Filling capacity	Model	kg
Refrigerant R 12	116.02/032/033 116.036	1.0 1.2
Refrigerant bottle R 12, one-way bottle Frigen-Baby R12		approx. 7.5 approx. 0.430

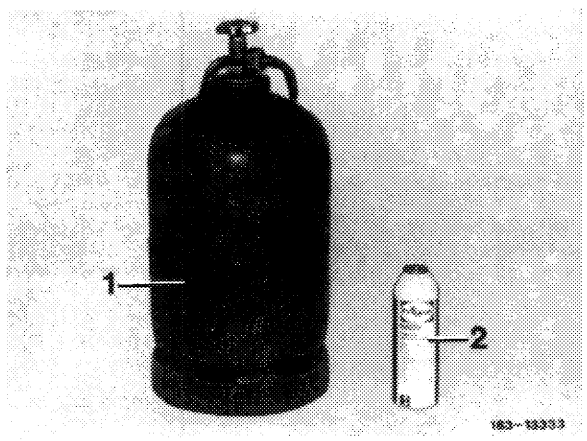
Conventional tools

Assembly tester with 3 filling hoses and vacuum pump or evacuating and filling unit (service unit) for air conditioning system	
Line connection reduction piece 7/16" – 1/4" for refrigerant bottle or tapping valve for Frigen-Baby bottle.	e.g. made by Christof Fischer Augsburger Straße 289 7000 Stuttgart 60
Filling aid type CH 200 and angle piece 90° with rapid screw connection 7/16"	
Double open-end wrench 1/2" x 9/16"	

Note

The jobs for refilling and filling up of air conditioning system are in principle alike. When refilling, evacuate system first (83–512).

Note: Filling requires a supply bottle (1) with refrigerant, which is commercially available just like e.g. a supply bottle with oxygen or acetylene gas. In addition, there are small cans (2 [Frigen Babys]) containing approx. 1/2 liter R 12. If hard to obtain, contact one of the specialist companies manufacturing or operating refrigerating units.



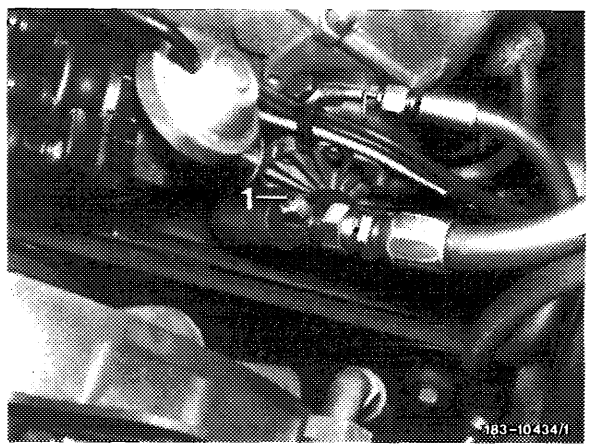
Since the refrigerant in the supply bottle is under pressure and liquid, and will flow in the shape of gas when filling the air conditioning system **without** filling cylinder or when refilling, it is recommended (at least when the supply bottle is already partially empty) to place the supply bottle in a water bath of **max 40 °C.** If the system is completely empty, the refrigerant can also be filled-in in liquid shape via pressure end upon evacuation. Filling up can be done only in the shape of gas with the system switched on. **When filling the system from a refrigerant bottle of 10 or 20 kg capacity, a scale with 100 g graduation for the bottle or a filling cylinder will be required.**

Attention!
If filling up in the shape of gas, the supply bottle should always be set up with the lock in upward direction.

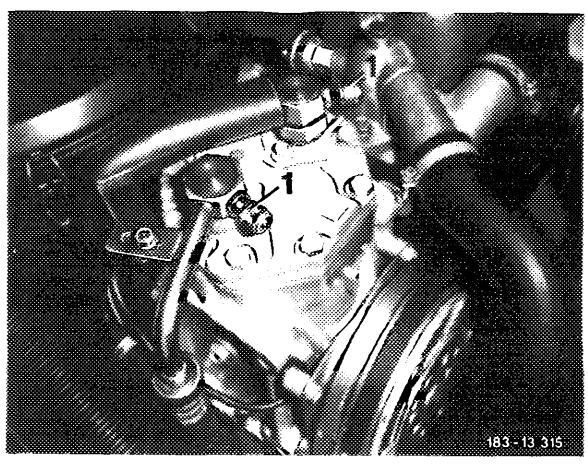
A. Filling system from supply bottle

Filling-in refrigerant in the shape of gas

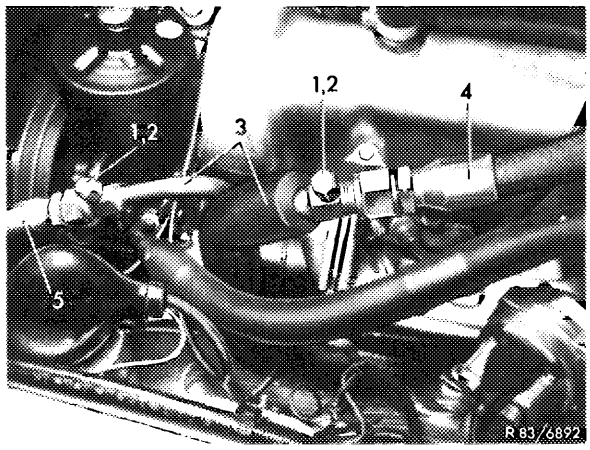
1 Remove closing caps (1) from service valves.



Frigidaire refrigerant compressor
Engine 100

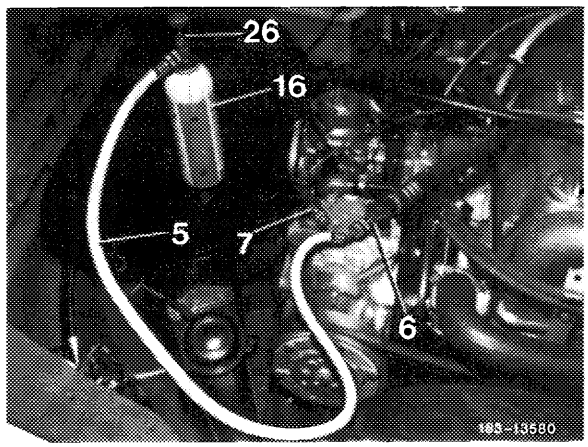


York refrigerant compressor
Engine 110



Frigidaire refrigerant compressor
Engines 116 and 117

2 Screw line connection reduction piece (26) on supply bottle (16). Connect filling hose (5) to reduction piece (26) and blow through for a short moment with refrigerant to remove remains of dirt and moisture, if any, then connect filling hose (5) to connection (6 [suction end]) of service valve (offset end with pressure pin of hose line).



3 Run engine at approx. 1000/min and set temperature selector knob to the highest cooling capacity and blower switch to full blower speed. In rooms with temperatures above 20 °C blow out condenser with an additional blower. Blowing out of condenser will always speed up filling.

4 Slowly open valve on supply bottle. When filling up air conditioning system, continue until refrigerant flows free of bubbles past sight-glass of receiver dehydrator.

5 When refilling, fill in approx. 100–200 g refrigerant. Then stop engine.

6 Check complete air conditioning system with leak tester and seal leaks, if required. Fill system with full quantity of refrigerant only when there are no more leaks.

7 Completely fill air conditioning system (item 1 to 3).

8 Close valve on supply bottle and stop engine. Disconnect filling hose (5).

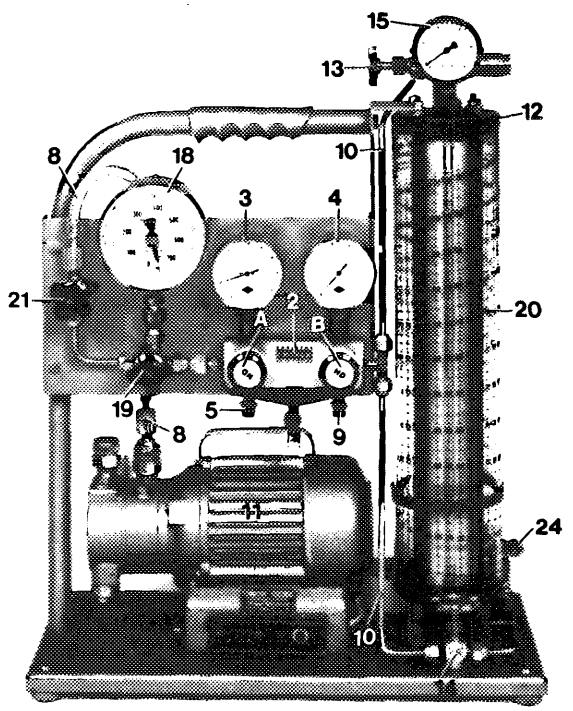
9 Screw closing caps (1) to service valves.

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

B. Filling system with filling cylinder or service unit

Note: The filling cylinder (12) serves for the accurate filling of the desired quantity by weight of refrigerant.

If the temperature of the refrigerant, which is inside the closed cylinder, is increased, the pressure and the specific volume of the liquid refrigerant will also increase.
If an accurate quantity by weight is taken from a cylinder provided with a sight-glass, it will be necessary to compensate the changes in specific weight caused by the change in temperature.



By reading the pressure on the pressure gauge (15) and by adjusting this pressure on the upper scale of the rotatable plastic cylinder (20), and with reference to the refrigerant to be filled in as stated on lower rim of rotatable plastic cylinder, the changes in volume under the influence of temperature can be compensated. Since the air conditioning system is filled with R 12, set scale for R 12 at lower rim of plastic cylinder when filling up.