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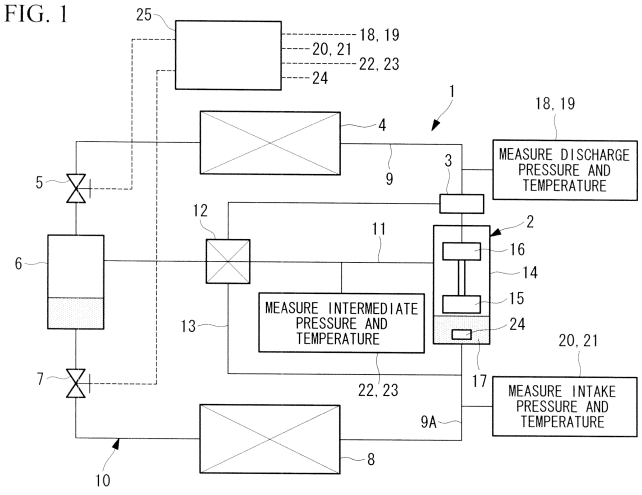
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(54) Supercritical-cycle heat pump

(57) A supercritical-cycle heat pump (1) that employs CO_2 refrigerant as a working medium that is provided with an injection circuit (11) for injecting intermediate-pressure refrigerant gas being separated by a gas-liquid separator 6 into a sealed housing (14), having intermediate pressure in the interior thereof, in a multistage compressor (2), a controller (25) is provided, which determines the viscosity of the POE oil (17) on the basis of the solubility of the POE oil (17) in the CO_2 refrigerant and temperature of the POE oil (17), the solubility of the POE oil (17) in the CO_2 refrigerant being determined by pressure and temperature of intermediate-pressure refrigerant and which controls the pressure of the intermediate-pressure refrigerant by controlling a first electronic expansion valve (5) so that the pressure thereof is controlled within a preset usage limit range in order to keep the viscosity of the POE oil (17) above the certain viscosity zone.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 12 17 7749

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	6 February 2014	Szilagyi, Barnabas

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