

Defective/Damaged Injector Replacement Guide

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Complaint:

Rolls-Royce Motor Cars have recently seen a few cases of defective sealing rings on injectors.

A defective sealing ring on the injector can be identified by, for example:

- Unsmooth engine running with a rhythmic chuffing noise from the upper part of the cylinder head.
- MIL on and entry of misfire fault in the fault memory of the DME.
- Burn marks and traces of smoke in the area of the affected injector (see attached image)

Cause

The defective sealing ring allows combustion gases to leave the combustion chamber and pass the injector.
This can cause damage to the sealing ring, injector and the cylinder head.

Measure

This is a repair instruction that must be carried out before removal of the affected injector.

The procedures described below must be followed exactly.

This prevents foreign bodies, dirt and debris from entering the combustion chamber and prevents the cylinder head from being damaged during the removal of the injector.

After the careful cleaning of the injector bore and the installation of the new injector, the tightness of the new injector has to be tested.

Special tools:

- Pressure loss tester 81 39 2 302 630

Other tools and auxiliary materials:

- Vacuum cleaner with narrow / pointed nozzle
- BMW brake cleaner
- Brass or bronze cylinder brush with 8 mm diameter
- Leak detection spray 83 19 9 407 861
- Lint-free cleaning cloth
- Cleaning agent for the injector bore:

Commercially available seal solvent e.g. Liqui Moly 3623

Or cleaner for carbon-based impurities on intake- or EGR systems e.g. Tunap 138, 926, Liqui Moly 5111

Procedure:

- Remove the injector securing bracket according to the repair instructions.
- Protect / Seal all the exposed openings / connections from the entry of any foreign bodies / contamination!
- Close all the windows and doors of the vehicle.
- Wear safety goggles. Dirt particles may get into your eyes!
- Use a vacuum cleaner and compressed air (air gun with a lance) to draw off / blow out any contamination in the area of the injector thoroughly.

Attention

It must be ensured that there is no contamination in other openings / bore holes, clean if necessary.

- Remove the spark plug in the affected cylinder according to the repair instructions.
- Turn the crankshaft at the central screw in the direction of rotation and set the piston on the firing TDC. If necessary, use TDC Finder or pressure tester 81 39 2 302 630.

*****Attention*****

Risk of damage!

Do not turn the crankshaft in reverse.

- Run approx. 10 ml of engine oil slowly from above into the gap between injector and cylinder head.
(Example picture in attachments)
Allow approx. 5 minutes to soak in.

- Screw the hose of the pressure loss tester into the spark plug bore and connect it to the pressure loss tester.

- Connect the pressure loss tester with the compressed air supply.

- Switch on the vacuum cleaner and keep it ready.

- Pull the injector out of the injector bore in accordance with the repair instructions and immediately suck off dust / dirt so that it cannot enter the combustion chamber.

*****Attention*****

Risk of damage:

Do not tilt or twist the injector to avoid damaging the bore in the cylinder head!

Do not deactivate the compressed air until the loose dirt has been removed from the injector bore area.

- Remove oil and oily impurities in this area with lint-free cleaning cloths, brake cleaner and blow clean and dry with compressed air.

*****If there are still deposits / combustion residues in the injector bore, this must be removed before inserting the new injector. *****

*****Attention*****

Risk of damage:

The cleaning agent must not come into contact with seals, rubber or plastic parts!

- Apply the cleaning agent directly to the deposits.
 - Wash off after approx. 5 minutes. Clean and dry with compressed air.
- If there are still deposits in the injector bore:
- Apply the cleaning agent again and remove the stubborn deposits with the brass or bronze cylinder brush.
 - Wash off the dissolved deposits. Clean and dry with compressed air.

*****Attention*****

Risk of damage:

Do not use any sharp-edged or pointed objects that damage the surface of the injector bore!

If necessary, repeat the cleaning process until the injector bore is clean.

Discoloration of the metal surface can be tolerated.

It is important that the surfaces in contact with the seal and components are free of contamination.

- Prepare and install the new injector according to the repair instructions. (Do not yet rebuild the engine).
- Thoroughly spray the gap between injector and cylinder head from above with the leak detection spray.
- Reconnect the pressure loss tester with the compressed air supply and observe for at least 5 minutes whether signs of leakage are visible between injector and cylinder head. (Foaming.)

If a leak can be identified, contact Technical Support via PuMA/TSARA with clear good quality pictures and videos.

If no leakage is visible, blow the gap between injector and cylinder head dry with compressed air.

- Rebuild the engine according to the repair instructions.
- Delete fault memory, carry out the injector compensation service function and reset adaptations of the DME.

Validity information

Model series:	[RR5, RR4, RR22, RR11, RR6, RR12, RR31, RR21]
Engine range:	[N74L, N74N, N74R]
Body style:	[ALL]
Fault codes:	[143310, 140010, 140011, 120908, 120408, 140B05, 140009, 100314]
Production period:	-

Repair overviews

13/53/002/27175/36590, Injector, Engine compartment area (front), , Cannot be encoded with VFC, , Checking, repairing, replacing

Attachments

Number of attachments: 2