



This Service Information bulletin supersedes SI B13 04 09 **dated January 2011.**

NEW designates changes to this revision

SUBJECT

N54 - Diagnosis of Cold Start Rough Running with Misfire Faults

MODEL

E82, E88, E89, E90, E92, E93, E60, and E61 vehicles with the N54 engine produced up to 09/2008

SITUATION

The customer may complain that during the cold start in the morning, the engine runs very roughly and the Service Engine Soon lamp is illuminated.

Various misfire fault codes (e.g., 29CC, 29D2, 29D1, 29D0, 29C0, 29CF) may be stored in the DME control module.

The engine rough running complaint can be reproduced on a cold start in the workshop. During the course of diagnosis, the spark plugs, removed from the misfiring cylinders after the problem was reproduced, are found to be soaked (“wet”) with fuel, while the injector tips are covered with a layer of carbon deposit.

CAUSE

Possible cause: high-pressure injector failure (leakage or incorrect spraying pattern) due to internal wear or unfavorable stock of tolerances

IMPORTANT:

NEW For comprehensive N54 drivability diagnostics, always refer to the “N54 Engine Diagnostic Fault Tree” file (the current version “02_14_13” is found as a PDF attachment to [SI B12 55 06](#)).

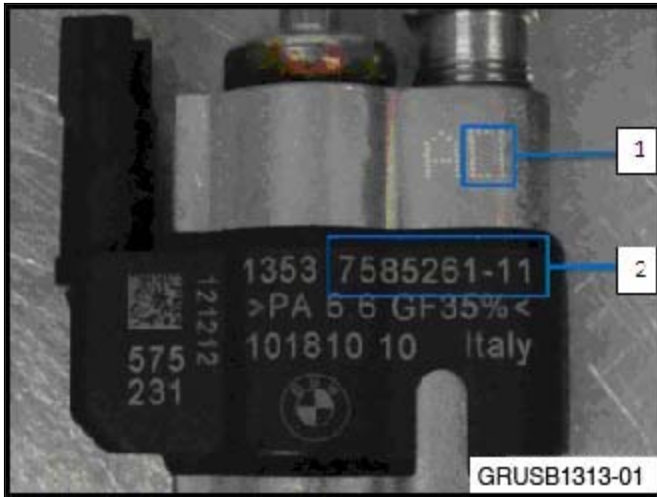
NEW CORRECTION

In the case of a reproducible “**cold start**” rough engine running with corresponding misfire faults, replace the high-pressure injector of the affected cylinder, using the improved part (P/N 13 53 7 585 261). Follow the Repair Instruction REP13 53 310 for injector removal and installation. Additionally, the spark plugs from the misfiring cylinders which were found to be soaked (“wet”) with fuel should be replaced as well.

After an injector replacement, perform the individual injector calibration (adjustment) with the DME control module, as per [SI B12 26 08](#).

If the misfire faults are stored, the complete set of injectors (6) needs to be installed using P/N 13 53 8 616 079 (index 11 or higher).

See the photo below to properly identify the index number.



Additional Information:

As of January 2013, an improved injector is available. Two distinct markings on the injector itself will identify the improved injector.

1 = Internal material improvement

2 = 7585261 – (index) 11 or greater

IMPORTANT: Injectors with index 11 and higher have a different calibration than injectors with index 10 and lower. Due to this difference, injectors with index 11 and higher and injectors with index 10 and lower cannot be used in the same engine.

IMPORTANT:

Starting on January 3rd, 2011, Part Replacement Authorization is NOT required for N54 injector replacement.

IMPORTANT NOTE:

For N54 misfire fault complaints during normal engine operation (misfire faults not related to the engine's "cold start"), refer to the following Service bulletins:

- [B12 05 09](#) - N54 (E6x) Misfire Faults due to DME Software Error
- [B12 06 09](#) - N54 (E9x) Misfire Faults due to DME Software Error

NEW PARTS INFORMATION

Part Number	Description	Quantity
13 53 8 616 079	High-pressure injector	As required, up to 6

NEW WARRANTY INFORMATION

Not applicable.