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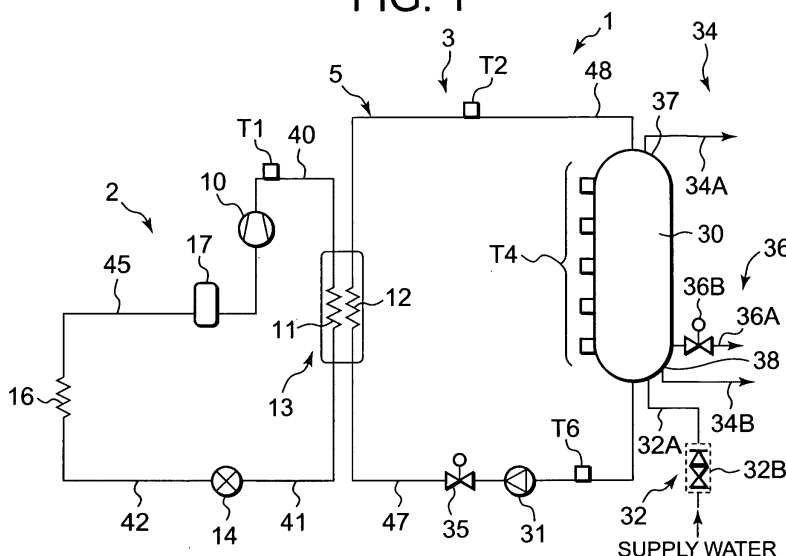
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(54) **Refrigeration cycle device**

(57) In a refrigeration cycle device (2) in which heat generated by heat absorption of an evaporator (16) is used for heating in a condenser (11), a disadvantage that a cooling capacity of the evaporator (16) deteriorates owing to shortage or drop of an amount of the heat to be rejected from the condenser (11) is securely avoided and a cooling function is maintained. In the refrigeration cycle device which is provided with a refrigerant circuit including a compressor (10), a condenser (11), an expansion

valve (14) and an evaporator (16) and which exhibits a heating function by the heat rejected from the condenser (11) and which exhibits the cooling function by the heat absorption of the evaporator (16), an operation to secure a predetermined amount of the heat to be rejected from the condenser (11) is executed in order to maintain the cooling function of the evaporator (16) based on an index capable of grasping the amount of the heat to be rejected from the condenser (11).

FIG. 1





EUROPEAN SEARCH REPORT

Application Number
EP 07 00 3911

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 373 345 A (TYREE JR LEWIS [US] ET AL) 15 February 1983 (1983-02-15) * column 2, line 4 - column 7, line 33; figure * * column 6, line 47 - column 7, line 3 *	2	INV. F25B29/00
X	US 4 351 159 A (SCHUMACHER FRANK A) 28 September 1982 (1982-09-28) * column 2, line 43 - column 5, line 27; figures 1,2 * * column 4, line 31 - column 4, line 49 *	2	ADD. F25B6/02 F25B6/04 F25B9/00 F25B49/02
A	GB 2 117 884 A (BIRMINGHAM HEAT PUMPS LIMITED) 19 October 1983 (1983-10-19) * page 3, line 21 - page 3, line 127; figures 3-5 *	2	
			TECHNICAL FIELDS SEARCHED (IPC)
			F25B F24D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 17 January 2011	Examiner Szilagyi, Barnabas
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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EPO FORM 1503 03.92 (P04C01)



Application Number

EP 07 00 3911

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

see additional sheet(s)

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

EP 07 00 3911

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claim: 2(partially)

Refrigeration cycle wherein the cycle is operated if a temperature of the water stored in the hot water storage tank rises to a predetermined value or more.

2. claim: 2(partially)

Refrigeration cycle wherein the cycle is operated if a temperature of water to be circulated through a heat exchanger which performs heat exchange between the condenser and the water stored in the hot water storage tank rises to a predetermined value or more.

3. claim: 2(partially)

Refrigeration cycle wherein the cycle is operated if a temperature in the condenser rises to a predetermined value or more.

4. claim: 2(partially)

Refrigeration cycle wherein the cycle is operated if a temperature of a refrigerant discharged from the condenser rises to a predetermined value or more.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 00 3911

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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17-01-2011

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4373345	A	15-02-1983	NONE	
US 4351159	A	28-09-1982	NONE	
GB 2117884	A	19-10-1983	NONE	