

3.3 Retractable Rear Head Restraints (PSE/RHR) Model 210

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Activation of the Pneumatic System Equipment (PSE):

The control wire from the RHR unlocking switch (S6/1s2) is connected to the combination control module (N10-1). The necessary control signal is sent from the combination control module (N10-1) via two CAN data lines to the PSE control module (A37).

Diagnosis – Function Test (Retractable Rear Head Restraint)

Preparation for Test:

1. Check fuses F1–14, F1–22, F4–3, F4–5 ok,
2. Battery voltage 11 – 14 V.
3. Ignition: **ON**
4. Retractable rear head restraints extended up.

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
⇒ 1.0 Retract rear head restraints.	Press RHR unlocking switch (S6/1s3).	Both retracable rear head restraints retract.	<p>Retractable rear head restraints do not retract and pump motor in PSE control module (A37) does not run.</p> <p>23 ⇒ 1.0, 23 PSE/CL ⇒ 1.0, 2.1 23 ⇒ 1.0–3.0</p> <p>Retractable rear head restraints do not retract even though pump motor in PSE control module (A37) runs.</p> <p>32 ⇒ 1.0, 33 PSE ⇒ 4.0, Mechanical fault in RHR.</p>

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations (RHR)

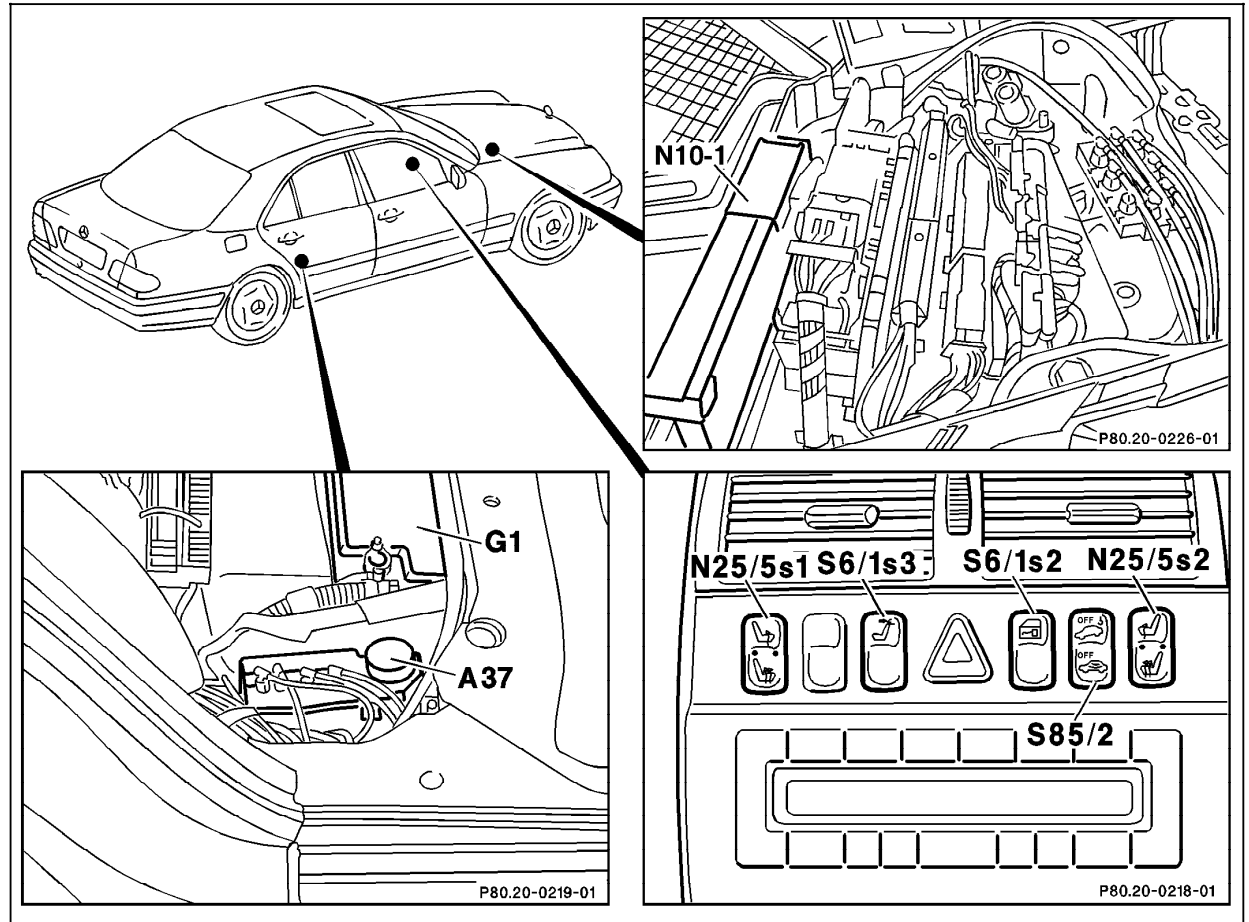


Figure 1

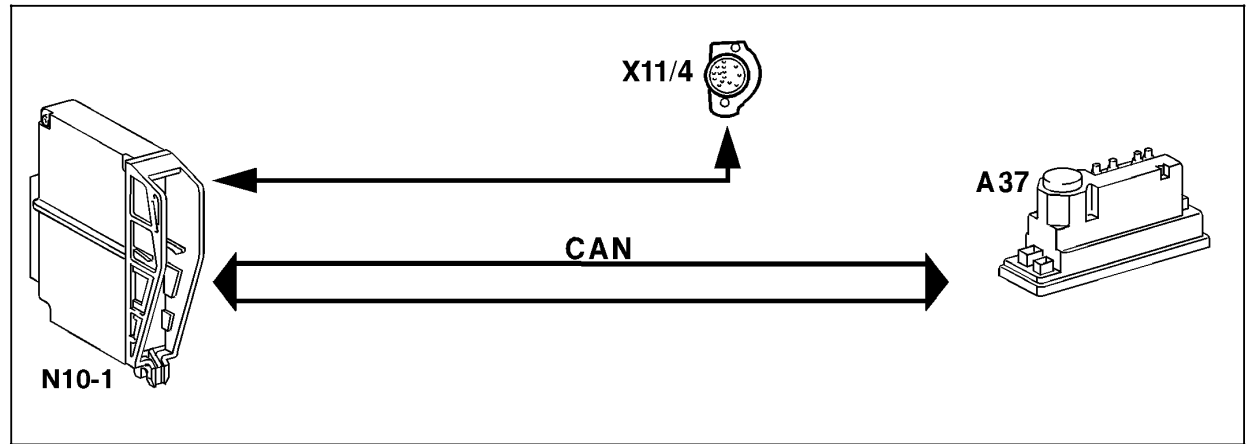
- A37 PSE control module, combined functions
- G1 Battery
- N10-1 Combination control module
- S6/1s3 RHR unlocking switch

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Electrical Test Program – Connection of Components

Figure 1

- A37 PSE control module, combined functions
- CAN Control-Area-Network
- N10-1 Combination control module
- S6/1s3 RHR unlocking switch
- X11/4 Data link connector (DTC readout)



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Electrical Test Program - Preparation for Test

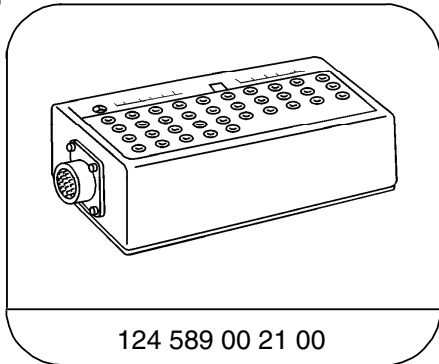
Preparation for Test:

1. Fuses for PSE system and PSE control module ok,
2. Battery voltage 11 – 14 V,
3. Provide access to PSE control module (A37),
4. Provide access to combination control module (N10-1 or N10-3),
5. Connect socket box with test cable according to connection diagram, see 22, Figure 1 – 3.

Electrical Wiring Diagrams:

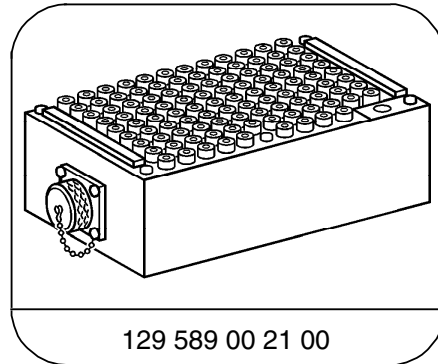
See Electric Troubleshooting Manual, Model 170, (please see future ETM),
Model 210, Volume 2, group 80

Special Tools



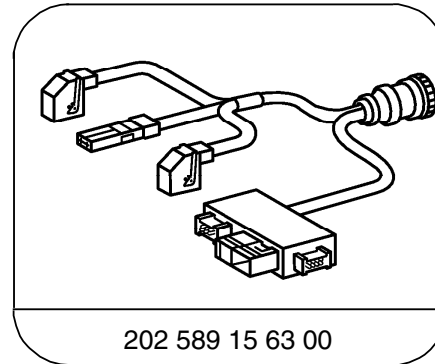
124 589 00 21 00

35-pin socket box



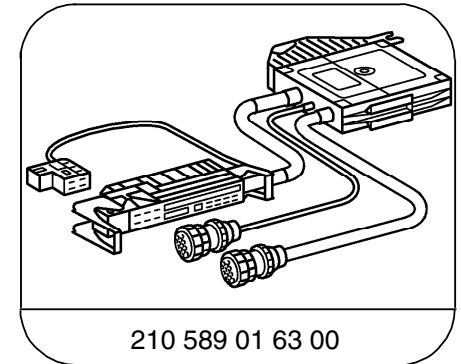
129 589 00 21 00

126-pin socket box



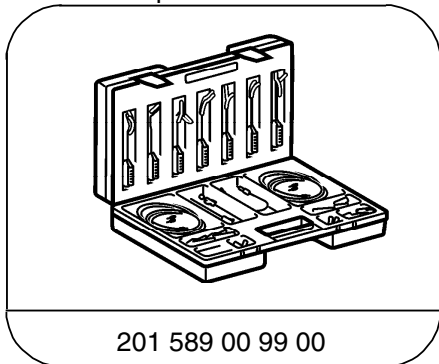
202 589 15 63 00

18-pin and 12-pin CAN test cable



210 589 01 63 00

78-pin test cable



201 589 00 99 00

Electrical connecting set

3.3 Pneumatic System Equipment (PSE)

Models 170, 210

Conventional tools, test equipment

Description	Brand, model, etc.
Multimeter ¹⁾	Fluke models 23, 83, 85, 87

¹⁾ Available through the MBUSA Standard Equipment Program.

Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box
Model 170

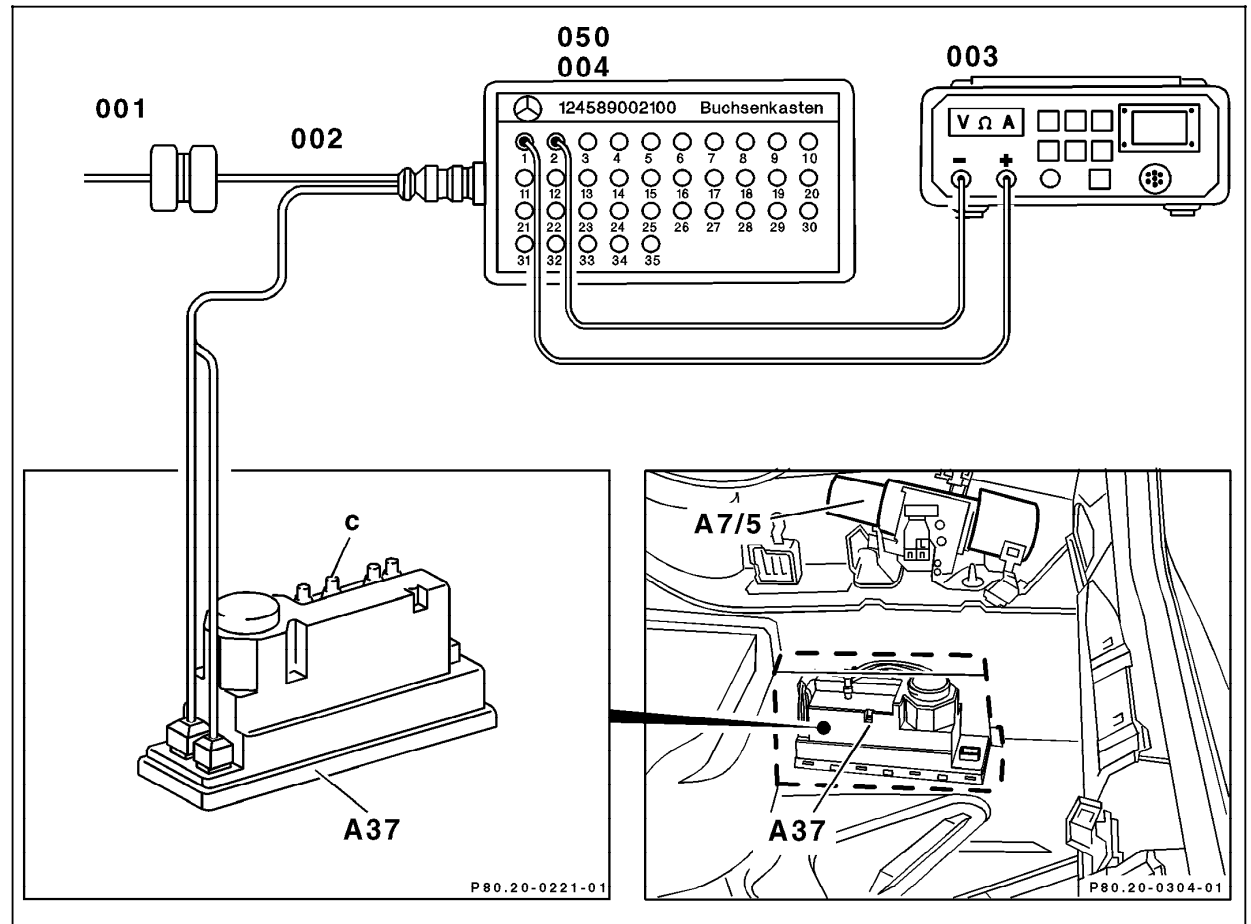


Figure 1

- A37 PSE control module, combined functions
- 001 PSE control module connector
- 002 Test cable
- 003 Multimeter
- 004/050 Socket box (35-pole)

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Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box

Model 210

(sedan shown)

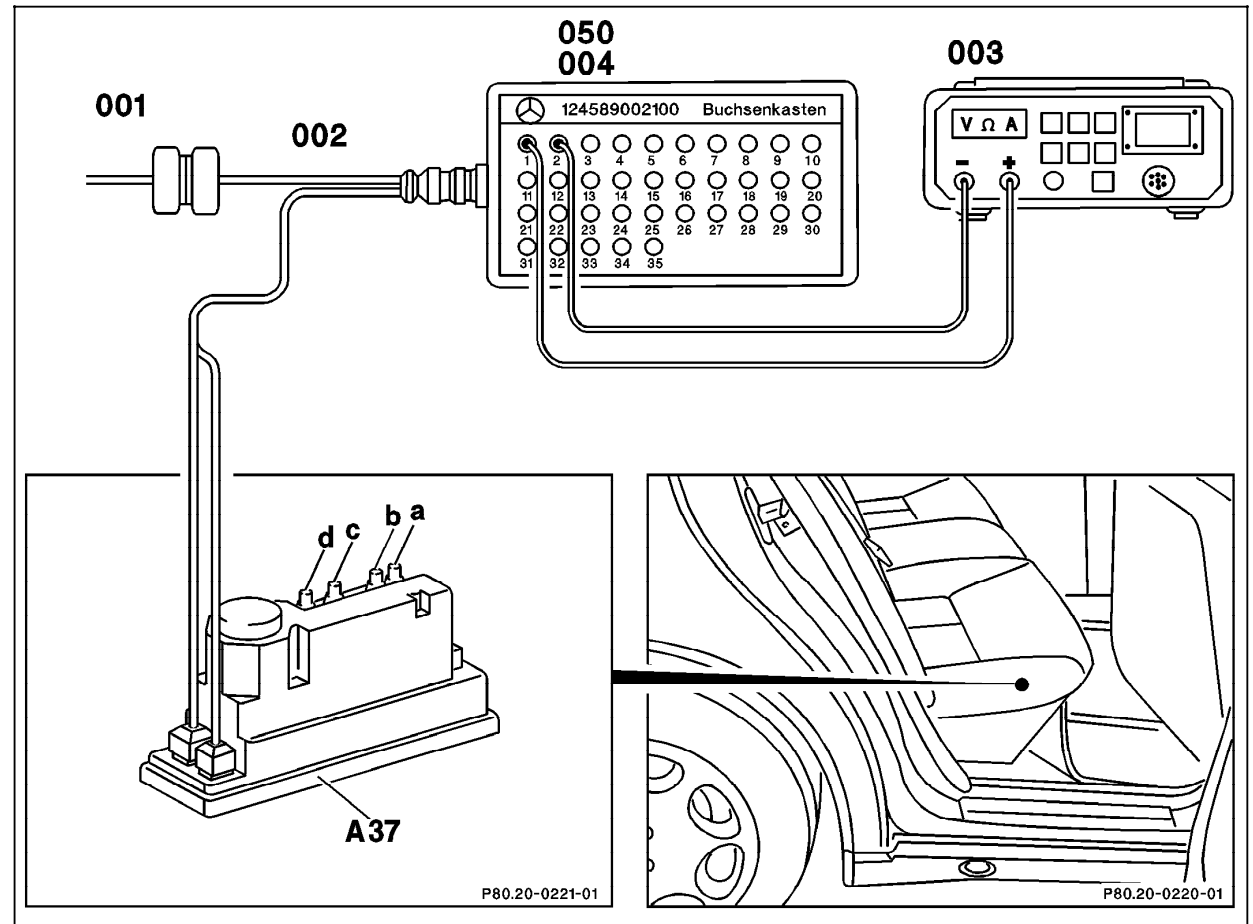


Figure 2

- A37 PSE control module, combined functions
- 001 PSE control module connector
- 002 Test cable
- 003 Multimeter
- 004/050 Socket box (35-pole)

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Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box

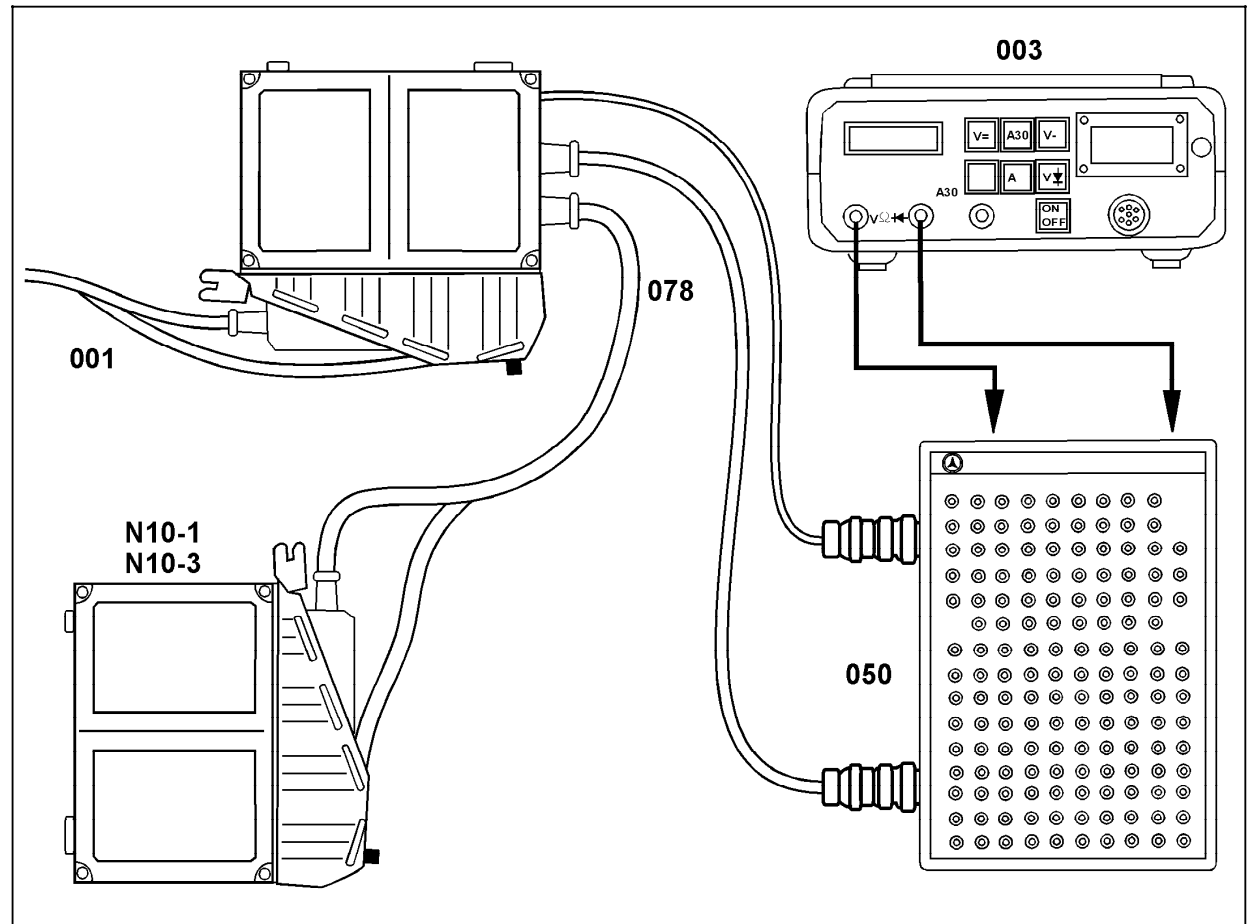


Figure 3

- N10-1 Combination control module (model 210)
- N10-3 Combination control module (model 170)
- 001 PSE control module connector
- 002 Test cable
- 003 Multimeter
- 050 Socket box (35-pole)

P82.40-0214-06

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		RHR unlocking circuit		Rear head restraints extended. Ignition: ON RHR unlocking switch (S6/1s3): Press switch:	Rear head restraints retract.	Wiring, ⇒ 1.1, 23 PSE ⇒ 1.0–8.0, 23 PSE/CL ⇒ 1.0, 2.1 23 ⇒ 1.0–3.0, 32 ⇒ 1.0, 33 PSE ⇒ 4.0, Combination control module (N10-1), PSE control module (A37).
1.1		RHR unlocking switch (S6/1s3)	<p>N10-1 49 —(C)</p> <p>A37 3 (2)</p>	Disconnect combination control module (N10-1) from S6/1s3: Rest position S6/1s3: Hold pressed	>20 kΩ approx. 760 Ω	Wiring, S6/1s3, S6/1s2

Pneumatic Test Program – Component Locations (RHR)

Component Locations

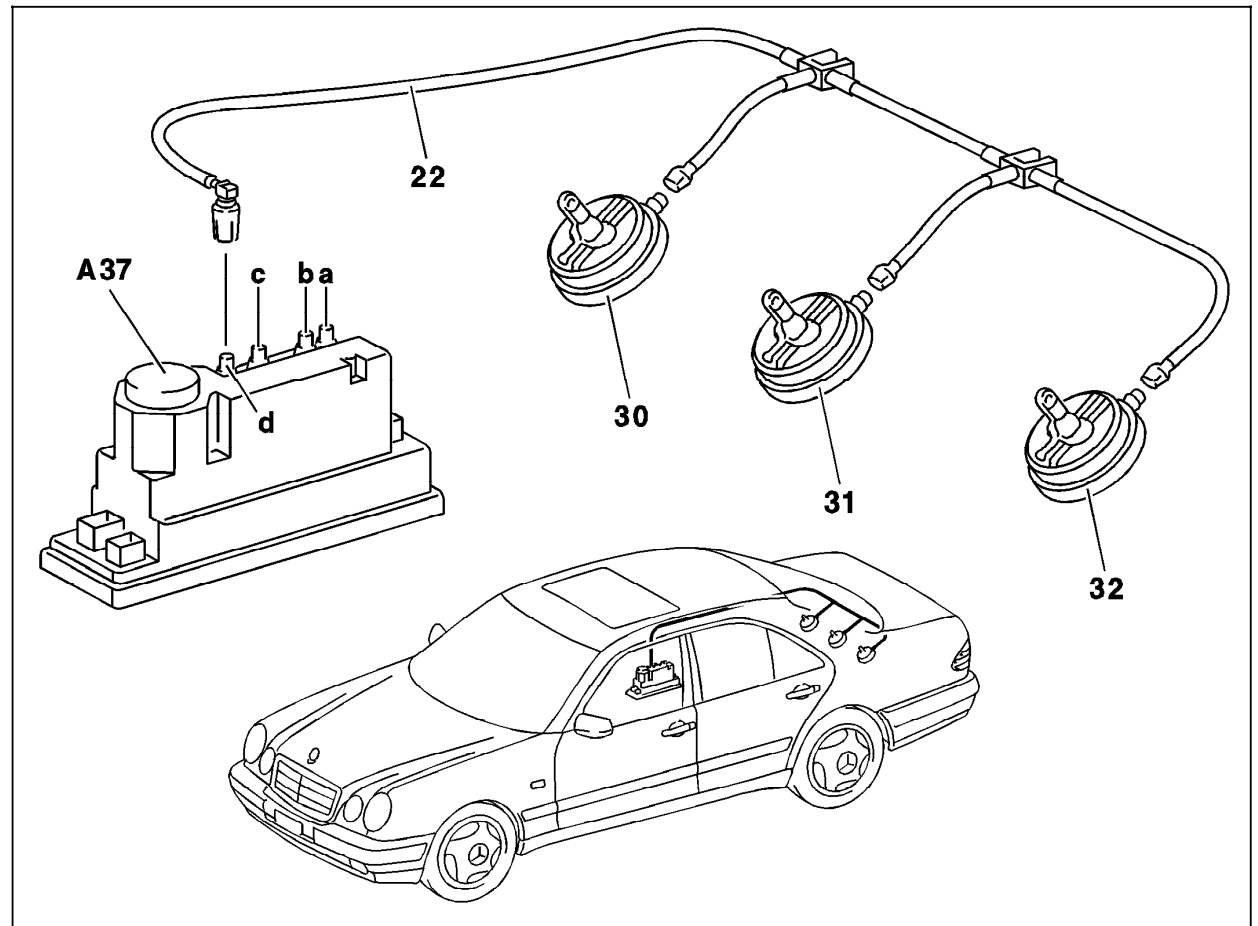


Figure 1

- A37 PSE control module, combined functions
- a Pneumatic connection OSB
- b Pneumatic connection MVA
- c Pneumatic connection CL, RTR
- d Pneumatic connection RHR
- 22 Pneumatic line RHR (color code: white/blue)
- 30 Pneumatic actuator RHR, right side
- 31 Pneumatic actuator RHR, center
- 32 Pneumatic actuator RHR, left side

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Pneumatic Test Program – Test (RHR)

Preliminary work:

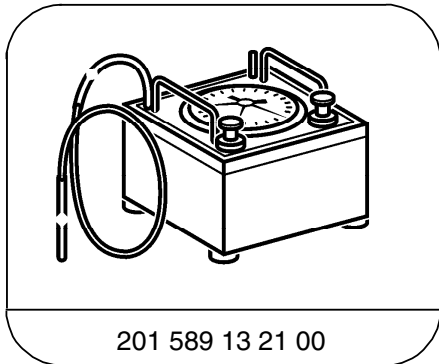
PSE control module voltage supply 23 PSE ⇒ 1.0, 2.0
 PSE Control Module Test 32 PSE

Data (mbar)

Test procedure	Permissible deviation
Allowable system leakage of 300 mbar vacuum in 1 minute.	30 mbar
Allowable leakage of actuators with line at 300 mbar vacuum in 1 minute.	25 mbar

Vacuum distribution block used with gasoline models only

Special Tools



201 589 13 21 00

Tester

Pneumatic Test Program – Test (RHR)

A. Entire System

Preparation for Test:

1. Provide access to PSE control module (A37), disconnect **white** RHR pneumatic line with socket from PSE control module.
2. Connect tester to disconnected socket using connector 202 805 03 44.



If an actuator does not operate correctly and no leakage is found, check the respective lines for kinks or blockages.

Parts Required for Test:

- | | | |
|---|--------------------------|---------------|
| 1 | Connector | 202 805 03 44 |
| 2 | Rubber hose, 50 mm long | 007 997 61 82 |
| 1 | Pneumatic line, 1 m long | 000 158 14 35 |

Note:

The connections on the PSE control module and pneumatic multiple connector are marked with their German acronyms. In other words:
ZV (German) = **CL** (English),
SRU (German) = **MVA** (English),
OSL (German) = **OSB** (English).

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	Complete system evacuated	Black connector on tester to connector	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	⇒ 2.0, ⇒ 3.0

Pneumatic Test Program – Test (RHR)

B. Actuators

Preparation for Test:

1. Remove RHR actuators.
2. Connect tester to pneumatic connection of actuator.

Parts Required for Test:

- | | | |
|---|-------------------------|---------------|
| 2 | Rubber hose, 50 mm long | 007 997 61 82 |
| 1 | Pneumatic line, 1m long | 000 158 14 35 |
| 1 | Socket | 202 800 02 53 |

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0	Actuator hold vacuum	Black connector on tester.	Apply 300 mbar vacuum to actuator.	Vacuum loss 25 mbar in 1 minute.	Actuator leaks. Replace.

Pneumatic Test Program – Test (RHR)

C. Lines

Preparation for Test:

1. Connect tester to one end of pneumatic line and plug other end with cap, part no. 124 805 02 44.

Parts Required for Test:

- | | | |
|---|-----------------------|---------------|
| 1 | Connector | 202 805 03 44 |
| 3 | Cap | 124 805 02 44 |
| 1 | Connector, 50 mm long | 007 997 61 82 |

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0	Vacuum leakage	Black connector on tester.	Apply 300 mbar vacuum to pneumatic line.	Vacuum loss 0 mbar in 1 minute.	Pneumatic line leaks. Replace.