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## BlueTec 4/5 - "AdBlue pressure too low" (MR fault code 0 6721 or 1 6721)

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Topic number	G14.40-N-040116
Version	11
Design group	14.40 Exhaust-gas Aftertreatment, AdBlue
Date	09-11-2011
Validity	Only vehicles with code (MS4) BlueTec 4 or code (MS5) BlueTec 5
Reason for change	Failure of diaphragm valves due to oil drag-in in the compressed air.
Reason for block	

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### Complaint:

The MIL lamp in the Instrument lights up. The fault memory of the engine control (MR) control unit contains the fault code 0 6721 or 1 6721, depending on the software version.

### Cause:

The excessively low AdBlue pressure may be caused by the following:

1. Incorrect medium in AdBlue tank.

A fluid containing mineral oil has been filled into the AdBlue tank (gasoline, diesel, cold cleaning solvent). This fluid causes swelling of the plastic or rubber parts in the pump module. The piston of the internal pneumatic pressure reduction valve is stuck.

2. AdBlue pressure sensor in metering device defective.

3. Line system leaky and/or clogged.

The line system between the pump module and AdBlue metering device is leaky meaning that no AdBlue pressure can be built up and/or the line system between the AdBlue tank and pump module is clogged meaning that the pump module cannot take in any AdBlue.

4. Intake filter of pump module clogged.

5. Vehicles with production date earlier than 07/2009

The internal pneumatic pressure reduction valve in the pump module does not switch, causing AdBlue to be pumped back into the AdBlue tank via the return line. The following causes are possible:

a) Compressed air supply at pump module insufficient.

b) Filter on compressed air connection clogged with white crystals. Piston of internal pneumatic pressure reduction valve leaky, AdBlue penetrates to air side.

c) Piston of internal pneumatic pressure reduction valve has excessive resistance or is stuck.

Vehicles with production date later than 06/2009

Internal diaphragm valve defective: See SI14.40-W-0011A.

**Remedy:**

Note: AdBlue fluid may escape during the following tests. Wear safety glasses when handling AdBlue. Do not reuse any AdBlue fluid that escapes.

Perform the tests in the specified order.

1. Check pump module for fuel/oil residues. (AR14.40-W-2047A)
2. Check SCR AdBlue pressure sensor.

Note: A maximum relative air pressure of 5 bar may not be exceeded during the test otherwise irreparable damage will be caused to the metering unit.

Supply the SCR AdBlue pressure sensor with compressed air using the adapter line (see attachment 4) and a pressure reducing valve. Adjust the pressure to between 0 and 5 bar in 1 bar steps using the pressure reducing valve and compare with engine control actual value 64 (see attachment 5). The pressure displayed on the Star Diagnosis unit should be approx. 1 bar above the pressure value displayed on the pressure gauge (difference between relative and absolute pressure). If actual value 64 does not change or jumps implausibly despite the increase in pressure via the pressure reducing valve, the pressure sensor is defective. Replace pressure sensor (AR14.40-W-2003A).

3. Check AdBlue line system between AdBlue tank and pump module and between pump module and metering device for damage/blockage. Clean/replace lines as required.
4. Remove intake filter behind intake connection as per AR14.40-W-2040A, check for blockage and replace if necessary.

If soiling is found when checking the intake filter, the AdBlue tank should be checked for contamination. Clean tank and AdBlue line harness if necessary. Do not use a cleaning agent that contains mineral oil!

5. With the engine running, an air pressure of approx. 5.5 +/- 0.2 bar must be present at the pump module. The pressure can be measured using an adapter line (see attachment 3 and repair instructions AR14.40-W-2025A). We are aware of some cases where the air lines in the vicinity of the crossmember have been kinked by a body manufacturer (see attachment 2).

Is there an air pressure of 5.5 bar?

No: Repair compressed air line between pump module and 3/2-way solenoid valve.

Yes: Repair pump module as per SI14.40-W-0011A.

Note: In vehicles with production date >06/2009 the piston has been replaced by a diaphragm valve. The replacement of the diaphragm valve is also described in SI14.40-W-0011A (republished 03/2010).

Note: If oil residues are visible through the compressed air system when the diaphragm valve is removed, then oil-absorbing compressed air drier cartridges must be installed.

If necessary, the compressed air lines as far as the compressed air drier must be replaced.

Attachments	
File	Designation

Checkliste - FC 6721 - AdBlue Druck zu gering.pdf	Checklist - German version
Checklist - FC 6721 - AdBlue pressure too low.pdf	Checklist - English version

<b>Symptoms</b>
Communication/information / Information display / Displays fault code / Multifunction display / Multifunction display / Displays /

<b>Control unit/fault code</b>		
Control unit	Fault code	Fault text
MR engine control, MR engine control (PLD) (MRSKR) (Eco-nic,Actros 2,3,Atego II,Axor II)	6721	AdBlue pressure is too low.

<b>Parts</b>							
Part number	ES1	ES2	Designation	Quantity	Note	EPC	Non-EPC
A0001400694			Intake filter of pump module	1	Filter with larger mesh size compared with A0001400494	X	
A0049970989			Straight connector	2	for test line in attachment 3	X	
A0009975034			Union nut	2	for test line in attachment 3	X	
A0004294237			Distributor	1	for test line in attachment 3	X	
A0019978171			Connector	1	for test line in attachment 3	X	
A0014311931			Test connection	1	for test line in attachment 3	X	
A0009872627			PA line 6 mm	2 m	for test line in attachment 3	X	
A0004312931			Test connection	1	for test line in attachment 4	X	
A6249974172			Fitting	1	for test line in attachment 4	X	
A0009956535			Single-eye clamp 16.2	1	for test line in attachment 4	X	
A0009956235			Single-eye clamp 18	1	for test line in attachment 4	X	
A9304760001			EPDM hose	2 m	for test line in attachment 4	X	
A0049979289			Plug coupling	1	for test line in attachment 4	X	
A0029971271			Fitting	1	for test line in attachment 4; for connecting test line to metering device on engine model series 500 and engine 457. On engine model series 900, the fitting is installed on the metering unit as standard.	X	
A0169974945			Seal	10	for test line in attachment 4	X	
A0001420089			Filter element with cover	1	Main filter of pump module	X	
A0001420680			Molded elastomer gasket	1	Gasket between pump housing and pump housing cover. The molded gasket may suffer irreparable damage during disassembly and must then be replaced.	X	

A0009982605		Rubber grommet	1	The rubber grommet may suffer irreparable damage during disassembly of the pump housing cover and must then be replaced.	X
A0005850202		Test strips	1	Test strips for verifying oil and diesel in the AdBlue fluid. Pack of 100 test strips.	X
A9305842438		AdBlue information label	1	New information label	X
A0001420319		External pneumatic pressure reduction valve	1	Only for pump module A0001400478. Observe SI14. 40-W-0011A!	X
A9414751720		Chafe protection		Only for pump module A0001400478. Observe SI14. 40-W-0011A! Chafe protection for external pneumatic pressure reduction valve.	X
A0001420019		Internal diaphragm valve	1	Only for pump module A0001400578 (production date > 06/2009)	X
A0061537528		AdBlue pressure sensor	1		X
A0001420519		External pneumatic switching valve	1	Only for pump module A0001400278, A0001400378; production date < 08/06	X
A0004295795		Oil-absorbing compressed air drier cartridge	1	Knorr	X
A0004295695		Oil-absorbing compressed air drier cartridge	1	Wabco	X

Attachments	
File	Designation
Anlage 1.pdf	Pump module: Intake fitting disassembly
Anlage 2.pdf	Kinked air line in vicinity of crossmember
Anlage 3.pdf	Adapter line for measuring compressed air at AdBlue pump module
Anlage 4.pdf	Adapter line for testing AdBlue pressure sensor
Anlage 5.pdf	Comparison of pressure displayed at pressure reducing valve with measurement value 64
Anlage 6 Teststreifen-Box.jpg	100 test strips in pack
Anlage 7 Teststreifen-Beispiel.jpg	1: No contamination by diesel/oil 2: Slight residues of diesel/oil 3 : Heavy residues of diesel/oil
Anlage 8 OI-Testpapier D-GB-F.pdf	Pack leaflet
Anlage 9 OI-Testpapier NL-I-E.pdf	Pack leaflet
Anlage 10 Prufung mittels Teststreifen am Hauptfilter.pdf	Check for residues of diesel and oil
Anlage 11 Externes pneumatisches Druckabbauventil.jpg	1 Pump module 2 External pneumatic pressure reduction valve 3 AdBlue return connection

	4 Screw plug
Anlage 12 Demontage festsitzender Kolben.jpg	Tip for stuck pistons. Bolt M4x80

Work units				
Op. no.	Operation text	Time	Damage code	Note
			14486 73	if AdBlue pressure sensor of metering device is defective
			14476 04	if AdBlue line is leaky
			14476 C6	if AdBlue line is kinked
			43389 C6	if air line to pump module is kinked
			14471 B2	if external pneumatic pressure reduction valve is retrofitted
			47308 52	AdBlue switching valve - does not operate correctly. Use this damage code if the external pneumatic switching valve is defective.

WIS-References			
Document number	Title	Note	Allocation
SI14.40-W-0011A	Repair solution of pressure reduction valve in pump module of exhaust aftertreatment system	Revised version published in 03/2010. First published on 16.01.2009.	Remedy
SI14.40-W-0006A	Incorrect filling of AdBlue tank		Remedy
AR14.40-W-2040A	Remove/install intake filter of pump module	Select appropriate document in WIS according to model.	Remedy
AP14.40-W-1481A	Replace AdBlue filter	Select appropriate document in WIS according to model.	Remedy
AR14.40-W-2025A	Check pneumatic working pressure at metering device of exhaust aftertreatment system	Select appropriate document in WIS according to model.	Remedy
AR14.40-W-2003A	Remove/install SCR AdBlue pressure sensor	Select appropriate document in WIS according to model.	Remedy
AR14.40-W-2047A	Check pump module of exhaust aftertreatment system for fuel/oil residues	Select appropriate document in WIS according to model.	Remedy