have a few extra tips for anyone attempting this.

- 1. drain coolant the night before. this will allow all the drip, drip, drip to cease before you get under it.
- 2. completely remove the sway bar, it takes 10 minute and will greatly aid in getting access to the thermostat.
- 3. go ahead and replace the water pump at the same time, because you have to remove the water pump to get the thermostat out (apparently the thermostat was made by tiny german folks inside the engine bay, within the smallest confines available). I did not remove my cooling fan, because I had an oil cooler

attached. perhaps removal of fan would allow for t-stat removal without removing the waterpump, not sure.

- 4. when installing the new thermostat, put a little grease on the 2 ports of the thermostat that have hoses clamps. this will make the "slip on" a lot easier. the other 2 ports have hard plastic connectors with quick-release rings.
- 5. When you have completed the job, don't forget to add approved coolant, and perform the bleed procedure (way cool) as described elsewhere on bimmerfest (do a bleed search). basically the car does it for you.



□ 05-24-2012, 08:09 AM

#**7**

gck Registered User Location: Miami, Fl

Join Date: Jan 2012 Posts: 20 Mein auto: 330i View My Garage

intresting!



□ 07-02-2012, 09:48 AM

#8

snopea Registered User Location: Tulsa

Join Date: Sep 2010 Posts: 22 Mein auto: 2006 325i View My Garage

Old thread, I know, but I am running into some issues doing this procedure myself.

I am trying to remove the thermostat and water pump right now, but I can't seem to get any of these hoses off.

I was able to pull the metal fasteners off the tubes, and I could unscrew the hose clip at 1a, but the only hose I've been able to pull off is the 1a hose. I had to wedge a screwdriver in the 1a hose to break the 6 year old "seal" on it to get it off. With all the other hoses, I have no idea how to get them off. They all seem to be permanently stuck there.

Does anyone have any advice for how to get them off?

(I couldn't even get the hose off at 1332a so I just skipped it)

Also, I can't seem to get the plug connection out of the thermostat. I've peeled back the clip holding it on, but it still won't budge. Any advice?

Thanks



09-03-2012, 03:20 PM

#9

carlys325i Registered User Location: Petaluma, CA

Join Date: Feb 2012 Posts: 22

3

Mein auto: 2006 BMW 325i View My Garage

Thank you for posting this!



□ 09-07-2012, 08:05 AM

#10



Join Date: Sep 2012 Posts: 14 Mein auto: 09 X5, 05 545i View My Garage

09 X5 3.0i 53K

I just completed the same procedure on my X5 folks. The directions above are all good. My 2 cents:

- this is much better as a 2 man job
- that VE12 torx is not easy to find
- replace thermostat as well, no questions.
- lift the car up as much as you can!
- super human strength required to get the clip-on hoses off!
- no need to remove fan
- can reuse thermostat housing

took us 3 hours, cheers!



10-21-2012, 04:45 PM

#11

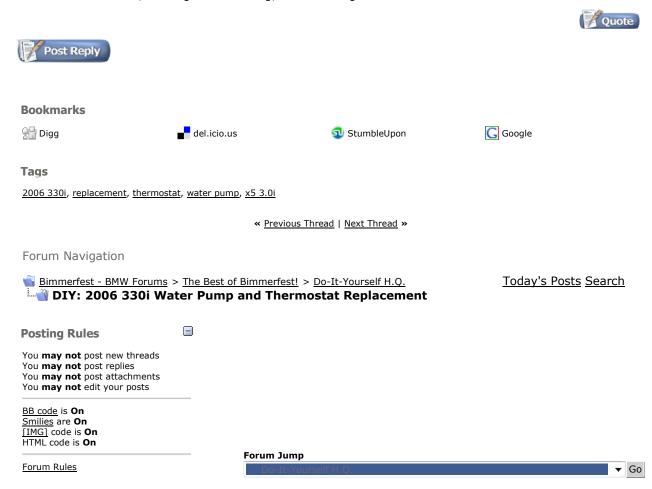


Registered User Location: NJ,US Posts: 1 Mein auto: 2006 325i <u>View My Garage</u>

Join Date: Oct 2012

On my 2006 325i,90k miles, check engine light went on, at dealership they told me it was the faulty water pump which is electric ,and the price was 525 for parts incl. thermostat ,and labor (they insisted it was 6hrs) was 600 (after discount).Had to fix and spent \$almost \$1200. I can't imagine doing this on my own, so many right tools needed.

Also wanted to mention that I am out of warranty, and seriously considering getting one, to avoid any upcoming costly repairs. Just changed rotors and breaks, put new tires on, it is adding up. While I was covered, nothing needed fixing, how amazing.



All times are GMT -7. The time now is 04:04 AM.

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