




In this issue:

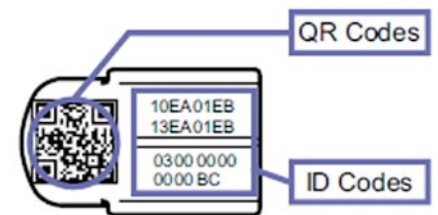
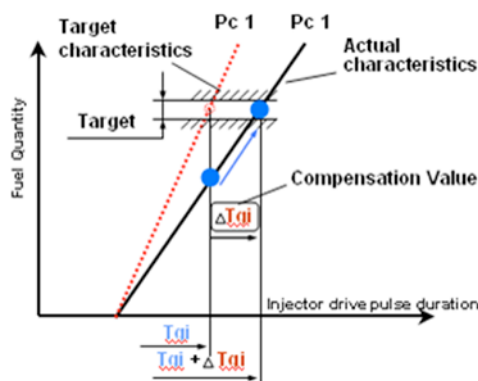
In this fourth news bulletin we bring you an overview of replacing DENSO Diesel Common Rail Injectors, as useful background information to our latest film on  [click here](#).

Following the introduction of the new DENSO-C diagnostic tool in our recent December newsletter, we will be issuing some additional technical news bulletins in the coming weeks to provide further technical insight into DENSO Diesel systems – and the need for, and use of, diagnostics.

Replacing a Diesel Common Rail Injector:

When replacing a DENSO Diesel Common Rail Injector, marked with a compensation code, it is necessary to register the ID code printed on the upper part of the injector with a genuine OEM - or DENSO diagnostic tool into the electronic control unit (ECU).

The injector compensation code is used to compensate injector production tolerances.



Injector Replacement Key Points:

Remove:

1. Ensure there is no pressure in the system before opening the high pressure pipes
2. Ensure the area around unions is clear from any dirt or liquids
3. Use blanking caps on open ports to prevent dirt / dust entering the components
4. Use the nozzle protection cap after injector is removed

5. Ensure care is taken not to damage the injector solenoid when removing injectors from the engine

Reinstallation:

1. If fitting injectors to the engine ensure that the injector QR code on top of the injector is noted, along with the cylinder number
2. Ensure that the injector pocket is clear of obstructions, including the seal from the removed injector
3. If re-using the original injector always replace the old gasket with a new one.

4. Ensure no excessive force is used on the solenoid when fitting injector to the engine. Only apply force (no impact) to the clamp
5. Ensure the injectors are clamped down following the correct procedure and torque to avoid distortion (refer to the OEM information or DENSO diagnostic tool). During this operation, remove blanking caps before re-fitting the high pressure / back leakage pipes

> continued overleaf

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6. If fitting new injectors ensure that the injector QR code is re-entered in the ECU via the diagnostic tool. Ensure that each individual injector QR code corresponds with the cylinder mounting position!
7. Perform the high pressure test using the diagnostic tool to confirm there is no leakage!
8. Perform injection learning (if available in the OEM - or DENSO diagnostic tool)

Did you know...?




- The QR Code was invented by DENSO in 1994 to track vehicles during the manufacturing process
- DENSO diagnostic tooling will report wrong injectors if the ID code does not match the vehicle
- DENSO diagnostic tooling will report typing mistakes if the ID code contains a typing mistake
- Cleanliness has the highest priority during repair activities

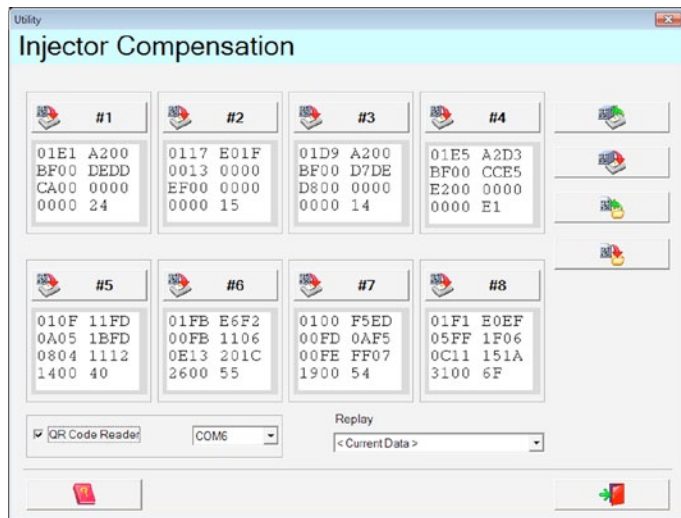


- 1** Back leak port
- 2** High pressure inlet port
- 3** Nozzle protection cap

When working on a Common Rail System, maintaining cleanliness is absolutely essential! The smallest particles may cause engine operation and / or fuel system faults! During any repair activities, opened fuel connections must be sealed off immediately!

Important: If the engine is running and/or a high pressure test is performed, never touch any high pressure pipe/connection/component with your fingers! If there is a leakage, hot, highly pressurised fuel could cause serious injuries.

-  **Make sure that the engine is switched off**
-  **Make sure that the fuel pressure has dropped to zero and that the fuel temperature is at ambient temperature**
-  **Wait at least one minute after the engine has stopped before commencing any repair to the fuel injection system**



Risks if injector compensation code programming is not done:

- Knocking noise
- Wiggling during driving
- Unstable idle
- MIL (Check Engine Lamp) on

In the next issue:


In the next news bulletin we will look in depth at the DENSO Diesel-specific system factors you need to be aware of whilst working on, and diagnosing, a DENSO Diesel common rail system.

Aspects that will be reviewed are:

- Small injection quantity learning
- And more....

Go online!

Over the coming weeks we will upload new videos on the DENSO Diagnostic YouTube channel to support these news bulletins.

Why not take a look? To check out our films and subscribe to our  channel, [click here](#). Thank you for watching!



Scan the QR Code with your smartphone to open the DENSO Diagnostic YouTube channel and have a look at our latest technical movies.

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