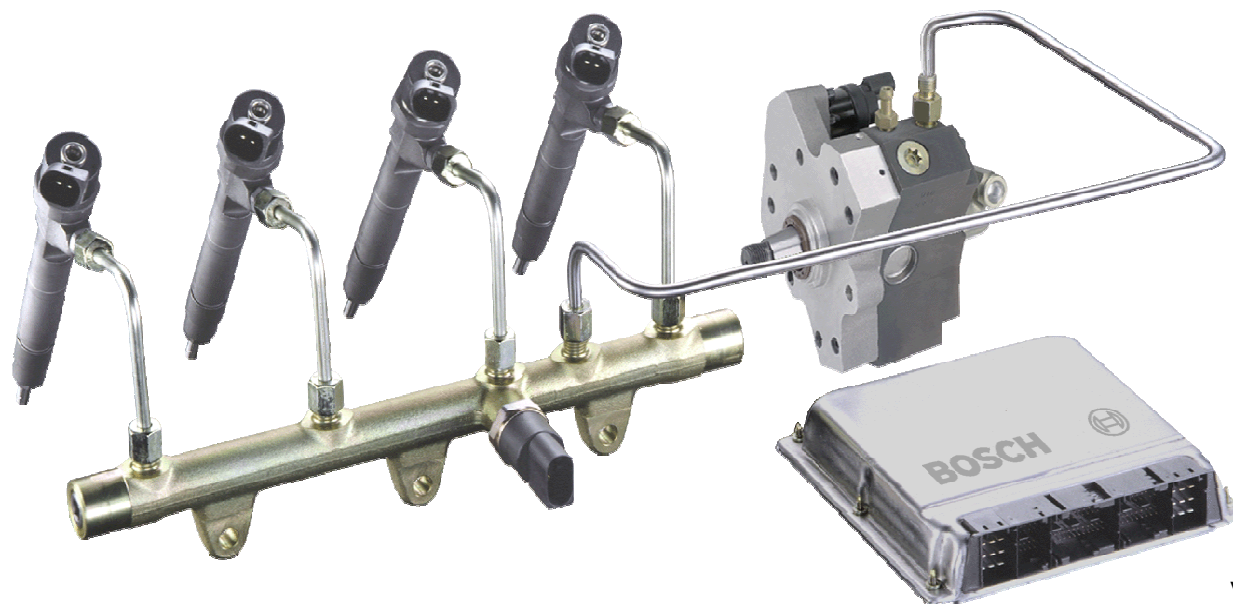


## Testing and Repair of CRI and CRIN

# Preliminary testing and repair instruction for solenoid controlled Bosch Common Rail Injectors of the 1st and 2nd generation

**AA/PDS1  
03.2004**



Automotive Aftermarket

1

AA/PDS1 | 03.2005 | © Robert Bosch GmbH reserves all rights even in the event of industrial property rights. We reserve all rights of disposal such as copying and passing on to third parties.



**BOSCH**

# Testing and Repair of CRI and CRIN

## Clean Workshop Area

Any repair work on injectors is to be carried out on workbenches with stainless steel plating according to Bosch guidelines.

Other workbench concepts do not meet the cleanliness demands for repair work on today's modern Diesel components!



# Testing and Repair of CRI and CRIN

## General Subjects

Bosch Common Rail injectors may only be repaired:

- After any warranty period of the vehicle or engine has expired
- Outside any in-field compliance periods required by law during which vehicles can be subject to exhaust tests.  
For an EURO 3 vehicle this means three years and  $\leq 80.000$  km,  
5 years and  $\leq 100.000$  km for an EURO 4 vehicle.
- Country specific rules and laws have to be obeyed.

Testing of injectors on released test equipment is permitted at any time.



# Testing and Repair of CRI and CRIN

## Special Features

This instruction describes the testing and repair of solenoid controlled Common Rail injectors (CRI or CRIN, resp.) of the 1st and 2nd generation.

Part numbers are 0 445 110 xxx (CRI) and 0 445 120 xxx (CRIN). These injectors are referred to as CRI1 and CRI2 or CRIN1 and CRIN2, respectively.

The nozzle change on any CRI or CRIN can only be performed once in the live cycle of the injector.

## CRI1

Locating pins are used for aligning the nozzle to the injector body. Some CRI1 are using spiral type locating pins which can not be removed from the injector body.

Injectors with this feature can not be repaired because the locating pins may break when mounting the nozzle retaining nut.

When this happens, the alignment between nozzle and the fuel supply bore of the injector body is no longer given.



# Testing and Repair of CRI and CRIN

## Special features (Continued)

### CRI1

Injectors of this generation with cylinder-type locating pins can be repaired.

The locating pins have to be replaced with new ones.

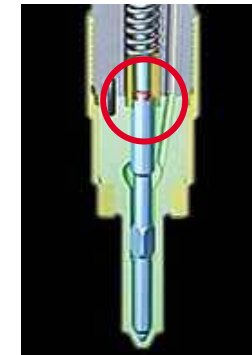
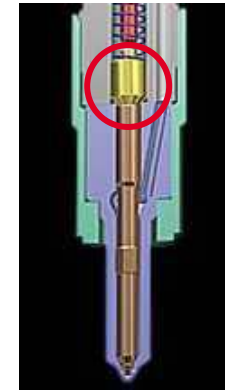
Differences: Types with big pressure pin (top picture) or nozzle guided valve piston (DGV, picture below).

The big pressure pin or the DGV-sleeve with a small pressure pin (pill) can not be replaced.

These parts, like the nozzle spring and the adjustment shims, have to be used again.

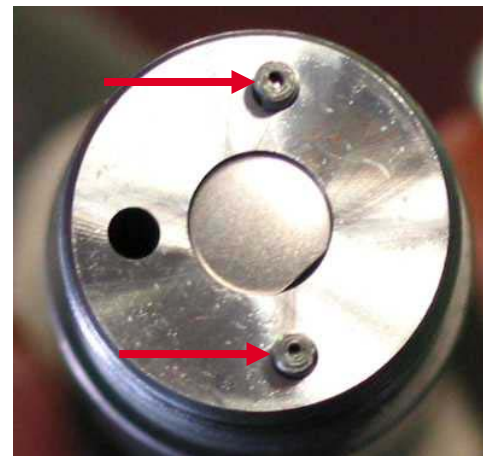
### CRI2

Like CRI1, but no types with big pressure pin, only DGV. Locating pins are always of the cylindrical type.

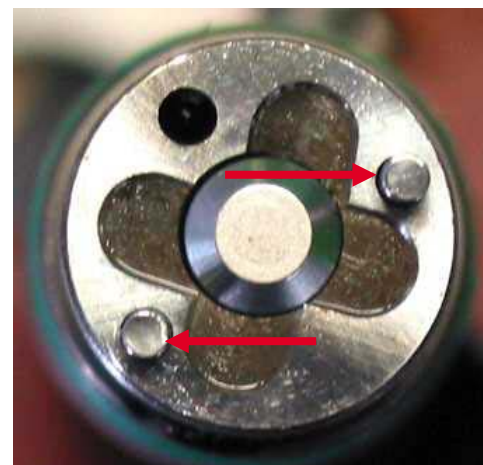


## Testing and Repair of CRI and CRIN

**Arrows on top picture:**  
CRI with spiral-type locating pins, nozzle change not possible.



**Arrows on bottom picture:**  
CRI with cylinder-type locating pins, nozzle change possible.



Automotive Aftermarket

6

AA/PDS1 | 03.2005 | © Robert Bosch GmbH reserves all rights even in the event of industrial property rights. We reserve all rights of disposal such as copying and passing on to third parties.



**BOSCH**