3.5 PSE Control Module (PSE)
Models 129, 140, 170 as of M.Y. 1998

Notes:

The PSE provides pressure or vacuum for the following systems:

- Central locking (CL), (pressure or vacuum) – activation via remote central locking (RCL), interior switch (CL) (S6/1s2) and via mechanical key (only USA J).
- Remote trunk release (RTR), (pressure) – activation via remote trunk release switch (S15) or via remote central locking (RCL), (RTR except for model 170).
- Retractable rear head restraint (RHR), (vacuum) – activation via RHR unlocking switch (S6/1s3). (RHR for model 140 only).
- Multi-contour seat (OSB), (pressure) – control of the working pressure via pressure switch in the PSE, as soon as the ignition ON signal is received via the CAN-interface. (OSB for models 129,140 only).
- Manifold Vacuum Assist (MVA), (vacuum) – control of the working vacuum via pressure switch in the PSE, as soon as the ignition ON signal is received via the CAN-interface. (MVA for model 140 only).

Diagnostic Trouble Code (DTC) Memory

- Pneumatic as well as electrical faults of the systems (CL, OSB, MVA, RTR and RHR) are recognized by the PSE and stored in the DTC memory. DTC memory can only be readout and erased using the Hand-Held-Tester (HHT).

⚠ **CAUTION!**

Erasing the DTC memory, may also erase the DTC memory for the other systems which use the PSE control module DTC memory.

Additional components of the PSE:

- Heated rear window relay (model 170 only)
- Crash sensor for emergency unlocking
- ATA control module (model 170 only)

PSE control module version coding:

- The PSE control module (A37) must be version coded. In the HHT display, the menu point 6 appears as a result.
- Version coding is menu driven.

Version Coding Possibilities	Selection	Hints
Locking while driving	Yes/No	Automatic locking after V > 9 mph. i If "No" has been selected, the automatic lock function can not be activated even when pressing the CL interior switch (S6/1s2).
Automatic subsequent locking	Yes/No	The vehicle is locked after a period of time, provided that after unlocking none of the doors are opened.
Locking while driving via CL interior switch (S6/1s2)	Yes/No i Selection is relevant only if the "locking while driving" function is active (see above).	If "Yes" has been selected, the function "Automatic locking" can be controlled (activated/deactivated) via the CL interior switch (S6/1s2).

Diagnosis – Function Test (PSE)

Preparation for Test:

1. Ignition: **ON**,
2. Side windows open,
3. Fuses ok for PSE control module, electronic ignition switch (EIS),
4. Battery voltage 11 to 14 V,
5. Review C/1, 20, 21, 22, 31, 32,

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 1.0 Locknut 1	Press "**unlock**" button on transmitter key.	ON OFF	See section 4.10 23
⇒ 2.0 Locknut 2	Press "**lock**" button on transmitter key.	ON OFF	See section 4.10 23
⇒ 3.0 Rotary tumbler/trunk lid microswitch (S88/1) (Model 140 only)	Trunk lid: Open Close	 ON OFF	23 ⇒ 7.0
⇒ 4.0 Lock vehicle via interior switch (CL) (S85/5)	Interior switch (CL): Press "lock" Not pressed	 ON OFF	23 (PSE/CL) ⇒ 2.0
⇒ 5.0 Unlock vehicle via interior switch (CL) (S85/5)	Interior switch (CL): Press "Unlock" Not pressed	 ON OFF	23 (PSE/CL) ⇒ 2.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (PSE)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 6.0 Left/right front door switch (S17/3, S17/4) (Model 140 only)	Open left/right front door Close left/right front door	ON OFF	23 ⇒ 3.0
⇒ 7.0 Left/right rear door switch (S17/5, S17/6) (Model 140 only)	Open left/right rear door Close left/right rear door	ON OFF	23 ⇒ 6.0
⇒ 8.0 Left front door switch (S17/3) (Model 170 only)	Left front door: Open Closed	 ON OFF	23 ⇒ 4.0
⇒ 9.0 Right front door switch (S17/4) (Model 170 only)	Right front door: Open Closed	 ON OFF	23 ⇒ 5.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (PSE)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 10.0RHR release switch (S52) (Model 140 only)	RHR release switch: Pressed Not pressed	 ON OFF	See AD80.20-P-6003-01A
⇒ 11.0Circuit 15 (Model 140 only)	Ignition: ON OFF	 ON OFF	23 ⇒ 2.0
⇒ 12.0Remote trunk release switch (S15) (Model 140 only)	Remote trunk release switch: Pressed Not pressed	 ON OFF	See AD80.20-P-6002-01A

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

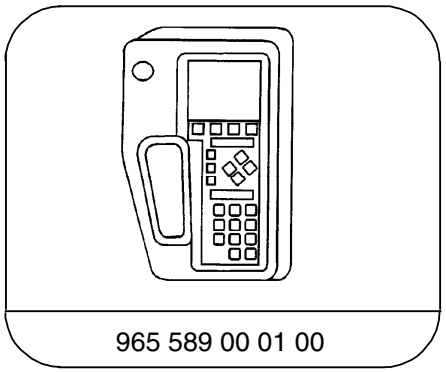
Preparation for Test:

1. Unlock vehicle via remote central locking,
2. Battery voltage 11 – 14 V,
3. Fuses ok,
4. Review C/1, 20, 21, 22, 31, 32,
5. Connect the Hand-Held Tester (HHT) to X11/4, according to diagram, see section 0. Readout and note DTCS's.

i

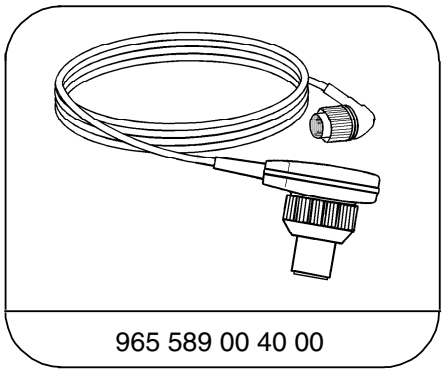
The DTC memory can only be readout and erased via the HHT.
DTC's can be readout only for models 129 and 140.
Voltage supply to control modules and CAN data lines ok.
Readout DTC memory and note failure codes.
Perform repairs of noted failures as per fault table. There is a separate fault table for each model in this section.
Interrupt PSE control module power supply for approx. 3 seconds to erase safety memory.
Since the DTC memory has been integrated into the combination control module (N10-1 or N10-3), DTC memory must be erased after replacement of the PSE control module.

Special Tools



965 589 00 01 00

Hand-Held-Tester



965 589 00 40 00

Test cable

i

> Ω resistance too great
< Ω resistance too low
⌜⌝+ short circuit to positive (POS)
⌜⌝– short circuit to ground (GND)
–//– open circuit

i

Actual values for Model 140 and 170 only, see 11
The tests and activations within the Function Test Section (11) can be performed using the HHT.

i

Within 12, the DTC's are arranged by model, please see header as necessary.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

Model 129 only

DTC 	Possible cause	Hints	Test step/Remedy [1]
012	Central locking, driver's door – safety switch time exceeded.		32 PSE ⇒ 1.0, 32 PSE ⇒ 2.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 2.0
013	Central locking, fuel filler flap – safety switch time exceeded.		32 PSE ⇒ 7.0, 32 PSE ⇒ 8.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 6.0
014	Central locking, passenger door – safety switch time exceeded.		32 PSE ⇒ 3.0, 32 PSE ⇒ 4.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 4.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

Model 140 only

DTC 	Possible cause	Hints	Test step/Remedy [1]
002	Central locking: air demand too high		32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 4.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 6.0, 32 PSE/CL ⇒ 7.0, 32 PSE/CL ⇒ 8.0
003	Retractable trunk lid grip: air demand too high	D.M., B&A, Vol. 1, section 3.1, 32	
004	RHR/RTR : air demand too high		See AD80.20-P-8003-01A, AD80.20-P-8002-01A
005	Multi-contour seat backrest (OSB): air demand too high		See AD80.20-P-8004-01A, AD80.20-P-8004-01B
006	MVA: vacuum too low		See AD80.20-P-8005-01A
007	Lock switch circuit 1 (S86/1, S87/1, S88/1): Resistance too high		4.10 23 4.10 23
008	Lock switch circuit 2 (S86/1, S87/1, S88/1): Resistance too high		4.10 23 4.10 23
009	RHR release switch (S52): Resistance too high		See AD80.20-P-6003-01A

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

Model 140 only

DTC 	Possible cause	Hints	Test step/Remedy [1]
010	Interior CL switch (S85): Resistance too high		23 PSE/CL ⇒ 1.0
011	Left front door switch (S17/3, S17/4): Resistance too high		23 PSE ⇒ 3.0
012	Remote trunk release switch (S15): Resistance too high		See AD80.20-P-6002-01A
013	Rotary tumbler/trunk lid microswitch (S88/1): Resistance too high		See AD80.20-P-6002-02A
014	Lock switch circuit 1 (S86/1, S87/1, S88/1): Signal > 2 minutes		4.10 23 4.10 23
015	Lock switch circuit 2 (S86/1, S87/1, S88/1): Signal > 2 minutes		4.10 23 4.10 23
016	Interior CL switch (S85): Signal > 2 minutes		23 PSE/CL ⇒ 2.0
017	RHR release switch (S52): Signal > 2 minutes		See AD80.20-P-6003-01A
018	RTR release switch (S15): Signal > 2 minutes		See AD80.20-P-6002-01A

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

Model 170 only

DTC 	Possible cause	Hints	Test step/Remedy [1]
012	Central locking, driver's door – safety switch time exceeded.		32 PSE ⇒ 1.0, 32 PSE ⇒ 2.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 2.0
013	Central locking, fuel filler flap – safety switch time exceeded.		32 PSE ⇒ 7.0, 32 PSE ⇒ 8.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 6.0
014	Central locking, passenger door – safety switch time exceeded.		32 PSE ⇒ 3.0, 32 PSE ⇒ 4.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 4.0
B1000	Combination control module (N10-3)		Replace combination control module.
B1010	Low voltage		
B1011	System voltage too high		

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

Model 170 only

DTC	Possible cause	Hints	Test step/Remedy [1]
B1021	CAN: no commumnication with PSE control module		23 PSE ⇒ 9.0, 23 PSE ⇒ 10.0, 23 PSE ⇒ 11.0, 23 PSE ⇒ 12.0, 23 PSE ⇒ 13.0, 23 PSE ⇒ 14.0, 23 PSE ⇒ 15.0
B1024	CAN: Data line-Low		23 PSE ⇒ 9.0, 23 PSE ⇒ 10.0, 23 PSE ⇒ 11.0, 23 PSE ⇒ 12.0, 23 PSE ⇒ 13.0, 23 PSE ⇒ 14.0, 23 PSE ⇒ 15.0
B1025	CAN: Data line-High		23 PSE ⇒ 9.0, 23 PSE ⇒ 10.0, 23 PSE ⇒ 11.0, 23 PSE ⇒ 12.0, 23 PSE ⇒ 13.0, 23 PSE ⇒ 14.0, 23 PSE ⇒ 15.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory (PSE)

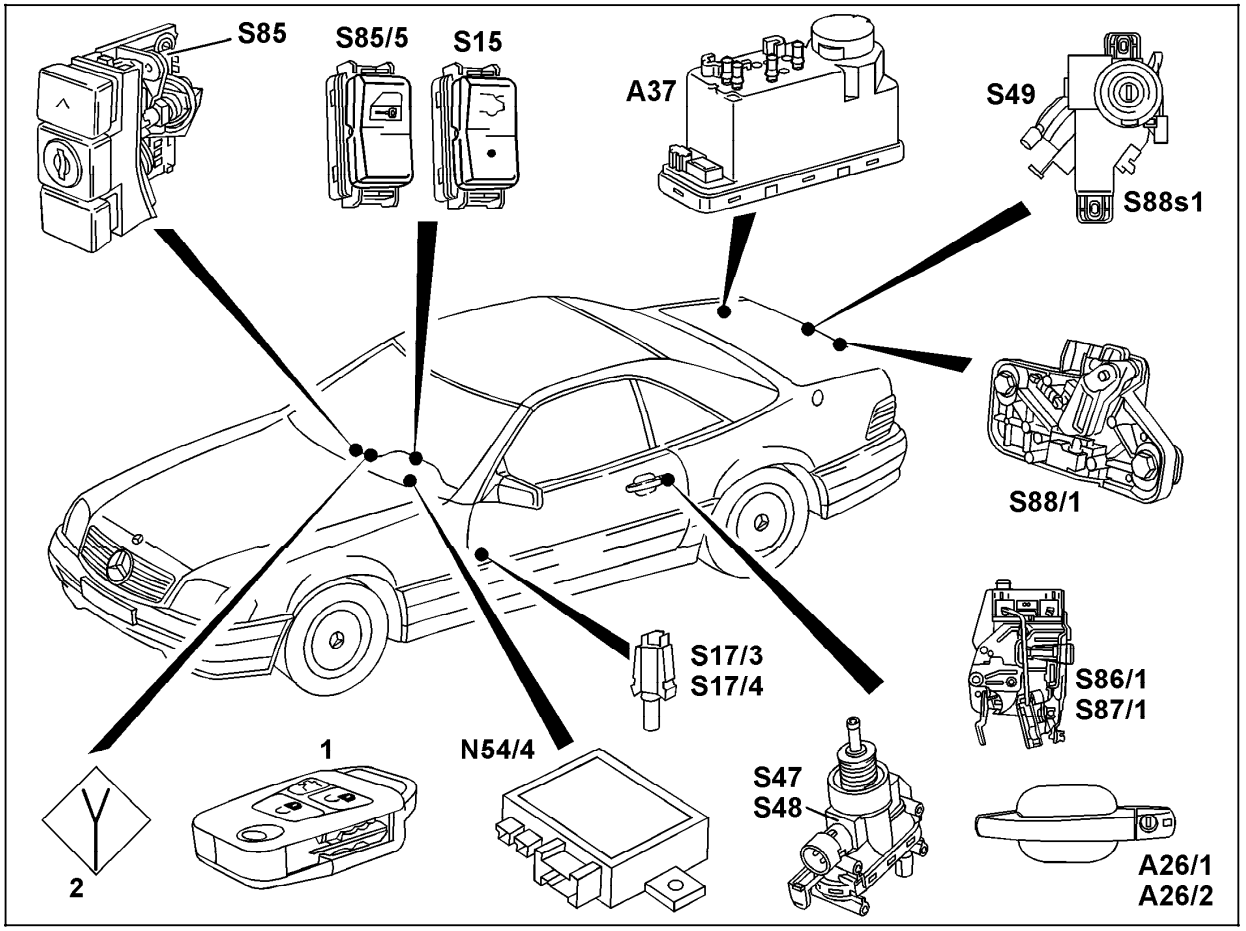
Model 170 only

DTC 	Possible cause	Hints	Test step/Remedy [1]
B1100	Control line SN1/SN2 from N54/3 to N10-3, ⌐¬– short circuit to ground (GND) ⌐¬+ short circuit to positive (POS)		4.10 23, 4.10 23, 4.10 23, 4.10 23,
B1436	Central locking, driver's door – safety switch time exceeded.		32 PSE ⇒ 1.0, 32 PSE ⇒ 2.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 2.0
B1436	Central locking, fuel filler flap – safety switch time exceeded.		32 PSE ⇒ 7.0, 32 PSE ⇒ 8.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 6.0
B1436	Central locking, passenger door – safety switch time exceeded.		32 PSE ⇒ 3.0, 32 PSE ⇒ 4.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 4.0
B1729	PSE control module, combined functions, (A37)		Replace PSE (A37).

[1] Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations (PSE)

Model 129



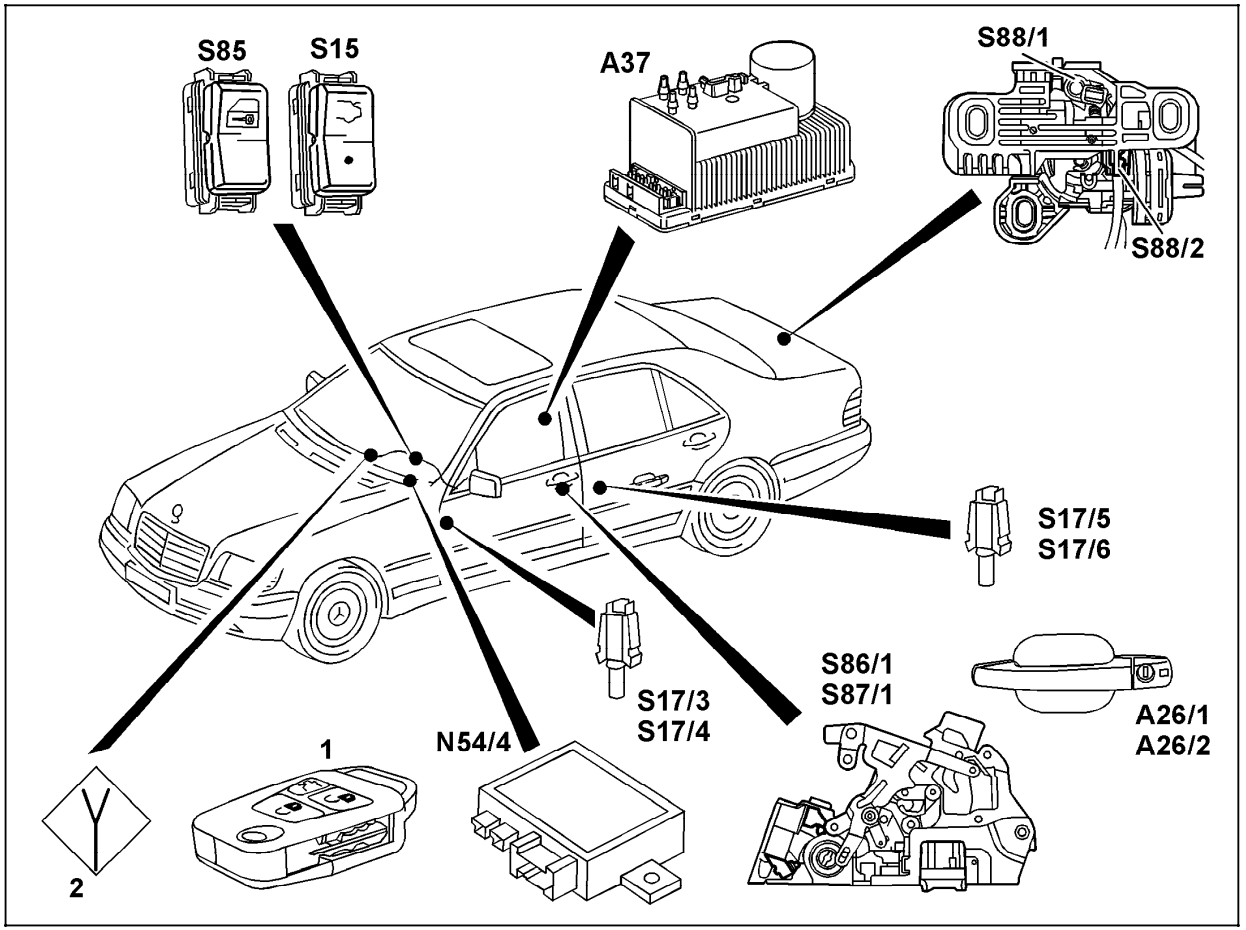
P80.20-0445-06

Figure 1

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A37	PSE control module, combined functions
N54/4	DAS radio frequency/infrared control module
S15	Remote trunk release
S17/3	Left front door switch
S17/4	Right front door switch
S47	Left door actuator
S48	Right door actuator
S49	Trunk lid lock actuator
S85	CL interior control switch
S85/5	CL interior control switch
S86/1	Left front door lock switch (CF) (only USA J)
S87/1	Right front door lock switch (CF) (only USA J)
S88s1	ATA/CF switch (only USA J)
S88/1	Rotary tumbler/trunk lid microswitch
1	Transmitter key
2	Antenna

Electrical Test Program – Component Locations (PSE)

Model 140 sedan shown



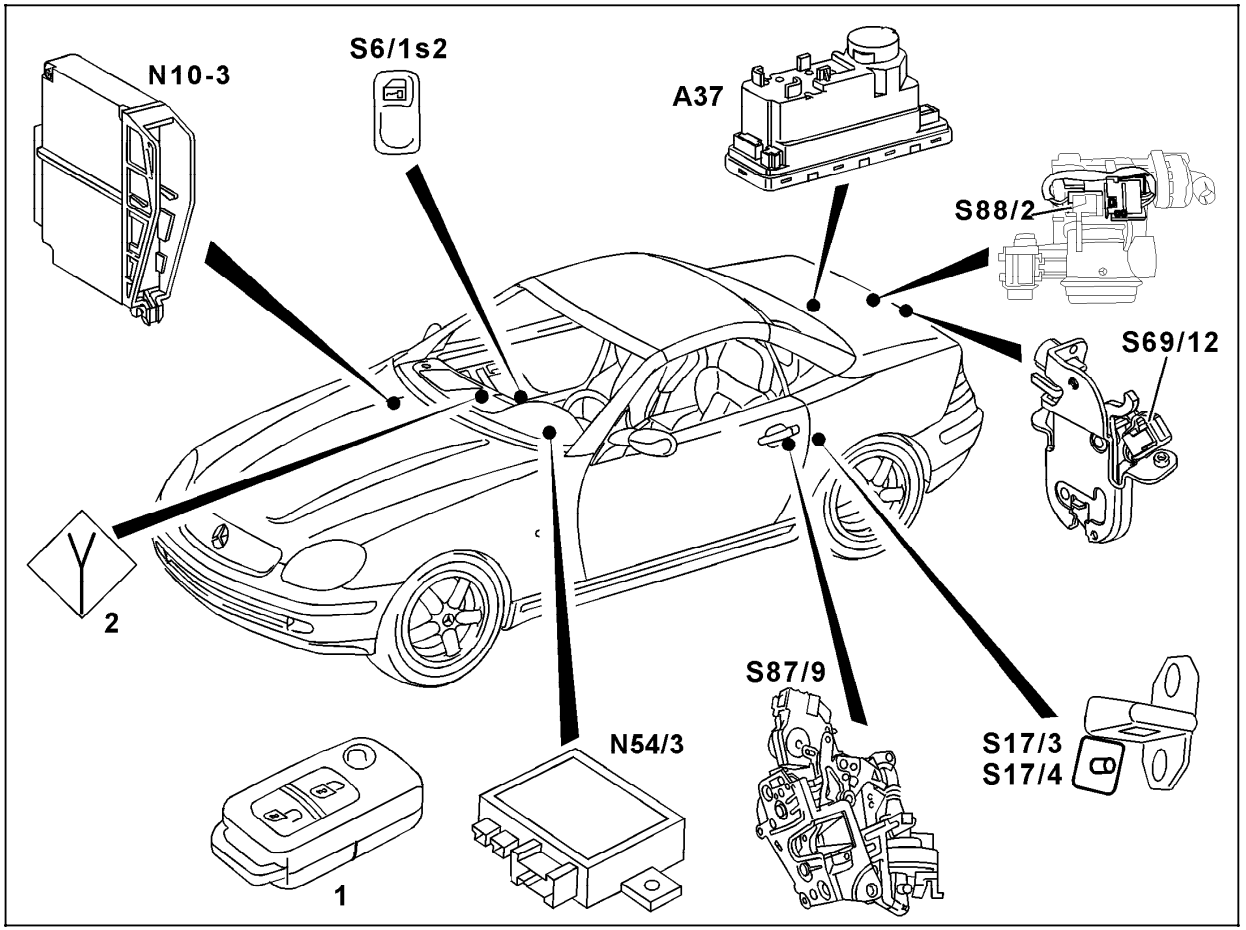
P80.20-0446-06

Figure 2

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A37	PSE control module, combined functions
N54/4	DAS radio frequency/infrared control module
S15	Remote trunk release
S17/3	Left front door switch
S17/4	Right front door switch
S17/5	Left rear door switch
S17/6	Right rear door switch
S85	CL interior control switch
S86/1	Left front door lock switch (CF) (only USA J)
S87/1	Right front door lock switch (CF) (only USA J)
S88/2	Trunk lid lock switch (CF) (only USA J)
S88/1	Rotary tumbler/trunk lid microswitch
1	Transmitter key
2	Antenna

Electrical Test Program – Component Locations (PSE)

Model 170



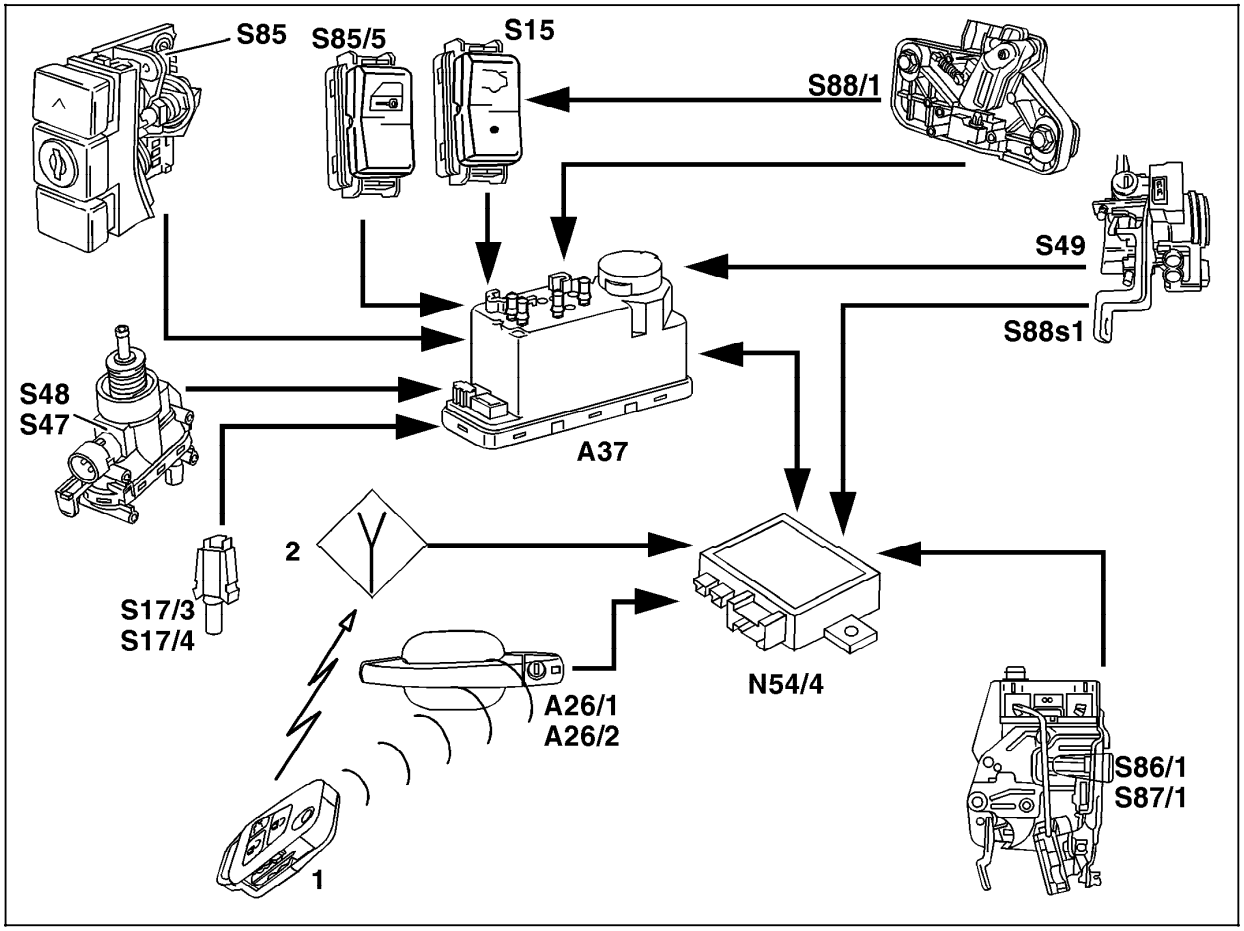
P80.20-0447-06

Figure 3

A37	PSE control module, combined functions
N54/3	Radio frequency DAS control module
N10-3	Combination control module
S6/1s2	Interior switch (CL)
S17/3	Left front door switch
S17/4	Right front door switch
S69/12	Rotary latch selector switch, trunk lock/trunk illumination
S87/9	Left front door lock switch (CF) (only USA J)
S88/2	Trunk lid lock switch (CF) (only USA J)
1	Transmitter key
2	Antenna

Electrical Test Program – Connection of Components

Model 129



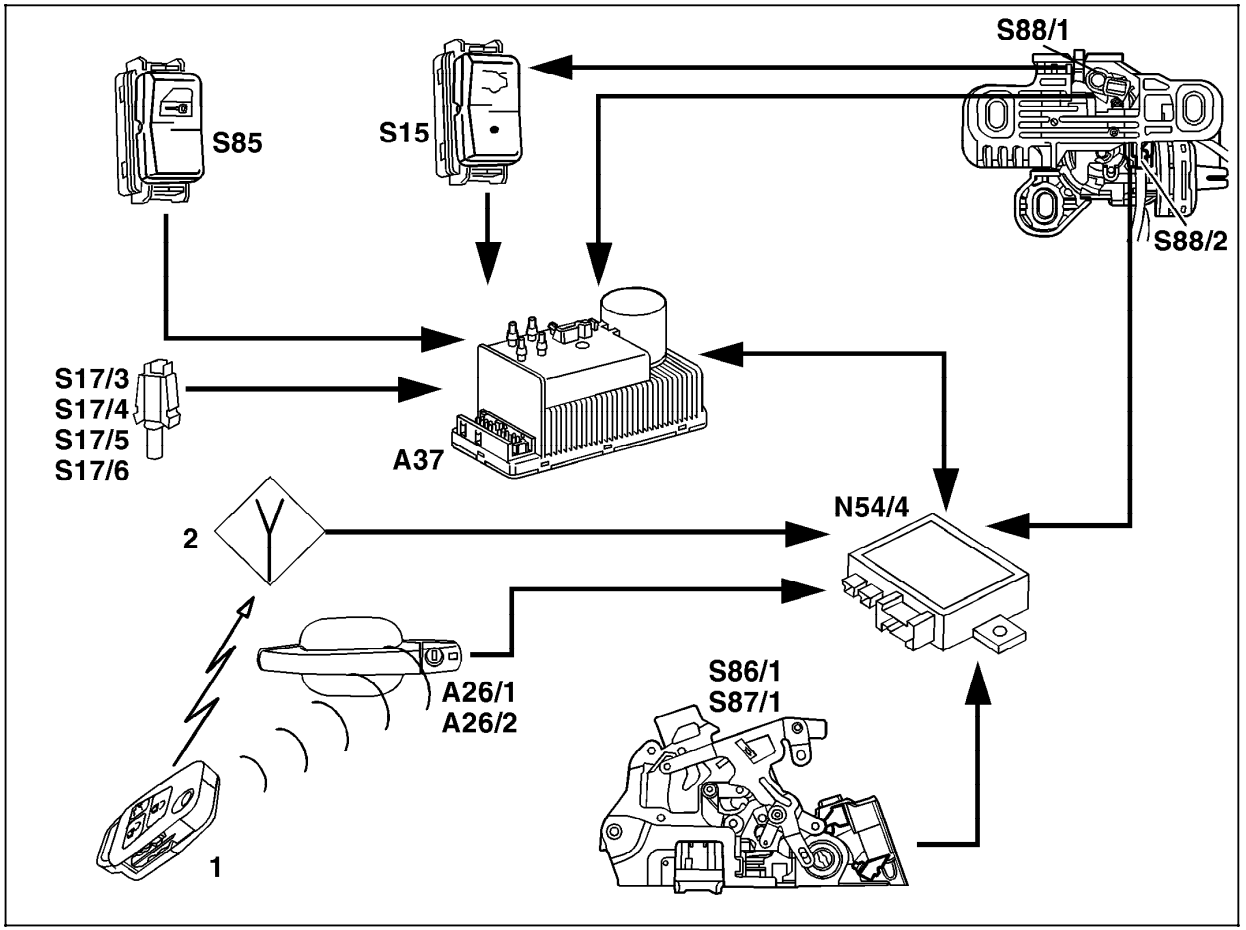
P80.20-0451-06

Figure 1

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A37	PSE control module, combined functions
N54/4	DAS radio ferquency/infrared control module
S15	Remote trunk release
S17/3	Left front door switch
S17/4	Right front door switch
S47	Left door actuator
S48	Right door actuator
S49	Trunk lid lock actuator
S85	CL interior control switch
S85/5	CL interior control switch
S86/1	Left front door lock switch (CF) (only USA J)
S87/1	Right front door lock switch (CF) (only USA J)
S88/1	Rotary tumbler/trunk lid microswitch
S88s1	ATA/CF microswitch (only USA J)
1	Transmitter key
2	Antenna

Electrical Test Program – Connection of Components

Model 140



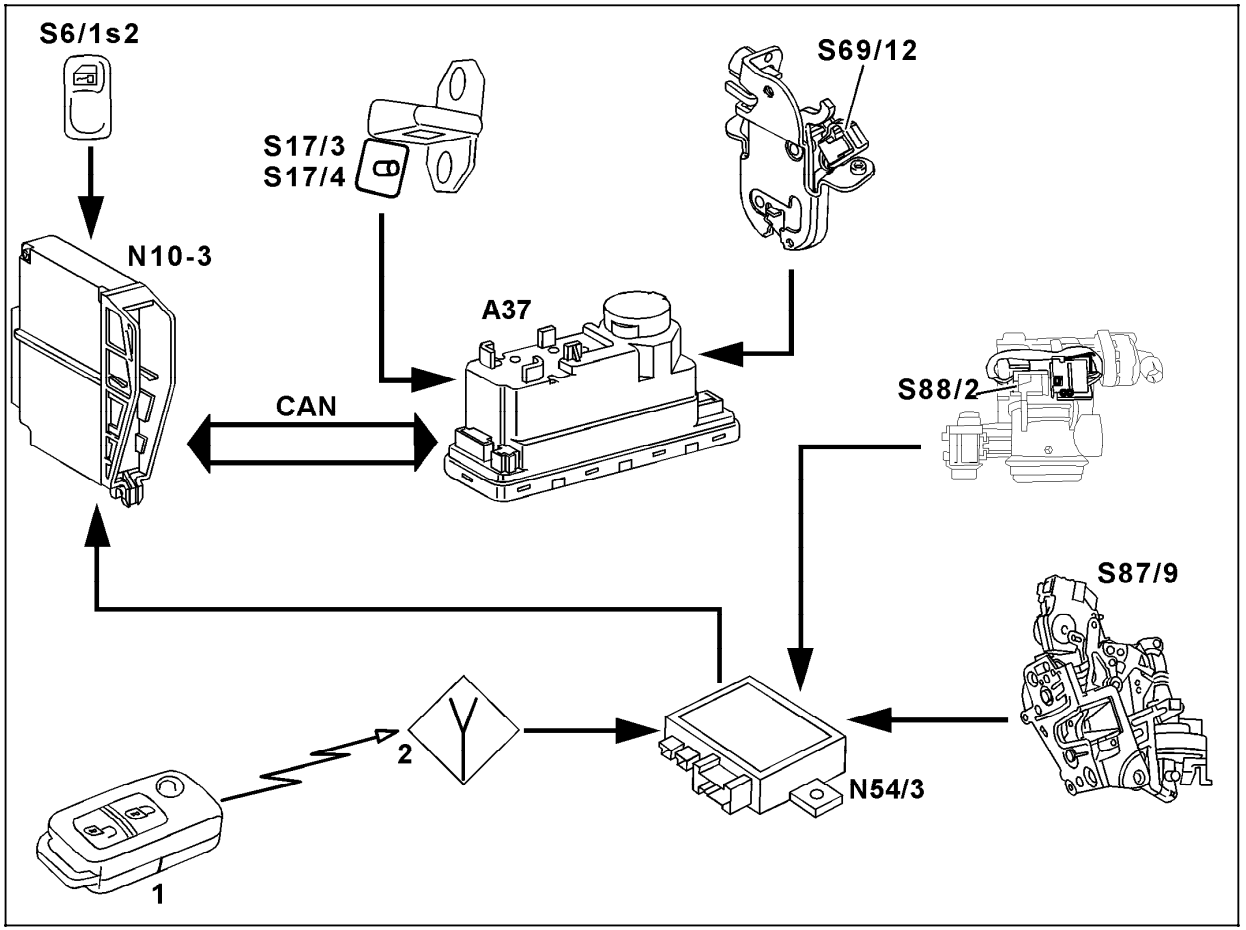
P80.20-0452-06

Figure 2

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A37	PSE control module, combined functions
N54/4	DAS radio ferquency/infrared control module
S15	Remote trunk release
S17/3	Left front door switch
S17/4	Right front door switch
S17/5	Left rear door switch
S17/6	Right rear door switch
S85	CL interior control switch
S86/1	Left front door lock switch (CF) (only USA J)
S87/1	Right front door lock switch (CF) (only USA J)
S88/1	Rotary tumbler/trunk lid microswitch
S88/2	Trunk lid lock switch (CF) (only USA J)
1	Transmitter key
2	Antenna

Electrical Test Program – Connection of Components

Model 170



P80.20-0453-06

Figure 3

A37	PSE control module, combined functions
CAN	Control-Area-Network
N54/3	Radio frequency DAS control module
N10-3	Combination control module
S6/1s2	Interior switch (CL)
S17/3	Left front door switch
S17/4	Right front door switch
S69/12	Rotary latch selector switch, trunk lock/trunk illumination
S87/9	Left front door lock switch (CL) (only USA J)
S88/2	Trunk lid lock switch (CF) (only USA J)
1	Transmitter key
2	Antenna

Electrical Test Program - Preparation for Test

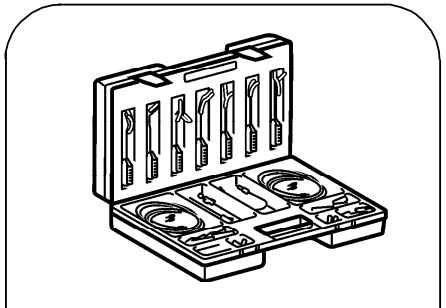
Preparation for Test:

1. Insert module specific module into HHT
2. Battery voltage 11 – 14 V,
3. Fuses ok,
5. Connect socket box with test cable according to connection diagram, see 22, Figures 1, 2 and 3 accordingly, for model being tested.
6. Review section 0, 11, 12, 20, 21, 22, 31, 32.

Electrical Wiring Diagrams:

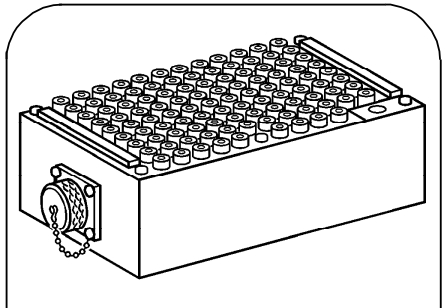
See Electric Troubleshooting Manual, Model 129, Volume 2, group 80,
Model 140, Volume 2, group 80,
Model 170, Volume 2, group 80

Special Tools



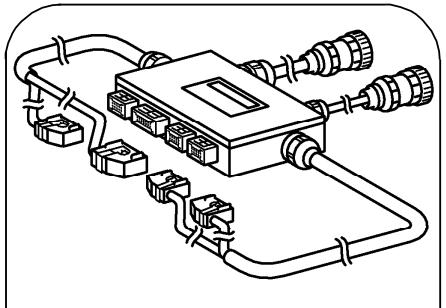
201 589 00 99 00

Electrical connecting set



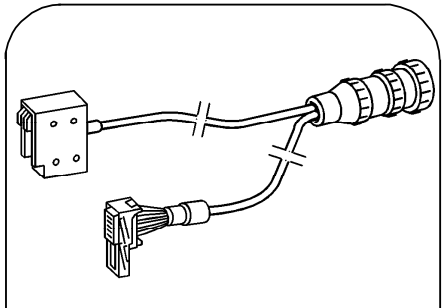
129 589 00 21 00

126-pin socket box



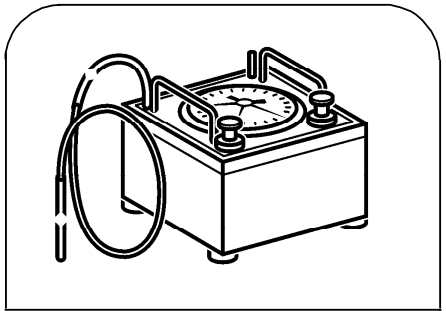
202 589 16 63 00

Test cable (82-pin)



140 589 13 63 00

21-pin test cable



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 129

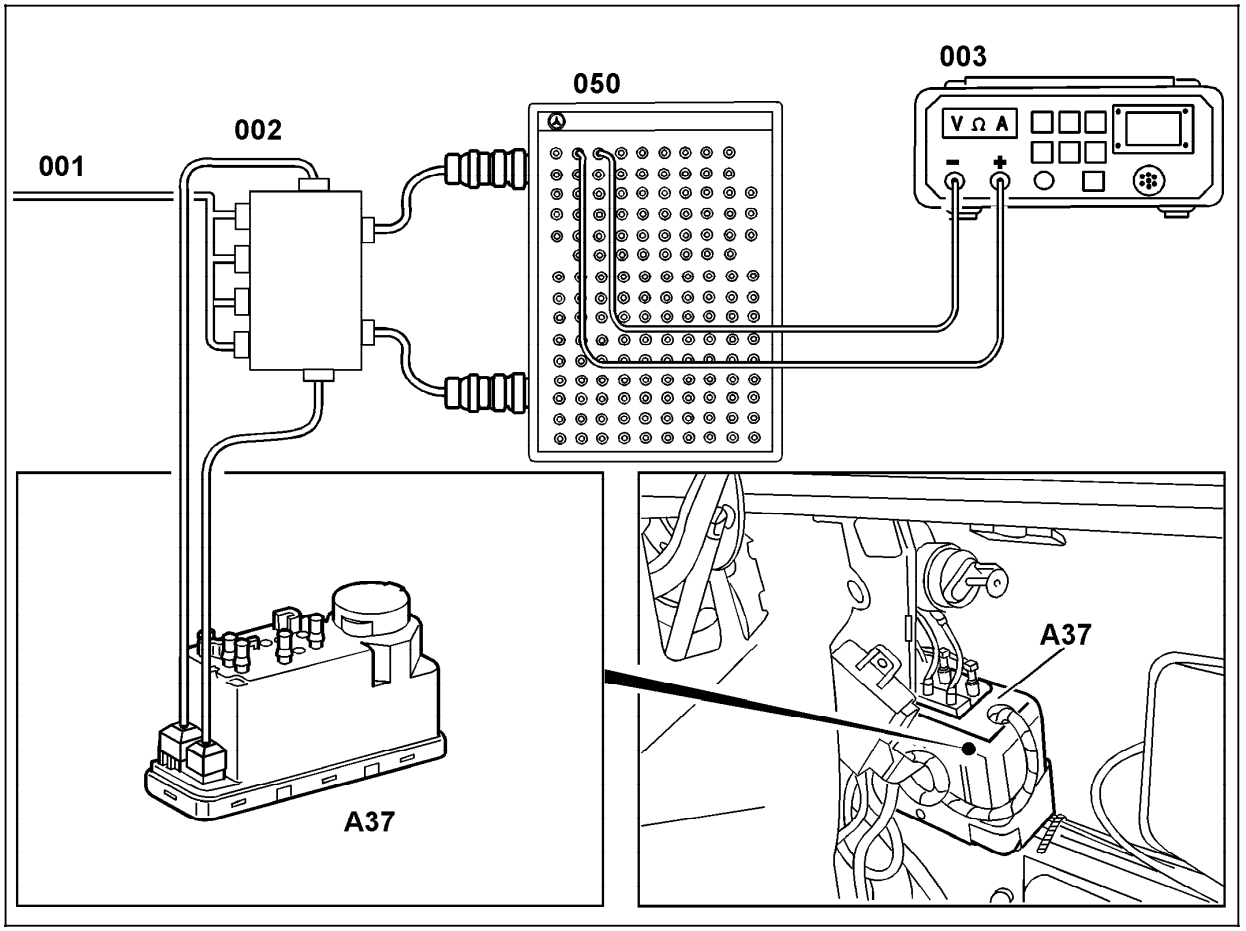


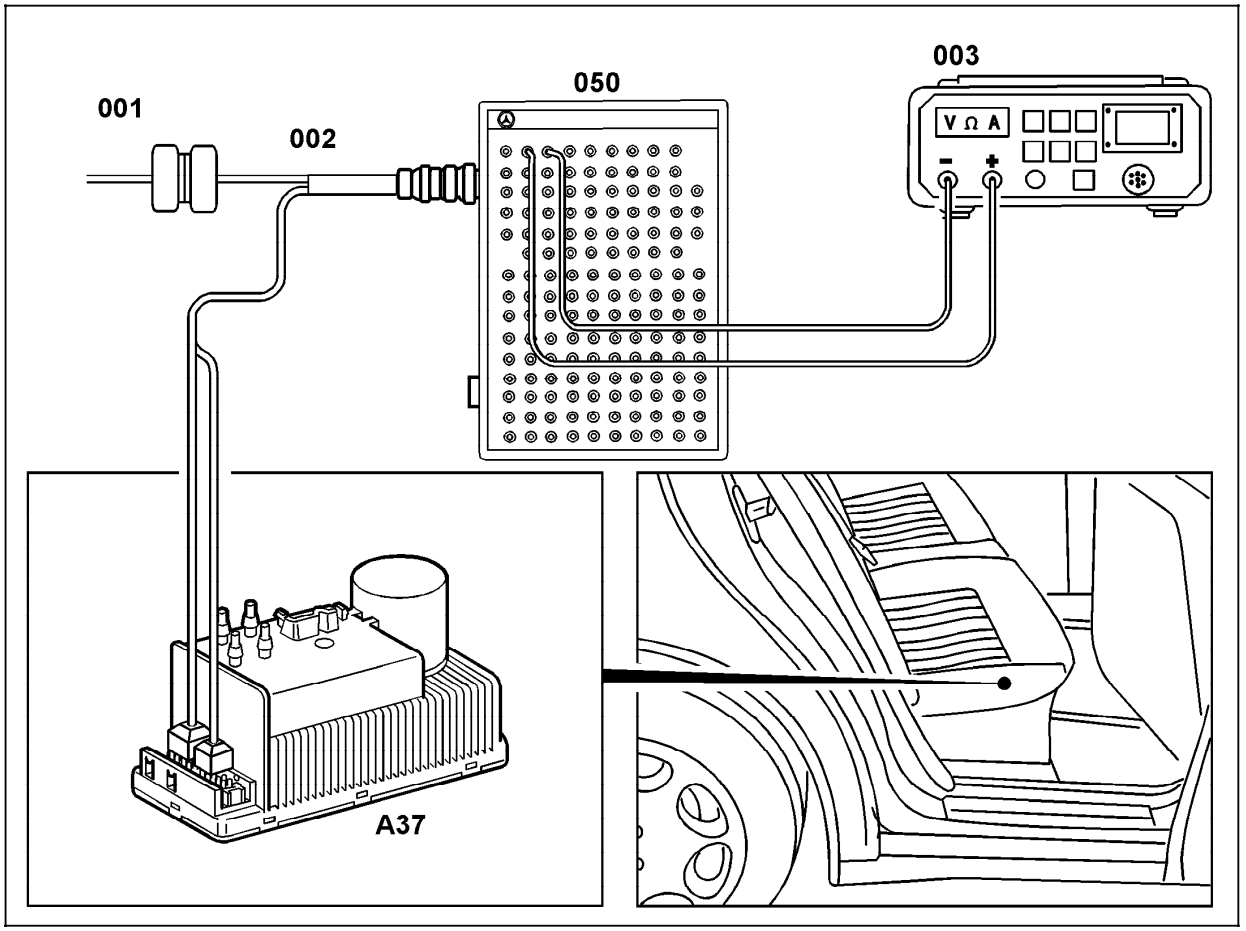
Figure 1

001	PSE control module connector
002	Test cable (202 589 16 63 00)
003	Multimeter
050	Socket box (35-pole)
A37	PSE control module, combined functions

P80.20-0442-06

Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box
Model 140



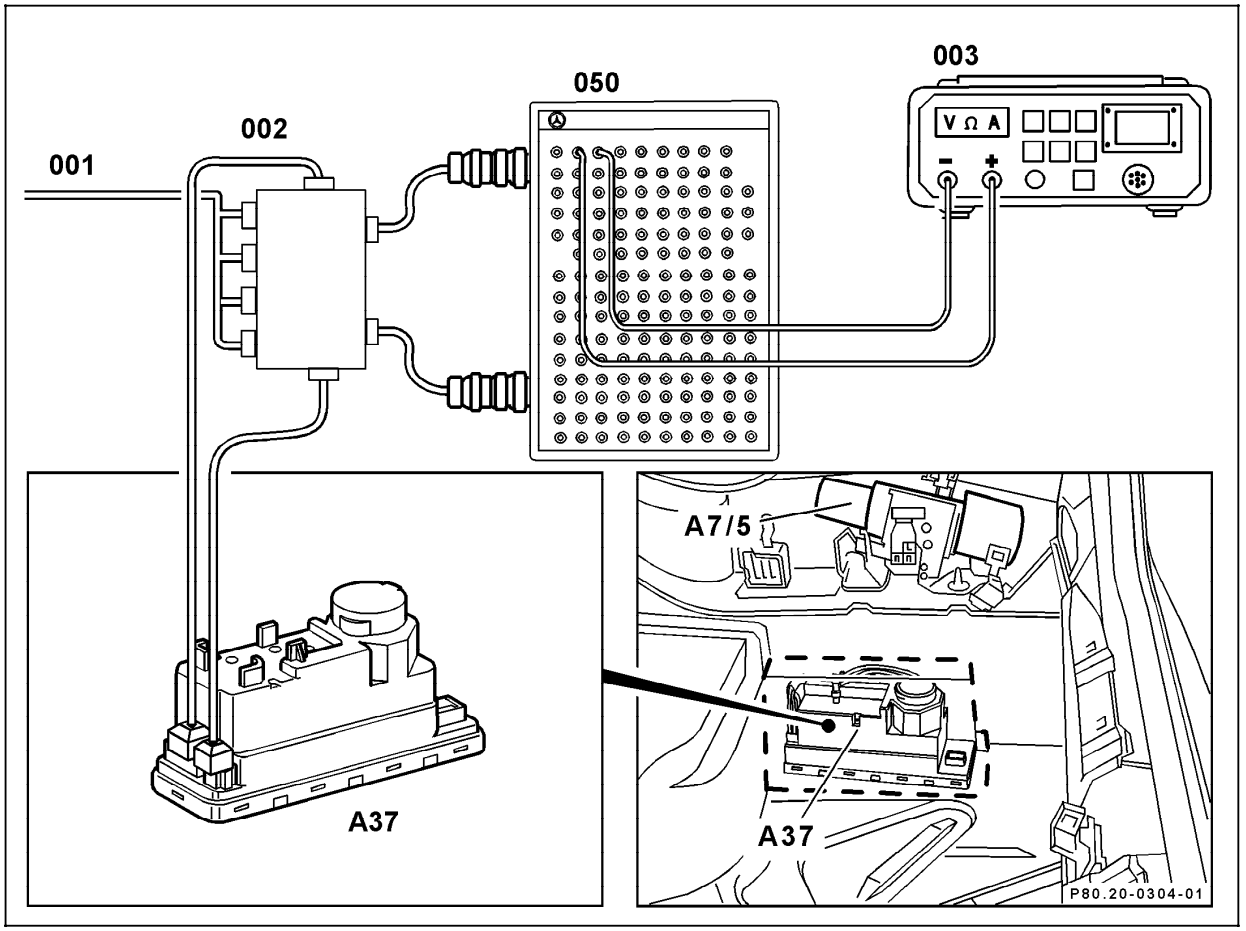
P80.20-0443-06

Figure 2

001	PSE control module connector
002	Test cable (140 589 13 63 00)
003	Multimeter
050	Socket box (35-pole)
A37	PSE control module, combined functions

Electrical Test Program - Preparation for Test

Connection Diagram - Socket Box
Model 170



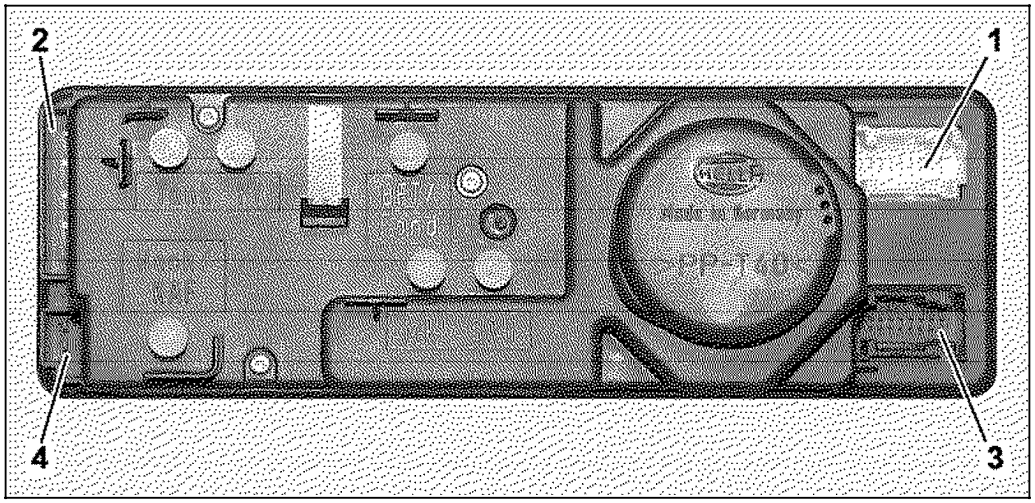
P80.20-0444-06

Figure 3

001	PSE control module connector
002	Test cable (202 589 16 63 00)
003	Multimeter
050	Socket box (35-pole)
A37	PSE control module, combined functions

Electrical Test Program - Preparation for Test

Connections - PSE control module



P80.20-2037-10

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)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**PSE control module (A37)** Voltage supply Circuit 30, 31 Model 140	A37 21 — (V) — 7		11 – 14 V	Circuit 31, ⇒ 1.1
		Model 129	A37 2 — (V) — 1 (1) (1)	Disconnect connector 1 on A37		
		Model 170	A37 3 — (V) — 2 (2) (2)	Disconnect connector 2 on A37		
1.1		Circuit 30 Model 140	A37 ⊥ — (V) — 7			Circuit 31
		Model 129	A37 ⊥ — (V) — 1 (1)	Disconnect connector 1 on A37		
		Model 170	A37 ⊥ — (V) — 2 (2)	Disconnect connector 2 on A37		

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**PSE control module (A37)** Voltage supply Circuit 15, 31 Model 140 Model 129	A37 21 — V — 4 A37 2 — V — 56 (1) (2.10)	Ignition: **ON** Ignition: **OFF** **Model 129 only:** Disconnect connector 1 from A37	11 – 14 V >1 V	Circuit 31, ⇒ 2.1
2.1		Circuit 15 Model 140 Model 129	A37 ⊥ — V — 4 A37 ⊥ — V — 56 (2.10)	Ignition: **ON** Ignition: **OFF**	11 – 14 V >1 V	Circuit 15

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		**Left front door switch (S17/3) and right front door switch (S17/4)**	A37	Both front doors closed.	>1 V	Wiring, S17/3, S17/4
		Model 140	3 — V — 7	Left door open.	11 – 14 V	
			A37	Left and right door closed.	>1 V	
		Model 129	62 — V — (2.16)	Right door open.	11 – 14 V	
4.0		**Left front door switch (S17/3)**	A37	Left front door closed.	>1 V	Wiring, S17/3
		Model 170	60 — V — (1.14)	Left front door open.	11 – 14 V	
5.0		**Right front door switch (S17/4)**	A37	Right front door closed.	>1 V	Wiring, S17/4
		Model 170	62 — V — (1.16)	Right front door open.	11 – 14 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0		**Left rear door switch (S17/5) and right rear door switch (S17/6)** Model 140 only	A37 19 — V — 7	Both rear doors closed. Left rear door open. Both rear doors closed. Right rear door open.	>1 V 11 – 14 V >1 V 11 – 14 V	Wiring, S17/5, S17/6
7.0		**Rotary tumbler/trunk lid microswitch (S88/1)** Model 140 Model 129	A37 18 — V — 7 A37 61 — V — (+) (2.15)	Trunk lid closed closed. Trunk lid open.	>1 V 11 – 14 V	Wiring, S88/1
8.0		**Retractable hardtop closed limit switch (S69/1) (right pin)** Model 170	A37 59 — V — (+) (1.13)	Trunk lid closed. Trunk lid open.	<1 V 11 – 14 V	Wiring, S69/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		**CAN data line L, PSE control module (A37), Combination control module (N10-3)** –//– Model 170 only, **Socket 9, Socket 62**	A37 9 (1) — Ω — N10-3 62 (A)	Disconnect A37 from ⌨, Disconnect N10-3 from ⌨.	<1 Ω	Wiring.
10.0		**CAN data line H, PSE control module (A37), Combination control module (N10-3)** –//– Model 170 only, **Socket 10, Socket 78**	A37 10 (1) — Ω — N10-3 78 (A)	Disconnect A37 from ⌨, Disconnect N10-3 from ⌨.	<1 Ω	Wiring.
11.0		**CAN data line L, PSE control module (A37), Combination control module (N10-3)** ⌜⌝+ Model 170 only, **Socket 9, Socket 1**	A37 9 (1) — Ω — A37 1 (2)	Disconnect A37 from ⌨, Disconnect battery ground cable. Disconnect N10-3	>20 kΩ	Wiring.

Electrical Test Program – Test

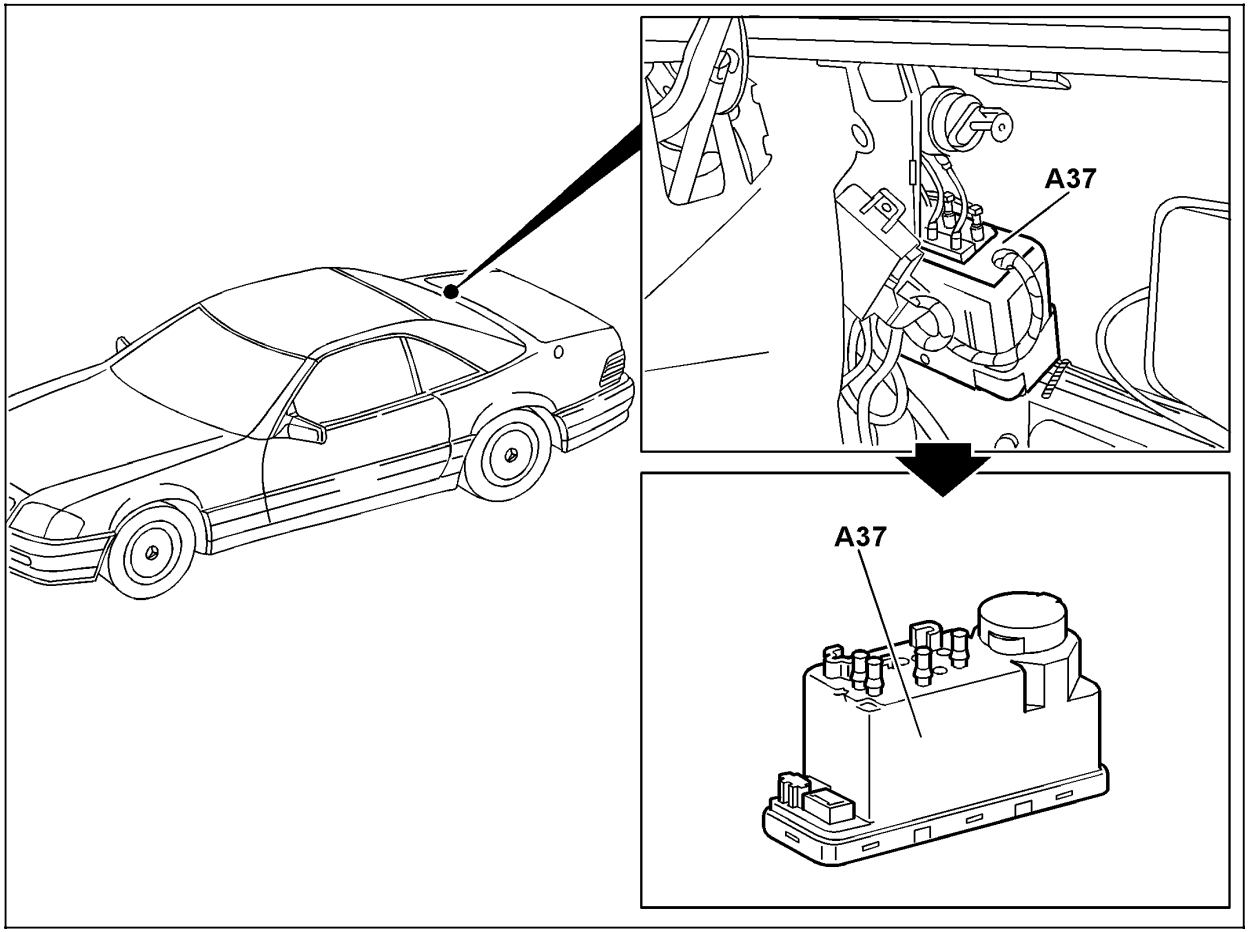
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**CAN data line H, PSE control module (A37), Combination control module (N10-3)** ⌜⌝+ Model 170 only, **Socket 10, Socket 1**	A37 10 (1) — Ω — A37 1 (2)	Disconnect A37 from ⌨, Disconnect battery ground cable. Disconnect combination control module (N10-3).	>20 kΩ	Wiring.
13.0		**CAN data line L, PSE control module (A37), Combination control module (N10-3)** ⌜⌝– Model 170 only, **Socket 3, Socket 9**	A37 3 (2) — Ω — A37 9 (1)	Disconnect A37 from ⌨, Disconnect N10-3	>20 kΩ	Wiring.
14.0		**CAN data line H, PSE control module (A37), Combination control module (N10-3)** ⌜⌝– Model 170 only, **Socket 3, Socket 10**	A37 3 (2) — Ω — A37 10 (1)	Disconnect A37 from ⌨, Disconnect N10-3	>20 kΩ	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.0		**Data line, CAN L / CAN H, PSE control module (A37), Combination control module (N10-3)** ⌜⌝– to each other Model 170 only, **Socket 9, Socket 10**	A37 9 (1) – Ω + 10 (1)	Disconnect A37 from ⌨, Disconnect N10-3	>20 kΩ	Wiring.

Pneumatic Test Program – Component Locations

Model 129



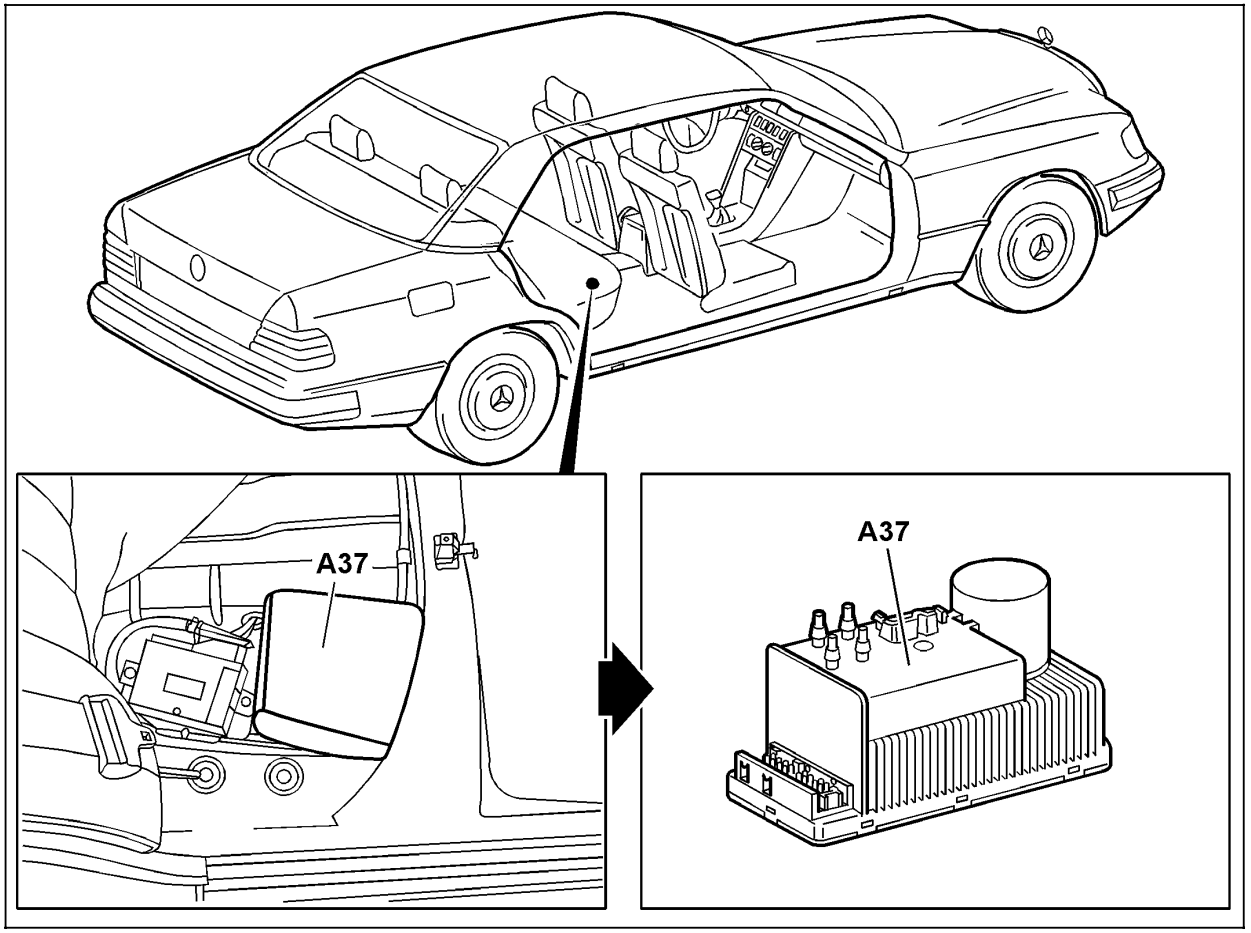
P80.20-0433-06

Figure 1

A37 PSE control module, combined functions

Pneumatic Test Program – Component Locations

Model 140



P80.20-0434-06

Figure 2

A37 PSE control module, combined functions

Pneumatic Test Program – Component Locations

Model 170

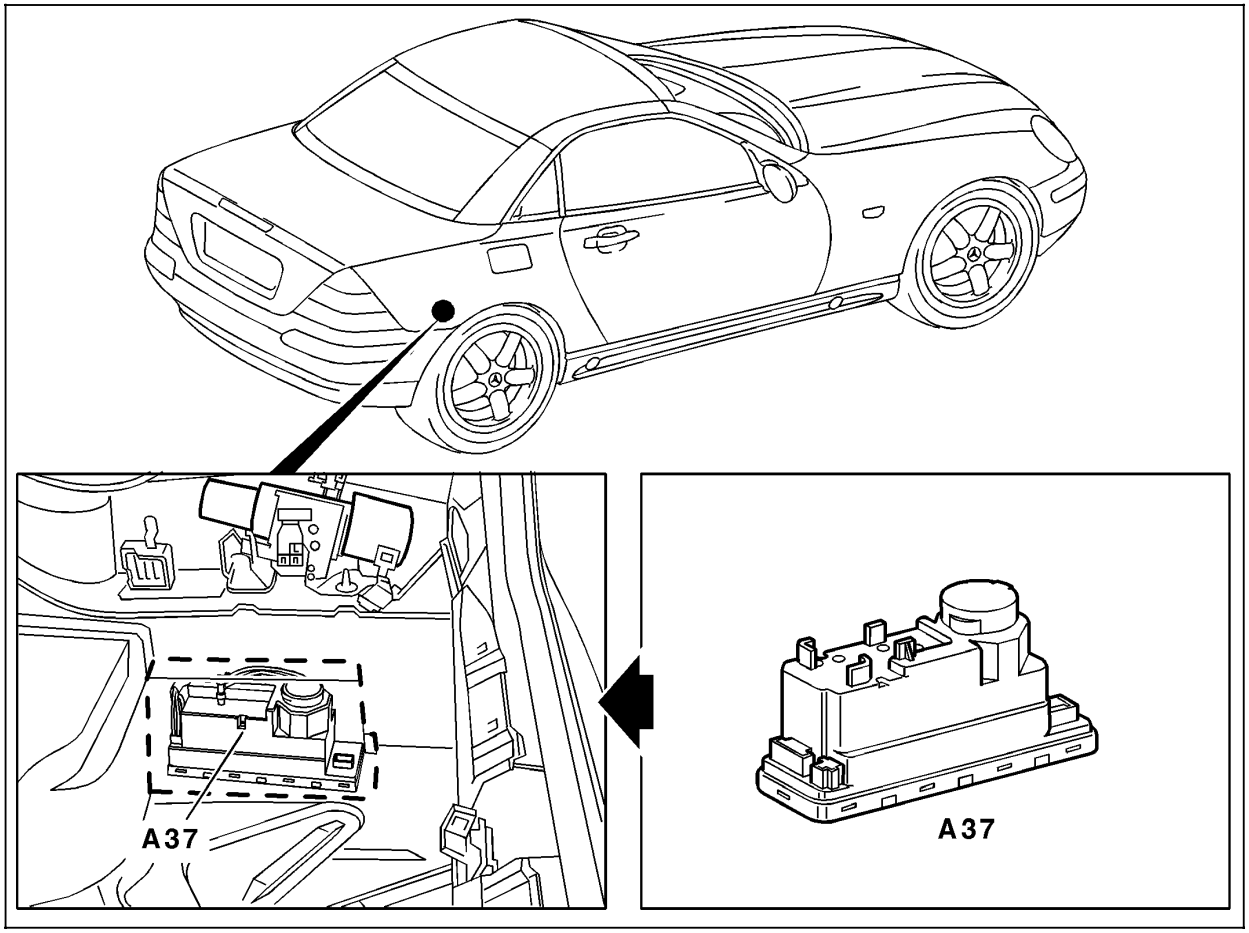


Figure 3

A37 PSE control module, combined functions

P80.20-0454-06

Pneumatic Test Program - Preparation for Test

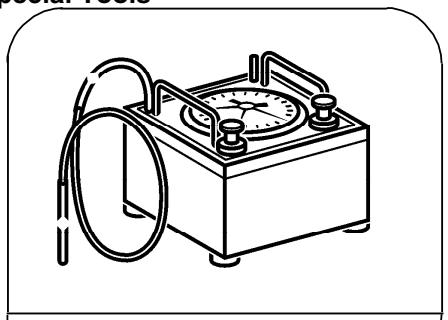
Preparation for Test:

1. Connect vacuum/pressure tester with reservoir to PSE control module (see 32, Figures 1, 2 and 3).
2. Unlock vehicle using IR transmitter,
3. Battery voltage 11 – 14 V,
4. Fuses ok,
5. Review section 0, 11, 12, 20, 21, 22, 31, 32,
6. Provide access to PSE control module (A37) and disconnect PSE pneumatic multiple connector (do not disconnect wiring harness).

Parts Required for Test:

1	Reservoir	107 800 08 19
1	Y-distributor	117 078 01 45
3	Connector	202 800 03 53
1	Connector	202 800 05 53
1	Connection hose, 50 mm long	007 997 61 82
2	Pneumatic line, 1 m long	000 158 14 35
8	Rubber plug	000 987 11 45

Special Tools



201 589 13 21 00

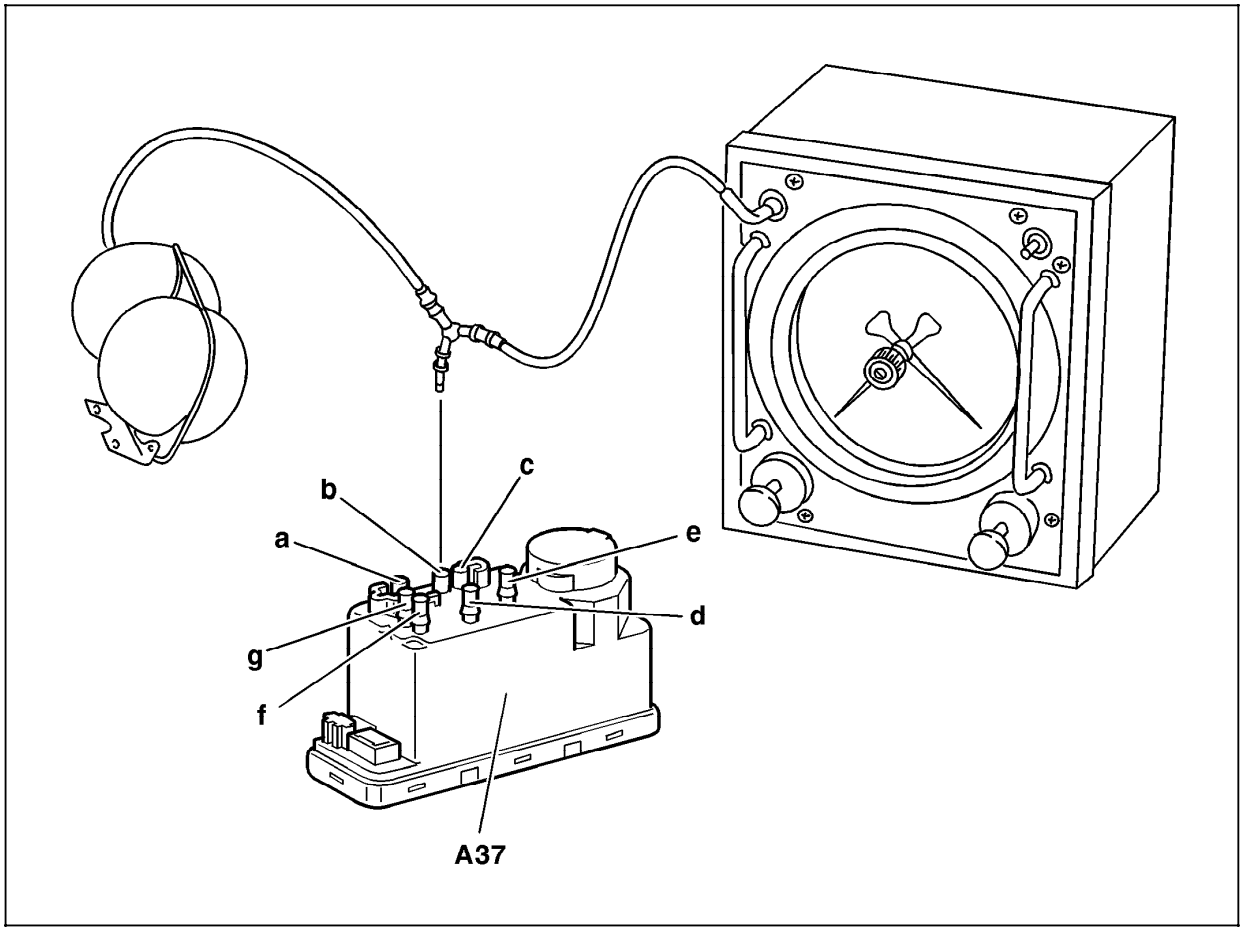
Tester

Notes:

1. Before testing the safety switch time of the consumers, interrupt the PSE control module power supply for at least 3 seconds.
2. After completing the **PSE** control module test, interrupt the PSE control module power supply for at least 3 seconds (erase safety switch time memory).
3. After completing the **PSE** control module test, do not operate any system which would require vacuum or pressure for approx. 10 minutes.
4. The connections on the PSE control module are marked with their German acronyms. Reference to these connections in this test are made to their U. S. equivalents. In other words:
   ZV (German) = CL (U.S.),
   SRU (German) = MVA (U.S.),
   OSL (German) = OSB (U.S.).

Pneumatic Test Program - Preparation for Test

Connection Diagram - Vacuum/Pressure Tester with Reservoir
Model 129



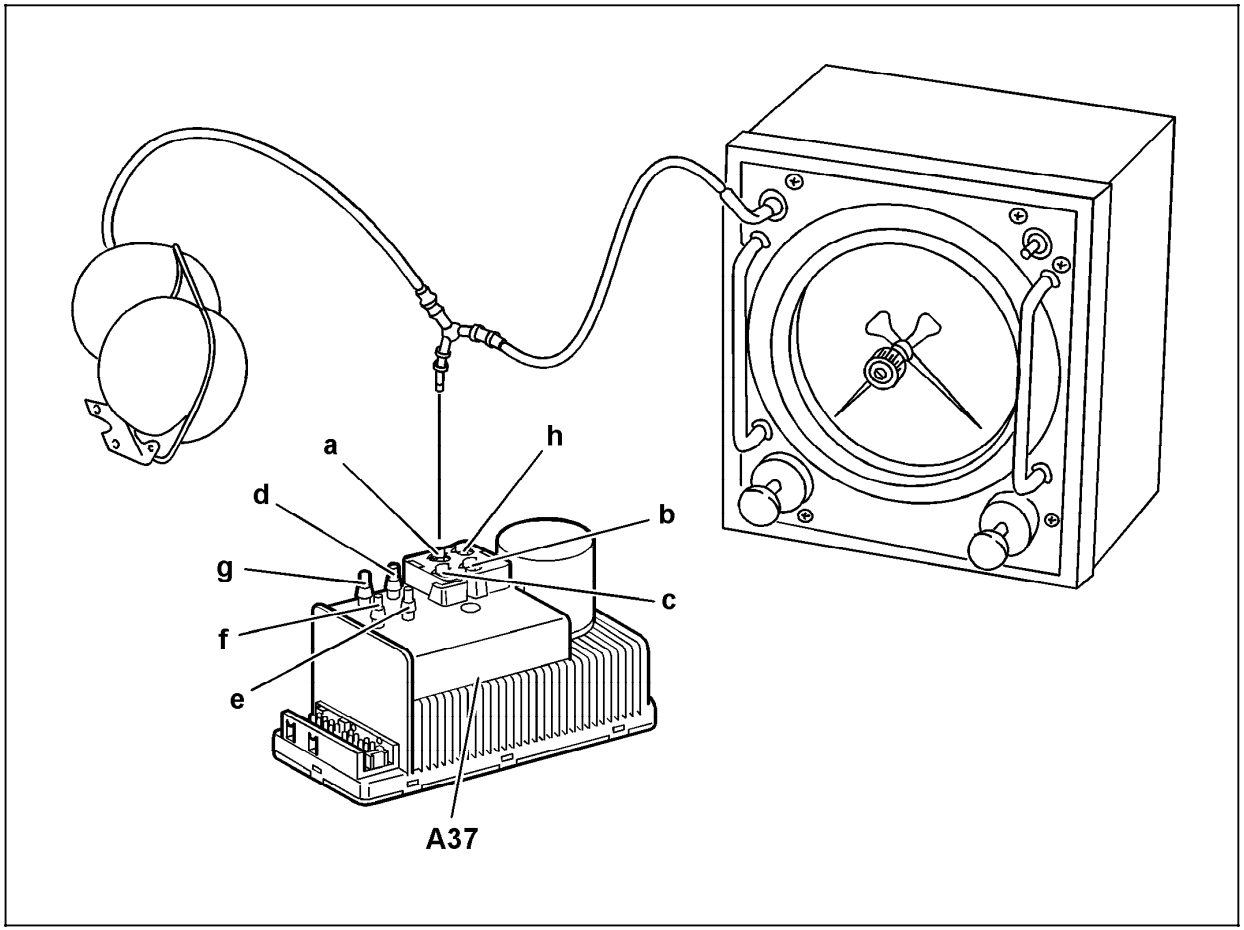
P80.20-0450-06

Figure 1

a	Right door pneumatic connection
b	Left door pneumatic connection
c	Fuel filler flap pneumatic connection
d	RTR pneumatic connection
e	OSB pneumatic connection
f	Trunk lid pneumatic connection
g	CL pneumatic connection
A37	PSE control module, combined functions

Pneumatic Test Program - Preparation for Test

Connection Diagram - Vacuum/Pressure Tester with Reservoir
Model 140



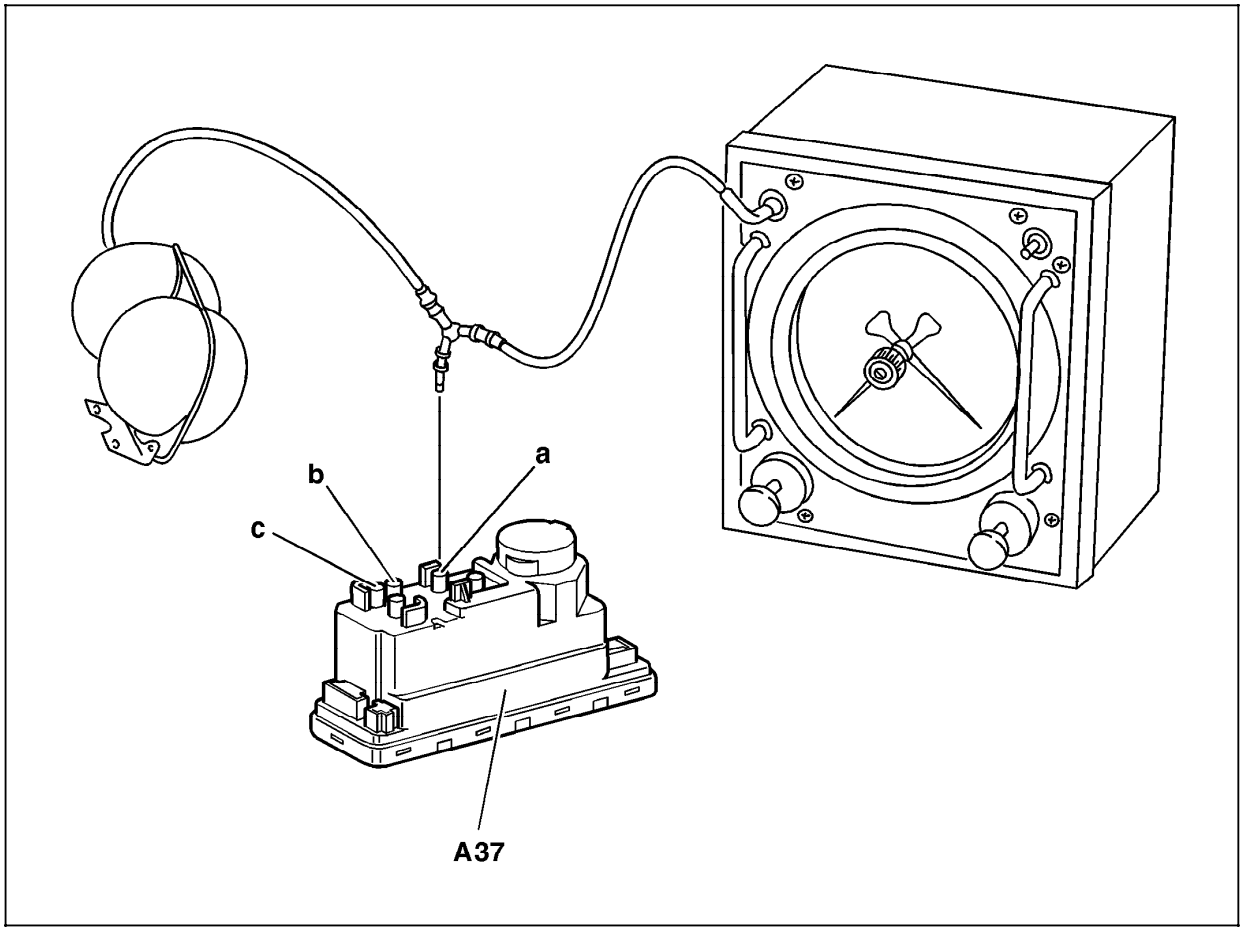
P80.20-0449-06

Figure 2

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	OSB pneumatic connection
f	MVA pneumatic connection
g	RTG pneumatic connection
h	Trunk lid pneumatic connection
A37	PSE control module, combined functions

Pneumatic Test Program - Preparation for Test

Connection Diagram - Vacuum/Pressure Tester with Reservoir
Model 170



P80.20-0448-06

Figure 3

a	Passenger-side door pneumatic connection
b	Left door pneumatic connection
c	Fuel filler flap pneumatic connection
A37	PSE control module, combined functions

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	**Central locking system Left front door** Vacuum supply	Connector **FT to PSE** control module **Black** connector on tester.	Cap all other connections on the **PSE** control module. Close doors. Lock vehicle using interior switch (CL).	450 mbar in 1.2 sec.	PSE control module (A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0
2.0	**Central locking system Left front door** Pressure supply	Connector **FT to PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. Close front doors. Unlock vehicle using interior switch (CL).	450 mbar in 0.8 s	(A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0
3.0	**Central locking system Right front/right rear doors (model 140 sedan), Passenger-side door (Model 129/140 coupé) or Passenger-side door/trunk lid (Model 170)** Vacuum supply	Connector **BFT or BFT/Fond** to**PSE** control module. **Black** connector on tester.	Cap all other connections on the **PSE** control module. Close doors. Lock vehicle using interior switch (CL).	450 mbar in 1.2 s	PSE control module (A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	**Central locking system Passenger-side/rear doors (Model 140), Passenger-side door (Model 129/140 coupé) or Passenger-side door/trunk lid (Model 170)** Pressure supply	Connector **BFT or BFT/rear** to **PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. Close doors. Unlock vehicle using CL interior switch.	450 mbar in 0.8 s	(A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0
5.0	**Central locking system Trunk lid** Vacuum supply	Connector **Heck or HD** to **PSE** control module. **Black** connector on tester.	Cap all other connections on the **PSE** control module. Close all doors Lock vehicle using CL switch	450 mbar in 1.2 s	(A37), 23 PSE ⇒ 1.0, 23 PSE ⇒ 2.0, 23 PSE ⇒ 3.0
6.0	**Central locking system Trunk lid** Pressure supply	Connector **Heck or HD** to **PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. Close all doors Lock vehicle using IR transmitter. Unlock vehicle using CL interior switch.	450 mbar in 0.8 s	(A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0, 4.10 23

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0	**Central locking system** **Fuel filler flap** Vacuum supply	Connector **TK or Tank** to **PSE** control module. **Black** connector on tester	Cap all other connections on the **PSE** control module. Close all doors. Lock vehicle using IR transmitter.	450 mbar in 1.2 s	(A37), 23 PSE/CL ⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 3.0, 4.10 23
8.0	**Central locking system** **Fuel filler flap** Pressure supply	Connect **TK or Tank** to **PSE** control module. **Yellow** connector on tester	Cap all other connections on the **PSE** control module. Close all doors. Lock vehicle using IR transmitter. Unlock vehicle using CL interior switch.	450 mbar in 0.8 s	(A37), 23 PSE/CL⇒ 1.0, 23 PSE/CL ⇒ 2.0, 23 PSE/CL ⇒ 30.0
9.0	**Multi-contour seat backrest** (Models 129, 140 only) Pressure supply	Connect **MKL** to **PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. Igntion: **ON/OFF**	Pump runs with 4 second delay. 450 mbar in 0.8 s	(A37), 23 PSE ⇒ 2.0, 23 PSE ⇒ 9.0, 23 PSE ⇒ 10.0, 23 PSE ⇒ 11.0, 23 PSE ⇒ 12.0, 23 PSE ⇒ 13.0, 23 PSE ⇒ 14.0, 23 PSE ⇒ 15.0

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0	**RHR retraction in rear** Vacuum supply (Model 140 sedan only)	Connector **Heck/KAF or HFE/KAF** to **PSE** control module. **Black** connector on tester	Cap all other connections on the **PSE** control module. Extend RHRs'. Ignition: **ON** Press RHR switch.	450 mbar in 1.2 s	(A37), See AD80.20-P-6003-01A
11.0	**Manifold vacuum assist** Vacuum supply Model 140 only)	Connector **MVA** to **PSE** control module. **Black** connector on tester.	Cap all other connections on the **PSE** control module. Ignition: **ON/OFF**	Pump runs with 8 second delay. 450 mbar in 1.2 s	(A37), 23 PSE ⇒ 2.0
12.0	**Remote trunk release** Pressure supply (Model 129, 140 only)	Connector **Heck/KAF** or **HFE/KAF** to **PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. Press RTR switch.	450 mbar in 0.8 s	(A37), See AD80.20-P-6002-01A
13.0	**Retractable trunk lid grip** Vacuum supply (Model 129, 140 only)	Connector **SFG** to **PSE** control module. **Black** connector on tester.	Cap all other connections on the **PSE** control module. Close trunk lid.	Pump runs with a 0.5 second delay. 450 mbar in 1.2 s	(A37), D.M., B&A, Vol. 1, section 3.1, 23, D.M., B&A, Vol. 1, section 3.1, 32

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0	**Retractable trunk lid grip** Pressure supply (Model 129, 140 only)	Connector **SFG** to **PSE** control module. **Yellow** connector on tester.	Cap all other connections on the **PSE** control module. CL system unlocks. Open trunk lid.	450 mbar in 0.8 s	(A37), D.M., B&A, Vol.1, section 3.1, 23, D.M., B&A, Vol.1, section 3.1, 32
15.0	**Central locking system** Safety switch time		Cap the following connectors on **PSE** using rubber caps: **Model 140:** **HFE/KAF, MVA, OSB, RTR** **Model 129:** **HECK/KAF, OSB, RTR** **Model 170:** **None** **Close drivers-side doors.** Unlock vehicle using CL interior switch.	PSE control module runs approx. 10 ±1seconds	(A37), 23 PSE/CL ⇒ 1.0

Pneumatic Test Program - PSE Control Module Test

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0	**Additional consumers** Safety switch time (Models 129, 140 only)		Cap the following connectors on **PSE** using rubber caps: **Model 140:** **FT, BFT/fond, TK, RTR, HFE/KAF** **Model 129:** **FT, BFT, Tank, RTR** Ignition: **ON**	PSE control module runs approx. 60seconds	(A37), See AD80.20-P-6003-01A