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D E C I S I O N
of 5 July 2005

Case Number: T 1131/03 - 3.2.04

Application Number: 96109417.4

Publication Number: 0748937

IPC: F04B 27/18

Language of the proceedings: EN

Title of invention:

Displacement controlling structure for clutchless variable displacement compressor

Patentee:

Kabushiki Kaisha Toyota Jidoshokki Seisakusho

Opponent:

I: Zexel Valeo Climate Control Corporation

II: Zexel Valeo Compressor Europe GmbH

Headword:

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Relevant legal provisions:

EPC Art. 100(c), 111(1), 114(1), 123(2)

EPC R. 55(c)

Keyword:

"Added subject-matter (no) "

"Remittal for further prosecution (yes) "

Decisions cited:

G 0010/91

Catchword:

-



Case Number: T 1131/03 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 5 July 2005

Appellant: Kabushiki Kaisha Toyota Jidoshokki Seisakusho
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 1 September 2003
revoking European patent No. 0748937 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: M. Ceyte
Members: C. Scheibling
T. Bokor

Summary of Facts and Submissions

I. By its decision dated 1 September 2003 the Opposition Division revoked the patent. On 30 October 2003 the Appellant (patentee) filed an appeal and paid the appeal fee simultaneously. The statement setting out the grounds of appeal was received on 30 December 2003.

II. The patent was opposed on the grounds based on Article 100(a)(b) and (c) EPC. The Opposition Division revoked the patent because the subject-matter of claim 1 of the main request was considered to contravene the requirements of Article 123(2) EPC and because the subject-matter of claim 1 according to all auxiliary requests then on file was considered to contravene the requirements of Article 123(3) EPC.

III. Oral proceedings took place on 5 July 2005.

The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the claims as granted (main request) or on the basis of one of the first, second, third or fourth auxiliary requests filed with letter of 2 June 2005.

He mainly argued as follows: The ground for opposition based on Article 100(c) EPC was introduced just before the one month time limit set by the Opposition division had elapsed, that is not sufficiently in advance of the date of the oral proceedings to allow the representative of the Patentee to discuss this fresh matter with his client. Furthermore, some of the arguments used to substantiate this fresh ground for opposition were presented for the first time during

said oral proceedings. Finally, it was not possible for the Opposition Division to determine whether the objection raised was prima facie relevant. Therefore, the Opposition division should have disregarded this fresh ground for opposition under Article 114(2) EPC.

However, even if the ground for opposition based on Article 100c) EPC were admissible, a skilled person would certainly interpret the description especially paragraphs [0033], [0034], [0035] and [0038] of the description as granted (respectively page 11, line 27 to page 12, line 1; page 12, lines 3 to 9; page 12, line 29 to page 13, line 4 and page 14, lines 17 to 22 of the description as originally filed) as disclosing features A, B, C and D. Therefore, claim 1 of the main requests meets the requirements of Article 123(2) EPC.

The features A to D are detailed in section 2.2 below.

The Respondents (opponents I and II) countered the Appellant's arguments and mainly argued as follows: The description of the patent application does not comprise the words "parameter", "continuously", "maximum value" nor the expression "and all values in-between". It was thus prima facie clear that claim 1 as granted might contravene the requirements of Article 123(2) EPC and therefore, justified to introduce this ground for opposition into the proceedings.

As a matter of fact, none of the features A to D is explicitly contained in the application as originally filed. Concerning feature B, it is clear that the valve does not react when the amount of current applied to the solenoid is below a minimum, which corresponds to

the preload of the spring of the valve plunger and which is superior to zero. Thus, the teaching of the patent in suit cannot cover a range of current values between zero and that minimum amount. The description as originally filed does not teach a maximum value either. Thus, there can be no continuously varied value of current up to a maximum value.

Furthermore, features A to D are claimed in combination; however, there is no basis in the application as filed for the now claimed combination of features.

Consequently, claim 1 of the main request offends against Article 123(2) EPC.

The Respondents requested that the appeal be dismissed.

IV. Claim 1 according to the main request (as granted) reads as follows:

"1. A vehicle air-conditioner compressor of a variable displacement type, wherein the compressor has a plurality of pistons (22) mounted in respective cylinder bores (1a) and reciprocated by rotation of a variably inclinable swash plate (15), the inclination of the swash plate (15) being determined by the pressure within a crank chamber (2a) that houses the swash plate (15); the pressure within the crank chamber (2a) is established by feeding compressed gas from a discharge chamber (3b) through a supply passage (31; 61) into the crank chamber (2a) and returning gas from said crank

chamber (2a) through a pressure release passage (30; 30,58) to a suction chamber (3a); the flow of gas is controlled by an electromagnetic valve (20; 57; 59); and control means (Ca; Cb; Cc) control a value of electric current flowing through a solenoid (32) of said electromagnetic valve (20; 57; 59) for actuating a valve body (45; 50; 60) and adjusting the amount of opening of body (45; 50; 60) and adjusting the amount of opening of an associated valve hole (44d), said value of electric current being continuously varied on the basis of input parameters between zero and a maximum value and all values in-between and said input parameters including

i) whether the temperature of an evaporator (38) of an external refrigerant circuit (35) has fallen below a predetermined value thus indicating the possibility of frost; and

ii) a deviation of a passenger compartment temperature from a temperature set by a temperature controller (56)."

Reasons for the Decision

1. The appeal is admissible.

2. *Main request - Added subject-matter:*
 - 2.1 Introduction of the ground for opposition based on Article 100c) EPC into the proceedings:

According to paragraph 1 of the order of the decision of the Enlarged Board of Appeal G 10/91; OJ 1993; 420;

new grounds for opposition which are not covered by the statement under Rule 55(c) EPC need not to be considered by an Opposition Division. However, because of Article 114(1) EPC the Opposition Division may in exceptional cases and on its discretion, also consider other grounds for opposition which, prima facie, would seem to prejudice the maintenance of the European patent in whole or in part (G 10/91, paragraph 2 of the order).

In the Appellant's view, the Opposition Division should not have admitted the ground for opposition based on Article 100c) EPC at this stage of the proceedings. He argued that according to case law, to be admissible the relevance of the objection raised should have been evident prima facie. However, to determine whether the amended claim 1 contains subject-matter which extends beyond the content of the application as filed necessitates a thorough analysis, thus excluding a prima facie conclusion.

The Board does not share this point of view, since the objected claim 1 comprises words and expressions such as "parameter", "continuously", "maximum value" and "and all values in-between" which clearly do not appear in the application as originally filed. Therefore, in the Board's view, there are good prima facie reasons for believing that these added features which are not explicitly disclosed could effectively introduce subject-matter extending beyond the application as filed. It is in this respect not a matter of whether or not this ground for opposition requires a thorough analysis or investigation. What is decisive is solely whether - to paraphrase paragraph 2 of the order of

G 10/91 - the ground for opposition in question would prima facie seem to prejudice the maintenance of the European patent in whole or in part. This is here the case as explained above.

Accordingly, the Board comes to the conclusion that the Opposition Division has correctly exercised its discretion in introducing the ground for opposition according to Article 100c) EPC into the proceedings.

2.2 Claim 1, which is partly based on claims 1 to 6 as originally filed, page 1, lines 16 and 17 and Figure 1 of the description as originally filed; additionally comprises the following features:

A: the value of the electric current is continuously varied on the basis of input parameters,

B: between zero and a maximum value and all values in-between,

C: the input parameters including whether the temperature of an evaporator of an external refrigerant circuit has fallen below a predetermined value thus indicating the possibility of frost, and

D: the input parameter including a deviation of a passenger compartment temperature from a temperature set by a temperature controller.

2.3 According to the "Oxford Advanced Learners Dictionary of Current English", Encyclopaedic Edition, Oxford University Press 1992, the word "continuously" means "going on without stopping or being interrupted". Thus,

in the present case, this implies that the current is applied so as to vary without stopping or being interrupted in time.

The Respondents argued that "continuously" has been introduced in the description of the patent in suit with respect to the acknowledgment of the prior art and that therefore, the meaning of "continuously" has to be determined in the context of this prior art and thus, should be interpreted as meaning without interruption in "value".

This point of view cannot be shared. The mere use of the word "continuously" in a passage describing the background art does not amount to an explicit definition giving this word a special meaning. Furthermore, such an interpretation would not be in line with the description as originally filed, giving examples where the current is not continuous in value; see page 11, line 27 "The computer Ca de-energizes the solenoid ...", page 12, lines 7 to 9 "This causes a determined value of electric current to flow through the solenoid 32" or page 15, lines 19 to 21 "When the detected temperature ... the computer Ca sends commands to de-energize the solenoid 32". Therefore, it is clear that "continuously" has to be interpreted as meaning without interruption in "time" and not without interruption in "value".

- 2.4 It is clear from the description as originally filed that, at least when the switch, which activates the air conditioning apparatus, is turned on, the computer controls the driving circuit and adjusts the value of the current without interruption in time.

Thus, the value of the electric current is continuously varied.

- 2.5 Furthermore, on page 12, line 29 to page 13, line 4 of the description as originally filed, it is stated "A large difference between the temperature in the passenger compartment, which is detected by the temperature sensor 56a, and the temperature set by the temperature controller 56 indicates that cooling is greatly needed. In such a case, the computer Ca adjusts the value of the electric current that flows through the solenoid 32 in accordance with the temperature difference to alter the suction pressure. For example the computer increases the electric current value as the detected temperature becomes higher", and on page 14, lines 17 to 22 it is indicated "Contrarily, when the requirement for cooling becomes low, the difference between the temperature in the passenger compartment, which is detected by the temperature sensor 56a, and the temperature set by the temperature controller 56 becomes small. The lower the detected temperature is, the lower the computer Ca decreases the electric current value." Thus, the value of the electric current is varied on the basis of the temperature difference between the temperature of the passenger compartment and the temperature set by a temperature controller.

Consequently, features A and D do not contravene the requirements of Article 123(2) EPC.

- 2.6 That the computer can de-energise the solenoid, i.e. that the computer can set the value of the electric current to zero is disclosed in the description as

originally filed page 11, line 27; page 15, line 21 and page 19, line 14. Furthermore, it is self-evident that the current cannot indefinitely increase; there must be a maximum value inherent to the system. Thus, one of the limits (zero) of the claimed range is explicitly disclosed and the other (maximum value) is implicit.

Moreover, in the description as originally filed, it is indicated that "... the computer adjusts the value of the electric current that flows through the solenoid 32 in accordance with the temperature difference ..." see page 12, line 33 to page 13, line 2" and "The lower the detected temperature is, the lower the computer Ca decreases the electric current value" see page 14, lines 21 and 22.

Thus, a skilled person is given the information that the value of the current varies in function of the temperature, i.e. the temperature difference, and decreases when the temperature decreases. Consequently, when the temperature difference approaches or becomes equal to zero the current tends to or becomes also equal to zero.

The Respondents argued that there will be no response of the valve as long as the value of the current which flows through the solenoid does not produce a force which is sufficient to overcome the preload of the spring acting on the plunger that carries the valve body, i.e. as long as the current does not reach a "minimal value". He concludes that the computer will not set the current to values comprised between zero and the "minimal value" and that consequently, the

current cannot be set to all values between zero and the maximum value.

It might be true that when the current is set to values between zero and a "minimal value" the valve does not respond. However, there is no indication in the application as filed that the correlation between the variation of temperature difference and the variation of the electric current set by the computer ceases when the value of the current is between zero and a "minimal value". Therefore, a skilled person can only stick to the information effectively given in the description, which is that the values of the current set by the computer decrease with the temperature difference without any limit, and thus also below the "minimal value" necessary to overcome the plunger spring preload, regardless whether values below the "minimal value" induce a change of the valve opening or not.

Thus, feature B does not contravene the requirements of Article 123(2) EPC.

- 2.7 On page 11, line 27 to 33 of the description as originally filed, it is stated "The computer Ca de-energizes the solenoid 32 when the temperature of the evaporator 38, detected by the temperature sensor 39, becomes equal to or lower than a predetermined value while a switch 40, which activates the air-conditioning apparatus, is turned on. There is a possibility of frost forming when the temperature of the evaporator 38 becomes equal to or lower than the predetermined value."

Thus, whether the temperature of an evaporator of an external refrigerant circuit has fallen below a predetermined value, that indicates the possibility of frost, is one of the input parameters used by the computer to control the electric current.

The Respondents argued that feature C is claimed in combination with features A and B. However, feature C, cannot be considered as a parameter used for controlling the current, since the information that the predetermined value is reached, is not used to control, i.e. to continuously vary the electric current as the combination with the features A and B would imply, but corresponds to an emergency case, where the compressor is shut down, i.e. the solenoid de-energised.

This cannot be accepted. The information that the predetermined value is reached is used by the computer to de-energise the solenoid. Thus, this information is a parameter, which when present leads the computer to set the electric current to zero. Furthermore, even if the current is set to zero, the control of the electric current effected by the computer still continues in time.

Thus, feature C taken alone or in combination with features A and B does not contravene the requirements of Article 123(2) EPC.

- 2.8 Consequently, the ground for opposition based on Article 100c) EPC does not prejudice the maintenance of the patent as granted.

3. *Further processing:*

In the present case the Opposition division gave its decision solely upon the particular issues of added subject-matter and extension of the protection conferred (Article 123 EPC) and left the other issues undecided.

Since proceedings before the Boards of Appeal are primarily concerned with the examination of the contested decision, remittal of the case to the Opposition division in accordance with Article 111(1) EPC is normally considered by the Boards in cases where the Opposition division issues a decision solely upon a particular issue and leaves substantive issues regarding sufficiency of disclosure (Article 83 EPC), novelty (Article 54 EPC) or inventive step (Article 56 EPC) undecided.

The Board therefore considers it appropriate to remit the case to the first instance for consideration of the undecided issues.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.

The Registrar:

The Chairman:

G. Magouliotis

M. Ceyte