

Tips & Technology

For Bosch Partners

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Diesel injection



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Important tips for diesel specialists

Precise, sensitive and always under pressure

Modern diesel injection systems are highly sensitive and complex. They consist of precision parts and components, with extremely minimal manufacturing tolerances. During operation, these parts are exposed to maximum stress in the form of pressure, heat and vibration yet must function like clockwork. Consequently, no dirt or foreign bodies whatsoever must penetrate the inside of the system. Even tiny dirt particles can lead to malfunctions, component failure and engine damage. To put things into perspective: the average hair has a diameter of 60 µm. The armature clearance of any injection is just 39 ±3 µm. For this reason, cleanliness and meticulousness when working on the fuel system are equally as important as using the right tools and workshop professionals having in-depth knowledge of the system.

Tips from one professional to another

In order to maintain the necessary precision and perfect function and guarantee expert repair or maintenance, some important rules must be observed when working on diesel fuel systems.

- Clean tools and work equipment before commencing work. Do not use tools that display any damage (cracked chrome coating).
- Only carry out work on removed components in a workplace specifically equipped for this purpose.

The following measures must be adhered to when working on the open fuel system:

- Do not clean parts with used cleaning or test fluid.
- Do not use compressed air for cleaning. Remove loose dirt particles, such as paint chips and insulation material, using suitable extraction devices. A burr may form on the taper of the high-pressure connection, in particular, which must in no event be allowed to get into the system.

We recommend using the extraction gun, which is available under part number 0 986 613 111.



- When removing and installing components, never use materials such as cloths, cardboard or wood, as they may loose particles and fibers.
- After removal, seal openings in components immediately with suitable, clean caps. You should always have a stock of caps ready at hand (experience shows that these should be placed in suitable trays). Store caps free from dust and protected from dirt in their original packaging, and dispose of after they have been used once!
- Next, store the components carefully in a clean, closed container. If removed parts have to be shipped, always use the original packaging of the new part.
- Rub parts down only if necessary, using a clean, lint-free cloth and exercising great care. Take care not to rub in dirt particles.
- Seal all openings in housings of removed components immediately.

Important tip: In the case of reconditioned components, always fill out the accompanying slip or the form on the packaging (mileage, etc.).

The most important sealing plugs at a glance

Common rail injection (CRI)/commercial vehicle common rail injection (CRIN) protective caps:

- 6 000 610 126 (CRIN return hole)
- 6 000 900 048 (PS 606, CRIN return hole)
- 6 000 900 050 (PS 601, CRIN inlet hole)
- 6 000 900 051 (PS 604, CRIN inlet hole)
- 6 000 900 225 (PS 601, CRI inlet hole)
- 6 000 900 262 (PS 600, CRI nozzle)
- 6 000 900 202 (PS 602, CRI/CRIN return hole)

Rail protective caps

- F 00N 200 397
- F 00R L00 011
- F 00R L00 201
- F 00R 000 366
- F 00R 000 365

This list of protective caps is only a selection from the current range. But with this, the workshop professional can cover the most common CR components. However, in individual cases protective caps not listed here may be required.

Material

Here is a brief list of the most important materials required for working on diesel injection systems:

- Engine cleaner
- Material for covering the electronics
- Cleaning agent for parts washer
- Lint-free paper towels (e.g. Kimberly-Clark, type 7643)
- Calibrating oil to ISO 4113
- Bekanol H, degreasing cleaning agent for the solenoid module. If Bekanol H cleaning fluid is not available, it may be replaced by a different fluid with similar properties.
- Tickopur R 61 (cleaning agent for the ultrasonic bath)
- Sewing machine oil or clean engine oil for assembly

Special note for UI/UP elements

If the UI/UP elements of an engine are removed, e.g. for repairing the cylinder head, they must be immersed immediately in clean diesel fuel, to protect them against corrosion.

Otherwise, the tiny holes made through high-precision laser perforation would seal due to corrosion. This would cause the vehicle to suffer a lack of power after just a short time.

Please note

Diesel injection systems are under high pressure. Please observe the relevant safety instructions for your own protection!