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This Service Information bulletin supersedes SI B13 04 09 **dated October 2009**.

**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, E61, E71 with N54 engine

#### 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

#### **NEW** IMPORTANT:

For comprehensive N54 drivability diagnostics, **always** refer to the "N54 Engine Diagnostic Fault Tree" file (the current version "12\_03\_09" is found as a PDF attachment to [SI B12 25 09](#), [SI B13 08 09](#) and [SI B12 55 06](#)).

#### 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 TIS Repair Instruction RA 13 53 310 for injector removal and installation. Additionally, the spark plug and the ignition coil from the misfiring cylinder 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 during a **cold start** rough engine running, the misfire faults are stored in more than one cylinder of the same bank, all three injectors from that bank need to be replaced.

In case the misfire faults are stored on three (or more) cylinders, then the complete set of injectors (6) needs to be installed.

#### IMPORTANT:

As of Monday, October 19, 2009, a **Part Replacement Authorization is required** (via submission of a TC Case) **for replacement of the injectors and ignition coils on N54-equipped E60, E61, E82, E88, E89 and E71 vehicles**. For details related to the "N54 Engine Drivability TC Action", refer to the updated [SI B12 25 09](#).

## 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

## PARTS INFORMATION

Part Number	Description	Quantity
13 53 7 585 261	High-pressure injector	1

## WARRANTY INFORMATION

**Important note for E60, E61, E82, E88, E89, and E71 vehicles:**

**Part Replacement Authorization must be obtained for vehicle repairs requiring replacement of the N54 fuel injector, ignition coil or any other component affected by the "N54 Engine Drivability TC Action" listed in SI B12 25 09.**

Any TC part replacement must be preapproved by the TeileClearing process if it is to be paid by BMW NA. **TC part replacement without prior approval will be subject to debit. Claims submitted without prior approval will not be eligible for payment by BMW NA.** When submitting a warranty claim for the replaced part, the PuMA case number must be specified in the comment section.