Technical Service Bulletin

01 MIL on (DTC P0491/P0492 Secondary Air Injection System Bank 1/2 Insufficient Flow)

01 17 10 2035002/5 April 20, 2017. Supersedes Technical Service Bulletin Group 01 number 16-55 dated March 14, 2016 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A8	2010 - 2012	All	4.2FSI

Condition

REVISION HISTORY		
Revision	**Date**	**Purpose**
5	-	Revised *Required Parts and Tools* (Updated part number) Revised *Service* (Completely revised)
4	03/15/2017	Revised *Required Parts and Tools* (Updated part number)
3	10/22/2015	Revised *Production Solution* (Added solution) Revised *Service* (Completely revised) Revised *Warranty* (Updated TU for GFF) Updated *Required Parts and Tools* (Removed parts; updated part numbers)

- MIL on.

The following DTCs are stored in the engine control module (ECM), J623 (address word 0001):

- **DTC P049100** (secondary air system bank 1, low flow)
- **DTC P049200** (secondary air system bank 2, low flow)

Technical Background

The DTCs may appear during monitoring of the secondary air system during the engine cold starting phase. With the electric solenoid valves controlled, a diagnosis cycle is performed and the secondary air pressure is measured for a specified value.

The air pressure can be influenced by several factors within the secondary air system or the vacuum system.

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Production Solution

Improved combination valves.

Service

Check the vacuum system for leaks

During the catalyst heating phase, the secondary air valves could close too early if vacuum supply is low. Low vacuum supply can be a result of a leak in the vacuum system, so it is necessary to check the entire system for leaks.

1. Check the vacuum check valve for leaks (Figure 1). The direction of flow should only be towards the intake manifold.

   If a leak is found at the check valve, replace the valve and recheck.

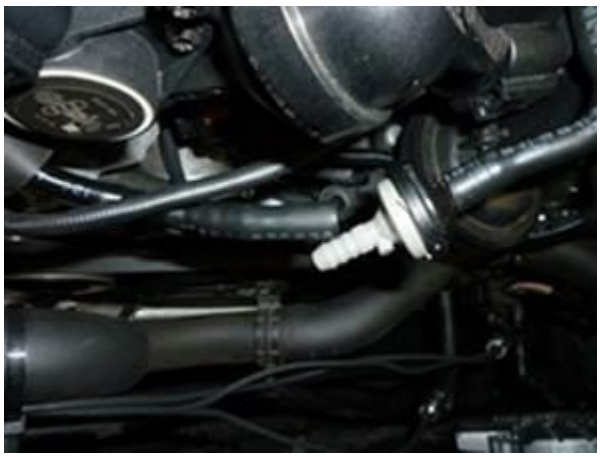


Figure 1. *Vacuum check valve.*

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2. With the hose to the check valve disconnected, apply 400 mmHG of vacuum with the VAS 6213 hand vacuum pump (Figure 2).

   If the vacuum supply drops during the first 10 minutes of the test, check the complete vacuum system and solenoid changeover valves for leaks using the diagram below.

   See diagram (Figure 3):

   A: Cylinder Bank 1 Intake Manifold Flap Vacuum Actuator

   B: Cylinder Bank 2 Intake Manifold Flap Vacuum Actuator

   C: Intake Manifold Runner Control Valve N316

   D: Left Secondary Air Injection (AIR) Combination Valve

   E: Right Secondary Air Injection (AIR) Combination Valve

   F: Cylinder Head Coolant Valve N489 – Vacuum Actuator

   G: Secondary Air Injection Solenoid Valves N112 and N320

   1: Vacuum from intake manifold

   2: Vacuum reservoir of cylinder head (0.9 l)

   3: Vacuum reservoir in inner valley of engine 0.7 l)



Figure 2. *VAS 6213 hand vacuum pump.*

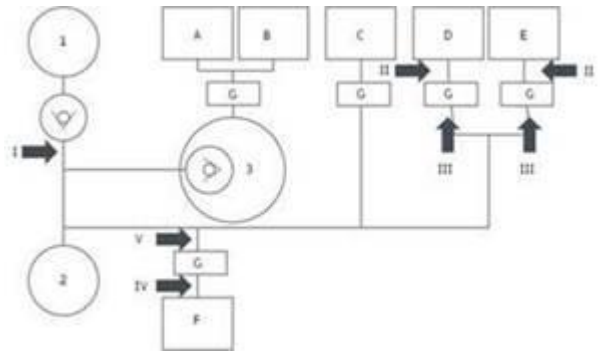


Figure 3. *Vacuum Diagram*

   Repair as necessary.

4. If the engine warning light has come on in combination with DTC P049100 and/or DTC P049200, proceed as follows after the vacuum system was checked and with the procedure listed above.

5. Replace the following components:
   - Bank 1 and Bank 2 - Combination valves and gaskets (**079 131 101 AN** and **06A 131 120 D**)

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- Secondary air injection sensor 1 (G-609) (**06K 906 052**). SAI solenoid valves N112 and N320 for combination valves (**037 906 283 C**)
- Delete the DTC entry before setting the readiness code.

If the DTC is not logged after two engine starts, return the vehicle to the customer.

Check the exhaust catalyst

Only perform this section if the vehicle has a history of prior misfire or catalyst efficiency DTC.

Vehicles with misfire DTCs (e.g., P0300, P0301 – P0308, or P130A) or faulty catalyst DTCs (e.g., P042100 or P043100) in current or older diagnosis protocols may have faulty exhaust catalysts.

1. Remove pre and post oxygen sensors and endoscope the catalysts from both ends and assess the honeycomb structure for damage.
2. If damage is found, repair as necessary.

Warranty

Claim Type:	• 110 up to 48 Months/50,000 Miles. • G10 for CPO Covered Vehicles – Verify Owner. • If vehicle is outside any warranty, this Technical Service Bulletin is informational only.		
Service Number:	2640		
Damage Code:	0010		
Labor Operations:	Combi valves remove + reinstall (both)	2640 2019	40 TU
	Secondary Air Solenoid Valves N112/N320 remove + reinstall both	2644 1999	40 TU
	Pressure sensor G609 remove + reinstall	2675 1919	20 TU
	Front heated oxygen sensors remove + reinstall both	2469 2019	130 TU
	Rear oxygen sensors remove + reinstall both	2473 2019	90 TU
	Borescope check of both exhaust catalysts	2640 0299	30 TU max

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	Vacuum system checks	2640 0299	30 TU max
Diagnostic Time:	GFF	0150 0000	Time stated on diagnostic protocol (50 TU max)
	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 #2035002/5		

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

Part Number	Part Description	Quantity
06K 906 052	Secondary air injection sensor (G609)	1
06A 131 120 D	Combination valves gaskets	2
079 131 101 AN	Combination valves for secondary air system	2
037 906 283 C	Solenoid valves N112/N320 for operating combination valves	2

Tool Number	Tool Description
VAS 6213	Hand Vacuum Pump
3337	Ring Spanner 7 piece set for oxygen sensor removal (if required).

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Additional Information

All parts and service references provided in this TSB (2035002) are subject to change and/or removal. Always check with your Parts Department and service manuals for the latest information.

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