

## Checking functions

### Checking Lambda probe and Lambda regulation before catalyst

#### Note:

Only gold-plated contacts must be used to repair the contacts in the Lambda probes connectors.

#### Special tools, workshop equipment, testers, measuring instruments and auxiliary items required

- ☐ Hand multimeter V.A.G 1526 or multimeter V.A.G 1715
- ☐ Fault reader V.A.G 1551 or vehicle system tester V.A.G 1552 with cable V.A.G 1551/3
- ☐ Adapter set V.A.G 1594
- ☐ Test box V.A.G 1598/31
- ☐ Current flow diagram

#### Check conditions

- → All fuses must be OK.
- The battery voltage must be at least 11.5 V.
- Exhaust system between catalyst and cylinder head must be free of leaks
- No faults must be stored in fault memory  
=> Page [01-21](#), interrogating fault memory
- Coolant temperature must be at least 80 °C, => display group 04, display zone 3.

#### Functional check

- Connect fault reader V.A.G 1551 (V.A.G 1552). Start engine and select "Address word" 01 of engine control unit. When doing this the engine must be running at idling speed.  
(Connecting fault reader and selecting engine control unit => Page [01-12](#).)

→ Indicated on display:

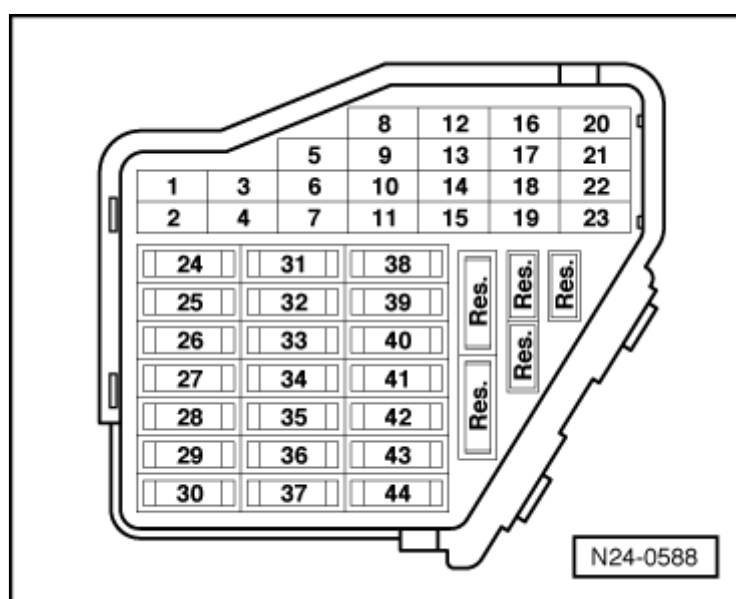
Rapid data transfer	HELP
Select function XX	

- Press keys 0 and 8 for the function "Read measured value block" and confirm entry with Q key.

→ Indicated on display:

Read measured value block
Input display group number XXX

- Press keys 0, 0 and 1 for "Display group number 1" and confirm entry with Q key.



→ Indicated on display:  
(1...4 = Display zones)

- Check whether the coolant temperature is above 80 °C in display zone 2.
- Change to display group 30 as follows:
- Press C key.

Read measured value block 1 ☐

1 2 3 4

→ Indicated on display:

- Press keys 0, 3 and 0 for the "Display group number 30" and confirm entry with Q key.

Read measured value block  
Input display group number XXX

→ Indicated on display:  
(1...2 = Display zones)

- Check status of Lambda regulation before catalyst (display zone 1):  
Specification: 111

Read measured value block 30 ☐

1 2

**Significance of 3 digit number block in display zone 1:**

Significance if display = 1			
1	2	3	
		1	Lambda regulation active
	1		Lambda probe operationally ready
1			Lambda probe heating on

If the specification is not obtained:

- Check Lambda probe heating before catalyst  
=> Page [24-28](#).

If the specification is obtained:

- Change to display group 32 as follows:
- Press C key.
- Press keys 0, 3 and 2 for "Display group number 32" and confirm entry with Q key.

→ Indicated on display:  
(1...2 = Display zones)

- Check Lambda learnt values at idling speed (additive) in display zone 1.

Read measured value block 32 ☐

1 2

Specification: -14.0...14.0 %

- Check Lambda learnt values at part load (multiplicative) in display zone 2.

Specification: -10.0...10.0 %

If the specifications are not obtained:

- Press ☐ key.
- Press keys 0 and 6 for the "End output" function and confirm input with the Q key.
- Switch off ignition.
- =>Page [01-140](#), Evaluating display group 32

If the specifications are obtained:

- Change to display group 33 as follows:

V.A.G 1551: Press key 3

V.A.G 1552: Press key ↑

→ Indicated on display:  
(1= Display zones)

Read measured value block 33 ☐  
1

- Check Lambda regulation in display zone 1. The display should fluctuate slightly in the range of -10.0...10.0 %.
- Check Lambda probe voltage in display zone 2. The voltage must fluctuate in range of 1.4... 1.6 V.

If the display in display zone 2 remains constantly at a value:

- Continue check according to following table.

Display	Cause	Continuation of check
1.5 V	Open circuit	
4.9 V	Short to positive	=> Page <a href="#">24-89</a> checking Lambda probe wiring
0.0 V	Short to earth	

If the Lambda regulation in display zone 1 does not fluctuate as stated:

- Press ☐ key.
- Press keys 0 and 6 for the function

"End output" and confirm entry with the Q key.

- Carry out a test drive to remove possible residue on Lambda probe and repeat check.

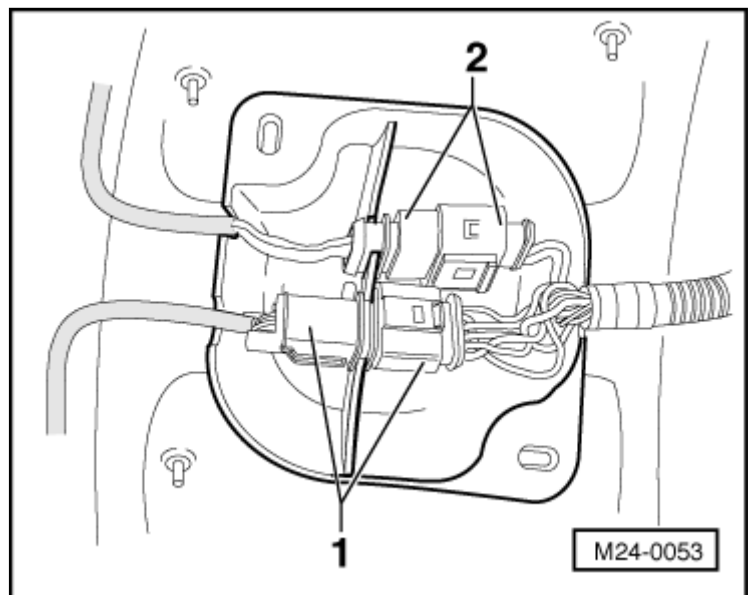
Observe the valid safety precautions when carrying out a road test => Page [24-23](#).

If specifications are not obtained after test drive:

- Check Lambda probe before catalyst for ageing =>Page [24-99](#)

### Checking basic voltage

- → Unscrew protective cover -arrows- and separate 6-pin connector (black) to Lambda probe before catalyst (G39).



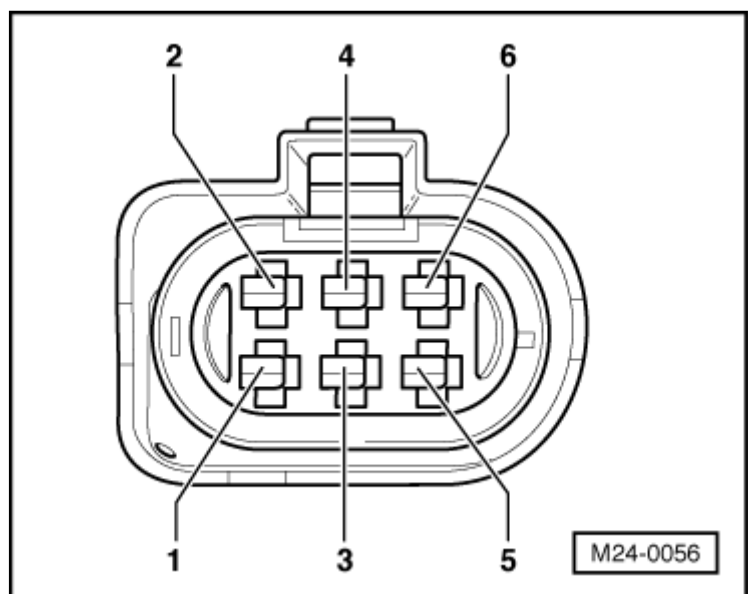
- → Connect multimeter with aux. cables from V.A.G 1594 to measure voltage at contacts 1 + 5 (connector to engine control unit).
- Switch on ignition and measure basic voltage.  
Specification: 0.40...0.50 V
- Switch off ignition.

If the specification is not obtained:

- Check Lambda probe wiring  
=> Page [24-89](#)

If the specification is obtained:

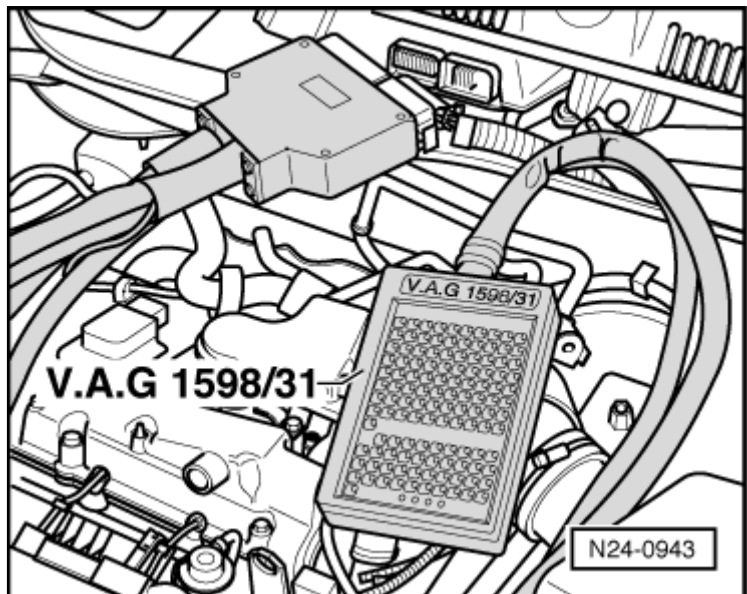
- Replace the Lambda probe before catalyst (G39).
- Interrogate fault memory, if necessary, repair any faults and then erase fault memory => Page [01-21](#), interrogating and erasing fault memory.



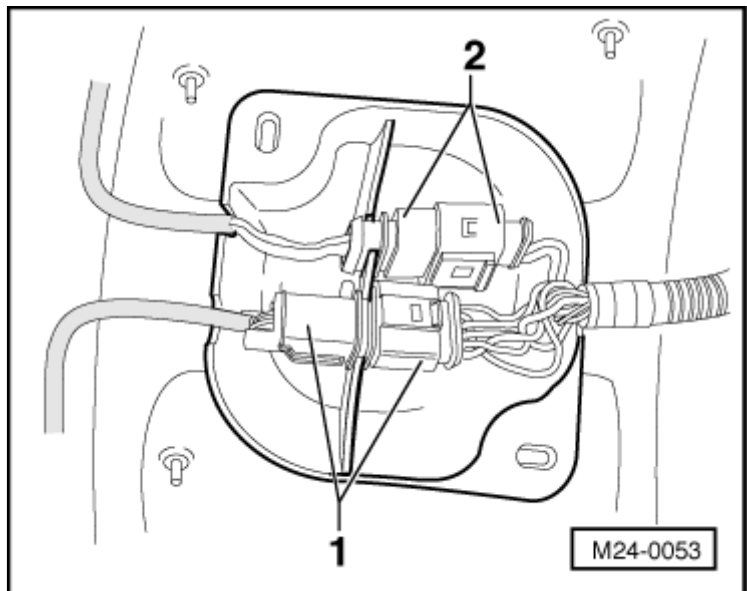
- Erase learnt values and adapt engine control unit=> Page [24-128](#)

### Checking Lambda probe wiring

- → Connect test box V.A.G 1598/31 to control unit wiring harness. The engine control unit remains disconnected.



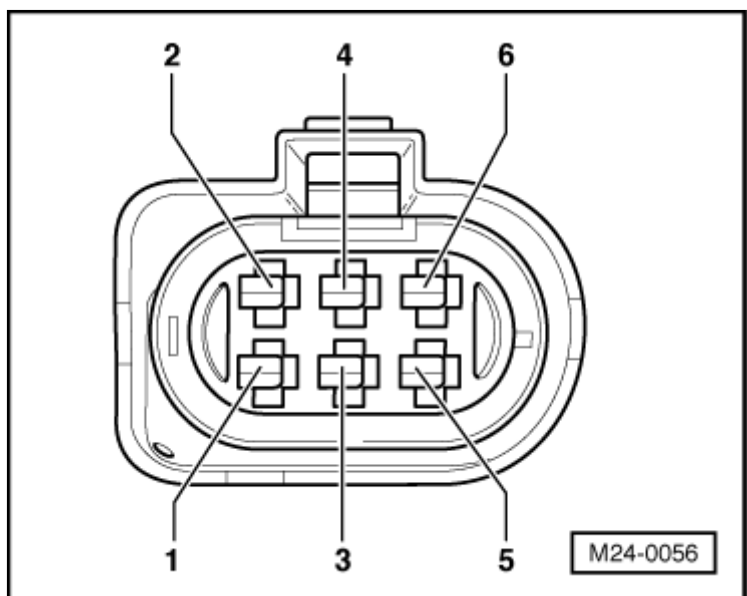
- → Unscrew protective cover on underbody -arrows- and disconnect 6-pin connector (black) -1- to Lambda probe before catalyst (G39).



- → Check wiring between test box and 6-pin connector for open circuit using current flow diagram:
  - Contact 1 and test box socket 14
  - Contact 2 and test box socket 15
  - Contact 5 and test box socket 34
  - Contact 6 and test box socket 33
  - Wire resistance: max. 1.5  $\omega$
- Additionally check wires all for short to one another.  
Specification:  $\infty\omega$

If no fault is detected in the wiring:

- Replace the Lambda probe before catalyst (G39).
- Interrogate fault memory, if necessary, repair any faults and then erase fault memory => Page [01-21](#), interrogating and erasing fault memory.



- Erase learnt values and adapt engine control unit=> Page [24-128](#)