

12.7 Mirror, Steering Column Adjustment, Heated Mirrors (MSC) Models 202, 208, 210 as of M.Y. 1998

Diagnosis – Diagnostic Trouble Code (DTC) Memory (MSC)

Preliminary work:

Function test 11

Preparation for Test:

1. Review sections: C/1, 12, 13, 20, 21, 31,
2. Review connecting of test equipment, see section 0,
3. Voltage supply to all control modules and CAN bus ok, see DM, B&A, Vol. 2, section 7.1, 23,
4. All fuses are ok,
5. Ignition: **ON**
6. All CAN data line connections must be connected.



The diagnostic trouble codes (DTC's) can only be read out and erased **using the Hand-Held Tester (HHT)**.

DTCs for the system being checked may be located in other control modules, therefore it is important to check the DTC memory on all control modules that are relevant to the system being checked.

While performing the DTC readout, it is possible that DTCs may appear that are not relevant to the system being checked, meaning that all stored DTCs in that particular control module are being displayed.

Non-relevant DTCs are described in each system as necessary.

Abbreviations:

TSG 1 Front driver-side door control module (N69/1)

TSG 2 Front passenger-side door control module (N69/2)

UBF Lower control field control module (N72)

ESV-L Left seat adjustment

ESV-R Right seat adjustment

The noted abbreviations (**TSG 1, TSG 2, ESV-L, ESV-R**) are located in the header above each of the following DTC memory charts and advise of which control module the DTC is stored in.

Note regarding Diagnostic Trouble Codes (DTC's):

Current diagnostic trouble codes are highlighted in black on the display.

Additional detailed fault information based on fault type is displayed with nearly all diagnostic codes (DTC's) such as:

> Ω	Resistance too great
< Ω	Resistance too low
ΓΓ-	Short circuit to ground (GND)
ΓΓ+	Short circuit to positive (POS)
-//-	Open circuit

With some DTCs additional information such as fault frequency can be readout.

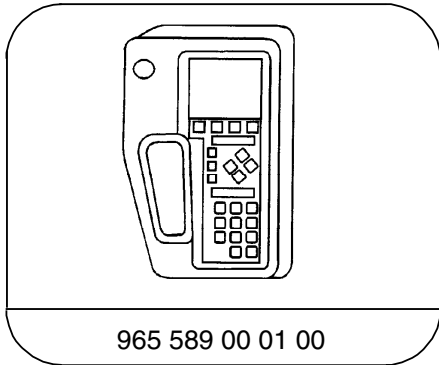
Fault frequency

Faults are noted by frequency of occurrence, i.e.: 4 periodic faults, 4 occurrences.

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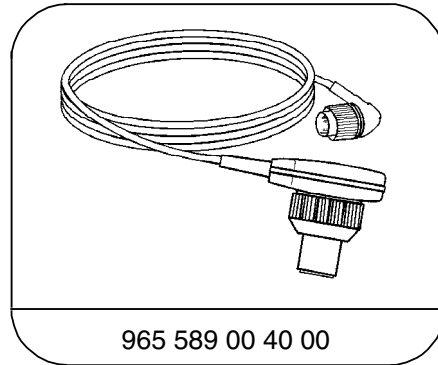
Diagnosis – Diagnostic Trouble Code (DTC) Memory (MSC)

Special Tools



965 589 00 01 00

Hand-Held-Tester




965 589 00 40 00

Test cable

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Diagnosis – Diagnostic Trouble Code (DTC) Memory TSG 1

DTC 	Possible cause	Test step/Remedy ¹⁾
B1000	Front driver-side door control module (N69/1)	Replace N69/1
B1001	Switch illumination, circuit 58d, wiring Γ1 (short circuit)	Wiring.
B1010	Low voltage	DM, B&A, Vol. 2, section 7.1, 23
B1011	Excess Voltage	DM, B&A, Vol. 2, section 7.1, 23
B1114	Steering column up/down switch (S91/2s11) or Steering column in/out switch (S91/2s12) stuck/binding, or wiring Γ1 short circuit	13
B1407	Faulty signal from mirror position memory (M21/6n1) (up/down) to left outside rearview mirror (M21/6)	13
B1407	Faulty signal from mirror position memory (M21/6n1) (right/left) to left outside rearview mirror (M21/6)	13
B1521	Wiring or motor Mirror-Horizontal adjustment motor (M21/6m2) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-06A
B1521	Wiring or motor Mirror-Vertical adjustment motor (M21/6m1) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-03A
B1521	Wiring or motors Mirror-adjustment motor (M21/6m1, M21/6m2) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-03A See WIS document: AD88.79-P-6000-06A
B1521	Mirror heater (M21/6r1) Γ1 (short circuit) Front driver-side door control module (N69/1)	See WIS document: AD88.79-P-6000-13A

¹⁾ Observe Preparation for Test, see 22.

12.7 Mirror, Steering Column Adjustment, Heated Mirrors (MSC) Models 202, 208, 210 as of M.Y. 1998


Diagnosis – Diagnostic Trouble Code (DTC) Memory TSG 2

DTC 	Possible cause	Test step/Remedy ¹⁾
B1000	Front passenger-side door control module (N69/2)	Replace N69/2
B1001	Switch illumination, circuit 58d, wiring Γ1 (short circuit)	Wiring.
B1010	Low voltage	DM, B&A, Vol. 2, section 7.1, 23
B1011	Excess Voltage	DM, B&A, Vol. 2, section 7.1, 23
B1114	Steering column up/down switch (S91/2s11) or Steering column in/out switch (S91/2s12) stuck/binding, or wiring Γ1 (short circuit)	13
B1407	Faulty signal from mirror position memory (M21/7n1) (up/down) to right outside rearview mirror (M21/7)	13
B1407	Faulty signal from mirror position memory (M21/7n1) (right/left) to right outside rearview mirror (M21/7)	13
B1521	Wiring or motor Mirror-Horizontal adjustment motor (M21/7m2) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-12A
B1521	Wiring or motor Mirror-Vertical adjustment motor (M21/7m1) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-09A
B1521	Wiring or motors Mirror-adjustment motor (M21/7m1, M21/7m2) Γ1 (short circuit)	See WIS document: AD88.79-P-6000-09A See WIS document: AD88.79-P-6000-12A
B1521	Mirror heater (M21/7r1) Γ1 (short circuit) Front passenger-side door control module (N69/2)	See WIS document: AD88.79-P-6000-14A

1) Observe Preparation for Test, see 22.

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Diagnosis – Diagnostic Trouble Code (DTC) Memory ESV-L

DTC 	Possible cause	Test step/Remedy ¹⁾
B1000	Left front ESA control module (with memory) (N32/1)	Replace N32/1
B1205 (model 210 up to 6/98)	ESC motor (M20), voltage supply, Γ1- (short to grnd)	13
B1206 (model 210 up to 6/98)	Tilt adjustment motor (M20m2) (up/down), Γ1- (short to grnd), -//- (open circuit)	13
B1207 (model 210 up to 6/98)	Tilt adjustment motor (M20m2) (up/down), Γ1+ (short circuit to positive)	13
B1208 (model 210 up to 6/98)	Telescopic adjustment motor (M20m1) (in/out), Γ1- (short to grnd), -//- (open circuit)	13
B1209 (model 210 up to 6/98)	Telescopic adjustment motor (M20m1) (in/out), Γ1+ (short circuit to positive)	13

1) Observe Preparation for Test, see 22.

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Diagnosis – Diagnostic Trouble Code (DTC) Memory ESV-L (continued)

DTC 	Possible cause	Test step/Remedy ¹⁾
B1410 - 006 (model 210 up to 6/98)	Steering wheel Hall sensor for: Tilt adjustment motor (up/down) (M20m2)	13
B1410 - 008 (model 210 up to 6/98)	Steering wheel Hall sensor for: Telescopic adjustment motor (in/out)(M20m1)	13

¹⁾ Observe Preparation for Test, see 22.

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Diagnosis – Diagnostic Trouble Code (DTC) Memory ESV-R

DTC 	Possible cause	Test step/Remedy ¹⁾
B1000	Right front ESA control module (with memory) (N32/2)	Replace N32/2

1) Observe Preparation for Test, see 22.