

# Universal Bosch Common Rail CP1 High Pressure Fuel Pump O-Rings Seal Seals Repair Fix Kit Leaks Instructions Install Guide

by **x8ritd** on February 25, 2016

## **Intro: Universal Bosch Common Rail CP1 High Pressure Fuel Pump O-Rings Seal Seals Repair Fix Kit Leaks Instructions Install Guide**

### **The Problem**

It is a common fault for the seals, gaskets and orings to deteriorate within the CP1 fuel pump leading to leaks around the pump. These pumps operate at extremely high pressures so even the smallest deterioration in a seal can lead to substantial fuel leaks and associated vehicle faults. Our kit includes replacement seals - those which commonly fail. Enabling you to repair the fuel pump you have without the vast cost of a new / refurbished unit.

### **Symptoms of the fault**

Fuel leaking from the fuel pump, commonly from the heads of the pump, poor vehicle running or vehicle failing to start.

### **Vehicles affected and compatibility**

0 445 010 002 Alfa Romeo / Fiat  
0 445 010 003 Alfa Romeo / Fiat  
0 445 010 004 Mercedes  
0 445 010 006 Alfa Romeo/ Fiat  
0 445 010 007 Alfa Romeo/ Fiat  
0 445 010 071 Alfa Romeo/ Fiat/ Lancia  
0 445 010 072 Alfa Romeo/ Lancia  
0 445 010 009 BMW  
0 445 010 010 Citroen/ Peugeot/ Suzuki  
0 445 010 021 Citroen/ Fiat/ Peugeot  
0 445 010 046 Citroen/ Fiat/ Peugeot  
0 445 010 132 Citroen/ Peugeot  
0 445 010 162 Citroen/ Peugeot/ Suzuki  
0 445 010 163 Citroen/ Fiat/ Peugeot  
0 445 010 164 Citroen/ Peugeot  
0 445 010 283 Citroen/Peugeot  
0 445 020 002 Citroen/Fiat/Iveco/Peugeot/Renault  
0 445 020 006 Fiat/Iveco  
0 445 010 080 Fiat/ Ford/ Lancia  
0 445 010 069 Ford  
0 445 010 079 Hyundai  
0 445 010 049 Hyundai  
0 445 010 050 Hyundai  
0 445 010 280 Hyundai  
0 445 010 281 Hyundai  
0 445 020 040 Iveco  
0 445 010 038 Kia/Hyundai  
0 445 010 011 Landrover/ MG/ Rover  
0 445 010 008 Mercedes  
0 445 010 005 Mercedes  
0 445 010 013 Mercedes  
0 445 010 014 Mercedes  
0 445 010 015 Mercedes

<http://www.instructables.com/id/Universal-Bosch-Common-Rail-CP1-High-Pressure-Fuel/>

0 445 010 019 Mercedes  
0 445 010 024 Mercedes  
0 445 010 027 Mercedes  
0 445 010 030 Mercedes  
0 445 010 032 Mercedes  
0 445 010 070 Mercedes  
0 445 010 268 Mercedes  
0 445 010 018 Renault  
0 445 010 028 Renault  
0 445 010 037 Renault  
0 445 010 025 Smart  
0 445 010 092 Suzuki/ Vauxhall  
0 445 010 138 Suzuki/ Vauxhall  
0 445 010 203 Vauxhall

#### **Our solution**

Replacement seals for the CP1 fuel pump

Our repair kit includes replacement seals for those that commonly fail within the CP1 fuel pump causing fuel leaks. Our unique kit includes both type of head seals for these pumps both the circular and shaped seal. Our kit allows you to replace just the seals /gaskets / O-rings which fail without the need to replace the complete pump at vast expense. Our kit includes the seals that commonly fail including the head seals, conical seals, fuel galley seals and drive shaft seals. Designed to enable you to repair your current unit at the fraction of the price of a new or reconditioned unit.

#### **You will receive**

- 3x Head seal (round)
- 3x Head seal (shaped)
- 3x Conical seal
- 6x Fuel galley nylon rings
- 6x Fuel galley O-ring seals
- 2x Drive shaft orings
- 3x Small head seals

From X8R Ltd [www.x8r.co.uk](http://www.x8r.co.uk)



## Step 1: Safety and clean working conditions

Before carrying out the repair please note:

The CP1 fuel pump operates at extremely high pressures, more than high enough to cause serious injury or death. Follow your vehicle manufacturers guidance on depressurize the fuel pump before commencing repair.

The repair needs to be carried out in an ultra clean environment; any contaminants greater than 2 micron (0.0002mm) that enter the pump or pipework can cause irreparable damage to the injector system. Customers have noted success in the past carrying out the repair submersed in pure and filtered diesel using latex gloves to handle the components, with the pump being thoroughly flushed through with clean diesel before being refitted to the vehicle. It is the customers responsibility to ensure a sufficiently clean environment for this repair.



## Step 2: Remove the 3rd valve solenoid / pressure regulator

- Remove the 3rd valve solenoid and pressure reg from the pump.
- Remove the three T20 Torx screws that hold the 3rd valve solenoid to the cylinder head - once all three are removed lift it up, you may have to twist the solenoid to allow the o-ring on the solenoid to release itself from the pump.
- Remove the two T30 Torxs that hold on the pressure reg and lift up, there will be a gasket which also needs to be removed.



## Step 3: Remove the three cylinder heads

- We recommend that you repair the seals in each head one at a time.
- Remove the four T40 Torxs from the cylinder head - on undoing the last T40 Torx press down on the cover as the cylinder head will start to lift due to a spring below the head (it can lift with force, so be careful once unbolted).
- Repeat for all 3 cylinder heads. It is advised to label each cylinder head for re-fitting purposes.



#### Step 4: Remove the drive shaft

- Remove the three T30 Torxs to allow removal of the drive shaft.
- With the three bolts removed the drive shaft will lift up (some may need a little tap to allow the o-ring within the pump to release)
- With the drive shaft removed there is drive shaft cam on the inside of the pump which will just lift out freely.





### Step 5: Replace the drive shaft o-rings

- There are two o-rings that need replacing on the drive shaft, which are of two different sizes.
- To remove the o-rings, you could use a small pick or a small pair of pliers.
- Remove the two o rings from the drive shaft as shown.
- Slide the new o-rings on to the drive shaft and slot into the correct position slots, making sure the O-rings are seated correctly.



### Step 6: Refit the drive shaft and cam

- Re-fit the drive shaft cam into the pump.
- Slot the drive shaft into the pump, when fitting the drive shaft line up the bolt holes in the correct position.
- Re-fit the three T30 Torxs.



### Step 7: Remove the seals / orings on the cylinder head

- Using small pick or a small pair of pliers to remove the o-rings/ seals from the cylinder head.
- The plunger spring and valve cage may just lift out as one.
- If they don't come out as one, lift the plunger spring out, which will then allow access and removal of the valve cage - now you'll have access to the metal o-ring.
- Using a pick pop out the seal that sits around the plunger spring.
- Ensure all seals are removed from the head.



## Step 8: Replace the head seals

- Follow order of pictures:

1. Slot in the rubber o-ring, you may have to press into place.
2. Slot in plastic o-ring again press into place.
3. Re-fit the fuel gallery - press into the plastic o ring.
4. Re-fit small metal washer.
5. Re-fit valve cage.
6. Re-fit new seal around the plunger spring.
7. Re-fit plunger spring.
8. Re-fit small o-ring - this o-ring does need pressing in using a blunt pry tool.





**Step 9: Remove and replace the seals / oring in the pump body**

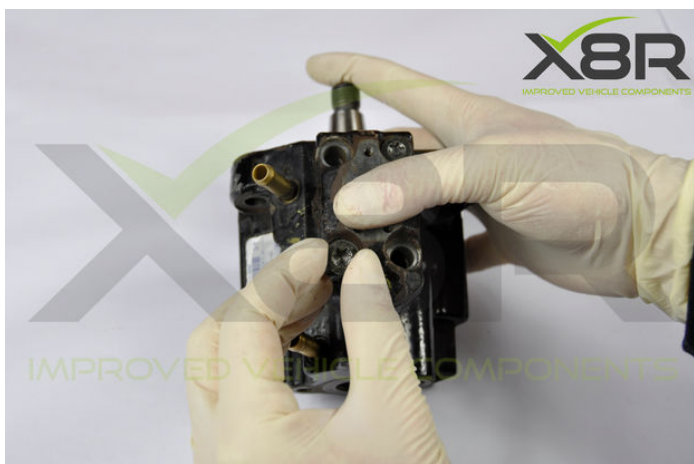
- Using a pick or small pair of pliers pick out the plastic o-ring, once removed this will expose another rubber o-ring.
- Refit replacement rubber o-ring, you may have to press it into place.
- Refit the plastic o-ring, slot into its groove and press in.





### Step 10: Refit the cylinder head

- Refit the correct cylinder head to pot as labeled in step 2.
- Refit cylinder, fit into the body, making sure the seals stay in the correct position.
- Pressing down the cylinder head refit the four T40 Torxs.
- Repeat for all three cylinder heads.
- Torque setting for cylinder head bolts is 25nm.



### Step 11: Refit the 3rd valve solenoid / pressure reg

- Refit the solenoid to the cylinder head. Slotting into the cylinder head.
- Refit the three T20 Torxs
- Refit the pressure reg, with the two T30 torxs

If you need any further guidance on this install or would like to purchase the parts shown please call us on +44 01843 446643 or email us at sales@x8r.co.uk.

Please also check out our instruction guide on YouTube.

[www.x8r.co.uk](http://www.x8r.co.uk)

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