

01 ON BOARD DIAGNOSTIC (OBD)

BODY ON BOARD DIAGNOSTIC (OBD), GENERAL INFORMATION

This article contains On Board Diagnostic (OBD) information for Seat Memory only. Information related to all other Body OBD systems for this vehicle is accessible through the VAS 5051 Testing and Diagnostic System.

VAS 5051 SCAN TOOL (ST), CONNECTING

VAS 5051 Scan Tool (ST), connecting

Test conditions

- Battery voltage at least 11 V
- Ground connections at engine and transmission OK
- Fuse OK

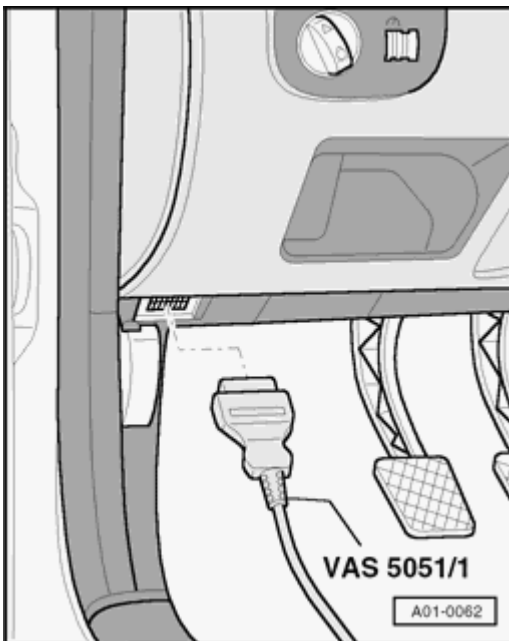


Fig. 1: Connecting Up VAS 5051 Scan Tool (ST) Using Cable VAS 5051/1 And K Wiring Adapter VAS 6017

Courtesy of VOLKSWAGEN UNITED STATES, INC.

- Connect up VAS 5051 Scan Tool (ST) using cable VAS 5051/1 and K wiring adapter VAS 6017.

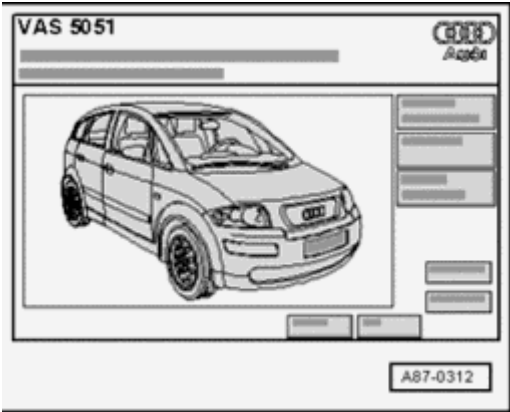


Fig. 2: Diagnostic System VAS 5051: Display
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051:

- Press the "vehicle self-diagnosis" button.

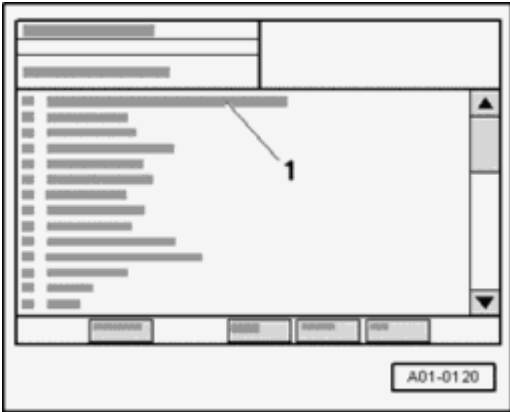


Fig. 3: Diagnostic System VAS 5051: Display
Courtesy of VOLKSWAGEN UNITED STATES, INC.

Display on VAS 5051:

- Select vehicle system "15 - Airbag" -1-.

NOTE: If one of the adjacent messages appears on the display, perform troubleshooting in line with troubleshooting program for diagnostic wire.

Rapid data transfer HELP

No control module response

Indicated on display

Rapid data transfer HELP			
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Error in communication link

Refer to Electrical Wiring Diagrams, Troubleshooting & Component Locations

Rapid data transfer HELP
K-wire not switched to Ground

Indicated on display

Rapid data transfer HELP
K-wire not switched to positive

Indicated on display

NOTE: If display remains blank:

Refer to Scan Tool operating instructions

- Press Print button to switch on printer (lamp in button lights).
- Press button -1- for "Rapid data transfer".

Rapid data transfer HELP
Enter address word XX

Indicated on display:

NOTE: Address word 00 implements automatic test sequence, i.e. the DTC memories of all vehicle systems with On Board Diagnostic (OBD) capability are checked by way of rapid data transfer.

AIRBAG SYSTEM (WITH SIDE AIRBAG) FROM MODEL YEAR 2002, ON BOARD DIAGNOSIS (OBD)

OBD in Guided Fault Finding using VAS 5051 scan tool

The On Board Diagnosis (OBD) is available exclusively in Guided Fault Finding. Please refer to Guided Fault Finding in VAS 5051 for more information.

DRIVER'S SEAT ADJUSTMENT WITH MEMORY, ON BOARD DIAGNOSTIC (OBD)

General information

The new seat adjustment with memory generation features On Board Diagnostic (OBD) capability. The control module for seat adjustment with memory is equipped with a DTC Memory.

Malfunctions occurring in monitored components/wiring are stored in DTC memory together with an indication of the type of malfunction.

If any control elements are replaced they must be adapted and a basic setting must be initiated. Refer to **Seat control element, basic setting**.

On Board Diagnostic (OBD), initiating program

Test requirements:

- Voltage supply and fuses for appropriate systems OK.

Refer to Electrical Wiring Diagrams, Troubleshooting & Component Locations

- Connecting VAS 5051 scan tool. Refer to **VAS 5051 Scan Tool (ST), connecting**
- Switch ignition on.

NOTE:

- If no display appears, use wiring diagram to check power supply for VAS 5051
- Additional operating instructions can be called up by pressing the Scan Tool HELP button.
- The next step in the program sequence can be selected by pressing the --> button.
- Incorrect entries can be terminated by pressing the -C- button.

- Switch on printer by pressing Print button (indicator lamp in button lights up).
- Press button -1- for "Rapid data transfer".

Rapid data transfer HELP
Enter address word XX

Indicated on display:

Address word for driver's seat memory system: 36

- Press buttons -3- and -6-.

Rapid data transfer Q
36 - Driver's seat adjustment

Indicated on display:

- Confirm entry with -Q- button.

Rapid data transfer HELP
Tester transmits address word 36

Indicated on display:

Rapid data transfer HELP
No control module response

If "No control module response" appears on the display: Close door, then open again and keep open. Re-start On Board Diagnostic (OBD).

- Display appears after approximately 5 seconds:
- Press the --> button.

Rapid data transfer HELP
Select function XX

Indicated on display:

NOTE: Pressing the HELP button will print out a list of possible functions:

On Board Diagnostic (OBD) functions

Possible functions:	Refer to
02 - Check DTC Memory	<u>Check DTC Memory (function 02)</u>
04 - Basic Setting	<u>Seat control element, basic setting</u>
05 - Erase DTC Memory	<u>Erasing DTC memory</u>
06 - End Output	<u>End output (function 06)</u>
07 - Code Control Module	<u>Code Control Module (function 07)</u>
08 - Read Measured Value Block	<u>Read Measuring Value Block (function 08)</u>
10 - Adaptation	<u>Adaptation (function 10)</u>

Check DTC Memory (function 02)

NOTE: DTC information displayed is not updated constantly, but rather only on starting On Board Diagnostic (OBD)/implementing function 05 "Erase DTC Memory."

- Switch on printer by pressing the Print button (indicator lamp in button lights up).

Performing function "02 Check DTC Memory"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -2-.

Rapid data transfer Q
02 - Interrogate fault memory

Indicate on display:

- Confirm entry with -Q- button.

X fault detected -->

The number of stored DTCs appears on the display.

The stored DTCs are consecutively displayed and printed out.

- Consult Diagnostic Trouble Code (DTC) table with DTC printed out and correct malfunction. Refer to **Diagnostic Trouble Code (DTC) table**.

No fault detected -->

In the case of "No faults detected", program returns to its start position after pressing the --> button.

Rapid data transfer HELP
Enter address word XX

Indicated on display:

If something else is displayed:

Refer to Scan tool operating instructions

- Erase DTC Memory (function 05). Refer to **Erasing DTC memory**.
- End output (function 06). Refer to **End output (function 06)**
- Disconnect diagnostic connector.

Diagnostic Trouble Code (DTC) table

DTCs VAG 00466 to 65535

NOTE:

- The table below includes all the malfunctions that can be detected by Airbag Control Module -J234-, listed according to their DTC numbers. If the printer on VAG 1551 Scan tool is switched on, the malfunctions can be printed out together with their 5-digit DTCs.

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- When a malfunction occurs, the airbag system warning lamp will light up and remain lit until the malfunction is repaired and the DTC memory has been erased.
- If a malfunction only occurs occasionally or if the DTC memory is not erased after a malfunction has been repaired, the malfunction will be shown as a sporadic DTC. Such malfunctions are identified by the letters "/SP" on the right of the VAG 1551 display and will cause the warning lamp to light up continuously.
- If a component is indicated as being faulty, always test for open circuits and short circuits in the wiring to the component (using the wiring diagram) as well as testing the component itself.

VAS 5051 print-out	Possible cause	Corrective action
00466		
Steering column electronic systems control module - J527- No communication	• Data bus wiring damaged or open circuit • -J527- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -J527-
00474		
Control unit for immobilizer No communication	• Data bus wiring damaged or open circuit	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations
00668		
Vehicle voltage terminal 30 Signal too low Signal too high	• Battery discharged • Faulty wiring	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Charge and test battery

VAS 5051 print-out	Possible cause	Corrective action
01191		
Seat adjustment motors Short circuit	• Short circuit in one of the seat adjustment motors.	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations
01317		
Control module with indicator unit in instrument panel insert -J285- No communication	• Data bus wiring damaged or open circuit • -J285- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations

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		○ Replace -J285-
01330		
Central control module for comfort system -J393- No communication	• Data bus wiring damaged or open circuit • -J393- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -J393-

VAS 5051 print-out	Possible cause	Corrective action
01331		
Door control module, driver side -J386- No communication	• Data bus wiring damaged or open circuit • -J386- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -J386-
01332		
Door control module, passenger side -J387- No communication	• Data bus wiring damaged or open circuit • -J387- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -J387-
01336		
CAN convenience Faulty	• Data bus wiring damaged or open circuit	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations

VAS 5051 print-out	Possible cause	Corrective action
01445		
Sensor for fore and aft adjustment, driver seat - G227- Short to Ground Open circuit	• Wiring damaged • Open circuit • -G227- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -G227-
01446		
Sensor for seatback adjustment, driver seat - G230- Short to Ground Open circuit Malfunction in basic setting	• Wiring damaged • Open circuit • -G230- faulty • Backrest limit "forgotten"	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -G230- ○ Initiate basic setting. Refer to <u>Seat control element, basic setting</u>

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1) If malfunction still exists after following a basic setting, replace Hall sensor of backrest adjuster.

NOTE: With DTCs 01445 to 01448 the message "Open circuit" may also indicate a short to positive.

VAS 5051 print-out	Possible cause	Corrective action
01447		
Sensor for height adjustment, driver seat - G231- Short to Ground Open circuit.	• Wiring damaged. • Open circuit • -G231-faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -G231-
01448		
Sensor for slope adjustment, driver seat - G232- Short to Ground Open circuit.	• Wiring damaged. • Open circuit • -G232-faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -G232-

NOTE: With DTCs 01445 to 01448 the message "Open circuit" may also indicate a short to positive.

VAS 5051 print-out	Possible cause	Corrective action
01449		
Switch for slope adjustment, driver seat. - E222-, backward Short to positive	• Short circuit in wiring • -E222-faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E222-
01450		
Switch for slope adjustment, driver seat - E222-, forward Short to positive	• Short circuit in wiring • -E222-faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E222-
01451		
Driver's seat fore/aft and height adjusting switch -	• Short circuit in	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams,

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E61-, up Short to positive	wiring • -E61- faulty	Troubleshooting & Component Locations ○ Replace -E61-
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VAS 5051 print-out	Possible cause	Corrective action
01452		
Driver's seat fore/aft and height adjusting switch - E61-, down Short to positive	• Short circuit in wiring • -E61- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E61-
01453		
Driver's seat fore/aft and height adjusting switch - E61-, forward Short to positive	• Short circuit in wiring • -E61- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E61-
01454		
Driver's seat fore/aft and height adjusting switch - E61-, back Short to positive	• Short circuit in wiring • -E61- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E61-

VAS 5051 print-out	Possible cause	Corrective action
01455		
Driver's backrest adjustment switch -E96-, forward Short to positive	• Short circuit in wiring • -E96- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E96-
01456		
Driver's backrest adjustment switch -E96-, backward Short to positive	• Short circuit in wiring • -E96- faulty	○ Use wiring diagram to perform troubleshooting. Refer to Electrical Wiring diagrams, Troubleshooting & Component Locations ○ Replace -E96-
01794		
Control unit - incorrect chassis	• The chassis number stored in the control module does not	○ Perform adaptation. Refer to <u>Adaptation (function 10)</u>

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number	correspond to the number sent by the immobilizer control module
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VAS 5051 print-out	Possible cause	Corrective action
65535		
Control module faulty		○ Replace control unit for seat adjustment with memory -J136-

NOTE: The DTC "65535 Control module faulty" cannot be erased with VAS 5051!

Check Control Module Versions (function 01)

- Press buttons -0- and -1-.

Rapid data transfer Q
01 - Check Control Module Versions

Indicated on display:

- Confirm entry with -Q- button.
- Indicated on display:

Explanation of display:

- 8E0959760: Control module number
- Seat memory R2: Component designation
- OE01: Software version of control module
- Use the --> button to return to basic function.

Rapid data transfer HELP
Select function XX

Indicated on display:

Code Control Module (function 07)

- NOTE:**
- Read out coding before removing the existing control module.
 - If coding cannot be read out, code using standard coding (00002).
 - Control unit is not factory-coded.
 - Coding is carried out using the VAS 5051.

If VAS 5051 does not display appropriate code or if control module is replaced, perform control module coding as follows:

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Performing function "07 - Code control module"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -7-.

Rapid data transfer Q
07 - Code Control Module

Indicated on display:

- Confirm entry with -Q- button.

Encoding control unit
Enter code number XXXXX (0-32000)

Indicated on display:

- Enter coding for control module memory via the keypad:

Code:	00002
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- 00001: Selecting recall button items via remote control key.
- 00002: Selection via remote control key, of last seat/mirror position as vehicle was locked (automatic).
- 00003: All remote control key memory functions off.

NOTE: Remote control key adaptation. Refer to Matching new remote control keys

Read Measuring Value Block (function 08)

NOTE: The function "Read Measuring Value Block" can be used to determine the current status of the system.

Performing function "08 - Read measured value block"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -8-.

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Rapid data transfer Q
08 - Read Measuring Value Block

Indicated on display:

- Confirm entry with -Q- button.

Read Measuring Value Block
Enter display group number XXX

Display:

- Enter display group 001 and confirm entry with -Q- button.

The measuring value block selected will be displayed in standardized form. Evaluation. Refer to **Measuring value block overview**

Measuring value block overview

Measuring value block 001

Indicated on display:	Display value	Designation
Read Measuring Value Block 1	0000 1)	1 = Personalized memory buttons P1, P2, P3, P4
1 2 3 4	1000 1)	2 = STOP switch, M button, door contact and terminal 15
	1 1)	3 = Key number via CAN
	0010 1)	4 = Status of remote control key automatic 2)

1) Example. Evaluation of display values. Refer to **Display value table**.

2) Display for code 00002.

Display value table

1	2	
P1: not pressed = 0, pressed = 1 P2: not pressed = 0, pressed = 1 P3: not pressed = 0, pressed = 1 P4: not pressed = 0, pressed = 1	STOP switch: 2) Memory: Door contact: Terminal 15:	No current = 0; current = 1 Not pressed = 0; pressed = 1 Not actuated = 0; actuated = 1 Off = 0; on = 1
3	4	
Serial interface: 0 = no signal 1...4 = Key number	Memory button 1: Memory button 2: Memory button 3: Memory button 4:	Automatically deactivated = 0; Automatically deactivated = 1 3) Automatically deactivated = 0; Automatically deactivated = 1 3) Automatically deactivated = 0; Automatically deactivated = 1 3)

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Automatically deactivated = 0;
Automatically deactivated = 1 3)

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

2) If the procedure is aborted by pressing the STOP button all four digits will change to "0".

3) Display for code 00001: Display zone 4 = Assignment of remote control key recall button.

- Memory button 1: unassigned = 0; assigned = 1
- Memory button 2: unassigned = 0; assigned = 1
- Memory button 3: unassigned = 0; assigned = 1
- Memory button 4: unassigned = 0; assigned = 1

Measuring value block 002

Indicated on display:	Display value	Designation
Read Measuring Value Block 2	Not operated 1)	1 = Status for seat fore/aft adjustment button
1 2 3 4	32767 1)	2 = Current value for seat fore/aft adjustment
	Not operated 1)	3 = Condition of backrest angle adjustment button
	32767 1)	4 = Current setting for backrest angle adjustment

1) Example of display.

Table of readouts

1	2	3	4
Forward Backward Not operated Implausible	32767 2)	Forward Backward Not operated Implausible	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 003

Indicated on display:	Display value	Designation
Read Measuring Value Block 3	Raise 1)	1 = Status of seat height adjustment button
1 2 3 4	32767 1)	2 = Current setting for seat height
	Not operated 1)	3 = Status of seat angle adjustment button
	32767 1)	4 = Current setting for seat angle

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1) Example of display.

Table of readouts

1	2	3	4
Raise Lower Not operated Implausible	32767 2)	Raise Lower Not operated Implausible	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 004

Indicated on display:	Display value	Designation
Read Measuring Value Block 4	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

NOTE: The values shown are the values stored for memory location 1.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 005

Indicated on display:	Display value	Designation
Read Measuring Value Block 5	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

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1) Example of display.

NOTE: The values shown are the values stored for memory location 2.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 006

Indicated on display:	Display value	Designation
Read Measuring Value Block 6	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

NOTE: The values shown are the values stored for memory location 3.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 007

Indicated on display:	Display value	Designation
Read Measuring Value Block 7	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

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NOTE: The values shown are the values stored for memory location 4.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 008

Indicated on display:	Display value	Designation
Read Measuring Value Block 8	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

NOTE: The values are applicable for remote control key memory location 1 and code 00002.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 009

Indicated on display:	Display value	Designation
Read Measuring Value Block 9	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

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NOTE: The values are applicable for remote control key memory location 2 and code 00002.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 010

Indicated on display:	Display value	Designation
Read Measuring Value Block 10	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

NOTE: The values are applicable for remote control key memory location 3 and code 00002.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 011

Indicated on display:	Display value	Designation
Read Measuring Value Block 11	32767 1)	1 = Stored value for seat fore/aft adjustment
1 2 3 4	32767 1)	2 = Stored value for backrest adjustment
	32767 1)	3 = Stored value for seat height
	32767 1)	4 = Stored value for seat angle

1) Example of display.

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NOTE: The values are applicable for remote control key memory location 4 and code 00002.

Table of readouts

1	2	3	4
32767 2)	32767 2)	32767 2)	32767 2)

2) Figure between 0...65535, central position: 32767

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 080

Indicated on display:	Display value	Designation
Read Measuring Value Block 80	004-HLO 1)	1 = Manufacturer's factory code
1 2 3 4	08.08.00 1)	2 = Date of manufacture
	1 1)	3 = Modification status
	1 1)	4 = Test stand number
	0023 1)	5 = Serial number (daily from manufacturer)

1) Example of display.

Measured value block 081

Indicated on display:	Display value	Designation
Read Measuring Value Block 81	OAUZZZB6Y01234567 1)	1 = VIN number
1 2	5DS008437-00 1)	2 = Production number

1) Example of display.

Measuring value block 125

Indicated on display:	Display value	Designation
Read Measuring Value Block 125	Two-wire 1	1 = Data bus mode
1 2 3 4	1 1)	2 = Door control module, driver's side
	1 1)	3 = Convenience module control unit
	1 1)	4 = Dash panel insert control module, driver's side

1) Example of display.

Table of readouts

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1	2	3	4
One-wire Two-wire	Active: 1 Inactive: 0	Active: 1 Inactive: 0	Active: 1 Inactive: 0

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Measuring value block 126

Indicated on display:	Display value	Designation
Read Measuring Value Block 126	1 1)	1 = Steering column module
1 2 3 4	1 1)	2 = Door control module, passenger's side
		3 = not allocated
		4 = not allocated

1) Example of display.

Table of readouts

1	2	3	4
Active: 1 Inactive: 0	Active: 1 Inactive: 0		

Possible cause and Corrective action. Refer to **Diagnostic Trouble Code (DTC) table**.

Seat control element, basic setting

Basic setting must be performed if seat components are replaced.

Test requirements:

- Voltage supply and fuses for the appropriate system OK.

Refer to Electrical Wiring Diagrams, Troubleshooting & Component Locations

- Connect VAS 50511 Scan Tool (ST). Refer to **VAS 5051 Scan Tool (ST), connecting**.

Procedure

- Move backrest as far forward as possible.
- Check the existing value in Measuring Value Block 002. Refer to **Read Measuring Value Block (function 08)**.

Read measured value block 2 -->
Not operated 32767 forward 34231

Indicated on display (example values):

Display zone 4 will show current value (in example 34231).

- Note this value.
- Move backrest back toward its normal seating position until the setting is 1082 units less than the original value (in example: 34231 minus 1082 = 33149).
- Start basic setting.

Implementing function "04 - Basic setting"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -4-.

Rapid data transfer Q
04 - Basic setting

Indicated on display:

- Confirm entry with -Q- button.

Basic setting
Enter display group number XXX

Indicated on display:

- Press buttons -0-, -0- and -1-.

Basic setting Q
Enter display group number 001

Indicated on display:

- Confirm entry with -Q- button.

System in basic setting 1
Basic value learned

Indicated on display:

- Basic setting complete.

- Press the --> button.

Rapid data transfer HELP
Select function XX

Indicated on display:

- Check display zone 4 in measured value block 002. The display should show the numerical value for the central position (i.e. 32767).
- Check the basic setting as follows:
- Move the backrest as far back as possible.
- Press the "memory" button and one of the personalized buttons (e.g. memory location 1).
- With the driver's door open, press the selected personalized button again (e.g.: 1). The backrest will move back automatically to the rearmost position.

NOTE: **A gap will always be left between the backrest and the rear seat to ensure that the rear passenger has enough leg room.**

Deactivating remote control key memory function

In basic setting 004, all (simultaneously) memory functions for all 4 remote control key are erased.

Test requirements:

- Voltage supply and fuses for the appropriate system OK.

Refer to Electrical Wiring Diagrams, Troubleshooting & Component Locations

- Connect VAS 5051 Scan Tool (ST). Refer to **VAS 5051 Scan Tool (ST), connecting.**

Procedure

Basic setting
Enter display group number XXX

Indicated on display:

- Press buttons -0-, -0- and -4-.

Basic setting Q
Enter display group number 004

Indicated on display:

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- Confirm entry with -Q- button.

System in basic setting 4
Basic value learned

Indicated on display:

- Basic setting is complete.
- Press the --> button.

Rapid data transfer HELP
Select function XX

Indicated on display:

- Check display value 4 in measured value block 001. The display must show 0000 when the "open" button is actuated on the remote control key.
- Check the function as follows:
 - Lock the vehicle.
 - Unlock the vehicle using the remote control key.
- The driver's seat adjustment must not change when the driver's door is opened.

Matching new remote control keys

To ensure that the stored positions for the seats and exterior mirrors (see Owner's Manual) will be recalled automatically via the remote control function of the keys each key must be assigned to a separate memory button.

Each of the 4 memory buttons can be assigned to one remote control key.

Procedure

- Use the memory button to move the seat to the position to be recalled when the remote control key is operated.
- Press and hold the memory button, and press the "UNLOCK" button on the remote control key within 10 seconds.
- Wait for approximately 2 seconds, then release the memory button.
- To test the memory function, press a different memory button to move the seat to a different position.
- Lock the vehicle.
- Unlock the vehicle using the remote control key.

When the driver's door is opened, the seat should move to the pre-programmed position.

Adaptation (function 10)**Requirements:**

- Connect VAS 5051 Scan Tool (ST). Refer to **VAS 5051 Scan Tool (ST), connecting.**
- Switch on ignition.

Implementing function "10 - Adaptation"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -1- and -0- to select "Adaptation".

Rapid data transfer Q
10 - Adaptation

Indicated on display:

- Confirm entry with -Q- button.

Adaptation
Feed in channel No. XX

Indicated on display:

- Press buttons -8- and -1- to select "Channel" 81.

NOTE:

- **Incorrect entries can be corrected after pressing the C key.**

- Confirm entry with -Q- button.

Channel 81 Adaptation 1 -->
PIN ? <-1 3->

Indicated on display:

- Enter 20771 and press the --> button.

Channel 81 Adaptation 20771 -->

Indicated on display:

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- Press the --> button.

Channel 81 Adaptation 20771 Q
Store changed value?

Indicated on display:

- Confirm input with -Q- button.

Channel 81 Adaptation 20771 -->
Changed value is stored.

Indicated on display:

- Press the --> button.

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -6- to select "End output".

If the Adaptation value (PIN) is incorrectly entered three times, the Adaptation function will be disabled.

Channel 81 Adaptation 00000 Q
Disabled 10

Indicated on display:

The current disabled time in minutes (e.g. 10) is indicated in field 2, on the bottom line.

- Press the -Q- button.
- Initiate Adaptation again after the indicated disabled time has elapsed.

If Adaptation is performed and no new vehicle data is available, the following appears:

Channel 81 Adaptation 00000 -->
Bus not OK

Indicated on display:

- Press the --> button.

In this case, Adaptation is not necessary.

Erasing DTC memory

NOTE: If DTC Memory cannot be erased, check DTC Memory again and eliminate malfunction.

Requirements:

- DTC Memory checked
- All malfunctions corrected

After DTC Memory interrogation:

Implementing function "05 - Erase DTC Memory"

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -5-.

Rapid data transfer Q
05 - Erase DTC Memory

Indicated on display:

- Confirm entry with -Q- button.

Rapid data transfer -->
DTC Memory is erased

Indicated on display:

DTC Memory has been erased.

- Press the --> button.

Rapid data transfer HELP
Select function XX

Indicated on display:

NOTE:

- This message indicates an error in the test sequence.
- This message indicates an error in test sequence.
- Follow test sequence exactly: First check DTC Memory, if necessary eliminate any faults, then erase DTC Memory.
- After erasing DTC Memory, implement End Output with function 06, switch ignition off and on again, then re-check DTC Memory.

End output (function 06)**Implementing function "06 - End Output"**

Rapid data transfer HELP
Select function XX

Indicated on display:

- Press buttons -0- and -6-.

Rapid data transfer Q
06 - End output

Indicated on display:

- Confirm entry with -Q- button.

Rapid data transfer HELP
Enter address word XX

Indicated on display:

- Switch ignition off.
- Disconnect VAS 5051 Scan Tool (ST).