

# Air Conditioning, 240

## Repairs and Maintenance

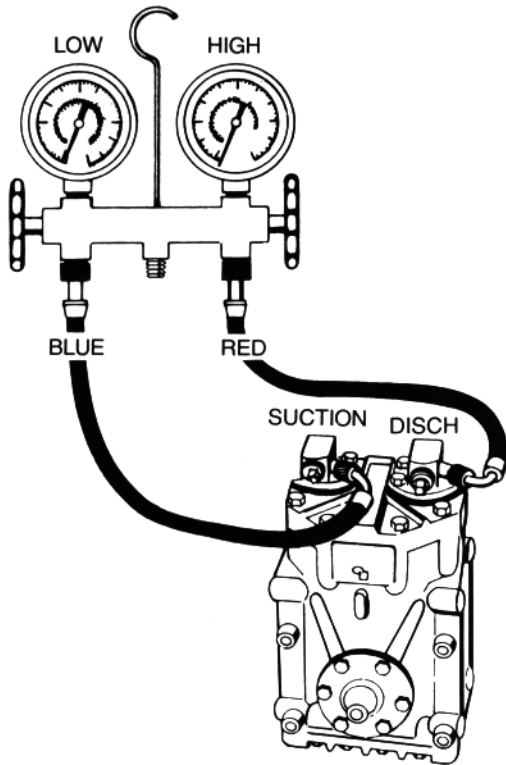
Section 8	Group 87
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Air Conditioning 240
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# VOLVO

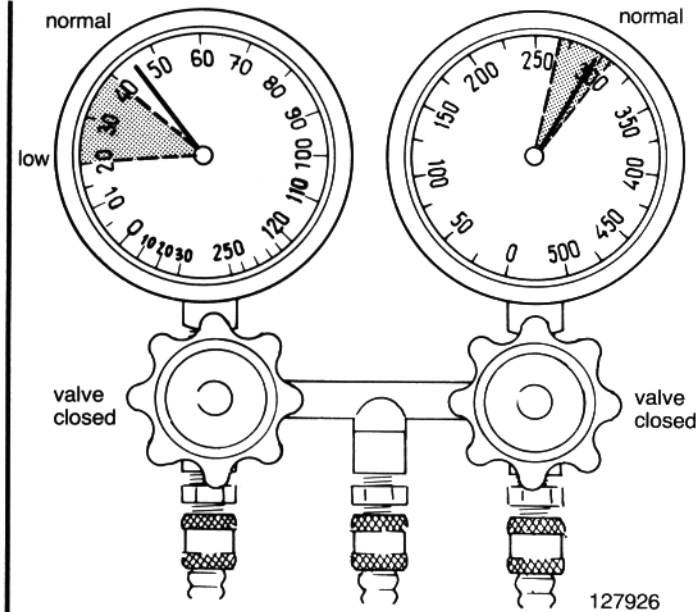
# Diagnosis

## Abnormal pressure gauge readings



Conditions and pressures according to performance (function) test, see Specifications and Operations X1-X6.

Connection of gauges

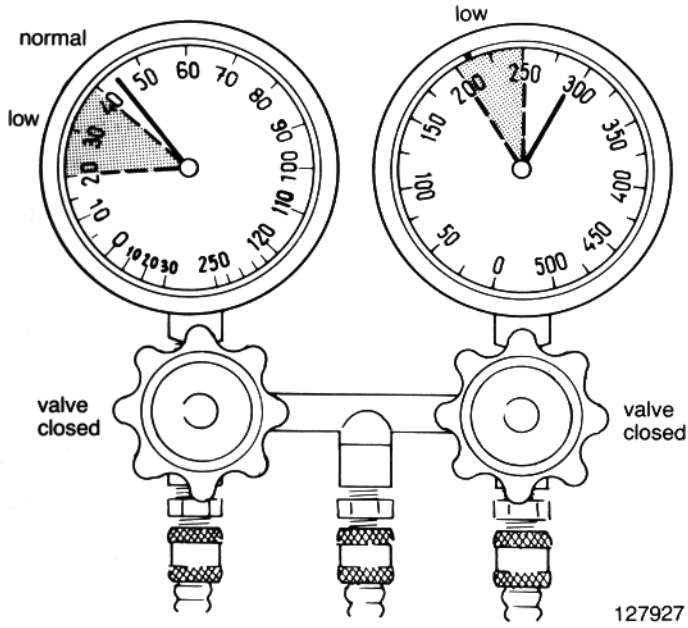


Suction pressure:  
low (20–40)

Head pressure:  
normal

At ambient temperature 104°F (40°C)  
Higher or lower ambient temperatures will cause associated higher or lower readings.

Reason	Remedy
1. Expansion valve clogged or locked in closed position.	Remove restriction if possible, otherwise replace valve.
2. Sensing element of expansion valve defective, fluid has escaped.	Replace expansion valve.
3. Moisture in system, ice in expansion valve.	Discharge system. Replace receiver-drier insert. Vacuum pump and re-charge.



Suction pressure:  
low (20–40)

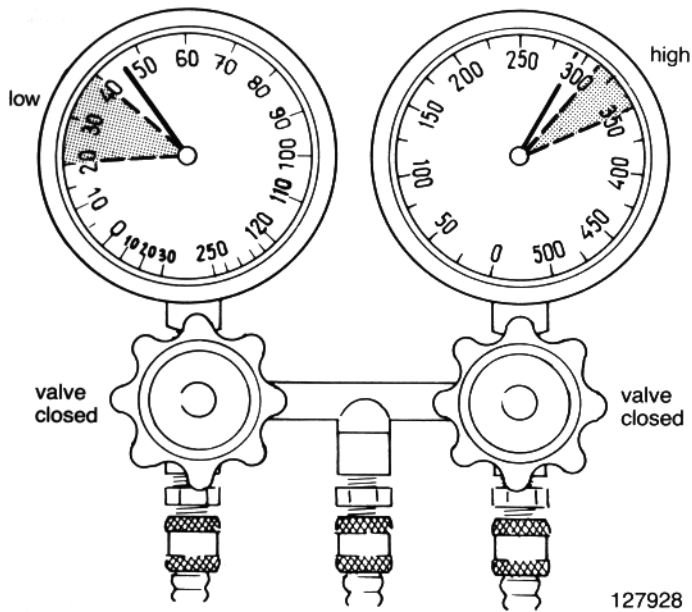
Head pressure:  
low (200–250)

Reason

Remedy

4. Insufficient refrigerant charge.

Discharge system. Vacuum pump and re-charge.



Suction pressure:  
low (20–40)

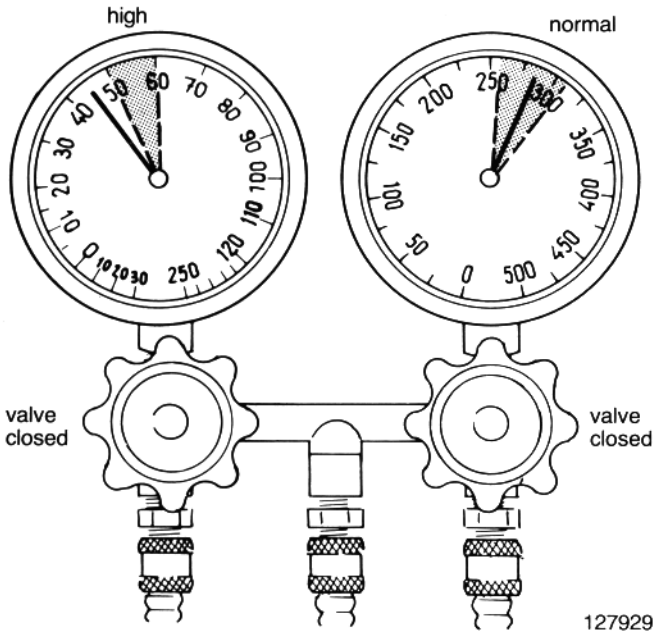
Head pressure:  
high (310–350)

Reason

Remedy

5. Receiver-drier or connecting pipes clogged.

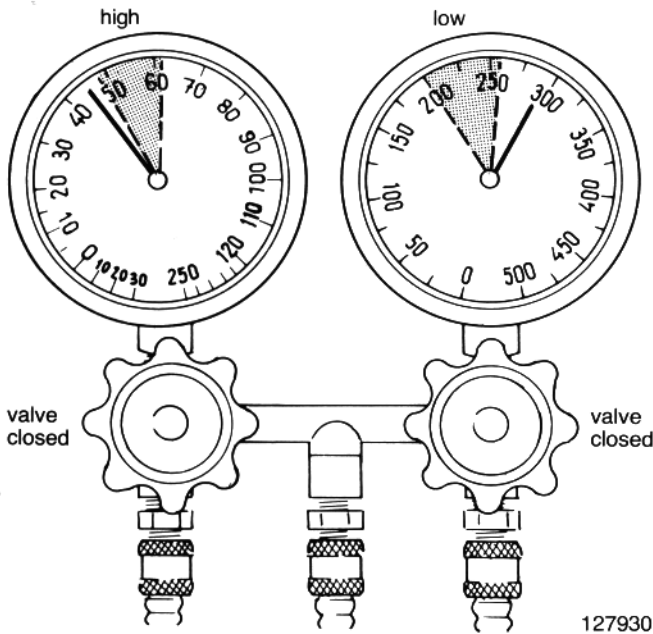
Replace receiver-drier insert.  
Remove restrictions.



Suction pressure:  
high (50–60)

Head pressure:  
normal

Reason	Remedy
6. Expansion valve locked open.  7. Sensing element of expansion valve making improper contact to evaporator outlet pipe, or improperly insulated.	Replace expansion valve.  Attach sensing element properly. Insulate sensing element as necessary.

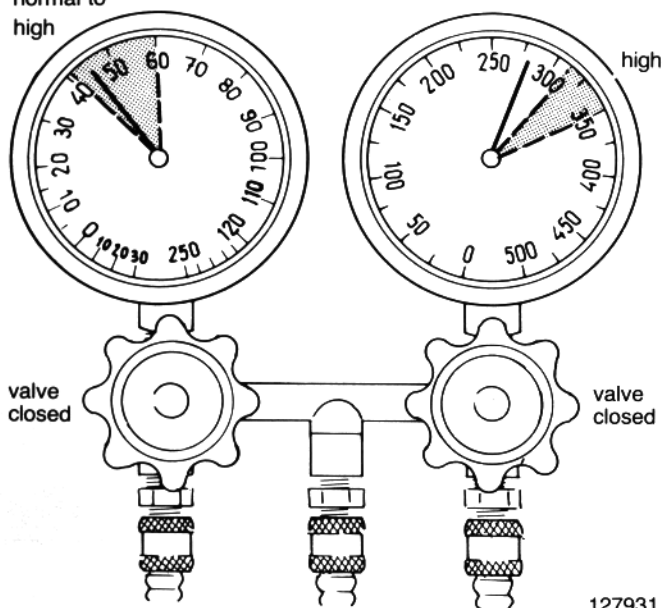


Suction pressure:  
high (48–62)

Head pressure:  
low (200–260)

Reason	Remedy
8. Compressor defective.	Repair or replace compressor. Replace receiver-drier insert.

normal to high



Suction pressure:  
normal to high (40–60)

Head pressure:  
high (310–350)

127931

Reason

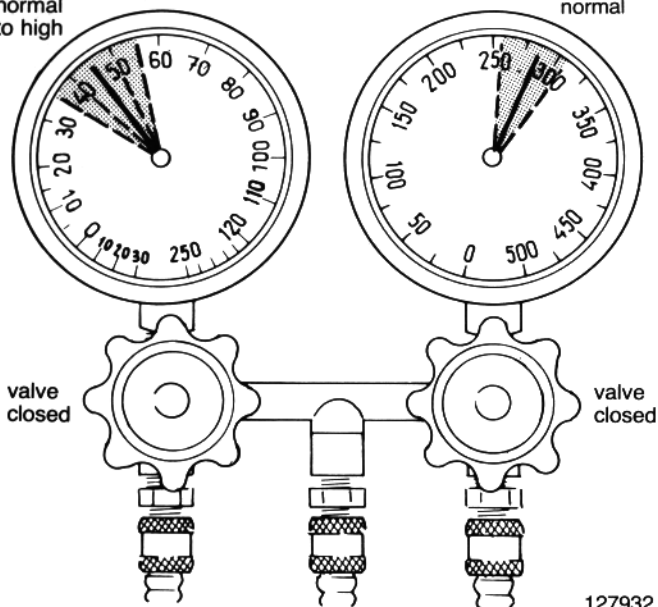
Remedy

- 9. System over-charged.
- 10. Insufficient cooling of condenser.
- 11. Restriction in refrigerant high pressure side.
- 12. Engine radiator overheats.
- 13. Air in system. Insufficient vacuum pumping and refrigerant charge.

- Discharge system. Vacuum pump and re-charge.
- Remove restrictions. Check engine cooling fan and drive belts.
- Remove restriction.
- Improve engine cooling.
- Discharge system. Replace receiver-drier insert. Vacuum pump and charge system as prescribed.

normal to high

normal



Suction pressure:  
normal or fluctuating

Head pressure:  
normal

127932

Reason

Remedy

- 14. Moisture in system creates ice restrictions now and then. Cooling capacity satisfactory at medium ambient temperature conditions but insufficient, or fails, at high ambient temperatures.

- Discharge system. Replace receiver-drier insert. Vacuum pump and charge system as prescribed.

# Customer complaints

## Trouble: system produces no cooling

<p style="text-align: center;"><b>1</b></p> <p><b>Fuse for compressor clutch or blower motor blown</b> Indication: Electrical components will not operate. Remedy: Replace fuse.</p>	<p style="text-align: center;"><b>5</b></p> <p><b>Evaporator thermostat does not switch in compressor clutch</b> Indication: Compressor clutch inoperative. Remedy: Replace thermostat.</p>
<p style="text-align: center;"><b>2</b></p> <p><b>Broken or disconnected electrical wire</b> Indication: Electrical components will not operate. Remedy: Check all terminals for loose connections. Check wiring for hidden breaks.</p>	<p style="text-align: center;"><b>6</b></p> <p><b>Compressor drive belt loose or broken</b> Indication: Visual inspection. Remedy: Tighten to specifications or replace.</p>
<p style="text-align: center;"><b>3</b></p> <p><b>Broken or disconnected ground wire</b> Indication: Electrical components will not operate. Remedy: Check current flow to clutch or solenoid. Replace if inoperative.</p>	<p style="text-align: center;"><b>7</b></p> <p><b>Compressor partially or completely frozen</b> Indication: Compressor pulley slips on belt or will not turn when clutch is engaged. Remedy: Repair or replace compressor.</p>
<p style="text-align: center;"><b>4</b></p> <p><b>Clutch coil burned out or disconnected</b> Indication: Compressor clutch inoperative. Remedy: Check current flow to clutch. Replace if inoperative.</p>	<p style="text-align: center;"><b>8</b></p> <p><b>Compressor reed valves inoperative</b> Indication: Only slight variation on both gauge readings at any engine speed. Remedy: Repair or replace reed valves or compressor.</p>

<p style="text-align: center;"><b>9</b></p> <p><b>Expansion valve stuck in open position</b>  <b>Indication:</b>  Head pressure normal, suction pressure high, evaporator flooding.  <b>Remedy:</b>  Replace expansion valve</p>	<p style="text-align: center;"><b>13</b></p> <p><b>Hose, pipe, receiver-drier, expansion valve, evaporator or condenser clogged or plugged</b>  <b>Indication:</b>  High gauge normal or may read high, low gauge usually shows vacuum or very low pressure reading. Frosting usually occurs at point of blockage.</p>
<p style="text-align: center;"><b>10</b></p> <p><b>Broken refrigerant line</b>  <b>Indication:</b>  Complete loss of refrigerant  <b>Remedy:</b>  Examine all lines for evidence of breakage by external stress or rubbing wear.</p>	<p style="text-align: center;"><b>14</b></p> <p><b>No refrigerant</b>  <b>Indication:</b>  No pressure on high and low gauges.  <b>Remedy:</b>  Discharge system, apply static charge and leak test system.</p>
<p style="text-align: center;"><b>11</b></p> <p><b>Leak in system</b>  <b>Indication:</b>  No pressure on high and low gauges (applies to any system having complete loss of refrigerant).  <b>Remedy:</b>  Discharge system, apply static charge and leak test system. Repair leak as necessary.</p>	<p style="text-align: center;"><b>15</b></p> <p><b>Blower motor defective or disconnected</b>  <b>Indication:</b>  Blower motor inoperative.  <b>Remedy:</b>  Check current flow to blower motor. Repair or replace if inoperative.</p>
<p style="text-align: center;"><b>12</b></p> <p><b>Compressor shaft seal leaking</b>  <b>Indication:</b>  Clutch and front of compressor oily: system low or out of refrigerant.  <b>Remedy:</b>  Replace compressor shaft seal.</p>	<p style="text-align: center;"><b>16</b></p> <p><b>Vehicle heater control partly open in position COOL</b>  <b>Indication:</b>  Heater hoses are warm and the air passing through heated up.  <b>Remedy:</b>  Adjust heater control. Replace if necessary.</p>



## Trouble: system will not produce sufficient cooling

<p style="text-align: center;"><b>1</b></p> <p><b>Blower motor sluggish in operation</b></p> <p>Indication: Small air discharge from outlets. Blower motor possibly noisy.</p> <p>Remedy: Remove blower motor for service or replacement.</p>	<p style="text-align: center;"><b>5</b></p> <p><b>Evaporator air passage obstructed</b></p> <p>Indication: Fins clogged with lint, dust, or coated with cigarette tars.</p> <p>Remedy: Loosen, pull down and clean with compressed air. Use cleaning agent to remove cigarette tars.</p> <p>Caution: Protect floor mats.</p>
<p style="text-align: center;"><b>2</b></p> <p><b>Air ducts clogged</b></p> <p>Indication: Small or no air discharge from outlets, blower operates at high speed but air displacement very small.</p> <p>Remedy: Remove obstructions, service or replace as necessary.</p>	<p style="text-align: center;"><b>6</b></p> <p><b>Air supply through fresh air intake</b></p> <p>Indication: Insufficient cooling at highway speeds.</p> <p>Remedy: Engage control REC (push in).</p> <p>NOTE: Instruct owner on importance to use REC when air conditioning unit is in operation.</p>
<p style="text-align: center;"><b>3</b></p> <p><b>Air intake in front of windshield clogged</b></p> <p>Indication: System operates normally with control in position REC (recirculation, pushed in).</p> <p>Remedy: Remove obstructions as necessary.</p>	<p style="text-align: center;"><b>7</b></p> <p><b>Compressor clutch or drive belts slipping</b></p> <p>Indication: Visual inspection.</p> <p>Remedy: Service or replace clutch. Check drive belt tension.</p>
<p style="text-align: center;"><b>4</b></p> <p><b>Insufficient air circulation over condenser coils</b></p> <p>Indication: Insufficient cooling at discharge outlets; excessive high pressure gauge reading; engine temperature usually excessive.</p> <p>Remedy: Clean engine radiator and condenser. Check fan belt tension. Service as necessary.</p>	

<p style="text-align: center;"><b>8</b></p> <p><b>Evaporator thermostat defective or adjusted too high</b></p> <p>Indication: Low gauge reading high, clutch cycles at too high a reading.</p> <p>Remedy: Adjust or replace thermostat. Relocate capillary.</p>	<p style="text-align: center;"><b>12</b></p> <p><b>Excessive moisture in system</b></p> <p>Indication: Excessive head pressure reading. Cooling capacity usually normal during the first few minutes of operation and then gradually decreasing.</p> <p>Remedy: Discharge system, replace receiver-drier insert (dehydrator), vacuum pump and recharge.</p>
<p style="text-align: center;"><b>9</b></p> <p><b>Insufficient refrigerant charge</b></p> <p>Indication: Bubbles in sight glass, high gauge readings excessively low.</p> <p>Remedy: Discharge system, vacuum pump and recharge.</p>	<p style="text-align: center;"><b>13</b></p> <p><b>Air in system</b></p> <p>Indication: Excessive head pressure, sight glass shows bubbles or is cloudy.</p> <p>Remedy: Discharge system, replace receiver-drier insert (dehydrator), vacuum pump and recharge.</p>
<p style="text-align: center;"><b>10</b></p> <p><b>Expansion valve thermal bulb or capillary has lost charge</b></p> <p>Indication: Excessively high or low gauge readings, may cool in excess or not enough.</p> <p>Remedy: Purge system, replace expansion valve.</p>	<p style="text-align: center;"><b>14</b></p> <p><b>Heating system coolant valve does not close completely in control position COOL</b></p> <p>Indication: Heater hoses are warm and air passing through is heated up.</p> <p>Remedy: Adjust control for heater valve.</p>
<p style="text-align: center;"><b>11</b></p> <p><b>Receiver-drier partly clogged</b></p> <p>Indication: High pressure gauge usually higher than normal, low pressure gauge lower than normal, receiver cold to touch and may frost.</p> <p>Remedy: Purge system, replace receiver-drier insert (dehydrator).</p>	

## Trouble: system cools intermittently (alternately good and bad)

<p style="text-align: center;"><b>1</b></p> <p><b>Evaporator outside icing</b></p> <p>Indication: Unit ices up intermittently. Evaporator thermostat setting may be too low or blower inoperative.</p> <p>Remedy: Adjust thermostat, service blower.</p>	<p style="text-align: center;"><b>5</b></p> <p><b>Compressor clutch slipping</b></p> <p>Indication: Visual inspection. Clutch operates until head pressure builds up (as seen on high pressure gauge) at which time clutch begins slipping. May or may not be noisy.</p> <p>Remedy: Slippage over a prolonged period will require that clutch be removed for service (may require readjustment for proper spacing).</p>
<p style="text-align: center;"><b>2</b></p> <p><b>Excessive moisture in system</b></p> <p>Indication: Excessive head pressure reading. Cooling capacity usually normal during the first few minutes of operation and then gradually decreasing.</p> <p>Remedy: Discharge system, replace receiver-drier insert (dehydrator), vacuum pump and recharge.</p>	<p style="text-align: center;"><b>6</b></p> <p><b>Expansion valve capillary improperly connected to evaporator outlet or improperly insulated in relation to ambient air temperature</b></p> <p>Indication: Low gauge reading high, clutch cycles at too high a reading.</p> <p>Remedy: Relocate and insulate capillary.</p>
<p style="text-align: center;"><b>3</b></p> <p><b>Blower motor operation incorrect</b></p> <p>Indication: Blower motor operation intermittent or sluggish.</p> <p>Remedy: Check current flow to blower motor, repair or replace blower motor as necessary.</p>	<p style="text-align: center;"><b>7</b></p> <p><b>Excessive difference between thermostat cut-in and cut-out temperatures</b></p> <p>Indication: Low side pressure may be low or excessively high and adjustments will not correct.</p> <p>Remedy: Replace thermostat.</p>
<p style="text-align: center;"><b>4</b></p> <p><b>Loose electrical connections on evaporator thermostat, wiring, compressor clutch or switch</b></p> <p>Indication: Compressor clutch disengages prematurely during operation.</p> <p>Remedy: Check connections, or remove clutch coil or solenoid for service or replacement.</p>	

## Trouble: system excessively noisy

<p style="text-align: center;">1</p> <p><b>Defective winding or improper connection in compressor clutch coil or wiring circuit</b></p> <p>Indication: Clutch cycles with short intervals.</p> <p>Remedy: Replace or repair as necessary.</p>	<p style="text-align: center;">5</p> <p><b>Blower fan noisy</b></p> <p>Indication: Blower motor noisy, blower fan touches cover.</p> <p>Remedy: Remove blower motor for service or replacement, correct as required.</p>
<p style="text-align: center;">2</p> <p><b>Drive belts loose or excessively worn</b></p> <p>Indication: Belts slip and are noisy.</p> <p>Remedy: Tighten or replace as required.</p>	<p style="text-align: center;">6</p> <p><b>Excessive charge in system</b></p> <p>Indication:</p> <ul style="list-style-type: none"> <li>- rumbling noise</li> <li>- vibration in high pressure line</li> <li>- thumping noise in compressor</li> <li>- excessive head pressure and suction pressure</li> <li>- hissing in evaporator valve</li> <li>- bubbles or cloudiness in sight glass.</li> </ul> <p>Compressor pressure insufficient if compressor reed valves have been damaged by overcharge.</p> <p>Remedy: Discharge system, vacuum pump and recharge.</p>
<p style="text-align: center;">3</p> <p><b>Clutch noise caused by worn bearings or improper centering</b></p> <p>Indication: May or may not slip, noisy when engaged.</p> <p>Remedy: Remove clutch for replacement or repair as necessary.</p>	<p style="text-align: center;">7</p> <p><b>Low charge in system</b></p> <p>Indication:</p> <ul style="list-style-type: none"> <li>- hissing in evaporator at the expansion valve</li> <li>- bubbles or cloudiness in sight glass</li> <li>- compressor head pressure low.</li> </ul> <p>Remedy: Recharge system.</p>
<p style="text-align: center;">4</p> <p><b>Compressor noisy</b></p> <p>Indication: Loose mountings, worn parts inside compressor.</p> <p>Remedy: Check mountings and repair. Remove compressor for repair or replacement.</p>	<p style="text-align: center;">8</p> <p><b>Excessive moisture in system</b></p> <p>Indication: Expansion valve noisy, suction pressure low.</p> <p>Remedy: Discharge system. Replace receiver-drier insert (dehydrator), vacuum pump and recharge.</p>

# Checking compressor oil level

Under normal conditions the amount of lubricant does not have to be checked or refilled.

However, if a new or reconditioned compressor is installed, the oil level should be checked, before the

system is charged.

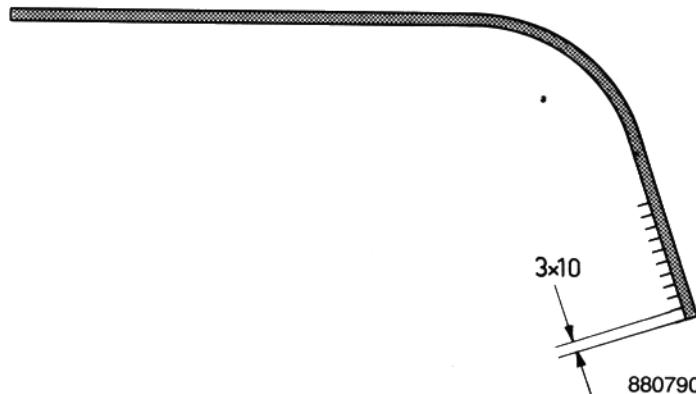
A new compressor is filled with correct quantity of lubricant at delivery.



107 284

To check the compressor oil level, make a dipstick with measurements as shown. Suitable material is 3 mm (1/8'') brass wire. Make ten marks 3 mm apart

at the end of the stick. One mark corresponds to approx. 0.03 liter of oil.



When making an oil level check with an installed compressor, it is important to have the refrigerant evacuated before the oil plug is removed. The compressor crankcase is connected to the rest of the cooling system and any refrigerant left in the system will spurt out of the filler hole and take with it any oil in the compressor crankcase.

Follow the instructions on how to discharge the system, Op. A1-A5.

When checking the oil level, the graduated part of the dipstick should be vertical to the compressor bottom. Correct level is 28–29 mm, corresponding to 0.3 liter, for a new compressor in a new system which is not yet operated.

When the system has been operated, some oil has followed the refrigerant and is lodged in other components. The compressor oil level might therefore be 20–25 mm. If lower than 20 mm, fill up to 20 mm.

Only refrigerant compressor oil must be used, as:

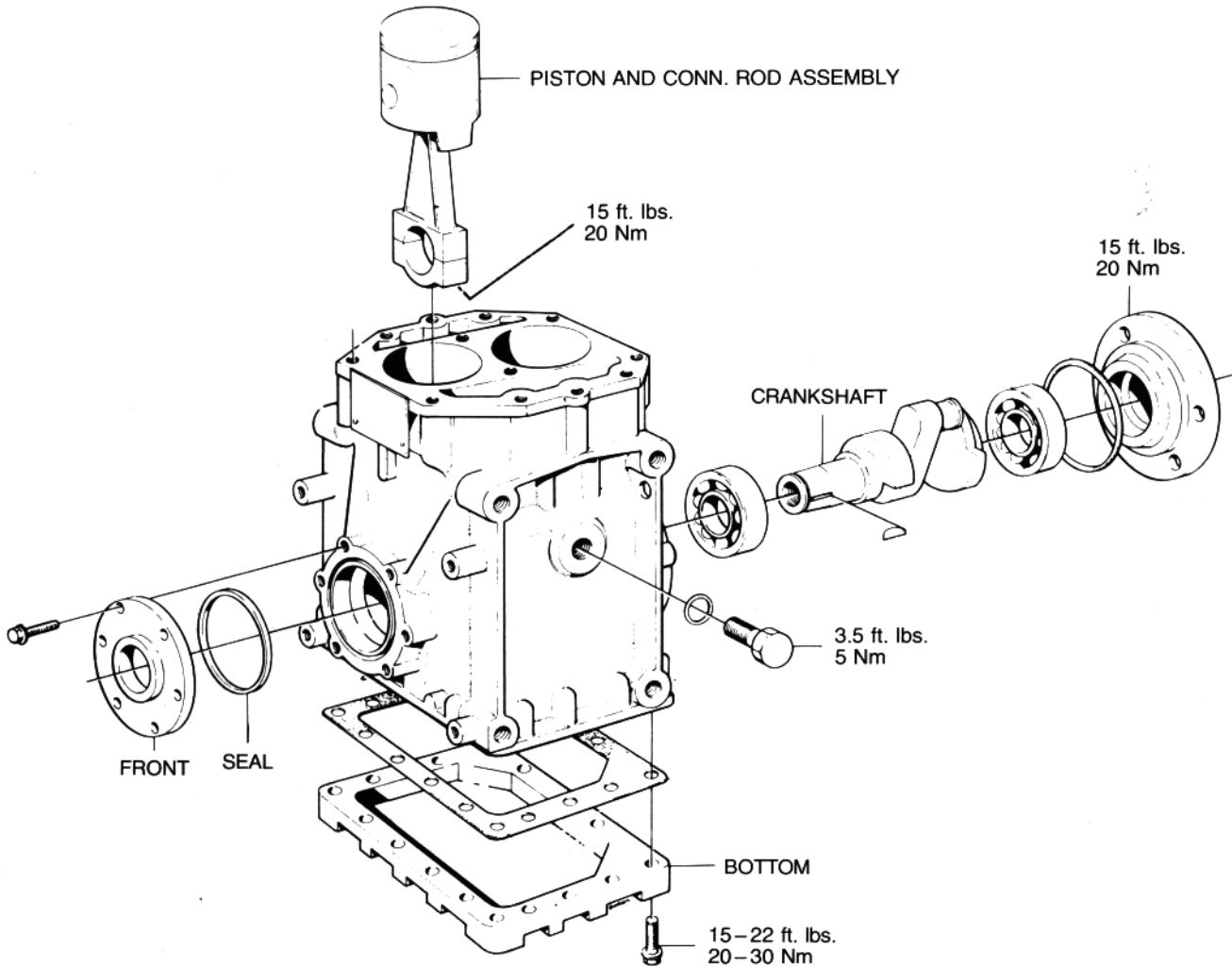
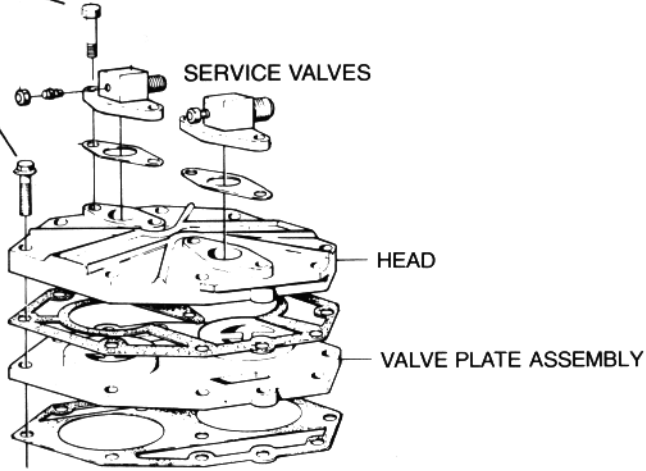
Suniso 5  
BP Energol LPT 100  
Shell Clavius 33  
Texaco Capella E500  
or corresponding.

Before inserting the oil plug, check that the O-ring is OK and that sealing surfaces are undamaged. Oil plug torque: 5 Nm=3.5 ft. lbs.

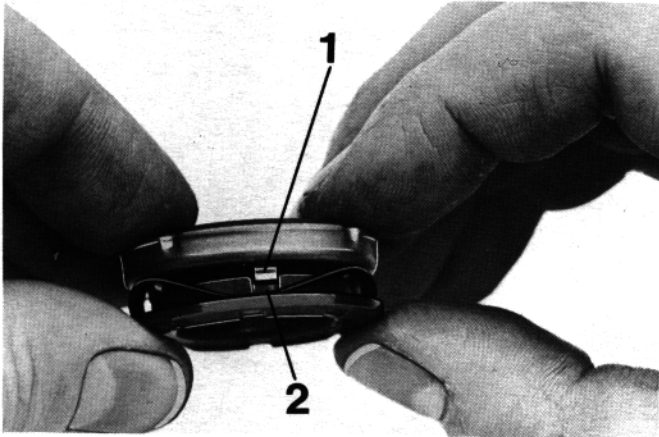
# Compressor

COMPRESSOR RETAINING BOLTS  
Torque: 22 ft. lbs.  
30 Nm.

15-22 ft. lbs.  
20-30 Nm



E4

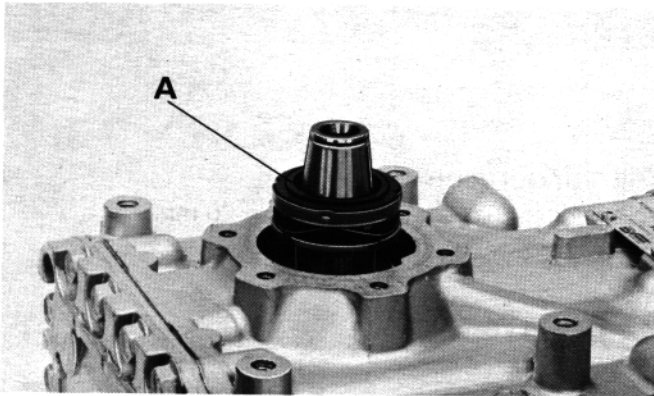


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#### Check the new seal

Compress the seal a few times. The tabs (1) should move freely in the recesses (2).

E5



107 995

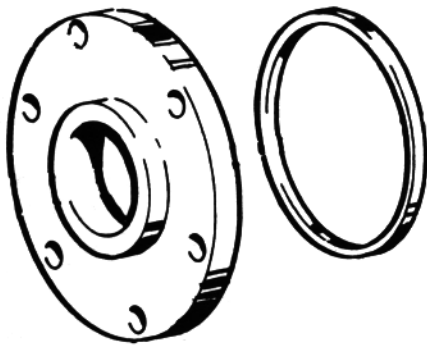
#### Install seal

Immerse the seal in refrigeration oil. Push it on to the shaft.

Insert the charcoal seal in the retainer, fine ground surface (A) up.

(Use the end plate to press the seal assembly into position.)

E6



#### Install end plate

Install a new seal in the end plate. Apply refrigeration oil to the end plate sealing surfaces. Center on shaft before tightening screws.

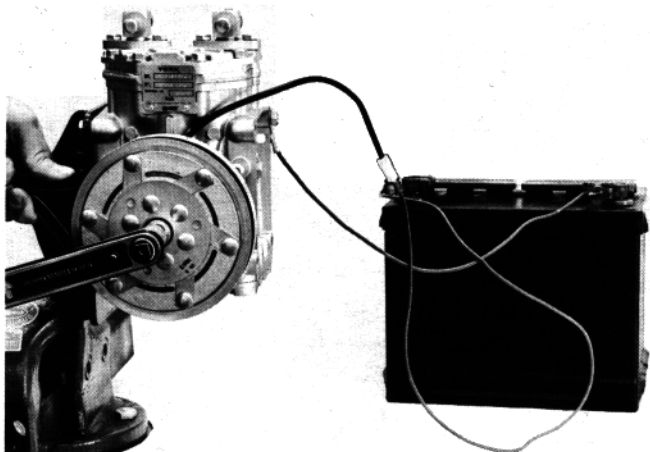
E7



107 996

#### Install dust protective washer

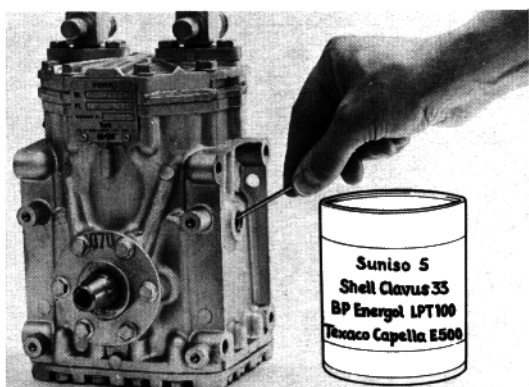
Press it on the shaft finger tight. It will attain correct position when installing the clutch.



**Install clutch**

Torque: 25–30 Nm=18–22 ft. lbs.

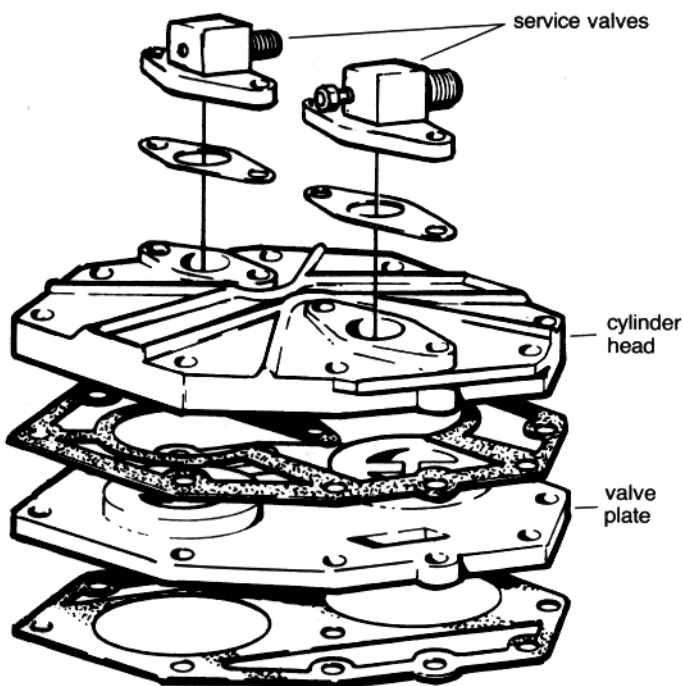
880 757



**Fill refrigeration oil**

Oil level should not be lower than 20 mm,  
see page 29.

**Replacing valve plate assembly**



The valve plate is available as an assembly, complete with valves. It can be replaced without removing the compressor.

F1

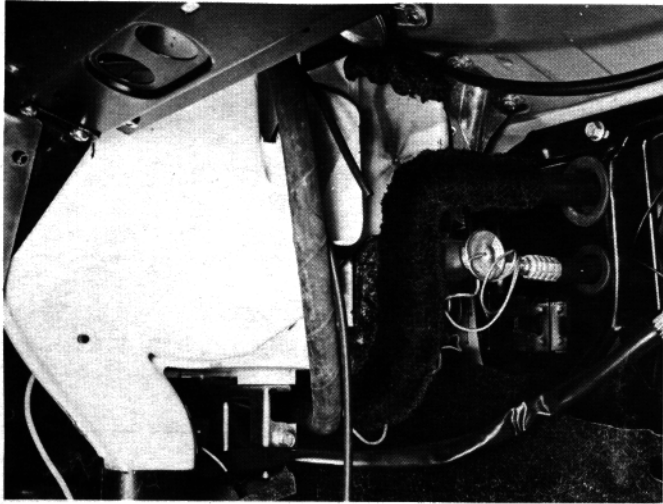
Discharge the refrigerant completely according to instructions, Op. C1–C6.

F2

Remove the service valves and the screws for the compressor head.

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O4

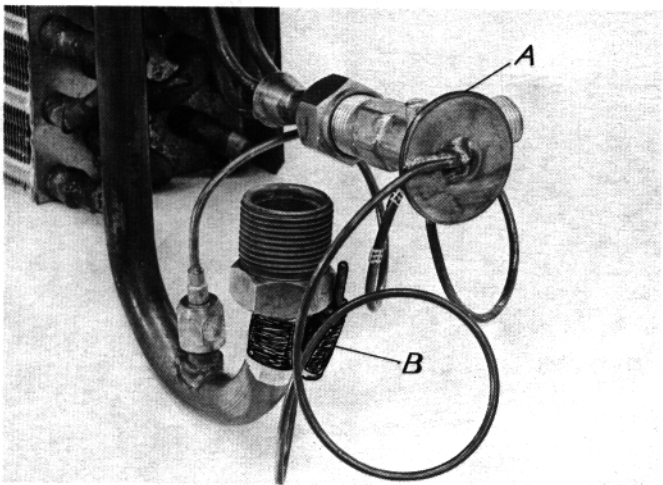
Remove the putty from the pipes

O5

Disconnect the hoses

O6

Pull out the evaporator



O7

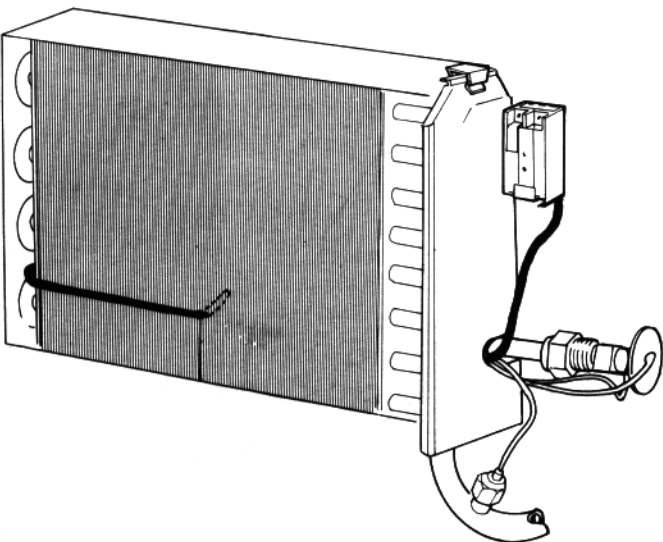
Replacing expansion valve

Replace the valve (A).

Attach the capillary tube (B) to the pipe.

120 798

O8



Replacing evaporator thermostat

Pull the sensor out of the evaporator.

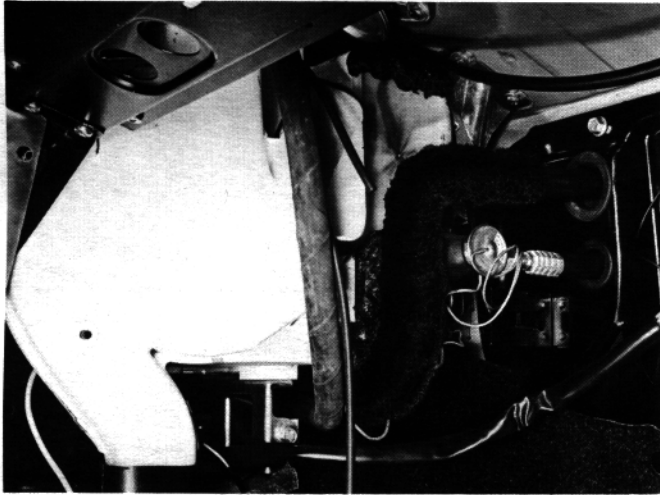
Replace the thermostat.

Position the sensor as shown.

In case of irregular cycling, the capillary tube can be re-attached according to a new method. See page 8 for additional information.

114503

O9



**Install evaporator**

Connect hoses and apply putty to the outlet hose.

Torque for hose connections:

44 Nm = 32 ft. lbs.

O10

**Install cover and thermostat assembly**

O11

**Charge refrigerant and leak test**

See separate instructions.

881 215

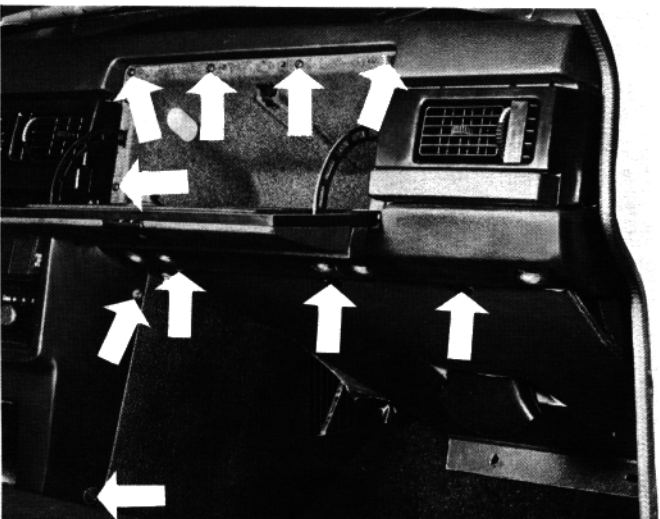
O12



**Install defroster outlet and air channel**

120 796

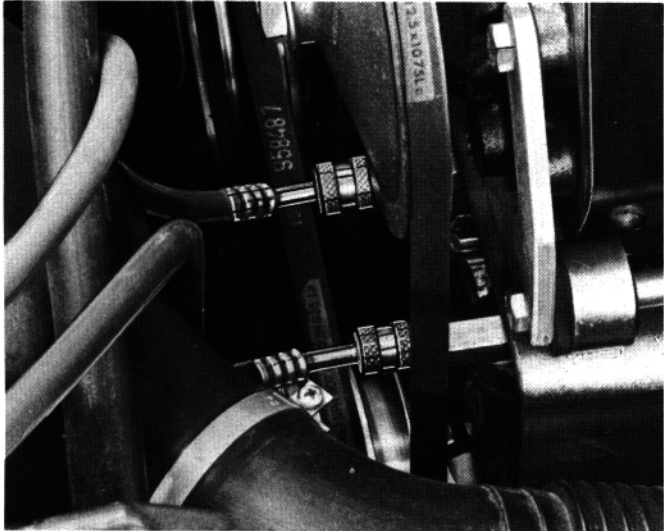
O13



**Install glove box, insulation panel and side panel**

881 210

Q2



Check that gauges and hoses are correctly connected and all valves closed.

Q3

### Hose connections

Remove protective caps and connect gauge hoses.

- Red hose (high pressure) to compressor “DISCH”
- Blue hose (low pressure) to compressor “SUCTION”
- White hose to vacuum pump.

Nipples should be torqued finger tight. DO NOT use tools.

120 802

Q4

Start the vacuum pump. Open both gauge valves slowly and simultaneously.

Q5

### Vacuum pump

Run the vacuum pump until a vacuum of 28" = 710 mm Hg = 95 kPa. is obtained and then additional 30 minutes at temperatures higher than + 30°C (85°F) or 50 minutes at temperatures lower than + 30°C (85°F).

#### NOTE:

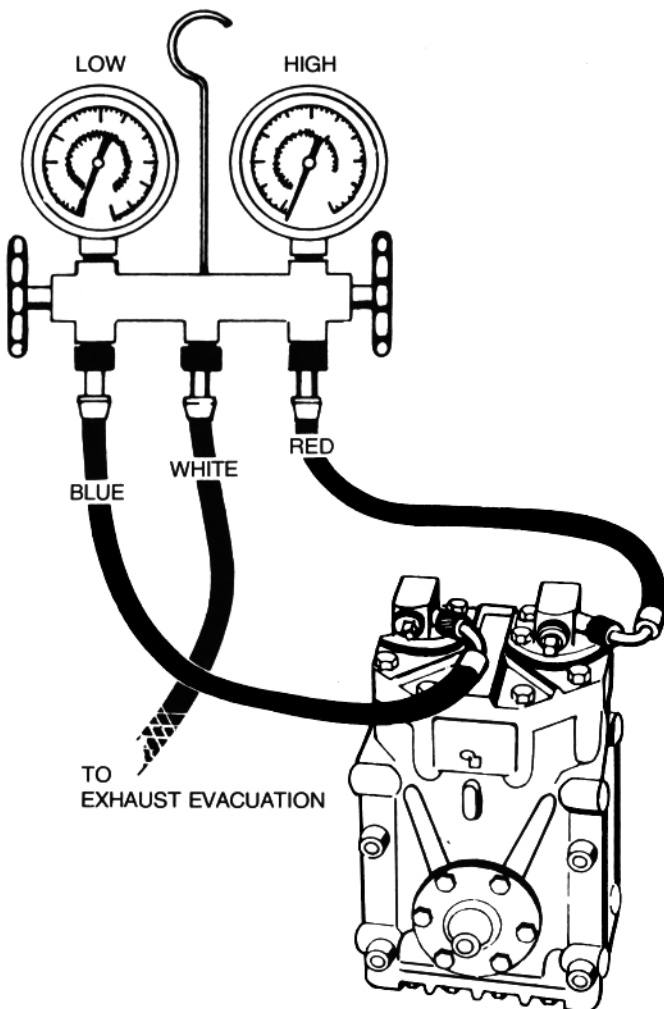
The figure for the vacuum is valid only at, or close to, sea level. For each additional altitude of 1000 ft. (300 meters), lower the figure by 1" = 25.4 mm Hg = 3.4 kPa. For instance: altitude 4,840 ft. = 1500 meters, the vacuum figure should be 23" = 584 mm Hg = 78 kPa.

Q6

Close the gauge valves and shut off the pump.

Q7

If the specified vacuum cannot be obtained, or the vacuum decreases after the valves have been closed, there is a leak in the system. Find and correct the leak and repeat operations Q4–Q6.



## Testing for leaks

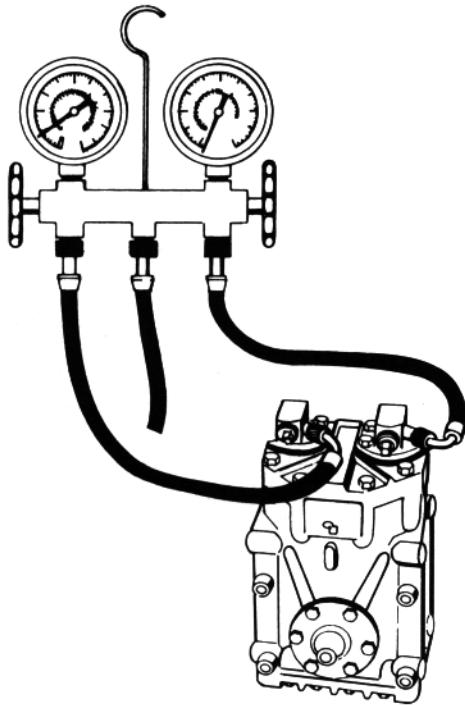
R1



Close the valve at the vacuum pump.  
Disconnect it and attach it to a refrigerant container.

112 108

R2



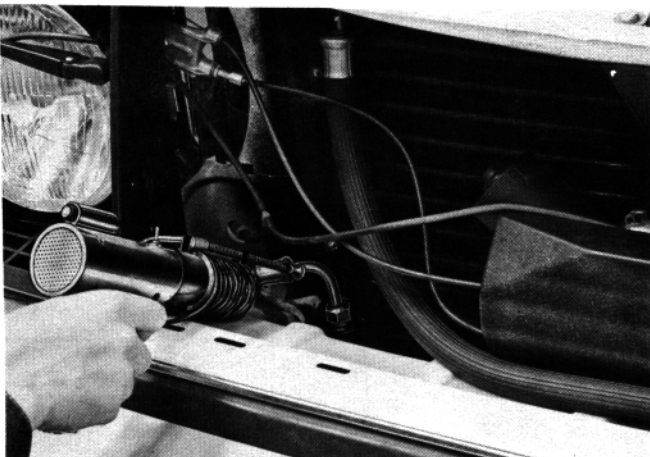
Disconnect the white hose from the vacuum pump  
and connect it to the refrigerant container.

R3

Hold the refrigerant container upright. Disconnect the  
white hose nipple at the gauges. Flush the hose with  
refrigerant and tighten the nipple. Open both gauge  
valves and the refrigerant container valve. When the  
whistling sound ceases, pressure is equalized in the  
system and approx. 3–7 oz = 100–200 grams of  
refrigerant are charged.

127951

R4



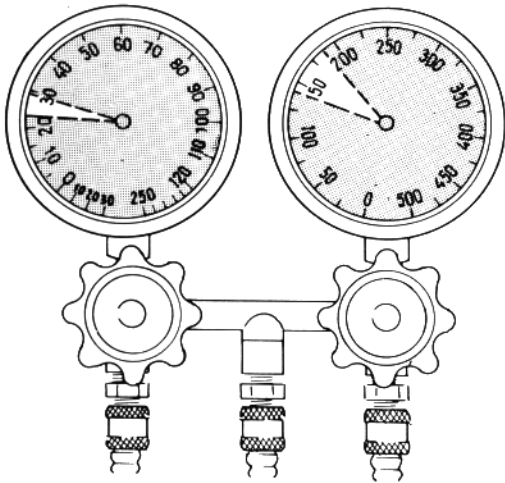
Use a leak detector to check all connections.

R5

Close the gauge valves and correct any leakage.  
If necessary perform a new leak test.

117983

X4



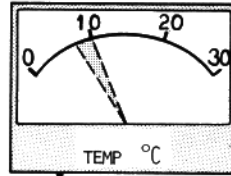
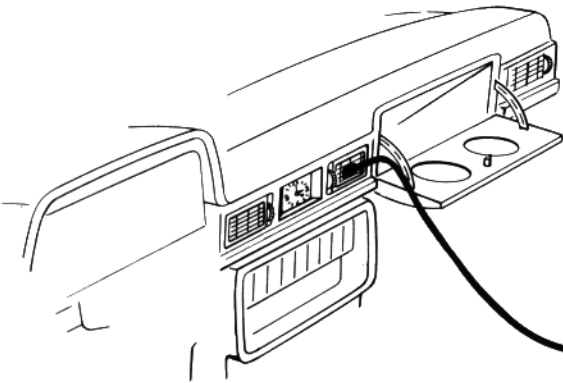
Readings at ambient temperature  
20°C = 68°F

Gauge pressure:

Low side: 24–28 psi  
0.17–0.20 MPa

High side: 142–185 psi  
10–13 MPa

127955

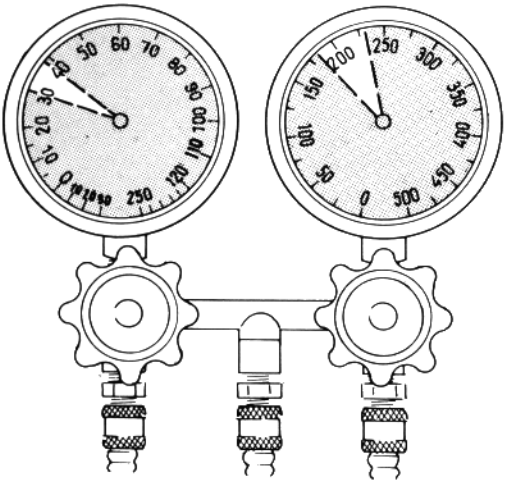


Air outlet temperature:

8–10°C  
45–50°F

127958

X5



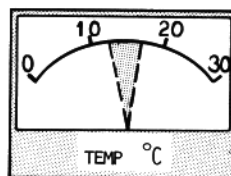
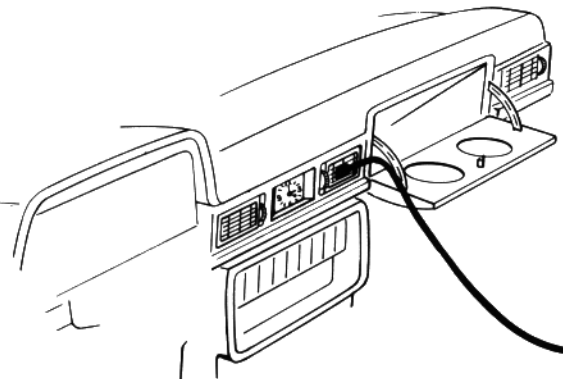
Readings at ambient temperature  
30°C = 86°F

Gauge pressures:

Low side: 31–38 psi  
0.22–0.27 MPa

High side: 185–227 psi  
13–16 MPa

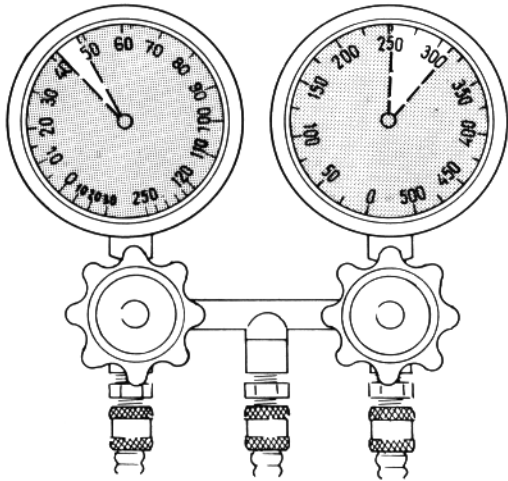
127956



Air outlet temperature:

13–17°C  
55–63°F

127959



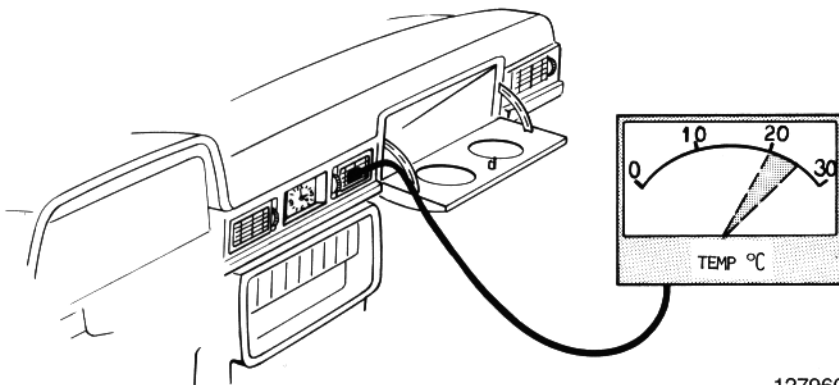
Readings at ambient temperature  
 $40^{\circ}\text{C} = 104^{\circ}\text{F}$

Gauge pressures:

Low side: 43–48 psi  
0.30–0.34 MPa

High side: 255–312 psi  
18–22 MPa

127957

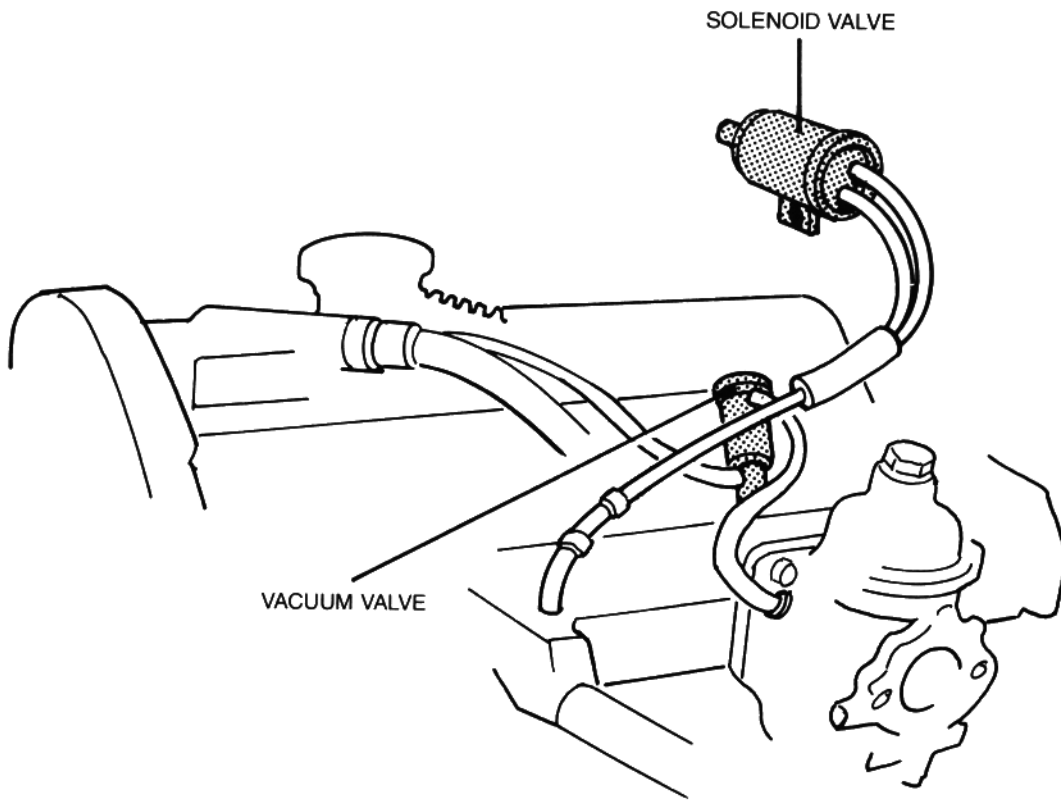


Air outlet temperature:

20–26°C  
68–79°F

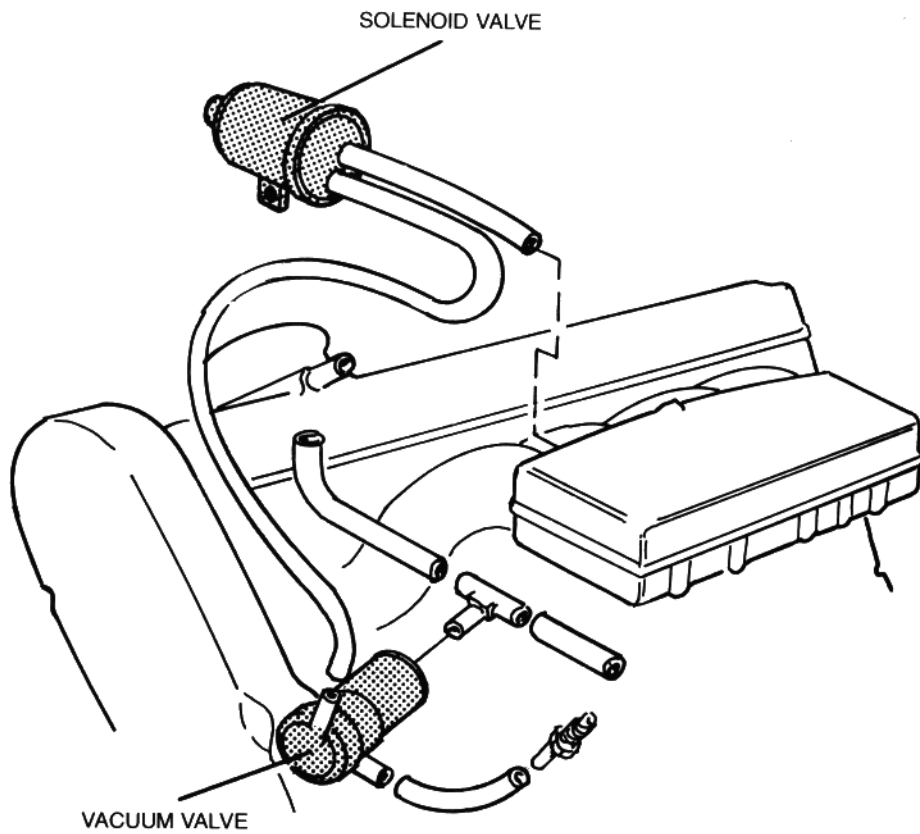
127960

# AC compensation system



B21A  
1979

127964



B21F  
1979

127965

# Volvo Air Conditioning

B20F 1975

B21F 1976

VIN-s ("chassis numbers"):

242 up to and including 99679

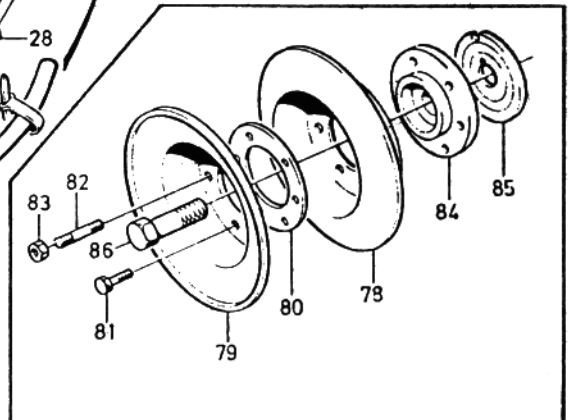
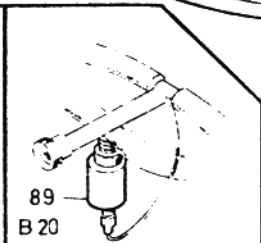
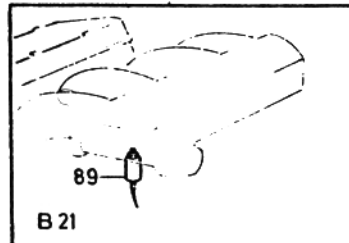
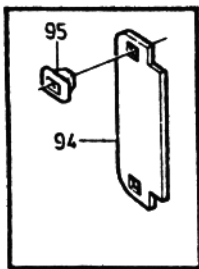
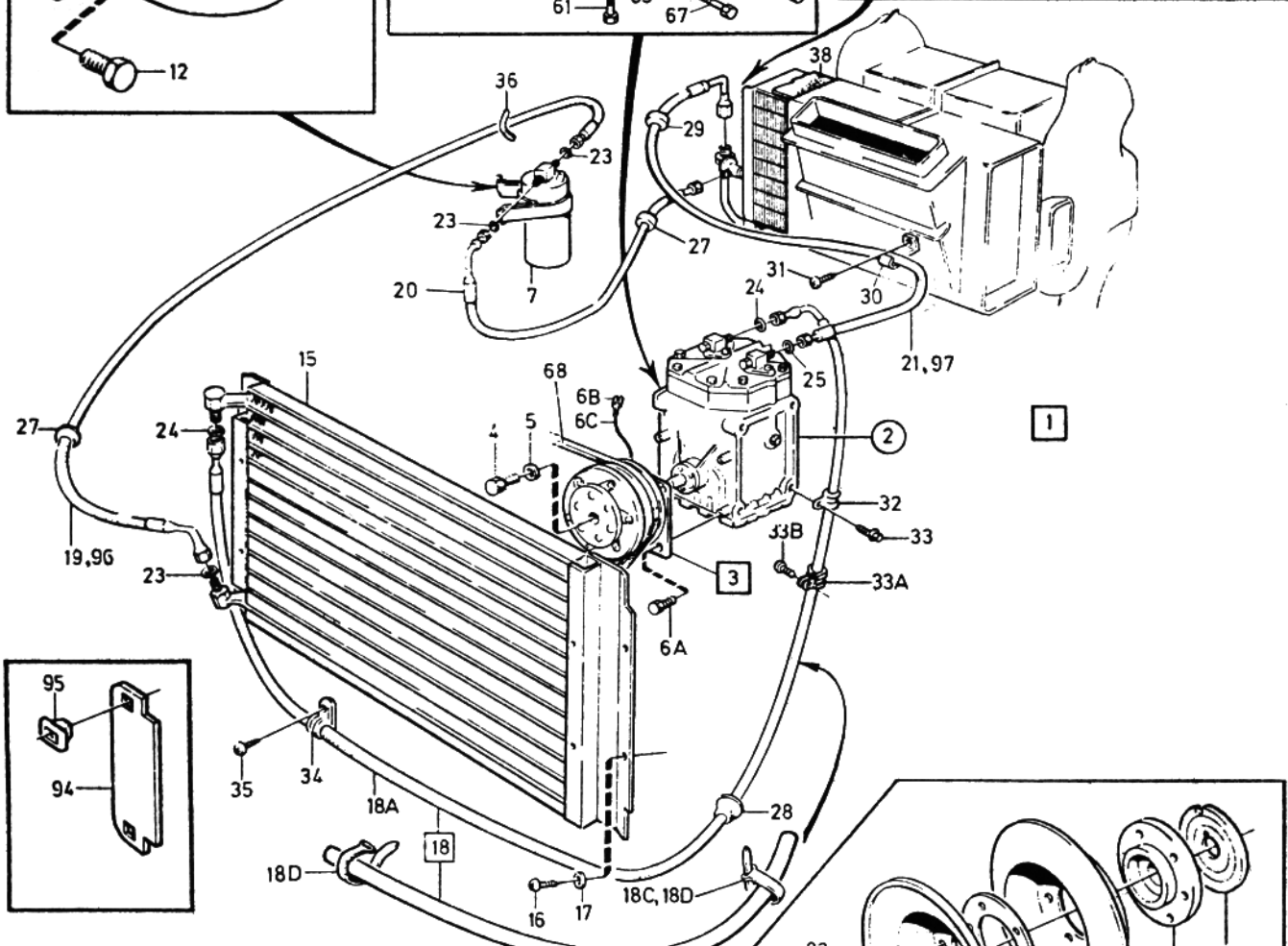
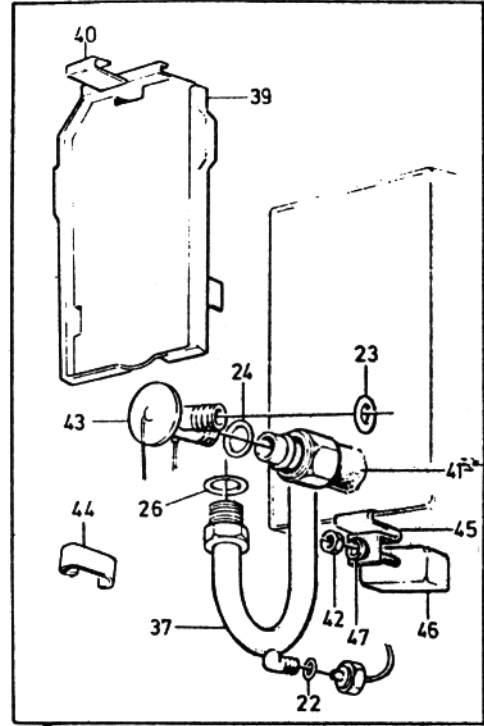
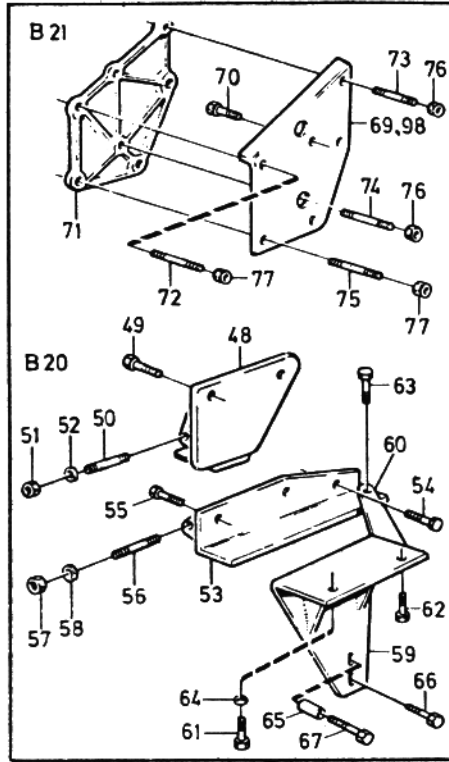
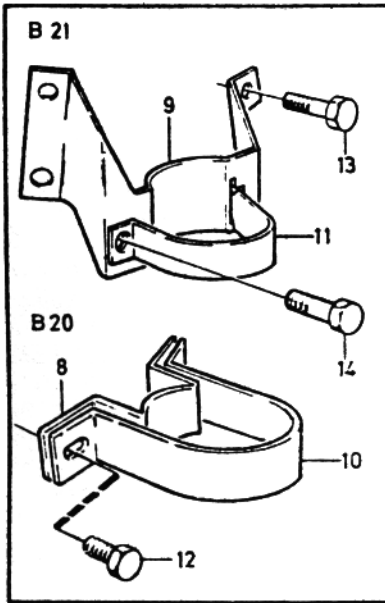
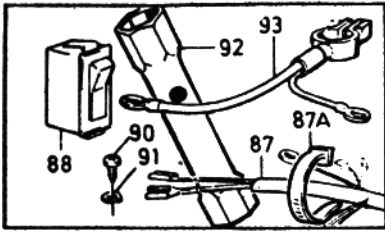
244 up to and including 174909

245 up to and including 115349

Pos.	Description	Part No
2	Compressor .....	1215012-4
3	Connection .....	684322-1
4	Screw .....	944023-1
5	Washer .....	191169-2
6a	Screw .....	943159-4
6b	Cable terminal .....	958216-4
6c	Sleeve insulator .....	958208-1
7	Receiver - drier .....	1215020-7
8	Bracket .....	688162-7
9	Bracket .....	1215114-8
10	Clamp .....	688227-8
11	Clamp .....	1215021-5
12	Screw .....	190665-0
13	Screw .....	190666-8
14	Screw .....	945414-1
15	Condenser .....	1214086-9
16	Screw .....	955137-5
	Screw .....	955268-8
17	Washer .....	960138-6
	Nut .....	955781-0
18	Hose cpl. ....	1234874-4
	Hose cpl. ....	1234875-1
18a	Hose .....	1215019-9
	Hose .....	1215553-7
18b	Hose .....	948248-0
18c	Clamp .....	948211-8
18d	Clamp .....	948211-8
18	Hose .....	948248-0
19	Hose .....	1215007-4
20	Hose .....	1215008-2
21	Hose .....	1215006-6
	Hose .....	1215292-2
22	O-ring .....	1215024-9
23	O-ring .....	1215025-6
24	O-ring .....	1215026-4
25	O-ring .....	1215027-2
26	O-ring .....	1215028-0
27	Rubber bushing .....	686355-9
28	Rubber bushing .....	686356-7
29	Rubber bushing .....	1215268-2
30	Clamp .....	1215779-8
31	Screw .....	955139-1
32	Clamp .....	1215139-5
	Clamp .....	947827-2
33	Screw .....	944209-6
33a	Clamp .....	952633-6
33b	Screw .....	958236-2
34	Clamp .....	952633-6
35	Screw .....	958236-2
36	Moulding .....	679754-2
37	Evaporator .....	1214851-6
38	Gasket .....	1215736-8
39	Cover .....	1234810-8
40	Clip .....	1211604-2
41	Tape .....	591235-7
42	Nut .....	1214057-0

Pos.	Description	Part No
43	Expansion valve .....	1215023-1
44	Clamp .....	684281-9
45	Clamp .....	684565-5
46	Thermostat .....	1215683-2
47	Spring washer .....	120164-3
48	Bracket .....	462749-3
49	Screw .....	955535-0
50	Stud .....	924079-7
51	Nut .....	955783-6
52	Washer .....	960148-5
53	Bracket .....	462928-3
54	Screw .....	955319-9
55	Screw .....	940115-9
56	Stud .....	924077-1
57	Nut .....	955783-6
58	Washer .....	960148-5
59	Support .....	462924-2
60	Stay .....	462923-4
61	Screw .....	955535-0
62	Screw .....	940162-1
63	Screw .....	955317-3
64	Washer .....	960148-5
65	Spacer sleeve .....	1218506-2
66	Screw, 30 mm .....	955318-1
67	Screw, 70 mm .....	955326-4
68	Drive belt, B20F, 1550 .....	958512-6
	Drive belt, 925 .....	958487-1
69	Attaching plate .....	1219246-4
70	Screw .....	955534-3
71	Attaching plate .....	1219247-2
72	Stud .....	953262-3
73	Stud .....	924083-9
74	Stud .....	924081-3
75	Stud .....	953267-2
76	Nut .....	955783-6
77	Nut .....	955827-1
78	Pulley, inner .....	1219091-4
79	Pulley, outer .....	1219092-2
80	Washer .....	1219093-0
81	Screw .....	955274-6
82	Stud .....	924052-4
83	Nut .....	955781-0
84	Hub .....	1219368-6
85	Guide .....	463376-4
86	Screw .....	963296-9
87	Cable harness .....	1234327-3
87a	Clamp .....	946405-8
88	Switch .....	1235092-2
89	Solenoid valve .....	1266026-2
90	Screw, ground cable, engine .....	940133-2
91	Resilient washer, ground cable, engine .....	942336-9
92	Spanner, spark plug .....	688902-6
93	Ground cable .....	1215208-8
94	Cover plate .....	1234217-6
95	Clip .....	1203069-8





VOLVO PARTS  
1 090 19524  
(110-4)

# Volvo Air Conditioning B21 1977

VIN-s ("chassis numbers"):

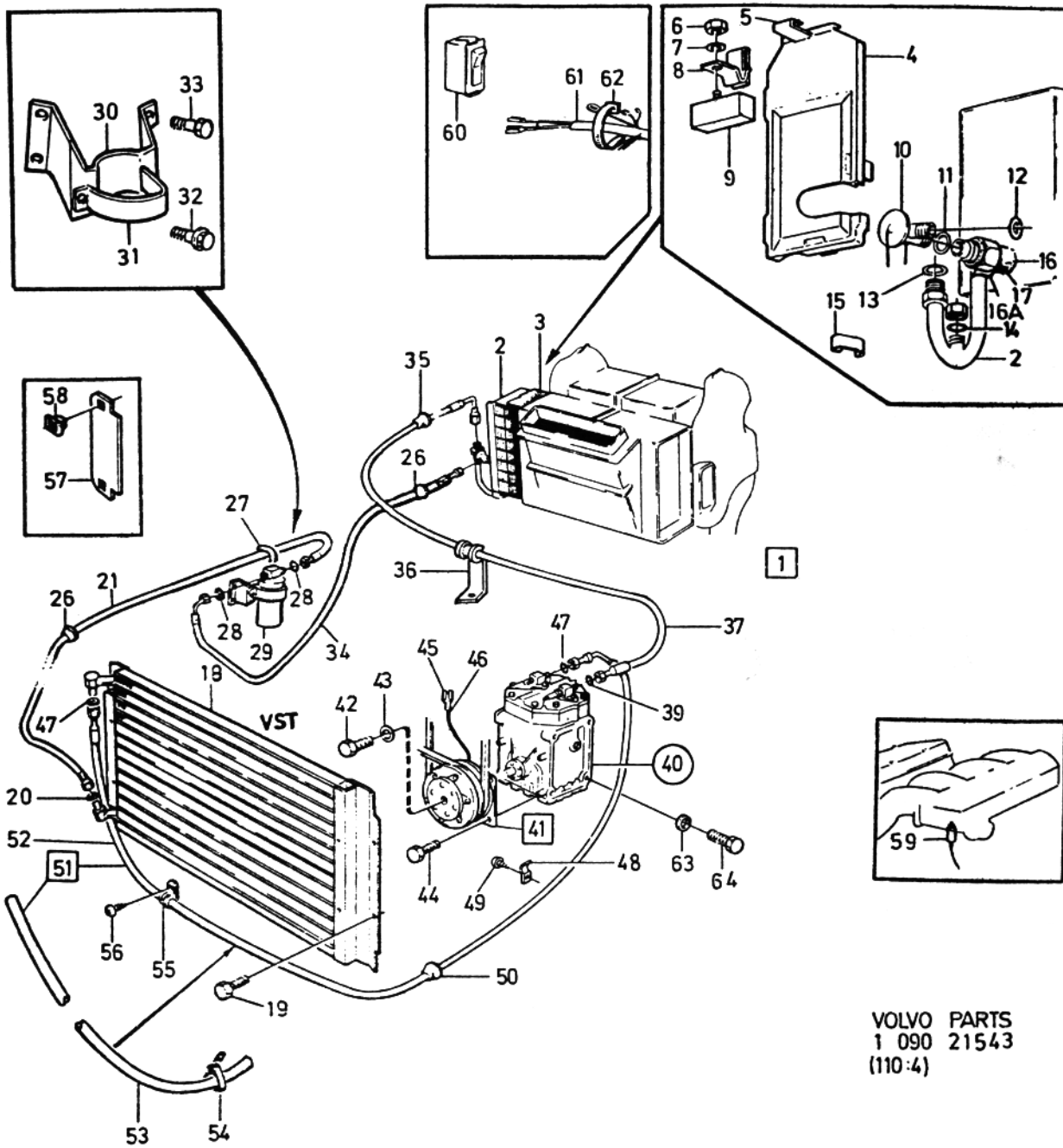
242 99680-122894

244 174910-274964

245 115350-163834

Pos.	Description	Part No
2	Evaporator .....	1214851-6
3	Gasket .....	1215736-8
4	Cover .....	1234810-8
5	Clip .....	1211604-2
6	Nut .....	1214057-0
7	Spring washer .....	120164-9
8	Clamp .....	684565-5
9	Thermostat .....	1215683-2
10	Expansion valve .....	1215023-1
11	O-ring .....	1215026-4
12	O-ring .....	1215025-6
13	O-ring .....	1215028-0
14	O-ring .....	1215024-9
15	Clamp .....	684281-9
16	Tape .....	591235-7
16a	Tape .....	591275-3
17	Sealing compound .....	591265-4
18	Condenser .....	1214086-9
19	Screw .....	965395-7
20	O-ring .....	1215025-6
21	Hose .....	1215007-4
22	Hose cpl. ....	1234873-6
23	Hose .....	1215294-8
24	Hose .....	948248-0
25	Clamp .....	948211-8
26	Rubber bushing .....	686355-9
27	Moulding .....	679754-2
28	O-ring .....	1215025-6
29	Receiver - drier .....	1215020-7
30	Bracket .....	1215114-8
31	Clamp .....	1215021-5
32	Screw .....	945414-1
33	Screw .....	190666-8

Pos.	Description	Part No
34	Hose .....	1215008-2
35	Rubber bushing .....	1215268-2
36	Clamp .....	1234694-6
37	Hose .....	1234689-6
38	Hose .....	1235009-6
38a	Clamp .....	952639-9
39	O-ring .....	1215027-2
40	Compressor .....	1215012-4
41	Connection .....	684322-1
42	Screw .....	944023-1
43	Washer .....	191169-2
44	Screw .....	943159-4
45	Cable terminal .....	958216-4
46	Sleeve insulator .....	958208-1
47	O-ring .....	1215026-4
48	Clamp .....	952633-6
49	Screw .....	958236-2
50	Rubber bushing .....	686356-7
51	Hose cpl. ....	1234875-1
52	Hose .....	1215553-7
53	Hose .....	948248-0
54	Clamp .....	948211-8
55	Clamp .....	952633-6
56	Screw .....	958236-2
57	Cover plate .....	1234217-6
58	Nut .....	1203069-8
59	Solenoid valve .....	1266026-2
60	Switch .....	1235092-2
61	Cable harness .....	1234327-3
62	Clamp .....	948211-8
63	Screw, ground cable, engine .	940133-2
64	Resilient washer, ground cable, engine .....	942336-9



VOLVO PARTS  
 1 090 21543  
 (110:4)

# Volvo Air Conditioning B21 1978

VIN-s ("chassis numbers"):

242 122895-142124

244 274965-364649

245 163835-211324

Pos.	Description	Part No
2	Evaporator .....	1214851-6
3	Gasket .....	1215736-8
4	Cover .....	1234810-8
5	Clip .....	1211604-2
6	Nut .....	1214057-0
7	Spring washer .....	120164-9
8	Clamp .....	684565-5
9	Thermostat .....	1215683-2
10	Expansion valve .....	1215023-1
11	O-ring .....	1215026-4
12	O-ring .....	1215025-6
13	O-ring .....	1215028-0
14	O-ring .....	1215024-9
15	Clamp .....	684281-9
16	Tape .....	591235-7
17	Tape .....	591275-3
18	Sealing .....	591265-4
19	Condenser .....	1214086-9
20	Screw .....	965395-7
21	O-ring .....	1215025-6
22	Hose .....	1235125-0
23	Hose cpl. ....	1235127-6
24	Clamp .....	952636-9
25	Screw .....	190666-8
26	Rubber bushing .....	1215268-2
27	Rubber bushing .....	686355-9
28	Moulding .....	679751-2
29	O-ring .....	1215025-6
30	Receiver - drier .....	1215020-7
31	Bracket cpl. ....	1235239-9
32	Screw .....	945414-1
33	Clamp .....	948211-8
34	Hose .....	1235126-8

Pos.	Description	Part No
35	Solenoid valve .....	1266026-2
36	Clamp .....	1234694-6
37	Hose .....	1234689-6
38	Hose .....	1235009-6
39	O-ring .....	1215027-2
40	Compressor .....	1215012-4
41	Connection .....	684322-1
42	Screw .....	944023-1
43	Washer .....	191169-2
44	Screw .....	943159-4
45	Cable terminal .....	958216-4
46	Sleeve insulator .....	958208-1
47	O-ring .....	1215026-4
48	Clamp .....	952633-6
49	Screw .....	958236-2
50	Rubber bushing .....	686356-7
51	Hose cpl. ....	1234875-1
52	Hose .....	1215553-7
53	Hose .....	948248-0
54	Clamp .....	948211-8
55	Clamp .....	952633-6
56	Screw .....	958236-2
57	Cover plate .....	1234217-6
58	Nut .....	1203069-8
59	Switch .....	1235092-2
60	Cable harness .....	1235346-2
61	Clamp .....	948211-8
62	Screw, ground cable, engine .	940132-2
63	Resilient washer, ground cable, engine .....	942336-9
64	Relay .....	1234095-6
65	Clip .....	1212957-3
66	Cable, ground-switch .....	1212727-0