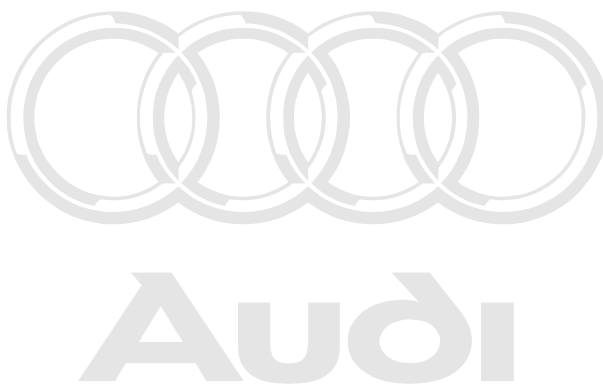


Audi A2 2001 ➤

Electrical system, Self-diagnosis

Edition 06.2000



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List of Workshop Manual Repair GroupsList of Workshop Manual
Repair GroupsList of Workshop Manual Repair Groups

Audi A2 2001 ➤

Electrical system, Self-diagnosis
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Repair Group

01 - Self-diagnosis



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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01 - Self-diagnosis

1 - Dash panel insert self-diagnosis

1.1 - Dash panel insert self-diagnosis

1.2 - General

Technical features of dash panel insert

The dash panel insert is equipped with a service display which can process flexible data, i.e. the dash panel insert uses various input variables such as driving style or oil consumption to evaluate individual vehicle service requirements.

By means of suitable limit value programming, the long-life service is capable of simulating the behaviour of the conventional service display. For this purpose, the limit values are designed to be flexible. Provision is also made for evaluation of the oil temperature sender. This is implemented by means of appropriate adaption channels in the V.A.G diagnosis.

The following adaption values must be entered in countries utilising long-life service => Table, Page **1** .

Table of service display values for long-life service

(valid until market launch)

Channel 42 (min. mileage)	15000 km
Channel 43 (max. mileage) Diesel engine A2 (unit injector engine)	15000 km
Channel 43 (max. mileage) - Petrol engine A2	30000 km
Channel 44 (max. time interval prior to service) for diesel engine A2 (unit injector engine)	365 days
Channel 44 (max. time interval prior to service) for petrol engine A2	730 days
Channel 45 (oil grade for max. mileage of 15000 km)	1
Channel 45 (Oil grade for max. mileage of 30000 km)	2

Changes to service display values for long-life service

(as of calendar week 36)

Channel 43 (max. mileage) Diesel engine A2 (unit injector engine)	50000 km
Channel 45 (oil grade for max. mileage of 50000 km)	4

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Channel 44 (max. time interval prior to service)	730 days
--	----------

The following fixed adaption values must be entered for countries where the conventional service display values are to be retained:

Table of service display values without long-life service

Channel 42 (min. mileage)	15000 km
Channel 43 (max. mileage)	15000 km
Channel 44 (max. time interval prior to service)	365 days
Channel 45 (Oil grade)	1

The Audi A2 dash panel insert will be available in two versions, namely the midline version with mini-check system and the highline version with driver information system (DIS).

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The speedometer features a mileage counter and trip recorder LCD.

The rev counter is provided with a clock/date LCD.

The service display appears on the centre display.

The warning lamps are integrated into the speedometer and rev counter.

For detailed information on dash panel insert, refer to

=> Owner's Manual for Audi A2

The dash panel insert is controlled by a microprocessor and provided with comprehensive self-diagnosis. System component faults cause fault codes to be stored in the fault memory of the dash panel insert. The faults can be determined using the fault reader V.A.G 1551 or V.A.G 1552.

Note:

The description given in this Workshop Manual relates exclusively to the fault reader V.A.G 1551.

"dEF" display on trip recorder

If the control unit in the dash panel insert detects a ROM fault, "dEF" is displayed on the trip recorder.

- If "dEF" appears, replace dash panel insert.

=> Electrical System; Repair Group 90; Dash panel insert Dash panel insert

Notes on dash panel insert replacement

- ♦ Dash panel insert is not to be dismantled.
- ♦ If necessary, dash panel insert is to be replaced as part of exchange program.
- ♦ Complete damage report sheet and return together with dash panel insert.
- ♦ Original packaging must be used for return shipment.
- ♦ Mileage and service display can be adapted for replacement dash panel insert by way of fault reader V.A.G 1551 => Page 88 .

1.3 - Starting dash panel insert self-diagnosis

Additional information material required

- ♦ Binder: "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations"
- ♦ Technical Service Handbook

- ◆ Parts List

1.4 - Safety precautions

Pay attention to the following if testers and measuring instruments have to be used in the course of a test drive:

Attention:

- ◆ Proceed as follows during measurement and test drives so as to avoid the risk of accident:
- ◆ Exclusive use is to be made for measured value block readout of VAS 5051 or V.A.G 1551, which is to be attached to rear seat and operated from there by a second person.

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Heed the following so as to avoid possible injury and/or the destruction of electrical and electronic components:

- ◆ Switch off ignition before disconnecting and connecting measuring instruments and testers.
- ◆ Certain tests may lead to a fault being detected by the control unit and stored. The fault memory is therefore to be interrogated and if necessary erased on completion of all tests and repair work.
- ◆ Switch off ignition before disconnecting and connecting battery so as not to damage control units.

Test requirements:

- ◆ Use current flow diagram to check that fuse is OK.
- ◆ Always check encoding of dash panel insert in line with encoding table => Page 14 .
- ◆ Connect up vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 => Page 88 .
- ◆ Switch on ignition.

Notes:

- ◆ If no display appears, use current flow diagram to check power supply for V.A.G 1551.
 - ◆ Additional operating instructions can be called up by pressing the fault reader HELP key.
 - ◆ Next step in program sequence can be selected by pressing => key.
 - ◆ Incorrect entries can be terminated by pressing C-key.
 - ◆ Function 00 "Automatic test sequence" can be implemented in mode 1 "Rapid data transfer". This involves automatic interrogation of all vehicle control units.
- Switch on ignition.
 - Switch on printer by pressing PRINT key (lamp in key lights).
 - Press key 1 for "Rapid data transfer" mode.

-> Indicated on display:

```
Rapid data transfer    HELP
Enter address word XX
```

Address word for dash panel insert: 17

- Press keys 1 and 7.

-> Indicated on display:

```
Rapid data transfer    Q
17 - Dash panel insert
```

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

```
8Z0920930A W1-DASH PANEL INSERT VD0
D05      "
Code      05142      WSC      06812
```



- 8Z0920930A: Part number of dash panel insert (refer to Parts List)
- W1-DASH PANEL INSERT: Component designation
- VDO: Manufacturer designation VDO
(M73 : Manufacturer designation for Magneti Marelli)
- D05: Software version of dash panel insert
- Code 05142: Code for dash panel insert
- WSC 06812: Workshop code

Note:

Check encoding in line with encoding table =>Page **14**.

- Press => key.

-> Indicated on display:

WAUZZZ8ZZ1N000518 AUZ7Z0Y1340403

- ♦ WAUZZZ8ZZ1N000518: 17-position vehicle identification no. (chassis number)
- ♦ AUZ7Z0Y1340403: 14-position identification number of immobilizer control unit

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- Press => key.

-> If one of the adjacent messages appears on the display, perform fault-finding in line with fault-finding program for diagnostic wire.

Rapid data transfer HELP
No control unit response

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

Rapid data transfer HELP
Fault in communication link

Rapid data transfer HELP
K-wire not switched to earth

Rapid data transfer HELP
K-wire not switched to positive

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Pressing HELP key prints out a list of possible functions.

Self-diagnosis functions

Possible functions:

- 02 - Interrogating fault memory => Page **5**
- 03 - Final control diagnosis => Page **10**
- 05 - Erasing fault memory => Page **12**
- 06 - End of output => Page **13**
- 07 - Encoding control unit => Page **13**
- 08 - Reading measured value block => Page **15**
- 10 - Adaption=> Page **22**

1.5 - Interrogating fault memory

Note:

Fault information displayed is not updated constantly, but rather only on starting self-diagnosis/implementing function 05 "Erasing fault memory".

- Switch on printer by pressing PRINT key (lamp in key lights).

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 2 to select "Interrogating fault memory" function.

-> Indicated on display:

Rapid data transfer Q
02 - Interrogating fault memory

- Confirm entry with Q key.

-> The number of stored faults appears on the display.

X faults detected

The stored faults are consecutively displayed and printed out.

- Consult fault table with fault printed out and eliminate fault => Page 5 .

-> In the case of "No faults detected", program returns to start after pressing =>key.

No faults detected

-> Indicated on display:

Rapid data transfer HELP
Select function XX

If any other display appears:

=> Fault reader operating instructions

- End output (function 06) => Page 13 .
- Switch off ignition and unplug diagnostic connector.

1.6 - Dash panel insert fault table

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Notes:

- ◆ Listed in the following in ascending order of 5-digit fault codes are all the faults which can be detected by the dash panel insert and printed out on V.A.G 1551.
- ◆ The fault code only appears on the printout.
- ◆ Before replacing components found to be defective, use current flow diagram to check wiring and connectors to these components as well as earth connections.
- ◆ On completion of repair work and system functional test, always interrogate fault memory again with fault reader V.A.G 1551 and erase it.
- ◆ All static and sporadic faults are stored in the fault memory:
A fault is recognised as being static if it is present for at least 2 seconds (ambient temperature error at least 60 seconds, coolant temperature sender only after engine has been running for at least 30 minutes). If a fault is then no longer present, it is stored as being sporadic and "/SP" appears on the right of the display.
- ◆ After switching on ignition, all faults present are set to sporadic and only stored as being static if they are still present after checking.



- ♦ Sporadic faults are erased if they do not re-occur in the course of 50 driving cycles (ignition on for at least 5 minutes, vehicle speed > 30 km/h).
- ♦ When eliminating an open circuit in the event of a data bus fault, always remember to twist the two data wires of the corresponding bus system together to prevent electromagnetic interference.

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
00562 Oil level/temperature sender -G266 - Open circuit/short to positive - Short to earth - Implausible signal	- Open circuit in wiring or short circuit between oil level/oil temperature sender -G266 and dash panel insert - Oil level/oil temperature sender - G266 defective - Sender electronics defective	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Replace oil level/oil temperature sender -G266
00667 Ambient temperature signal - Open circuit/short to positive - Short to earth - Implausible signal (incorrect display; can be ignored)	- Open circuit in wiring or short circuit between dash panel insert and operating and display unit for air conditioner/Climatronic -E87 - Operating and display unit for air conditioner/Climatronic -E87 defective	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Air conditioner self-diagnosis => Heating/Air Conditioner; Repair Group 01; Air conditioner self-diagnosis Air conditioner self-diagnosis
00668 Vehicle voltage terminal 30 - Power supply too low	- Disconnection of battery - Open circuit in wiring or short circuit at control unit or sender	- Perform automatic test sequence to establish control unit responsible for fault message => Check power supply of defective control unit Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Erase fault memory and continue to monitor vehicle

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
00771 Fuel gauge sender -G - Open circuit/short to positive - Short to earth	- Open circuit in wiring or short circuit between fuel gauge sender -G and dash panel insert - Fuel gauge sender -G defective	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Replace fuel gauge sender -G
00779 Ambient temperature sensor -G17 - Open circuit/short to positive - Short to earth	- Open circuit in wiring or short circuit - Ambient temperature sensor -G17 defective	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Replace ambient temperature sensor -G17
00849 S-contact on ign. starter switch -D - Open circuit/short to positive - Short to earth	- Wiring damage - Open circuit in wiring - Ignition/starter switch -D defective	- Use current flow diagram to perform fault-finding => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Eliminate open circuit in wiring Replace ignition/starter switch -D
01039 Coolant temperature gauge sender -G2 - Open circuit/short to positive - Short to earth	- Open circuit in wiring or short circuit between coolant temperature sender -G2 and dash panel insert - Coolant temperature sender -G2 defective	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Replace coolant temperature sender -G2

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01300 Nav. with CD drive control unit -J401 - No communication	- Dash panel insert adaption not performed correctly - "1" not displayed in measured value block => Page 22 for navigation system with CD drive control unit -J401 - Open circuit in wiring or short circuit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 62 and enter correct adaption value => Page 50
01302 Telematic control unit - No communication	- Dash panel insert adaption not performed correctly - "1" not displayed in measured value block => Page 22 for telematics control unit -J499 - Open circuit in wiring or short circuit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 62 and enter correct adaption value => Page 50
01303 Telephone transmitter/receiver unit -R36 - No communication	- Dash panel insert adaption not performed correctly - "1" not displayed in measured value block => Page 22 for telephone transmitter and receiver unit -R36 - Open circuit in wiring or short circuit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 62 and enter correct adaption value => Page 50

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01304 Radio1) - No communication	- Dash panel insert adaption not performed correctly - "1" not displayed in measured value block => Page 22 for radio control unit -R - Open circuit in wiring or short circuit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 62 and enter correct adaption value => Page 50
01311 Data bus information - Defective - In one-wire operation	- Open circuit in wiring or short circuit at control unit/in information data bus - "1" not displayed in measured value block => Page 22 for control unit with CAN capability - Data bus only operating on one wire (may lead to EMC problems)	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 62 and enter correct adaption value => Page 51

Note:

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1)Only in conjunction with radio with CAN capability

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01312 Drive train data bus - Defective	- Open circuit in wiring or short circuit at control unit/in drive data bus - "1" not displayed in measured value block => Page 21 for drive data bus user	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 60 and enter correct adaption value => Page 46
01314 Engine control unit - No communication	- Dash panel insert adaption not performed correctly - Open circuit in wiring or short circuit - "1" not displayed in measured value block=>Page 21 for engine control unit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 60 and enter correct adaption value => Page 46



Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01315 Gearbox control unit1) - No communication	- Dash panel insert adaption not performed correctly - Open circuit in wiring or short circuit - "1" not displayed in measured value block=>Page 21 for gearbox control unit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 60 and enter correct adaption value => Page 46
01320 Control unit for Climatronic -J255 - No communication	- Dash panel insert adaption not performed correctly - Open circuit in wiring or short circuit - "1" not displayed in measured value block=>Page 21 for Climatronic control unit -J255	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 61 and enter correct adaption value => Page 48
01330 Convenience sys. central ctrl. unit -J393 - No communication	- Dash panel insert adaption not performed correctly - "1" not displayed in measured value block=>Page 22 for convenience system central control unit -J393 - Open circuit in wiring or short circuit	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 61 and enter correct adaption value => Page 48

Note:

1)With 1.2l TDI engine only

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01331 Door control unit driver's side -J386 - No communication - Power supply too low - Power supply too high - Defective	- Short circuit or open circuit in connectors or in the two data bus wires in the Group convenience data bus - Door control unit in emergency mode - Battery -A defective or flat - Alternator -C defective - Voltage regulator -C1 defective - Door control unit, driver's side - -J386 defective	- Use current flow diagram to check connectors and data bus wires in Group convenience data bus and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check communication with door control unit => Measured value block 017 (display zone 1) Interrogate control unit version; if door control unit no longer responds, check and if necessary replace unit Check supply voltage => Measured value block 016 (display zone 1) => Body Self-diagnosis; Repair Group 01; Convenience system self-diagnosis Front Door

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01332 Door control unit passenger side - J387 - No communication - Power supply too low - Power supply too high - Defective	- Short circuit or open circuit in connectors or in the two data bus wires in the Group convenience data bus - Door control unit in emergency mode - Battery -A defective or flat - Alternator -C defective - Voltage regulator -C1 defective - Door control unit, front passenger's side -J387 defective	- Use current flow diagram to check connectors and data bus wires in Group convenience data bus and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check communication with door control unit => Measured value block 017 (display zone 2) Interrogate control unit version; if door control unit no longer responds, check and if necessary replace unit Check supply voltage => Measured value block 016 (display zone 1) => Body Self-diagnosis; Repair Group 01; Convenience system self-diagnosis Front Door

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01333 Door control unit RL -J388 - No communication - Power supply too low - Power supply too high - Defective	- Short circuit or open circuit in connectors or in the two data bus wires in the Group convenience data bus - Door control unit in emergency mode - Battery -A defective or flat - Alternator -C defective - Voltage regulator -C1 defective - Door control unit, rear left -J388 defective	- Use current flow diagram to check connectors and data bus wires in Group convenience data bus and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check communication with door control unit => Measured value block 017 (display zone 3) Interrogate control unit version; if door control unit no longer responds, check and if necessary replace unit Check supply voltage => Measured value block 016 (display zone 1) => Body Self-diagnosis; Repair Group 01; Convenience system self-diagnosis Rear Door

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01334 Door control unit RR -J389 - No communication - Power supply too low - Power supply too high - Defective	- Short circuit or open circuit in connectors or in the two data bus wires in the Group convenience data bus - Door control unit in emergency mode - Battery -A defective or flat - Alternator -C defective - Voltage regulator -C1 defective - Door control unit, rear right -J389 defective	- Use current flow diagram to check connectors and data bus wires in Group convenience data bus and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check communication with door control unit => Measured value block 017 (display zone 4) Interrogate control unit version; if door control unit no longer responds, check and if necessary replace unit Check supply voltage => Measured value block 016 (display zone 1) => Body Self-diagnosis; Repair Group 01; Convenience system self-diagnosis Rear Door



Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01336 Group convenience data bus - Defective - In one-wire operation	- Open circuit in wiring or short circuit at control unit/in Group convenience data bus - "1" not displayed in measured value block => Page 21 for Group convenience data bus user - Data bus only operating on one wire (may lead to EMC problems)	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 61 and enter correct adaption value => Page 51
65535 Control unit defective	Dash panel insert defective Protected by copyright. Copying for private or commercial purposes is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copying by AUDI AG.	- Replace dash panel insert => Electrical System; Repair Group 90; Dash panel insert; Removing and installing dash panel insert Dash panel insert; Removing and installing dash panel insert

Power steering faults (via address word "17")

Note:

Power steering diagnosis is performed by the dash panel insert. Power steering fault entries are stored in the dash panel insert fault memory. Fault table can be found in Running Gear Self-diagnosis Workshop Manual.

=> Running Gear Self-diagnosis for ESP, Steering; Repair Group 01; Steering fault table Steering fault table

1.7 - Final control diagnosis

Notes:

- Final control diagnosis can only be performed with vehicle stationary and engine stopped.
- If final control diagnosis detects a fault, locate cause of problem if necessary and replace dash panel insert.

"Final control diagnosis" function consecutively actuates all control elements of dash panel insert (if fitted/encoded):

- Simultaneous parallel run-through of display range of all analog instruments (coolant temperature gauge, rev counter, speedometer, fuel gauge)
- Actuation of warning lamps
- Actuation of seat belt warning lamp
- Actuation of gong
- Segment test for multifunction display, clock/date LCD and mileage counter/trip recorder LCD
- Testing of dash panel insert illumination and dimming

Note:

Test can only be performed with lighting on.

Implementing final control diagnosis function:

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 0 and 3 to select "Final control diagnosis" function.

-> Indicated on display:

Rapid data transfer Q
03 - Final control diagnosis

- Confirm entry with Q key.
Final control diagnosis for analog displays starts immediately.

-> Indicated on display:

Final control diagnosis
Analog displays

The following tests are implemented simultaneously:

- ◆ Passage of coolant temperature gauge needle through entire display range
- ◆ Passage of rev counter needle through entire display range
- ◆ Passage of speedometer needle through entire display range
- ◆ Passage of fuel gauge needle through entire display range

The following fixed values are displayed on completion of the above process:

Coolant temperature gauge:	90 ° C
Rev counter:	3000 rpm
Speedometer:	100 km/h
Fuel gauge:	1/2

Note:

Started run-up of pointer is terminated every time ignition is switched on and off.

- Press ⇒ key.

-> Indicated on display:

Final control diagnosis
Dash panel insert warning lamp test

All lamps actuated by the processor are switched on.

- Press ⇒ key.

-> Indicated on display:

Final control diagnosis
Seat belt warning system warning lamp - K19

Seat belt warning system warning lamp is actuated.

Note:

Seat belt warning system warning lamp is only activated by way of control unit encoding in USA and Canada, i.e. this control element test does not apply to versions for other countries.

- Press ⇒ key.

-> Indicated on display:

Final control diagnosis
Gong

Gong is actuated and sounds continuously.

- Press ⇒ key.

-> Indicated on display:

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Final control diagnosis
Segment test

All elements of multifunction display, clock/date LCD and mileage counter/trip recorder LCD are actuated.

- Press ⇒ key.

-> Indicated on display:

Final control diagnosis
Illumination/switches and instruments

Dash panel insert illumination is automatically brightened and dimmed twice and then set to maximum illumination (bright).

- Press ⇒ key.

-> Indicated on display:

Final control diagnosis
END

- Press ⇒ key to terminate final control diagnosis.

Tester returns to basic function.

-> Indicated on display:

Rapid data transfer HELP
Select function XX

1.8 - Erasing fault memory

Note:

If fault memory cannot be erased, interrogate fault memory again and eliminate fault.

Requirements:

- ♦ Fault memory interrogated =>Page 5
- ♦ All faults eliminated

After fault memory interrogation:

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 5 to select "Erasing fault memory" function.

-> Indicated on display:

Rapid data transfer Q
05 - Erasing fault memory

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer
Fault memory erased

Fault memory has now been erased.



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- Press ➔ key.

-> Indicated on display:

Rapid data transfer Select function XX	HELP
---	------

Notes:

⚠ Attention: Fault memory not interrogated
--

-> Test sequence has not been correctly implemented if adjacent display appears.

⚠ Attention: Fault memory not interrogated
--

-> Test sequence has not been correctly implemented if adjacent display appears.

Keep exactly to test sequence: Interrogate fault memory first, eliminate any faults and then erase fault memory.

1.9 - End of output

-> Indicated on display:

Rapid data transfer Select function XX	HELP
---	------

- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer 06 - End of output	Q
---	---

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer Enter address word XX	HELP
--	------

- Switch off ignition.
- Unplug connectors to fault reader V.A.G 1551.

1.10 - Encoding control unit

This function can be used to encode dash panel insert as follows:

- ◆ Optional extras
- ◆ Country versions
- ◆ Number of cylinders
- ◆ Engine versions

Notes:

- ◆ The encoding function sets the various on-board computer combination possibilities in line with equipment, country version, number of cylinders and type of engine.



- ♦ The encoding table only lists the possible combinations applying to the Audi A2.

Implementing encoding function

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 7 to select "Encoding control unit" function.
- Confirm entry with Q key.

-> Indicated on display:

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

- Enter code number in line with encoding table
=> Page 14. Example: 05142

05	1.4 l petrol engine (02T gearbox) with 34l tank
1	RoW/Left-hand drive
4	4-cyl.
2	Petrol engine

Encoding control unit Q
Enter code number 05142 (0-32000)

- > Indicated on display:
- Confirm entry with Q key.

-> Indicated on display:

8Z0920930A W1-DASH PANEL INSERT VDO
D05 "
Code 05142 WSC 06812

- Press ⇒ key.

-> Indicated on display:

WAUZZZ8ZZ1N000518 AUZ7Z0Y1340403

- ♦ WAUZZZ8ZZ1N000518: 17-position vehicle identification no. (chassis number)
- ♦ AUZ7Z0Y1340403: 14-position identification number of immobilizer control unit
- Conclude encoding by pressing ⇒ key.

Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 6.

Indicated on display:

Rapid data transfer Q
06 - End of output

- Confirm entry with Q key.

Encoding table:

XX	Optional extra/gearbox version
----	--------------------------------

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00	20l tank - 1.2l TDI engine - 085 Direct-shift
01	gearbox
02	34l tank
04	Seat belt warning active
08	1.4l petrol engine - 02T gearbox 1.4l TDI engine - 02J gearbox
X	Country version
0	Germany (D)
1	RoW/Left-hand drive
2	USA (US)
3	Canada (CDN)
4	Great Britain (GB)
5	Japan (JP)
6	Saudi Arabia (SA)
7	Australia (AUS)
8	RoW/Right-hand drive
9	JP/Right-hand drive
X	Number of cylinders
3	3-cyl.
4	4-cyl.
X	Engine versions
0	TDI engine
2	Petrol engine
5	1.2l TDI engine

Notes:

- ♦ Encoding of optional extras/gearbox versions is also possible for several combinations, depending on vehicle equipment.
- ♦ If a vehicle is fitted with several encodable optional extras and/or gearbox versions, the code is to be entered as the sum of the individual code numbers.

Example:

- 34l tank and 02T gearbox = 01 + 04 = 05

1.11 - Reading measured value block

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Implementing "Reading measured value block" function

-> Indicated on display:

Rapid data transfer **HELP**
 Select function XX

- Press keys 0 and 8 to select "Reading measured value block" function.
- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer **Q**
 08 - Reading measured value block

- Confirm entry with Q key.

-> Indicated on display:

Reading measured value block
 Enter display group number XXX

- Enter display group number (from table => Page **16**) and confirm with Q key.



The measured value block selected is then displayed in standardised form.

List of display groups

Display group number	Indicated on display
001	1 = Vehicle speed 2 = Engine speed 3 = Oil-pressure switch (1.2 bar) 4 = Time h
002	1 = Mileage counter 2 = Fuel gauge 3 = Fuel gauge sender 4 = Ambient temperature
003	1 = Coolant temperature 2 = Standing time terminal 15 (only with 1.2l TDI engine) 3 = Dimming signal 58d (only with 1.2l TDI engine) 4 = Dimming signal 58s (only with 1.2l TDI engine)

Display group number	Indicated on display
004	1 = Miles driven after service due 2 = Not used 3 = Not used 4 = Not used
010	1 = Channel 30 2 = Fuel gauge sender adaption 3 = Channel 9 4 = Input value for mileometer
011	1 = Channel 4 2 = Language version 3 = Channel 3 4 = Fuel consumption indicator
012	1 = Channel 40 2 = Mileage since service 3 = Channel 41 4 = Time since service

Display group number	Indicated on display
013	1 = Channel 42 2 = Min. value km 3 = Channel 43 4 = Max. value km
014	1 = Channel 44 2 = Max. time interval 3 = Not used 4 = Not used
015	1 = Channel 45 2 = Oil grade 3 = Channel 46 4 = Total consumption
016	1 = Channel 47 2 = Soot index 3 = Channel 48 4 = Thermal load

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Display group number	Indicated on display
050	1 = Mileage counter 2 = Engine speed 3 = Oil temperature 4 = Coolant temperature
125	1 = Engine 2 = Gearbox (only with 1.2l TDI engine) 3 = Not used 4 = Not used
126	1 = Air conditioner
130	1 = Not used 2 = Not used 3 = Convenience system central control unit 4 = Not used
140	1 = Radio (optional extra) 2 = Telephone (optional extra) 3 = Navigation (optional extra) 4 = Telematics (optional extra)

Notes:

- ◆ If dash panel insert is replaced, data from display groups 10...16 have to be printed out.
- ◆ Display always indicates actual sender and sensor values. The values displayed in the dash panel insert are filtered and may deviate slightly.
- ◆ If the actual coolant temperature is between approx. 80 °C and 100 °C, the dash panel insert always displays 90 °C.

Measured value block 001

Reading measured value block 1			⇒	◀ Indicated on display
50 km/h	2400 rpm	Oilp2<min	12: 20 h	
				Time
				Oil-pressure switch 2
				▪ Oilp.2 < min
				▪ Oilp.2 OK
				Engine speed
				▪ 0 ... 9990 rpm
				Vehicle speed
				▪ 0 ... 300 km/h

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Measured value block 002

Reading measured value block 2			⇒	◀ Indicated on display
2390 km	43 l	82 ohms	23.0 ° C	
				Ambient temperature
				▪ -40 ... +70 ° C
				Fuel gauge sender
				▪ approx. 54 ohms (empty) ... approx. 290 ohms (full)
				Fuel gauge
				▪ 0 ... 100 l



Value displayed by mileage counter

Measured value block 003

Reading measured value block 3			⇒	◀ Indicated on display
85.0 ° C	0:1 h	24 %	80 %	
			Dimming signal 58s Degree of illumination of controls (e.g. switches) (1.2l TDI engine only)	
			Dimming signal 58d Degree of illumination of displays (e.g. radio display) (1.2l TDI engine only)	
			Standing time terminal 15 (only with 1.2l TDI engine)	
Coolant temperature ▪ 50 ... 130 ° C				

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Measured valueblock 004

Reading measured value block 4			⇒	◀ Indicated on display
100 km				
			Miles driven after service due	

Measured value block 010

Reading measured value block 10			⇒	◀ Indicated on display
Channel 30	128	Channel 9	239 km	
			Input value for mileometer adaption	
			Adaption channel for mileometer	
			Factory-set adaption value	
			Adaption channel for fuel gauge sender resistance range	

Note:

If customer complaint has resulted in value of "128" in display zone 2 being changed, altered value must be adopted on dash panel insert replacement.

Measured value block 011

Reading measured value block 11		⇒	◀ Indicated on display
---------------------------------	--	---	------------------------

Channel 4	2	Channel 3	100	
				Factory-set adaption value
				Adaption channel for fuel consumption indicator
				Language selected ▪ Input value for language => Page 27
				Adaption channel for language versions of multifunction display

Note:

If customer complaint has resulted in value of "100" in display zone 4 being changed, altered value must be adopted on dash panel insert replacement.

Measured value block 012

Reading measured value block 12				⇒	▪ Indicated on display
Channel 40	8	Channel 41	10		
					Elapsed time ▪ e.g. 10 = 10 days
					Adaption channel for time since service
					Miles driven ▪ 8 = 800 km
					Adaption channel for number of miles driven since service

Measured value block 013

Reading measured value block 13				⇒	▪ Indicated on display
Channel 42	15	Channel 43	30		
					Maximum mileage in km ▪ 30 = 30000 km1)
					Adaption channel for max. mileage in km
					Minimum mileage in km ▪ 15 = 15000 km1)
					Adaption channel for min. mileage in km

Note:

1) Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

Measured value block 014

Reading measured value block 14				⇒	▪ Indicated on display
Channel 44		730			



		Max. time interval ▪ 730 = 730 days/2 years ¹⁾
	Adaption channel for max. time interval	

Note:

1) Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

Measured value block 015

Reading measured value block 15			⇒	▪ Indicated on display
Channel 45	1	Channel 46	300	
			Total consumption ▪ 300 = 300 litres	
			Adaption channel for total consumption (petrol engine only)	
			Oil grade ▪ Entries between 1 and 4 are possible 1)	
Adaption channel for oil grade				

Notes:

- ♦ 1) Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

- ♦ Oil grade must always be re-adapted following service.

Measured value block 016

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Reading measured value block 16				⇒	▪ Indicated on display
Channel 47	400	Channel 48	500		
			Thermal load		
			Adaption channel for thermal load (diesel engine only)		
			Soot index		
Adaption channel for soot index (diesel engine only)					

Measured value block 050

Reading measured value block 50		⇒	▪ Indicated on display
2390 km	2400 rpm	99 ° C	85.0 ° C
			Coolant temperature ▪ 50 ... 130 ° C
		Oil temperature	

	Engine speed ▪ 0 ... 9990 rpm
Value displayed by mileage counter	

Measured value block 125

Reading measured value block 125		⇒	◀ Indicated on display
Engine 1	Gearbox 11)		
Gearbox display zone for drive data bus link ▪ 1 - Signifies that gearbox control unit is a drive data bus user ▪ Empty display zone signifies that gearbox control unit is not a drive data bus user			
Engine display zone for drive data bus link ▪ 1 - Signifies that engine control unit is a drive data bus user ▪ Empty display zone signifies that engine control unit is not a drive data bus user			

Note:

1) With 1.2l TDI engine only

Measured value block 1261)

Reading measured value block 131		Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.	⇒	◀ Indicated on display
AC 1				
Air conditioner display zone for drive data bus link ▪ 1 - Signifies that air conditioner control unit is a drive data bus user ▪ Empty display zone signifies that air conditioner control unit is not a drive data bus user				

Note:

1) Measured value block 126 will only be used to display air conditioner (Group convenience data bus user => Table, Page 46), which does not at present appear in any measured value block, will then be displayed as of calendar week 18/01 in measured value block 126 and the air conditioner will be output in measured value block 131.

Measured value block 130

Reading measured value block 130		⇒	◀ Indicated on display
Central 1			



		Convenience system central control unit display zone for Group convenience data bus link ▪ 1 - Signifies that convenience system central control unit is a Group convenience data bus user ▪ Empty display zone signifies that convenience system central control unit is not a Group convenience data bus user
--	--	---

Measured value block 140

Reading measured value block 140 ⇒			▪ Indicated on display
		Telematics display zone for information data bus link ▪ 1 - Signifies that telematics control unit is an information data bus user ▪ Empty display zone signifies that telematics control unit is not an information data bus user	
		Navigation display zone for information data bus link ▪ 1 - Signifies that navigation control unit is an information data bus user ▪ Empty display zone signifies that navigation control unit is not an information data bus user	
		Telephone display zone for information data bus link ▪ 1 - Signifies that telephone control unit is an information data bus user ▪ Empty display zone signifies that telephone control unit is not an information data bus user	
		Radio display zone for information data bus link ▪ 1 - Signifies that radio control unit is an information data bus user ▪ Empty display zone signifies that radio control unit is not an information data bus user	

1.12 - Adaption

The individual functions are called up by way of the appropriate adaption channel number (refer to adaption table => Page 22).

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Notes:

- ♦ Prior to replacement, the measured value blocks 10, 11, 12, 15 and 16 can be used to read out the values to be adopted for the new dash panel insert.
- ♦ On dash panel insert replacement, adaption channels 42, 43 and 44 (refer to measured value blocks 13 and 14 => Pages 20).
- ♦ Adaption channels 60, 61 and 62 are only required if the dash panel insert communicates with the respective bus system.

Adaption table

Adaption channel	Adaption function
02	Resetting of service display following service => Page 23
03	Adaption of fuel consumption indicator => Page 25
04	Language versions of multifunction display => Page 27

Adaption channel	Adaption function
09	Mileometer => Page 29
18	Adaption of auxiliary heater => Page 30
19	Adaption of radio clock/ambient temperature => Page 31
30	Adaption of fuel gauge sender resistance range => Page 33
35	Adaption of engine speed level => Page 34
40	Adaption for number of miles driven since service => Page 35
41	Adaption for time since service => Page 36
42	Adaption for min. mileage in km => Page 37
43	Adaption for max. mileage in km => Page 38
44	Adaption for max. time interval => Page 40
45	Adaption for oil grade => Page 41

Adaption channel	Adaption function
46	Adaption for total consumption (petrol engines only) => Page 42
47	Adaption for soot index (diesel engines only) => Page 43
48	Adaption for thermal load (diesel engines only) => Page 44
60	Drive data bus adaption => Page 45
61	Group convenience data bus adaption => Page 47
62	Information data bus adaption => Page 49

Implementing function "10 - Adaption"

-> Indicated on display:

Rapid data transfer HELP
Select function XX

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- Press keys 1 and 0 to select "Adaption" function.
- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer Q
10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Enter desired adaption channel (adaption table => Page 22).
- Confirm entry with Q key.

Note:

After changing adaption value/following termination of an adaption channel, function "10 - Adaption" must be implemented again to select a different adaption channel.

Resetting of service display following service

-> Indicated on display:

Rapid data transfer HELP
Select function XX



- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer Q
10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 0 and 2.
- Confirm entry with Q key.

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- ♦ The service display is designed to remind drivers that service is due. The display appears in the centre display.
- ♦ The service prompt appears as of 1 month/2000 km before reaching service limit. The resolution is 100 km.
Display example:
"SERVICE IN 1300 KM" is displayed after a total mileage of 13700 km.
- ♦ The remaining mileage prior to service can be called up by way of the menu in the centre display by pressing the clock adjuster button once.
- ♦ When service is due, a corresponding message appears on the centre display for 5s after switching on ignition.
It is displayed after the automatic gearbox info and after entering destination for navigation system where appropriate. Message: "SERVICE!"
- ♦ Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

- ♦ Data level of dash panel insert => Page 4 .
- ♦ Channels 40, 41, 46, 47 and 48, which display dynamic service values, are set automatically to "0".

-> Indicated on display:

Display shows service status

Channel 2 Adaption 1
(- 1 3-L

1 - Signifies service active
i.e. "SERVICE!" is displayed on dash panel insert

- Press => key.

-> Indicated on display:

Channel 2 Adaption 1
Enter adaption value XXXXX

Service is reset by the following adaption value:

Adaption value	Service status
00000	Reset

- Use keypad to enter appropriate adaption value (00000) to reset service.
- Press key 0 five times.

-> Indicated on display:

Channel 2 Adaption 1 Q
Enter adaption value 00000

- Confirm entry with Q key.

-> Indicated on display:

Channel	2	Adaption	0	Q
(- 1	3-L			

0 - Signifies service reset
i.e. following confirmation with Q key, dash panel insert displays "SERVICE IN 15000 KM"

Note:

15000 km is the initial value for the service display. -Conversion to higher mileage (e.g. 30000 km for petrol engine) is performed during vehicle operation.-

- Confirm entry with Q key.

-> Indicated on display:

Channel	2	Adaption	0	Q
Store altered value?				

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- Confirm entry with Q key.

-> Indicated on display:

Channel	2	Adaption	0
Altered value stored			

- Conclude service display reset by pressing =>key.

Adaption of fuel consumption indicator

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 0 and 3.
- Confirm entry with Q key.

Notes:

- ◆ Adaption function only applies to vehicles with on-board computer.
- ◆ It is only possible to make entries between 85% and 115%.
- ◆ Entries must be made in 5% steps.
- ◆ If customer complaint has resulted in value of "100" being changed, altered value has to be entered in new dash panel insert.

-> Indicated on display:

Channel	3	Adaption	100
Fuel consumption indicator	(- 1		
3-L			



- Press ⇒ key.

Note:

Fuel consumption indicator can only be corrected by way of a direct input.

-> Indicated on display:

Channel	3	Adaption	100
Enter adaption value XXXXX			

- Enter desired correction value via fault reader keypad, using "0" for leading positions.

Example:

Desired input: 90%

Keypad entry: 00090

-> Indicated on display:

Channel	3	Adaption	100	Q
Enter adaption value 00090				

- Confirm entry with Q key.

-> Indicated on display:

Channel	3	Adaption	90	Q
Fuel consumption indicator (- 1 3-L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	3	Adaption	90	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	3	Adaption	90
Altered value stored			

- Conclude fuel consumption indicator adaption by pressing ⇒key.

-> Indicated on display:

Rapid data transfer		HELP
Select function XX		

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

Note:

Incorrect entry causes tester to switch to function mode.

-> Indicated on display:

Function unknown or cannot be implemented at present	
--	--

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- Press ⇒ key.
- Select function "10 - Adaption" and adaption channel 03 again.
- Perform fuel consumption indicator correction again.

Language versions of multifunction monitor

-> Indicated on display:

Rapid data transfer HELP Select function XX

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer Q 10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption Enter channel number XX

- Press keys 0 and 4.
- Confirm entry with Q key.

-> Indicated on display:

Channel 4 Adaption 1 Language (- 1 3-L
--

Notes:

- ♦ The display only shows the last digit of the five-position language version code, e.g. 1 for German.
- ♦ If an incorrect value is entered, "Adaption" function is terminated and function "10 - Adaption" must be re-started.
- ♦ Fault reader keypad can then be used for incrementing/decrementing or direct code entry.

Encoding table

Code	Language version
00001	German
00002	English
00003	French
00004	Italian
00005	Spanish
00006	Portuguese
00007	Not used
00008	Chinese

Incrementing/decrementing:

- Keys 1/3 can be used to decrement/increment code e.g. to 2 for English.

-> Indicated on display:

Channel 4 Adaption 2 Q Language (- 1 3-L

- Confirm entry with Q key.

-> Indicated on display:

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Channel	4	Adaption	2	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	4	Adaption	2
Altered value stored			

- Conclude language version adaption by pressing ⇒key.

Direct entry:

-> Indicated on display:

Channel	4	Adaption	1
Language	(- 1	3-L	

- Press ⇒ key.

-> Indicated on display:

Channel	4	Adaption	1
Enter adaption value XXXXX			

- Use keypad to enter desired five-digit code => Page 27 .

Example:

Code: 2 (English)

Input: 00002

- Confirm entry with Q key.

-> Indicated on display:

Channel	4	Adaption	1	Q
Enter adaption value 00002				

- Confirm entry with Q key.

-> Indicated on display:

Channel	4	Adaption	2	Q
Language	(- 1	3-L		

- Confirm entry with Q key.

-> Indicated on display:

Channel	4	Adaption	2	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	4	Adaption	2
Altered value stored			

- Conclude language version adaption by pressing ⇒key.



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Mileometer

This function can be used to update the mileage counter display on dash panel insert replacement.

Notes:

- ◆ Adaption is only possible for dash panel inserts with a mileage of up to max. 100 km.
- ◆ Adaption can only be performed once for a given dash panel insert.
- ◆ It is only possible to enter a higher adaption value (greater than 100 km).
- ◆ Confirmed incorrect entries cannot be corrected. Dash panel insert then has to be replaced with a new one.
- ◆ Adaption can be implemented in miles for countries using mph speedometers.
- ◆ If dash panel insert is replaced, heed information given on => Page 50 .

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 1 to select "Login procedure" function.

-> Indicated on display:

Rapid data transfer	Q
11 - Login procedure	

- Confirm entry with Q key.

-> Indicated on display:

Login procedure	
Enter code number	XXXXX

Enter code number 13861.

-> Indicated on display:

Login procedure	
Enter code number	Q 13861

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption	
Enter channel number	XX

- Press keys 0 and 9.
- Confirm entry with Q key.

-> Indicated on display:

Channel	9	Adaption	0
Mileage in 10 km	(- 1		3-L

**Note:**

Only direct entry using fault reader V.A.G 1551 keypad is possible.

- Press ➡ key to select next step in program sequence.

-> Indicated on display:

Channel	9	Adaption	0	Q
Enter adaption value XXXXX				

- Use keypad to enter adaption value (refer to measured value block 10 => Page 18).

Example:

Mileage = 89627

0 8 9 6 3

X				Hundred thousands: 100000 ... 655350 km
	X			Ten thousands: 10000 ... 90000 km
		X		Thousands: 1000 ... 9000 km
			X	Hundreds: 100 ... 900 km
			X	Tens: 10 ... 90 km
				Units: Round up to nearest ten

-> Indicated on display:

Channel	9	Adaption	0	Q
Enter adaption value 08963				

- Confirm entry with Q key.

-> Indicated on display:

Channel	9	Adaption	8963	Q
Mileage in 10 km (- 1 3-L)				

- Confirm entry with Q key.

-> Indicated on display:

Channel	9	Adaption	8963	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	9	Adaption	8963
☐ Altered value stored			

- Conclude mileometer adaption by pressing ➡ key.

Adaption of auxiliary heater

-> Indicated on display:

Rapid data transfer		HELP
Select function XX		

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

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Rapid data transfer Q
 10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
 Enter channel number XX

- Press keys 1 and 8.
- Confirm entry with Q key.

Channel 18 Adaption 0
 (- 1 3-L

-> Indicated on display:
 Display shows adaption value, in this case e.g. 0.

Notes:

- ◆ Adaption value "0" (first position from right) is entered if there is no auxiliary heater fitted. -Display XXXX0-
- ◆ Adaption value "1" (first position from right) is entered if auxiliary heater has been fitted. -Display XXXX1-
- ◆ Adaption value "2" (first position from right) is entered if vehicle has been fitted with an auxiliary heater which is deactivated after switching off engine. -Display XXXX2-

- Press ⇒ key.

Channel 18 Adaption 0
 Enter adaption value XXXXX

-> Indicated on display:

- Enter adaption value via keypad, using "0" for leading positions, e.g. 00001.

Channel 18 Adaption 0 Q
 Enter adaption value 00001

-> Indicated on display:

- Confirm entry with Q key.

Channel 18 Adaption 1 Q
 (- 1 3-L

-> Indicated on display:

- Confirm entry with Q key.

Channel 18 Adaption 1 Q
 Store altered value?

-> Indicated on display:

- Confirm entry with Q key.

Channel 18 Adaption 1
 Altered value stored

-> Indicated on display:

- Conclude auxiliary heater adaption by pressing ⇒ key.

Adaption of radio clock/ambient temperature

Notes on adaption of radio clock:

- ◆ The Audi A2 does not feature a radio clock at present. The radio clock status must therefore be set to "not active" in channel 19 by entering adaption value "0" in first position from right.
 -Display XXXX0-
- ◆ Adaption value "1" is to be entered in first position from right if radio clock is active.
 -Display XXXX1-

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**Notes on adaption of ambient temperature gauge (midline only):**

- ♦ Adaption value "1" is to be entered in second position from right if ambient temperature gauge is active (display and illumination on, as well as info and processing for other systems via data bus).
-Display XXX1X-
- ♦ Adaption value "0" is to be entered in second position from right if ambient temperature gauge is not active (no display and illumination off, as well as no info and processing for other systems via data bus).
-Display XXX0X-
- ♦ Adaption value "2" is to be entered in second position from right if ambient temperature gauge is partially active (no display and illumination off, however info and processing for other systems via data bus).
-Display XXX2X-

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key

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-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 1 and 9.
- Confirm entry with Q key.

Channel	19	Adaption	10
(- 1	3-L		

-> Indicated on display:

Display shows adaption value, in this case 10.

- Press => key.

Channel	19	Adaption	10
Enter adaption value	XXXXX		

-> Indicated on display:

- Enter adaption value via keypad, using "0" for leading positions; current specification: 00010

Channel	19	Adaption	10	Q
Enter adaption value	00010			

-> Indicated on display:

- Confirm entry with Q key.

Channel	19	Adaption	10	Q
(- 1	3-L			

-> Indicated on display:

- Confirm entry with Q key.

Channel	19	Adaption	10	Q
Store altered value?				

-> Indicated on display:

- Confirm entry with Q key.

Channel	19	Adaption	10
Altered value stored			

-> Indicated on display:

- Press => key to conclude adaption of radio clock/ambient temperature.

Adaption of fuel gauge sender resistance range

This function can be used to shift the resistance range of the fuel gauge sender if the dash panel insert display does not correspond to the actual tank capacity.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 3 and 0.
- Confirm entry with Q key.

Channel	30	Adaption	128
Fuel gauge sender		(- 1	3-L

-> Indicated on display:

Display shows adaption value, in this case e.g. 128.

Notes:

- ♦ The adaption value 128 represents the factory-set mean fuel gauge sender resistance range.
- ♦ The fuel gauge sender resistance can be changed by ± 8 to an adaption value of 120 ... 136.
- ♦ If customer complaint has resulted in value of "128" being changed, altered value has to be entered in new dash panel insert.

- Press $\Rightarrow$ key.

Channel	30	Adaption	128
Enter adaption value XXXXX			

-> Indicated on display:

- Enter desired correction value via fault reader keypad, using "0" for leading positions and then observe effect on display.

Example:

Desired input: 132

Keypad entry: 00132

Channel	30	Adaption	128	Q
Enter adaption value 00132				

-> Indicated on display:

- Confirm entry with Q key.

Channel	30	Adaption	132	Q
Fuel gauge sender		(- 1	3-L	

-> Indicated on display:

- Confirm entry with Q key.

Channel	30	Adaption	132	Q
Store altered value?				

-> Indicated on display:



- Confirm entry with Q key.

Channel	30	Adaption	132
Altered value stored			

-> Indicated on display:

- Conclude adaption of fuel gauge sender resistance range by pressing ⇒ key.

Adaption of engine speed level

This function can be used to influence the offset value for engine speed level of the dynamic oil-pressure warning system.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 3 and 5.
- Confirm entry with Q key.

Channel	35	Adaption	0
(- 1 3-L			

-> Indicated on display:

Display shows adaption value, in this case e.g. 0.

Notes:

- ♦ Adaption value 0 corresponds to factory-set oil-pressure warning if oil pressure drops below 1.2 bar at an engine speed of 1500 rpm.
- ♦ Adaption can be performed in four steps (0 - 1000).
- ♦ The adaption value "250" changes the engine speed level to 1750 rpm.
- ♦ If customer complaint has resulted in value of "0" being changed, altered value has to be entered in new dash panel insert.

- Press ⇒ key.

Channel	35	Adaption	0
Enter adaption value XXXXX			

-> Indicated on display:

- Enter desired value via keypad, using "0" for leading positions, e.g. 00250.

Channel	35	Adaption	0	Q
Enter adaption value 00250				

-> Indicated on display:

- Confirm entry with Q key.

Channel	35	Adaption	250	Q
(- 1 3-L				

-> Indicated on display:

- Confirm entry with Q key.

Channel	35	Adaption	250	Q
Store altered value?				



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- > Indicated on display:
- Confirm entry with Q key.

Channel 35	Adaption 250
Altered value stored	

- > Indicated on display:
- Press ⇒ key to conclude adaption of engine speed level.

Miles driven since service

This function can be used to enter the number of miles driven in km since last service.

- > Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

- > Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

- > Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 0.
- Confirm entry with Q key.

- > Indicated on display:

Display shows mileage in km since last service (in this case e.g. 8, corresponding to 800 km).

Channel 40	Adaption 8
Actual value Insp. in 100 km	(- 1
3-L	

Notes:

- ◆ The respective specification can only be entered in steps of 100 km; the display is thus also in 100 km.
- ◆ If dash panel insert is replaced, pay attention to information given on => Page 50.
- ◆ Fault reader keypad can only be used to make direct entries.
- ◆ Adaption can be implemented in miles for countries using mph speedometers.
- ◆ If an incorrect value is entered, "Adaption" function is terminated and must be re-started.

- Press ⇒ key.

- > Indicated on display:

Channel 40	Adaption
Enter adaption value XXXXX	

- Enter desired value via fault reader keypad, using "0" for leading positions.

Example:

Desired input: e.g. 1000 km

Keypad entry: 00010

- > Indicated on display:

Channel 40	Adaption 8	Q
Enter adaption value 00010		



- Confirm entry with Q key.

-> Indicated on display:

Channel	40	Adaption	10	Q
Actual value Insp. in 100 km		(- 1		
3-L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	40	Adaption	10	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	40	Adaption	10	
☐				
Altered value stored				

- Conclude adaption of miles driven since service by pressing ⇒ key.

Time since service

This function can be used to enter time in days since last service.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption	
Enter channel number XX	

- Press keys 4 and 1.
- Confirm entry with Q key.

Channel	41	Adaption	110	
Actual value Insp. in single days		(- 1		
3-L				

-> Indicated on display:

Display shows time in days since last service (in this case e.g. 110, corresponding to 110 days).

Notes:

- ♦ The respective specification can only be entered in one-day steps; the display is thus also in days.
- ♦ If dash panel insert is replaced, pay attention to information given on => Page 50 .
- ♦ Fault reader keypad can only be used to make direct entries.
- ♦ If an incorrect value is entered, "Adaption" function is terminated and must be re-started.

- Press ⇒ key.

Channel	41	Adaption	110	
Enter adaption value XXXXX				

-> Indicated on display:

- Enter desired value via fault reader keypad, using "0" for leading positions.

Example:

Desired input: e.g. 200 days

Keypad entry: 00200

Channel	41	Adaption	110	Q
Enter adaption value 00200				

-> Indicated on display:

- Confirm entry with Q key.

Channel	41	Adaption	200	Q
Actual value Insp. in single days (- 1 3-L				

-> Indicated on display:

- Confirm entry with Q key.

Channel	41	Adaption	200	Q
Store altered value?				

-> Indicated on display:

- Confirm entry with Q key.

Channel	41	Adaption	200	
Altered value stored				

-> Indicated on display:

- Conclude adaption of time since service by pressing => key.

Min. mileage in km

This function can be used to specify a minimum mileage in km for the service display in the dash panel insert.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 2.
- Confirm entry with Q key.

-> Indicated on display:

Display shows min. mileage in km prior to service (in this case e.g. 15, corresponding to 15000 km).

Channel	42	Adaption	15	
Min. value Oil in 1000 km (- 1 3-L				

Notes:

- ♦ Valid specifications can be found in "Maintenance" booklet.



=> Maintenance

- ♦ The respective specification can only be entered in steps of 1000 km; the display is thus also in 1000 km.
- ♦ Adaption can be implemented in miles for countries using mph speedometers.
- ♦ Fault reader keypad can only be used to make direct entries.
- ♦ If an incorrect value is entered, "Adaption" function is terminated and must be re-started.

- Press => key.

-> Indicated on display:

Channel	42	Adaption	15
Enter adaption value XXXXX			

- Enter specification via keypad, using "0" for leading positions.

Specification: 15000 km

Keypad entry: 00015

-> Indicated on display:

Channel	42	Adaption	15	Q
Enter adaption value 00015				

- Confirm entry with Q key.

-> Indicated on display:

Channel	42	Adaption	15	Q
Min. value Oil in 1000 km (- 1 3- L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	42	Adaption	15	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	42	Adaption	15
Altered value stored			

- Press => key to conclude adaption of min. mileage in km.

Max. mileage in km

This function can be used to specify a maximum mileage in km for the service display in the dash panel insert.

-> Indicated on display:

Rapid data transfer		HELP
Select function XX		

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption Enter channel number XX

- Press keys 4 and 3.
- Confirm entry with Q key.

-> Indicated on display:

Display shows max. mileage in km prior to service (in this case e.g. 30, corresponding to 30000 km).

Channel	43	Adaption	30
Max. value Oil in 1000 km	(- 1	3-	L

Notes:

- ◆ Adaption value entered for respective engine version must coincide with value in table => Page 1.
- ◆ Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

- ◆ The respective specification can only be entered in steps of 1000 km; the display is thus also in 1000 km.
- ◆ Adaption can be implemented in miles for countries using mph speedometers.
- ◆ Fault reader keypad can only be used to make direct entries.
- ◆ If an incorrect value is entered, "Adaption" function is terminated and must be re-started.

- Press ⇒ key.

-> Indicated on display:

Channel	43	Adaption	30
Enter adaption value XXXXX			

- Enter value via keypad, using "0" for leading positions.

Input: e.g. 30000 km

Keypad entry: 00030

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-> Indicated on display:

Channel	43	Adaption	30	Q
Enter adaption value 00030				

- Confirm entry with Q key.

-> Indicated on display:

Channel	43	Adaption	30	Q
Max. value Oil in 1000 km	(- 1	3-	L	

- Confirm entry with Q key.

-> Indicated on display:

Channel	43	Adaption	30	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	43	Adaption	30
Altered value stored			

- Press ⇒key to conclude adaption of max.



mileage in km.

Max. time interval

This function can be used to specify a maximum time in days for the service display in the dash panel insert.

-> Indicated on display:

```
Rapid data transfer      HELP
Select function XX
```

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

```
Rapid data transfer      Q
10 - Adaption
```

- Confirm entry with Q key.

-> Indicated on display:

```
Adaption
Enter channel number XX
```

- Press keys 4 and 4.
- Confirm entry with Q key.

```
Channel    44    Adaption    730
Max. value Insp. in single days (- 1
3-L
```

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-> Indicated on display:

Display shows max. time interval in days prior to service (in this case e.g. 730, corresponding to 730 days).

Notes:

- ♦ Adaption value entered for respective engine version must coincide with value in table => Page 1 .
- ♦ Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

- ♦ The respective specification can only be entered in one-day steps; the display is thus also in days.
- ♦ Fault reader keypad can only be used to make direct entries.
- ♦ If an incorrect value is entered, "Adaption" function is terminated and must be re-started.

- Press => key.

```
Channel    44    Adaption    730
Enter adaption value XXXXX
```

-> Indicated on display:

- Enter value via keypad, using "0" for leading positions.

Input: e.g. 730 days

Keypad entry: 00730

```
Channel 44    Adaption    730    Q
Enter adaption value 00730
```

-> Indicated on display:

- Confirm entry with Q key.

```
Channel    44    Adaption    730    Q
Max. value Insp. in single days (- 1
3-L
```

-> Indicated on display:

- Confirm entry with Q key.

```
Channel    44    Adaption    730    Q
Store altered value?
```

- > Indicated on display:
- Confirm entry with Q key.

Channel	44	Adaption	730
Altered value stored			

- > Indicated on display:
- Press ⇒ key to conclude adaption of max. time interval.

Adaption of oil grade

- > Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

- > Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

- > Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 5.
- Confirm entry with Q key.

Notes:

- ◆ Oil used must always be re-adapted following service..
- ◆ Adaption value can be set from 1-4. Each value 1-4 is linked to a max. mileage (channel 43) and a max. time (channel 44).
- ◆ Adaption value entered for respective engine version must coincide with value in table => Page 1 .
- ◆ Valid specifications can be found in "Maintenance" booklet.

=> Maintenance

- > Indicated on display:

Channel	45	Adaption	1
Oil grade	(- 1	3-L	

- Press ⇒ key.

- > Indicated on display:

Channel	45	Adaption	1
Enter adaption value XXXXX			

- Enter value via keypad, using "0" for leading positions.

Input: e.g. 2

Keypad entry: 00002

- > Indicated on display:

Channel	45	Adaption	1	Q
Enter adaption value 00002				

- Confirm entry with Q key.

- > Indicated on display:

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Channel 45	Adaption	2	Q
Oil grade	(- 1	3-L	

- Confirm entry with Q key.

-> Indicated on display:

Channel 45	Adaption	2	Q
Store altered value?			

- Confirm entry with Q key.

-> Indicated on display:

Channel 45	Adaption	2	
Altered value stored			

- Press ⇒ key to conclude adaption of oil grade.

Adaption of total consumption

Note:

This adaption channel is only used for vehicles with petrol engine.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 6.
- Confirm entry with Q key.

Notes:

- ♦ Value displayed must be adopted on replacing dash panel insert.
- ♦ The value given in litres does not represent the actual consumption, but rather an arithmetic value for the service display based on various items of engine data and mileage.

-> Indicated on display:

Channel 46	Adaption	300
Consumption in litre units	(- 1	
3-L		

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- Press ⇒ key.

-> Indicated on display:

Channel 46	Adaption	300
Enter adaption value XXXXX		

- Enter display value via fault reader keypad, using "0" for leading positions.

Desired input: 300 litres

Keypad entry: 00300

-> Indicated on display:

Channel	46	Adaption	300	Q
Enter adaption value 00300				

- Confirm entry with Q key.

-> Indicated on display:

Channel	46	Adaption	300	Q
Consumption in litre units (- 1 3-L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	46	Adaption	300
Q Store altered value?			

- Confirm entry with Q key.

-> Indicated on display:

Channel	46	Adaption	300
□ Altered value stored			

- Press ⇒ key to conclude adaption of total consumption.

Adaption for soot index

Note:

This adaption channel is only used for vehicles with diesel engine.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 7.
- Confirm entry with Q key.

Notes:

- ◆ Value displayed must be adopted on replacing dash panel insert.
- ◆ Value given represents a comparison value (0 - 600) for the service display.
- ◆ The value displayed is an arithmetic value for the amount of soot in the engine oil referenced to a distance of 100 km.

-> Indicated on display:

Display shows soot index.

Channel	47	Adaption	400
□ (- 1 3-L			



- Press ⇒ key.

-> Indicated on display:

Channel	47	Adaption	400
Enter adaption value XXXXX			

- Enter display value via fault reader keypad, using "0" for leading positions.

Desired input: 400

Keypad entry: 00400

-> Indicated on display:

Channel	47	Adaption	400	Q
Enter adaption value 00400				

- Confirm entry with Q key.

-> Indicated on display:

Channel	47	Adaption	400
Q			
Consumption in litre units (- 1			
3-L			

- Confirm entry with Q key.

-> Indicated on display:

Channel	47	Adaption	400
Q			
Store altered value?			

- Confirm entry with Q key.

-> Indicated on display:

Channel	47	Adaption	400
□			
Altered value stored			

- Press ⇒ key to conclude adaption for soot index.
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Adaption for thermal load

Note:

This adaption channel is only used for vehicles with diesel engine.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 4 and 8.
- Confirm entry with Q key.

Notes:

- ♦ Value displayed must be adopted on replacing dash panel insert.
- ♦ Value given represents a comparison value (0 - 600) for the service display.

- ♦ The value displayed is an arithmetic value for the thermal load in the engine oil referenced to a distance of 100 km.

-> Indicated on display:
Display shows thermal load.

Channel	48	Adaption	500	
(- 1 3-L				

- Press ⇒ key.

-> Indicated on display:

Channel	48	Adaption	500	
Enter adaption value XXXXX				

- Enter display value via fault reader keypad, using "0" for leading positions.

Desired input: 500

Keypad entry: 00500

-> Indicated on display:

Channel	48	Adaption	500	Q
Enter adaption value 00500				

- Confirm entry with Q key.

-> Indicated on display:

Channel	48	Adaption	500	
Q				
Consumption in litre units		(- 1		
3-L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	48	Adaption	500	
Q				
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	48	Adaption	500	
Altered value stored				

- Press ⇒ key to conclude adaption for thermal load.

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Drive data bus adaption

Notes:

- ♦ The adaption values from the table => Page 46 are entered.
- ♦ If dash panel insert is replaced, heed information given on => Page 50 .

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:



Rapid data transfer Q
10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 6 and 0.
- Confirm entry with Q key.

-> Indicated on display:

Channel 60 Adaption 1035
□
(- 1 3-L

- Press ⇒ key.

-> Indicated on display:

Channel 60 Adaption 1035
Enter adaption value XXXXX

- On the basis of the table => Page 46 enter desired value via fault reader keypad, using "0" for leading positions if necessary.

e.g. desired input: 1033 for 1.4l TDI engine=> Examples, Page 47

Keypad entry: 01033

-> Indicated on display:

Channel 60 Adaption 1035
Q
Enter adaption value 01033

- Confirm entry with Q key.

-> Indicated on display:

Channel 60 Adaption 1033
Q
(- 1 3-L

- Confirm entry with Q key.

-> Indicated on display:

Channel 60 Adaption 1033
Q
Store altered value?

- Confirm entry with Q key.

-> Indicated on display:

Channel 60 Adaption 1033
□
Altered value stored

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- Press ⇒ key to conclude adaption for drive data bus.

Table

Equipment	Adaption value
Engine	1
Gearbox	2

Equipment	Adaption value
Air conditioner	8
Dash panel insert	1024

The control units currently fitted in the Audi A2 which use the drive data bus (=> Measured value block, Page 21) are added together (addition of corresponding adaption values).

Note:

The dash panel insert, which features CAN capability, is not displayed in the measured value block, but must be added.

Examples:

1.2l TDI engine:

- Engine + Gearbox + Dash panel insert =
1 + 2 + 1024 = 1027
- Engine + Gearbox + Power steering + Dash panel insert =
1 + 2 + 8 + 1024 = 1035

1.4l TDI engine:

- Engine + Gearbox + Power steering =
1 + 8 + 1024 = 1033

1.4l petrol engine:

- Engine + Gearbox + Power steering =
1 + 8 + 1024 = 1033

Adaption for Group convenience data bus

Notes:

- ♦ The adaption values from the table => Page 48 are entered.
- ♦ If dash panel insert is replaced, pay attention to information given on => Page 50.

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer Q
 10 - Adaption

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- Confirm entry with Q key.

-> Indicated on display:

Adaption
 Enter channel number XX

- Press keys 6 and 1.
- Confirm entry with Q key.

-> Indicated on display:

Channel 61 Adaption 0
 (- 1 3-L



- Press ⇒ key.

-> Indicated on display:

```
Channel    61    Adaption    0
Enter adaption value XXXXX
```

- On the basis of the table ⇒ Page 48 enter desired value via fault reader keypad, using "0" for leading positions if necessary.

e.g. Desired input: 2306 for convenience system central control unit and air conditioner ⇒ Example, Page 48

Keypad entry: 02306

-> Indicated on display:

```
Channel    61    Adaption    0    Q
Enter adaption value    02306
```

- Confirm entry with Q key.

-> Indicated on display:

```
Channel    61    Adaption    2306
Q
(- 1    3-L
```

- Confirm entry with Q key.

-> Indicated on display:

```
Channel    61    Adaption    2306
Q
Store altered value?
```

- Confirm entry with Q key.

-> Indicated on display:

```
Channel    61    Adaption    2306
□
Altered value stored
```

- Press ⇒ key to conclude adaption for Group convenience data bus.

Table

Equipment	Adaption value
Convenience system central control unit	2
Dash panel insert	256
Air conditioner	2048

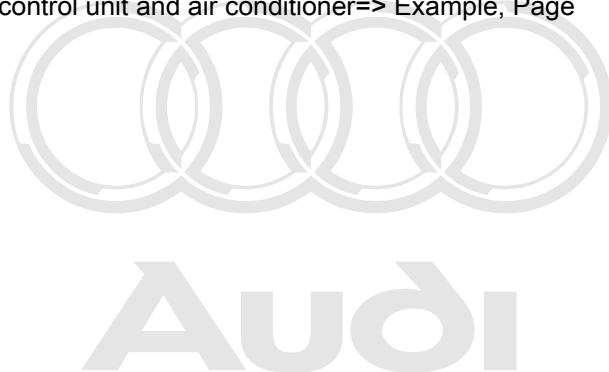
The control units currently fitted in the Audi A2 which use the Group convenience data bus (⇒ Measured value blocks, Page 21 are added together (addition of corresponding adaption values).

Note:

The dash panel insert, which features CAN capability, is not displayed in the measured value block, but must be added.

Example:

- Convenience system central control unit + Dash panel insert + Air conditioner = 2 + 256 + 2048 = 2306



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Adaption for information data bus

Notes:

- ♦ The adaption values from the table => Page 50 are entered.
- ♦ If dash panel insert is replaced, pay attention to information given on => Page 50 .

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 and confirm with Q key.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption	
Enter channel number XX	

- Press keys 6 and 2.
- Confirm entry with Q key.

-> Indicated on display:

Channel	62	Adaption	0
(- 1	3-L		

- Press => key.

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-> Indicated on display:

Channel	62	Adaption	0
Enter adaption value XXXXX			

- On the basis of the table => Page 50 enter desired value via fault reader keypad, using "0" for leading positions if necessary.

e.g. desired input: 5 for navigation system III with radio (symphony) => Example, Page 50

Keypad entry: 00005

-> Indicated on display:

Channel	62	Adaption	0	Q
Enter adaption value 00005				

- Confirm entry with Q key.

-> Indicated on display:

Channel	62	Adaption	5	Q
(- 1	3-L			

- Confirm entry with Q key.

-> Indicated on display:

Channel	62	Adaption	5	Q
Store altered value?				

- Confirm entry with Q key.



-> Indicated on display:

Channel	62	Adaption	5
Altered value stored			

- Press => key to conclude adaption for information data bus.

Table

Equipment	Adaption value
Radio (symphony only)	1
Telephone	2
Navigation	4
Telematics	8

The control units currently fitted in the Audi A2 which use the information data bus (=> Measured value block, Page 22) are added together (addition of corresponding adaption values).

Example:

- Radio + Navigation system = 1 + 4 = 5

1.13 - Values to be entered on replacing dash panel insert

The following items must always be heeded on replacing dash panel insert:

Notes:

- ♦ The dash panel insert is always to be encoded.
- ♦ Prior to replacement, note down values displayed by fault reader V.A.G 1551 in measured value blocks 10...16.
- ♦ Before replacing, note down display of mileage counter/mileometer input value in measured value block 10 (display zone 4) => Page 18 and enter when prompted.
- ♦ In countries using mph speedometers, adaption of service display and mileage counter can be implemented in miles.

Perform the following after replacing dash panel insert:

- Encode dash panel insert => Page 13

and

- Adaption of fuel consumption indicator => Page 25
(if fixed value changed)
- Language versions of multifunction display => Page 27
- Adaption of auxiliary heater => Page 30
- Adaption of radio clock/ambient temperature => Page 31
- Adaption of fuel gauge sender resistance range => Page 33
(if fixed value changed)
- Enter adaption for oil grade =>Page 41
- Enter adaption for max. mileage =>Page 38
- Enter adaption for max. time interval =>Page 40
- Adaption for miles driven since service => Page 35
- Adaption for time since service => Page 36
- Enter adaption for total consumption (petrol engine only)=>Page 42
- Enter adaption for soot index (diesel engine only) => Page 43
- Enter adaption for thermal load (diesel engine only) => Page 44
- Enter adaption for drive data bus => Page 45
- Enter adaption for Group convenience data bus => Page 47

- Enter adaption for information data bus => Page 49
- and
- Enter mileage => Page 29
- Perform adaption of immobilizer after replacing dash panel insert => Page 68
- Perform matching of vehicle keys=> Page 65

1.14 - Resetting of service display without V.A.G 1551/1552 following service

Attention:

Resetting without V.A.G 1551/1552 automatically sets service to a fixed interval value.

Service message must be reset after performing service.

Service display can be reset with fault reader V.A.G 1551 using "Adaption" function => Page 23 .

The service display can also be reset as follows:

- Switch off ignition.
- Press reset button for trip recorder in dash panel insert and at the same time switch on ignition.

The following display appears after releasing trip recorder button: "SERVICE IN ????KM" or "SERVICE!".

- Keep pressing clock adjuster button in dash panel insert until message is reset to "SERVICE IN ????KM" or "SERVICE!".

Display: "SERVICE IN 15000 KM"

- Switch off ignition.

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Notes:

- ◆ Channels 40, 41, 46, 47 and 48, which display dynamic service values, are set automatically to "0".
- ◆ Resetting without V.A.G 1551/1552 automatically sets service to a fixed interval (refer to table).

Channel 42 (min. mileage)	15000 km
Channel 43 (max. mileage)	15000 km
Channel 44 (max. time interval prior to service)	365 days
Channel 45 (Oil grade)	1

1.15 - Checking exchange of data between control units

Notes:

- ◆ Data are exchanged between the individual control units by means of a bus system.
- ◆ "CAN bus" is the term used to describe a data transfer and distribution system.
- ◆ The wires between the control units on which data are transmitted are referred to as signal wires.
- ◆ Data are transmitted serially on these signal wires to the connected control units.

Checking bus system

If fault table contains prompt for checking exchange of data on bus:

- Check for proper connection of multi-pin connectors of control units.
- Connect up vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 => Page 88 .
- Switch on ignition.
- Press Print key to switch on printer (lamp in key lights).
- Press key 1 for "Rapid data transfer".

-> Indicated on display:

Rapid data transfer HELP
Enter address word XX

Note:

Address word 00 implements automatic test sequence, i.e. the fault memories of all vehicle systems with self-diagnosis capability are interrogated by way of rapid data transfer.

If a control unit responds with its identification, the number of stored faults or "No faults detected" appears on the display.

Any stored system faults are consecutively displayed and printed out. V.A.G 1551 then transmits the next address word.

-> The automatic test sequence is over if the adjacent display appears.

V.A.G SELF-DIAGNOSIS HELP
1 - Rapid data transfer*
2 - Flash code output*

If a fault relating to "Data bus..." or "...no communication" is displayed:

- Check whether correct control units have been fitted for vehicle (part number and code).

Check CAN bus system if correct control units have been fitted.

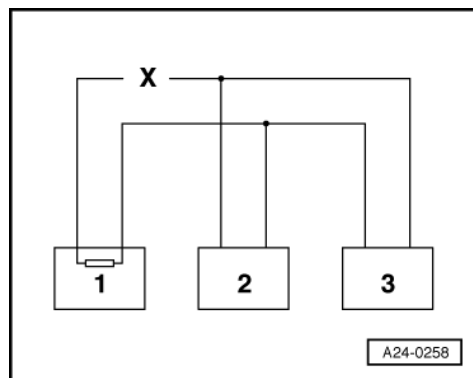
Testing "two-wire bus system"

Communication between three or more control units by way of a "two-wire bus system"

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- Assess faults stored in control units.

Assessment helps to localise wiring fault.



Example 1:

Faults entered in fault memories reveal that control unit 1 has no link with control units 2 and 3.

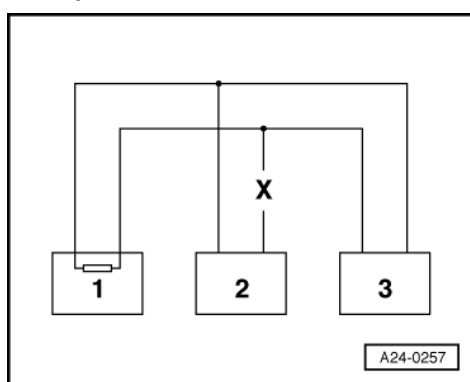
Control unit	Faults entered in fault memory
1	- No communication with control unit 2 - No communication with control unit 3
2	- No communication with control unit 1
3	- No communication with control unit 1

- Switch off ignition.
- Disconnect control units linked by bus wires and examine bus wires for open circuit.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

- Replace control unit 1 if no faults are found in bus wires.

Example 2:



Faults entered in fault memories reveal that control unit 2 has no link with control units 1 and 3.

Control unit	Faults entered in fault memory
1	- No communication with control unit 2
2	- No communication with control unit 1 - No communication with control unit 3
3	- No communication with control unit 2

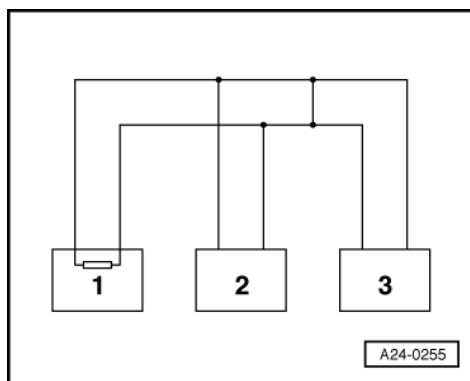
- Switch off ignition.
- Disconnect control units linked by bus wires and examine bus wires for open circuit.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

- Replace control unit 2 if no faults are found in bus wires.

Example 3:

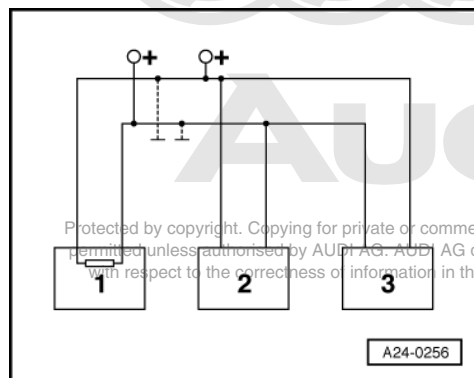
Faults entered in fault memory reveal that none of the control units can transmit or receive.



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Control unit	Faults entered in fault memory
1	- e.g. Drive data bus defective
2	- e.g. Drive data bus defective
3	- e.g. Drive data bus defective

- Switch off ignition.
- -> Disconnect control units linked by bus wires and examine bus wires for mutual short circuit.



=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

- -> Examine bus wires for short to positive/earth.

If cause of "Drive data bus defective" fault, for example, is not found in bus wires, check whether one of the control units is responsible for the problem.

All control units using CAN bus for communication still disconnected; ignition off.

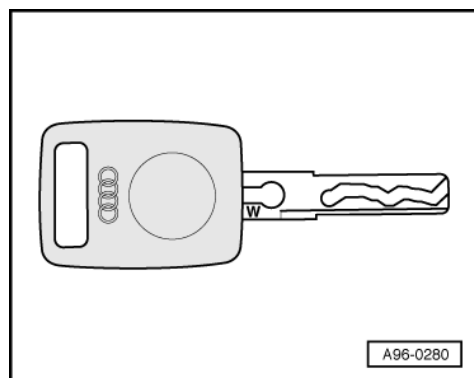
- Connect up one of the control units.
- Connect fault reader V.A.G 1551. Switch on ignition and erase fault memory of control unit just connected. Terminate output of fault reader with function 06 "End output".
- Switch ignition off and on again.
- Leave ignition switched on for 10 seconds. Then use fault reader to read out fault memory of control unit just connected.
- If fault "Drive data bus defective" is read out, replace control unit just connected.
- If fault "Drive data bus defective" is not read out, connect next control unit and repeat sequence.

2 - Immobilizer self-diagnosis - immobilizer III

2.1 - Immobilizer self-diagnosis - immobilizer III

Note:

The immobilizer III system actively incorporates the engine control unit into the evaluation and monitoring procedure. The immobilizer control unit is integrated into the dash panel insert.



-> With the immobilizer III the keys are marked with a "W". The code is made up of a fixed and a variable component.

2.2 - General

Measures for eliminating current, model-specific faults

=> Technical Service Handbook

Function

The immobilizer III consists of the following:

- ◆ Adapted immobilizer control unit (integrated into dash panel insert)
- ◆ Warning lamp in dash panel insert
- ◆ Reader coil at ignition lock
- ◆ Adapted engine control unit
- ◆ Adapted ignition keys with electronic components (transponder)

The electronic immobilizer control unit is an integral part of the dash panel insert, i.e. the dash panel insert has to be replaced in the event of a defective control unit.

=> Electrical System; Repair Group 90; Dash panel insert Dash panel insert

The immobilizer is a system designed to enable/disable the engine control unit (via CAN wire).

The transponder code consists of a fixed code and a variable code. This changes whenever the vehicle is started and thus prevents the transponder being copied.

Each immobilizer has a different arithmetic rule for the variable code, which remains the same over the entire service life. On vehicle key matching, the immobilizer writes this arithmetic rule into the key transponder and at the same time learns the respective transponder fixed code.

The fixed code identifies each individual key, thus enabling a lost key to be disabled. Whenever the ignition is switched on, the immobilizer reader coil reads out the fixed transponder code for the key and then the variable code and checks whether this key is authorised for starting.

The warning lamp lights briefly (max. 3 s) and then goes out if an authorised vehicle key is being used.

The warning lamp flashes continuously when the ignition is switched on if an unauthorised vehicle key is used or in the event of a system fault.

The electronic immobilizer is provided with comprehensive self-diagnosis. Fault codes are stored in the fault memory of the immobilizer if faults occur in system components. The faults can be determined using the vehicle diagnostic, testing and information system VAS 5051 or the fault reader V.A.G 1551/V.A.G 1552.

Note:

The following description relates exclusively to the fault reader V.A.G 1551.

Notes on use/matching of vehicle keys

The engine will only start if use is made of an authorised key, i.e. of a key matched to the immobilizer.

Vehicle key matching => Page 65 involves matching all vehicle keys, i.e. including spare and emergency keys, to the immobilizer.

Matching must be performed for all vehicle keys if new or additional keys are required.



If, for any reason, e.g. loss of keys en route, it is not possible to perform matching for all vehicle keys, customers are to be informed of the necessity of subsequent matching for all keys.

It is particularly important to re-match all the remaining vehicle keys if any have been lost to ensure that the lost key is no longer authorised to start the vehicle.

2.3 - Starting immobilizer self-diagnosis

Additional information material required

- ♦ Binder: "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations"
- ♦ Technical Service Handbook
- ♦ Parts List

2.4 - Safety precautions

Pay attention to the following if testers and measuring instruments have to be used in the course of a test drive:

Attention:

- ♦ Proceed as follows during measurement and test drives so as to avoid the risk of accident:
- ♦ Exclusive use is to be made for measured value block readout of VAS 5051 or V.A.G 1551, which is to be attached to rear seat and operated from there by a second person.

Heed the following so as to avoid possible injury and/or the destruction of electrical and electronic components:

- ♦ Switch off ignition before disconnecting and connecting measuring instruments and testers.
- ♦ Certain tests may lead to a fault being detected by the control unit and stored. The fault memory is therefore to be interrogated and if necessary erased on completion of all tests and repair work.
- ♦ Switch off ignition before disconnecting and connecting battery so as not to damage control units.

Test requirements:

- ♦ Use current flow diagram to check that fuse is OK.
- ♦ Connect up vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 => Page 88 .

Notes:

- ♦ If no display appears, use current flow diagram to check power supply for V.A.G 1551.
 - ♦ Additional operating instructions can be called up by pressing the fault reader HELP key.
 - ♦ Next step in program sequence can be selected by pressing ⇒ key.
 - ♦ Incorrect entries can be terminated by pressing C-key.
 - ♦ Function 00 "Automatic test sequence" can be implemented in mode 1 "Rapid data transfer". This involves automatic interrogation of all vehicle control units.
- Switch on ignition.
 - Switch on printer by pressing PRINT key (lamp in key lights).
 - Press key 1 for "Rapid data transfer" mode.

-> Indicated on display:

Rapid data transfer HELP
Enter address word XX

Address word for immobilizer: 17

Note:

The joint address word for the dash panel insert has to be used, as the immobilizer is an integral part of the dash panel insert.

- Press keys 1 and 7.

-> Indicated on display:

Rapid data transfer Q
17 - Dash panel insert

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0920930 W1-DASH PANEL INSERT VDO D03
Code 05042 WSC 06812

- 8Z0920930: Part number of dash panel insert (refer also to Parts List)
 - W1-DASH PANEL INSERT: Component designation
 - VDO: Manufacturer designation
 - D03: Software version of dash panel insert
 - Code 05042: Code for dash panel insert
 - WSC 06812: Workshop code
- Press ⇒ key.

-> Indicated on display:

WAUZZZ8ZZYN002341 AUZ7Z0X0590944

- ◆ WAUZZZ8ZZYN002341: 17-position vehicle identification no. (chassis number)
- ◆ AUZ7Z0X0590944: 14-position identification number of immobilizer control unit

- Press ⇒ key.

-> If one of the adjacent messages appears on the display, perform fault-finding in line with fault-finding program for diagnostic wire.

Rapid data transfer HELP
No control unit response

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

Rapid data transfer HELP
Fault in communication link

Rapid data transfer HELP
K-wire not switched to earth

Rapid data transfer HELP
K-wire not switched to positive

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Pressing HELP key prints out a list of possible functions.
- Press ⇒ key to select next step in program sequence.

Self-diagnosis functions

Possible functions:



01 - Interrogating control unit version => Page 58

02 - Interrogating fault memory => Page 59

05 - Erasing fault memory => Page 61

06 - End of output => Page 62

08 - Reading measured value block => Page 62

10 - Adaption=> Page 65

11 - Login procedure => Page 75

2.5 - Interrogating control unit version

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-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 0 and 1 to select "Interrogating control unit version" function.

-> Indicated on display:

Rapid data transfer	Q
01 - Interrogating control unit version	

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0920930	W1-DASH	PANEL	INSERT	VDO	D03
Code	05042	WSC	06812		

- 8Z0920930: Part number of dash panel insert (refer also to Parts List)
- W1-DASH PANEL INSERT: Component designation
- VDO: Manufacturer designation
- D03: Software version of dash panel insert
- Code 05042: Code for dash panel insert
- WSC 06812: Workshop code

- Press => key.

-> Indicated on display:

WAUZZZ8ZZYN002341	AUZ7Z0X0590944
-------------------	----------------

- ♦ WAUZZZ8ZZYN002341: 17-position vehicle identification no. (chassis number)
- ♦ AUZ7Z0X0590944: 14-position identification number of immobilizer control unit

- Press => key.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

2.6 - Interrogating fault memory

Note:

Fault information displayed is not updated constantly, but rather only on starting self-diagnosis/implementing function 05 "Erasing fault memory".

- Switch on printer by pressing PRINT key (lamp in key lights).

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 2 to select "Interrogating fault memory" function.

-> Indicated on display:

Rapid data transfer Q
02 - Interrogating fault memory

- Confirm entry with Q key.

-> The number of stored faults appears on the display.

X faults detected

The stored faults are consecutively displayed and printed out.

- Consult fault table with fault printed out and eliminate fault => Page 59 .

-> In the case of "No faults detected", program returns to start after pressing => key.

No faults detected

-> Indicated on display:

Rapid data transfer HELP
Select function XX

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If any other display appears:

=> Fault reader operating instructions

- End output (function 06) => Page 62 .
- Switch off ignition and unplug diagnostic connector.

2.7 - Immobilizer fault table:

Notes:

- ◆ Listed in the following in ascending order of 5-digit fault codes are all the faults which can be detected by the immobilizer and printed out on V.A.G 1551.
- ◆ Dash panel insert faults may also be displayed, as the immobilizer is an integral part of the dash panel insert.
- ◆ The fault code only appears on the printout.
- ◆ Before replacing components found to be defective, use current flow diagram to check wiring and connectors to these components as well as earth connections.
- ◆ On completion of repair work, always interrogate fault memory again with fault reader V.A.G 1551 and erase it.
- ◆ All static and sporadic faults are stored in the fault memory:
A fault is recognised as being static if it is present for at least 2 seconds. If a fault is then no longer present, it is stored as being sporadic and "/SP" appears on the right of the display.
- ◆ After switching on ignition, all faults present are set to sporadic and only stored as being static if they are still present after checking.



- ♦ Sporadic faults are erased if they do not re-occur in the course of 50 driving cycles (ignition on for at least 5 minutes, vehicle speed > 30 km/h).
- ♦ When eliminating an open circuit in the event of a data bus fault, always remember to twist the two data wires of the corresponding bus system together to prevent electromagnetic interference.

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01128 Immobilizer reading spool -D2	Connector not attached to dash panel insert/reader coil or reader coil defective Immobilizer control unit (integrated into dash panel insert) defective	- Check connector and reader coil (visual inspection) and replace reader coil if necessary => Electrical System; Repair Group 96; Servicing immobilizer Servicing immobilizer - Erase fault memory and interrogate it again => Page 59; replace dash panel insert if necessary => Electrical System; Repair Group 90; Dash panel insert Dash panel insert

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01176 Key Signal too low	Reader coil or wire defective (contact resistance/loose contact)	- Check reader coil as well as wiring and connector (visual inspection) and replace reader coil if necessary => Electrical System; Repair Group 96; Servicing immobilizer Servicing immobilizer
Not authorised	No electronics in ignition key (transponder) or not functioning Mechanically suitable ignition key not matched	- Replace ignition key, re-match all ignition keys and check function => Page 65 - Re-match all ignition keys and check function => Page 65

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Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01176 Key Not authorised	Mechanically suitable ignition key not matched	- Re-match all ignition keys and check function => Page 65
01177 Engine control unit Not authorised	Engine control unit not adapted	- Adapt engine control unit =>Page 71

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01179 Incorrect key programming	Ignition keys not properly matched	- Re-match all ignition keys with entry of PIN number and check function =>Page 65
65535 Control unit		

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
Defective	Dash panel insert (with integrated immobilizer) defective	- Replace dash panel insert => Electrical System; Repair Group 90; Dash panel insert Dash panel insert

2.8 - Erasing fault memory

Note:

If fault memory cannot be erased, interrogate fault memory again and eliminate fault.

Requirements:

- ◆ Fault memory interrogated =>Page 59
- ◆ All faults eliminated

After fault memory interrogation:

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

- Press keys 0 and 5 to select "Erasing fault memory" function.

-> Indicated on display:

Rapid data transfer Q
 05 - Erasing fault memory

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer
 Fault memory erased

Fault memory has now been erased.

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

Notes:

Attention:
 Fault memory not interrogated

-> Test sequence has not been correctly implemented if adjacent display appears.

Attention:
 Fault memory not interrogated

-> Test sequence has not been correctly implemented if adjacent display appears.

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Keep exactly to test sequence: Interrogate fault memory first, eliminate any faults and then erase fault memory.



After erasing fault memory, faults are not updated until ignition has been switched off and on again.

2.9 - End of output

-> Indicated on display:

Rapid data transfer Select function XX	HELP
---	------

- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer 06 - End of output	Q
---	---

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer Enter address word XX	HELP
--	------

- Switch off ignition.
- Unplug connectors to fault reader V.A.G 1551.

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2.10 - Reading measured value block

Implementing "Reading measured value block" function

-> Indicated on display:

Rapid data transfer Select function XX	HELP
---	------

- Press keys 0 and 8 to select "Reading measured value block" function.

-> Indicated on display:

Rapid data transfer 08 - Reading measured value block	Q
--	---

- Confirm entry with Q key.

-> Indicated on display:

Reading measured value block Enter display group number XXX	HELP
--	------

- Enter display group number (from table => Page 62) and confirm with Q key.

The measured value block selected is then displayed in standardised form.

List of display groups

Display group number	Indicated on display
022	1 = Starting allowed 2 = Engine control unit response 3 = Key status OK 4 = Number of learned keys

Display group number	Indicated on display
023	1 = Variable code authorised 2 = Key status (transponder) 3 = Fixed code authorised 4 = Immobilizer status
024	1 = Dash panel insert disabled time 2 = Engine control unit disabled time 3 = Emergency release disabled time 4 = Transponder identification disabled time
025	1 = CAN communication

Measured value block 022

Reading measured value block 22				⇒	Indicated on display
1	1	1		4	
					Number of learned keys ▪ Up to max. 8 keys
					Key status OK ▪ 1 = Yes, i.e. possible to read formally correct transponder fixed code (regardless of whether authorised or not) ▪ 0 = No, i.e. not possible to read formally correct transponder fixed code
					Engine control unit response ▪ 1 = Yes (regardless of whether engine control unit authorised or not) ▪ 0 = No, i.e. engine control unit in run-on mode*
					Starting allowed ▪ 1 = Yes ▪ 0 = No, i.e. vehicle key not/incorrectly matched or engine control unit incorrectly encoded/defective

*) Depending on engine control unit, measured value block is set for 10 ... 30 s after switching off engine and ignition to "0 = Engine control unit response no", i.e. engine control unit released and no fault present. Start self-diagnosis again as a check => Page 56 .

Measured value block 023

Reading measured value block 23				⇒	Indicated on display
1	1	1		6	
					Immobilizer status ▪ 4: Service new; service as-delivered condition (replacement dash panel insert) ▪ 5: Service blocked; service adaption data programmed ▪ 6: Immobilizer adapted; normal function status ▪ 7: Key learning active; key learning via tester



		Fixed code authorised ▪ 1 = Yes ▪ 0 = No, i.e. transponder fixed code of key not authorised
		Key status (transponder) ▪ 1 = Transponder in key blocked, i.e. arithmetic rule in key can no longer be overwritten; key cannot be matched to any other immobilizer system ▪ 0 = Transponder in key not blocked, i.e. transponder not yet matched to dash panel insert (new replacement key)
		Variable code authorised ▪ 1 = Yes ▪ 0 = No, i.e. variable code not authorised (arithmetic rule for variable code in key not the same as in dash panel insert)

Measured value block 024

Reading measured value block 24				⇒	◀ Indicated on display
10	0	0	10		
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.					The transponder identification disabled time indicates the period after which transponder identification is again possible; this disable function is activated if the transponder of a non-authorised key has been read out on 20 consecutive occasions ▪ 0 ... 10 min
					The emergency release disabled time indicates the period after which PIN number can be entered again via menu function in dash panel insert (emergency starting function without VAG 1551); control unit is disabled for 10* minutes if PIN number is entered incorrectly three times ▪ 0 ... 255 min
					The engine control unit disabled time indicates the period after which adaption function can be implemented again by engine control unit; control unit is disabled for 10* minutes if PIN number is entered incorrectly three times during channel 50 adaption ▪ 0 ... 255 min
					The dash panel insert disabled time indicates the period after which login procedure can be implemented again at dash panel insert; control unit is disabled for 10* minutes if PIN number is entered incorrectly three times during login procedure (matching of vehicle keys or old dash panel insert) ▪ 0 ... 255 min

*) Time is doubled up to max. 255 minutes after every 3 further incorrect attempts

Measured value block 025

Reading measured value block 25				⇒	◀ Indicated on display
1					

CAN communication with engine control unit

- 1 = Yes
- 0 = No, i.e. no CAN communication between immobilizer and engine control units - key learning not possible

2.11 - Adaption

The adaption function can be used to make and store the following changes:

- ◆ Matching of vehicle keys => Page 65
- ◆ Adaption following replacement of dash panel insert => Page 68
- ◆ Adaption following replacement of engine control unit=>Page 71
- ◆ Adaption following replacement of dash panel insert and engine control unit => Page 74

2.12 - Matching of vehicle keys

Notes:

- ◆ If new or additional ignition keys are required, they have to be matched to the immobilizer.
- ◆ All keys - including the existing authorised ones - have to be re-matched.
- ◆ It is particularly important to re-match all the remaining vehicle keys if any have been lost to ensure that the lost key is no longer authorised to start the vehicle.
- ◆ If matching cannot be performed for all keys, for example when matching is required en route, customers are to be informed of the necessity of subsequent re-matching at their local Audi Dealership.
- ◆ The number of keys already matched is displayed following selection of adaption function (channel 21) and in measured value block 022.
- ◆ Matching can be terminated by pressing "C" key on V.A.G 1551.
- ◆ Once a key has been matched, it is blocked and cannot be matched to any other immobilizer system.

Requirement:

All ignition keys available. If no old ignition key is available, refer to "Procedure in the event of loss of keys" => Page 67 .

- Insert first key in ignition lock and switch on ignition.
- Connect up fault reader V.A.G. 1551 and start immobilizer self-diagnosis with address word "17" => Page 56 .

Following display of control unit identification:

- Press ➡ key.

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Perform dash panel insert login procedure => Page 75 .

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 1 and 0 to select "Adaption" function.

-> Indicated on display:

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Rapid data transfer Q
10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

- Press keys 2 and 1 to select key matching channel.
- Confirm entry with Q key.

-> *If adjacent display appears:*

Function unknown or cannot
be implemented at present

- Repeat matching with entry of PIN number.

-> Indicated on display:

Channel 21 Adaption 2

The top line shows that 2 ignition keys have been matched to the system.

Note:

The number of keys to be matched can also be entered by way of key 1 (fewer) and key 3 (more).

- Press ⇒ key.

-> Indicated on display:

Channel 21 Adaption 2
Enter adaption value XXXXX

- Press key 0 four times and then enter total number of ignition keys to be matched, including key in ignition lock (e.g. 00003); the maximum possible number is 8.
- Confirm entry with Q key.

-> Indicated on display for 3 ignition keys to be matched:

Channel 21 Adaption 3 Q

- Confirm entry with Q key.

-> Indicated on display:

Channel 21 Adaption 3 Q
Store altered value?

Note:

A period of 30 s per key is not to be exceeded when performing matching, as otherwise fault lamp flashes at a frequency of 2 Hz and entire matching procedure must be implemented again (login procedure and matching).

- Confirm entry with Q key.

-> Indicated on display:

Channel 21 Adaption 3
Altered value stored

Fault lamp in dash panel insert goes out; key in ignition lock matched.

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- Press ⇒ key.

-> Indicated on display:

Rapid data transfer HELP Select function XX

- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer Q 06 - End of output
--

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer HELP Enter address word XX
--

- Insert next key in ignition lock and switch on ignition. The fault lamp lights when the ignition is switched on and goes out after approx. one second, indicating that this key has also been matched.
- Repeat procedure until all keys have been matched. With the last key, the fault lamp goes out approx. 2 s following successful matching and a brief confirmation signal is given (lamp off for 0.5 s, lamp on for 0.5 s, lamp off).
- On vehicle key matching, the fixed code of the respective key (transponder) is matched to the immobilizer. Furthermore, the arithmetic rule for the variable code is written into each key and blocked. Accordingly, with immobilizer III, keys can only be matched if they have the correct arithmetic rule for the variable code (key already matched to system) or if they have still to be blocked (replacement key). Once they have been matched, vehicle keys cannot be used with a different immobilizer system.
- Select fault memory interrogation function 02. If there are no faults stored, then "Key matching" function has been successfully completed.

Ignition key matching is terminated automatically:

- ◆ On reaching the number of keys to be matched
- ◆ If the ignition is switched on again and left switched on for more than 1 s using a key which has already been matched (fault is stored)
- ◆ If the permitted matching time of 30 s per key as of switching on the ignition is exceeded (fault is stored)
- ◆ If a fault is stored during key matching

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2.13 - Procedure in the event of loss of keys

- Make/order replacement ignition keys on the basis of the lock number.
- Match all vehicle keys => Page 65.
- On the appropriate vehicles, match all remote control keys to the convenience system central control unit.

=> Body Self-diagnosis; Repair Group 01; Convenience system self-diagnosis Convenience system self-diagnosis

Establishing PIN number

The Dealer must establish the PIN number on the basis of the 14-position identification number of the immobilizer/engine control unit by way of direct system interrogation (as for direct interrogation of radio code). It is also possible to find out the PIN number from the appropriate Regional Sales Centre or importer.

The 14-position identification number of the engine control unit/immobilizer control unit can be read out by way of the self-diagnosis function "Interrogating control unit version".

**Attention:**

The PIN number is intended for internal use only and is not to be divulged to customers.

2.14 - Adaption following replacement of dash panel insert**Notes:**

- ♦ The dash panel insert (immobilizer) is adapted to the engine control unit. Re-adaption to the engine control unit must be performed if the dash panel insert is replaced.
- ♦ After adapting dash panel insert to engine control unit, vehicle key matching is required =>Page 65 .
- ♦ Adaption can be terminated by pressing "C" key on V.A.G 1551.

Requirements:

- Insert old (authorised) ignition key in ignition lock and switch on ignition.
- If no authorised ignition key is available, new ones must be made and matched after "Adaption following replacement of dash panel insert".
- Connect up fault reader V.A.G. 1551 and start engine electronics self-diagnosis with address word "01".

-> Indicated on display:

Rapid data transfer HELP
Enter address word XX

Address word for engine electronics 01:

- Press keys 0 and 1.

-> Indicated on display:

Rapid data transfer Q
01 - Engine electronics

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s.

036906034Q 1.4l/R4 EPC
AG D00□
Code 71 WSC 06812

- Press => key.

-> Indicated on display:

WAUZZZ8ZZYN002341 AUZ7Z0X0590944

- ♦ WAUZZZ8ZZYN002341: 17-position vehicle identification no. (chassis number)
- ♦ AUZ7Z0X0590944: 14-position identification number of immobilizer control unit

With 14-position identification number of engine control unit, PIN number must be determined by way of direct system interrogation (as for direct interrogation of radio code).

Attention:

The PIN number is intended for internal use only and is not to be divulged to customers.

- Press => key.

-> Indicated on display:

Rapid data transfer HELP
Select function XX

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- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer	Q
06 - End of output	

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer	HELP
Enter address word XX	

- Start self-diagnosis of immobilizer (dash panel insert).

Address word for immobilizer: 17

- Press keys 1 and 7.

-> Indicated on display:

Rapid data transfer	Q
17 - Dash panel insert	

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0920930 W1-DASH PANEL INSERT VDO D03
Code 05042 WSC 06812

- Press ⇒ key.

-> Indicated on display:

XXXXXXXXXXXXXXXXX AUZ7Z0X0023456

Replacement dash panel inserts already have a 14-position identification number (required if dash panel insert and engine control unit are replaced at the same time). This is however overwritten on adapting dash panel insert to engine control unit.

Note:

If an old dash panel insert is to be fitted, this must first be released by means of a login procedure => Page 75. The appropriate PIN number has to be determined from the 14-position identification number of the old dash panel insert. Proceed as follows after successful completion of login:

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 1 and 0 to select "Adaption" function.

-> Indicated on display:

Rapid data transfer	Q
10 - Adaption	

- Confirm entry with Q key.

-> Indicated on display:

Adaption
Enter channel number XX

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- Press keys 5 and 0 to select channel for adapting immobilizer to engine control unit.
- Confirm entry with Q key.

-> Indicated on display:

Channel 50	Adaption 32000
PIN ?	

- Press => key.

-> Indicated on display:

Channel 50	Adaption 32000
Enter adaption value XXXXX	

- Enter previously determined PIN number (of engine control unit) with a 0 before the 4-digit number (e.g. 01915).
- "Disabled 10" appears on tester display if PIN number is entered incorrectly three times. This disabled time can also be displayed in measured value block 24 (position 2). Adaption is now disabled for 10 minutes. Time is doubled up to max. 255 minutes after every 3 further incorrect attempts.
- Confirm entry with Q key.

-> Indicated on display:

Channel	50	Adaption	32000
Q			
Wait			

If PIN number has been entered correctly, chassis number of vehicle appears on tester display after a waiting time of approx. 4 seconds and fault lamp in dash panel insert lights.

The following messages may be displayed if a fault occurs during adaption:

-> CAN bus not available or engine speed detected (adaption only possible with engine stopped)

Channel	50	Adaption	32000
Q			
Fault			

-> Engine control unit cannot supply data (chassis number, 14-position identification number), as control unit is brand new or data available are incorrect

Channel	50	Adaption	32000
Q			
Adaption not OK			

-> Engine control unit does not supply data on account of previous use with a control unit (dash panel insert) of a different category (tuning protection)

Channel	50	Adaption	32000
Q			
System not OK			

-> Data cannot be supplied/accepted as there is either no key available or no suitable key

Channel	50	Adaption	32000
Q			
Key not OK			

Chassis number appears on display if there are no faults present.

-> Indicated on display:

Channel	50	Adaption	32000
Q			
WAUZZZ8ZZYN002341			

- Confirm chassis number with Q key.

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-> Indicated on display:

Channel	50	Adaption	32000
Q			
Store altered value?			

- Press Q key.

Fault lamp in dash panel insert goes out on successful completion of adaption and a brief confirmation signal is given (lamp off for 0.5 s, lamp on for 0.5 s, lamp off).

-> Indicated on display:

Channel 50	Adaption 32000
Altered value stored	

- Press ➡ key.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

This completes adaption of immobilizer to engine control unit.

Matching of vehicle keys to immobilizer can now be commenced
=>Page 65 .

2.15 - Adaption following replacement of engine control unit

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Notes:

- ♦ The engine control unit is adapted to the immobilizer (dash panel insert). Re-adaption to the immobilizer must be performed if the engine control unit is replaced.
- ♦ Adaption can be terminated by pressing "C" key on V.A.G 1551.

Requirements:

- Insert old (authorised) ignition key in ignition lock and switch on ignition.
- If no authorised ignition key is available, new ones must be made and matched after "Adaption following replacement of engine control unit".
- Connect up fault reader V.A.G. 1551 and start immobilizer self-diagnosis with address word "17" => Page 56 .

-> Indicated on display:

Rapid data transfer	HELP
Enter address word XX	

Address word for immobilizer: 17

- Press keys 1 and 7.

-> Indicated on display:

Rapid data transfer	Q
17 - Dash panel insert	

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0920930	W1-DASH	PANEL	INSERT	VDO	D03
Code	05042	WSC	06812		

- Press ➡ key.



-> Indicated on display:

WAUZZZ8ZZYN002341 AUZ7Z0X0590944

- ♦ WAUZZZ8ZZYN002341: 17-position vehicle identification no. (chassis number)
- ♦ AUZ7Z0X0590944: 14-position identification number of immobilizer control unit

With 14-position identification number of immobilizer control unit, PIN number must be determined by way of direct system interrogation (as for direct interrogation of radio code).

Attention:

The PIN number is intended for internal use only and is not to be divulged to customers.

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer Q
06 - End of output

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer HELP
Enter address word XX

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- Start engine electronics self-diagnosis.

Address word for engine electronics 01:

- Press keys 0 and 1.

-> Indicated on display:

Rapid data transfer Q
01 - Engine electronics

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

0369060340 1.4l/R4 EPC
AG D00
Code 71 WSC 06812

- Press ⇒ key.

-> Indicated on display:

XXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX

Note:

If an old engine control unit is to be fitted, this must first be released by means of a login procedure => Page 76. The appropriate PIN number has to be determined from the 14-position identification number of the old engine control unit. Proceed as follows after successful completion of login:

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

- Press keys 1 and 0 to select "Adaption" function.

-> Indicated on display:

Rapid data transfer Q
 10 - Adaption

- Confirm entry with Q key.

-> Indicated on display:

Adaption
 Enter channel number XX

- Press keys 5 and 0 to select channel for adapting engine control unit to immobilizer.
- Confirm entry with Q key.

-> Indicated on display:

Channel 50 Adaption 32000
 PIN ?

- Press => key.

-> Indicated on display:

Channel 50 Adaption 32000
 Enter adaption value XXXXX

- Enter previously determined PIN number (of dash panel insert) with a 0 before the 4-digit number (e.g. 01915). "Disabled 10" appears on tester display if PIN number is entered incorrectly three times. Adaption is now disabled for 10 minutes. Time is doubled up to max. 255 minutes after every 3 further incorrect attempts.
- Confirm entry with Q key.

-> Indicated on display:

Channel 50 Adaption 32000
 Q
 Wait

If PIN number has been entered correctly, chassis number of vehicle appears on tester display after a waiting time of approx. four seconds.

The following messages may be displayed if a fault occurs during adaption:

-> CAN bus not available or engine speed detected (adaption only possible with engine stopped)

Channel 50 Adaption 32000
 Q
 Fault

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-> Dash panel insert cannot supply data (chassis number, 14-position identification number), as control unit is brand new or data available are incorrect

Channel 50 Adaption 32000
 Q
 Adaption not OK

-> Dash panel insert does not supply data on account of previous use with a control unit (engine control unit) of a different category (tuning protection)

Channel 50 Adaption 32000
 Q
 System not OK



-> Data cannot be supplied/accepted as there is either no key available or no suitable key

Channel	50	Adaption	32000
Q			
Key not OK			

Chassis number appears on display if there are no faults present.

-> Indicated on display:

Channel	50	Adaption	32000
Q			
WAUZZZ8ZZYN002341			

- Confirm chassis number with Q key.

-> Indicated on display:

Channel	50	Adaption	32000
Q			
Store altered value?			

- Press Q key.

-> Indicated on display:

Channel	50	Adaption	32000
Altered value stored			

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer		HELP
Select function XX		

This concludes adaption of engine control unit to immobilizer and vehicle can be started.

2.16 - Adaption following replacement of dash panel insert and engine control unit

Attention:

All vehicle keys must be changed if both dash panel insert and engine control unit are replaced at the same time.

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The arithmetic rule for the variable code is written into the transponder and blocked on vehicle key matching. These vehicle keys can then not be matched to any other immobilizer system. If dash panel insert and engine control unit are replaced at the same time, the new immobilizer in the dash panel insert is given a different arithmetic rule for the variable code. This new rule is written on adaption into the engine control unit and into the transponder of the new vehicle keys and blocked.

Procedure:

- ♦ Enter chassis number in dash panel insert (only possible using vehicle diagnostic, testing and information system VAS 5051)
- ♦ Perform adaption following replacement of engine control unit
=> Page 71
- ♦ Perform matching of vehicle keys => Page 65

Attention:

Chassis number can only be entered in dash panel insert using vehicle diagnostic, testing and information system VAS 5051.

- Connect up vehicle diagnostic, testing and information system VAS 5051 and enter vehicle self-diagnosis mode. Select vehicle system "17 - Dash panel insert". Select diagnostic function "Transfer chassis number".
- Enter chassis number of vehicle and confirm.

Note:

The following adaption operations can also be performed using the vehicle diagnostic, testing and information system VAS 5051.

- Perform "Adaption following replacement of engine control unit"
=> Page 71 .
- Perform "Matching of vehicle keys" => Page 65 .

This completes adaption/matching of dash panel insert, engine control unit and vehicle keys and vehicle can be started.

2.17 - Login procedure

Notes:

- ◆ The PIN number must be established on the basis of the 14-position identification number of the immobilizer/engine control unit by way of direct system interrogation (as for direct interrogation of radio code). It is also possible to find out the PIN number from the appropriate Regional Sales Centre or importer.
- ◆ Three incorrect PIN number entries disable the immobilizer/engine control unit.
- ◆ A further attempt can only be made after 10 minutes (ignition is to be left permanently switched on during this period and exit from self-diagnosis mode effected by way of function 06 "End output"). Time is doubled up to max. 255 minutes after every 3 further incorrect attempts.

Dash panel insert login procedure

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press key 1 twice to select "Login procedure" function.

-> Indicated on display:

Rapid data transfer Q
11 - Login procedure

- Confirm entry with Q key.

-> Indicated on display:

Login procedure
Enter code number XXXXX

- Enter PIN number with a 0 before the 4-digit number (e.g. 01915).
- Confirm entry with Q key.

Note:

Once login procedure has been successfully completed, lamp lights continuously and immobilizer is released:

- ◆ As long as engine is running and ignition key remains in lock
- ◆ For 45 min. if ignition key remains in lock (engine not running)
- ◆ For 5 min. if ignition key is removed

-> Indicated on display:



Rapid data transfer HELP
Select function XX

Attention:

-> If this display appears during login procedure, PIN number has been entered incorrectly (e.g. wrong PIN number).

Function unknown or cannot
be implemented at present

Engine control unit login procedure

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press key 1 twice to select "Login procedure" function.

-> Indicated on display:

Rapid data transfer Q
11 - Login procedure

- Confirm entry with Q key.

-> Indicated on display:

Login procedure
Enter code number XXXXX

- Enter PIN number with a 0 before the 4-digit number (e.g. 01915).
- Confirm entry with Q key.

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-> Indicated on display:

Rapid data transfer HELP
Select function XX

Engine control unit has now been released.

Attention:

-> If this display appears during login procedure, PIN number has been entered incorrectly (e.g. wrong PIN number).

Function unknown or cannot
be implemented at present

3 - Parking aid (parking system) self-diagnosis

3.1 - Parking aid (parking system) self-diagnosis

3.2 - General

On reversing, the parking aid system uses the echo-sounding principle to measure the distance between the back end of the vehicle and an obstacle.

For this purpose, the rear bumper is fitted with four ultrasonic sensors.

The sensors are actuated both in combined transmit/receive mode and in pure receive mode.

On the Audi A2, the parking aid control unit features CAN capability, i.e. both the self-diagnosis and the actual system only function when the CAN is active.

Function:

The parking aid consists of the following:

- ◆ Parking aid control unit -J446
- ◆ Rear left parking aid sender -G203
- ◆ Centre rear left parking aid sender -G204
- ◆ Centre rear right parking aid sender -G205
- ◆ Rear right parking aid sender -G206
- ◆ Rear parking aid warning buzzer -H15

A self-test lasting less than one second is performed after switching on the ignition.

The control unit is then permanently in operation, however the distance sensing function is only activated on engaging reverse gear.

A brief signal tone sounds to indicate that parking aid is ready for operation (time lag of one second on vehicles with automatic gearbox on account of P-D shift).

A high-pitched continuous tone of 5 seconds duration sounds if the control unit detects a fault in the system during the self-test and the parking aid does not function.

On reversing, the proximity warning provided by the two centre sensors and the outer sensors is first given on attaining a distance of roughly 1.60 m and roughly 0.60 m respectively from the obstacle. The warning is given in the form of acoustic pulses with a duration of 75 ms.

The intervals between the acoustic pulses become shorter as a function of the decreasing gap. When the gap is less than 25 cm the pulses become a continuous tone. (Adaption of volume and pitch (audio frequency) with V.A.G 1551 =>Page **87**)

Special case: Travelling backwards alongside a wall

Note:

The following description relates exclusively to the fault reader V.A.G 1551.

3.3 - Starting parking aid self-diagnosis

Additional information material required

- ◆ Binder: "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations"
- ◆ Technical Service Handbook
- ◆ Parts List



3.4 - Safety precautions

Pay attention to the following if testers and measuring instruments have to be used in the course of a test drive:

Attention:

- ◆ Proceed as follows during measurement and test drives so as to avoid the risk of accident:
- ◆ Exclusive use is to be made for measured value block readout of VAS 5051 or V.A.G 1551, which is to be attached to rear seat and operated from there by a second person.

Heed the following so as to avoid possible injury and/or the destruction of electrical and electronic components:

- ◆ Switch off ignition before disconnecting and connecting measuring instruments and testers.
- ◆ Certain tests may lead to a fault being detected by the control unit and stored. The fault memory is therefore to be interrogated and if necessary erased on completion of all tests and repair work.
- ◆ Switch off ignition before disconnecting and connecting battery so as not to damage control units.

Test requirements:

- ◆ Use current flow diagram to check that fuse is OK.
- ◆ Connect up vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 => Page 88 .

Notes:

- ◆ If no display appears, use current flow diagram to check power supply for V.A.G 1551.
- ◆ Additional operating instructions can be called up by pressing the fault reader HELP key.
- ◆ Next step in program sequence can be selected by pressing ➡ key.
- ◆ Incorrect entries can be terminated by pressing C-key.
- ◆ Function 00 "Automatic test sequence" can be implemented in mode 1 "Rapid data transfer". This involves automatic interrogation of all vehicle control units.
- Switch on ignition.
- Switch on printer by pressing PRINT key (lamp in key lights).
- Press key 1 for "Rapid data transfer" mode.

-> Indicated on display:

Rapid data transfer HELP
Enter address word xx

Address word for parking aid: 76

- Press keys 7 and 6.

-> Indicated on display:

Rapid data transfer Q
76 - Parking aid

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0919283 Parking sys. A2 RoW D02
Code 00102 WSC 06812

- 8Z0919283: Part number of parking aid control unit (refer also to Parts List)
- Parking system A2: Component designation
- D02: Software version of parking aid control unit
- Code 00102: Code for parking aid control unit
- WSC 06812: Workshop code

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Press ⇒ key.

-> If one of the adjacent messages appears on the display, perform fault-finding in line with fault-finding program for diagnostic wire.

Rapid data transfer HELP
No control unit response

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

Rapid data transfer HELP
Fault in communication link

Rapid data transfer HELP
K-wire not switched to earth

Rapid data transfer HELP
K-wire not switched to positive

-> Indicated on display:

Rapid data transfer HELP
Select function XX

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- Pressing HELP key prints out a list of possible functions.
- Press ⇒ key to select next step in program sequence.

Self-diagnosis functions

Possible functions:

01 - Interrogating control unit version=> Page 79

02 - Interrogating fault memory => Page 80

05 - Erasing fault memory => Page 82

06 - End of output => Page 83

07 - Encoding control unit => Page 84

08 - Reading measured value block => Page 85

10 - Adaption=> Page 87

3.5 - Interrogating control unit version

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 1 to select "Interrogating control unit version" function.

-> Indicated on display:

Rapid data transfer Q
01 - Interrogating control unit version

- Confirm entry with Q key.

-> Adjacent display appears after approx. 5 s:

8Z0919283 Parking sys. A2 RoW D02
Code 00102 WSC 06812



- 8Z0919283: Part number of parking aid control unit (refer also to Parts List)
- Parking system A2: Component designation
- D02: Software version of parking aid control unit
- Code 00102: Code for parking aid control unit
- WSC 06812: Workshop code

3.6 - Interrogating fault memory

Note:

Fault information displayed is not updated constantly, but rather only on starting self-diagnosis/implementing function 05 "Erasing fault memory".

- Switch on printer by pressing PRINT key (lamp in key lights).

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

- Press keys 0 and 2 to select "Interrogating fault memory" function.

-> Indicated on display:

Rapid data transfer	Q
02 - Interrogating fault memory	

- Confirm entry with Q key.

-> The number of stored faults appears on the display.

X faults detected

The stored faults are consecutively displayed and printed out.

- Consult fault table with fault printed out and eliminate fault
=> Page 80 .

-> In the case of "No faults detected", program returns to start after pressing => key.

No faults detected

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	

If any other display appears:

=> Fault reader operating instructions

- End output (function 06) => Page 83 .
- Switch off ignition and unplug diagnostic connector.

3.7 - Parking aid fault table

Notes:

- ♦ Listed in the following in ascending order of 5-digit fault codes are all the faults which can be detected by the parking aid and printed out on V.A.G 1551.
- ♦ The fault code only appears on the printout.

- ◆ Before replacing components found to be defective, use current flow diagram to check wiring and connectors to these components as well as earth connections.
- ◆ On completion of repair work and system functional test, always interrogate fault memory again with fault reader V.A.G 1551 and erase it.
- ◆ All static and sporadic faults are stored in the fault memory:
A fault is recognised as being static if it is present for at least 2 seconds. If fault is then no longer present, it is stored as being sporadic and "/SP" appears on the right of the display.
- ◆ After switching on ignition, all faults present are set to sporadic and only stored as being static if they are still present after checking.
- ◆ Sporadic faults are erased if they do not re-occur in the course of 50 driving cycles (ignition on for at least 5 minutes, vehicle speed > 30 km/h).
- ◆ When eliminating an open circuit in the event of a data bus fault, always remember to twist the two data wires of the corresponding bus system together to prevent electromagnetic interference.

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
00532 Supply voltage - Signal too low	- Open circuit in wiring or short circuit in power supply	- Use current flow diagram to perform fault-finding
00625 Speed signal - Implausible signal	- Fault is set if vehicle-speed signal is implausible (e.g. 500 km/h); occurs, for example, in the event of loose contact in wiring	- Use current flow diagram to perform fault-finding

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01317 Control unit with display in dash panel insert -J285 - No communication	- Open circuit in wiring or short circuit - Dash panel insert adaption not performed correctly	- Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 61 and enter correct adaption value => Page 46
01336 Group convenience data bus - Defective	- Short to positive/earth in both signal wires at one control unit in Group convenience data bus	- Use current flow diagram to perform fault-finding Eliminate short circuit

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01543 Parking aid warning buzzer -H15 - Short to positive - Open circuit/short to earth	- Open circuit in wiring or short circuit between -H15 and control unit - Warning buzzer defective	- Use current flow diagram to perform fault-finding Replace -H15
01545 RL parking aid sender -G203		



- Short to positive - Open circuit/short to earth - Defective component - Implausible signal	- Open circuit in wiring or short circuit between -G203 and control unit - -G203 defective	- Use current flow diagram to perform fault-finding Replace -G203
---	---	--

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01546 RL, ctr, parking aid sender -G204 - Short to positive - Open circuit/short to earth - Implausible signal	- Open circuit in wiring or short circuit between -G204 and control unit - -G204 defective	- Use current flow diagram to perform fault-finding Replace -G204
01547 RR, ctr, parking aid sender -G205 - Short to positive - Open circuit/short to earth - Implausible signal	- Open circuit in wiring or short circuit between -G205 and control unit - -G205 defective	- Use current flow diagram to perform fault-finding Replace -G205

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01548 RR parking aid sender -G206 - Short to positive - Open circuit/short to earth - Implausible signal	- Open circuit in wiring or short circuit between -G206 and control unit - -G206 defective	- Use current flow diagram to perform fault-finding Replace -G206
01549 Voltage supply for parking aid sender - Short to earth	- Short to earth between parking aid sender and control unit	- Use current flow diagram to perform fault-finding

Output on printer of V.A.G 1551	Possible cause of trouble	Fault remedy
01550 Reverse gear signal - Implausible signal	- Short to earth between reversing light switch and parking aid control unit (reverse gear signal = 1 and vehicle speed > 100 km/h)	- Use current flow diagram to perform fault-finding Eliminate short circuit
65535 Control unit defective	- Parking aid control unit -J446 defective	- Replace control unit

3.8 - Erasing fault memory

Note:

If fault memory cannot be erased, interrogate fault memory again and eliminate fault.

Requirements:

- ♦ Fault memory interrogated =>Page 80

- ♦ All faults eliminated

After fault memory interrogation:

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 5 to select "Erasing fault memory" function.

-> Indicated on display:

Rapid data transfer Q
05 - Erasing fault memory

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer
Fault memory erased

Fault memory has now been erased.

- Press ⇒ key.

-> Indicated on display:

Rapid data transfer HELP
Select function XX

Notes:

♦ Attention:
Fault memory not interrogated

-> Test sequence has not been correctly implemented if adjacent display appears.

♦ Rapid data transfer
Fault memory not interrogated

-> Test sequence has not been correctly implemented if adjacent display appears.

Keep exactly to test sequence: Interrogate fault memory first, eliminate any faults and then erase fault memory.

3.9 - End of output

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 6 to select "End output" function.

-> Indicated on display:

Rapid data transfer Q
06 - End of output

- Confirm entry with Q key.

-> Indicated on display:

Rapid data transfer HELP
Enter address word XX



- Switch off ignition.
- Unplug connectors to fault reader V.A.G 1551.

3.10 - Encoding control unit

This function can be used to encode parking aid control unit as follows:

- ♦ Gearbox version: Manual/automatic
- ♦ Signal tone for engaged reverse gear: With or without acknowledgement of function
- ♦ Body version: Saloon
- ♦ Vehicle model: e.g. Audi A2

Note:

The encoding adapts the universal parking aid control unit -J446 to the particular requirements of the vehicle concerned.

Implementing encoding function

-> Indicated on display:

Rapid data transfer HELP
Select function XX

- Press keys 0 and 7 to select "Encoding control unit" function.

-> Indicated on display:

Rapid data transfer Q
07 - Encoding control unit

- Confirm entry with Q key.

-> Indicated on display:

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

- Enter code number as per encoding table => Page 85 .
Example: 00102

0				Not used at present
	0			Manual gearbox
		1		With acknowledgement of function
			0	Saloon (standard)
			2	Audi A2

-> Indicated on display:

Encoding control unit Q
Enter code number 00102 (0-32000)

- Confirm entry with Q key.

-> Indicated on display:

8Z0919283 Parking sys. A2 RoW D02
Code 00102 WSC 06812

- Conclude encoding by pressing => key.

Indicated on display:

Rapid data transfer **HELP**
 Select function XX

Encoding table

0	Not used at present
0	Manual gearbox
1	Automatic gearbox
0	No acknowledgement of function
1	With acknowledgement of function (ex works)
0	Saloon (standard)
6	A6
4	A4
3	A3
2	A2

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3.11 - Reading measured value block

Implementing "Reading measured value block" function

-> Indicated on display:

Rapid data transfer **HELP**
 Select function XX

- Press keys 0 and 8 to select "Reading measured value block" function.

-> Indicated on display:

Rapid data transfer **Q**
 08 - Reading measured value block

- Confirm entry with Q key.

-> Indicated on display:

Reading measured value block **HELP**
 Enter display group number XXX

- Enter display group number (from table => Page **85**) and confirm with Q key.

The measured value block selected is then displayed in standardised form.

List of display groups:

Display group number	Indicated on display
001	1 = Distance from rl sensor in cm 2 = Distance from rlc sensor in cm 3 = Distance from rrc sensor in cm 4 = Distance from rr sensor in cm
002	1 = Minimum distance in cm 2 = Vehicle speed km/h 3 = Warning buzzer
003	1 = Supply voltage V 2 = Reverse gear 3 = Trailer



Display group number	Indicated on display
004	1 = rl sensor settling time in ms 2 = rlc sensor settling time in ms 3 = rrc sensor settling time in ms 4 = rr sensor settling time in ms

Measured value block 001

Reading measured value block 1				⇒	◀ Indicated on display
50 cm	110 cm	90 cm	50 cm		Distance from rear right sensor ▪ 0 ... 200 cm
					Distance from rear right centre sensor ▪ 0 ... 200 cm
					Distance from rear left centre sensor ▪ 0 ... 200 cm
					Distance from rear left sensor ▪ 0 ... 200 cm

Measured value block 002

Reading measured value block 2			⇒	◀ Indicated on display
50 cm	20 km/h	Tone off		Warning buzzer ▪ Tone on ▪ Tone off
				Vehicle speed ▪ 0 ... 300 km/h
				Minimum distance ▪ Smallest value of the four measured distances

Measured value block 003

Reading measured value block 3			⇒	◀ Indicated on display
12.0 V	Reverse yes	Trailer no		Trailer display ▪ Trailer yes ▪ Trailer no
				Reverse gear display ▪ Reverse yes ▪ Reverse no
				Sensor supply voltage ▪ 0 ... 15 V

Measured value block 004

Reading measured value block 4				⇒	◀ Indicated on display
1.02 ms	1.00 ms	0.97 ms	1.02 ms		
				Rear right sensor settling time	
				Rear right centre sensor settling time	
				Rear left centre sensor settling time	
				Rear left sensor settling time	

Note:

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Values of greater than 4.00 ms with reverse gear engaged are an indication of a defective ultrasonic sensor or an open circuit in the wiring.

3.12 - Adaption

The adaption function can be used to make and store the following changes:

- ◆ Volume of warning tone
- ◆ Pitch (audio frequency) of warning tone

Implementing function "10 - Adaption"

→ Indicated on display:

```
Rapid data transfer    HELP
Select function XX
```

- Press keys 1 and 0 to select "Adaption" function.

→ Indicated on display:

```
Rapid data transfer    Q
10 - Adaption
```

- Confirm entry with Q key.

→ Indicated on display:

```
Adaption      Q
Enter channel number XX
```

- Enter channel number in line with adaption table => Page 88 . Example: 01
- Press keys 0 and 1.
- Confirm entry with Q key.

→ Indicated on display:

```
Channel      1      Adaption      6
(- 1      3-L
```

- Adaption value can either be decremented with key 1 or incremented with key 3 or use can be made of ⇒ key.
- Press ⇒ key.

→ Indicated on display:

```
Channel      1      Adaption      6
Enter adaption value XXXXX
```



- Now enter adaption value by hand (e.g. 00005).

-> Indicated on display:

Channel	1	Adaption	6	Q
Enter adaption value 00005				

- Confirm entry with Q key.

-> Indicated on display:

Channel	1	Adaption	5	Q
(- 1 3-L				

- Confirm entry with Q key.

-> Indicated on display:

Channel	1	Adaption	5	Q
Store altered value?				

- Confirm entry with Q key.

-> Indicated on display:

Channel	1	Adaption	5	
Altered value stored				

- Conclude sensitivity adaption by pressing ⇒key.

-> Indicated on display:

Rapid data transfer	HELP
Enter address word XX	

Adaption table

Adaption channel	Adaption function
01	Volume adjustable in stages from 2 to 6
02	Pitch (audio frequency), adjustable in stages from 0 to 4 (500 Hz to 2 kHz)

4 - Connecting vehicle diagnostic, testing and information system VAS 5051/ fault reader V.A.G 1551 and selecting functions

4.1 - Connecting vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 and selecting functions

Test conditions

- Battery voltage at least 11 V
- Earth connections at engine and gearbox OK
- Fuses OK

=> "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations" binder

- Earth connections and earth point for gearbox OK

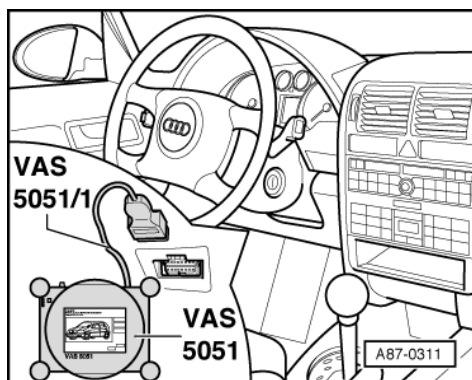
=> "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations" binder

- Check battery earth strap and earth strap between battery and gearbox.



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- Switch off ignition.



Note:

Diagnostic connection is located at bottom left of driver's footwell.

- -> Unclip cover for diagnostic connection.
- Use diagnostic wire VAS 5051/1 to connect up vehicle diagnostic, testing and information system VAS 5051. Alternatively, use can be made of diagnostic wire V.A.G 1551/3 to connect up fault reader V.A.G 1551.

Attention:

- ◆ If measurements/tests have to be performed whilst driving, vehicle diagnostic, testing and information system VAS 5051 or fault reader V.A.G 1551 is always to be attached to rear seat and operated from there.
- ◆ Pay attention to safety precautions => Page 3.

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-> Indicated on display:

V.A.G SELF-DIAGNOSIS HELP
1 - Rapid data transfer*
2 - Flash code output*

* Displayed alternately

Note:

If display remains blank:

=> Fault reader operating instructions

- Switch on ignition.
- Switch on printer by pressing PRINT key (lamp in key lights).
- Press key 1 for "Rapid data transfer".

-> Indicated on display:

Rapid data transfer HELP
Enter address word xx

Note:

Address word 00 implements automatic test sequence, i.e. the fault memories of all vehicle systems with self-diagnosis capability are interrogated by way of rapid data transfer.