3.1 Retractable Rear Head Restraints (PSE/RHR)
Model 140

Diagnosis - Function Test (Retractable Rear Head Restraints)

Preparation for Test:

1. Check fuse F4-3 and fuse F4-11.
2. Battery voltage 11 – 14 V.
3. Ignition: **ON**.
4. Rear head restraints raised.

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 1.0 Retract rear head restraints	Activate rear head restraint release switch (S52) momentarily.	Both rear head restraints retract.	Rear head restraints do not retract and pump motor in PSE control module (A37) **does not run**. 23 PSE ⇒ 1.0, 23 ⇒ 1.0. Rear head restraints do not retract even though pump motor in PSE control module (A37) **runs**. 32 PSE ⇒ 8.0, 32 ⇒ 1.0.

[1] Observe Preparation for Test, see 22.

Note: The retraction of the rear head restraints may not be synchronized. One headrest retracting a few seconds before or after the other is normal and should not be considered a defect.

Electrical Test Program - Component Locations (Retractable Rear Head Restraints)

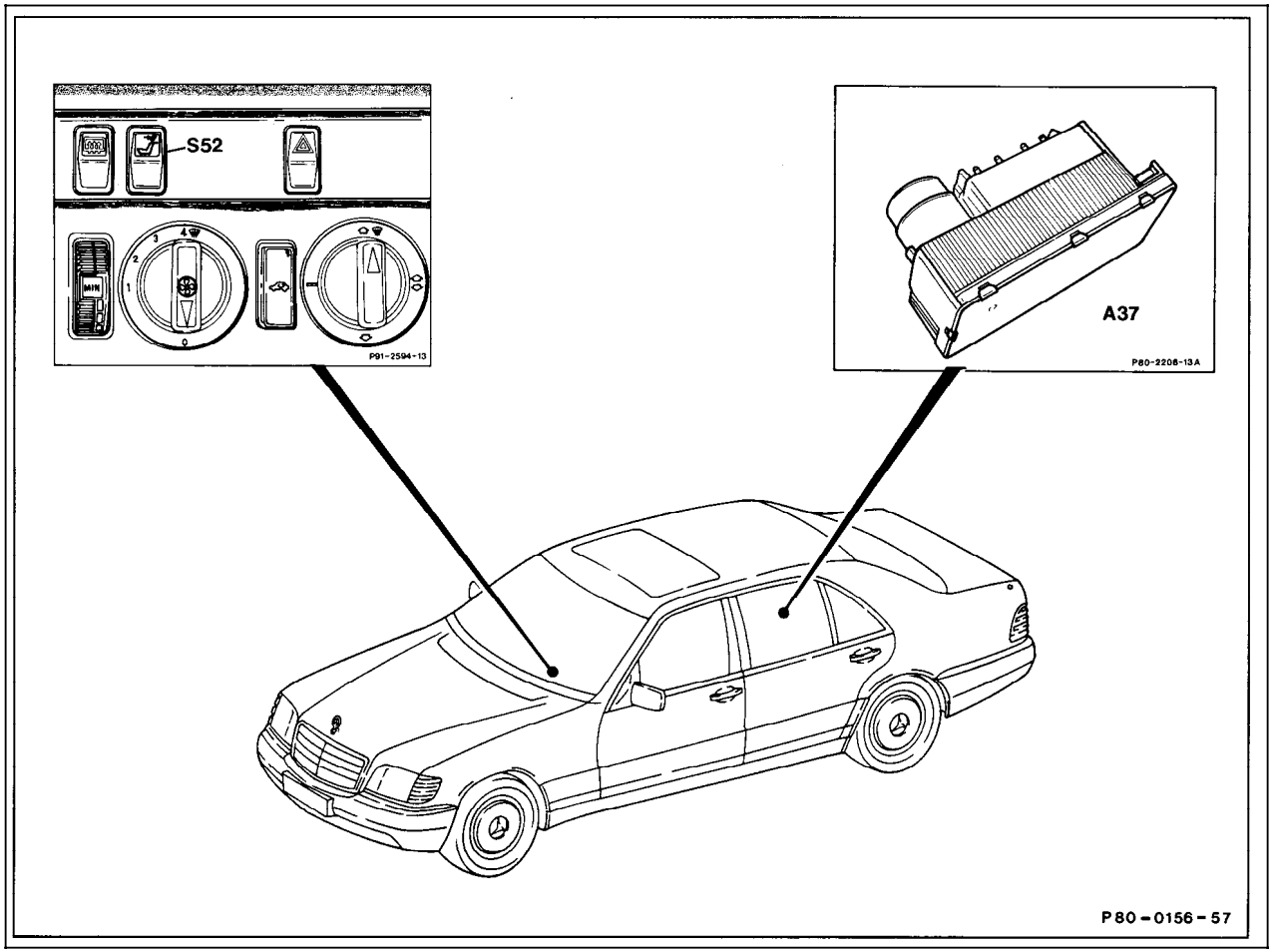


Figure 1

A37	PSE control module
S52	RHR release switch

P80-0156-57

Electrical Test Program - Preparation for Test (Retractable Rear Head Restraints)

Preliminary work:
Diagnosis - Diagnostic Trouble Code (DTC) Memory . . . . . 11 PSE

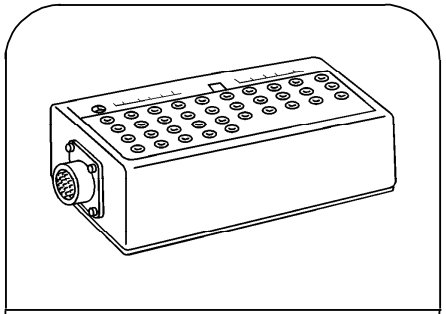
Preparation for Test:

1. Check fuse F4-3 and fuse F4-11.
2. Provide access to PSE control module (A37).
3. Connect socket box with test cable according to connection diagram, see 22 Figure 1.

Electrical wiring diagrams

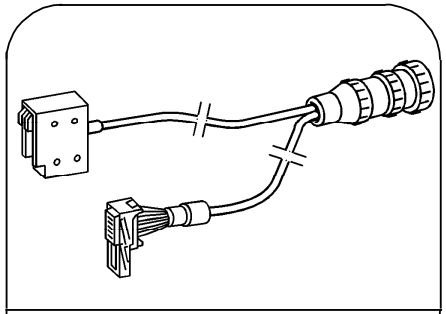
See Electrical Troubleshooting Manual, Model 140, Volume 2.

Special Tools



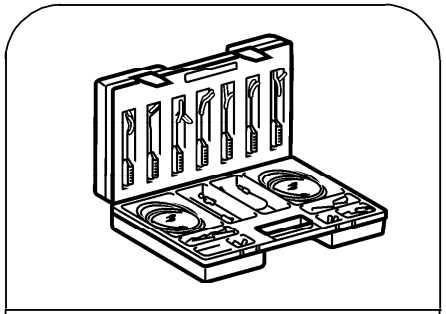
124 589 00 21 00

35-pin socket box



140 589 13 63 00

21-pin test cable



201 589 00 99 00

Electrical connecting set

Equipment

Multimeter [1]	Fluke models 23, 83, 85, 87

[1] Available through the MBUSA Standard Equipment Program.

Electrical Test Program - Preparation for Test (Retractable Rear Head Restraints)

Connection Diagram - Socket Box

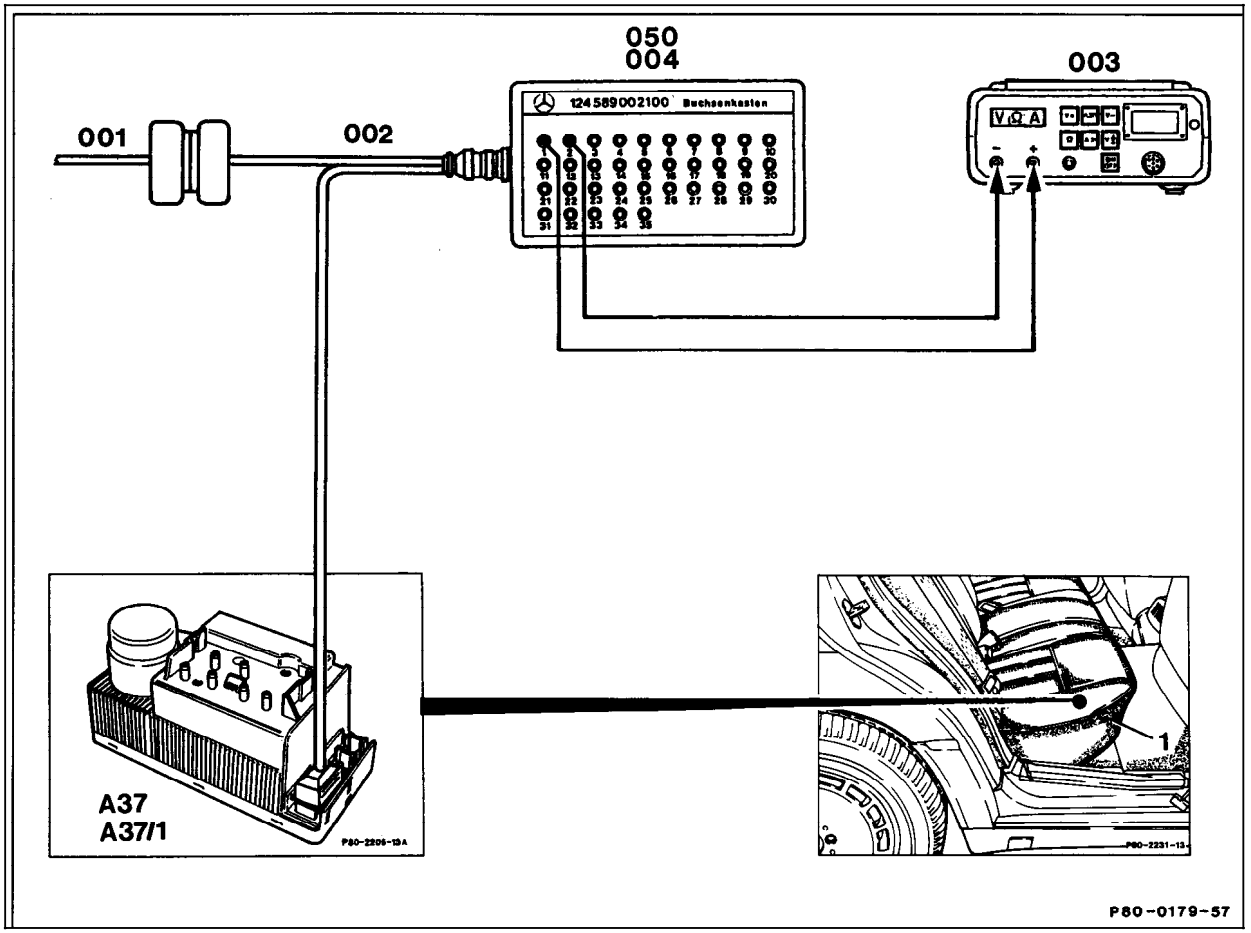


Figure 1

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

P80-0179-57

Electrical Test Program - Test (Retractable Rear Head Restraints)

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0 9 15	**Rear head restraint retraction**		Raise the rear head restraints. Ignition: **ON** Rear head restraint release switch (S52): **Hold switch pressed.**	Rear head restraints retract.	Wiring, ⇒ 1.1, PSE control module (A37).
⇒ 1.1	Rear head restraint release switch (S52)	A37 21 — 13	Disconnect A37 from S52: **Rest position.** **Hold switch pressed.**	>20 kΩ $<40\ \Omega$	Wiring, S52. Wiring, S52.

Pneumatic Test Program - Component Locations (Retractable Rear Head Restraint)

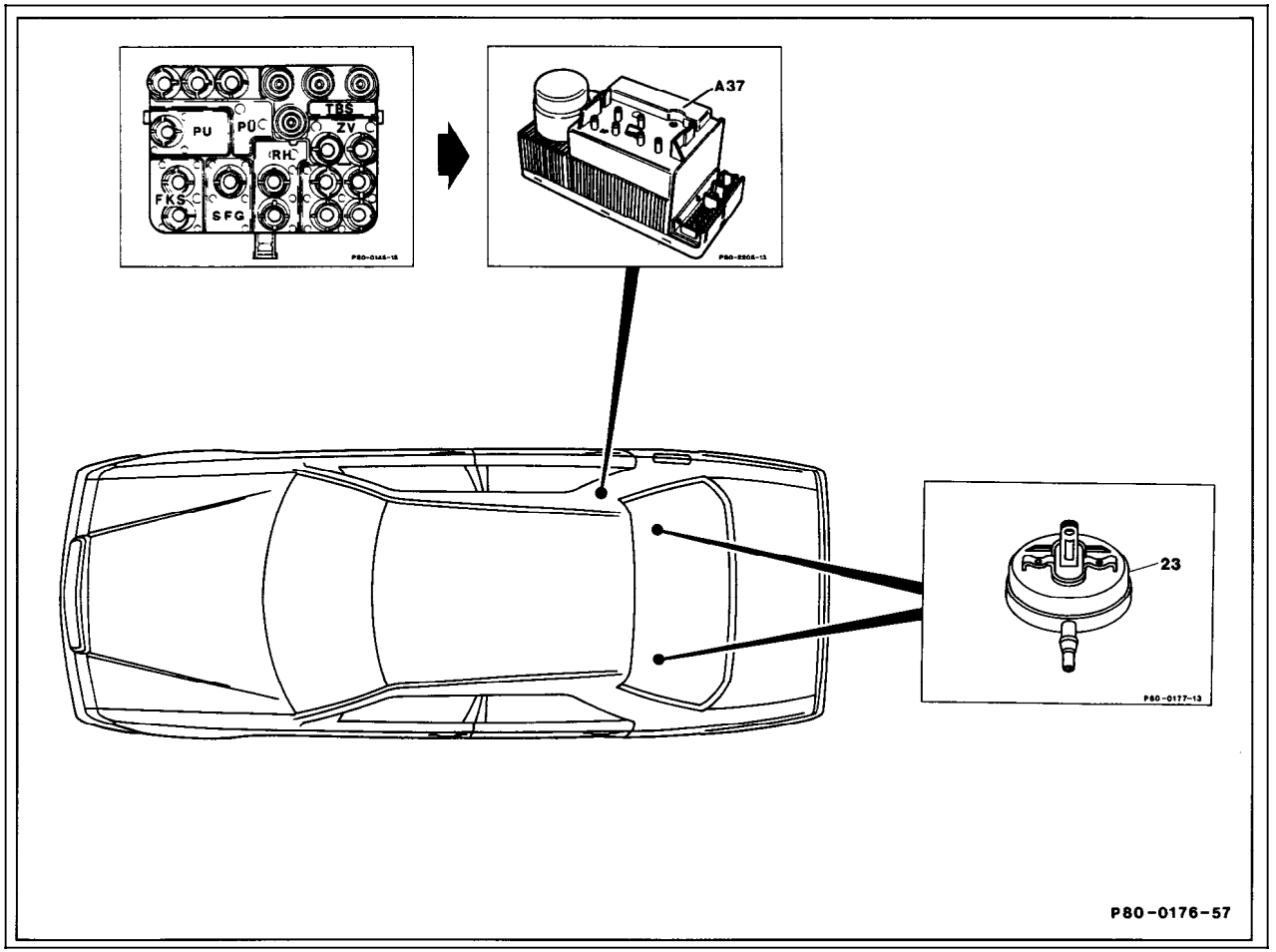


Figure 1

23	Rear head restraint retraction actuator
A37	PSE control module

P80-0176-57

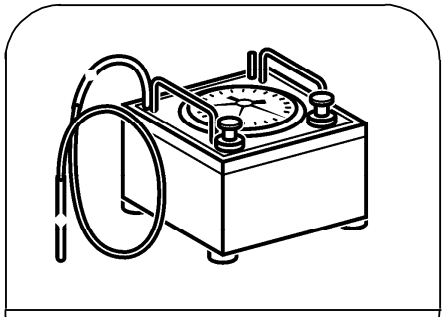
Pneumatic Test Program – Test (RHR)

Preliminary work:
Diagnosis - Diagnostic Trouble Code (DTC) Memory . . . . . 11 PSE
PSE Control Module Test . . . . . 32 PSE

Data (mbar)

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

Special Tools



201 589 13 21 00

Tester

Pneumatic Test Program – Test (RHR)

A. Entire system

Preparation for Test:

Vehicles up to 07/94:

1. Disconnect pneumatic multiple connector at the PSE control module.
2. Connect the tester to bottom side of pneumatic multiple connector at **FKS** (RHR) using connector 129 805 04 44.

Vehicles starting 08/94:

1. Disconnect **white/blue** pneumatic line with socket from PSE control module.
2. Connect tester to disconnected pneumatic line using connector 129 805 04 44.

Parts Required for Test:

1	Connector	129 805 04 44
2	Connectors, 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),
RH (German) = **BA** (English),
FKS (German) = **RHR** (English),
SFG (German) = **RTG** (English),
PÜ/P+ (OSL) (German) = **PÜ/P+ (OSB)** (English),
PU/P- (SRU) (German) = **PU/P- (MVA)** (English).

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	**Complete system evacuated**	**Black** connector on tester. **FKS** on bottom side of the multiple connector.	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	33 PSE ⇒ 2.0, 32 ⇒ 2.0.

Pneumatic Test Program – Test (RHR)

B. Vacuum lines with actuators

Preparation for Test:

Vehicles up to 07/94:

1. Pry off **white/blue** rear head restraint retraction (RHR) pneumatic lines at pneumatic multiple connector (using a 7 mm open end wrench).
2. Connect tester in sequence to each of the **white/blue** RHR pneumatic lines using connector 007 997 61 82.

Vehicles as of 08/94:

1. Disconnect **white/blue** RHR pneumatic lines at pneumatic distributor.
2. Connect tester in sequence to each of the **white/blue** RHR pneumatic lines using connector 007 997 61 82.

Letters on the distributor indicate whereto the pneumatic lines are leading.

A → Left actuator B → Right actuator

Note:

1. If an actuator does not operate correctly and no leakage is found, check the respective lines for kinks or blockages.
2. On vehicles as of approx. 06/94, the disconnected pneumatic lines are to be reconnected to the distributor with connector 007 997 61 82

Parts Required for Test:

1 Connector, 50 mm long 007 997 61 82

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0	**Vacuum leakage, pneumatic lines and actuators**	**Black** connector on tester.	Apply 300 mbar vacuum to the actuator and line.	Vacuum loss 25 mbar in 1 minute.	32 ⇒ 3.0, 32 ⇒ 4.0.

Pneumatic Test Program – Test (RHR)

C. Actuators

Preparation for Test:

1. Remove the actuator (See SMS, Repair Instructions, Job No. 91-400).
2. Connect the pressure/vacuum tester to the pneumatic connector of the actuator.

Parts Required for Test:

1	Connector, 50 mm long	007 997 61 82

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0	**Actuator holds vacuum**	**Black** connector on tester.	Apply 300 mbar vacuum to the actuator.	Vacuum loss 25 mbar in 1 minute.	Actuator.

Pneumatic Test Program – Test (RHR)

D. Lines

Preparation for Test:

1. Connect the tester at one end of the pneumatic line and seal the other end with cap 124 805 02 44.

Parts Required for Test:

1	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
4.0	**Vacuum leakage**	**Black** connector on tester.	Apply 300 mbar vacuum to the lines.	Vacuum loss 0 mbar in 1 minute.	Pneumatic line.