

Title (en)  
COMPOUND HEAT EXCHANGE UNIT

Title (de)  
ZUSAMMENGESETZTE WÄRMETAUSCHEREINHEIT

Title (fr)  
UNITE D'ECHANGE DE CHALEUR COMPOSITE

Publication  
**EP 2360444 A1 20110824 (EN)**

Application  
**EP 09829056 A 20091124**

Priority  
• JP 2009069779 W 20091124  
• JP 2008301312 A 20081126

Abstract (en)  
A combined heat-exchanger includes a first air-cooled heat-exchanger 5 for cooling coolant for a heat generator other than an internal combustion engine in an automobile and a second air-cooled heat-exchanger for cooling refrigerant for air-conditioning. The first air-cooled heat-exchanger includes an upstream tank into which the coolant flows, a downstream tank from which the refrigerant flows out, flow channel members that communicate the upstream tank with the downstream tank, heat release fins that are alternately stacked with the flow channel members, and a water-cooled heat-exchanger for cooling the refrigerant. The water-cooled heat-exchanger is disposed within the downstream tank, and includes an inlet port to which the refrigerant flows at its upper portion and an outlet port from which the refrigerant flows out at its lower portion. According to the heat-exchanger, staying of oil mixed in the refrigerant can be prevented, heat exchange efficiency can improve and downsizing can be achieved.

IPC 8 full level  
**F28F 9/02** (2006.01); **F28F 9/26** (2006.01)

CPC (source: EP US)  
**F28D 1/0452** (2013.01 - EP US); **F28F 9/0234** (2013.01 - EP US)

Citation (search report)  
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Cited by  
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