Technical Service Bulletin

Audi

23 MIL on, no start or rough running (DTCs P0087, P0088, P0191)

23 15 37 2040752/5 November 20, 2015. Supersedes Technical Service Bulletin Group 23 number 15-36 dated July 17, 2015 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A3	2010 - 2012	All	TDI clean diesel
Q7	2009 - 2012	All	TDI clean diesel

Condition

REVISION HISTORY		
Revision	**Date**	**Purpose**
5		Revised *Service* (Completely revised step 5 under *High pressure fuel pump replacement and fuel system repair*) Revised *Warranty* (Added labor operation 2050 1901 under Q7) Revised *Required Parts and Tools* (Added Fuel delivery unit and fuel gauge sender under A3; added suction pump and updated quantity of seal rings under Q7)
4	7/17/2015	Revised *Required Parts and Tools* (Updated part numbers for Q7 fuel supply module)
3	6/29/2015	Revised *Service* (Added note about shipping the fuel sample)

- MIL on.
- Vehicle either runs roughly or does not start.
- One or more of the following DTCs is stored in the engine control module (ECM), J623 (address word 01):
  - **DTC P0087** (Fuel rail/system pressure - too low)
  - **DTC P0088** (Fuel rail/system pressure - too high)
  - **DTC P0191** (Fuel rail pressure sensor “A” circuit range/performance)

Technical Background

Metallic particles in the high pressure fuel pump may cause the condition.

Production Solution

Not applicable.

Service

Note:

Before proceeding, perform all GFF diagnostic procedures and check all components to determine a root cause of the condition, including testing supply pressure to the high pressure fuel pump (low pressure side) and checking for internal leakage from the injectors and N276 pressure regulating valve.

If no root cause can be found, use the following procedure to check for metallic particles in the high pressure fuel pump.

Initial diagnosis of high pressure fuel pump:

1. Prepare to remove the N290 fuel metering valve by first cleaning the area around the valve then drying the area using compressed air (Figure 1). All debris must be removed from the area to ensure that no debris enters the fuel system and causes damage.

   More information is available in the Elsa Repair Manual at *Engine>>Fuel Supply System>>General Repair Information>>Clean Working Conditions*.

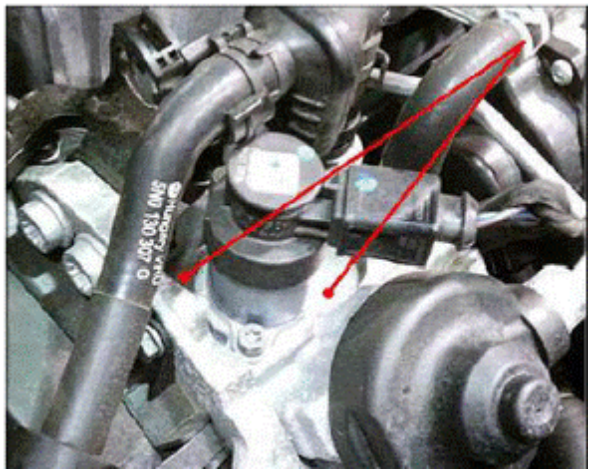

Figure 1. *Area surrounding N290 fuel metering valve.*

2. Remove the N290 fuel metering valve, and inspect both the valve and valve bore for metallic particles (Figure 2).

Figure 2. *N290 fuel metering valve and valve bore shown with and without metallic particles.*

3. **If metallic particles are found:**

   - This bulletin applies.
   - The high pressure fuel pump and major components of the fuel system will need to be replaced. Proceed to the next section for instructions.

   If metallic particles are not found:

   - This bulletin does not apply.
   - Reinstall the N290 fuel metering valve using light pressure. Before reinstalling, ensure that the valve is free of contaminates.
   - 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).

     Note:
     Before reinstalling the N290 fuel metering valve, check the O-rings for damage (Figure 3). If any damage is found, the high fuel pressure pump must be replaced outside of this bulletin.
     To prevent damage to the O-rings during reinstallation of the valve, lubricate the O-rings with diesel fuel.

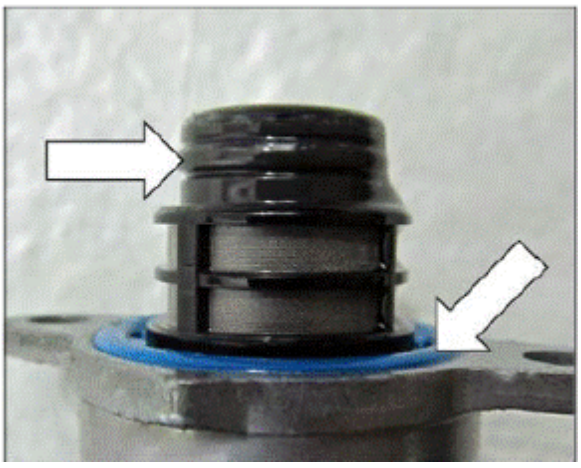

Figure 3. *N290 fuel metering valve O-rings.*

Fuel sampling and analysis:

Before any repairs are performed, a fuel sample must be taken and analyzed.

1. Order the fuel sample kit (part number LQ1LKIT) from the Compliance Label Ordering Portal under Service in AccessAudi (Figure 4).
   - A valid extension VIN must be used to order the kit.
   - The fuel sample kit will be sent to the dealership within one business day (note that dealerships in Alaska and Hawaii will be contacted by Audi of America with further instructions after the kit is ordered).
     The fuel sample kit contains a prepaid shipping label, all necessary packaging, and instructions for sending the sample to a designated test facility.

     Note:
     HAZMAT certification is required for packaging the fuel sample, but NOT for shipping. The fuel sample can be shipped to the laboratory through ground shipment services, provided that the dealer is using the Limited Quantity Kit (PN# LQ1LKIT).
   - Test results will be provided to the dealership within three days of receipt of the sample.

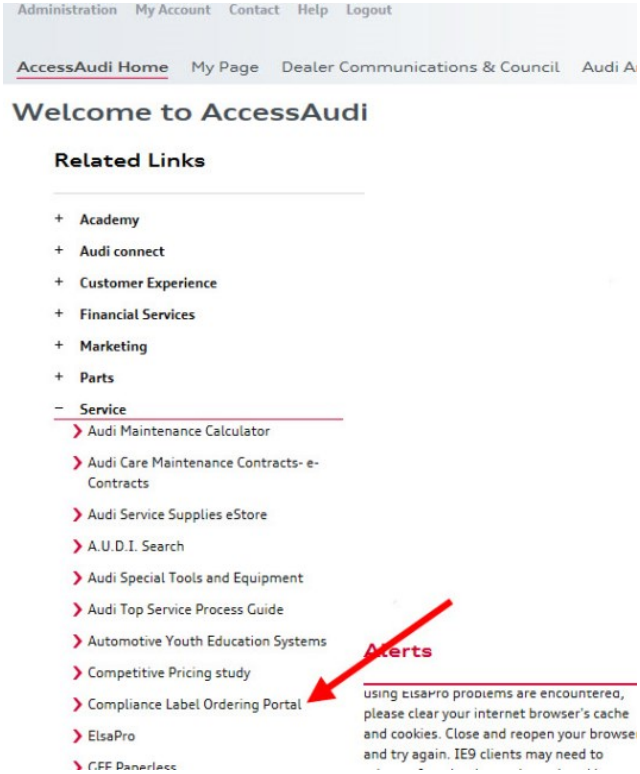

Figure 4. *Compliance Label Ordering Portal.*

2. Review the test results. The results will be marked "PASS" or "FAIL" in the comments section of the certificate of analysis (Figure 5 and Figure 6).

Figure 5. *Example of a clean fuel sample analysis.*

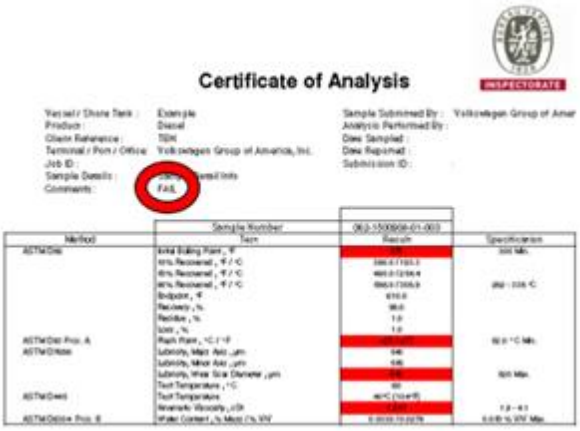

Figure 6. *Example of a contaminated fuel sample analysis.*

3. See **Warranty Extension Bulletin AWA-15-05** for details regarding high pressure fuel pump coverage eligibility.

   Tip: Remember to include the fuel sample kit number in the repair order comments.

High pressure fuel pump replacement and fuel system repair:

Before proceeding, check ElsaPro for the latest information and detailed instructions for removal and replacement of the components listed in this TSB.

1. Use suction pump VAS5226 to clean the fuel delivery unit and fuel tank.
2. Fill the fuel tank with five liters of fresh diesel fuel.
3. Use suction pump VAS5226 to completely drain the fuel tank.
4. Replace the in-tank fuel pump.
5. Replace the suction jet pump.
6. Following the instructions in the Elsa repair manual, replace the following components:
   - High pressure fuel pump
   - High pressure fuel lines
   - Fuel rail (with both sensors included)
   - All fuel injectors
   - Fuel return lines (overflow oil lines)
   - Fuel filter

- Fuel filter housing
- Auxiliary fuel pump

7. After replacements are complete, fuel the vehicle.
8. Ensure that the fuel injector return line is properly seated and sealed.
9. Using the VAS tester, perform the “Vent Fuel System” Guided Function. See the Elsa repair manual at *Engine>>Fuel Supply System>>20 Fuel Supply>>Fuel System, Bleeding* for additional information.

   Tip: If the test plan is unavailable through Guided Functions, switch to *Self Diagnosis>>Engine Electronics>>Basic Settings>>35*, and perform the basic settings three times consecutively. For UDS vehicles, perform basic settings for initial fueling.
10. Once the repairs are complete, test drive the vehicle.
11. Inspect for fuel seepage at the fuel injector return line connector. If seepage is found, the condition must be corrected.

Warranty

Claim Type:	Use applicable claim type. If vehicle is outside any warranty, this Technical Service Bulletin is informational only.		
Service Number:	2374		
Damage Code:	0010		
Labor Operations:	**For Q7:**		
	Fuel bleed	2003 0750	10 TU
	Fuel tank cleaned	2010 2999	50 TU
	Diesel fuel filter remove+reinstall	2034 1900	40 TU
	Supply line cleaned	2038 2999	10 TU
	Return line cleaned	2039 2999	10 TU
	2 electric fuel pump remove+reinstall	2066 2000	190 TU
	Suction jet pump remove+reinstall	2050 1901	190 TU
	2 distribution rail remove+reinstall	2373 2047	130 TU
	6 injector remove+reinstall	2340 2047	340 TU
	High-pressure pump remove+reinstall	2374 1947	220 TU

	Online fuel analysis	2374 0199	20 TU
	For A3:		
	Fuel bleed	2003 0750	10 TU
	Fuel tank cleaned	2010 2999	50 TU
	Diesel fuel filter remove+reinstall	2034 1951	20 TU
	Supply line cleaned	2038 2999	10 TU
	Return line cleaned	2039 2999	10 TU
	Electric fuel pump remove+reinstall	2066 1900	110 TU
	Electric fuel pump (aux) remove+reinstall	2066 1902	50 TU
	Distribution rail remove+reinstall	2373 1912	110 TU
	4 injector remove+reinstall	2340 2012	220 TU
	Toothed belt remove+reinstall	1524 1912	190 TU
	High pressure pump remove+reinstall	2374 1962	70 TU
	Online fuel analysis	2374 0199	20 TU
Diagnostic Time:	GFF	0150 0000	Time stated on diagnostic protocol (Q7: Max 80 TU) (A3: Max 70 TU)
	Road test prior to service procedure	No allowance	0 TU
	Road test after service procedure	0121 0004	10 TU
	Technical diagnosis at dealer's discretion (Refer to Section 2.2.1.2 and Audi Warranty Online for DADP allowance details)		
Claim Comment:	As per TSB #2040752/5		

All warranty claims submitted for payment must be in accordance with the *Audi Warranty Policies and Procedures Manual*. Claims are subject to review or audit by Audi Warranty.

Required Parts and Tools

For A3:

Part Number	Part Description	Quantity
03L130755A	High pressure fuel pump	1
03L130321	Fuel line	1
03L130089	Fuel rail (sensors)	1
03L130277A	Fuel injector	4
059130519	Seal ring (Fuel injector)	4
WHT000884	O-ring (Fuel injector)	4
03L130301 03L130301R 03L130301B 03L130301C	Pressure pipe	4
059130216C	Tensioning plate (Injector)	4
3C0127400C	Fuel filter/housing	1
1K0130307BH	Fuel line	1
03L201360G	Fuel line	1
1K0130295AJ	Fuel line	1
1K0130307BK	Fuel line	1
5N0130307J	Fuel line	1
1K0919050AB	Fuel delivery unit and fuel gauge sender	1
5N0906129B	Auxiliary fuel pump	1

FOR Q7:

Part Number	Part Description	Quantity
059130755BT	High pressure fuel pump	1
059130310AK	Fuel line	1
059130089AM	Fuel rail (left)	1
059130090AQ (MY09-10) 059130090BR (MY11-12)	Fuel rail (right)	1
N 0138128	Seal ring (Fuel rail/fuel line)	2
059130218Q (MY09-10) 059130218AF (MY11-12)	Fuel line/hose	1
059130309AT	Fuel line	1
059130277AM	Fuel injector	6
WHT000884	O-ring (injector)	6
059130241CD	Pressure pipe	6
059130216C	Tensioning plate (Injector)	6
059130312K	Fuel line	1
7L6127401H (MY09-10) 8T0127401A (MY11-12)	Fuel filter	1
059103113G	Sealing cap (Cylinder head cover)	6
7L6919088F (MY09-10) 7P6919088B (MY11-12)	Fuel supply module	1
4L0919715B (see ETKA) 4L0919715C (see	Suction pump	1

ETKA) 4L0919715D (see ETKA)		
8E0919133B	Seal ring (Fuel supply module)	2
7L6203491D	Fuel radiator	1
1K0906089C (MY09-10)	Auxiliary fuel pump	1

Additional Information

All parts and service references provided in this TSB (2040752) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.