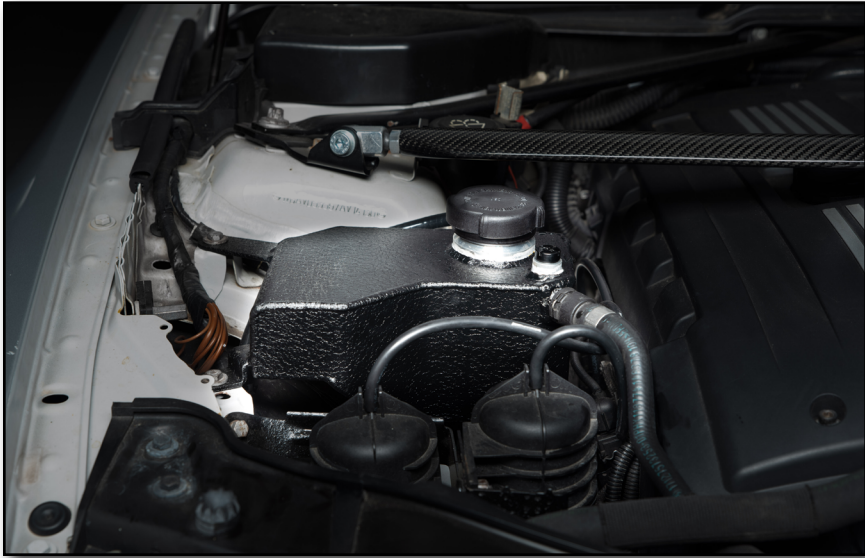




BMW E9x N52, N54 Heavy Duty Expansion Kit Installation

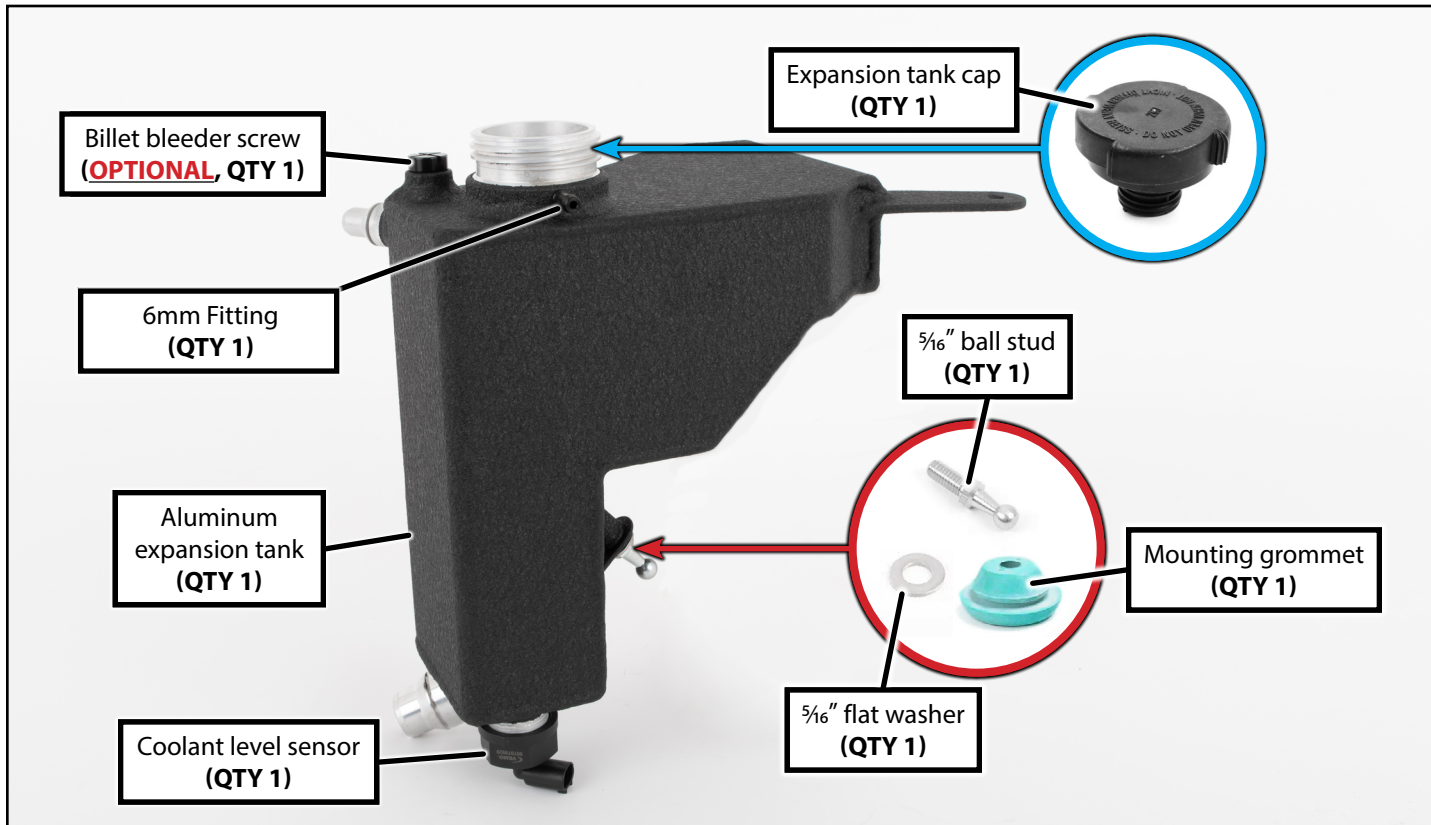


Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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KIT CONTENTS



INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

Turner Motorsport cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.

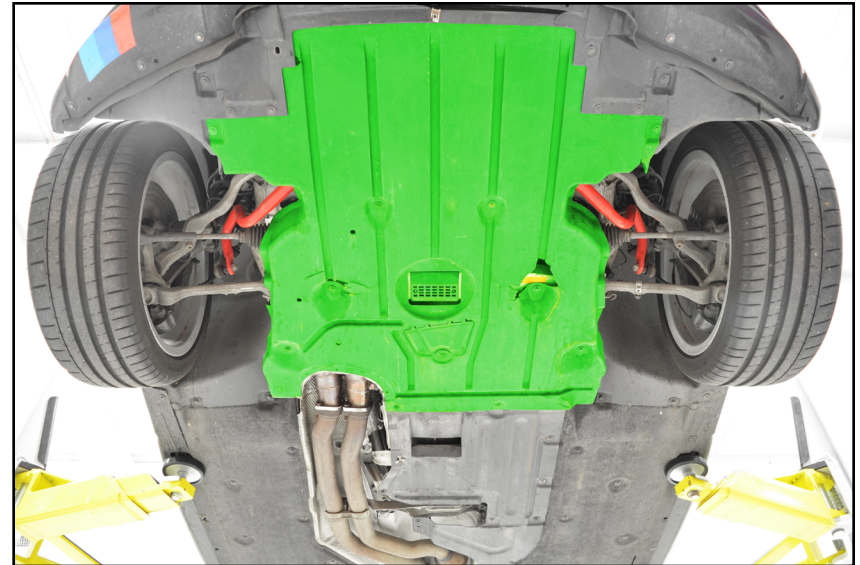


NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

REMOVING THE STOCK EXPANSION TANK

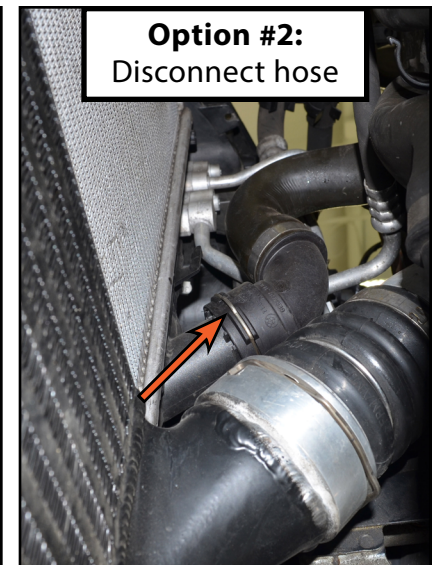
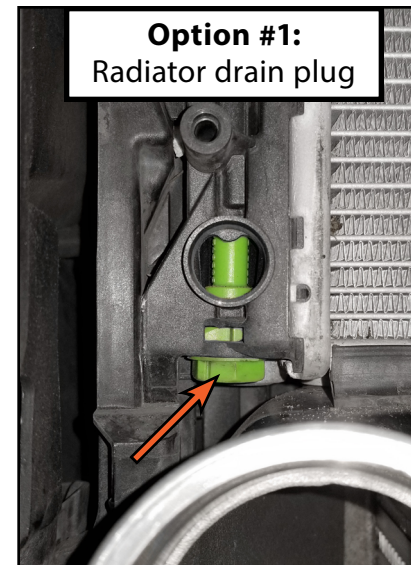
Step 1: 8mm Socket & Ratchet

Safely lift and support the vehicle, then remove the belly pan (highlighted in **GREEN**).



Step 2: Flat Blade Screwdriver or Angle Pick Tool

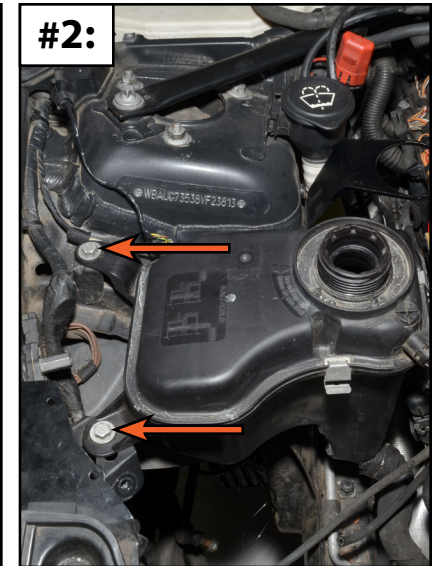
In order to remove the expansion tank we must first drain the coolant from the system. This could be done one of two ways: certain models may have a drain plug on the underside of the radiator (**Photo #1**), while others will require you to disconnect the lower radiator hose to drain the coolant (**Photo #2**). Place a drain pan underneath to catch the coolant as it drains. While we don't need to drain the entire system, we need to drain enough of it to remove the stock expansion tank and the hoses without making a mess.



REMOVING THE STOCK EXPANSION TANK

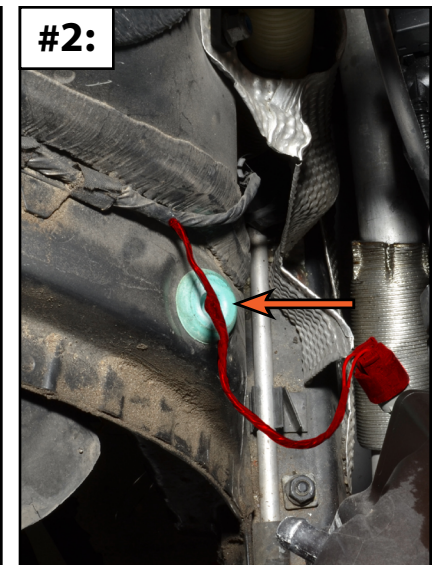
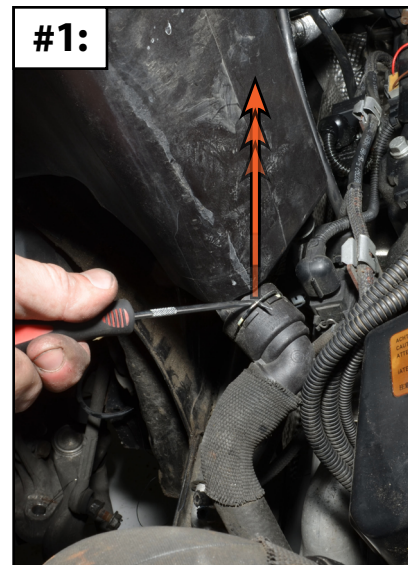
Step 3: Angle Pick Tool, 10mm Socket & Ratchet

Lift up on the retaining clip (as shown) pull the upper hose free from the expansion tank (**Photo #1**), then remove the two screws (arrows) which secure the expansion tank to the vehicle.



Step 4: Small Flat Blade Screwdriver or Angle Pick Tool

Lift up on the retaining clip (as shown in **Photo #1**) and pull the lower hose free from the expansion tank, then lift the expansion tank up slightly to access the coolant level sensor underneath (**Photo #2**). Disconnect the coolant level sensor (highlighted in **RED**) and remove the expansion tank from the engine bay. Remove the OE expansion tank grommet (arrow).



INSTALLING THE NEW ALUMINUM EXPANSION TANK

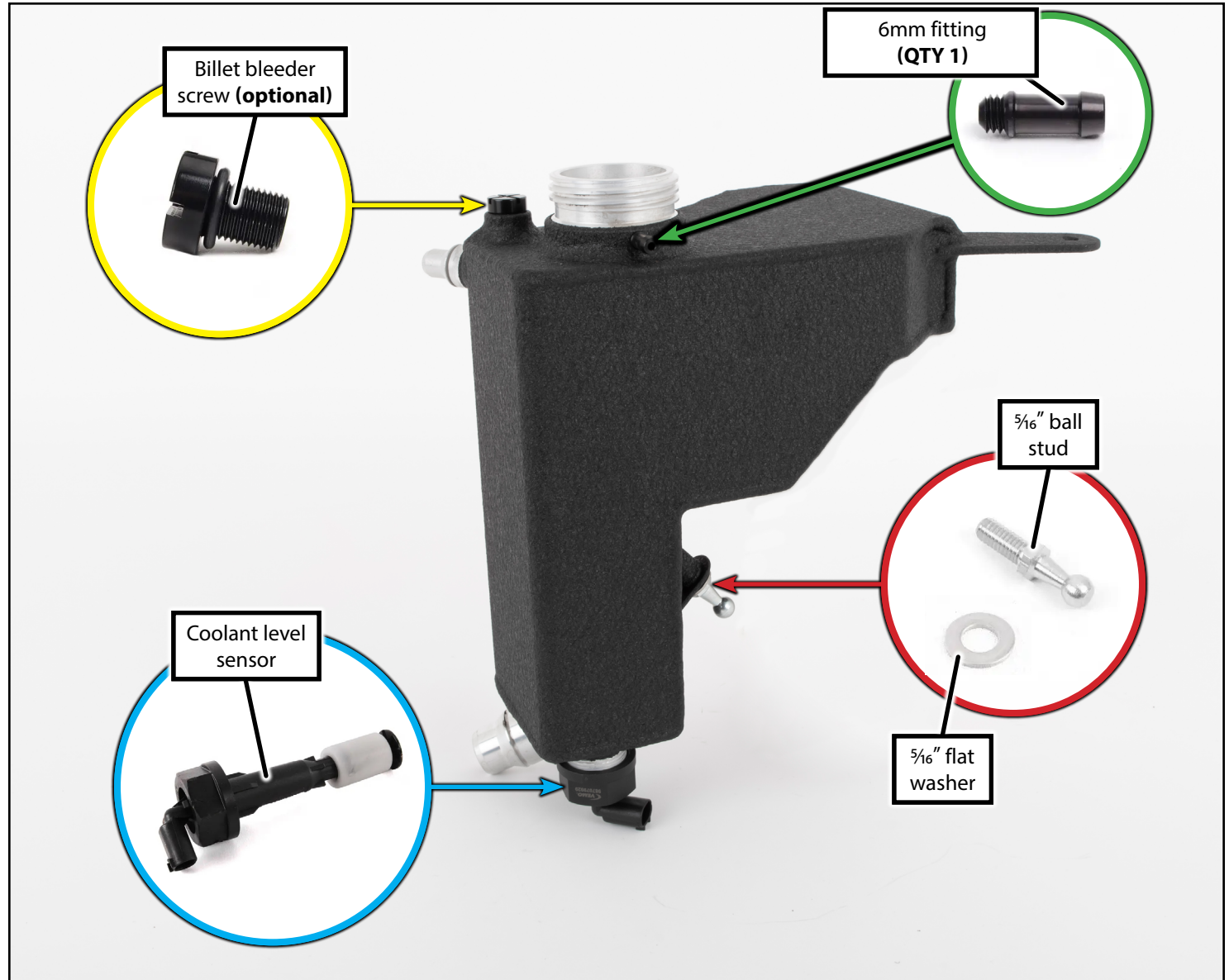
Step 1:

Install the provided $\frac{5}{16}$ " ball stud and flat washer (**RED** inset photo) into the lower mounting tab on the new expansion tank.

Install the provided coolant level sensor (**BLUE** inset photo). Be mindful of which direction the coolant level sensor will face once it's installed into the engine bay, make sure it will be accessible when it comes time to reconnect it.

Install the provided 6mm fitting (**GREEN** inset photo) into the threaded hole at the top of the expansion tank.

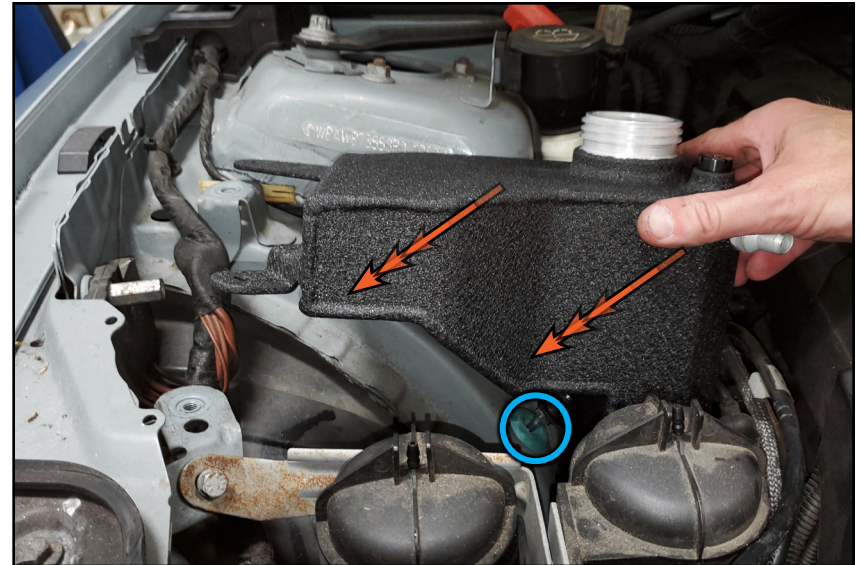
Transfer the plastic bleeder screw over from the stock expansion tank, or install a billet bleeder screw (optional, **YELLOW** inset photo).



INSTALLING THE NEW ALUMINUM EXPANSION TANK

Step 2:

Replace the OE grommet with the new one provided (circled in **BLUE**). Reconnect the coolant level sensor and the lower expansion tank hose (not shown). Install the new expansion tank by aligning the ball stud into the grommet, then press down until the ball stud is fully seated into the grommet.

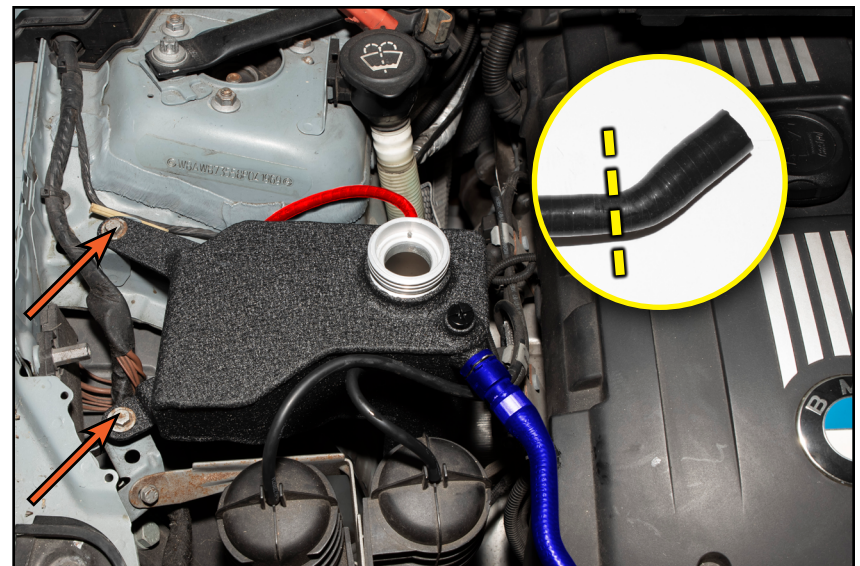


Step 3: 10mm Socket & Ratchet

Reinstall the bolts (arrows) to secure the expansion tank to the vehicle, torquing them to 8 Nm (6 Ft-lbs). Install the upper expansion tank hose (highlighted in **BLUE**), then route the overflow line (highlighted in **RED**) from the fitting on the expansion tank to a suitable location, trimming as needed.



You'll need to remove one of the flared ends from the silicone hose to connect it to the expansion tank (shown in the **YELLOW** inset photo).



INSTALLING THE NEW ALUMINUM EXPANSION TANK

Step 4:

Refill the expansion tank with fresh coolant until it is above the Turner logo plate and ensure all connections to the expansion tank are tight and free from leaks.



Step 5:

Reinstall the belly pan.



BLEEDING THE COOLING SYSTEM

Step 1:

Bleeding procedure:

1. Ensure that the expansion tank bleeder screw and the cap are both tightened down.
2. Connect a battery charger.
3. Switch the ignition to ON (**engine OFF**).
4. Set the temperature controls to the highest setting (~84° F).
5. Set the blower speed to the lowest setting.
6. Press and hold the accelerator pedal to the floor for 10-12 seconds. This will activate the electric water pump.
7. The water pump will cycle on and off for 12 minutes, **this is normal**.
8. After 12 minutes have passed you can turn the ignition to **OFF**.
9. Disconnect the battery charger.
10. Return the climate controls to their previous settings.
11. Check and top up the coolant level.
 - The Turner logo (**Photo #2**) inside the tank serves as the fill gauge. Once the coolant rises up to the logo plate it is full.
 - Coolant level is only to be adjusted when the engine is **COLD**, and when the vehicle is sitting on a level surface.

Your installation is complete!



Your E9x N52, N54 Aluminum Expansion Tank Kit installation is complete!



These instructions are provided as a courtesy by Turner Motorsport

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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