Teves 04 ABS and ABS/EDL On Board Diagnostic (OBD)

Test requirements

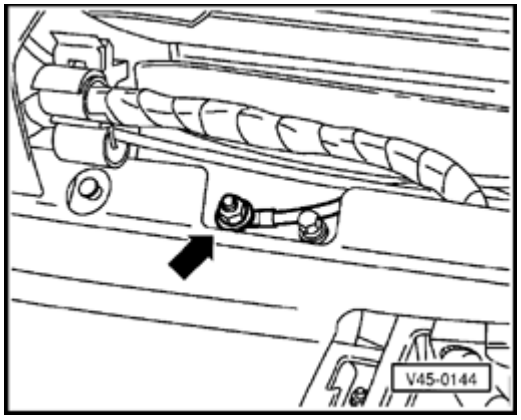
- Tires mounted to all four wheels must be of the same (approved) size, inflated to correct pressure
- Conventional brake system OK, including brake light switch and brake lights
- Brake hydraulic lines and connections not leaking (visual check of ABS hydraulic unit, brake calipers)
- Wheel bearings and wheel bearing play OK
- Connector on ABS control module -J104- correctly attached (retainer is engaged)
- Check terminals and sockets on ABS or ABS/EDL components for damage and correct seating.
- ABS relay -J102-, ABS hydraulic pump relay -J185- and electronic differential lock relay -

J310- correctly installed/connected

- All fuses according to wiring diagram OK (remove fuse from fuse holder to check).
- Supply voltage OK (at least 10.5 V).
- ABS control module -J104- Ground (GND) connection OK.

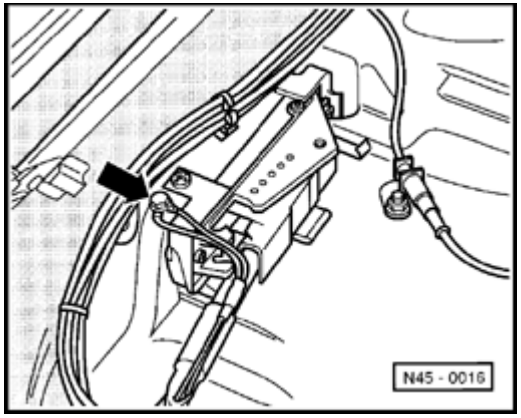
ABS control module -J104- Ground (GND) connections

Up to 01.93:



- Under the right sill panel trim.

From 01.93:



- Under rear seat near ABS control module

VAG 1551 scan tool, connecting and selecting function

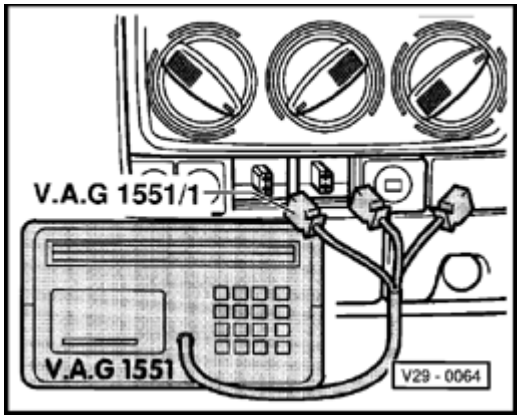
- Test prerequisites ⇒ Page 01-15 .

Note:

- *The ABS function is switched off in the ABS control module during the On Board Diagnostic (OBD) program.*

- *DTC memory can only be erased after successful checking and repair.*

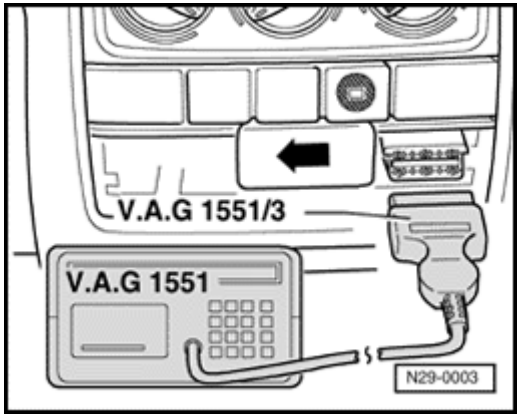
Vehicles ➢ 07.93



- Unclip covers for Data Link Connectors (DLC) below the heating/ventilation controls.
- Connect VAG 1551 scan tool with adapter cable VAG 1551/1 as follows:
  - First connect black plug for scan tool voltage supply to black DLC.
  - Connect white connector to white DLC.

  The blue connector is not required.

Vehicles 08.93 ➢



- Remove ashtray and slide cover for Data Link Connector (DLC) to left (arrow).
- With ignition switched off, connect VAG 1551 scan tool with adapter cable VAG 1551/3.

V.A.G. On Board Diagnostic HELP

1 - Rapid data transfer

2 - Blink code output

Indicated on display1)

1) Operating modes 1 and 2 are displayed alternately.

Note:

- *Depending on the program, additional operating information can be printed out by pressing the HELP button on the VAG 1551 scan tool.*
- *The → button is used to advance within the scan tool program sequence.*

- Switch ignition on.
- Press PRINT button to switch on printer (indicator lamp in button lights up).
- Press button -1- to select "Rapid data transfer" operating mode 1.

Rapid data transfer HELP

Insert address word XX

Indicated on display

- Press buttons -0- and -3- to insert "Brake Electronics" address word 03.

Rapid data transfer Q

03 - Brake Electronics

Indicated on display

- Press -Q- button to confirm input.

1H0 907 379 E ABS + EDL Teves 04

ABS control module identification (example) is displayed

ABS control module applications ⇒ Parts catalog.

Note:

Rapid data transfer **HELP**

Control module does not answer

If any other message appears in the display, the possible causes of the malfunction can be printed out by pressing the HELP button.

Rapid data transfer **HELP**

K wire not switching to B+

The ignition must be switched on!

Rapid data transfer →

No signal from control module

Malfunctions have occurred at the start or during the scan tool program (external interference?)

Rapid data transfer →

Error in communication link

- Check VAG 1551/1 or VAG 1551/3 adapter harness.

  Also check for battery positive voltage (B+) supply and check for proper Ground (GND) connection near ABS control module -J104- ⇒ page 01-41 , Electrical testing, test steps 42 and 43.

- After repairing possible causes of malfunction, again insert "Brake electronics" address word 03 and press -Q- button to confirm input.

Rapid data transfer

Scan tool sends address word 03

Indicated on display after inserting the address word 03.

1H0 907 379 E ABS + EDL Teves 04

ABS control module identification (example) is displayed.

- Press → button.

Rapid data transfer HELP

Select function XX

Indicated on display

List of selectable scan tool functions

Function		Page
01	Check Control Module Version ⇒ *VAG 1551 scan tool, connecting and selecting function*	⇒ Page 01-17
02	Check DTC Memory	⇒ Page 01-23
05	Erase DTC Memory	⇒ Page 01-39
06	End Output	⇒ Page 01-39

Note:

Currently only the functions listed are available to be used during the On Board Diagnostic (OBD) program.

Diagnostic Trouble Code (DTC) memory, checking

Rapid data transfer **HELP**

Select function XX

Indicated on display

- Press buttons -0- and -2- to select the "Check DTC Memory" function 02.

Rapid data transfer **Q**

02 - Check DTC Memory

Indicated on display

- Press -Q- button to confirm input.

X DTC recognized →

The number of stored diagnostic trouble codes (DTCs) will be indicated, or "No DTC recognized" will be displayed

No DTC recognized →

- Press → button.

The stored DTCs will be displayed and printed out one after the other in sequence.

- In Diagnostic Trouble Code (DTC) table, look up DTCs that are printed out ⇒ page 01-25 .
- Press → button.

  As with "No DTC recognized" scan tool returns to start of program sequence after pressing → button.

Rapid data transfer **Select function XX**	**HELP**	⮜	Indicated on display

- Press buttons -0- and -6- to select "End Output" function 06 ⇒ page 01-39 .
- Switch ignition off and disconnect Data Link Connectors (DLC).

Note:

If a malfunction was recognized:

- Repair malfunction

- Check DTC memory (function 02)

- Erase DTC memory (function 05)

If the ABS warning light -K47- lights up although there is no malfunction stored in DTC memory, first check the battery positive voltage (B+) supply ⇒ *page 01-41* *, Electrical testing, test steps 1 through 4.*

Diagnostic Trouble Code (DTC) table

Notes:

- *All the possible malfunctions that can be recognized by the ABS control module -J104- and printed out on the VAG 1551 scan tool are listed on the following pages according to the 5-digit Diagnostic Trouble Code (DTC).*
- *Diagnostic Trouble Codes (DTC) and blink codes appear only on the print-out (in "Rapid data transfer" mode).*

Example:

Diagnostic Trouble Code (DTC)	Blink code
5 digit	4 digit
00277	1221

Notes:

- *In addition, the type of malfunction may also appear in the Diagnostic Trouble Code (DTC) table.*
- *Reference is made to individual test steps of the electrical test in the "Repairing malfunction" column.*
- *Before replacing components indicated as being faulty, check all appropriate wiring, harness connectors and Ground (GND) connections according to the wiring diagram.*
- *After repairs, always check and erase DTC memory again using the VAG 1551 scan tool, also carry out a road test during which the vehicle exceeds a speed of 40 km/h (24 mph).*

- *Repeat the On Board Diagnostic (OBD) procedure after the road test.*

Diagnostic Trouble Code (DTC) table

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00000	**4444**		
No DTC recognized		If "No DTC recognized" is displayed after carrying out repairs, On Board Diagnostic (OBD) program sequence has ended. If, despite "No DTC recognized" being displayed, the ABS system does not operate properly, then proceed as follows: ♦ Carry out road test exceeding 40 km/h (24 mph). ♦ Again check DTC memory. If there is still no DTC stored: ♦ Troubleshoot without On Board Diagnostic (OBD) and work through the complete electrical test ⇒ page 01-41 .	
00257	**1112**		
ABS Inlet Valve,LF -N101		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 17 and 371)*
00259	**1114**		
ABS Inlet Valve,RF -N99		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding

		⇒ *Test steps 18 and 381)*

1) ⇒ page 01-41 , Electrical testing.

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00265	**1132**		
ABS Outlet Valve,LF -N102		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 21 and 371)*
00267	**1134**		
ABS Outlet Valve,RF -N100		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 22 and 381)*
00273	**1211**		
ABS Inlet Valve,RR -N133		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 20 and 401)*
00274	**1212**		
ABS Inlet Valve,LR -N134		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 19 and 391)*

1) ⇒ page 01-41 , Electrical testing.

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00275	**1213**		
ABS Outlet Valve,RR -N135		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 24 and 401)*
00276	**1214**		
ABS Outlet Valve,LR -N136		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 23 and 391)*
00279	**1223**		
Differential Lock Valve 1 -N125		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 25 and 411)*
00280	**1224**		
Differential Lock Valve 2 -N126		Faulty wire, connector or valve winding	- Check wiring, connectors and valve winding ⇒ *Test steps 26 and 411)*

1) ⇒ page 01-41 , Electrical testing.

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00283	**1233**		
ABS Wheel Speed Sensor,LF-G47		Open circuit, short circuit or loose connection in: ♦ ABS wheel speed sensor wire ♦ Connector ♦ ABS wheel speed sensor winding	- Check wiring, connectors, ABS wheel speed sensor, Ground (GND) wiring to ABS control module and also capacitor for correct Ground (GND) connection ⇒ *Test steps 7, 11 and 341)*
Mechanical malfunction 2)		Excessive or insufficient air gap between ABS wheel speed sensor and impulse rotor (signal not OK)	- Check installation of ABS wheel speed sensor and impulse rotor; clean if necessary
Signal outside tolerances 2)		Impulse rotor and ABS wheel speed sensor dirty or damaged	
1) ⇒ page 01-41 , Electrical testing.			
2) Type of malfunction.			

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00285	**1241**		
ABS Wheel Speed Sensor,RF-G45		Open circuit, short circuit or loose connection in: ♦ ABS wheel speed sensor wire ♦ Connector ♦ ABS wheel speed sensor winding	- Check wiring, connectors, ABS wheel speed sensor, Ground (GND) wiring to ABS control module and also capacitor for correct Ground (GND) connection ⇒ *Test steps 6, 10 and 331)*
Mechanical malfunction 2)		Excessive or insufficient air gap between ABS wheel speed sensor and impulse rotor (signal not OK)	- Check installation of ABS wheel speed sensor and impulse rotor; clean if necessary
Signal outside tolerances 2)		Impulse rotor and ABS wheel speed sensor dirty or damaged	
1) ⇒ page 01-41 , Electrical testing.			
2) Type of malfunction.			

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00287	**1243**		
ABS Wheel Speed Sensor,RR-G44		Open circuit, short circuit or loose connection in: ♦ ABS wheel speed sensor wire ♦ Connector ♦ ABS wheel speed sensor winding	- Check wiring, connectors, ABS wheel speed sensor, Ground (GND) wiring to ABS control module and also capacitor for correct Ground (GND) connection ⇒ *Test steps 8, 12 and 311)*
Mechanical malfunction 2)		Excessive or insufficient air gap between ABS wheel speed sensor and impulse rotor (signal not OK)	- Check installation of ABS wheel speed sensor and impulse rotor; clean if necessary
Signal outside tolerances 2)		Impulse rotor and ABS wheel speed sensor dirty or damaged	
1) ⇒ page 01-41 , Electrical testing.			
2) Type of malfunction.			

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00290	**1311**		
ABS Wheel Speed Sensor,LR-G46		Open circuit, short circuit or loose connection in: ♦ ABS wheel speed sensor wire ♦ Connector ♦ ABS wheel speed sensor winding	- Check wiring, connectors, ABS wheel speed sensor, Ground (GND) wiring to ABS control module and also capacitor for correct Ground (GND) connection ⇒ *Test steps 9, 13 and 321)*
Mechanical malfunction 2)		Excessive or insufficient air gap between ABS wheel speed sensor and impulse rotor (signal not OK)	- Check installation of ABS wheel speed sensor and impulse rotor; clean if necessary
Signal outside tolerances 2)		Impulse rotor and ABS wheel speed sensor dirty or damaged	
1) ⇒ page 01-41 , Electrical testing.			
2) Type of malfunction.			

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00292	**1313**		
Hydraulic Energy Supply Pressure Level		Pressure loss through leaks or air in the hydraulic unit and brake system	- Bleed brake system ⇒ *Repair Manual, Suspension, Wheels, Brakes, Steering, Repair Group 47*
Mechanical malfunction 2)		ABS hydraulic pump -V64- not producing sufficient pressure	- If necessary, replace ABS hydraulic unit and tandem master cylinder ⇒ *Repair Manual, Suspension, Wheels, Brakes, Steering, Repair Group 45*
			- After repairs, erase DTC memory with VAG 1551 scan tool ⇒ page 01-39
00532	**2234**		
Supply Voltage (B+)		Faulty wiring, connectors, fuse -S4-, ABS valves fuse -S54- or ABS relay -J102-	- Check fuses, wiring, connectors, Ground (GND) wiring and the voltage supply to ABS control module ⇒ *Test steps 1-4, 14 and 301)*

1) ⇒ page 01-41 , Electrical testing.

2) Type of malfunction.

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00547	**2133**		
ABS Pressure Control Switch- F137 2)		Wire between terminal 13 and terminal 26 of ABS control module -J104- with ABS pressure control switch -F137- has connection to battery + or battery -	- Visual check of wiring between terminal 13 and terminal 26 ⇒ Electrical Wiring Diagrams, Troubleshooting & Component Locations binder
			- Disconnect multi-pin connector from ABS control module, connect to test box VAG 1598 and VAG 1598/10 and use multimeter (Fluke 83 or equivalent) to measure voltage between terminals: 13 and 1 = max. 0.1 V 26 and 1 = max. 0.1 V ⇒ *Test step 291)*
1) ⇒ page 01-41 , Electrical testing.			
2) Applies to ABS control module 1H0 907 379A only.			

VAG 1551 scan tool printout	Possible cause of malfunction	Repairing malfunction
00599		
Plausibility Pressure/ Brake Light Switch	Faulty wiring, connectors, ABS pressure control switch -F137-, fuse -S20- or brake light switch -F-	- Visual check of wire routing from brake light switch -F-, ABS pressure control switch -F137- and fuse -S20- ⇒ *Test steps 5 and 291)*
	Time delay between brake light switch signal and pressure control switch signal excessive	- Ensure that the brake light switch signal enters the ABS control module before the pressure control switch signal, if necessary adjust brake light switch ⇒ page 01-76

1) ⇒ page 01-41 , Electrical testing.

VAG 1551 scan tool printout	Possible cause of malfunction	Repairing malfunction
00634		
Series Resistance - N159	Faulty wiring, connectors, EDL relay -J310- or EDL series resistance -N159-	- Check wiring, connectors, EDL relay -J310- and EDL series resistance -N159- ⇒ *Test steps 15, 35 and 361)*
		- Check EDL series resistance -N159- for continuity (using VW 1594 connector test kit and multimeter (Fluke 83 or equivalent) in 200 ohm resistance range); Specification: max. 2 Ω, replace if necessary
1) ⇒ page 01-41 , Electrical testing.		

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
00793	**3231**		
Brake Pedal Pos. Sensor-G100		Faulty wiring, connectors, brake pedal position sensor -G100- or short to battery positive (B+) or Ground	- Check wiring, connectors and brake pedal position sensor -G100- ⇒ *Test steps 281)*
Mechanical malfunction 2)			- Unplug multi-pin connector from ABS control module, connect to test box VAG 1598 with adapter VAG 1598/10 and use multimeter (Fluke 83 or equivalent) to measure voltage between the terminals: 16 and 1 = max. 0.1 V 41 and 1 = max. 0.1 V
1) ⇒ page 01-41 , Electrical testing.			
2) ⇒ Type of malfunction.			

VAG 1551 scan tool printout		Possible cause of malfunction	Repairing malfunction
01276	**4133**		
ABS Hydraulic Pump-V64		Faulty wiring, connectors, ABS hydraulic pump relay -J185-, ABS hydraulic pump -V64- or hydraulic pump sender -G101-	- Check wiring, connectors, ABS hydraulic pump relay -J185-, ABS hydraulic pump -V64- and hydraulic pump sender -G101- ⇒ *Test steps 15, 27, 35 and 361)*
Signal outside tolerances 2)			
65535	**1111**		
Control Module Malfunctioning		Electrical malfunctions caused by outside interference, poor Ground (GND) connections, poor positive connections to ABS control module -J104-	- Check wiring, connectors and Ground (GND) wires to ABS control module and voltage supply ⇒ *Test steps 1-4, 14 and 301)*
		ABS control module faulty	- Replace ABS control module if necessary
1) ⇒ page 01-41 , Electrical testing.			
2) ⇒ Type of malfunction.			

Diagnostic Trouble Code (DTC) memory, erasing and ending output

Requirements

- DTC memory has been checked

Erasing DTC memory

No DTC recognized → ⮜

- Indicated on display
- Press → button.

Rapid data transfer **HELP** ⮜ Indicated on display (clear for function selection)

Select function XX

- Press buttons -0- and -5- to select the "Erase DTC Memory" function 05.

Rapid data transfer **Q** ⮜ Indicated on display

05 - Erase DTC Memory

- Press -Q- button to confirm input.

Rapid data transfer → ⮜ Indicated on display

DTC memory is erased

- Press → button.

Rapid data transfer **HELP** ⮜ Indicated on display (clear for function selection)

Select function XX

Note:

Attention!

DTC Memory is not interrogated

- *If "DTC Memory is not interrogated" is displayed, the OBD test sequence is faulty.*
- *Follow the program sequence exactly: first check DTC memory, then erase.*

Ending output

Rapid data transfer **HELP**

Select function XX

Indicated on display (clear for function selection)

- Press buttons -0- and -6- to select "End Output" function 06.

Rapid data transfer **Q**

06 - End Output

Indicated on display

- Press -Q- button to confirm input.

Rapid data transfer **HELP**

Insert address word XX

Indicated on display

- Switch ignition off.
- Disconnect VAG 1551 scan tool.
- Switch ignition on.

• ABS warning light -K47- must come on, then go out after approx. 2 seconds.