GLOBAL PARTS DISTRIBUTORS, LLC

Tech Tip

Late Model Evaporators

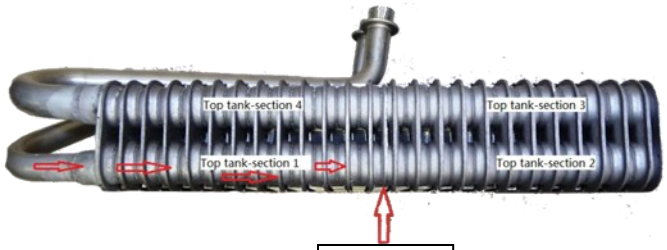
Like condensers, evaporators have undergone a lot of design changes to produce more efficiency from a smaller area. Evaporators are now part of an elaborate system of electronic doors and actuators to produce the exact temperature you request on the dashboard. They are also located under the dashboard, which makes the repair job labor intensive.

Evaporators on some late model vehicles can have up to six internal passages that change the flow of refrigerant to enhance the heat exchange to help in keeping the vehicle at a constant temperature.

These evaporators have the nickname "twin pack", because they "split" into two. The front and the back section are separated. Then, for each section, they are "split" again into two to produce the most heat exchange for each single refrigerant flow through the evaporator.

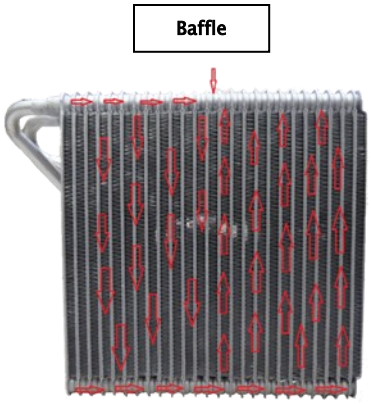
As you can see below, the refrigerant passes through the inlet, and like a condenser, the refrigerant is turned to flow downward, rather than across the whole evaporator. From there, it flows to the bottom tank, where it is again directed to flow to another part of the evaporator; repeating the process up to four times.

1.



Refrigerant flows into the top tank- Section 1. Section 1 is separated from section 2 by the baffle.

2.



From top tank- section 1, the refrigerant flows down to the bottom tank- section 1. There is no baffle in bottom tank- section 1.

The refrigerant flows across the bottom tank- section 1 and then continues back up to the top tank- section 2.

Continue on back

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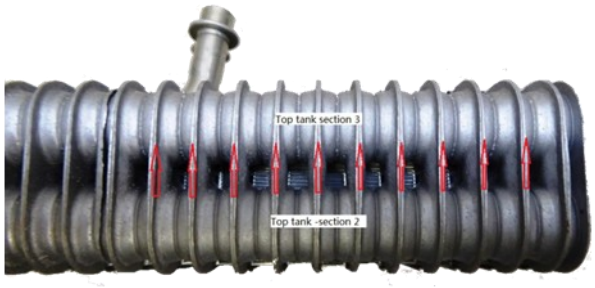
3.



Top tank section 2 is connected to top tank- section 3 by passageways that permit the through flow of refrigerant.

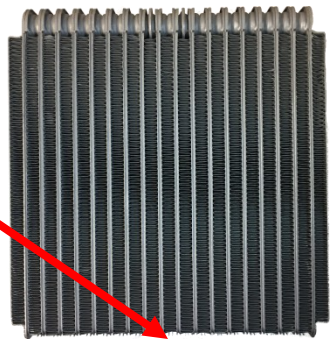
4.

Flow continues up to top tank- section 4 and then to the outlet.

From top tank- section 3 the refrigerant flows down to bottom tank- section 2. Bottom tank- section 2 is not baffled.

There are some cheaper products that are in the market that do not offer the same design or refrigerant flow. They may create a cooling issue, because the refrigerant will not have the same amount of surface area to generate heat exchange. They may also put the air conditioning system in to an overcharge situation, because modern systems take less refrigerant, so the smallest of overcharges has a large impact on the system.

No Tank



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