

3.4 Retractable Rear Head Restraints (PSE/RHR)
Models 202, 208, 210 as of M.Y. 1998

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Activation of the Pneumatic System Equipment (PSE):

The control wire from the RHR unlocking switch (S6/1s3) is connected to the signal pick-up and activation module (SAM) (N10/1). From the signal pick-up and activation module (SAM) (N10/1), the activation signal is sent via two CAN data lines to the PSE control module (A37).

Diagnosis – Function Test (Retractable Rear Head Restraint)

Preparation for Test:

1. Retractable rear head restraints extended up.
2. Ignition: **ON**
3. Battery voltage 11 – 14 V.
4. Check fuses ok.
5. Voltage to control modules and CAN data lines ok.

| 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 retractable rear head restraints retract. | <p>Retractable rear head restraints do not retract and pump motor in PSE control module (A37) does not run. PSE version coding incorrect, Wiring, PSE (A37).</p> <p>Retractable rear head restraints do not retract even though pump motor in PSE control module (A37) runs. Mechanical fault in RHR, 23 PSE/RHR ⇒ 1.0, 32 PSE/RHR ⇒ 1.0, 32 PSE ⇒ 8.0</p> |

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations (RHR)

Models 202, 208
(model 202 shown)
(for balance of compnents see Figure 2)

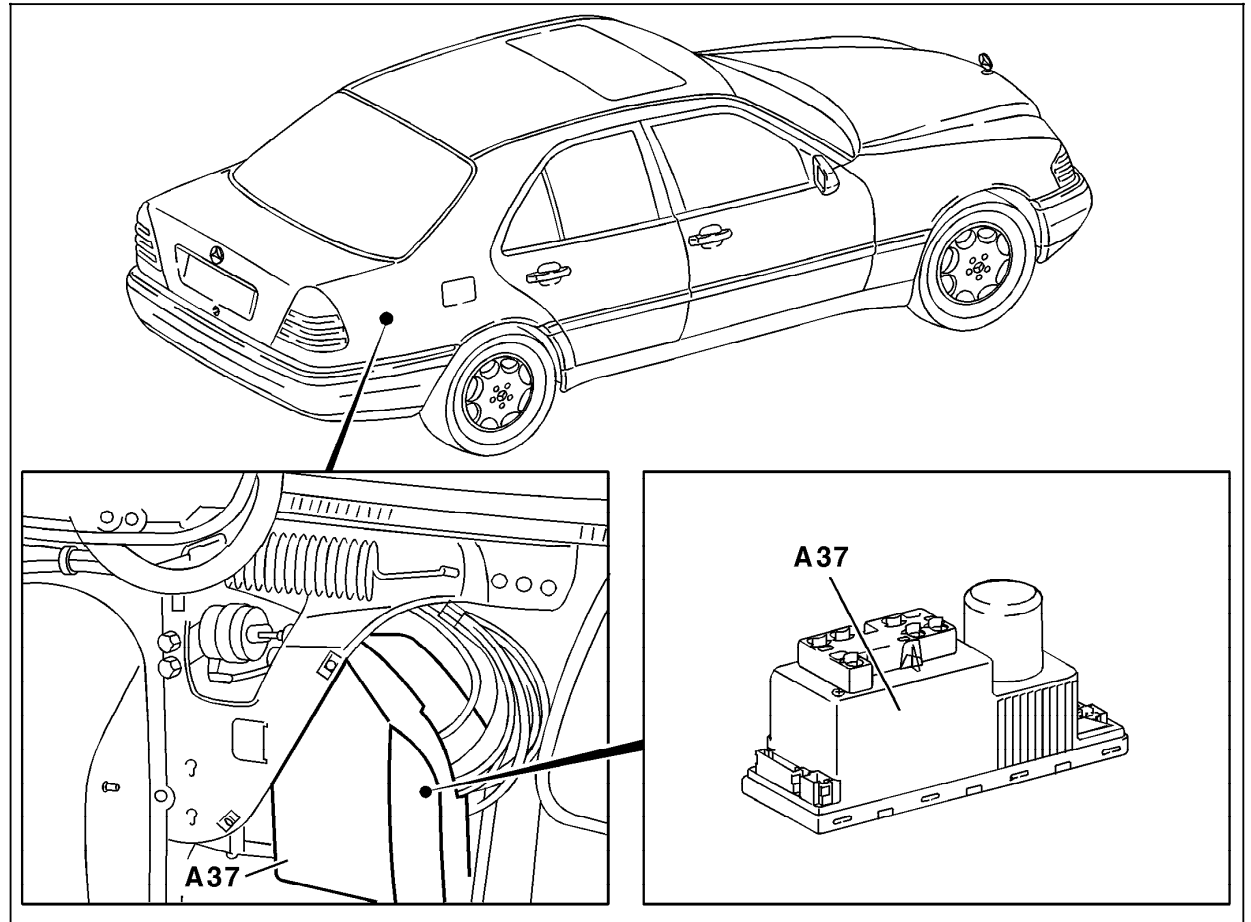


Figure 1

A37 PSE control module, combined functions

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Electrical Test Program – Component Locations (RHR)

Model 210 sedan

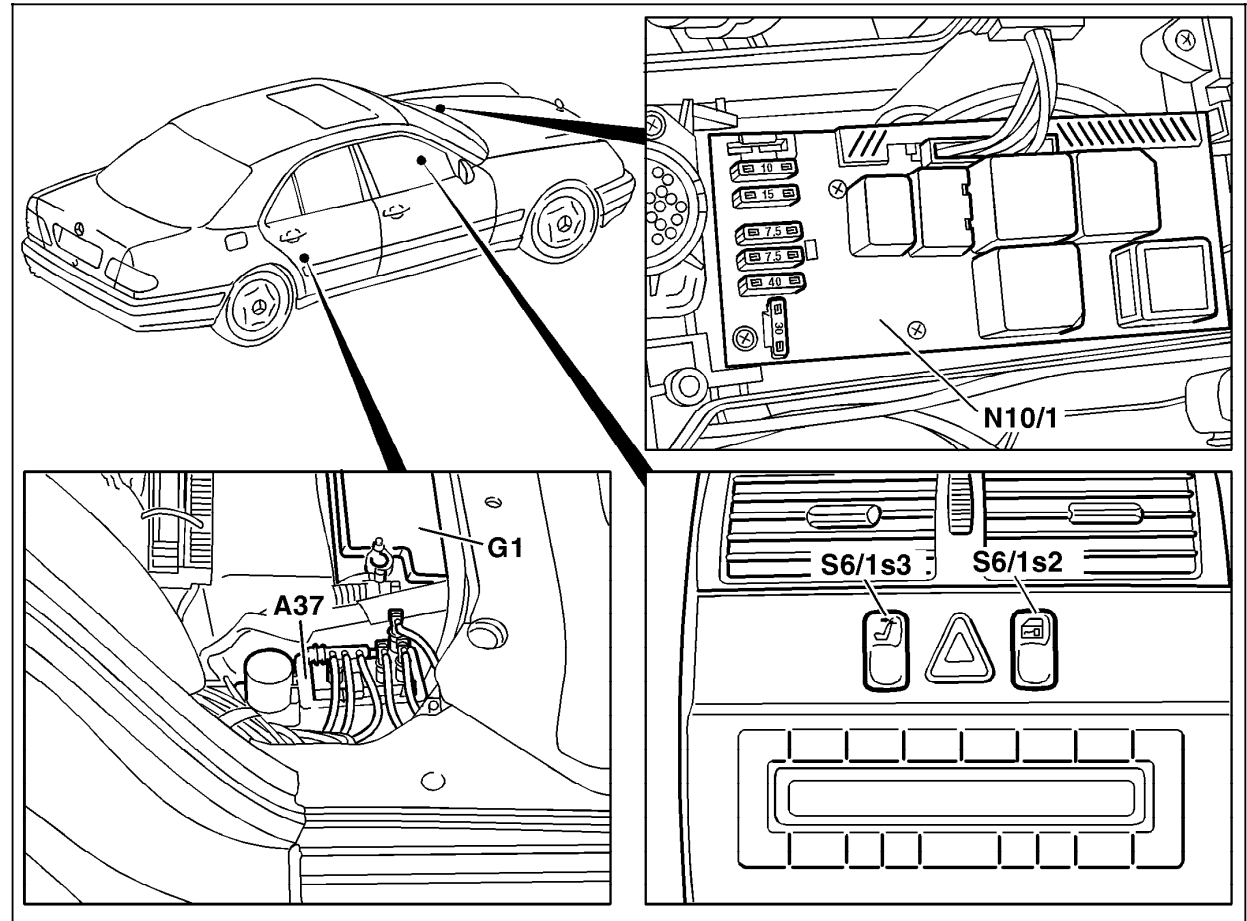


Figure 2

- A37 PSE control module, combined functions
- G1 Battery
- N10/1 Signal pick-up and activation module (SAM) left front
- S6/1s2 Interior switch (CL)
- S6/1s3 RHR unlocking switch

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Electrical Test Program – Connection of Components (RHR)

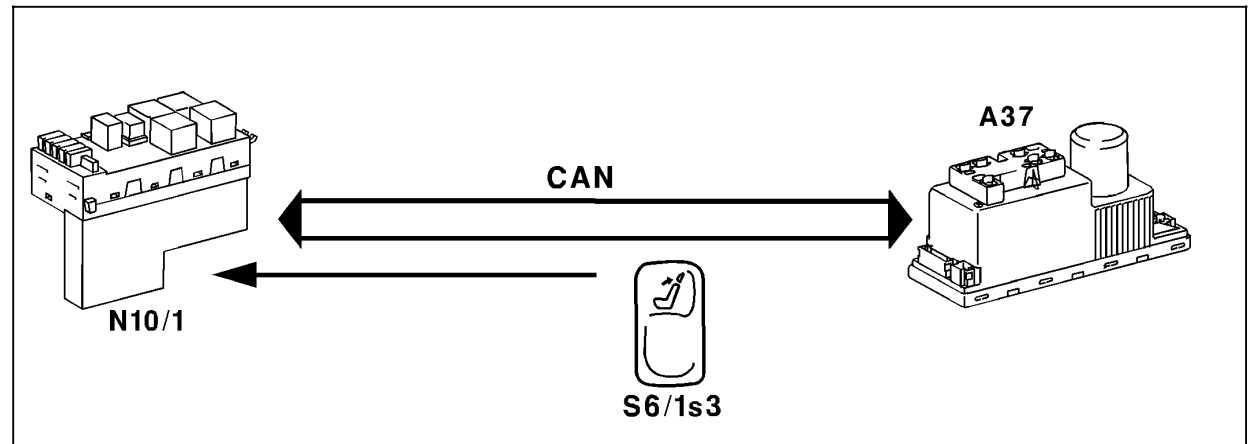


Figure 1

- A37 PSE control module, combined functions
- CAN Control-Area-Network
- N10/1 Signal pick-up and activation module (SAM) left front
- S6/1s3 RHR unlocking switch

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Electrical Test Program - Preparation for Test

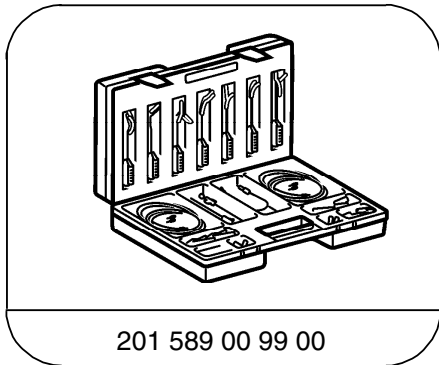
Preparation for Test:

1. Voltage supply to all control modules and CAN data lines ok,
2. Battery voltage 11 – 14 V,
3. Review section 0,
4. Review C/1, C/2, 11, 12, 20, 21, 22, 31, 32,
5. Connect HHT, see section 0,
6. For model 202 and 208, review PE80.00-P-1100D and for model 210 review PE80.00-P-1100A, prior to starting test.

Electrical Wiring Diagrams:

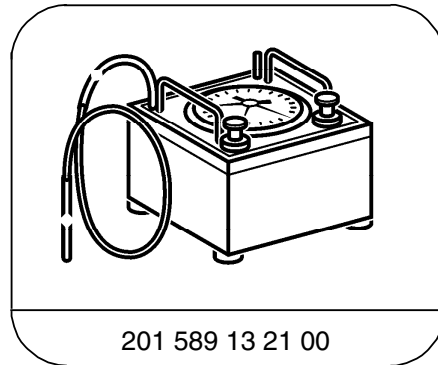
See Electric Troubleshooting Manual, Model 202/208, group 80,
Model 210, Volume 2, group 80

Special Tools



201 589 00 99 00

Electrical connecting set



201 589 13 21 00

Tester

Test equipment; See MBUSA Standard Service Equipment Program

| Description | Brand, model, etc. |
|--------------------|-------------------------------------|
| Digital multimeter | Fluke models 23, 77 III, 83, 85, 87 |

Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box
Model 210
 (sedan shown)

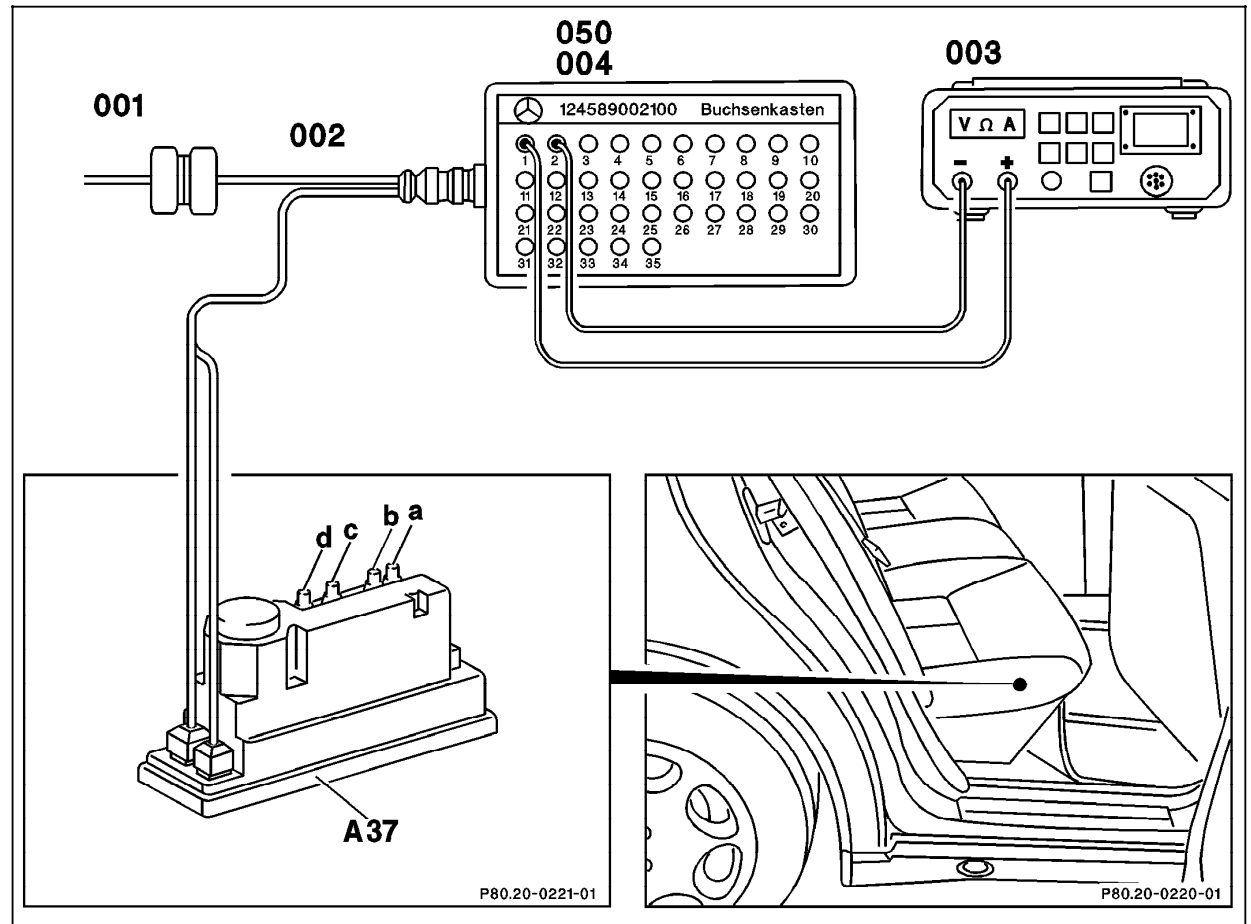


Figure 1

- 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

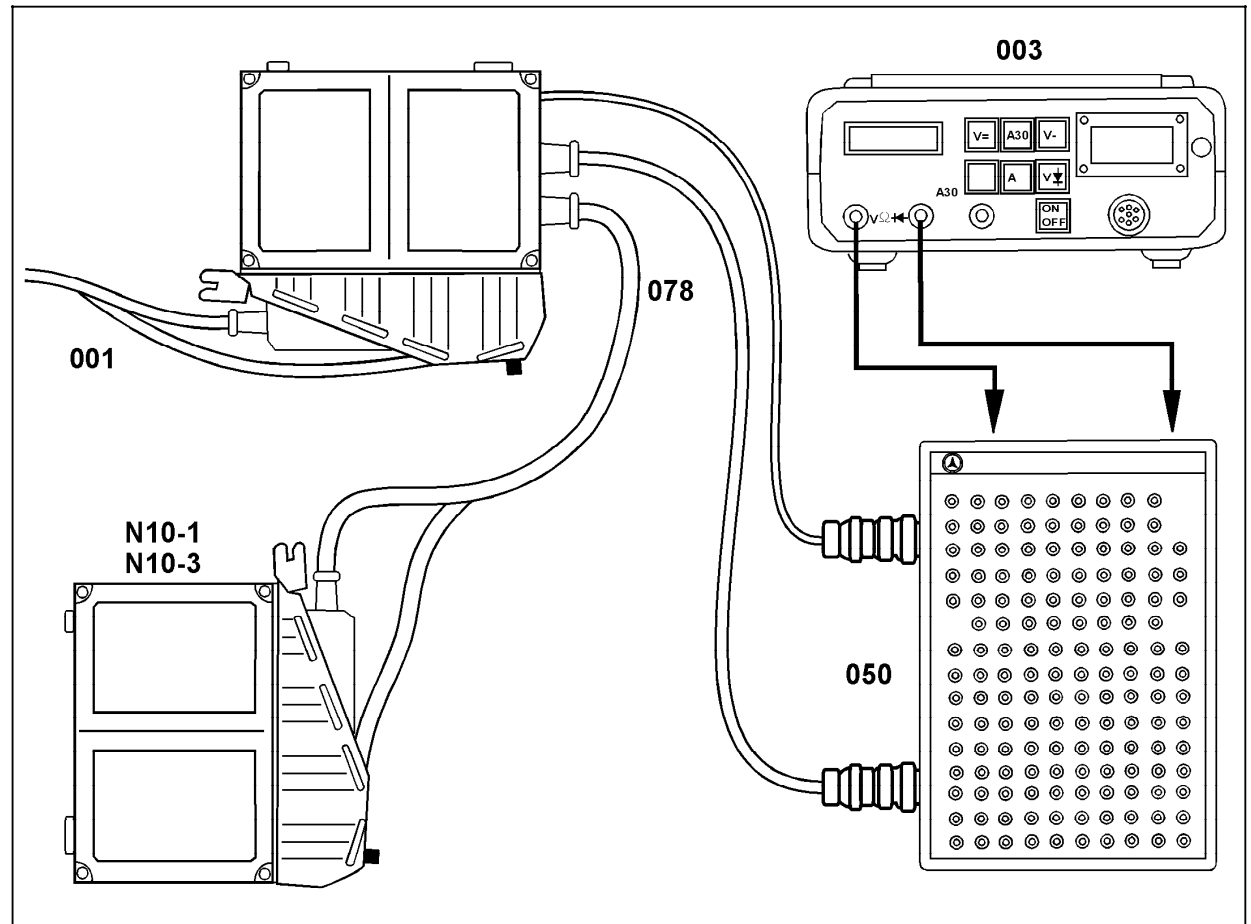


Figure 2

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

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Electrical Test Program - Preparation for Test

Connections - PSE control module (A37)

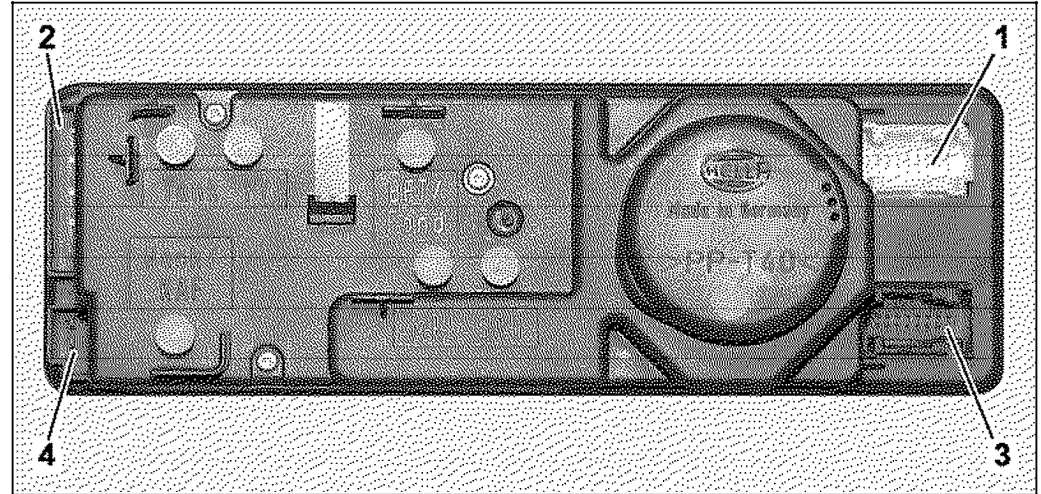





Figure 4

- 1 Connector 1 (control line PSE)
- 2 Connector 2 (voltage supply PSE)
- 3 Connector 3 (control line ATA)
- 4 Connector 4 (load connections ATA)

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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, 32 PSE/RHR ⇒ 1.0, 32 PSE ⇒ 8.0, Signal pick-up and activation module (SAM) (N10/1), PSE control module (A37). |
| 1.1 | | RHR unlocking switch (S6/1s3) | N10/1 6 —  (1) | Disconnect connector 1 from N10/1. S6/1s3: Rest position S6/1s3: Hold pressed | >20 kΩ approx. 760 Ω | Wiring, S6/1s3, S6/1s2 |

Pneumatic Test Program – Component Locations (RHR)

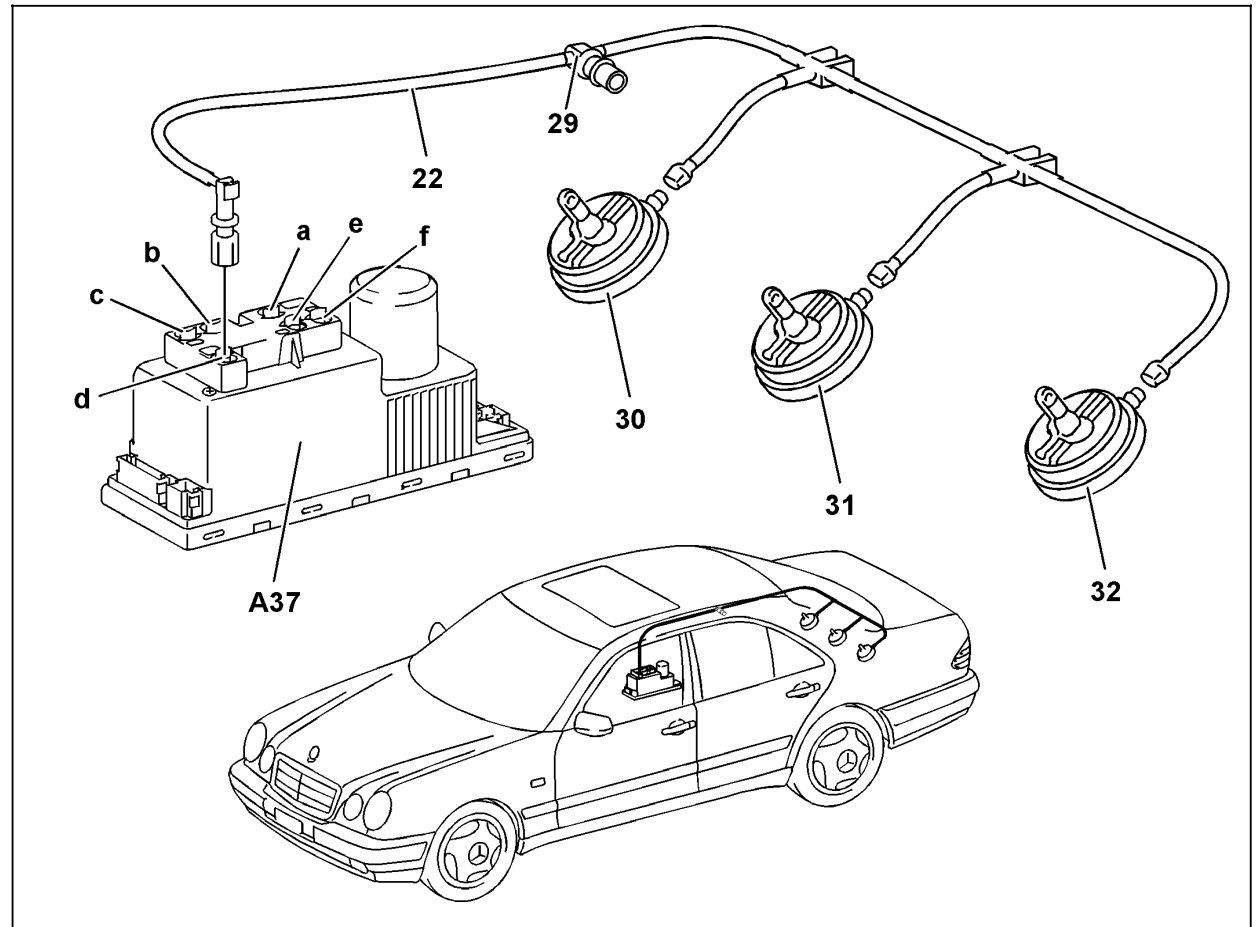


Figure 1

- A37 PSE control module, combined functions
- a Pneumatic connection, passenger/rear doors
- b Pneumatic connection, driver-side door
- c Pneumatic connection, fuel tank filler flap
- d Pneumatic connection, RTR/RHR
- e Pneumatic connection, OSB
- f Pneumatic connection, MVA
- 22 Pneumatic line, RHR
- 29 Pneumatic line, T-connector
- 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:

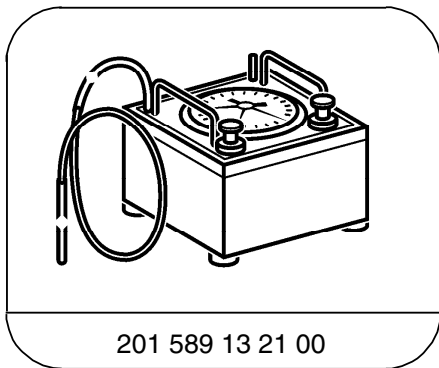
PSE control module voltage supply 23 PSE ⇒ 1.0, 2.0
 PSE Control Module Test 32 PSE

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. | 32 PSE/RHR ⇒ 2.0, 32 PSE/RHR ⇒ 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. Repair/Replace. |