

## Multi-contour/Dynamic Seat Air Cushions Not Inflating or Bubble Formation in One or More Seats

Topic number	LI91.25-P-046797
Version	2
Design group	91.25 Multicontour seat (MCS)
Date	12-08-2009
Validity	Model 216.371/376/377/379/386, As of MY 07, VIN Range A002723 to A006715 Model 221.171/176/177/179/186, As of MY 07, VIN Range A106647 to A134746 Equipped with Option Code 406, 409 or 432 Multi-Contour Seats (MCS)
Reason for change	Left Front Seat Cushion Adapter and Right Front Seat Cushion Adapter part designations switched / Supercedes DTB P-B-91.25/169a

**Complaint:**

Multi-contour/Dynamic Seat Air Cushions Not Inflating or Bubble Formation in One or More Seats

**Cause:**

Inoperative transistors in the valve electronics (Figure 1).

[i] Note: Depending on the switch position of the valve, the air cushions may either over-inflate or not inflate at all even without interaction by the driver. To remedy, follow the procedures below based on the specified fault code.

Attachments	
File	Designation
Figure1.jpg	Figure 1

**Remedy:**

[i] Note: Read the notes below very carefully prior to performing any repairs.

- The comfort functions control units in the backrest of the pneumatic pump may only be replaced when all diagnostic and verification steps below are performed and the inoperative conditions are present.
- Do not replace the control unit under the seat cushion. It is not integrated in the comfort system and cannot cause any of the conditions referenced above.
- These specific conditions may only be caused by the valve electronics, and not by the pneumatic pump or the control unit.
- DTC memory read-out and control unit programming must be performed in all cases.

Condition 1: Check for the following stored DTCs in front left and right dynamic seat and rear left and right Multi-contour Backrest (Figures 2 and 3). Should either of these codes be present, replace the corresponding unit.

DTC 9210: "System failure of Backrest Module Carrier"

DTC 8211: "System failure of Cushion Module Carrier"

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[i] Note: On the front seats (Figures 2 and 3), the adapters (Module Carriers) in the backrest and seat cushions (Figures 4 and 5) for the Multi-contour/dynamic seat function can be replaced separately. For the rear seat, the entire backrest pad should be replaced since the corresponding modules are permanently integrated.

The following additional DTCs may be stored in the control units even for seats that are not affected.

DTC 9306: "Pump error"

DTC 9307: "Pump inactive"

These DTCs may be caused by the automatic shut-off of the pneumatic pump. In this case, do NOT replace any components on the corresponding seat. Refer to Figures 6 and 7.

Condition2: Check for the following stored DTCs in the front and rear backrest massage pads (Figures 8 and 9).

DTC 9202: "The Module Carrier for the massage function is defective" which may be caused by inoperative valves in the massage pads.

[i] Note: The massage pad in the front seats is integrated in the backrest pad, the entire backrest pad should be replaced should DTC 9202 occur. Due to the inoperative valves in the massage pads, the following two DTCs may also occur.

DTC 9251: "Pressure loss detected due to a leak"

DTC 9250: "Pressure build up not possible due to a leak"

Should DTCs 9251 and 9250 occur in one of the dynamic Multi-contour seat control unit without DTC 9202, it may not be possible to immediately identify the inoperative massage pad. For this condition, please follow the steps below (please read the steps first prior to starting).

1. Delete the DTC memory in the pump control unit (dynamic seat pump).
2. Isolate each seat with massage function from the pneumatic system; use each seat's connector which is separable. On the front seats, separable connectors are accessed by removing the seat lining. On the rear seats, separable connectors are located behind the backrests.
3. Seal the separation point leading to the pump with blind plug, part number A124 805 02 44.
4. Pressurize the system for at least 5 minutes.

[i] Note: During this time, do NOT operate any pneumatic functions; otherwise the pump control unit will not register the random air consumption.

5. If a seat with the inoperative massage function is isolated from the system, no DTC will be stored in the pump since random air loss is detected. As a result, this identifies the inoperative massage pad.
6. Replace the identified backrest pad (with integrated massage pads).
7. After replacing the inoperative module carrier, control unit programming must be performed.

The following DTCs may also be stored in the pneumatic pump control unit (dynamic seat pump)

DTC 9180: "Pressure supply shut off via CAN signal from MCMS\_FL"

DTC 9181: "Pressure supply shut off via CAN signal from MCMS\_FR"

DTC 9182: "Pressure supply shut off via CAN signal from MCMS\_RL"

DTC 9183: "Pressure supply shut off via CAN signal from MCMS\_RR"

If one or more of these DTCs are stored in the pump control unit and if the inoperative parts cannot be replaced immediately, the entire pneumatic system must be decommissioned by deactivating the pump via DAS. Under NO circumstances should the fault memory be erased and system re-commissioned without first replacing the inoperative parts or deactivating the pump. The same applies in the event of significant over-inflation of one or more air cushions (bubble formation).

(NOTE: For Part Number: Refer to EPC Group / Subgroup/Callout #)

[i] Note: The following allowable labor operations should be used when submitting a warranty claim for this repair. This information has been generated on March 6, 2009. Please refer to Netstar -> Star TekInfo -> Star Time for the most current labor time allowance.

Attachments	
File	Designation
Figure2_5.jpg	Figure 2-5
Figure6-9.jpg	Figure 6-9

Symptoms
Seat / Nonfunctional / Body / Multicontour seat /
Seat / Body / Dynamic multicontour seat / Nonfunctional /

Control unit/fault code		
Control unit	Fault code	Fault text
DS-LF-Left front dynamic seat (FDSVL2)	9210	The module carrier for the backrest is defective. (((ECU1_DV_HEX@0100-)))
MKL-HL-Rear left multicontour backrest (FDSHL2) (S (221))	9307	Event:Control module DSP is not activated.
MKL-HR-Rear right multicontour backrest (FDSHR2) (S (221))	9306	Event:Control unit DSP is switched off due to a fault.
MKL-HR-Rear right multicontour backrest (FDSHR2) (S (221))	9307	Event:Control module DSP is not activated.
DS-RF-Right front dynamic seat (FDSVR2)	9306	Event:Control unit DSP is switched off due to a fault.
DS-RF-Right front dynamic seat (FDSVR2)	9307	Event:Control module DSP is not activated.
DS-LF-Left front dynamic seat (FDSVL2)	9306	Event:Control unit DSP is switched off due to a fault.
DS-LF-Left front dynamic seat (FDSVL2)	9307	Event:Control module DSP is not activated.
DS-LF-Left front dynamic seat (FDSVL2)	9250	Leakage at an air cushion-Inflatable cushion in shoulder area (((ECU1_DV_HEX@0002-ECU1_DV_HEX@0005)))
DS-LF-Left front dynamic seat (FDSVL2)	9251	Leakage at an air cushion-Inflatable cushion for lateral support (((ECU1_DV_HEX@0002-ECU1_DV_HEX@0005),not(ECU_FDSVL2_DEF_FDS und Massage@aktiv)))
DS-LF-Left front dynamic seat (FDSVL2)	9251	Leakage at an air cushion-Left air cushion for lateral support ((ECU_FDSVL2_DEF_FDS und Massage@aktiv,(ECU1_DV_HEX@0002-ECU1_DV_HEX@0005)))
DS-RF-Right front dynamic seat (FDSVR2)	9210	The module carrier for the backrest is defective. (((ECU1_DV_HEX@0100-)))
DS-RF-Right front dynamic seat (FDSVR2)	9250	Leakage at an air cushion-Inflatable cushion in shoulder area (((ECU1_DV_HEX@0002-ECU1_DV_HEX@0005)))
DS-RF-Right front dynamic seat (FDSVR2)	9251	Leakage at an air cushion-Inflatable cushion for lateral support (((ECU1_DV_HEX@0002-ECU1_DV_HEX@0005),not(ECU_FDSVR2_DEF_FDS und Massage@aktiv)))

DS-RF-Right front dynamic seat (FDSVR2)	9251	Leakage at an air cushion-Left air cushion for lateral support ((ECU_FDSVR2_DEF_FDS und Massage@aktiv,(ECU1_DV_HEX@0002-ECU1_DV_HEX@0005)))
MKL-HL-Rear left multicontour backrest (FDSHL2) (S (221))	9251	Leakage at an air cushion-Inflatable cushion for lateral support
MKL-HR-Rear right multicontour backrest (FDSHR2) (S (221))	9251	Leakage at an air cushion-Inflatable cushion for lateral support
MKL-HL-Rear left multicontour backrest (FDSHL2) (S (221))	9210	The module carrier for the backrest is defective. (((ECU1_DV_HEX@0100-)))
MKL-HR-Rear right multicontour backrest (FDSHR2) (S (221))	9210	The module carrier for the backrest is defective. (((ECU1_DV_HEX@0100-)))
DS-RF-Right front dynamic seat (FDSVR2)	9202	The module carrier for the massage function is defective. ((ECU_FDSVR2_DEF_FDS und Massage@aktiv,(ECU1_DV_HEX@0100-)))
DS-LF-Left front dynamic seat (FDSVL2)	9202	The module carrier for the massage function is defective. ((ECU_FDSVL2_DEF_FDS und Massage@aktiv,(ECU1_DV_HEX@0100-)))
MKL-HR-Rear right multicontour backrest (FDSHR2) (S (221))	9202	The module carrier for the massage function is defective. (((ECU1_DV_HEX@0100-)))
MKL-HL-Rear left multicontour backrest (FDSHL2) (S (221))	9202	The module carrier for the massage function is defective. (((ECU1_DV_HEX@0100-)))
MKL-HL-Rear left multicontour backrest (FDSHL2) (S (221))	9306	Event:Control unit DSP is switched off due to a fault.

Parts

Part number	ES1	ES2	Designation	Quantity	Note	EPC	Non-EPC
			Right Front Backrest Pad (Model 216)	1	91/070/#200		X
			Right Front Backrest Adapter (Model 216)	1	91/070/#470		X
			Right Front Seat Cushion Adapter (Model 216)	1	91/070/#460		X
			Left Front Backrest Pad (Model 216)	1	91/065/#200		X
			Left Front Backrest Adapter (Model 216)	1	91/065/#470		X
			Left Front Seat Cushion Adapter (Model 216)	1	91/065/#460		X
			Right Front Backrest Pad (Model 221)	1	91/070/#200		X
			Right Front Backrest Adapter (Model 221)	1	91/070/#500		X
			Right Front Seat Cushion Adapter (Model 221)	1	91/070/#460		X

		Left Front Backrest Pad (Model 221)	1	91/065/#200		X
		Left Front Backrest Adapter (Model 221)	1	91/065/#500		X
		Left Front Seat Cushion Adapter (Model 221)	1	91/065/#460		X
		Right Rear Backrest Pad (Model 221, Rear Elec. Adj Seats)	1	92/035/#230		X
		Right Rear Backrest Pad (Model 221, Rear Single Seats)	1	92/050/#130		X
		Left Rear Backrest Pad (Model 221, Rear Elec. Adj Seats)	1	92/035/#220		X
		Left Rear Backrest Pad (Model 221, Rear Single Seats)	1	92/050/#130		X
A124 805 02 44		Blind plug (if required for test procedure only)	1			X

Work units				
Op. no.	Operation text	Time	Damage code	Note
				Refer to Warranty Matrix via Netstar - VMI - Enter VIN – DTB / LI - Find Document Number - “Related Warranty Information” link OR “Print Warranty Information” link