TECHNICAL SERVICE BULLETIN

TSB No: TSB-US6047 Revision: A Date: 04/2026

WATER PUMP INSTALLATION REQUIREMENTS PART NUMBER: US6047

⚠ **COOLANT:** Flush and refill with NEW coolant. Use Toyota Super Long Life Coolant (SLLC) or equivalent. Incorrect coolant causes premature seal failure.

⚠ **BOLTS:** 16 bolts, 3 types (1, 2, 3) — different torque values. Bolt 3 requires adhesive (Three Bond 1344, or equivalent: Loctite 243 / Permatex Threadlocker Blue 24240 (NOT supplied with new water pump).

⚠ **TORQUE:** See table below. Use calibrated torque wrench. No oil on bolt A threads. Do not overtighten.

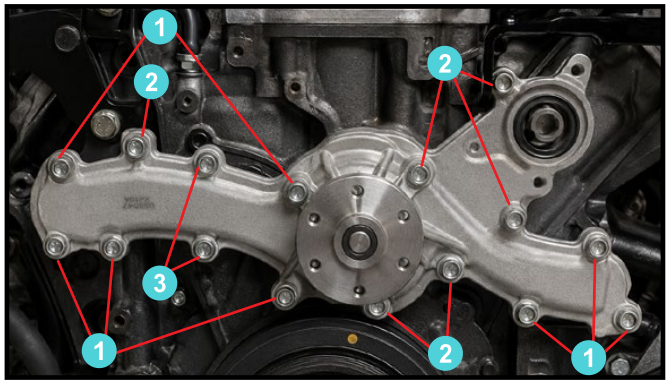
⚠ **BLEED:** Bleed cooling system using airlift vacuum tool or manual burp method.

BEFORE YOU START INSTALLATION

• Engine must be completely cold • Disconnect negative battery cable • Drain coolant
• Remove accessory drive belt • Remove old water pump • Clean mounting surface
(The engine mounting surface must be clean, dry, smooth, and free of gasket material, RTV, oil, or debris before installation.)

STEP 1 - INSTALL THE WATER PUMP

16 bolts in 3 types (1, 2, 3). Install each bolt in the CORRECT position — see diagram.



1. Install new gasket and pump with pulley. Identify bolt types 1, 2, 3 (see diagram and table). Hand-start all 16 bolts in correct positions. Torque per table.

⚠ No oil on bolt 1 threads. Bolt 3: replace with new bolts or apply Three Bond 1344 (or equivalent: Loctite 243 / Permatex Threadlocker Blue 24240) before reusing. NOTE: adhesive is not supplied with the new water pump — source separately.

⚠ Incorrect bolt torque can cause leaks at the mounting surface.

STEP 2 - FLUSH, FILL & BLEED THE COOLING SYSTEM

2. Reassemble hoses, thermostat housing, belt, and components per service manual.
3. Flush the old coolant: run clean water through the system until it comes out clear. Drain completely.
4. Use only OEM-specified coolant (Toyota Super Long Life Coolant / SLLC or equivalent) mixed 50/50 with distilled water. Never reuse old coolant. Never mix with other chemistries — causes gelling and plugging.

⚠ Always refer to the vehicle service manual for the complete step-by-step cooling system bleeding / air purge procedure. The steps below are a general guide only.

Water Pump Bolt Torque - Toyota 3.5L (2GR-FE):

Bolt	N·m	Ft-Lbs	In-Lbs
Bolt 1	21	15	180
Bolt 2 & 3	11	8	96

Option A — Vacuum fill (best method):

5. Set heater to MAX HOT. Engine OFF. Attach vacuum fill tool to the filler neck and seal it.
6. Pull vacuum per the tool manufacturer's specification. Close the valve and hold.
7. Vacuum holds steady = no leaks, continue. Vacuum drops = leak — find and fix before filling.
8. Put the suction hose in the coolant jug. Open the valve. Gauge at zero = system is full.

Option B — Manual fill (no vacuum tool):

9. Park on level ground. Engine cold. Remove the cap. Pour coolant slowly to the COLD FILL line.
10. A/C OFF. Heater on MAX HOT. Blower on LOW. If the vehicle has a bleed screw, open it now.
11. Start engine with cap OFF. Keep adding coolant as level drops.
12. Warm up until the thermostat opens. To confirm: the UPPER radiator hose transitions from cold to hot — that is hot coolant flowing into the radiator.
13. Once the thermostat is open, squeeze both hoses a few times to push air out. Wear gloves. Keep face clear of the filler neck — coolant can spurt. A spill-free funnel is strongly recommended.
14. Keep filling until the level stays steady and bubbles stop. Close the bleed screw if opened. Install the cap.
15. If the reserve tank drops below the line: shut off the engine, let it cool, then top off to FULL. Never add coolant to a hot engine.

After filling (both methods):

16. Run engine to operating temp with heater on HEAT. Shut off. Let cool completely.
17. When cold, top off to the COLD FILL line. Road test. Recheck next morning.
18. Heater blows HOT = properly bled. Heater stays COLD = air trapped — repeat the bleed.

For the full procedure, torque values, and vehicle-specific bleed points, follow the OEM service manual.

⚠ **Warning:** Skipping the cooling system fill/bleed traps air pockets causing overheating, erratic temp gauge, no heater, and premature seal failure — warranty claims from improper fill are NOT covered as manufacturing defects.

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