



This Service Information bulletin supersedes SI B12 05 07 **dated January 2008.**

**NEW** designates changes to this revision

## SUBJECT

**Diagnosis: Low Oil-Level Warning Message Is Displayed**

## MODEL

E60, E61, E70, E83, E85, E86, E90, E91, E92, E93 with N51, N52, and N52K engines from SOP to 9/2007

E60, E61, E90, E92, E93 with the N54 engine from 9/2006 to 3/2008

E60, E63, E64, E65, E66 with the N62TU engine produced from 3/2005 to 3/2007

E70 with the N62TU engine produced up to 3/2008

## SITUATION

An erroneous oil level warning message, "Oil level below minimum", may be displayed intermittently or permanently, **even though the engine contains the correct volume of oil.** This situation occurs primarily during the winter months and in the colder regions of the country.

## CAUSE

The root cause is moisture condensation from the crankcase ventilation system migrating into the oil condition sensor (QLT). Frequent starts and shorter driving trips can cause an increase of moisture accumulating in the oil, which may adversely affect the oil level calculation.

## PROCEDURE

**NEW** For E90, E91, E92, and E93 vehicles with the **N51, N52, N52K, and N54** engines:

**NEW** Follow the latest diagnostic test plan with the most current DIS software, using the fault symptom selection path.

**NEW** **Always use the current diagnostic software whenever performing symptom troubleshooting.**

Important:

**NEW** A "short test" must be performed for this menu selection to be available.

**NEW** Select "1200 Engine Control / 120022 Incorrect oil-level warning" and then "Transfer" to place this accepted symptom into the Diagnosis Test plan.

Page to the right and highlight this test plan, associated with the symptom selection.

**NEW** The "Incorrect oil-level warning W1214\_OEZS" test plan responds according to the individual status of the vehicle being checked. When this test module is started, the following vehicle data is read out to determine which appropriate test steps will be recommended:

- Any relevant fault codes to the oil condition sensor (QLT – quality, level, temperature)
- Current vehicle software data status and engine variant

- CBS oil service data.

### **NEW Important Note**

If vehicle programming is recommended, complete the programming, using the latest version of Progman. Then return to the diagnosis and perform the W1214\_OEVS test plan once more, until the diagnosis test module is complete. Failure to do this may result in steps in the test module being omitted.

**NEW** Follow all of the steps in the test plan until the end of the test module is reached.

**NEW** Refer to [SI B07 12 07](#) for information about running test modules to completion.

**NEW** **Currently, this test module only functions for E90, E91, E92, and E93 vehicles with the N51, N52, N52K, and N54 engines.**

**NEW** **For other models, proceed as described below:**

For the E60, E61, E70, E83, E85, and E86 with **N52** and **N52K** engines produced up to September 2007:

1. Prior to the first engine oil service (with factory fill oil) – **do not change the oil and** proceed to step #3.
2. If the first oil service has been performed previously, change the engine oil (without replacing the filter), remove and blow out the QLT sensor, using compressed air. Reinstall the sensor with a new O-ring, new engine oil, and proceed to step #3.
3. Program using the latest version of Progman to the appropriate integration level or higher:
  - E060-07-09-515
  - E070-07-09-515
  - E83, E85 and E86 - program the DME using the most current version of Progman.

**NEW** For vehicles with **N62TU** engines:

1. Verify the Check control message and check the oil level using the dipstick.
2. If the oil level is OK and the complaint is reproducible, Program\* the vehicle.
  - \* **Only applies to vehicles with a current integration level (vehicle data status):**
  - E060-06-12-510 or lower
  - E065-06-12-530 or lower
  - E070-06-12-550 or lower.

**NEW** Note:

If the situation were to occur in a N62TU-equipped vehicle, in which a Check Control message is displayed indicating that the engine oil is overfilled, but the dipstick indicates the correct oil level, proceed by performing the following test module:

**Function Selection / Service Functions / Maintenance / CBS Reset / CBS Functionality, engine oil, disturbed**

This test module clears the stored long-term oil level value in the DME RAM memory. A new value can then be recalculated and displayed.

### **For all vehicles:**

Road test the vehicle until the engine is at full operating temperature. Verify that the oil level status shows correctly between the "MIN" and "MAX" marks.

Note: The "short" and "long" oil level measurements begin once the oil temperature is above 60°C.

These measurements may take some time to complete, depending on the engine operating conditions and the engine management variant.

After the oil is up to temperature, engine operation with a steady throttle while keeping the engine speed above 1200 RPM is required for the DME to complete the measurement function.

These measurements will pause during heavy acceleration, cornering, at engine speeds below 1200 RPM, and will resume once the prerequisite conditions return.

If the measurement is interrupted by stopping and turning the engine off, for example, the process starts over at the beginning once the engine is restarted.

### **Important:**

**NEW** If an oil level measurement is not possible and the DME fault **2E9F: oil condition sensor - error permittivity measurement** is stored, then the most likely cause is that moisture is still present within the QLT sensor.

Outside or in a well ventilated area, operate the engine at a speed of 3500-4000 rpm for 8 minutes to quickly raise the oil temperature above 100°C. This will help to quickly vaporize moisture within the engine crankcase.

Let the engine idle for 2 minutes before shutting it off.

With the engine off, carefully open the oil cap and allow any remaining vapor to escape for a few minutes.

An alternative to this would be a longer test drive of at least 30-45 minutes of constant engine and higher road speeds, heating the oil above 100°C long enough to vaporize any remaining moisture within the engine.

In the unlikely event (perhaps for vehicles being programmed only) that the procedure above is not effective in restoring the oil level measurement functionality due to moisture contamination, it will be necessary to remove and blow out the QLT sensor and install fresh engine oil.

### **WARRANTY INFORMATION**

#### **Warranty claims may be denied:**

- 1. If not supported by diagnostic test plans (transferred via FASTA). Be sure to include any "Diagnostic codes" in the comments section of the warranty claim.**
- 2. If the latest diagnostic software is not used.**

Covered under the terms of the BMW New Vehicle Limited Warranty.

Please refer to the latest KSD for all applicable labor operations and allowances.

If the appropriate labor operation is not contained in KSD, then a work time labor operation should be used.

**Defect Code**

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