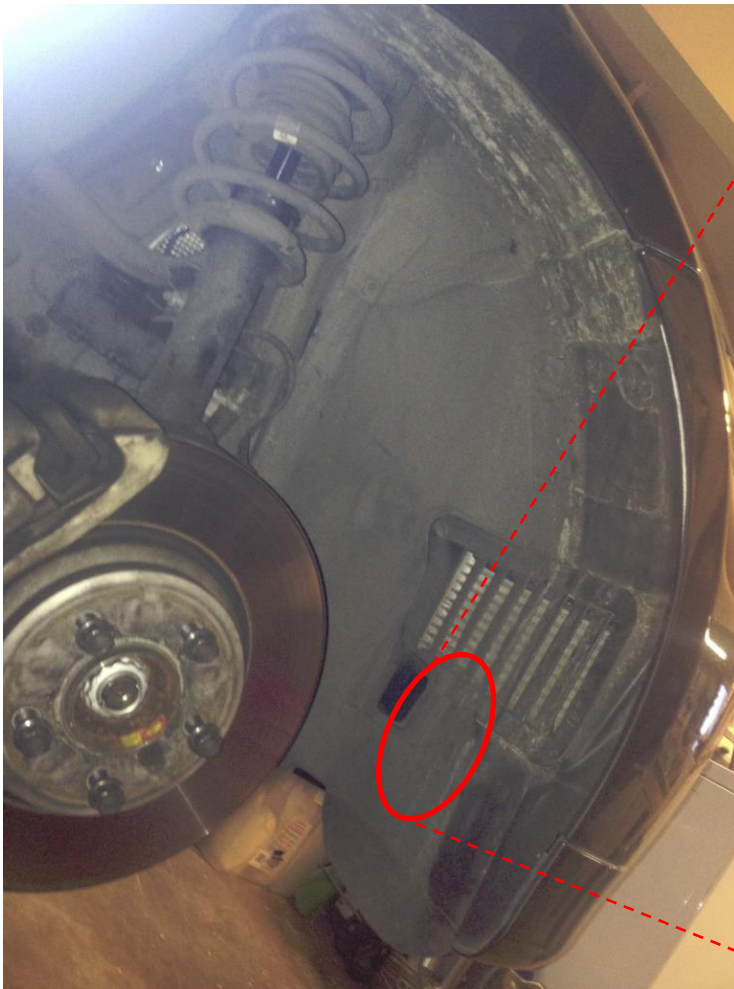


- I recently replaced my water pump after it left me stranded on my way to work
- My car is a 2008 E90 335xi 6MT, 109,000 miles
  - AT makes this a bit more complicated since there is an additional cooling system in the front
- Tear down took about 2.5 hours, once I got the pump it took about 3-4 hours to put it all together
- I tried to re-arrange hose clamps to make for easier access if I ever have to do this again
- Before you begin, clear water pump codes, then disconnect the negative terminal of the battery
- *I take no responsibility for anyone else's repairs, this is just a documentation of my own experience, and a few tips along the way*
- Hope this helps!

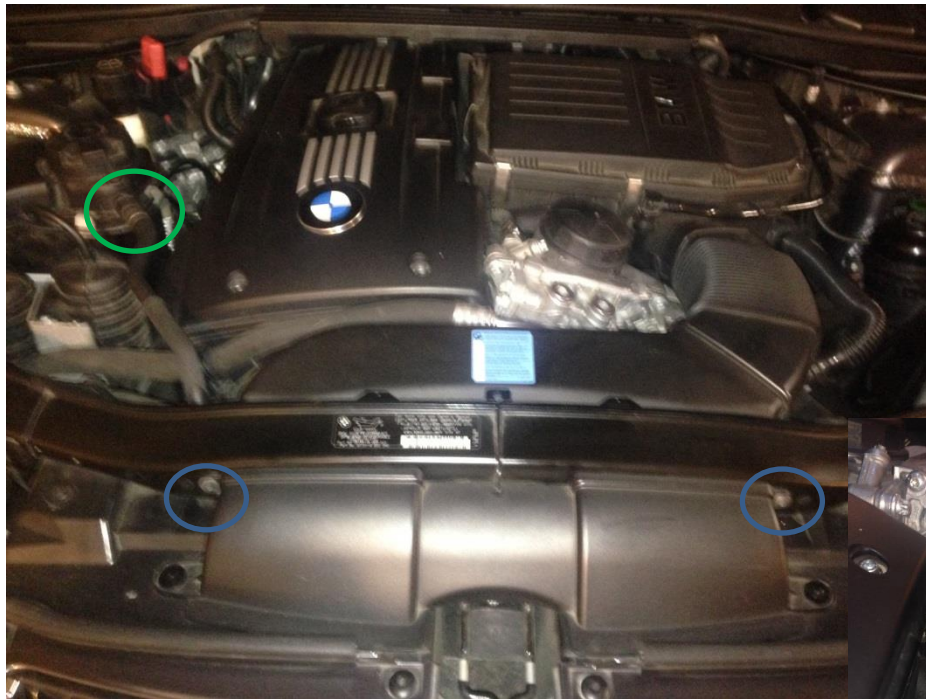
Tools I used:

- ¼", 3/8", ½" drive wrenches
- Extensions and universal joints
- Torx bit set, E-torx socket set
- Metric sockets
- Flat head screw drivers, large and small
- Dental pick set (to help remove pipes and connector clips)
- Torque wrenches
- Metric ratcheting wrench
- Impact gun for tire removal
- 4 ton hydraulic jack
- 2 jack stands
- Extension mirror to locate buried hose clamps
- Zip ties
- So many rubber gloves
- Fluid drain pan (at least 2 gallon capacity)

1. Lift the car on jack stands in the front
2. Remove front splash shield under car (a bunch of 8mm screws)
3. Remove front passenger wheel
4. Remove front splash shield (a bunch of 8mm screws, one 10mm nut)
  - a) Be mindful of TPMS connector, and remove once you have access (behind the red circle)



1. Remove intake snorkel (two torx screws, forget size, blue circles)
2. Disconnect coolant vent line from expansion tank and set aside (greed circle) with zip ties (red)
  - a) Take care to not bend the middle part over the fan, it can be brittle and break easily (don't ask how I know, yellow circle)





1. Remove screw from top of radiator fan, passenger side (torx, forget size, red)
  - a) Tight clearance, I used the torx bit with a ratcheting wrench
2. Remove radiator fan connector and set aside (yellow, already disconnected in picture)
3. Remove radiator fan
  - a) There is a clip on the driver side, about halfway down, that you have to press towards the fan as you lift it up (green arrow pointing down).
  - b) It will be a very tight fit against the oil cooler lines, but be patient and careful and it will come up



1. Disconnect charge pipes from intercooler
  - a) Pull the clip down (red), then you should be able to pull the pipes out with a little force
2. Rotate the two plastic retention clips on the front of the FMIC 90°; the plastic seal should drop down and be able to be removed (sorry forgot picture)
3. Remove the two screws holding the FMIC to the chassis (torx, forget size, green)
4. Remove the FMIC from the car.
5. Plug all the pipes on the car and FMIC with shop rags to prevent crap from getting in there

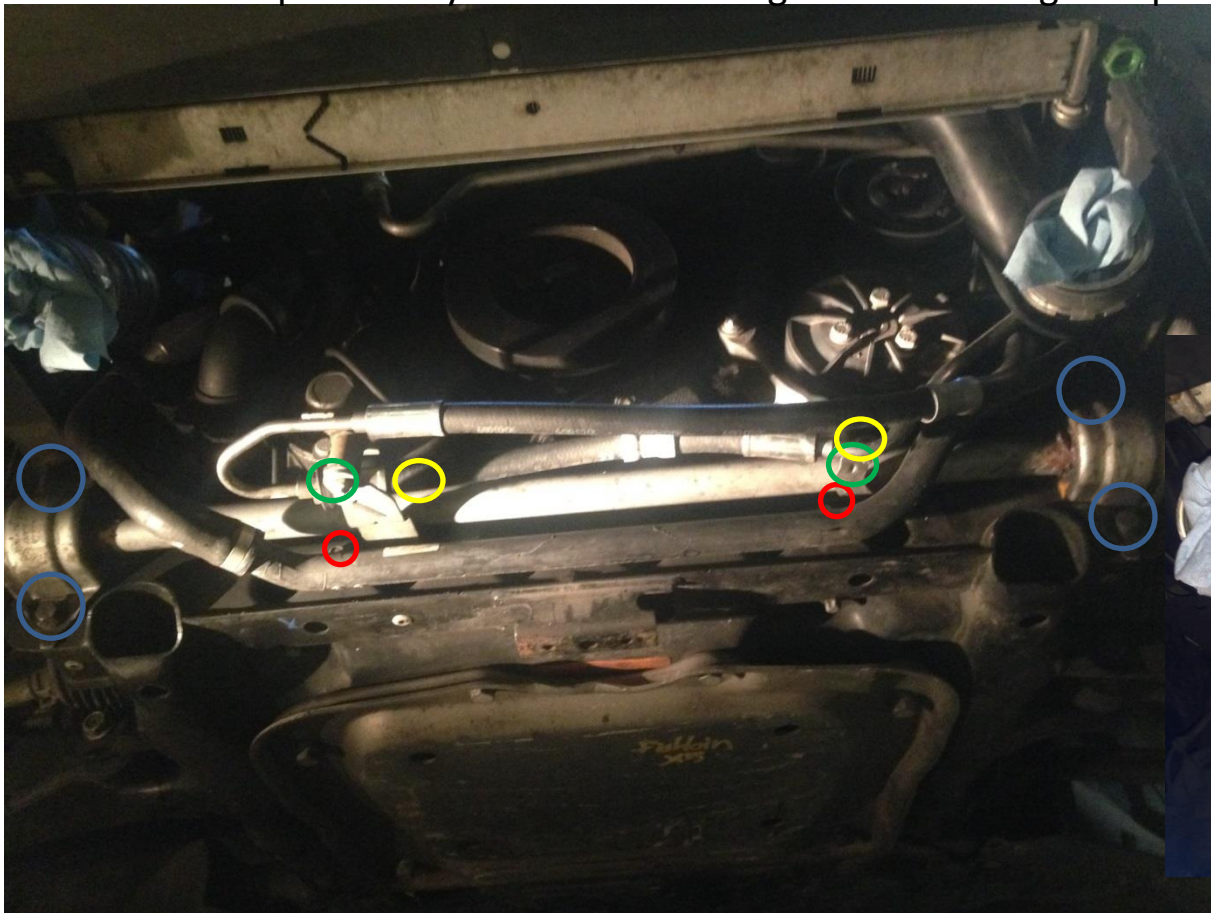


1. Drain the coolant from the car
  - a) Rotate the green nut approximately 90° counter clockwise until it hits the stop (red circle). This is on the bottom of the radiator on the drivers side.
  - b) Unscrew and remove the blue drain screw (you'll need a very wide flat head screw driver; I had to improvise and use a flat washer with vice grips)
2. Once draining stops, re-install the blue screw, then twist the green nut clockwise 90° until it hits the stop.
  - a) Mine took a while to drain, I continued working, just had to remember to plug it back up





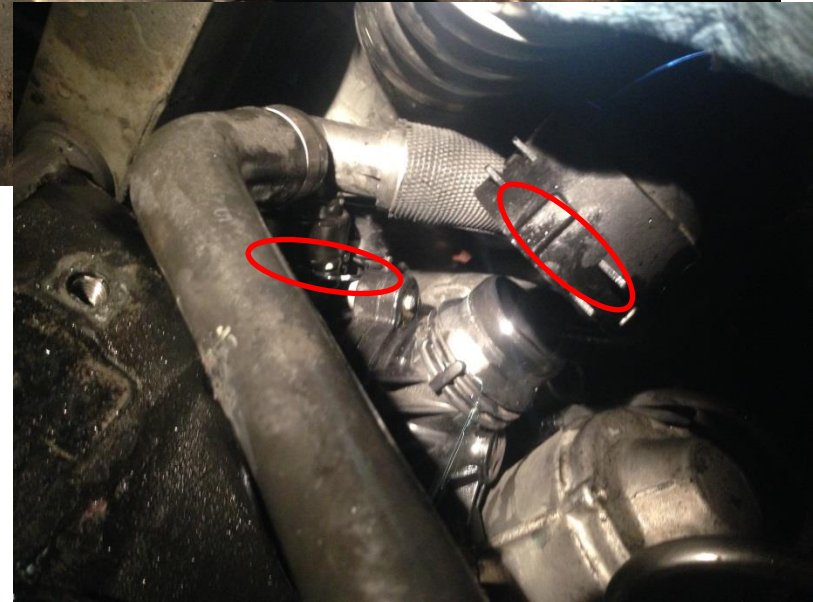
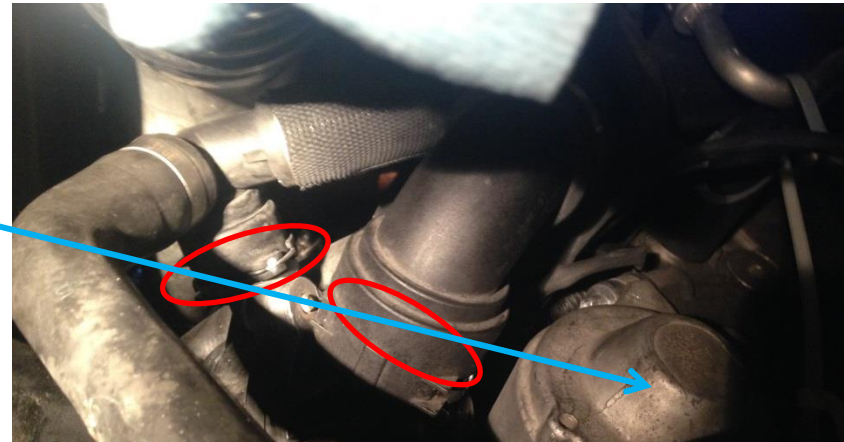
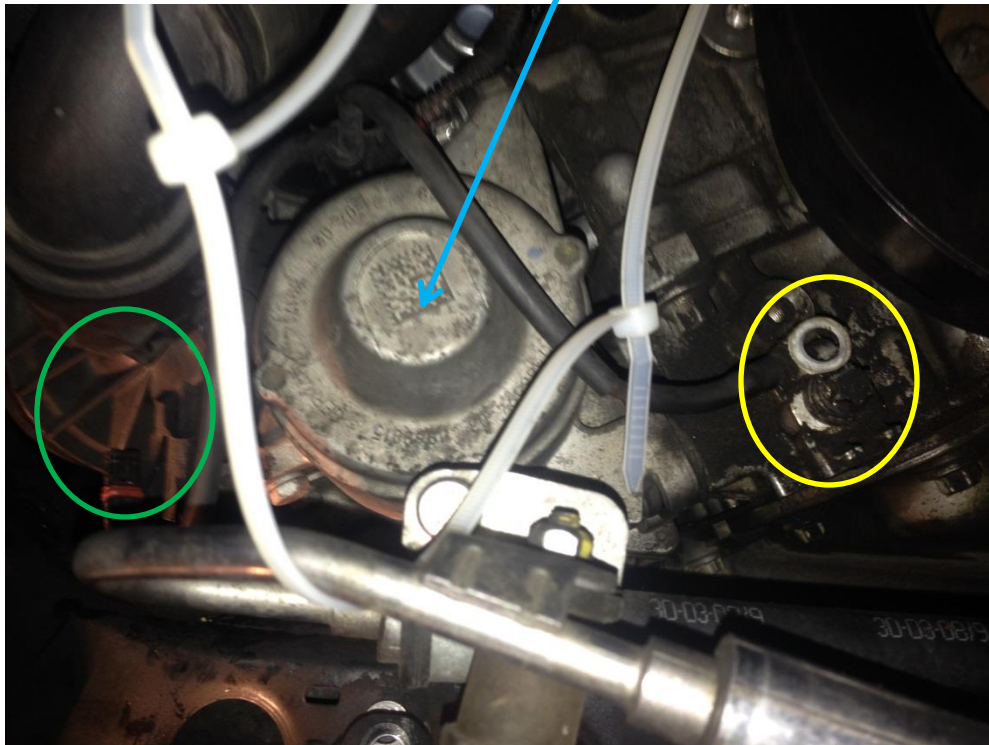
1. Remove two bolts securing the coolant line (red circles, 10mm I think)
2. Remove power steering line from subframe
  - a) Remove two nuts (green); need to hold the base of the rubber bushing with an open ended wrench
  - b) Remove the two bolts holding the power steering brackets to the frame (yellow, 10mm I think, have to feel on top of the frame for them)
  - c) Secure with zip ties
3. Remove 4 bolts securing sway bar
4. Drop the sway bar and let it hang – it will be a tight fit past the coolant line





1. Remove ground lug (yellow, some kind of E-socket)
2. Disconnect thermostat connector (green)
3. Place drip pads/container under frame on passenger side, next step will release fluid
4. Remove two clipped hoses from thermostat by pulling the clip out with a small screwdriver, then pulling the hose straight out (red)

Water pump.... %\$#%\*@\_%\*@\



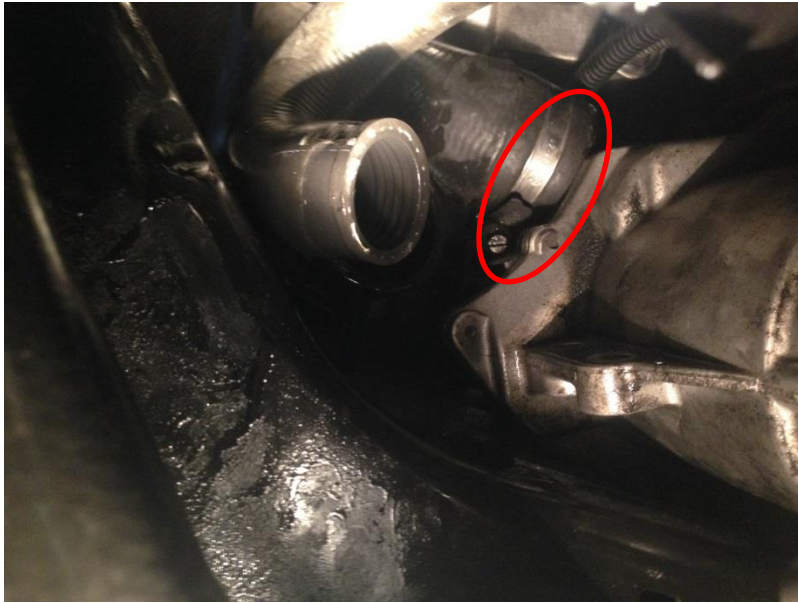
1. Remove two remaining hoses (hose clamps, 6mm) from thermostat (blue)
  - a) I used a combination of wrenches and sockets with extensions and universal joints to get these
  - b) Once clamps were loose, it took quite a bit of finagling to get the hoses off
2. Remove two bolts from t-stat (red, 10mm I think)
3. Remove t-stat – removing the 3 water pump bolts made this a little easier



View looking in from passenger wheel well



1. Loosen hose clamp from water pump (red), and remove hose
  - a) This one is a pain, it's only a short section of rubber hose until hard metal pipe
  - b) Since the water pump was loose from previous step, made it a little easier
2. Remove water pump connector (green), and pull the entire harness (t-stat connector and ground lug), up over the water pump)



View from front



View from wheel well

1. Remove the water pump
  - a) There is still one hose attached, so be mindful of it. It connects the t-stat to the water pump, one less crappy hose clamp to remove
  - b) This took a little wiggling, but after a few minutes I had it out
  - c) Since I had to wait a few days for my new pump to arrive, I put shop towels in all the pipes on the car to keep crap out
2. Remove this pipe from the old pump, and place it on the new pump
  - a) I snugged up the t-stat temporarily just to make sure it was properly aligned
  - b) Ensure the heat shield goes with it

Of note, original pump was Seimens VDO, new BMW pump has Continental markings



Old water pump... %\$#!^@\$^!



New water pump... ☺



1. Reverse the steps to put it back together
  - a) Water pump bolt torque: 10 Nm + 90°
  - b) Mate the water pump connector
  - c) T-stat bolt torque: 8 Nm
  - d) Mate T-stat connector and ground lug
  - e) Re-attach hoses and snug hose clamps
2. I took this opportunity to clean the sway bar and bushings and apply new grease
  - a) Sway bar torque bolt torque: 16 ft-lb
3. Re-install coolant line and power steering (hand tight bolts)
4. Reinstall FMIC, then install radiator fan (and connector)
  - a) Make sure the charge pipe flanges are FLUSH with the FMIC; one time I reinstalled it and it wasn't flush, charge pipe blew off and I had limp mode
  - b) Make sure bottom of radiator fan is seated in the FMIC clips
  - c) It helps to keep the driver side charge pip loose while seating the fan, they are connected by a rubber seat
5. Re-connect coolant vent line (top of engine)



1. Mix BMW coolant with distilled water, 50/50 ratio
2. Open bleeder screw in expansion tank
3. Pour mixture into expansion tank until full. Close bleeder screw and expansion tank
4. Reconnect battery
5. Perform the following flush procedure
  - a) Turn on ignition (don't start car)
  - b) Turn HVAC on to highest temperature (84F), and blower fan to lowest setting
  - c) Step on the gas pedal for ~10 sec; you should hear the water pump come on
  - d) Let this process run for 10-12 minutes, don't close the door or it will stop it
  - e) Check for leaks under car and around hose connections
6. Once completed, top off the coolant in the expansion tank
7. Reinstall splash guards (don't forget TPMS connector!)
8. Put your wheel back on (89 ft-lb torque)
9. Drop the car
10. Start her up!
  - a) My DTC and AWD system light up like Christmas; once I start driving forward it all clears
11. Check the coolant level the next day after it cools, mine needed another top off (no leaks). Total coolant mixture ~1.75 gallons

1. The most important step: you just saved yourself ~500-700\$ in labor, so enjoy the fruits of your own labor :D

