

AUTOMOTIVE AIR CONDITIONING REPAIR

Question:

How does air get into an AC system and become a contaminate?

Answer:

First, let's establish why air won't work in an AC system. Air is the third state of matter of ice. It requires heat to change states of matter. To collect heat, there must be a change of state. When heat is dissipated, there must be a change of state. Air is never in a liquid state so therefore will never work in an AC system as they are presently designed.

If the air isn't working in the system then it is taking up space. If the AC system isn't working, it is a tendency to install more refrigerant, attempting to make it work. This causes pressures to be higher than normal. It causes the compressor to run hot and will cause leakage or failure of the compressor. Air contains moisture and that creates a bigger problem. Hydrochloric acid is formed when moisture and refrigerant come in contact with each other. It causes metal to rust, aluminum to deteriorate, and pressures to run high.

Here are a couple ways that air gets into a system. If the system was not evacuated, air and moisture is in the system.

When a charge of refrigerant is recovered, the air that was in the system is now in the recovery machine. If the machine is not allowed to complete its functions, the air will be trapped in the tank. Older equipment will not purge off air so it has to be done manually. If these steps are not taken to purge off air, it is assumed that there is no air and the refrigerant is reused.

It should be a weekly procedure to check the tank for air contamination. This is done by reading the temperature of the tank and the pressure that is in the tank. Refer to a pressure/temperature chart. For example, seventy degrees ambient temperature is equal to seventy pounds pressure.