## B. Delco refrigerant compressor engines 116 and 117

**Oil capacity**

| | |
|---|---|
| Oil type | Refrigerant oil (for approved refrigerant oils refer to specifications for service products, page no. 362) |

| **Tightening torque** | Nm |
|---|---|
| Oil check plug | 15–17 |

**Conventional tools**

Socket 11 mm with joint and extension

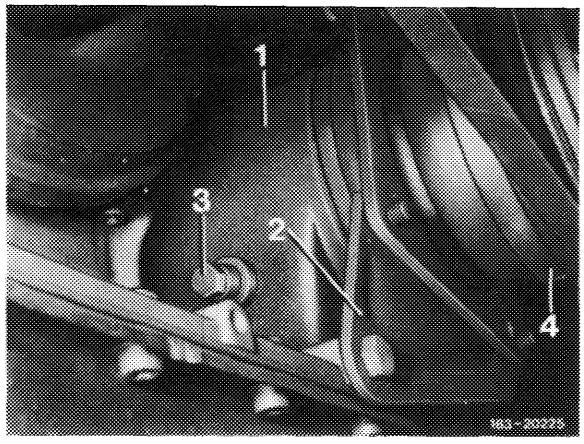
**Note**

All compressors are **filled with approx. 300 cc of refrigerant oil** by the manufacturer. Under normal conditions, oil is neither changed nor added.
**Never fill-in machine or engine oil.**

**Check oil level after replacing parts, prior to refilling system, or when refrigerant or oil has been lost.**
Since a certain quantity of oil is picked up by the refrigerant and will get into the system, a loss of refrigerant may also include a loss of oil.

Models with Delco compressor permit an oil level check in installed condition. Such a checkup is necessary only if the system is completely empty. For details concerning removal and installation of refrigerant compressor refer to 83–522.

For checking oil level, unscrew oil check screw (3) and add refrigerant oil with squirt can up to overflow. Screw back oil check screw and tighten.




Delco refrigerant compressor with carrier
1 Refrigerant compressor
2 Carrier
3 Oil check screw
4 Electromagnetic clutch

## C. Delco-refrigerant compressor (engine 617.951)

**Oil capacity**

| | |
|---|---|
| Oil type: Refrigerant oil (for approved refrigerant oils refer to specifications for service products, page no. 362). | |
| Fresh oil in refrigerant compressor | 170 cc |

**Oil capacity when working on system**

| Procedure | Quantity of refrigerant oil to be filled in |
|---|---|
| Renew refrigerant compressor, oil quantity drained from old compressor above 40 cc [1]). | Drain refrigerant oil from removed compressor and measure quantity. Also drain refrigerant oil on new compressor and keep in closed storage. Fill new compressor with same quantity of fresh refrigerant oil as drained from removed compressor. |
| Renew refrigerant compressor, oil quantity drained from old compressor below 40 cc [1]). | See above, but fill-in 90 cc of refrigerant oil. |
| Recondition refrigerant compressor (drained oil quantity above 40 cc [1]). | Fill drained quantity of oil plus an additional 30 cc into compressor. |
| Recondition refrigerant compressor (drained oil quantity below 40 cc. [1]) | 90 cc |
| Add refrigerant to system (up to 200 g). | Do not fill in refrigerant oil. |
| Add refrigerant to system (more than 200 g) or fill system completely new in the event of a leak. | 30 cc |
| Renew condenser | 50 cc |
| Renew evaporator | 70 cc |
| Renew receiver dehydrator | 40 cc |

[1]) Renew receiver dehydrator, but do not fill refrigerant oil into receiver dehydrator.

| **Tightening torques** | Nm | (kpm) |
|---|---|---|
| Screws M 12 refrigerant compressor to carrier | 60+10 | (6+1) |
| Screw pipe line to refrigerant compressor | 50±3 | (5±0.3) |
| Hose line from evaporator to pipe line 7/8" | 29–37 | (2.9–3.7) |
| Hose line from pipe line to condenser 3/4" | 24–28 | (2.4–2.8) |

**Special tools**

| | | |
|---|---|---|
| Holding device for refrigerant compressor |  11004-8103 | 116 589 14 31 00 |
| Pressure-test plate for refrigerant compressor |  11004-7632 | 109 589 00 25 00 |

**Conventional tools**

| | |
|---|---|
| Double open end wrench 1/2" x 9/16", 5/8" x 3/4", 7/8" x 15/16", 1" x 11/8"<br>Socket 14 mm, 3/8" square | |
| Assembly tester with 3 filling hoses or evacuating and filling device for air-conditioning system | e.g. made by Christof Fischer,<br>Augsburger Str. 289<br>7000 Stuttgart 60 |
| Oil pump order no. 823–2250 | |

**Note**

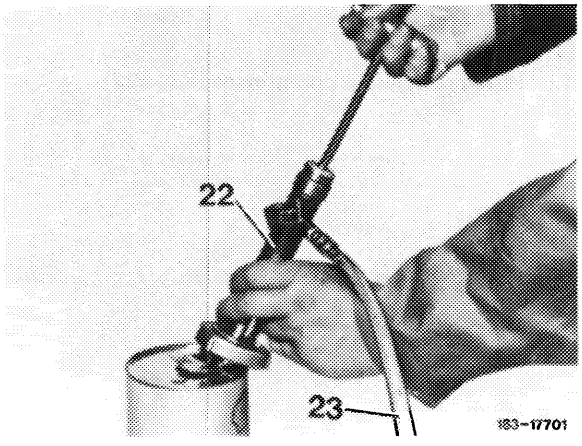
But be sure to install a new receiver dehydrator.

No refrigerant oil need be added if refrigerant losses for an extended period do not exceed 400 g. If more than 400 g refrigerant are added, check air-conditioning system for leaks. The specified quantity of refrigerant oil can be forced into filled air-conditioning system by means of an oil pump. If a complete refill is required, fill approx. 30 cc refrigerant oil into system prior to evacuation.

The 4-cylinder refrigerant compressor receives an oil charge of approx. 170 cc (6 oz) of refrigerant oil. Since this refrigerant compressor has no oil sump, a given quantity of oil will circulate during normal operation with the R 12 in air-conditioning system. If a component of the system must be replaced, a given quantity of oil must be filled directly into the new component.

**Adding refrigerant oil with oil pump with refrigerant compressor installed and air-conditioning system filled**

**Note:** Prior to connecting the oil pump (22) to the refrigerant circuit, find accurate volume of oil pump by sucking-in and forcing-out refrigerant oil several times.

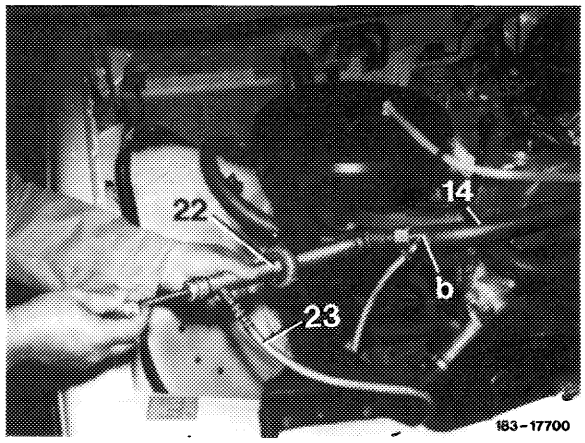


1 Place refrigerant oil into a measuring vessel and suck up with oil pump (22).

2 Remove closing cap from service valve (b) at hose line (14).

3 Connect oil hose (23) from oil pump (22) to service valve (b) and force oil quantity into system.

4 Disconnect oil hose (23) and screw closing cap to service valve.




**Oil capacity of refrigerant compressor**

5 Remove refrigerant compressor (83–522).

6 Drain oil from refrigerant compressor while holding refrigerant compressor with shaft stump in upward direction and let oil run out through pressure and suction hole for approx. 10 minutes. Draining of oil will be accelerated by turning drive shaft (clutch) several times.

7 Drain refrigerant oil out of new refrigerant compressor as described under item 6.

8 Check how much oil has run out of original refrigerant compressor and pipe line.

9 Fill same quantity of fresh oil into new refrigerant compressor through suction hole, if the oil quantity drained from removed refrigerant compressor amounts to more than 40 cc. If the drained oil quantity is below 40 cc, add 90 cc into new refrigerant compressor.

10 When the refrigerant compressor is reconditioned, drain refrigerant oil out of refrigerant compressor as described under item 6. If the drained oil amounts to more than 40 cc, fill the drained oil quantity and an additional 30 cc into refrigerant compressor. If the drained oil quantity is below 40 cc, fill 90 cc refrigerant oil into refrigerant compressor.

11 Check O-ring for correct seat and provide with refrigerant oil.

12 Install refrigerant compressor (83–522).