



Technical bulletin

PRODUCT:	Common rail injector
OEM:	Schaeffler (Continental, Siemens, VDO)
FITS:	Ford, Peugeot, Citroën, Hyundai, Kia, Renault, VW 1.6/2.0 TDI
JOB:	How to perform an ECU self-adaptation

Due to the nature of Schaeffler - Continental, Siemens, VDO - injectors, and the characteristics of the piezoelectrical arrangement, they require a mandatory two-step procedure when installing into the vehicle as:

1) Injector coding

All Continental, Siemens, VDO Euro 5 and Euro 6 common rail injectors feature a 6, 7 or 9-digit alphanumeric grading code. When installing a replacement injector, this code must be programmed into the vehicle ECU to realign the timing and quantity of fuel delivered, just like it would any other common rail injector. See our 'how to code a common rail injector' for further instructions.

2) Injector adaptation

Unlike others however, these injectors also require an injector adaptation, otherwise known as injector smoothing or pilot injector relearn. This additional phase helps the ECU "learn" the precise flow rates so it can balance each cylinder.



How to perform an injector adaptation

- » with a diagnostic tool connected, check that no injector-related fault codes are present in the ECU
- » next navigate to the injector adaptation function and start the routine - note, this may also be called injector learning, pilot injection learn or smooth running control but will always be under the engine > special functions

- » drive the vehicle until the engine is at operating temperature – the minimum coolant temperature is 80°C. Continental ECUs will not relearn if the coolant or fuel temperature is too low
- » in third gear, increase vehicle speed to 3,000 rpm and allow the engine to naturally deaccelerate to 1,500 rpm. Important! Do not depress the brake pedal during this step, as it will cancel the adaptation process
- » repeat the RPM change a further two times
- » the ECU will run the self adaptation process. Whilst doing so, you may notice fluctuations in RPM, slight changes in engine noise, temporary rough running etc
- » on completion of the above, the ECU should have performed a successful adaptation – the ECU will store the 'learnt' values permanently, and the vehicle can be driven as normal
- » if the conditions are not met the adaptation may fail - if this happens, address the issue and perform the above steps again

Why might the injector adaptation fail

- » engine not at the right temperature
- » air in the fuel system
- » low rail pressure
- » incorrect injector coding

IMPORTANT: This process should only be performed by a trained technician. The exact procedure can vary, so always follow the on-screen instructions when prompted. Failure to follow these instructions may result in the vehicle not running correctly.

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