Model 126

The automatic climate control with stepless blower is the same as for model 124. For function and test procedure, refer to Model Year 1986, Model 124, pages A 15 - A 39.

Component layout, wiring and vacuum diagrams are as follows:

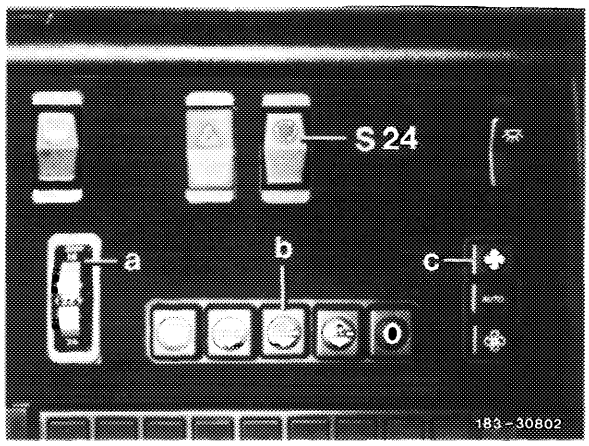

Fig. 83/15

S 24 Fresh/recirculating air switch (100 %)
The pushbutton switch unit consists of:
a Temperature selector
b Pushbutton switch with 5 functions
c Blower switch

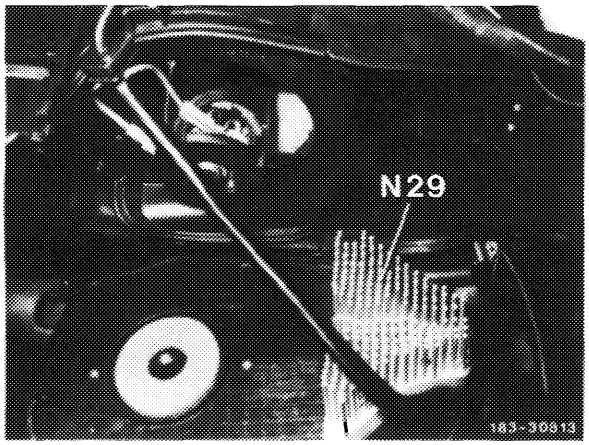

Fig. 83/16

N 29 Blower control unit

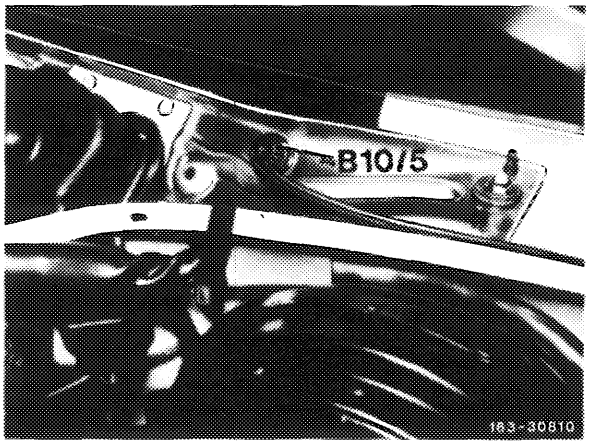

Fig. 83/17

B 10/5 Outside temperature sensor, mounted in windshield wiper bracket

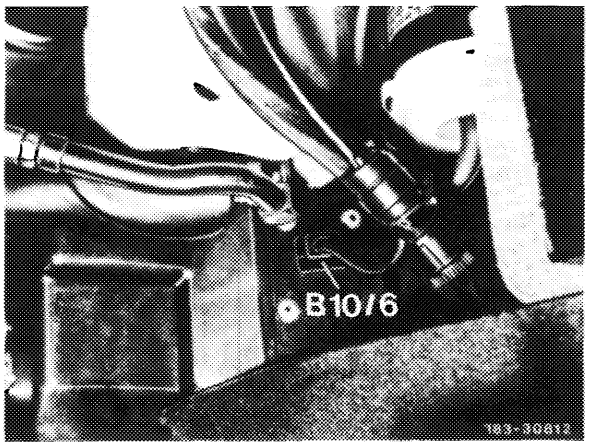

Fig. 83/18

B 10/6 Evaporator temperature sensor, above accelerator pedal

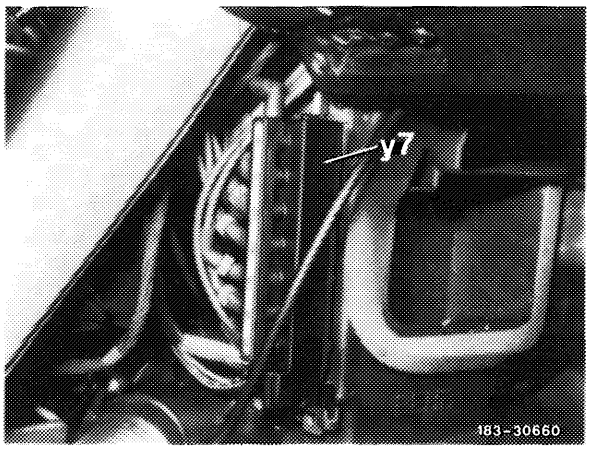

Fig. 83/19

Y 7 Switchover valve unit, 7 connections, shown with center console, right-panel, removed

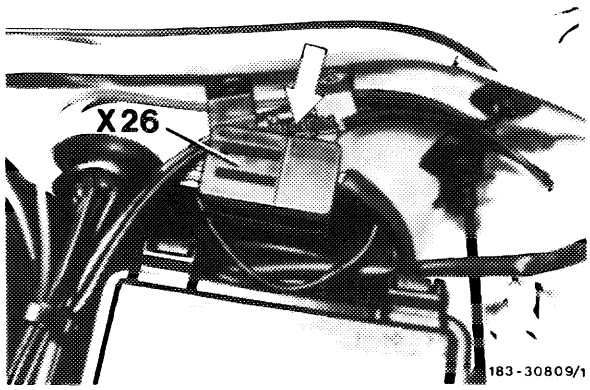

Fig. 83/20

X 26 Plug connection engine harness, behind fuse box

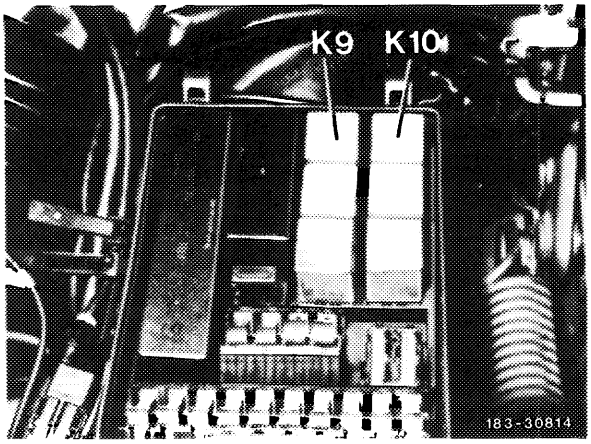

Fig. 83/21

K 9 Relay, auxiliary fan (high speed)
K 10 Relay, auxiliary fan (low speed)

Auxiliary fan, A/C compressor and compressor cutout

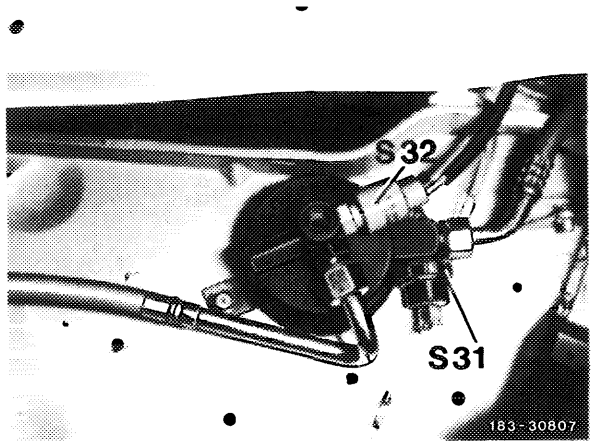

Fig. 83/22

S 32 Refrigerant high pressure switch for auxiliary fan closed 20 bar/open 15 bar

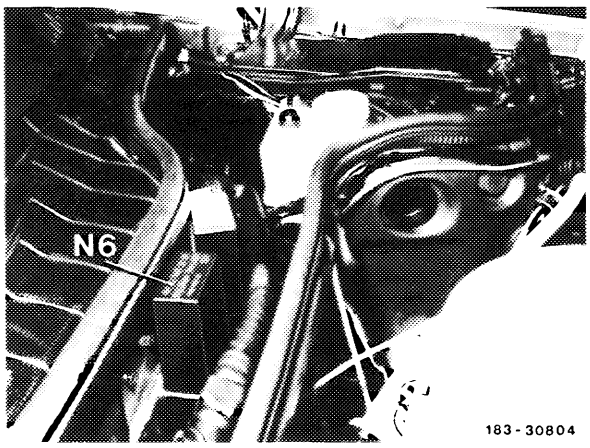

Fig. 83/23

N 6 Control unit for compressor cutout

Vacuum element, legroom flaps

Modified shape, oval instead of round.

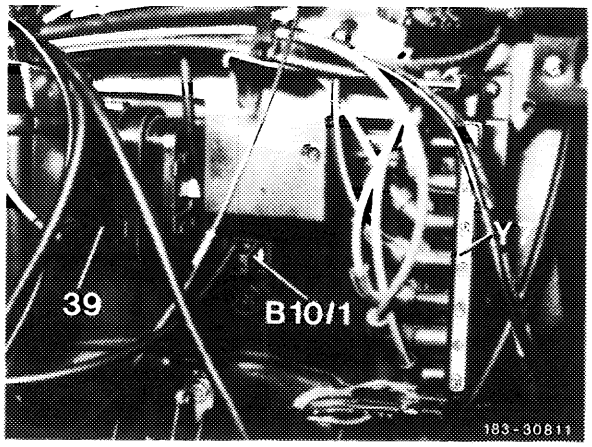

Fig. 83/24 Components behind pushbutton switch

B 10/1 Temperature sensor for heat exchanger
39 Vacuum element, legroom flaps

Wiring diagram, automatic climate control

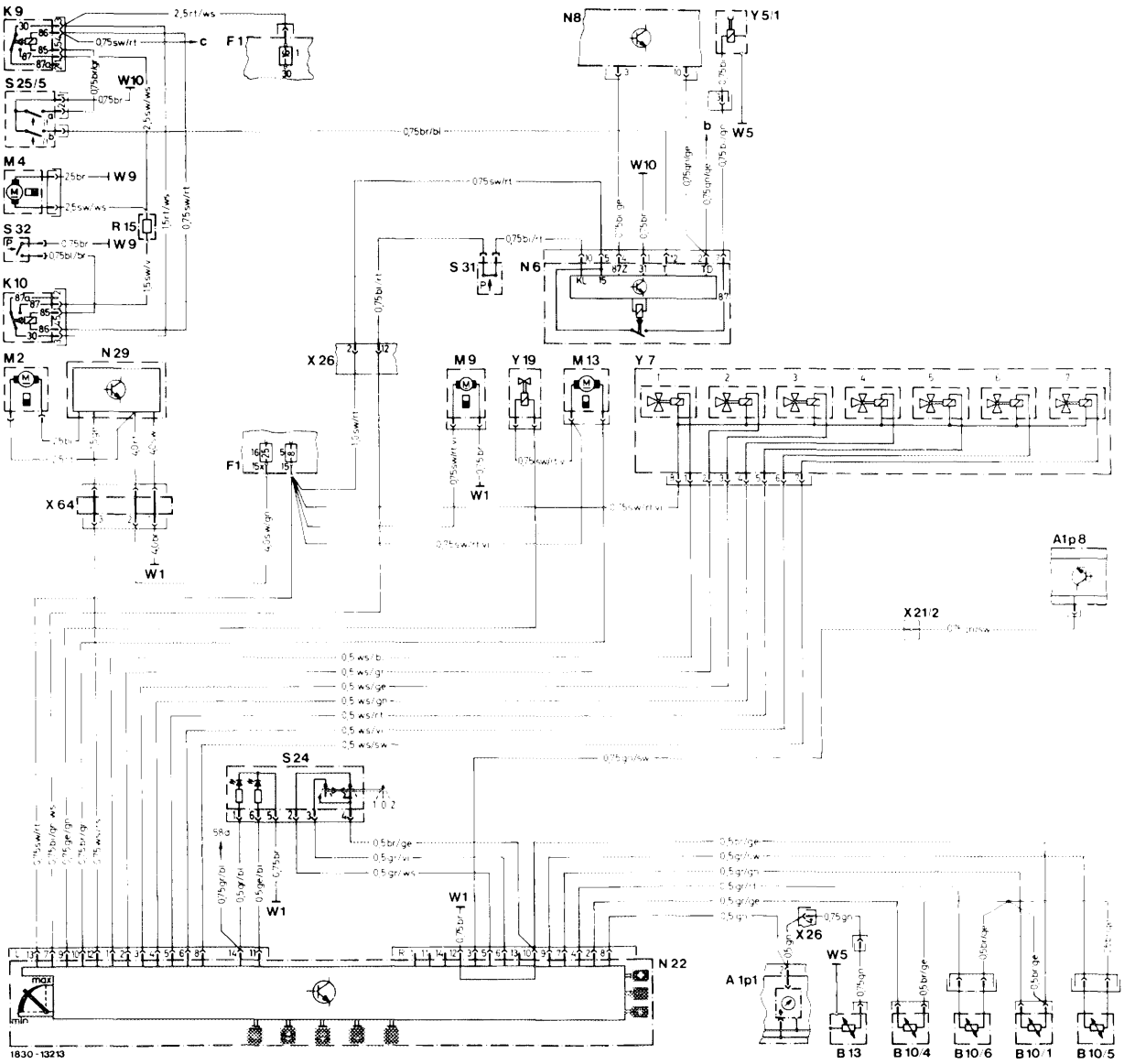

Fig. 83/25 Wiring diagram, automatic climate control, model 126.0

A	1p1	Coolant temperature gauge
A	1p8	Electronic speedometer
B	10/1	Temperature sensor for heat exchanger
B	10/4	In-car temperature sensor
B	10/5	Outside temperature sensor
B	10/6	Evaporator temperature sensor
B	13	Temperature sensor for coolant gauge
F	1	Fuse and relay box
K	9	Relay, auxiliary fan
K	10	Relay, auxiliary fan pre-resistor
M	2	Blower motor
M	4	Auxiliary fan
M	9	Aspirator blower for in-car temperature sensor
M	13	Auxiliary coolant pump
N	6	Control unit, compressor cut-out
N	8	Control unit for idle speed rpm
N	22	Pushbutton switch unit
N	29	Electronic blower control unit
R	15	Pre-resistor, auxiliary fan
S	24	Switch for fresh/recirculating air
S	25/5	Coolant temperature switch 105/115°C a 105°C for auxiliary fan b 115°C for compressor (overheat cut-out)
S	31	Refrigerant low pressure switch open 2.0 bar/closed 2.6 bar
S	32	Refrigerant high pressure switch open 15 bar/closed 20 bar
W	1	Main ground (behind instrument cluster)
W	3	Ground, wheelhousing front left
W	5	Ground, engine
W	9	Ground, front left (at headlamp)
W	10	Ground, battery
X	21/2	Connector for electronic speedomater
X	26	Plug connection, engine harness
X	64	Plug connection, blower control unit to interior harness
Y	5/1	Electromagnetic clutch for A/C compressor
Y	7	Switchover valve unit, 7 connections 1 Fresh/recirculating air flap, short stroke 2 Fresh/recirculating air flap, long stroke 3 Legroom flaps 4 Center air flap 5 Defroster flaps, long stroke 6 Diverter air flap 7 Defroster flaps, short stroke
Y	19	Monovalve
b		To fuel pump relay connector, socket 10
c		To relay for air pump, terminal 30
d		To control unit for cruise control, socket 11

Wiring diagram, automatic climate control

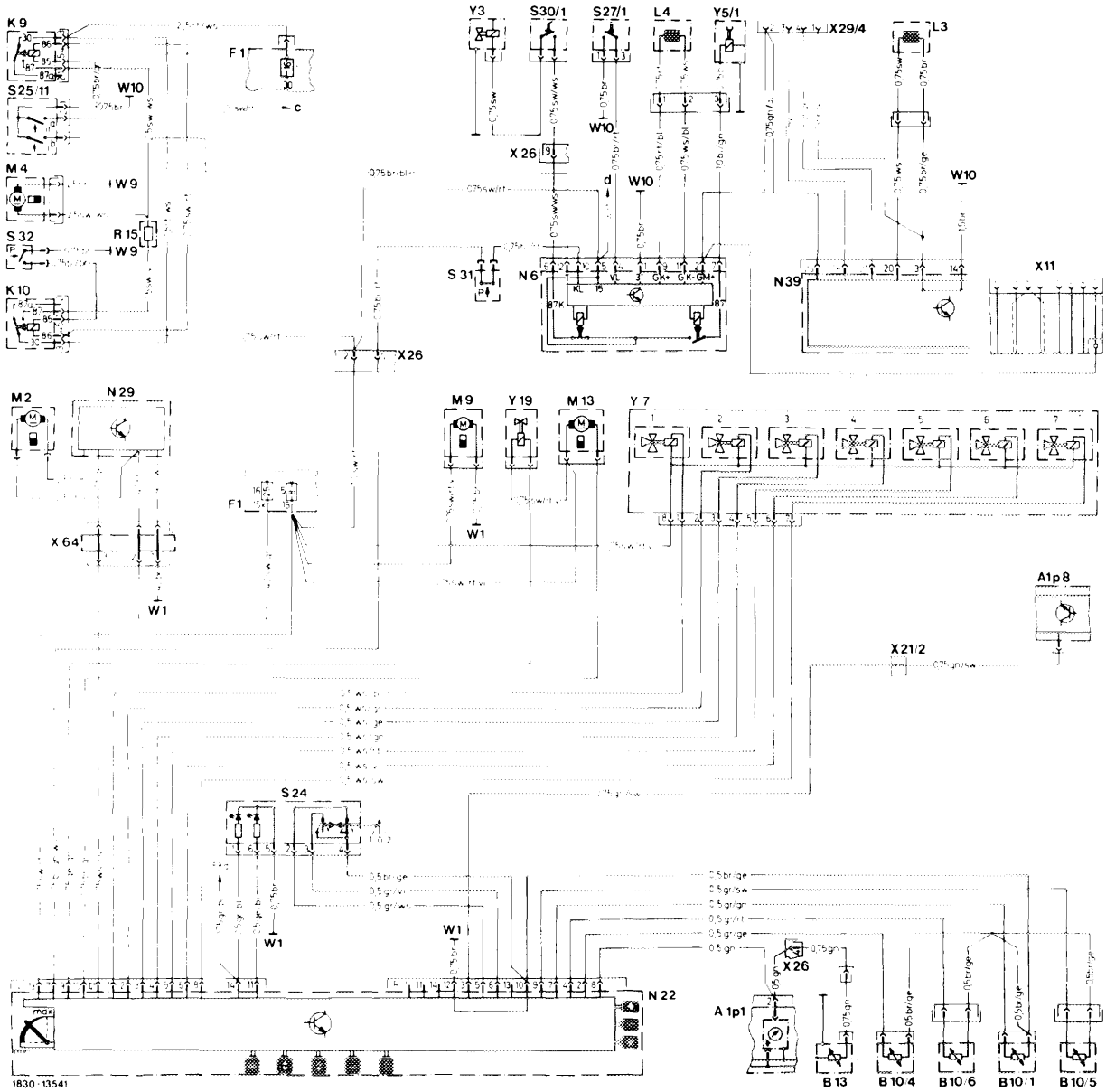

Fig. 83/25a Wiring diagram, automatic climate control, model 126.1

A1p1 Coolant temperature gauge
A1p8 Electronic speedometer
B10/1 Temperature sensor, heat exchanger
B10/4 In-car temperature sensor
B10/5 Outside air temperature sensor
B10/6 Evaporator temperature sensor
B13 Coolant temperature sensor
F1 Fuse and relay box
K9 Auxiliary fan relay
K10 Auxiliary fan pre-resistor relay
L3 Rpm sensor, flywheel ring gear
L4 Rpm sensor, A/C compressor
M2 Blower motor
M4 Auxiliary fan
M9 Aspirator blower, in-car temperature sensor
M13 Auxiliary coolant pump
N6 Control unit, A/C compressor cut-out
N22 Pushbutton switch unit
N29 Electronic blower control
N39 Control unit, Electronic Diesel System (EDS)
R15 Pre-resistor, auxiliary fan
S24 Fresh/recirculating air switch
S25/11 Temperature switch 105/120 °C
a 105 °C, auxiliary fan
b 120 °C, A/C compressor cut-out
S27/1 Microswitch, A/C compressor cut-out
S30/1 Kickdown switch
S31 Low pressure switch, A/C compressor cut-out
Off 2.0 bar/On 2.6 bar
S32 High pressure switch, auxiliary fan
Off 15 bar/On 20 bar
W1 Main ground (behind instrument cluster)
W9 Ground, front left (near headlamp)
W10 Ground, battery
X11 Test cable with diagnostic socket
X21/2 Connector for electronic speedometer
X26 Plug connection, engine harness (12-pin)
X29/4 Test plug (EDS)
X64 Plug connection, blower control/ in-car harness
Y3 Switchover valve, automatic transmission
Y5/1 Electromagnetic A/C compressor clutch
Y7 Switchover valve unit, 7 connections
1 Fresh/recirculating air flap, short stroke
2 Fresh/recirculating air flap, long stroke
3 Legroom flaps
4 Center outlet flap
5 Defroster nozzle flaps, long stroke
6 Diverter flap
7 Defroster nozzle flaps, short stroke
Y19 Monovalve
c To vacuum transducer switchover valve part 2 (auto. transmission)
d To overload protection switchover valve port 2

Vacuum function diagram

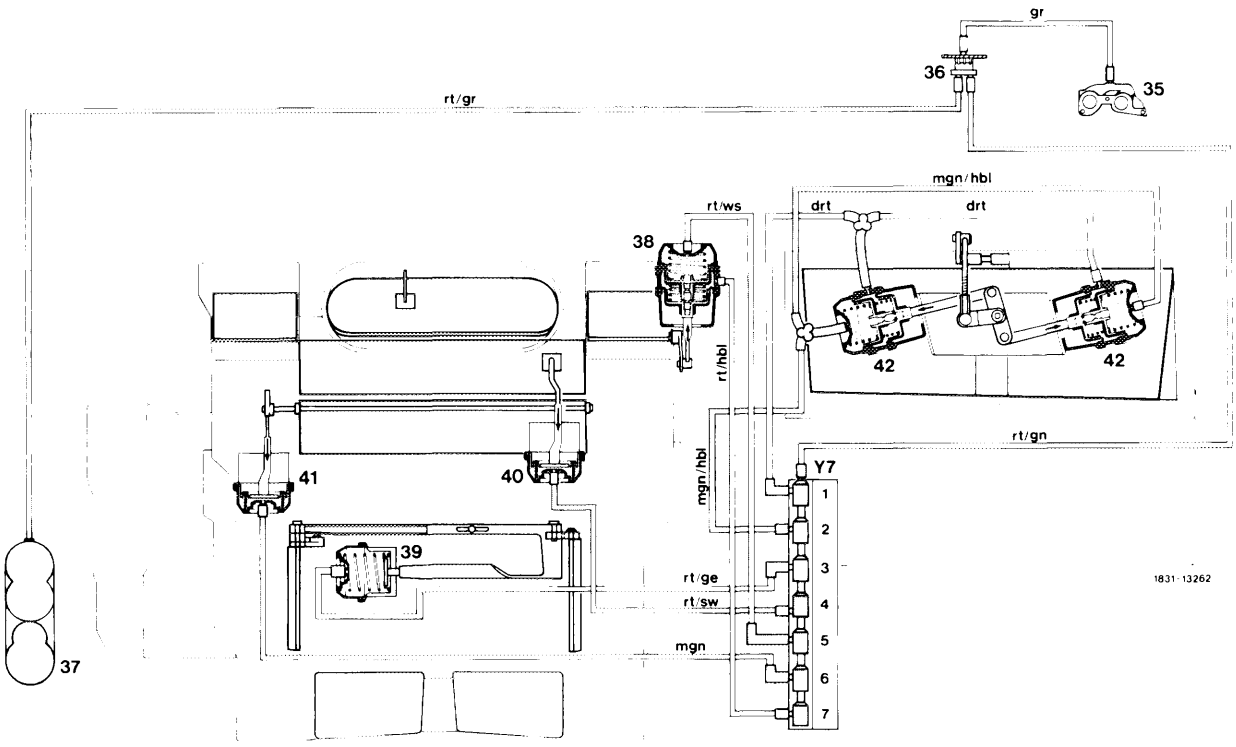

Fig. 83/26 Vacuum diagram, automatic climate control model 126, Function selection
Cooling mode with 80% recirculated air.

Y 7 Switchover valve unit
- 1 Switchover valve for fresh/recirculating air flap (short stroke)
- 2 Switchover valve for fresh/recirculating air flap (long stroke)
- 3 Switchover valve for legroom flaps
- 4 Switchover valve for center air flap
- 5 Switchover valve for defroster air flaps (long stroke)
- 6 Switchover valve for diverter flap
- 7 Switchover valve for defroster flaps (short stroke)

35 Vacuum connection on intake manifold (diesel to power brake vacuum source)
36 Check valve
37 Vacuum supply tank (except on diesel models)
38 Vacuum element for defroster flaps (flaps "closed")
39 Vacuum element for legroom flaps (flaps "closed")
40 Vacuum element for center air flap (flap "open")
41 Vacuum element for diverter flap (flap "open")
42 Vacuum element for fresh/recirculating air flap (flap in position 80 % recirculated air)

hbl = light blue
drt = dark red
ge = yellow
mgn = medium green
gr = grey
rt = red
ws = white
sw = black

Automatic climate control

Location of components

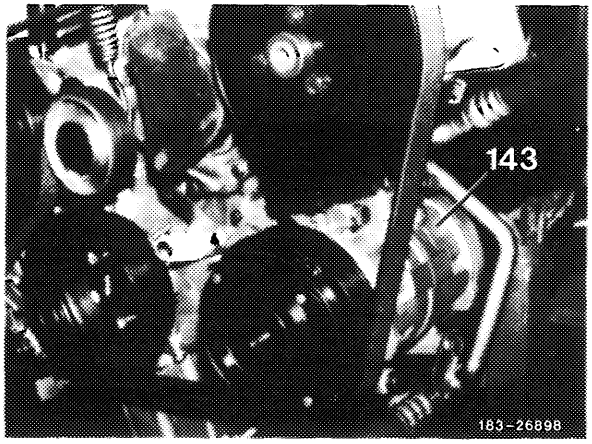

Fig. 83/1

143 A/C compressor

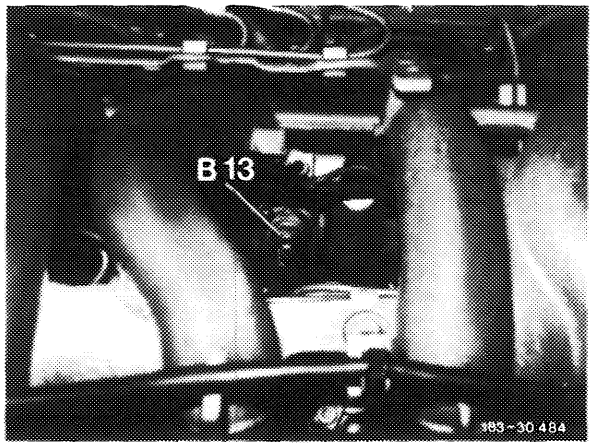

Fig. 83/3

B 13 Coolant temperature gauge sensor

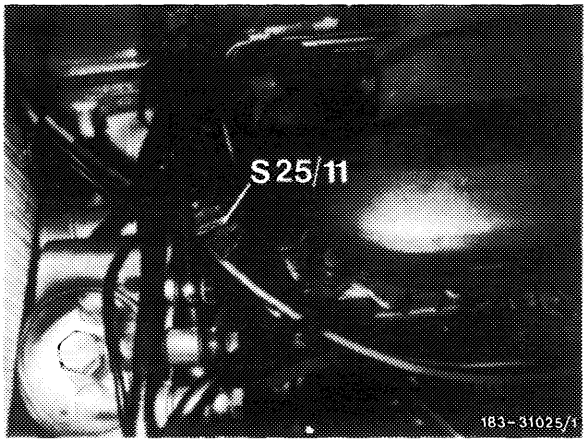

Fig. 83/2

S25/11 Coolant temperature switch 105/120°C
105°C for auxiliary fan high speed
120°C for overheating cut-out

Wiring diagram, automatic climate control

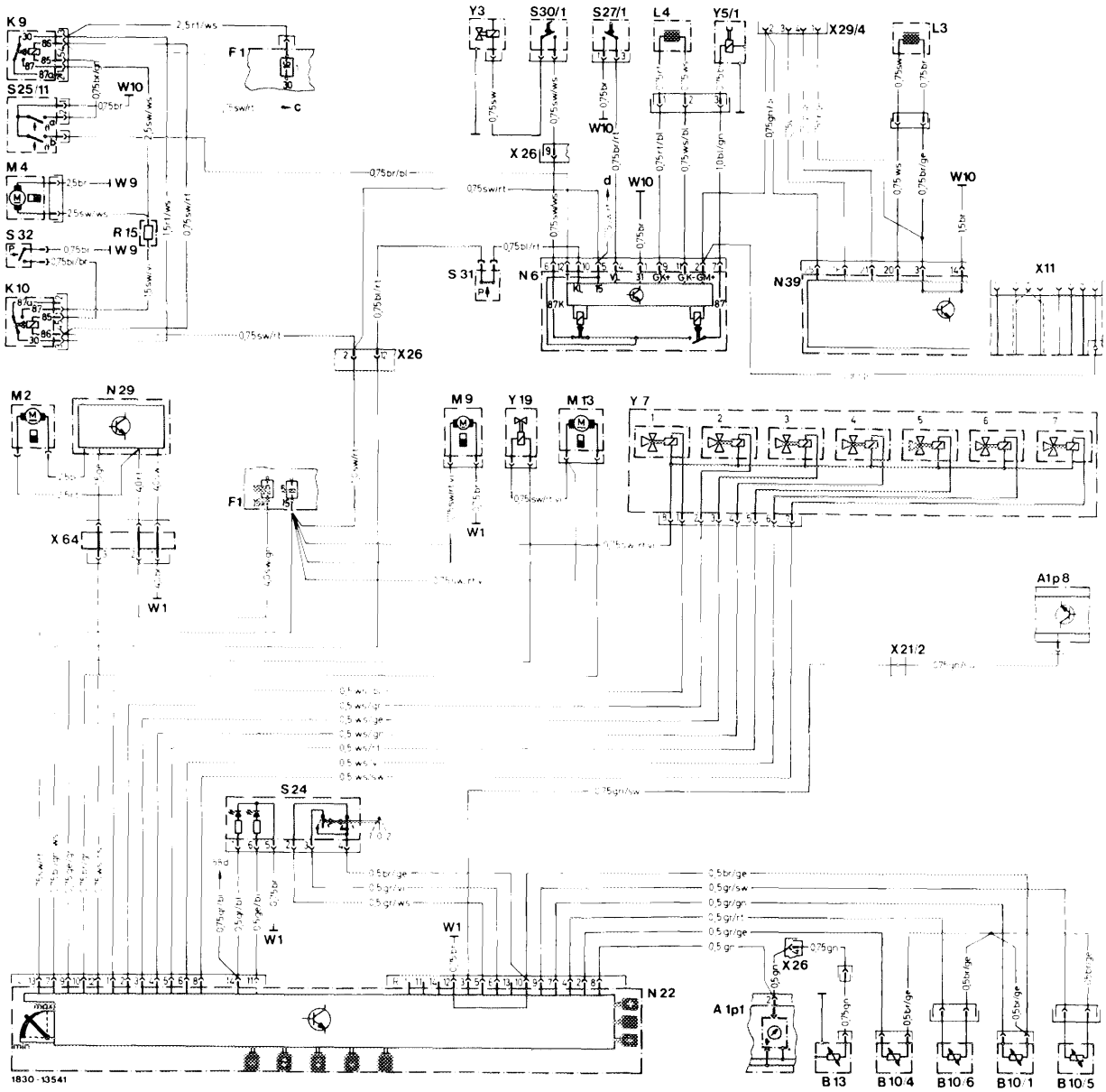

Fig. 83/4 Wiring diagram, automatic climate control

A1p1 Coolant temperature gauge
A1p8 Electronic speedometer
B10/1 Temperature sensor heat exchanger
B10/4 In-car temperature sensor
B10/5 Outside air temperature sensor
B10/6 Evaporator temperature sensor
B13 Coolant temperature sensor
F1 Fuse and relay box
K9 Auxiliary fan relay
K10 Auxiliary fan pre-resistor relay
L3 Rpm sensor, flywheel ring gear
L4 Rpm sensor, A/C compressor
M2 Blower motor
M4 Auxiliary fan
M9 Aspirator blower, in-car temperature sensor
M13 Auxiliary coolant pump
N6 Control unit, A/C compressor cut-out
N22 Pushbutton switch unit
N29 Electronic blower control
N39 Control unit, Electronic Diesel System (EDS)
R15 Pre-resistor, auxiliary fan
S24 Fresh/recirculating air switch
S25/11 Temperature switch 105/120°C
a 105°C, auxiliary fan
b 120°C, A/C compressor cut-out
S27/1 Microswitch, A/C compressor cut-out
S30/1 Kickdown switch
S31 Low pressure switch, A/C compressor cut-out
Off 2.0 bar/On 2.6 bar
S32 High pressure switch, auxiliary fan
Off 15 bar/On 20 bar
W1 Main ground (behind instrument cluster)
W9 Ground, front left (near headlamp)
W10 Ground, battery
X11 Test cable with diagnostic socket
X21/2 Connector for electronic speedometer
X26 Plug connection, engine harness (12-pin)
X29/4 Test plug (EDS)
X64 Plug connection, blower control/ in-car harness
Y3 Switchover valve, automatic transmission
Y5/1 Electromagnetic A/C compressor clutch
Y7 Switchover valve unit, 7 connections
1 Fresh air/recirculating flap, short stroke
2 Fresh air/recirculating flap, long stroke
3 Legroom flaps
4 Center outlet flap
5 Defroster nozzle flaps, long stroke
6 Diverter flap
7 Defroster nozzle flaps, short stroke
Y19 Monovalve
c To vacuum transducer switchover valve terminal 2 (auto. transmission)
d To overload protection switchover valve terminal 2

Testing compressor protective cutout

A. Testing compressor clutch (does not engage)

Note:
Do not begin testing below unless you have verified that the compressor control is working properly as follows:

- Switch ignition on, depress , and set temperature wheel to "MIN" (fully to stop).
- Connect voltmeter (+) to battery and (–) to both terminals (one after the other) of refrigerant low pressure switch (S31) and check if battery voltage is present.

  If neither terminal indicates a ground connection, check the signal to the compressor (test step 21 using socket box tester).

  If only one terminal indicates ground, pressure check the system to determine the refrigerant charge, with more than 3 bar available replace the refrigerant low pressure switch (S31). With less than 2 bar available, recharge the system, check for system leaks.

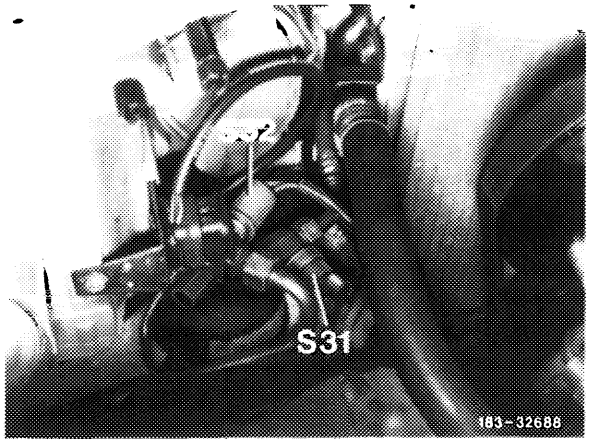

Fig. 83/5

Testing voltage supply for A/C compressor control unit (N6)

Pull control unit (N6) from 12-pole connector. Connect positive lead of multimeter to pole socket 5 and negative lead to pole socket 1 of 12-pole connector. Switch steering lock to "2".

Nominal value: battery voltage

OK	Not OK

Test wiring according to wiring diagram (refer to Fig. 83/4) and repair, if required.

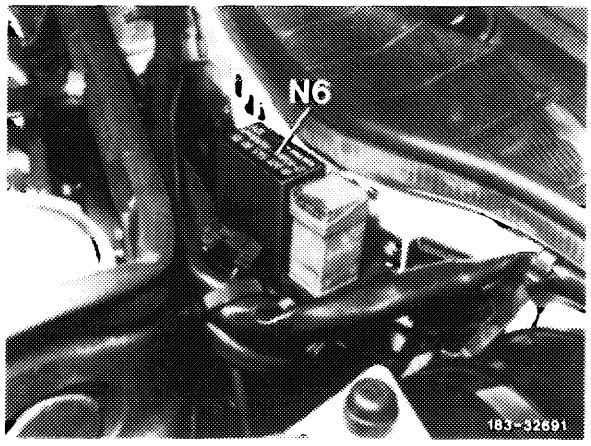

Fig. 83/6

Testing control voltage for A/C compressor from refrigerant low pressure switch (S31) to control unit, A/C compressor cut-out (N6).

Connect positive lead of multimeter to pole socket 5 and negative lead to pin socket 10 on 12-pole connector.

Nominal value: battery voltage

OK	Not OK

Test wiring from:

a pole socket 10 to refrigerant low pressure switch (S31)

b refrigerant low pressure switch (S31) to pole socket 7 of push button control assembly, left side.

Repair wiring or connections if required.

Testing A/C compressor clutch and wiring

Bridge pole sockets 5 and 7 on 12-pole connector. Start engine briefly and check if A/C compressor is running (clutch engaging).

OK	Not OK

Test A/C compressor clutch and replace, if required, or repair wiring to A/C compressor.

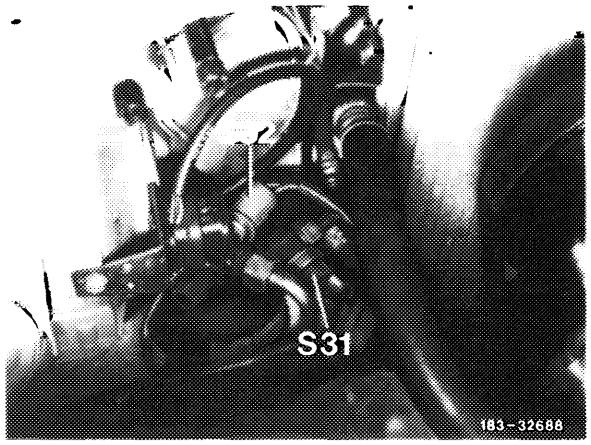

Fig. 83/7

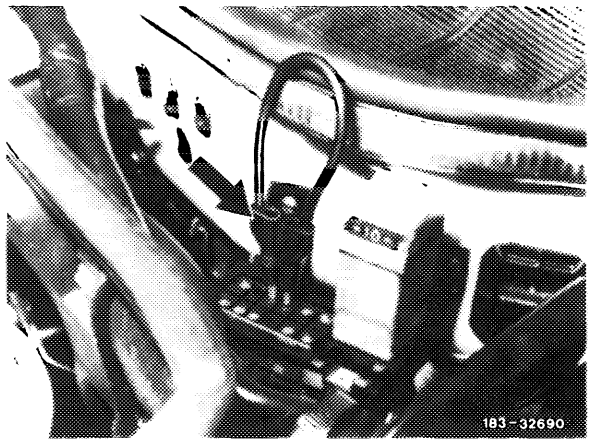

Fig. 83/8

Testing rpm sensor for A/C compressor (L4)

Connect multimeter to pole sockets 9 and 11 of 12-pole connector and set meter to V ~. Pole sockets 5 and 7 of 12-pin connector remain bridged.

Run engine at idle speed (approx. 750 rpm).

Nominal value: min. 0.3 V~

OK	Not OK

Stop engine and test resistance of A/C compressor speed sensor (L4) on pole sockets 9 and 11.
Nominal value: 530 to 650 Ω, replace A/C compressor speed sensor, if required.

Testing rpm signal from EDS control unit (N39)

Connect multimeter to pole sockets 1 and 2 of 12-pole connector and set multimeter to V ~. Run engine at idle speed (approx. 750 rpm).

Nominal value: greater than 2.8 V ~

OK	Not OK

Eliminate interruption to EDS control unit (N39). Testing rpm sensor (07.1).
Replace EDS control unit.

Replace A/C compressor control unit (N6)

Check air conditioning system for function.

End of test.

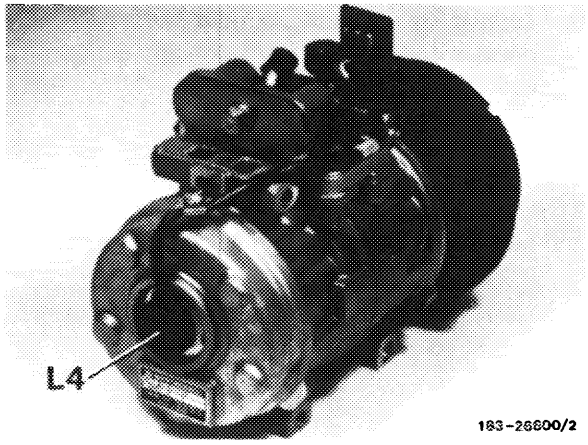

Fig. 83/9

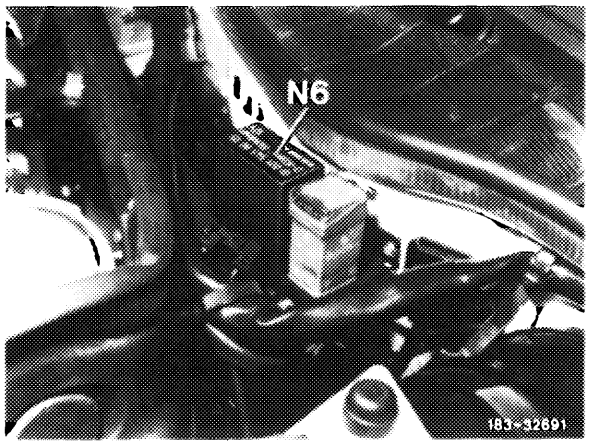

Fig. 83/10

B. Testing the protective cut-out of the A/C compressor clutch via the A/C compressor control unit (N6)

1 Run engine at idle speed.

2 Push ❄ button, set temperature control to "MIN" and switch on the fresh/recirculation air switch.

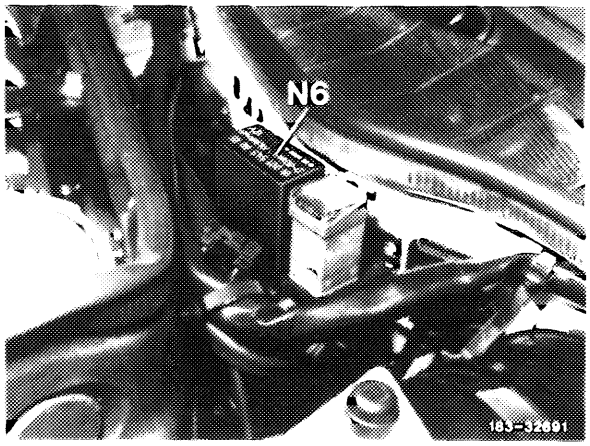

Fig. 83/11

3 Spray a jet of water between V-belt and A/C compressor clutch pulley (to cause slippage) while accelerating intermittently until the clutch disengages. If the clutch does not disengage, replace A/C compressor control unit (N6).

Note:
After stopping and restarting the engine, the A/C compressor clutch will again engage via the control unit (N6).

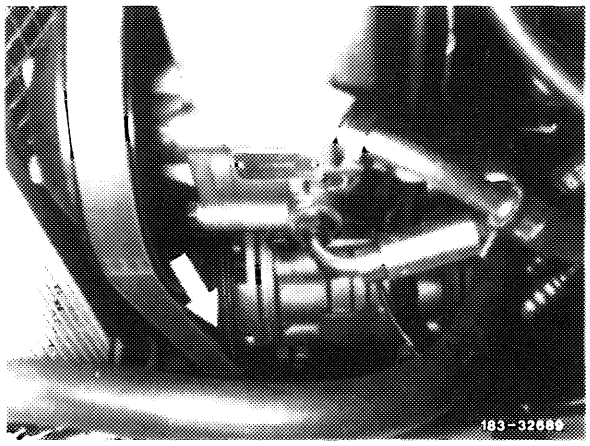

Fig. 83/12

4 Start engine again, pull 1-pole connector from coolant temperature switch 105/120°C (S25/11) and connect to ground.

The A/C compressor must be switched off immediately. If required, eliminate line interruption or replace control unit (N6).

Location of coolant temperature switch 105/120°C (S25/11)

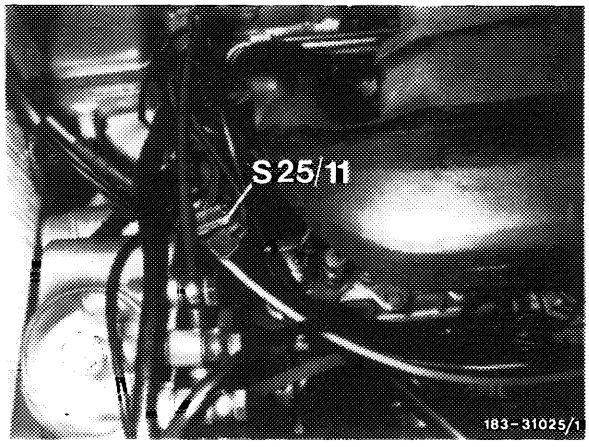

Fig. 83/13

5 Check if the A/C compressor clutch is disengaged by A/C compressor cut-out microswitch (S27/1), as follows:
Run engine at idle. Watch A/C compressor clutch and briefly apply full throttle. The clutch should be disengaged up to 2150 rpm and then engage again. If the clutch is not disengaged, replace A/C compressor cut-out microswitch (S27/1) or A/C compressor control unit (N6).

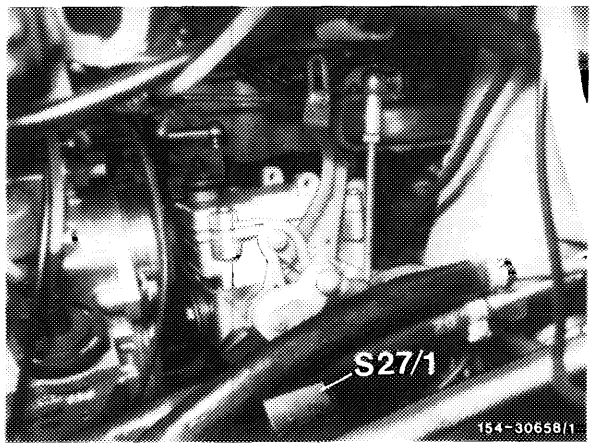

Fig. 83/14

Technical data

Filling capacity	1.1 kg refrigerant R 12
A/C compressor	Nippondenso 10 P 15, swash-plate, 10 cylinders
Oil filling capacity of A/C compressor, new	120 cc
Blower motor (max. speed)	approx. 28 A at 13 V
Auxiliary fan (max. speed)	approx. 17.5 A at 13 V
Auxiliary coolant pump	approx. 1.3 A at 13 V
High pressure switch for auxiliary fan	approx. 20 bar On and at approx. 15 bar Off
Electromagnetic clutch for A/C compressor at 13 V	cold 4.2 A warm 3.75 A

Sensor	Resistance in kΩ at ambient temperature °C						
	+15°C	+20°C	+25°C	+30°C	+35°C	+40°C	+45°C
In-car temperature sensor, temperature sensor for heat exchanger, and evaporator temperature sensor	15.2 to 17.2	11.5 to 13.5	9.5 to 10.5	7.5 to 8.5	6.0 to 7.0	4.5 to 5.5	3.5 to 4.5
Outside air temperature sensor	4.0 to 4.6	3.1 to 3.9	2.4 to 3.0	1.9 to 2.3	1.6 to 2.0	1.4 to 1.6	1.1 to 1.3

The resistance of the A/C compressor speed sensor is 530–650 Ω

Control of air flaps

Operating condition of system		Temperature on temperature sensor for heat exchanger starting at approx. 0°C for a period of at least 15 s	Positions of air flaps		
			Defroster nozzles[1]	Center nozzle	Legroom nozzles
	Heating	40°C	leak air	closed	open
		31°C	opens	closed	open
		29°C	open	opens	open
Cooling direction	Transition zone	26°C	open	open	closes
		15°C	closes (leak air)	open	closed
		10°C	closes (closed)	open	closed
▼	Cooling	8°C	closed	open	closed
		15°C	opens (leak air)	open	closed
Heating direction	Transition zone	34°C	leak air	open	opens
		37°C	leak air	closes	open
▼	Heating	40°C	leak air	closed	open

[1]After switching the ignition on or starting the engine, the defroster flaps remain fully open for approx. 30 seconds, thereby eliminating most windshield fogging.