

Title (en)
REFRIGERATION CYCLE DEVICE

Title (de)
KÄLTEKREISLAUFVORRICHTUNG

Title (fr)
DISPOSITIF À CYCLE DE RÉFRIGÉRATION

Publication
EP 4134601 A1 20230215 (EN)

Application
EP 20930077 A 20200407

Priority
JP 2020015651 W 20200407

Abstract (en)
A refrigeration cycle apparatus (100) includes: a compressor; a four-way valve; a first heat exchanger (3) having a first flow inlet/outlet portion (3A) and a second flow inlet/outlet portion (3B) through which a non-azeotropic refrigerant mixture flows in and out, and a first tube portion (31A) and a second tube portion (32A) that are connected in series to each other between the first flow inlet/outlet portion and the second flow inlet/outlet portion, the non-azeotropic refrigerant mixture flowing through the first tube portion (31A) and the second tube portion (32A); a decompressing device; and a second heat exchanger (6). The non-azeotropic refrigerant mixture contains refrigerant having a characteristic causing a disproportionation reaction and refrigerant not having the characteristic causing a disproportionation reaction. The four-way valve performs switching between: a first state in which the non-azeotropic refrigerant mixture flows in order of the compressor, the first heat exchanger, the decompressing device, and the second heat exchanger; and a second state in which the non-azeotropic refrigerant mixture flows in a direction opposite to a direction in which the non-azeotropic refrigerant mixture flows in the first state. In the first state, the non-azeotropic refrigerant mixture flows through the first heat exchanger in order of the first flow inlet/outlet portion, the first tube portion, the second tube portion, and the second flow inlet/outlet portion. In the second state, the non-azeotropic refrigerant mixture flows through the first heat exchanger in order of the second flow inlet/outlet portion, the second tube portion, the first tube portion, and the first flow inlet/outlet portion. A first inner circumferential surface of the first tube portion is higher in area expansion ratio than a second inner circumferential surface of the second tube portion.

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