

B. Engines 116, 117

Oil capacity

 Oil type cold-flowing oil (for approved cold-flowing oils refer to specifications for service products, page no. 362)

Oil quantity with new refrigerant compressor	in cm ³	300
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Oil quantity with refrigerant compressor removed and air conditioning system flushed with R 11	in cm ³	300
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Oil quantity with refrigerant compressor removed and air conditioning system not flushed	in cm ³	200
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Tightening torques

	Nm	(kpm)
Suction hose on pipe line	with Cu seal	60 ± 5
	without Cu seal	70 ± 5

Pressure hose on pipe line	with Cu seal	45 ± 5
	without Cu seal	55 ± 5

Pipe line to refrigerant compressor	17	(1.7)
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Oil check plug	15–17	(1.5–1.7)
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8 mm screw	35	(3.5)
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10 mm screws	30–45	(3.0–3.5)
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12 mm screws	40–45	(4.0–4.5)
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Special tool

Pressure-testing plate



109 589 00 25 00

Conventional tool

Double open-end wrench 3/8" x 7/16" for oil check screw

Note

Since November 1979 the Delco-A6 refrigerant compressors (former designation Frigidaire) have been changed from inch threads to metric threads. For identification these refrigerant compressors are carrying a label with the note: "NOTICE, MOUNTING HOLES HAVE METRIC THREADS" (refer to Fig., arrow). Background, as well as edge and separating line of this label are blue.

If a refrigerant compressor with inch threads is exchanged for a compressor with metric threads, use screws M 10 x 1.5 x 40 (instead of formerly 3/8") for rear attachment, and screws M 8 x 1.25 x 15 (instead of formerly 5/16") for front attachment.

The threads for attaching closing plate have been changed to M 10 x 1.5.

After Delco-A6 refrigerant compressors with inch threads are used up, only compressors with metric threads will be supplied.



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The refrigerant compressor can be removed and installed together with refrigerant compressor carrier only. If the compressor is removed because of leaks on compressor or on system, correct oil level in compressor by filling-up again, but fill-in only max. 200 cc refrigerant oil.

If the refrigerant compressor is renewed, drain all the refrigerant oil from new refrigerant compressor. Then add max. 200 cc oil. If the system is flushed with refrigerant R 11, fill 300 cc refrigerant oil into refrigerant compressor.

Attention!

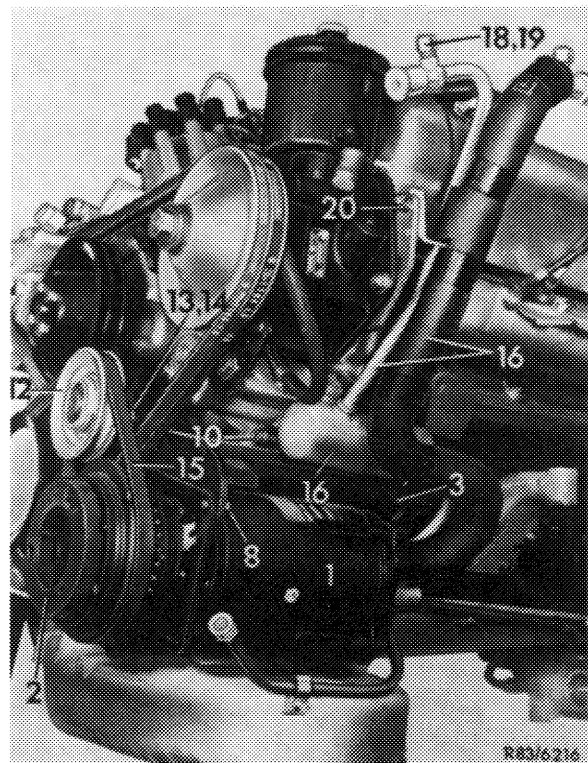
If the refrigerant compressor must be renewed, e.g. because of a blocking effect, the pipe line with hoses on refrigerant compressor should also be replaced on principle, since there is a possibility that small parts (abrasives) of refrigerant compressor may flow into pipe line, where removal by flushing with R 11 may not be possible up to 100 %.

When loosening or tightening hose or pipe connections, be sure to apply counterhold with a second open-end wrench.

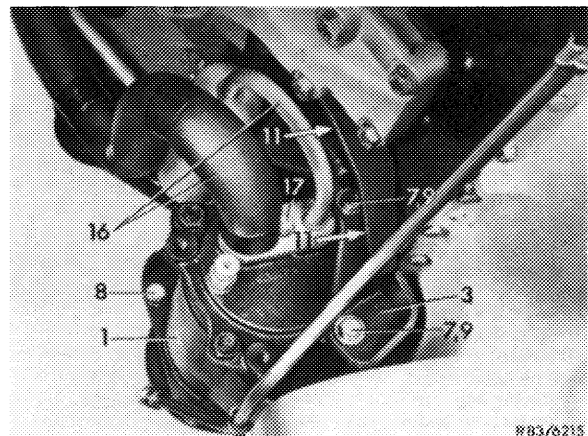
Removal

- 1 Cover front fender.
- 2 Drain air conditioning system (83–516).
- 3 Remove radiator (20–420).
- 4 Unscrew belt tensioning roller (12) on refrigerant compressor carrier (3) and remove V-belt (15).
- 5 Unscrew pressure and suction hose from pipe line (16).
- 6 Unscrew screw (20) on carrier for pressure oil pump.

Layout refrigerant compressor (1st version)



- 7 Unscrew screw (17) and remove pipe line (16) from refrigerant compressor paying attention to sealing rings.
- 8 Screw pressure-testing plate to refrigerant compressor by means of available fastening members (17).



9 Unscrew screws (5) from supporting angle (4) or on oil pan upper half.

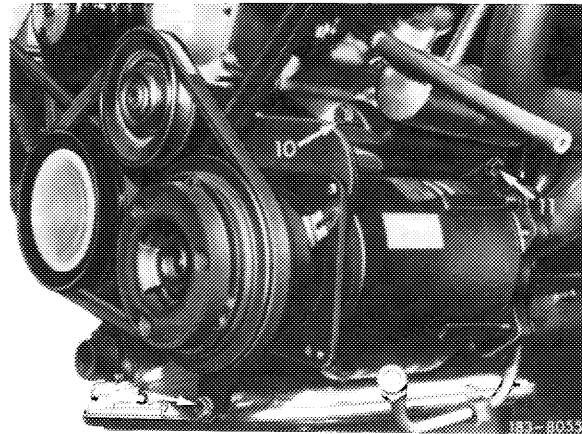
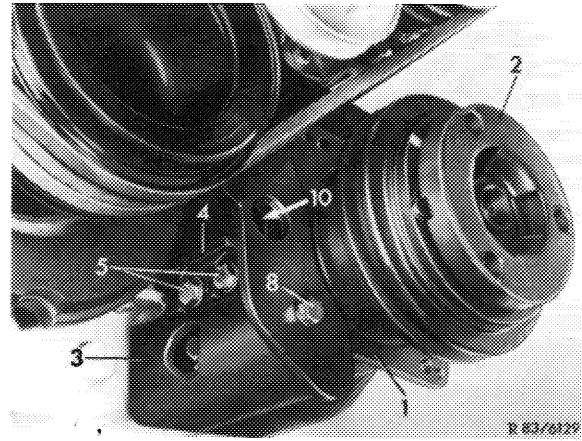
10 Unscrew two screws (11) on refrigerant compressor carrier (3) rear, as well as two screws (10) on engine face.

11 Pull electric plug connection from compressor.

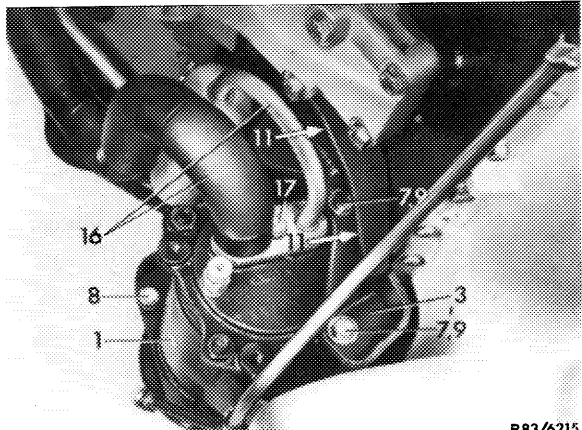
12 Remove V-belt for power steering pump (13–340).

13 Remove refrigerant compressor in forward direction.

14 Unscrew refrigerant compressor from refrigerant compressor carrier (3) by unscrewing 4 screws (7 and 8).



15 If the pipe line (16) requires removal, turn pipe line by 180° and remove in downward position.

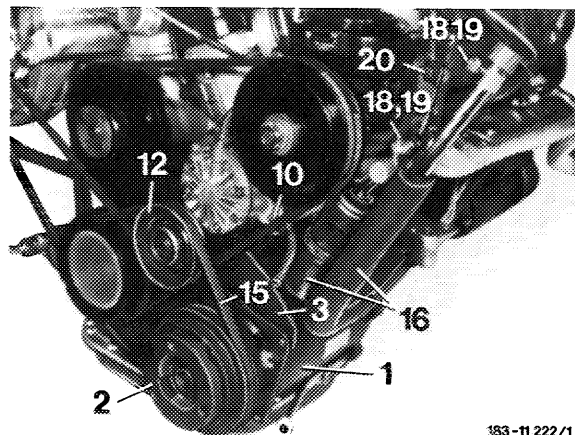


Layout refrigerant compressor (1st and 2nd version)

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|--------------------------|------------------------------|
| 1 Refrigerant compressor | 9 Spacing ring |
| 3 Carrier | 11 Inch screw |
| 7 Inch screw with washer | 16 Pipe line |
| 8 Inch screw with washer | 17 Inch screw with snap ring |

Layout of refrigerant compressor with new pipe line on engine 116.98 and 117.98 and (USA) starting model year 1975 with engine 117 (4.5)

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|---|
| 1 Refrigerant compressor |
| 2 Electromagnetic clutch |
| 3 Carrier |
| 10 Hex socket screw |
| 12 Belt tensioning roller |
| 15 V-belt |
| 16 Pipe line |
| 19 Closing cap |
| 20 Screw with washer, snap ring and hex screw |



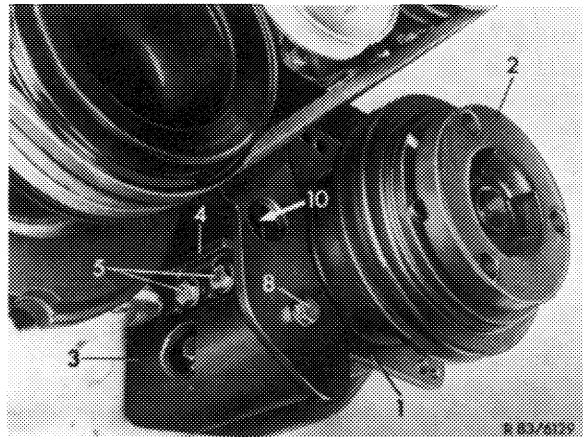
Installation

16 Correct oil level in refrigerant compressor (83–520).

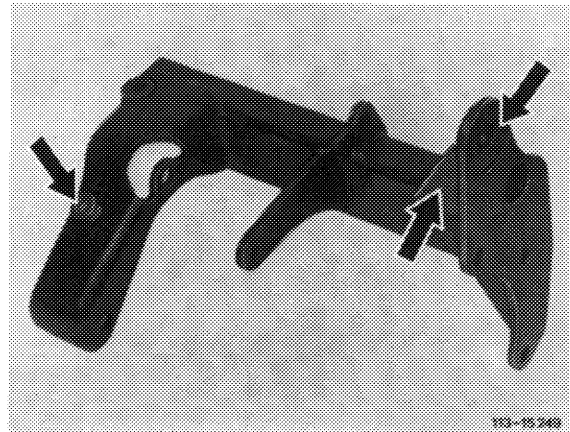
17 Screw refrigerant compressor (1) to refrigerant compressor carrier (3) (with parts item 7 to 9) (item 7 and 8 are inch screws).

18 Install pipe line (16).

19 Install refrigerant compressor with refrigerant compressor carrier. Screw to cylinder crankcase and to supporting angle (4) or to oil pan upper half (with parts items 5, 10 and 11).



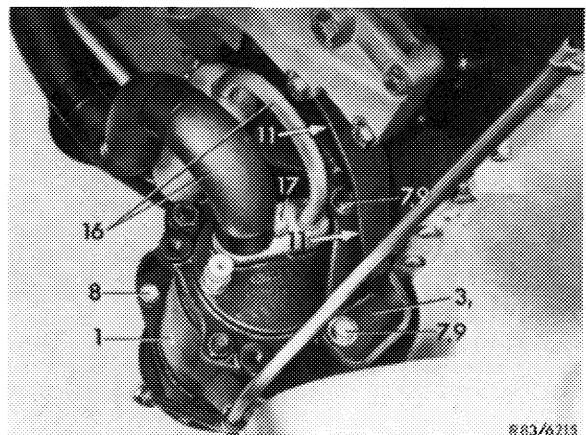
20 Under 3rd version (vehicles 107, 024/044) a disc (part no. 169902440) must be added in-between engine and carrier of grey iron engines. On light-alloy engine (116 and 117) the carrier for the refrigerant compressor is mounted without a disc.



Mounting carrier for refrigerant compressor (3rd version starting March 78, part no. 1171300035).

21 Remove pressure test plate, provide O-rings on refrigerant compressor with refrigerant oil and renew, if required. Then screw pipe line (16) again to refrigerant compressor by means of screw (17).

22 Mount V-belt for powersteering pump and tension (13–340).



23 Screw pipe line (16) (with parts item 20) to carrier for pressure oil pump or cylinder head.

24 Screw tensioning roller (12) to refrigerant compressor carrier (3). Mount V-belt (15) and tension (13–340).

Note: Check alignment of pulley – compressor in relation to pulley – crankshaft and tensioning roller and correct with compensating washers (14) between tensioning roller and refrigerant compressor carrier, if required.

25 Plug electric double plug to refrigerant compressor.

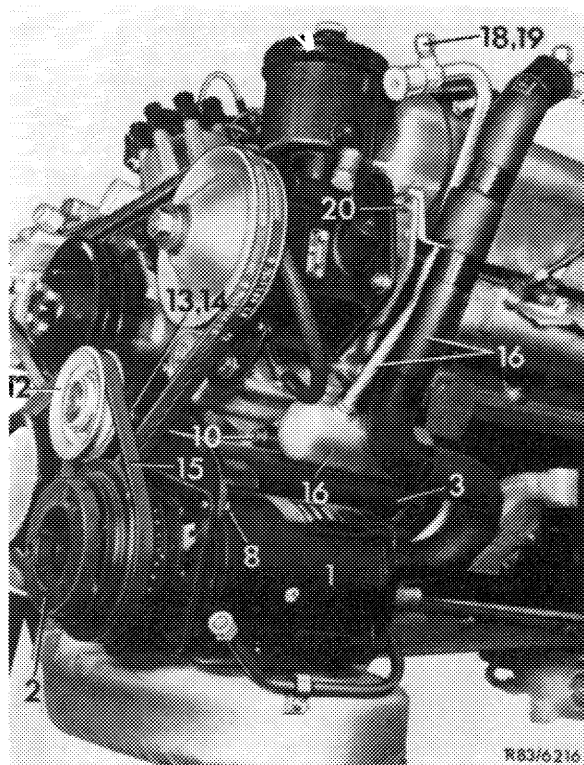
26 Install radiator (20–420).

27 Connect pressure and suction hose to pipe line (16).

28 Evacuate air conditioning system and fill up again (83–512 and 514).

29 Run engine and check cooling system for leaks.

30 Check air conditioning system for function (83–510).



Layout of pipe line on engine 116 (3.8) and 117 (5.0)

- 16 Pipe line
- 20 Screw with washer (spacing washer on engine 116 (3.8) only)

