11.3 Model 129 as of 1/94

Note:
The diagnosis of roll bar deployment in an accident is described in Diagnostic Manual, Body and Accessories, Volume 5, Chapter 19.2 or 19.3.

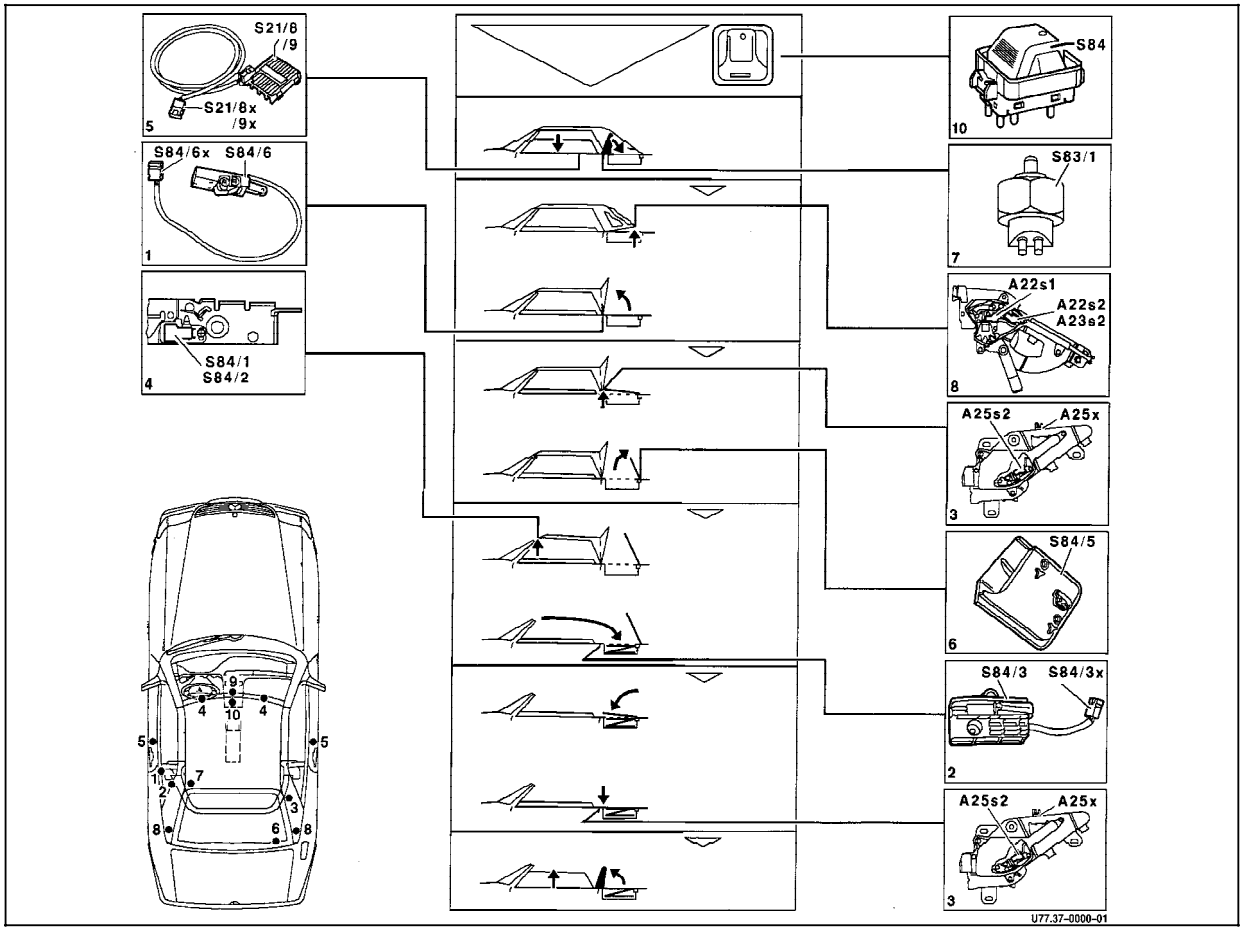
Diagnosis – Function Test

Soft top opening sequence

Figure 1

A22	Left soft top fabric bow switch group
A22s1 (8)	Bow “closed” switch
A22s2 (8)	Bow “locked” switch
A23	Right soft top fabric bow switch group
A23s2 (8)	Bow “locked” switch
A25	Right soft top compartment cover switch group
A25s2 (3)	Cover “locked” switch
S21/8 (5)	Right front door “window down” limit switch [1]
S21/9 (5)	Left front door “window down” limit switch [1]
S83/1 (7)	RB “retracted” switch
S84 (10)	Power soft top switch
S84/1 (4)	Left front soft top “locked” switch
S84/2 (4)	Right front soft top “locked” switch
S84/3 (2)	Soft top “open” switch (soft top in storage compartment)
S84/5 (6)	Soft top compartment “open” switch
S84/6 (1)	Soft top fabric bow “raised” switch

[1] Up to 12/94



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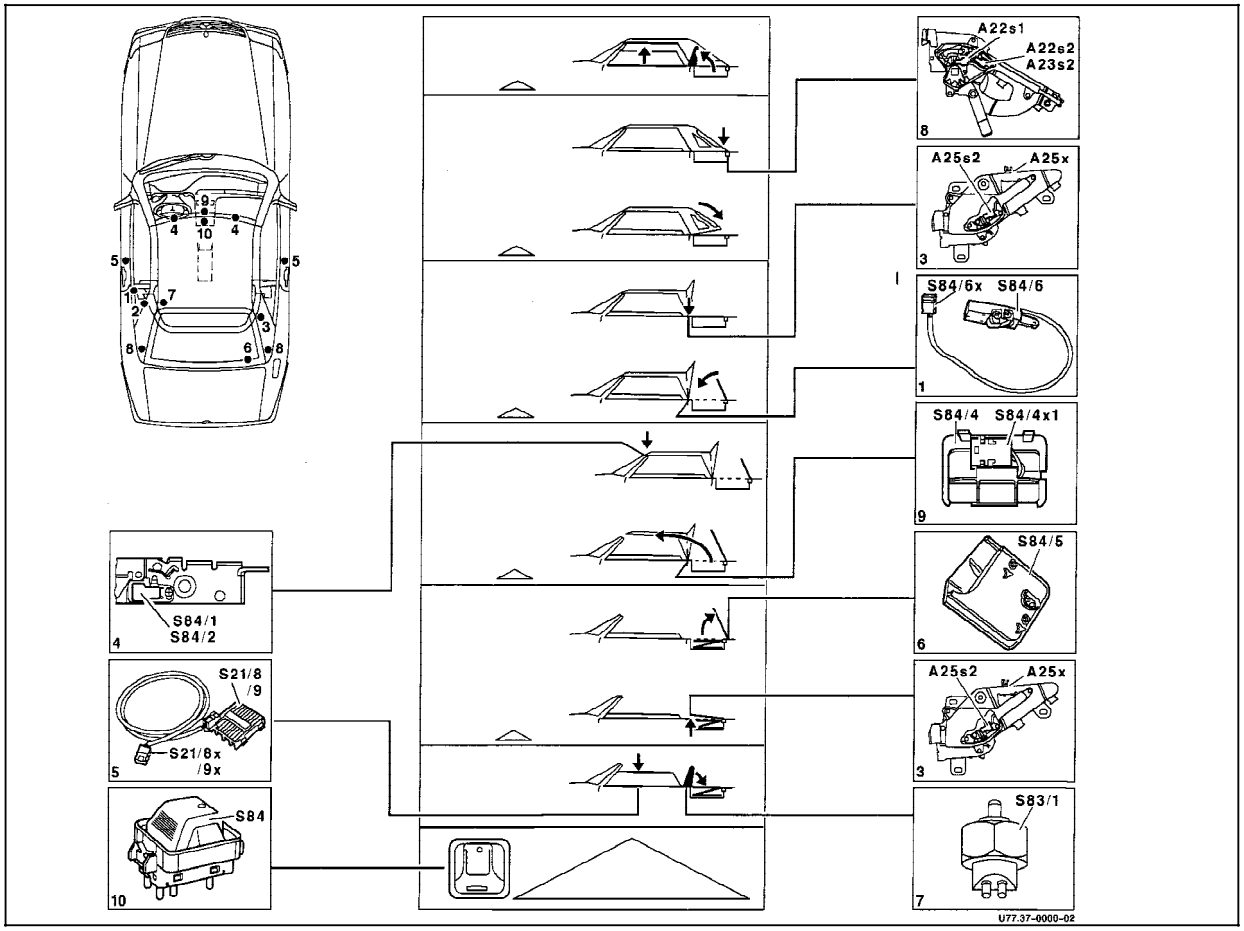
Diagnosis – Function Test

Soft top closing sequence

Figure 1

A22		Left soft top fabric bow switch group
A22s1	(8)	Bow “closed” switch
A22s2	(8)	Bow “locked” switch
A23		Right soft top fabric bow switch group
A23s2	(8)	Bow “locked” switch
A25		Right soft top compartment cover switch group
A25s2	(3)	Cover “locked” switch
S21/8	(5)	Right front door “window down” limit switch [1]
S21/9	(5)	Left front door “window down” limit switch [1]
S83/1	(7)	RB “retracted” switch
S84	(10)	Power soft top switch
S84/1	(4)	Left front soft top “locked” switch
S84/2	(4)	Right front soft top “locked” switch
S84/3	(2)	Soft top “closing” switch (soft top in storage compartment)
S84/5	(6)	Soft top compartment “open” switch
S84/6	(1)	Soft top fabric bow “raised” switch

[1] Up to 12/94



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Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 1.0 Power soft top switch (S84), indicator lamp	Ignition: **ON**	The warning lamp in the power soft top switch should illuminate once briefly.	S84, Open circuit, Power soft top control module (N52).
⇒ 2.0 Hardtop safety test	Ignition: **ON** After a period of more than 10 seconds push power soft top switch (S84) to **Open** for approximately 10 seconds.	Hardtop must **not** unlock.	Power soft top control module (N52) (SMS, Job No. 77-450).
⇒ 3.0 Lock hardtop	Hardtop set in place (unlocked). Ignition: **ON** Push power soft top switch (S84) to **Close**.	Locking begins immediately. Indicator lamp in power soft top switch goes out once the top is fully locked. **Starting 9/95**, the front and rear hardtop locks lock simultaneously.	14 Complaint No. 1
⇒ 4.0 Unlock hardtop	Ignition: **ON** Within 10 seconds push power soft top switch (S84) to **Open**.	After 2 to 4 seconds the front unlocks, then the rear.	14 Complaint No. 1
⇒ 5.0 Raise roll bar using RB switch (S83)	Ignition: **ON** Push RB switch (S83) to **Up**.	Roll bar raises.	14 Complaint No. 5
⇒ 6.0 Close soft top using power soft top switch (S84)	Ignition: **ON** Hardtop removed, push power soft top switch (S84) to **Close**.	Roll bar retracts. Side windows open, soft top closes, roll bar raises, side windows close.	14 Complaint Nos. 10-17

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 7.0 Open soft top using power soft top switch (S84)	Ignition: **ON** Roll bar raised, Press power soft top switch (S84) toward **Open**.	Roll bar retracts. Side windows open, soft top opens, roll bar rises, side windows close.	14 Complaint Nos. 18-25
⇒ 8.0 Lower roll bar using RB switch (S83)	Ignition: **ON** Press RB switch (S83) toward **Lower**.	Roll bar retracts.	14 Complaint No. 7
⇒ 9.0 Gong in dome lamp	With the soft top cover unlocked, drive a short distance with the vehicle.	Gong in dome lamp sounds.	14 Complaint Nos. 3, 4
⇒ 10.0 Side window convenience feature operation	Side windows open. Lock the vehicle with the key from the driver's door, passenger's door and trunk lock (Hold the key in the trunk lock in the 60° position).	Side windows close.	14 Complaint No. 30
⇒ 11.0 Side windows close when door is closed (as of 12/94)	Left or right side window lowered 4 mm, close left or right door.	Left or right side window closes.	14 Complaint No. 35, 36
⇒ 12.0 Convienence Feature Opening side windows (as of 06/97)	Side windows closed and vehicle is locked. Open vehicle using remote control or mechanical key[2], hold in opening position.	Side windows open.	14 Complaint No. 38

1) Observe Preparation for Test, see 22.

2) (only USA)

Diagnosis – Diagnostic Trouble Code (DTC) Memory

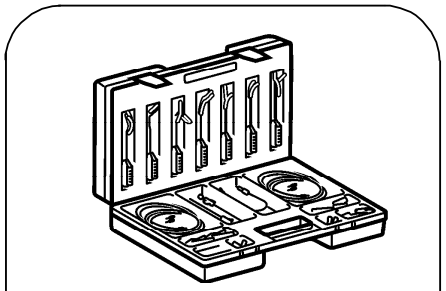
Preliminary work:
Diagnosis - Function Test 11

Prerequisite for reading DTC memory

1. Fuses in order
2. Battery voltage > 11 V.
3. Connect HHT according to connection diagram, see section 0.

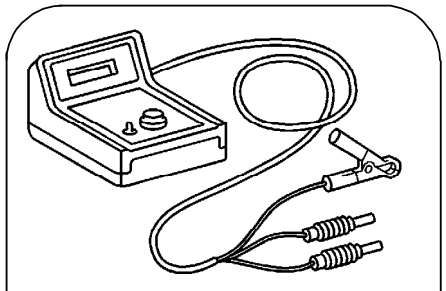
Starting 9/95, the DTC memory can be read only with the HHT.

Special Tools



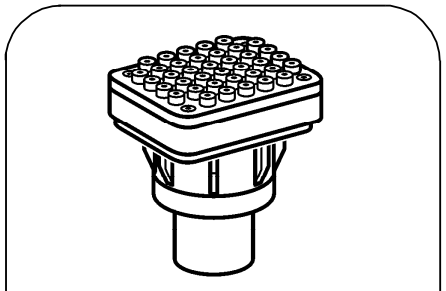
201 589 00 99 00

Electrical connecting set



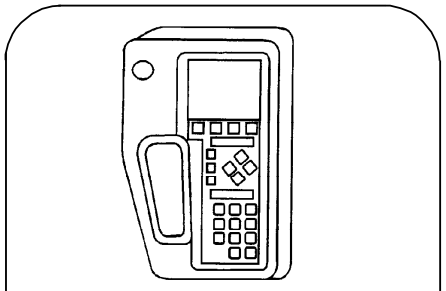
124 589 19 21 00

Pulse counter



140 589 14 63 00

Adapter

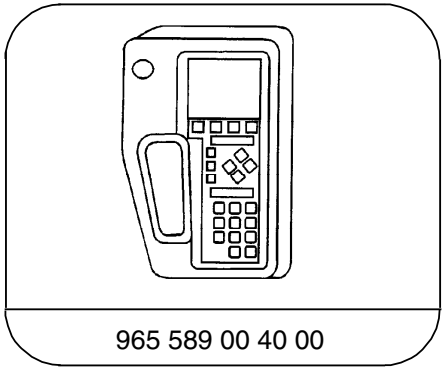


965 589 00 01 00

Hand-Held-Tester

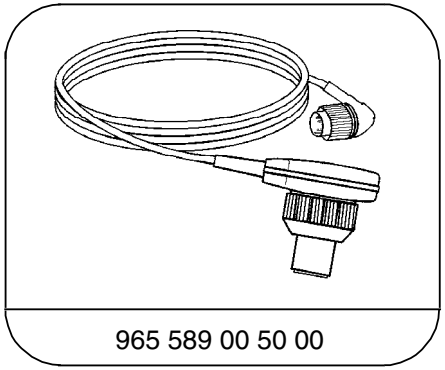
Diagnosis – Diagnostic Trouble Code (DTC) Memory up to 9/95

Special Tools



965 589 00 40 00

Test cable



965 589 00 50 00

Adapter cable

Diagnosis – Diagnostic Trouble Code (DTC) Memory up to 9/95

DTC  	Possible cause	Test step/Remedy [1]
8 001	Power soft top control module (N52)	Replace (N52).
2 032	Low voltage	23 ⇒ 1.0, 2.0
048	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1) >85 °C	23 ⇒ 3.0, 36.0
049	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1) >120 °C	23 ⇒ 3.0, 36.0
3 050	RST/RB hydraulic unit (A7/5) locked up	23 ⇒ 3.0
051	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1)	23 ⇒ 36.0
052	RST/RB hydraulic unit (A7/5)	23 ⇒ 3.0
4 064	VSS status signal	23 ⇒ 22.0, 23.0
065	Implausible VSS	23 ⇒ 22.0, 23.0
5 080	RST/RB hydraulic unit (A7/5)	23 ⇒ 3.0
6 096	Right power window activation	23 ⇒ 21.0, 25.0, 27.0
6 097	Left power window activation	23 ⇒ 20.0, 24.0, 26.0
098	Right front power window motor (M10/4), Hall-effect sensor [2]	Replace M10/4 (SMS, Job No. 82-600)
099	Left front power window motor (M10/3), Hall-effect sensor [2]	Replace M10/3 (SMS, Job No. 82-600)
100	Right front power window motor (M10/4), Hall-effect sensor not synchronized [2]	14 ⇒ 33.0

[1] Observe Preparation for Test, see 22.

[2] As of 12/94.

Diagnosis – Diagnostic Trouble Code (DTC) Memory up to 9/95

DTC	Possible cause	Test step/Remedy [1]
101	Left front power window motor (M10/3), Hall-effect sensor not synchronized [2]	14 ⇒ 33.0
112	Left front soft top “locked“ switch (S84/1)	23 ⇒ 8.0
113	Right front soft top “locked” switch (S84/2)	23 ⇒ 9.0
114	Soft top “closed” switch (S84/4)	23 ⇒ 13.0
115	Soft top “open” switch (S84/3)	23 ⇒ 12.0
116	Left soft top fabric bow “locked“ switch (A22s2)	23 ⇒ 5.0
117	Right soft top fabric bow “locked“ switch (A23s2)	23 ⇒ 6.0
118	Left soft top fabric bow “closed“ switch (A22s1)	23 ⇒ 7.0
119	Soft top fabric bow “raised“ switch (S84/6)	23 ⇒ 11.0
120	Soft top compartment “open“ switch (S84/5)	23 ⇒ 10.0
121	Right soft top compartment cover “locked“ switch (A25s2)	23 ⇒ 4.0
122	RB “retracted“ switch (S83/1)	23 ⇒ 14.0
123	ATA/CF microswitch, left door (S86), right door (S87s1), trunk lid (S88s1)	23 ⇒ 38.0
124	Left front door actuator (S47), right front door actuator (S48), trunk lid actuator (S49)	23 ⇒ 37.0

1) Observe Preparation for Test, see 22.
2) As of 12/94.

Diagnosis – Diagnostic Trouble Code (DTC) Memory as of 9/95

DTC  	Possible cause	Test step/Remedy [1]
7 125	Left front door “window down“ limit switch (S21/9) [3]	23 ⇒ 15.0
7 126	Right front door “window down“ limit switch (S21/8) [3]	23 ⇒ 16.0
7 127	Illogical limit switch signals	24
9 144	Roll bar crash deployment	23 ⇒ 17.0
10 160	Power soft top switch (S84)	23 ⇒ 18.0
10 161	RB switch (S83) (manual operation)	23 ⇒ 19.0
11 176	Power soft top switch (S84) indicator lamp	23 ⇒ 28.0
11 177	RB switch (S83) (manual operation) indicator lamp	23 ⇒ 42.0
11 178	Warning buzzer (E15h1)	23 ⇒ 39.0

1) Observe Preparation for Test, see 22.
2) As of 12/94.

Diagnosis – Diagnostic Trouble Code (DTC) Memory as of 9/95

DTC	Possible cause	Test step/Remedy [1]
001 128–136	Power soft top control module (N52)	Replace (N52)
032	Low voltage	23 ⇒ 1.0, 2.0
048	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1) >85 °C	23 ⇒ 3.0, 36.0
049	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1) >120 °C	23 ⇒ 3.0, 36.0
050	RST/RB hydraulic unit (A7/5) locked up	23 ⇒ 3.0
051	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1)	23 ⇒ 36.0
052	RST/RB hydraulic unit (A7/5)	23 ⇒ 3.0
064	VSS status signal	23 ⇒ 22.0, 23.0
065	Implausible VSS	23 ⇒ 22.0, 23.0
080	RST/RB hydraulic unit (A7/5)	23 ⇒ 3.0
096	Right front power window motor (M10/4), Hall-effect sensor	Replace M10/4 (SMS, Job No. 82-600)
097	Left front power window motor (M10/3), Hall-effect sensor	Replace M10/3 (SMS, Job No. 82-600)
098	Right front power window motor (M10/4), Hall-effect sensor not synchronized	14 ⇒ 36.0
099	Left front power window motor (M10/3), Hall-effect sensor not synchronized	14 ⇒ 33.0
100	Right front power window motor (M10/4), no Hall-effect sensor signal	23 ⇒ 27.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory as of 9/95

DTC	Possible cause	Test step/Remedy [1]
101	Left front power window motor (M10/4), no Hall-effect sensor signal	14 ⇒ 36.0
102	Right power window activation, wire ⌜1+, ⌜1–, Power soft top control module (N52)	23 ⇒ 21.0, 25.0, 27.0
103	Left power window activation, wire ⌜1+, ⌜1–, Power soft top control module (N52)	23 ⇒ 20.0, 24.0, 26.0
112	Left front soft top “locked“ switch (S84/1)	23 ⇒ 8.0
113	Right front soft top “locked” switch (S84/2)	23 ⇒ 9.0
114	Soft top “closed” switch (S84/4)	23 ⇒ 13.0
115	Soft top “open” switch (S84/3)	23 ⇒ 12.0
116	Left soft top fabric bow “locked“ switch (A22s2)	23 ⇒ 5.0
117	Right soft top fabric bow “locked“ switch (A23s2)	23 ⇒ 6.0
118	Left soft top fabric bow “closed“ switch (A22s1)	23 ⇒ 7.0
119	Soft top fabric bow “raised“ switch (S84/6)	23 ⇒ 11.0
120	Soft top compartment “open“ switch (S84/5)	23 ⇒ 10.0
121	Right soft top compartment cover “locked“ switch (A25s2)	23 ⇒ 4.0
122	RB “retracted“ switch (S83/1)	23 ⇒ 14.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory as of 9/95

DTC	Possible cause	Test step/Remedy [1]
123	ATA/CF microswitch, left door (S86), right door (S87s1), trunk lid (S88s1)	23 ⇒ 38.0
124	Illogical limit switch signals	24
127	Voltage interruption on circuit 30	23 ⇒ 1.0
146	Roll bar crash deployment, Hydraulic linkage separated from roll bar	23 ⇒ 14.0
160	Power soft top switch (S84)	23 ⇒ 18.0
161	RB switch (S83) (manual operation)	23 ⇒ 19.0
176	Power soft top switch (S84) indicator lamp	23 ⇒ 28.0
177	RB switch (S83) (manual operation) indicator lamp	23 ⇒ 42.0
178	Warning buzzer (E15h1)	23 ⇒ 39.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Recalling Actual Values with HHT

The following tests or activations are possible with the **Hand-Held Tester**

Prerequisite for recalling the actual values

1. Fuses in order.
2. Battery voltage > 11 V.
3. Connect HHT according to connection diagram, see section 0.

Diagnosis – Recalling Actual Values with HHT

Actual Value	Activation	Test step/Remedy [1]
01	Right soft top compartment cover “locked“ switch (A25s2)	23 ⇒ 4.0
02	Soft top compartment “open“ switch (S84/5)	23 ⇒ 10.0
03	Left soft top fabric bow “closed“ switch (A22s1)	23 ⇒ 7.0
04	Left soft top fabric bow “locked“ switch (A22s2)	23 ⇒ 5.0
05	Right soft top fabric bow “locked“ switch (A23s2)	23 ⇒ 6.0
06	Soft top fabric bow “raised“ switch (S84/6)	23 ⇒ 11.0
07	Soft top “closed“ switch (reed contact) (S84/4)	23 ⇒ 13.0
08	Soft top “open“ switch (S84/3) (soft top in storage compartment)	23 ⇒ 12.0
09	Roll bar “retracted“ switch (S83/1)	23 ⇒ 14.0
10	Left front soft top “locked“ switch (S84/1)	23 ⇒ 8.0
11	Right front soft top “locked“ switch (S84/2)	23 ⇒ 9.0
12	Left door actuator (S47), right front door actuator (S48), trunk lid lock actuator (S49)	23 ⇒ 37.0
13	Left front door “window down“ limit switch (S21/9) **as of 12/94** left rotary tumbler microswitch (S86s2)	23 ⇒ 15.0 23 ⇒ 40.0
14	Right front door “window down“ limit switch (S21/8) **as of 12/94** right rotary tumbler microswitch (S87s2)	23 ⇒ 16.0 23 ⇒ 41.0
15	ATA/convenience microswitch	23 ⇒ 38.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Recalling Actual Values with HHT

Actual Value	Activation	Test step/Remedy [1]
16	Left power window switch (S21/1)	23 ⇒ 24.0
17	Right power window switch (S21/2)	23 ⇒ 25.0
18	Power soft top switch (S84)	23 ⇒ 18.0
19	Roll bar switch (S83)	23 ⇒ 19.0
20	RST/RB hydraulic unit (A7/5), Right power soft top valve block, RB “lower” valve (Y56/1y2)	23 ⇒ 3.0, 3.3, 34.0, 36.0
21	Right power soft top valve block, RB “raise” valve (Y56/1y3)	23 ⇒ 35.0
22	Left power soft top valve block, soft top “closed”/fabric bow lock “open” valve (Y55/1y1)	23 ⇒ 31.0
23	Right power soft top valve block, soft top “open”/front lock “open” valve (Y56/1y1)	23 ⇒ 30.0
24	Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3)	23 ⇒ 32.0
25	Left power soft top valve block, fabric bow “closed” valve (Y55/1y2)	23 ⇒ 33.0
26	Left power soft top valve block, soft top compartment cover “open”/lock “open” valve (Y55/1y4)	23 ⇒ 29.0
27	Left power window activation	23 ⇒ 20.0, 24.0, 26.0
28	Right power window activation	23 ⇒ 21.0, 25.0, 27.0
29	RST/RB hydraulic unit, overload protection thermocouple (A7/5b1)	23 ⇒ 36.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Recalling Actual Values with HHT

Actual Value	Activation	Test step/Remedy [1]
30	Vehicle speed	23 ⇒ 22.0, 23.0
31	VSS signal status (ABS)	23 ⇒ 23.0
32	Circuit 15	23 ⇒ 2.0
33	Maintenance ground signal	(1) check connector X11/12.
34	Left front window position (Hall-effect sensor) [2]	Replace M10/3 (SMS, Job No. 82-600).
35	Right front window position (Hall-effect sensor) [2]	Replace M10/4 (SMS, Job No. 82-600).

1) Observe Preparation for Test, see 22.

2) As of 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 1 Hardtop does not lock or unlock.	RST/RB hydraulic unit (A7/5) does not run.	23 ⇒ 1.0, 2.0, 3.0
	Power soft top switch (S84).	23 ⇒ 18.0
	Right power soft top valve block, RB “raise” valve (Y56/1y3).	23 ⇒ 30.0
	Left power soft top valve block, soft top “closed”/fabric bow lock “closed” valve (Y55/1y1).	23 ⇒ 31.0
	Pump temperature signal.	23 ⇒ 36.0
	Insufficient system pressure (nominal value).	33 ⇒ 1.0, 2.0
	Latch pins on the hardtop poorly adjusted.	Check adjustment, (SMS, Job No. 77-420).
No. 2 Indicator lamp in the power soft top switch does not come on when the ignition is turned on.	Voltage supply, circuits 15, 31.	23 ⇒ 2.0
	Power soft top switch (S84).	23 ⇒ 18.0, 28.0
	Power soft top control module (N52) defective.	(SMS, Job No. 77-450).
No. 3 Indicator lamp in power soft top switch comes on with the soft top locked (no DTC display). (Gong sounds while driving)	Left soft top fabric bow “locked” switch (A22s2).	23 ⇒ 5.0
	Right soft top fabric bow “locked” switch (A23s2).	23 ⇒ 6.0
	Left front soft top “locked” switch (S84/1).	23 ⇒ 8.0
	Right front soft top “locked” switch (S84/2).	23 ⇒ 9.0
No. 4 Indicator lamp in power soft top switch comes on with the soft top open (no DTC display). (Gong sounds while driving)	Right soft top compartment cover “locked“ switch (A25s2).	23 ⇒ 4.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 5 Roll bar cannot be raised using the RB switch (S83).	RST/RB hydraulic unit (A7/5) does not run. RB switch (S83). Pump temperature signal. Insufficient system pressure (nominal value). Test hydraulic circuit, raising roll bar.	23 ⇒ 1.0, 2.0, 3.0 23 ⇒ 19.0 23 ⇒ 36.0 33 ⇒ 1.0, 2.0 33 ⇒ 17.0
No. 6 Roll bar cannot be raised with power soft top switch (S84). (Only possible during the soft top up or down sequence. Roll bar must have been raised previously).	Right power soft top valve block, RB “raise” valve (Y56/1y3). Test hydraulic circuit, raising roll bar.	23 ⇒ 35.0 33 ⇒ 17.0
No. 7 Roll bar cannot be lowered using the RB switch (S83).	Roll bar was automatically deployed (“Crash deployment”). RST/RB hydraulic unit (A7/5) does not run. RB switch (S83). Right power soft top valve block, RB “lower” valve (Y56/1y2). Right power soft top valve block, RB “raise” valve (Y56/1y3). Pump temperature signal. Insufficient system pressure (nominal value). Test hydraulic circuit, lowering roll bar.	Raise RB using RB switch (S83) until a re-engagement click is heard on passenger side. 23 ⇒ 1.0, 2.0, 3.0 23 ⇒ 19.0 23 ⇒ 34.0 23 ⇒ 35.0 23 ⇒ 36.0 33 ⇒ 1.0, 2.0 33 ⇒ 18.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 8 Roll bar cannot be retracted using the power soft top switch (S84).	RST/RB hydraulic unit (A7/5) does not run. Power soft top switch (S84). Right power soft top valve block, RB “lower” valve (Y56/1y2). Right power soft top valve block, RB “raise” valve (Y56/1y3). Pump temperature signal. Insufficient system pressure (nominal value). Test hydraulic circuit, roll bar retraction.	23 ⇒ 1.0, 2.0, 3.0 23 ⇒ 18.0 23 ⇒ 34.0 23 ⇒ 35.0 23 ⇒ 36.0 33 ⇒ 1.0, 2.0 33 ⇒ 18.0
No. 9 Roll bar raises by itself (not a crash deployment).	Roll bar activator (right) defective	SMS, Job No. 91-920.
No. 10 **During a soft top closing operation:** Soft top compartment cover does not unlock.	RST/RB hydraulic unit (A7/5) does not run. Soft top “open” switch (soft top in storage compartment) (S84/3). RB “retracted” switch (S83/1). Power soft top switch (S84). Left power soft top valve block, soft top compartment cover “open”/soft top compartment cover lock “open” valve (Y55/1y4). Pump temperature signal. Insufficient system pressure (nominal value). Test hydraulic circuit, opening the center locks.	23 ⇒ 1.0, 2.0, 3.0 23 ⇒ 12.0 23 ⇒ 14.0 23 ⇒ 18.0 23 ⇒ 29.0 23 ⇒ 36.0 33 ⇒ 1.0, 2.0 33 ⇒ 11.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 11 Soft top compartment cover does not open or raises only slowly.	Right soft top compartment cover “locked“ switch (A25s2). Left power soft top valve block, soft top compartment cover “open”/soft top compartment cover lock “open” valve (Y55/1y4). Check hydraulic circuit, raising soft top compartment cover.	23 ⇒ 4.0 23 ⇒ 29.0 33 ⇒ 14.0
No. 12 Soft top does not come out of the soft top compartment or closes only slowly.	Soft top compartment “open” switch (S84/5). Soft top fabric bow “raised” switch (S84/6). Left power soft top valve block, soft top “closed”/fabric bow lock “closed” valve (Y55/1y1). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Check hydraulic circuit, soft top closed. Check hydraulic output volume.	23 ⇒ 10.0 23 ⇒ 11.0 23 ⇒ 31.0 23 ⇒ 32.0 33 ⇒ 12.0 33 ⇒ 3.0
No. 13 Soft top remains in 90° position.	Left front door “window down” limit switch (S21/9) [2]. Right front door “window down” limit switch (S21/8) [2]. Left front power window motor (M10/3) not synchronized [3]. Right front power window motor (M10/4) not synchronized [3].	23 ⇒ 15.0 23 ⇒ 16.0 14 ⇒ 33.0 14 ⇒ 34.0
No. 14 Front latches of soft top do not lock.	Left front soft top “locked“ switch (S84/1). Right front soft top “locked“ switch (S84/2). Soft top “closed“ switch (reed contact) (S84/4). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Check hydraulic circuit, locking front latches. Latch pins poorly adjusted at the soft top front latches.	23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 13.0 23 ⇒ 32.0 33 ⇒ 13.0 SMS, Job No. 77-303.

1) Observe Preparation for Test, see 22.
2) Up to 12/94.
3) As of 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 15 Soft top compartment cover does not move or moves only slowly or does not lock.	Left front soft top “locked” switch (S84/1). Right front soft top “locked” switch (S84/2). Soft top “closed“ switch (reed contact) (S84/4). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Check hydraulic circuit, lowering soft top compartment cover.	23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 13.0 23 ⇒ 32.0 33 ⇒ 10.0
No. 16 Fabric bow does not move down or moves down slowly.	Right soft top compartment cover “locked“ switch (A25s2). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Left power soft top valve block, fabric bow “closed” valve (Y55/1y2). Check hydraulic circuit, fabric bow closed.	23 ⇒ 4.0 23 ⇒ 32.0 23 ⇒ 33.0 33 ⇒ 15.0
No. 17 Rear latches of soft top do not lock.	Soft top fabric bow “down“ switch (S84/7) Left power soft top valve block, soft top “closed”/fabric bow lock “closed” valve (Y55/1y1). Check hydraulic circuit, locking rear latches.	23 ⇒ 7.0 23 ⇒ 31.0 33 ⇒ 16.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 18 **During soft top opening:** Rear locks do not unlock.	RST/RB hydraulic unit (A7/5) does not run. Left front power window motor (M10/3), not synchronized [3]. Right front power window motor (M10/4), not synchronized [3]. Soft top “open” switch (soft top in storage compartment) (S84/3). RB “retracted” switch (S83/1). Power soft top switch (S84). Soft top “closed“/fabric bow lock “open“ valve (Y55/1y1). Pump temperature signal. Insufficient system pressure (nominal value). Check hydraulic circuit, unlocking rear latches.	23 ⇒ 1.0, 2.0, 3.0 14 ⇒ 33.0 14 ⇒ 34.0 23 ⇒ 12.0 23 ⇒ 14.0 23 ⇒ 18.0 23 ⇒ 31.0 23 ⇒ 36.0 33 ⇒ 1.0, 2.0 33 ⇒ 5.0
No. 19 Fabric bow does not move or moves only slowly up.	Left bow “locked” switch (A22s2). Right bow “locked” switch (A23s2). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Left power soft top valve block, fabric bow “closed” valve (Y55/1y2). Check hydraulic circuit, fabric bow up.	23 ⇒ 5.0 23 ⇒ 6.0 23 ⇒ 32.0 23 ⇒ 33.0 33 ⇒ 6.0
No. 20 Fabric bow goes up and down.	Left bow “closed” switch (A22s1).	23 ⇒ 7.0

[1] Observe Preparation for Test, see 22.

[3] As of 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 21 Center locks do not unlock.	Soft top fabric bow “raised” switch (S84/6). Left power soft top valve block, soft top compartment cover “open”/soft top compartment cover lock “open” valve (Y55/1y4). Check hydraulic circuit, unlocking center latches.	23 ⇒ 11.0 23 ⇒ 29.0 33 ⇒ 7.0
No. 22 Soft top compartment cover does not open or opens only slowly.	Right soft top compartment cover “locked” switch (A25s2). Left power soft top valve block, soft top compartment cover “open”/soft top compartment cover lock “open” valve (Y55/1y4). Check hydraulic circuit, opening soft top compartment.	23 ⇒ 4.0 23 ⇒ 29.0. 33 ⇒ 7.0
No. 23 Front latches of soft top do not unlock.	Left front soft top “locked” switch (S84/1). Left front door “window down” limit switch (S21/9) [2]. Right front door “window down” limit switch (S21/8) [2]. Right power soft top valve block, RB “raise“ valve (Y56/1y3). Check hydraulic circuit, unlocking front locks.	23 ⇒ 10.0 23 ⇒ 15.0 23 ⇒ 16.0 23 ⇒ 30.0 33 ⇒ 8.0
No. 24 Soft top does not open or opens only slowly.	Left front soft top “locked” switch (S84/1). Right front soft top “locked” switch (S84/2). Right power soft top valve block, RB “raise“ valve (Y56/1y3). Left power soft top valve block, soft top “closed”/fabric bow lock “closed” valve (Y55/1y1). Check hydraulic circuit, open soft top. Check hydraulic output volume.	23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 30.0 23 ⇒ 31.0 33 ⇒ 9.0 33 ⇒ 3.0

[1] Observe Preparation for Test, see 22.

[2] Up to 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 25 Soft top compartment cover does not close or closes only slowly or does not lock.	Soft top “open” switch (soft top in storage compartment) (S84/3). Left power soft top valve block, soft top compartment cover “open”/soft top compartment cover lock “open” valve (Y55/1y4). Left power soft top valve block, fabric bow “open”/soft top compartment cover “closed” valve (Y55/1y3). Check hydraulic circuit, close soft top compartment cover.	23 ⇒ 12.0 23 ⇒ 29.0 23 ⇒ 32.0 33 ⇒ 10.0
No. 26 Side windows do not open using the power soft top switch, but do with the power window switches.	Left front door “window down” limit switch (S21/9) [2]. Right front door “window down” limit switch (S21/8) [2]. Left front power window motor (M10/3) not synchronized [3]. Right front power window motor (M10/4) not synchronized [3]. Power soft top control module (N52).	23 ⇒ 15.0 23 ⇒ 16.0 14 ⇒ 33.0 14 ⇒ 34.0 SMS, Job No. 77-450.
No. 27 Side windows do not close using the power soft top switch, but do with the power window switches.	Left front power window motor (M10/3) not synchronized [3]. Right front power window motor (M10/4) not synchronized [3]. Power soft top control module (N52).	14 ⇒ 33.0 14 ⇒ 34.0 SMS, Job No. 77-450.
No. 28 Side windows do not close or open using the power window switches (first detent).	Left front power window switches (S21/1). Right front power window switches (S21/2). Left front power window motor (M10/3). Right front power window motor (M10/4). Power soft top control module (N52).	23 ⇒ 24.0 23 ⇒ 25.0 23 ⇒ 20.0, 37.0 23 ⇒ 21.0, 38.0 SMS, Job No. 77-450.

1) Observe Preparation for Test, see 22.
2) Up to 12/94.
3) As of 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 29 Side windows do not open (one-touch opening) using the power window switches (second detent).	Left front door “window down” limit switch (S21/9) [2]. Right front door “window down” limit switch (S21/8) [2]. Left front power window motor (M10/3) not synchronized [3]. Right front power window motor (M10/4) not synchronized [3]. Left front power window switches (S21/1). Right front power window switches (S21/2). Power soft top control module (N52).	23 ⇒ 15.0 23 ⇒ 16.0 14 ⇒ 33.0 14 ⇒ 34.0 23 ⇒ 24.0 23 ⇒ 25.0 SMS, Job No. 77-450
No. 30 Side window closing convenience feature (at driver/passenger door lock or at trunk lock) does not work.	Left door actuator (S47), right door actuator (S48), trunk lid lock actuator (S49). Left door ATA/CF microswitch (S86), right door ATA/CF microswitch (S87s1), trunk lid ATA/CF microswitch (S88s1). Power soft top control module (N52).	23 ⇒ 37.0 23 ⇒ 38.0 SMS, Job No. 77-450
No. 31 [3] Left side window will not synchronize (electric base setting)	Left front power window motor (M10/3). Power soft top control module (N52).	23 ⇒ 26.0 SMS, Job No. 77-450
No. 32 [3] Right side window will not synchronize (electric base setting)	Right front power window motor (M10/4). Power soft top control module (N52).	23 ⇒ 27.0 SMS, Job No. 77-450

1) Observe Preparation for Test, see 22.
2) Up to 12/94.
3) As of 12/94.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 33 [3] Left side window does not open (4 mm) when opening left door	Window not synchronized (electric base setting). Left door switch group, rotary tumbler microswitch (S86s2). Power soft top control module (N52).	Synchronize power window motor by closing window using window switch. When window is closed, hold switch down for an additional 1 – 2 seconds. 23 ⇒ 40.0 SMS, Job No. 77-450
No. 34 [3] Right side window does not open (4 mm) when opening right door	Window not synchronized (electric base setting). Right door switch group, rotary tumbler microswitch (S87s2). Power soft top control module (N52).	Synchronize power window motor by closing window using window switch. When window is closed, hold switch down for an additional 1 – 2 seconds. 23 ⇒ 41.0 SMS, Job No. 77-450
No. 35 [3] Left side window does not close (4 mm) when closing left door	Window not synchronized (electric base setting). Left door switch group, rotary tumbler microswitch (S86s2). Power soft top control module (N52).	Synchronize power window motor by closing window using window switch. When window is closed, hold switch down for an additional 1 – 2 seconds. 23 ⇒ 40.0 SMS, Job No. 77-450

1) Observe Preparation for Test, see 22.
3) As of 12/94.

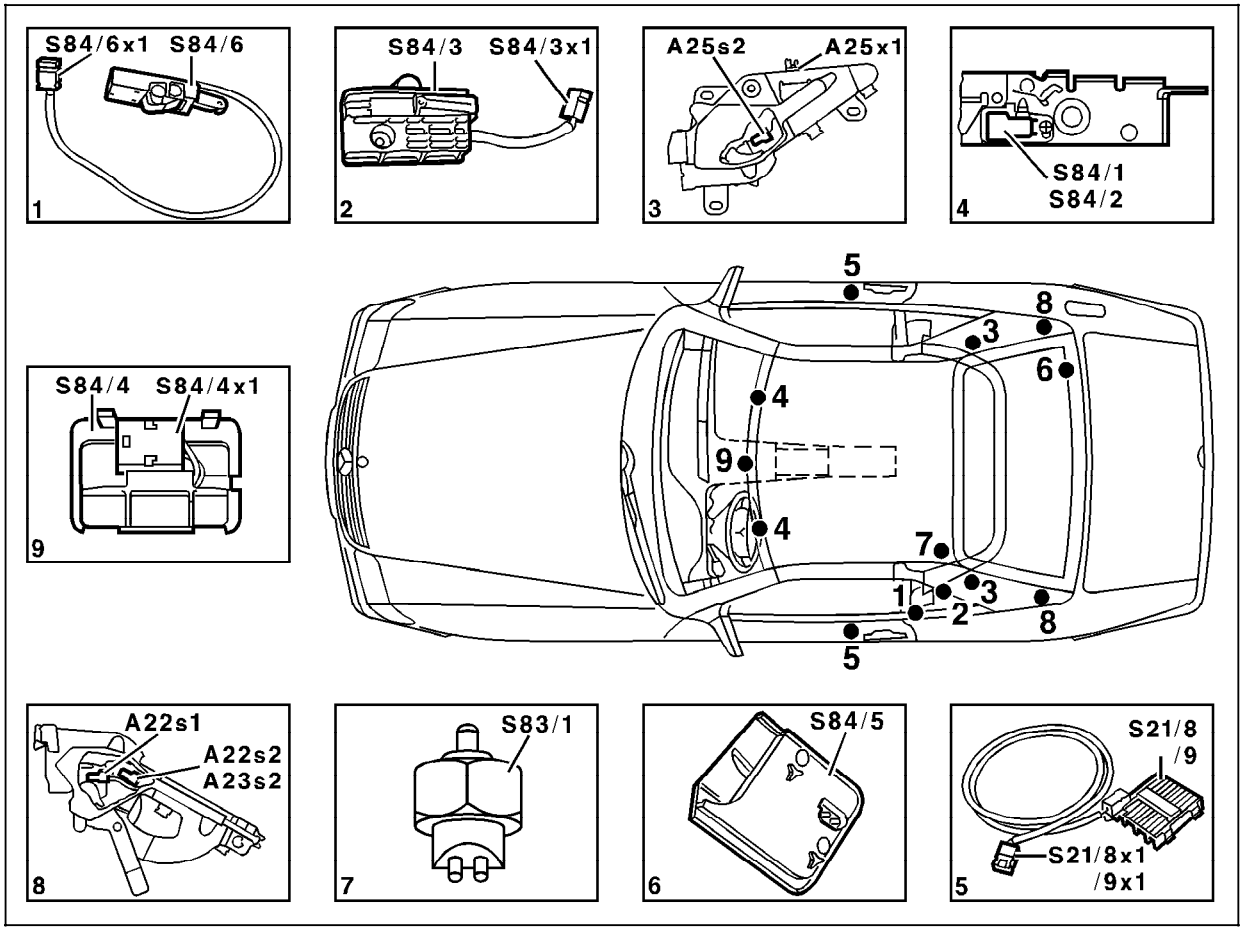
Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 36 [3] Right side window does not close (4 mm) when closing right door	Window not synchronized (electric base setting). Right door switch group, rotary tumbler microswitch (S87s2). Power soft top control module (N52).	Synchronize power window motor by closing window using window switch. When window is closed, hold switch down for an additional 1 – 2 seconds. 23 ⇒ 41.0 SMS, Job No. 77-450
No. 37 [3] One or both side windows lose electric base setting	Voltage supply, power soft top control module (N52), connector X1, pin 1, pin 5, pin 8 (low voltage). Left front power window motor (M10/3) switching circuit. Right front power window motor (M10/4) switching circuit. Power soft top control module (N52).	23 ⇒ 1.0, 2.0 23 ⇒ 26.0 23 ⇒ 27.0 SMS, Job No. 77-450
No. 38 [4] Convienence feature of the side windows does not function	Left door actuator (S47), right door actuator (S48), trunk lid lock actuator (S49). ATA/CF microswitch (S86), ATA/CF microswitch (S87s1), ATA/CF microswitch (S88s1). Power soft top control module (N52).	23 ⇒ 37.0 23 ⇒ 38.0 SMS, Job No. 77-450

[1] Observe Preparation for Test, see 22.
[3] As of 12/94
[4] As of 06/97

Electrical Test Program – Component Locations

Limit switches



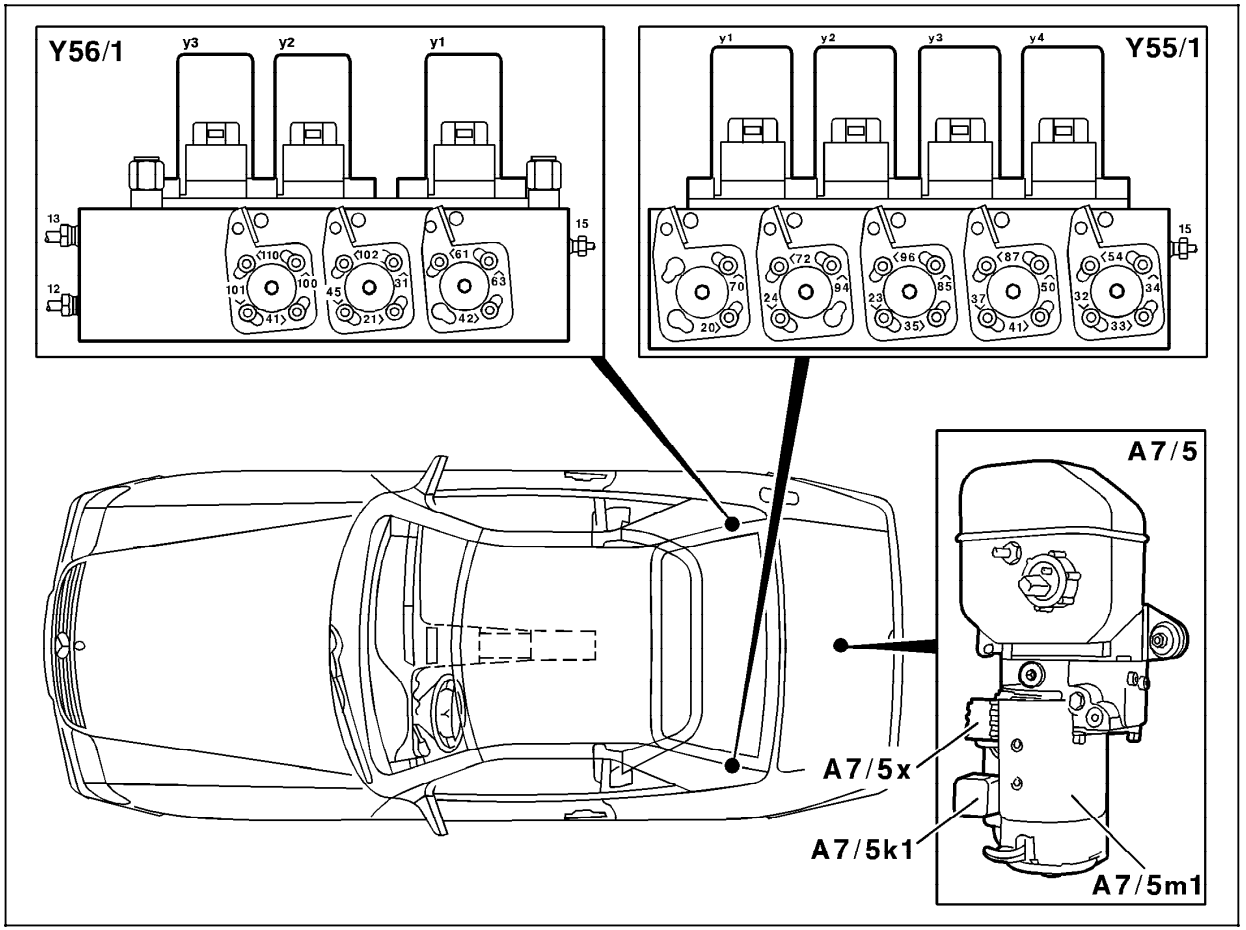
P77-5411-57

Figure 1

A22s1 (8)	Bow "closed" switch
A22s2 (8)	Bow "locked" switch
A23s2 (8)	Bow "locked" switch
A25s2 (3)	Right soft top compartment cover "locked" switch
S21/8 (5)	Right front door “window down” limit switch
S21/9 (5)	Left front door “window down” limit switch
S83/1 (7)	RB “retracted” switch
S84/1 (4)	Left front soft top “locked” switch
S84/2 (4)	Right front soft top “locked” switch
S84/3 (2)	Soft top “open” switch (soft top in storage compartment)
S84/4 (9)	Soft top “closed” switch (reed contact)
S84/5 (6)	Soft top compartment “open” switch
S84/6 (1)	Soft top fabric bow “raised” switch

Electrical Test Program – Component Locations

Electrical components



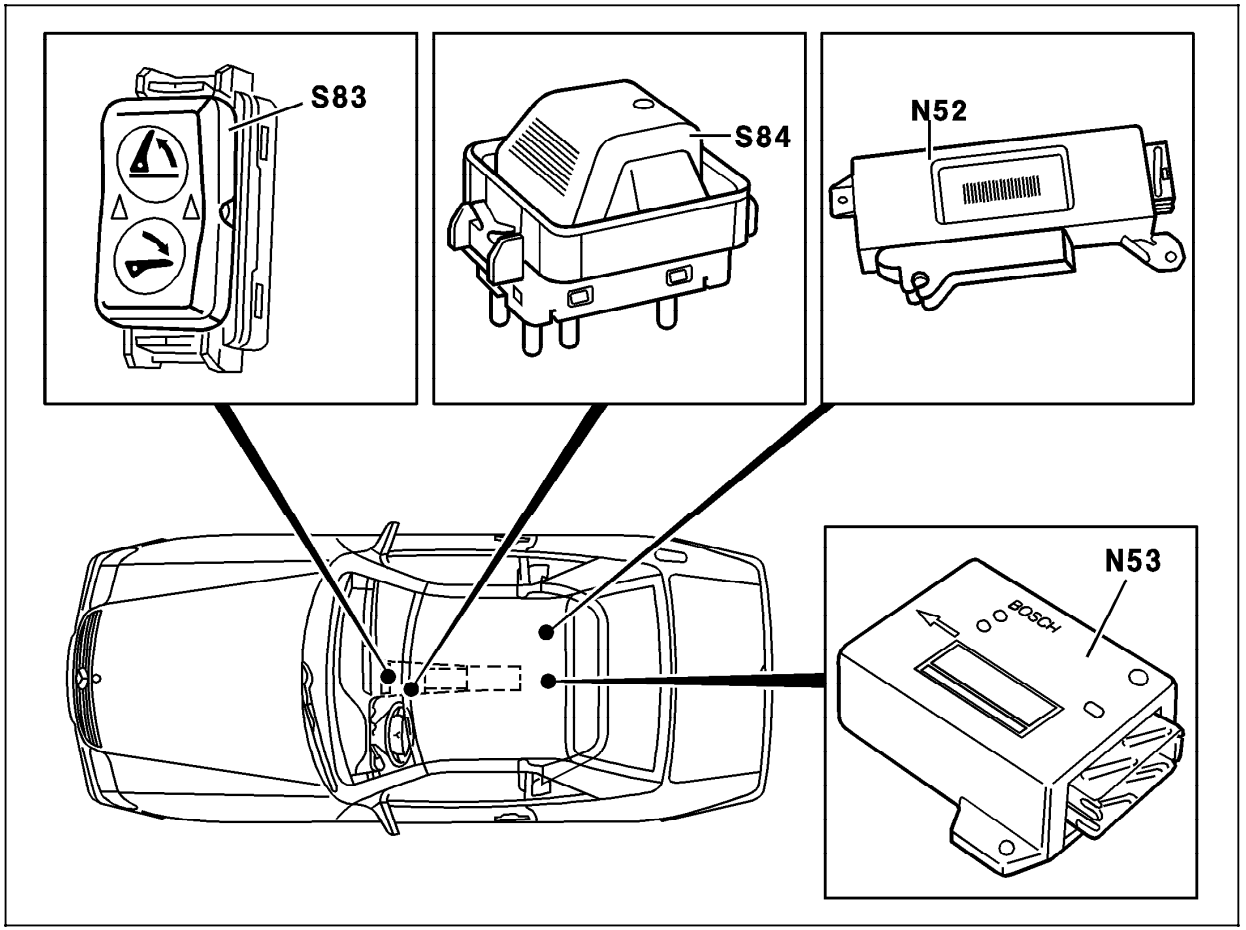
U77.39-0200-06

Figure 2

A7/5	RST/RB hydraulic unit (power soft top)
A7/5k1	Relay
A7/5m1	Motor
A7/5x1	Soft top/roll bar hydraulic unit connector
Y55/1	Left power soft top valve block (4 connections)
Y55/1y1	Soft top “closed”/fabric bow lock “open“ valve
Y55/1y2	Fabric bow “closed“ valve
Y55/1y3	Fabric bow “open“/soft top compartment cover “closed“ valve
Y55/1y4	Soft top compartment cover “open“/soft top compartment cover lock “open“ valve
Y56/1	Right power soft top valve block (3 connections)
Y56/1y1	Soft top “open“/front lock “open“ valve
Y56/1y2	RB “lower“ valve
Y56/1y3	RB “raise“ valve

Electrical Test Program – Component Locations

Electrical components



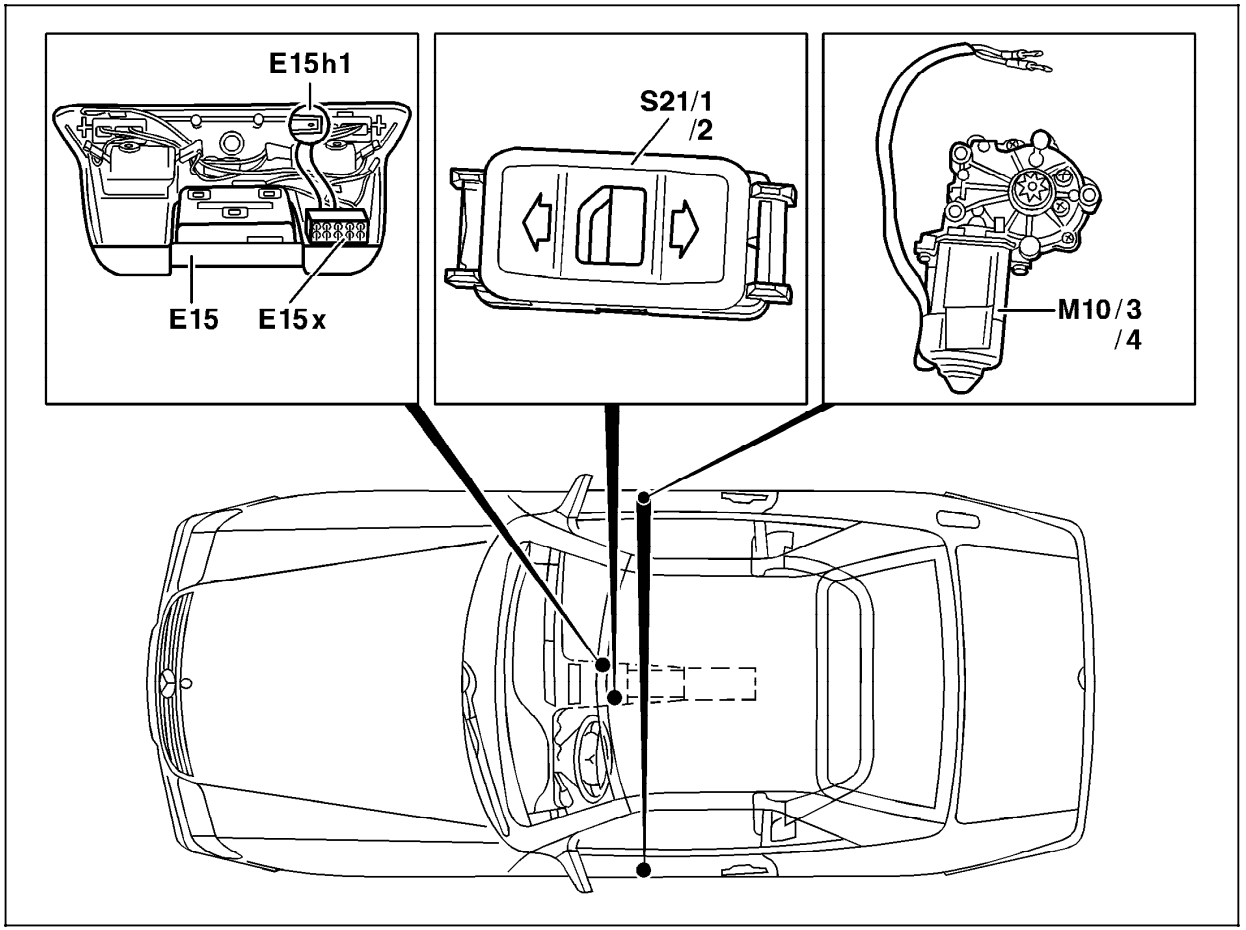
P77.39-0201-06

Figure 3

N52	Power soft top control module
N53	RB control module (crash deployment)
S83	RB switch (manual operation)
S84	Power soft top switch

Electrical Test Program – Component Locations

Electrical components



U77.39-0202-06

Figure 4

E15	Dome lamp (with shut-off delay and reading lamp)
E15h1	Warning buzzer
E15x1	Dome lamp connector (with shut-off delay and reading lamp)
M10/3	Left front power window motor
M10/4	Right front power window motor
S21/1	Left front power window switch (front center console)
S21/2	Right front power window switch (front center console)

Electrical Test Program – Preparation for Test

- Battery voltage 11 – 14 Volts **(always connect battery charger when working on the soft top)**.
- Up to 9/95 fuses F1-f6, f8, F20-f1, f2, f3, f4 and f7 in order.
- As of 9/95 fuses F1-f19, f20, F20-f1, f2, f3, f4, f7, f8 and f9 in order.
- RB control module **must** release soft top for operation (indicator lamp in RB switch should not blink).
  If soft top does not release, see impulse counter DTC 9 or HHT 144.

Note regarding limit switch testing. Control module in diagnostic mode:

1. Ignition: **OFF**
2. Bridge sockets 1 and 3 of connector (X11/12) in passenger footwell see 23, Figure 1 (only necessary when testing with socket box).
3. Ignition: **ON**
4. Remove bridge.

⚠ IMPORTANT NOTE

The power soft top control module has 2 different connection possibilities. Therefore, a separation in the section “Test“ is necessary.

Connect socket box according to connection diagram X1 (22, Figure 1):
X1 .
Connect socket box according to connection diagram X2 (22, Figure 2):
X2 .

Electrical wiring diagrams

See Electrical Troubleshooting Manual, Model 129, Volume 2.

Note regarding Testing with the HHT:

Actual values:
OPEN corresponds to **11 – 14 V.**
CLOSE corresponds to **0 – 1 V.**

⚠

As of 9/95

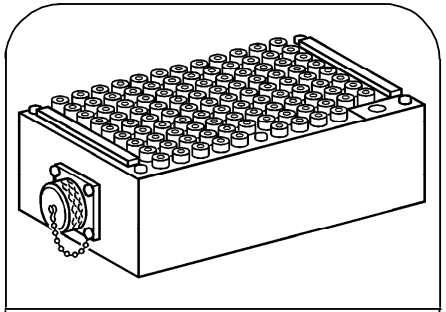
- **The RB control module (N53) is integrated into the power soft top control module (N52).**
- **The hardtop locks front and rear simultaneously.**
- **The DTC memory can only be read and erased with the HHT.**

⚠ Danger of injury

When disconnecting the connector on the power soft top control module (N52) or when changing the position of control module N52, the roll bar is deployed!

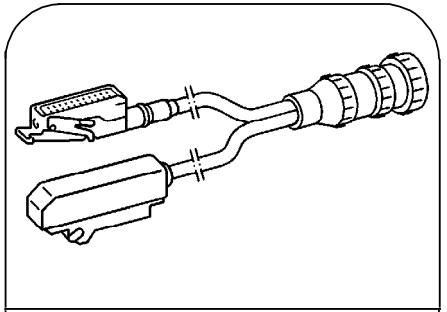
Electrical Test Program – Preparation for Test

Special Tools



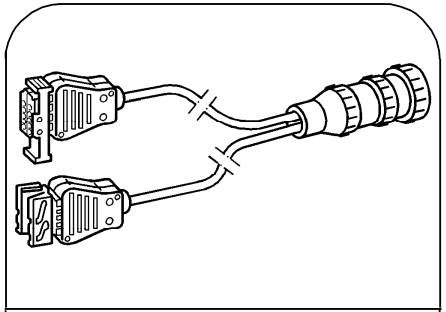
129 589 00 21 00

126-pin socket box



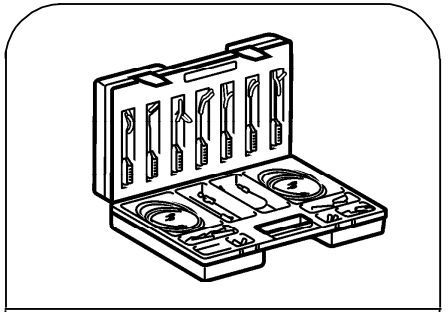
104 589 00 63 00

Test cable



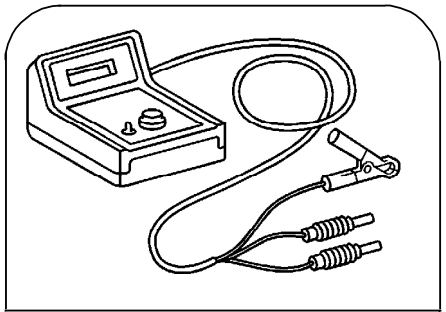
129 589 01 63 00

12-pin test cable



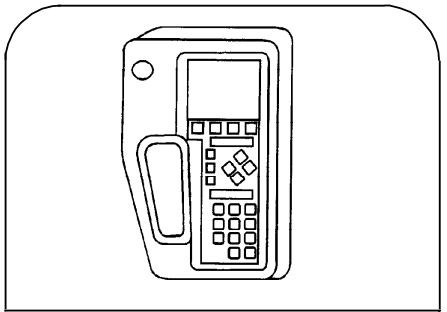
201 589 00 99 00

Electrical connecting set



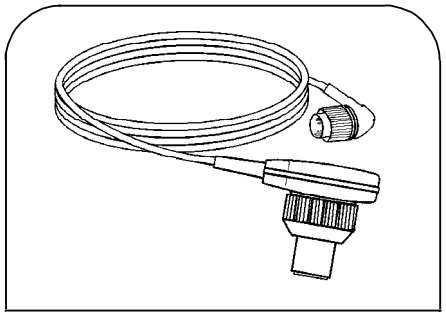
124 589 19 21 00

Pulse counter



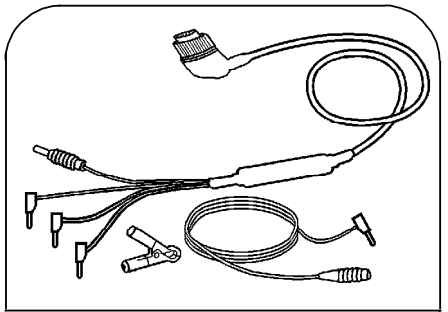
965 589 00 01 00

Hand-Held-Teste



965 589 00 40 00

Test cable



965 589 00 50 00

Adapter cable

Conventional tools, test equipment

Description	Brand, model, etc.
Multimeter 1)	Fluke models 23, 83, 85, 87
Battery charger 1)	Local supply

1) Available through the MBUSA Standard Equipment Program.

Electrical Test Program – Preparation for Test

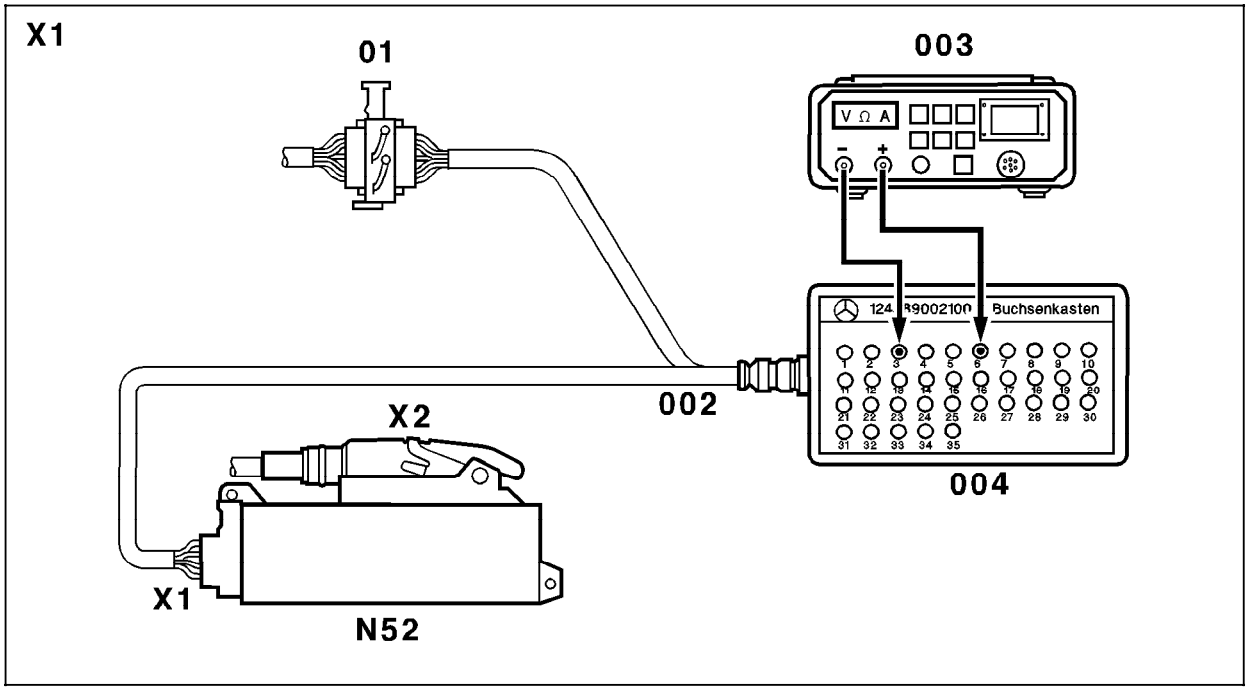
⚠

Ignition: **OFF**

Disconnect connector X1 from control module

Connect socket box

Connection Diagram -
Socket Box to Connector (X1)



P77-5409-55

Figure 1

01	Connector, 12-pole (vehicle wiring harness)
002	Test cable, 12-pole 129 589 01 63 00
003	Digital multimeter
004	Socket box (35-pole)
N52	Soft top control module

Electrical Test Program – Preparation for Test

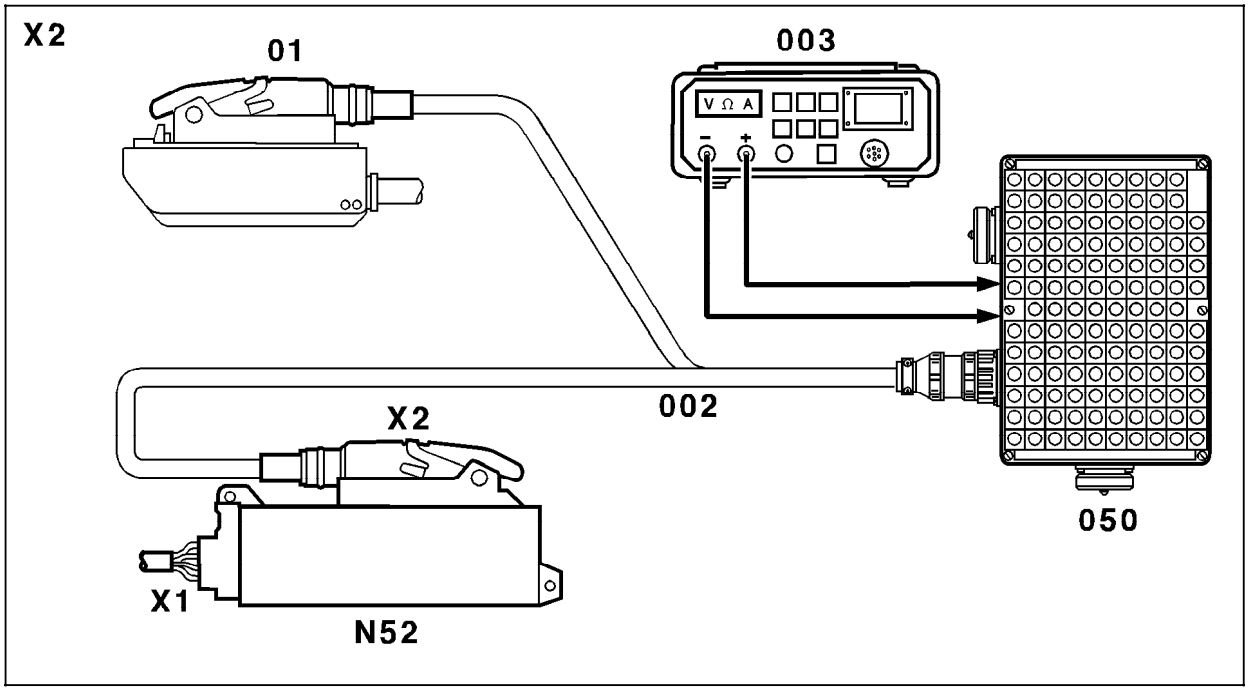
⚠

Ignition: **OFF**

Disconnect connector X2 from control module

Connect socket box

Connection Diagram -
Socket Box to Connector (X2)



P77-5408-55

Figure 2

01	Connector, 35-pole (vehicle wiring harness)
002	Test cable, 55-pole 104 589 00 63 00
003	Digital multimeter
004	Socket box (126-pole)
N52	Soft top control module

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	2 032 127	**Voltage supply** **Circuit 30**	N52 X1 4 — V — 1 11 — V — 8 7 — V — 5		11 – 14 V 11 – 14 V 11 – 14 V	Wiring.
2.0	2 032	**Voltage supply** **Circuit 15, 31 (low voltage)** Up to 9/95	N52 X1 4 — V — 2	Ignition: **ON**	11 – 14 V	Wiring, ⇒ 2.1
2.1	2 032	Voltage supply Circuit 31 As of 9/95	N52 X2 47 — V — +		11 – 14 V	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0	5 048 049 052 080	**Control signal to RST/RB hydraulic unit (A7/5)**	N52 X2 ⊥ V 54	Ignition: **ON** Move power soft top switch (S84) toward **Open** or **Close**.	0 – 1 V 11 – 14 V Hydraulic unit runs.	⇒ 18.0, N52. ⇒ 3.1, ⇒ 3.2, ⇒ 3.3, Wiring.
3.1		Activation of RST/RB hydraulic unit relay (A7/5k1)	A7/5x1 5 — V — 6	Ignition: **OFF** Unplug connector A7/5x1. Ignition: **ON** Move power soft top switch (S84) toward **Open** or **Close**.	 0 – 1 V 11 – 14 V	Power soft top switch (S84), Wiring, Power soft top control module (N52).
3.2		RST/RB hydraulic unit motor (A7/5m1) Voltage supply	A7/5x1 1 — V — 4	Unplug connector A7/5x1.	11 – 14 V	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.3		RST/RB hydraulic unit motor (A7/5m1)	A7/5x1 1 — Ω — 4	Unplug connector A7/5x1. Remove relay A7/5k1. Bridge sockets 1 and 3 of relay connector A7/5k1.	0.1 – 1.5 Ω	A7/5m1 (SMS, Job No. 77-350).
4.0		**Right soft top cover "locked" switch (A25s2)** Voltage supply	N52 X2 ⊥ — V — 7	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **locked** **unlocked**	 0 – 1 V 11 – 14 V	⇒ 4.1, N52.
4.1		A25s2 Resistance	N52 X2 ⊥ — Ω — 7	Ignition: **OFF** Disconnect test cable from N52. Soft top compartment cover: **locked** **unlocked**	 0 – 5 Ω >20 kΩ	A25s2 (SMS, Job No. 77-440), Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0	7 116	**Left soft top fabric bow "locked" switch (A22s2)** Voltage supply	N52 X2 ⊥ (V) 28	Power soft top control module in diagnostic mode, see 22. Fabric bow: **locked** **unlocked**	 0 – 1 V 11 – 14 V	⇒ 5.1, N52.
5.1		A22s2 Resistance	N52 X2 ⊥ (Ω) 28	Ignition: **OFF** Disconnect test cable from N52. Fabric bow: **locked** **unlocked**	 0 – 5 Ω >20 kΩ	A22s2 (SMS, Job No. 77-445), Wiring.
6.0	7 117	**Right soft top bow "locked" switch (A23s2)** Voltage supply	N52 X2 ⊥ (V) 45	Power soft top control module in diagnostic mode, see 22. Fabric bow: **locked** **unlocked**	 0 – 1 V 11 – 14 V	⇒ 6.1, N52.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		A23s2 Resistance	N52 X2 ⊥ Ω + — 45	Ignition: **OFF** Disconnect test cable from N52. Fabric bow: **locked** **unlocked**	 0 – 5 Ω >20 kΩ	A23s2 (SMS, Job No. 77-445), Wiring.
7.0	7 118	**Left soft top bow "closed" switch (A22s1)** Voltage supply	N52 X2 ⊥ V + — 8	Power soft top control module in diagnostic mode, see 22. Fabric bow: **closed** **raised**	 0 – 1 V 11 – 14 V	⇒ 7.1, N52.
7.1		A22s1 Resistance	N52 X2 ⊥ Ω + — 8	Ignition: **OFF** Disconnect test cable from N52. Fabric bow: **closed** **raised**	 0 – 5 Ω >20 kΩ	Wiring, A22s1 (SMS, Job No. 77-445), A/C pushbutton control module (N22),

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0	7 112	**Left front soft top "locked" switch (S84/1)** Voltage supply	N51 ⊥ V N52 X2 30	Power soft top control module in diagnostic mode, see 22. Soft top: **locked in front** **unlocked in front**	 0 – 1 V 11 – 14 V	⇒ 8.1, N52.
8.1		S84/1 Resistance	N52 X2 ⊥ Ω 30	Ignition: **OFF** Disconnect test cable from N52. Soft top: **locked in front** **unlocked in front**	 0 – 5 Ω >20 kΩ	S84/1 (SMS, Job No. 77-330), Wiring.
9.0	7 113	**Right front soft top "locked" switch (S84/2)** Voltage supply	N52 X2 ⊥ V 11	Power soft top control module in diagnostic mode, see 22. Soft top: **locked in front** **unlocked in front**	 0 – 1 V 11 – 14 V	⇒ 9.1, N52.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.1		S84/2 Resistance	N52 X2 ⊥ Ω +) 11	Ignition: **OFF** Disconnect test cable from N52. Soft top: **locked in front** **unlocked in front**	 0 – 5 Ω >20 kΩ	S84/2 (SMS, Job No. 77-330), Wiring.
10.0	7 120	**Soft top compartment “open“ switch (S84/5)** Voltage supply	N52 X2 ⊥ V +) 26	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **open** **closed**	 0 – 1 V 11 – 14 V	⇒ 10.1, N52.
10.1		S84/5 Resistance	N52 X2 ⊥ Ω +) 26	Ignition: **OFF** Disconnect test cable from N52. Soft top compartment cover: **open** **closed**	 0 – 5 Ω >20 kΩ	S84/5 (SMS, Job No. 77-405), Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0	7 119	**Soft top fabric bow "raised" switch (S84/6)** Voltage supply	N52 X2 ⊥ (V) 44	Power soft top control module in diagnostic mode, see 22. Fabric bow: **raised** **lowered, locked**	 0 – 1 V 11 – 14 V	⇒ 11.1, N52.
11.1		S84/6 Resistance	N52 X2 ⊥ (Ω) 44	Ignition: **OFF** Disconnect test cable from N52. Fabric bow: **raised** **lowered**	 0 – 5 Ω >20 kΩ	Wiring, S84/6 (SMS, Job No. 77-435).
12.0	7 115	**Soft top "open" switch (soft top in compartment) (S84/3)** Voltage supply	N52 X2 ⊥ (V) 46	Power soft top control module in diagnostic mode, see 22. Soft top: **in compartment** **raised**	 0 – 1 V 11 – 14 V	⇒ 12.1, N52.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.1		S84/3 Resistance	N52 X2 ⊥ Ω + — 46	Ignition: **OFF** Disconnect test cable from N52. Soft top: **in compartment** **raised**	 0 – 5 Ω >20 kΩ	Wiring, S84/3 (SMS, Job No. 77-425).
13.0	7 114	**Soft top "closed" switch (S84/4)** Voltage supply	N52 X2 ⊥ V + — 29	Power soft top control module in diagnostic mode, see 22. Soft top: **closed** **in compartment**	 0 – 1 V 10 – 12 V	⇒ 13.1, N52.
13.1		S84/4 Resistance	N52 X2 ⊥ Ω + — 29	Ignition: **OFF** Disconnect test cable from N52. Soft top: **closed** **in compartment**	 Approx. 33 Ω >20 kΩ	S84/4, Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0	7 122 146	**RB "retracted" switch (S83/1)** Voltage supply	N52 X2 ⊥ (V) 4	Power soft top control module in diagnostic mode, see 22. Roll bar: **lowered** **raised**	 0 – 1 V 11 – 14 V	⇒ 14.1, N52.
14.1		S83/1 Resistance	N52 X2 ⊥ (Ω) 4	Ignition: **OFF** Disconnect test cable from N52. Roll bar: **lowered** **raised**	 0 – 5 Ω >20 kΩ	Wiring, S83/1 (SMS, Job No. 77-400).
15.0	6 125	**Left front window "down" limit switch (S21/9)** 1) Voltage supply	N52 X2 ⊥ (V) 23	Ignition: **ON** Left front window: **down** **up**	 0 – 1 V 11 – 14 V	⇒ 15.1, N52.

1) Up to 12/94

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.1		S21/9 Resistance	N52 X2 ⊥ Ω + – 23	Ignition: **OFF** Disconnect test cable from N52. Left front window: **down** **up**	 0 – 5 Ω >20 kΩ	Wiring, S21/9.
16.0	6 126	**Right front door "window down" limit switch (S21/8)** 1) Voltage supply	N52 X2 ⊥ V + – 40	Ignition: **ON** Right front window: **down** **up**	 0 – 1 V 11 – 14 V	⇒ 16.1, N52.
16.1		S21/8 Resistance	N52 X2 ⊥ Ω + – 40	Ignition: **OFF** Disconnect test cable from N52. Right front window: **down** **up**	 0 – 5 Ω >20 kΩ	Wiring, S21/8.

1) Up to 12/94

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
17.0	9 144	**RB control module (N53)** Voltage supply up to 9/95	N52 X2 ⊥ –(V)+ 9	Ignition: **ON**	> 2.4 V	Wiring, Fault in RB system (DM, Body & Access., Vol. 5, section 19.2), N53 (SMS, Job No. 91-840).
			N52 X2 ⊥ –(V)+ 47		> 2.4 V	
18.0	10 160	**Power soft top switch (S84)** Voltage supply	N52 X2 ⊥ –(V)+ 39	Ignition: **ON** Press S84 towards **close**	11 – 14 V 0 – 1 V	⇒ 18.1, N52.
			N52 X2 ⊥ –(V)+ 22	Ignition: **ON** Press S84 towards **open**	11 – 14 V 0 – 1 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.1		S84 Resistance	N52 X2 ⊥ Ω – + 39	Disconnect test cable from N52. S84 in rest position Press S84 towards **close**	 >20 kΩ 0 – 5 Ω	Wiring, ⇒ 18.2, S84.
18.2		S84 Resistance	N52 X2 ⊥ Ω – + 22	S84 in rest position Press S84 towards **open**	>20 kΩ 0 – 5 Ω	Wiring, S84.
19.0	10 16	**RB switch (manual operation) (S83)** Voltage supply	N52 X2 ⊥ V – + 3 N52 X2 ⊥ V – + 38	Ignition: **ON** Press S83 towards **raise** Ignition: **ON** Press S83 towards **lower**	11 – 14 V 0 – 1 V 11 – 14 V 0 – 1 V	⇒ 19.1, Wiring, N52.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
19.1		S83 Resistance	N52 X2 ⊥ Ω+ – 3	Disconnect test cable from N52. S83 in rest position Press S83 towards **raise**	 >20 kΩ 0 – 5 Ω	Wiring, S83.
			N52 X2 ⊥ Ω+ – 38	S83 in rest position Press S83 towards **lower**	>20 kΩ 0 – 5 Ω	
20.0	B 097	**Left front power window motor (M10/3)** Voltage supply control module	N52 X1 7 – V+ – 5	Ignition: **OFF**	11 – 14 V	Wiring.
21.0	B 096	**Right front power window motor (M10/4)** Voltage supply control module	N52 X1 11 – V+ – 8	Ignition: **OFF**	11 – 14 V	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
22.0	4 064 065	**VSS**	N52 X2 ⊥ –(V)+) 27	Ignition: **ON** Rotate left front wheel (approx. 1 rev./sec.)	2.5 – 4.0 V	Wiring, N30, N30/1, N47/1 or N47/2, N52.
23.0	4 064 065	**VSS signal status**	N52 X2 ⊥ –(f)+) 10	Drive vehicle: < 5 mph > 5 mph	 3.125 Hz 25.00 Hz	Wiring, N30, N30/1, N47/1 or N47/2.
24.0	6 097	**Left front power window switch (S21/1)** Voltage supply	N52 –(V)+ X2 ⊥) 21 N52 X2 ⊥ –(V)+) 20	Ignition: **ON**	 11 – 14 V 11 – 14 V	Wiring, ⇒ 24.1, N52.
24.1		S21/1 close, Lower limit stop control Resistance	N52 X2 ⊥ –(Ω)+) 21	Ignition: **OFF** Disconnect test cable from N52. Push switch (S21/1) back to second detent and then forward.	>20 kΩ 0 – 1 Ω	Wiring, ⇒ 24.2, S21/1.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.2		S21/1 open, Resistance	N52 X2 ⊥ Ω 20	Ignition: **OFF** Disconnect test cable from N52. Push switch (S21/1) back to first and second detent.	>20 kΩ 0 – 1 Ω	Wiring, S21/1.
25.0	6 096	**Right front power window switch (S21/2)** Voltage supply	N52 X2 ⊥ V 2 N52 X2 ⊥ V 1	Ignition: **ON**	11 – 14 V	Wiring, ⇒ 25.1, N52.
25.1		S21/2 close, Lower limit stop control Resistance	N52 X2 ⊥ Ω 2	Ignition: **OFF** Disconnect test cable from N52. Push switch (S21/2) back to second detent and then forward.	>20 kΩ 0 – 1 Ω	Wiring, ⇒ 25.2, S21/2.
25.2		S21/2 open, Resistance	N52 X2 ⊥ Ω 1	Ignition: **OFF** Disconnect test cable from N52. Push switch (S21/2) back to first and second detent.	>20 kΩ 0 – 1 Ω	Wiring, S21/2.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
26.0	6 097	**Left front power window motor (M10/3)** Voltage supply to motor	N52 X1 6 — (V) — 3	Ignition: **ON** Switch (S21/1) in: **rest position**	0 – 1 V	Wiring, ⇒ 26.1, N52.
				open	11 – 14 V	
			N52 X1 3 — (V) — 6	**close**	11 – 14 V	
26.1		M10/3 Resistance	N52 X1 3 — (Ω) — 6	Ignition: **OFF** Disconnect test cable from N52.	0.5 – 2.0 Ω	Wiring, ⇒ 26.2, M10/3 (SMS, Job No. 82-600).
			N52 X1 4 — (Ω) — 6		>20 kΩ	
26.2		M10/3 Switch circuit [2)]	N52 X2 50 — (V) — 52	Ignition: **ON**	11 – 14 V	Wiring, ⇒ 26.3, N52.

2) As of 12/94.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
26.3		M10/3 Switch circuit session [2)]	M10/3x2 — N52 X2 2 — Ω — 14 M10/3x2 — N52 X2 3 — Ω — 15	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/3x2 from M10/3.	< 1 Ω < 1 Ω	Wiring, ⇒ 26.4.
26.4		M10/3 Switch circuit [2)] Short to circuit 31	N52 X2 ⊥ — Ω — 14 ⊥ — Ω — 15	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/3x2 from M10/3.	>20 kΩ >20 kΩ	Wiring, ⇒ 26.5.
26.5		M10/3 Switch circuit [2)] Short	N52 X2 15 — Ω — 14 50 — Ω — 14 52 — Ω — 14 50 — Ω — 15 52 — Ω — 15	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/3x2 from M10/3.	>20 kΩ >20 kΩ >20 kΩ >20 kΩ >20 kΩ	Wiring.

[2)] As of 12/94.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
27.0	6 096	**Right front power window motor (M10/4)** Voltage supply to motor	N52 X1 10 — (V) — 9 9 — 10	Ignition: **ON** Switch (S21/2) in: **rest position** **open** **close**	 0 – 1 V 11 – 14 V 11 – 14 V	Wiring, ⇒ 27.1, N52.
27.1		M10/4 Resistance	N52 X1 9 — (Ω) — 10 4 — (Ω) — 10	Ignition: **OFF** Disconnect test cable from N52.	 0.5 – 2.0 Ω >20 kΩ	Wiring, ⇒ 27.2, M10/4 (SMS, Job No. 82-600).
27.2		M10/4 Switch circuit [2]	N52 X2 51 — (V) — 53	Ignition: **ON**	10 – 14 V	Wiring, ⇒ 27.3, N52.

[2] As of 12/94.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
27.3		M10/4 Switch circuit session [2]	M10/4x2 — N52 X2 2 — Ω — 33 M10/4x2 — N52 X2 3 — Ω — 34	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/4x2 from M10/4.	< 1 Ω < 1 Ω	Wiring, ⇒ 27.4.
27.4		M10/4 Switch circuit [2] Short to circuit 31	N52 X2 ⊥ — Ω — 33 ⊥ — Ω — 34	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/4x2 from M10/4.	>20 kΩ >20 kΩ	Wiring, ⇒ 27.5.
27.5		M10/4 Switch circuit [2] Short	N52 X2 34 — Ω — 33 51 — Ω — 33 53 — Ω — 33 51 — Ω — 34 53 — Ω — 34	Ignition: **OFF** Disconnect test cable from N52. Disconnect M10/4x2 from M10/4.	>20 kΩ >20 kΩ >20 kΩ >20 kΩ >20 kΩ	Wiring.

[2] As of 12/94.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
28.0	11 176	**Power soft top switch indicator lamp (S84)**	–	Ignition: **ON**	Indicator lamp in S84 momentarily illuminates.	Wiring, S84, N52.
29.0		**Left power soft top valve block, soft top compartment cover "open"/soft top compartment cover lock "open" valve (Y55/1y4)** Voltage supply	N52 X2 ⊥ – (V) + 37	Ignition: **OFF** Operate soft top compartment cover by pressing switch (S84): **unlock, open** **close, lock**	 11 – 14 V 0 – 1 V	⇒ 29.1, Wiring, N52.
29.1		Y55/1y4 Resistance	N52 X2 ⊥ – (Ω) + 37	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y55/1y4. **Nominal values are okay:** Check Y55/1y4 for mechanical binding.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
30.0		**Right power soft top valve block, soft top "open"/front lock "open" valve (Y56/1y1)** Voltage supply	N52 X2 ⊥ V 19	Ignition: **ON** Operate soft top by pressing switch (S84): **unlock front** **close, lock front**	 11 – 14 V 0 – 1 V	⇒ 30.1, Wiring, N52.
30.1		Y56/1y1 Resistance	N52 X2 ⊥ Ω 19	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y56/1y1. **Nominal values are okay:** Check Y56/1y1 for mechanical binding.
31.0		**Left power soft top valve block, soft top "closed" /fabric bow lock "closed" valve (Y55/1y1)** Voltage supply	N52 X2 ⊥ V 36	Ignition: **ON** Operate soft top by pressing switch (S84): **close** **open** Operate rear locks using switch (S84) to: **unlock** **lock**	 11 – 14 V 0 – 1 V 11 – 14 V 0 – 1 V	⇒ 31.1, Wiring, N52.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
31.1		Y55/1y1 Resistance	N52 X2 ⊥ Ω ⟩— 36	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y55/1y1. **Nominal values are okay:** Check Y55/1y1 for mechanical binding.
32.0		**Left power soft top valve block, fabric bow "open" /soft top compartment cover"closed" valve (Y55/1y3)** Voltage supply	N52 X2 ⊥ V ⟩— 18	Ignition: **ON** Operate fabric bow by pressing switch (S84): **raise** **lower** Operate soft top compartment cover using switch (S84) to: **close** **open**	 11 – 14 V 0 – 1 V 11 – 14 V 0 – 1 V	⇒ 32.1, Wiring, N52.
32.1		Y55/1y3 Resistance	N52 X2 ⊥ Ω ⟩— 18	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y55/1y3. **Nominal values are okay:** Check Y55/1y3 for mechanical binding.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
33.0		**Left power soft top valve block, fabric bow "closed" valve (Y55/1y2)** Voltage supply	N52 X2 ⊥ (V) 55	Ignition: **ON** Operate fabric bow by pressing switch (S84): **lower** **raise**	 11 – 14 V 0 – 1 V	⇒ 33.1, Wiring, N52.
33.1		Y55/1y2 Resistance	N52 X2 ⊥ (Ω) 55	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y55/1y2. **Nominal values are okay:** Check Y55/1y2 for mechanical binding.
34.0		**Right power soft top valve block, RB "lower" valve (Y56/1y2)** Voltage supply	N52 X2 ⊥ (V) 54	Ignition: **ON** Operate soft top switch (S84) or RB switch (S83)	0 – 1 V 11 – 14 V	⇒ 34.1, Wiring, N52.
34.1		Y56/1y2 Resistance	N52 X2 ⊥ (Ω) 54	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y56/1y2.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
35.0		**Right power soft top valve block, RB "raise" valve (Y56/1y3)** Voltage supply	N52 X2 ⊥ (V) ⟩— 17	Ignition: **ON** Operate roll bar by pressing switch (S84) or switch (S83): **raise** **lower**	 11 – 14 V 0 – 1 V	⇒ 35.1, Wiring, N52.
35.1		Y56/1y3 Resistance	N52 X2 ⊥ (Ω) ⟩— 17	Disconnect test cable from N52.	5 – 15 Ω	Wiring, Y56/1y3. **Nominal values are okay:** Check Y56/1y3 for mechanical binding.
36.0	048 049 051	**RST/RB hydraulic unit, overload protection thermocouple (A7/5b1)** Pump temperature signal	N52 X2 49 —((Ω) ⟩— 48	Ignition: **OFF** Disconnect test cable from N52. Pump temperature: 25 °C Pump temperature: 85 °C Pump temperature: 120 °C	 220 kΩ 25 kΩ 10 kΩ	A7/5.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
37.0	124	**Left door actuator (S47),right door actuator (S48), trunk lid lock actuator (S49)** Up to 9/95	N52 X2 6 — (V) — ⊥ ⊥ — (V) — 6	Disconnect ATA control module (N26). Lock/unlock vehicle via central locking: **locked** **unlocked**	 < 1V 11 – 14 V	S47, S48, S49, CL/vacuum supply pump (M14/1), Wiring.
37.1		Left door actuator (S47),right door actuator (S48), trunk lid lock actuator (S49) As of 9/95	N52 X2 31 — (V) — ⊥ ⊥ — (V) — 31	Disconnect ATA control module (N26). Lock/unlock vehicle via central locking: **locked** **unlocked**	 < 1V 11 – 14 V	S47, S48, S49, CL/vacuum supply pump (M14/1), Wiring.
38.0	123	**Left door switch group (S86), right door ATA/CF microswitch (S87s1), trunk lid ATA/CF microswitch (S88s1)** Up to end of Model Year 1995	N52 X2 ⊥ — (V) — 31	Ignition: **OFF** Switches (S86, S87s1 and S88s1) in: **rest position** S86: **locked** S87s1: **locked** S88s1: **locked**	 11 – 14 V 0 – 1 V 0 – 1 V 0 – 1 V	⇒ 38.1, Wiring, M14/1, N52, N26, RCL control module (N54).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
38.1		S86, S87s1, S88s1 Up to end of Model Year 1995	N52 X2 ⊥ Ω + 31	Ignition: **OFF** Remove N52 from socket box. Disconnect connectors from M14/1, N26 and N54. Switches (S86, S87s1 and S88s1) in: **rest position** S86: **locked** S87s1: **locked** S88s1: **locked**	 > 20 kΩ < 10 Ω < 10 Ω < 10 Ω	Wiring, S86, S87s1, S88s1.
38.2	123	Lock switch signal from RCL control module (N54) As of start of Model Year 1996	N52 X2 + 6	Ignition: **OFF** Operate central locking system with infrared remote control or master key Lock and hold Unlock and hold	 11 – 14 V 11 – 14 V	Wiring, RCL control module (N54), Pneumatic supply pump (M14/1), N52, ATA control module (N26)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
39.0	11 178	**Warning buzzer (E15h1) in dome lamp (E15)**		Drive vehicle with soft top or hard top closed, fabric bow unlocked.	Warning buzzer sounds	Wiring, E15h1, N52.
40.0		**Left front door, rotary tumbler microswitch (S86s2)** only with short-stroke power window control	N52 X2 ⊥ V — 23	Ignition: **ON** Left door open close	 0 – 1 V 11 – 14 V	Wiring, S86s2, N52.
41.0		**Right front door switch group, rotary tumbler microswitch (S87s2)** only with short-stroke power window control	N52 X2 ⊥ V — 40	Ignition: **ON** Right door open close	 0 – 1 V 11 – 14 V	Wiring, S87s2, N52.
42.0	177	**RB switch (S83)** Warning lamp Voltage supply	N52 X2 24 — V — +	Ignition: **ON**	11 – 14 V Measurable for approx. 1 second	Wiring, N52.

Electrical Test Program – Test

Electrical connector locations

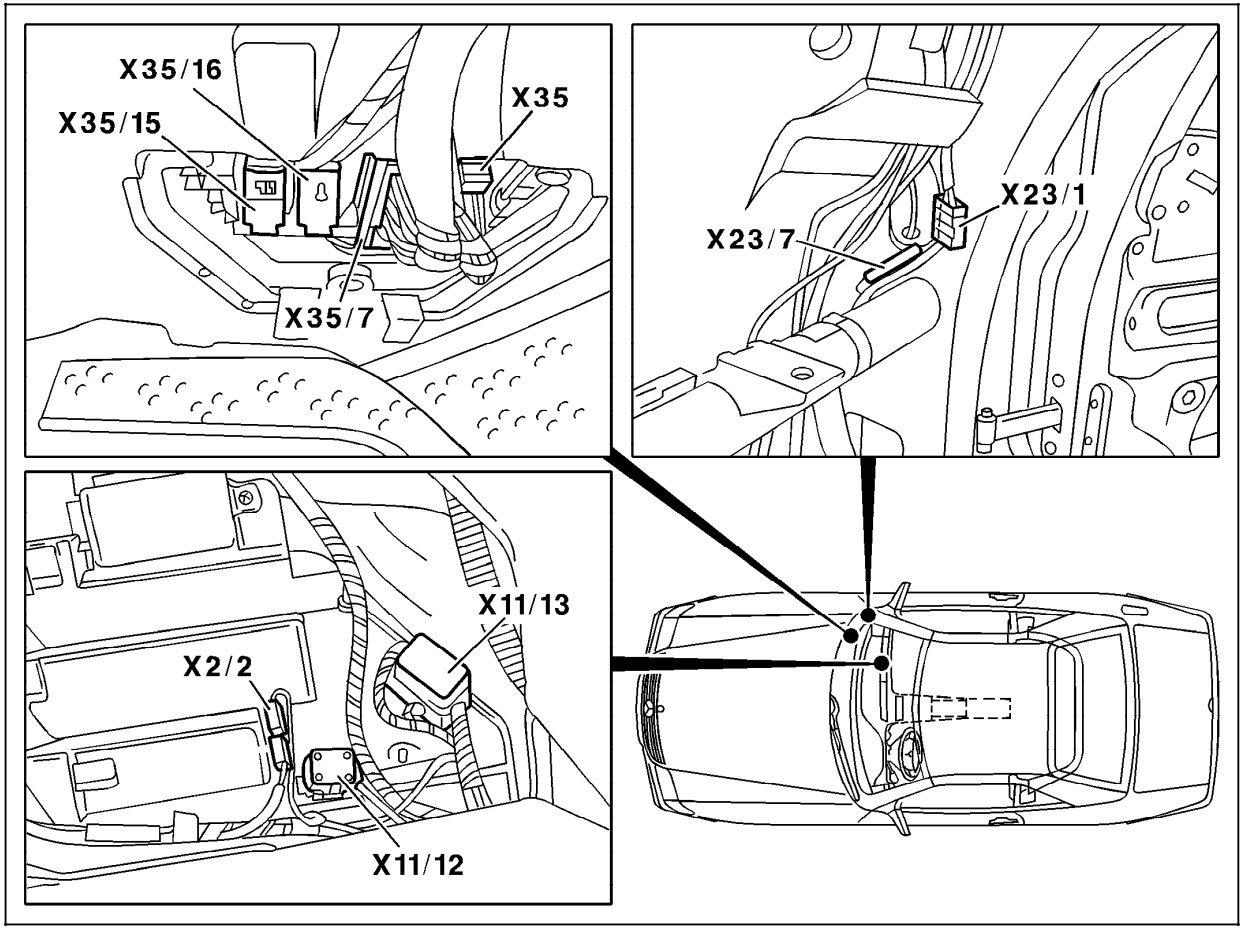


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Figure 1

X2/2	VSS connector (radio) (2-pole)
X11/12	Power soft top test connector (4-pole)
X23/1	Soft top/front locks connector (3-pole)
X23/7	Soft top connector (reed contact switch)
X35	Cockpit/module box separation point (12-pole)
X35/7	Cockpit/module box separation point (18-pole)
X35/15	Module box/taillamp harness separation point
X35/16	Module box/taillamp harness separationpoint (6-pole)

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational sequence, opening soft top

Limit switches engaged When testing with HHT **Open** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Soft top compartment cover		Soft top			Fabric bow			Roll bar
	locked	up	locked	closed	up	locked	closed	raised	lowered
	A25s2	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1	S84/6	S83/1
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2) **Control module in diagnostic mode 22**	X2 ⊥ 7	X2 ⊥ 26	X2 ⊥ 30 ⊥ 11	X2 ⊥ 29	X2 ⊥ 46	X2 ⊥ 28 ⊥ 45	X2 ⊥ 8	X2 ⊥ 44	X2 ⊥ 4
Roll bar retracted, side windows down	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
Fabric bow unlocked	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	0–1 V
Fabric bow raised	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top compartment cover unlocked	**11–14 V**	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top compartment cover open	**11–14 V**	0–1 V	0–1 V	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top unlocked in front	**11–14 V**	0–1 V	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top open	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top retracted into soft top compartment	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top compartment cover locked	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
Roll bar up, side windows up	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational sequence, opening soft top

Limit switches engaged When testing with HHT **Open** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Soft top compartment cover		Soft top			Fabric bow			Roll bar
	locked	up	locked	closed	open	locked	closed	raised	lowered
	A25s2	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1	S84/6	S83/1
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2) **Control module in diagnostic mode 22**	X2 ⊥ 7	X2 ⊥ 26	X2 ⊥ 30 ⊥ 11	X2 ⊥ 29	X2 ⊥ 46	X2 ⊥ 28 ⊥ 45	X2 ⊥ 8	X2 ⊥ 44	X2 ⊥ 4
Roll bar retracted, side windows down	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
Soft top compartment cover unlocked	**11–14 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
Soft top compartment cover open	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top out of soft top compartment	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top closed (differential operation)	**11–14 V**	0–1 V	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top locked in front	**11–14 V**	0–1 V	0–1 V	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Soft top compartment cover locked	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V
Fabric bow closed	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	0–1 V
Fabric bow locked	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
Roll bar up, side windows up	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**

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational sequence, hardtop locking

Limit switches engaged When testing with HHT **Open** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Soft top compartment cover		Soft top			Fabric bow			Roll bar
	locked	up	locked	closed	up	locked	closed	raised	lowered
	A25s2	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1	S84/6	S83/1
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2) **Control module in diagnostic mode 22**	X2 ⊥ 7	X2 ⊥ 26	X2 ⊥ 30 ⊥ 11	X2 ⊥ 29	X2 ⊥ 46	X2 ⊥ 28 ⊥ 45	X2 ⊥ 8	X2 ⊥ 44	X2 ⊥ 4
rear	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V
front	0–1 V	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V

Operational sequence, hardtop unlocking

Limit switches engaged When testing with HHT **Open** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Soft top compartment cover		Soft top			Fabric bow			Roll bar
	locked	up	locked	closed	up	locked	closed	raised	lowered
	A25s2	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1	S84/6	S83/1
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2) **Control module in diagnostic mode 22**	X2 ⊥ 7	X2 ⊥ 26	X2 ⊥ 30 ⊥ 11	X2 ⊥ 29	X2 ⊥ 46	X2 ⊥ 28 ⊥ 45	X2 ⊥ 8	X2 ⊥ 44	X2 ⊥ 4
front	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V
rear	0–1 V	**11–14 V**	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V

Electrical Test Program – Survey of Electrical Valve Actuation

Y55/1 Left power soft top valve block (4 connections)

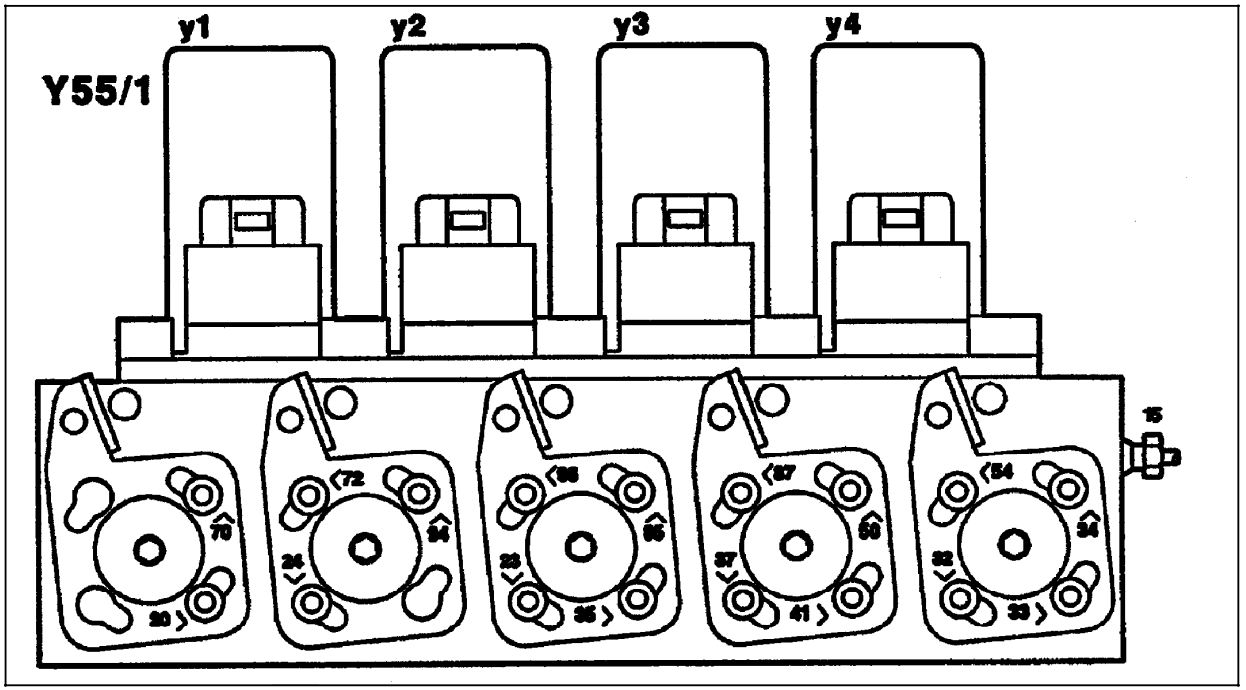

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Figure 1

y1 Soft top “closed”/ fabric bow lock “open” valve
y2 Fabric bow “closed” valve
y3 Fabric bow “open”/soft top compartment cover “closed” valve
y4 Soft top compartment cover “open”/soft top compartment cover lock “open” valve

Electrical Test Program – Survey of Electrical Valve Actuation

Y56/1 Right power soft top valve block (3 connections)

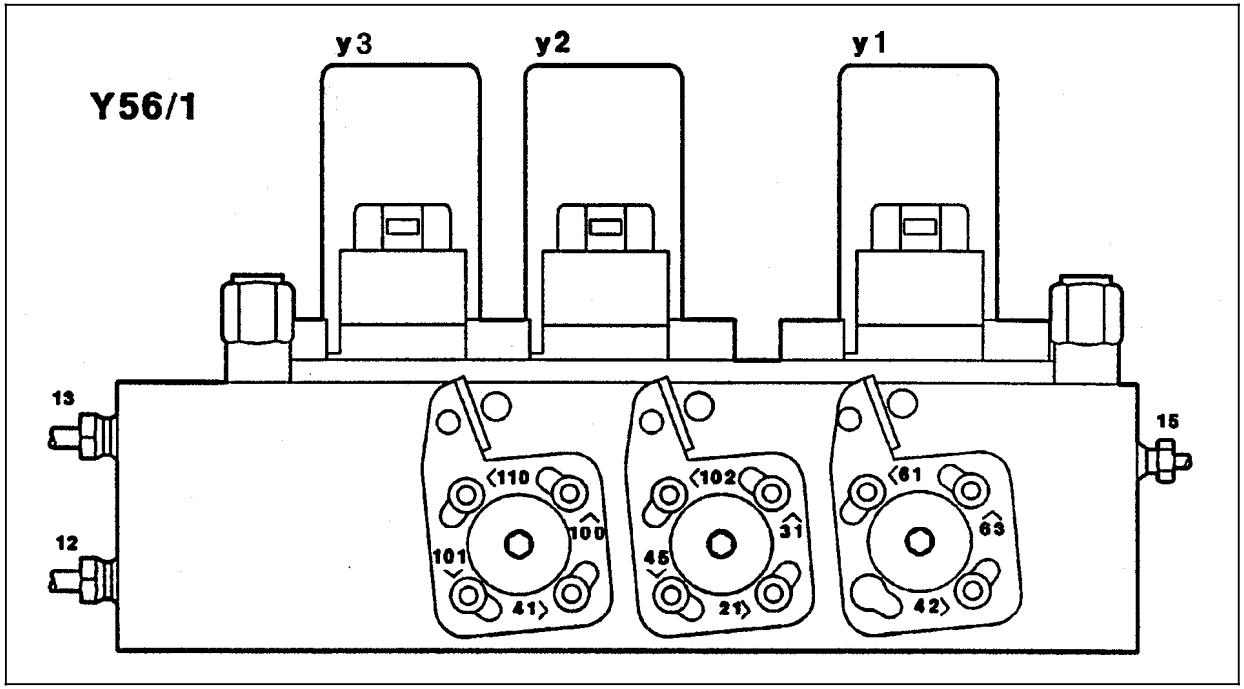

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Figure 2

y1 Soft top “open”/front lock “open” valve
y2 Roll bar “lower” valve
y3 Roll bar “raise” valve

Electrical Test Program – Survey of Electrical Valve Actuation

Operational sequence, soft top opening

Valves being controlled at time of operational sequence When testing with HHT **Up** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Left power soft top valve block (Y55/1)				Right power soft top valve block (Y56/1)		
	Soft top compartment cover "open" / soft top compartment cover lock "open" valve (y4)	Soft top "closed"/ fabric bow lock "open" valve (y1)	Fabric bow "closed" valve (y2)	Fabric bow "open"/soft top compartment cover "closed" valve (y3)	Soft top "open"/front lock "open" valve (y1)	Roll bar "raise" valve (y3)	Roll bar "lower" valve, Hydraulic actuator (y2)
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2)	X2 ⊥ 37	X2 ⊥ 36	X2 ⊥ 55	X2 ⊥ 18	X2 ⊥ 19	X2 ⊥ 17	X2 ⊥ 54
Lower roll bar, lower side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**
Unlock fabric bow	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**
Raise fabric bow	0–1 V	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Unlock, open soft top compartment cover	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Unlock front soft top	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**
Open soft top	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**
Lower soft top in soft top compartment	**11–14 V**	0–1 V	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**
Close, lock soft top compartment cover	0–1 V	0–1 V	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**
Raise roll bar, raise side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	**11–14 V**

Electrical Test Program – Survey of Electrical Valve Actuation

Operational sequence, soft top closing

Valves being controlled at time of operational sequence When testing with HHT **Up** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Left power soft top valve block (Y55/1)				Right power soft top valve block (Y56/1)		
	Soft top compartment cover "open" / soft top compartment cover lock "open" valve (y4)	Soft top "closed"/ fabric bow lock "open" valve (y1)	Fabric bow "closed" valve (y2)	Fabric bow "open"/soft top compartment cover "closed" valve (y3)	Soft top "open"/front lock "open" valve (y1)	Roll bar "raise" valve (y3)	Roll bar "lower" valve, Hydraulic actuator (y2)
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2)	X2 ⊥ 37	X2 ⊥ 36	X2 ⊥ 55	X2 ⊥ 18	X2 ⊥ 19	X2 ⊥ 17	X2 ⊥ 54
Lower roll bar, lower side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**
Unlock, open soft top compartment cover	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Close soft top	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Close soft top (Differential operation, after approximately 6 seconds)	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**
Lock front soft top (Activate for 0.5 seconds)	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V
Lock front soft top	**11–14 V**	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Close, lock soft top compartment cover	0–1 V	**11–14 V**	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**
Lower fabric bow	0–1 V	**11–14 V**	**11–14 V**	0–1 V	0–1 V	0–1 V	**11–14 V**
Lock fabric bow	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V	**11–14 V**
Raise roll bar, raise side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	**11–14 V**

Electrical Test Program – Survey of Electrical Valve Actuation

Operational sequence, hardtop locking

Valves being controlled at time of operational sequence When testing with HHT **Up** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Left power soft top valve block (Y55/1)				Right power soft top valve block (Y56/1)		
	Soft top compartment cover "open" / soft top compartment cover lock "open" valve (y4)	Soft top "closed"/ fabric bow lock "open" valve (y1)	Fabric bow "open"/soft top compartment cover "closed" valve (y3)	Fabric bow "closed" valve (y2)	Soft top "open"/front lock "open" valve (y1)	Roll bar "raise" valve (y3)	Roll bar "lower" valve, Hydraulic actuator (y2)
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2)	X2 ⊥ 37	X2 ⊥ 36	X2 ⊥ 18	X2 ⊥ 55	X2 ⊥ 19	X2 ⊥ 17	X2 ⊥ 54
Hardtop attached (for approximately 3 seconds)	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	**11–14 V**
front	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V	**11–14 V**
rear	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**

Electrical Test Program – Survey of Electrical Valve Actuation

Operational sequence, hardtop unlocking

Valves being controlled at time of operational sequence When testing with HHT **Up** corresponds to **11 – 14 V** Closed corresponds to 0 – 1 V	Left power soft top valve block (Y55/1)				Right power soft top valve block (Y56/1)		
	Soft top compartment cover "open" / soft top compartment cover lock "open" valve (y4)	Soft top "closed"/ fabric bow lock "open" valve (y1)	Fabric bow "open"/soft top compartment cover "closed" valve (y3)	Fabric bow "closed" valve (y2)	Soft top "open"/front lock "open" valve (y1)	Roll bar "raise" valve (y3)	Roll bar "lower" valve, Hydraulic actuator (y2)
Connection Diagram – Socket Box to Connector (X2) (22, Figure 2)	X2 ⊥ 37	X2 ⊥ 36	X2 ⊥ 18	X2 ⊥ 55	X2 ⊥ 19	X2 ⊥ 17	X2 ⊥ 54
front	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V	**11–14 V**
rear	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	**11–14 V**
Hardtop unlocks (for approximately 3 seconds, after switch is released)	0–1 V	**11–14 V**	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V

Electrical Test Program – Component Locations

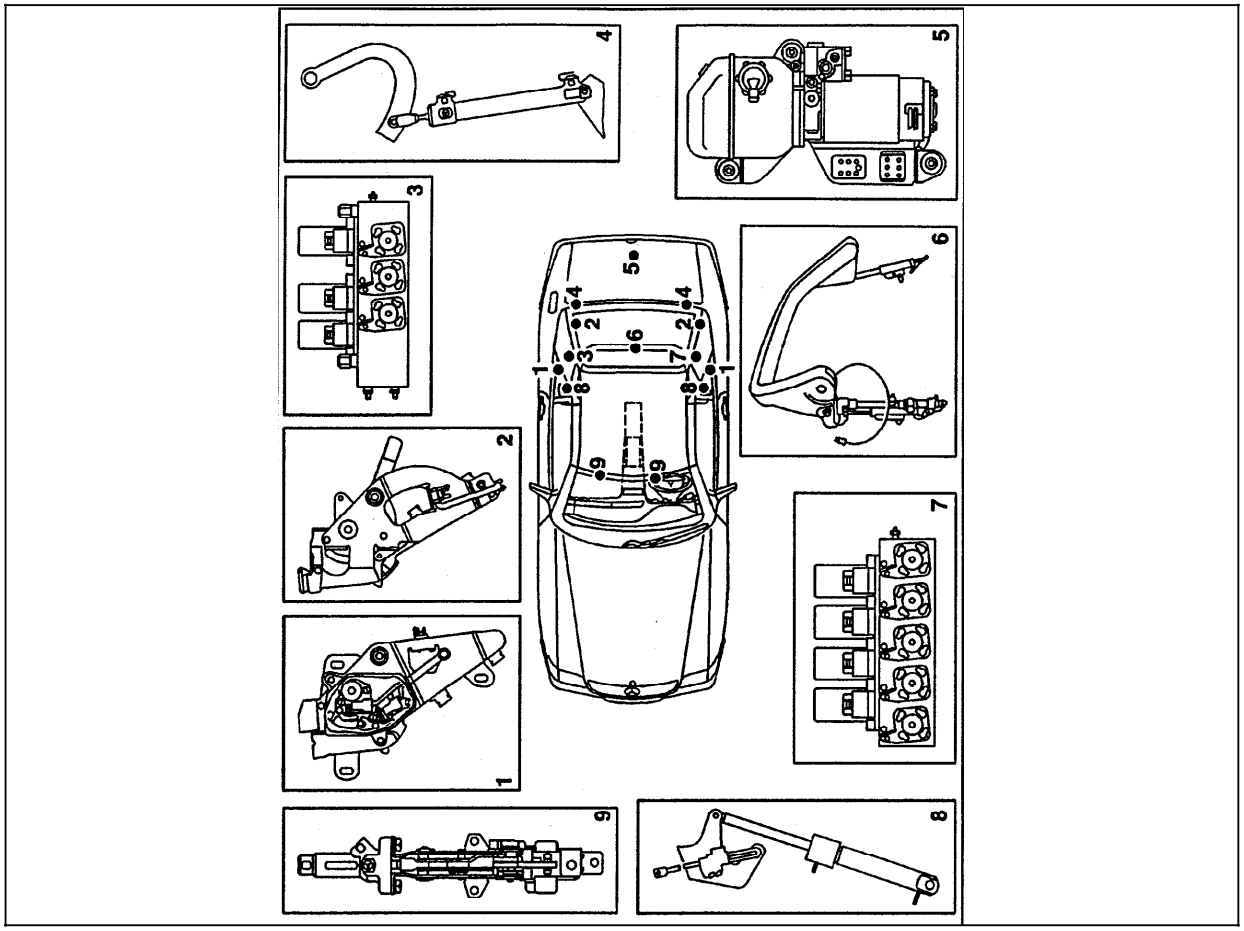

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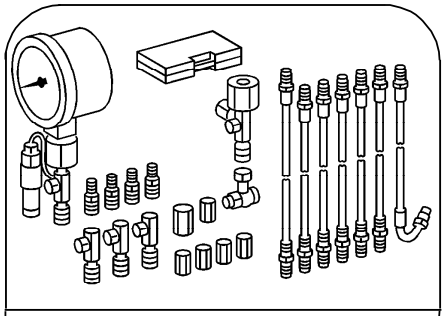
Figure 1

1	Center latches
2	Rear latches
3	Right power soft top valve block (Y56/1) (3 connections)
4	Soft top compartment cover hydraulic cylinder 5RST/RB hydraulic unit
6	Roll bar complete
7	Left power soft top valve block (Y55/1) (4 connections)
8	Soft top and fabric bow hydraulic cylinder
9	Front latches

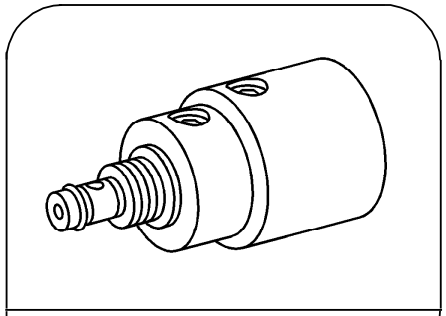
Hydraulic Test Program – Preparation for Test

Special Tools



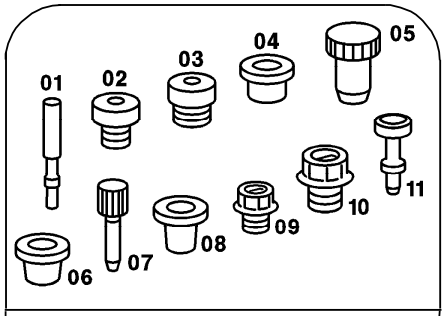
126 589 14 21 00

Tester



129 589 08 63 00

Check valve



129 589 00 91 00

Set of plugs

Conventional tools, test equipment

Description	Brand, model, etc.
Graduated beaker (0.5 liter, 10 ml graduations)	local purchase

1) Available through the MBUSA Standard Equipment Program.

Before beginning the test, check the oil level in the hydraulic unit reservoir and top up if needed (Refer to Maintenance Manual job no. 7710).

Brief description:

In order to make an accurate visual inspection for oil loss from the hydraulic system, the windscreen or other personal belongings should be removed from the vehicle.

The hydraulic circuits and components for each soft top operation can be tested separately.

The soft top can be placed in all required positions either by the power soft top switch or (if needed, with ignition: **OFF**) by hand.

All of the locks can be locked or unlocked with the soft top wrench.

⚠ **WARNING**

Keep clear of the soft top linkage, upper part of the windshield and soft top compartment during soft top locking or unlocking operations (risk of personal injury).

Hydraulic Test Program – Test

Notes for Hydraulic Test:

The following jobs are the same for all test steps:

A. Connection of test equipment to hydraulic unit (Figure 4).
Torque check valve 129 589 08 63 00 to 5 Nm.

B. Build up and release test pressure (example).

C. Test hydraulic cylinder only at end position of piston (Observe soft top positions).

D. If hydraulic lines need to be disconnected from the valve blocks during pressure tests, the appropriate soft top position (end position of the hydraulic cylinder) must first be ensured.

⚠ WARNING
Disconnected hydraulic lines should be held in a container (connect a transparent hose such as windshield washer hose).
Hydraulic components that leak should be replaced. During pressure tests, the valve block connections **must** be plugged with threaded plug 129 589 00 91 01.

If hydraulic components need to be replaced, the disconnected hydraulic lines must be plugged with plug 129 589 00 91 07, while the connections of valve blocks, hydraulic cylinders and hydraulic manifolds must be plugged **immediately** using plug 129 589 00 91 11 to prevent the possible entry of dirt.

Example: Building up and releasing test pressure.

Soft top

⇒ 1.0 to 16.0	**Ignition ON:** Activate power soft top switch (toward lower if the soft top is down, toward raise if the soft top is up) for 5 seconds. Have a second technician disconnect relay (A7/5k1, Figure 4). Hold power soft top switch for 5 additional seconds. Read and record test pressure.
Release test pressure:	Briefly activate power soft top switch several more times.

Roll bar

⇒ 17.0 to 18.0	**Ignition ON:** Activate RB switch (toward lower if the roll bar is lowered, toward raise if it is raised) for 5 seconds. Have a second technician disconnect relay (A7/5k1, Figure 4). Hold roll bar switch for 5 additional seconds. Read and record test pressure.
Release test pressure:	Briefly activate power soft top switch several more times.

⚠ CAUTION!
Release established test pressure before beginning the next test step.

Electrical Test Program – Component Locations

Y55/1 Left power soft top valve block (4 connections)

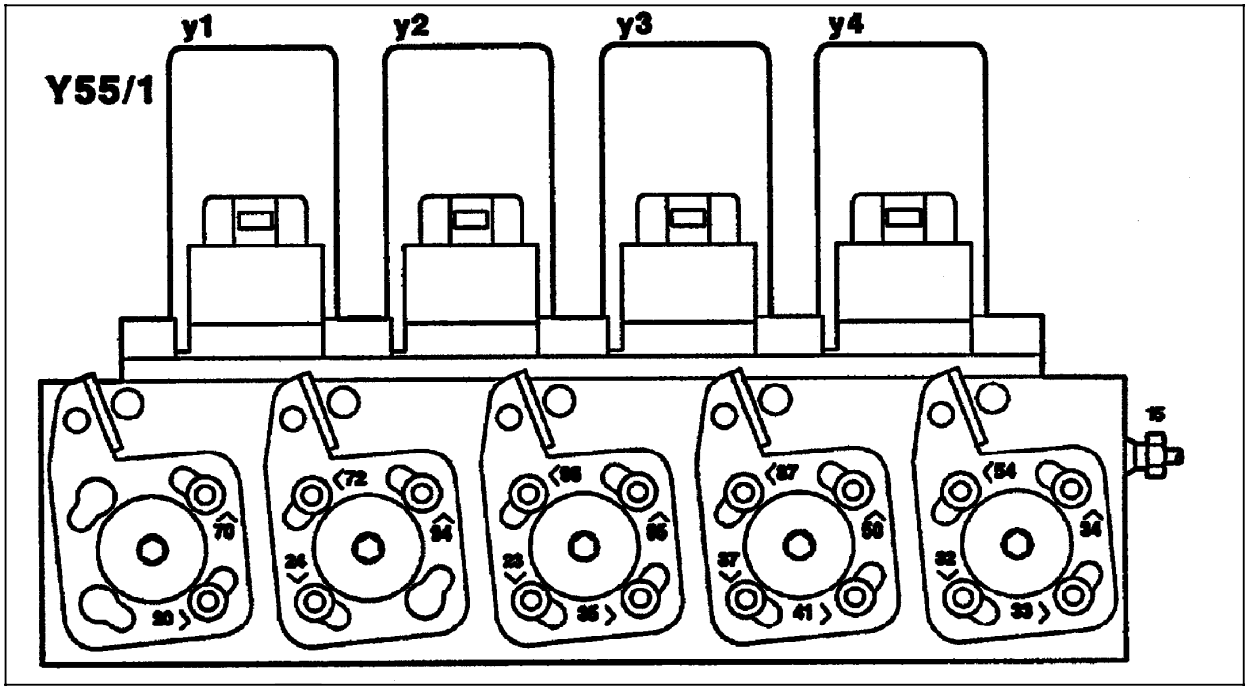


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Figure 2

y1	Soft top “closed”/fabric bow lock “open” valve
y2	Fabric bow “closed” valve
y3	Fabric bow “open”/soft top compartment cover “closed” valve
y4	Soft top compartment cover “open”/soft top compartment cover lock “open” valve

Electrical Test Program – Component Locations

Y56/1 **Right power soft top valve block (3 connections)**

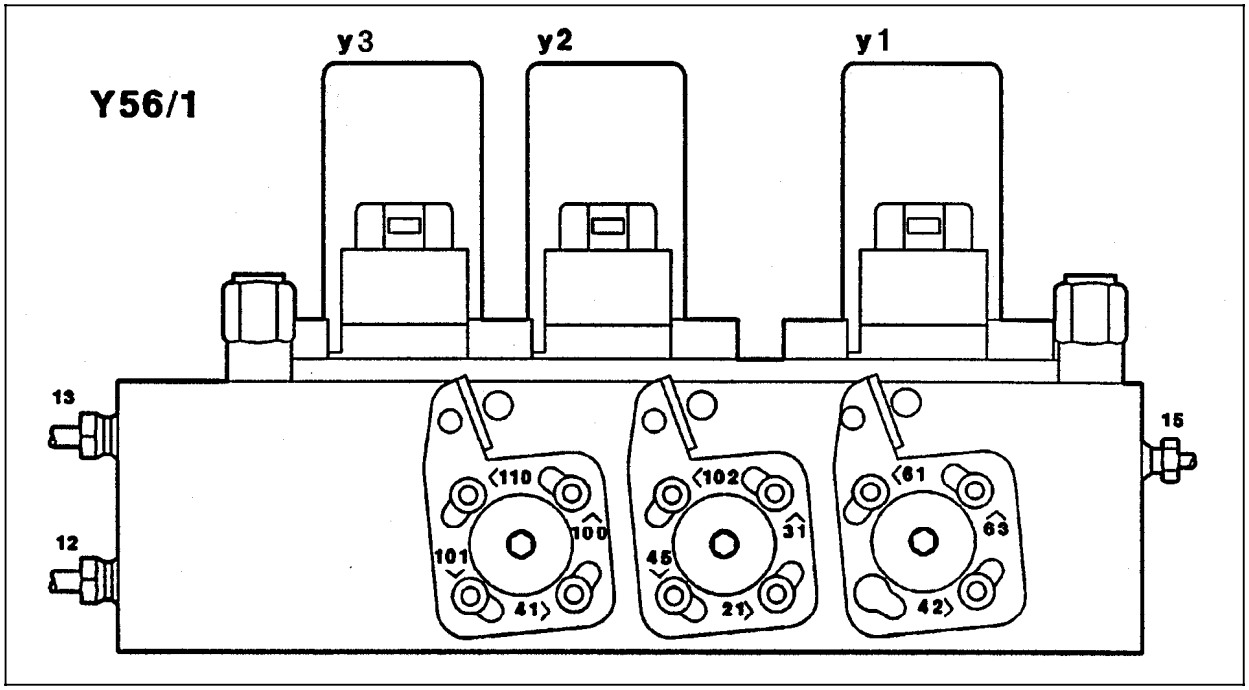

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Figure 3

y1	Soft top “open”/front lock “open” valve
y2	Roll bar “lower” valve
y3	Roll bar “raise” valve

Electrical Test Program – Component Locations

Connection Diagram - Check valve and Pressure Gauge to Hydraulic Unit

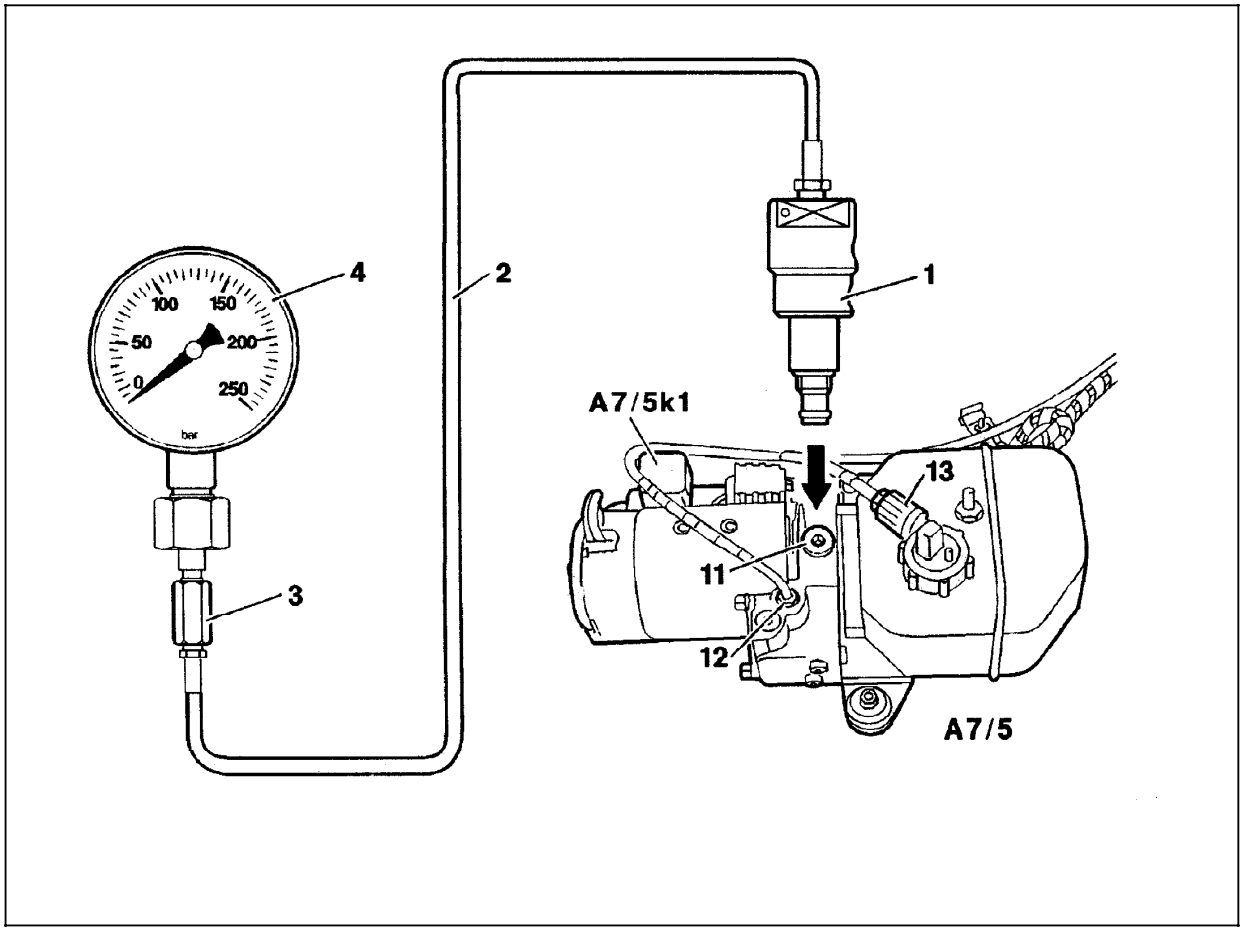

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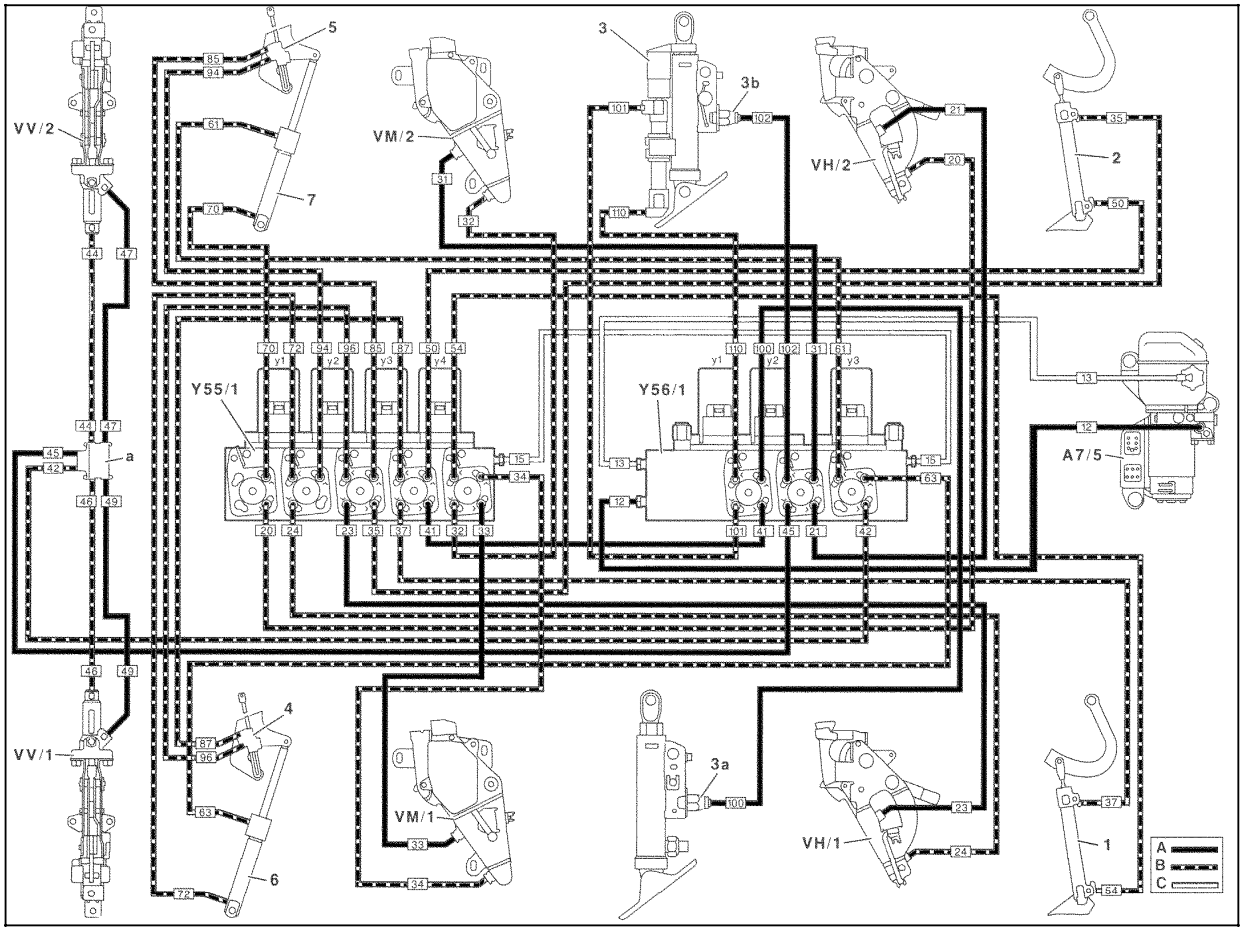
Figure 4

1	Check valve	129 589 08 63 00
	Adaptor kit	129 589 14 21 00
2	Test pressure line	
3	Connector piece	
4	Pressure gauge	
11	Test connection	
12	Soft top/roll bar operation hydraulic line	
13	Return line	
A7/5	RST/RB hydraulic unit	
A7/5k1	Relay	

Hydraulic Test Program - Test

Soft top/roll bar

Figure 5



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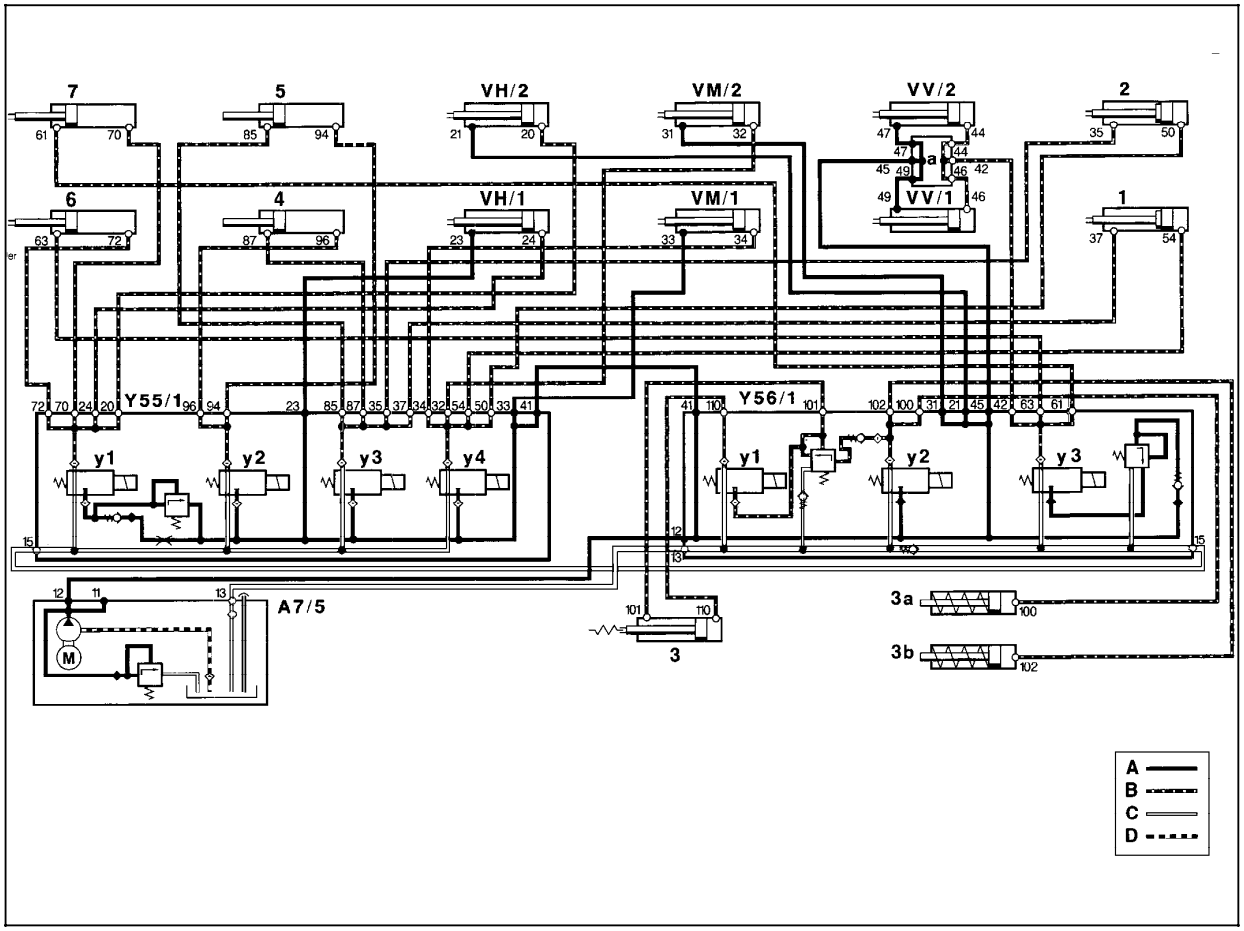
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
B	Pressure control lines
C	Return flow lines
a	Hydraulic manifold at A-pillar cross member
VV/1	Left front lock
VV/2	Right front lock
VM/1	Left center lock
VM/2	Right center lock
VH/1	Left rear lock
VH/2	Right rear lock
Y55/1	Left power soft top valve block (4 connections)
Y56/1	Right power soft top valve block (3 connections)

Hydraulic Test Program - Test

Soft top/roll bar

Figure 6

1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
B	Pressure control lines
C	Return flow lines
D	Suction line
a	Hydraulic manifold at A-pillar cross member
VV/1	Left front lock
VV/2	Right front lock
VM/1	Left center lock
VM/2	Right center lock
VH/1	Left rear lock
VH/2	Right rear lock
Y55/1	Left power soft top valve block (4 connections)
Y56/1	Right power soft top valve block (3 connections)



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Hydraulic Test Program – Test

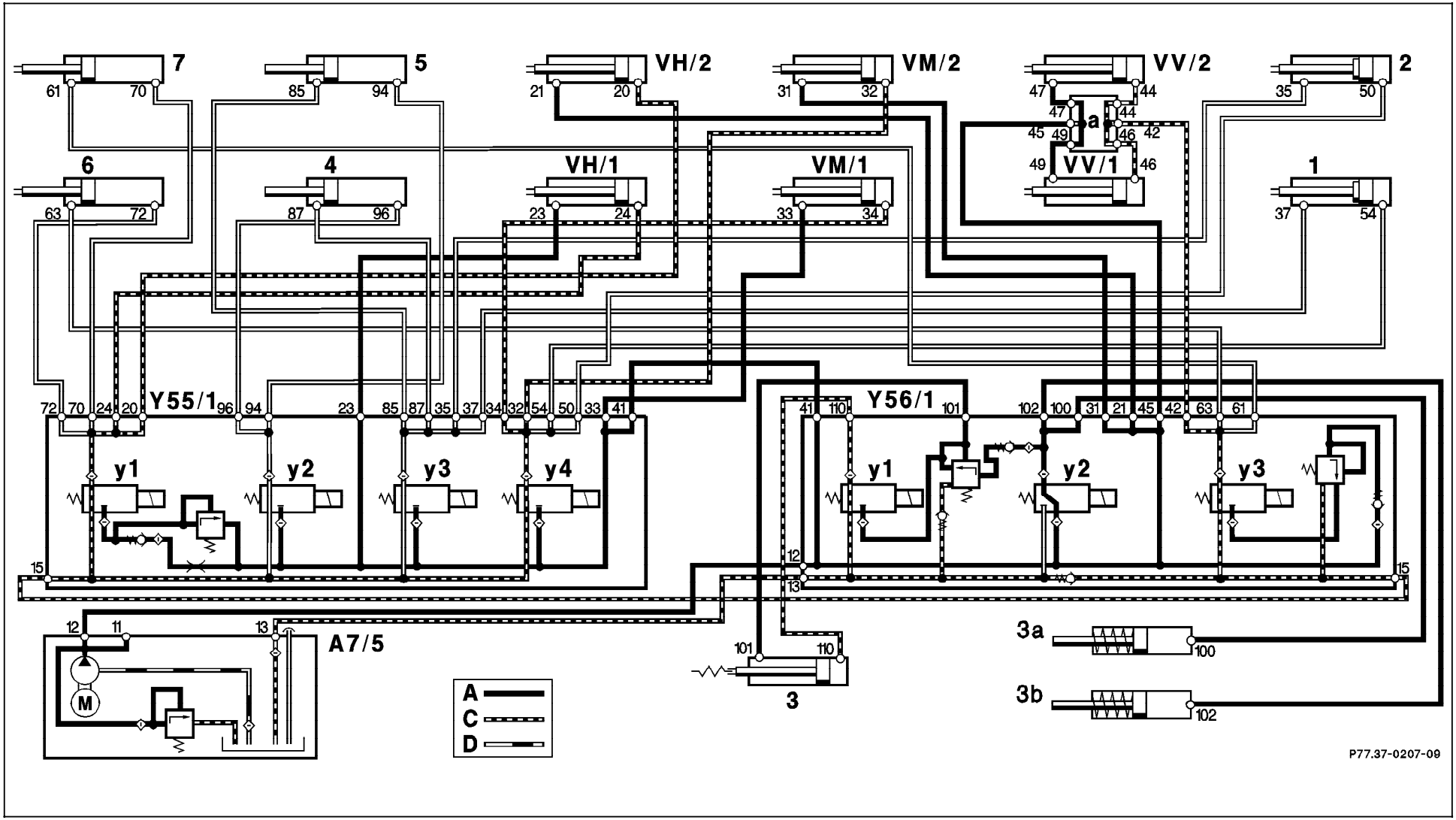

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Figure 7

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Checking system pressure** (Figure 7)	Connect pressure gauge according to connection diagram (Figure 4).	**Starting point: soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**<120 bar:** ⇒ 2.0

Hydraulic Test Program – Test

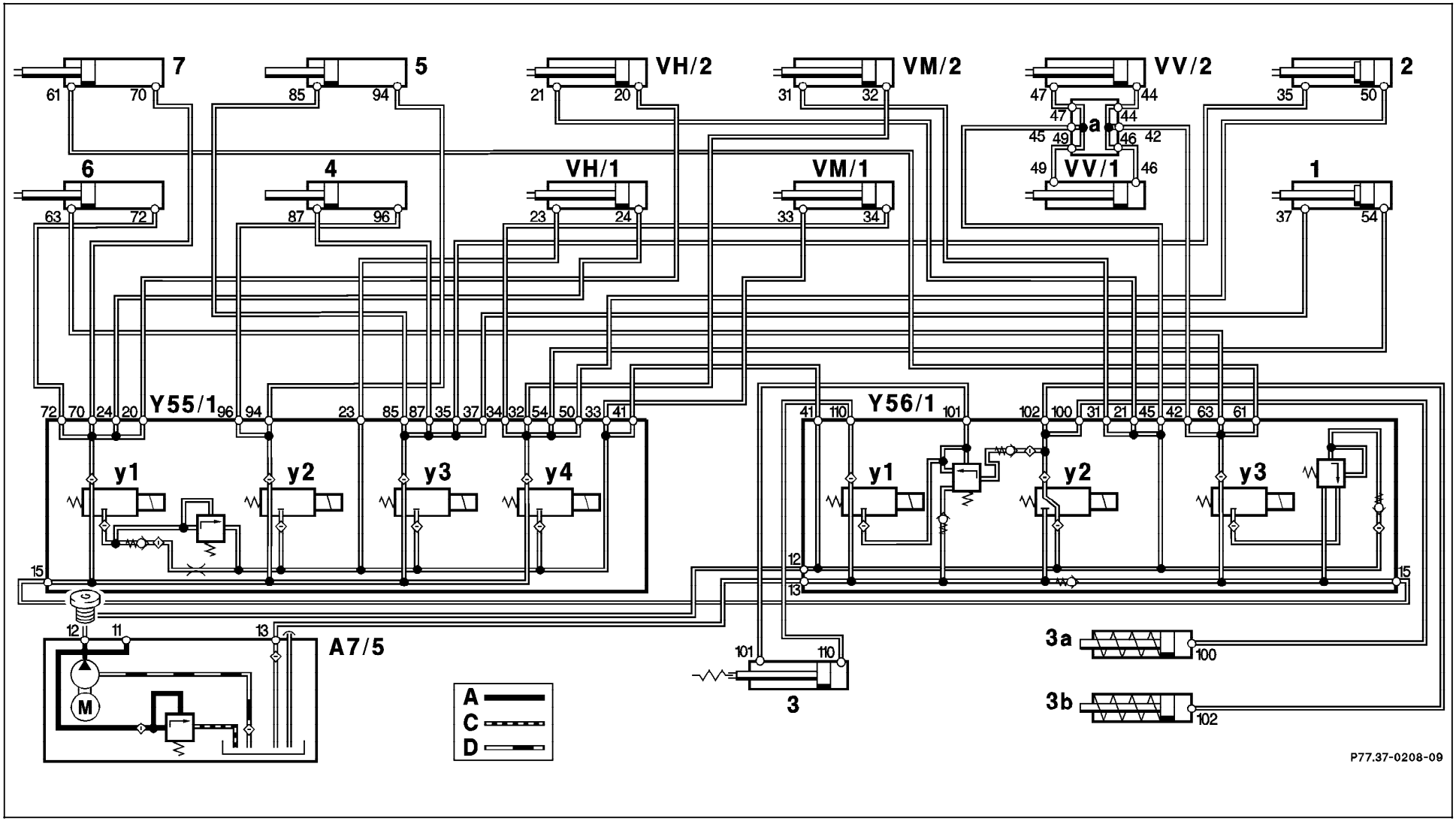

Figure 8

P77.37-0208-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**Testing RST/RB hydraulic unit (A7/5)** (Figure 8)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 12 from hydraulic unit (Figure 4). Seal connection with threaded plug 129 589 00 91 03.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	180 – 200 bar	**Nominal values ok:** ⇒ 3.0. **< 180 bar:** Replace hydraulic unit (A7/5) (SMS, Job No. 77-350).

Hydraulic Test Program – Test

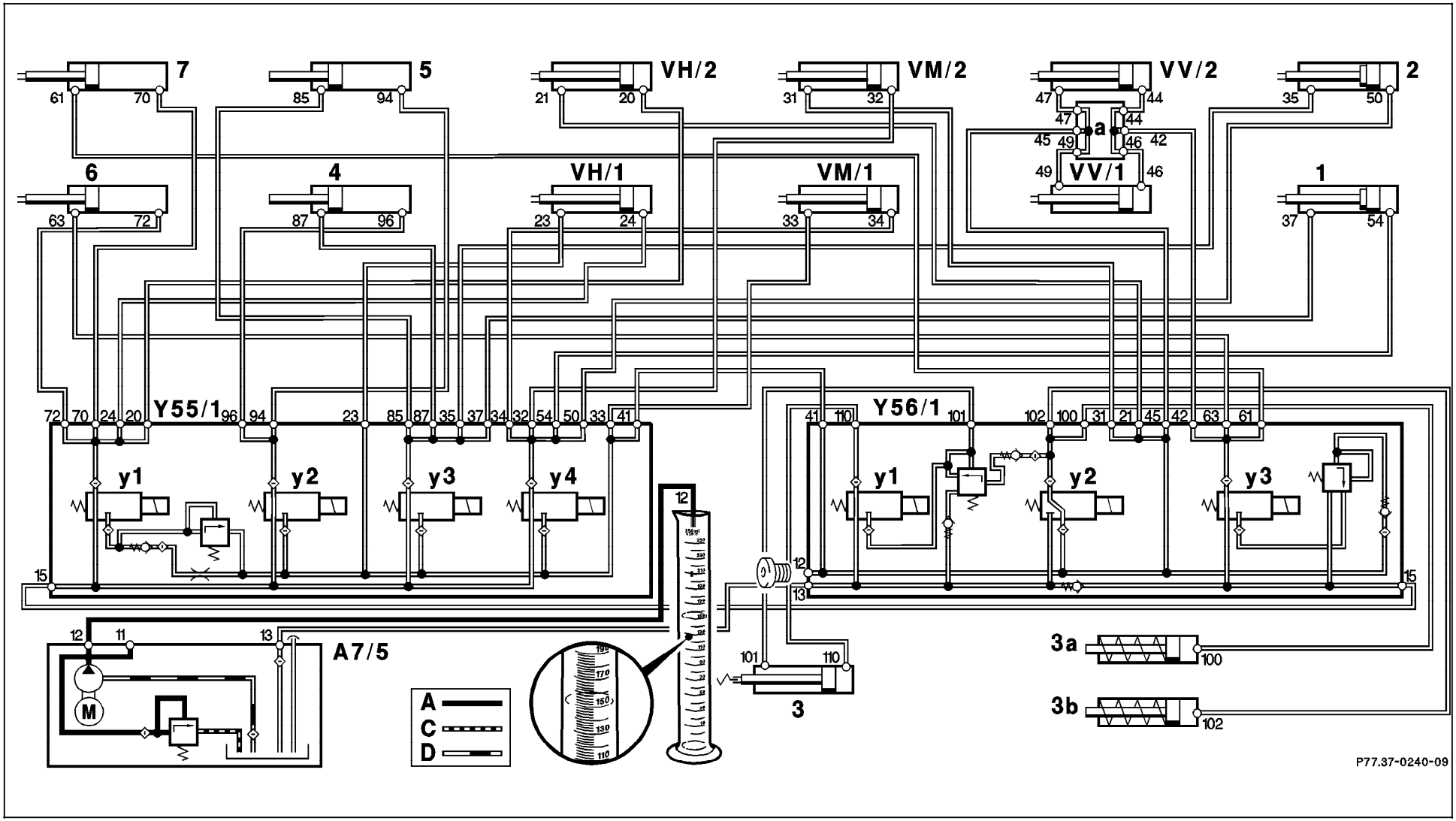

Figure 9

P77.37-0240-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		**Checking hydraulic fluid volume output of hydraulic unit (A7/5)** (Figure 9) **Note:** Room temperature not to be <70˚ F.	Note: Room temperature must not be < 70ºF (18º C). Disconnect hydraulic line no. 12 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 10. Insert hydraulic line into a graduated beaker.	**Soft top completely open, roll bar lowered.** Ignition: **ON** Press and hold RB switch for 15 seconds to retract. **Read and note hydraulic fluid volume output in graduated beaker:**	>0.15 liter (150 ml).	**Nominal values ok:** ⇒ 4.0. **<0.15 liter:** Replace hydraulic unit (A7/5) (SMS, Job No. 77-350).

Hydraulic Test Program – Test

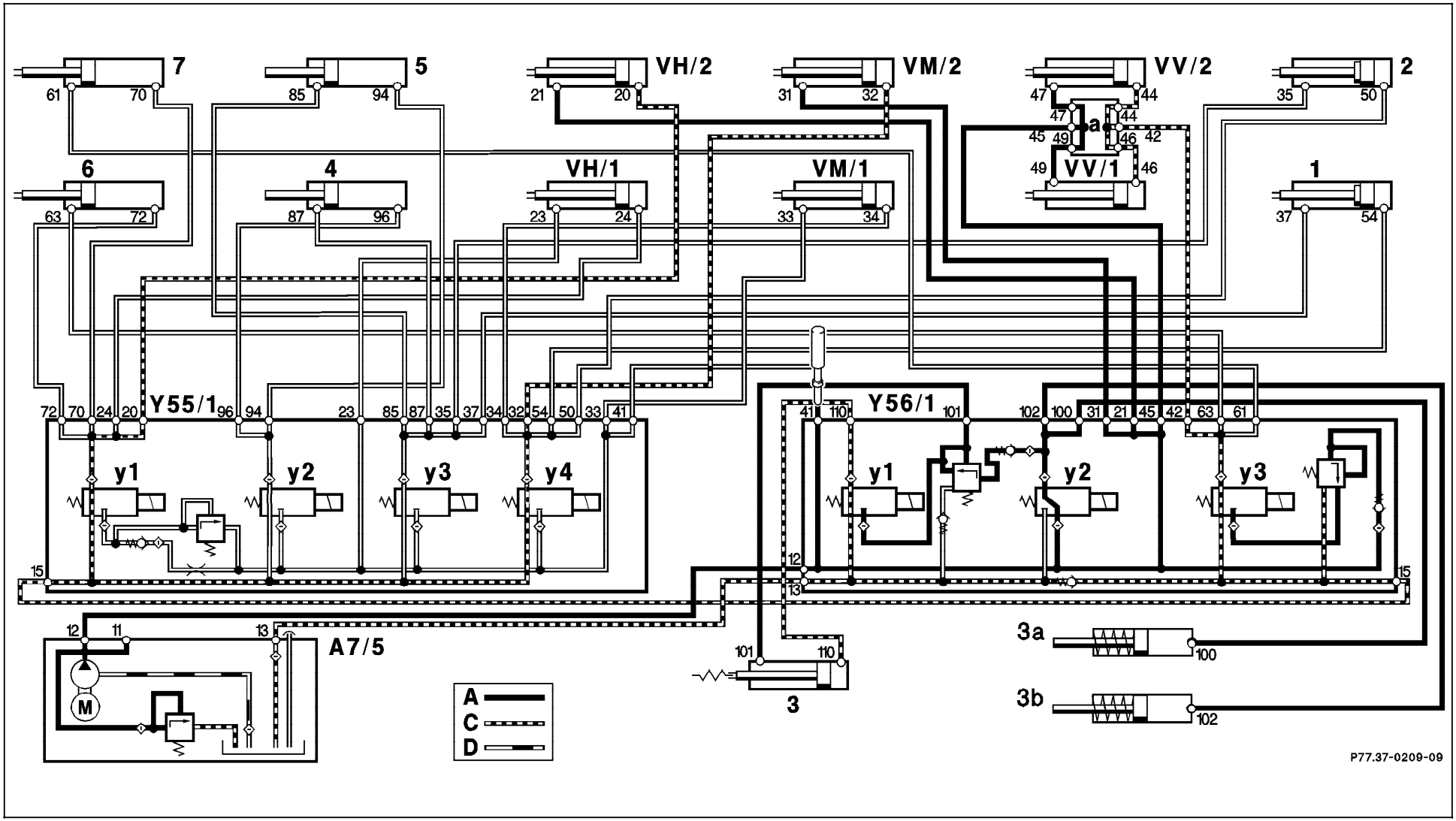

Figure 10

P77.37-0209-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**Checking locks** (Figure 10)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 41 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** ⇒ 4.6 **<120 bar:** ⇒ 4.1

Hydraulic Test Program – Test

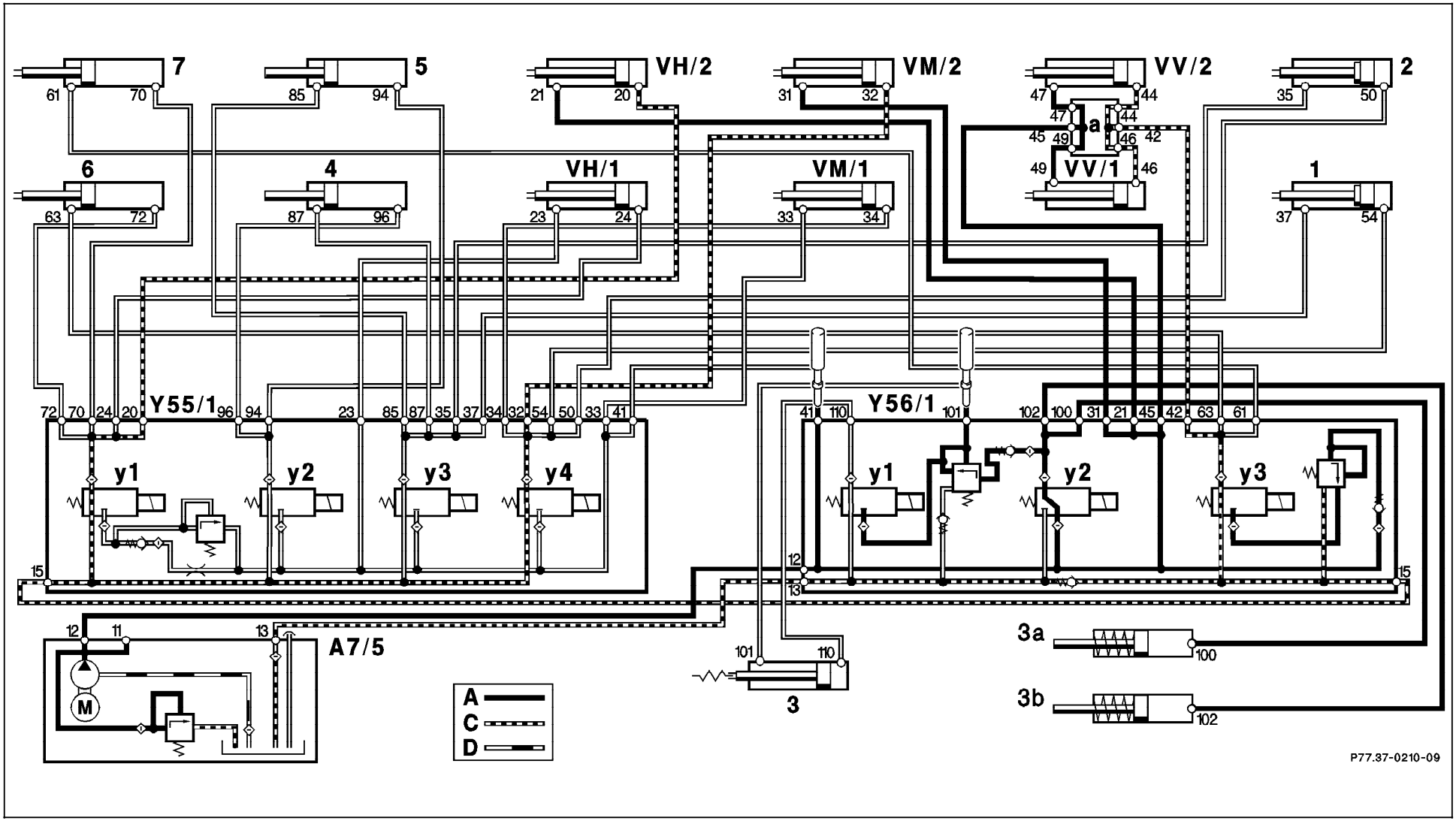

Figure 11

P77.37-0210-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.1		Checking locks (Figure 11)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 101 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. ⚠ **WARNING** Hydraulic line no. 101 has residual pressure (hydraulic cylinder in pos. 3). Wrap hydraulic line and fitting with a shop towel when it is removed. Hydraulic line no. 41 remains disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Hydraulic cylinder in support element for roll bar (3) leaking. Replace support element (SMS, Job No. 91-920). **<120 bar:** ⇒ 4.2

Hydraulic Test Program – Test

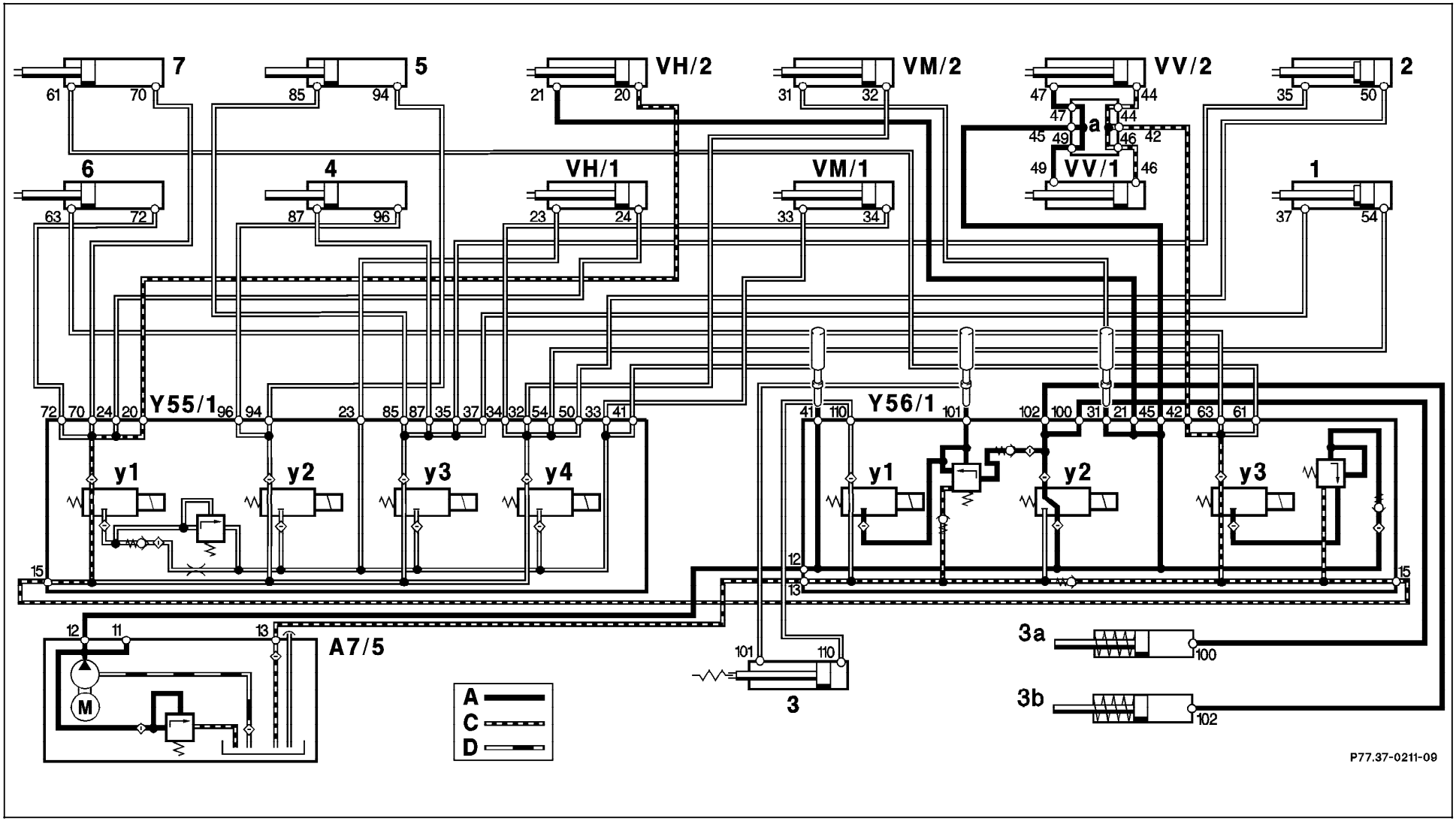

Figure 12

P77.37-0211-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.2		Checking locks (Figure 12)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 31 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Hydraulic lines no. 41 and no. 101 to remain disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of right center lock (VM/2) leaking. Replace hydraulic cylinder (SMS, Job No. 77-324). **>120 bar**: ⇒ 4.3

Hydraulic Test Program – Test

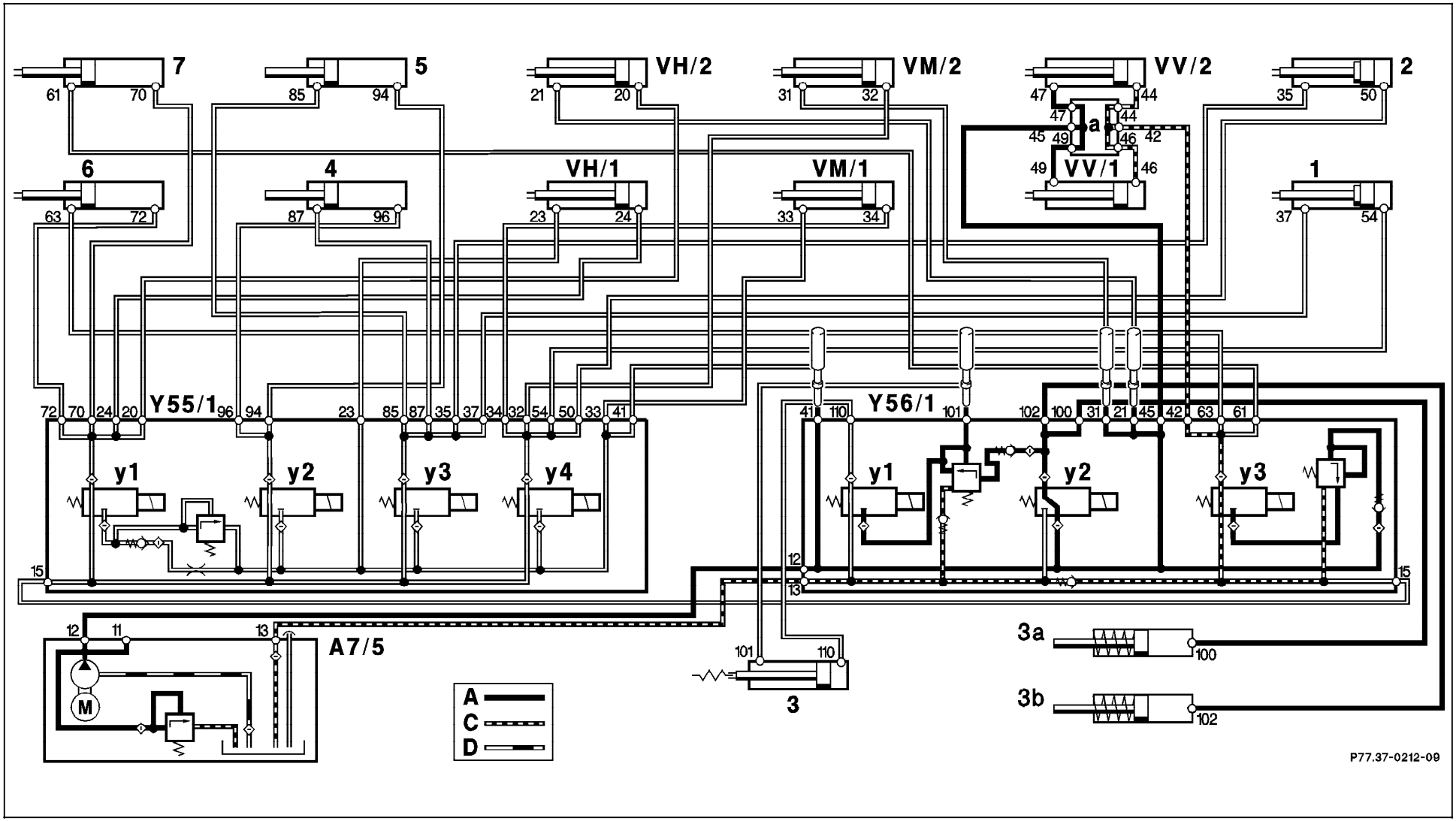

Figure 13

P77.37-0212-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.3		Checking locks (Figure 13)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 21 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Hydraulic lines no. 41, no. 101 and no. 31 to remain disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of right center lock (VH/2) leaking. Replace hydraulic cylinder (SMS, Job No. 77-328). **<120 bar**: ⇒ 4.4

Hydraulic Test Program – Test

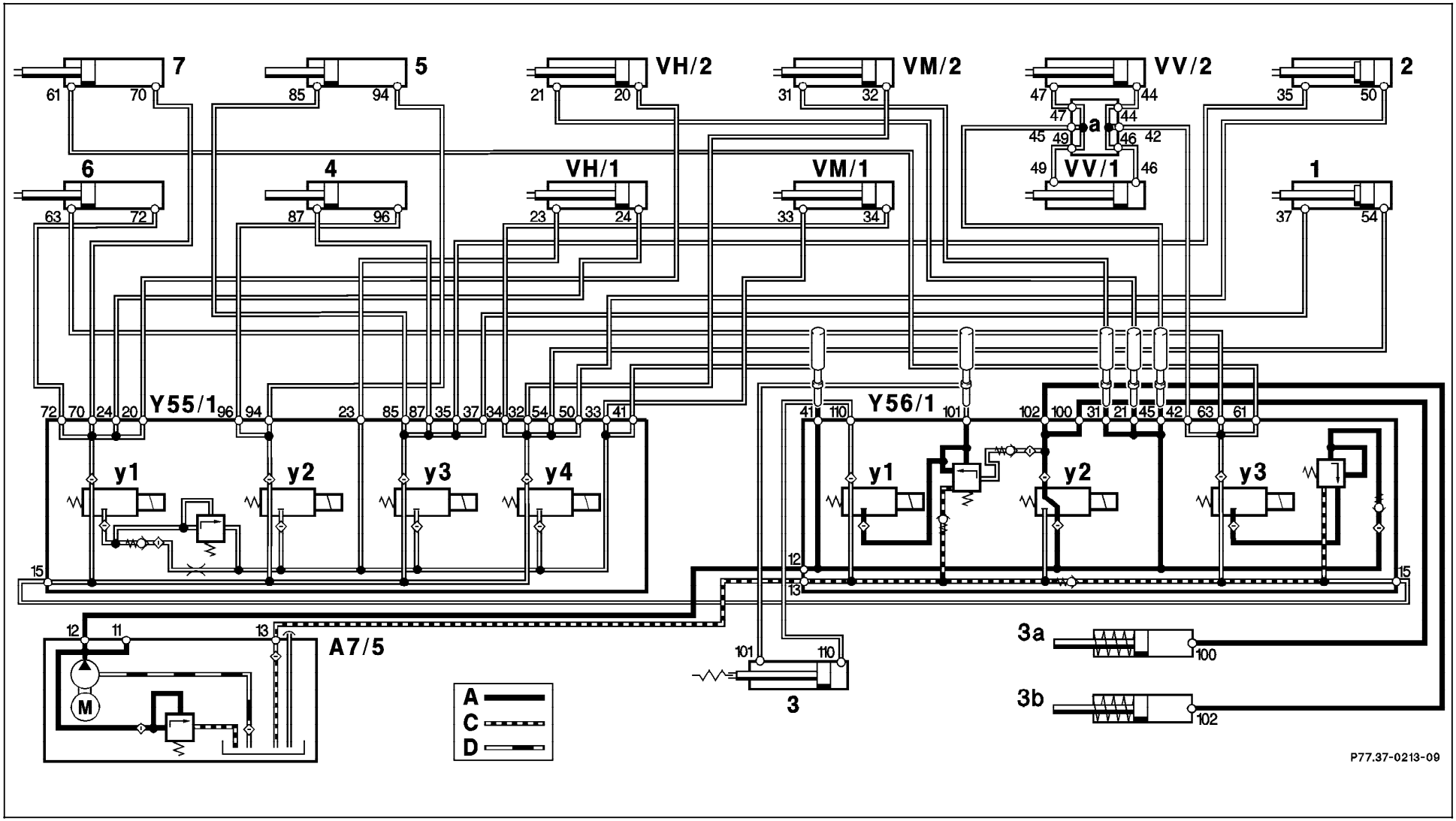

Figure 14

P77.37-0213-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.4		Checking locks (Figure 14)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 45 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Hydraulic lines no. 41, no. 101, no. 31 and no. 21 to remain disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of left front lock or right front lock (VV/1, VV/2) leaking. ⇒ 4.5 **<120 bar**: Replace Y56/1 (SMS, Job No. 77-380).

Hydraulic Test Program – Test

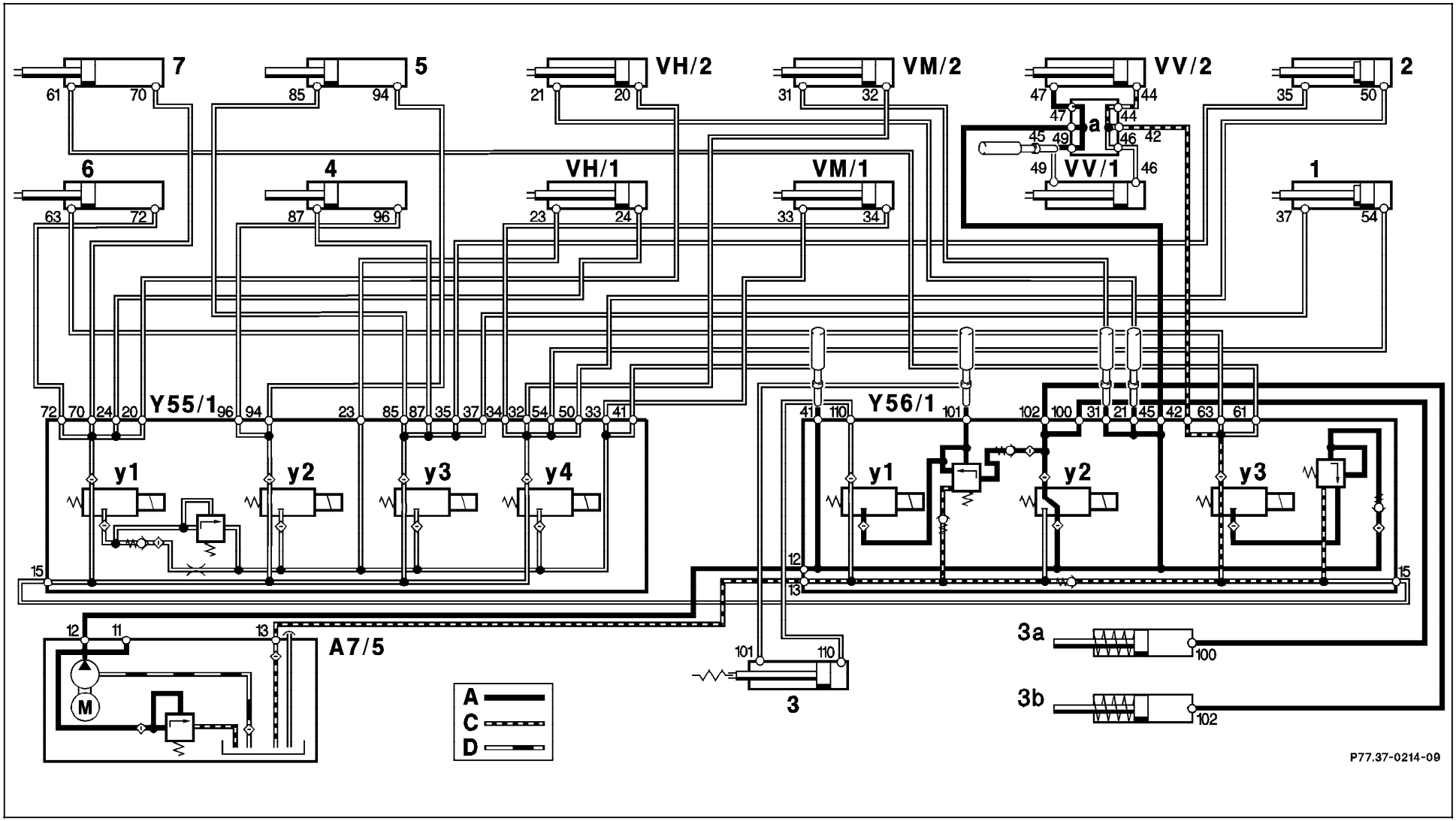

Figure 15

P77.37-0214-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.5		Checking locks (Figure 15)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 49 from hydraulic manifold (a) at A-pillar cross member. Seal connection with threaded plug 129 589 00 91 01. Reconnect hydraulic line no. 45 to valve block (Y56/1). Hydraulic lines no. 41, no. 101, no. 31 and no. 21 to remain disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal vales ok:** Hydraulic cylinder of left front lock (VV/1) leaking. Replace hydraulic cylinder (SMS, Job No. 77-335). **<120 bar**: Hydraulic cylinder of right front lock (VV/2) leaking. Replace hydraulic cylinder (SMS, Job No. 77-335).

Hydraulic Test Program – Test

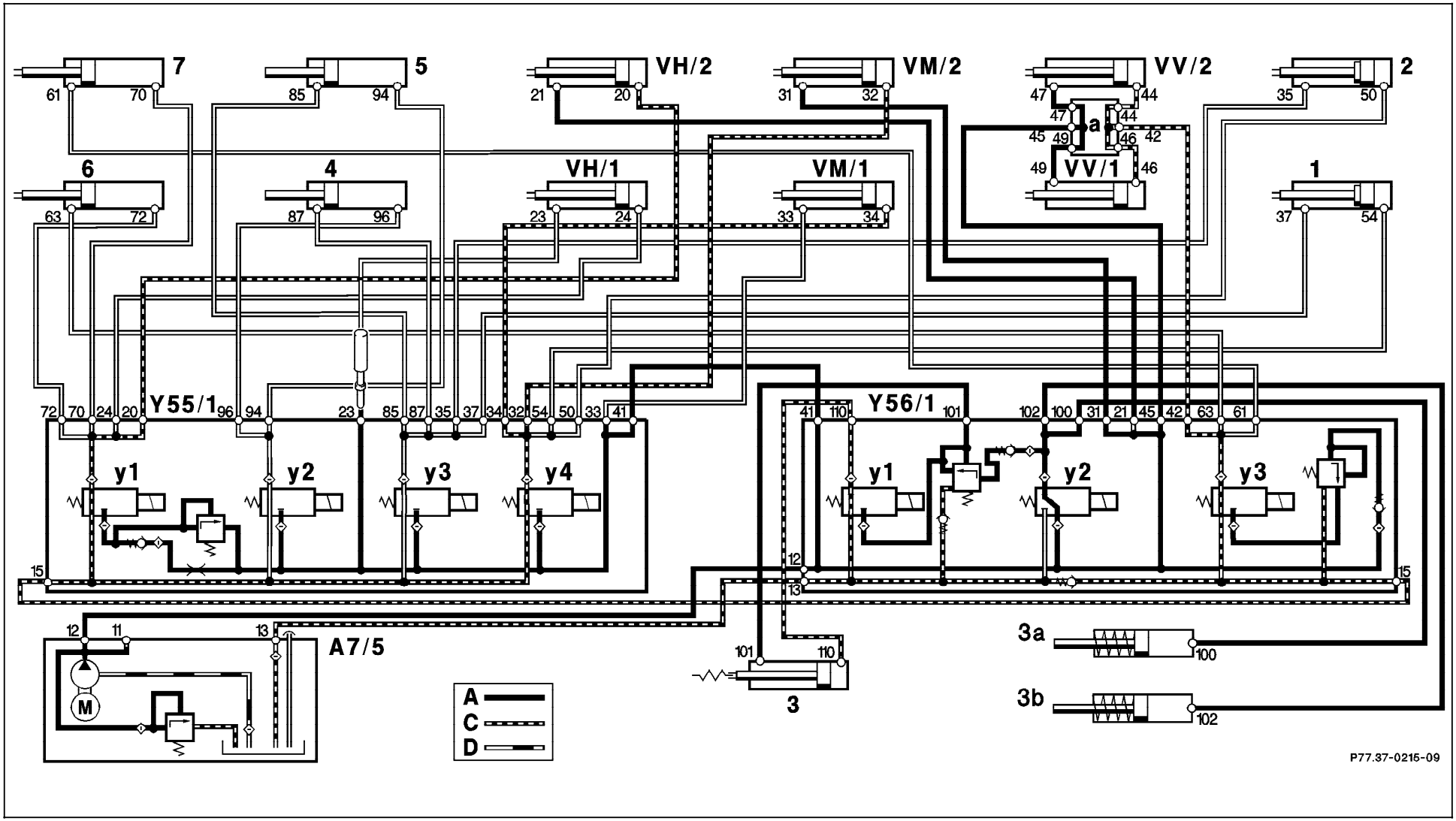

Figure 16

P77.37-0215-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.6		Checking locks (Figure 16)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 23 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Reconnect hydraulic lines no. 21, no. 31, no. 41 and no.101 to connections on valve block (Y56/1). ⚠ **WARNING** Hydraulic line no. 101 has residual pressure. Wrap hydraulic line and threaded plug (129 589 00 91 01) with a shop towel when removing threaded plug.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of left rear lock (VH/1) leaking. Replace hydraulic cylinder (SMS, Job No. 77-328). **<120 bar**: ⇒ 4.7

Hydraulic Test Program – Test

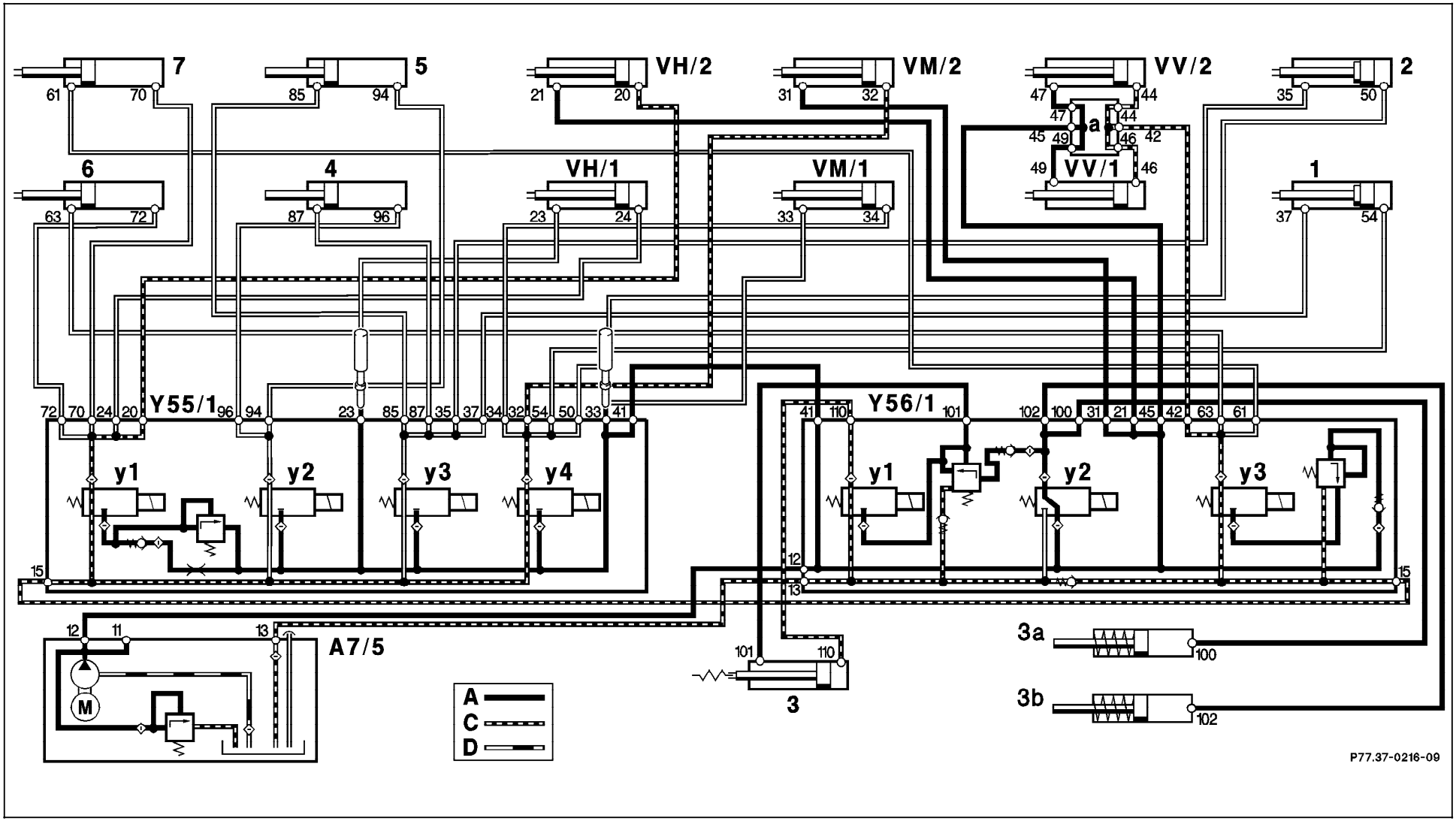

Figure 17

P77.37-0216-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.7		Checking locks (Figure 17)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 33 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01 Hydraulic line no. 23, to remain disconnected.	**Soft top completely closed** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of left center lock (VM/1) leaking. Replace hydraulic cylinder (SMS, Job No. 77-324). **<120 bar**: Replace Y55/1 (SMS, Job No. 77-380).

Hydraulic Test Program – Test

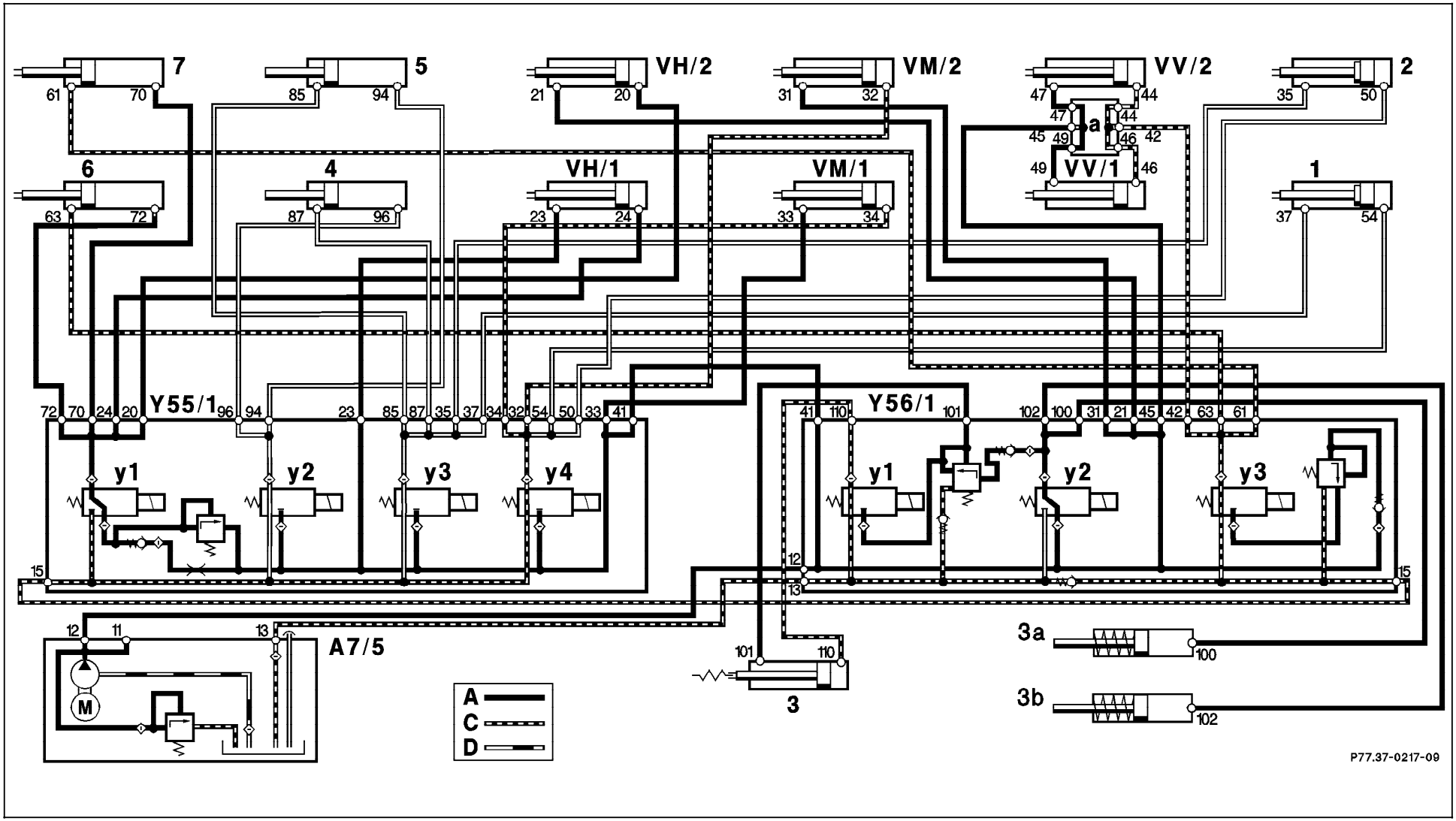

Figure 18

P77.37-0217-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0		**Open rear locks (VH/1, VH/2)** (Figure 18)	Connect pressure gauge according to connection diagram (Figure 4).	**Soft top completely closed** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Should the rear locks (VH/1, VH/2) not open, check adjustment of fabric bow latch pins. Also check for mechanical fault in one or both of the locks. Check adjustment of latch pins (SMS, Job No. 77-303). Replace the rear locks, if above remedies are without effect (SMS, Job No. 77-325). **<120 bar:** ⇒ 5.1

Hydraulic Test Program – Test

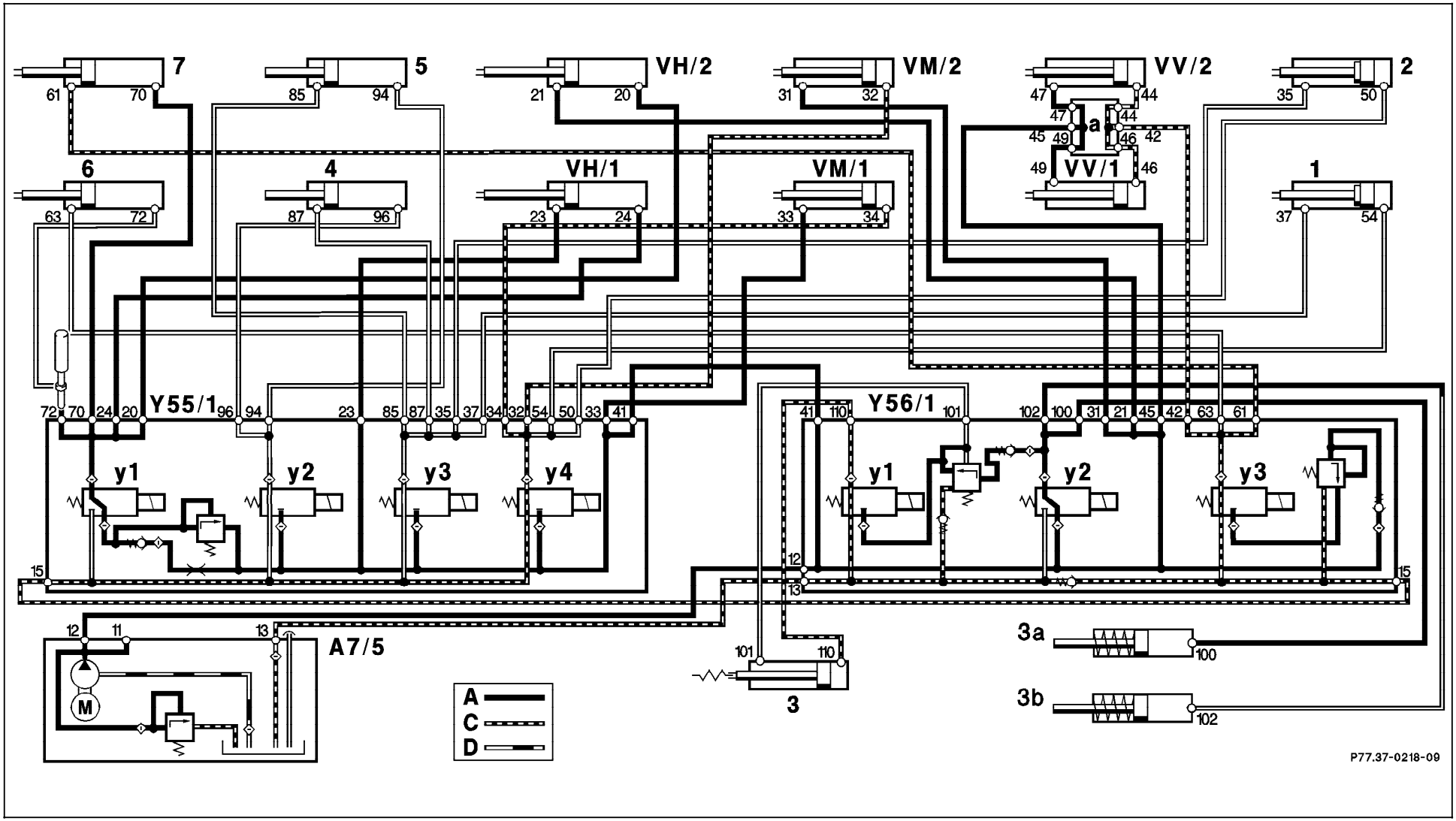

Figure 19

P77.37-0218-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.1		Open rear locks (VH/1, VH/2) (Figure 19)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect connector at valve block (Y55/1y3). Disconnect hydraulic line no. 72 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01.	**Mechanically unlock left/right rear locks (VH/1, VH/2) (see owner's manual)** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Left Hydraulic cylinder (6) for soft top actuation leaking. Replace hydraulic cylinder (SMS, Job No. 77-355). **<120 bar**: ⇒ 5.2

Hydraulic Test Program – Test

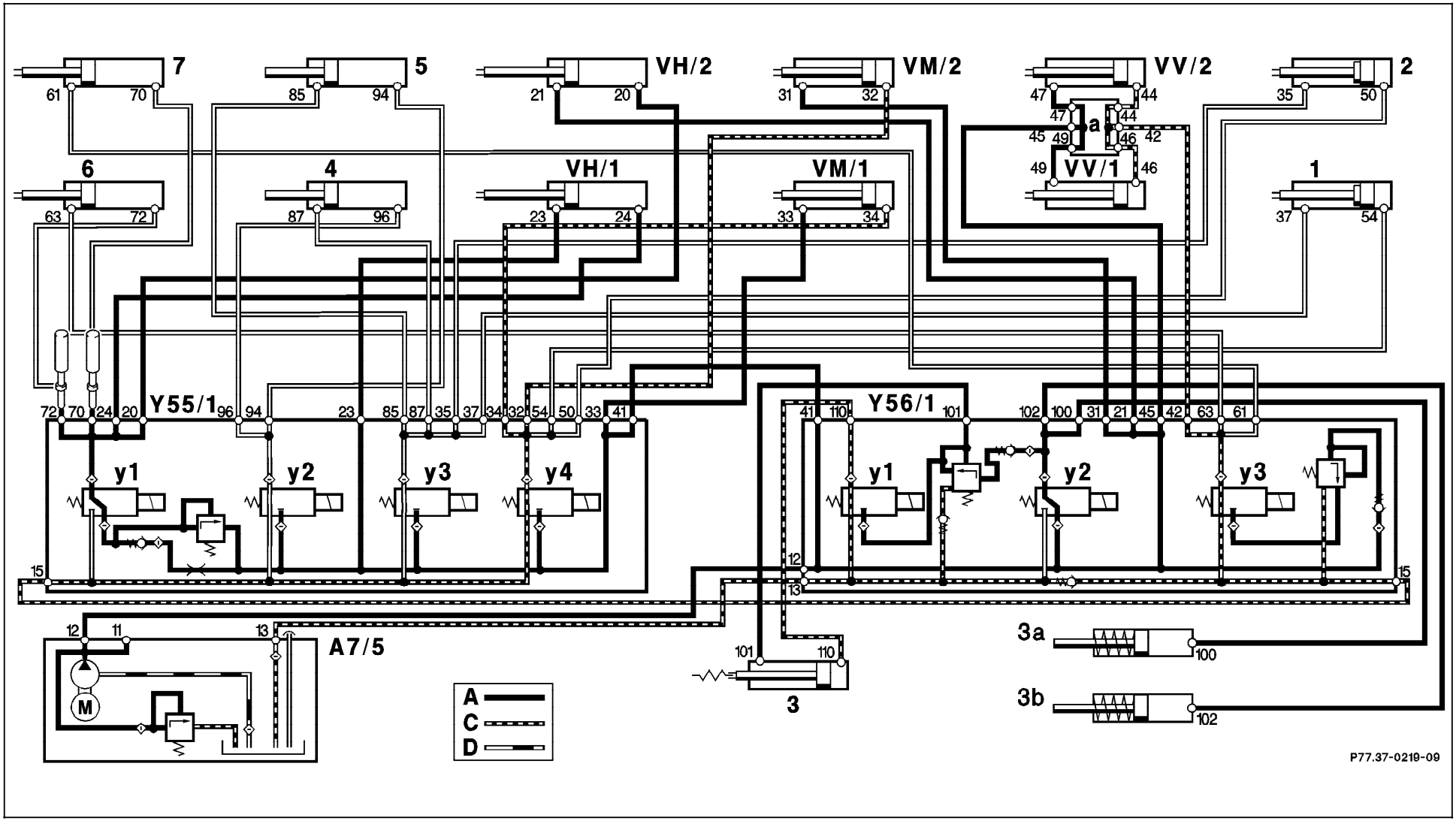

Figure 20

P77.37-0219-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.2		Open rear locks (VH/1, VH/2) (Figure 20)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 70 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Connector at valve block (Y55/1y3) to remain disconnected. Hydraulic line no. 72 to remain disconnected.	**Rear locks (VH/1, VH/2) unlocked** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Briefly activate power soft top switch several times.	120 – 200 bar	**Nominal values ok:** Right Hydraulic cylinder(7) for soft top actuation leaking. Replace hydraulic cylinder (SMS, Job No. 77-355). **<120 bar**: ⇒ 4.0

Hydraulic Test Program – Test

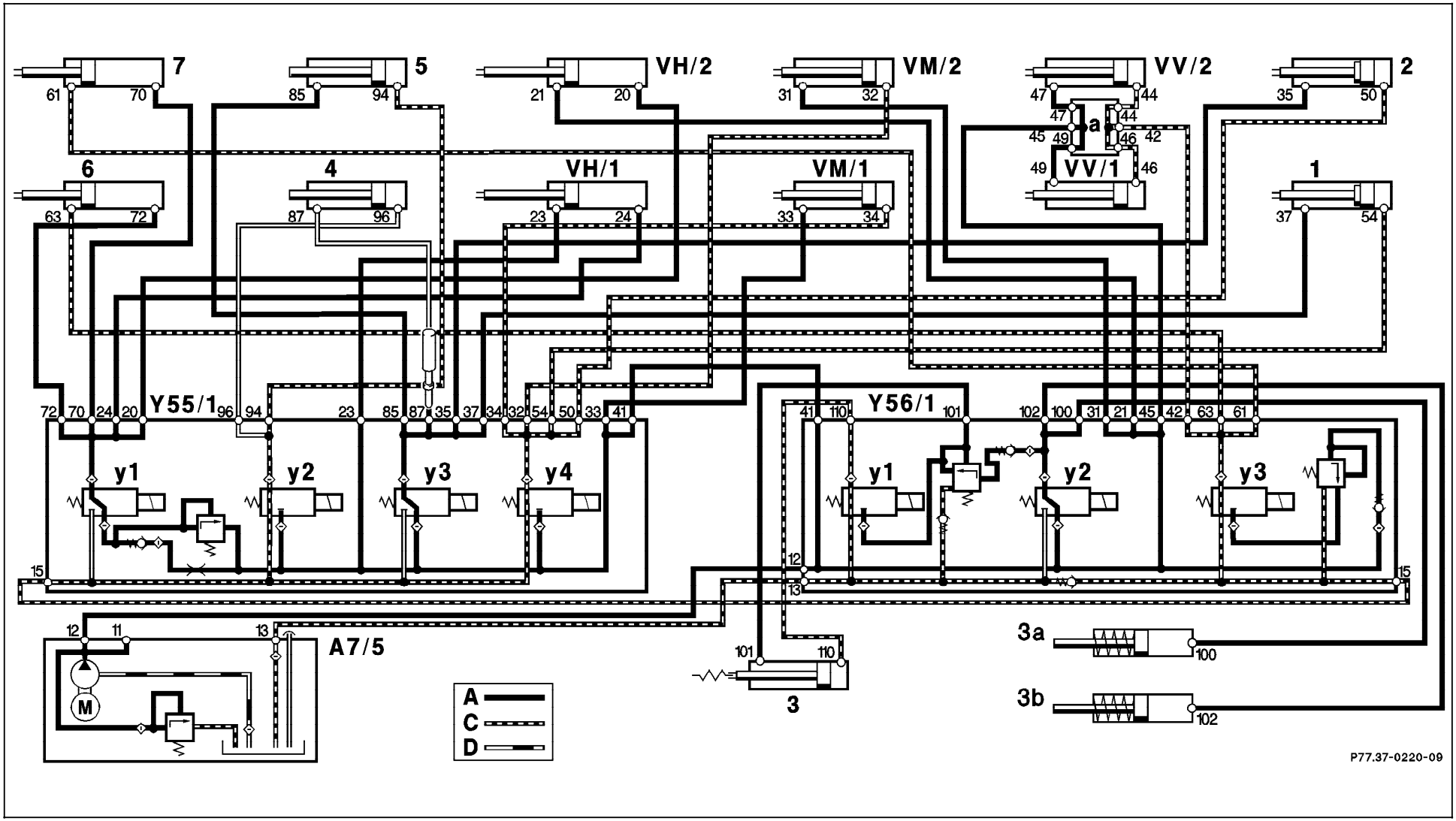

Figure 21

P77.37-0220-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0		**Raise fabric bow** (Figure 21)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect connector at valve block (Y55/1y4). Disconnect hydraulic line no. 87 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01.	**Fabric bow up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Briefly activate power soft top switch several times.	 120 – 200 bar	**Nominal values ok:** Left hydraulic cylinder (4) for fabric bow leaking. Replace hydraulic cylinder (SMS, Job No. 77-360). **<120 bar**: ⇒ 6.1

Hydraulic Test Program – Test

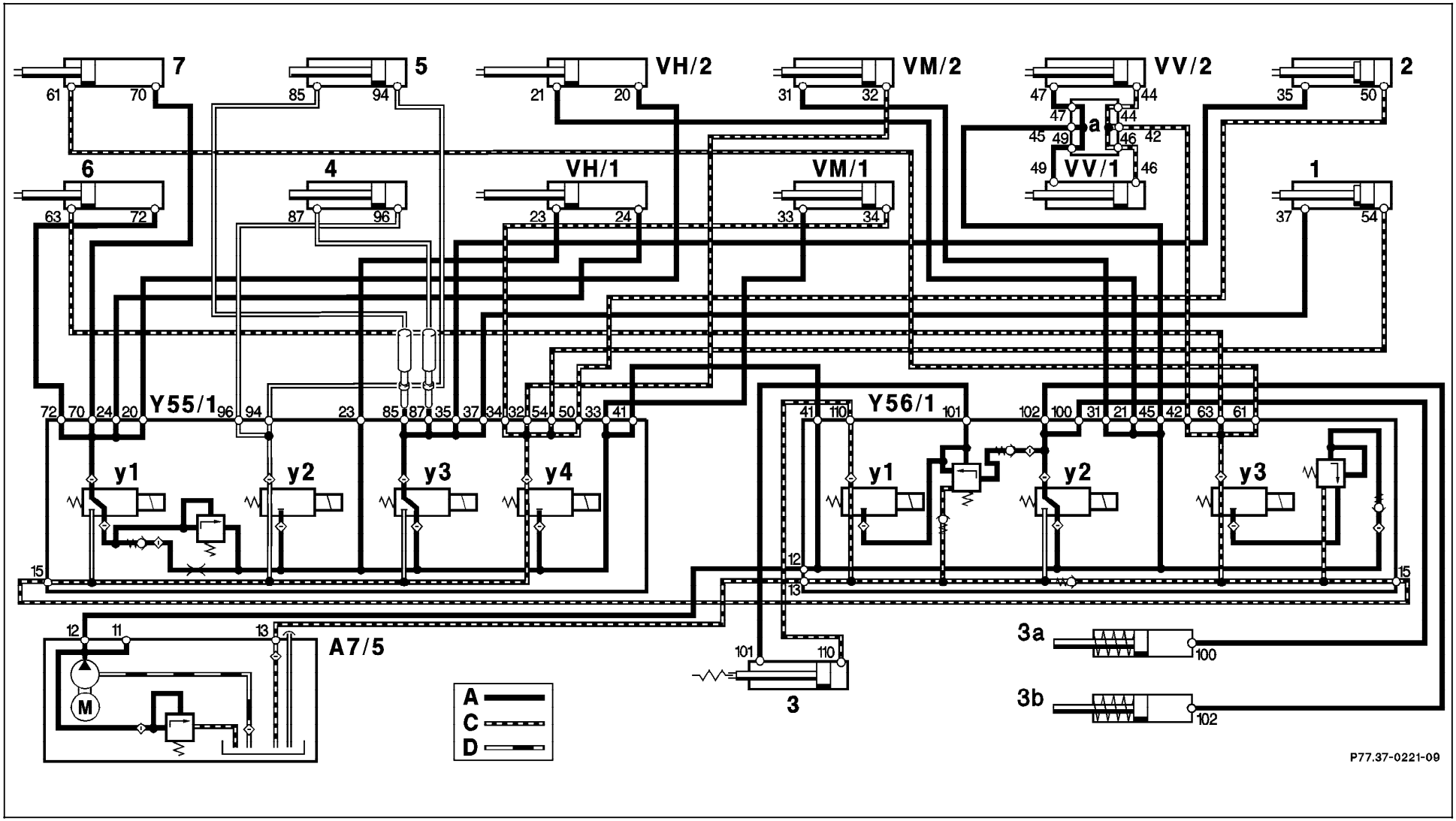

Figure 22

P77.37-0221-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		Raise fabric bow (Figure 22)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 85 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Connector at valve block (Y55/1y4) to remain disconnected. Hydraulic line no. 87 to remain disconnected.	**Fabric bow up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal value ok:** Right hydraulic cylinder (5) for fabric bow leaking. Replace hydraulic cylinder (SMS, Job No. 77-360). **<120 bar**: ⇒ 6.2

Hydraulic Test Program – Test

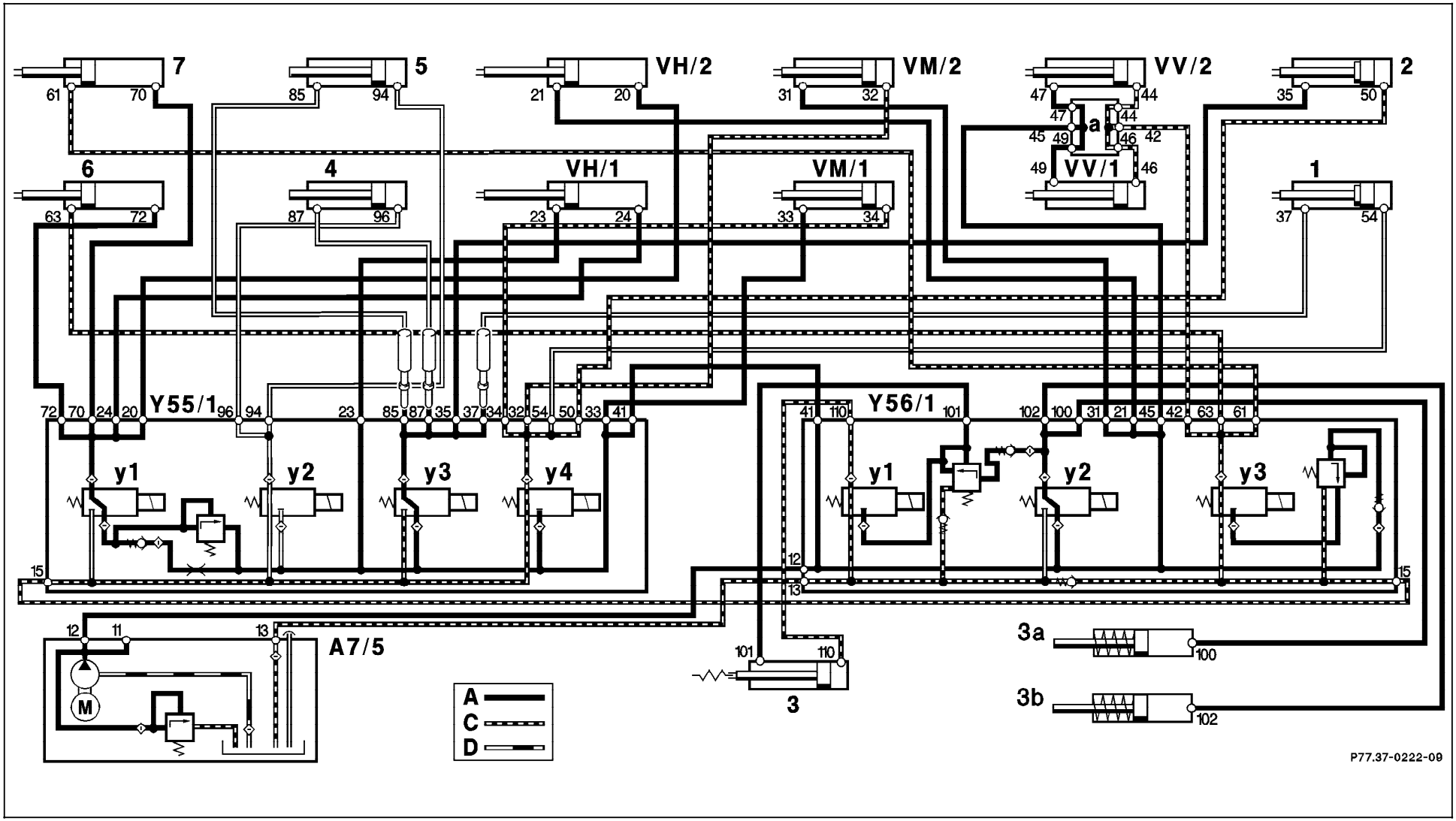

Figure 23

P77.37-0222-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.2		Raise fabric bow (Figure 23)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 37 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Connector at valve block (Y55/1y4) to remain disconnected. Hydraulic lines no. 85, no. 87 to remain disconnected.	**Fabric bow up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal value ok:** Left hydraulic cylinder (1) for soft top compartment cover leaking. Replace hydraulic cylinder (SMS, Job No. 77-370). **<120 bar**: ⇒ 6.3

Hydraulic Test Program – Test

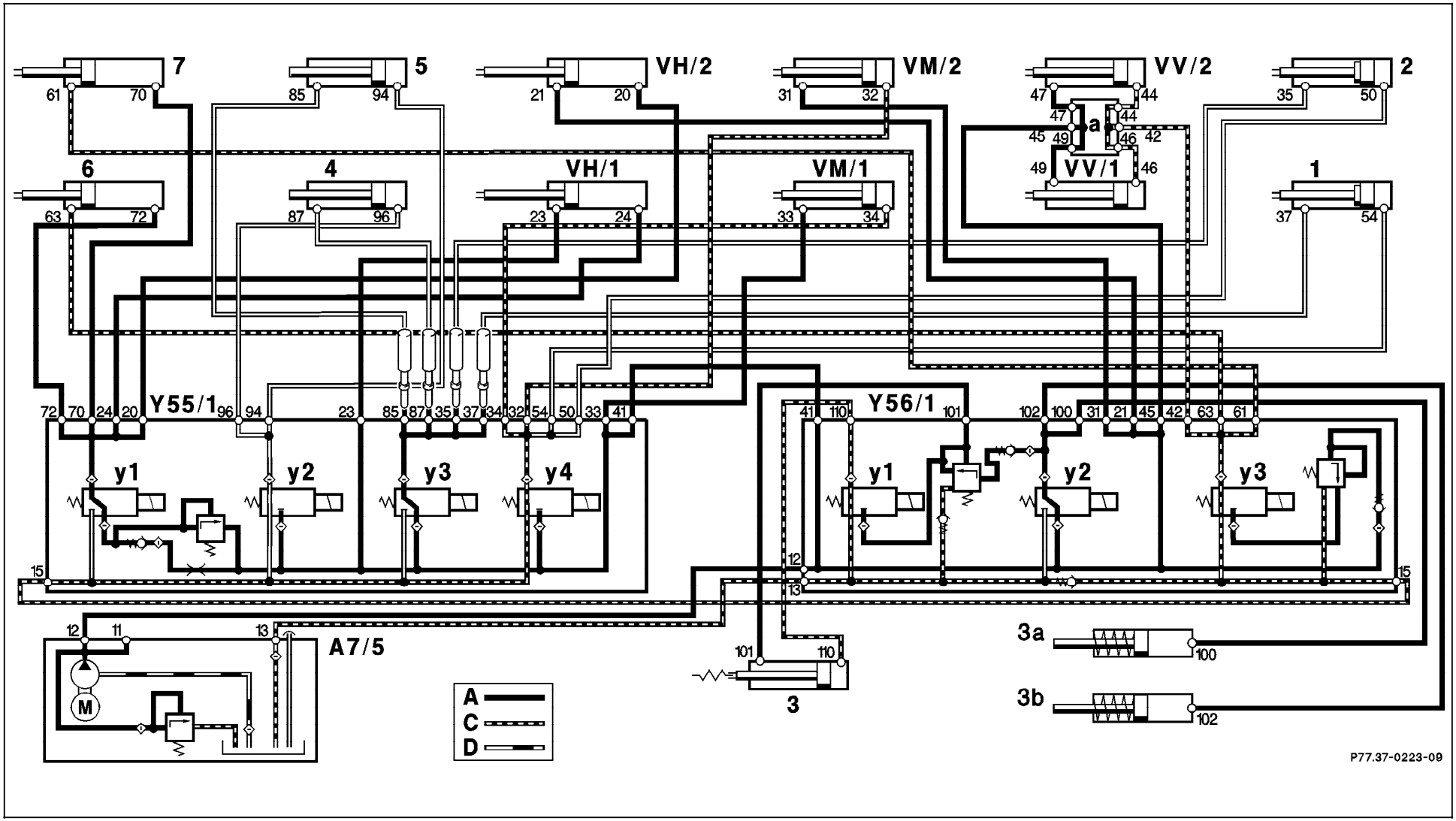

Figure 24

P77.37-0223-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.3		Raise fabric bow (Figure 24)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 35 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Connector at valve block (Y55/1y4) to remain disconnected. Hydraulic lines no. 37, no. 85 and no. 87 to remain disconnected.	**Fabric bow up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal value ok:** Right hydraulic cylinder (2) for soft top compartment cover leaking. Replace hydraulic cylinder (SMS, Job No. 77-370). **<120 bar**: ⇒ 5.1

Hydraulic Test Program – Test

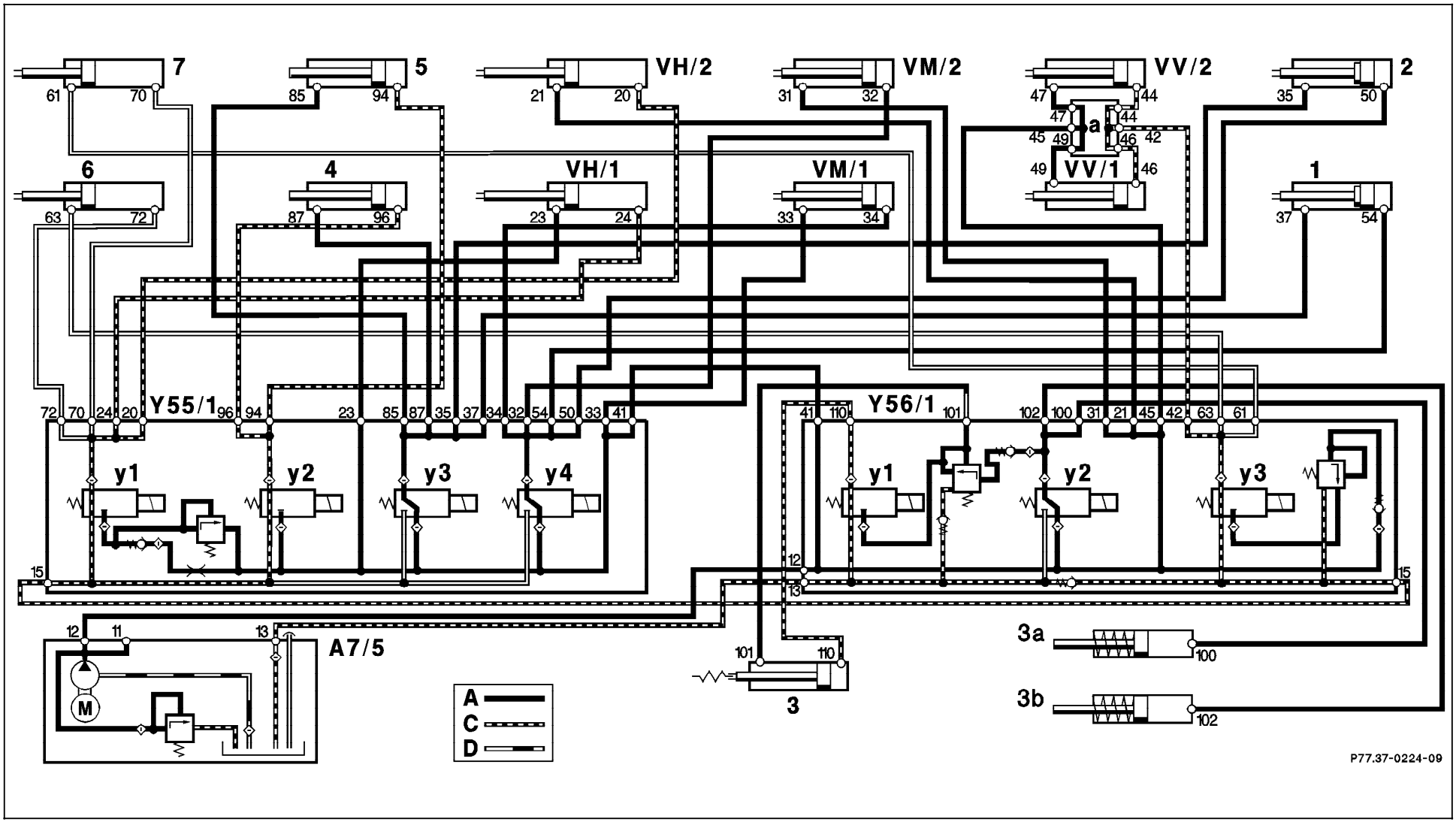

Figure 25

P77.37-0224-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		**Opening center locks (VM/1, VM/2)** (Figure 25) **Raise soft top compartment cover** (Figure 25)	Connect pressure gauge according to connection diagram (Figure 4).	**Fabric bow up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Should center locks (VM/1, VM/2) not open, check adjustment of soft top compartment cover latch pin. Also check for mechanical fault in one or both center locks. Check adjustment of center locking pins. Replace center locks, if locks do not open with above remedies when using soft top switch (SMS, Job No. 77-320). Additionally check soft top compartment hinges or gas pressure shock if soft top cover does not raise and all remedies are without effect. **<120 bar:** ⇒ 6.0

Hydraulic Test Program – Test

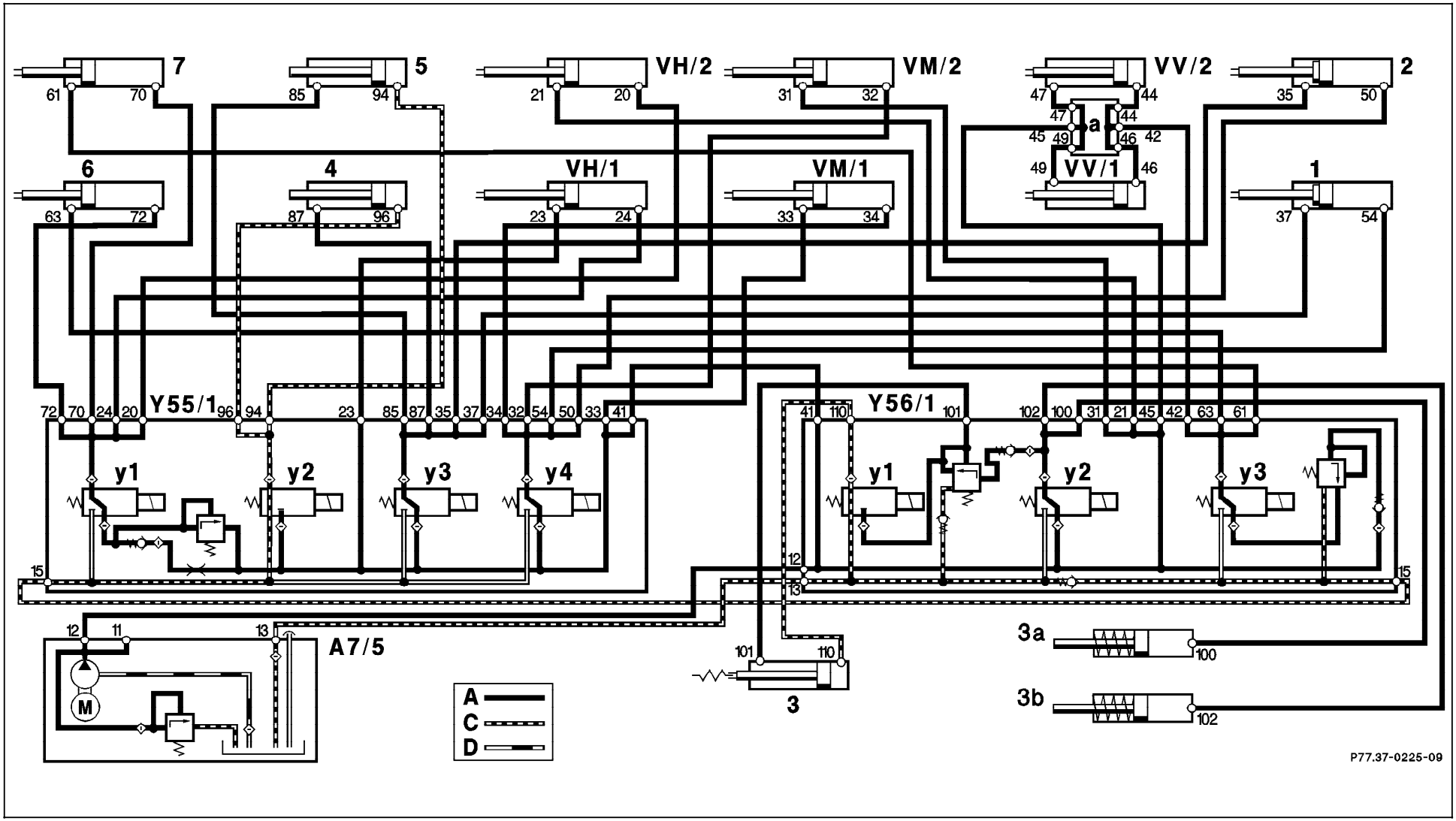

Figure 26

P77.37-0225-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		**Open front locks (VV/1, VV/2)** (Figure 26)	Connect pressure gauge according to connection diagram (Figure 4).	**Fabric bow up, soft top compartment cover up** Ignition: **ON** Press soft top switch: **“lower“.** **Read test pressure while pressing the soft top switch**	180 – 200 bar	**Nominal values ok:** Should front locks (VV/1, VV/2) not open, check adjustment of soft top latch pins. Also check for mechanical fault in one or both front locks. Check the adjustment of latch pins (SMS, Job No. 77-303). Replace the locks, if nominal values are met but locks still do not open (SMS, Job No. 77-330). **<180 bar**: ⇒ 6.0

Hydraulic Test Program – Test

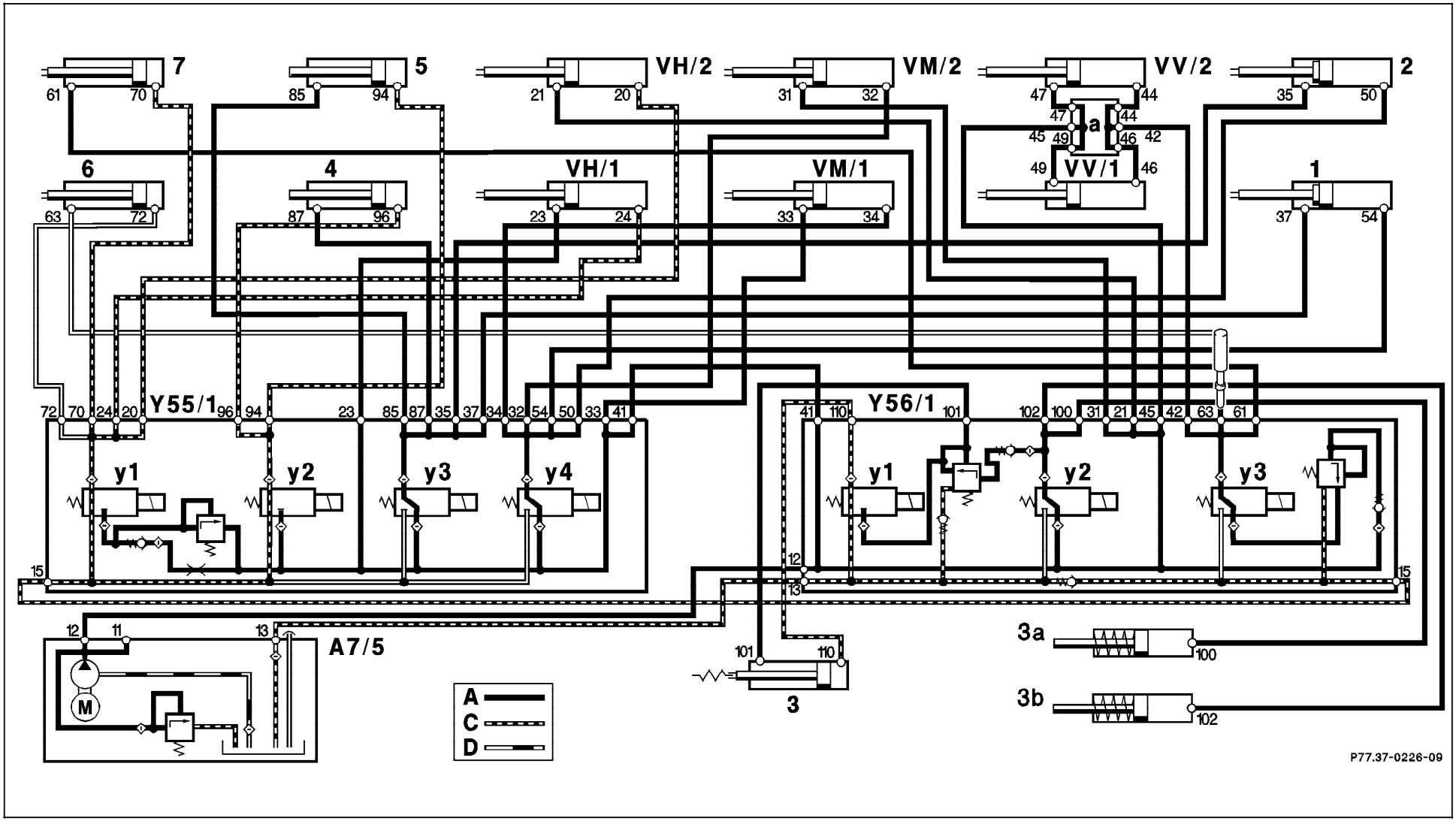

Figure 27

P77.37-0226-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		**Open soft top** (Figure 27)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect connector S84/3x (see 11/1; Pos. 2, Figure 1). Disconnect hydraulic line no. 63 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01.	**Soft top retracted in soft top compartment, soft top compartment cover up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Left hydraulic cylinder (6) for soft top actuation leaking. Replace hydraulic cylinder (SMS, Job No. 77-355). **<120 bar**: ⇒ 9.1

Hydraulic Test Program – Test

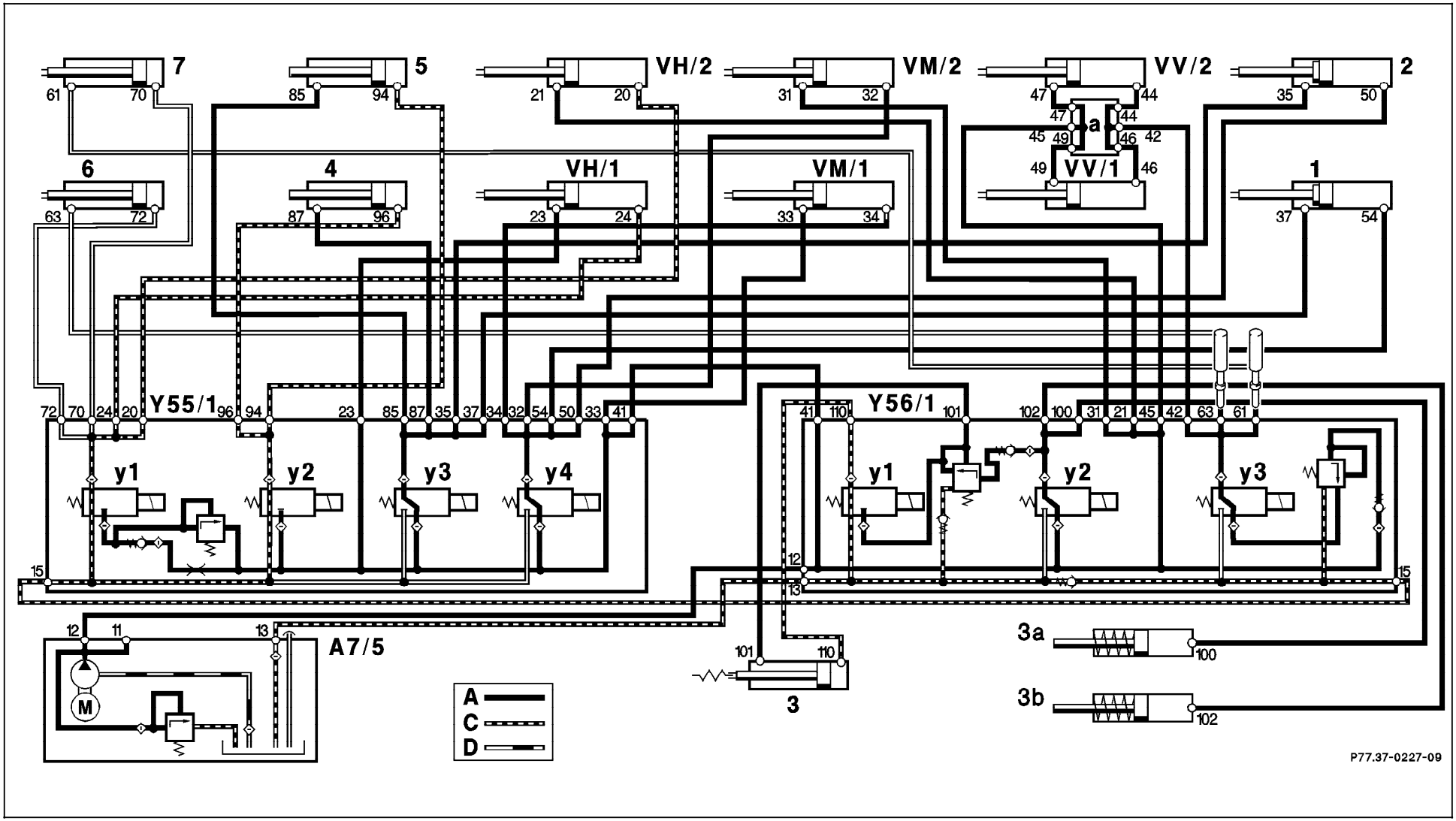

Figure 28

P77.37-0227-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.1		Open soft top (Figure 28)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 61 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Connector S84/3x (see 11/1; 2, Figure 1) to remain disconnected. Hydraulic line no. 63 to remain disconnected.	**Soft top inside soft top compartment,** **soft top compartment cover up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Right hydraulic cylinder (7) for soft top actuation leaking. Replace hydraulic cylinder (SMS, Job No. 77-355). **<120 bar**: ⇒ 9.2

Hydraulic Test Program – Test

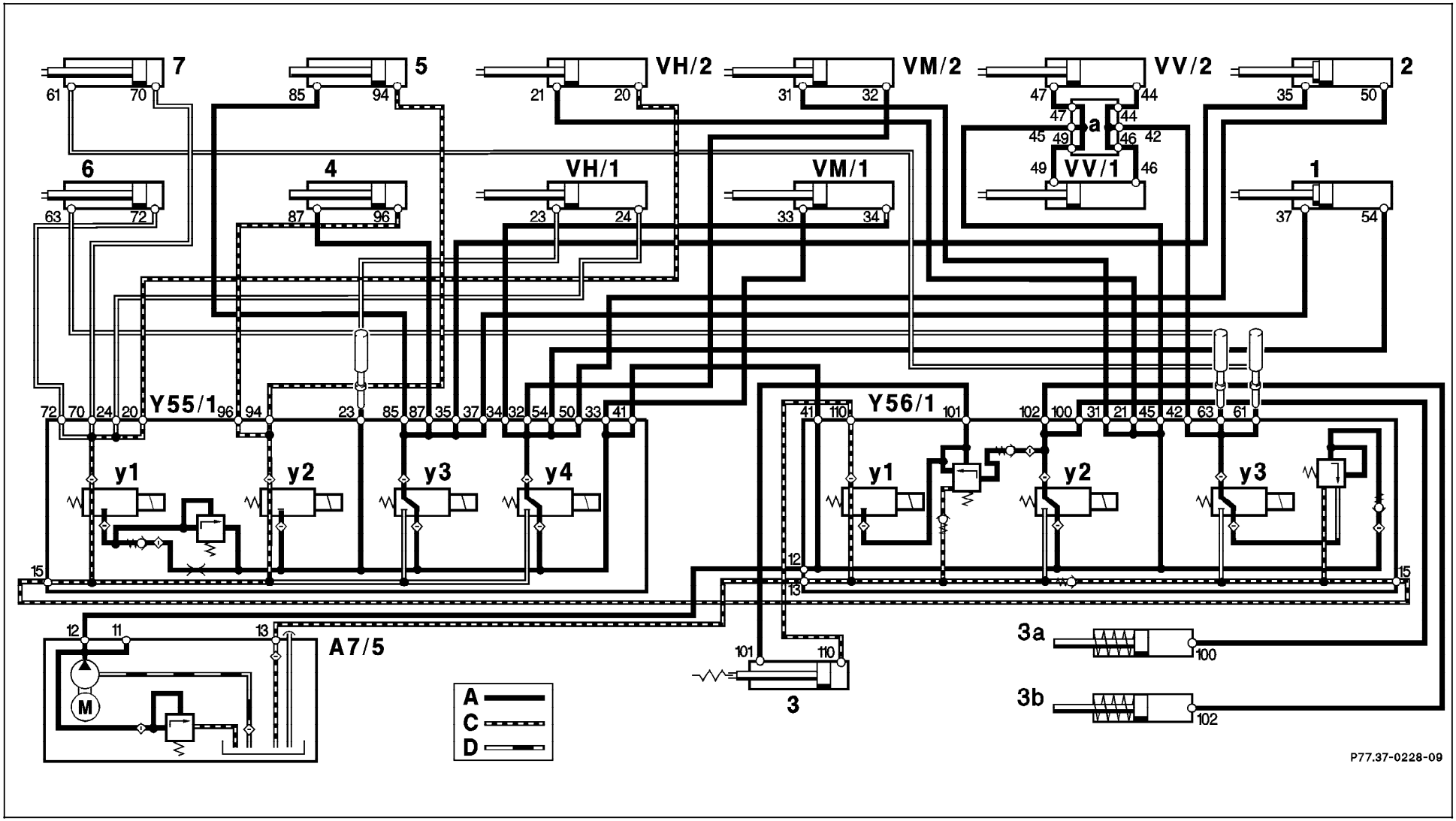

Figure 29

P77.37-0228-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.2		Open soft top (Figure 29)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 23 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01. Connector S84/3x (see 11/1; 2, Figure 1) to remain disconnected. Hydraulic lines no. 61 and no. 63 to remain disconnected.	**Soft top retracted in soft top compartment, soft top compartment cover up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Hydraulic cylinder in left rear lock (VH/1) leaking. Replace hydraulic cylinder (SMS, Job No. 77-328). **<120 bar**: ⇒ 9.3

Hydraulic Test Program – Test

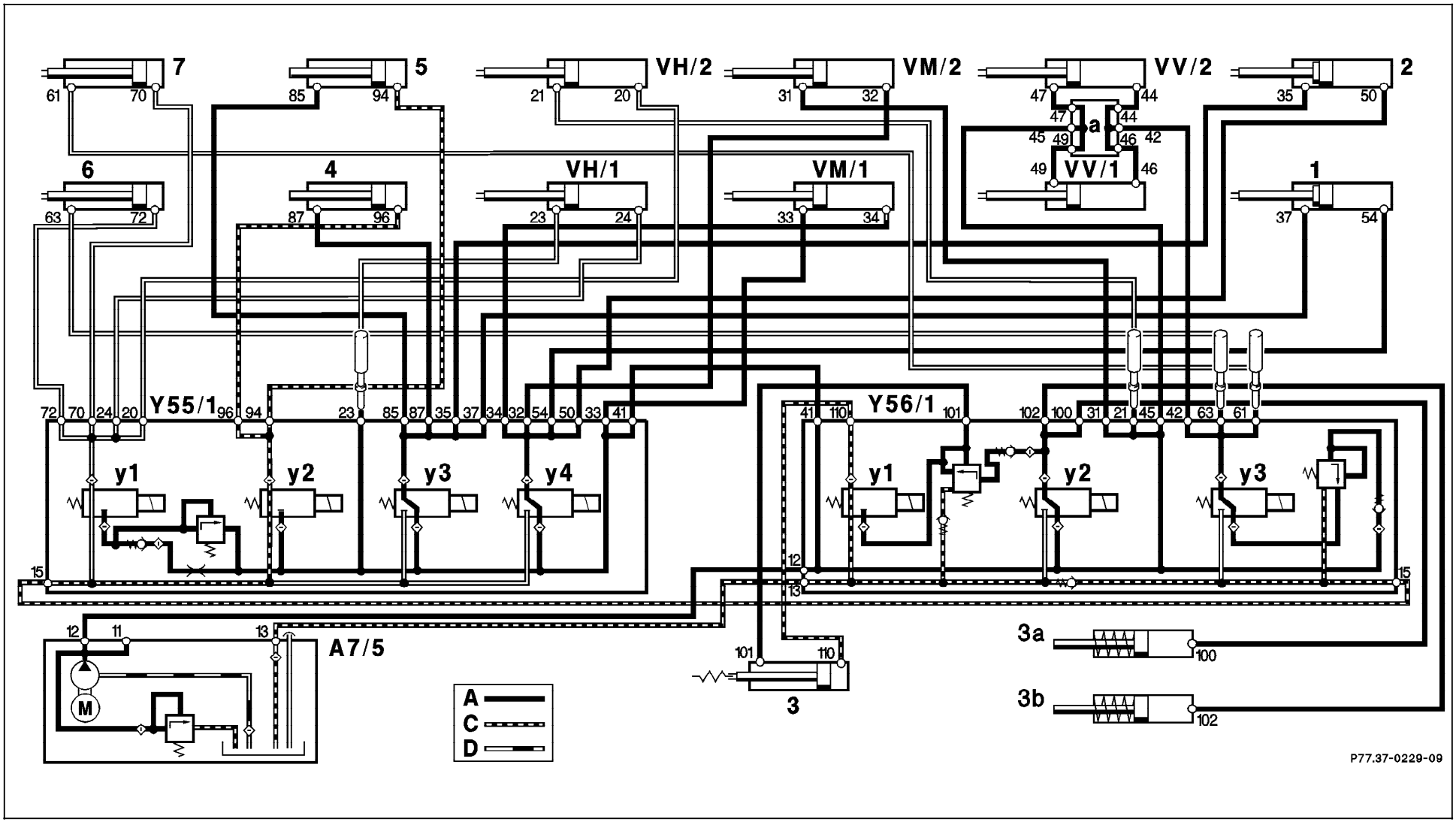

Figure 30

P77.37-0229-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.3		Open soft top (Figure 30)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 21 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Connector S84/3x (see 11/1; 2, Figure 1) to remain disconnected. Hydraulic lines no. 23, no. 61 and no. 63 to remain disconnected.	**Soft top inside soft top compartment,** **soft top compartment cover up** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Hydraulic cylinder in the right rear lock (VH/2) leaking. Replace hydraulic cylinder (SMS, Job No. 77-328). **<120 bar**: ⇒ 6.0

Hydraulic Test Program – Test

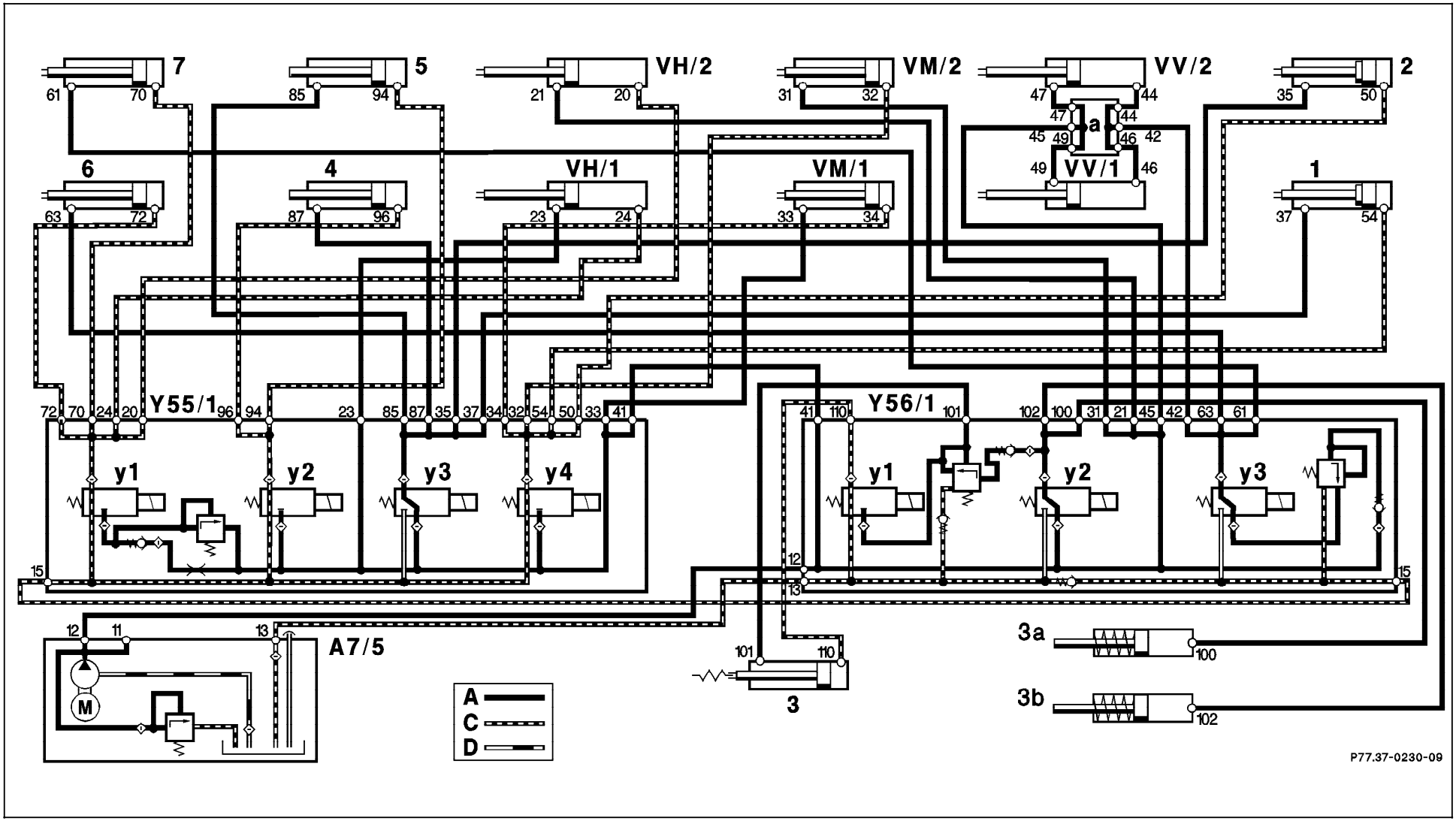

Figure 31

P77.37-0230-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		**Close soft top compartment cover** (Figure 31) **Lock center latches (VM/1, VM/2)** (Figure 31)	Connect pressure gauge according to connection diagram (Figure 4).	**Soft top inside soft top compartment, soft top compartment cover closed (see owner's manual)** Ignition: **ON** Press and hold soft top switch: **"lower"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Check adjustment of latch pins for soft top compartment cover. Center latches (VM/1, VM/2) have mechanical fault. Replace center latches (SMS, Job No. 77-320). **<120 bar**: ⇒ 9.0, ⇒ 6.2, ⇒ 4.0.

Hydraulic Test Program – Test

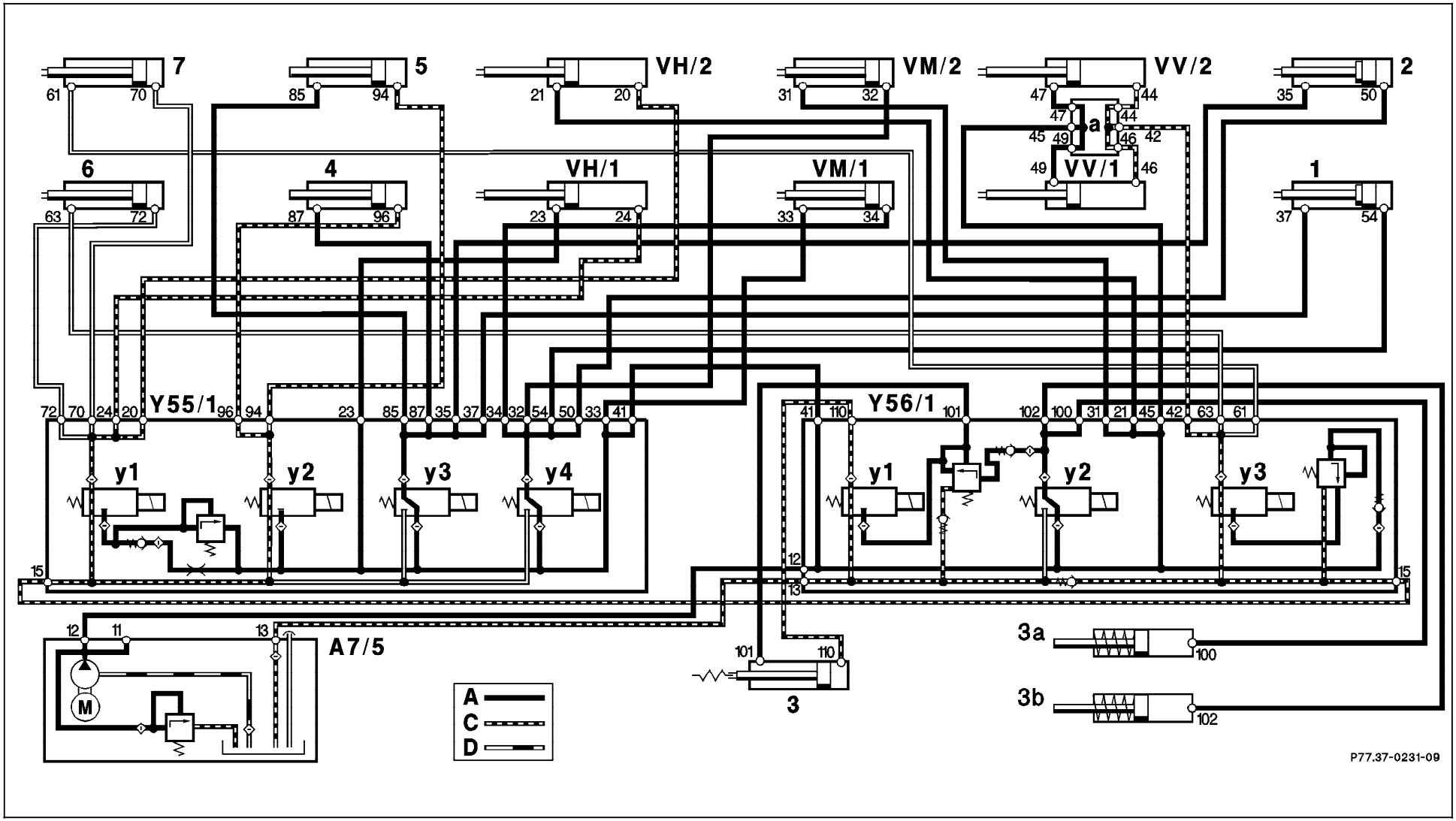

Figure 32

P77.37-0231-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0		**Open center latches (VM/1, VM/2)** (Figure 32) **Raise soft top compartment cover** (Figure 32)	Connect pressure gauge according to connection diagram (Figure 4).	**Starting point:** **Soft top completely up** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Should center latches (VM/1,VM/2) not open, check adjustment of latch pins for soft top compartment cover. Also check both center latches for mechanical fault. Check the adjustment of latch pins. Replace center locks, if locks do not open when using soft top switch (SMS, Job No. 77-320). Additionally check soft top compartment hinges or gas pressure shock, if soft top cover does not raise and above remedies are without effect. **<120 bar**: ⇒ 9.2, ⇒ 6.0, ⇒ 11.1.

Hydraulic Test Program – Test

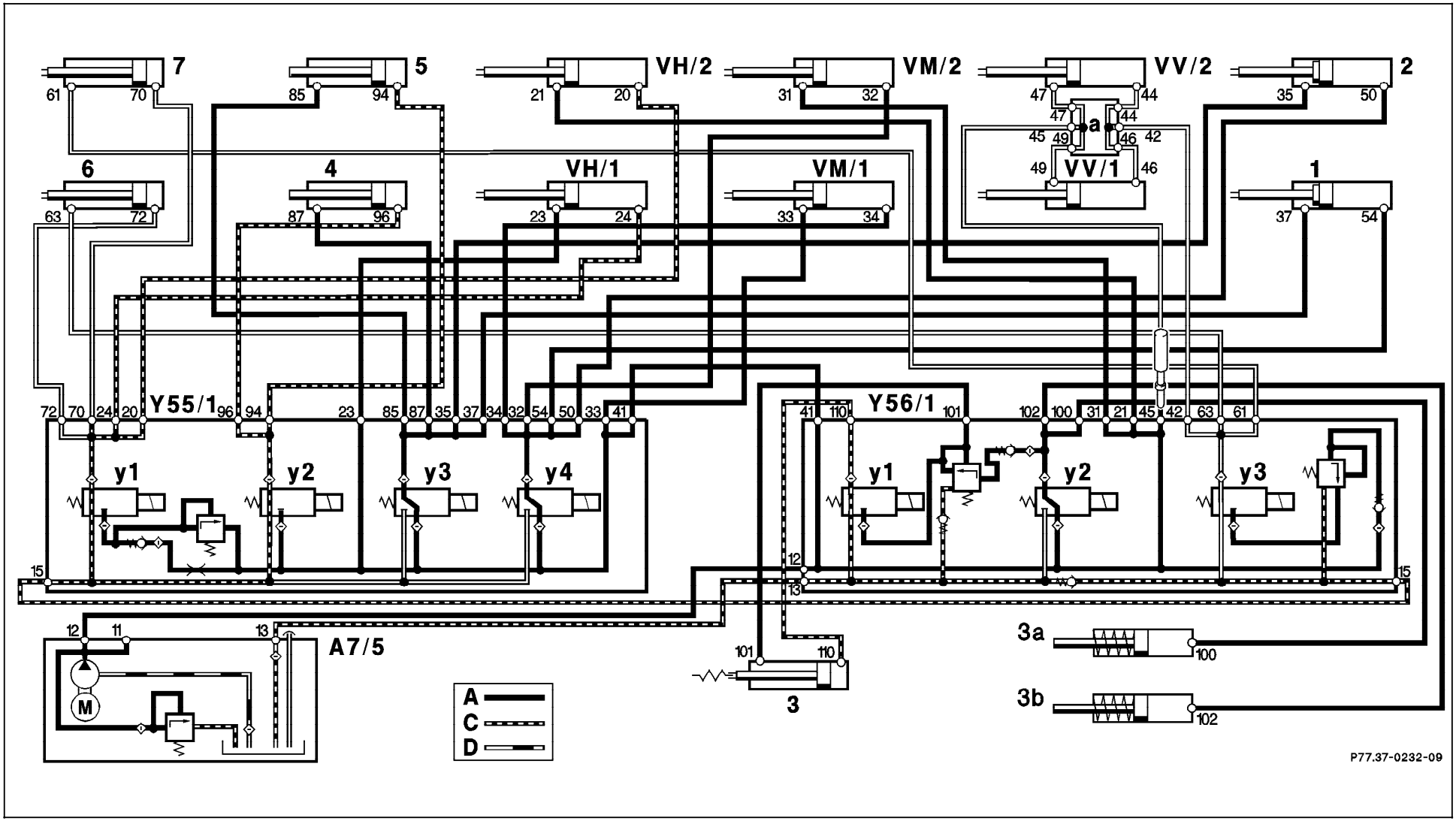

Figure 33

P77.37-0232-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.1		Open center latches (VM/1, VM/2) (Figure 33)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 45 from valve block (Y56/1). Seal connection with threaded plug 129 589 00 91 01. Disconnect connector at valve block (Y55/1y1).	**Soft top compartment cover raised, soft top in soft top compartment** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** ⇒ 11.2. **<120 bar**: ⇒ 6.0, ⇒ 9.2.

Hydraulic Test Program – Test

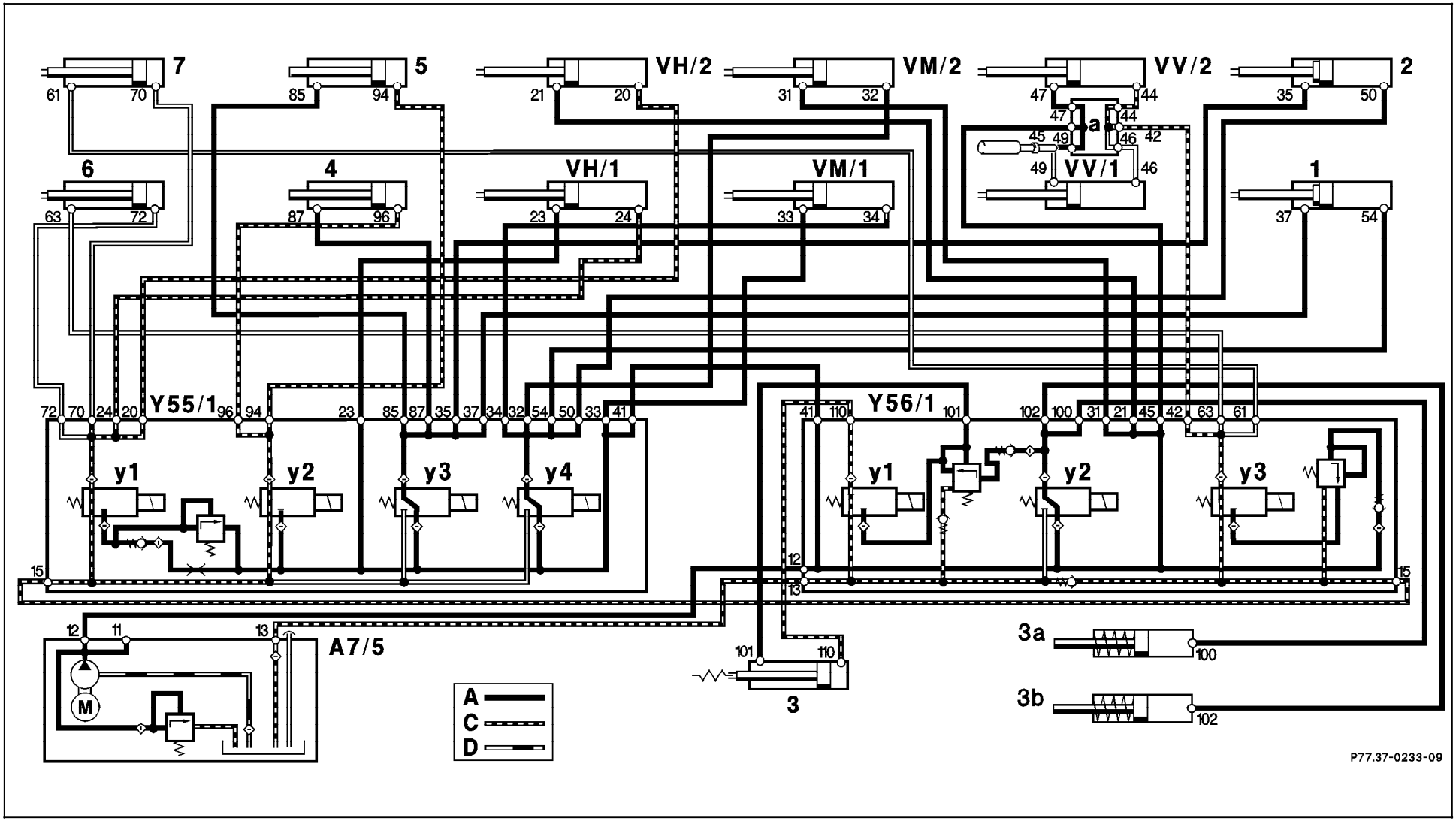

Figure 34

P77.37-0233-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.2		Open center latches (VM/1, VM/2) (Figure 34)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 49 from hydraulic manifold (a) at A-pillar crossmember. Reconnect hydraulic line no. 45. Connector at valve block (Y55/1y1) to remain disconnected.	**Soft top compartment cover raised, soft top in soft top compartment** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder in left front lock (VV/1) leaking. Replace hydraulic cylinder (SMS, Job No. 77-335). **<120 bar**: Hydraulic cylinder in right front lock (VV/2) leaking. Replace hydraulic cylinder (SMS, Job No. 77-335).

Hydraulic Test Program – Test

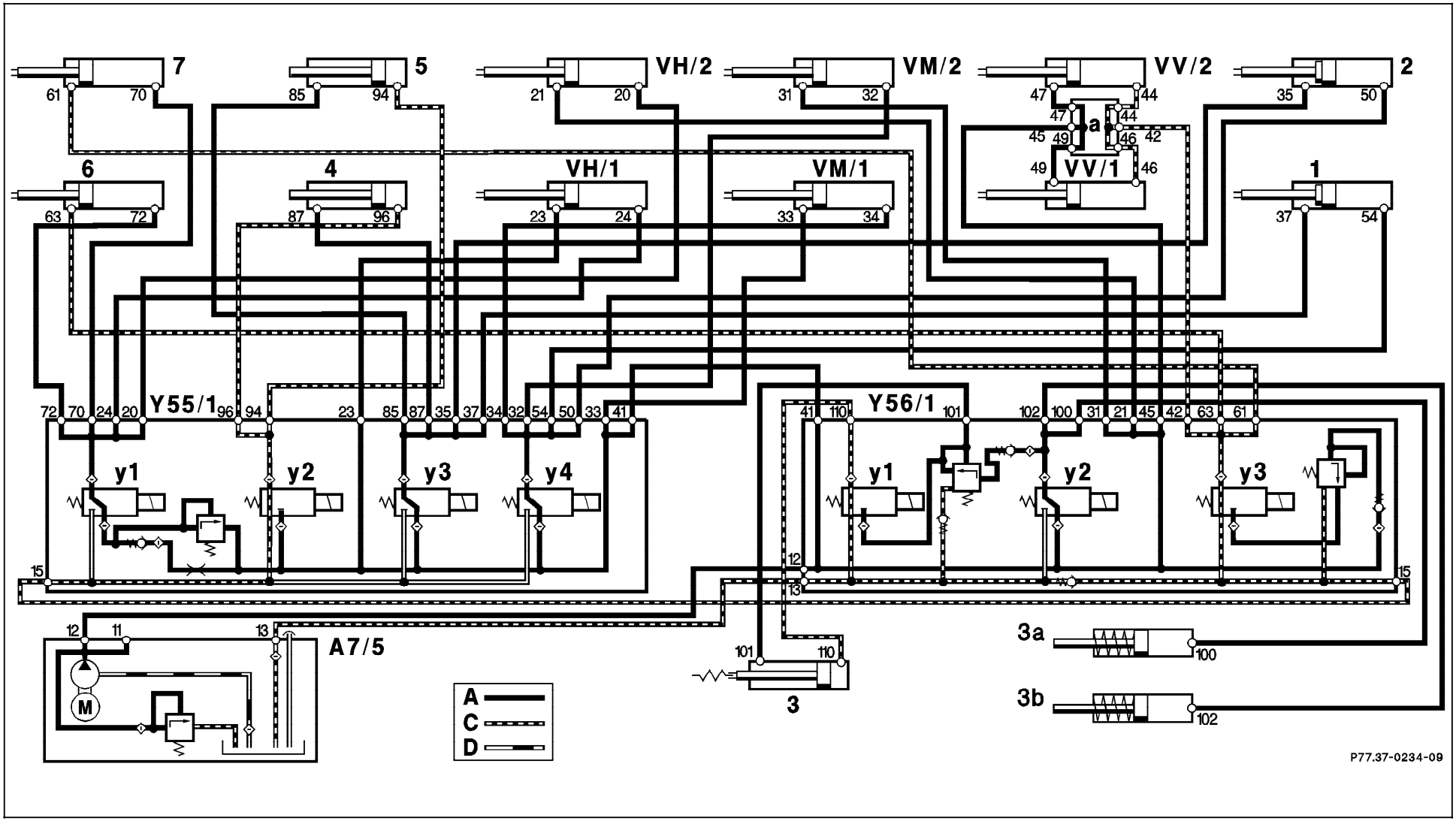

Figure 35

P77.37-0234-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Close soft top** (Figure 35)	Connect pressure gauge according to connection diagram (Figure 4). Install shim between windshield crossmember and soft top so that latch pins do not engage into left and right front latches (VV/1, VV/2). Disconnect connector at valve block (Y56/1y3).	**Close soft top, soft top compartment cover raised, fabric bow raised** Ignition: **ON** Press soft top switch: **"Close".** **Read test pressure while pressing soft top switch** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Mechanical fault in soft top frame assembly. **<120 bar**: ⇒ 5.1, ⇒ 6.0, ⇒ 11.1.

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0		**Lock front locks (VV/1, VV/2)**	Connect pressure gauge according to connection diagram (Figure 4). Remove shim between windshield crossmember and soft top. Insert latch pins into front latches (VV/1, VV/2).	**Soft top lowered unto winshield crossmember, soft top compartment cover up, fabric bow raised** Ignition: **ON** Press soft top switch: **"Close".** **Read test pressure while pressing soft top switch**	180 – 200 bar	**Nominal values ok:** Check the adjustment of front latch pins on soft top frame (SMS, Job No. 77-303). Replace front locks if nominal values are met but locks still do not lock (SMS, Job No. 77-330). **<180 bar**: ⇒ 5.1, ⇒ 6.0, ⇒ 11.1.

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Hydraulic Test Program – Test

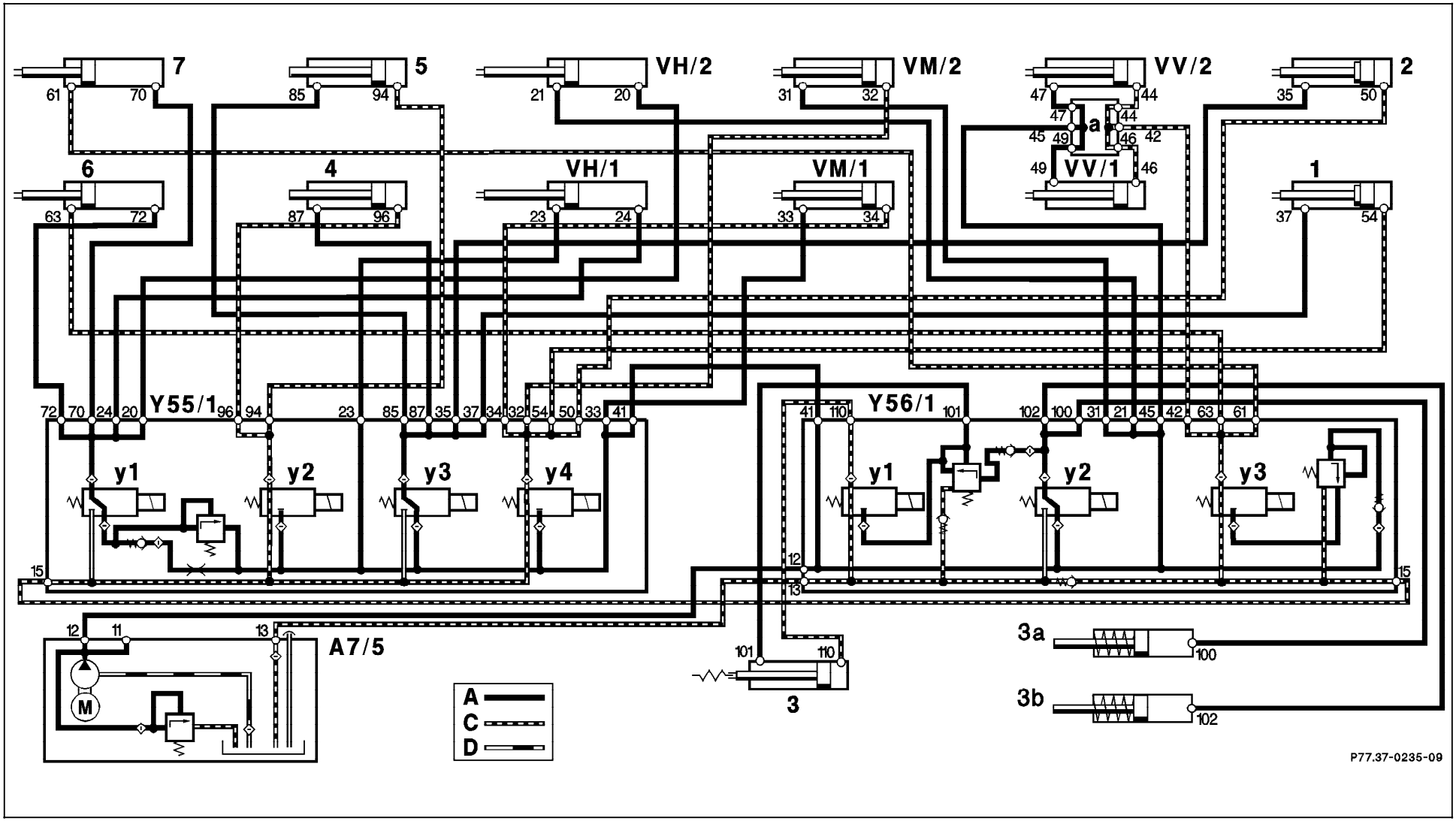

Figure 36

P77.37-0235-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0		**Close soft top compartment cover** (Figure 36) **Lock center locks (VM/1, VM/2)** (Figure 36)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect connector at valve block (Y55/1y2).	**Front of soft top locked, fabric bow raised, soft top compartment cover closed and center locks (VM/1, VM/2) locked** Ignition: **ON** Press and hold soft top switch: **"close". ** Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Check adjustment of soft top compartment cover latch pins. Replace center locks, if locks do not lock when using the soft top switch (SMS, Job No. 77-320). **<120 bar**: ⇒ 4.0, ⇒ 6.2, ⇒ 9.0.

Hydraulic Test Program – Test

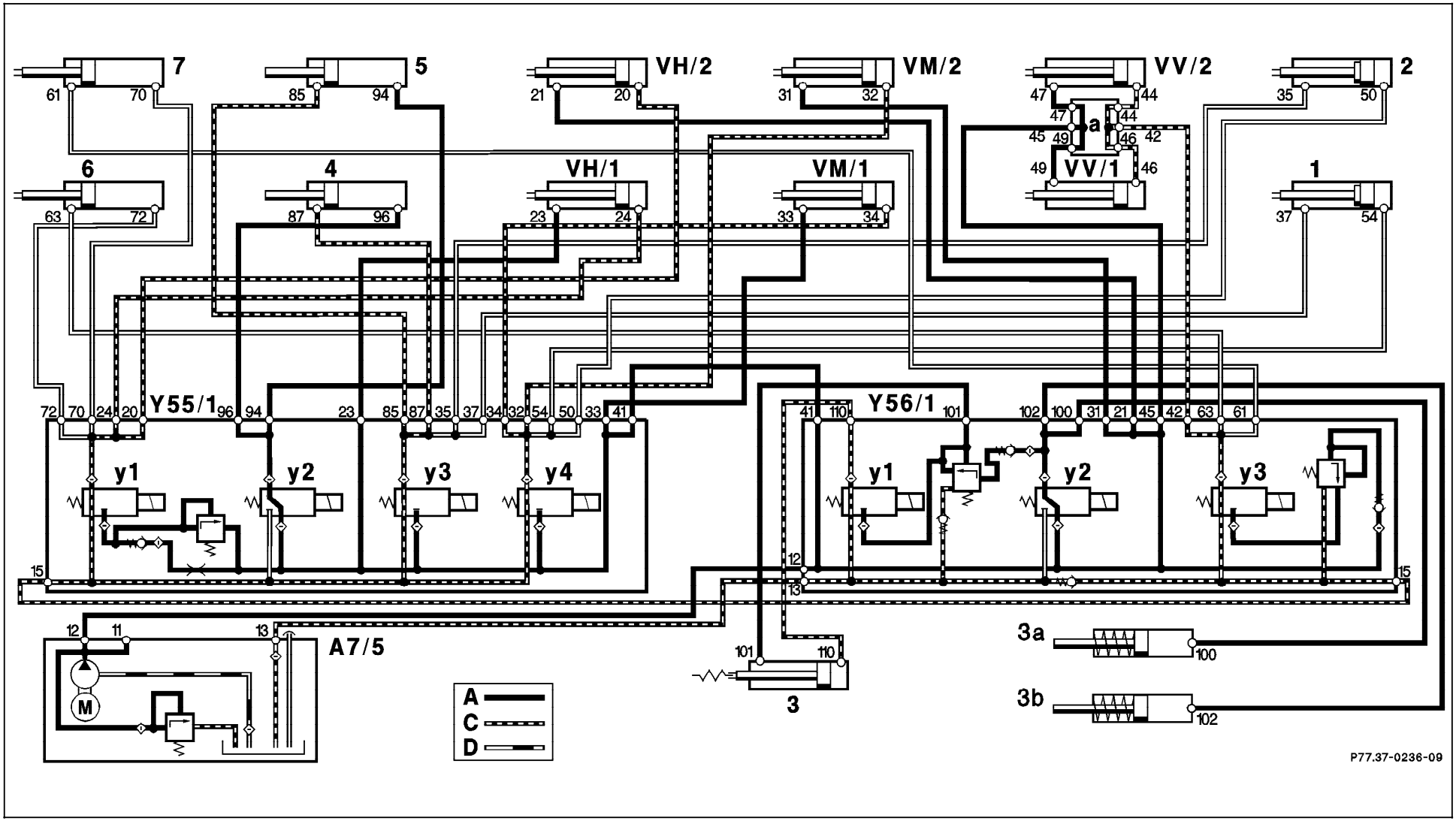

Figure 37

P77.37-0236-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.0		**Retract fabric bow** (Figure 37)	Connect pressure gauge according to connection diagram (Figure 4).	**Soft top completely closed** Ignition: **ON** Press and hold soft top switch: **"close".** Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Mechanical fault in soft top frame assembly. **<120 bar**: ⇒ 4.0, ⇒ 15.1.

Hydraulic Test Program – Test

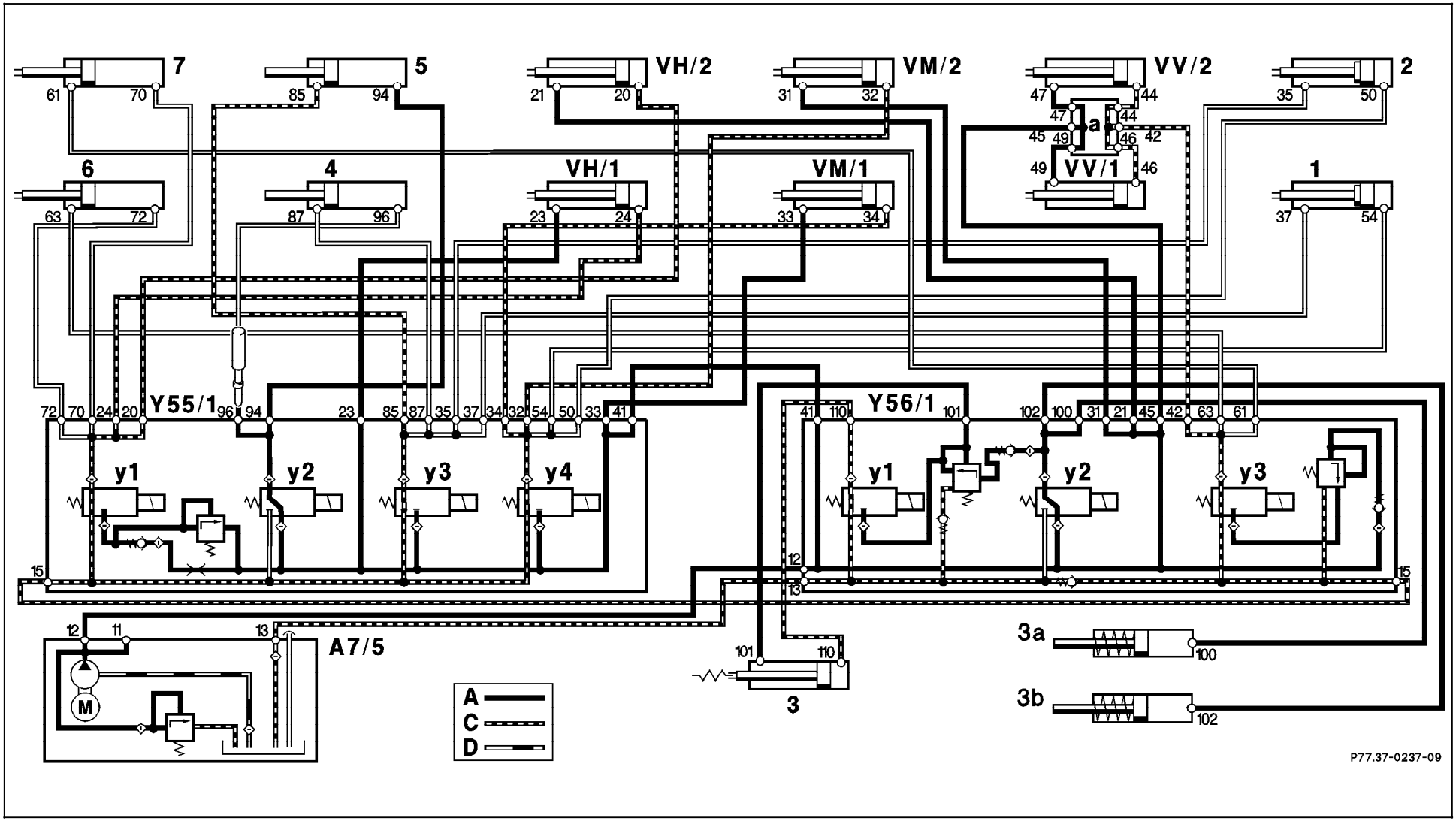

Figure 38

P77.37-0237-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.1		Retract fabric bow (Figure 38)	Connect pressure gauge according to connection diagram (Figure 4). Disconnect hydraulic line no. 96 from valve block (Y55/1). Seal connection with threaded plug 129 589 00 91 01.	**Soft top completely closed** Ignition: **ON** Press and hold soft top switch: **close**. Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Hydraulic cylinder of left fabric bow (4) leaking. Replace hydraulic cylinder (SMS, Job No. 77-360). **<120 bar**: Hydraulic cylinder of right fabric bow (5) leaking. Replace hydraulic cylinder (SMS, Job No. 77-360).

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0		**Lock rear locks (VH/1, VH/2)**	Connect pressure gauge according to connection diagram (Figure 4).	**Soft top completely closed** Ignition: **ON** Press and hold soft top switch: **"close".** Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Check adjustment of latch pins on fabric bow (SMS, Job No. 77-303). Replace rear latches if locking is not possible and nominal values are met (SMS, Job No. 77-328). **<120 bar**: ⇒ 4.0.

Hydraulic Test Program – Test – This Page Left Blank Intentionally

Hydraulic Test Program – Test

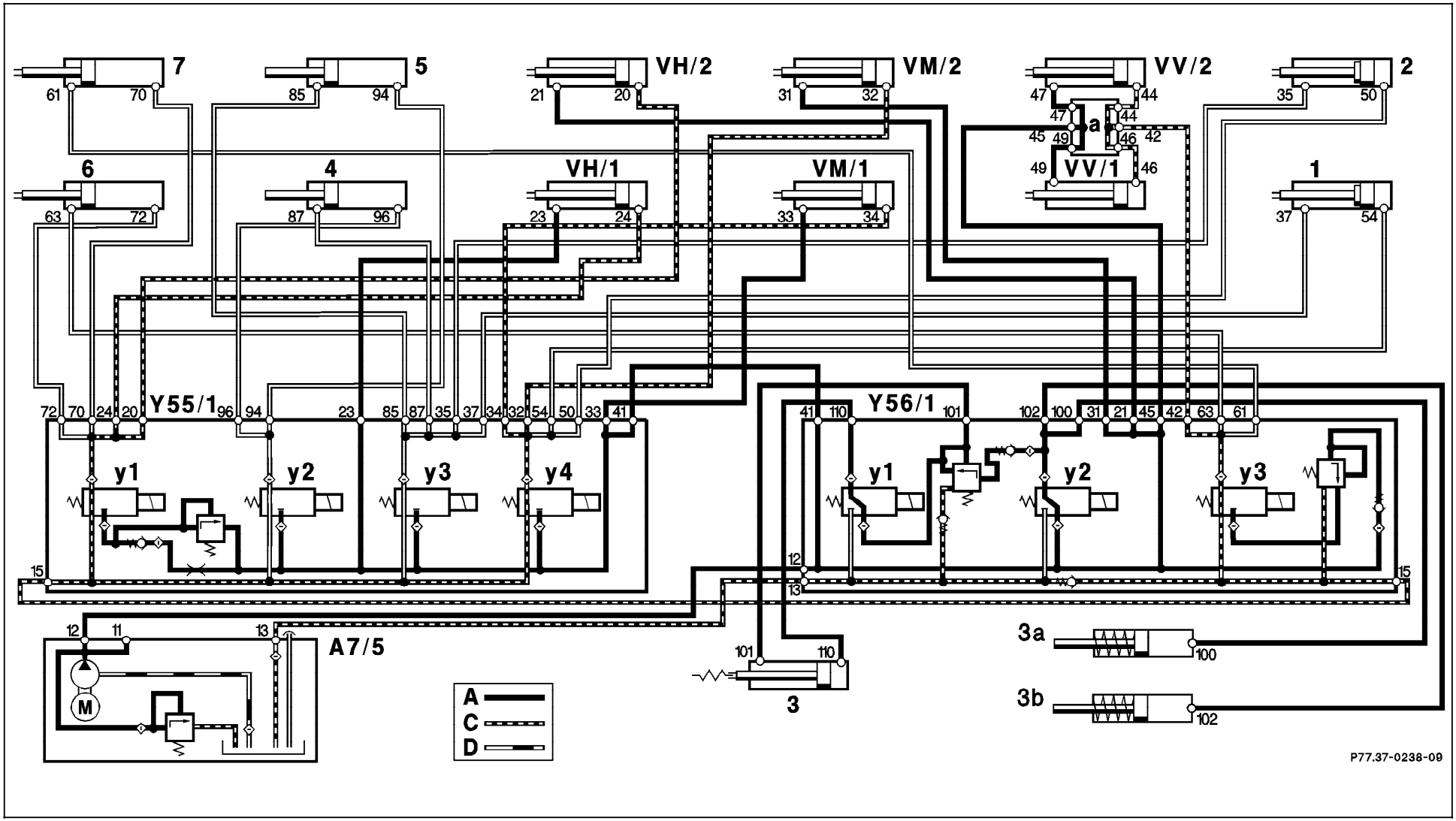

Figure 39

P77.37-0238-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
17.0		**Raise roll bar** (Figure 39)	Connect pressure gauge according to connection diagram (Figure 4).	**Roll bar lowered** Ignition: **ON** Press and hold RB switch: **"raise".** Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	 120 – 200 bar	**Nominal values ok:** Hydraulic cylinder lock in roll bar support element (3) does not unlock. Replace support element (SMS, Job No. 91-920). **<120 bar**: ⇒ 4.0.

Hydraulic Test Program – Test

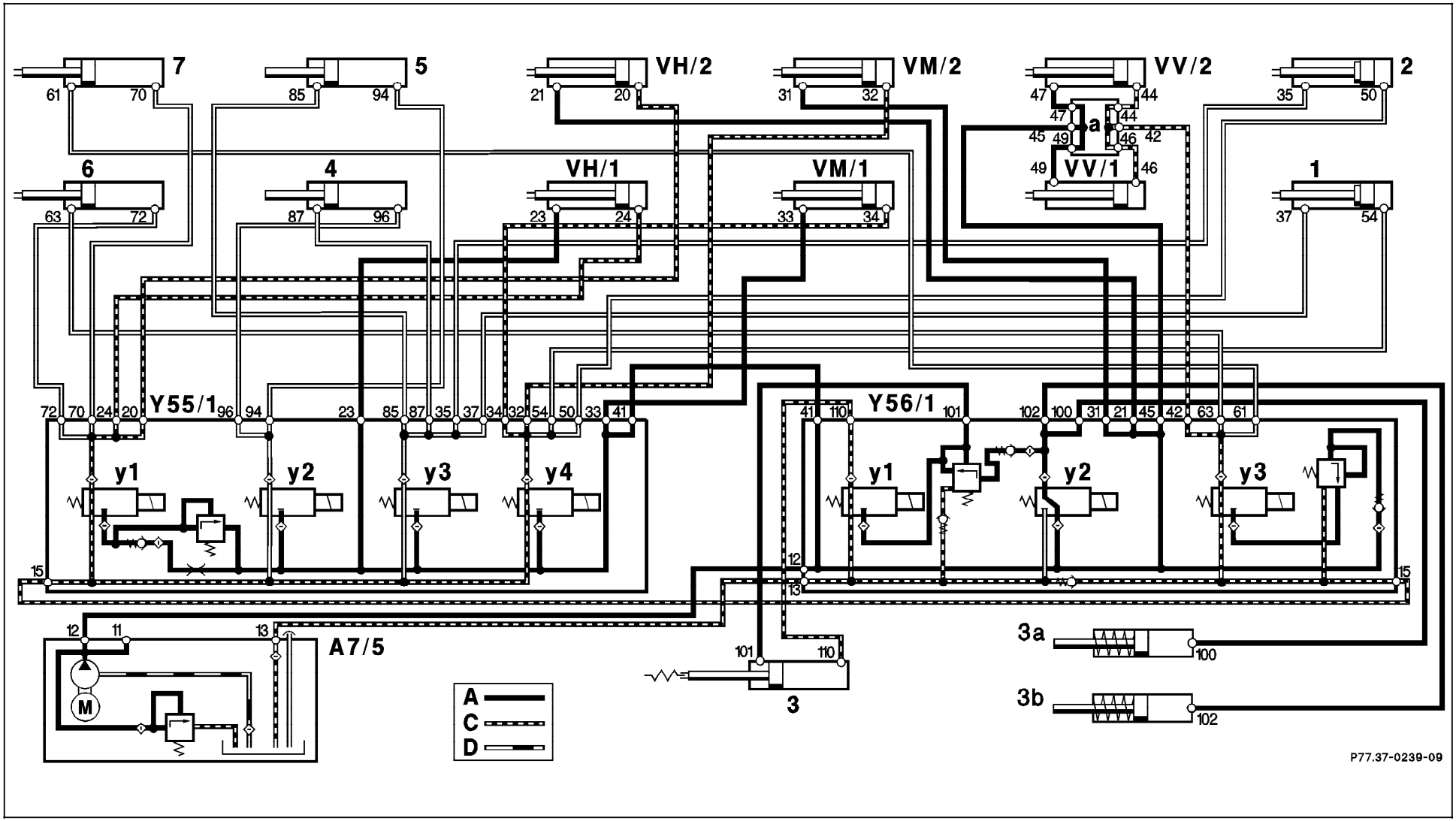

Figure 40

P77.37-0239-09

Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.0		**Lower roll bar** (Figure 40)	Connect pressure gauge according to connection diagram (Figure 4).	**Roll bar raised** Ignition: **ON** Press and hold RB switch: **"lower".** Have a second technician unplug relay (A7/5k1, Figure 4) **after 5 sec.** Keep switch depressed an **additional 5 sec.** **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**Nominal values ok:** Left/right locking pawls (3a/3b) do not release. Replace locking pawls. Mechanical fault in support element (3). Replace support element (SMS, Job No. 91-920). **<120 bar**: ⇒ 4.0.