

Title (en)
CYCLONE REFRIGERATION DEVICE, CYCLONE COOLNESS/HEAT RECOVERY UNIT, AND HEAT PUMP SYSTEM PROVIDED WITH SAID CYCLONE REFRIGERATION DEVICE OR CYCLONE COOLNESS/HEAT RECOVERY UNIT

Title (de)
ZYKLONKÜHLVORRICHTUNG, ZYKLONKÜHL-/WÄRMERÜCKGEWINNUNGSEINHEIT UND WÄRMEPUMPENSYSTEM MIT DIESER ZYKLONKÜHLVORRICHTUNG ODER ZYKLONKÜHL-/WÄRMERÜCKGEWINNUNGSEINHEIT

Title (fr)
DISPOSITIF DE RÉFRIGÉRATION CYCLONE, UNITÉ DE RÉCUPÉRATION DE FROID/ CHALEUR CYCLONE, ET SYSTÈME DE POMPE À CHALEUR ÉQUIPÉ DUDIT DISPOSITIF DE RÉFRIGÉRATION CYCLONE OU UNITÉ DE RÉCUPÉRATION DE FROID/CHALEUR CYCLONE

Publication
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Application
EP 19741070 A 20190118

Priority
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• JP 2019001499 W 20190118

Abstract (en)
[origin: EP3742070A1] A cyclone refrigeration device comprises a cylindrical portion 1, an exhaust pipe 3, a cooling portion 4 with a cavity 4a communicating with an interior space 1b of the cylindrical portion, a refrigerant inflow pipe 5 and a decompression unit 6. A liquid-phase refrigerant condensed under high pressure is supplied into the refrigerant inflow pipe and decompressed into a solid-gas two-phase refrigerant by the decompression unit, and the solid-gas two-phase refrigerant flows downward into the interior space of the cylindrical portion while forming a first vortex flow and separating into a solid-phase refrigerant and a gas-phase refrigerant. The solid-phase refrigerant deposits in the cavity and the gas-phase refrigerant forms a second vortex flow rising from the bottom of the cavity through the inside space of the first vortex flow to flow out through the exhaust pipe. A circulation pipeline for circulating fluid to be cooled 7a, 7b extends through the cavity. A heat exchanger 8 is provided in a portion of the circulation pipeline which is located within the cavity and exchanges heat between the solid-phase refrigerant and the fluid to be cooled. A pump 10 circulates the fluid to be cooled.

IPC 8 full level
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CPC (source: EP)
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Citation (search report)
• [YA] US 4224801 A 19800930 - TYREE JR LEWIS
• [YD] JP 2004308972 A 20041104 - MAEKAWA SEISAKUSHO KK
• [A] US 2043190 A 19360602 - CARPENTER WALTER E
• [Y] EP 2656741 A2 20131030 - MESSER FRANCE SAS [FR], et al
• See references of WO 2019142919A1

Designated contracting state (EPC)
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DOCDB simple family (application)
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