13. Evaporator

A: MECHANISM

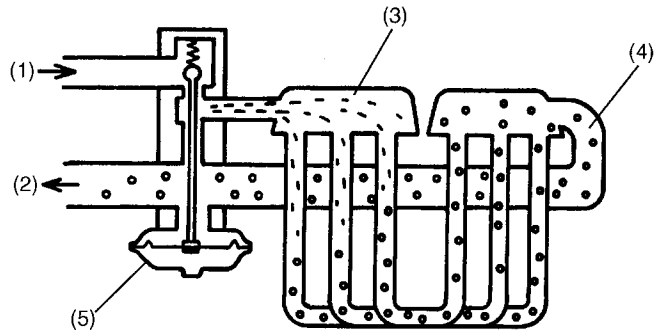
Air pushed by the blower passes through the cooling fins and tubes of the evaporator. Since the air is warmer than the refrigerant, the heat of air moves to the refrigerant through the fins and tubes. As the low-pressure refrigerant moves through the evaporator, heat from the air causes the refrigerant to boil. By the time the refrigerant has passed through the evaporator, it becomes vapor. Moisture in the air condenses to water drops as it moves around the tubes and fins of the evaporator. Water and dirt are then discharged outside the vehicle through a drain hose.

The evaporator is a laminated type and consists of thin, rectangular aluminum plates arranged in multiple layers and fins that are attached between them. During flow through the evaporator, the state of the refrigerant changes as follows:

Misty refrigerant (very close to liquid form) from the expansion valve at a low-pressure, enters the lower tube of the evaporator, where it soaks up heat from the compartment. The refrigerant boils and vaporizes quickly due to the rapid heat exchange. Then the refrigerant is pushed upward by the force of the bubble generated during the heat exchange and enter the upper tube. When it reaches the upper tank, the refrigerant is in a thoroughly vaporized state.

The evaporator has a single tank, and its surface has been given the following treatments.

- Rustproof treatment
- Waterproof treatment
- Moldproof treatment



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(1) From receiver drier
(2) To compressor
(3) Misty refrigerant
(4) Vapor
(5) Expansion valve