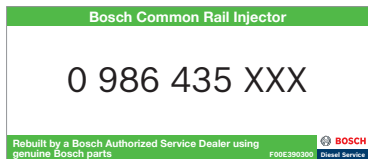


# OE Replacement for OE Performance

**If replacement injectors are needed, use only genuine Bosch new or remanufactured injectors or injectors from an Authorized Bosch Common Rail Field Repair location.**

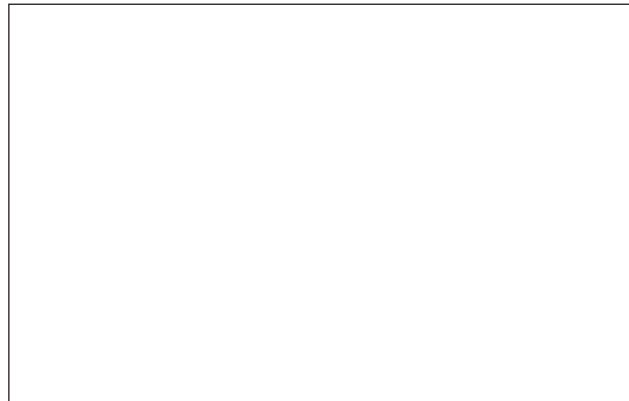
- ▶ Remanufactured/Repaired using genuine OE parts
- ▶ Meets OEM performance and emission requirements



Bosch Authorized part label



Bosch Authorized test equipment



To find a local Bosch Diesel Service Center, visit:  
[www.boschservice.com](http://www.boschservice.com)



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## Bosch Common Rail Injectors

Potential Failures and Causes

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# You're telling me I need new injectors, what happened?

The diesel fuel system supplies, transfers, cleans and delivers fuel to the engine cylinders to facilitate combustion, thereby producing power.

## The key causes of injector failures are:

- ▶ Poor Fuel Filtration
- ▶ Fuel Contamination
- ▶ Incorrect Installation

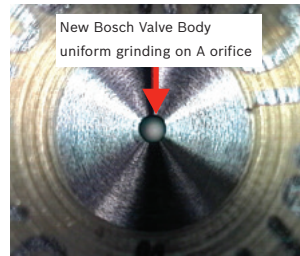
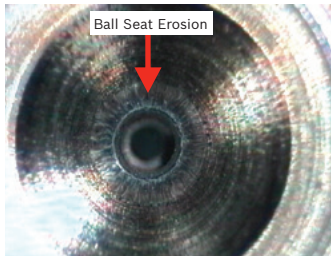
### Poor Fuel Filtration

A common problem with diesel injectors today is ball seat erosion. The heart of the common rail injector is the magnetic valve through which fuel passes at extremely high pressure. The

passage opening is sealed using a small ball that is only 1mm in size. A proper seal is critical for proper injector performance. Abrasive contaminants can erode and damage the ball seat causing the ball not to seal properly, leading to improper injection.

To ensure exact performance within the designed service life of the injector, use only OE filters or filters having the same OE micron rating and follow the recommended OE filter change interval. Using anything less can cost you more in the long run.

### Filtration



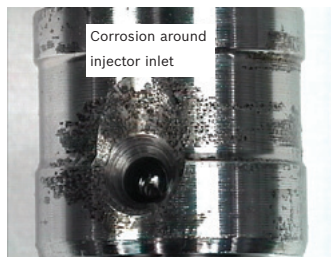
#### Causes:

- ▶ Inadequate filtration
- ▶ Poor quality fuel supply
- ▶ Inadequate maintenance intervals

#### Effect:

- ▶ Starting problems
- ▶ Poor performance
- ▶ Idling problems (vibration)

### Fuel Contamination and Corrosion



#### Causes:

- ▶ Water in fuel
- ▶ Poor quality fuel supply
- ▶ Inadequate filtration, water separation
- ▶ Inadequate maintenance interval

#### Effect:

- ▶ Poor performance
- ▶ Idling problems (vibration)

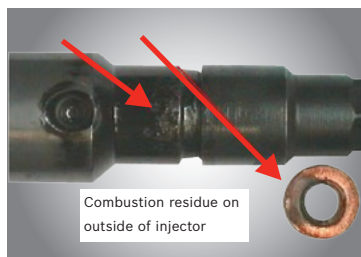
### Fuel Contamination

Repair statistics show that the majority of diesel engine problems stem from contaminated fuel. One of the most common problems with diesel injectors is corrosion, which is caused by water in the fuel.

How does the water get into the fuel? A vented cap allows air to enter the storage tank to equalize pressure as the fuel flows out. The outside air contains moisture and this moisture condenses into water inside the tank.

Always purchase fuel from a reputable service provider and use a proper fuel/water separator.

### Incorrect Installation



#### Causes:

- ▶ Missing sealing ring
- ▶ Incorrect procedure and/or tightening torque when installed

#### Effect:

- ▶ Black smoke
- ▶ Poor performance

### Stretched Solenoid Studs



#### Cause:

- ▶ Incorrect tightening torque

#### Effect:

- ▶ Misfire
- ▶ Check Engine Light (MIL)

### Incorrect Installation

Missing sealing rings, incorrect tightening torque and incorrect cleaning of nozzle can cause poor performance, misfiring, black smoke and check engine light (MIL) to appear.

Always follow the engine manufacturer's maintenance procedures.