3.5 Central locking (PSE/CL)
Models 129, 140, 170 as of M.Y. 1998

The central locking system can only be activated by the IR transmitter or for (USA) (J) activation of the CL system is possible via the mechanical key from the outside as well. Opening and closing of the vehicle using the mechanical key does not have an influence on the central locking system. When unlocking, "global" or "selective" unlocking can be selected.
Global: all lockable locks unlock on the vehicle.
Selective: Only the driver's door and fuel filler flap unlock.

Activation of the Pneumatic System Equipment (PSE):
On models 129 and 140, the PSE control module is activated via the DAS radio frequency/infrared control moduleN54/4), via the signals SN1 and SN2.

On model 170, the control wire from the radio frequency DAS control module(N54/3), and from the interior switch CL (S6/1s2) is connected to the combination control module (N10-3). Via the combination control module, the required signals are sent via two CAN data lines to the PSE control module.

Specialized Functions of the Central Locking System

- **Emergency unlocking**

Integrated within the PSE Controlmodule is a crash sensor, which upon a vehicle de-acceleration rate of 6g from all angles will unlock the vehicle. The sensor is only active if the vehicle is unlocked from the outside.

- **Automatic locking**

If the automatic locking feature is activated, the vehicle will lock at vehicle speed of greater then 9 mph.

- **Subsequent locking**

In order to prevent an unintentional unlocking via the remote central locking system, the vehicle is automatically locked provided none of the vehicle doors are opened within 40 seconds, the key is not in the ignition lock or the interior switch (CL) activated (pressed).

Diagnosis – Function Test (Central Locking)

Preparation for Test:

1. Review 20, 21, 22, 31,
2. RCL system for central locking is functional,
3. Vehicle is unlocked,
4. All doors and trunk lid are closed,
5. Side windows are open,
6. Battery voltage 11 to 14 V,
7. Fuses ok.

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 1.0 Locking vehicle by pointing IR transmitter at the RCL receiver (roof frame) (A26/9) or via the IR receivers in the doors (A26/1, A26/2)	Locking vehicle using transmitter key.	All doors and filler flap lock in 3 sec. Model 129: Interior CL switch locks.	Vehicle does not lock and pump motor in PSE control module (A37) **does not run**: PSE version coding incorrect, see 3.5 PSE C/2, PSE (A37) Vehicle does not lock, or only partially, even though pump motor in PSE control module (A37) **runs**: 4.10 12, 32 PSE/CL ⇒ 2.0, 32 PSE ⇒ 1.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 2.0 "Selective" unlocking of the vehicle by pointing the IR transmitter at the RCL receiver (roof frame) (A26/9) or via the IR receivers in the doors (A26/1, A26/2)	Select "selective" opening. Unlocking vehicle using transmitter key.	Driver's door and filler flap unlock in 3 sec. Model 129: Interior CL switch unlocks.	Vehicle does not unlock and pump motor in PSE control module (A37) **does not run**: Wiring, PSE version coding incorrect, see 3.5 PSE C/2, PSE (A37) Vehicle does not unlock, or only partially, even though pump motor in PSE control module (A37) **runs**: 23 PSE/CL⇒ 1.0, 4.10 12, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 8.0, 32 PSE ⇒ 1.0, 32 PSE ⇒ 5.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 3.0 "Global" unlocking of the vehicle by pointing the IR transmitter at the RCL receiver (roof frame) (A26/9) or via the IR receivers in the doors (A26/1, A26/2)	Select "global" opening. Unlocking vehicle using transmitter key.	All doors, trunk lid and filler flap lock in 3 sec. Model 129: Interior CL switch unlocks.	Vehicle does not unlock and pump motor in PSE control module (A37) **does not run**: Wiring, PSE version coding incorrect, see 3.5 PSE C/2 Vehicle does not unlock, or only partially, even though pump motor in PSE control module (A37) **runs**: 23 PSE/CL⇒ 1.0, 4.10 12, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 4.0, 32 PSE/CL ⇒ 6.0, 32 PSE/CL ⇒ 8.0, 32 PSE ⇒ 1.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 4.0 Lock vehicle via interior switch (CL)	Unlock vehicle via transmitter key. Press interior switch in direction: Lock	All doors and trunk lid lock in 3 sec. Fuel filler flap **does not** lock.	Vehicle does not lock and pump motor in PSE control module (A37) **does not run**: PSE version coding incorrect, see 3.5 PSE C/2, Wiring, PSE (A37) Vehicle does not lock, or only partially, even though pump motor in PSE control module (A37) **runs**: 23 PSE/CL⇒ 1.0, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 5.0 Unlock vehicle via interior switch (CL)	Press interior switch in direction: Unlock	All doors and trunk lid unlock in 3 sec.	Vehicle does not unlock and pump motor in PSE control module (A37) **does not run**: PSE version coding incorrect, see 3.5 PSE C/2, Wiring, PSE (A37) Vehicle does not unlock, or only partially, even though pump motor in PSE control module (A37) **runs**. 23 PSE/CL⇒ 1.0, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 3.0, 23 PSE/CL⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0 32 PSE ⇒ 6.0
⇒ 6.0 Unlock vehicle by opening one of the front doors.	Select "selective opening". Vehicle locked via interior switch. Open one of the front doors via door interior handle.	Door which was unlocked via door interior handle, unlocks.	Vehicle unlocks at all doors and the PSE control module (A37) **runs**: transmitter key, PSE (A37)

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 7.0 Unlock vehicle by opening one of the front doors.	Select "global opening". Vehicle locked via CL interior switch. Open one of the front doors via door interior handle.	All doors and trunk lid unlock in 3 sec.	Vehicle does not unlock and pump motor in PSE control module (A37) **does not run**: PSE version coding incorrect, see 3.5 PSE C/2, Wiring, PSE (A37). Vehicle does not unlock, or only partially, even though pump motor in PSE control module (A37) **runs**: 23 PSE/CL⇒ 8.0, 32 PSE/CL ⇒ 9.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 8.0 Unlock vehicle via lock switch on front door or trunk lid lock switch (only USA J).	Turn mechanical key in lock switch towards unlock.	All doors, trunk lid and filler flap unlock in 3 sec.	Vehicle does not unlock and pump motor in PSE control module (A37) **does not run:** Wiring, PSE (A37). Vehicle does not unlock, or only partially, even though pump motor in PSE control module (A37) **runs**: 4.10 23, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 7.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0, 32 PSE ⇒ 8.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 9.0 Lock vehicle via lock switch on front door or trunk lid lock switch (only USA J).	Turn mechanical key in lock switch towards lock.	All doors, trunk lid and filler flap lock in 3 sec.	Vehicle does not lock and pump motor in PSE control module (A37) **does not run:** Wiring, PSE (A37). Vehicle does not lock, or only partially, even though pump motor in PSE control module (A37) **runs**: 4.10 23 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 4.0, 32 PSE/CL ⇒ 6.0, 32 PSE/CL ⇒ 8.0, 32 PSE ⇒ 1.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 10.0 Subsequent locking of vehicle via central locking (CL).	Remove ignition key. Lock vehicle via RCL. Unlock vehicle via RCL. Do not open any doors within 40 seconds. Do not press interior switch (CL).	Elapsed time > 40 seconds. All doors, trunk lid and fuel filler flap lock.	Vehicle does not lock and pump motor in PSE control module (A37) **does not run:** PSE version coding incorrect, see 3.5 PSE C/2, Wiring, PSE (A37) Vehicle does not lock, or only partially, even though pump motor in PSE control module (A37) **runs**: 23 PSE/CL⇒ 8.0, 23 PSE/CL ⇒ 9.0, 23 PSE/CL ⇒ 10.0, 23 PSE/CL ⇒ 11.0, 32 PSE/CL ⇒ 2.0, 32 PSE/CL ⇒ 4.0, 32 PSE/CL ⇒ 6.0, 32 PSE/CL ⇒ 8.0, 32 PSE ⇒ 1.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test (Central Locking)

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 11.0 Automatic locking of vehicle via central locking (CL).	"Automatic locking activated". Drive vehicle with a speed greater than 9 mph. i The "Automatic locking" feature should not have been deactivated via the CL interior switch (S6s1) or via the HHT.	All doors and trunk lid lock. Fuel filler flap does not lock.	Vehicle does not lock and pump motor in PSE control module (A37) **does not run:** PSE version coding incorrect, see 3.5 PSE C/2, Wiring, PSE (A37) Vehicle does not lock, or only partially, even though pump motor in PSE control module (A37) **runs**: 32 PSE/CL ⇒ 12.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0

[1] Observe Preparation for Test, see 22.

Electrical Test Program – Location of Components (CL)

Model 129

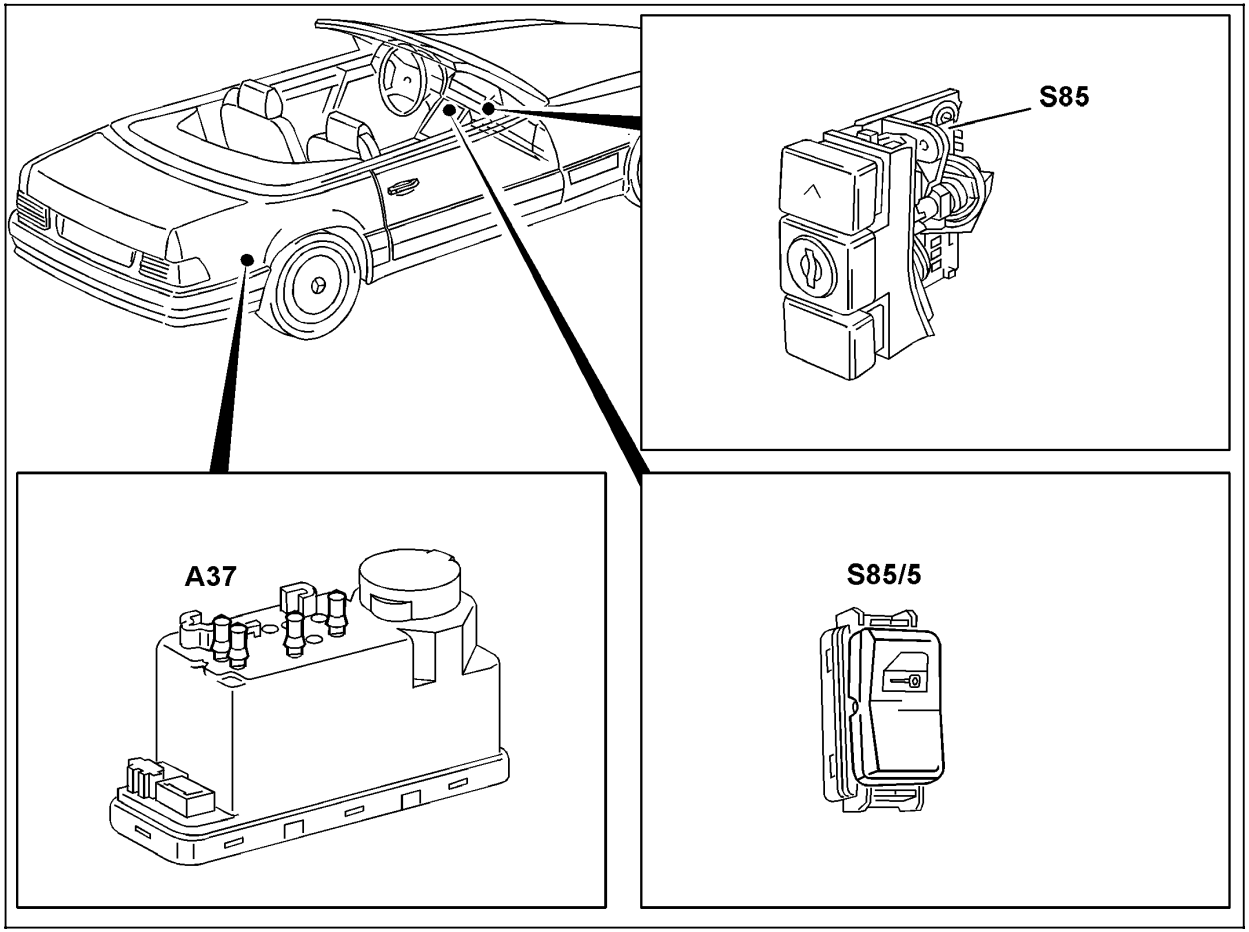


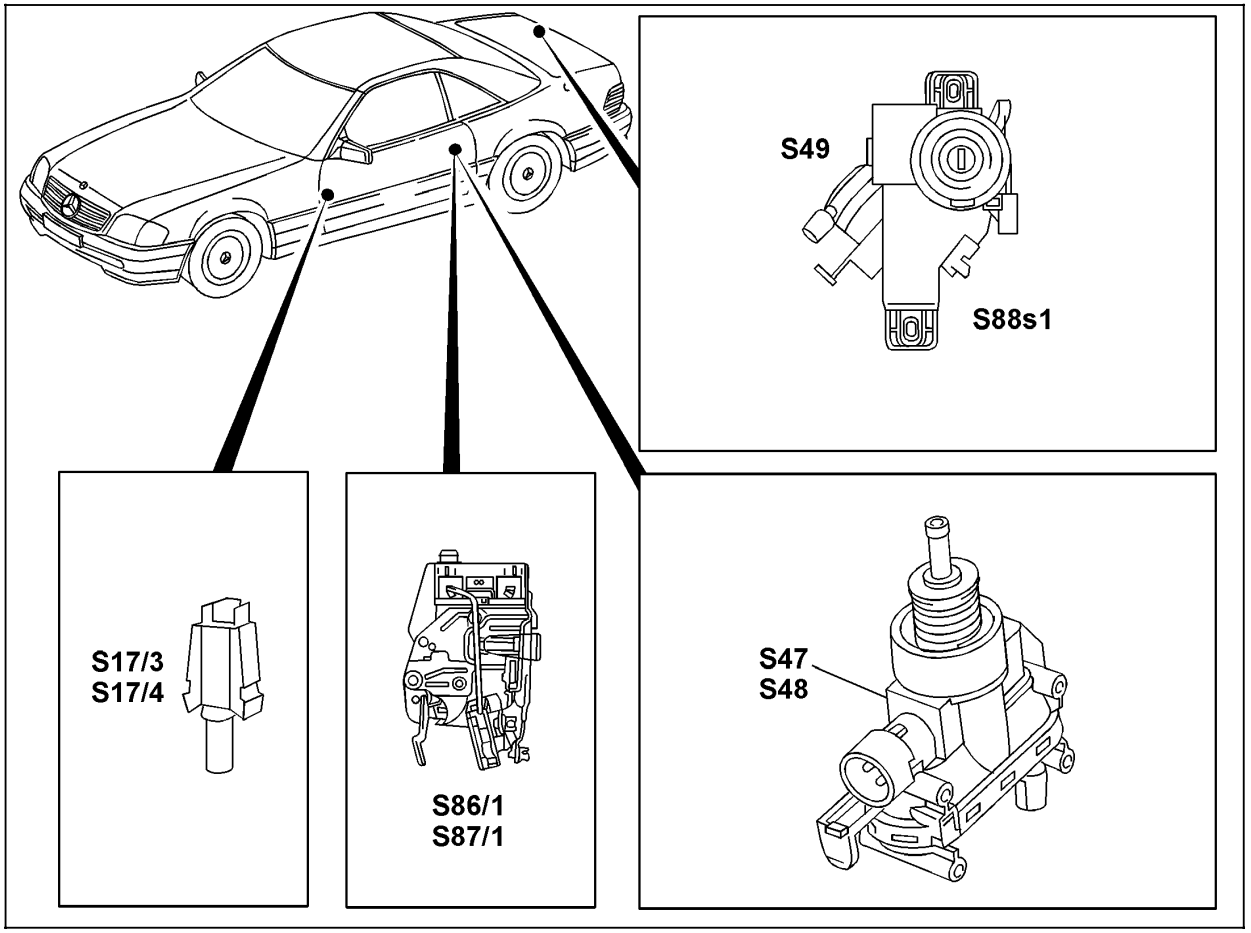
Figure 1

A37	PSE control module, combined functions
S85	CL interior control switch
S85/5	CL interior control switch

P80.20-0436-06

Electrical Test Program – Location of Components (CL)

Model 129



P80.20-0437-06

Figure 2

S17/3	Left front door switch
S17/4	Right front door switch
S47	Left door actuator
S48	Right front door actuator
S49	Trunk lid lock actuator
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 microswitch (only USA J)

Electrical Test Program – Location of Components (CL)

Model 140
(Sedan shown)

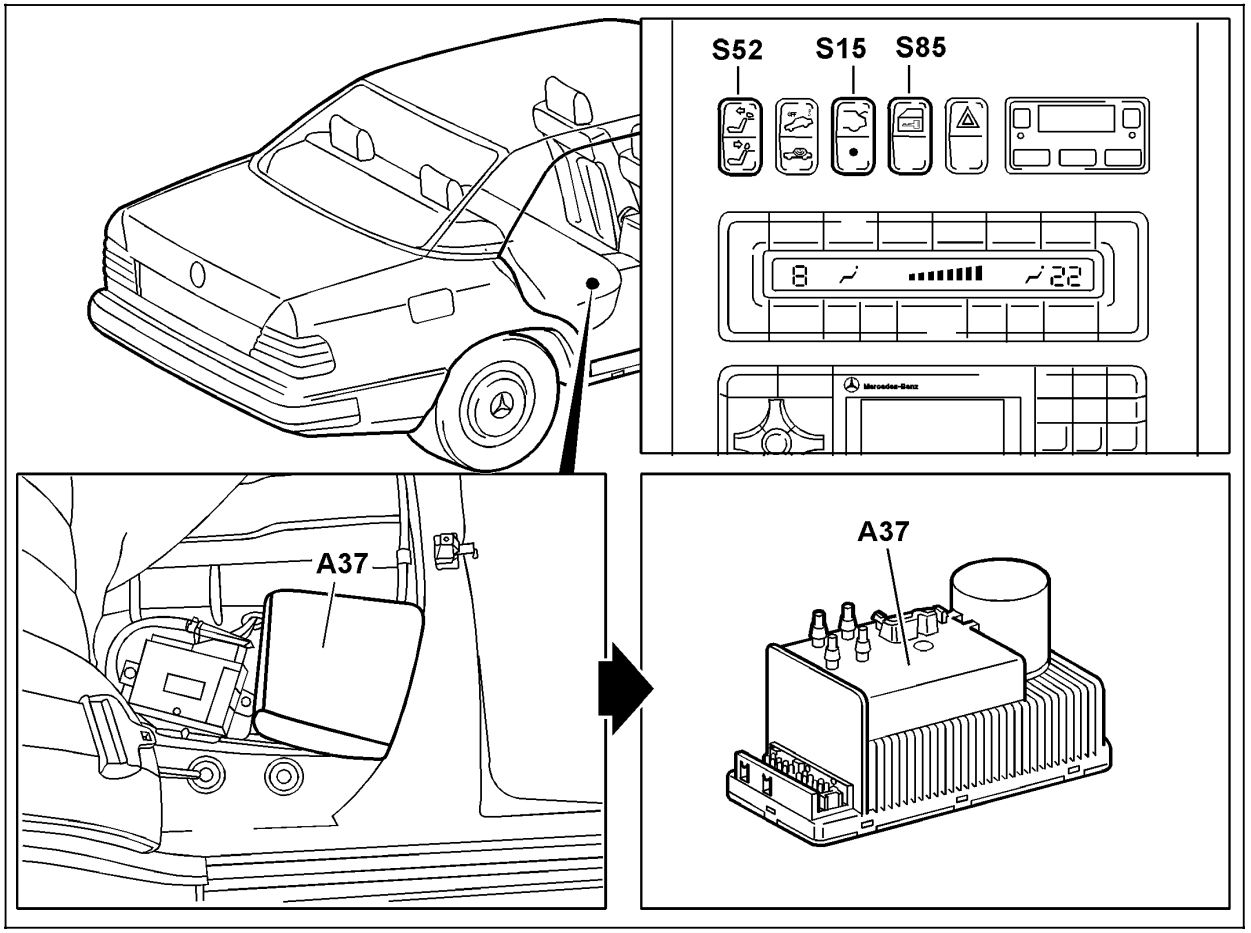


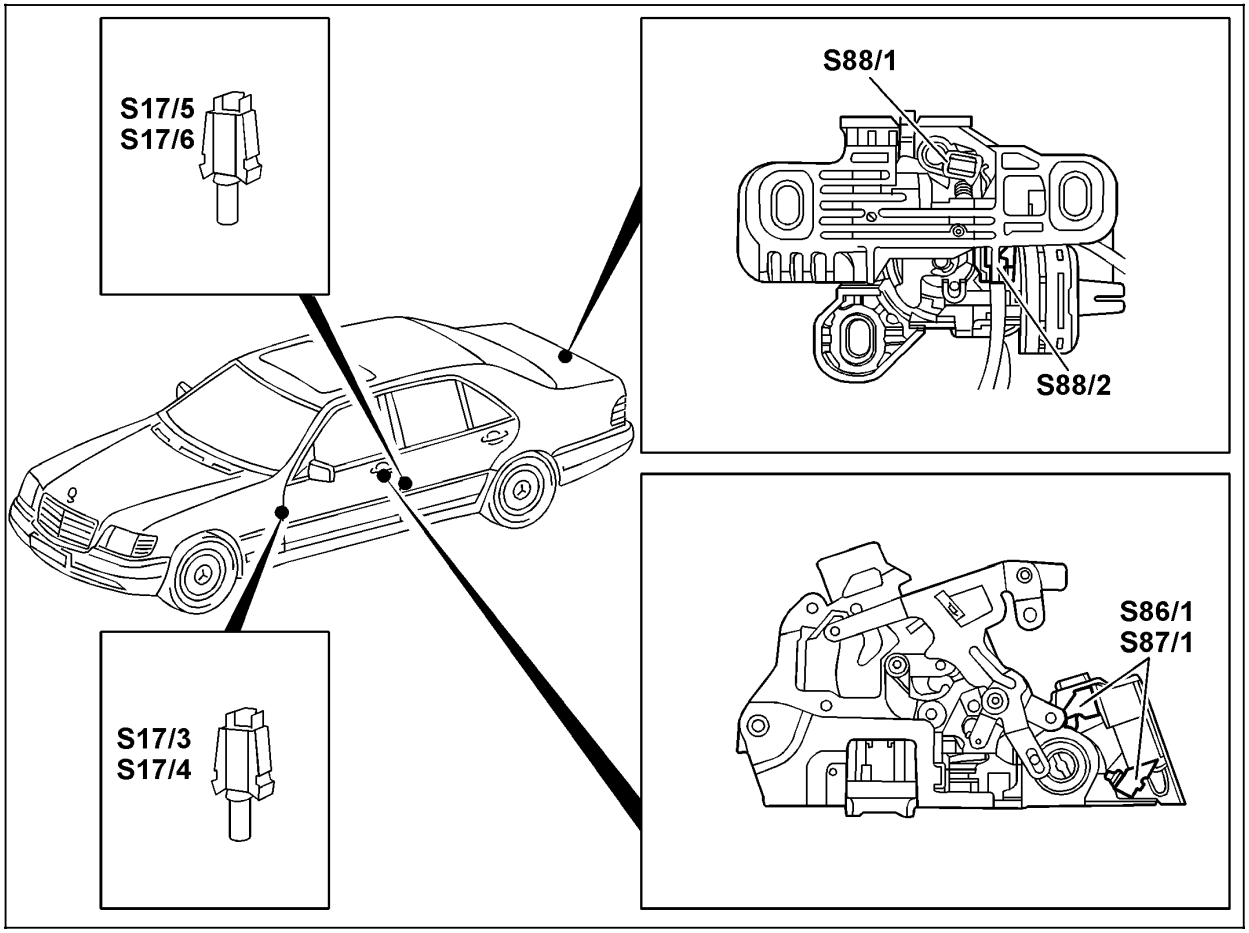
Figure 3

A37 PSE control module, combined functions
S85 Interior CL switch

P80.20-0438-06

Electrical Test Program – Location of Components (CL)

Model 140
(Sedan shown)



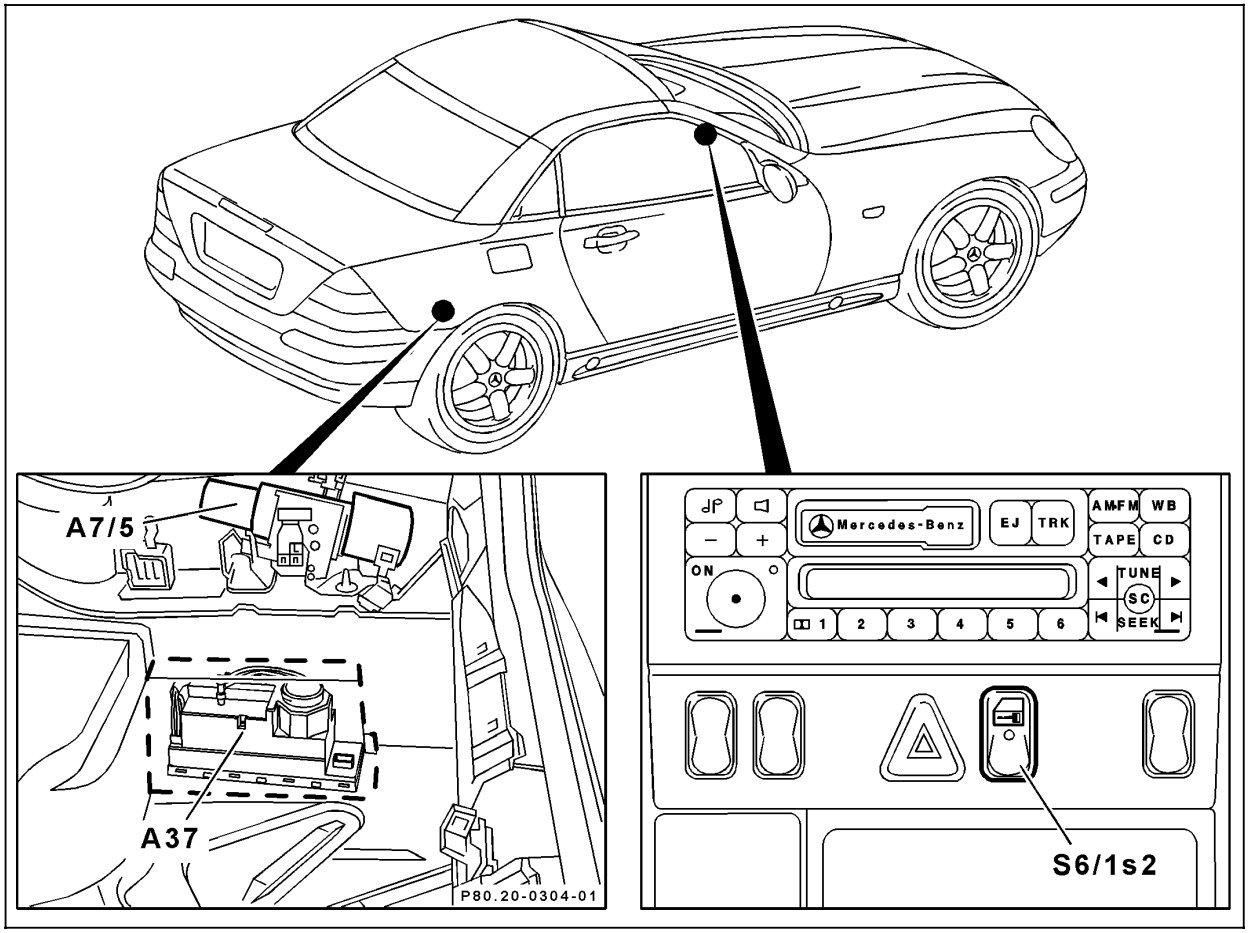
P80.20-0439-06

Figure 4

S17/3	Left front door switch
S17/4	Right front door switch
S17/5	Left rear door switch
S17/6	Right rear door 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)

Electrical Test Program – Location of Components (CL)

Model 170



P80.20-0440-06

Figure 5

A37 PSE control module, combined functions
S6/1s2 Interior switch (CL)

Electrical Test Program – Location of Components (CL)

Model 170

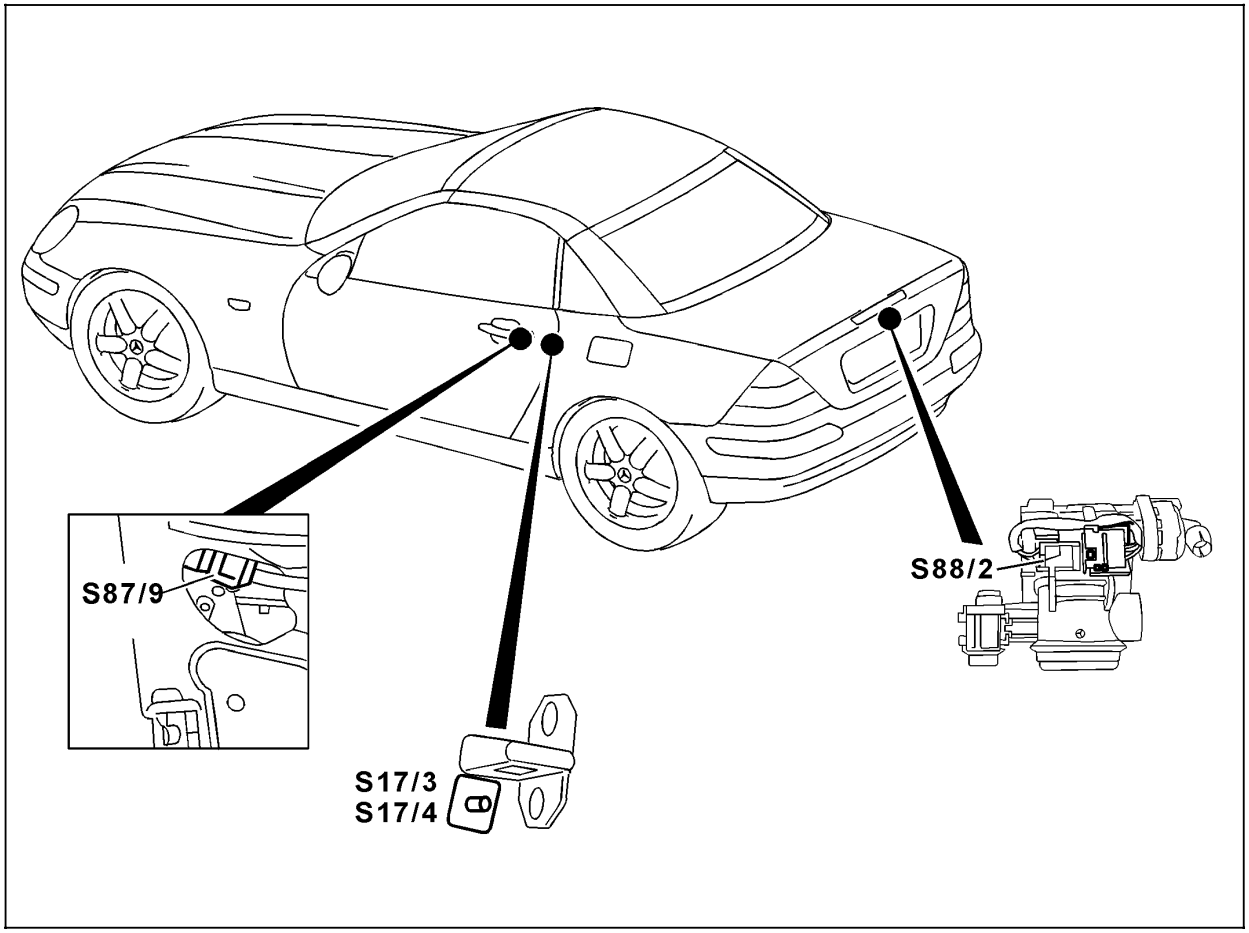


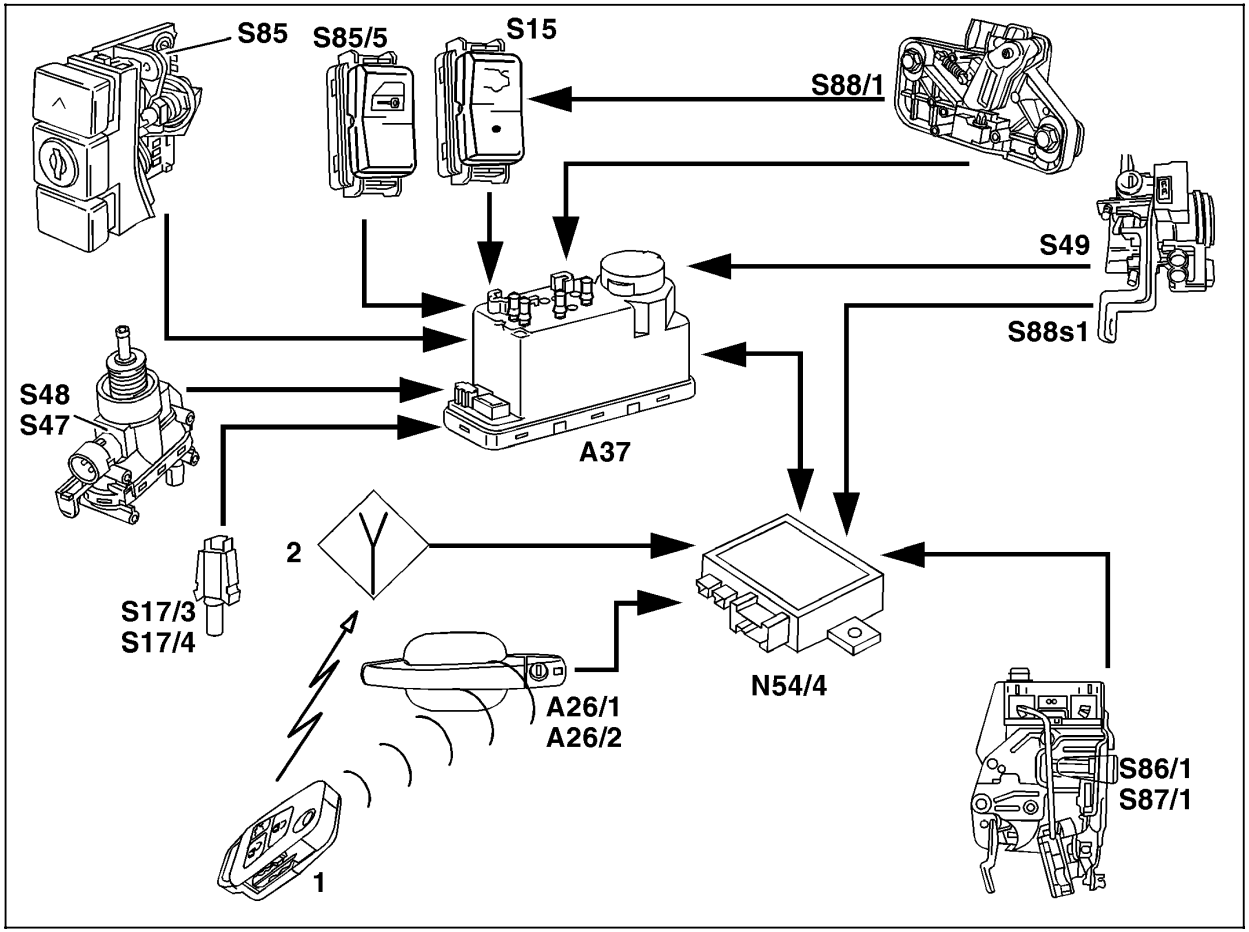
Figure 6

S17/3	Left front door switch
S17/4	Right front door switch
S87/9	Left front door lock switch (only USA J)
S88/2	Trunk lid lock switch (CF) (only USA J)

P80.20-0441-06

Electrical Test Program – Connection of Components (CL)

Model 129



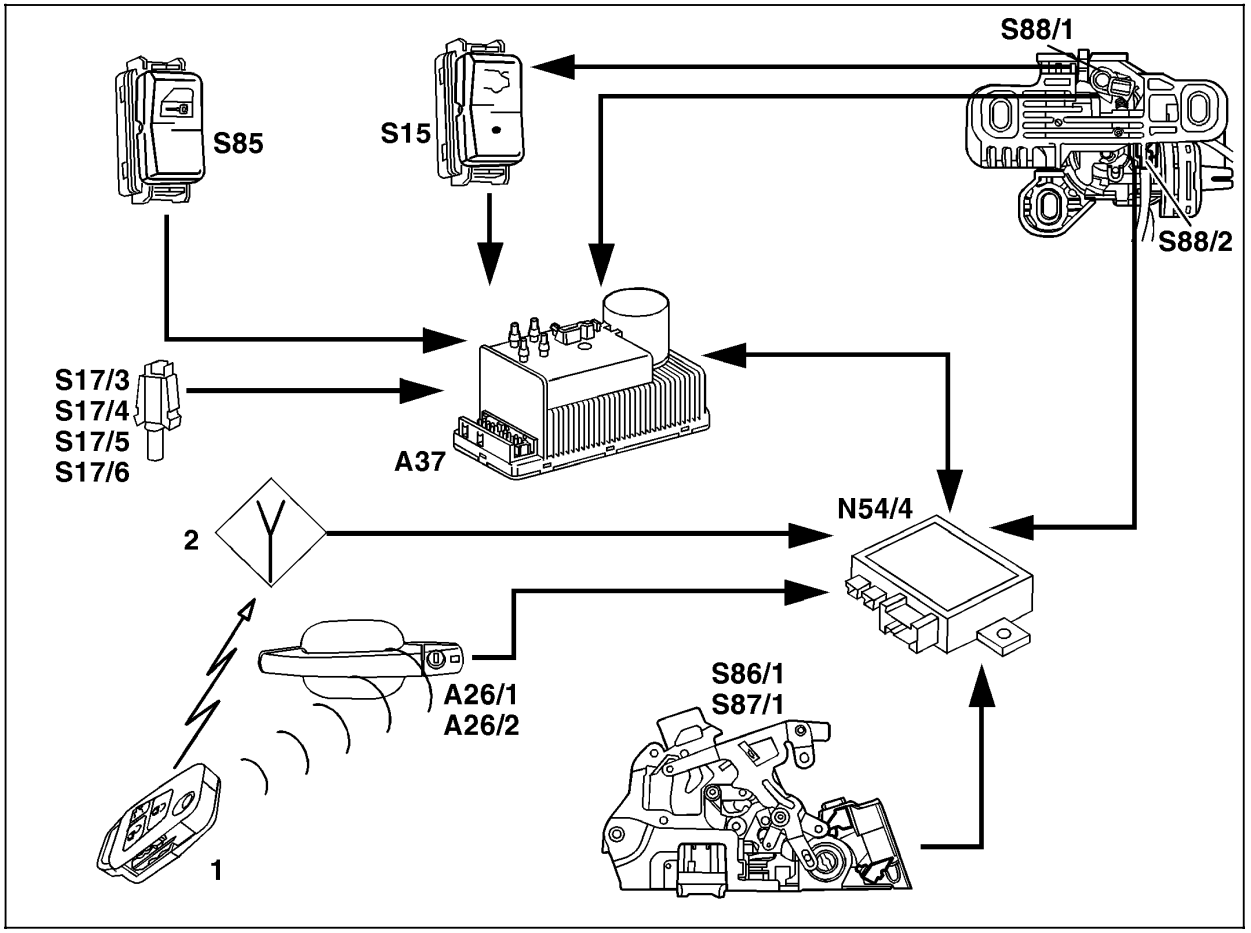
P80.20-0451-06

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 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	Trunk lid lock switch (CF) (only USA J)
S88/1	Rotary tumbler/trunk lid microswitch
1	Transmitter key
2	Antenna

Electrical Test Program – Connection of Components (CL)

Model 140



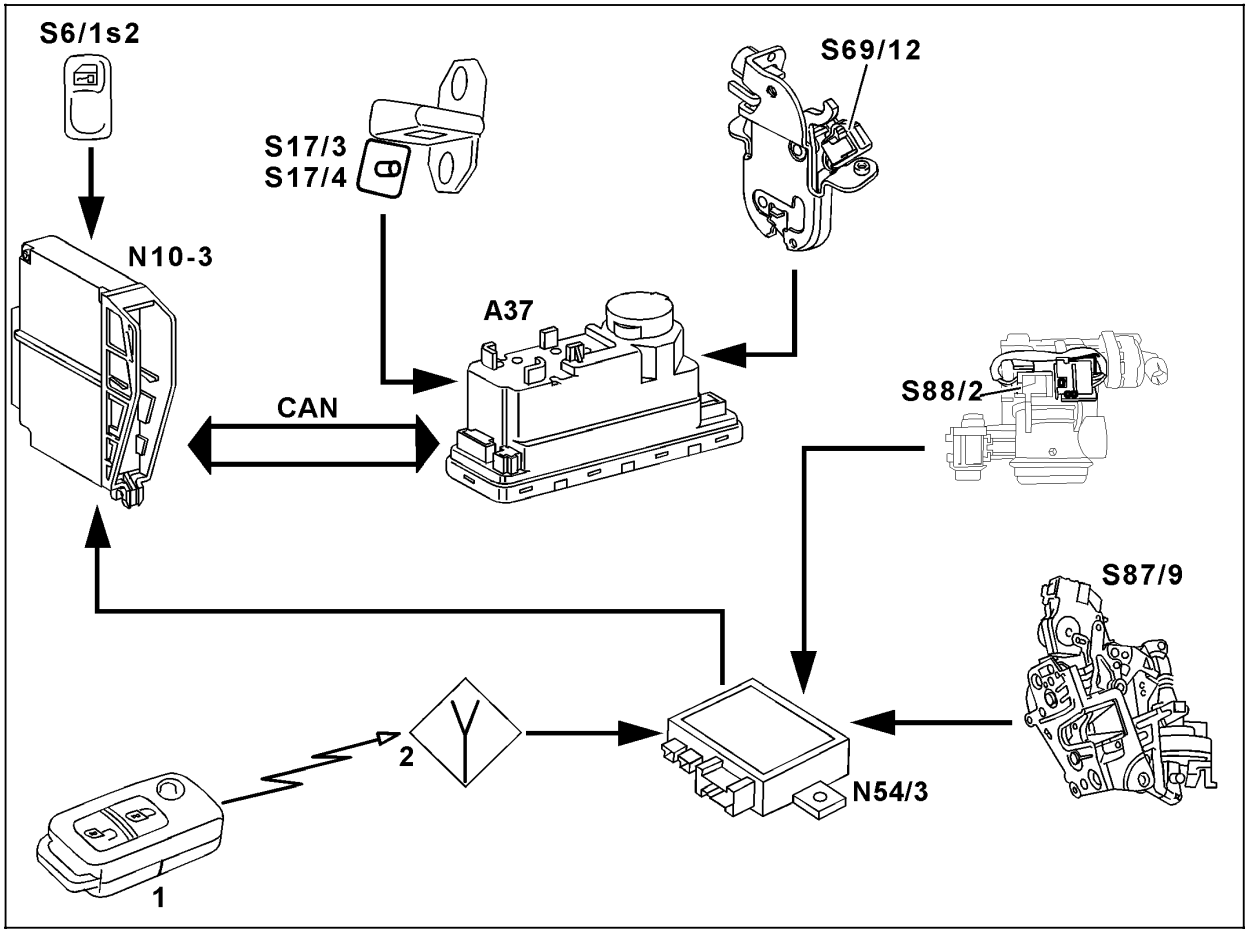
P80.20-0452-06

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 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)
S88/1	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 (CL)

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 (only USA J)
S88/2	Trunk lid lock switch (CF)(only USA J)
1	Transmitter key
2	Antenna

Electrical Test Program - Preparation for Test

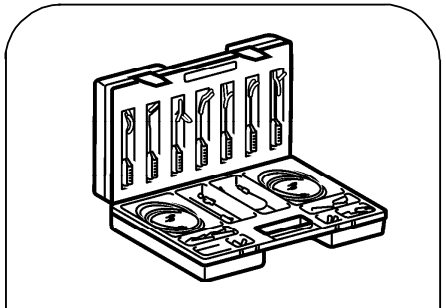
Preparation for Test:

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:

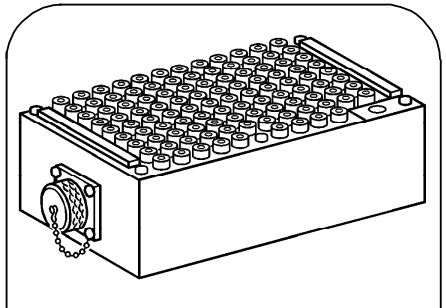
See Electric Troubleshooting Manual, Model 129, Volume 2, group 80,
Model 140, Volume 2, group 80,
Model 170, Volume 2, group 80

Special Tools



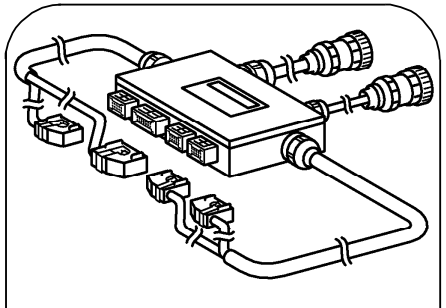
201 589 00 99 00

Electrical connecting set



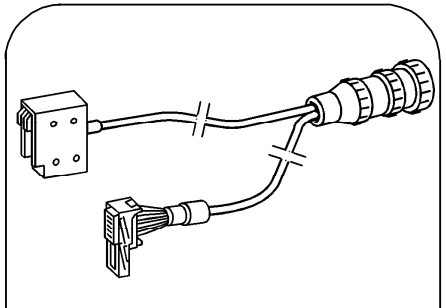
129 589 00 21 00

126-pin socket box



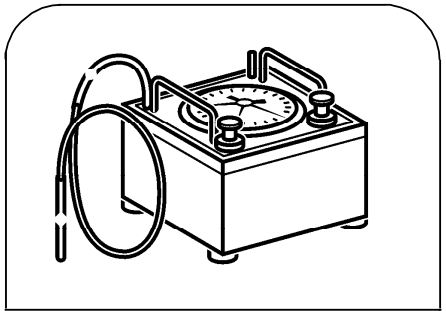
202 589 16 63 00

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

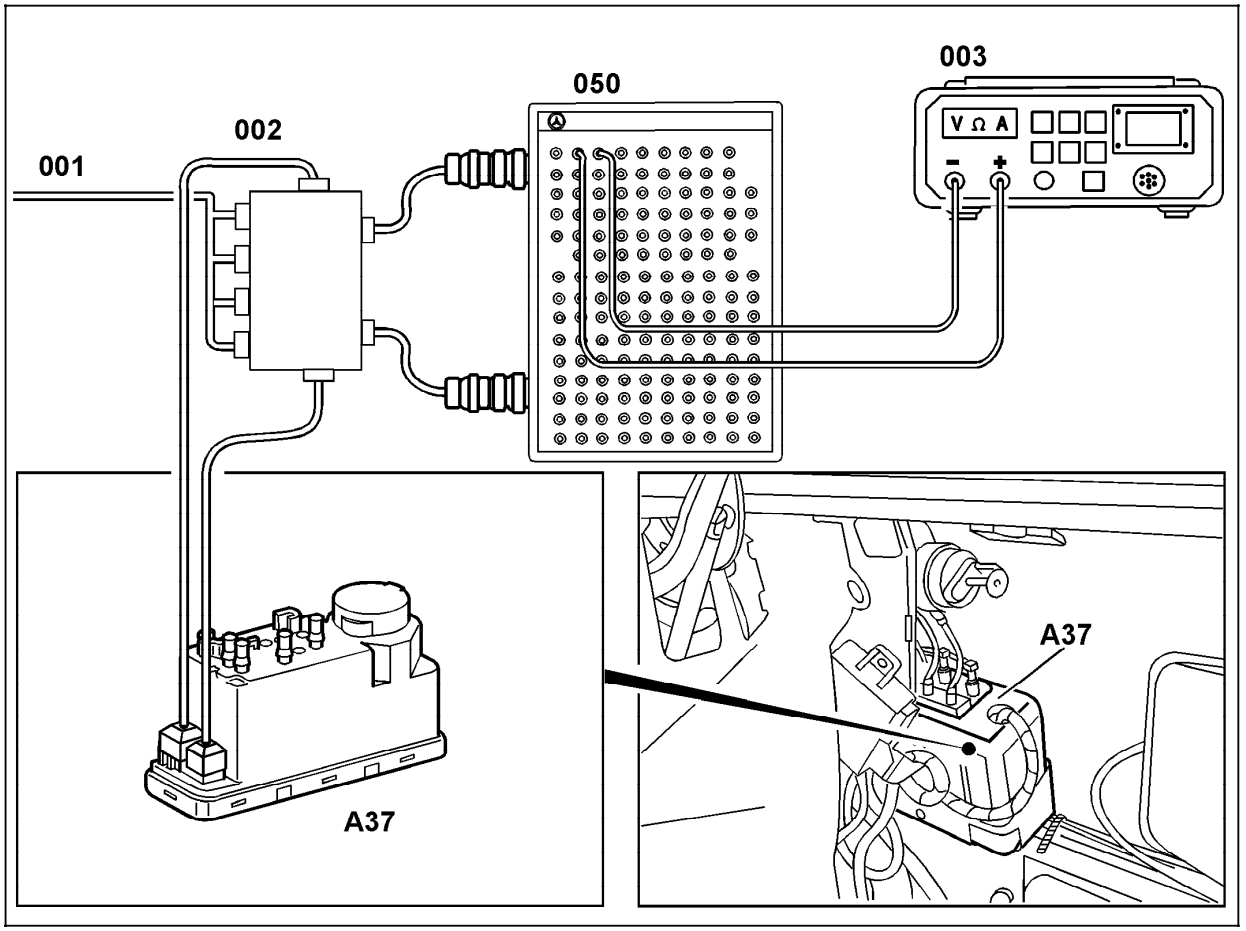


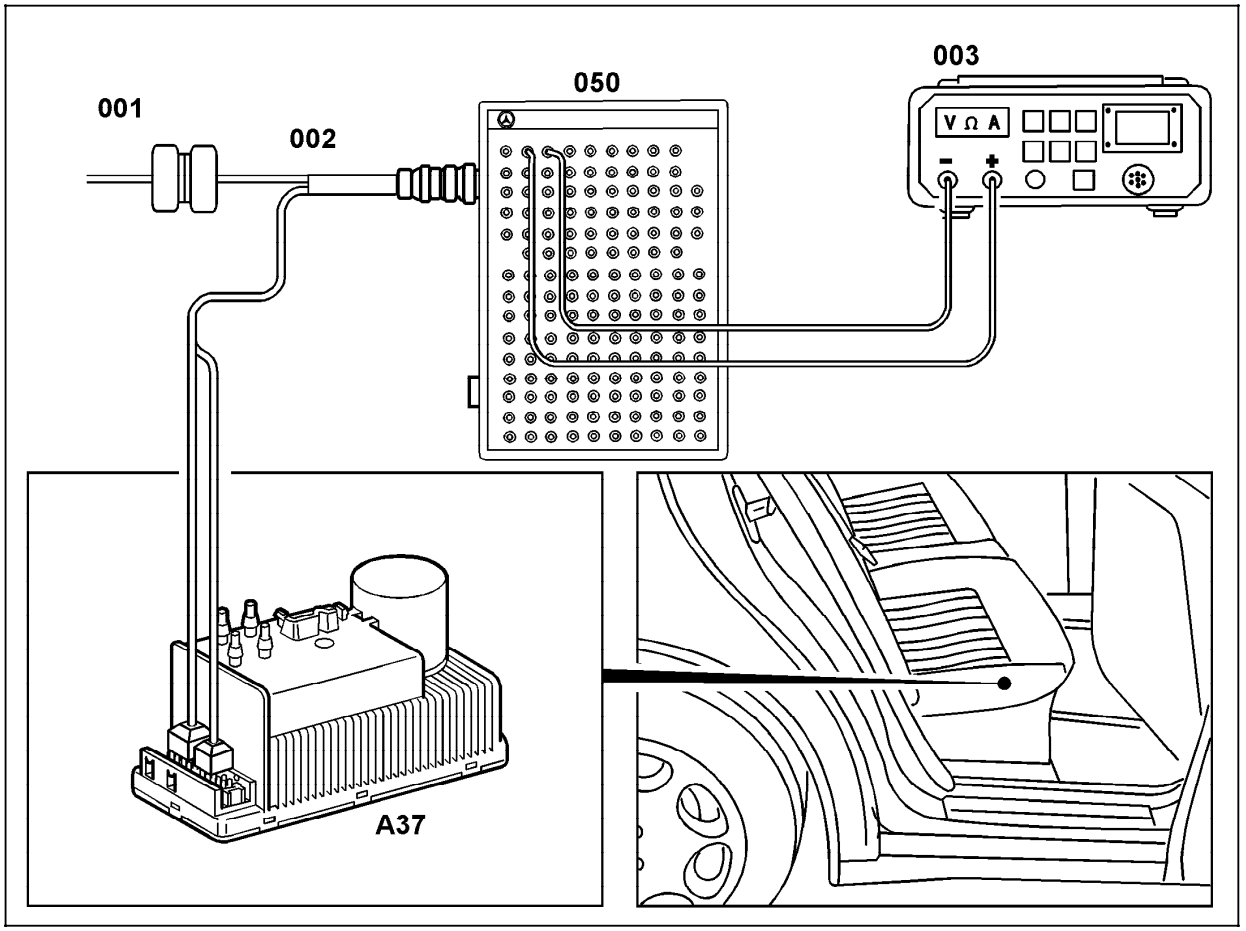
Figure 1

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



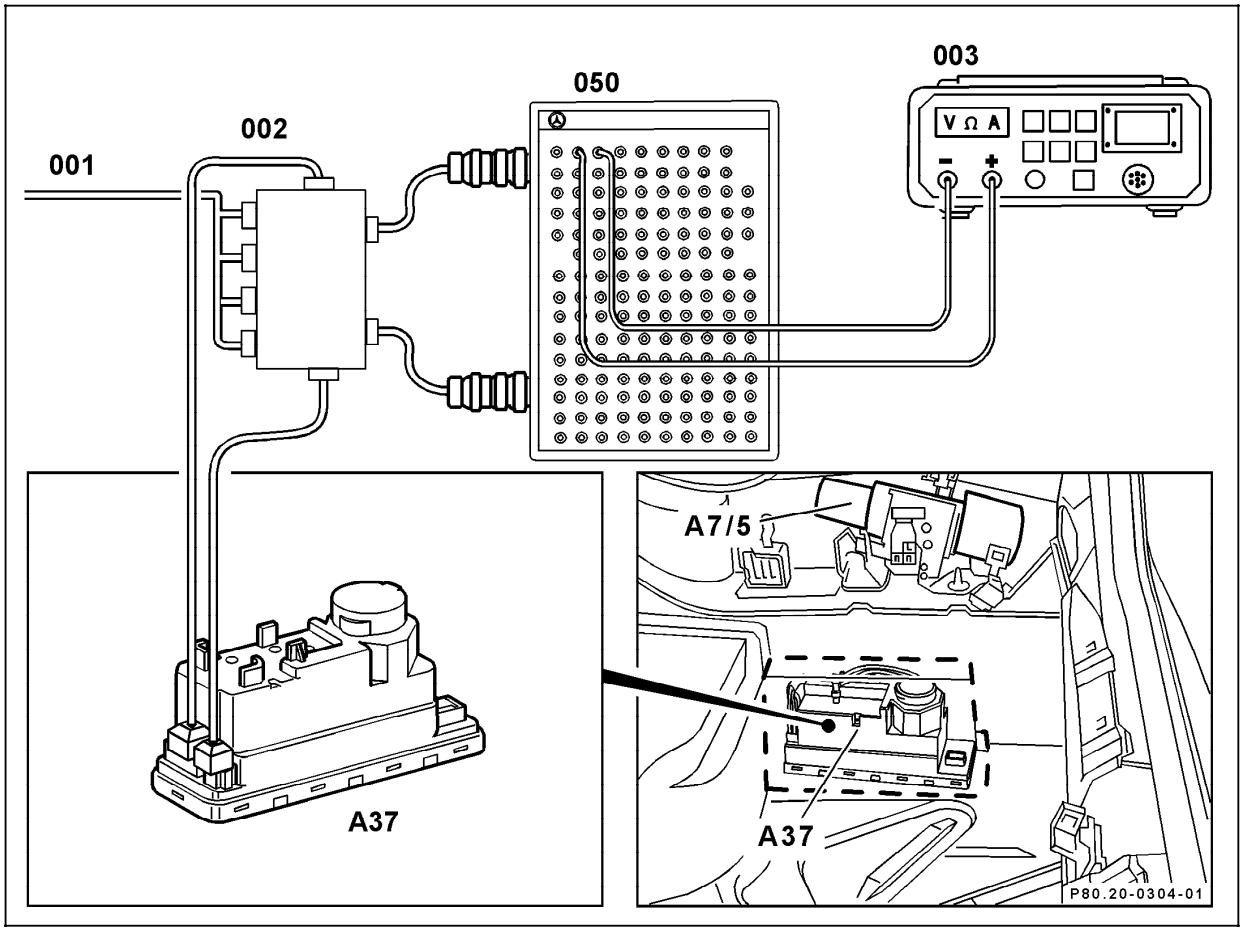
P80.20-0443-06

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



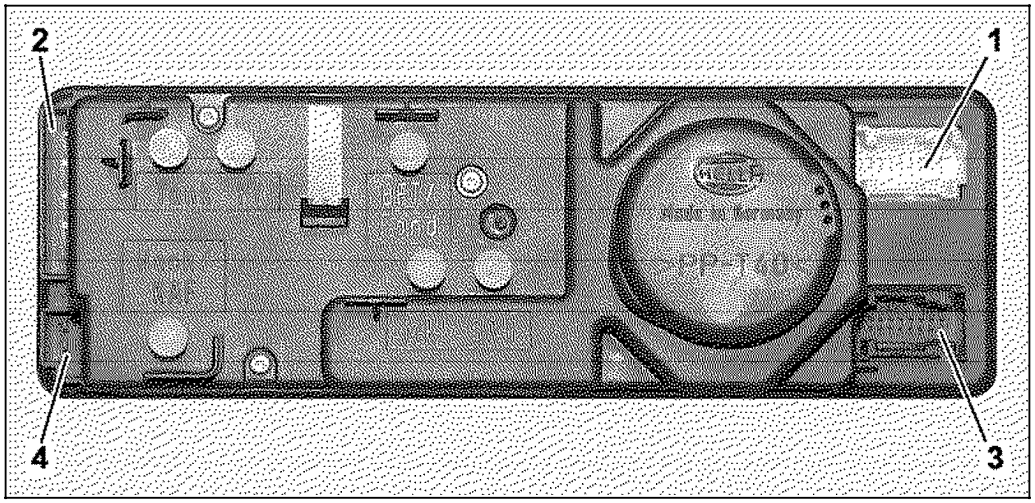
P80.20-0444-06

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

Preparation for Test:

1. Insert model specific module into HHT,
2. Ignition: ON
3. Unlock vehicle via RCL system,
4. Battery voltage 11 – 14 V,
6. Review section 0, 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

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Interior switch (S6/1s2) (CL)** Model 170	N10-3  49 (C) 	Disconnect combination control module (N10-3) from  S6/1s2: **Rest position** **Press to lock and hold** **Press to unlock and hold**	 >20 kΩ approx. 200 Ω <1 Ω	Wiring, S6/1s2

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**Interior CL switch (S85)** Model 140	A37 6 — V — 7	Disconnect A37 from S85: **Rest position** **Press to lock and hold**	 >1 V 11 – 14 V	Wiring, S85
			A37 21 — V — 6	S85: **Rest position** **Press to unlock and hold**	 >1 V 11 – 14 V	
3.0		**CL interior control switch (S85/5)** Model 129	A37 48 — V — (+) (2.2)	Disconnect A37 from S85/5: **Rest position** **Press to lock and hold**	 >1 V 11 – 14 V	Wiring, S85/5
			A37 ⊥ — V — 48 (2.2)	S85/5: **Rest position** **Press to unlock and hold**	 >1 V 11 – 14 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**CL interior control switch (S85)** Model 129	A37 ⊥ Ω — 49 (2.3)	Disconnect A37 from S85: **Open** **Close**	 >20 kΩ <1 Ω	Wiring, S85
5.0		**Left door actuator (S47) or right door actuator (S48) Activation: PSE** Model 129 only	A37 ⊥ V — 55 (2.9)	Unlock vehicle at driver's door using mechanical key. Lock vehicle at driver's door using mechanical key.	11 – 14 V < 1 V	Wiring, S47
6.0		**Trunk lid lock actuator (S49) Activation: PSE** Model 129 only	A37 ⊥ V — 53 (2.7)	Unlock trunk lid using mechanical key. Lock trunk lid using mechanical key.	11 – 14 V < 1 V	Wiring, S49

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		**Door contact status** Model 129 Model 140	A37 47 (2.1) A37 8 — 7	Both doors closed. Lock vehicle using transmitter key, then unlock vehicle again using transmitter key. Elased time: 40 seconds.	< 1 V 11 – 14 V for appox. 0.5 seconds	Wiring, PSE control module (A37), 23 PSE/CL ⇒ 8.0, 23 PSE/CL ⇒ 9.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 6.0
7.1		**Door contact status** Model 170	N10-3 59 — 75	Both doors closed. Lock vehicle using transmitter key, then unlock vehicle again using transmitter key. Elased time: 40 seconds.	< 1 V 11 – 14 V for appox. 0.5 seconds	Wiring, PSE control module (A37), Combination control module (N10-3), 23 PSE/CL ⇒ 8.0, 23 PSE/CL ⇒ 9.0, 32 PSE ⇒ 3.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 5.0, 32 PSE ⇒ 6.0

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		**Left front door switch (S17/3)** Circuit		Vehicle is unlocked via "global" via RCL. Both front doors closed. Vehicle is locked via CL interior switch. Open driver's door.	CL unlocks vehicle.	Wiring, 23 PSE ⇒ 3.0, 23 PSE ⇒ 4.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 7.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0, 32 PSE ⇒ 8.0
9.0		**Left front door switch (S17/4)** Circuit		Unlock vehicle via "Global" via RCL. Both front doors closed. Vehicle is locked via CL interior switch. Open right front door	CL unlocks vehicle.	Wiring, 23 PSE ⇒ 3.0, 23 PSE ⇒ 5.0, 32 PSE/CL ⇒ 1.0, 32 PSE/CL ⇒ 3.0, 32 PSE/CL ⇒ 5.0, 32 PSE/CL ⇒ 7.0, 32 PSE ⇒ 2.0, 32 PSE ⇒ 4.0, 32 PSE ⇒ 6.0, 32 PSE ⇒ 8.0

Electrical Test Program – Test

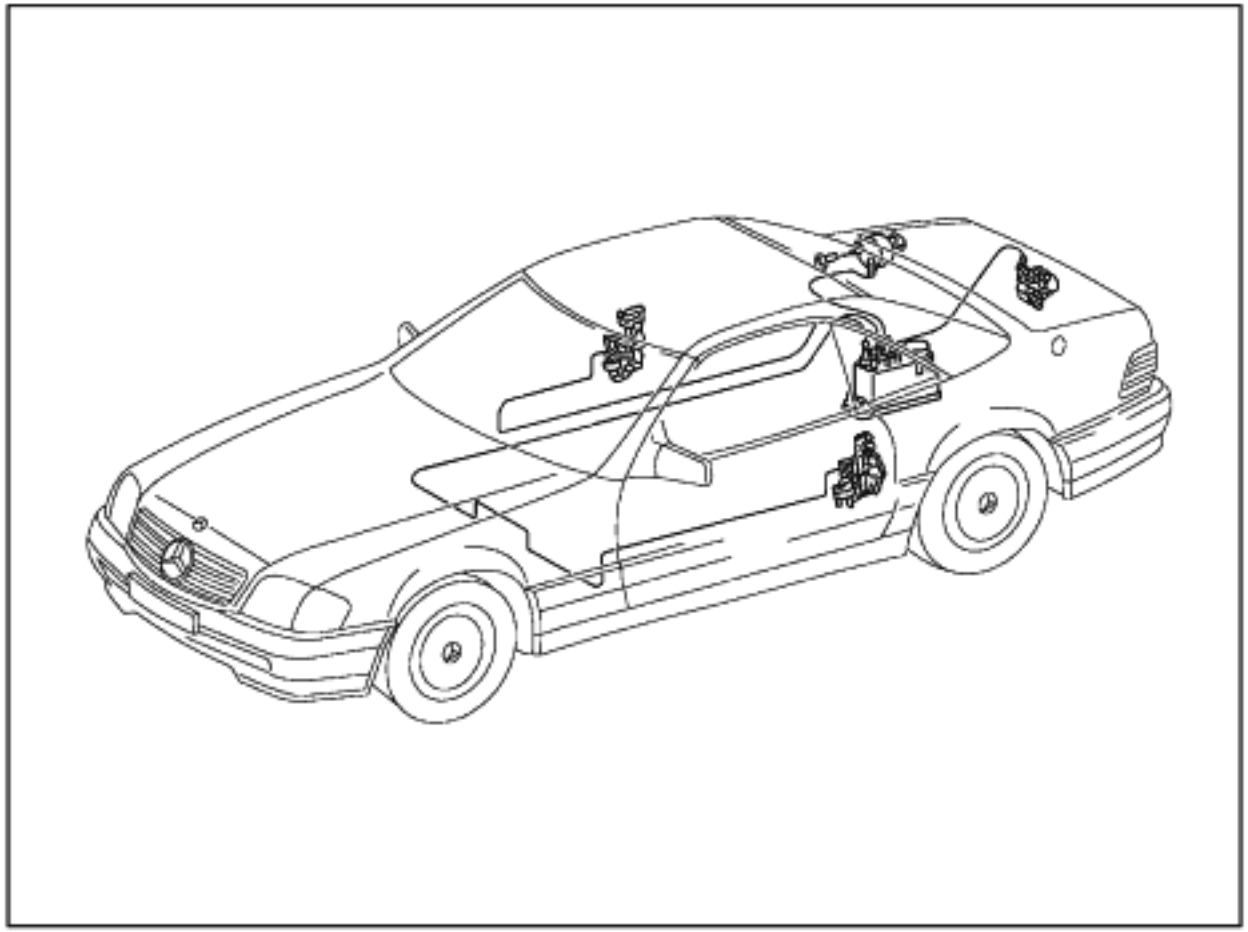
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		**Left rear door switch (S17/5)** Circuit Model 140 sedan only		Vehicle is unlocked via RCL. Remove ignition key. All doors are closed. Lock vehicle using RCL, then open left rear door within 30 seconds.	Elapsed time > 40 seconds. Subsequent locking does not function.	Wiring, 23 PSE ⇒ 6.0
11.0		**Right rear door switch (S17/6)** Circuit Model 140 sedan only		Unlock vehicle via RCL. Remove ignition key. All doors are closed. Lock vehicle using RCL, then open right rear door within 30 seconds.	Elapsed time > 40 seconds. Subsequent locking does not function.	Wiring, 23 PSE ⇒ 6.0

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Vehicle speed signal,** **Activation: PSE (A37)** Model 140 Model 129	A37 ⊥ V 10 (1.10) A37 ⊥ V 64 (2.18)	Ignition: ON Raise L/H side of vehicle, rotate left front wheel at 1 rpm/min.	Approx. 5 V	Wiring, Traction systems control module (N47), D.M., Chassis and Drivetrain, section 9.3, 23

Pneumatic Test Program – Component Locations (CL)

Model 129



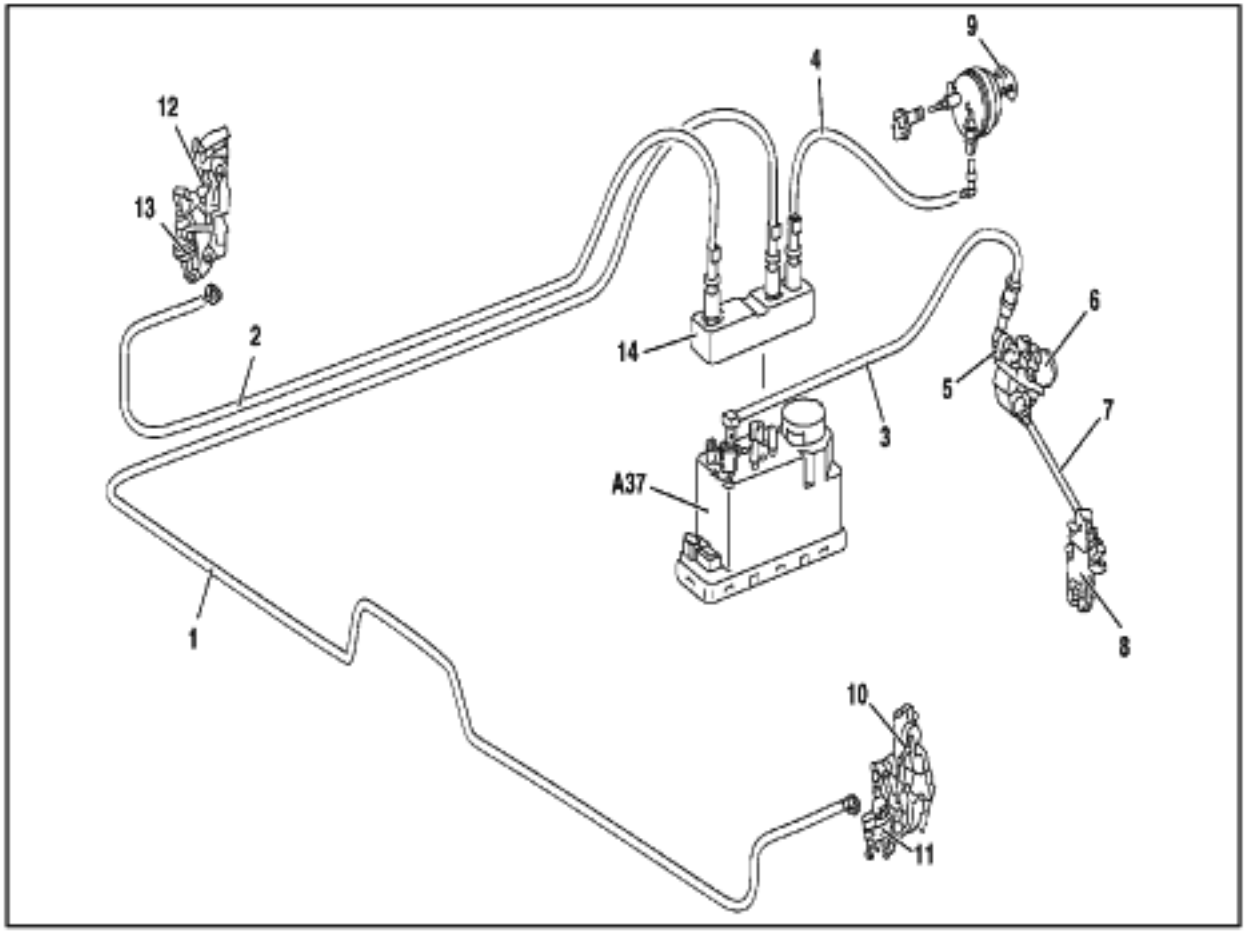
P80.20-0491-09

Figure 1

See Figure 2 for component designations

Pneumatic Test Program – Component Locations (CL)

Model 210 sedan



P80.20-0492-09

Figure 2

A37	PSE control module, combined functions
1	Pneumatic line (CL), driver-side door frame floor,
2	Pneumatic line (CL), passenger-side door frame floor
3	Pneumatic line (CL), trunk lid
4	Pneumatic line, fuel filler flap
5	CL actuator, trunk lid
6	Lock cylinder housing
7	Shift linkage
8	Trunk lid lock
9	CL actuator, fuel filler flap
10	Driver's door lock
11	CL actuator, driver's door
12	Passenger-side door lock
13	CL actuator, passenger-side door
14	PSE control module connector

Pneumatic Test Program – Component Locations (CL)

Model 140

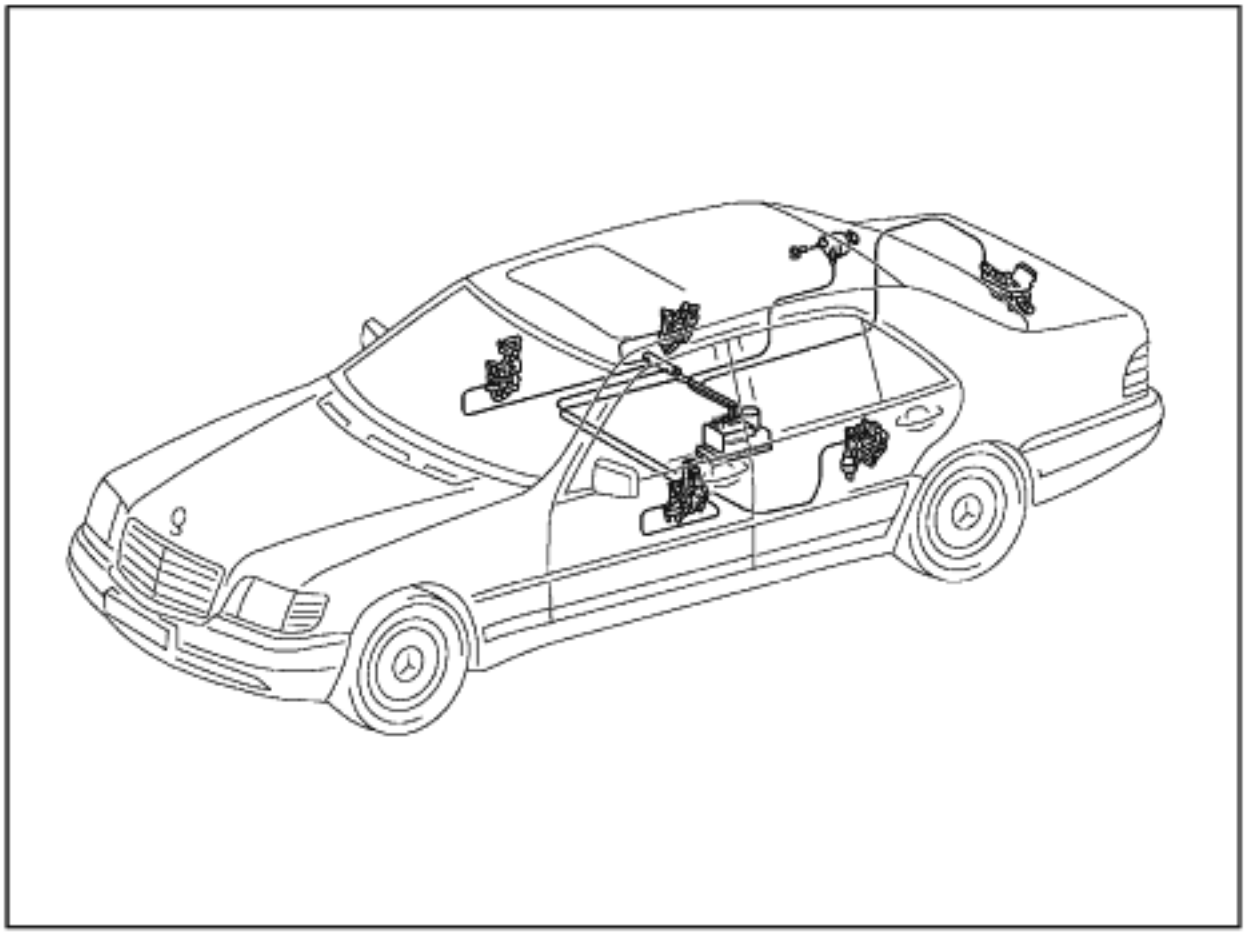


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Figure 3

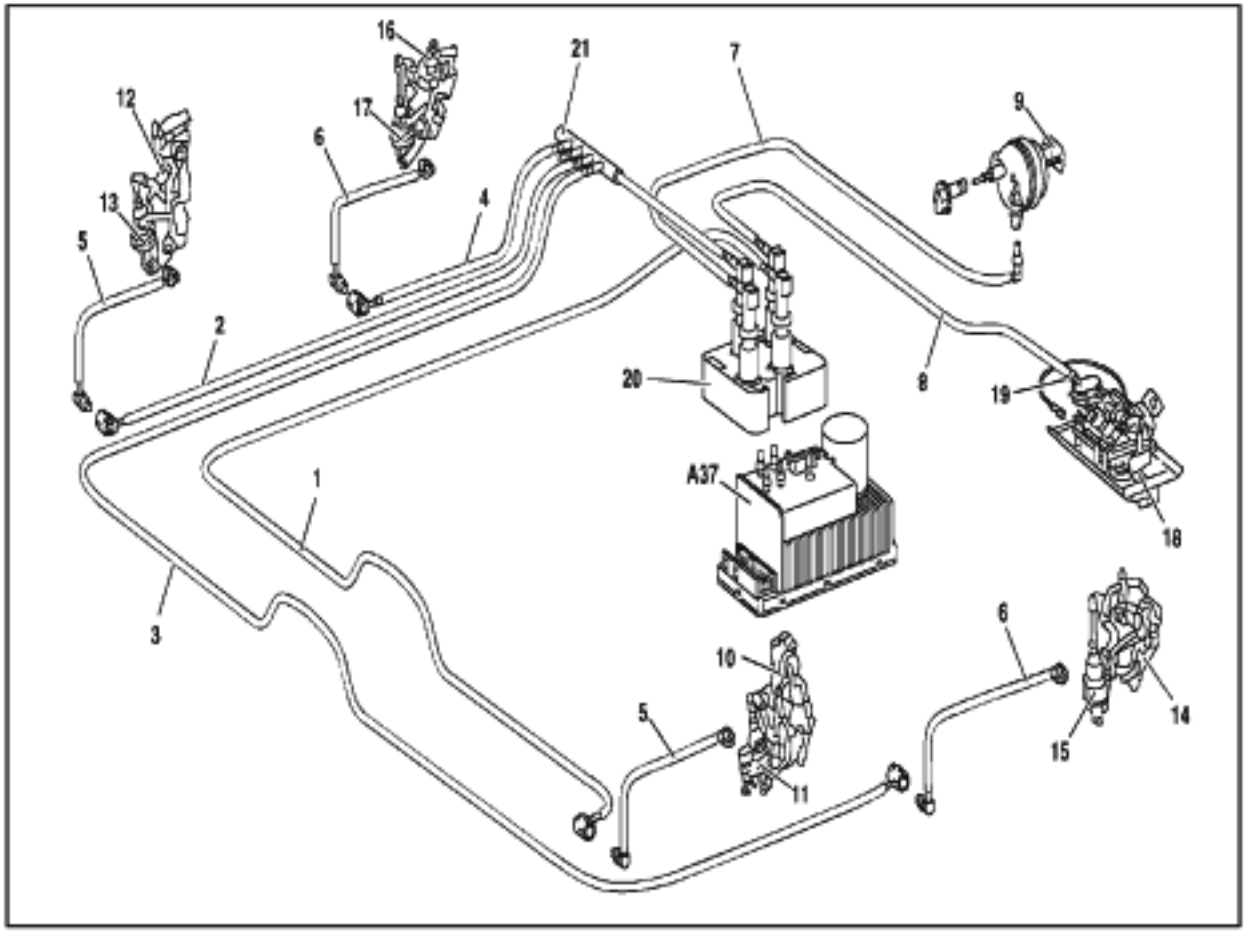
See Figure 4 for component designations

Pneumatic Test Program – Component Locations (CL)

Model 140

Figure 4

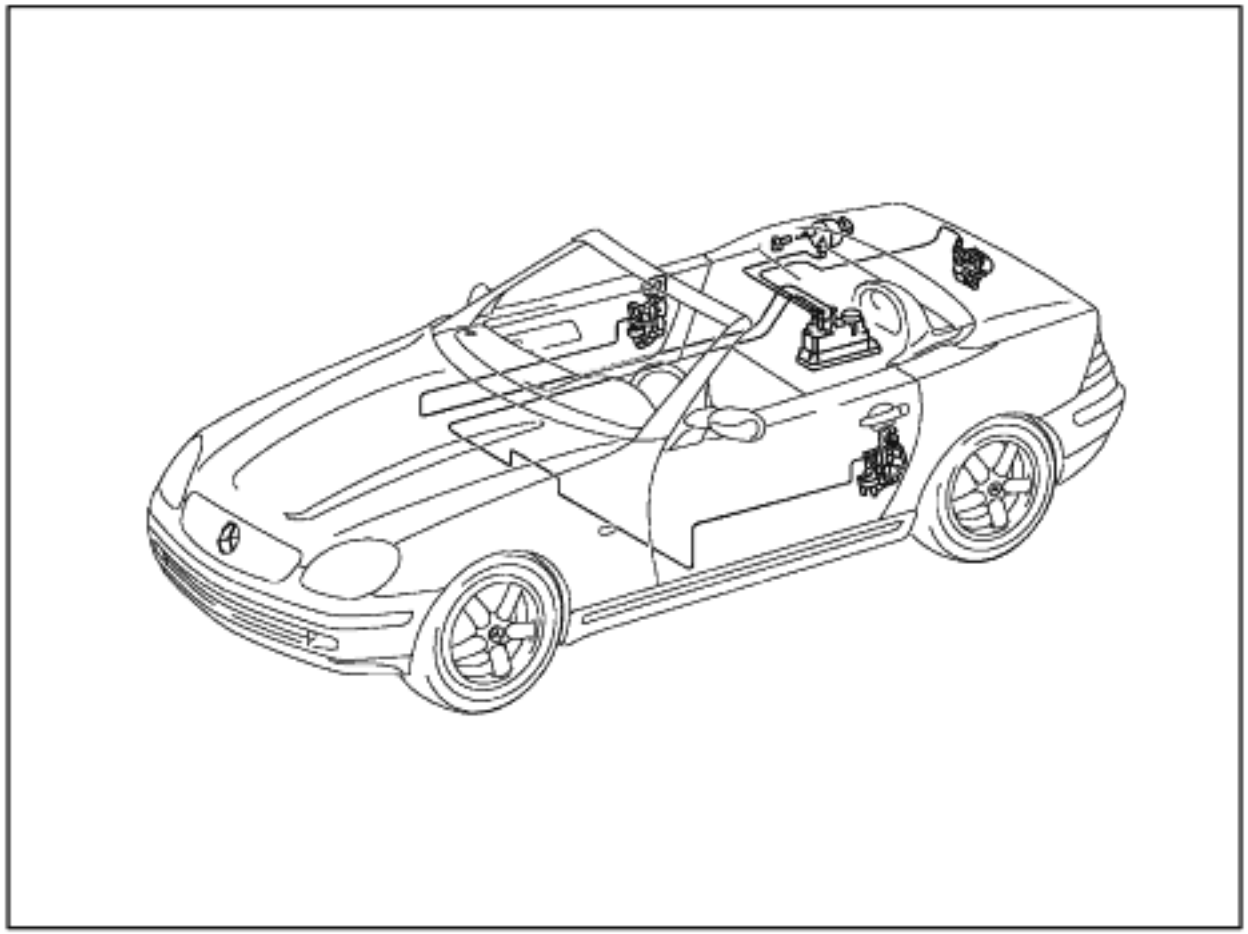
A37	PSE control module, combined functions
1	Pneumatic line (CL), driver-side door frame floor
2	Pneumatic line (CL), passenger-side door frame floor
3	Pneumatic line (CL), left rear door frame floor
4	Pneumatic line (CL), right rear door frame floor
5	Pneumatic line, front doors
6	Pneumatic line, rear doors
7	Pneumatic line (CL), fuel filler flap
8	Pneumatic line (CL), trunk lid frame floor
9	CL actuator, fuel filler flap
10	Driver's door lock
11	CL actuator, driver's door
12	Passenger-side door lock
13	CL actuator, passenger-side door
14	Left rear door lock
15	CL actuator, left rear door
16	Right rear door lock
17	CL actuator, right rear door
18	Trunk lid lock
19	CL actuator, Trunk lid
20	PSE controlmodule connector
21	4-way distributor (CL) (sedan only)



P80.20-0494-09

Pneumatic Test Program – Component Locations (CL)

Model 170



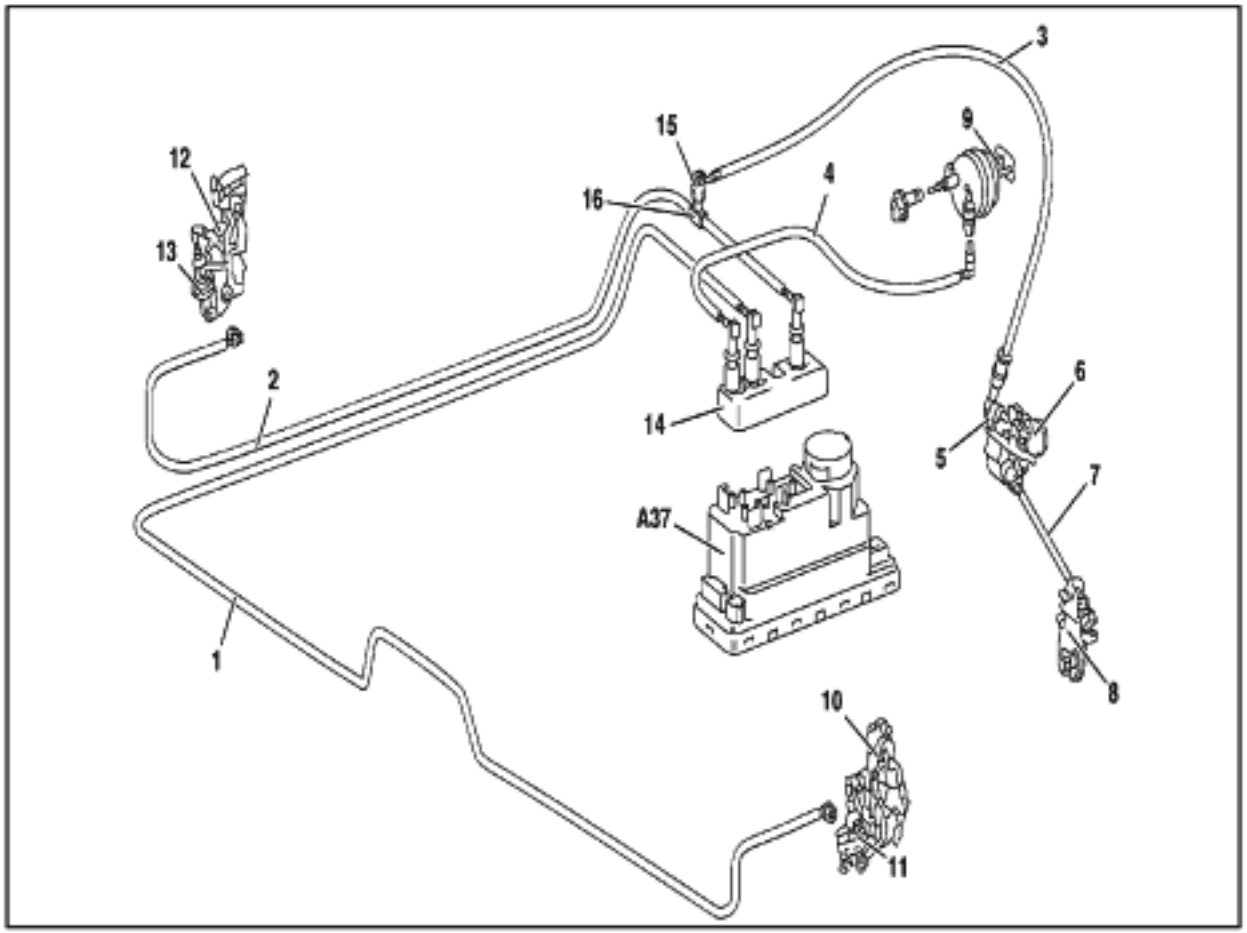
P80.20-0495-09

Figure 5

See Figure 6 for component designations

Pneumatic Test Program – Component Locations (CL)

Model 170



P80.20-0496-09

Figure 6

A37	PSE control module, combined functions
1	Pneumatic line (CL), driver-side door frame floor,
2	Pneumatic line (CL), passenger-side door frame floor
3	Pneumatic line (CL), trunk lid
4	Pneumatic line, fuel filler flap
5	CL actuator, Trunk lid
6	Lock cylinder housing
7	Shift linkage
8	Trunk lid lock
9	CL actuator, fuel filler flap
10	Driver's door lock
11	CL actuator, driver's door
12	Passenger-side door lock
13	CL actuator, passenger-side door
14	PSE controlmodule connector
15	Pneumatic line (CL) connector, trunk lid
16	Pneumatic line 2-way connector, CL passenger-side door/trunk lid

Pneumatic Test Program – Test (CL)

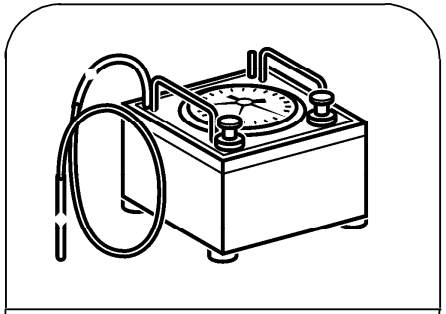
Preparation for Test:

1. Review section 0,
2. Review C/1, 11, 20, 21, 31

Data (mbar)

Test procedure	Permissible deviation
Allowable system leakage at 600 mbar pressure or 300 mbar vacuum in 1 minute.	30 mbar
Allowable leakage of actuators with lines at 600 mbar pressure or 300 mbar vacuum in 1 minute.	25 mbar

Special Tools



201 589 13 21 00

Tester

Pneumatic Test Program – Test (CL)

A. Entire system

Preparation for Test:

1. Provide access to PSE control module (A37) and disconnect pneumatic line with socket from PSE control module.
2. Connect tester to disconnected pneumatic line using with connector 129 805 03 44.

i

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	Connection 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 pressurized**	Connector **FT** on **PSE. Yellow** connector on tester.	Apply 600 mbar pressure to entire system.	Pressure loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 11.0, 32 PSE/CL ⇒ 13.0
2.0	**Complete system evacuated**	Connector **FT** on **PSE. Black** connector on tester.	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 12.0 32 PSE/CL ⇒ 14.0

Pneumatic Test Program – Test (CL)

A. Entire system (continued)

3.0	**Complete system pressurized**	Connector **BFT** or **BFT/FOND** on **PSE.** **Yellow** connector on tester.	Apply 600 mbar pressure to entire system.	Pressure loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 9.0
4.0	**Complete system evacuated**	Connector **BFT** or **BFT/FOND** on **PSE.** **Black** connector on tester.	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 10.0
5.0	**Complete system pressurized**	Connector **HD** or **HECK** on **PSE.** **Yellow** connector on tester.	Apply 600 mbar pressure to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 9.0

Pneumatic Test Program – Test (CL)

A. Entire system (continued)

6.0	**Complete system evacuated**	Connector **HD** or **HECK** on **PSE.** **Yellow** connector on tester.	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 10.0
7.0	**Complete system pressurized**	Connector **TK** or **Tank** on **PSE.** **Yellow** connector on tester.	Apply 600 mbar pressure to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 9.0
8.0	**Complete system evacuated**	Connector **TK** or **Tank** on **PSE.** **Black** connector on tester.	Apply 300 mbar vacuum to entire system.	Vacuum loss 30 mbar in 1 minute.	32 PSE/CL ⇒ 10.0

Pneumatic Test Program – Test (CL)

B. Individual lines with actuators

Preparation for Test:

1. Disconnect pneumatic line leading to the non-operating pneumatic actuator at the pneumatic distributor. Letters on the distributor indicate to which of the CL actuators the pneumatic line leads.

A → Left front door
B → Right front door
C → Left rear door
D → Right rear door
E → Fuel tank filler flap
F → Trunk lid

i

1. If an actuator does not operate correctly and no leakage is found, check the respective lines for kinks or blockages.
2. Disconnected pneumatic lines are to be reconnected to the distributor with connector 007 997 61 82.

Parts Required for Test:

1 Pneumatic hose, 50 mm long 007 997 61 82

Parts Required for Repair:

1 Pneumatic hose, (as needed) 007 997 61 82

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0	**Line and actuator pressurized**	**Yellow** connector on tester.	Apply 600 mbar pressure to line and actuator.	Pressure drop 25 mbar in 1 minute.	32 PSE/CL ⇒ 11.0 32 PSE/CL ⇒ 13.0
10.0	**Line and actuator evacuated**	**Black** connector on tester.	Apply 300 mbar vacuum to line and actuator.	Vacuum loss 25 mbar in 1 minute.	32 PSE/CL ⇒ 12.0 32 PSE/CL ⇒ 14.0

Pneumatic Test Program – Test (CL)

C. Actuators

Preparation for Test:

1. Remove non functioning actuator.
2. Connect vacuum/pressure tester to pneumatic connection of actuator.

Parts Required for Test:

1	Pneumatic line	129 800 95 15
1	Pneumatic line, 1 m long	000 158 14 35
1	Pneumatic hose, 50 mm long	007 997 61 62
1	Connector	202 805 03 44

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0	**Actuator holds pressure**	**Yellow** connector on tester.	Apply 600 mbar pressure to actuator.	Pressure drop 25 mbar in 1 minute.	Actuator leaks. Replace actuator.
12.0	**Actuator holds vacuum**	**Black** connector on tester.	Apply 300 mbar vacuum to actuator.	Vacuum loss 25 mbar in 1 minute.	Actuator leaks. Replace actuator.

Pneumatic Test Program – Test (CL)

D. Lines

Preparation for Test:

1. Connect tester to one end of pneumatic line and plug other end with cap 000 987 29 45.

Parts Required for Test:

1	Cap	000 987 11 45
1	Pneumatic hose, 50 mm long	007 997 61 82

⇒	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0	**Line holds pressure**	**Yellow** connector on tester.	Apply 600 mbar pressure to lines.	Pressure drop 0 mbar in 1 minute.	Pneumatic line leaks, repair/replace line.
14.0	**Line holds vacuum**	**Black** connector on tester.	Apply 300 mbar vacuum to lines.	Vacuum loss 0 mbar in 1 minute.	Pneumatic line leaks, repair/replace line.