Location of plug connections

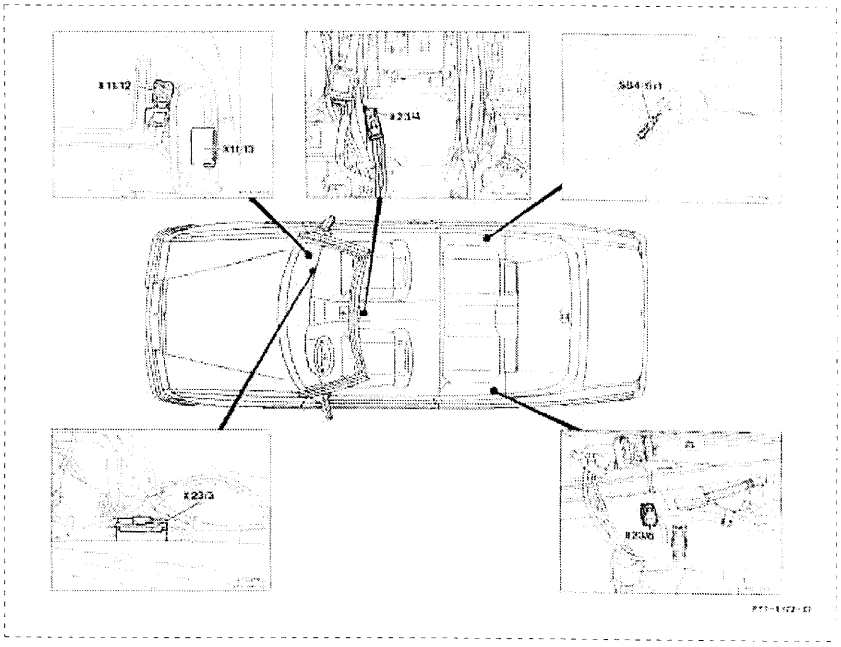


Fig. 1

S84/6x1	Plug connection, soft top bow "raised" switch
X11/12	Test coupling, soft top control, 4-pin
X23/3	Plug connection, soft top/interior, 14-pin
X23/4	Plug connection, roll-over bar/power windows, 2-pin
X23/6	Plug connection, soft top harness/soft top limit switch, 4-pin

Switches

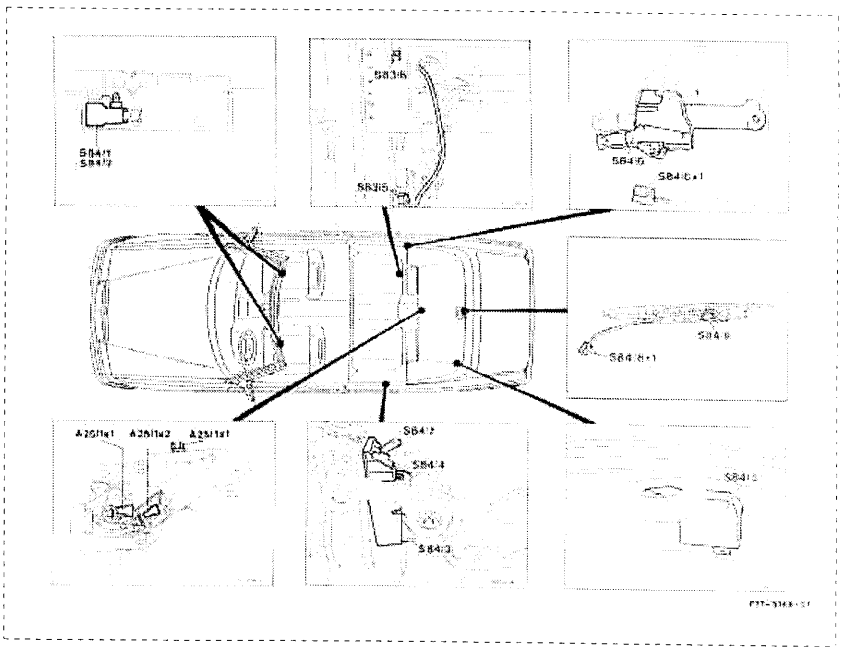


Fig. 1

A25/1s1	Soft top compartment cover switch "closed"
A25/1s2	Soft top compartment cover switch "locked"
S83/5	Roll-over bar "retracted" switch
S83/6	Roll-over bar "extended" switch
S84/1	Left front soft top "locked" switch
S84/2	Right front soft top "locked" switch
S84/3	Soft top "open" switch (soft top in compartment)
S84/4	Soft top "up" switch
S84/5	Soft top compartment "open" switch
S84/6	Soft top bow "raised" switch
S84/7	Soft top bow "lowered" switch
S84/8	Soft top bow "locked" switch

Switches and control units

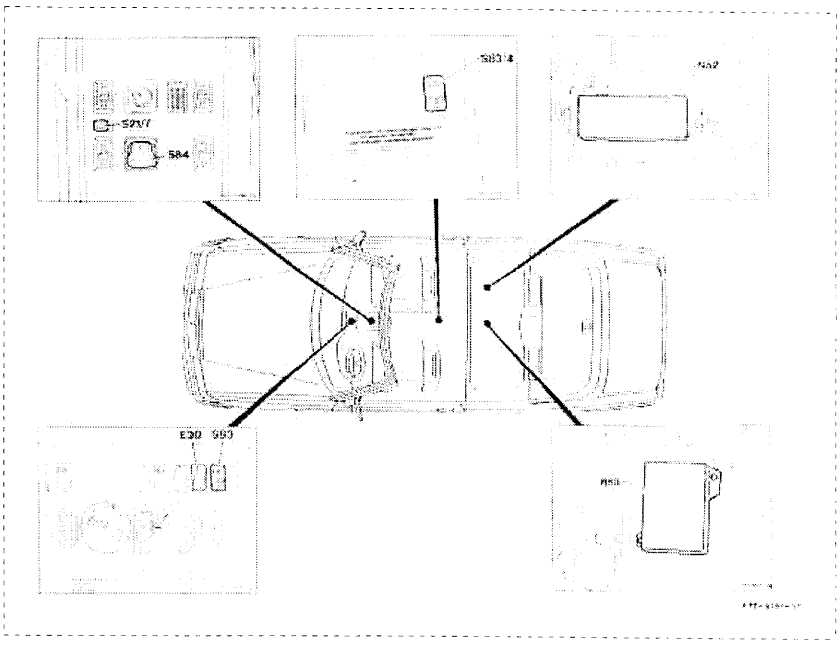


Fig. 2

E30	Roll-over bar indicator lamp
N52	Soft top control unit
N53	Roll-over bar control unit (crash actuation)
S21/7	Rear power window safety switch
S83	Roll-over bar convenience switch (convenience feature)
S83/4	Roll-over bar switch
S84	Soft top actuating switch

Electrical components

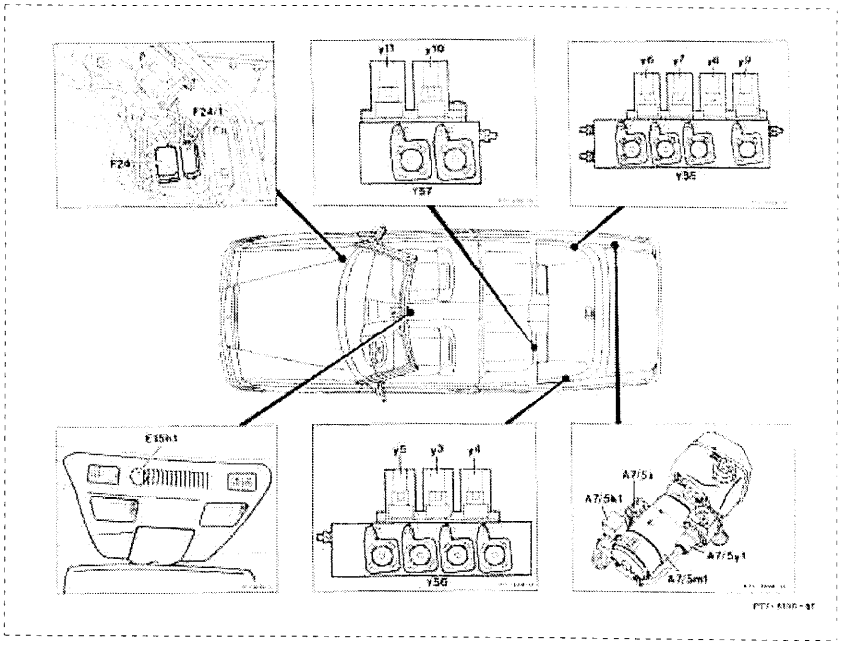


Fig. 3

A7/5	Soft top (roll-over bar) hydraulic unit
A7/5k1	Relay
A7/5m1	Motor
A7/5x	Plug connection
A7/5y1	Main valve
E15	Dome lamp with shut-off delay and reading lamp
E15h1	Warning buzzer
F24	Auxiliary fuse box, soft top/roll-over bar
F24/1	Auxiliary fuse box, hydraulic unit
Y55	Right valve block, soft top actuation (4 connections)
Y55y6	Valve, soft top "open"
Y55y7	Valve, soft top "closed"
Y55y8	Valve, soft top bow - raise
Y55y9	Valve, soft top bow - lower
Y56	Left valve block, soft top actuation (4 connections)
Y56y3	Valve, soft top compartment cover lock
Y56y4	Valve, soft top bow lock
Y56y5	Valve, soft top compartment cover drive
Y57	Valve block, roll-over bar
Y57y10	Valve, rod side
Y57y11	Valve, piston side

Diagnosis - Troubleshooting chart

Complaint	Possible cause	Remedy/Test step 1)
Indicator lamp in soft top actuating switch (S84) does not burn when ignition is switched on	Control unit (N52)	□23 ⇒ 1.0
	Indicator lamp for soft top actuating switch (S84)	□23 ⇒ 35.0, 36.0
Indicator lamp in soft top actuating switch (S84) burns when soft top is **closed** (no pulse display) (Gong sounds for approx. 10 s while driving)	Soft top bow "locked" switch (S84/8)	□23 ⇒ 8.0
	Left front soft top "locked" switch (S84/1)	□23 ⇒ 11.0
	Right front soft top "locked" switch (S84/2)	□23 ⇒ 12.0
Indicator lamp in soft top actuating switch (S84) burns with softtop **open** (no pulse display) (Gong sounds for approx. 10 s while driving)	Soft top compartment cover switch "locked" (A25/1s2)	□23 ⇒ 5.0
	Left front soft top "locked" switch (S84/1)	□23 ⇒ 11.0
	Right front soft top "locked" switch (S84/2)	□23 ⇒ 12.0
Indicator lamp in soft top actuating switch (S84) flashes when pressed	Fault is stored	Display fault code □12/1
Roll-over bar cannot be extended with roll-over bar convenience switch (S83)	Hydraulic unit not running	□23 ⇒ 1.0, 2.0
	Roll-over bar convenience switch (S83)	□23 ⇒ 20.0
	Roll-over bar "extended" switch (S83/6)	□23 ⇒ 16.0
	Valve, extend roll-over bar (Y57y11)	□23 ⇒ 23.0
	System pressure	□33 ⇒ 1.0
	Extend roll-over bar	□33 ⇒ 4.0
Roll-over bar cannot be extended with roll-over bar switch (rear, S83/4)	Roll-over bar switch (rear, S83/4)	□23 ⇒ 20.0
	Power window safety switch (S21/7)	□23 ⇒ 22.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

Complaint	Possible cause	Remedy/Test step 1)
Roll-over bar cannot be extended with soft top actuating switch (S84)	Valve, extend roll-over bar (Y57y11)	□23 ⇒ 23.0
	System pressure	□33 ⇒ 1.0
	Extend roll-over bar	□33 ⇒ 4.0
Roll-over bar cannot be retracted with roll-over bar actuating switch (S83)	Hydraulic unit not running	□23 ⇒ 1.0, 2.0
	Roll-over bar convenience switch (S83)	□23 ⇒ 20.0
	Roll-over bar "retracted" switch (S83/5)	□23 ⇒ 15.0
	Valve, retract roll-over bar (Y57y10)	□23 ⇒ 21.0
	Retract roll-over bar	□33 ⇒ 3.0
Roll-over bar cannot be retracted with roll-over bar switch (rear, S83/4)	Roll-over bar switch (rear, S83/4)	□23 ⇒ 20.0
	Power window safety switch (S21/7)	□23 ⇒ 22.0
Roll-over bar cannot be retracted with soft top actuating switch (S84)	Hydraulic unit not running	□23 ⇒ 1.0, 2.0
	Soft top actuating switch (S84)	□23 ⇒ 18.0
	Roll-over bar "retracted" switch (S83/5)	□23 ⇒ 15.0
	Valve, retract roll-over bar (Y57y10)	□23 ⇒ 21.0
	Retract roll-over bar	□33 ⇒ 3.0
Side windows do not open at start of soft top actuation sequence	Power supply to convenience control unit Convenience control unit (N57)	□23 ⇒ 33.0
Side windows do not close after soft top actuation sequence (catches at front must be locked)	Soft top compartment cover switch "locked" (A25/1s2)	□23 ⇒ 5.0
	Power supply to convenience control unit Convenience control unit (N57)	□23 ⇒ 33.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

Complaint	Possible cause	Remedy/Test step 1)
Heated rear window does not switch off with soft top open	Soft top "up" switch (S84/4)	□23 ⇒ 14.0
	Power supply to combination relay (heated rear window) (N10)	□23 ⇒ 32.0
Soft top cannot be opened or closed while driving (catches at front unlocked). Gong in soft top control unit does not sound.	Speed signal Hall-effect sensor (X53/5) Soft top control unit (N52)	□23 ⇒ 19.0, 34.0
Central closing feature for side windows does not function even after soft top actuating switch (S84) has been actuated twice in direction **close**	Soft top actuating switch (S84)	□23 ⇒ 18.0
	Power supply to convenience control unit (N57)	□23 ⇒ 33.0

Central opening feature for side windows does not function even after soft top actuating switch (S84) has been actuated twice in direction **open**	Soft top actuating switch (S84)	□23 ⇒ 18.0
	Power supply to convenience control unit (N57) Convenience control unit (N57)	□23 ⇒ 33.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

During soft top closing sequence (soft top unlocked at front left and right)

Complaint	Possible cause	Remedy/Test step 1)
Soft top compartment cover lock does not open	Hydraulic unit not running	□23 ⇒ 1.0, 2.0
	Left front soft top "locked" switch (S84/1)	□23 ⇒ 11.0
	Right front soft top "locked" switch (S84/2)	□23 ⇒ 12.0
	Roll-over bar "retracted" switch (S83/5)	□23 ⇒ 15.0
	Soft top actuating switch (S84)	□23 ⇒ 18.0
	Valve, soft top compartment cover lock (Y56y3)	□23 ⇒ 25.0
	Main valve, hydraulic unit (A7/5y1)	□23 ⇒ 24.0
	Roll-over bar (ÜRB) crash-activated trigger unit (N53)	□23 ⇒ 37.0
	System pressure	□33 ⇒ 1.0
	Open soft top compartment cover lock	□33 ⇒ 13.0
Soft top compartment cover does not open, or moves upward too slowly	Valve, soft top compartment cover drive (Y56y5)	□23 ⇒ 27.0
	Raise soft top compartment cover	□33 ⇒ 14.0
Soft top does not come out of soft top compartment or only closes slowly	Soft top compartment "open" switch (S84/5)	□23 ⇒ 7.0
	Valve, soft top closed (Y55y7)	□23 ⇒ 29.0
	Close soft top	□33 ⇒ 15.0
Soft top bow does not move up or moves up too slowly	Soft top "up" switch (S84/4)	□23 ⇒ 14.0
	Valve, soft top bow up (Y55y8)	□23 ⇒ 30.0
	Raise soft top bow	□33 ⇒ 16.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

Complaint	Possible cause	Remedy/Test step 1)
Soft top compartment cover does not close or closes too slowly	Soft top bow "raised" switch (S84/6)	□23 ⇒ 10.0
	Valve, soft top bow lock (Y56y4)	□23 ⇒ 26.0
	Valve, soft top compartment cover drive (Y56y5)	□23 ⇒ 27.0
	Lower soft top compartment cover	□33 ⇒ 17.0
Soft top compartment cover lock does not lock	Soft top compartment cover switch "closed" (A25/1s1)	□23 ⇒ 6.0
	Valve, soft top compartment cover lock (Y56y3)	□23 ⇒ 25.0
	Lock soft top compartment cover lock	□33 ⇒ 18.0
Soft top bow does not move down or moves down too slowly	Soft top compartment cover switch "locked" (A25/1s2)	□23 ⇒ 5.0
	Valve, soft top bow closed (Y55y9)	□23 ⇒ 31.0
	Lower soft top bow	□33 ⇒ 19.0
Soft top bow lock does not lock	Soft top bow "lowered" switch (S84/7)	□23 ⇒ 9.0
	Valve, soft top bow lock (Y56y4)	□23 ⇒ 26.0
	Lock soft top bow lock	□33 ⇒ 20.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

During soft top opening sequence (soft top unlocked at front left and right)

Complaint	Possible cause	Remedy/Test step 1)
Soft top bow lock does not unlock	Hydraulic unit not running	□23 ⇒ 1.0, 2.0
	Left front soft top "locked" switch (S84/1)	□23 ⇒ 11.0
	Right front soft top "locked" switch (S84/2	□23 ⇒ 12.0
	Roll-over bar "retracted" switch (S83/5)	□23 ⇒ 15.0
	Soft top actuating switch (S84)	□23 ⇒ 18.0

	Roll-over bar (ÜRB) crash-activated trigger unit (N53)	☐23 ⇒ 37.0
	System pressure	☐33 ⇒ 1.0
	Open soft top bow lock	☐33 ⇒ 5.0
Soft top bow does not move up or moves up too slowly	Soft top bow "locked" switch (S84/8)	☐23 ⇒ 8.0
	Valve, soft top bow - raise (Y55y8)	☐23 ⇒ 30.0
	Raise soft top bow	☐33 ⇒ 6.0
Soft top compartment cover lock does not unlock	Soft top bow "raised" switch (S84/6)	☐23 ⇒ 10.0
	Valve, soft top compartment cover lock (Y56y3)	☐23 ⇒ 25.0
	Open soft top compartment cover lock	☐33 ⇒ 7.0

1) Observe prerequisites for testing.

Diagnosis - Troubleshooting chart

Complaint	Possible cause	Remedy/Test step 1)
Soft top compartment cover does not open or opens too slowly	Valve, soft top compartment cover (Y56y5)	☐23 ⇒ 27.0
	Raise soft top compartment cover	☐33 ⇒ 8.0
Soft top bow does not go down or goes down too slowly	Soft top compartment "open" switch (S84/5)	☐23 ⇒ 7.0
	Valve, soft top bow - lower (Y55y9)	☐23 ⇒ 31.0
	Lower soft top bow	☐33 ⇒ 9.0
Soft top does not open or opens too slowly	Soft top bow "lowered" switch (S84/7)	☐23 ⇒ 9.0
	Valve, soft top open (Y55y6)	☐23 ⇒ 28.0
	Open soft top	☐33 ⇒ 10.0
Soft top compartment cover does not close or closes too slowly	Soft top "open" switch (S84/3)	☐23 ⇒ 13.0
	Valve, soft top bow lock (Y56y4)	☐23 ⇒ 26.0
	Valve, soft top compartment cover (Y56y5)	☐23 ⇒ 27.0
	Lower soft top compartment cover	☐33 ⇒ 11.0
Soft top compartment cover lock does not lock	Soft top compartment cover switch "closed" (A25/1s1)	☐23 ⇒ 6.0
	Valve, soft top compartment cover lock (Y56y5)	☐23 ⇒ 25.0
	Lock soft top compartment cover lock	☐33 ⇒ 12.0

1) Observe prerequisites for testing.

- Battery voltage 11-14 V **(always connect battery charger when working on soft top).**
- Roll-over bar switch must not flash (index 19.1).
- Fuses F24, F24/1 and F1/A okay.

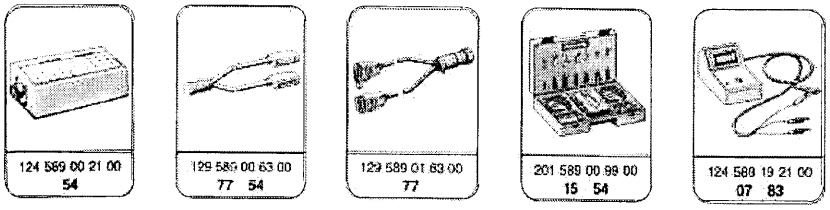
See "Electrical circuit diagrams, **Designation** model 124, volume 4.1" **Group** 77

Note on testing limit switches

To put control unit in diagnosis mode:
1. Ignition: **OFF**
2. Bridge sockets 1 and 3 on plug connection (X11/12) in passenger footwell (□23, Fig. 1)
3. Ignition: **ON**
4. Remove bridges

⚠
The soft top control unit has three different connection possibilities. For this reason subdivision is required in the chapter "Testing":
Connect socket box according to connection schematic X (□22, Fig. 4): X
Connect socket box according to connection schematic Y (□22, Fig. 5): Y
Connect socket box according to connection schematic Z (□22, Fig. 6): Z

Special tools



Commercially available tools and instruments, MB instruments (see Workshop Equipment Manual)

Designation	e.g. company, order no.
Multimeter	Fluke 23 DB, 83, 88 ITT Metrix MX 47, 50, 51, 52
Battery charger	Bosch, model L 4816, model SL 60100

⚠
Ignition: **OFF**
Disconnect connector X from control unit
Connect socket box

Socket box connection schematic with connector X

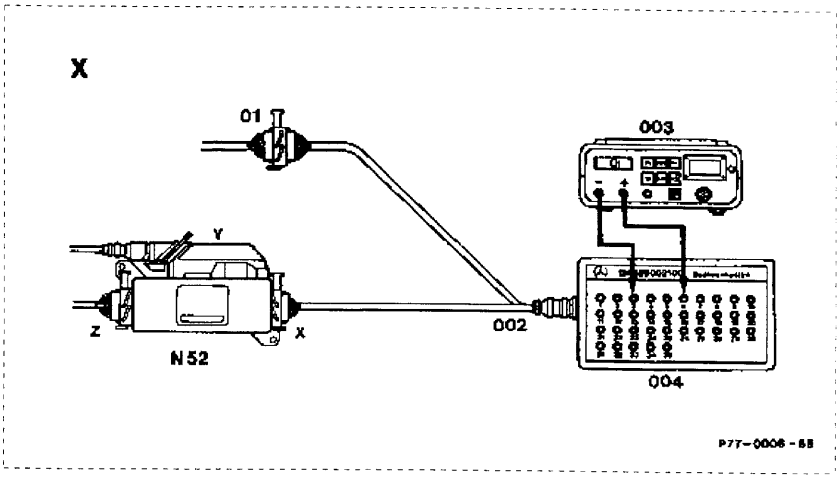


Fig. 4

01	Connector, 12-pin (vehicle cable harness)
002	Test cable, 12-pin 129 589 01 63 00
003	Multimeter
004	Socket box
N52	Soft top control unit

⚠
Ignition: **OFF**
Disconnect connector Y from control unit
Connect socket box

Socket box connection schematic with connector Y

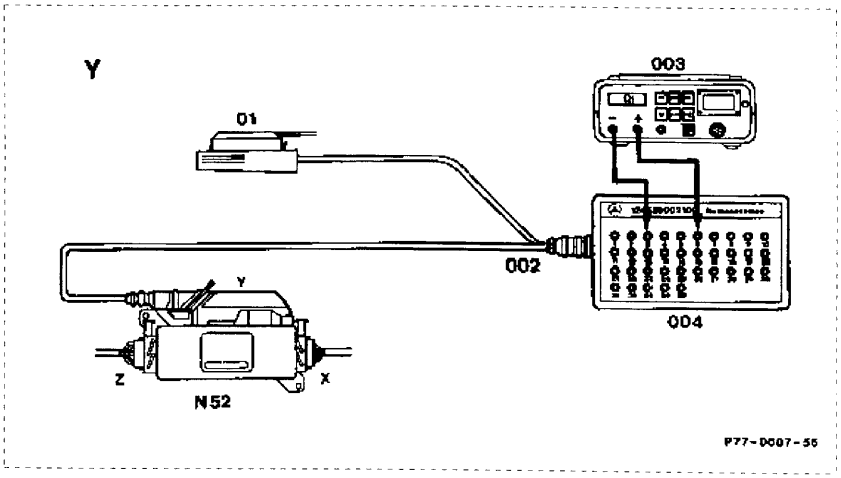


Fig. 5

01	Connector, 35-pin (vehicle cable harness)
002	Test cable, 35-pin 129 589 00 63 00
003	Multimeter
004	Socket box
N52	Soft top control unit

Test program - Electrical system

Prerequisites for testing

⚠
Ignition: **OFF**
Disconnect connector Z from control unit
Connect socket box

Socket box connection schematic with connector Z

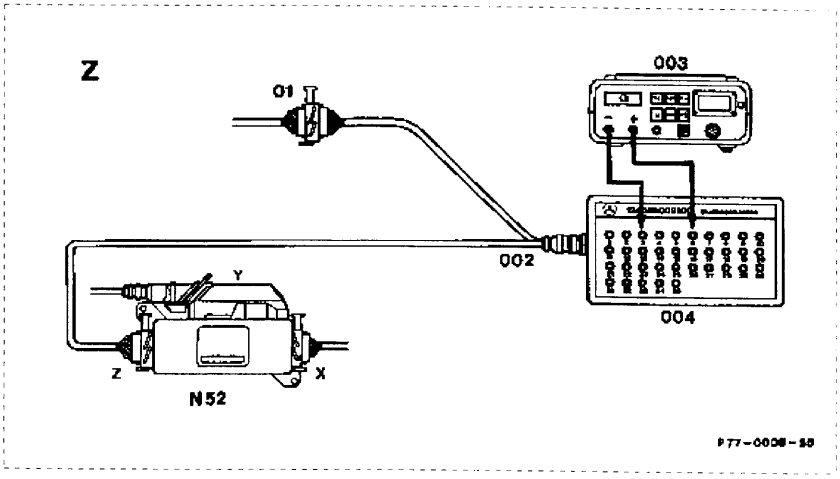


Fig. 6

01	Connector, 12-pin (vehicle cable harness)
002	Test cable, 12-pin 129 589 01 63 00
003	Multimeter
004	Socket box
N52	Soft top control unit

Test program - Electrical system **Survey of electrical limit switch signals**

Soft top opening sequence

Limit switches actuated	Soft top			Soft top bow			Soft top compartment cover			Roll-over bar	
	locked	up	open	down	locked	open	closed	locked	open	retracted	extended
	S84/1 S84/2	S84/4	S84/3	S84/7	S84/8	S84/6	A25/1s1	A25/1s2	S84/5	S83/5	S83/6
Socket box, connection schematic Y (□22, fig. 5) **Control unit in diagnosis mode □22**	Y ⊥ 5 ⊥ 6	Y ⊥ 7	Y ⊥ 9	Y ⊥ 10	Y ⊥ 11	Y ⊥ 12	Y ⊥ 13	Y ⊥ 14	Y ⊥ 15	Y ⊥ 16	Y ⊥ 17
Soft top unlocked at front, roll-over bar extended	11-14 V	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**
Roll-over bar retracted	11-14 V	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top bow unlocked	11-14 V	**0-1 V**	11-14 V	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top bow raised	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top compartment cover open	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top bow lowered	11-14 V	**0-1 V**	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top open	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top compartment cover locked	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Roll-over bar extended	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**
Soft top locked at front	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**

Test program - Electrical system **Survey of electrical limit switch signals**

Soft top closing sequence

Limit switches actuated	Soft top			Soft top bow			Soft top compartment cover			Roll-over bar	
	locked	up	open	down	locked	open	closed	locked	open	retracted	extended
	S84/1 S84/2	S84/4	S84/3	S84/7	S84/8	S84/6	A25/1s1	A25/1s2	S84/5	S83/5	S83/6
Socket box, connection schematic Y (□22, fig. 5) **Control unit in diagnosis mode □22**	Y ⊥ 5 ⊥ 6	Y ⊥ 7	Y ⊥ 9	Y ⊥ 10	Y ⊥ 11	Y ⊥ 12	Y ⊥ 13	Y ⊥ 14	Y ⊥ 15	Y ⊥ 16	Y ⊥ 17
Soft top unlocked at front, roll-over bar extended	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**
Roll-over bar retracted	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top compartment cover open	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top closed, soft top bow lowered	11-14 V	**0-1 V**	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top bow raised	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V
Soft top compartment cover locked	11-14 V	**0-1 V**	11-14 V	11-14 V	11-14 V	**0-1 V**	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top bow lowered	11-14 V	**0-1 V**	11-14 V	**0-1 V**	11-14 V	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top bow locked	11-14 V	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V
Soft top locked at front	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	**0-1 V**	11-14 V	**0-1 V**	11-14 V

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 1.0 2	**Soft top control unit (N52)** Power supply Terminals 30, 15	N52 X 11 — (V) — 12		11-14 V	⇒ 1.1 Terminal 31
		N52 Z 6 — (V) — 5	Ignition: **ON**	11-14 V	
⇒ 1.1	Power supply Terminals 30, 15	N52 X ⊥ — (V) — 12		11-14 V	Terminal 30
		N52 Z ⊥ — (V) — 5	Ignition: **ON**	11-14 V	Terminal 15
⇒ 2.0 2 1	**Hydraulic unit switching circuit (A7/5)** Power supply	A7/5x1 1 — (V) — 4	Disconnect plug connection (A7/5x1).	11-14 V	Wiring
		A7/5x1 5 — (V) — 4		11-14 V	

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ [2.0]		N52 X 11 — (V) — 10	Ignition: **ON** Open front catches Actuate soft top actuating switch (S84) in direction **open** or **close**	0-1 V 11-14 V Hydraulic unit (A7/5m1) running	⇒ 18.0 ⇒ 18.0 ⇒ 21.0 ⇒ 2.1 Relay (A7/5k1) Wiring
⇒ 2.1	A7/5m1		Disconnect A7/5k1 Bridge sockets 1 and 3 in connector A7/5k1	A7/5m1 running	Wiring A7/5m1
⇒ 3.0 3	**Operating time exceeded**		Reset pulse display	Pulse display 1	Control unit (N52)
⇒ 4.0 4	**Limit switch signals not logical**		Check limit switch signals according to table (□24).		Wiring Limit switches

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 5.0 5	**Circuit, soft top compartment cover switch "locked" (A25/1s2)** Power supply	N52 Y ⊥ — (V) — 14	Control unit (N52) in diagnosis mode □22 **Soft top compartment cover**		
			locked	0-1 V	⇒ 5.1
			unlocked	11-14 V	⇒ 5.1
⇒ 5.1 5	A25/1s2 Resistance	N52 Y ⊥ — (Ω) — 14	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top compartment cover**		A25/1s2 Wiring Nominal values okay: N52
			locked	0-5 Ω	
			unlocked	>20 k Ω	
⇒ 6.0 6	**Circuit, soft top compartment cover switch "closed" (A25/1s1)** Power supply	N52 Y ⊥ — (V) — 13	Control unit (N52) in diagnosis mode □22 **Soft top compartment cover**		
			closed	0-1 V	⇒ 6.1
			open	11-14 V	⇒ 6.1

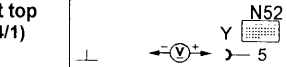
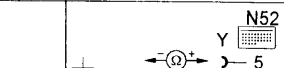
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 6.1 6	A25/1s1 Resistance	N52 Y — 13	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top compartment cover**		A25/1s1 Wiring Nominal values okay: N52
			closed	0-5 Ω	
			open	>20 k Ω	
⇒ 7.0 7	**Circuit, soft top compartment "open" switch (S84/5)** Power supply	N52 Y — 15	Control unit (N52) in diagnosis mode □22 **Soft top compartment cover**		
			open	0-1 V	⇒ 7.1
			closed	11-14 V	⇒ 7.1
⇒ 7.1 7	S84/5 Resistance	N52 Y — 15	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top compartment cover**		S84/5 Wiring Nominal values okay: N52
			open	0-5 Ω	
			closed	>20 k Ω	

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 8.0 8	**Circuit, soft top bow "locked" switch (S84/8)** Power supply	N52 Y — 11	Control unit (N52) in diagnosis mode □22 **Soft top bow**		
			locked	0-1 V	⇒ 8.1
			unlocked	11-14 V	⇒ 8.1
⇒ 8.1 8	S84/8 Resistance	N52 Y — 11	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top bow**		S84/8 Wiring Nominal values okay: N52
			locked	0-5 Ω	
			unlocked	>20 k Ω	
⇒ 9.0 9	**Circuit, soft top bow "lowered" switch (S84/7)** Power supply	N52 Y — 10	Control unit (N52) in diagnosis mode □22 **Soft top bow**		
			down	0-1 V	⇒ 9.1
			up	11-14 V	⇒ 9.1 N52

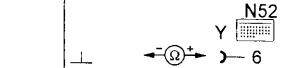
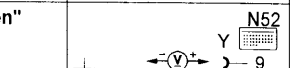
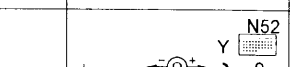
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 9.1 9	S84/7 Resistance	N52 Y — 10	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top bow**		S84/7 Wiring Nominal values okay: N52
			down	0-5 Ω	
			up	>20 k Ω	
⇒ 10.0 10	**Circuit, soft top bow "raised" switch (S84/6)** Power supply	N52 Y — 12	Control unit (N52) in diagnosis mode □22 **Soft top bow**		
			up	0-1 V	⇒ 10.1
			down	11-14 V	⇒ 10.1
⇒ 10.1 10	S84/6	N52	Ignition: **OFF**		S84/6

			up	0-5 Ω	
			down	>20 k Ω	

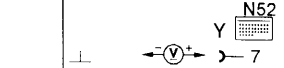
Test program - Electrical system **Testing**

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 11.0 11	**Circuit, left front soft top "locked" switch (S84/1)** Power supply	 N52 Y 5	Control unit (N52) in diagnosis mode □22 **Soft top, front**		
			locked	0-1 V	⇒ 11.1
			unlocked	11-14 V	⇒ 11.1
⇒ 11.1 11	S84/1 Resistance	 N52 Y 5	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top, front**		S84/1 Wiring Nominal values okay: N52
			locked	0-5 Ω	
			unlocked	>20 k Ω	
⇒ 12.0 12	**Circuit, right front soft top "locked" switch (S84/2)** Power supply	 N52 Y 6	Control unit (N52) in diagnosis mode □22 **Soft top, front**		
			locked	0-1 V	⇒ 12.1
			unlocked	11-14 V	⇒ 12.1

Test program - Electrical system **Testing**

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 12.1 12	S84/2 Resistance	 N52 Y 6	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top, front**		S84/2 Wiring Nominal values okay: N52
			locked	0-5 Ω	
			unlocked	>20 k Ω	
⇒ 13.0 13	**Circuit, soft top "open" switch (S84/3)** Power supply	 N52 Y 9	Control unit (N52) in diagnosis mode □22 **Soft top**		
			open	0-1 V	⇒ 13.1
			closed	11-14 V	⇒ 13.1
⇒ 13.1 13	S84/3 Resistance	 N52 Y 9	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top**		S84/3 Wiring Nominal values okay: N52
			open	0-5 Ω	
			closed	>20 k Ω	

Test program - Electrical system **Testing**

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 14.0 14	**Circuit, soft top "up" switch (S84/4)** Power supply	 N52 Y 7	Control unit (N52) in diagnosis mode □22 **Soft top**		
			closed	0-1 V	⇒ 14.1
			open	11-14 V	⇒ 14.1
⇒ 14.1 14	S84/4 Resistance	 N52 Y 7	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Soft top**		S84/4 Wiring Nominal values okay: N52
			closed	0-5 Ω	
			open	>20 k Ω	
⇒ 15.0 15	**Circuit, roll-over bar**	N52	Control unit (N52) in		

			retracted extended	0-1 V 11-14 V	⇒ 15.1 ⇒ 15.1

Test program - Electrical system **Testing**

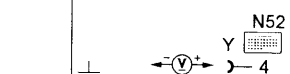
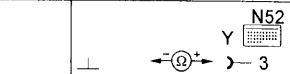
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 15.1 15	S83/5 Resistance	N52 Y — Ω — 16	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Roll-over bar** retracted extended	 0-5 Ω >20 k Ω	S83/5 Wiring Nominal values okay: N52
⇒ 16.0 16	**Circuit, roll-over bar "extended" switch (S83/6)** Power supply	N52 Y — V — 17	Control unit (N52) in diagnosis mode □22 **Roll-over bar** extended retracted	 0-1 V 11-14 V	 ⇒ 16.1 ⇒ 16.1
⇒ 16.1 16	S83/6 Resistance	N52 Y — Ω — 17	Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) **Roll-over bar** extended retracted	 0-5 Ω >20 k Ω	S83/6 Wiring Nominal values okay: N52

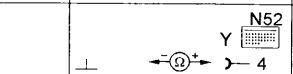
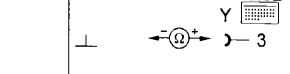
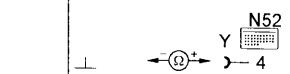
Test program - Electrical system **Testing**

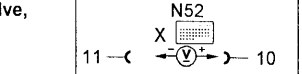
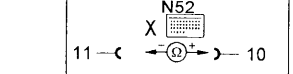
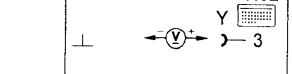
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 17.0 17	**Roll-over bar Crash actuation**		Ignition: **OFF, ON** Press roll-over bar convenience switch (S83) in direction **extend** (approx. 10 s). Retract roll-over bar with switch (S83)	Roll-over bar is retracted	Crash actuation has been tripped
⇒ 18.0 18	**Circuit, soft top switch (S84)** Power supply	N52 Y — V — 1 N52 Y — V — 2	Ignition: **ON** Press S84 in direction **close** Ignition: **ON** Press S84 in direction **open**	11-14 V 0-1 V 11-14 V 0-1 V	⇒ 18.1

Test program - Electrical system **Testing**

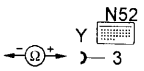
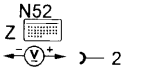
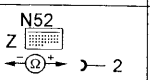
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 18.1 18	S84 Resistance	N52 Y — Ω — 1 N52 Y — Ω — 2	Disconnect test cable (Y) from control unit (N52). Press S84 to: **non-actuated position** Press in direction **close** **Non-actuated position** Press in direction **open**	>20 k Ω 0-5 Ω >20 k Ω 0-5 Ω	Wiring S84 Nominal values okay: N52
⇒ 19.0 19	**Speed signal**	N52 Y — V — 35	Drive vehicle (approx. 40 km/h)	approx. 6 V ∽	Wiring Hall sensor (B6) Plug connection/Hall-effect sensor (X53/5)
⇒ 20.0	**Circuit, roll-over bar convenience switch (S83) and roll-over bar switch (rear) (S83/4)**	N52 Y — V — 3	Ignition: **ON** Rear power window safety switch (S21/7) in unlocked	11-14 V	⇒ 20.1 ⇒ 20.2

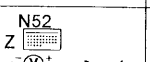
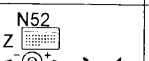
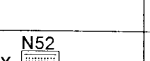
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ [20.0]			Press S83 in direction **extend** roll-over bar Press S83/4 in direction **extend** roll-over bar S83 and S83/4 in: **Non-actuated position** Press S83 in direction **retract** roll-over bar Press S83/4 in direction **retract** roll-over bar	0-1 V 0-1 V 11-14 V 0-1 V 0-1 V	⇒ 20.1 ⇒ 20.2 ⇒ 22.0 ⇒ 20.1 ⇒ 20.2 ⇒ 20.1 ⇒ 20.2 ⇒ 22.0
⇒ 20.1	S83 Resistance		Ignition: **OFF** Disconnect test cable (Y) from control unit S83 and S83/4 in: **Non-actuated position** Press S83 in direction **extend** roll-over bar	 >20 k Ω 0-5 Ω	Wiring S83 S83/4

Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ [20.1]			S83 and S83/4 in: **Non-actuated position** Press S83 in direction **retract** roll-over bar	>20 k Ω 0-5 Ω	Wiring S83 S83/4 Nominal values okay: control unit (N52)
⇒ 20.2	S83/4 Resistance		Ignition: **OFF** Disconnect test cable (Y) from (N52) S83 and S83/4 in: **Non-actuated position** Press S83/4 in direction **extend** roll-over bar	 >20 k Ω 0-5 Ω	Wiring S83 S83/4 Nominal values okay: N52
			S83 and S83/4 in: **Non-actuated position** Press S83/4 in direction **retract** roll-over bar	>20 k Ω 0-5 Ω	

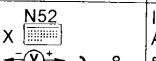
Test step / Pulse display	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 21.0 21	**Circuit, solenoid valve, retract roll-over bar (Y57y10)** Power supply		Ignition: **ON** Actuate roll-over bar with switch (S83) as follows **retract** **extend**	0-1 V 11-14 V 11-14 V	S83 Control unit (N52) ⇒ 21.1 ⇒ 21.1
⇒ 21.1 21	Y57y10 Resistance		Disconnect test cable (X) from control unit (N52)	10-20 Ω	Wiring Y57y10 Relay (A7/5k1) Nominal values okay: N52
⇒ 22.0	**Circuit, rear power window safety switch (S21/7)** Power supply		Ignition: **ON** Hold switch (S83/4) down in position extend roll-over bar S21/7 in position:		

			unlocked	0-1 V	Wiring ⇒ 22.1 ⇒ 20.0

Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 22.1	S21/7 Resistance		Ignition: **OFF** Disconnect test cable (Y) from control unit (N52) Hold S83/4 down in position extend roll-over bar S21/7 in position: **unlocked** **locked**	 0-5 Ω >20 k Ω	Wiring S21/7 Nominal values okay: N52
⇒ 23.0	**Circuit, solenoid valve, extend roll-over bar (Y57y11)** Power supply		Ignition: **ON** Actuate roll-over bar with switch (S83) as follows **extend** **retract**	 11-14 V 0-1 V	 ⇒ 23.1 Control unit (N52)
⇒ 23.1	Y57y11 Resistance		Disconnect test cable (Z) from (N52)	5-15 Ω	Wiring Y57y11 Nominal value okay: N52

Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 24.0	**Circuit, hydraulic unit main valve (A7/5y1)** 1) Power supply		Ignition: **ON** Open front catches Actuate soft top actuating switch (S84) in direction **open** or **close** Roll-over bar retracted	0-1 V 10-14 V	Control unit (N52) ⇒ 24.1
⇒ 24.1	A7/5y1 Resistance		Disconnect test cable (Z) from control unit	5-15 Ω	Wiring A7/5y1 Nominal value okay: N52
⇒ 25.0	**Circuit, solenoid valve, soft top compartment cover lock (Y56y3)** Power supply		Ignition: **ON** Actuate soft top compartment cover with soft top actuating switch (S84) as follows: **unlock** **lock**	 10-14 V 0-1 V	 ⇒ 25.1 Control unit (N52)
⇒ 25.1	Y56y3 Resistance		Disconnect test cable (X) from control unit	5-15 Ω	Wiring Y56y3 Nominal value okay: Y56y3 sticks mechanically or N52

1) Hydraulic unit main valve (A7/5y1) eliminated as of chassis number 124 061-1B-837708

Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 26.0	**Circuit, solenoid valve, soft top bow lock (Y56y4), soft top compartment cover**		Ignition: **ON** Actuate soft top bow with soft top actuating switch		

			unlock	10-14 V	⇒ 26.1
			lock	0-1 V	Control unit (N52)
⇒ 26.1	Y56y4 Resistance	N52 X 11 — Ω — 8	Disconnect test cable (X) from N52	5-15 Ω	Wiring Y56y4 Nominal value okay: Y56y4 sticks mechanically or N52
⇒ 27.0	**Circuit, solenoid valve, soft top compartment cover drive (Y56y5) open** Power supply	N52 X 11 — V — 5	Ignition: **ON** Actuate soft top compartment cover with soft top actuating switch (S84) as follows:		
			raise	10-14 V	⇒ 27.1
			lower	0-1 V	Control unit (N52)
⇒ 27.1	Y56y5 Resistance	N52 X 11 — Ω — 5	Disconnect test cable (X) from N52	5-15 Ω	Wiring Y56y5 Nominal value okay: N52

Test program - Electrical system Testing

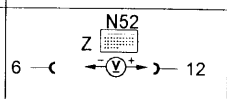
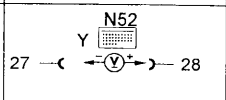
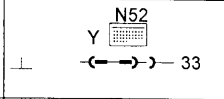
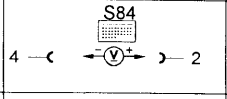
Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 28.0	**Circuit, solenoid valve, soft top "open" (Y55y6)** Power supply	N52 X 11 — V — 1	Ignition: **ON** Actuate soft top with soft top actuating switch (S84) as follows:		
			open	10-14 V	⇒ 28.1
			close	0-1 V	Control unit (N52)
⇒ 28.1	Y55y6 Resistance	N52 X 11 — Ω — 1	Disconnect test cable (X) from N52	5-15 Ω	Wiring Y55y6 Nominal value okay: N52
⇒ 29.0	**Circuit, solenoid valve, soft top "closed" (Y55y7)** Power supply	N52 X 11 — V — 2	Ignition: **ON** Actuate soft top with soft top actuating switch (S84) as follows:		
			close	10-14 V	⇒ 29.1
			open	0-1 V	Control unit (N52)
⇒ 29.1	Y55y7 Resistance	N52 X 11 — Ω — 2	Disconnect test cable (X) from N52	5-15 Ω	Wiring Y55y7 Nominal value okay: N52

Test program - Electrical system Testing

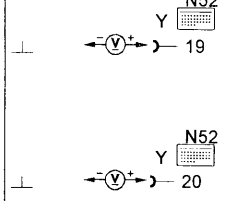
Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 30.0	**Circuit, solenoid valve, soft top bow - raise (Y55y8)** Power supply	N52 X 11 — V — 3	Ignition: **ON** Actuate soft top bow with soft top actuating switch (S84) as follows:		
			raise	10-14 V	⇒ 30.1
			lower	0-1 V	Control unit (N52)
⇒ 30.1	Y55y8 Resistance	N52 X 11 — Ω — 3	Disconnect test cable (X) from N52	5-15 Ω	Wiring Y55y8 Nominal value okay: N52
⇒ 31.0	**Circuit, solenoid valve, soft top bow - lower (Y55y9)** Power supply	N52 X 11 — V — 4	Ignition: **ON** Actuate soft top bow with soft top actuating switch (S84) as follows:		
			lower	10-14 V	⇒ 31.1
			raise	0-1 V	Control unit (N52)

⇒ 31.1	Y55y9 Resistance		Disconnect test cable (X) from N52	5-15 Ω	Wiring Y55y9 Nominal value okay: N52

Test program - Electrical system Testing

Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 32.0	**Combination relay (heated rear window, N10)** Power supply		Soft top open	Indicator flashes (approx. 2 Hz)	Wiring Switch, soft top up (S84/4) Control unit (N52)
⇒ 33.0	**Convenience control unit (N57)** Power supply		Ignition: **ON** Press soft top actuating switch (S84) momentarily two times and then hold down: in direction **open** in direction **close**	0-1 V -9 to -14 V 11-14 V	Wiring Control unit (N52) N57
⇒ 34.0	**Warning buzzer for soft top control unit**		Ignition: **ON**	Gong sounds	Wiring Ceiling lamp with delay (E15)
⇒ 35.0	**Indicator lamp, soft top actuating switch (S84)** Power supply		Ignition: **ON**	11-14 V	Wiring

Test program - Electrical system Testing

Test step **Pulse display**	Scope of test	Measuring instrument/ Test connection	Action/ Prerequisite	Nominal value	Possible cause/Remedy
⇒ 36.0	**Indicator lamp control for soft top actuating switch (S84)**		Soft top completely closed or open Ignition: **ON**	Indicator lamp should come on for approx. 1 s	Wiring S84 Control unit (N52)
⇒ 37.0	**Roll-over bar crash-activated trigger unit (N53)**		Ignition: **ON**	>2,4 V >2,4 V	Wiring Fault in roll-over bar system (Body, volume 3-19.1) Roll-over bar crash-activated trigger unit (N53)

Test program - Electrical system Testing