

TECH SESSIONS WITH HARRISON MOTORSPORTS
THERMOSTAT AND HOUSING REPLACEMENT ON M50 MOTORS
(3 Series E36/5 Series E34)

Given that BMW's "middle name" is Motor, it is expected that the motors found in these vehicles are above standard in terms of performance and reliability. While we all know this is not true and nothing is perfect, BMW engines and the M50 in particular are very robust and reliable, with the exception of the cooling system.

The M50, upon its introduction in the 1991 model year, was a step into the future when compared to the tried and true M30 that was in just about every BMW vehicle at some point in time from the mid 1970s on. The M50 has self adjusting valves, direct fire ignition, and starting in 1993, VANOS, a form of variable-valve timing. While one does not need to worry about replacing caps and rotors or adjusting valves on the M50, certain parts of the engine that were not traditionally "routine" replacement items are now treated as such. The example we're looking at today is the thermostat housing. We will replace cover the replacement of the thermostat housing. We will install a new, upgraded aluminum housing (add link?) in lieu of the brittle plastic housing the cars came with from the factory.

First and foremost, make sure the car is cold! Disconnect the negative cable from the battery. To prevent making a huge mess of toxic coolant, you will want to partially drain the radiator. Remove the cap to the expansion tank, and set the interior heater controls on full warm. Place a large pail (3 gallons or so) underneath the radiator drain plug, located on the bottom left or right side of your radiator, depending on the specific radiator brand. Remove the drain plug. Do not drain the radiator completely.

Now you can remove the housing and the thermostat. The thermostat is mounted inside the housing. Looking at the engine, the thermostat housing is just to the left of the oil filter canister on the front of the engine. Next, separate the thermostat from its housing. Install the new thermostat in the housing making sure the direction and orientation of the new thermostat matches the old. Simply reinstall the housing.

Refill the system with coolant and bleed. To bleed the system, add coolant to the expansion tank until the reading is at the "cold" mark on the tank. Next, loosen the bleed screw on the top of the radiator and expansion tank. Add coolant to the expansion tank until it spills from the bleed screw. Tighten the screw. Making sure the temperature controls are at full warm, start the engine. Once the engine reaches normal operating temperature, loosen the bleed screw again. While the engine idles, watch the coolant that spills out of the bleed screw. Once it is clear of air bubbles, tighten the bleed screw. Turn the engine off, let it cool, and recheck the coolant level, adding coolant if necessary.