

Technical Service Bulletin



01 Mil on (DTC P0491/P0492 secondary air system bank 1/2 through-flow too low/malfunction)

01 13 25 2035002/1 August 23, 2013.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A8	2011-2012	000001 - 999999	4.2 FSI

Condition

- MIL on.
- The following DTCs are stored in the engine control module, J623 (address word 01):
 - **DTC P0491** (secondary air system bank 1, low flow)
 - **DTC P0492** (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 secondary air pressure can be influenced by several factors; which may include a leak in the vacuum system or a faulty exhaust catalyst. Review the *Service* section of this bulletin for more information.

Production Solution

Not applicable.

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.

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 all pipes of the vacuum system and solenoid changeover valves for leaks. Repair as necessary.



Figure 2. VAS 6213 hand vacuum pump

3. Disconnect the vacuum hoses to the solenoid valves N112 and N320 (Figure 3, 1 and 2), then connect the VAS 6213 to the hoses, one at a time.

Apply vacuum.

If the vacuum supply drops during the first 10 minutes of the test, check all pipes of the vacuum system. Repair as necessary.

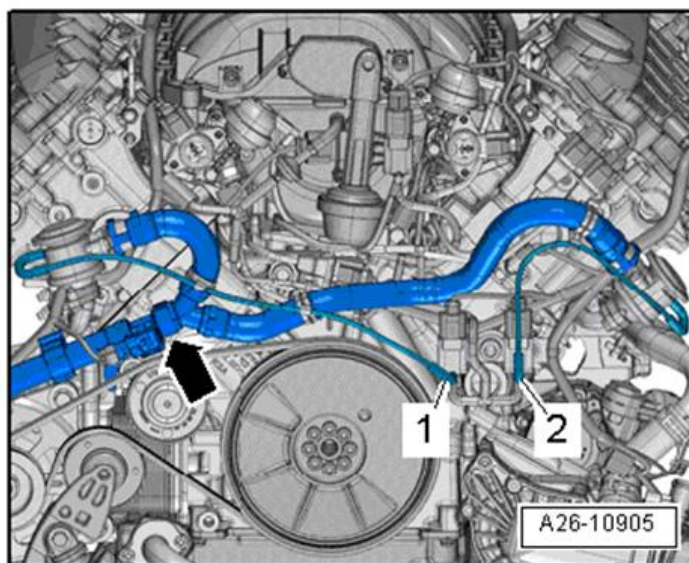


Figure 3. Solenoid valves N112 and N320 (1 and 2)

4. If the engine warning light has come on in combination with DTC P0491 and/or DTC P0492, proceed as follows after the vacuum system was checked with the procedure listed above.

1. Replace the following components:

- Bank 1 and Bank 2 - Combination valves and gaskets (**079131101P** and **06A131120D**)
- Secondary air injection sensor 1 (G-609) (**06E906052**). If the two securing clips (Figure 4) for the G-609 sensor are damaged, the SAI pump pressure hose must be replaced.
- SAI solenoid valves N112 and N320 for combination valves (**037906283C**)

2. Delete the DTC entry before setting the readiness code.

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

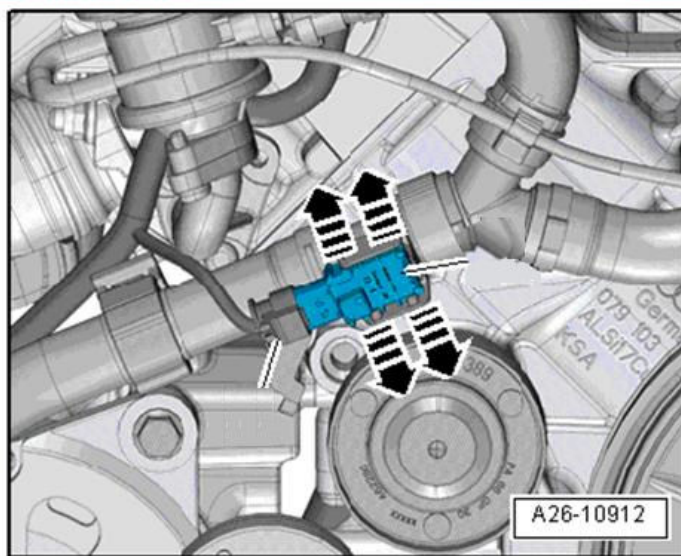


Figure 4. Securing clips for the G-609 sensor (arrows).

Check the exhaust catalyst

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

Vehicles with misfire DTCs (e.g., P0300, P0301 – P0308, or P130A) or faulty catalyst DTCs (e.g., P0421 or P0431) in current or older diagnosis protocols may have faulty exhaust catalysts. Vehicles with higher mileage (greater than 40,000 miles) are more likely to be affected.

1. Remove pre and post oxygen sensors and endoscope the catalysts on both sides and assess the honeycomb structure for damage.
2. If damage is found, repair as necessary if vehicle is in NVLW or Federal Emissions Performance Warranty: 8 years or 80,000 miles.

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Warranty

Claim Type:	Use applicable claim type. 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 remove + reinstall (both)	2644 2019	30 TU
	Secondary air pressure sensor 1(G-609)	2644 9999	20 TU
	Front heated oxygen sensor remove + reinstall (Both), only if vehicle has history of prior misfire or catalyst efficiency DTC	2469 2019	130 TU
	Oxygen sensor after catalyst remove +reinstall (Both), only if vehicle has history of prior misfire or catalyst efficiency DTC	2473 2019	90 TU
Diagnostic Time:	GFF – Checking and clearing fault codes included in existing labor operations, including vacuum checks	0150 0000	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 #2035002/1		

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.

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Required Parts and Tools

Part Number	Part Description	Quantity
06E906052	Secondary air injection sensor 1 (G609)	1
06A131120D	Combination valves gaskets	2
079131101P	Combination valves for secondary air system	2
037906283C	Solenoid valves 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).

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.