



Sealing agents

Use of sealing agents endangers warranty / guarantee

An air conditioning system sealing agent (Fig. 1 shows an example) is a fluid which is added to the air conditioning circuit and which circulates through the system together with the refrigerant and the oil. In the event of leaks up to a certain size, the sealing agent hardens at the leaky spot and closes it. There are three different types of sealing agents.

1. Sealing agents to repair the sealing of O-rings and other rubber elements
2. Sealing agents to repair metal components
3. Combined sealing agents to repair O-rings and metal components



Fig. 1

By using sealing agents, the "sealing function" of brittle or shrunken O-rings can be improved by making them swell up and become more supple. In addition, it is possible to seal minor leaks in metal components (evaporator, condenser) (Fig. 2).

The sealing agents are added to the air conditioning system in liquid form and contain substances which harden when they come into contact with humidity and air. The moment external air or humidity tries to enter the system at the leaky spot, part of the sealing agent hardens and seals the leak. As long as the system is dry from the inside and no humidity penetrates, the sealing agent continues to circulate through the system.

When sealing agents are used, it must be ensured that the inside of the system is free of any humidity, since this can otherwise lead to blockages (Fig. 3 shows a throttle valve). This requires replacement of the filter-dryer/accumulator and sufficient evacuation time (at least 30 minutes). This is the

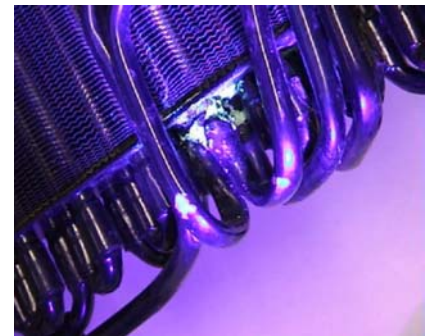


Fig. 2



only way to make sure that the sealing agent does not react with humidity in the system or in the filter-dryer/accumulator shortly after filling, thereby causing problems.

The use of sealing agents is not a permanent, professional repair method and should be considered only when repair costs are not justifiable in relation to the current value of the vehicle. Sealing agents can be used only up to a certain leak rate. Leaks which are so large that the complete refrigerant is lost within a few days cannot be sealed in this way. The use of sealing agents must always be indicated by a sticker in the engine compartment. There are now testing devices or testing methods on the market which can be used to detect sealing agents in the refrigerant circuit by taking a refrigerant sample (Fig. 4). When refrigerant is being evacuated, there is a risk of the sealing agent reacting with the humidity in the service station, leading to blockages/damage. Retrofit filter systems (Fig. 5) which filter the sealing agent out of the refrigerant before it reaches the service station are available from various manufacturers. The only possibility of removing sealing agent residues from an air conditioning system is to flush the system out using chemical agents. Problems can occur with multi-flow components during flushing; these must be renewed if in doubt. The customer should be informed about the disadvantages of sealing agents, the necessary replacement of the filter-dryer/accumulator and the potential loss of warranty/guarantee rights.

CAUTION: Any warranty/guarantee rights are automatically rendered invalid by many vehicle and parts manufacturers if sealing agents are used!



Fig. 3



Fig. 4



Fig. 5