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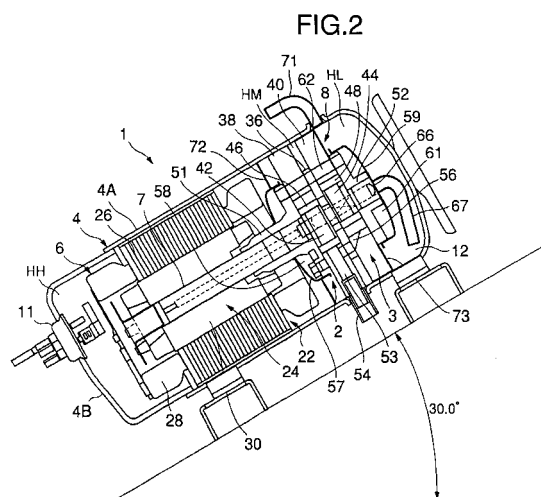
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(54) **Hermetic compressor**

(57) An object of the invention is to provide a horizontal closed type compressor for vehicle use which can suck a lubricating oil from an oil suction pipe without an oil surface of the lubricating oil becoming lower than the oil suction pipe, even in the case that a vehicle is inclined and the compressor is accordingly inclined. A horizontal closed type compressor for vehicle use is provided with a motor (6) housed within a closed container (4) to divide a shaft (7). A compression element (8) is driven by the motor (6), oil supplying means provided on the opposite side to the motor (6) feed lubricating oil to the compression element (8). The compression element (8) compresses refrigerant gas drawn from the exterior of the closed container (4) and discharge it into the motor side of the closed container, and thereafter out of the closed container from the side of the oil supplying means. Partition walls (72,73) divide the interior of the closed container (4) while allowing the refrigerant gas and the lubricating oil to move therethrough and are located respectively in the side of the motor (6) and the side of the oil supplying means in the compression element (8).





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## EUROPEAN SEARCH REPORT

Application Number  
EP 02 25 0724

| DOCUMENTS CONSIDERED TO BE RELEVANT  |  |  |   |
|--|--|--|---|
| Category   | Citation of document with indication, where appropriate, of relevant passages  | Relevant to claim  | CLASSIFICATION OF THE APPLICATION (Int.Cl.7)    |
| A  | EP 0 569 119 A (CARRIER CORP)<br>10 November 1993 (1993-11-10)<br>* column 4, line 7 - line 32; figure 2 *   | 1  | F04C23/00<br>F04C18/356                         |
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| X  | ---<br>US 5 520 015 A (SAPERSTEIN ZALMAN P ET AL) 28 May 1996 (1996-05-28)<br>* claim 1 *  | 4,5  |   |
| X  | ---<br>US 4 063 431 A (DANKOWSKI GERHARD)<br>20 December 1977 (1977-12-20)<br>* column 5, line 47 - line 50; claim 1 *   | 4,5  |   |
| The present search report has been drawn up for all claims   |  |  |   |
| Place of search<br><b>THE HAGUE</b>  |  | Date of completion of the search<br><b>28 March 2003</b> | Examiner<br><b>DIMITROULAS, P</b>               |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |  |  |   |

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### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

### 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:



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LACK OF UNITY OF INVENTION  
SHEET B

Application Number  
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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. Claims: 1-3

A horizontal closed type compressor housed in a closed container with partition walls dividing the interior of the closed container

2. Claims: 4-5

A cooling system for an electric compressor with heat exchanging means

Prior art document JP 07 229660 discloses a horizontal closed type compressor with a motor housed in a closed container which drives a rotary shaft in a lateral direction, and a compression element such as a rotary compressor, scroll compressor or the like driven by the motor. Lubricating oil is stored within the closed container. An oil suction pipe is located opposite the motor element, and an oil pump sucks lubricating oil through the oil suction pipe and circulates it around a cylinder of the compression element and a bearing frame, thereby preventing the horizontal closed type compressor from being abraded.

Subject 1 (Claims 1-3)

The prior art document does not disclose partition walls dividing the interior of the closed container.

The problem to be solved is to make sure that the compressor can suck a lubrication oil from an oil suction pipe even when the compressor is inclined.

The special technical features which contribute to the solution are the partition walls dividing the interior of the closed container.

Subject 2 (Claims 4,5)

The prior art document does not disclose heat exchanging means arranged to establish heat exchanging relationship with an engine cooling system. The problem to be solved is to provide cooling system for an electric compressor for a vehicle in a limited space engine compartment.

The special technical features which contribute to the solution are heat exchanging means arranged to establish heat exchanging relationship with an engine cooling system.

The special technical features of the two subjects are neither the same nor corresponding and therefore the requirement for unity of invention referred to in Article 82 EPC is not fulfilled.

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

EP 02 25 0724

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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28-03-2003

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