



# Technical Bulletin

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Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
All	2009-2014	All with TDI	All	All	All

## Condition

23 14 02 March 07, 2014 2036656

**MIL ON, No Start, or Rough Running with DTCs P0087, P0088 or P0191 Stored in ECM Fault Memory**

DTC	Description
P0087	Fuel Rail/System Pressure - Too Low
P0088	Fuel Rail/System Pressure - Too High
P0191	Fuel Rail Pressure Sensor "A" Circuit Range/Performance

## Technical Background

When diagnosing a MIL ON, no-start or rough running concern on a common rail diesel vehicle, and no root cause is found after following all GFF diagnostic procedures, it may be necessary to check for metallic particles in the High Pressure Fuel Pump.

If such an inspection is necessary, the following guidelines must be observed when removing the N290 Fuel Metering Valve.

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## Production Solution

No production change required.

## Service

### **Note:**

Removing the N290 Fuel Metering Valve to inspect for metallic particles should only be considered as a last step after all GFF diagnostic procedures have been performed. This includes testing supply pressure to the high pressure fuel pump (low pressure side), and checking for internal leakage from the injectors and the N276 Pressure Regulating Valve

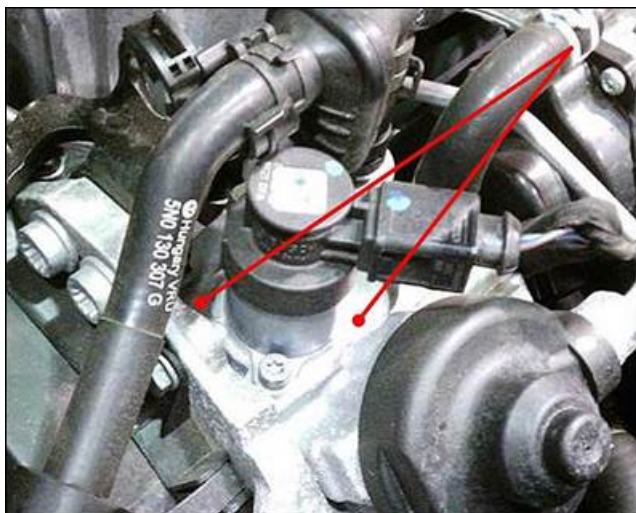


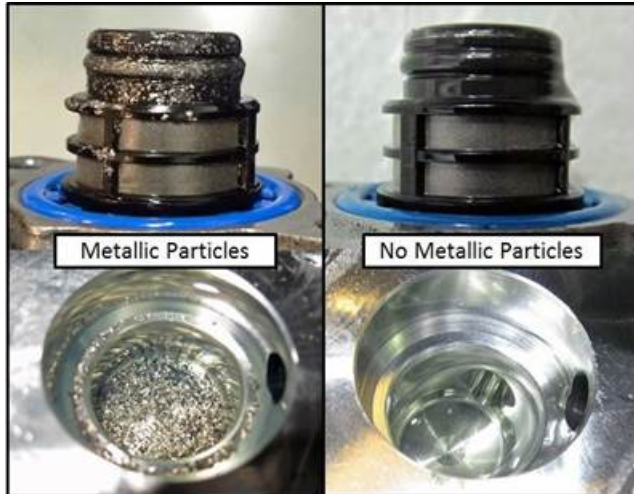
Figure 1. Surrounding Area

### **Note:**

Prior to removing the N290 Fuel Metering Valve, the area surrounding the valve (Figure 1) must be clean and dried with compressed air to remove ALL debris from the area. See Repair Manual Group 20 Fuel Supply, General Information, Clean Working Conditions in Elsa.

If debris enters the fuel system, components may be damaged.

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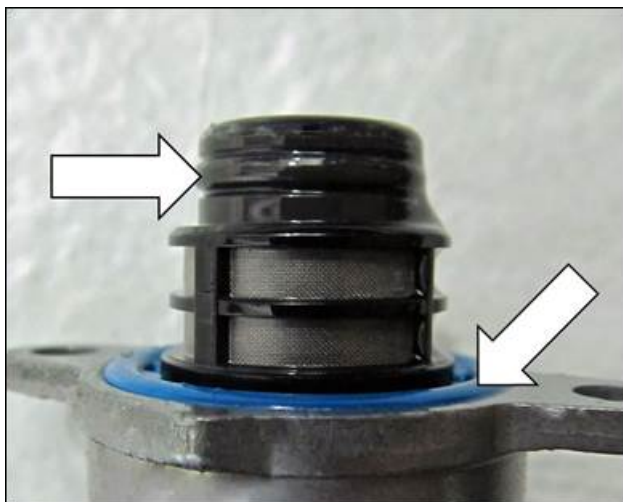


**Figure 2.** N290 Fuel Metering Valve and Valve Bore

1. Remove the N290 Fuel Metering Valve and inspect the valve and valve bore for the presence of metallic particles (see **Figure 2**).

2. If metallic particles are found on the N290 Fuel Metering Valve or in the valve bore, proceed to step 5.

If no metallic particles are found on the N290 Fuel Metering Valve or in the valve bore, do not replace the high pressure fuel pump. Reinstall the valve and continue with the diagnosis.



**Figure 3.** N290 Fuel Metering Valve O-rings



**Note:**

To prevent fuel system damage, ensure that the N290 Fuel Metering Valve is free of any contaminants before reinstalling.

Prior to reinstallation of the N290 Fuel Metering Valve, ensure that both O-rings are not damaged. If they are damaged, the high pressure fuel pump must be replaced.

To prevent damaging the O-rings when reinstalling the N290 Fuel Metering Valve, lubricate the O-rings with diesel fuel (see **Figure 3**).

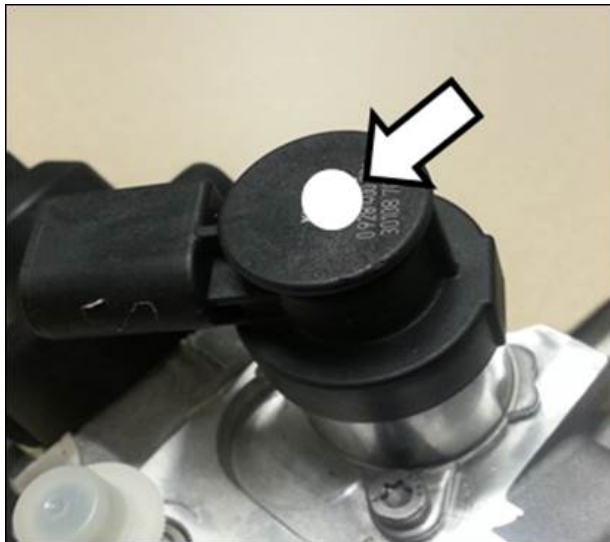
3. Install the N290 Fuel Metering Valve into the valve bore using light pressure.

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4. Install and hand tighten both M5 fasteners, ensuring that the threads are clean and dry.

**Pre-tighten to 2 Nm, then to 6.5 – 7 Nm.**



**Figure 4.** White dot on N290 Fuel Metering Valve



**Note:**

Using a paint marker or equivalent, mark the top of the N290 Fuel Metering Valve with a white dot as shown in figure 4.



**Tip:**

Be sure to include the 7 digit technical bulletin number in the repair order comments.

5. If metallic particles are found on the N290 Fuel Metering Valve or in the valve bore, open a VTA ticket and contact the Volkswagen Technician Helpline before continuing with the repair. **Clear pictures showing the metallic particles in the N290 Fuel Metering Valve and bore, as well as the GFF diagnostic log are required to continue with diagnosis and/or release of the High Pressure Fuel Pump.** Reference the pictures below for examples. (see Figures 5 & 6).

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**Figure 5.** N290 Fuel Metering Valve with Metal Particles

 **Tip:**

Prior to calling the Technician Helpline, have the pictures and the GFF log attached to the VTA ticket. This will help to ensure a timely repair.



**Figure 6.** Valve Bore with Metal Particles

 **Tip:**

Be sure to include the 7 digit technical bulletin number in the repair order comments.

**All TDI Clean Diesel High Pressure Fuel Pumps which have been replaced, are to be returned to the Volkswagen Warranty Parts Return Center in Auburn Hills, MI. All pumps will be inspected to verify the presence of metallic particles on the N290 Metering Valve and within the bore.**

 **Note:**

If a fuel system replacement is necessary, ensure that the fuel injector return line is properly seated and sealed once installed. Inspect for seepage at the fuel injector return line connector after the test drive. If seepage is found, the condition must be corrected.



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## Warranty

Information Only.

## Required Parts and Tools

Information Only.

## Additional Information

**All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.**