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**Datasheet for the decision  
of 30 June 2016**

**Case Number:** T 0628/14 - 3.2.01

**Application Number:** 08158282.7

**Publication Number:** 1961632

**IPC:** B60S5/04, B60C29/06, B29C73/16

**Language of the proceedings:** EN

**Title of invention:**

Kit for inflating and repairing inflatable articles, in particular tyres

**Patent Proprietor:**

TEK GLOBAL S.r.l.

**Opponents:**

Sumitomo Rubber Industries, Ltd.  
Active Tools A/S

**Headword:**

**Relevant legal provisions:**

EPC Art. 56  
EPC R. 116(1)

**Keyword:**

Exercise of opposition division's discretion not to admit  
late-filed documents - (confirmed)  
Inventive step - (yes)

**Decisions cited:**

G 0009/91, T 0039/93

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 0628/14 - 3.2.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.01**  
**of 30 June 2016**

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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 16 January 2014 rejecting the opposition filed against European patent No. 1961632 pursuant to Article 101(2) EPC.**

**Composition of the Board:**

**Chairman**            G. Pricolo  
**Members:**            W. Marx  
                             P. Guntz

## Summary of Facts and Submissions

- I. Appellants I and II (opponents 02 and 01) each lodged an appeal against the decision of the opposition division rejecting their oppositions against European patent No. 1 961 632.
- II. In its decision the opposition division held that the subject-matter of granted claim 1 was new and inventive having regard to the following documents:
- D6: DE 101 06 468 A1;
  - D7: International Design Registration DM/058926;
  - D8: WO 02/066236 A1;
  - PU1, PU1A, PU2-PU6: documentation in support of alleged public prior use of breakdown sets 7M3 012 143 and 3D 012 143 in accordance with D7.

Documents EP 0 972 616 A2 (D9) and DE 195 45 935 A1 (D10) filed by opponent 01 in response to the summons to attend oral proceedings were not admitted by the opposition division into the proceedings as they were late filed and *prima facie* not relevant. However, the following documents were considered as proof of the common general knowledge and admitted into the proceedings:

- D11: Dubbel "Taschenbuch für den Maschinenbau" 18. Edition, Springer Verlag, (1995) pp. H9, H10 and H17
- D12: Zoebel, "Pneumatikfibel", 3. Edition, Krausskopf-Verlag, (1970) Section 7

- III. As further evidence for the alleged prior use, documents PU7 to PU43 were filed by appellant II with its grounds of appeal and a witness was offered. Moreover, in response to the board's communication under Article 15(1) RPBA (Rules of Procedure of the

Boards of Appeal, OJ EPO 2007, 536), the following document was filed as evidence of the ordinary knowledge of the skilled person:

D13: Dubbel "Taschenbuch für den Maschinenbau"  
16. Edition, Springer Verlag, (1987) pp. H10,  
H12, H13, H15, H16, H18 and H20.

IV. Oral proceedings took place before the board on 30 June 2016.

The appellants I and II (opponents 02 and 01) requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed.

V. Claim 1 as granted reads as follows (broken into a feature analysis adopted by the parties):

- 1) A kit for inflating and repairing inflatable articles, in particular, tyres;
- 2) the kit comprising a compressor assembly (2),
- 3) a container (3) of sealing liquid,
- 4) connecting means (4, 5), formed as hoses, for connecting the container to the compressor assembly (2) and to an inflatable article for repair or inflation,
- 5) an outer casing (6) housing said compressor assembly (2) and defining a seat (7) for the container (3) of sealing liquid,
- 6) said container (3) being housed removably in said seat (7), and
- 7) connecting means (4, 40) for stably connecting said container to said compressor assembly (2), so that the container, when housed in said seat (7), is maintained functionally connected to said compressor assembly (2)

said kit being characterized by  
8) further comprising an additional hose (83)  
cooperating with said inflatable article;  
9) and a three-way valve (81) having an input connected  
to said compressor assembly (2),  
10) and outputs connected to said container (3) and to  
said additional hose (83) to direct a stream of  
compressed air selectively to said container (3) or to  
said additional hose (83).

VI. Appellant I essentially argued as follows:

Document D9 was considered to be highly relevant,  
showing two hoses for connecting the compressor and the  
container to the tyre, which the opposition division  
did not duly take into consideration. D9 also disclosed  
two modes of operation - inflating and repairing - as  
claimed and also a valve unit for controlling the  
compressor.

Document D8 disclosed the preamble of granted claim 1  
and a switching valve having an input connected to the  
compressor and two outputs for selectively delivering  
compressed air to the container (29) and an additional  
hose (12; 28) (page 11, 3<sup>rd</sup> and 4<sup>th</sup> paragraph). The  
switching valve could be of any type (page 11, second  
paragraph), e.g. a turning valve, which provided all  
functions of a three-way valve as specified in claim 1.

D8 did not disclose a second, additional hose  
cooperating with the inflatable article. The switching  
valve of D8 had an additional input and a channel for  
delivering sealing liquid to the inflatable article. A  
single hose was provided for delivering compressed air  
and sealing liquid to the inflatable article, so that  
remaining sealing liquid could clog the hose.

Eliminating in D8 the returning conduit between container and turning valve and connecting the container of sealing liquid via a separate hose to the inflatable article would result in a well-known three-way valve having one input and two outputs (see D11, D12). D8 disclosed conduits 6 to 10 and conduit 10 formed as a hose, and in Figure 9 conduits 6 and 10 were identically represented. Looking for a durable product with high comfort, the skilled man would avoid remaining sealant in the valve and provide a direct connection to the tyre via conduit 8 which would also be formed as a hose.

VII. Appellant II essentially submitted the following:

Documents D9 and D10 had been filed in-time, within the time limit according to Rule 116 EPC, in response to the communication of the opposition division and should have been admitted. Moreover, the opposition division was wrong in judging that the documents were not more relevant or related to a different method. They related to the same technical field, and D9 was the only prior art document describing one hose for the provision of compressed air from the compressor to a tyre and one hose for the provision of sealing liquid from the container to the tyre. Since feature 8 relating to an "additional hose" was a core feature of claim 1, D9 was *prima facie* relevant and should therefore have been considered. It was irrelevant whether the container was manually squeezed out (as in D9) or pressurized with compressed air from a compressor (as already known from D8). Moreover, D10 indicated the advantage of using a compressor instead of a squeezable bottle, so D9 in combination with D10 led to the claimed subject-matter.



D8 undisputedly disclosed features 1 to 7 of claim 1. The novel and unique feature of the tyre repair kit of D8 was achieved (see page 4, first paragraph) by providing the kit with a switching valve which opened, in a first position, a first connection between the pressure gas source and the inflation valve of the object (i.e. disclosing a 1<sup>st</sup> inlet and a 1<sup>st</sup> outlet) and, in a second position, a second connection between the pressure gas source and the container and further between the container and the inflation valve of the object (i.e. disclosing a 1<sup>st</sup> inlet, 2<sup>nd</sup> outlet, 2<sup>nd</sup> inlet and 3<sup>rd</sup> outlet). Therefore, two connections between the pressure gas source and the object were known from D8, and a switching valve to select between them. This valve was in fact a five-way valve having two inlets and three outlets, presuming that there were two separate conduits (hoses) between the switching valve and the object.

D8 did not show the three-way valve according to features 9 and 10, which provided the advantage of being less complex and easier to manufacture at lower costs. Starting from the tyre repair kit of D8 with a five-way valve, the skilled person would omit the additional non-mandatory switching feature between a separate first and second connection and replace the five-way valve with a three-way valve according to features 9 and 10 in order to arrive at a valve which was less complex and easier to manufacture. D8 already disclosed a four-way valve in a preferred embodiment (page 5 ff, Figures 1, 2), so the skilled person was prompted to downsize the switching valves of D8.

Another starting point for assessing inventive step was the tyre repair kit shown in Figures 1 and 2 of D8, comprising a four-way valve (1<sup>st</sup> outlet and 3<sup>rd</sup> outlet

were the same) and one single hose that either provided compressed air or sealing liquid to the tyre. Feature 4 did not specify the number of hoses forming the connecting means, leaving open which connecting means had to be formed as a hose. In fact, a connecting line to the container was described in the contested patent only as "conduit 82" (embodiment of Figure 7). D8 showed respective connecting means (Figures 1 and 2: conduits 6, 7 and 8) possibly formed as hoses and explicitly mentioned (page 18, line 30: "Schlauch 10") a hose. Hose 10 could be regarded as an additional hose cooperating with the inflatable article, and valve 5 had outlets connected to the container and to the additional hose. Thus, features 8 and 10 of granted claim 1 were also known from D8. The distinguishing feature of a three-way valve according to feature 9 had the effect and solved the problem of avoiding any sealant contamination of the valve. It was evident for the skilled person that the sealant had to bypass the valve in D8 in order to avoid contamination, and to connect the container directly to the inflatable article using conduit 8 formed as a hose. The channel within valve 5 that connected conduits 8 and 10 would be without any function. The required functionality of the kit of D8 was then provided by a three-way valve (see D13). Since D8 already dealt with the problem of valve contamination by the sealant, the skilled person was already motivated to think about such possibility.

A further line of argument resulted from claim 1 when read on its own (or paragraph [0045]). Claim 1 only specified the valve's inputs and outputs, leaving open whether the term "three-way valve" related to the number of channels within the valve or the number of ports or functions of the valve. D8 showed (Figures 1 and 2) a valve comprising two channels 13 and a bypass

12, i.e. three channels or "ways", and an input connected to the compressor and outputs connected to the container and to the tyre. Moreover, hose 10 was an additional hose, so the characterising portion of claim 1 was known from D8. This was also supported by the description (page 4, first paragraph) of D8. Thus, on a broad interpretation of claim 1, the sole distinguishing feature over D8 was part of feature 4 which only contained a functional specification. Claim 1 left open whether two hoses were leading to the tyre, i.e. did not require a further hose parallel to the additional hose. D8 showed hose 6 connecting the container to the compressor. Conduit 8 for connecting the container to the tyre was not formed as a hose. It was within the customary practice of the skilled person, starting from the schematics in Figures 1 and 2, to realise conduit 8 as a hose, in particular since D8 already showed hoses 6 and 10 (see representation in Figure 9). The problem of clogging was known from D8 and solved in D8 (via replacement of contaminated parts), but the skilled person would try to further improve the kit. Contamination of the valve was only avoided if no sealant was entering the valve.

Finally, D8 contained (page 4, first to third paragraph) a general disclosure on how to solve the problem recited on page 3 of D8, which basically described a switching valve with two positions and three connections, i.e. a 3/2-valve.

Document D6, alternatively considered as the closest prior art, showed one hose to either inflate the tyre with compressed air from a compressor or with sealing liquid provided by a container, depending on the position of a four-way valve incorporated into the extraction unit. Hose 8 shown in Figs. 3, 5 and 7 of D6

corresponded to the additional hose in the context of claim 1. D6 failed to show a three-way valve and a separate hose for connecting the container to the tyre (see feature 4) to direct sealing liquid from the container directly to the tyre, to avoid that the hose for providing compressed air was clogged with sealing liquid. The skilled person, faced with the problem of avoiding such clogging, would use a separate hose, bypassing hose 8, to direct sealant liquid from the container to the tyre, as known in the prior art (e.g. D9). Furthermore, D6 stated in paragraph [0028] merely as an option that the valve of the extraction unit opened in one position preferably ("vorzugsweise") two channels to the container, i.e. the valve could also switch only one channel to provide compressed air into the container of sealant liquid whereas the second channel from the container to the tyre was not switched but was constantly open. Thus, the valve used in D6 was a three-way valve according to the usual definition of valves. This interpretation was also supported by claim 2 of D6 ("valve could be a one-way valve or a multiple-way valve"). When using two separate hoses for the gas flow from the compressor to the tyre and for the flow of sealant liquid from the container to the tyre, only one fluid flow had to be switched (the fluid flow from the container to the tyre was fixed and had not to be switched). It was thus obvious which kind of valve - i.e. only a three-way valve - was required (see D11, D12 for common knowledge).

The kit shown in D6 provided the advantage of saving a second hose by using only one hose, i.e. was easier to handle by a user and production costs could be reduced. There was no inventive quality in going back to the simpler and less sophisticated design with two separate hoses according to the subject-matter of claim 1.

Finally, D6 disclosed in its embodiment according to Figure 4 the characterising portion of claim 1. It showed an additional hose 8 and a sliding valve having an input 3, an output 4 and a channel 17 (closed in Figure 4) establishing a connection to the container. Following a strict interpretation of the term "3-way valve", a valve having three ports was therefore known from D6. The only difference to the subject-matter of claim 1 was a hose for connecting the container to the tyre (i.e. feature 4), which could avoid clogging of the valve. It was obvious for the skilled person to provide sealant liquid directly to the tyre using a separate hose.

Public prior use of kits, designed in accordance with the design registration D7, had been asserted. They showed features 1 to 7, but did not comprise an additional hose as required by feature 8 and a three-way valve according to features 9 and 10. The problem to be solved was to provide an improved kit which provided the inflating function independent from the repair function. The skilled person would provide a hose for connecting compressor and tyre and a known switching valve (see D13, H20: three-way valve). Only in a second step he would contemplate using a four-way valve for further improvement, as known from D6 or D8. Moreover, D6 already described a kit switchable from an inflation-only use to a repair-and-inflation use. Since D6 suggested to improve the kit with regard to costs (see paragraphs [0003] and [0004]), the skilled person would as a matter of ordinary practice (see D11, D12) consider a common three-way valve, thus arriving at a kit in accordance with the features of claim 1.

VIII. The respondent argued as follows:

There was no particular technical content in D9 and D10 to consider the admission in view of *prima facie* relevance.

Document D8 disclosed a kit having a single hose for connection with the inflatable article, i.e. features 8 to 10 were missing. In particular, D8 did not disclose five connections, and therefore only a four-way valve interpretation was possible. According to the layout specified in claim 1, any sealant contamination of the valve was avoided, reducing maintenance and improving user-friendliness. The problem of valve contamination was present in D8, but D8 taught away from the solution of the contested patent by proposing a different solution without changing the layout. D8 showed two embodiments (Figures 10, 16) containing a spare part (54, 54'), and the problem was solved by disassembling this spare part. Thus, the layout of a kit according to claim 1 was an alternative to that of D8.

The term "three-way valve" in claim 1 referred to the standard definition of a valve, which was consistently used in the contested patent. In particular, the skilled man never understood the term "ways" by the way how the spool was made, as argued by appellant II, but by referring to the valve's connections, so D8 showed a four-way valve. Figures 1 and 2 of D8 only showed functional sketches of the fluidic layout, without giving any idea on conduits 7 and 8 (which were not present any more in further Figures describing the embodiment). In any case, D8 might show hoses 6 and 10, but was missing an additional hose as claimed (claim 1 required three hoses), in particular a second outlet hose for connecting to the tyre.

Document D6 provided a single tube layout having a four-way valve similar to that of D8, also discussing and solving the issue of valve contamination (see paragraphs [0007], [0009], [0038]). Therefore, a skilled man was not prompted by D6 to find another solution to the problem of valve contamination. A single reference in D6 that the valve had a preferred configuration did not prompt the skilled man to change the layout, i.e. adding a three-way valve and an additional tube. Many other solutions were available to the skilled man, e.g. D8 provided a partly demountable valve for replacement of contaminated parts.

As regards the representation of the sliding valve in Figure 4 of D6, the conduits did not match. Moreover, the single channel 17 provided for a flow into two directions, i.e. it was already arguable whether the valve in this embodiment followed the standard definition of a three-way valve. But even accepting that Figure 4 of D6 showed a three-way valve, the valve was contaminated when delivering sealing liquid to the tyre, and D6 already addressed the issue of valve contamination and proposed a solution to this problem.

The allegedly prior-used kit, failing to disclose an additional hose and a three-way valve, was not a better starting point than those already discussed and should not be considered.

## Reasons for the Decision

1. *Non-admitting documents D9 and D10*
  - 1.1 Documents D9 and D10 had not been admitted into the proceedings because (see contested decision, point 11) there were no reasons to suspect that, *prima facie*, these late-filed documents prejudiced the maintenance of the opposed patent. The opposition division found that D9 and D10 were not *prima facie* relevant, in particular not more relevant than the closest prior art already on file, since D9 related to a different method of supplying the sealant without the use of a compressor and D10 did not show a separate procedure for inflating tyres.
  - 1.2 Appellant II argues that D9 and D10 had been filed in time within the time limit under Rule 116 EPC and should have been admitted. However, according to the established case law, Rule 116(1) EPC (former Rule 71a EPC 1973) should not be construed as an invitation to file new evidence or other material departing from the legal and factual framework of issues and grounds pleaded (see T 39/93, headnote) as established with the notice of opposition according to Rule 76(c) EPC (former Rule 55(c) 1973, see G 9/91, point 6 of the Reasons). Also, the fact that the opposition division expressed a preliminary opinion in its communication annexed to the summons of oral proceedings does not necessarily justify the filing of new evidence, unless this is in reaction to new aspects raised in the communication. Such new aspects have not been substantiated by the appellant II, so the board confirms the view taken by the opposition decision that D9 and D10 have been filed late.



1.3 In fact, the request of the appellants to have D9 and D10 admitted into the proceedings amounts to a request to overrule the way in which the first-instance department has exercised its discretion pursuant to Article 114(2) EPC. According to established case law, a Board of Appeal should only overrule the way in which a first-instance department has exercised its discretion if it comes to the conclusion either that the first-instance department in its decision has not exercised its discretion in accordance with the right principles, or that it has exercised its discretion in an unreasonable way, and has thus exceeded the proper limits of its discretion.

As can be taken from the contested decision (point 11), the opposition division applied the criterion of *prima facie* relevance, which is considered to be the right criterion in case of late-filed submissions. Moreover, the board cannot see that the opposition division exercised its discretion in an unreasonable way. The appellants argue that the opposition division did not duly consider that document D9 shows a second hose for connection to the tyre and related to the same technical field. However, there is no reason to assume that the opposition division did not reasonably consider this argument, which was already on the table in first-instance proceedings, in a *prima facie* approach. Having identified further differences in comparison to the prior art on file (see above), the opposition division concluded that D9 and D10 were not more relevant or might prejudice the maintenance of the patent.

1.4 Therefore, the board sees no reason for overturning the decision of the opposition division non-admitting documents D9 and D10.

2. *Inventive step (Article 56 EPC)*

2.1 Starting from document D8 as the closest prior art, a kit for inflating and repairing inflatable articles comprising a compressor assembly, a container of sealing liquid, an outer casing and connecting means according to features 1 to 7 of granted claim 1 are known, which was not disputed by appellant I. D8 explicitly describes (page 18, line 30) the connecting means for connecting the container to an inflatable article to be a hose (10). Following the argument of appellant I, since the connecting means connecting the container to the compressor assembly (6) is identically represented in Figure 9, D8 implicitly shows a second hose, as required by feature 4 due to the plural term "formed as hoses".

2.1.1 Feature 8 specifies "an additional hose cooperating with said inflatable article". Therefore, when taking features 4 and 8 together, three hoses are required in total, in particular according to feature 8 a second, additional hose cooperating with the inflatable article. This is not known from D8 which only shows a single hose connected to the inflatable article (tyre).

The board does not follow appellant II in that the number of hoses forming the connecting means of feature 4 is not specified, because by using the plural "hoses" feature 4 requires at least more than one hose. Moreover, although the contested patent describes in relation to the embodiment according to Figure 7 (which shows a three-way valve according to feature 9) the connection between the container and compressor assembly to be a "conduit 82", there is no reason for interpreting feature 4 more broadly, as alleged by

appellant II, to include connecting means which are formed only by a single hose (e.g. hose 6 in D8) so that hose 10 in D8 might represent the additional hose of feature 8. As explicitly stated in the contested patent (see page 2, lines 37 to 38), "Figure 7 shows a schematic of a pneumatic circuit connected to the Figure 2 kit dispenser unit", and Figure 2 shows a fitting 53 (connected in Figure 7 to conduit 82) which is connected to compressor 2 by hose 4 as explicitly stated in paragraph [0036]. Moreover, the description of the embodiment of Figure 7 also refers to the hose 5 which in Figure 2 connects the container to the tyre. Therefore, there is no reason to assume that the contested patent itself might suggest only two hoses.

Appellant II asserts in a further line of argument that claim 1 leaves open whether two hoses are leading to the tyre, so the subject-matter of claim 1 was distinguished over D8 by part of feature 4, assuming that hose 10 represented the additional hose according to feature 8. Following appellant II in that feature 4 does not explicitly specify (due to the wording "for connecting the container to an inflatable article") a hose establishing a physical connection between the container and the inflatable article (i.e. a second hose parallel to the additional hose leading to the tyre), features 4 and 8 have to be considered in combination and require at least two hoses establishing a connection to the tyre (one of which cooperating with the tyre, see feature 8). In any case, D8 fails to show a second hose for establishing a connection to the tyre, no matter whether this missing feature is considered to represent feature 8 or part of feature 4.

For the same reason, the first line of argument presented by appellant II has to fail, according to

which the general disclosure on page 4 of D8 disclosed a five-way valve and two separate hoses between the switching valve and the inflatable object, so that allegedly the subject-matter of claim 1 was only distinguished from D8 by the three-way valve of features 9 and 10. According to appellant II two separate hoses were present between the switching valve and the inflatable object on the assumption that a 1st outlet and a 3rd outlet were leading to the tyre. However, D8 is totally silent on page 4 on whether the 1st and 3rd outlets might be identical or not, so that the feature in dispute is not disclosed clearly and unambiguously in D8.

2.1.2 The board also takes the view that the term "three-way valve" has a well-recognised meaning in the field of pneumatic or hydraulic circuits and defines a valve with three ports for connecting the valve to a respective circuitry. The broad interpretation of claim 1, as asserted by appellant II in a further line of argument, that claim 1 only specified the valve's inputs and outputs and the term "three-way" might relate to the number of channels within the valve as known from D8 (two channels 13 and bypass 12), is not accepted and not supported by the contested patent either, which shows in Figure 7 a three-way valve according to the standard definition. The same applies with regard to the assertion by the appellants that the turning valve of D8 provided all the functions of a three-way valve. As a consequence, feature 9 is not known from D8, although the four-way valve shown in Figures 1 and 2 in D8 might have an input and two outputs as specified by features 9 and 10.

Appellant II also argued that D8 contained a general disclosure on page 4 which basically described a

switching valve with two positions and three connections, i.e. a so called 3/2-valve. However, the board cannot see that the passages cited by appellant II provide any hint about how the valve is realised or that a three-way valve as specified by features 9 and 10 would be unambiguously disclosed. On the contrary, as mentioned in the third paragraph ("durch einfaches Umschalten des Ventils in die zweite Position kann der Benutzer jetzt das gleiche Gerät zum schnellen und einfachen Abdichten und Aufpumpen ... verwenden) suggests that simply switching the valve is the only manual operation necessary to switch over from an inflating function to a repair function, which does not suggest at all that a second additional hose to the tyre has to be provided, or that two outputs are necessary as required by feature 10. Moreover, appellant II himself (see above 2.1.1) relies on same page 4 for arguing that D8 discloses a five-way valve.

From this it follows that the lines of argument presented by appellant II, according to which a three-way valve was allegedly known from D8, have to fail.

2.1.3 In summary, the board takes the view that D8 fails to show a three-way valve according to feature 9 and a third hose as required by the wording of claim 1, be it the additional hose cooperating with the inflatable article according to feature 8 (as admitted by appellant I) or a hose for connecting the container to the inflatable article according to the second part of feature 4 (as argued by appellant II).

2.1.4 As stated in the contested patent (paragraph [0051]), this configuration provides the advantage that the user can switch in a simple way from an inflation-only to a repair and inflation use of the kit. A corresponding

problem is already mentioned and solved in D8 (see pages 3 and 4).

By providing an additional hose and the three-way valve as specified in claim 1, which only comprises one input connected to the compressor, contamination or clogging of the valve by sealant is avoided. According to the established case law, the technical problem has to be formulated in such a way that it does not contain pointers to the solution or partially anticipate the solution. Thus, the board does not agree to the formulation of the problem proposed by the appellants that sealant contamination of the valve should be avoided, which implies that the valve should not get in touch with sealant and should be bypassed. Since the problem of valve contamination is already addressed in D8 and solved by means of replacing respective parts, the problem to be solved may be regarded as how to provide an alternative solution to the problem of valve contamination.

- 2.1.5 The appellants consider it obvious to provide a direct connection from the container to the tyre, by forming conduit 8 of D8 as a hose and connecting it directly to the tyre. As argued by appellant II, this would result in one channel within the valve of D8 (connecting conduits 8 and 10) being without any function, so the valve would be a three-way valve.

However, the board does not see any motivation for the skilled person to contemplate such modification of the kit known from D8, which would require an additional hose to be provided with the kit. D8 already represents a user-friendly design which allows for inflation-only use in one position of the switching valve and which requires for repairing a punctured tyre, except for

operating the switching valve, no further manual operation. In particular, there is no prompting in the prior art to revert to an operation mode which might involve a further manual step of selecting the appropriate hose to be connected to the tyre and to one of the two outputs of a three-way valve, depending on whether a repair or inflation functions is required, in order to avoid valve contamination.

- 2.1.6 Therefore, the board finds that the subject-matter of claim 1 as granted involves an inventive step over closest prior art document D8 (Article 56 EPC).
- 2.2 Appellant II alternatively considered document D6 as the closest prior art.
  - 2.2.1 Similar to what has been found for D8 as closest prior art, D6 also shows an embodiment comprising a four-way valve (Figures 1, 2), one hose for connecting the container to the compressor assembly and one single hose for establishing a connection to the tyre. Irrespective of whether the hose leading to the tyre is associated with the hose claimed in feature 4 (connecting container and tyre) or in feature 8, D6 fails to show a three-way valve (feature 9) and a second, separate hose for establishing a connection to the tyre. Consequently, the kit for inflating and repairing inflatable article as specified in claim 1 is distinguished from the kit disclosed in D6 by the same distinguishing features as already argued above in relation to D8 as closest prior art. Therefore, the same considerations in judging inventive step apply.
  - 2.2.2 In addition to the arguments already dealt with, appellant II pointed to paragraph [0028] and claim 2 of D6. D6 describes in paragraph [0028] the advantage of

the invention of D6, mentioning that the valve of the extraction unit opens in one position preferably ("vorzugsweise") two channels leading to the container. However, even if the term "preferably" might indicate a mere option and a one-way valve or a multiple-way valve is explicitly specified in claim 2, there is no indication given in D6 or in the prior art that the skilled person would consider using a three-way valve, or that an additional hose should be provided for establishing a connection to the tyre to solve the problem of valve contamination. On the contrary, this known problem is already solved in D6 by a cleaning process using compressed air for inflating the tyre after having injected the sealant. Moreover, the arguments of appellant II are based on mere assumptions ("the valve could only switch one channel .... Thus, the valve used in D6 was a three-way valve..."; "When using two separate hoses ...to the tyre") without indicating any prompting that could have convinced the board.

2.2.3 Appellant II alleges that there is no inventive quality in going back to the simpler and less sophisticated design with two separate hoses according to the subject-matter of claim 1. However, the criterion for assessing inventive step as set forth in Article 56 EPC is not inventive quality, but whether the claimed solution is obvious to the person skilled in the art, having regard to the state of the art. As argued above, the board sees no reason why the skilled person would consider using a three-way valve and an additional hose cooperating with the inflatable article as required by features 8 and 9.

2.2.4 D6 also shows a further embodiment (Figures 3, 4) comprising a sliding valve having an input 3, an output



4 and a channel 17 for connecting the valve to the container. Following appellant II in that at least Figure 4 of D6 shows a valve having three ports, i.e. a three-way valve according to features 9 and 10, a second, additional hose for connecting the container to the tyre is not known, irrespective of whether this missing feature relates to feature 8 (as argued above) or to feature 4 (as argued by appellant II). The board does not see why the skilled person would provide, in addition to hose 8, a further hose leading to the tyre which would require an additional part and further manual steps as argued already above.

Moreover, by providing a further hose leading to the tyre and relying - to avoid completely redesigning the kit of D6 - on the known interface between valve and container comprising a combined inlet and outlet port, an additional valve output for the additional hose has to be provided. Such modification of the valve of D6 would result in a four-way valve, i.e. would not lead to the feature 9 of claim 1 as granted. Moreover, it would not solve the problem of valve contamination, since the valve still would have an input connected to the container (contrary to feature 9) so that during a repair operation sealant fluid would be injected into the valve. A contamination of the valve could only be avoided by further modifying the container such that sealant is not injected into the valve but into a separate hose now connected to the container. Such modification of the kit of D6 is not considered to be obvious, in particular because D6 already solves the problem of valve contamination or clogging by blowing air through the channels after having injected the sealant into the tyre (see paragraph [0038]).

- 2.2.5 Therefore, the subject-matter of claim 1 as granted involves an inventive step over D6.
- 2.3 Finally, appellant II argues lack of inventive step starting from the allegedly prior-used kits which were designed in accordance with the design registration D7. As acknowledged by appellant II, an additional hose according to feature 8 and a three-way valve according to features 9 10 were missing in those kits. Therefore, for the reasons given already above, the subject-matter of claim 1 as granted is found to involve an inventive step. Again, it is observed that the problem formulated by appellant II ("inflating function independent from the repair function") contains a pointer to the solution which cannot be accepted.
3. In view of this finding, it can be left open whether the public availability of the prior-used kits was sufficiently proven and whether this line of attack should be admitted into the proceedings, which has been answered in the negative in the contested decision.

**Order**

**For these reasons it is decided that:**

The appeals of appellant I and II are dismissed.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated