11.2 Model 129

The diagnosis of roll bar deployment in an accident is described in Diagnostic Manual, Body and Accessories, Volume 3, Chapter 19.2.

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
When working on components activated via hand, electrically via motors, hydraulically, pneumatically via linkages, it is possible that severe injury can result in the severing, pinching, or crushing of body parts.

⚠ CAUTION!

Do not allow any body parts to be in the general area of the moving components.

Protective measures:

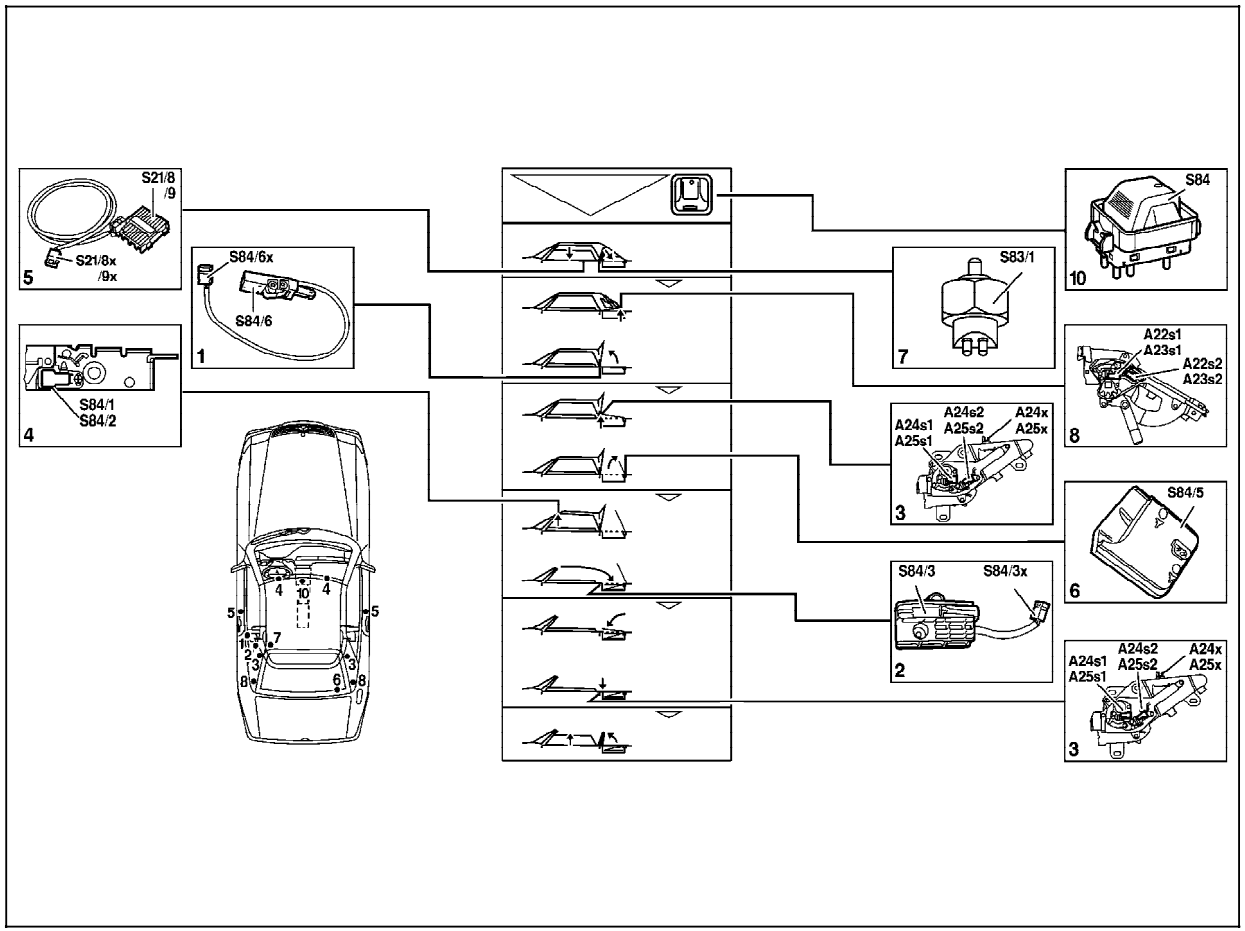
- Supervise work.
- Do not reach into the moving mechanism at any time during any tests.
- Keep away from the moving mechanism of components which are being activated via the HHT and or directly via circuit 30.
- Ensure that all test cables are of sufficient length.

Diagnosis – Function Test

Roadster Soft Top Opening Sequence
Initial stage: Roadster Soft Top closed.

Each frame (1-8, 10) in Figure 1 shows each opening sequence step **(1-8)** along with each component, with actuation of hydraulic actuators and window motors, that must be completed first before the next sequence step can be accomplished.

Figure 1



P77.39-0265-09

Roadster Soft Top Opening Sequence

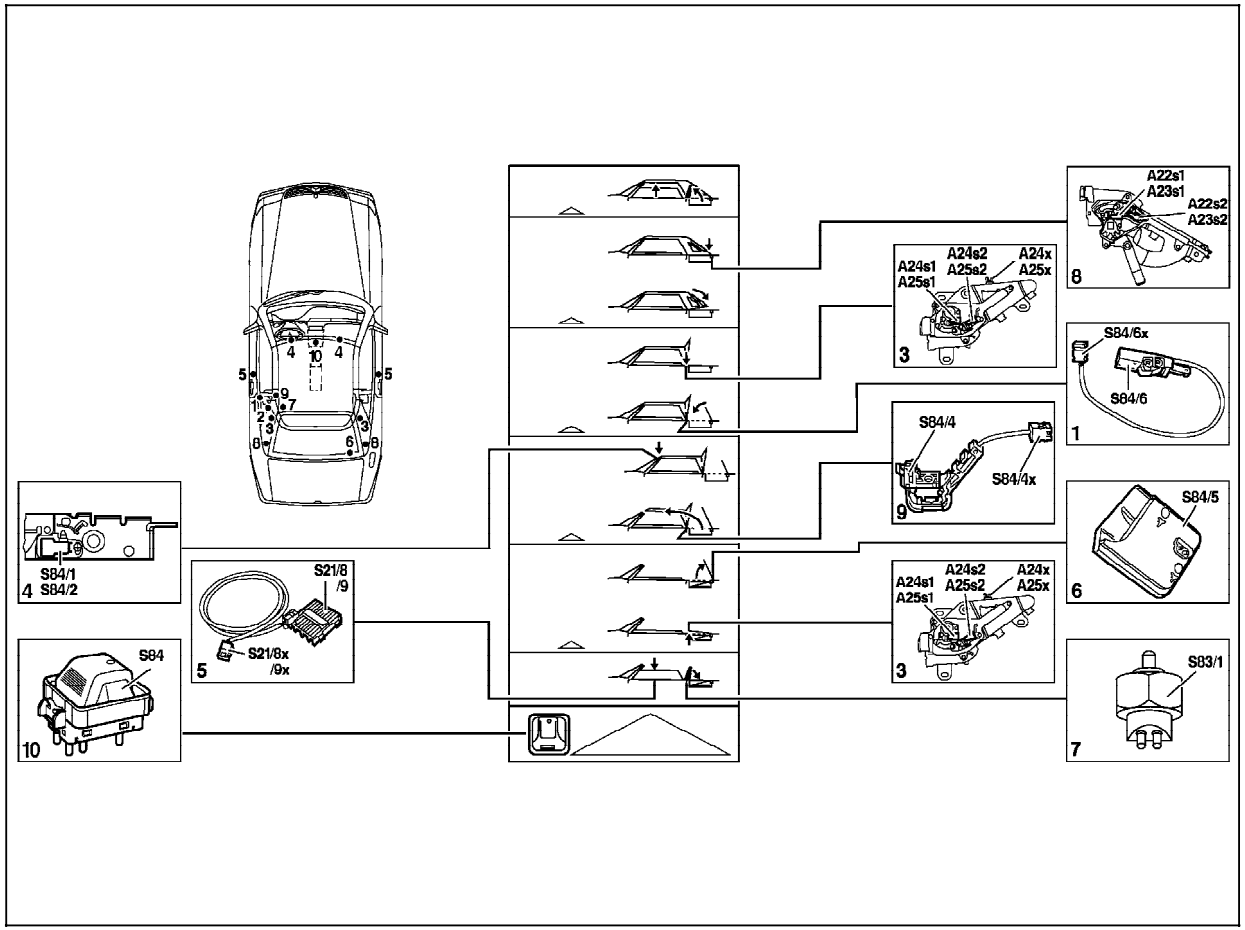
A22s1	Bow "closed" switch (8)
A22s2	Bow "locked" switch (8)
A23s1	Bow "closed" switch (8)
A23s2	Bow "locked" switch (8)
A24s1	Cover "closed" switch (3)
A24s2	Cover "locked" switch (3)
A25s1	Cover "closed" switch (3)
A25s2	Cover "locked" switch (3)
S21/8	Right front door “window down” limit switch (5)
S21/9	Left front door “window down” limit switch (5)
S83/1	RB “retracted” switch (7)
S84	Power soft top switch (10)
S84/1	Left front soft top “locked” switch (4)
S84/2	Right front soft top “locked” switch (4)
S84/3	Soft top “open” switch (soft top in storage compartment) (2)
S84/5	Soft top compartment “open” switch (6)
S84/6	Soft top fabric bow “raised” switch (1)

Diagnosis – Function Test

Roadster Soft Top Closing Sequence

Each frame (1, 3, 4-8,10) in Figure 2 shows each closing sequence step **(1-10)** along with each component, with actuation of hydraulic actuators and window motors, that must be completed first before the next sequence step can be accomplished.

Figure 2



P77.39-0266-09

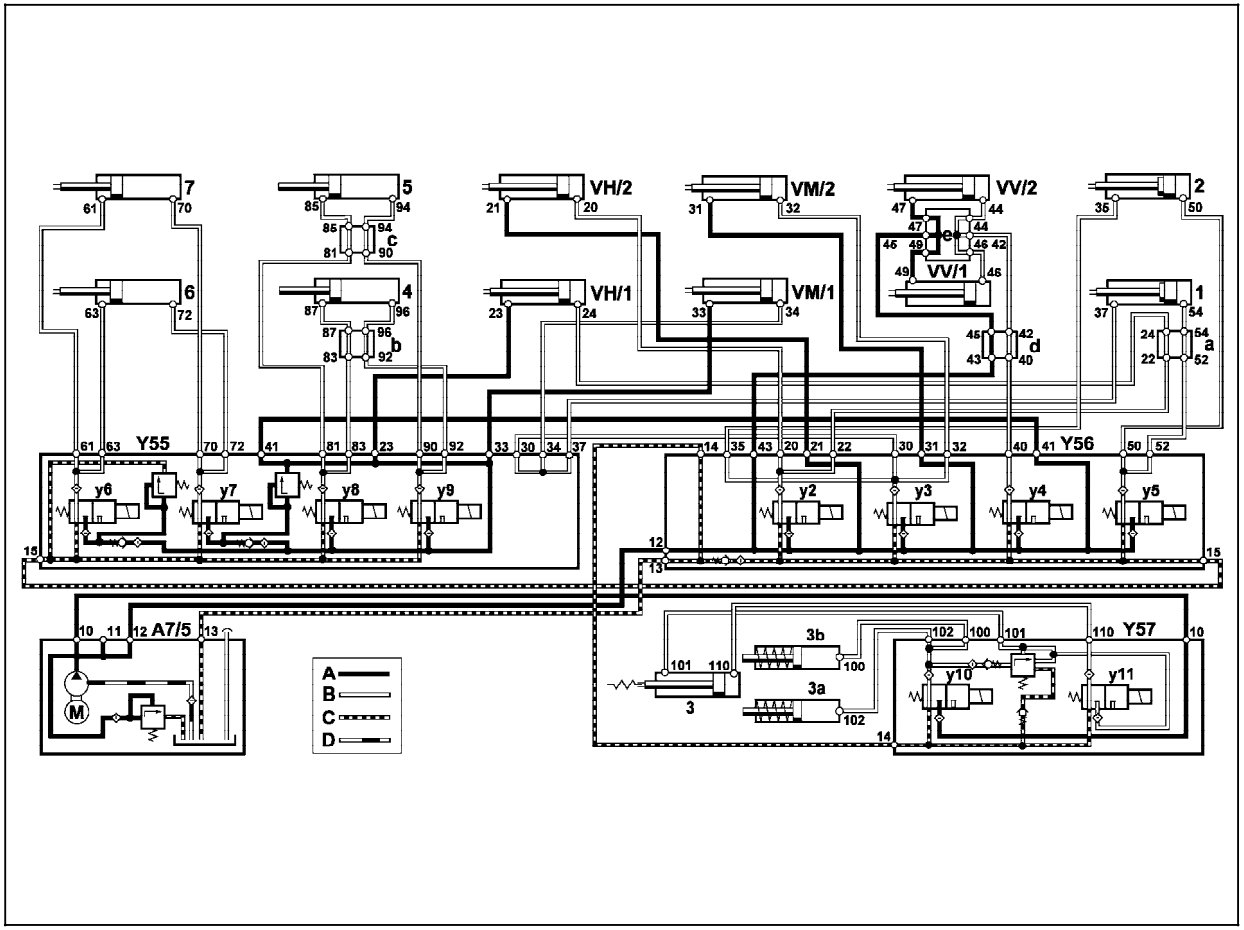
Roadster Soft Top Closing Sequence

A22s1	Bow "closed" switch (8)
A22s2	Bow "locked" switch (8)
A23s1	Bow "closed" switch (8)
A23s2	Bow "locked" switch (8)
A24s1	Cover "closed" switch (3)
A24s2	Cover "locked" switch (3)
A25s1	Cover "closed" switch (3)
A25s2	Cover "locked" switch (3)
S21/8	Right front door “window down” limit switch (5)
S21/9	Left front door “window down” limit switch (5)
S83/1	RB “retracted” switch (7)
S84	Power soft top switch (10)
S84/1	Left front soft top “locked” switch (4)
S84/2	Right front soft top “locked” switch (4)
S84/4	Soft top "raised" switch (9)
S84/5	Soft top compartment “open” switch (6)
S84/6	Soft top fabric bow “raised” switch (1)

Diagnosis – Function Test

Roadster Soft Top Hydraulic Flow Schematic

Figure 3



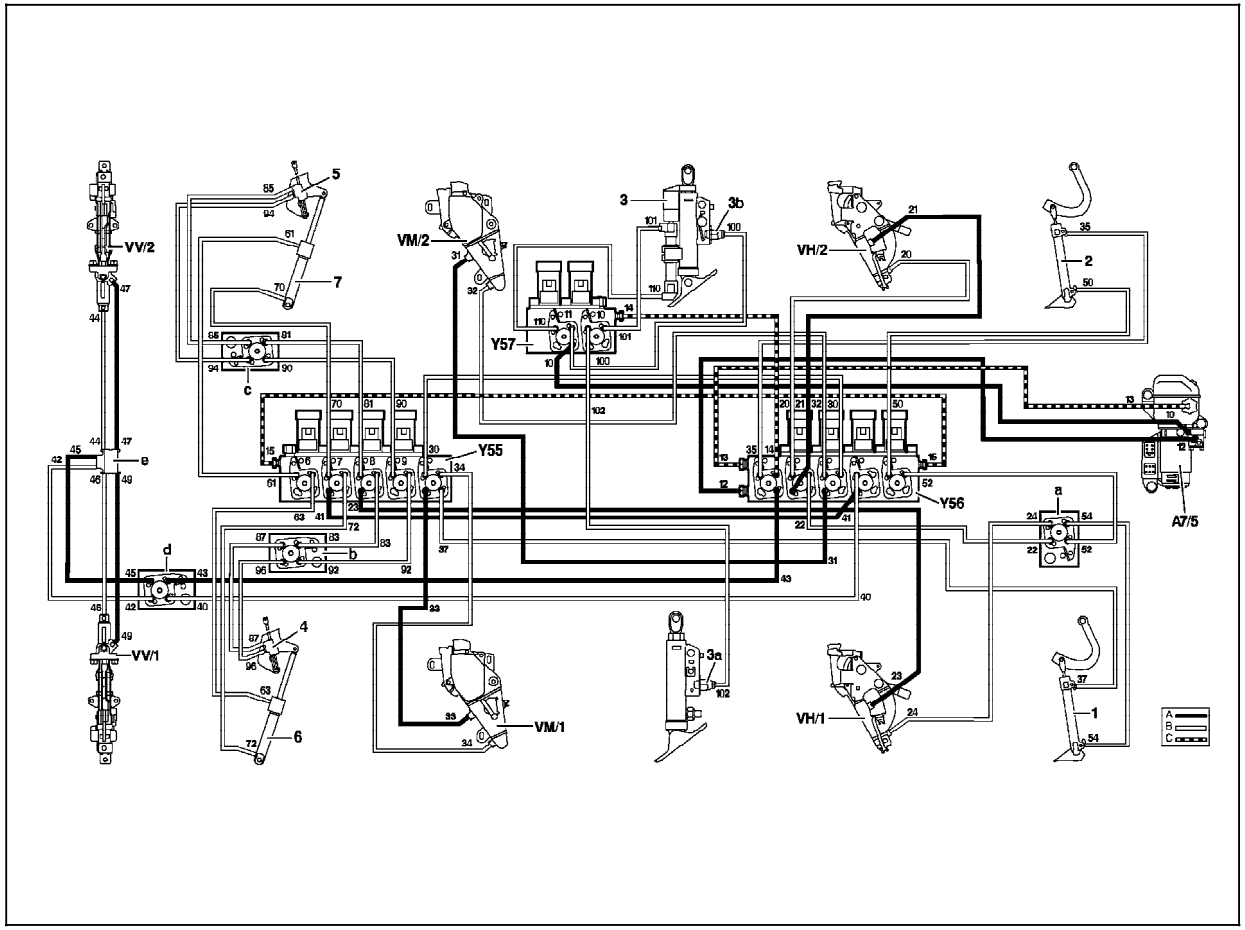
P77.37-0434-79

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	Control pressure lines
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Diagnosis – Function Test

Roadster Soft Top Hydraulic Flow Schematic

Figure 4



P77.37-0433-79

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	Control pressure lines
C	Return flow lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Diagnosis – Function Test

⚠ **CAUTION!**

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1) 2)]
⇒ 1.0 Power soft top switch (S84) indicator lamp	Ignition: **ON**	Indicator lamp within power soft top switch must illuminate 1X	S84, Open circuit, Power soft top control module (N52)
⇒ 2.0 Hard top safety test	Ignition: **ON** After a time period of more then 10 seconds, push power soft top switch (S84) to **OPEN** for approx. 10 seconds.	Hard top must **not unlock.**	Power soft top control module (N52) See SMS, Job number 77-0450
⇒ 3.0 Lock hard top	Hard top set inplace, unlocked. Ignition: **ON** Push power soft top switch (S84) to **CLOSE**.	Locking begins immediately, Once the locking procedure is completed the indicator lamp in switch goes out.	13, see complaint No. 1
⇒ 4.0 Unlock hard top	Ignition: **ON** Within 10 seconds push power soft top switch (S84) to OPEN.	After 2 to 4 seconds the unlocking procedure begins first at front amd then the rear.	13, see complaint No. 1

1) Observe Preparation for Test, see 22.

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1) 2)]
⇒ 5.0 Raise Roll bar using RB switch (S83)	Ignition: **ON** Push RB switch (S83) to **Raise**.	Roll bar raises.	13, see complaint No. 5
⇒ 6.0 Close power soft top using power soft top switch (S84)	Ignition: **ON** Hard top removed from vehicle. Push power soft top switch (S84) to **CLOSE**.	Roll bar retracts, side windows open, soft top closes, roll bar is raised, side windows close.	13, see complaint No. 10-19
⇒ 7.0 Open power soft top using power soft top switch (S84)	Ignition: **ON** Roll bar raised, push power soft top switch (S84) to **OPEN**.	Roll bar retracts, side windows open, power soft top opens, roll bar raises, side windows close.	13, see complaint No. 20-29

1) Observe Preparation for Test, see 22.

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1) 2)]
⇒ 8.0 Lower roll bar using RB switch (S83)	Ignition: **ON** Press RB switch (S83) to **lower**.	Roll bar retracts.	13, see complaint No. 7
⇒ 9.0 Gong in dome lamp	With the soft top unlocked, drive vehicle a short distance.	Gong in dome lamp must sound.	13, see complaint No. 3, 4
⇒ 10.0 Side window convenience feature function	Side windows open. Lock vehicle from driver's door, passenger door and trunk lid lock, while holding pressed (key in trunk lock at 60 degrees).	Side windows close.	13, see complaint No. 32

1) Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Prerequisite for reading DTC memory

1. Fuses O. K.,
2. Battery voltage > 11 V,
3. Connect HHT according to connection diagram, see section 0,
4. Review entire 11.2 section.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

DTC 	Possible cause	Test step/Remedy [1]
1	No fault stored in memory	
2	Left cover "locked" switch (A24s2)	23 ⇒ 4.0
3	Right cover "locked" switch (A25s2)	23 ⇒ 5.0
4	Left cover "closed" switch (A24s1)	23 ⇒ 6.0
5	Cover "closed" switch (A25s1)	23 ⇒ 7.0
6	Left bow "locked" switch (A22s2)	23 ⇒ 8.0
7	Right bow "locked" switch (A23s2)	23 ⇒ 9.0
8	Left bow "closed" switch (A22s1)	23 ⇒ 10.0
9	Right bow "closed" switch (A23s1)	23 ⇒ 11.0
10	Left front soft top “locked” switch (S84/1)	23 ⇒ 12.0
11	Right front soft top “locked” switch (S84/2)	23 ⇒ 13.0
12	Soft top compartment “open” switch (S84/5)	23 ⇒ 14.0
13	Soft top fabric bow “raised” switch (S84/6)	23 ⇒ 15.0
14	Soft top “open” switch (soft top in storage compartment)	23 ⇒ 16.0
15	Soft top "raised" switch (S84/4)	23 ⇒ 17.0
16	RB “retracted” switch (S83/1)	23 ⇒ 18.0
17	Left front door “window down” limit switch (S21/9)	23 ⇒ 19.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Diagnostic Trouble Code (DTC) Memory

DTC 	Possible cause	Test step/Remedy [1]
18	Right front door “window down” limit switch (S21/8)	23 ⇒ 20.0
19	VSS signal is un-logical (only retrieveable with control module version 7.6) (when using the dynamometer or brake test equipment, operation of the soft top is locked. When reading out the impulse scan tool DTC'S, the DTCs 19 or 28 or 29 and 30 are given. If the vehicle is subsequently driven for more then 10 seconds, the soft top function is again possible. DTCs 19 or 28 or 29 remain in memory, erase impulse indication).	23 ⇒ 21.0
20	Hard top recognized as installed on vehicle	23 ⇒ 22.0
21	Power soft top switch (S84)	23 ⇒ 23.0
22	RB switch (manual operation)	23⇒ 24.0
23	RB control module (crash deployment) (N53)	23⇒ 25.0
24	Roll Bar crash deployment	23⇒ 26.0
25	Unlogical limit switch signals (check limit switches via diagnostic mode)	13
26	Operation time span exceeded	23⇒ 28.0
27	Low voltage	23⇒ 29.0
28	Speedometer signal is missing.	23⇒ 30.0
29	VSS signal (wheel speed) (ABS control module) missing	23⇒ 31.0
30	Soft top function locked	23⇒ 32.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Preparation for Diagnosis:

1. Review entire 11.2 section.

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
	Rear locks valve (Y56y2)	23 ⇒ 40.0 23 ⇒ 41.0
	Front locks valve (Y56y4)	23 ⇒ 44.0 23 ⇒ 45.0
	Insufficient system pressure (nominal value). Latch pins on the hardtop poorly adjusted.	33 ⇒ 1.0 Check adjustment, (SMS, Job No. 77-0420)
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. Power soft top switch (S84). Power soft top control module (N52) defective.	23 ⇒ 2.0 23 ⇒ 23.0 23 ⇒ 37.0, See SMS, Job No. 77-0450
No. 3 Indicator lamp in the power soft top switch comes on with the soft top locked (no DTC display), (Gong sounds while driving).	Left bow "locked" switch (A22s2) Right bow "locked" switch (A23s2) Left front soft top "locked" switch (S84/1) Right front soft top "locked" switch (S84/2)	23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 12.0 23 ⇒ 13.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 4 Indicator lamp in the power soft top switch comes on with the soft top open (no DTC display), (Gong sounds while driving).	Left cover "locked" switch (A24s2) Right cover "locked" switch (A25s2) Soft top "raised" switch (S84/4)	23 ⇒ 4.0 23 ⇒ 5.0 23 ⇒ 17.0
No. 5 Roll bar cannot be raised with RB switch (S83).	RST/RB hydraulic unit (A7/5) does not run. RB switch (S83) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, raising roll bar.	23 ⇒ 1.0 23 ⇒ 2.0 23 ⇒ 3.0 23 ⇒ 24.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 4.0
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).	Piston side valve (Y57y11) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, raising roll bar.	23 ⇒ 58.0 23 ⇒ 59.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 4.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 7 Roll bar cannot be lowered using the RB switch (S83)	Roll bar was autmatically deployed ("Crash deployment")	Raise RB using RB switch (S83) until a reengagement click is heard on passenger side.
	RST/RB hydraulic unit (A7/5) does not run.	23 ⇒ 1.0 23 ⇒ 2.0 23 ⇒ 3.0
	RB switch (S83)	23 ⇒ 24.0
	Rod side valve (Y57y10)	23 ⇒ 56.0 23 ⇒ 57.0
	Piston side valve (Y57y11)	23 ⇒ 58.0 23 ⇒ 59.0
	Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, lower roll bar.	33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 3.0
No. 8 Roll bar cannot be lowered using the power soft top switch (S84)	RST/RB hydraulic unit (A7/5) does not run.	23 ⇒ 1.0 23 ⇒ 2.0 23 ⇒ 3.0
	Power soft top switch (S84)	23 ⇒ 23.0
	Rod side valve (Y57y10)	23 ⇒ 56.0 23 ⇒ 57.0
	Piston side valve (Y57y11)	23 ⇒ 58.0 23 ⇒ 59.0
	Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, lower roll bar.	33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 3.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 9 Roll bar raises by itself (not a crash deployment).	Roll bar activator (right) defective	See 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. RB “retracted” switch (S83/1). Soft top “open” switch (soft top in storage compartment) (S84/3). Power soft top switch (S84). Center locks valve (Y56y3). Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, opening the center locks.	23 ⇒ 1.0 23 ⇒ 2.0 23 ⇒ 3.0 23 ⇒ 18.0 23 ⇒ 16.0 23 ⇒ 23.0 23 ⇒ 42.0 23 ⇒ 43.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 8.0
No. 11 Soft top compartment cover does not open or raises only slowly.	Left cover "locked" switch (A24s2) Right cover "locked" switch (A25s2) Soft top compartment cover valve (Y56y5) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, raising the soft top compartment cover	23 ⇒ 4.0 23 ⇒ 5.0 23 ⇒ 46.0 23 ⇒ 47.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 9.0
No. 12 Soft top compartment cover opens and closes.	Left cover "closed" switch (A24s1) Right cover "closed" switch (A25s1)	23 ⇒ 6.0 23 ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 13 Soft top does not come out of compartment or closes very slowly..	Soft top compartment "open" switch (S84/5) Soft top fabric bow "raised" switch (S84/6) Soft top “close” valve (Y55y7) Fabric bow “raise” valve (Y55y8) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, soft top closing.	23 ⇒ 14.0 23 ⇒ 15.0 23 ⇒ 50.0 23 ⇒ 51.0 23 ⇒ 53.0 33 ⇒ 1.0 33 ⇒ 5.0 34 ⇒ 3.0
No. 14 Soft top remains in 90° position.	Left front door “window down” limit switch (S21/9). Right front door “window down” limit switch (S21/8).	23 ⇒ 19.0 23 ⇒ 20.0
No. 15 Front latches of soft top do not lock.	Soft top "raised" switch (S84/4) Left front soft top “locked” switch (S84/1) Right front soft top “locked” switch (S84/2) Front locks valve (Y56y4) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Check hydraulic circuit, locking front latches. Latch pins poorly adjusted at the soft top front latches.	23 ⇒ 17.0 23 ⇒ 12.0 23 ⇒ 13.0 23 ⇒ 44.0 23 ⇒ 45.0 33 ⇒ 1.0 33 ⇒ 5.0 34 ⇒ 4.0 See SMS, Job No. 77-0303
No. 16 Soft top compartment does not close or closes slowly or does not lock.	Left front soft top “locked” switch (S84/1) Right front soft top “locked” switch (S84/2) Soft top fabric bow "raised" switch (S84/6) Soft top compartment cover valve (Y56y5) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, soft top compartment cover closing.	23 ⇒ 12.0 23 ⇒ 13.0 23 ⇒ 15.0 23 ⇒ 46.0 33 ⇒ 47.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 12.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 17 soft top compartmentcover does not lock.	Left cover "closed" switch (A24s1) Right cover "closed" switch (A25s1) Soft top compartment cover valve (Y56y5) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, soft top compartment cover closing.	23 ⇒ 6.0 23 ⇒ 7.0 23 ⇒ 46.0 33 ⇒ 47.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 12.0
No. 18 Fabric bow does not move or moves down only slowly.	Left cover "locked" switch (A24s2) Right cover "locked" switch (A25s2) Fabric bow “raise” valve (Y55y8) Fabric bow “lower” valve (Y55y9) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, lowering fabric bow.	23 ⇒ 4.0 23 ⇒ 5.0 23 ⇒ 52.0 23 ⇒ 53.0 23 ⇒ 54.0 23 ⇒ 55.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 6.0
No. 19 Rear locks do not lock.	Left bow "closed" switch (A22s1) Right bow "closed" switch (A23s1) Soft top “close” valve (Y55y7) Rear locks valve (Y56y2) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, locking rear locks.	23 ⇒ 10.0 23 ⇒ 11.0 23 ⇒ 50.0 23 ⇒ 51.0 23 ⇒ 40.0 23 ⇒ 41.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 7.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 20 **During soft top opening:** Rear locks do not unlock.	 RB “retracted” switch (S83/1). Soft top “open” switch (soft top in storage compartment) (S84/3). RB switch (S83) Rear locks valve (Y56y2) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, open rear locks.	Readout impulse counter (DTC) 23 ⇒ 18.0 23 ⇒ 16.0 23 ⇒ 23.0 23 ⇒ 40.0 23 ⇒ 41.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 6.0
No. 21 Fabric bow does not move or moves only slowly up.	Left bow “locked” switch (A22s2). Right bow “locked” switch (A23s2). Fabric bow “raise” valve(Y55y8). Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, raise fabric bow.	23 ⇒ 8.0 23 ⇒ 9.0 23 ⇒ 52.0 23 ⇒ 53.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 7.0
No. 22 Fabric bow goes up and down.	Left bow “closed” switch (A22s1) Right bow "closed" switch (A23s1)	23 ⇒ 10.0 23 ⇒ 11.0
No. 23 Center locks do not unlock.	Soft top fabric bow “raised” switch (S84/6). Center locks valve (Y56y3). Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, open center locks.	23 ⇒ 15.0 23 ⇒ 42.0 23 ⇒ 43.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 8.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 24 Soft top compartment cover does not open or opens only slowly.	Left cover "locked" switch (A24s2) Right soft top compartment cover “locked” switch (A25s2) Soft top compartment cover valve (Y56y5) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, raise soft top compartment cover.	23 ⇒ 4.0 23 ⇒ 5.0 23 ⇒ 46.0 23 ⇒ 47.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 9.0
No. 25 Soft top compartment cover opens and closes.	Left cover "closed" switch (A24s1) Right cover "closed" switch (A25s1)	23 ⇒ 6.0 23 ⇒ 7.0
No. 26 Front locks do not unlock.	Soft top compartment "open" switch (S84/5) Left front door “window down” limit switch (S21/9) Right front door “window down” limit switch (S21/8) Front locks valve (Y56y4) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, open front locks.	23 ⇒ 14.0 23 ⇒ 19.0 23 ⇒ 20.0 23 ⇒ 44.0 23 ⇒ 45.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 10.0
No. 27 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) Soft top “open” valve (Y55y6) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, open soft top.	23 ⇒ 12.0 23 ⇒ 13.0 23 ⇒ 48.0 23 ⇒ 49.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 11.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 28 Soft top compartment cover does not close or closes only slowly.	Soft top “open” switch (soft top in storage compartment) (S84/3) Soft top compartment cover valve (Y56y5) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, close soft top compartment cover.	 23 ⇒ 16.0 23 ⇒ 46.0 23 ⇒ 47.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 12.0
No. 29 Center locks do not lock.	Left cover "closed" switch (A24s1) Right cover "closed" switch (A25s1) Center locks valve (Y56y3) Insufficient system pressure (nominal value). Check all hydraulic connections for leaks. Test hydraulic circuit, open center locks.	23 ⇒ 6.0 23 ⇒ 7.0 23 ⇒ 42.0 23 ⇒ 43.0 33 ⇒ 1.0 33 ⇒ 5.0 33 ⇒ 8.0
No. 30 Side windows do not open using the power soft top switch, but do open with the power window switches.	Power soft top control module (N52) Left front door “window down” limit switch (S21/9) Right front door “window down” limit switch (S21/8)	See SMS, Job No. RA77-0450 23 ⇒ 19.0 23 ⇒ 20.0
No. 31 Side windows do not close or open using the power window switches (first detent only). **or** if using one touch opening (second 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). Left front door “window down” limit switch (S21/9) Right front door “window down” limit switch (S21/8	23 ⇒ 33.0 23 ⇒ 34.0 23 ⇒ 35.0 23 ⇒ 36.0 SMS, Job No. 77-0450 23 ⇒ 19.0 23 ⇒ 20.0

[1] Observe Preparation for Test, see 22.

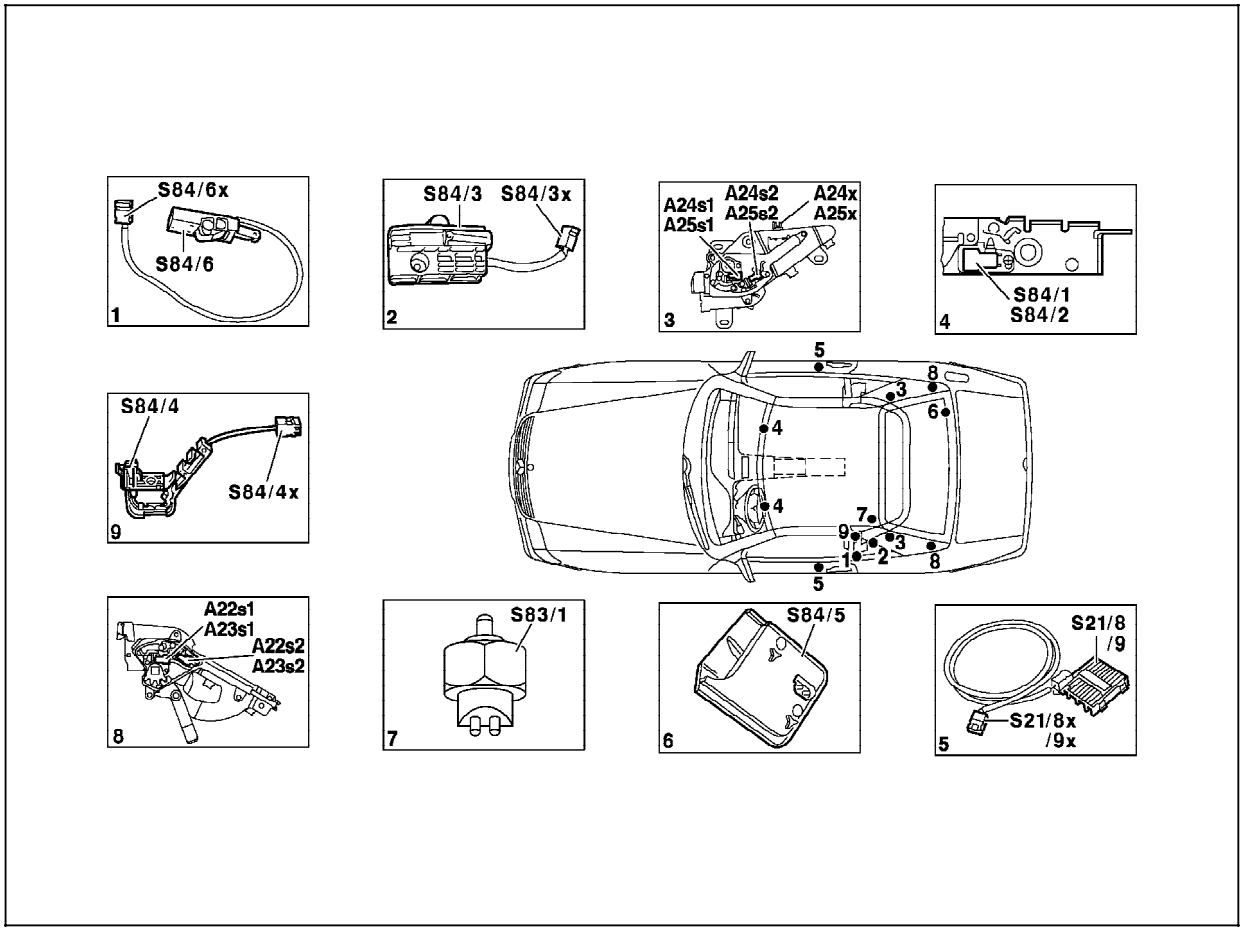
Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy [1]
No. 32 Side window closing convenience feature (at driver/passenger door lock or at trunk lock) does not work.	Left door ATA/CF microswitch (S86) Right door ATA/CF microswitch (S87s1) Trunk lid ATA/CF microswitch (S88s1) Left door actuator (S47) Right door actuator (S48) Trunk lid lock actuator (S49) Power soft top control module (N52)	23 ⇒ 60.0 23 ⇒ 60.0 23 ⇒ 60.0 23 ⇒ 61.0 23 ⇒ 61.0 23 ⇒ 61.0 See SMS, Job No. 77-450

[1] Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations

Locations of Limit Switches



P77.39-0267-09

Figure 1

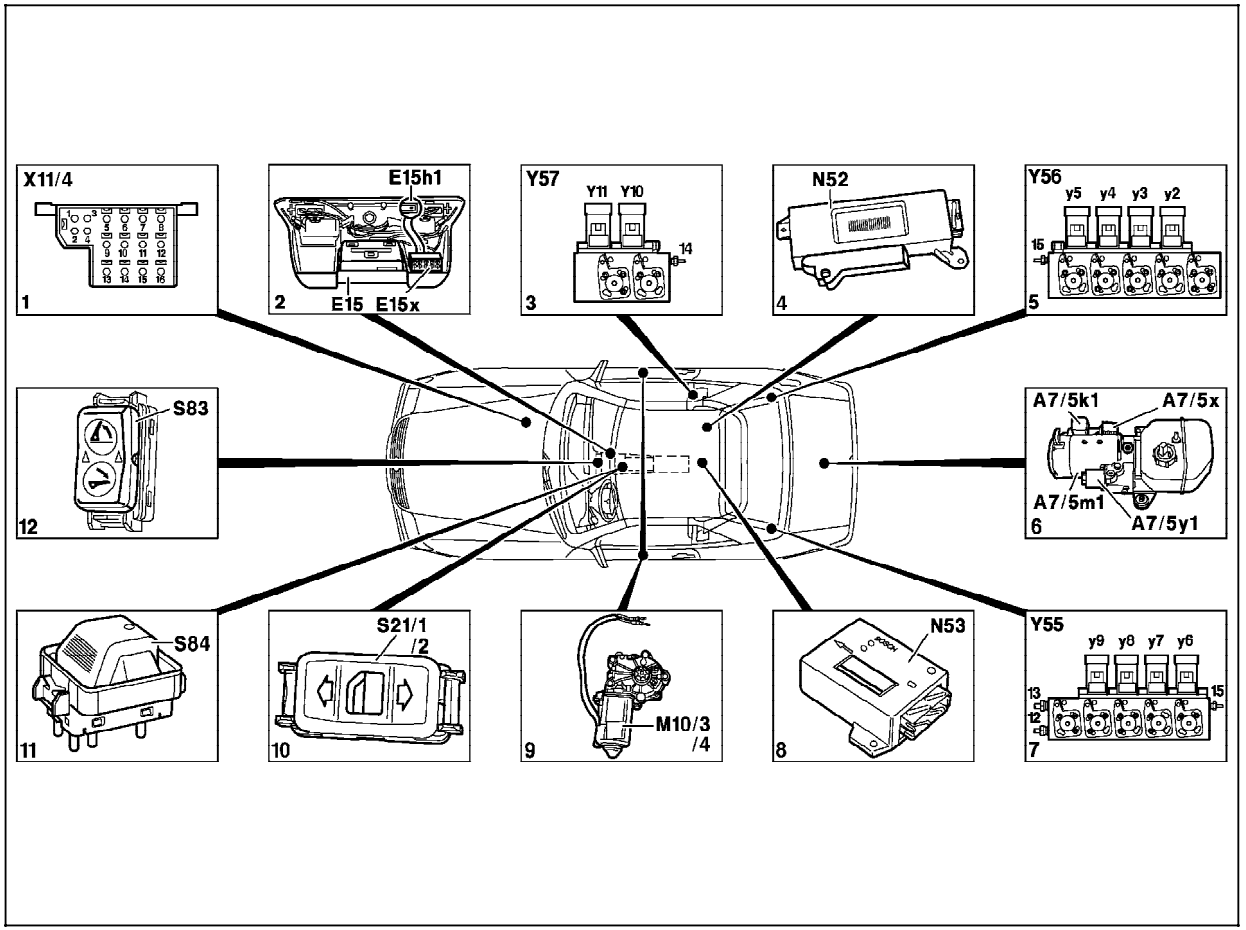
A22s1	Bow "closed" switch (8)
A22s2	Bow "locked" switch (8)
A23s1	Bow "closed" switch (8)
A23s2	Bow "locked" switch (8)
A24s1	Cover "closed" switch (3)
A24s2	Cover "locked" switch (3)
A25s1	Cover "closed" switch (3)
A25s2	Cover "locked" switch (3)
S21/8	Right front door “window down” limit switch (5)
S21/9	Left front door “window down” limit switch (5)
S83/1	RB “retracted” switch (7)
S84/1	Left front soft top “locked” switch (4)
S84/2	Right front soft top “locked” switch (4)
S84/3	Soft top “open” switch (soft top in storage compartment) (2)
S84/5	Soft top compartment “open” switch (6)
S84/6	Soft top fabric bow “raised” switch (1)

Electrical Test Program – Component Locations

Locations of the Electrical Components

Figure 2

A7/5k1	Hydraulic unit relay
A7/5m1	Hydraulic unit motor
A7/5x1	Hydraulic unit connector
A7/5y1	Main valve (deleted as of VIN 1F-083891)
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 (voltage supply) (9)
M10/4	Right front power window motor (voltage supply) (9)
N52	Power soft top control module (4)
N53	RB control module (crash deployment) (8)
S21/1	Left front power window switch (front center console) (10)
S21/2	Right front power window switch (front center console) (10)
S83	RB switch (manual operation) (12)
S84	Power soft top switch (11)
X11/4	Data link connector (DTC readout) (1)
Y55	Left RST valve block (4 connections) (7)
Y55y6	Soft top “open” valve
Y55y7	Soft top “close” valve
Y55y8	Fabric bow “raise” valve
Y55y9	Fabric bow “lower” valve
Y56	Right RST valve block (4 connections) (5)
Y56y2	Rear locks valve
Y56y3	Center locks valve
Y56y4	Front locks valve
Y56y5	Soft top compartment cover valve
Y57	RB valve block (3)
Y57y10	Rod side valve
Y57Y11	Piston side valve



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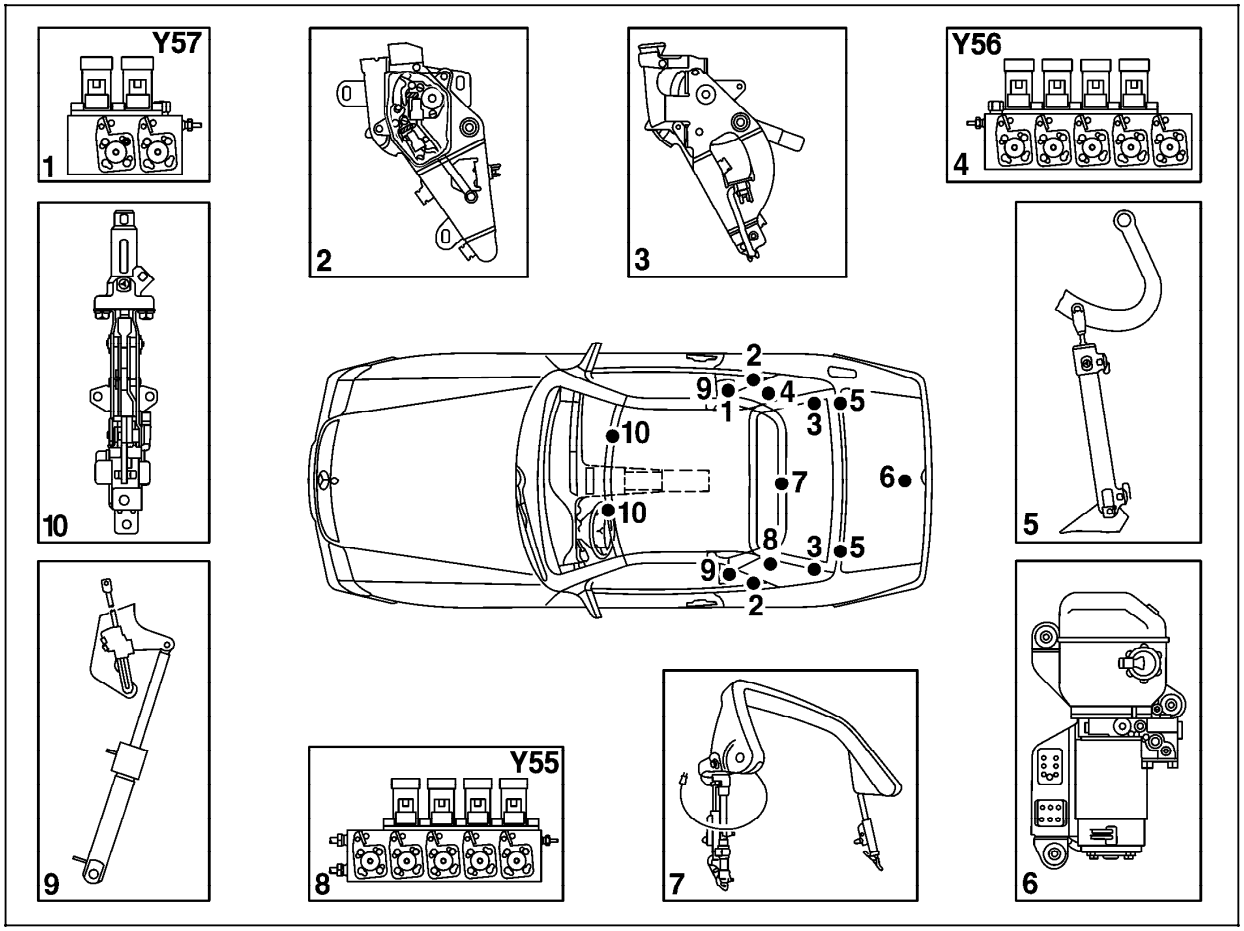
Electrical Test Program – Hydraulic Component Locations

Locations of the Hydraulic Components



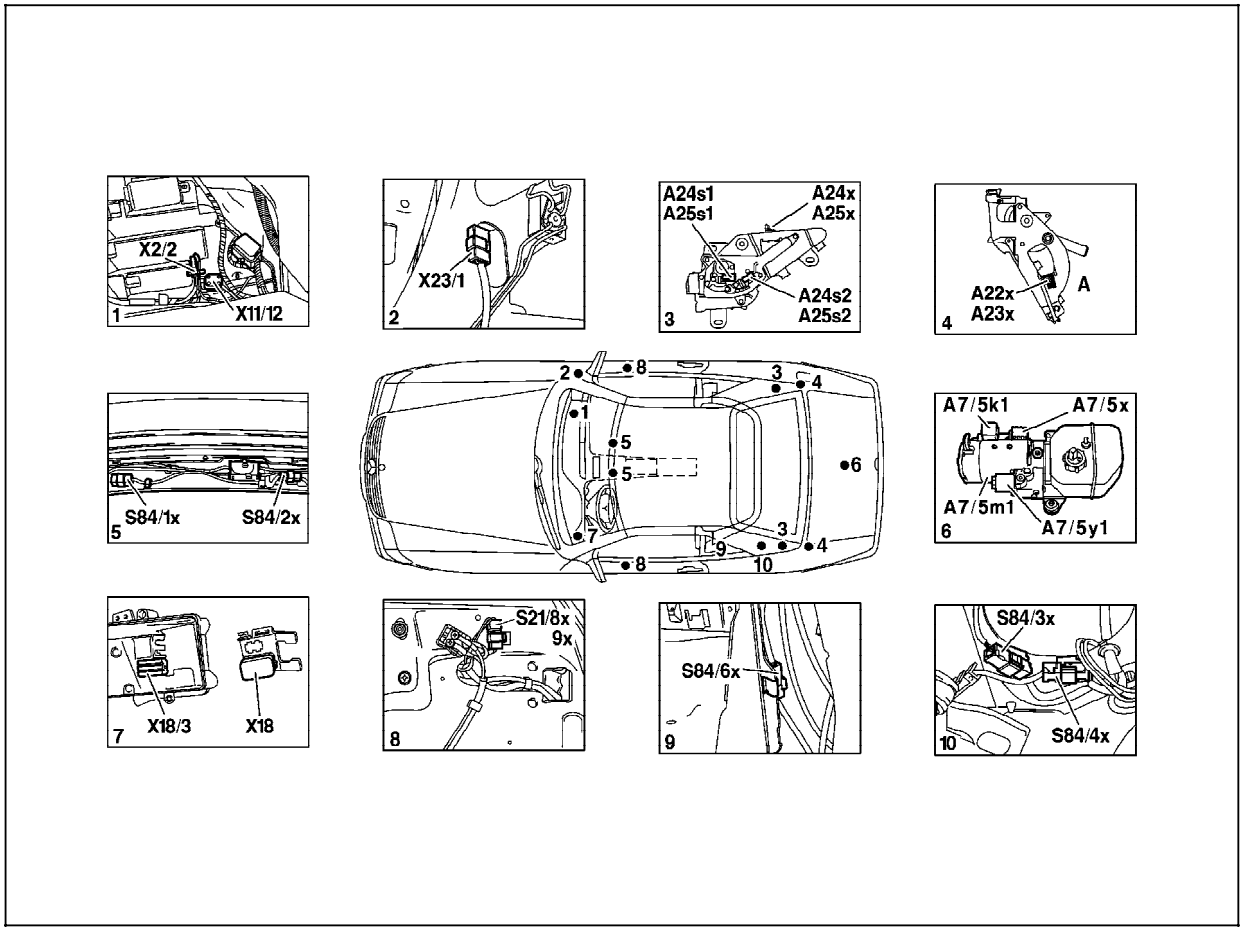
P77.39-0270-06

Figure 3

1 RB valve block (Y57)
2 Center locks
3 Rear locks
4 Right RST valve block (4 connections)
5 Soft top compartment cover hydraulic cylinder
6 Hydraulic element
7 Complete roll bar
8 Left RST valve block (4 connections)
9 Soft top and fabric bow hydraulic cylinder
10 Front locks

Electrical Test Program – Component Connections

Locations of Connectors



P77.39-0271-09

Figure 1

A7/5x1	Hydraulic unit connector
A22x1	Left soft top fabric bow switch group connector
A23x1	Right soft top fabric bow switch group connector
A24x1	Cover "locked" switch
A25x1	Center soft top compartment cover switch group connector
S21/8x1	Right front door “window down” limit switch connector
S21/9x1	Left front door “window down” limit switch connector
S84/1x1	Retractable hardtop switch connector
S84/2sx1	Right front soft top “locked” switch connector
S84/3x1	Soft top “open” switch connector (soft top in storage compartment)
S84/4x1	Soft top “closed” switch connector
S84/6x1	Soft top fabric bow “raised” switch connector
X2/2	VSS connector (radio) (2-pole)
X11/2	Power soft top test connector
X18	Interior/taillamp harness connector (12-pole)
X18/3	Interior/taillamp harness connector (8-pole)
X23/1	Power top/front locks connector (3-pole)

Electrical Test Program – Preparation for Test

Preliminary work:
Diagnosis - Diagnostic Trouble Code (DTC) Memory 12

- Fuses OK.
- Battery voltage 11–14 Volts **(always connect battery charger when working on the soft top)**.
- RB control module **must** release soft top for operation (indicator lamp in RB switch should not blink).
  If soft top does not release, see DTC 23, in 12.
- In DTC memory, no DTC's (i.e.:19, 21, 24 - 30) which could prevent soft top operation can be stored, these must be cleared from memory.
  If a stored DTC cannot be cleared from memory, repair defect.
- Review entire 11.2 section before performing test.

Note:
Connect yellow wire from impulse counter scan tool to
Socket 10 Model 129.06 (X11/4, 16-pole)
Socket 21 Model 129.07 (X11/4, 38-pole)

See Connection Diagram – Impulse Counter Scan Tool in section 0.

⚠ **CAUTION!**
Note regarding limit switch testing:
1. Ignition: **OFF**
2. Bridge sockets 1 and 3 of connector (X11/12) in passenger footwell (21, Figure 1).
3. Ignition: **ON**
4. Remove bridge.

Electrical wiring diagrams:
Electrical Troubleshooting Manual, Model 129.

⚠ **CAUTION!**
The test in the next section (23) calls for the connection of the socket box to the power soft top control module in 3 different ways. Connections are distinguished as connections made to the power soft top control module connector X, Y or Z. These are indicated in the test as follows:

X  indicates that the socket box should be connected according to Connection Diagram X (22, Figure 1)

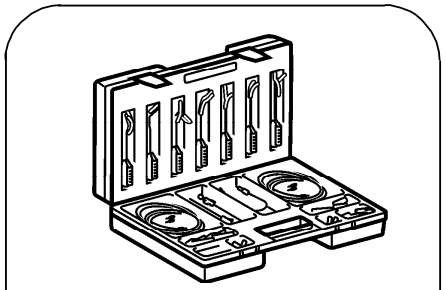
Y  indicates that the socket box should be connected according to Connection Diagram Y (22, Figure 2)

Z  indicates that the socket box should be connected according to Connection Diagram Z (22, Figure 3)

Note regarding connecting socket box to soft top control module:
Ignition: **OFF**
Disconnect connector (X, Y, Z) from control module.
Connect socket box.

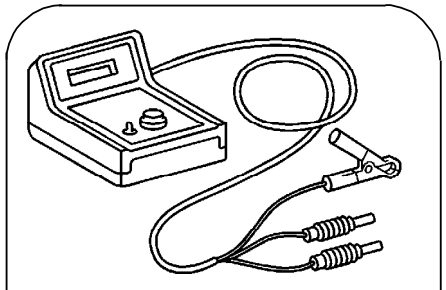
Electrical Test Program – Preparation for Test

Special Tools



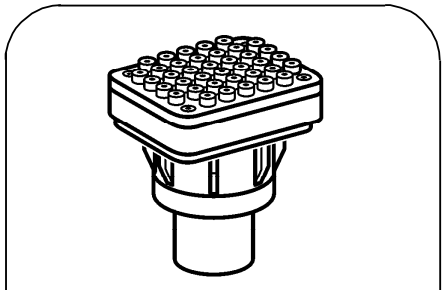
201 589 00 99 00

Electrical connecting set



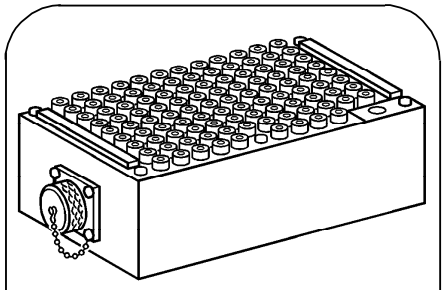
124 589 19 21 00

Pulse counter



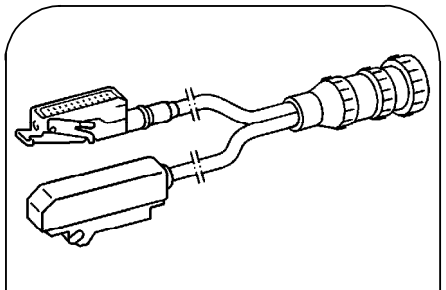
140 589 14 63 00

Adapter



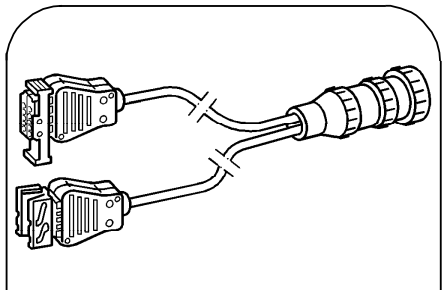
129 589 00 21 00

126-pin socket box



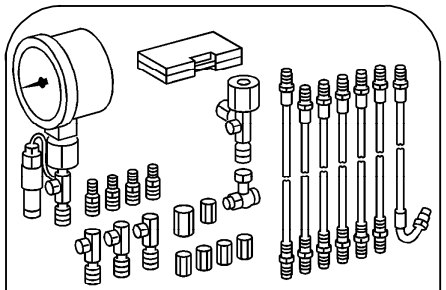
104 589 00 63 00

Test cable



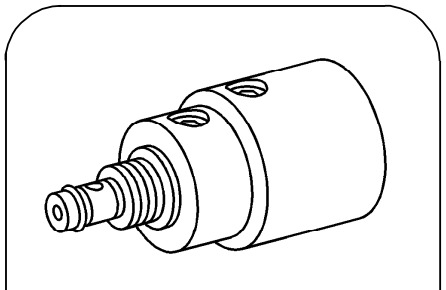
129 589 01 63 00

12-pin test cable



126 589 14 21 00

Tester

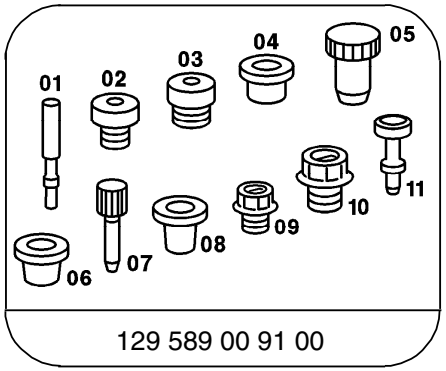


129 589 08 63 00

Check valve

Electrical Test Program – Preparation for Test

Special Tools



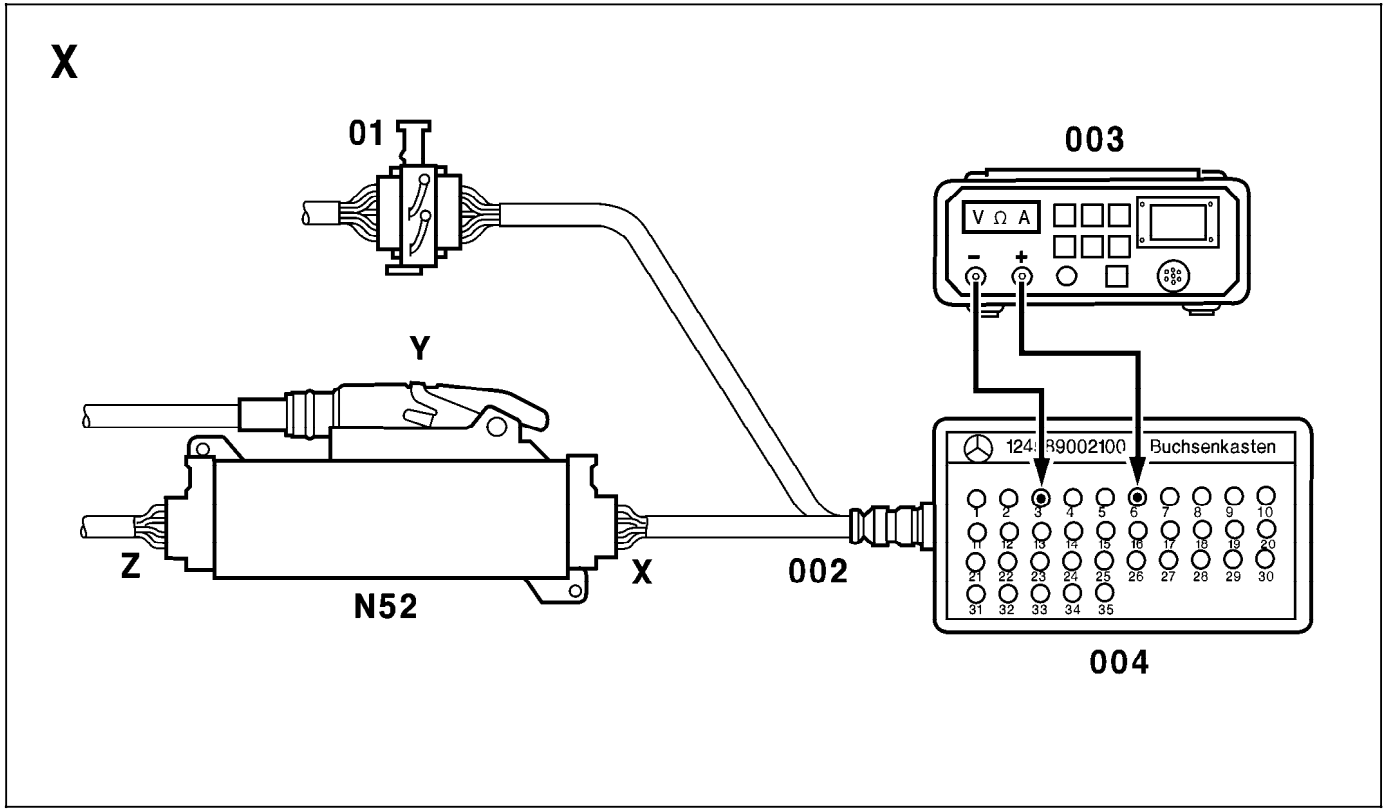
Set of plugs

Test equipment; See MBUSA Standard Service Equipment Program

Description	Brand, model, etc.
Digital multimeter	Fluke models 23, 77 III, 83, 85, 87
Battery charger	Local purchase

Electrical Test Program – Preparation for Test

Connection Diagram – Socket Box with Connector X



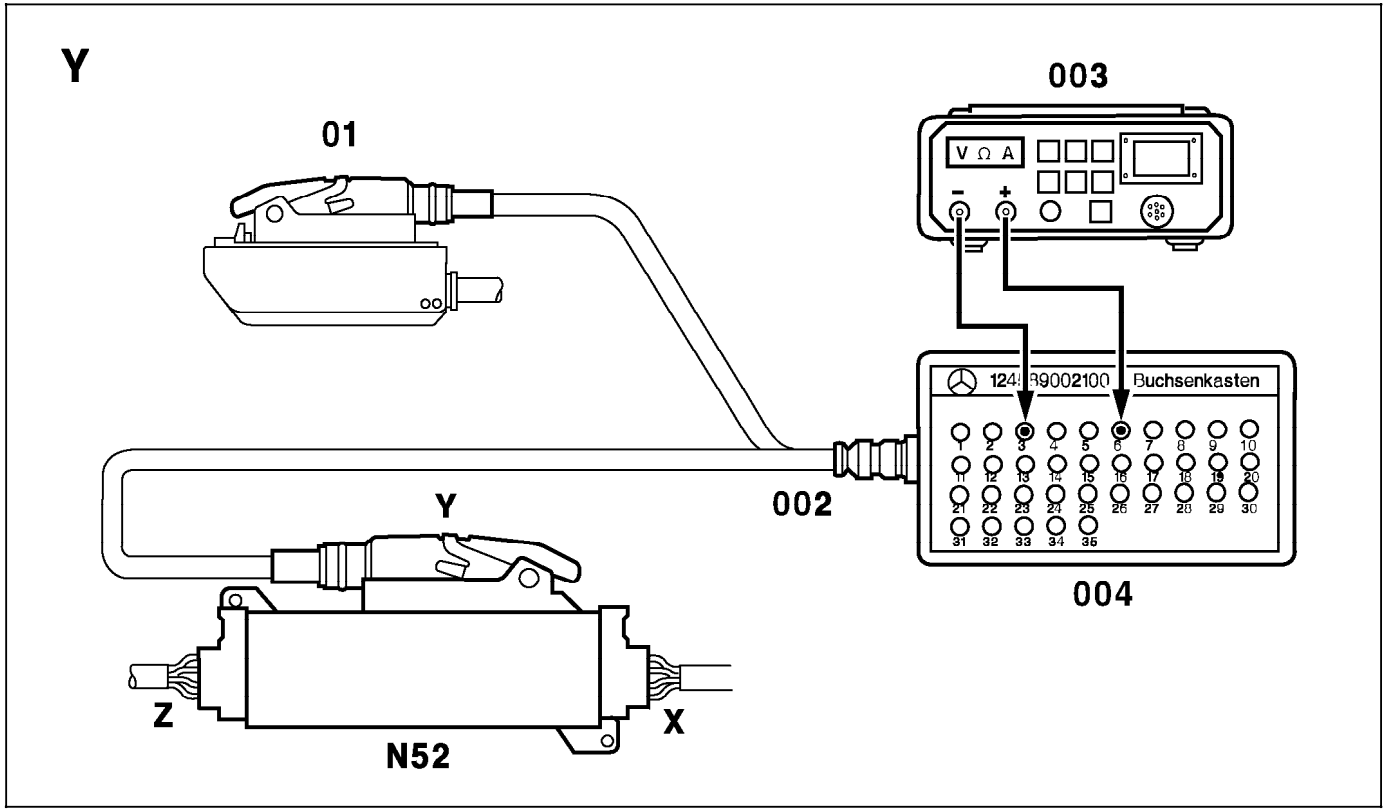
P77.39-0274-05

Figure 1

01	Connector, 12-pole (vehicle wiring harness)
002	Test cable, 12-pole 129 589 01 63 00
003	Multimeter
004	Socket box
N52	Power soft top control module

Electrical Test Program – Preparation for Test

Connection Diagram – Socket Box with Connector Y



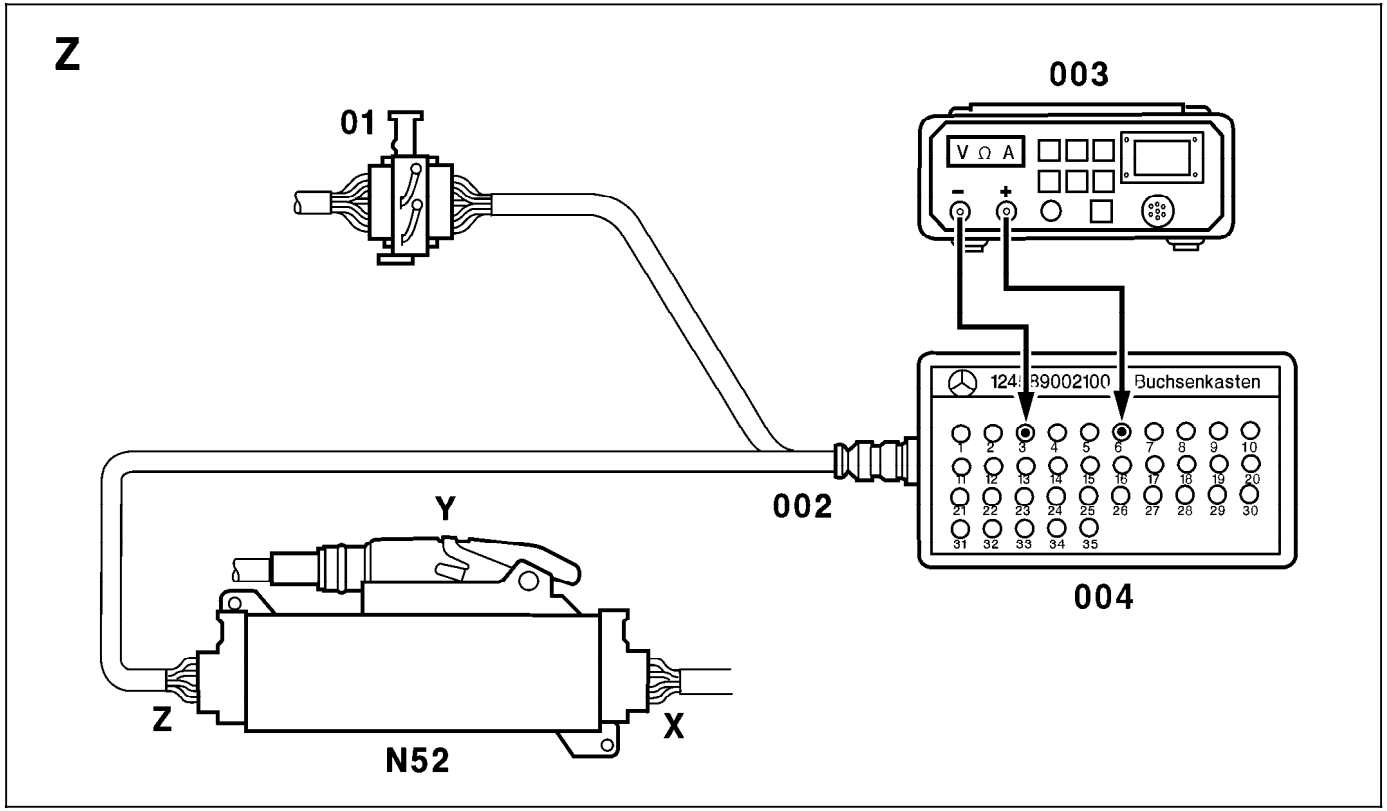
P77.39-0275-05

Figure 2

01	Connector, 35-pole (vehicle wiring harness)
002	Test cable, 35-pole 129 589 00 63 00
003	Multimeter
004	Socket box
N52	Power soft top control module

Electrical Test Program – Preparation for Test

Connection Diagram – Socket Box with Connector Z



P77.39-0276-05

Figure 3

01	Connector, 12-pole (vehicle wiring harness)
002	Test cable, 12-pole 129 589 01 63 00
003	Multimeter
004	Socket box
N52	Power soft top control module

Electrical Test Program – Test

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Preparation for Test:

1. Review entire 11.2 section.

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Voltage supply Circuit 30**	N52 Z 12 — V — 11		11 – 14 V	Wiring.
2.0		**Voltage supply Circuit 15, 31**	N52 X 10 — V — 12	Ignition: **ON**	11 – 14 V	Wiring.
3.0		**Hydraulic unit (A7/5)** Hydraulic unit motor (A7/5m1) control signal	N52 X 10 — V — 7	Ignition: **ON** Operate power soft switch towards **open** or **close.**	0 – 1 V 11 – 14 V Hydraulic unit runs.	23⇒ 23.0 Power soft top control module (N52) 23⇒ 23.0 Power soft top switch (S84) (N52) ⇒ 3.2 Hydraulic unit motor (A7/5m1) ⇒ 3.3 Hydraulic unit relay (A7/5k1) ⇒ 3.1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.1		Hydraulic unit relay (A7/5k1) Activation	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	Wiring, Power soft top switch (S84), Power soft top control module (N52). Wiring.
3.2		Hydraulic unit motor (A7/5m1) Voltage supply	A7/5x1 1 — (−) V (+) — 4	Unplug connector A7/5x1.	11 – 14 V	Wiring.
3.3		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, See SMS, Job No. 77-350

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**Left cover "Locked" switch (A24s2)**	N52 Y ⊥ V ⟩— 20	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **locked:** **unlocked:**	 0 – 1 V 11 – 14 V	Wiring, (A24s2), ⇒ 4.1, See SMS, Job no. 77-440, Wiring, (A24s2), ⇒ 4.1, N52
4.1		Left cover "Locked" switch (A24s2)	N52 Y ⊥ Ω ⟩— 20	Ignition: **OFF** Disconnect test cable from N52, Soft top compartment cover: **locked:** **unlocked:**	 0 – 5 Ω >20 kΩ	 Wiring, (A24s2) Wiring, (A24s2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0	∃	**Right cover "Locked" switch (A25s2)**	N52 Y ⊥ V 21	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **locked:** **unlocked:**	 0 – 1 V 11 – 14 V	Wiring, (A25s2), ⇒ 5.1, See SMS, Job no. 77-440, Wiring, (A25s2), ⇒ 5.1, N52
5.1	∃	Right cover "Locked" switch (A25s2)	N52 Y ⊥ Ω 21	Ignition: **OFF** Disconnect test cable from N52 Soft top compartment cover: **locked:** **unlocked:**	 0 – 5 Ω >20 kΩ	 Wiring, (A25s2) Wiring, (A25s2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0	Ч	**Left cover "Closed" switch (A24s1)**	N52 Y ⊥ V ❯— 25	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **closed:** **raised:**	 0 – 1 V 11 – 14 V	Wiring, (A24s1), ⇒ 6.1, See SMS, Job no. 77-440 Wiring, (A24s1), ⇒ 6.1, N52
6.1	Ч	Left cover "Closed" switch (A24s1)	N52 Y ⊥ Ω ❯— 25	Ignition: **OFF** Disconnect test cable from N52 Soft top compartment cover: **closed:** **raised:**	 0 – 5 Ω >20 kΩ	 Wiring, (A24s1) Wiring, (A24s1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		**Right cover"Closed" switch (A25s1)**	N52 Y ⊥ V) 26	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover: **closed:** **raised:**	 0 – 1 V 11 – 14 V	Wiring, (A25s1), ⇒ 7.1 See SMS, Job No. 77-440 Wiring, (A25s1), ⇒ 7.1, N52
7.1		Right cover"Closed" switch (A25s1)	N52 Y ⊥ Ω) 26	Ignition: **OFF** Disconnect test cable from N52 Soft top compartment cover: **closed:** **raised:**	 0 – 5 Ω >20 kΩ	 Wiring, (A25s1) Wiring, (A25s1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0	B	**Left bow "Locked" switch (A22s2)**	N52 Y ⊥ V ⟩— 18	Power soft top control module in diagnostic mode, see 22. Fabric bow: **locked:** **unlocked:**	 0 – 1 V 11 – 14 V	Wiring, (A22s2), ⇒ 8.1 See SMS, Job no. 77-445 Wiring, (A22s2), ⇒ 8.1, N52
8.1	B	Left bow "Locked" switch (A22s2)	N52 Y ⊥ Ω ⟩— 18	Ignition: **OFF** Disconnect test cable from N52 Fabric bow: **locked:** **unlocked:**	 0 – 5 Ω >20 kΩ	 Wiring, (A22s2) Wiring, (A22s2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		**Right bow "Locked" switch (A23s2)**	N52 Y ⊥ V ⟩— 19	Power soft top control module in diagnostic mode, see 22. Fabric bow: **locked:** **unlocked:**	 0 – 1 V 11 – 14 V	Wiring, (A23s2), ⇒ 9.1 See SMS, Job no. 77-445 Wiring, (A23s2) ⇒ 9.1, N52
9.1		Right bow "Locked" switch (A23s2)	N52 Y ⊥ Ω ⟩— 19	Ignition: **OFF** Disconnect test cable from N52 fabric bow: **locked:** **unlocked:**	 0 – 5 Ω >20 kΩ	 Wiring, (A23s2) Wiring, (A23s2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		**Left bow "Closed" switch (A22s1)**	N52 Y ⊥ V) 23	Power soft top control module in diagnostic mode, see 22. Fabric bow:		Wiring, (A22s1), ⇒ 10.1 See SMS, Job no. 77-445
				closed:	0 – 1 V	Wiring, (A22s1)
				raised:	11 – 14 V	⇒ 10.1, N52
10.1		Left bow "Closed" switch (A22s1)	N52 Y ⊥ Ω) 23	Ignition: **OFF** Disconnect test cable from N52 Fabric bow:		
				closed:	0 – 5 Ω	Wiring, (A22s1)
				raised:	>20 kΩ	Wiring, (A22s1), A/c pushbutton control module (N22).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0		**Right bow "Closed" switch (A23s1)**	N52 Y ⊥ V ⟩— 24	Power soft top control module in diagnostic mode, see 22. Fabric bow: **closed:** **raised:**	 0 – 1 V 11 – 14 V	Wiring, (A23s1), ⇒ 11.1 See SMS, Job no. 77-445 Wiring, (A23s1), ⇒ 11.1 N52
11.1		Right bow "Closed" switch (A23s1)	N52 Y ⊥ Ω ⟩— 24	Ignition: **OFF** Disconnect test cable from N52 Fabric bow: **closed:** **raised:**	 0 – 5 Ω >20 kΩ	 Wiring, (A23s1) Wiring, (A23s1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Left front soft top "Locked" switch (S84/1)**	N52 Y ⊥ V ⟩— 16	Power soft top control module in diagnostic mode, see 22. Soft top: **Locked in front:** **Unlocked in front:**	 0 – 1 V 11 – 14 V	Wiring, (S84/1), ⇒ 12.1 See SMS, Job no. 77-330 Wiring, (S84/1), ⇒ 12.1 N52
12.1		Left front soft top "Locked" switch (S84/1)	N52 Y ⊥ Ω ⟩— 16	Ignition: **OFF** Disconnect test cable from N52 Soft top: **Locked in front:** **Unlocked in front:**	 0 – 5 Ω >20 kΩ	Wiring, S84/3 (SMS, Job no. 77-425). Wiring, (S84/1) Wiring, (S84/1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0		**Right front soft top "Locked" switch (S84/2)**	N52 Y ⊥ V) 17	Power soft top control module in diagnostic mode, see 22. Soft top: **Locked in front:** **Unlocked in front:**	 0 – 1 V 11 – 14 V	Wiring, (S84/2), ⇒ 13.1 See SMS, Job no. 77-330 Wiring, (S84/2), ⇒ 13.1 N52
13.1		Right front soft top "Locked" switch (S84/2)	N52 Y ⊥ Ω) 17	Ignition: **OFF** Disconnect test cable from N52 Soft top: **Locked in front:** **Unlocked in front:**	 0 – 5 Ω >20 kΩ	 Wiring, (S84/2) Wiring, (S84/2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0		**Soft top compartment "Open" switch (S84/5)**	N52 Y ⊥ V 30	Power soft top control module in diagnostic mode, see 22. Soft top compartment cover:		Wiring, (S84/5), ⇒ 14.1
				open:	0 – 1 V	See SMS, Job no. 77-405 Wiring, (S84/5), ⇒ 14.1 N52
				closed:	11 – 14 V	
14.1		Soft top compartment "Open" switch (S84/5)	N52 Y ⊥ Ω 30	Ignition: **OFF** Disconnect test cable from N52 Soft top compartment cover:		
				open:	0 – 5 Ω	Wiring, (S84/5)
				closed:	>20 kΩ	Wiring, (S84/5)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.0		**Soft top fabric bow "Raised" switch (S84/6) (fabric bow raised)**	N52 Y ⊥ – V + 29	Power soft top control module in diagnostic mode, see 22. Fabric bow:		Wiring, (S84/6), ⇒ 15.1
				raised:	0 – 1 V	See SMS, Job no. 77-435 Wiring,
				lowered:	11 – 14 V	(S84/6), ⇒ 15.1 N52
15.1		Soft top fabric bow "Raised" switch (S84/6) (fabric bow raised)	N52 Y ⊥ – Ω + 29	Ignition: **OFF** Disconnect test cable from N52. Fabric bow:		
				raised:	0 – 5 Ω	Wiring, (S84/6)
				lowered:	>20 kΩ	Wiring, (S84/6)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0	14	**Soft top "Open" switch (S84/3) (soft top in storage compartment)**	N52 Y ⊥ V 27	Power soft top control module in diagnostic mode, see 22. Soft top: **in soft top compartment:** **up:**	 0 – 1 V 11 – 14 V	Wiring, (S84/3), ⇒ 16.1 See SMS, Job no. 77-425 Wiring, (S84/3), ⇒ 16.1 N52
16.1	14	Soft top "Open" switch (S84/3) (soft top in storage compartment)	N52 Y ⊥ Ω 27	Ignition: **OFF** Disconnect test cable from N52. Soft top: **in soft top compartment:** **up:**	 0 – 5 Ω >20 kΩ	 Wiring, (S84/3) Wiring, (S84/3)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
17.0	15	**Soft top "Raised" switch (S84/4)**	N52 Y ⊥ V ⟩— 28	Power soft top control module in diagnostic mode, see 22. Soft top: **up:** **in soft top compartment:**	 0 – 1 V 11 – 14 V	Wiring, (S84/4), ⇒ 17.1 See SMS, Job no. 77-415 Wiring, (S84/3), ⇒ 17.1 N52
17.1	15	Soft top "Raised" switch (S84/4)	N52 Y ⊥ Ω ⟩— 28	Ignition: **OFF** Disconnect test cable from N52. Soft top: **up:** **in soft top compartment:**	 0 – 5 Ω >20 kΩ	 Wiring, (S84/4) Wiring, (S84/4)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.0	16	**RB "Retracted" switch (S83/1)**	N52 Y ⊥ V ⟩— 31	Power soft top control module in diagnostic mode, see 22. Roll bar: **lowered:** **raised:**	 0 – 1 V 11 – 14 V	Wiring, (S83/1), ⇒ 18.1 See SMS, Job no. 77-400 Wiring, (S83/1), ⇒18.1 N52
18.1	16	RB "Retracted" switch (S83/1)	N52 Y ⊥ Ω ⟩— 31	Ignition: **OFF** Disconnect test cable from N52. Roll bar: **lowered:** **raised:**	 0 – 5 Ω >20 kΩ	 Wiring, (S83/1) Wiring, (S83/1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
19.0		**Left front door "window down" limit switch (S21/9)**	N52 Y ⊥ V) 10	Power soft top control module in diagnostic mode, see 22. Side windows: **down:** **up:**	 0 – 1 V 11 – 14 V	Wiring, (S21/9), ⇒ 19.1 See SMS, Job no. 77-410 Wiring, (S21/9), ⇒19.1 N52
19.1		Left front door "window down" limit switch (S21/9)	N52 Y ⊥ Ω) 3	Ignition: **OFF** Disconnect test cable from N52. Side windows: **down:** **up:**	 0 – 5 Ω >20 kΩ	 Wiring, (S21/9) Wiring, (S21/9)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
20.0		**Right front door "window down" limit switch (S21/8)**	N52 Y ⊥ V – + 22	Power soft top control module in diagnostic mode, see 22. Side windows: **down:** **up:**	 0 – 1 V 11 – 14 V	Wiring, (S21/8), ⇒ 20.1 See SMS, Job no. 77-410 Wiring, (S21/8), ⇒20.1 N52
20.1		Right front power window motor (M10/4) Voltage supply control module	N52 Y ⊥ Ω – + 22	Ignition: **OFF** Disconnect test cable from N52 Side windows: **down:** **up:**	 0 – 5 Ω >20 kΩ	 Wiring, (S21/8) Wiring, (S21/8)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
21.0	19	**VSS illogical signal** i See 12/3, regarding hints when using dynamometer or brake test equipment.	– – –	–	–	With vehicle stationary, an acceleration of .49 g error signal was sent to the control module, or vehicle was tilted to a 23° angle. RB control module (N53).
22.0	20	**Installed hardtop recognized**		See Hard top Locking Table in 24, (Limit switches)	Hard top installed.	With the hard top installed, at least one of the front or rear locks indicates "closed" or "locked".

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
23.0	21	**Power soft top switch (S84)**	N52 Y ⊥ –(V)+ 1	Ignition: **ON**	11 – 14 V	Switch (S84) and wiring, ⇒ 23.1, N52
				Power soft top switch (S84): **Press close:**	0 – 1 V	Switch (S84) and wiring, ⇒ 23.1, N52
			N52 Y ⊥ –(V)+ 2	Ignition: **ON**	11 – 14 V	Switch (S84) and wiring, ⇒ 23.1, N52
				Power soft top switch (S84): **Press open:**	0 – 1 V	Switch (S84) and wiring, ⇒ 23.1, N52

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
23.1	21	Power soft top switch (S84) and wiring	N52 Y ⊥ Ω 1	Disconnect test cable from N52 Power soft top switch (S84):		
				In rest position:	>20 kΩ	Wiring, (S84)
				Press in direction close:	0 – 5 Ω	Wiring, (S84)
			N52 Y ⊥ Ω 2	Power soft top switch (S84):		
				In rest position:	>20 kΩ	Wiring, (S84)
				Press in direction open:	0 – 5 Ω	Wiring, (S84)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.0	22	**RB switch (S83) (manual operation)**	N52 Y ⊥ V 3	Ignition: **ON** Roll bar switch (S83): **Press in direction Up**	4 – 6 V 0 – 1 V	Switch (S83) and wiring, ⇒ 24.1, N52 Switch (S83) and wiring, ⇒ 24.1, N52
			N52 Y ⊥ V 4	Ignition: **ON** Roll bar switch (S83): **Press in direction Lower**	4 – 6 V 0 – 1 V	Switch (S83) and wiring, ⇒ 24.1, N52 Switch (S83) and wiring, ⇒ 24.1, N52

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.1	22	RB switch (S83) and wiring	N52 Y ⊥ – Ω + 3	Disconnect test cable from N52 Roll bar switch (S83): **In rest position:**	>20 kΩ	Wiring, (S83)
				Press in direction Raise	0 – 5 Ω	Wiring, (S83)
			N52 Y ⊥ – Ω + 4	Roll bar switch (S83): **In rest position:**	>20 kΩ	Wiring, (S83)
				Press in direction Lower:	0 – 5 Ω	Wiring, (S83)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
25.0	23	**RB control module (N53)**	N52 Y ⊥ –(V)+ 11	Ignition: **ON**	>2.4 V	Wiring, Fault in the Roll bar system, see DM, B&A, Vol. 6, section 19.2, N53, See SMS, Job no. 91-840
			N52 Y ⊥ –(V)+ 12		>2.4 V	Wiring, Fault in the Roll bar system, see DM, B&A, Vol. 6, section 19.2, N53
26.0	24	**Roll Bar** (Crash Deployment)	N52 Y –(V)+ 9	Ignition: **ON** RB switch (S83): Press in direction "up" (approx. 10 seconds) Using RB switch (S83): Lower roll bar	Roll bar is lowered.	There has been a "Crash Deployment". Upon lowering the roll bar, the impulse (DTC) is erased.
27.0	25	**Limit switch un-logical**	– – –	Test limit switch via diagnostic mode, see 22	–	Limit switch is faulty.
28.0	2	**Operation time span exceeded**	– – –	Soft top completely open or closed. Ignition: ON (approx. 5 minutes)	Fault will erase itself.	N52

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
29.0	27	**Low system voltage**	N52 X 10 — (V) — 12	Ignition: **ON** (!) **Use battery charger each time when performing soft top tests.**	11 – 14 V	Voltage supply, 23⇒ 2.0
30.0	28	**Speedometer signal** i See 12/3, regarding hints when using dynamometer or brake test equipment.	N52 Y ⊥ — (Ω) — 35	Drive vehicle at approx. 25 mph.	approx. 6 V ~	Wiring, Electronic speedometer (A1p8) (see DM, Info. & Com., section 1.1), Combination relay module (N10/2), Pushbutton control module (N22), Radio (A2), Multi-function connector block (X30/1).
31.0	29	**VSS signal** i See 12/3, regarding hints when using dynamometer or brake test equipment.	N52 Y ⊥ — (V) — 9	Ignition: **ON** Rotate left front wheel at approx. 1 revo./second	2.5 – 4 V	Wiring, ABS control module (N30), Power soft top control module (N52).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
32.0	30	**Power soft top operation locked** i See 12/3, regarding hints when using dynamometer or brake test equipment.	– – –	–	–	Fault only occurs with impluse readouts (DTCs'): 19, 28 or 29
33.0		**Left front power window switch (S21/1)**	N52 Y 5 ⊥ V	Ignition: **ON**	11 – 14 V	Wiring, Power soft top control module (N52), (S21/1), ⇒ 33.1
			N52 Y 6 ⊥ V		11 – 14 V	Wiring, Power soft top control module (N52), (S21/1), ⇒ 33.2
33.1		Left front power window switch (S21/1) Close, lower limit stop control	N52 Y 5 ⊥ Ω	Ignition: **OFF** Disconnect test cable from N52, Press switch (S21/1) back to second detent and then forward.	>20 kΩ	Wiring, (S21/1),
					0 – 1 Ω	Wiring, (S21/1)

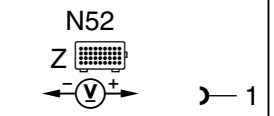
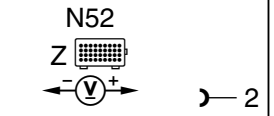
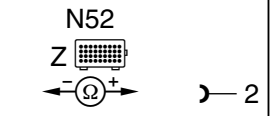
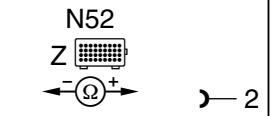
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
33.2		**Left front power window switch (S21/1)** Open	N52 Y ⊥ Ω — 6	Ignition: **OFF** Disconnect test cable from N52, Press switch (S21/1) back to first and second detent.	>20 kΩ 0 – 1 Ω	Wiring, (S21/1) Wiring, (S21/1)
34.0		**Right front power window switch (S21/2)**	N52 Y ⊥ V — 7 N52 Y ⊥ V — 8	Ignition: **ON**	11 – 14 V 11 – 14 V	Wiring, (S21/2), ⇒ 34.1, Power soft top control module (N52). Wiring, (S21/2), ⇒ 34.2, Power soft top control module (N52).
34.1		Right front power window switch (S21/2) Close, lower limit stop control	N52 Y ⊥ Ω — 7	Ignition: **OFF** Disconnect test cable from N52, Press switch (S21/1) back to second detent and then forward.	>20 kΩ 0 – 1 Ω	Wiring, (S21/2) Wiring, (S21/2)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
34.2		Right front power window switch (S21/2) Open	N52 Y ⊥ Ω — 8	Ignition: **OFF** Disconnect test cable from N52, Press switch (S21/1) back to first and second detent.	>20 kΩ 0 – 1 Ω	Wiring, (S21/2) Wiring, (S21/2)
35.0		**Left front power window motor (M10/3)** Voltage	N52 X 2 — V — 1	Ignition: **ON** Switch (S21/1): **At rest:**	0 – 1 V	Power soft top control module (N52)
				Press in direction **"open"**	11 – 14 V	Wiring, (M10/3), ⇒ 35.1, (N52).
			N52 X 1 — V — 2	Press in direction **"close"**	11 – 14 V	Wiring, (M10/3), ⇒ 35.1, (N52).
35.1		Left front power window motor (M10/3) (with wiring)	N52 X 1 — Ω — 2	Ignition: **OFF** Disconnect test cable from N52.	0.5 – 2 Ω	Wiring, (M10/3), See SMS, Job no. 82-600
			N52 X 9 — Ω — 2		>20 kΩ	Wiring, (M10/3)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
36.0		**Right front power window motor (M10/4)** Voltage		Ignition: **ON** Switch (S21/1): **At rest:**	 0 – 1 V	Power soft top control module (N52).
				Press in direction **"open"**	11 – 14 V	Wiring, (M10/4), ⇒ 36.1, (N52).
				Press in direction **"close"**	11 – 14 V	Wiring, (M10/4), ⇒ 36.1, (N52).
36.1		Right front power window motor (M10/4) (with wiring)		Ignition: **OFF** Disconnect test cable from N52.	0.5 – 2 Ω	Wiring, (M10/4), See SMS, Job no. 82-600
					>20 kΩ	Wiring, (M10/4).
37.0		**Indicator lamp in power soft top switch (S84)**		Ignition: **ON**	Indicator lamp in power soft top switch illuminates briefly.	Wiring, (S84).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
38.0		**Main valve (A7/5y1)** Activation (deleted as of VIN 1F-083891)	N52 X 10 — (V) — 8	Ignition: **ON** Roll bar retracted. Press power soft top switch (S84) to "open" or "close".	0 – 1 V 11 – 14 V	Power soft top control module (N52). 23⇒ 39.0, (N52)
39.0		**Main valve (A7/5y1)** with wires	N52 X 10 — (Ω) — 8	Disconnect test cable from N52. See connection schematic X	5 – 15 Ω	Wiring, (A7/5y1)
40.0		**Rear locks valve (Y56y2)** Activation	N52 Z 12 — (V) — 4	Ignition: **ON** **Unlock** hard top, or unlock fabric bow using power soft top switch (S84). **Lock** hard top, or unlock fabric bow using power soft top switch (S84).	11 – 14 V 0 – 1 V	23⇒ 41.0, (N52). (N52).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
41.0		**Rear locks valve (Y56y2)** with wiring	N52 Z 12 — (V) — 4	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y56y2), If nominal value is OK: Check if rear locks valve (Y56y2) is mechanically jammed.
42.0		**Center locks valve (Y56y3)** Activation	N52 Z 12 — (V) — 5	Ignition: **ON** Using power soft top switch (S84): **"Open "** soft top compartment cover. **"Close"** soft top compartment cover.	11 – 14 V 0 – 1 V	23⇒ 43.0, (N52). (N52).
43.0		**Center locks valve (Y56y3)** with wiring	N52 Z 12 — (Ω) — 5	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y56y3), If nominal value is OK: Check if center locks valve (Y56y3) is mechanically jammed.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
44.0		**Front locks valve (Y56y4)** Activation	N52 Z 12 — (V) — 3	Ignition: **ON** **Unlock** hard top, or unlock front soft top using power soft top switch (S84). **Lock** hard top, or unlock front soft top using power soft top switch (S84).	11 – 14 V 0 – 1 V	23⇒ 45.0, (N52). (N52).
45.0		**Front locks valve (Y56y4)** with wiring	N52 Z 12 — (Ω) — 3	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y56y4), If nominal value is OK: Check if front locks valve (Y56y4) is mechanically jammed.
46.0		**Soft top compartment cover valve (Y56y5)** Activation	N52 Z 12 — (V) — 6	Ignition: **ON** Using power soft top switch (S84): **"Open "** soft top compartment cover. **"Close"** soft top compartment cover.	11 – 14 V 0 – 1 V	23⇒ 47.0, (N52). (N52).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
47.0		**Soft top compartment cover valve (Y56y5)** with wiring	N52 Z 12 — Ω — 6	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y56y5), If nominal value is OK: Check if soft top compartment cover valve (Y56y5) is mechanically jammed.
48.0		**Soft top "open" valve (Y55y6)** Activation	N52 Z 10 — V — 3	Ignition: **ON** Using power soft top switch (S84): **"Open "** soft top. **"Close"** soft top.	11 – 14 V 0 – 1 V	23⇒ 49.0, (N52). (N52).
49.0		**Soft top "open" valve (Y55y6)** with wiring	N52 X 10 — Ω — 3	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y55y6), If nominal value is OK: Check if soft top "open" valve (Y55y6) is mechanically jammed.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
50.0		**Soft top "close" valve (Y55y7)** Activation	N52 X 10 — (V) — 4	Ignition: **ON** Using power soft top switch (S84): **"Close "** soft top. **"Open"** soft top.	11 – 14 V 0 – 1 V	23⇒ 51.0, (N52). (N52).
51.0		**Soft top "close" valve (Y55y7)** with wiring	N52 X 10 — (Ω) — 4	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y55y7), If nominal value is OK: Check if soft top "close" valve (Y55y7) is mechanically jammed.
52.0		**Fabric bow "raise" valve (Y55y8)** Activation	N52 X 10 — (V) — 5	Ignition: **ON** Using power soft top switch (S84): **"Raise "** fabric bow or **"Close"** soft top. Using power soft top switch (S84): **"Lower**" fabric bow or **"Close"** power soft top compartment cover.	11 – 14 V 0 – 1 V	23⇒ 53.0, (N52). (N52).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
53.0		**Fabric bow "raise" valve (Y55y8)** with wiring	N52 X 10 — Ω — 5	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y55y8), If nominal value is OK: Check if fabric bow "raise" valve (Y55y8) is mechanically jammed.
54.0		**Fabric bow "lower" valve (Y55y9)** Activation	N52 X 10 — V — 6	Ignition: **ON** Using power soft top switch (S84): **"Lower "** fabric bow. Using power soft top switch (S84): **"Raise**" fabric bow.	11 – 14 V 0 – 1 V	23⇒ 55.0, (N52). (N52).
55.0		**Fabric bow "lower" valve (Y55y9)** with wiring	N52 X 10 — Ω — 6	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y55y9), If nominal value is OK: Check if fabric bow "lower" valve (Y55y9) is mechanically jammed.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
56.0		**Rod side valve (Y57y10)** Activation	N52 X 10 —(–(V)+)— 7	Ignition: **ON** Press power soft top switch (S84), Or RB switch (S83).	0 – 1 V 11 – 14 V	Power soft top control module (N52). 23⇒ 57.0, Wiring, (N52).
57.0		**Rod side valve (Y57y10)** with wiring	N52 X 10 —(–(Ω)+)— 7	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y57y10).
58.0		**Piston side valve (Y57y11)** Activation	N52 Z 12 —(–(V)+)— 8	Ignition: **ON** Press power soft top switch (S84) or RB switch (S83): To **"raise"** roll bar or to **"lower"** roll bar.	11 – 14 V 0 – 1 V	23⇒ 59.0, (N52). (N52).
59.0		**Piston side valve (Y57y11)** with wiring	N52 Z 12 —(–(Ω)+)— 8	Disconnect test cable from N52.	5 – 15 Ω	Wiring, (Y57y11) If nominal value is OK: Check if piston side valve (Y55y11) is mechanically jammed.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
60.0		**ATA/CF microswitch** Driver's door (S86), Passenger side door (S87s1), Trunk lid (S88s1)	N52 Y ⊥ V 14	Ignition: **OFF** Microswitches (S86), S87s1) and S88s1) in: **Rest position:**	11 – 14 V	(S86), ⇒ 60.1, (S87s1), ⇒ 60.1, (S88s1), ⇒ 60.1, Supply pump (CL/vacuum) (M14/1), CF control module (N57), ATA control module (N26), RCL control module (N57).
				Microswitch (S86) in position: **Close:**	0 – 1 V	Wiring, (S86)
				Microswitch (S87s1) in position: **Close:**	0 – 1 V	Wiring, (S87s1)
				Microswitch (S88s1) in position: **Close:**	0 – 1 V	Wiring, (S88s1)

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
60.1		ATA/CF microswitch Driver's door (S86), Passenger side door (S87s1), Trunk lid (S88s1)	N52 Y ⊥ –Ω+ 14	Ignition: **OFF** Disconnect control modules from socket box, disconnect connectors from: Supply pump (CL/vacuum) (M14/1), CF control module (N57), ATA control module (N26), RCL control module (N57) Microswitches (S86), (S87s1) and (S88s1) in: **Rest position:**	>20 kΩ	Wiring, (S86), (S87s1), (S88s1).
				Microswitch (S86) in position: **Close:**	<10 Ω	Wiring, (S86).
				Microswitch (S87s1) in position: **Close:**	<10 Ω	Wiring, (S87s1).
				Microswitch (S88s1) in position: **Close:**	<10 Ω	Wiring, (S88s1).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
61.0		**Actuator:** Left door actuator (S47), Right door actuator (S48), Trunk lid lock actuator (S49)	N52 Y ⊥ Ω − 13	Vehicle locked via RCL	<10 Ω	Wiring, Actuators: (S47), (S48), (S49).

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational Sequence: Opening Soft Top

Limit switches engaged	Soft top compartment cover			Soft top			Fabric bow			Roll bar	Side windows
	locked	closed	open	locked	up	open	locked	closed	raised	retracted	down
	A24s2 A25s2	A24s1 A25s1	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1 A23s1	S84/6	S83/1	S21/9 S21/8
Connection Diagram – Socket Box (Y) (22, Figure 2) **Control module in diagnostic mode 22**	Y ⊥ 20 ⊥ 21	Y ⊥ 25 ⊥ 26	Y ⊥ 30	Y ⊥ 16 ⊥ 17	Y ⊥ 28	Y ⊥ 27	Y ⊥ 18 ⊥ 19	Y ⊥ 23 ⊥ 24	Y ⊥ 29	Y ⊥ 31	Y ⊥ 10 ⊥ 22
Roll bar retracted, side windows down	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V
Fabric bow unlocked	0–1 V	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	0–1 V
Fabric bow raised	0–1 V	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	0–1 V
Soft top compartment cover unlocked	11–14 V	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	0–1 V
Soft top compartment cover open	11–14 V	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	0–1 V
Soft top unlocked in front	11–14 V	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	0–1 V
Soft top open	11–14 V	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	0–1 V
Soft top retracted into soft top compartment	11–14 V	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	0–1 V
Soft top compartment cover closed	11–14 V	0–1 V	11–14 V	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V
Soft top compartment cover locked	0–1 V	0–1 V	11–14 V	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V
Roll bar up, side windows up	0–1 V	0–1 V	11–14 V	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational Sequence: Closing Soft Top

Limit switches engaged	Soft top compartment cover			Soft top			Fabric bow			Roll bar	Side windows
	locked	closed	open	locked	open	up	locked	closed	raised	retracted	down
	A24s2 A25s2	A24s1 A25s1	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1 A23s1	S84/6	S83/1	S21/9 S21/8
Connection Diagram – Socket Box (Y) (22, Figure 2) **Control module in diagnostic mode 22**	Y ⊥ 20 ⊥ 21	Y ⊥ 25 ⊥ 26	Y ⊥ 30	Y ⊥ 16 ⊥ 17	Y ⊥ 28	Y ⊥ 27	Y ⊥ 18 ⊥ 19	Y ⊥ 23 ⊥ 24	Y ⊥ 29	Y ⊥ 31	Y ⊥ 10 ⊥ 22
Roll bar retracted, side windows down	0–1 V	0–1 V	11–14 V	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V
Soft top compartment cover unlocked	11–14 V	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	0–1 V
Soft top compartment cover open	11–14 V	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	0–1 V
Soft top open (out of soft top compart.)	11–14 V	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	0–1 V
Soft top closed (Differential)	11–14 V	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	0–1 V
Soft top locked in front	11–14 V	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	0–1 V
Soft top compartment cover closed	11–14 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	11–14 V	11–14 V	11–14 V	0–1 V	0–1 V
Soft top compartment cover locked	0–1 V	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	0–1 V
Fabric bow raised	0–1 V	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	0–1 V
Fabric bow locked	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V
Roll bar up, side windows up	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V	11–14 V	11–14 V	11–14 V

Electrical Test Program – Survey of Electrical Limit Switch Signals

Operational Sequence: Hardtop Locking

Limit switches engaged	Soft top compartment cover			Soft top			Fabric retention bow			Roll bar	Side windows
	locked	closed	open	locked	open	up	locked	closed	raised	retracted	down
	A24s2 A25s2	A24s1 A25s1	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1 A23s1	S84/6	S83/1	S21/9 S21/8
Connection Diagram – Socket Box (Y) (22, Figure 2) **Control module in diagnostic mode 22**	Y ⊥ 20 ⊥ 21	Y ⊥ 25 ⊥ 26	Y ⊥ 30	Y ⊥ 16 ⊥ 17	Y ⊥ 28	Y ⊥ 27	Y ⊥ 18 ⊥ 19	Y ⊥ 23 ⊥ 24	Y ⊥ 29	Y ⊥ 31	Y ⊥ 10 ⊥ 22
Rear locks (locked)	0–1 V	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	11–14 V
Front locks (locked)	0–1 V	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	11–14 V

Operational Sequence: Hardtop Unlocking

Limit switches engaged	Soft top compartment cover			Soft top			Fabric retention bow			Roll bar	Side windows
	locked	closed	open	locked	open	up	locked	closed	raised	retracted	down
	A24s2 A25s2	A24s1 A25s1	S84/5	S84/1 S84/2	S84/4	S84/3	A22s2 A23s2	A22s1 A23s1	S84/6	S83/1	S21/9 S21/8
Connection Diagram – Socket Box (Y) (22, Figure 2) **Control module in diagnostic mode 22**	Y ⊥ 20 ⊥ 21	Y ⊥ 25 ⊥ 26	Y ⊥ 30	Y ⊥ 16 ⊥ 17	Y ⊥ 28	Y ⊥ 27	Y ⊥ 18 ⊥ 19	Y ⊥ Y23 ⊥ 24	Y ⊥ 29	Y ⊥ 31	Y ⊥ 10 ⊥ 22
Front (unlock)	0–1 V	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	11–14 V
Rear (unlock)	0–1 V	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	11–14 V

Electrical Test Program – Survey of Electrical Valve Actuation

Y55 Left RST Valve Block (4 connections)

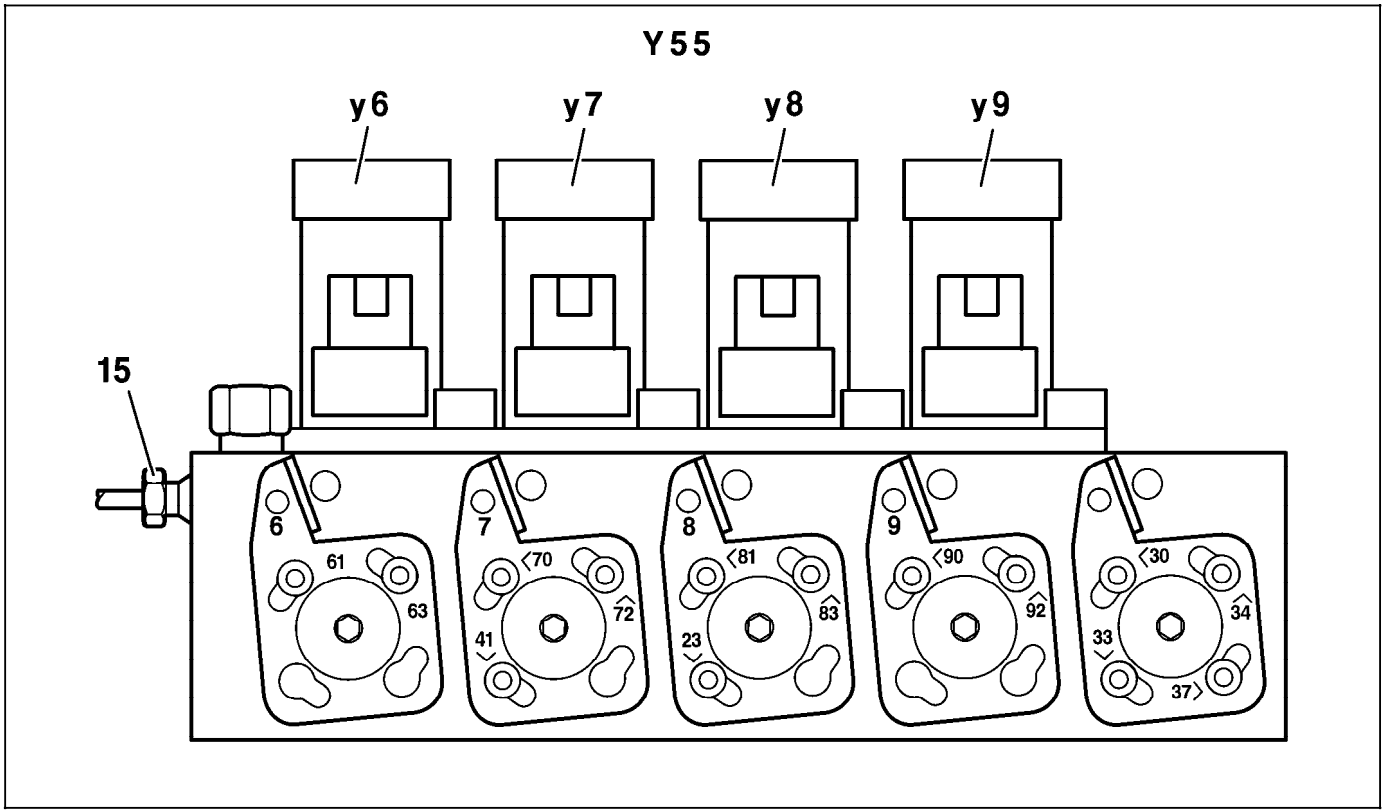


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Figure 1

Y55	Left RST valve block (4 connections)
y6	Soft top "open" valve
y7	Soft top "close" valve
y8	Fabric bow "raise" valve
y9	Fabric bow "lower" valve

Electrical Test Program – Survey of Electrical Valve Actuation

Y56 Right RST Valve Block (4 connections)
and
Y57 Roll bar Valve Block (2 connections)

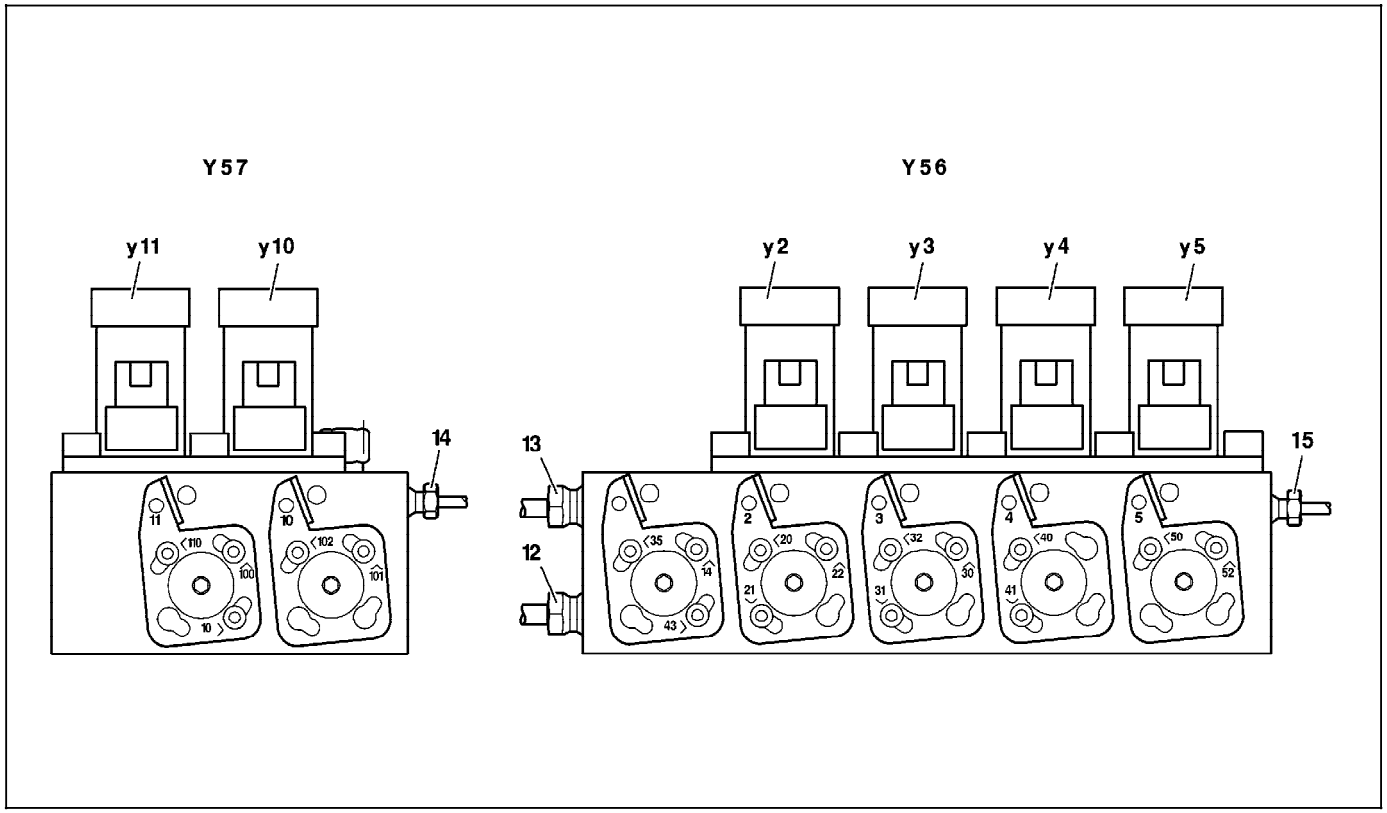

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Figure 2

Y56	Left RST valve block (4 connections)
y2	Rear locks valve
y3	Center locks valve
y4	Front locks valve
y5	Soft top compartment cover valve
Y57	Roll Bar valve block (2 connections)
y10	Roll bar "Lower" valve
y11	Roll bar "raise" valve

Electrical Test Program – Survey of Electrical Valve Actuation

Operational Sequence: Soft Top Opening

	Left RST valve block (Y55)				Hydraulic unit (A7/5) [1]	RB valve block (Y57)		Right RST valve block (Y56)			
Valves being controlled at time of operational sequence	y6	y7	y8	y9	y1	y10	y11	y4	y2	y3	y5
Connection Diagram – Socket box X (22, Figure 1), Z (22, Figure 3)	X 10 3	X 10 4	X 10 5	X 10 6	X 10 8	X 10 7	Z 12 8	Z 12 3	Z 12 4	Z 12 5	Z 12 6
Lower roll bar, lower side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V
Unlock fabric bow	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	11–14 V	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V
Raise fabric bow	0–1 V	0–1 V	**11–14 V**	**0–1 V**	11–14 V	11–14 V	0–1 V	0–1 V	11–14 V	0–1 V	0–1 V
Unlock soft top compartment cover	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V
Open soft top compartment cover	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	**11–14 V**
Unlock front of soft top	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	**11–14 V**	0–1 V	11–14 V	11–14 V
Open soft top	**11–14 V**	**0–1 V**	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V
Lower soft top into soft top compartment	11–14 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V
Close soft top compartment cover	11–14 V	0–1 V	**11–14 V**	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	**0–1 V**
Lock soft top compartment cover	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	**0–1 V**	0–1 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**	0–1 V	0–1 V	0–1 V	0–1 V

[1] RST/RB hydraulic unit main valve (A7/5y1) was deleted as of VIN 1F-083891

Electrical Test Program – Survey of Electrical Valve Actuation

Operational Sequence: Closing Soft Top

	Left RST valve block (Y55)				Hydraulic unit (A7/5) [1]	RB valve block (Y57)		Right RST valve block (Y56)			
Valves being controlled at time of operational sequence	y6	y7	y8	y9	y1	y10	y11	y4	y2	y3	y5
Connection Diagram – Socket box X (22, Figure 3), Z (22, Figure 5)	X 10 3	X 10 4	X 10 5	X 10 6	X 10 8	X 10 7	Z 12 8	Z 2 3	Z 12 4	Z 12 5	Z 12 6
Lower roll bar, lower side windows	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V	0–1 V	0–1 V
Unlock soft top compartment cover	0–1 V	0–1 V	0–1 V	0–1 V	**11–14 V**	11–14 V	0–1 V	0–1 V	0–1 V	**11–14 V**	0–1 V
Open soft top compartment cover	0–1 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	**11–14 V**
Close soft top	0–1 V	**11–14 V**	**11–14 V**	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V
Close soft top (differential operation)	**11–14 V**	11–14 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V
Lock front of soft top	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	**0–1 V**	0–1 V	11–14 V	11–14 V
Close soft top compartment cover	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	11–14 V	**0–1 V**
Lock soft top compartment cover	0–1 V	0–1 V	11–14 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	0–1 V	**0–1 V**	0–1 V
Lower fabric bow	0–1 V	0–1 V	**0–1 V**	**11–14 V**	11–14 V	11–14 V	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V
Lock fabric bow	0–1 V	0–1 V	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
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**	0–1 V	0–1 V	0–1 V	0–1 V

[1] RST/RB hydraulic unit main valve (A7/5y1) was deleted as of VIN 1F-083891

Electrical Test Program – Survey of Electrical Valve Actuation

Operational Sequence: Locking Hardtop

	Left RST valve block (Y55)				Hydraulic unit (A7/5) [1]
Valves being controlled at time of operational sequence	y6	y7	y8	y9	y1
Connection Diagram – Socket box X (22, Figure 1), Z (22, Figure 3)	X 10 3	X 10 4	X 10 5	X 10 6	X 10 8
Rear (lock)	0–1 V	0–1 V	0–1 V	0–1 V	11–14 V
Front (lock)	0–1 V	0–1 V	0–1 V	0–1 V	11–14 V

1) RST/RB hydraulic unit main valve (A7/5y1) was deleted as of VIN 1F-083891.

Operational Sequence: Locking Hardtop

	RB valve block (Y57)		Right RST valve block (Y56)			
Valves being controlled at time of operational sequence	y10	y11	y4	y2	y3	y5
Connection Diagram – Socket box X (22, Figure 1), Z (22, Figure 3)	X 10 7	Z 12 8	Z 12 3	Z 12 4	Z 12 5	Z 12 6
Rear (lock) (roll bar "lowered")	11–14 V	0–1 V	0–1 V	**0–1 V**	0–1 V	0–1 V
Rear (lock) (roll bar "raised")	11–14 V	11–14 V	0–1 V	**0–1 V**	0–1 V	0–1 V
Front (lock) (roll bar "lowered")	11–14 V	0–1 V	**0–1 V**	0–1 V	0–1 V	0–1 V
Front (lock) (roll bar "raised")	11–14 V	11–14 V	**0–1 V**	0–1 V	0–1 V	0–1 V

1) RST/RB hydraulic unit main valve (A7/5y1) was deleted as of VIN 1F-083891.

Electrical Test Program – Survey of Electrical Valve Actuation

Operational Sequence: Unlocking Hardtop

	Left RST valve block (Y55)				Hydraulic unit (A7/5) [1]	RB valve block (Y57)		Right RST valve block (Y56)			
Valves being controlled at time of operational sequence	y6	y7	y8	y9	y1	y10	y11	y4	y2	y3	y5
Connection Diagram – Socket box X (22, Figure 1), Z (22, Figure 3)	X 10 3	X 10 4	X 10 5	X 10 6	X 10 8	X 10 7	Z 12 8	Z 12 3	Z 12 4	Z 12 5	Z 12 6
Rear (unlock)	0–1 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V	0–1 V	**11–14 V**	0–1 V	0–1 V	0–1 V
Front (unlock)	0–1 V	0–1 V	0–1 V	0–1 V	11–14 V	11–14 V	0–1 V	0–1 V	**11–14 V**	0–1 V	0–1 V

[1] RST/RB hydraulic unit main valve (A7/5y1) was deleted as of VIN 1F-083891.

Electrical Test Program – Soft Top Tester Nominal Values

For Connection Diagram and Function, see Soft Top Tester Operations Manual.

Soft top menu protocol

Note:

Time and pressure specifications must be achieved during a normal/smooth and consistant soft top operational sequence (at room temperature). As long as the time specification is attained, the pressure readings are of secondary importance. System hydraulic pressure should be recorded as the limit switch activates.

Table I

Closing soft top	Time in seconds	Pressure in bar
Unlock soft top compartment cover	1.5	200
Raise soft top compartment cover	6.0	200
Raise soft top (differential operation) **and** engage in front locks	10–14	140
Lock front locks	1.8	200
Close soft top compartment cover	2.5	200
Lock soft top compartment cover	2.5	200
Close fabric bow	3.0	200
Lock fabric bow	3.0	200

Electrical Test Program – Soft Top Tester Nominal Values

Table II

Opening soft top	Time in seconds	Pressure in bar
Unlock fabric bow	1.5	200
Raise fabric bow	3.0	200
Unlock soft top compartment cover	1.5	200
Raise soft top compartment cover	6.0	200
Open front lock	2.0	200
Open soft top	15.0	200
Close soft top compartment cover	2.5	200
Lock soft top compartment cover	2.5	200

Electrical Test Program – Soft Top Tester Nominal Values

Table III

Menu, front locks	**Switch point in mm before main detent**
Soft top	0.12–0.35
Menu, center locks	
Left/right center lock limit switch, closed	42.0–43.1
Left/right center lock limit switch, locked	1.97–2.83
Menu, rear locks	
Left/right rear lock limit switch, closed	42.0–43.1
Left/right rear lock limit switch, locked	1.97–2.83
Menu, sealing	
Pressure must not fall below nominal value of 120 bar.	

Hydraulic Test Program – Component Locations

Location of Hydraulic Components

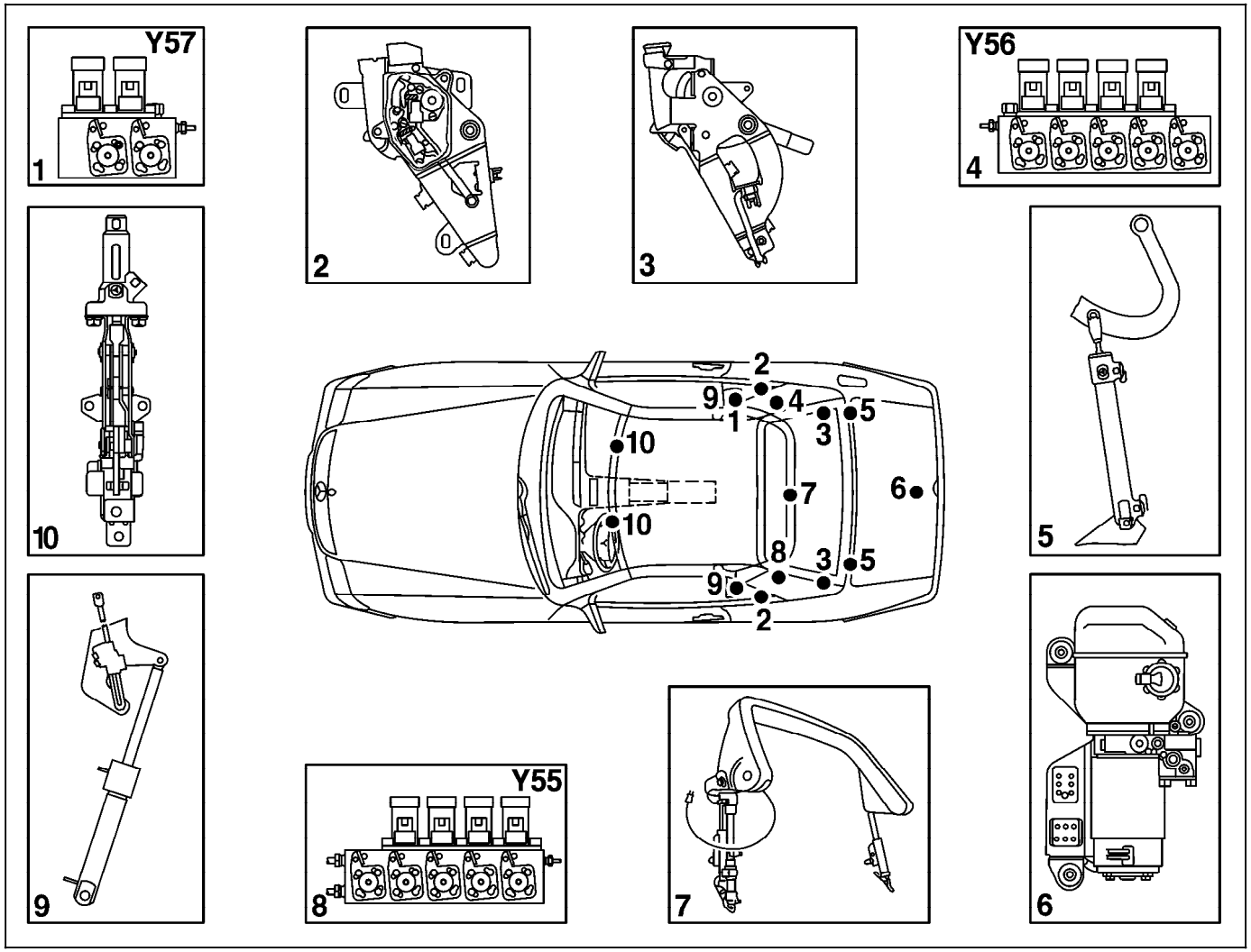

Figure 1

1 RB valve block (Y57) (2 connections)
2 Center locks
3 Rear locks
4 Right RST valve block (Y56) (4 connections)
5 Soft top compartment cover hydraulic cylinder
6 Hydraulic unit
7 Completely extended roll bar
8 Left RST valve block (Y55)
9 Soft top and fabric bow hydraulic cylinder
10 Front locks

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Hydraulic Test Program – Preparation for Test

Before beginning the test, check the oil level in the hydraulic unit reservoir and top up if needed (Refer to Maintenance Manual, Vol. 3, 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 items should be removed from the vehicle.

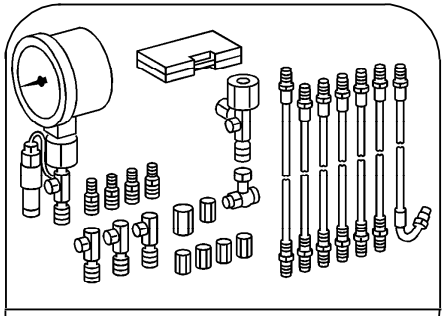
The hydraulic circuits and components for each soft top operation can be tested separately.

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.

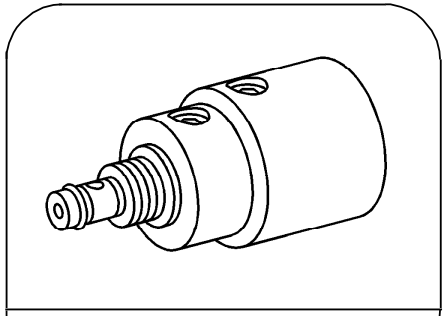
Disconnected hydraulic lines should be held in a container (connect a transparent hose such as windshield washer hose).
Hydraulic components that leak should be replaced. During pressure tests, the valve block connections **must** be plugged with threaded plug 129 589 00 91 01.
If hydraulic components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

Special Tools



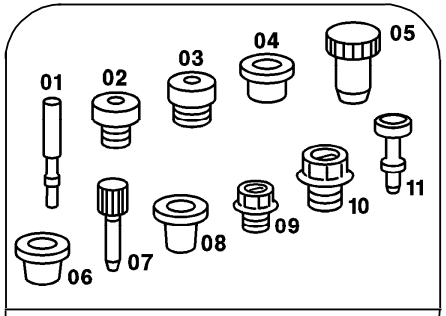
126 589 14 21 00

Tester



129 589 08 63 00

Check valve



129 589 00 91 00

Set of plugs

Hydraulic Test Program – Preparation for Test

Test equipment; See MBUSA Standard Service Equipment Program

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

Hydraulic Test Line,
Part no. 129 806 34 83

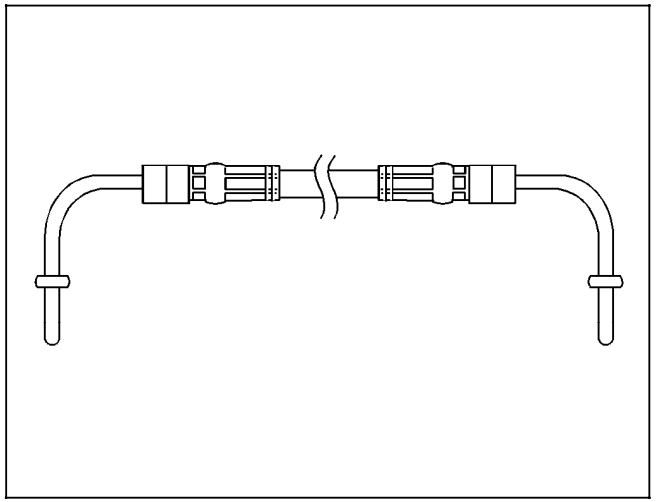


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Figure 1

Hydraulic Test Program – Test – Soft Top Closed

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Notes for Hydraulic Test:

The following jobs are the same for all test steps:

A. Connection of test equipment to hydraulic unit (Figure 1).
Torque check valve 129 589 08 63 00 to 5 Nm.

B. Build up and release test pressure (see 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.

Preparation for Test:

1. Review entire 11.2 section, especially 32, prior to performing any of the following tests on the soft top.

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 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.

Electrical Test Program – Test – Soft Top Closed

Example: Building up and releasing test pressure.

Soft top
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 1).
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.

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

Roll bar
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 1). 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.

Electrical Test Program – Test – Soft Top Closed

Connection Diagram - Check valve and Pressure Gauge to Hydraulic Unit

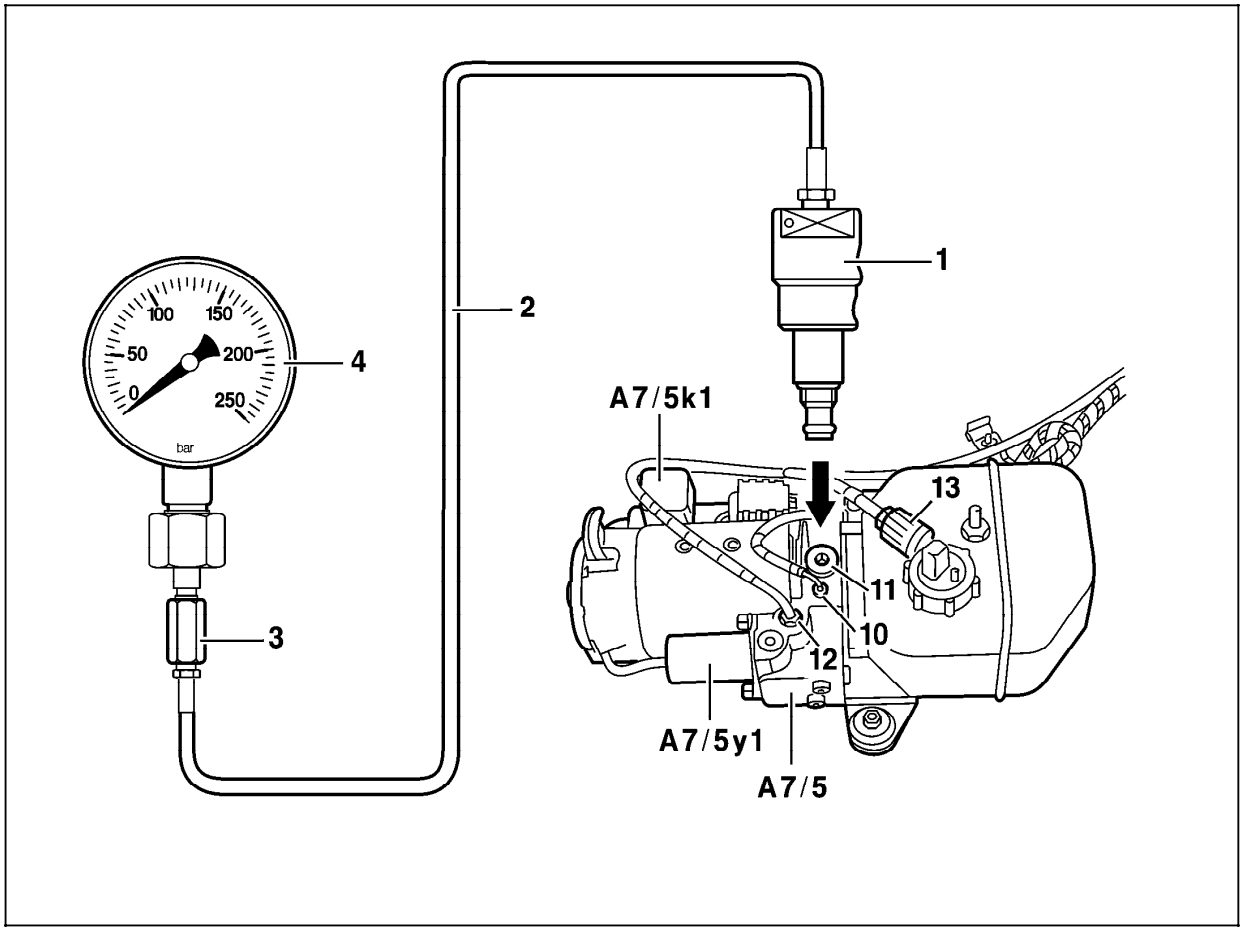

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Figure 1

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
10	Roll bar operation hydraulic line
11	Test connection
12	Soft top operation hydraulic line
13	Return line
A7/5	Hydraulic unit
A7/5k1	Relay
A7/5y1	Main valve (deleted as of VIN 1F-083891)

Electrical Test Program – Test – Soft Top Closed

Y55 Left RST Valve Block (4 connections)

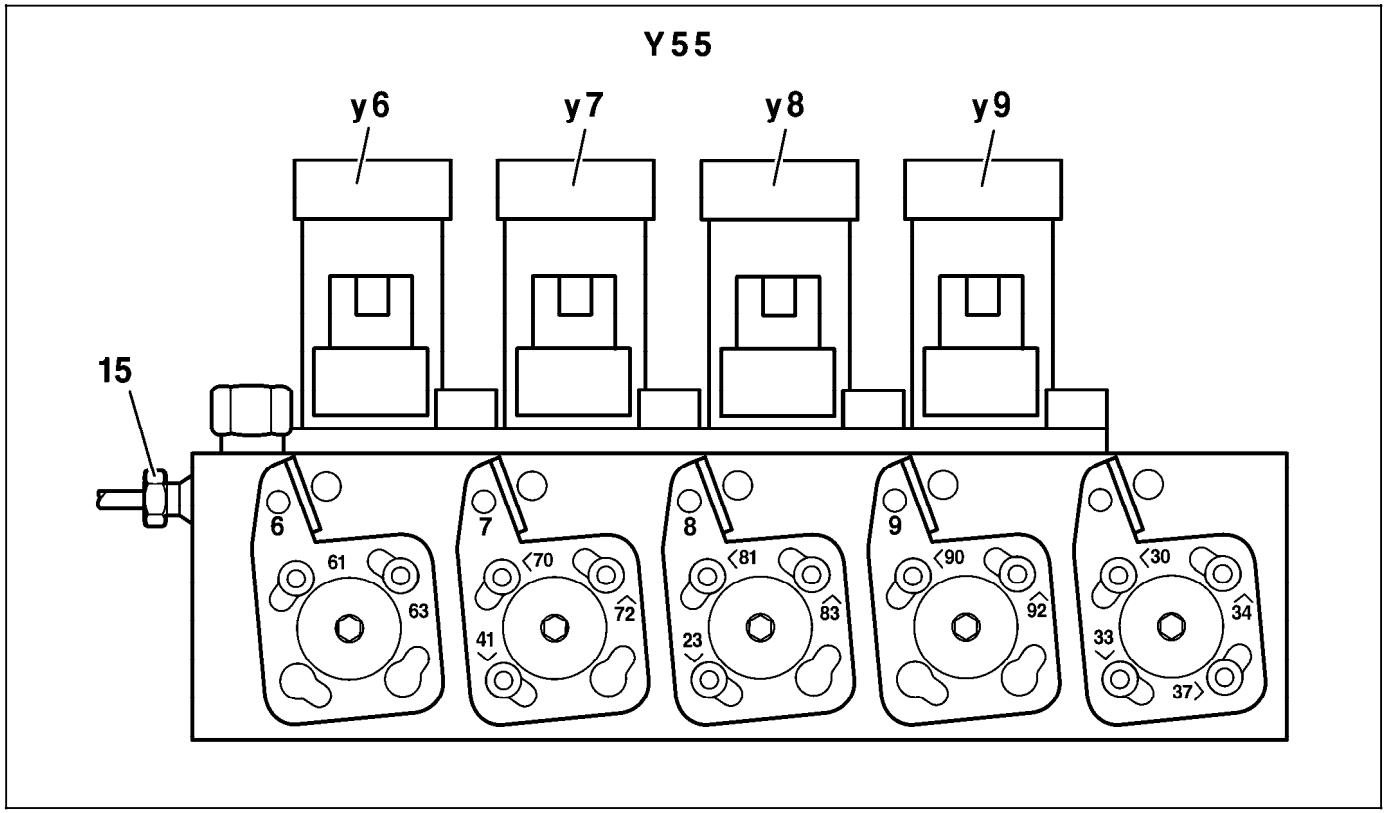

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Figure 1

Y55	Left RST valve block (4 connections)
y6	Soft top "open" valve
y7	Soft top "close" valve
y8	Fabric bow "raise" valve
y9	Fabric bow "lower" valve

Electrical Test Program – Test – Soft Top Closed

Y56 Right RST Valve Block (4 connections) and Y57 Roll bar Valve Block (2 connections)

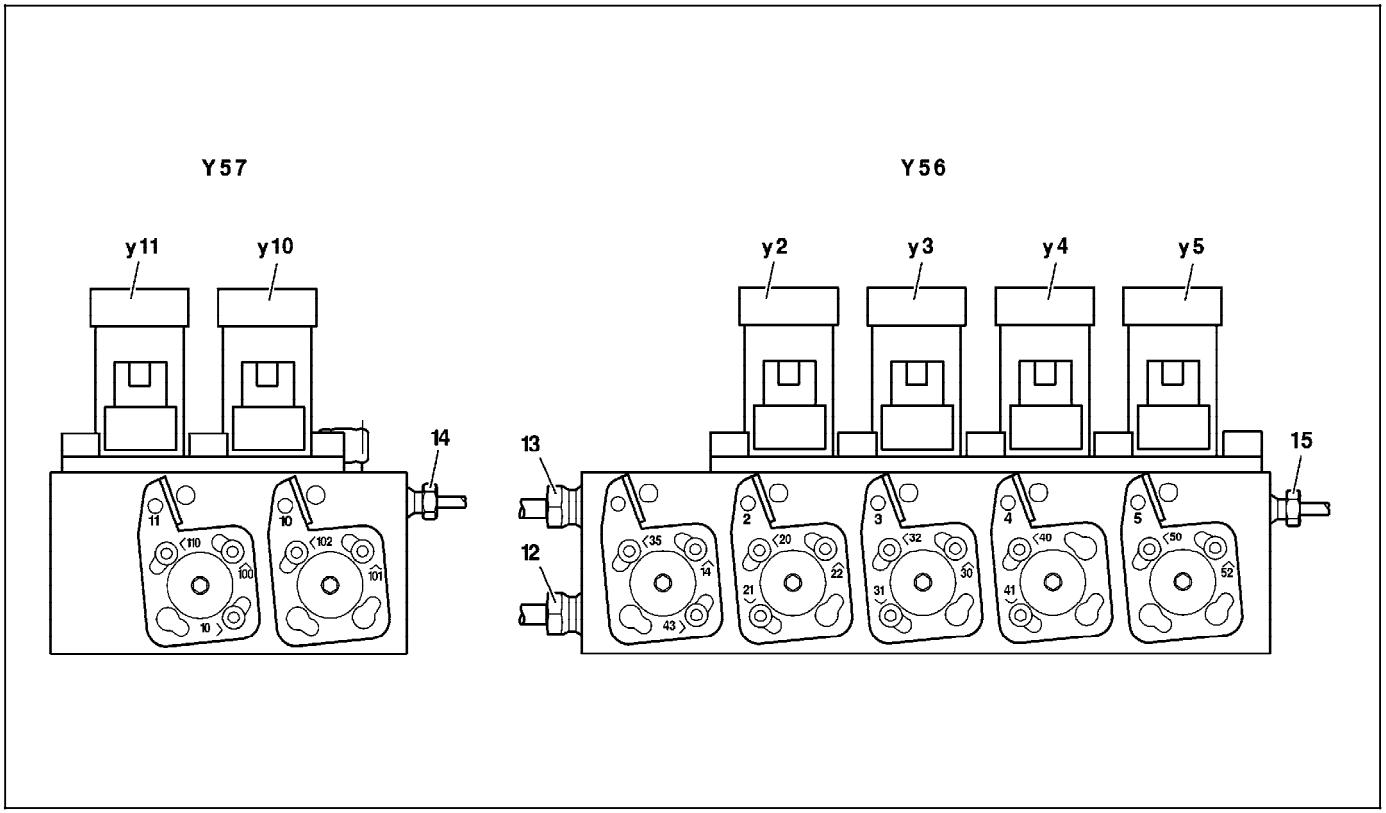

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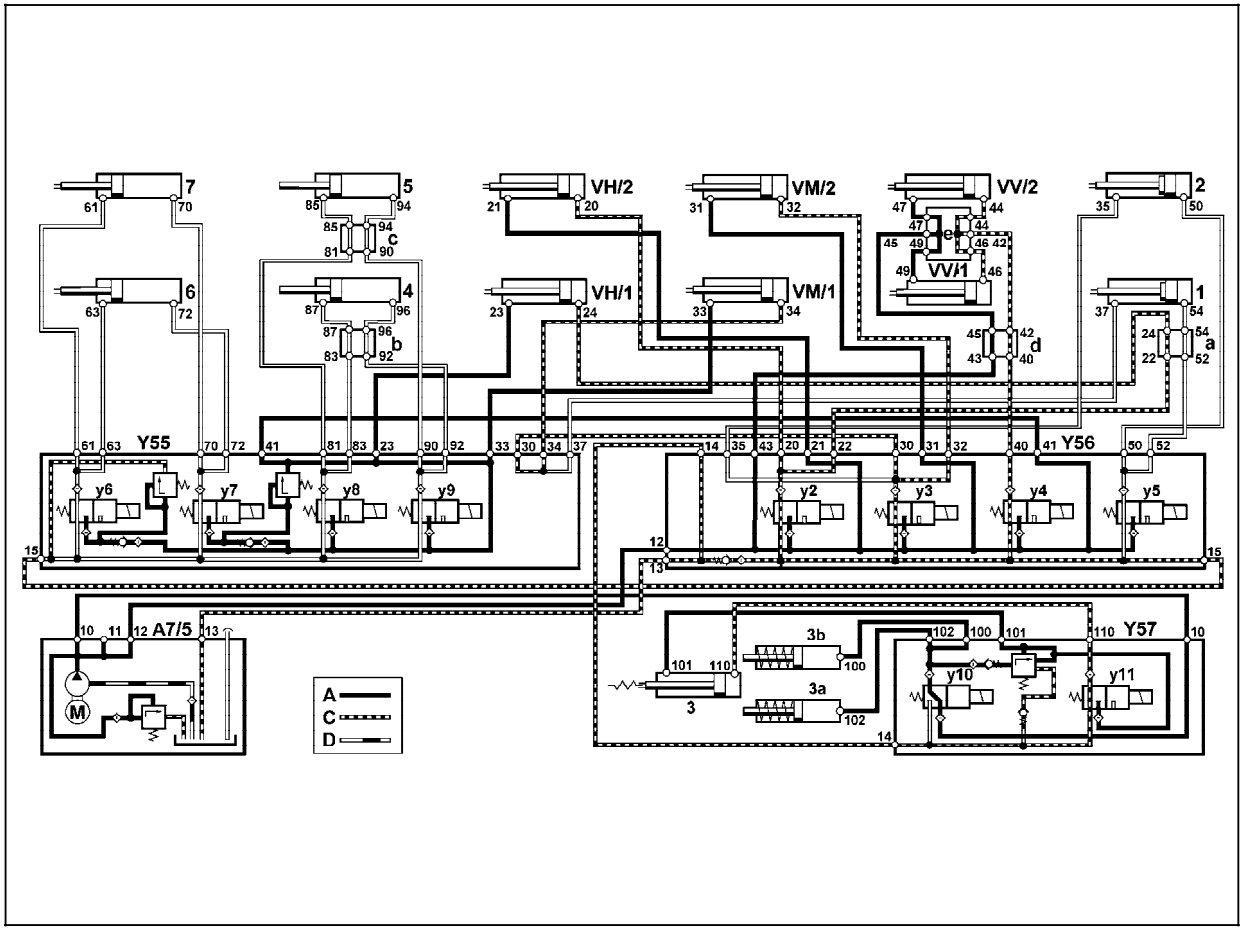
Figure 2

Y56	Left RST valve block (4 connections)
y2	Rear locks valve
y3	Center locks valve
y4	Front locks valve
y5	Soft top compartment cover valve
Y57	Roll Bar valve block (2 connections)
y10	Roll bar "Lower" valve
y11	Roll bar "raise" valve

Hydraulic Test Program – Test – Soft Top Closed

Figure 4

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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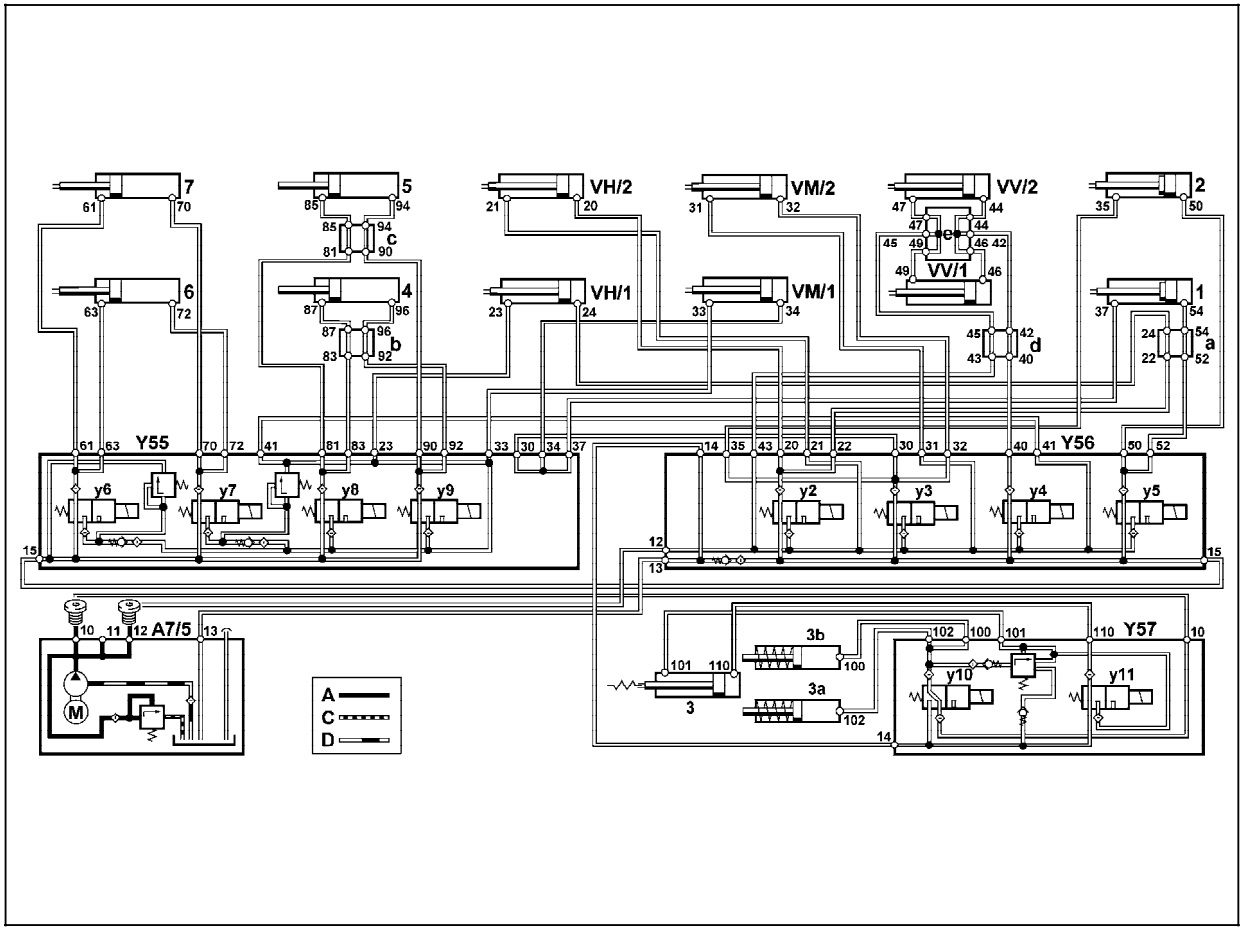
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Checking system pressure** (Figure 4)	Connect pressure gauge according to connection diagram (Figure 1).	**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 1) **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 – Soft Top Closed

Figure 5

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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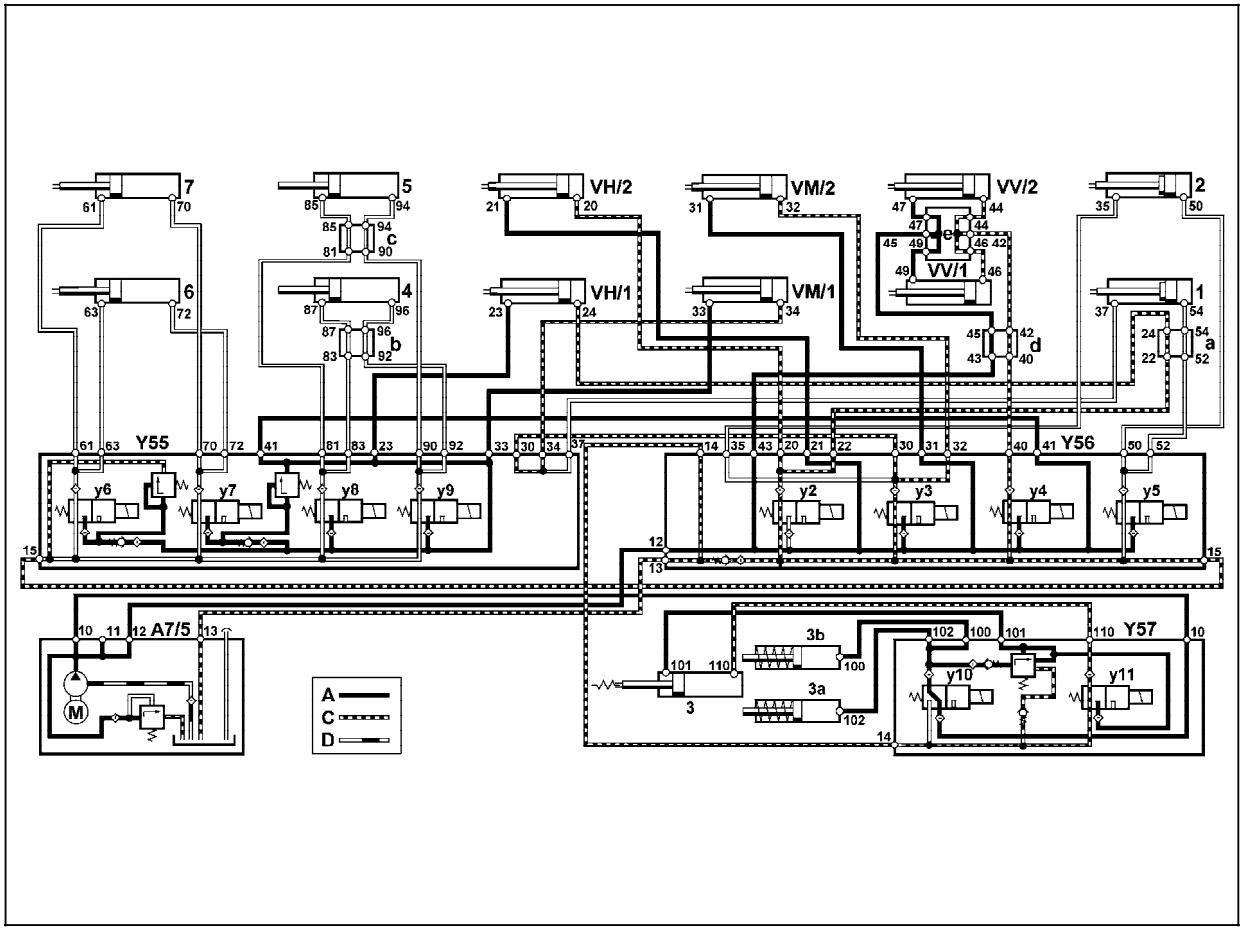
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**Testing RST/RB hydraulic unit (A7/5)** (Figure 5)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect hydraulic lines no. 10 and 12 from hydraulic unit (Figure 5). Seal connection with threaded plugs 129 589 00 91 02/03.	**Soft top completely closed.** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**< 180 bar:** If the indicated pressure **does not decrease:** Replace hydraulic unit (A7/5), See SMS, Job No. 77-0350 **< 180 bar:** If the indicated pressure **does decrease:** Replace main valve (A7/5y1), (deleted as of VIN 1F-083891).

Hydraulic Test Program – Test – Soft Top Closed

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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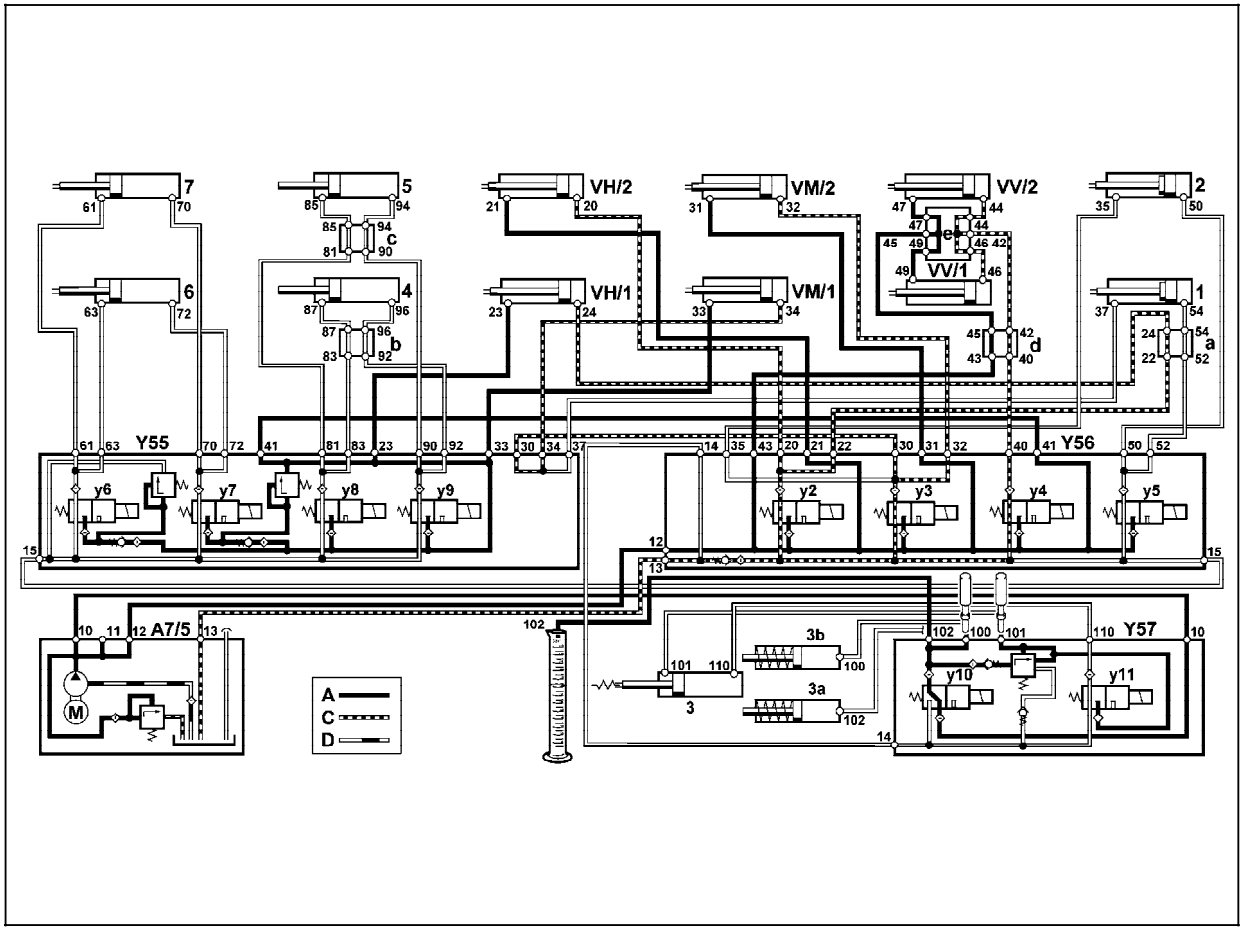
Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		**Retract roll bar** (Figure 6)	i Connect pressure gauge according to connection diagram (Figure 1).	**Soft top completely closed,** **roll bar raised.** Ignition: **ON** Press and hold RB switch for 5 seconds to retract. **Read and note pressure while pressing RB switch:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**If nominal values ok:** Locking pawls (3a or 3b, see Figure 6) are not releasing, replace locking pawls. Mechanical fault in support element (3, Figure 6), replace support element, see SMS, Job No. 91-920 **< 120 bar:** ⇒ 1.0, ⇒ 5.0 If the retracting the roll bar is still not possible with the RB switch: ⇒ 3.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 7

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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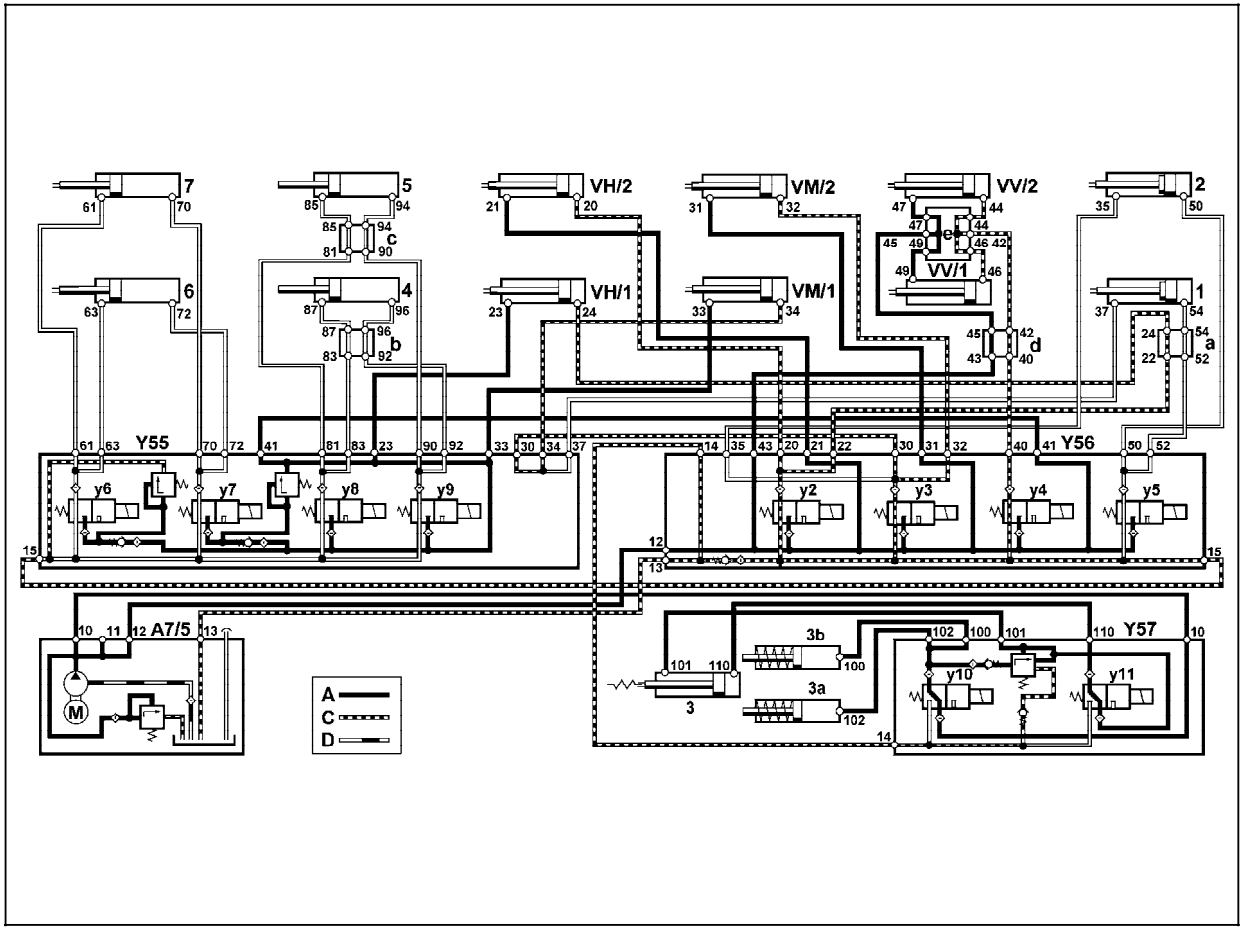
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.1		Retract roll bar (Figure 7)	Disconnect hydraulic line no. 102 from RB valve block (Y57). Install hydraulic line 129 806 34 83 to no. 102 in RB valve block (Y57) and place end of hydraulic line into clean container.	**Roll bar raised.** Ignition: **ON** Press and hold RB switch to **retract** roll bar for **2 sec.**		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, of no or a weak uneven hydraulic flow is noted:** Replace valve (y10) at Y57, See SMS, Job No. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 8

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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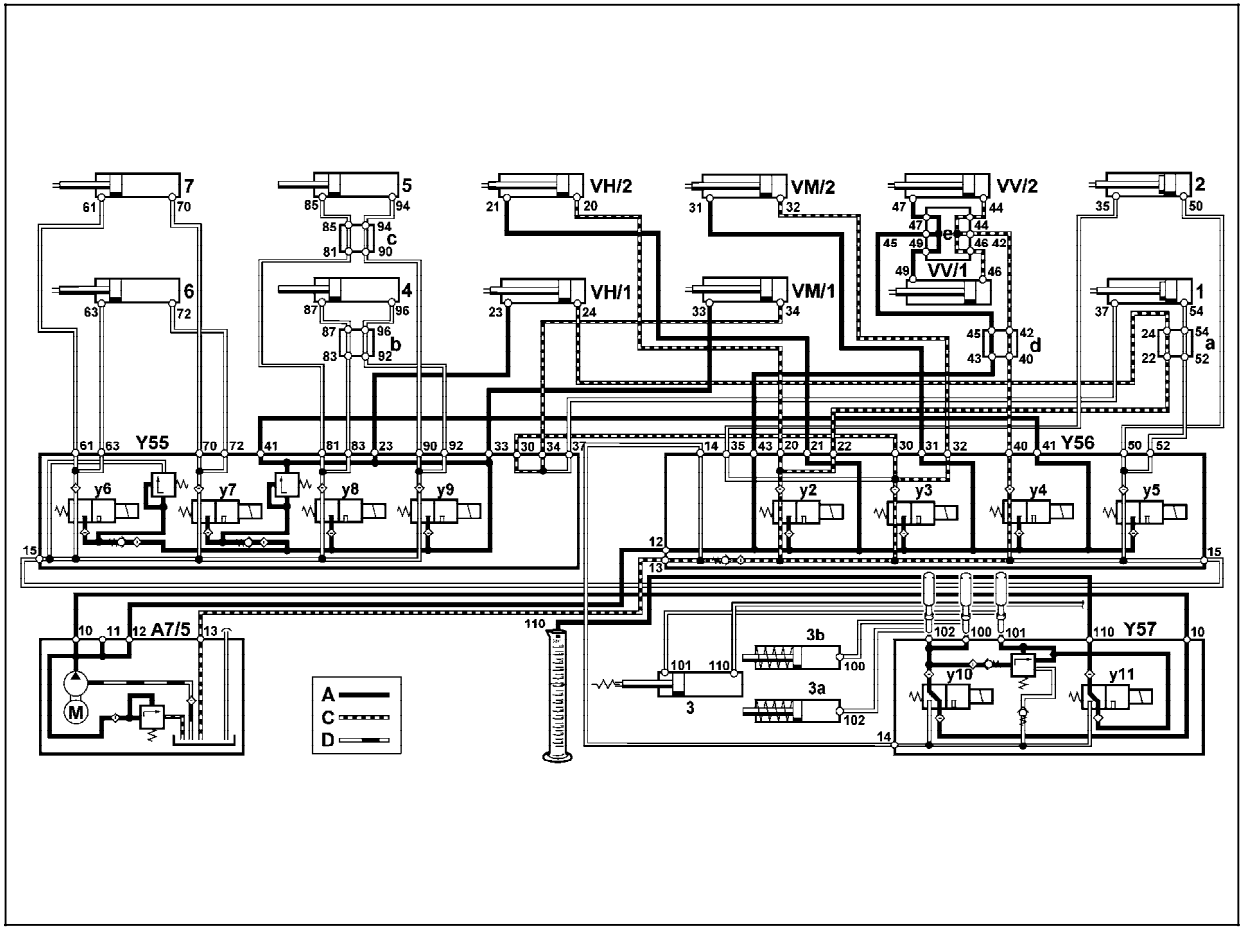
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**Raise roll bar** (Figure 8)	Connect pressure gauge according to connection diagram (Figure 1).	**Soft top completely closed,** **Roll bar retracted.** Ignition: **ON** Press and hold RB switch to raise roll bar. for **5 seconds**. **Read test pressure:** **Release test pressure:** Press soft top switch briefly several times.	120 – 200 bar	**If nominal values ok:** Lock for hydraulic cylinder in support element for roll bar (3, Figure 8) does not unlock. Replace support element, See SMS, Job No. 91-920 **<120 bar:** ⇒ 1.0, ⇒ 5.0, If raise roll bar using the RB switch still does not function check: ⇒ 4.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 9

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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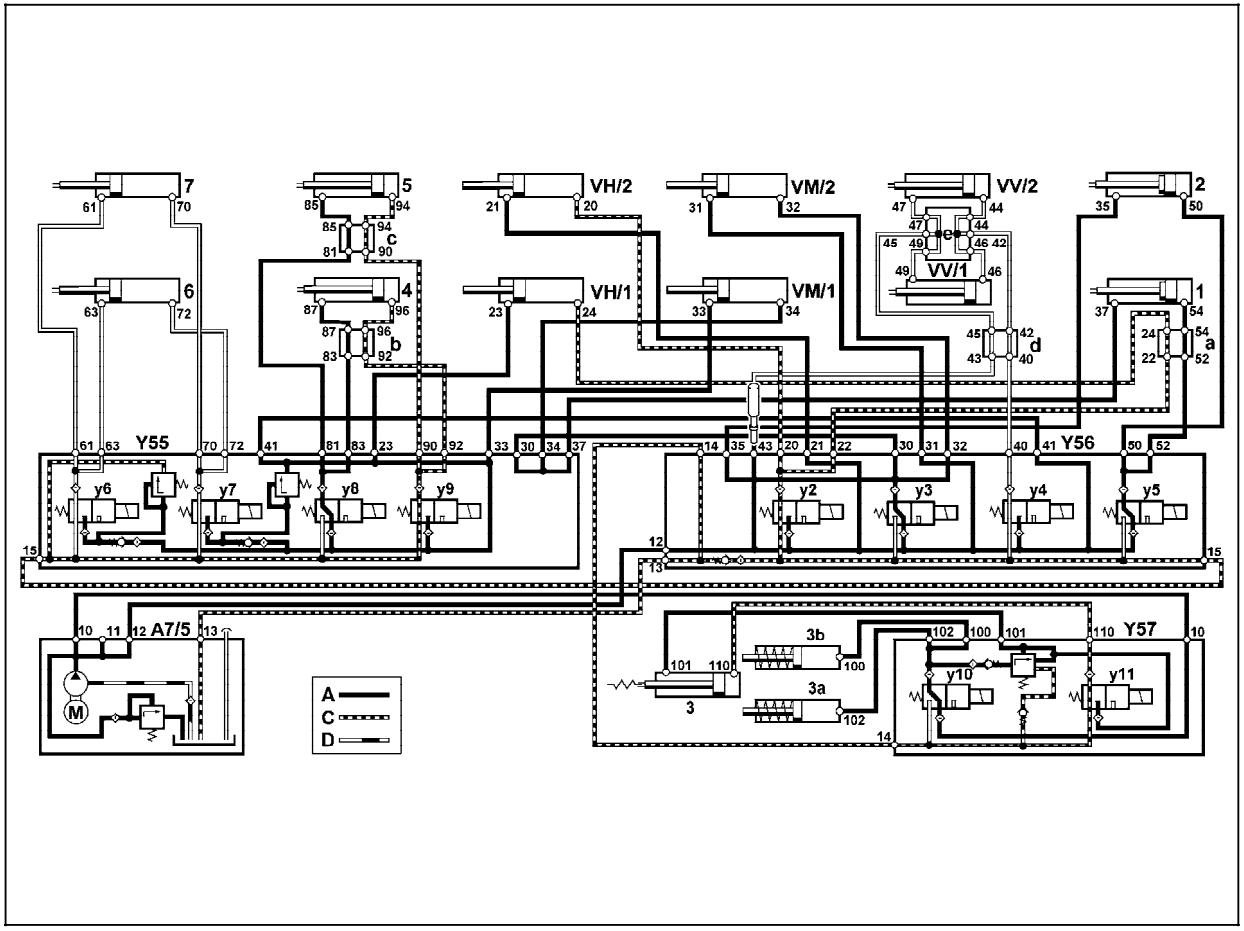
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.1		Raise roll bar (Figure 9)	Disconnect hydraulic line no. 100, 101, 102, 110 from valve block (Y57). Seal hydraulic line no. 100, 101, 102 connections with threaded plug 129 589 00 91 01. **When disconnecting Hydraulic line no. 101, cover valve block with shop towel since some pressure remains in the hydraulic cylinder (see 3, Figure 9).** Connect hydraulic line 129 806 34 83 to no. 110 on RB valve block (Y57) and place end of hydraulic line into clean container.	**Soft top completely closed,** **Roll bar retracted.** Ignition: **ON** Press and hold RB switch to raise roll bar for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or a weak uneven hydraulic flow is noted:** Replace valve (y11) at Y57, See SMS, Job No. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 10



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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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

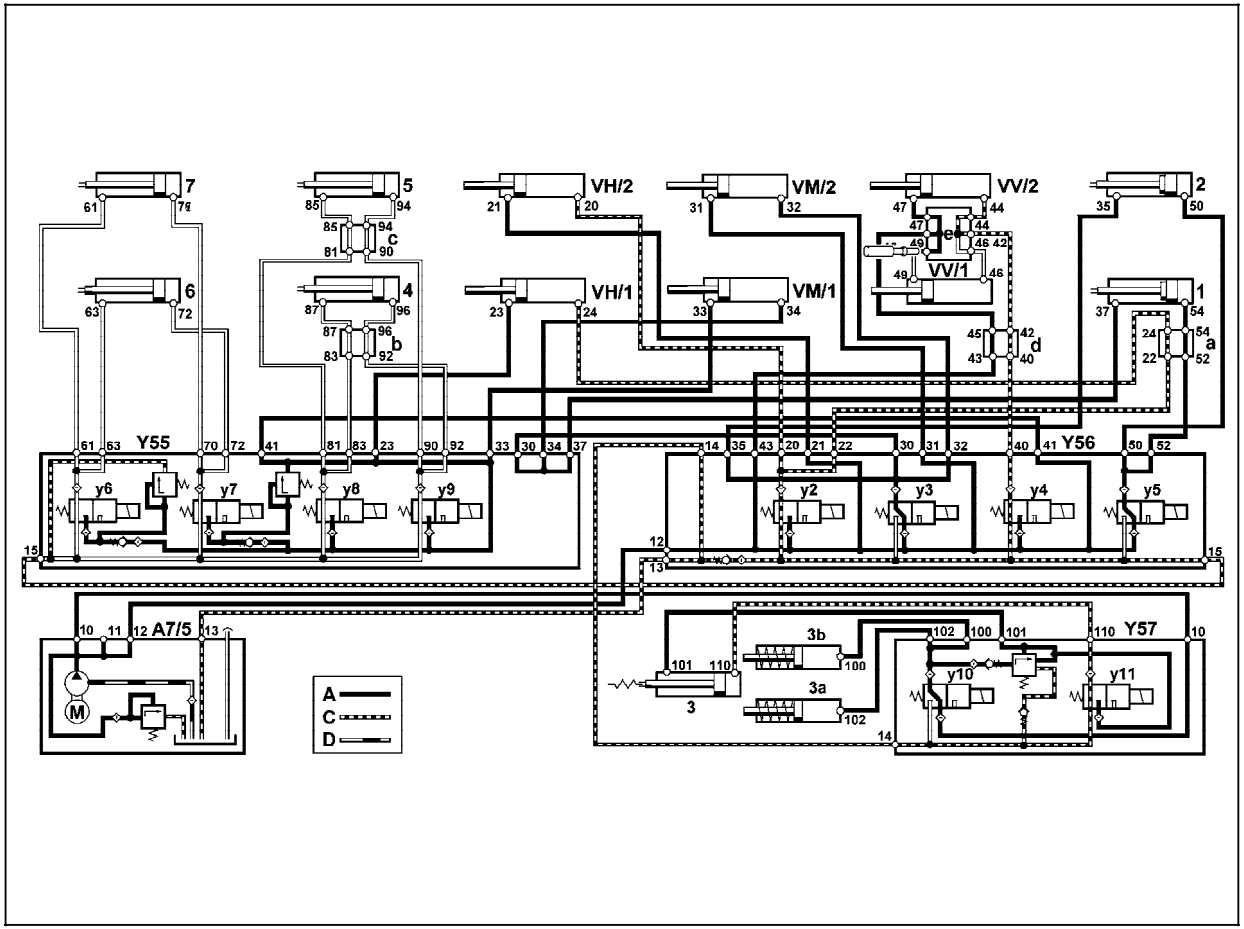
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0		**Checking locks** (Figure 10)	Disconnect hydraulic line no. 43 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01.	**Soft top locked in front, roll bar raised, locks VM/1, VM/2 unlocked (soft top compartment cover not raised).** Ignition: **ON** Press S84/3 (open soft top) for 5 seconds.		**Soft top compartment cover opens with normal speed:** Hydraulic cylinder in left/right locks (VV/1) or (VV/2) leak: ⇒ 5.1, If the coft top compartment cover does not open or opens **up** only slowly: ⇒ 5.4

Hydraulic Test Program – Test – Soft Top Closed

Figure 11

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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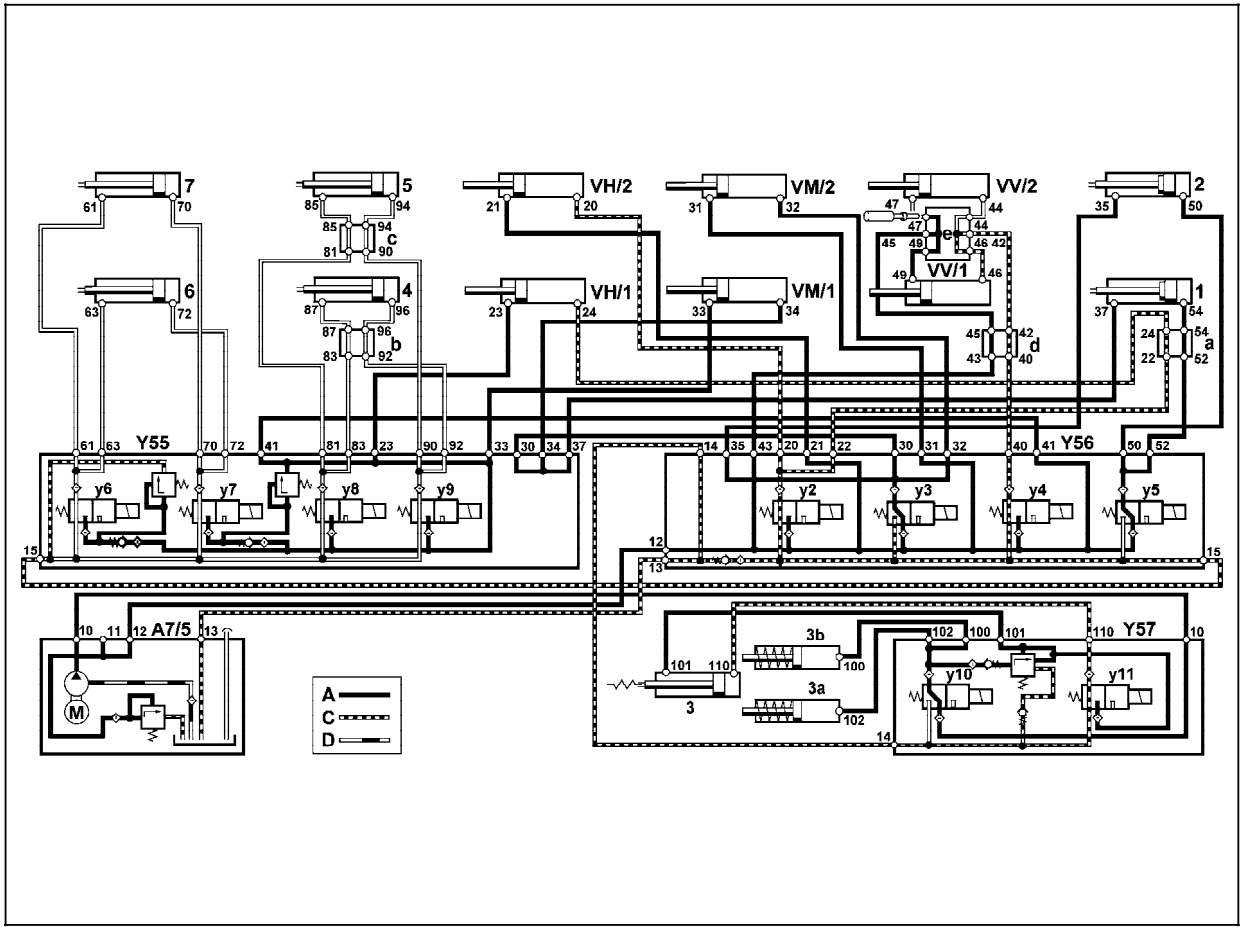
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.1		Checking locks (Figure 11)	Reconnect hydraulic line no. 43 from valve block (Y56). Disconnect hydraulic line no. 49 at hydraulic distributor (e, Figure 11) at upper windshield cross member. Seal connection with threaded plug 129 589 00 91 01.	**Soft top in soft top compartment,** **Center locks unlocked,** **(soft top compartment cover not raised).** Ignition: **ON** Press soft top switch (S84/3) (close soft top) for 5 seconds.		**Soft top compartment cover opens with normal speed:** Hydraulic cylinder in left lock (VV/1) leaks: Replace hydraulic cylinder, See SMS, Job No. 77-0335 If the coft top compartment cover does not open or opens **up** only slowly: ⇒ 5.2

Hydraulic Test Program – Test – Soft Top Closed

Figure 12

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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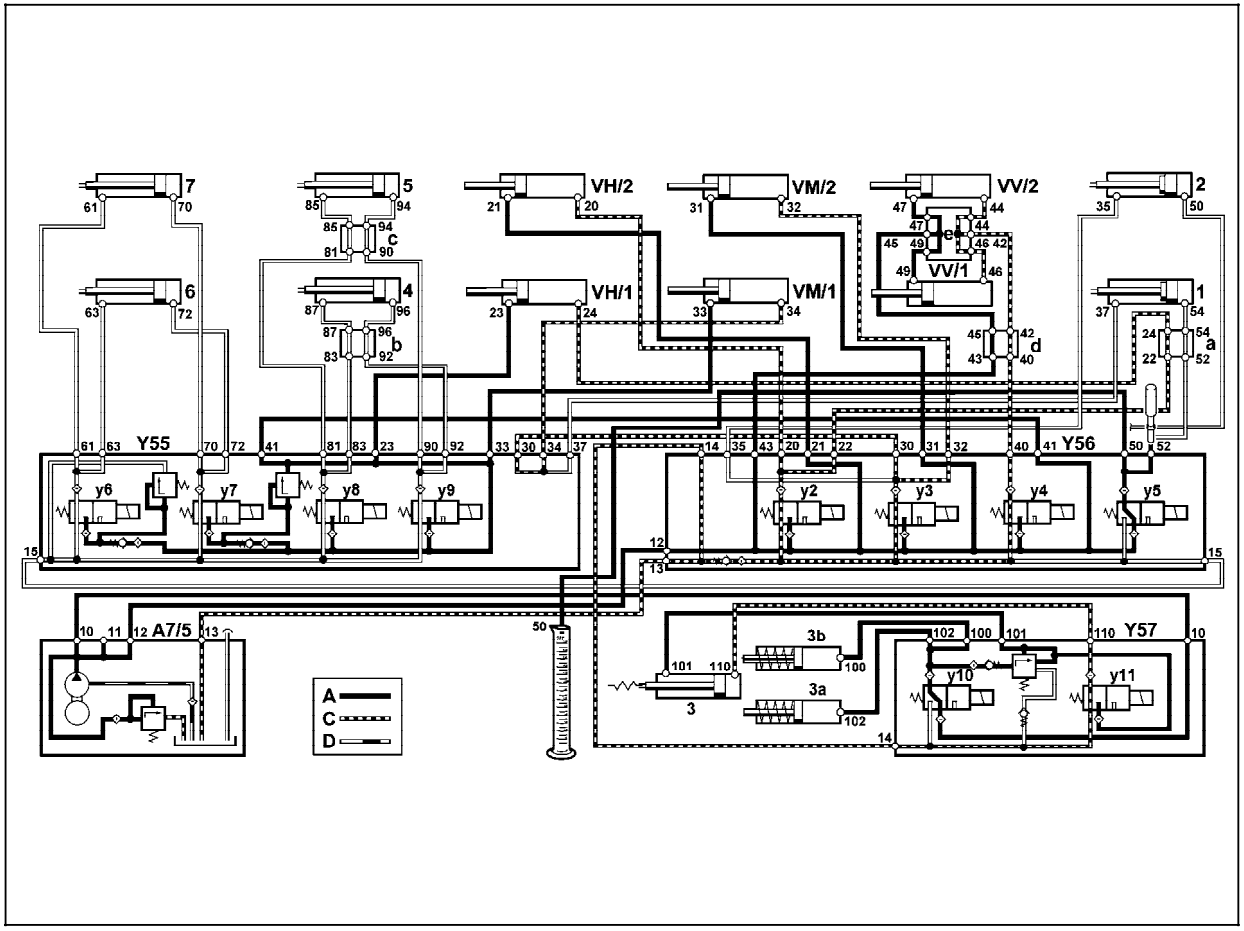
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.2		Checking locks (Figure 12)	Reconnect hydraulic line no. 49 from valve block (Y56). Disconnect hydraulic line no. 47 at Hydraulic distributor (e, Figure 11) at upper windshield cross member. Seal connection with threaded plug 129 589 00 91 01.	**Soft top in soft top compartment.** **Center locks unlocked, (soft top compartment cover not raised).** Ignition: **ON** Press soft top switch (S84/3) (close soft top) for 5 seconds.		**Soft top compartment cover opens with normal speed:** Hydraulic cylinder in right lock (VV/2) leaks: Replace hydraulic cylinder, See SMS, Job No. 77-0335 If the soft top compartment cover does not open or opens **up** only slowly: ⇒ 5.3

Hydraulic Test Program – Test – Soft Top Closed

Figure 13



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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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

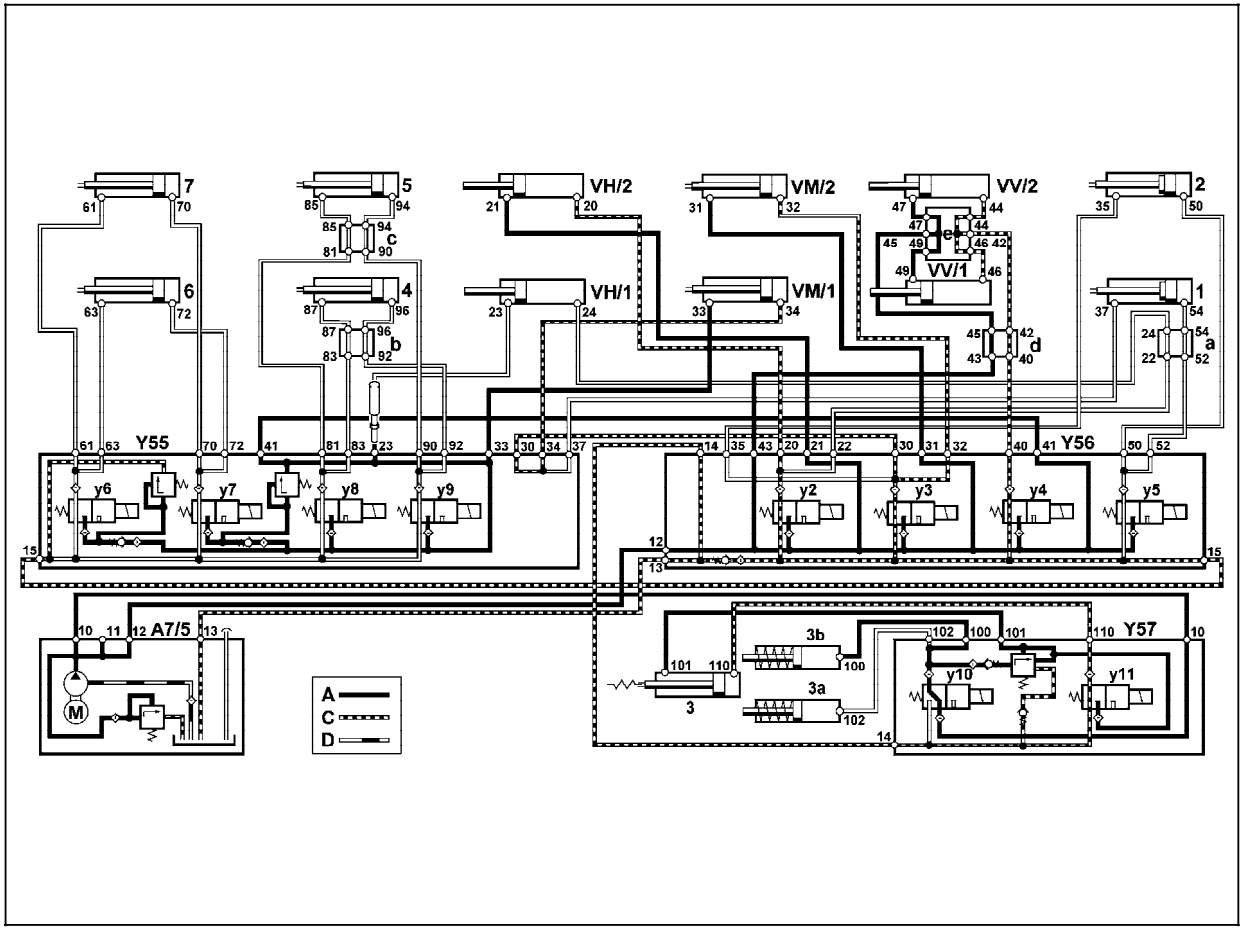
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.3		Checking locks (Figure 13)	Reconnect hydraulic line no. 47 at Hydraulic distributor (e, Figure 11) at upper windshield cross member. Disconnect hydraulic line no. 50 and 52 at valve block (Y56). Seal connection no. 52 with threaded plug 129 589 00 91 01. Connect hydraulic line 129 806 34 85 to connection 50 at valve block (Y56) and hold hydraulic line end into clean container. Disconnect connector at valve block (Y56y3).	**Soft top in soft top compartment,** **Center locks unlocked,** **(soft top compartment cover not raised).** Ignition: **ON** Press soft top switch (S84/3) (close soft top) for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if a steady even hydraulic flow is noted:** ⇒ 5.4 **Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y5) at Y56, See SMS, Job No. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 14

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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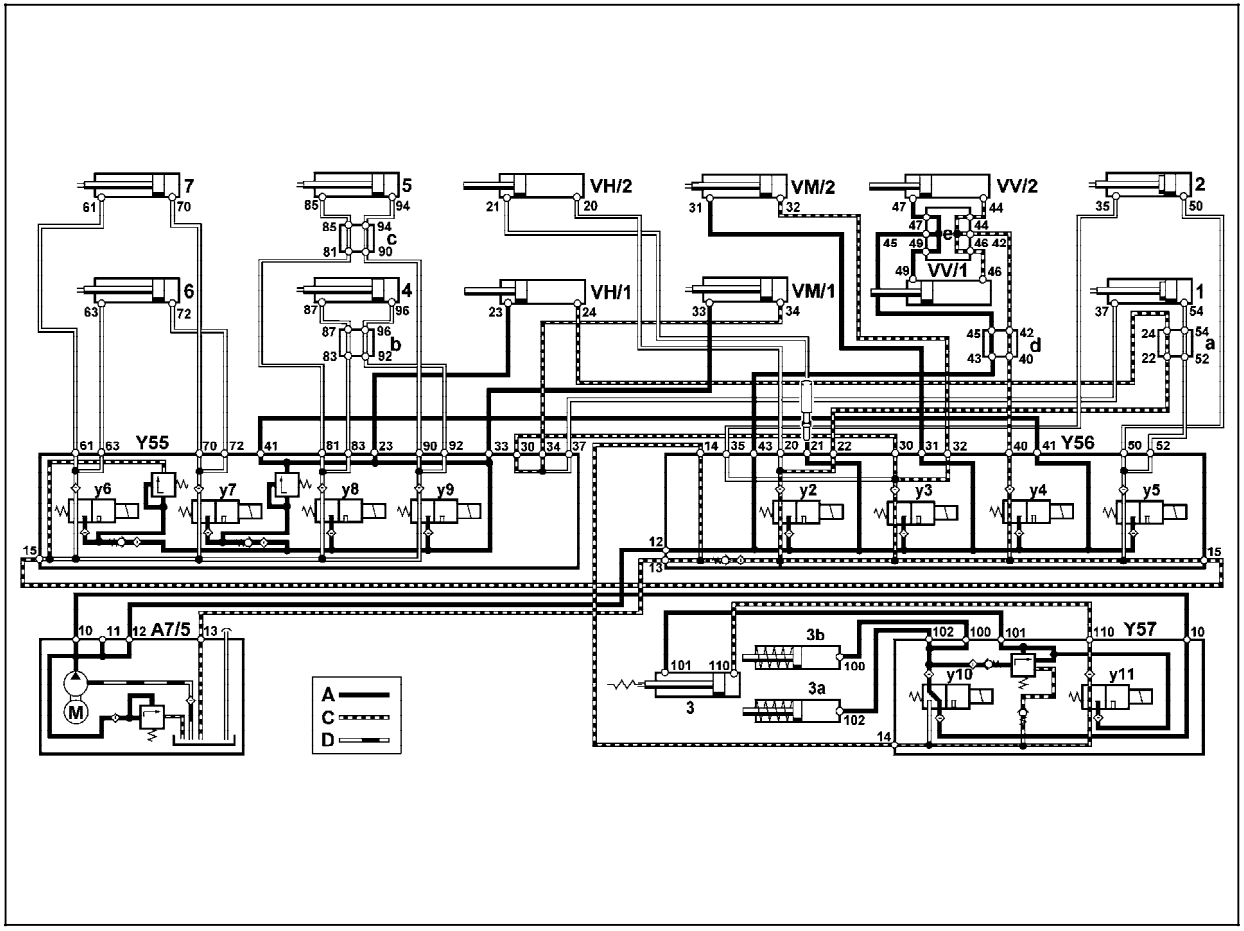
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.4		Checking locks (Figure 14)	i Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 50 and 52 at valve block (Y56), reconnect connector at valve block (Y56y3). Disconnect hydraulic line no. 23 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Soft top completely open.** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Hydraulic cylinder of left lock (VH/1) leaking. Replace hydraulic cylinder See SMS, Job No. 77-324 **<120 bar**: ⇒ 5.5

Hydraulic Test Program – Test – Soft Top Closed

Figure 15

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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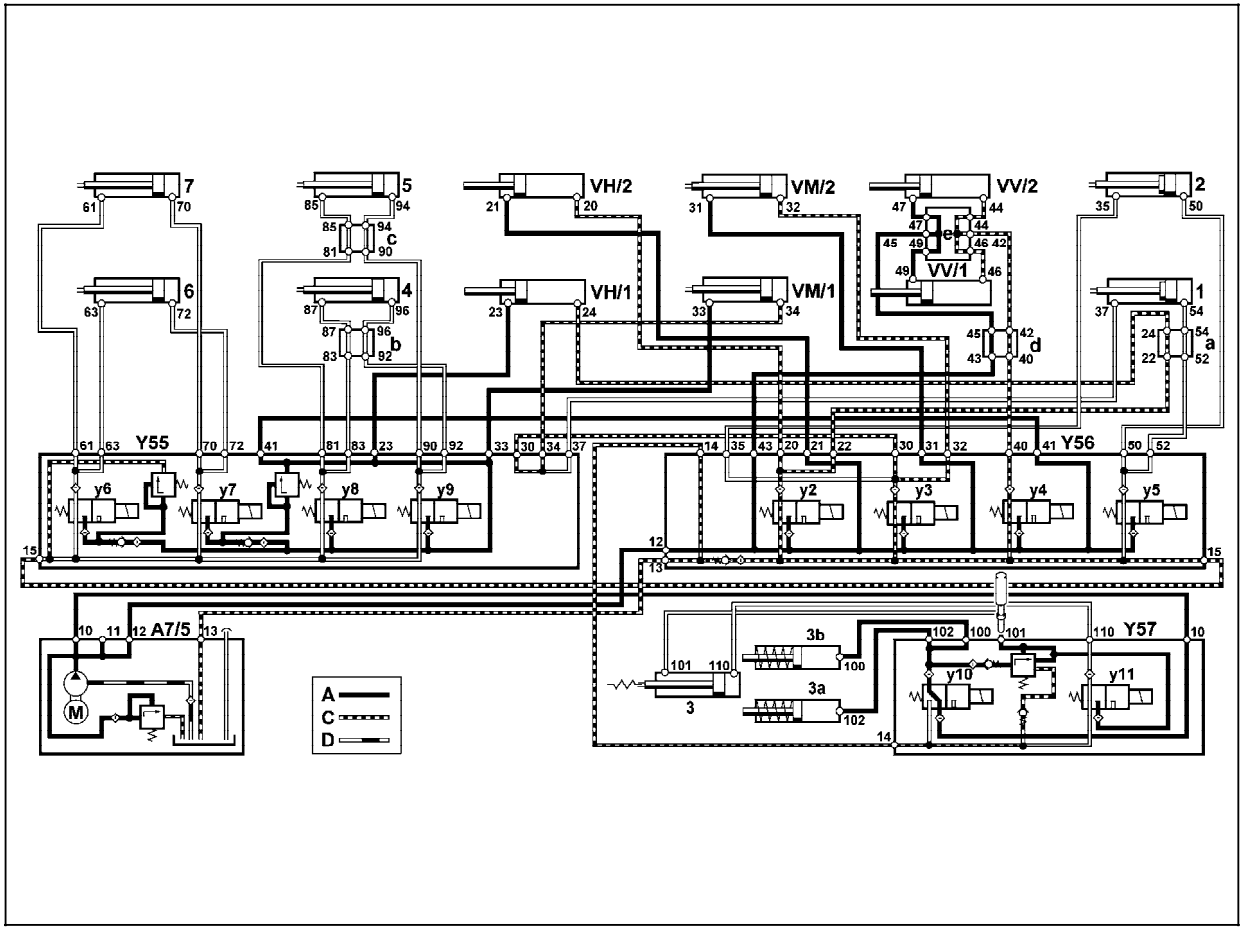
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.5		Checking locks (Figure 15)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 23 at valve block (Y55). Disconnect hydraulic line no. 21 from vlave block (Y56). Seal connection with threaded plug 129 589 00 91 01.	**Soft top completely open.** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Hydraulic cylinder of right lock (VH/2) leaking. Replace hydraulic cylinder See SMS, Job No. 77-324 **<120 bar**: ⇒ 5.6

Hydraulic Test Program – Test – Soft Top Closed

Figure 16

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



P77.37-0445-79

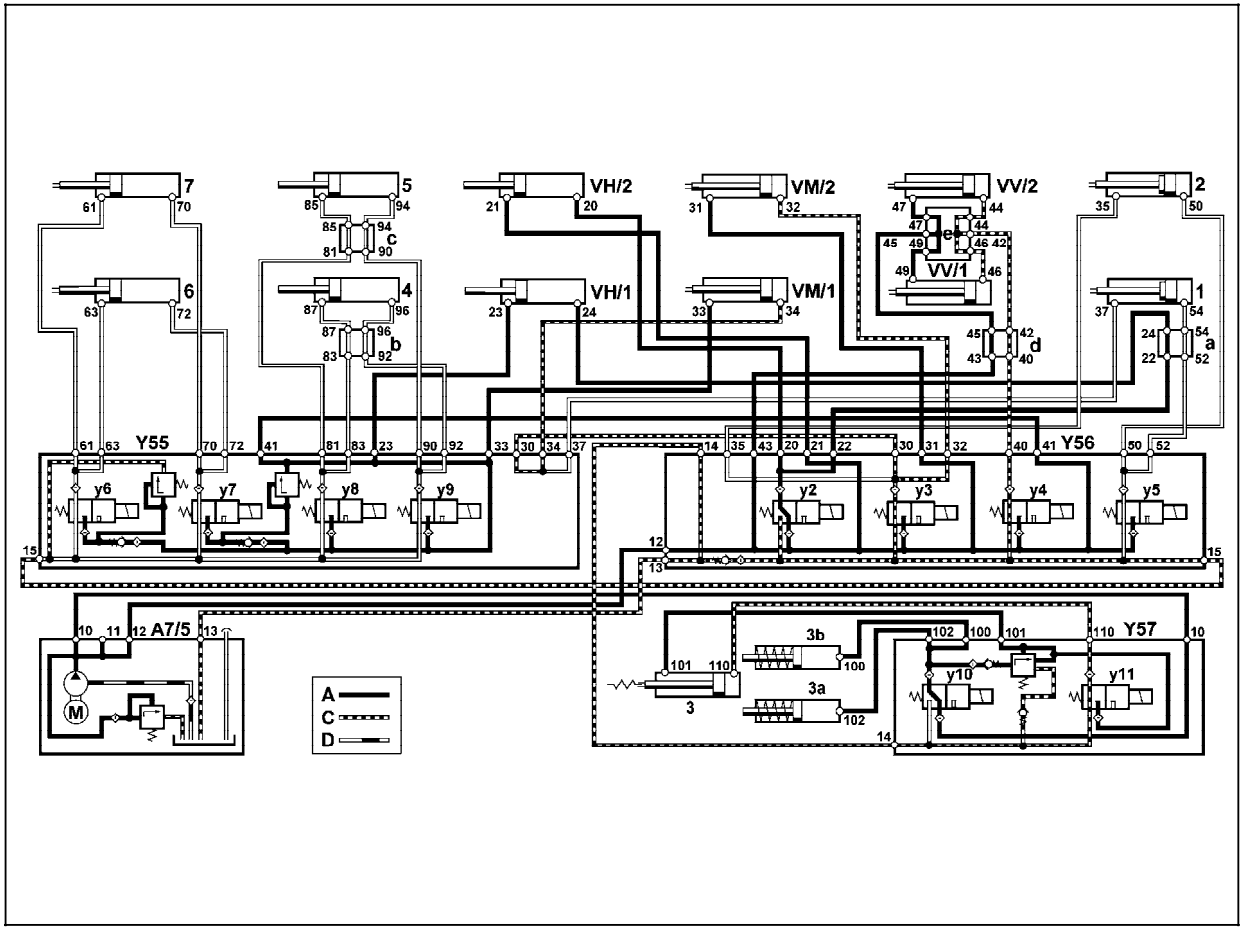
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.6		Checking locks (Figure 16)	i Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 21 at valve block (Y56). Disconnect hydraulic line no. 101 from vlave block (Y57). Seal connection with threaded plug 129 589 00 91 01. **When disconnecting Hydraulic line no. 101, cover valve block with shop towel since some pressure remains in the hydraulic cylinder (see 3, Figure 16).**	**Soft top completely open.** Ignition: **ON** Press and hold RB switch to retract roll bar. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Hydraulic cylinder in roll bar support element (3, Figure 16) leaking. Replace roll bar support element, See SMS, Job No. 91-920

Hydraulic Test Program – Test – Soft Top Closed

Figure 17

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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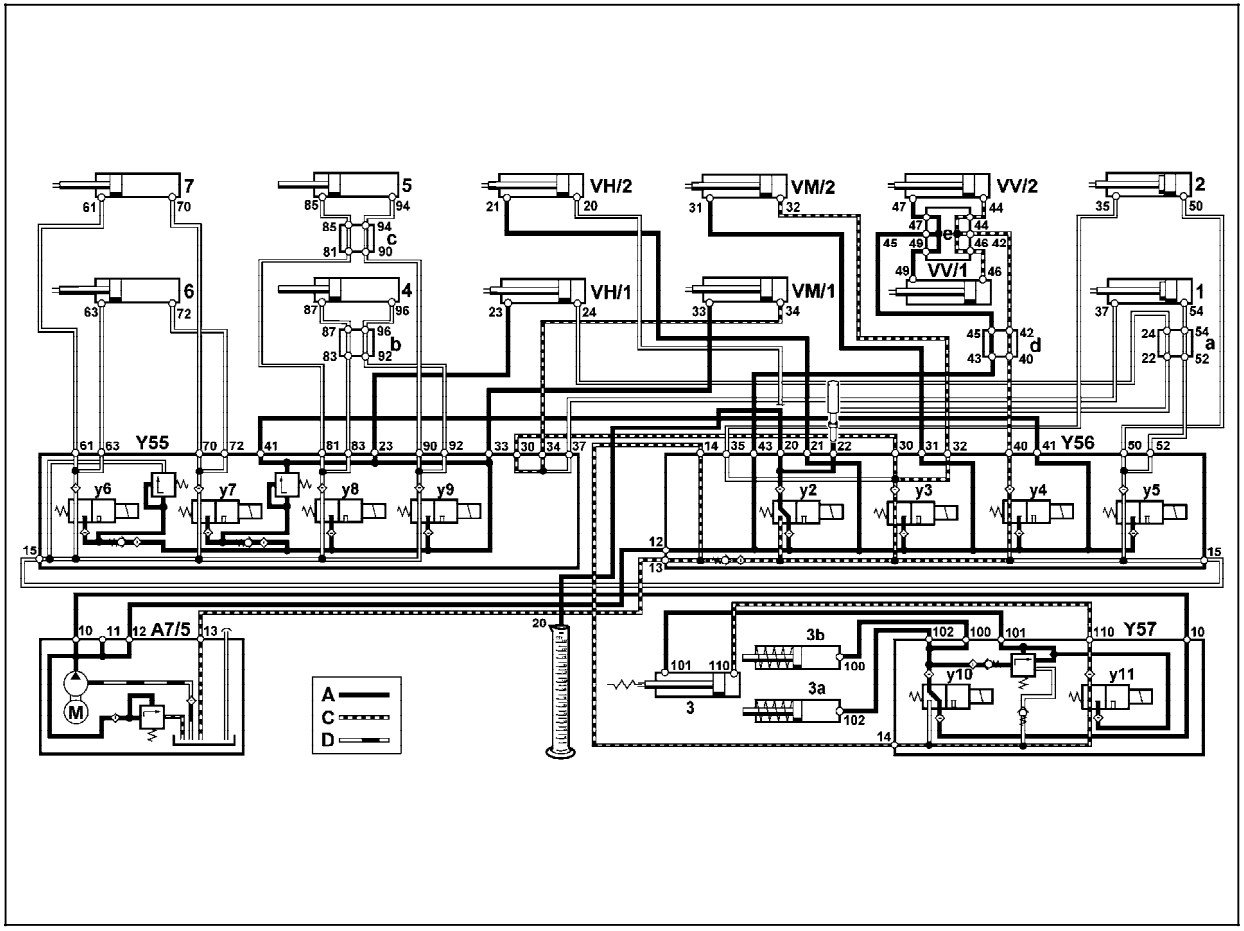
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0		**Open rear locks (VH/1, VH/2)** (Figure 17)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connect at valve block (Y55y8).	**Soft top completely closed, Rear locks (VH/1, VH/2) maually opened.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** If the rear locks (VH/1, VH/2) do not open: Check adjustment of locking pins for fabric bow, See SMS, Job no. 77-0303 **<120 bar**: ⇒ 5.0 If opening the locks is still not possible using the soft top switch: ⇒ 6.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 18

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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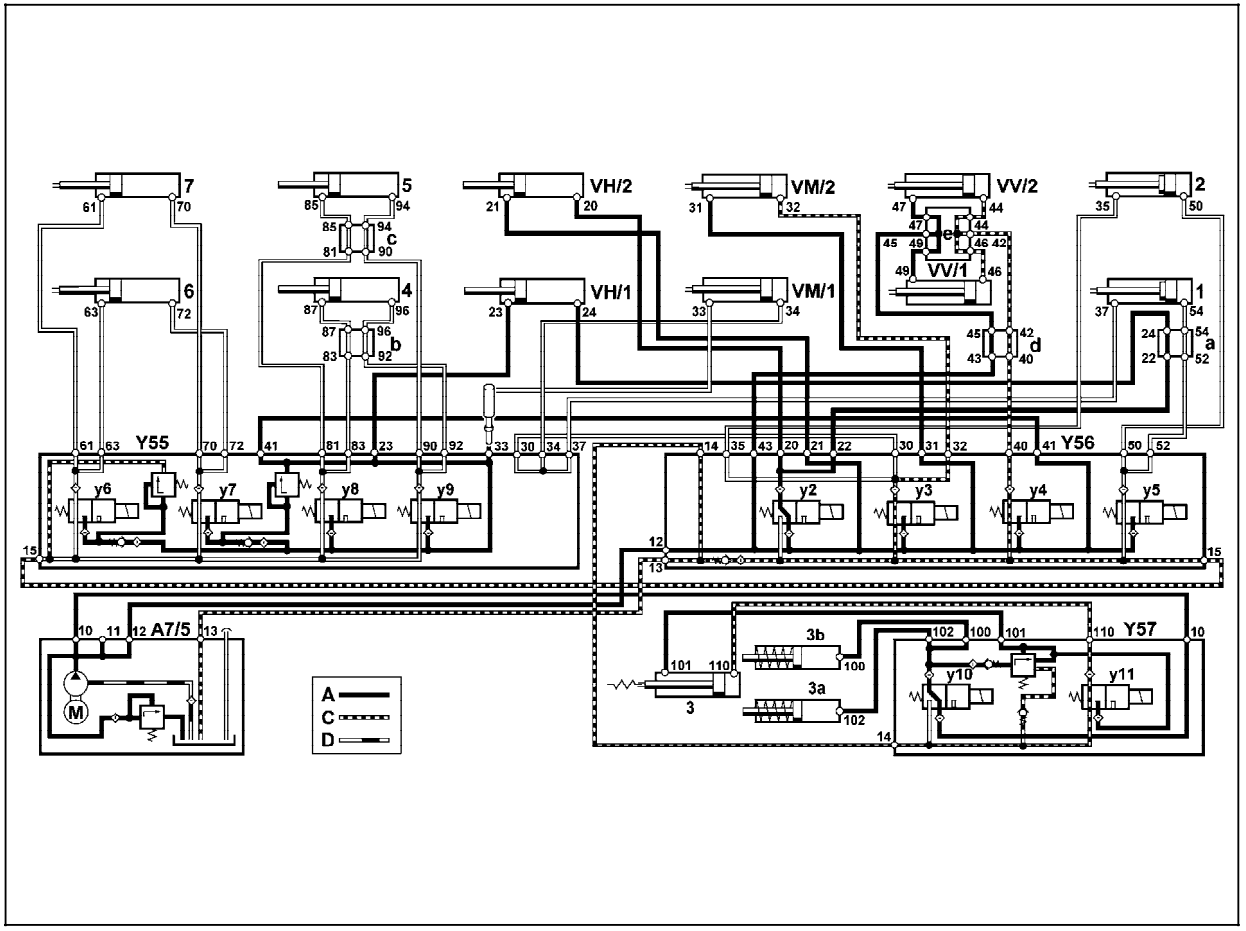
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		Open rear locks (VH/1, VH/2) (Figure 18)	Disconnect hydraulic line no. 20, 22 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01. Connect hydraulic line 129 806 34 85 to connection 20 at valve block (Y56) and hold hydraulic line end into clean container.	**Soft top completely closed.** Ignition: **ON** Press and hold soft top switch: **"close"** for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if a steady even hydraulic flow is noted:** ⇒ 6.2 **Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y2) at Y56, See SMS, Job No. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 19

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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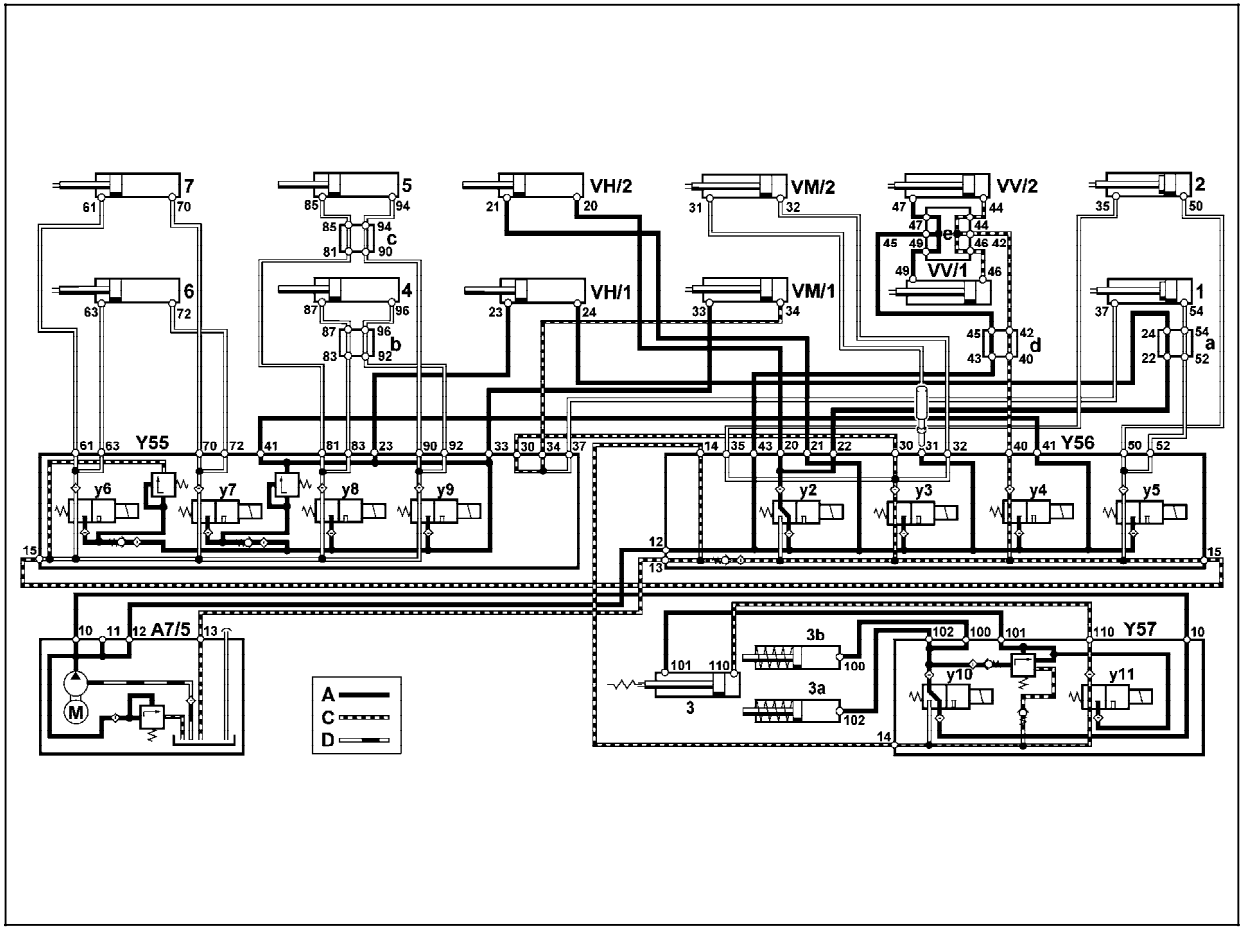
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.2		Open rear locks (VH/1, VH/2) (Figure 19)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 20, 21 at valve block (Y56), Disconnect hydraulic line no. 33 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01.	**Soft top completely closed, Rear locks (VH/1, VH/2) maually opened.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal value ok:** Hydraulic cylinder in left center lock (VM/1) leaking. Replace hydraulic cylinder See SMS, Job No. 77-0324 **<120 bar**: ⇒ 6.3

Hydraulic Test Program – Test – Soft Top Closed

Figure 20

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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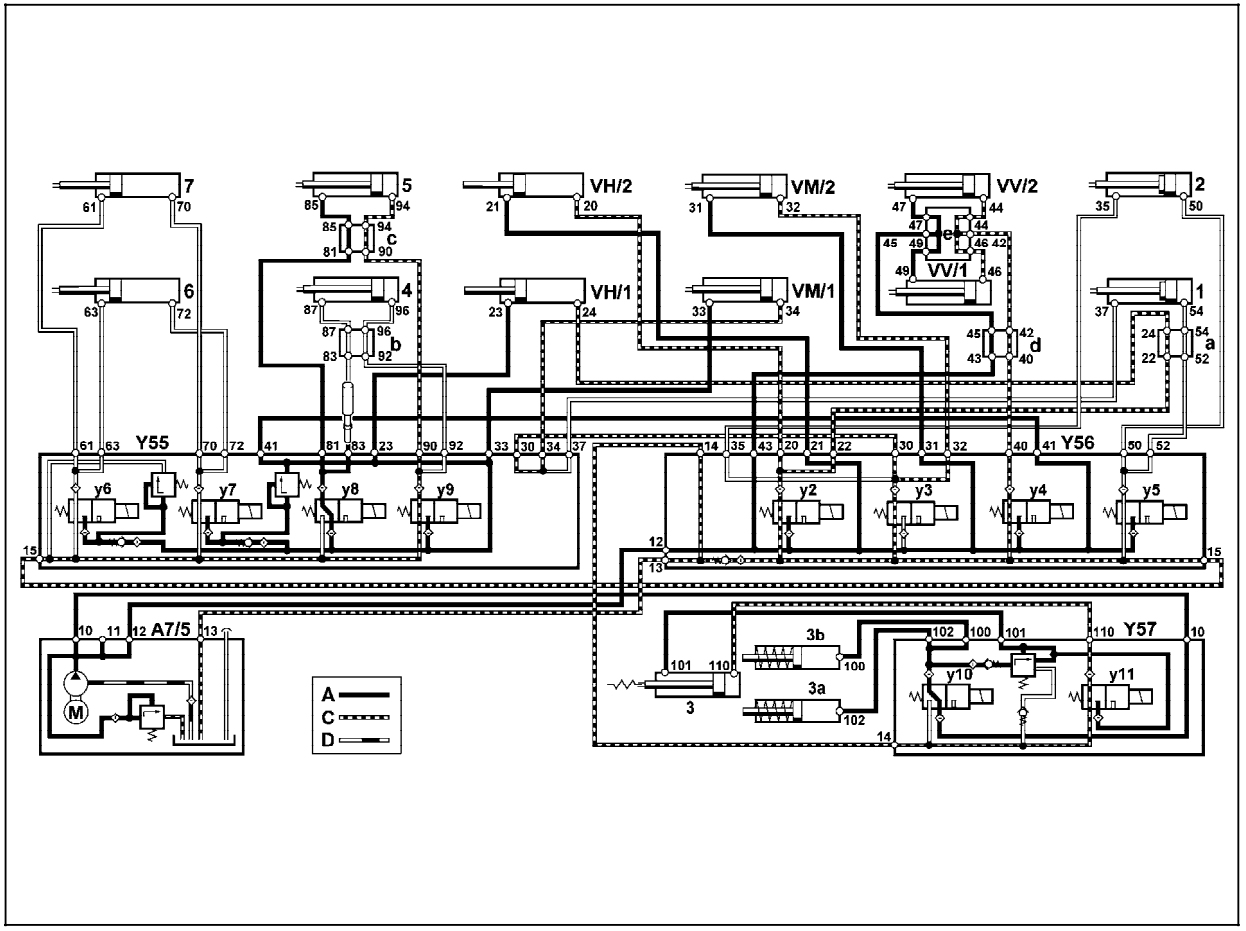
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.3		Open rear locks (VH/1, VH/2) (Figure 20)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 33 at valve block (Y55), Disconnect hydraulic line no. 31 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01. Reconnect connect after test at valve block (Y55y8).	**Soft top completely closed, Rear locks (VH/1, VH/2) maually opened.** 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	**If nominal value ok:** Hydraulic cylinder for left center lock (VM/1) leaking. Replace hydraulic cylinder, See SMS, Job No. 77-0324 **<120 bar**: ⇒ 6.3, See SMS, Job no. 77-0325

Hydraulic Test Program – Test – Soft Top Closed

Figure 21

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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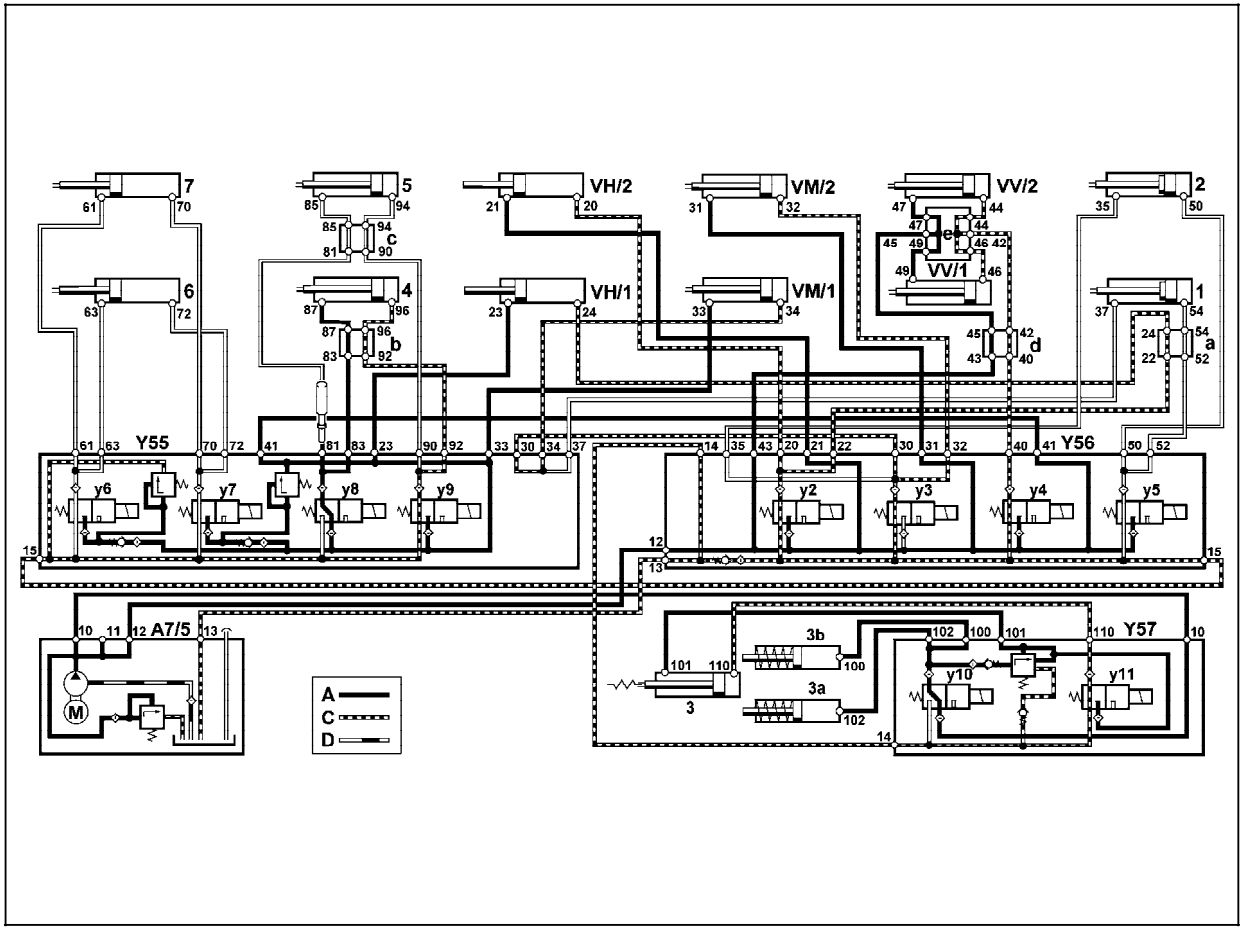
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		**Raise fabric bow** (Figure 21)	i Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at valve block (Y56y3). Disconnect hydraulic line no. 83 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Soft top closed,** **Fabric bow 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	**If nominal value ok:** Left hydraulic cylinder (4, Figure 21) for fabric bow leaking. Replace hydraulic cylinder See SMS, Job No. 77-0360 **<120 bar**: ⇒ 7.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 22

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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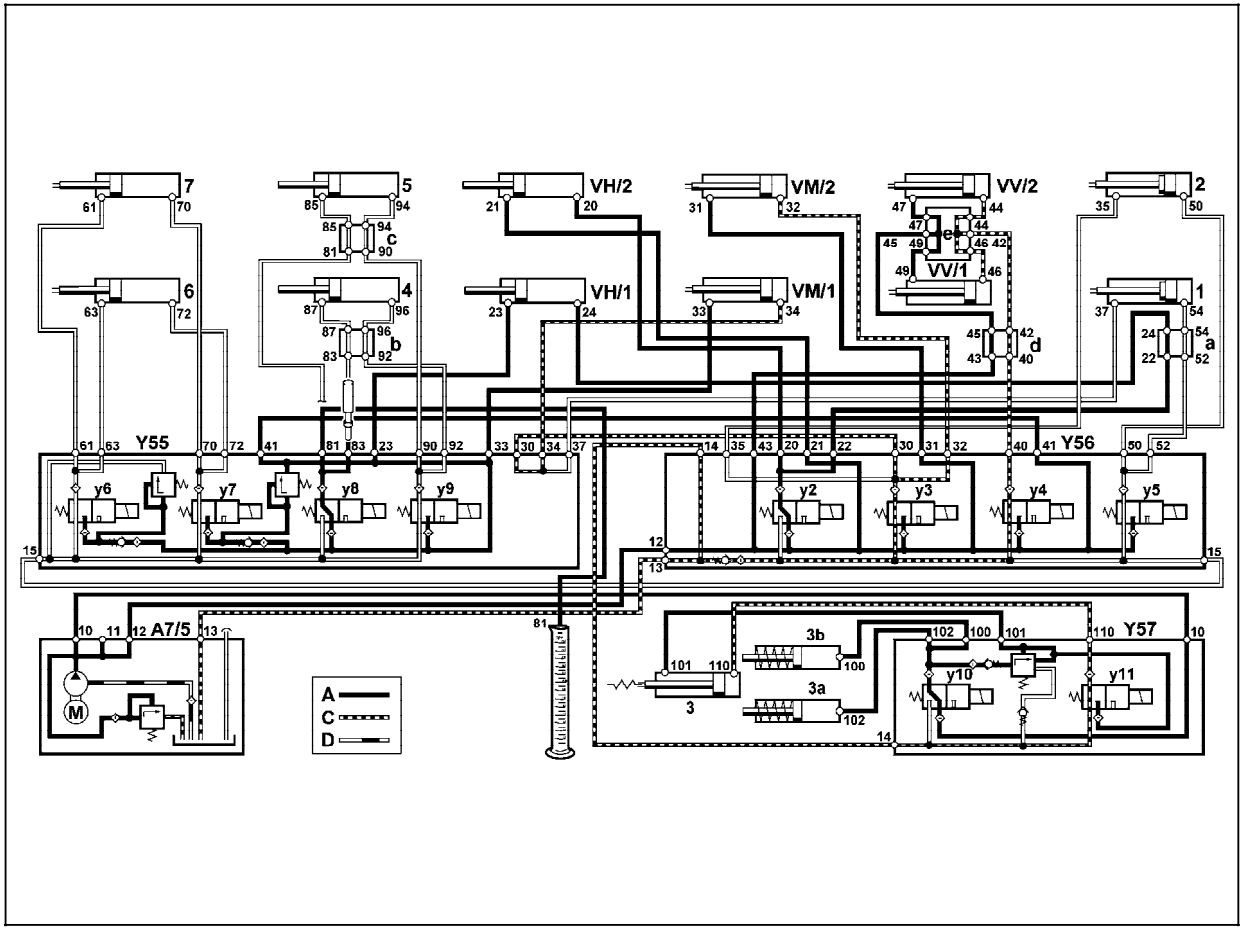
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.1		Raise fabric bow (Figure 22)	i Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 83 at valve block (Y55), Disconnect hydraulic line no. 81 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Soft top closed,** **Fabric bow 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	**If nominal values ok:** Right hydraulic cylinder (5, Figure 22) for fabric bow leaking. Replace hydraulic cylinder, See SMS, Job No. 77-0360 **<120 bar**: ⇒ 5.0 If the fasbric bow still can not be raised using soft top switch: ⇒ 7.2

Hydraulic Test Program – Test – Soft Top Closed

Figure 23

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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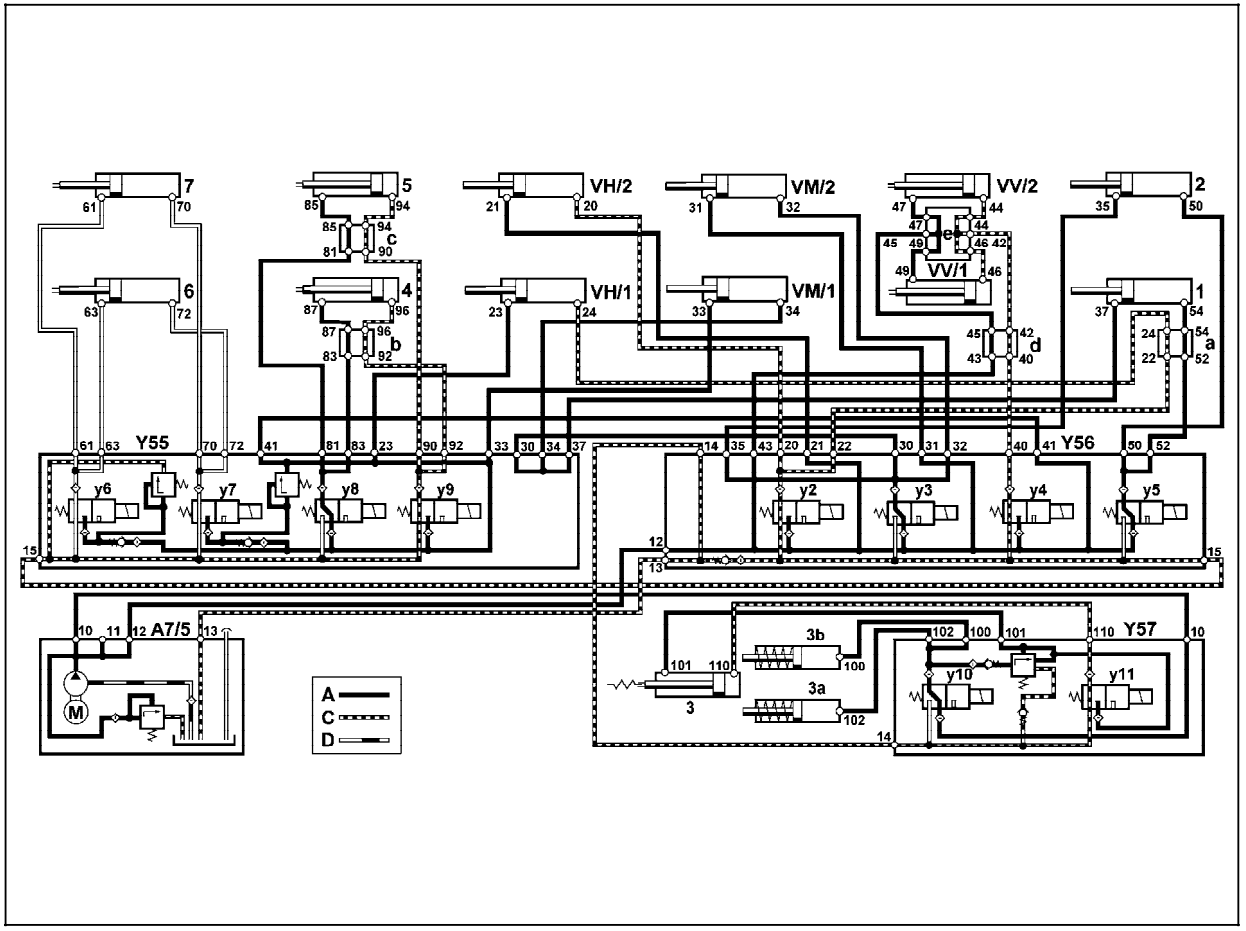
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.2		Raise fabric bow (Figure 23)	Disconnect hydraulic line no. 81, 83 from valve block (Y55). Seal connection at hydraulic line no. 83 with threaded plug 129 589 00 91 01. Connect hydraulic line no. 129 806 34 83 to hydraulic line connection no. 81 at Y55 and hold into clean container. Reconnect connector after test to valve block (Y56y3).	**Soft top closed,** **Fabric bow up.** Ignition: **ON** Press soft top switch: **“close“ for 2 seconds.**		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y8) at Y55 See SMS, Job no. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 24

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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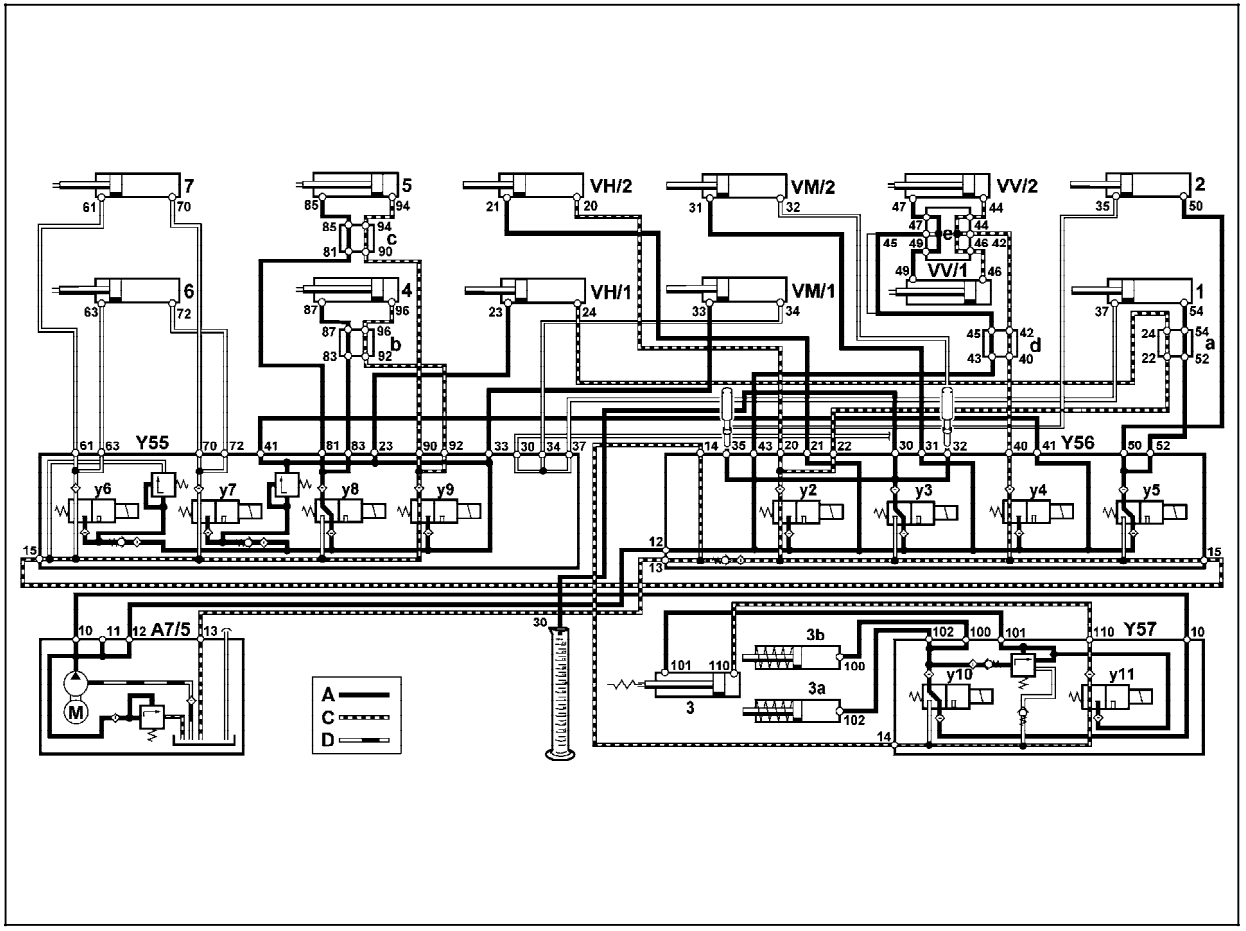
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		**Open center locks (VM/1, VM/2)** (Figure 24)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at valve block (Y56y4).	**Soft top closed,** **Fabric bow up,** **Center locks manually opened,** **Soft top compartment cover 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	**If nominal values ok:** If the center locks (VM/1, VM/2)do not open: Check adjustment of lock pin on soft top compartment cover, See SMS, Job no. 77-0303 **<120 bar**: ⇒ 5.0, ⇒ 7.0, If the center locks still can not be opened using the soft top switch: ⇒ 8.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 25

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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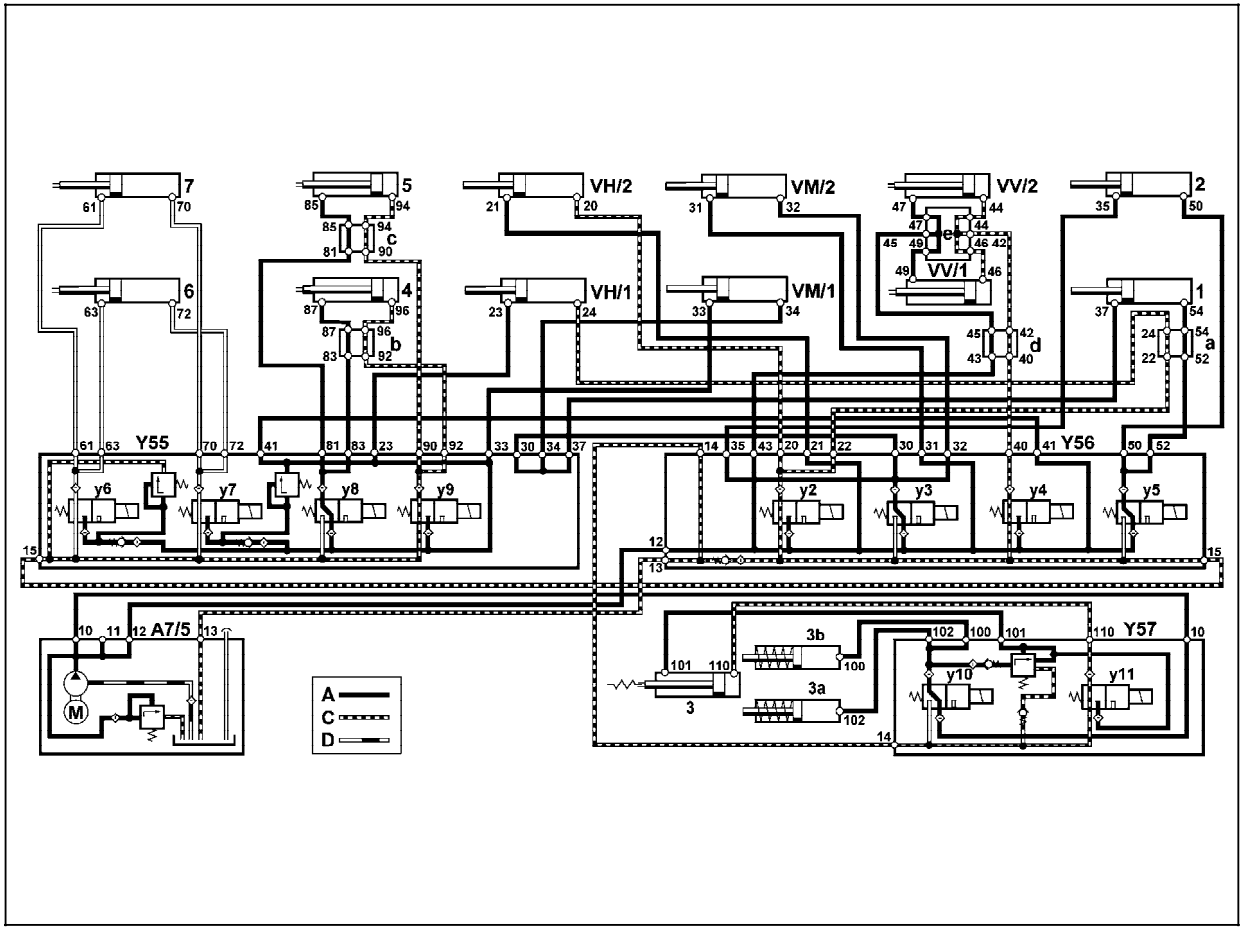
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.1		Open center locks (VM/1, VM/2**)** (Figure 25)	Disconnect hydraulic line no. 30, 32, 35 from valve block (Y56). Seal connections no. 32, 35 with threaded plug 129 589 00 91 01. Connect hydraulic line no. 129 806 34 83 to hydraulic line connection no. 30 at Y55 and hold into clean container. Reconnect connector after test to valve block (Y56y4).	**Soft top closed,** **Fabric bow up,** **Center locks (VM/1, VM/2) manually opened,** **soft top compartment cover open.** Ignition: **ON** Press soft top switch **"close"** for approx. 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y3) at Y56, See SMS, Job no. 77-0385 If the unlocking of the soft top is not possible using the soft top switch then: Replace locks, See SMS, see Job no. 77-0320

Hydraulic Test Program – Test – Soft Top Closed

Figure 26

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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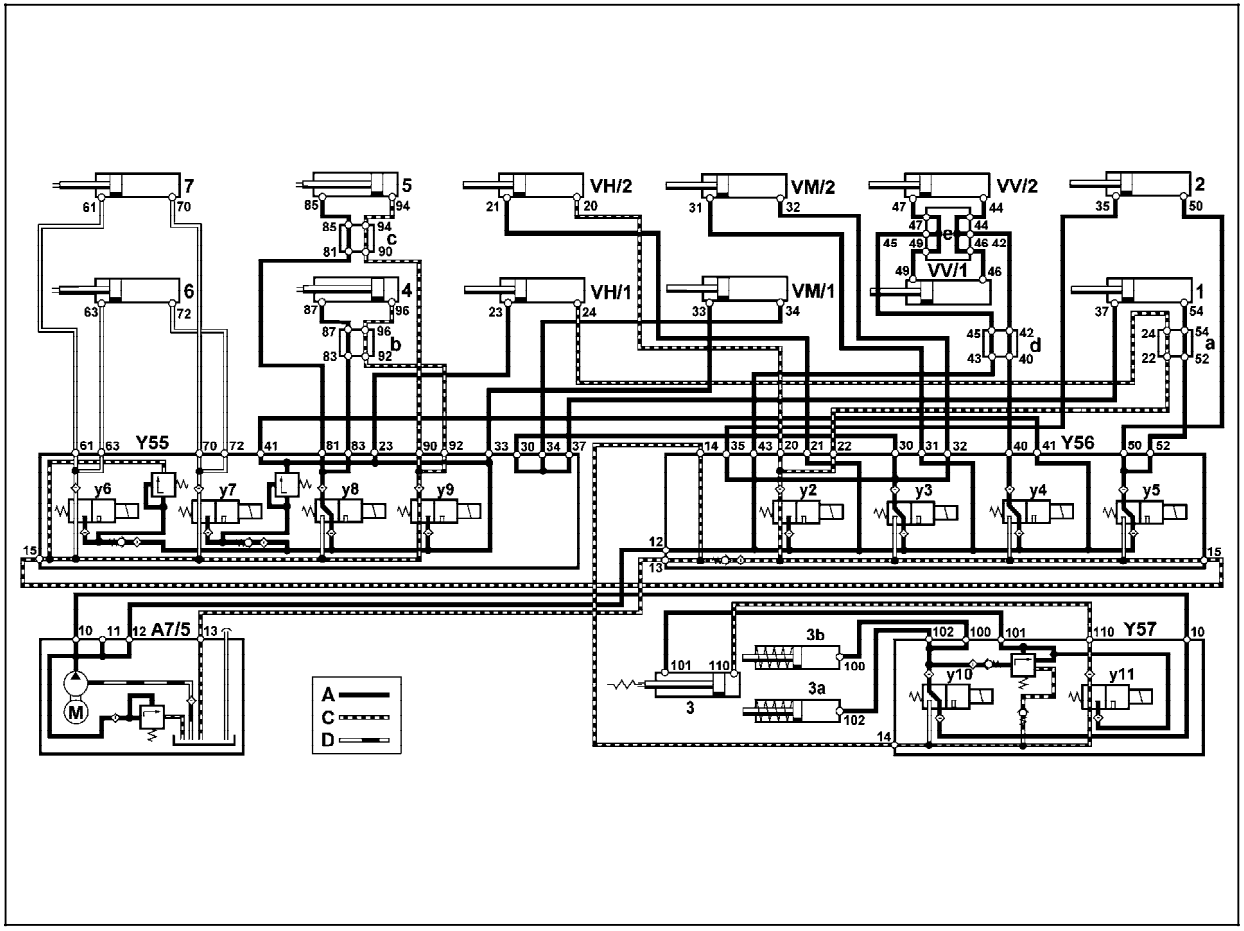
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		**Soft top compartment cover up** (Figure 26)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at valve block (Y56y4).	**Soft top closed, Fabric bow up, Center locks (VM/1, VM/2) manually open, Soft top compartment cover up.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Fault is with soft top compartment cover hinges or gas pressure shock. **<120 bar**: ⇒ 5.0, ⇒ 8.0

Hydraulic Test Program – Test – Soft Top Closed

Figure 27



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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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

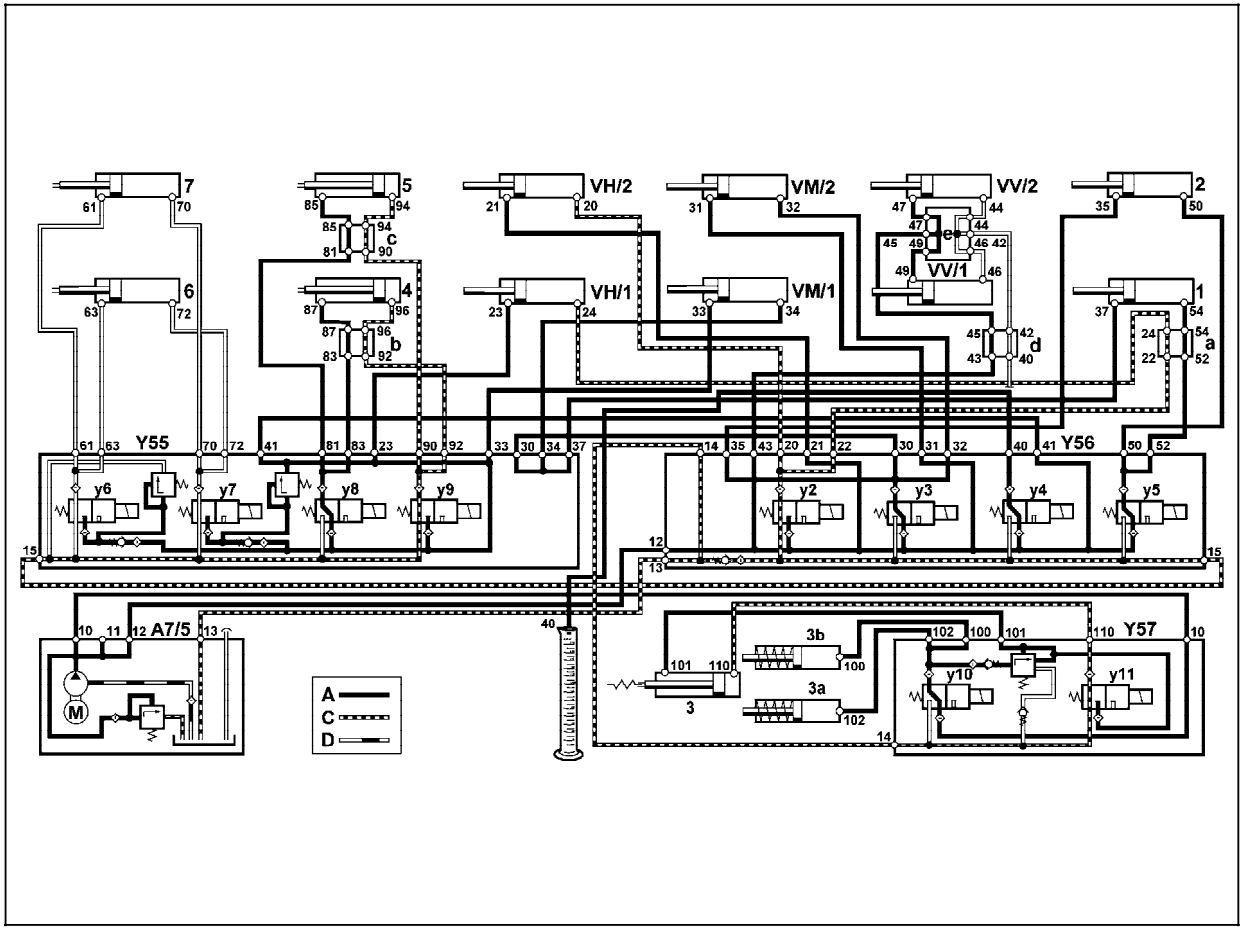
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		**Open front locks (VV/1, VV/2)** (Figure 27)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at vlave block (Y55y6).	**Fabric bow up,** **Soft top compartment cover up,** **Front locks (VV/1, VV/2) manually open.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** If the front locks (VV/1, VV/2) do not open: Check adjustment of front locking pins at front of soft top compartment frame, See SMS Job no. 77-0303 **<120 bar**: ⇒ 5.0, ⇒ 8.0, If itis still not possible to open the front locks (VV/1, VV/2) using the soft top switch see: ⇒ 10.1

Hydraulic Test Program – Test – Soft Top Closed

Figure 28

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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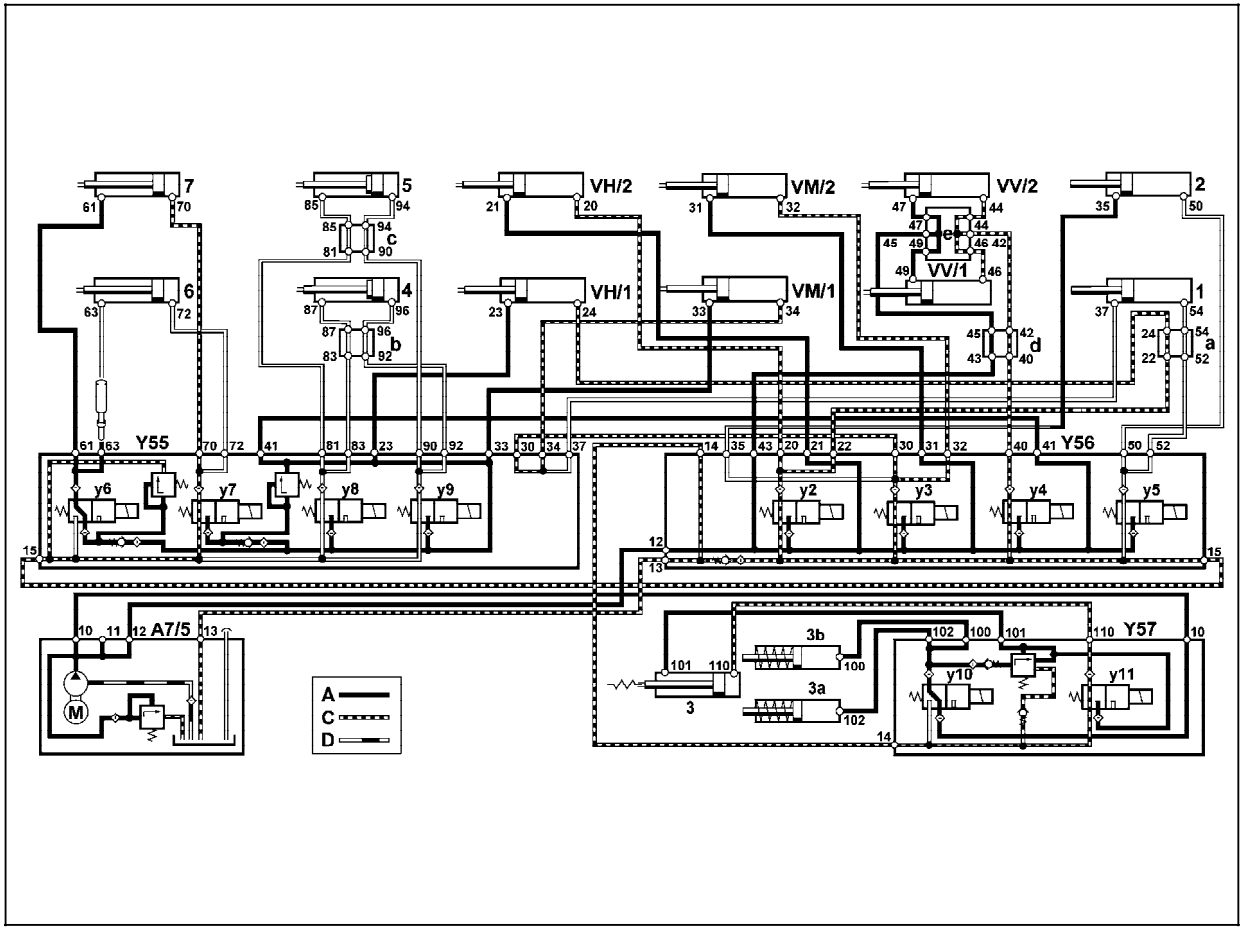
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.1		Open front locks (VV/1, VV/2) (Figure 28)	Disconnect hydraulic line no. 40 from valve block (Y56). Connect hydraulic line no. 129 806 34 83 to hydraulic line connection no. 40 at Y56 and hold into clean container. Reconnect connector after test to valve block (Y56y6).	**Fabric bow up,** **Soft top compartment open,** **Front locks (VV/1, VV/2) manually open.** Ignition: **ON** Press and hold soft top switch: **"close"** for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y4) at Y56, See SMS, Job no. 77-0385 If the unlocking of the soft top is not possible when using the soft top switch then: Replace locks, See SMS, see Job no. 77-0330

Hydraulic Test Program – Test – Soft Top Closed

Figure 29



P77.37-0458-79

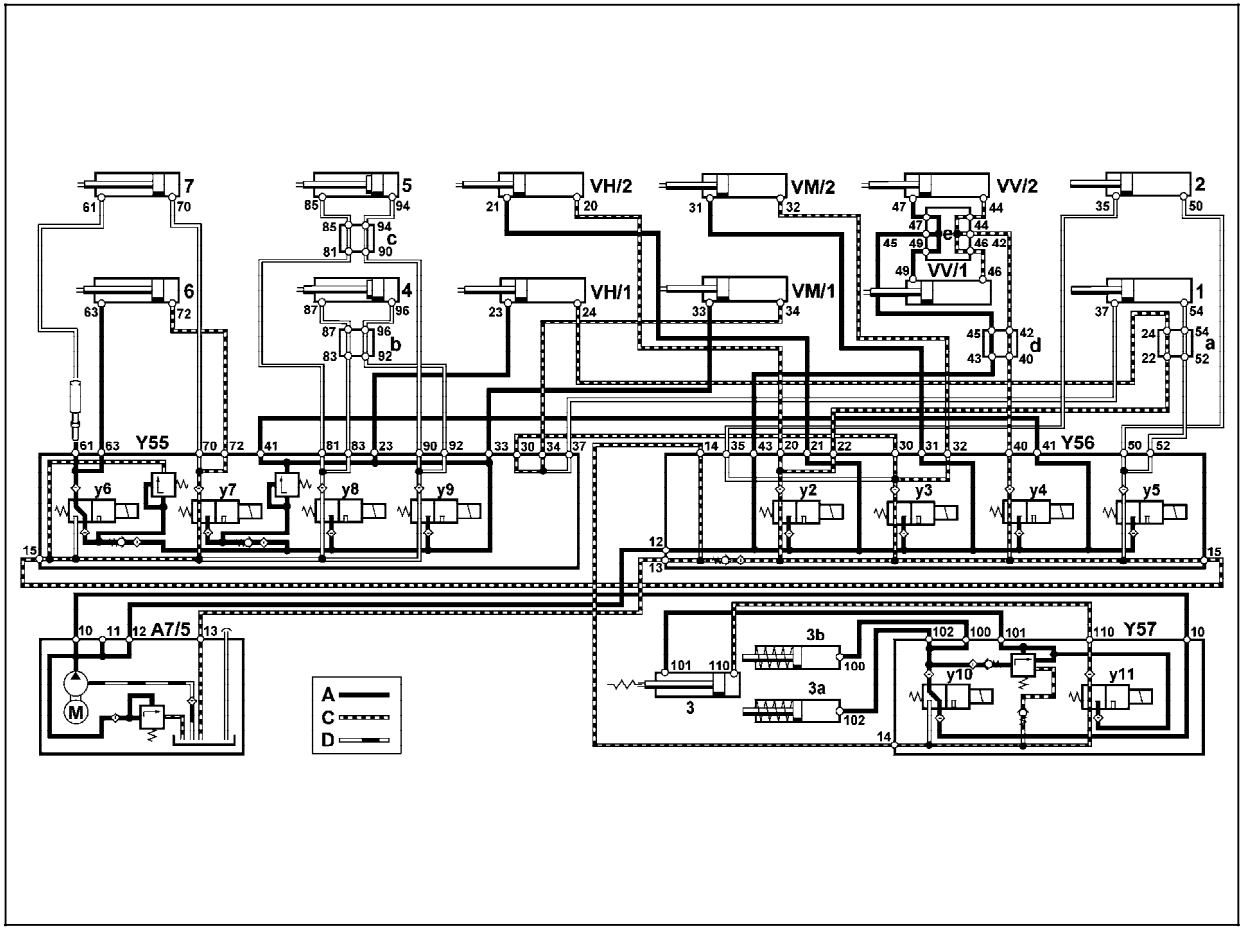
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0		**Open soft top** (Figure 29)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect hydraulic line no. 63 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01. Disconnect connector at valve block (Y56y3).	**Soft top in soft top compartment,** **Soft top compartment cover up.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Left power soft top hydraulic cylinder(6, Figure 29) leaking: Replace hydraulic cylinder, See SMS, Job No. 77-0355 **<120 bar**: ⇒ 11.1.

Hydraulic Test Program – Test – Soft Top Closed

Figure 30



P77.37-0459-79

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

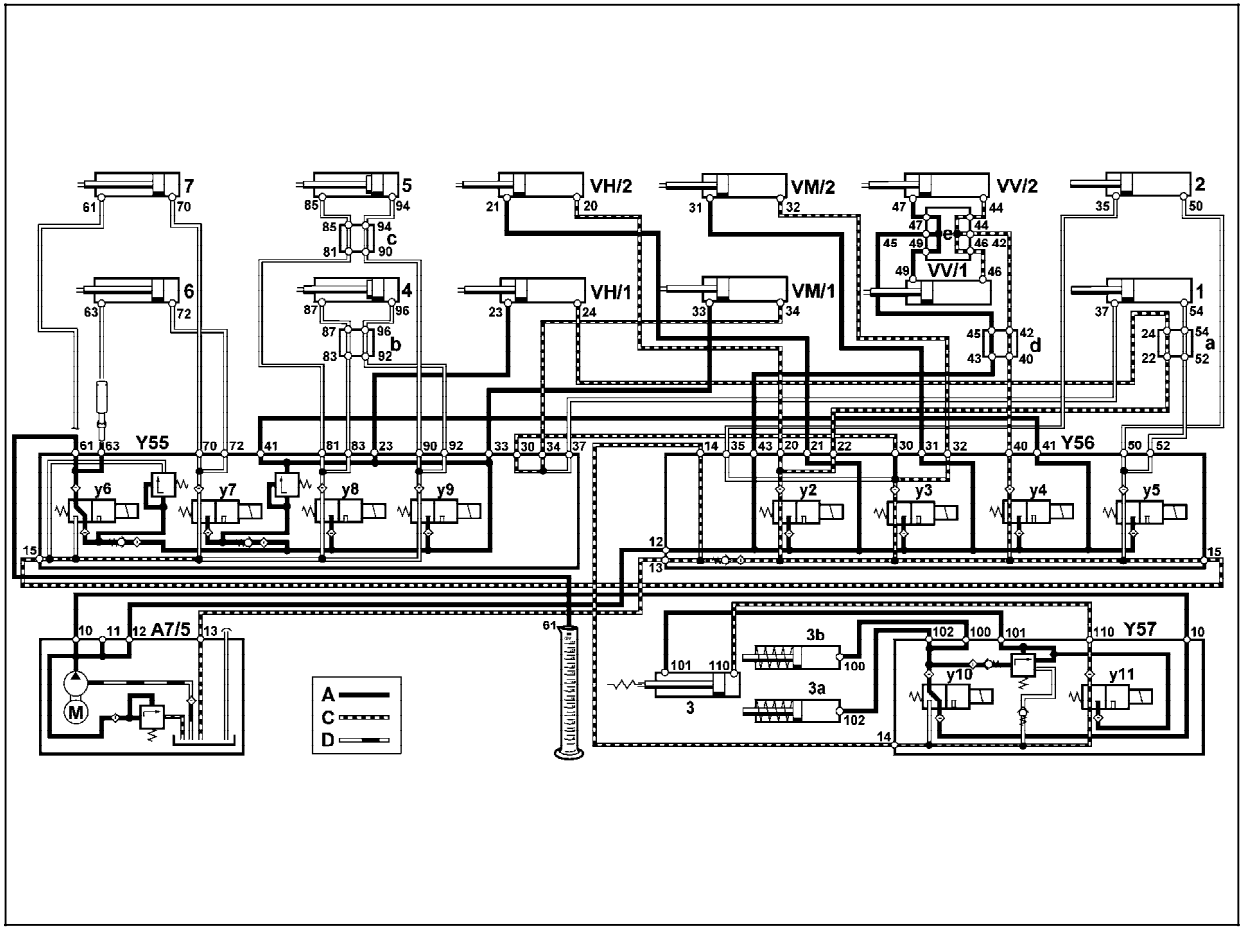
Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.1		Open soft top (Figure 30)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 63 to valve block (Y55). Disconnect hydraulic line no. 61 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01.	**Soft top in soft top compartment,** **Soft top compartment cover 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	**If nominal values ok:** Right power soft top hydraulic cylinder (7, Figure 29) leaking: Replace hydraulic cylinder, See SMS, Job No. 77-0355 **<120 bar**: ⇒ 5.0, If the soft top continues not to open or open slowly: ⇒ 11.2

Hydraulic Test Program – Test – Soft Top Closed

Figure 31

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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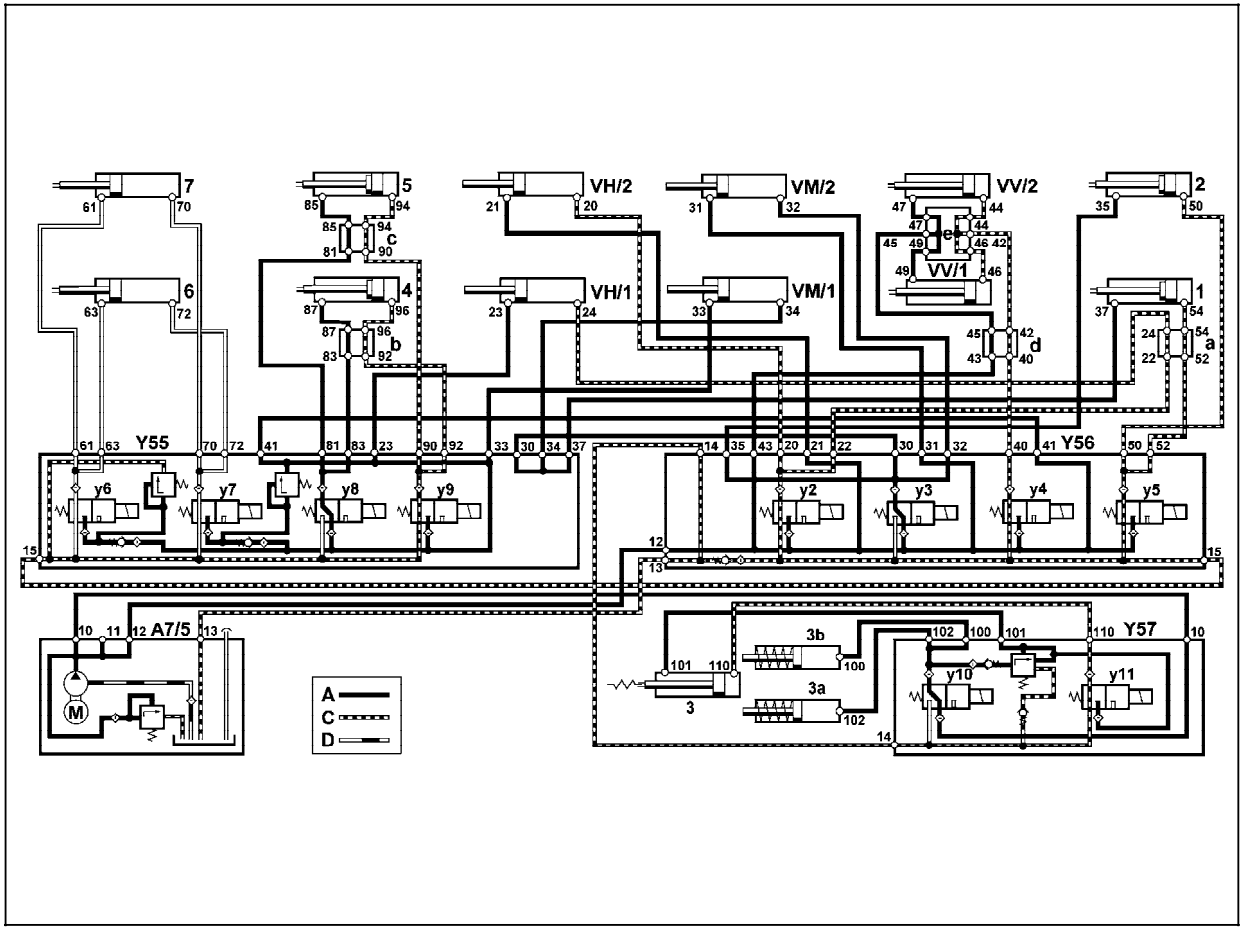
Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.2		Open soft top (Figure 31)	Disconnect hydraulic line no. 61and 63 from valve block (Y55). Seal connection no. 63 with threaded plug 129 589 00 91 01. Connect hydraulic line 129 806 34 85 to connection no. 61 at valve block Y55 and hold into clean container. Reconnect connector after test at valve block (Y56y3).	**Soft top in soft top compartment,** **Soft top compartment cover up.** Ignition: **ON** Press and hold soft top switch: **"close" for 2 seconds**.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y6) at Y55, See SMS, Job no. 77-0385

Hydraulic Test Program – Test – Soft Top Closed

Figure 32



P77.37-0462-79

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

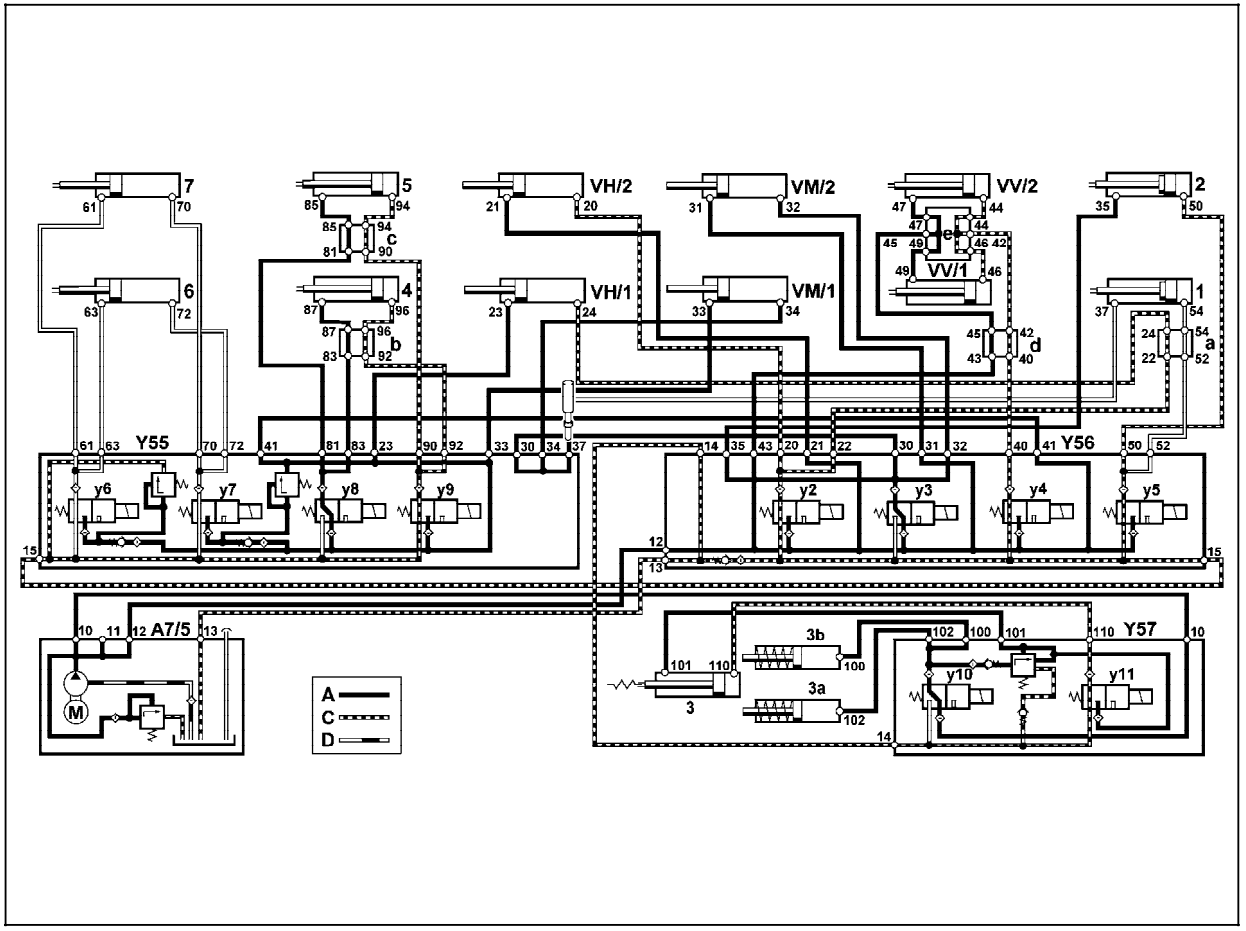
Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Close soft top compartment cover, Lock center locks (VM/1, VM/2)** (Figure 32)	Connect pressure gauge according to connection diagram (Figure 1). Remove both lock pins from soft top compartment cover.	**Soft top closed, Fabric bow up, Center locks (VM/1, VM/2) open, Soft top compartment cover manually pressed closed by hand.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Check adjustment of locking pins for soft top compartment cover. If locking of the locks is not possible using the soft top switch, then replace the locks. See SMS, Job no. 77-0320 **<120 bar**: ⇒ 12.1.

Hydraulic Test Program – Test – Soft Top Closed

Figure 33

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



P77.37-0463-79

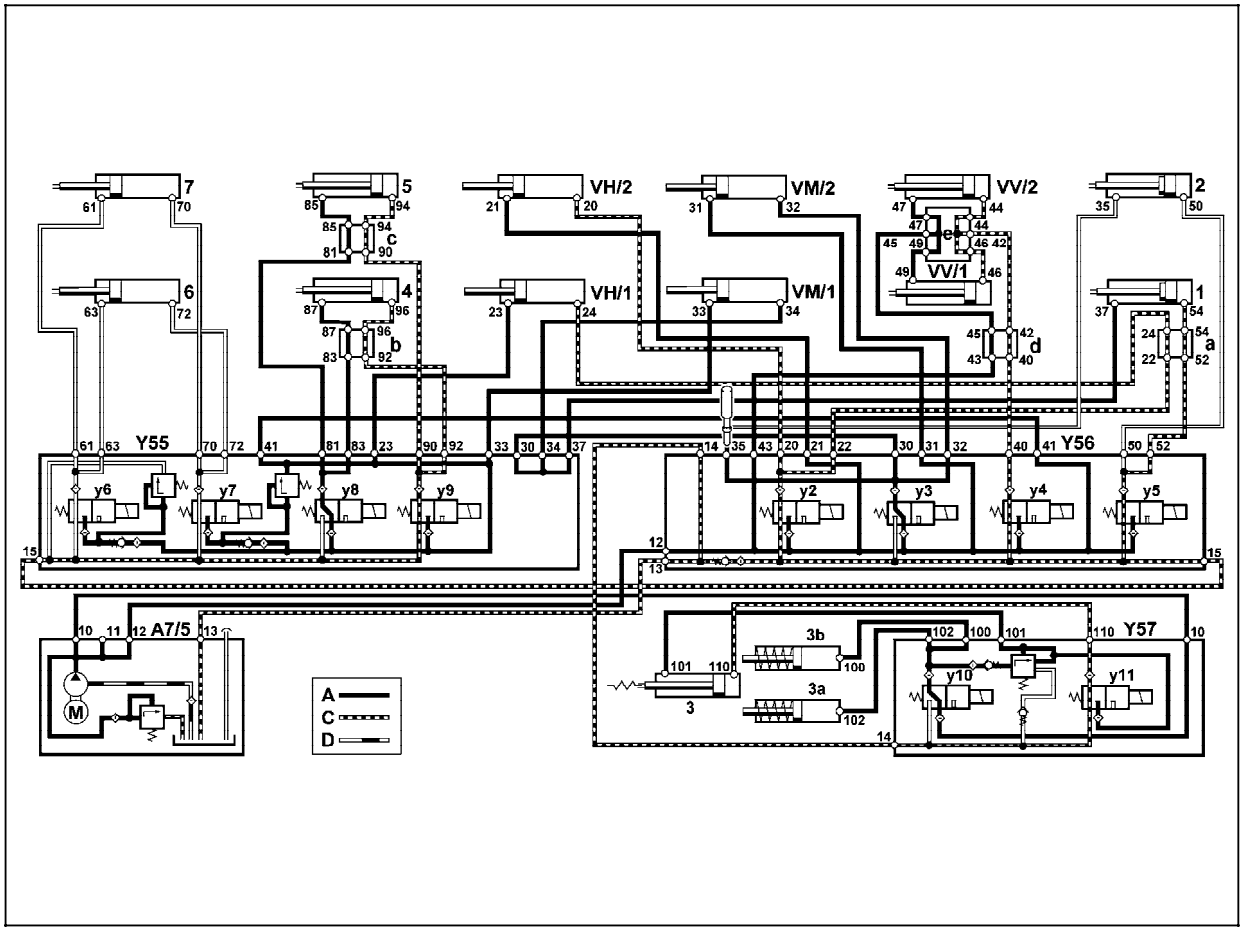
Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.1		Close soft top compartment cover Lock center locks (VM/1, VM/2) (Figure 33)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect hydraulic line no. 37 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Soft top closed,** **Fabric bow up,** **Center locks (VM/1, VM/2) open,** **Soft top compartment cover manually pressed closed by hand.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Left soft top compartment cover hydraulic cylinder (1, Figure 33) leaks. Replace hydraulic cylinder, See SMS, Job no. 77-0370 **<120 bar**: ⇒ 12.2

Hydraulic Test Program – Test – Soft Top Closed

Figure 34

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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Hydraulic Test Program – Test – Soft Top Closed

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.2		Close soft top compartment cover Lock center locks (VM/1, VM/2) (Figure 34)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 37 to valve block (Y55). Disconnect hydraulic line no. 35 from valve block Y56. Seal connection with threaded plug 129 589 00 91 01. Install both locking pins for soft top compartment cover after testing.	**Soft top closed,** **Fabric bow up,** **Center locks (VM/1, VM/2) open,** **Soft top compartment cover manually pressed closed by hand.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Right soft top compartment cover hydraulic cylinder (2, Figure 33) leaks. Replace hydraulic cylinder, See SMS, Job no. 77-0370 **<120 bar**: ⇒ 5.0, ⇒ 8.0

Hydraulic Test Program – Test – Soft Top Up

⚠ CAUTION!

Injury hazard from pinching and crushing, in extreme cases extremities can even be severed when caught in the mechanism.
Do not allow any body parts to be in the general area of the moving components.

Notes for Hydraulic Test:

The following jobs are the same for all test steps:

A. Connection of test equipment to hydraulic unit (Figure 1).
Torque check valve 129 589 08 63 00 to 5 Nm.

B. Build up and release test pressure (see 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.

Preparation for Test:

1. Review entire 11.2 section, especially 32, prior to performing any of the following tests on the soft top.

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 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.

Electrical Test Program – Test – Soft Top Up

Example: Building up and releasing test pressure.

Soft top
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 1).
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.

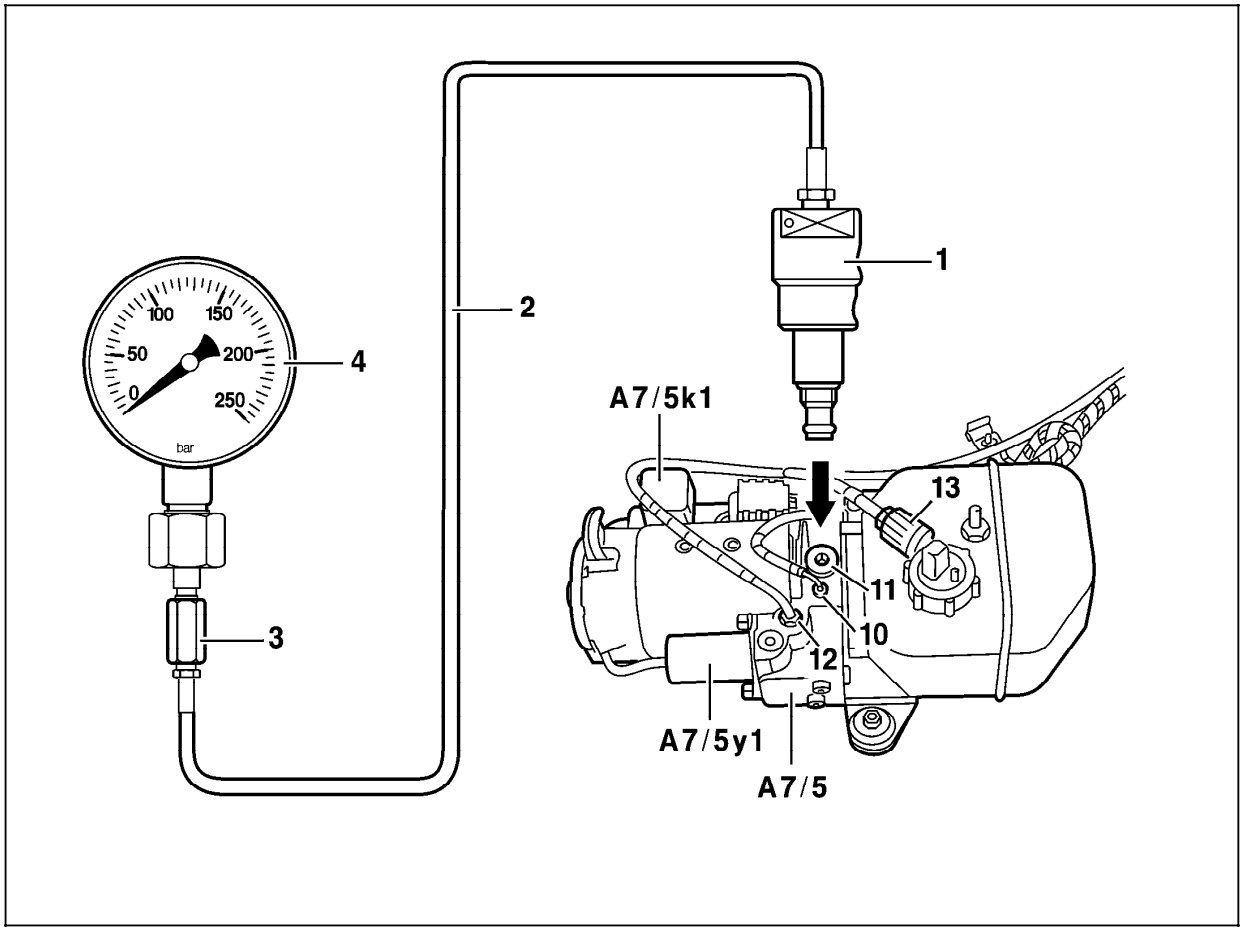
⚠ **CAUTION!**
Release established test pressure before beginning the next test step.

Roll bar
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 1). 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.

Electrical Test Program – Test – Soft Top Up

Connection Diagram - Check valve and Pressure Gauge to Hydraulic Unit



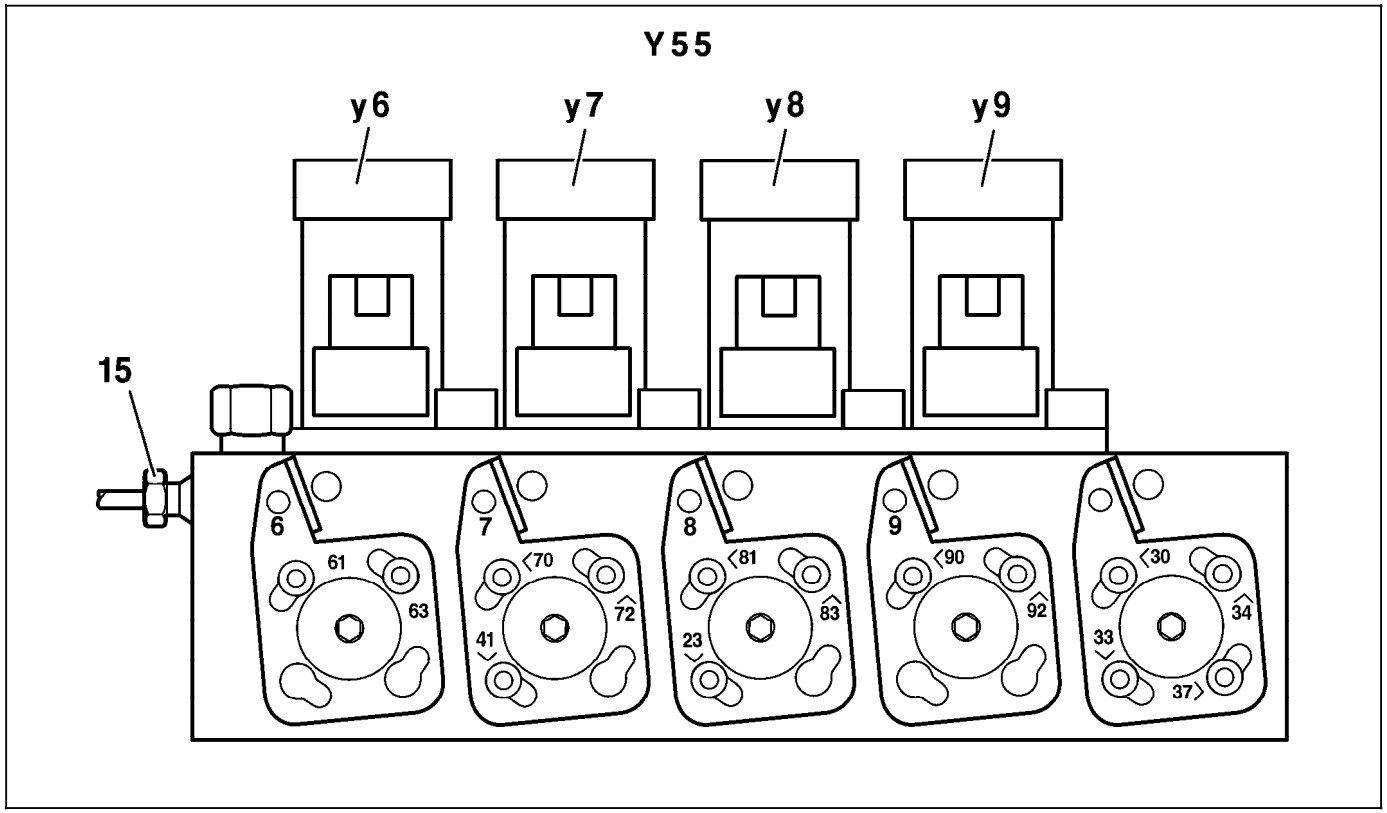
P77.37-0432-06

Figure 1

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
10	Roll bar operation hydraulic line
11	Test connection
12	Soft top operation hydraulic line
13	Return line
A7/5	Hydraulic unit
A7/5k1	Relay
A7/5y1	Main valve (deleted as of VIN 1F-083891)

Electrical Test Program – Test – Soft Top Up

Y55 Left RST valve block (4 connections)



P77.39-0272-05

Figure 2

Y55	Left RST valve block (4 connections)
y6	Soft top "open" valve
y7	Soft top "close" valve
y8	Fabric bow "raise" valve
y9	Fabric bow "lower" valve

Electrical Test Program – Test – Soft Top Up

Y56 Right RST Valve Block (4 connections) and Y57 Roll bar Valve Block (2 connections)

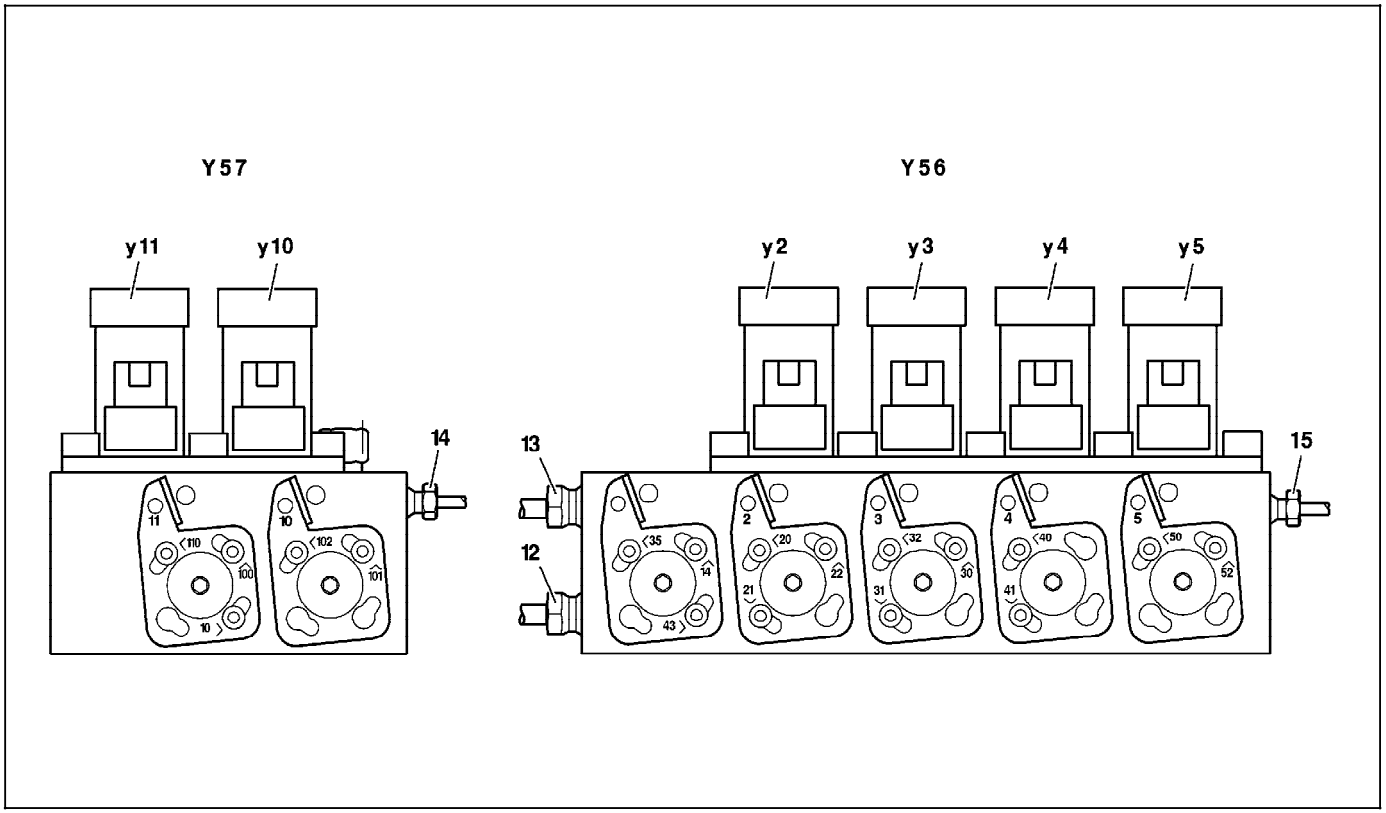


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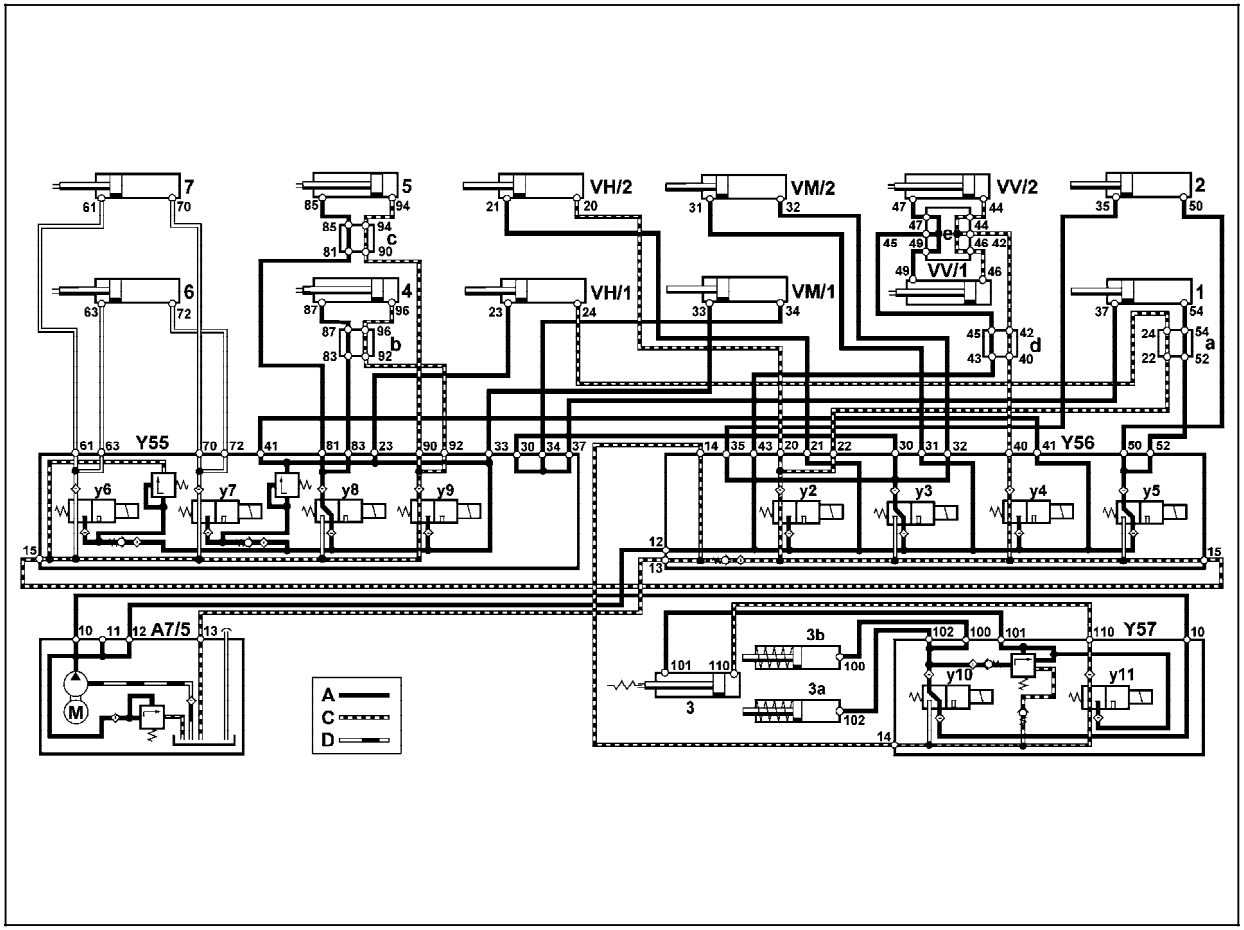
Figure 2

Y56	Left RST valve block (4 connections)
y2	Rear locks valve
y3	Center locks valve
y4	Front locks valve
y5	Soft top compartment cover valve
Y57	Roll Bar valve block (2 connections)
y10	Roll bar "Lower" valve
y11	Roll bar "raise" valve

Hydraulic Test Program – Test – Soft Top Up

Figure 4

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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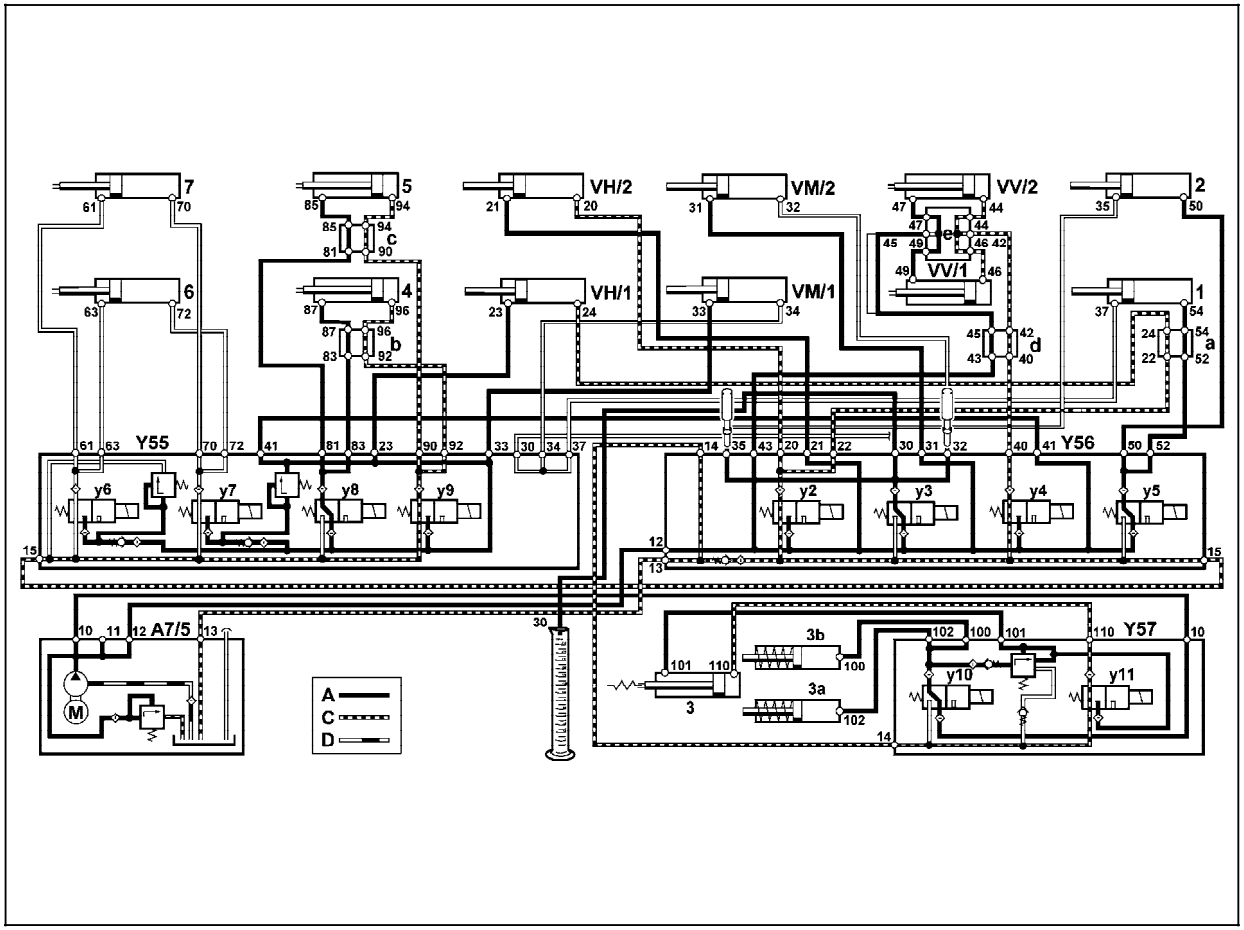
Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Open center locks (VM/1, VM/2)** (Figure 4)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at valve block (Y56y4).	**Soft top closed.** **Fabric bow up,** **Center locks (VM/1,VM/2) manually open,** **Soft top compartment cover up.** Ignition: **ON** Press and hold soft top switch to "**close**". Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** If the center locks do not open, check the adjustment of the locking pins for the soft top compartment cover, See SMS, Job no. 77-0303 **<120 bar:** 33 ⇒ 5.0, 33 ⇒ 7.0, If the opening of the center locks is still not possible using the soft top switch, see: ⇒ 1.1

Hydraulic Test Program – Test – Soft Top Up

Figure 5

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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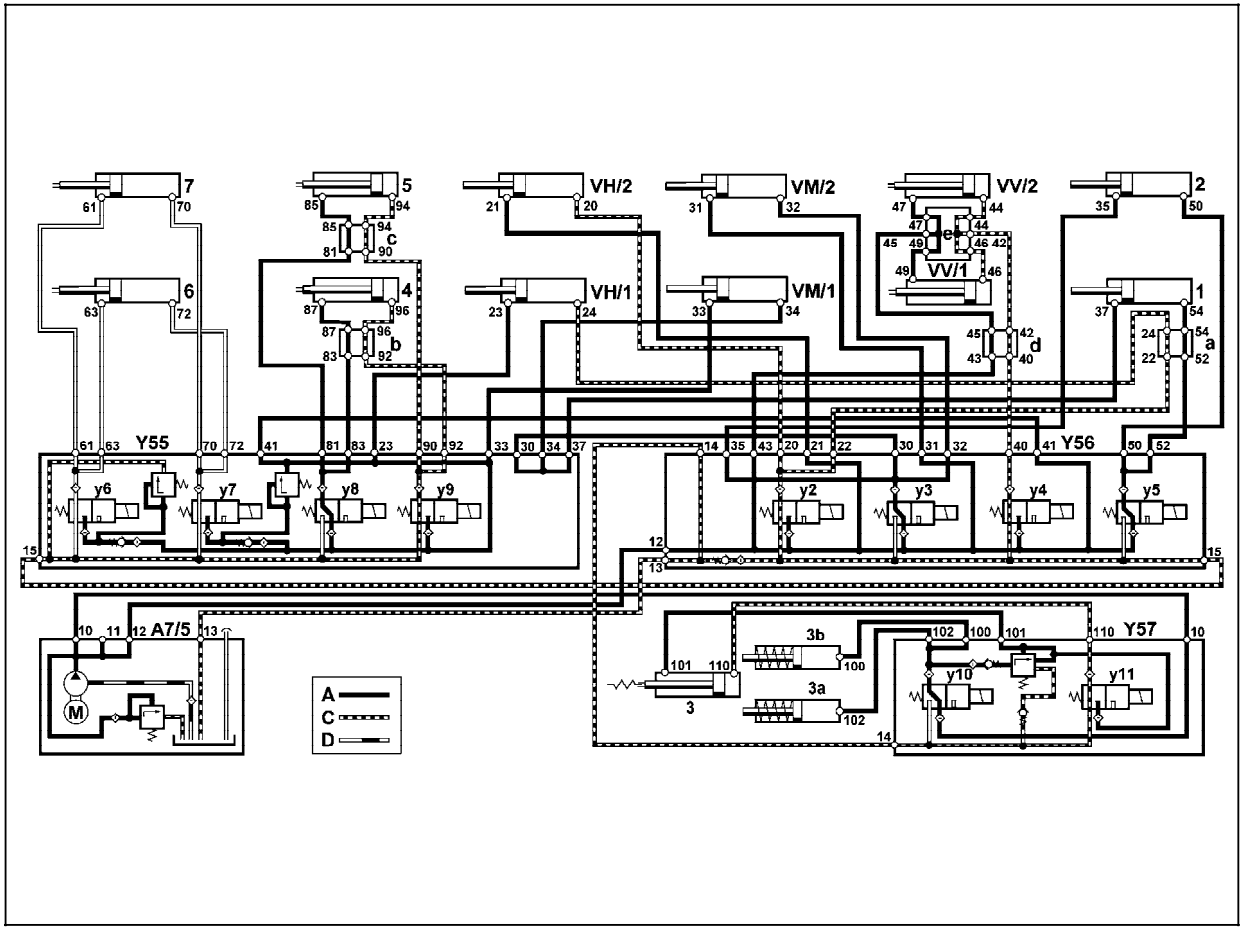
Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.1		Open center locks (VM/1, VM/2) (Figure 5)	Disconnect hydraulic lines no. 30, 32, 50 from valve block (Y56) (Figure 5). Seal connections no. 32, 35 with threaded plugs 129 589 00 91 01. Install hydraulic line 129 806 34 83 to no. 30 on valve block (Y56) and place end of hydraulic line into clean container. Reconnect connector after test to valve block (Y56y4).	**Soft top closed, Fabric bow raised, Center locks (VM/1, VM/2) manually opened, Soft top compartment cover open.** Ignition: **ON** Press and hold soft top switch to **"close" for 2 seconds.**		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y3) at Y56, See SMS, Job no. 77-0385 If the opening of the center locks using the soft top switch is still not possible, replace the center locks, See SMS, Job no. 77-0320

Hydraulic Test Program – Test – Soft Top Up

Figure 6



P77.37-0453-79

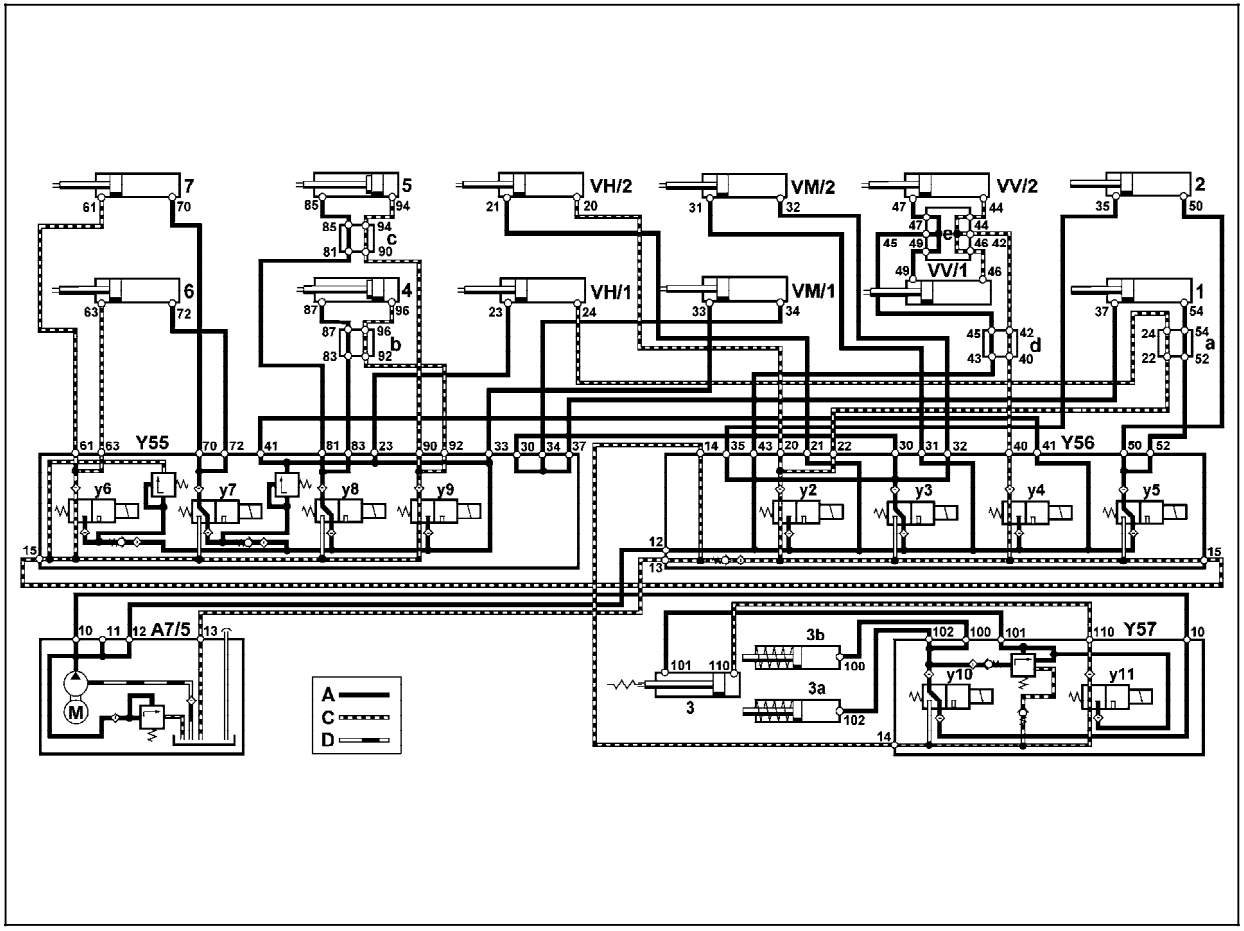
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**Raise soft top compartment cover** (Figure 6)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect connector at valve block (Y56y4).	**Soft top closed, Fabric bow raised, Center locks (VM/1, VM/2) manually opened, Soft top compartment cover raised.** 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	**If nominal values ok:** Check for fault with soft top compartment cover hinges or gas pressure shock. **<120 bar:** 33⇒ 5.0 34⇒ 1.0

Hydraulic Test Program – Test – Soft Top Up

Figure 7



P77.37-0465-79

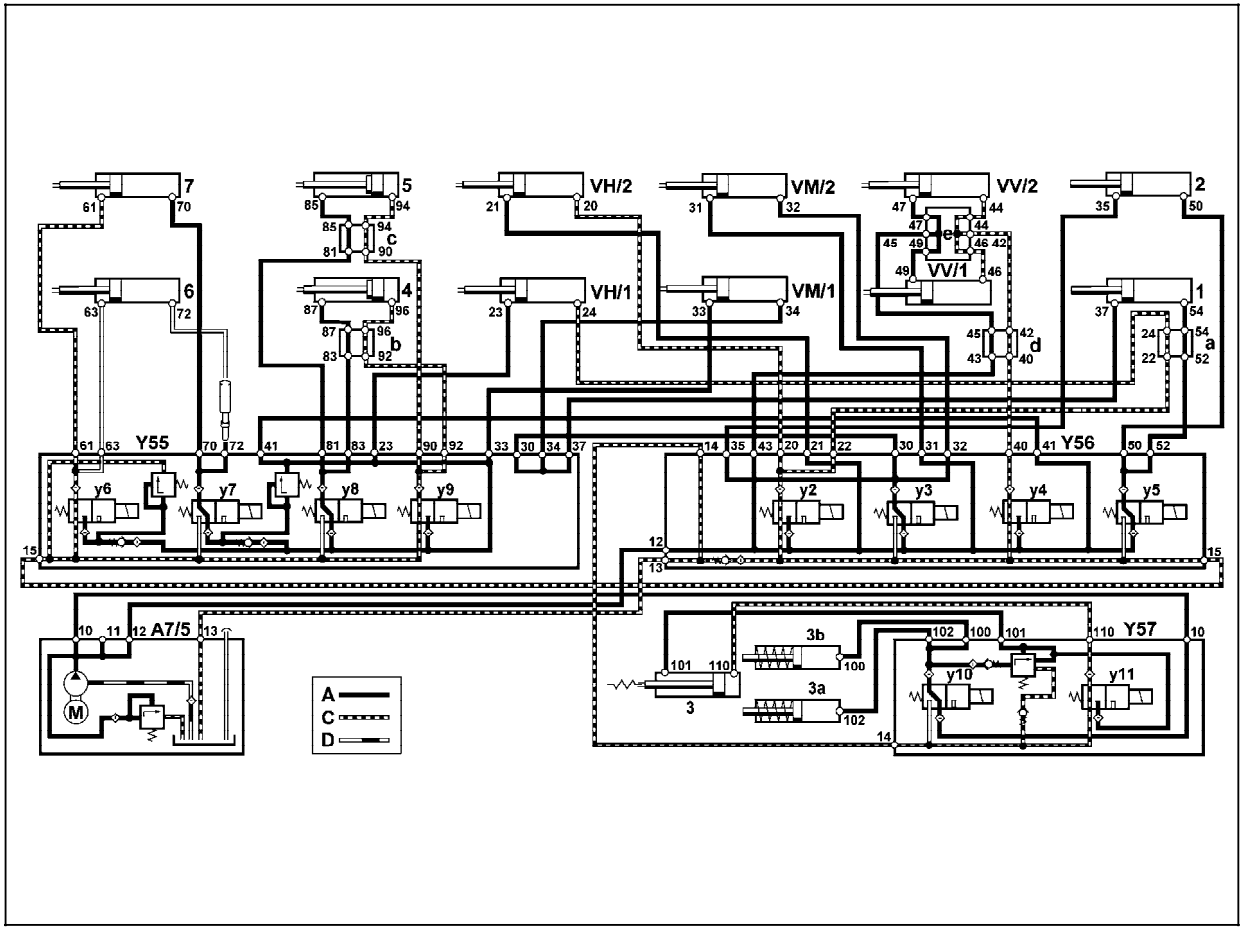
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		**Close soft top** (Figure 7)	Connect pressure gauge according to connection diagram (Figure 1). Install shim between windshield crossmember and soft top so that latch pins **do not** engage into left and right front locks (VV/1, VV/2). Disconnect connector at valve block (Y55y6).	**Soft top positioned over windshield crossmember,** **Soft top compartment cover raised,** **Fabric bow raised.** Ignition: **ON** Press and hold soft top switch to **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Check for mechanical fault within soft top frame. **< 120 bar:** ⇒ 3.1

Hydraulic Test Program – Test – Soft Top Up

Figure 8



P77.37-0466-79

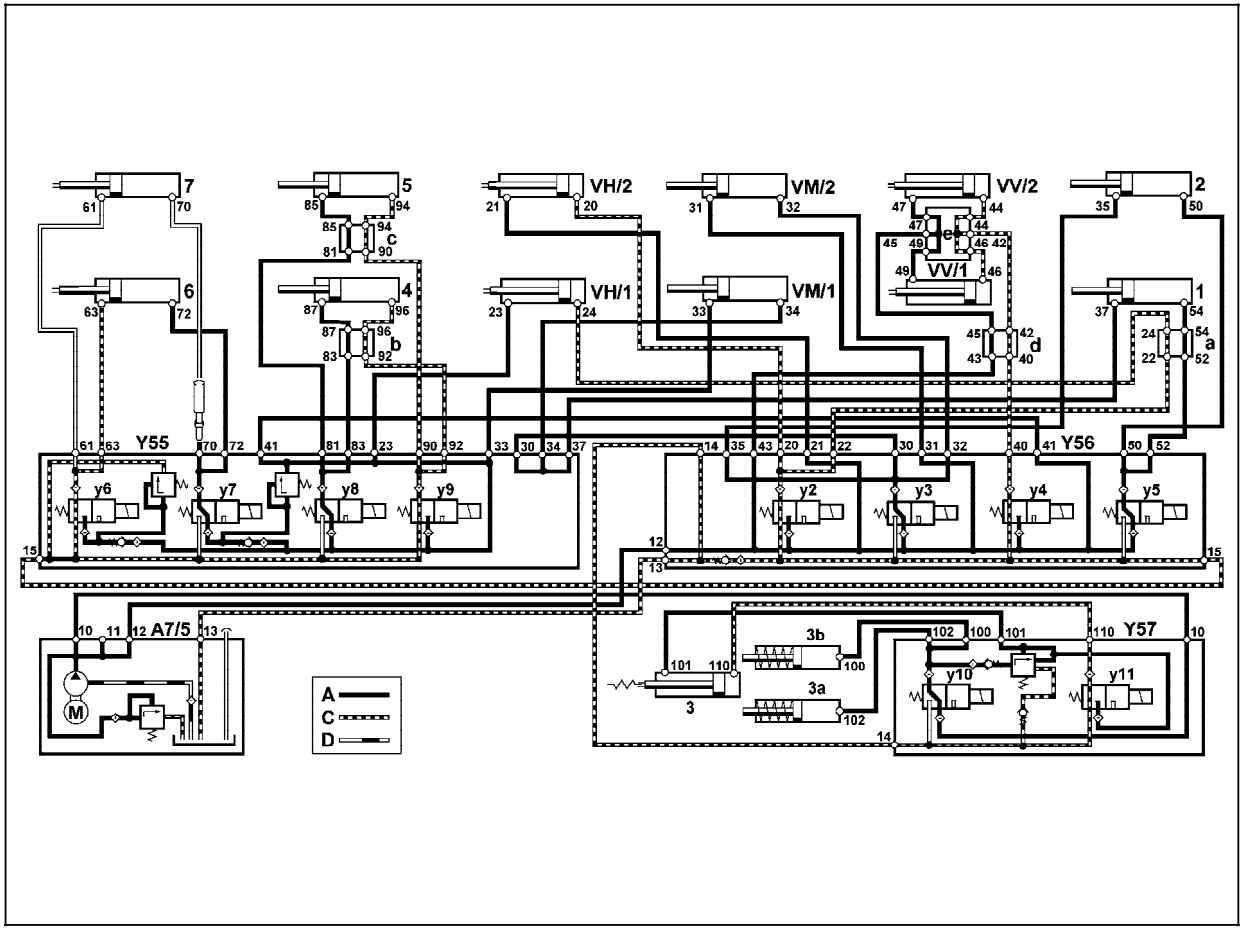
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.1		Close soft top (Figure 8)	Connect pressure gauge according to connection diagram (Figure 1). Install shim between windshield crossmember and soft top so that latch pins **do not** engage into left and right front locks (VV/1, VV/2). Disconnect hydraulic line no. 72 from valve block (Y55) (Figure 8). Seal connection with threaded plugs 129 589 00 91 02/03.	**Close soft top,** **Soft top compartment cover raised,** **Fabric bow raised.** Ignition: **ON** Press and hold soft top switch to **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Left power soft top hydraulic cylinder(6, Figure 8) leaking: Replace hydraulic cylinder, See SMS, Job No. 77-0355 **<120 bar**: ⇒ 3.2

Hydraulic Test Program – Test – Soft Top Up

Figure 9



P77.37-0467-79

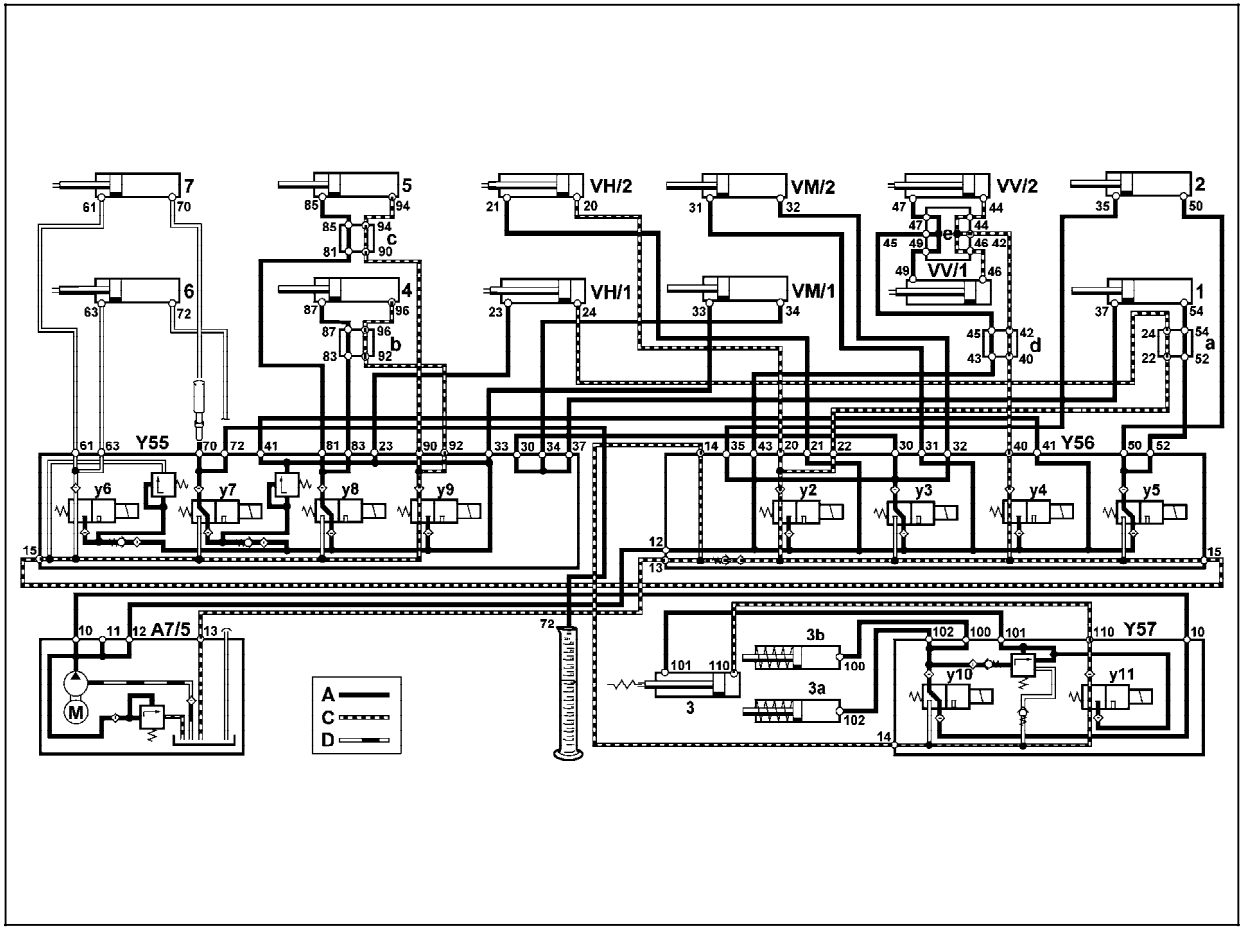
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.2		Close soft top (Figure 9)	Connect pressure gauge according to connection diagram (Figure 1). Install shim between windshield crossmember and soft top so that latch pins **do not** engage into left and right front locks (VV/1, VV/2). Reconnect hydraulic line no. 72 to valve block (Y55). Disconnect hydraulic line no. 70 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Close soft top,** **Soft top compartment cover raised,** **Fabric bow raised.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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 power soft top hydraulic cylinder (7, Figure 9) leaking: Replace hydraulic cylinder, See SMS, Job No. 77-0355 **<120 bar**: ⇒ 5.0, If the soft top continues not to close even after nominal values are met: ⇒ 3.3

Hydraulic Test Program – Test – Soft Top Up

Figure 10



P77.37-0468-79

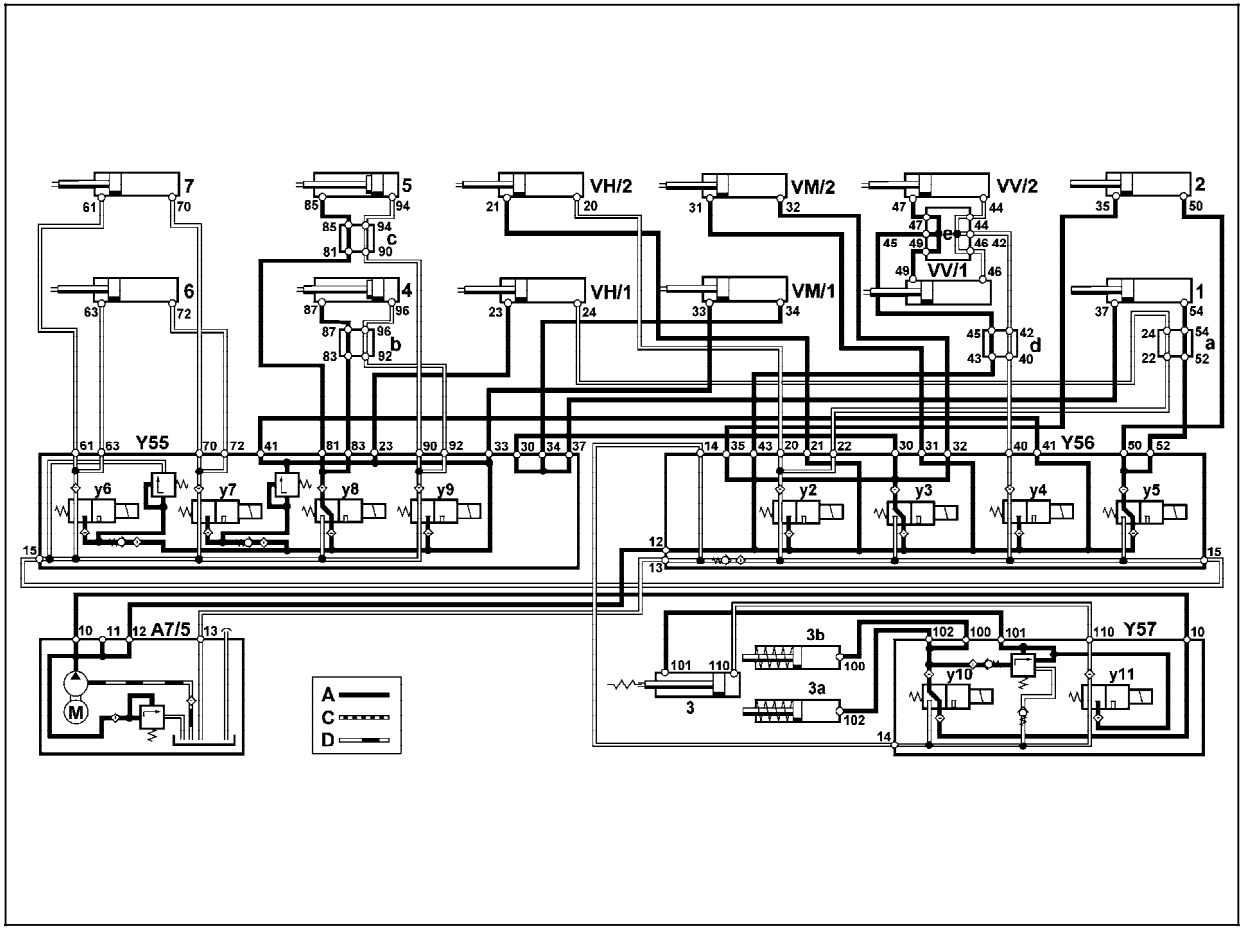
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.3		Close soft top (Figure 10)	Install shim between windshield crossmember and soft top so that latch pins **do not** engage into left and right front locks (VV/1, VV/2). Disconnect hydraulic lines no. 70, 72 from valve block (Y55). Seal connection no. 72 with threaded plug 129 589 00 91 01. Connect hydraulic line no. 129 806 34 83 to hydraulic line connection no. 70 at Y55 and hold into clean container. Reconnect connector after test to valve block (Y55y6).	**Close soft top,** **Soft top compartment cover raised,** **Fabric bow raised.** Ignition: **ON** Press and hold soft top switch: **"close"** for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y7) at Y55, See SMS, Job no. 77-0385

Hydraulic Test Program – Test – Soft Top Up

Figure 11



P77.37-0469-79

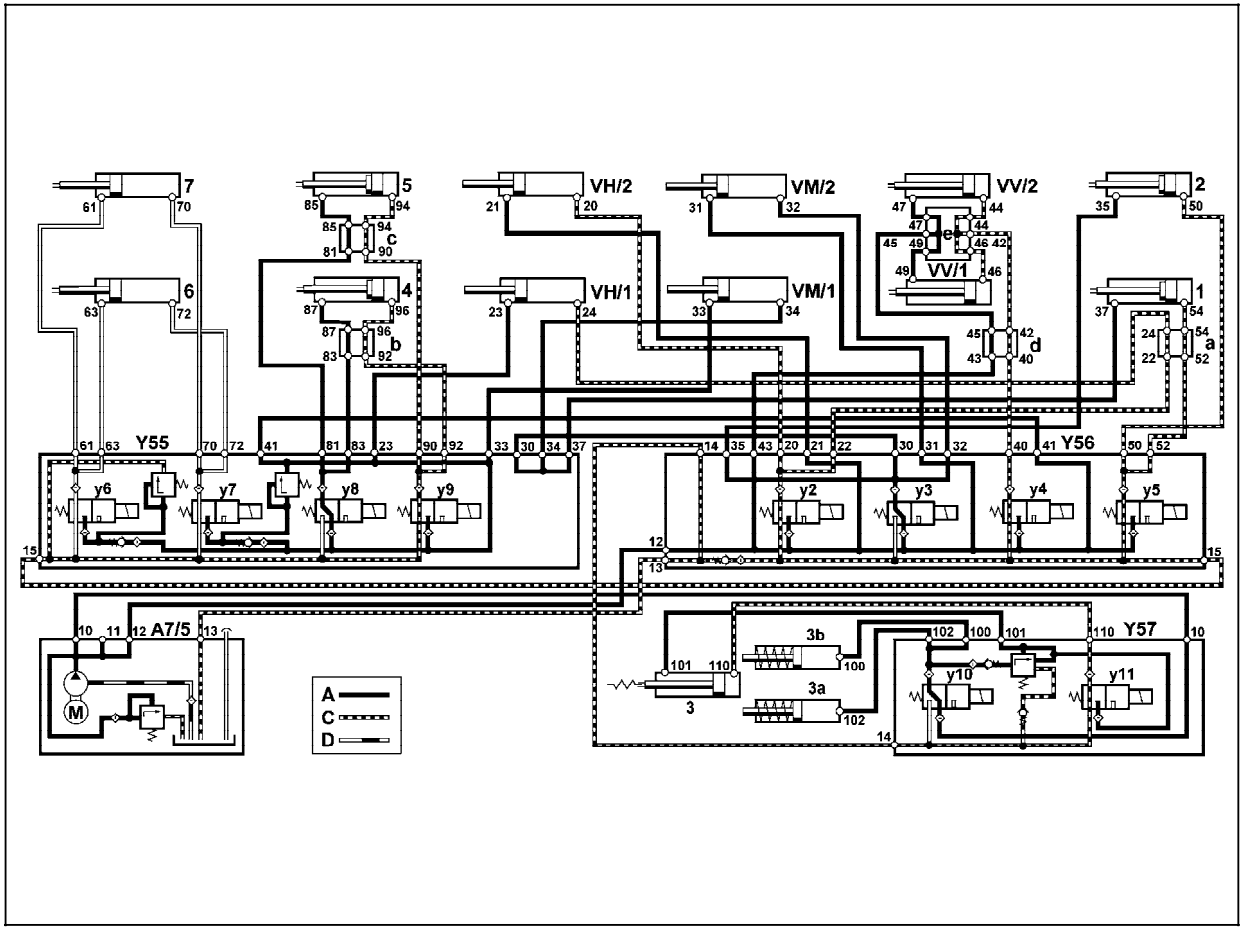
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**Lock front locks (VV/1, VV/2)** (Figure 11)	Connect pressure gauge according to connection diagram (Figure 1).	**Soft top lowered unto windshield crossmember,** **Engage lock pins into front locks (VV/1, VV/2),** **Soft top compartment cover raised,** **Fabric bow raised.** Ignition: **ON** Press and hold soft top switch: **"close"**. **Read pressure while pressing soft top switch.**	180 – 200 bar	**If Nominal values ok:** Check adjustment of lock pins on front soft top frame, See SMS, Job no. 77-0303 If the locking of the front locks is not possible even if the nominal values are met: Replace locks, See SMS, Job No. 77-0303 **>180 bar**: 33⇒ 5.0

Hydraulic Test Program – Test – Soft Top Up

Figure 12



P77.37-0462-79

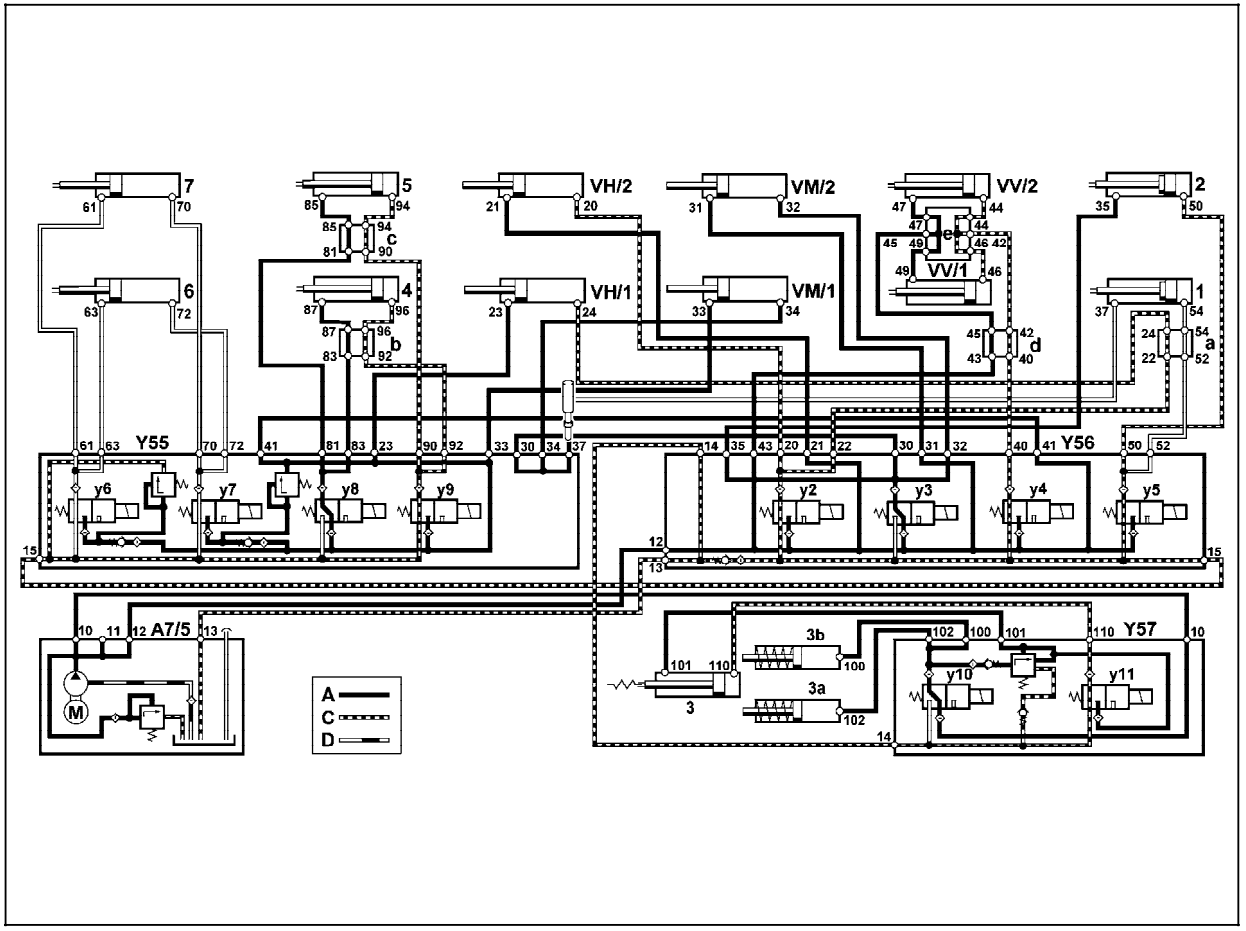
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0		**Close soft top compartment cover, Lock center locks (VM/1, VM/2)** (Figure 12)	Connect pressure gauge according to connection diagram (Figure 1). Remove both lock pins on soft top compartment cover.	**Soft top (front) closed, Fabric bow raised, Center locks (VM/1, VM/2) opened, Soft top compartment cover pressed closed by hand.** Ignition: **ON** Press and hold soft top switch to **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Check adjustment of soft top compartment cover lock pins. If the locking of the soft top compartment using the soft top switch still not possible: Replace locks, see SMS, Job No. 77-0320 **<120 bar**: ⇒ 5.1

Hydraulic Test Program – Test – Soft Top Up

Figure 13



P77.37-0463-79

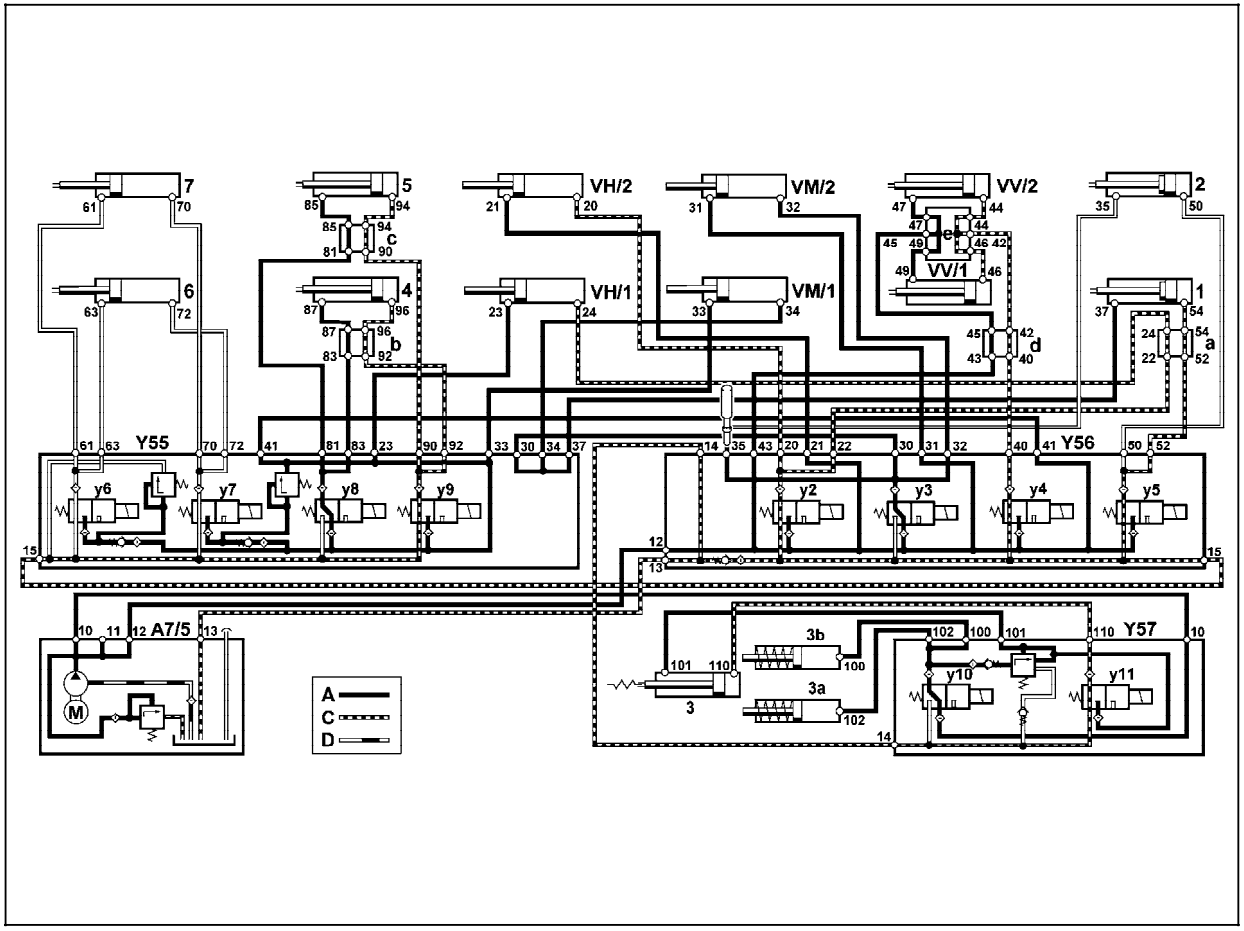
1/2	Left/right soft top compartment cover hydraulic cylinder
3	Right roll bar support element
3a/3b	Left/right locking pawl hydraulic cylinder
4/5	Left/right fabric bow hydraulic cylinder
6/7	Left/right power soft top hydraulic cylinder
A7/5	RST/RB hydraulic unit
A	Soft top/roll bar operation hydraulic circuit
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.1		Close soft top compartment cover, Lock center locks (VM/1, VM/2) (Figure 13)	i Connect pressure gauge according to connection diagram (Figure 1). Disconnect hydraulic line no. 37 from valve block (Y55). Seal connection with threaded plug 129 589 00 91 01.	**Front of soft top closed,** **Fabric bow raised,** **Center locks (VM/1, VM/2) opened,** **Soft top compartment cover manually pressed closed by hand.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Left soft top compartment cover hydraulic cylinder (1, Figure 13) leaks, Replace hydraulic cylinder, See SMS, Job no. 77-0370 **<120 bar**: ⇒ 5.2

Hydraulic Test Program – Test – Soft Top Up

Figure 14



P77.37-0464-79

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

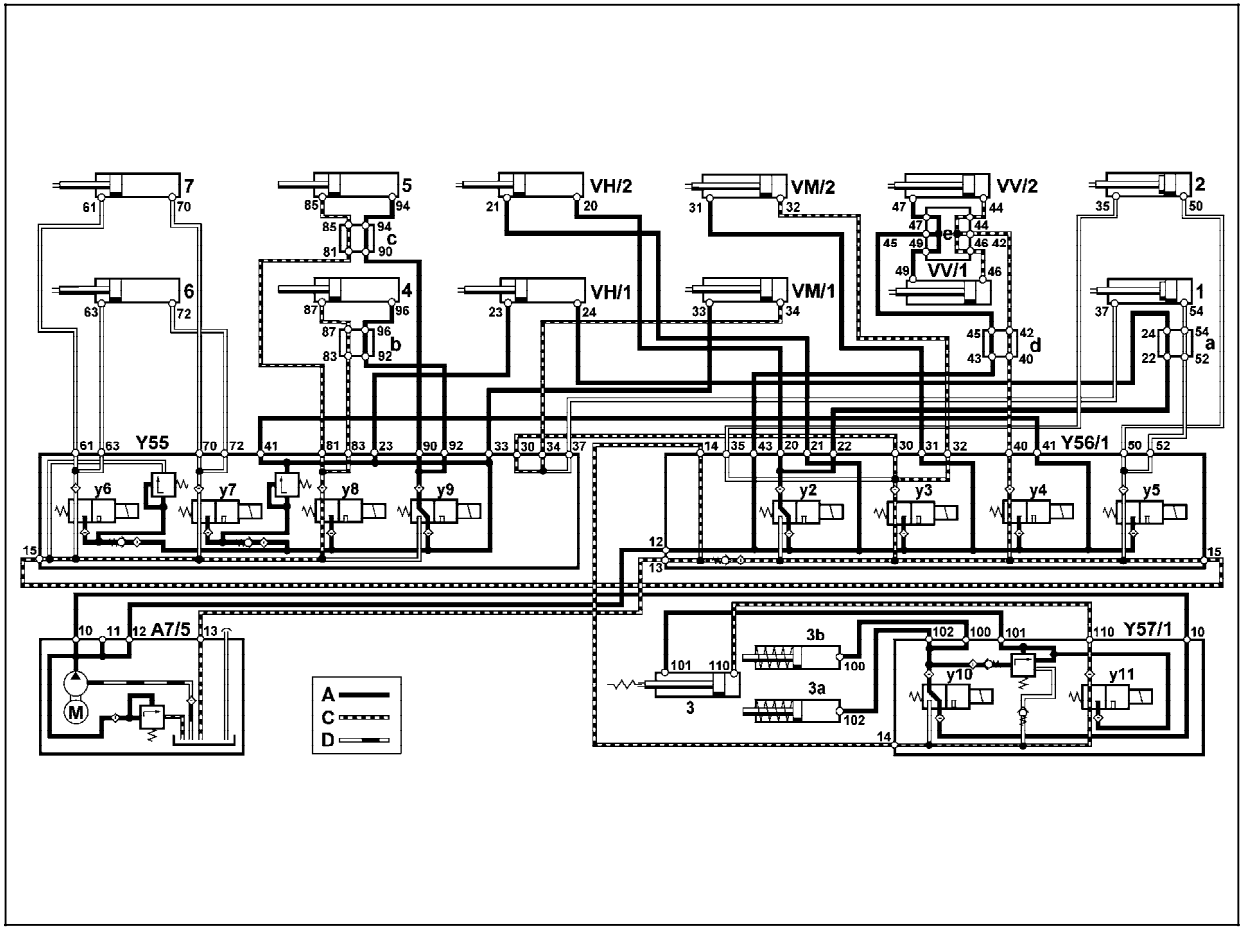
Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.2		Close soft top compartment cover, Lock center locks (VM/1, VM/2) (Figure 14)	Connect pressure gauge according to connection diagram (Figure 1). Reconnect hydraulic line no. 37 to valve block (Y55). Disconnect hydraulic line no. 35 from valve block (Y56). Seal connection with threaded plug 129 589 00 91 01. Reinstall both locks on soft top cover **after** performing test.	**Front of soft top closed,** **Fabric bow raised,** **Center locks (VM/1, VM/2) opened,** **Soft top compartment cover manually pressed closed by hand.** Ignition: **ON** Press and hold soft top switch to**"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal vales ok:** Right soft top compartment cover hydraulic cylinder (2, Figure 14) leaks, Replace hyraulic cylinder, See SMS, Job No. 77-0370 **<120 bar**: 33⇒ 5.0 34⇒ 1.0

Hydraulic Test Program – Test – Soft Top Up

Figure 15

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



P77.37-0470-79

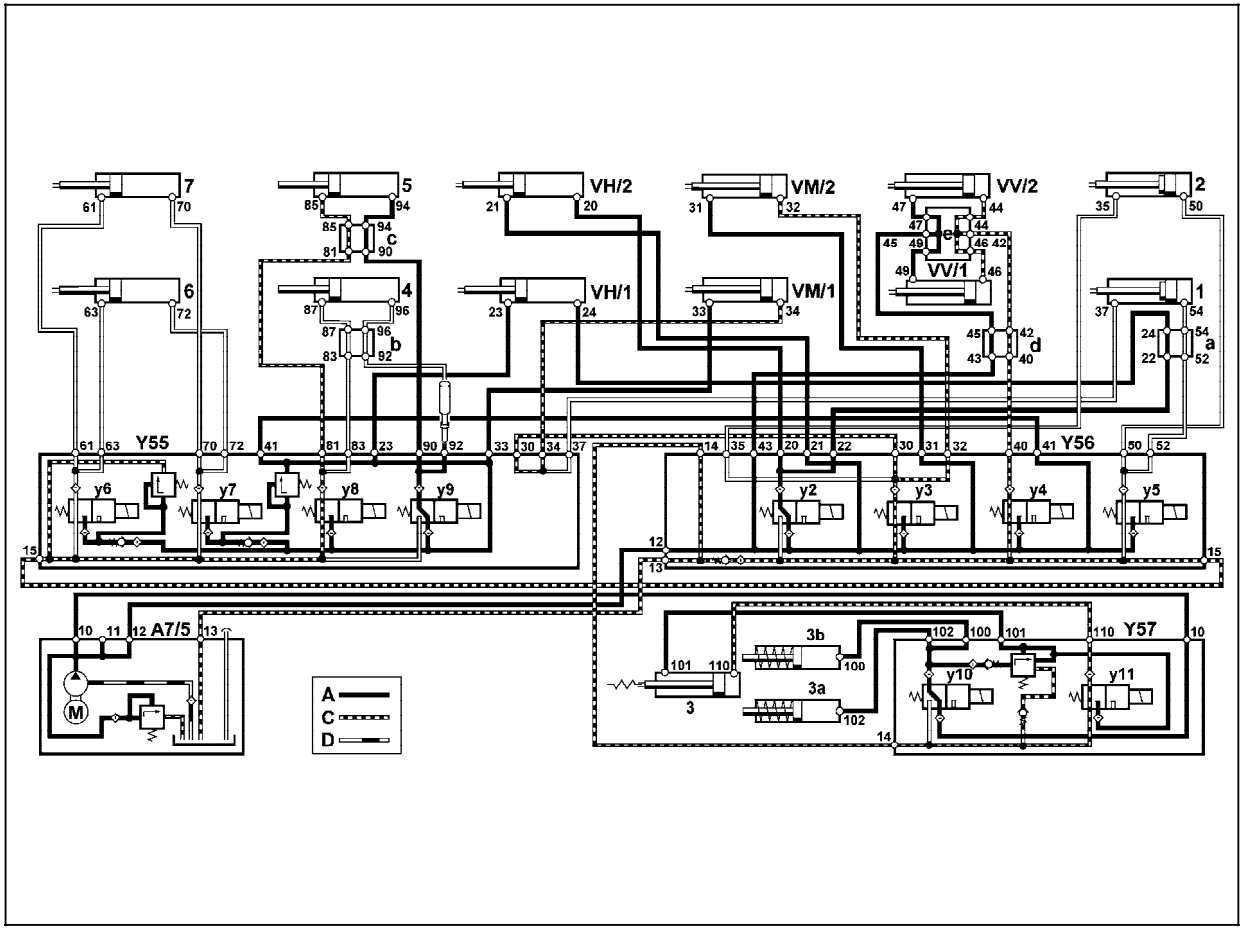
Hydraulic Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0		**Retract fabric bow** (Figure 15)	i Connect pressure gauge according to connection diagram (Figure 1). Remove both locking pins from the fabric bow.	**Front of soft top closed, Soft top compartment cover closed, Fabric bow manually lowered by hand.** Ignition: **ON** Press and hold soft top switch to**"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Mechanical fault in soft top frame. **<120 bar**: ⇒ 6.1

Hydraulic Test Program – Test – Soft Top Up

Figure 16

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



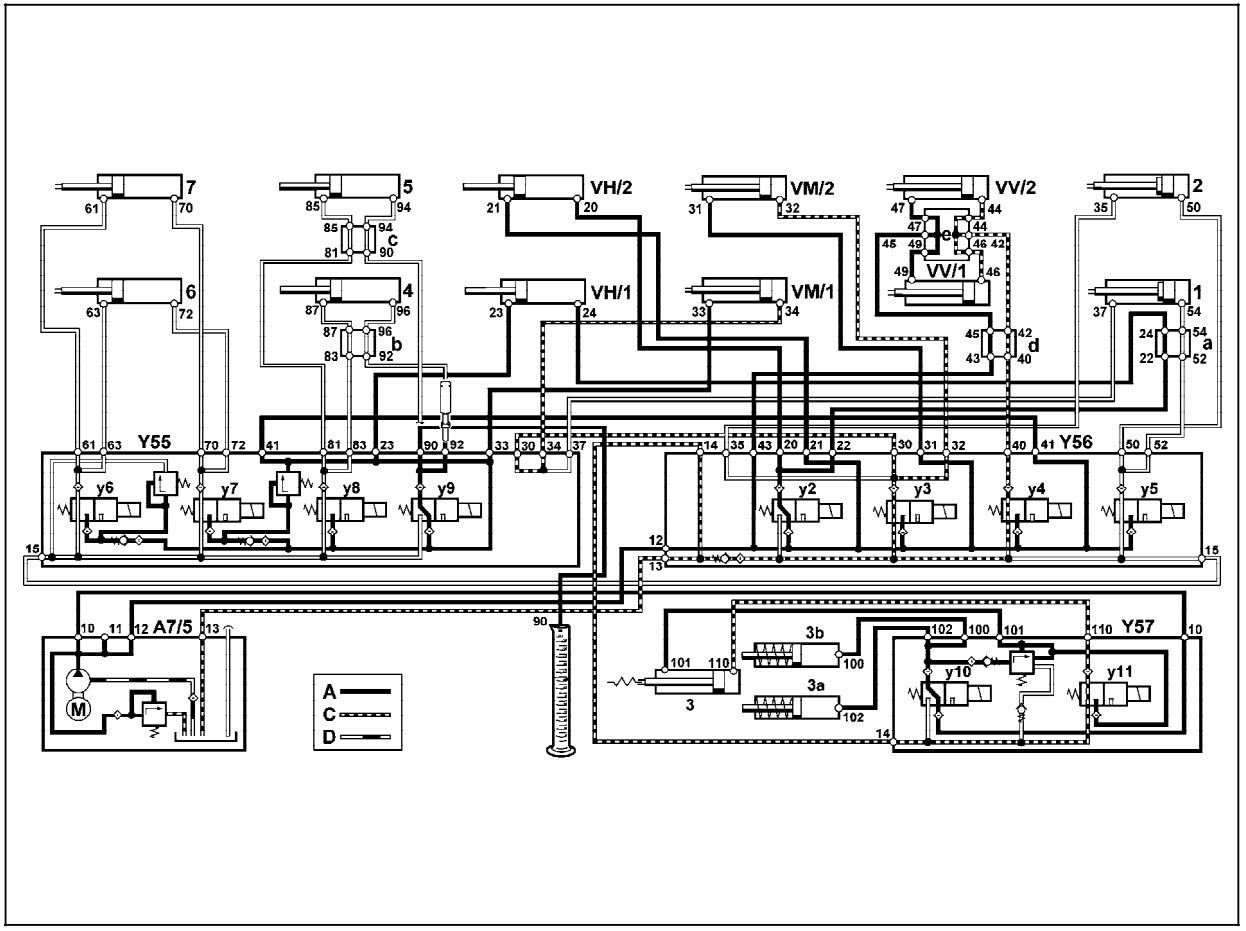
P77.37-0471-79

Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		Retract fabric bow (Figure 16)	Connect pressure gauge according to connection diagram (Figure 1). Disconnect hydraulic line no. 92 from Valve block (Y55). Seal connection with threaded plug 129 589 00 91 01. **Do not reinstall** both locking pins of fabric bow at this time.	**Front of Soft top closed, Soft top compartment cover closed, Fabric bow manually lowered by hand.** Ignition: **ON** Press and holdsoft top switch to **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Left fabric bow hydraulic cylinder (4, Figure 16) leaks: Replace hydraulic cylinder, See SMS, Job No. 77-0360 **<120 bar**: Right fabric bow hydraulic cylinder (5, Figure 16) leaks: Replace hydraulic cylinder See SMS, Job No. 77-0360 If the fabric bow cannot be lowered using the soft top switch, check: ⇒ 6.2

Hydraulic Test Program – Test – Soft Top Up

Figure 17



P77.37-0472-79

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)

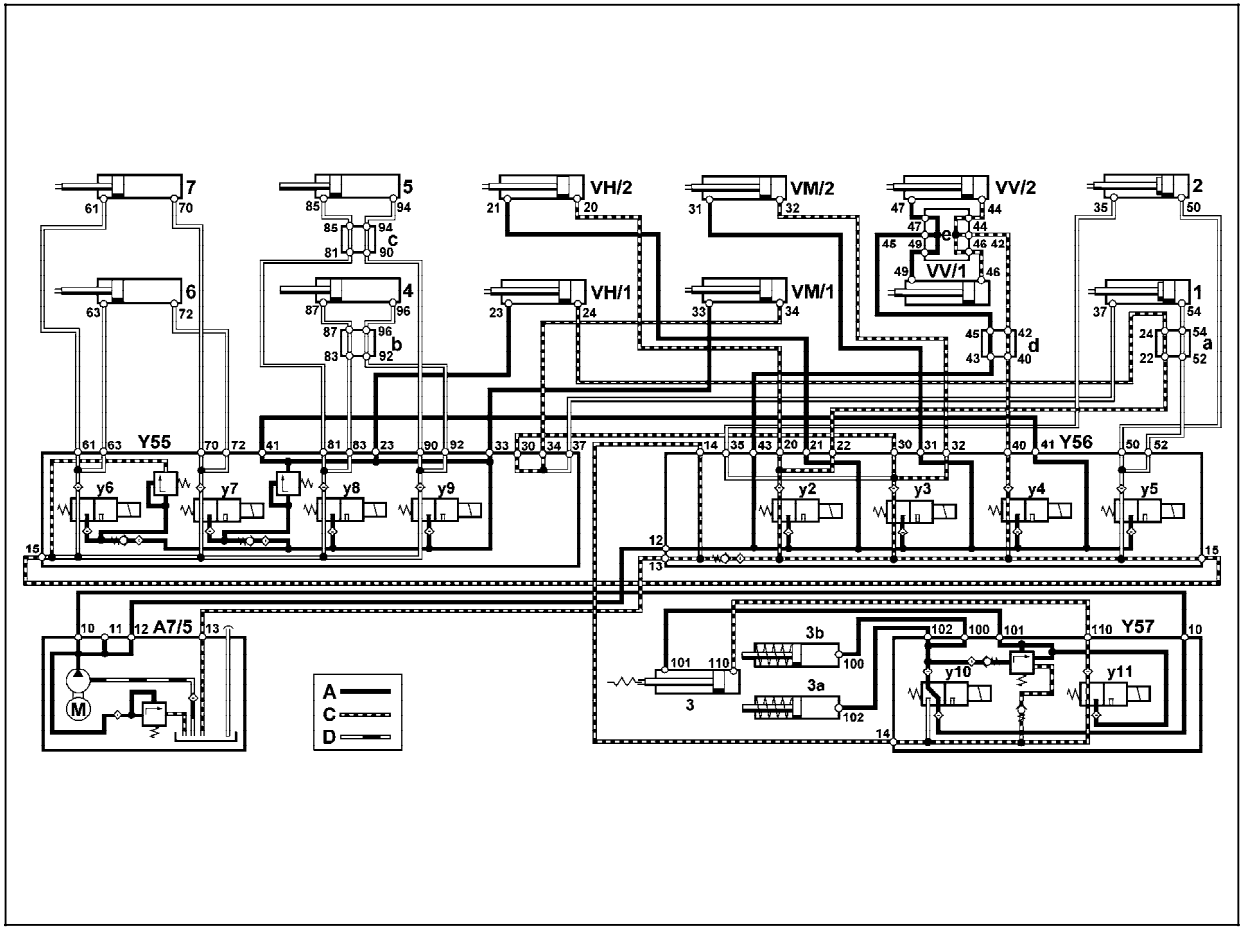
Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.2		Retract fabric bow (Figure 17)	Hydraulic line connection no. 92, on valve block (Y55) to remain plugged. Disconnect hydraulic no. 90 from valve block (Y55). Connect hydraulic line no. 129 806 34 83 to hydraulic line connection no. 90, from valve block (Y55) and hold into clean container. Locking pins for fabric bow to remain **removed** from fabric bow.	**Front of soft top closed,** **Soft top compartment cover closed,** **Manually by hand, retract fabric bow.** Ignition: **ON** Press and hold soft top switch: **"close"** for 2 seconds.		**Observe hydraulic fluid flow from hydraulic line 129 806 34 83, if no or weak uneven hydraulic flow is noted:** Replace valve (y9) at Y55, See SMS, Job no. 77-0385

Hydraulic Test Program – Test – Soft Top Up

Figure 18

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
C	Return flow lines
D	Suction lines
a	Hydraulic distributor at left rear wall
b	Hydraulic distributor at lower left center pillar
c	Hydraulic distributor at lower right center pillar
d	Hydraulic distributor at right front pillar before crossmember
e	Hydraulic distributor at upper windshield 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	Left RST valve block (4 connections)
Y56	Right RST valve block (4 connections)
Y57	RB valve block (2 connections)



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Hydraulic Test Program – Test – Soft Top Up

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		**Lock rear locks (VH/1, VH/2)** (Figure 18)	Connect pressure gauge according to connection diagram (Figure 1).	**Soft top completely closed.** Ignition: **ON** Press and hold soft top switch: **"close"**. Have a second technician unplug relay (A7/5k1, Figure 1) **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	**If nominal values ok:** Check adjustment of locking pins for fabric bow, See SMS, Job No. 77-0303 If the locks do not lock properly, even after nominal values have been met: Replace locks, See SMS, Job No. 77-0328 **<120 bar**: 33 ⇒ 5.0