VGT ACTUATOR CHECKLIST
READ BEFORE INSTALLATION

I. Pre-Install (Root Cause & Prep)

☐ **Fix the Failure Root Cause:** If the old actuator failed, ***determine and correct why***.
(e.g., Coolant flood, damaged turbocharger, wiring problem
(Power, ground, CAN communication)

☐ **Turbocharger selector shaft:** Check if the gear selector is moving freely
and operating ***within the operating range with no excessive effort.***

☐ **Center Housing Surface:** Surfaces must be flat; uneven, warped, rusty/corroded areas ***will cause leaks.*** Thoroughly ***remove all*** residual gasket material and contaminants.

☐ **Freeze Plugs (if equipped):** Examine the freeze plugs on the actuator mating surface for ***corrosion*** or the ***presence of coolant leaks.***

☐ **Hardware:** Use ***ALL NEW*** gaskets, seals and bolts.

☐ **Tamper-Seal:** The tamper seal on all HDTURBO parts must remain intact.
Breaking, removing, or altering the tamper seal will immediately void the warranty.

II. Installation (Calibration & Mounting)

1. Open the ***ECM Diagnostic Tests*** menu in the electronic service tool.
2. Select ***VGT Electronic Actuator Installation and Calibration*** from the list and click Next.
3. Select ***INSTALL ACTUATOR*** and click Start.
NOTE: The actuator must be connected to the engine harness
but NOT mounted to the turbocharger during this step!
4. ***Manually*** rotate the sector gear on the turbocharger to ***the INSTALL POSITION.***
5. Align the actuator with the bearing housing and mount it onto the turbocharger.
NOTE: Torque the M6x1.00 bolts to 11 Nm (97 in-lb.) with crisscross pattern!
6. In the service tool, select ***CALIBRATE ACTUATOR*** from the drop-down menu.
Note: The actuator must be fully mounted to the turbocharger before
selecting this command!
7. Follow the remaining on-screen prompts to complete the calibration process.

Failure to complete all pre-installation steps will void warranty coverage.

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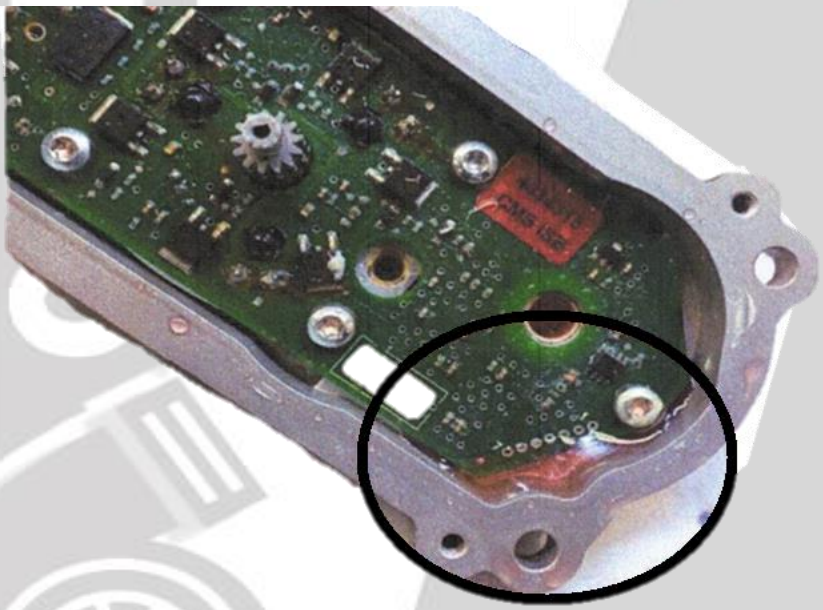
Please inspect the turbocharger actuator sealing surface carefully before installing the actuator.
Inspect the sealing surface for **coolant leaks, cracks, excessive corrosion, contamination, or other damage.**



If the turbocharger sealing surface is **not properly cleaned and prepared**, coolant may leak through the gear section of the actuator and reach the electrical circuit board, potentially causing a **short circuit and permanent actuator damage.** **Which will not be covered under warranty.**

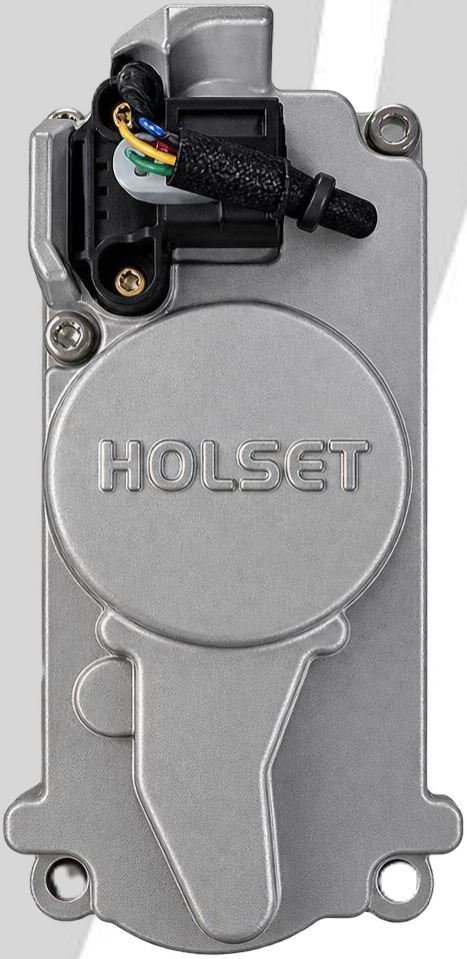




Coolant under normal operating pressure can enter the gear section and reach the electrical circuit board due to **corrosion or damage to the sealing surface, improper cleaning, or incorrect bolt torque during installation.**

Tighten the four cap screws in a criss-cross pattern, using two steps:

1. **3 N·m [27 in-lb]** — Short cap screws
2. **2.11 N·m [97 in-lb]** — Long cap screws



GEN. 1



GEN. 2



GEN. 3

IMPORTANT: Three actuator revisions may be encountered in the field. Refer to the images above for identification. The inspection and installation requirements in this bulletin apply to all three revisions.

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