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**Datasheet for the decision  
of 11 March 2025**

**Case Number:** T 0591/23 - 3.2.03

**Application Number:** 18195507.1

**Publication Number:** 3461961

**IPC:** E03D9/08, G05D9/00, G05D23/00

**Language of the proceedings:** EN

**Title of invention:**  
SANITARY WASHING DEVICE

**Patent Proprietor:**  
TOTO LTD.

**Opponent:**  
Geberit International AG

**Relevant legal provisions:**  
EPC Art. 100(b), 100(a), 52(1), 54, 56

**Keyword:**

Sufficiency of disclosure (yes) - invention as claimed (yes) - solves the stated problem (not required) - over the whole claimed breadth (yes) - exclusion of non-working embodiments (yes)

Novelty - (yes)

Inventive step (yes) - mixture of technical and non-technical features (yes) - technicality of indirect measurement (yes) - exclusion of non-working embodiments (yes) - problem solved over the whole claimed breadth (yes) - reformulation of the technical problem (yes) - non-obvious (yes)

**Decisions cited:**

T 1473/19, T 0409/91, T 2284/15, T 2729/18, T 2773/18,  
G 0001/03, T 0939/92, G 0003/08, T 0092/21, G 0001/99



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**Case Number:** T 0591/23 - 3.2.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.03**  
**of 11 March 2025**

**Appellant:**

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**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted on 23 January 2023  
rejecting the opposition filed against European  
patent No. 3461961 pursuant to Article 101(2)  
EPC.**

**Composition of the Board:**

**Chairman**

C. Herberhold

**Members:**

M. Olapinski

N. Obrovski

## **Summary of Facts and Submissions**

- I. The appeal was filed by the opponent (appellant) against the decision of the opposition division rejecting the opposition filed against the patent in suit (the patent).
- II. The opposition division decided that the maintenance of the patent was not prejudiced by the ground for opposition under Article 100(b) EPC or by those under Article 100(a) EPC in combination with Articles 52(1), 54 and 56 EPC because the subject-matter of claim 1 was novel over D5, D1 and D6 and involved an inventive step starting from these documents.
- III. At the end of the oral proceedings, the parties' requests were as follows.

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the appeal be dismissed and the patent be maintained as granted (main request). As an auxiliary measure, it requested that the patent be maintained on the basis of one of auxiliary requests 1 to 13 submitted during the opposition proceedings or one of auxiliary requests 14 to 16 submitted with the letter of 3 February 2025.

- IV. The following documents are referred to:

D1: JP 2017 115298 A

D1': machine translation of JP 2017 115298 A

D5: WO 2012/051722 A1

D6: JP 2017115332 A

D6': machine translation of JP 2017115 332 A

V. Claim 1 as granted (main request) reads (with feature denominations in square brackets):

"A sanitary washing device (100) comprising:

[a] a heating part (440);

[b] a first temperature sensor (41) configured to sense temperature of water heated by the heating part (440);

[c] a second temperature sensor (42) provided downstream of the first temperature sensor (41) and configured to sense temperature of the water;

[d] a nozzle (473) provided downstream of the second temperature sensor (42) and configured to jet the water toward human private parts; and

[e] a controlling part (405),

*characterized in that*

[f] the controlling part is configured to determine that the second temperature sensor (42) is abnormal when

[f1] change of the temperature sensed by the first temperature sensor (41) is larger than a predetermined first value and

[f2] change of the temperature sensed by the second temperature sensor (42) is smaller than a predetermined second value."

The auxiliary requests did not play a role in the present decision.

VI. The appellant's submissions can be summarised as follows.

*Sufficiency of disclosure*

It was the invention as defined in the claims, and over the entire range claimed, which had to be sufficiently disclosed in the patent as a whole. An interpretation of the claimed invention that was restricted to the examples in the description was not permissible.

The invention defined in claim 1 as granted, in particular the meaning of the expressions "abnormal" and "change of the temperature", was so broad and unclear that a skilled person could not carry it out. More specifically, a skilled person was at least not able to carry out the invention over the whole range claimed. Independent claim 1 encompassed a broad range of embodiments without the features defined in the dependent claims, but the patent did not disclose how to carry them out. Thus, claim 1 also included non-working embodiments, i.e. embodiments that did not solve the problem stated in the patent. Moreover, an invention was not sufficiently disclosed if the skilled person was only enabled to carry out subject-matter that did not solve the problem stated in the patent. It also placed an undue burden on the skilled person to have to determine for themselves which configurations, sensors, values and parameter definitions made the invention workable.

For these reasons, the invention of claim 1 as granted was not sufficiently disclosed in the patent.

### *Novelty*

Documents D5, D1 and D6 disclosed sanitary washing devices with two temperature sensors and a controlling part falling within the terms of claim 1. Hence, the subject-matter of claim 1 as granted was not novel over D5, D1 or D6.

### *Inventive step*

Features f, f1 and f2 of claim 1 did not contribute to the technical character of the invention. The determination defined in Feature f that the second sensor was "abnormal" was not meaningful, relied on subjective, mental steps and did not provide a technical effect. Furthermore, claim 1 did not define any technical consequence of the determination and thus did not solve a technical problem, in particular, it did not solve the problem of avoiding injury to a user's intimate parts. Hence, Features f, f1 and f2 had to be disregarded for inventive step. Moreover, the meaningless classification of the second temperature sensor as abnormal without any corresponding action being defined in claim 1 represented a worsening compared to D5 which actually prevented scalding. Meaningless or disadvantageous solutions did not involve an inventive step even if they were non-obvious. Hence, the subject-matter of claim 1 as granted did not involve an inventive step.

VII. The respondent essentially argued as follows.

### *Sufficiency of disclosure*

The invention according to claim 1 as granted was sufficiently disclosed in the patent and could be carried out by a skilled person over the entire range claimed, excluding embodiments that did not make sense. The detailed examples in the description provided an explanation of the claimed terms and disclosed a workable embodiment. Modifications and adaptations to cover the breadth of the invention were within the skilled person's knowledge.

### *Novelty*

Documents D5, D1 and D6 did not disclose determining that, specifically, the downstream second sensor is abnormal. Moreover, these documents relied on absolute temperature values and did not disclose determining changes in the temperature. Hence, D5, D1 and D6 did not disclose at least Features f, f1 and f2, meaning that the subject-matter of claim 1 as granted was novel.

### *Inventive step*

Features f, f1 and f2 specified determining whether the downstream second temperature sensor was abnormal. This represented important technical information about the reliability of the temperature control. The objective technical problem was how to avoid injury to a user's intimate parts. As none of D5, D1 and D6 disclosed Features f, f1 and f2 and this combination was not part of the common general knowledge, it would not have been obvious to arrive at the subject-matter of claim 1 as granted, which thus involved an inventive step.



## **Reasons for the Decision**

### **1. Sufficiency of disclosure, Article 100(b) EPC**

- 1.1 The appellant submitted that the maintenance of the patent was prejudiced by the ground for opposition under Article 100(b) EPC. Sufficiency of disclosure required that the "invention" as defined in the claims be sufficiently disclosed in the patent as a whole. In view of the function and primacy of the claims, the description and figures were not to be used for a restrictive interpretation of the invention in claim 1 but had to disclose how the claimed invention could be carried out over the whole range claimed.

In claim 1, the meaning of the terms "abnormal" and "change of the temperature" remained open and broad. Moreover, "abnormal" referred to a mental classification that went beyond objective measurements, and Feature f did not specify how this classification was to be determined. Likewise, as the term "sensed" in Features f1 and f2 applied to "temperature", not to "change", claim 1 did not specify what "change of the temperature" referred to, nor that it was measured at all. Nor was it justified to limit the scope of the claimed invention to the more specific examples in the description as had been done in the decision under appeal.

In the appellant's view, the subject-matter of claim 1 was so broad and unspecific that it could not be carried out. Furthermore, it was at least not sufficiently disclosed how to carry out the invention over its whole range claimed.

For example, in view of the specification in dependent claim 2, according to which the first "predetermined value" was larger than the second value, claim 1 indeed also encompassed the opposite case. This would, however, lead to false positives, i.e. to the erroneous determination that the second temperature sensor is abnormal while it actually worked well. More generally, the type, location, reaction time, flow conditions and thermal coupling of the sensors along the flow path had a large impact on the timing and extent of temperature changes. Yet, claim 1 did not specify how the change of temperature was to be determined, and neither claim 1 nor the patent disclosed how the determination of the change of temperature was to be implemented in view of the different characteristics mentioned of the sensors and the setup. Hence, claim 1 encompassed a large number of non-working embodiments. The requirement of sufficient disclosure could not be considered fulfilled if the subject-matter the skilled person was enabled to carry out did not solve the problem stated in the patent. The skilled person was at least not enabled to carry out the invention without the undue burden of finding out which configurations, sensors, values and parameter definitions made the invention workable.

Furthermore, as claim 1 left it open for what purpose the determination that the second temperature sensor was abnormal was used, it encompassed all possible uses in addition to the only one disclosed in the patent (e.g. claim 5). Thus, the skilled person was, again, not enabled to carry out the invention for other purposes, that is, over its whole scope.

- 1.2 Article 100(b) EPC defines as a ground for opposition that "the European patent does not disclose the

invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art" (emphasis by the Board).

The Board agrees with the appellant that the invention is defined in the claims (see also points 1.10.4 and 1.10.6 below), while the requirement of sufficiency of disclosure applies to the patent as a whole. It is thus to be determined whether the skilled person is enabled by the patent as a whole to carry out the invention as claimed.

In making this determination, the skilled person's common general knowledge in the field of the invention (which requires determining the technical field from the patent as a whole) and the skilled person's technical understanding of the claimed invention (which requires interpreting the claim language in the technical context of the patent as a whole, see, e.g. T 1473/19) are also taken into account.

- 1.3 Claim 1 is directed to a sanitary washing device for "human private parts". From this context in the claim alone, the skilled person understands that the water is heated (Features a and b) to be more comfortable. The range of temperatures perceived as comfortable is relatively narrow and thus requires precise monitoring and control. In addition to comfort, controlling water temperature is also a safety consideration for preventing injuries due to scalding.

In contrast to the view of the appellant, claim 1 explicitly specifies the temperature sensors as part of the heating system of the shower function: the first temperature sensor is "configured to sense temperature of water heated by the heating part" and the second

temperature sensor is "provided downstream of the first temperature sensor and configured to sense temperature of the water" (Features b and c).

Hence, the skilled person understands that the claimed temperature sensors and controlling part serve the above-mentioned purpose, i.e. controlling and monitoring the water temperature.

- 1.4 As indicated by the two-part form and Feature f, the invention resides in determining whether the second temperature sensor is abnormal. As the function of a temperature sensor is simply to accurately measure the temperature, and this is of paramount importance for the purposes set out in the preceding paragraph, the skilled person immediately understands that "abnormal" refers to an abnormal function of, i.e. inaccurate readings from, the second temperature sensor, irrespective of the underlying reasons for the inaccuracy (such as a sensor failure or, e.g. calcification). These are typical concerns in sanitary temperature control, and the above understanding is thus straightforward from the wording of the claim alone in view of the common general knowledge of a skilled person. It does therefore not require further explanation or an explicit "objective basis" in the claim or patent as submitted by the appellant.
- 1.5 Features f, f1 and f2 define that the controlling part is configured to determine that the second temperature sensor is "abnormal", when a change of the temperature sensed by the first temperature sensor is larger than a predetermined first value and a change of the temperature sensed by the second temperature sensor is smaller than a predetermined second value.

The skilled person understands that the word "when" in Feature f links the controlling part's configuration for determining an abnormality with the conditions of Features f1 and f2 and thus specifies the criteria according to which the abnormality is determined. The evaluation of the two threshold conditions of Features f1 and f2 is thus part of the controlling part's configuration (Feature f), and Features f1 and f2 provide an objective definition of how the controlling part determines that the second temperature sensor is abnormal and what is meant by "abnormal".

Accordingly, there is no room for arguing that determining that the second temperature sensor is abnormal referred to an unspecified mental classification that went beyond technical measurements and calculations.

- 1.6 It is also clear that "change of the temperature" refers to a *temporal* change, which routinely takes place during heating/cooling and/or displacement of heated water towards the user. The Board is not aware, and the appellant has not submitted, what else could be meant by this change.

Although the relationship between the first and second values is not defined in claim 1, it is apparent from the wording of Features f1 and f2 as well as from the technical understanding of the skilled person that the second sensor is abnormal if a relevant change of the water temperature sensed by the first temperature sensor (relevant in that it is "larger than a predetermined first value") is not followed by a corresponding change of the water temperature downstream sensed by the second temperature sensor

(i.e. "smaller than a predetermined second value").

What is "relevant" and "corresponding" in the above, i.e. the particular first and second threshold values, and the magnitude and the timing of the temperature response of the two sensors upon heating/cooling and/or water flow in general, depend, as also submitted by the appellant, on the constructional details of the washing device such as sensor type, geometry and positioning of the sensors along the flow path, heat dissipation, etc.

Although the only numerical example in the patent discloses a factor of 10 between the first and second values (paragraphs [0066] and [0068]), and thus determines when the temperature from the second sensor is "not varied" (paragraphs [0057] and [0058]), this is merely an example that does not limit the more general interpretation set out above.

The claimed invention is not limited to specific constraints on the sensors and the geometry of the system to achieve protection for different setups. Accordingly, the relationship between the first and second values need not be specified in claim 1.

It is, however, routine for the skilled person - and does not represent an undue burden - to take account of the given constructional details when implementing the invention for defining a suitable timing and measurement of the change in the temperature and for determining suitable threshold values to reliably detect abnormal second sensor responses.

- 1.7 The above understanding of claim 1 was derived from the claim language in view of the technical understanding

of a skilled person, without resorting to more specific examples in the patent.

1.8 In view of the above interpretation, the Board does not consider the breadth of the terms "abnormal" and "change of the temperature" in claim 1 problematic for sufficiency of disclosure. As the appellant argued that it was not apparent what else, in addition to the examples in the description, was covered by these terms, the Board notes that it is for the opponent to show that the claims cover embodiments that cannot be carried out. It is thus not sufficient to argue that the claimed invention is broad or broader than embodiments in the description to make a convincing objection of insufficiency of disclosure.

1.9 Furthermore, as the invention is not limited to specific constraints on the sensors and the system setup, it is reasonable that to legitimately achieve protection for different setups and to avoid undue limitations, the relationship between the first and second values is not specified in more detail in claim 1. It is indeed within the skilled person's common general knowledge and routine experimentation - and thus does not represent an undue burden - to define a suitable timing for measurements of the claimed change of the temperature and to determine suitable threshold values, taking into account the constructional details of a given system when implementing the invention to reliably detect abnormal second sensor responses.

1.10 Moreover, the Board is not convinced that the invention, in view of the broad definition in Features f, f1 and f2 and in view of claim 2, cannot be carried out over its whole range claimed.

- 1.10.1 Dependent claim 2 specifies that the first value is larger than the second value but does not limit claim 1 in this regard. It is acknowledged that claim 1 also encompasses the case that the second value is larger than the first value because this is not excluded by its wording. According to the appellant, it was readily apparent for a skilled person that this would lead to an incorrect determination result.

However, as submitted by the respondent, it is not true that the invention is not workable when the second value is the same as, or even larger than, the first value. Rather, in view of the relationships between the values and the various elements of the setup as set out under point 1.6 above, it is not excluded that a second value larger than the first value may be an appropriate choice (see e.g. the sensor positions in Figure 3 of D1 and the abnormality detection of D1 discussed below). Hence, not all threshold values falling outside claim 2 necessarily lead to "non-working" embodiments (in that they do not achieve the desired results).

- 1.10.2 It is nevertheless true that certain threshold combinations encompassed by claim 1 would not lead to reliable determination results under all circumstances. The appellant argued that claim 1 thus covered non-working embodiments (i.e. embodiments that did not reliably determine that the second temperature sensor was actually abnormal as defined in Feature f) and, hence, embodiments that did not achieve the technical effects and did not solve the problem stated in the patent. As to why this represented an insufficiency of disclosure, it referred to T 409/91 and T 2284/15 (Reasons 19 to 26).



1.10.3 First of all, the Board does not agree that claim 1 implicitly requires a reliable or successful determination of an "actual" abnormality of the second temperature sensor such as a malfunction as argued by the appellant. While it is desirable and intended according to the problem stated in the application that the determination reliably identifies actual problems, and a skilled person would understand and seek to implement the invention in this way (see point 1.4), Feature f merely requires a configuration of the controlling part that evaluates the conditions of Features f1 and f2 (see point 1.5). The determination accurately identifying a real problem and thus exhibiting the desired technical effect is, however, as such not defined in claim 1. Hence, disclosure of how this is achieved is not required for the invention as claimed to be sufficiently disclosed.

1.10.4 In the Board's view, the technical subject-matter expressed by the technical features of a claim is to be distinguished from the technical effects they exhibit - and even more so from *desired* effects and the *subjective* technical problem stated in the patent.

Although the desired technical effect of a reliable determination of a real problem may, in some sense, be "anchored" in the claim language in view of the skilled person's understanding, as submitted by the appellant, it is not a part of the claimed invention that the skilled person must be enabled to carry out. Hence, sufficiency of disclosure does not depend on whether this effect is actually achieved (see Case Law of the Boards of Appeal, 10th edn. 2022 (Case Law), II.C.3.2).

The fact that a skilled person can implement the controlling part of claim 1 characterised by Features f, f1 and f2 in general is, however, beyond question.

- 1.10.5 This, among other issues, also distinguishes the current case from that in T 409/91, where the issue was not whether the claimed features exhibited the desired technical effects or solved the stated problem, but that it was not known and not disclosed in the patent how the claimed feature (wax particle sizes below a certain limit) could be obtained at all.

Moreover, the particle size in T 409/91 concerned the essence of the invention. In contrast, the current invention does not reside in particular threshold values. The appellant's objection is based on embodiments which are only "encompassed" but not explicitly pointed to in the patent. This situation is instead comparable to that of T 2773/18 (referred to in the decision under appeal), according to which the function of a claim to capture the essence of an invention without unreasonably limiting the scope of protection naturally led to a certain breadth (in particular, in those areas which do not concern the essential features of the invention). The Board also shares the conclusion in T 2773/18 that "non-working" embodiments (i.e. "that may not solve the problem or achieve the desired effect") found "on clever construction" to be covered within this breadth do not prejudice sufficiency of disclosure if the skilled person - upon consideration of the entire disclosure in the patent and using common general knowledge - can infer what will and what will not work. This finding is also in line with G 1/03, Reasons 2.5.2 referring to T 939/92, and the above-mentioned section II.C.3.2 in Case Law.

- 1.10.6 The appellant referred to T 2284/15, according to which an invention was only workable and sufficiently disclosed if it could be carried out such that it solved the technical problem posed in the patent (Reasons 19 to 26; confirmed in T 2729/18, Reasons 14.1).

The reasoning in T 2284/15 is based on the assertion that solving a technical problem is a fundamental characteristic of an "invention" and that Rule 42(1)(c) EPC therefore required that the description disclose the invention, as claimed, in such terms that the technical problem and its solution can be understood.

The current Board doubts that this reasoning is in line with the established case law referred to under point 1.10.5 above and the understanding confirmed in G 1/19, Reasons 24 and 25, that an "invention" is defined by its technical *character*, whereas "non-inventions" lack such technical character. The question of whether the claimed subject-matter solves a technical *problem* is, on the other hand, part of the assessment whether an invention involves an inventive step. This requirement in Articles 52(1) and 56 EPC is not formulated as an inherent characteristic of an "invention" but as a separate requirement which must be met for an invention to be patentable. Furthermore, when inventive step is assessed, the objective technical problem is assessed (see G 1/19, Reasons 26, (iv)), which may be different from the subjective technical problem set out in the patent. Additionally, as explained in T 1473/19, Reasons 3.11.4, the "invention" referred to in Articles 54, 56 and 83 EPC (see T 92/21, Reasons 3.2, last sentence) and, with regard to claim amendments, the subject-matter under Article 123(2) EPC (see G

2/10, Reasons 4.5.2, last paragraph) refer to the claimed subject-matter only. For these reasons, a technical problem which is - as in the case at hand - only set out in the patent specification is, as such, not part of the invention which must be sufficiently disclosed pursuant to Articles 83 and 100(b) EPC. It must also be stressed that Rule 42 EPC only governs the content of the description in a patent application. Hence, the requirement under Rule 42(1)(c) EPC that the description disclose the claimed invention in such terms that the technical problem and its solution can be understood cannot simply be subsumed under the requirement of sufficiency of disclosure under Articles 83 and 100(b) EPC.

- 1.11 The Board agrees that claim 1 does not specify a configuration for taking a particular action upon determining that the second temperature sensor is abnormal - such as prohibiting water supply to the nozzle as defined in claim 5. However, in the Board's view, this does not imply an issue of insufficiency of disclosure. Apart from the fact that the omission of a further action normally cannot make it more difficult to carry out the invention, it is well within the skilled person's routine practice and common general knowledge to implement conceivable reactions such as storing, displaying, warning or otherwise communicating the results (examples mentioned by the appellant itself), even if the patent does not disclose anything other than shutting off the shower function.
- 1.12 Hence, the ground for opposition under Article 100(b) EPC does not prejudice the maintenance of the patent as granted.

2. Novelty, Article 100(a) EPC in conjunction with Articles 52(1) and 54 EPC

2.1 Document D5

2.1.1 It is common ground that D5 discloses a sanitary washing device (shower toilet with shower arm implying a nozzle, Figure 1; claim 1) with a heating part (4) and two temperature sensors (5, 6) in the water tank (2) and a controlling part (7, Figure 2). Hence, at least Features a, b, d and e are known from D5.

2.1.2 D5 discloses that the washing function is shut off when a discrepancy between the temperatures sensed by the two redundant temperature sensors is determined (page 4, fourth paragraph). Hence, D5 discloses a configuration of the controlling part for reading temperature values from both sensors and, as submitted by the appellant, determining whether the (absolute) difference exceeds a threshold value (to distinguish between fluctuations and real errors) to determine the presence of an abnormal situation.

2.1.3 However, the algorithm and the determination result in D5 do not distinguish between the two sensors.

Contrary to the appellant's view, features of the configuration of a control unit are understood as defining a structural or functional limitation for carrying out the specified steps, for example, by the programming of a computer-implemented controlling part.

It is thus not sufficient for establishing a lack of novelty that the result of the determination in D5 might correspond to that of claim 1 (determining that the second temperature sensor is abnormal) unless the

controlling part is configured in the same manner. This applies all the more if the result is not always the same but only in certain situations. For example, if the first temperature sensor fails and provides an unreasonably low reading (while the second sensor is in order), the controlling part of claim 1 does not determine an abnormality (of the second temperature sensor) but that of D5 does. Accordingly, the Board concurs with the respondent that D5 does not disclose Feature f.

It is true that claim 1 does not exclude an additional configuration of the controlling part for determining that the first temperature sensor is abnormal. But the claimed features require a distinct configuration which is not apparent from D5.

The Board also agrees that, in view of the fact that the determination result in claim 1 is objectively defined by the conditions of Features f1 and f2 (see point 1.5 above), it does not always correspond to an actual failure of, specifically, the second temperature sensor. For example, if both temperature sensors fail and provide unreasonably low readings, the controlling part defined in claim 1 would not determine that the second temperature sensor is abnormal. However, this does not mean that the determining results of D5 anticipate the subject-matter of claim 1 but rather underlines that it is decisive for novelty whether the controlling part is configured for carrying out the same steps.

Whether Feature f is a non-technical feature or does not exhibit a technical effect as submitted by the appellant is, in the Board's view, immaterial for novelty. This feature cannot be disregarded merely

because claim 1 does not specify a further use of the determining result.

- 2.1.4 Moreover, the Board agrees with the appellant that "sensed" in Features f1 and f2 applies to "temperature", not to "change". However, as set out above under point 1.5, Features f1 and f2 provide a definition of what is considered to be abnormal and specify how the result of Feature f is determined. This implies, contrary to the view of the appellant, that the controlling part must be configured to evaluate these conditions on the change of the temperature of the two sensors. The construction "change of the temperature sensed by the" first/second sensor used in Features f1 and f2 refers to a change between temperature values sensed by "the" same sensor, that is, a difference between temperature values from the same sensor at different times. The fact that claim 1 does not define at which times the respective temperatures are to be taken does not mean that it can be ignored that Features f1 and f2 refer to a change of the temperature. Hence, Features f1 and f2 imply that the controlling part is configured to calculate changes (differences) and to compare them with individual threshold values for coming to the determining result of Feature f.

However, D5 is silent as to "changes" of the temperatures of the individual sensors. The appellant may be correct that readings of the absolute temperature from the sensors can be considered *representative* of changes of the temperature with respect to a standard room (or tap water) temperature (e.g. when powering up the device) due to their deviation from this reference temperature. However, D5 does not disclose *determining* the respective changes of

the temperature. Furthermore, D5 also does not disclose comparing such changes detected by the individual sensors with individual threshold values. Hence, D5 does not disclose Features f1 and f2, either.

- 2.1.5 Accordingly, the subject-matter of claim 1 is novel over D5 at least due to Features f, f1 and f2. Whether or not Feature c is disclosed in D5 can thus be left open.

2.2 Document D1

- 2.2.1 It is common ground that D1 discloses a sanitary washing device with Features a to e.

The second temperature sensor (32) is located downstream of the first temperature sensor (31) which is located centrally with respect to the heater 10 (paragraphs [0019] and [0020], see D1', and Figure 3). A control means (40) receives the temperature readings and controls the heater (10) and the water ejection (Figure 2, paragraph [0015]).

- 2.2.2 D1 discloses a safety function according to the flow chart in Figure 5 (paragraphs [0022] to [0024]). If the temperature detected by the first sensor is not lower than the temperature detected by the second sensor (S1), it is determined that an abnormality has occurred (e.g. "abnormal heating" due to insufficient filling of the heating part with water, "empty heating", paragraph [0022]), and the output from the heater is stopped (S3). Likewise, the output is stopped (S3) if the temperature of the first sensor is above a threshold value (S2).



2.2.3 D1 discloses neither that changes of the temperature between readings of each sensor individually are determined and compared with individual threshold values (Features f1 and f2) nor the determination as defined in Feature f (D1 determines e.g. abnormal heating rather than an abnormality of one of the sensors). Accordingly, with the same understanding of claim 1 and the same reasoning as set out for D5 above, D1 does not disclose Features f, f1 and f2, either, and the subject-matter of claim 1 is novel over D1.

2.3 Document D6

D6 discloses a sanitary washing device with a heating unit (10, 10, Figures 1 and 2) similar to that of D1. The heating unit contains, *inter alia*, an outlet temperature sensor 13 provided downstream of an "abnormality detection temperature sensor" 15 located in the heating flow path (paragraph [0019], Figure 2). D6 does not explain how abnormality detection takes place and thus does not go beyond the teaching of D1. Hence, D6 also does not disclose at least Features f, f1 and f2, and the subject-matter of claim 1 is novel over D6.

2.4 Accordingly, the subject-matter of claim 1 as granted is novel. The maintenance of the patent is thus not prejudiced by the ground for opposition under Article 100(a) EPC in conjunction with Articles 52(1) and 54 EPC.

3. Inventive step, Article 100(a) EPC in conjunction with Articles 52(1) and 56 EPC

3.1 Distinguishing features

As set out above, the subject-matter of claim 1 differs from each of the sanitary washing devices in D5, D1 and D6 at least by Features f, f1 and f2.

### 3.2 Technical effects and problem to be solved

- 3.2.1 The appellant submitted that Features f, f1 and f2 did not contribute to the technical character of the invention. The determination that the second temperature sensor is "abnormal" in Feature f represented a subjective, non-technical classification (hence, a mental act), firstly, because the category "abnormal" represented a subjective allocation to a mental concept and, secondly, the attribution of this category to specifically the second sensor was based on human cognition. Features f1 and f2 merely defined the input that the controlling part used in the abnormality determination. The result of this classification was, according to claim 1, not used for any technical consequence, such as prohibiting water supply to the nozzle (claim 5) or issuing a warning, either. Hence, the non-technical Features f, f1 and f2 exhibited no technical effect and did not contribute to the technical character of the invention and were thus to be disregarded in the assessment of an inventive step.

In contrast to the reasoning in the decision under appeal, the determination did not "allow a precise detection of whether a specific sensor, i.e. the claimed second sensor, is correctly working" and, as claim 1, in contrast to claim 5, did not specify shutting off the shower function, it did not solve the problem of avoiding injury to a user's intimate parts, either. The meaningless classification as abnormal without a corresponding action according to claim 1 thus even represented a worsening compared to D5 which

actually prevented scalding. The appellant submitted that nonsensical or predictably disadvantageous solutions did not constitute an inventive step (due to a lack of technical contribution), even if they were not obvious (Case Law, I.D.9.15 and I.D.9.21.1).

3.2.2 As set out above under points 1.5 and 2.1.3, the Board does not share the appellant's interpretation of the claimed subject-matter. The configuration of the controlling part to determine that the second temperature sensor is abnormal is objectively defined by the conditions in Features f1 and f2. The controlling part is thus limited by the configuration to evaluate these conditions. Hence, Features f, f1 and f2 do not relate to an unspecific, subjective, mental classification but to a well-defined objective result.

3.2.3 It is nevertheless true that Features f, f1 and f2 - apart from their technical implementation - largely relate to mental and/or mathematical activities of a non-technical character such as subtracting, comparing and deciding. However, these features also involve measurements (temperatures sensed by the temperature sensors) based on an interaction with physical reality.

If the result of the processing of such measurements resides in information about the technical conditions of a machine, a respective "presentation of information", e.g. a visual indication, has long been considered a technical feature (see Case Law, I.D. 9.2.10 a), second paragraph). Likewise but more generally, in accordance with G 1/99, Reasons 99, an "indirect measurement" based on some measurements linked to physical reality and additionally involving data processing to derive another measurement result is

of a technical nature, regardless of what use is made of the results.

This is the case with Features f, f1 and f2, which provide an objective technical determination result representing the outcome of the evaluation of two conditions of Features f1 and f2. Hence, the knowledge of the determination result alone exhibits a technical effect. This technical effect resides in the indication that the temperature detection and control may not work properly.

Accordingly, Features f, f1 and f2 define a technical result and cannot be disregarded in the examination of inventive step.

3.2.4 As Feature f is a distinguishing feature, the objective technical problem should not be tailored to the second temperature sensor to avoid a pointer to the solution. Furthermore, as claim 1 does not specify any technical consequence of the indication of a problem with the temperature control, it does not solve the problem of eliminating the risk of getting a possible burn/scald on the intimate parts of the user. Hence, the objective technical problem set out in the decision under appeal and suggested by the respondent is not appropriate.

3.2.5 In view of the fact that the determination of an abnormality according to Feature f is objectively defined by the conditions of Features f1 and f2 (see point 1.5 above), and as explained in point 2.1.3, the determination result need not always be representative of an actual failure of, specifically, the second temperature sensor. Furthermore, as discussed above, claim 1 encompasses embodiments which do not provide a reliable determination of a problem with the

temperature detection and control (see point 1.10.2 or the example of a failure in both sensors in point 2.1.3).

As discussed above (points 1.10.4 to 1.10.6), it is not an issue of insufficiency of disclosure if the (desired, but not claimed) technical effect of the features of claim 1 is not achieved. However, this is different when considering inventive step, which depends on the technical effects and a technical solution to a technical problem achieved by the invention.

However, the Board considers that the arguments set out in the points referred to above on the exclusion of non-working embodiments which are only encompassed but not specified in claim 1 and which, as the skilled person would realise, do not provide the desired effects also apply for inventive step. More specifically, as the skilled person knows how to properly define the measurement and threshold values (see point 1.9), inventive step will not have to be examined for embodiments falling outside of what the skilled person would implement. Moreover, it is common that safety measures cannot account for each and every situation and that false positives and negatives cannot thus be entirely excluded. This must not affect the recognition of an inventive step of the general provision, either.

Hence, the Board is convinced that the determination result of Features f, f1 and f2 is generally indicative of issues with the temperature detection, meaning that it provides the technical effect of an indication that the temperature detection and control may not work

properly (see point 3.2.3). This effect applies substantially over the whole relevant scope of claim 1.

3.2.6 D5, D1 and D6 already disclose solutions of how to become aware that the temperature detection and control may not work properly. Hence, inventive step of the claimed solution cannot be based on this already solved technical problem.

3.2.7 The respondent submitted that Features f, f1 and f2 provided a more accurate determination because temperature was evaluated over time in the form of changes of temperature, so that momentary fluctuations of the temperature were cancelled out.

The appellant rightly countered that transient fluctuations affected temperature and changes of temperature in just the same manner, and that erroneous results due to transient fluctuations were reliably avoided by properly selected threshold values.

However, as discussed at the oral proceedings, the Board agrees that determining changes of temperature indeed cancels out systematic errors such as offsets in the temperature readings of the individual sensors. Hence, determining changes of the temperature improves comparability and indeed improves the accuracy of the determination result.

3.3 Inventive step in view of D1, D5 and D6 alone

The appellant submitted that claim 1 lacked inventive step starting from D1, D5 and D6 alone but did not set out how the skilled person would arrive (in an obvious manner) at the distinguishing features set out above. The appellant's statement that the objections set out

against novelty should be regarded as corresponding attacks on inventive step if any of the features submitted as being known (at least implicitly) from D5, D1 or D6 was found not directly and unambiguously disclosed is not sufficient to substantiate an objection of lack of inventive step.

Nor is the Board convinced that it would have been obvious for a skilled person in view of the problem of improved accuracy of determining an issue with temperature detection or control to consider changes of temperature instead of absolute temperatures to compare the changes of the individual sensors with different thresholds as in Features f1 and f2 and to try to determine an abnormality of, specifically, the second temperature sensor. This applies in particular to the system of D5, which discloses a redundancy test but does not distinguish between the two redundant sensors. It also applies when starting from D1 and D6, which define tests against dry heating or overheating and are not concerned with failures of the individual sensors.

#### 3.4 Inventive step starting from D1 or D6 in combination with D5

The Board does not agree with the appellant's argument that D5 and the problem of how to improve the accuracy of the abnormality detection would have led the skilled person starting from D1 or D6 to the subject-matter of claim 1.

First and foremost, none of these documents discloses considering changes of the temperature for determining abnormalities in the temperature detection or control. Although the temperature readings change during a heating phase, the measurement of a changing

temperature does not equate to the determination of a change of the temperature (see point 2.1.4).

Moreover, D5 discloses a mere redundancy test. Starting from D1 or D6, D5 could thus at best have led the skilled person to implement a redundancy of existing sensors for checking for discrepancies in their readings. In this way, the skilled person would, however, not have arrived at a comparison of the readings of different sensors upstream and downstream with different threshold values as defined in Features f1 and f2.

Neither could the additional considerations on protocols, error codes and routine automation submitted by the appellant have led the skilled person to the missing features of claim 1, either.

3.5 Accordingly, the subject-matter of claim 1 involves an inventive step. Hence, the maintenance of the patent is not prejudiced by the ground for opposition under Article 100(a) in conjunction with Articles 52(1) and 56 EPC, either.

4. It follows that none of the grounds for opposition prejudices the maintenance of the patent, and the opposition is to be rejected as decided by the opposition division.



## Order

### For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



C. Spira

C. Herberhold

Decision electronically authenticated