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**Datasheet for the decision  
of 15 December 2020**

**Case Number:** T 2710/17 - 3.2.01

**Application Number:** 12191349.5

**Publication Number:** 2596886

**IPC:** B23D33/00, B23D15/14,  
B23B29/04, B23B27/04, B23B27/10

**Language of the proceedings:** EN

**Title of invention:**  
Cutting assembly

**Patent Proprietor:**  
KENNAMETAL INC.

**Opponents:**  
KARL-HEINZ ARNOLD GmbH  
Sandvik Intellectual Property AB

**Headword:**

**Relevant legal provisions:**  
EPC Art. 123(2), 52(1), 54, 56  
RPBA Art. 12(4)  
RPBA 2020 Art. 13(1), 25(2), 25(3)

**Keyword:**

Novelty - main request (no)

Amendments in an auxiliary request - intermediate  
generalisation (yes)

Auxiliary requests not admitted because they could have been  
filed in the first instance proceedings (yes)

Amendment to appeal case - justification by party (yes) -  
amendment detrimental to procedural economy (no) - suitability  
of amendment to resolve issues raised (yes)

Inventive step - auxiliary request - (yes)

**Decisions cited:**

T 0634/16, T 0032/16

**Catchword:**



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Case Number: T 2710/17 - 3.2.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.01**  
**of 15 December 2020**

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(Patent Proprietor)

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**Decision under appeal:**

**Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
12 October 2017 concerning maintenance of the  
European Patent No. 2596886 in amended form.**

**Composition of the Board:**

**Chairman**            G. Pricolo  
**Members:**            V. Vinci  
                              S. Fernández de Córdoba

## **Summary of Facts and Submissions**

I. The appeals filed by the opponent 1 (appellant 1), the opponent 2 (appellant 2) and the patent proprietor (appellant 3) are directed against the interlocutory decision of the opposition division to maintain European patent No. 2 596 886 in amended form on the basis of the third auxiliary request filed during the oral proceedings.

II. In its decision the opposition division held that the subject-matter of claim 1 of the main request lacked novelty in the meaning of Articles 52(1) and 54 EPC in view of document

D5: JP-2007-44834

and that the subject-matter of claim 1 of the auxiliary requests 1 and 2 lacked inventive step in the meaning of Articles 52(1) and 56 EPC in view of document

D4: WO 2009/141851

in combination with document

D9: GB 1 369 096 A.

III. Oral proceedings before the Board took place on 15 December 2020.

IV. The appellant 3 (patent proprietor) requested that the decision under appeal be set aside and that the European patent be maintained on the basis of the main request underlying the appealed decision or, as auxiliary measure, according to one of the auxiliary

requests 1 to 3 filed with the statement of the grounds of appeal, or according to the auxiliary requests 4 or 5 filed with the letter dated 11 November 2020.

The appellant 1 (opponent 1) and the appellant 2 (opponent 2) requested that the decision under appeal be set aside and that the patent be revoked in its entirety.

V. Claim 1 of the main request reads as follows (numbering of the features adopted by the parties added):

**a)** *a cutting assembly (20), comprising*

**b)** *a toolholder (22) extending in an axial direction and a cutting insert (24) mounted in the toolholder;*

*c) the toolholder (22) having an axial forward end (28) and an axial rearward end (30), the toolholder (22) having a head portion (34) at the axial forward end (28) and a shank portion (32) at the axial rearward end (30);*

**d)** *the head portion (34) containing a slot (36) separating the head portion (34) into a lower section (42) and an upper section (40), the lower section (42) defining a lower seat (48) and the upper section (40) adapted to retain the cutting insert (24) therebetween;*

**e)** *wherein the head portion (34) has a narrow axial forward extension (44) which is divided by the slot (36) in a lower axial forward extension (44A) and an upper axial forward extension (44B), so they are movable relative to one another;*

**f)** *the upper section (40) having an upper seat (46) in*

*the vicinity of the axial forward extension (44) and wherein the lower section (42) has the lower seat (48) in the vicinity of the axial forward extension (44);*

**g)** *the head portion (34) having an exit (98) in the upper section (40), the exit being adapted to direct coolant to the cutting insert (24) when the cutting insert (24) is mounted in the toolholder (22);*

**h)** *wherein the coolant is delivered to the vicinity of a cutting insert-workpiece interface by discharging coolant from the exit (98) in the narrow axial forward extension (44) of the head portion (34);*

**i)** *wherein the cutting insert (24) includes a top surface (145) with an upwardly extending protuberance (146) that can be engaged by the toolholder (22) to rigidly mount the cutting insert (24) in the head portion (34) of the toolholder (22);*

*characterized in that*

**j)** *the cutting insert (24) further includes a coolant channel (154) formed in the shank portion of the cutting insert (24), in the top surface (145) of the cutting insert (24),*

**k)** *wherein the coolant channel (154) is positioned directly opposite of the exit (98) when mounted in the toolholder (22), thereby causing the coolant channel (154) to act as a nozzle to enhance the flow rate of the coolant delivered to an interface between the cutting insert (24) and a workpiece.*

Claim 1 of the auxiliary request 1 corresponds to claim 1 of the main request and includes the additional

feature that:

*the cutting assembly (20) is a cut-off tool assembly.*

Claim 1 of the auxiliary request 2 is identical to claim 1 of the auxiliary request 1 underlying the contested decision. It corresponds to claim 1 of the main request with the additional features that the narrow axial forward extension has:

*a constant transverse dimension (F),*

and that the

*the coolant discharged by the exit (98) is deflected by the cutting insert (24).*

Claim 1 of the auxiliary request 3 corresponds to claim 1 of the auxiliary request 2 at stake with the additional feature that:

*the cutting assembly (20) is a cut-off tool assembly.*

Claim 1 of the auxiliary request 4 corresponds to claim 1 of the auxiliary request 2 at stake with the additional feature that:

*a ratio (F/G) of the transverse dimension (F) of the narrow axial forward extension (44) to a maximum transverse dimension (G) of the head portion (34) ranges between about 0.15 and about 0.50.*

## **Reasons for the Decision**



**MAIN REQUEST**

Novelty: Articles 52(1) and 54 EPC

1. The Board shares the conclusion of the opposition division that claim 1 of the main request lacks novelty over D5.
  
- 1.1 The appellant 3 contested the assessment of the technical content of document D5 provided by the opposition division according to which the cutting assembly disclosed therein comprises features (e), (g) and (k) of claim 1. Furthermore, at the oral proceedings, the appellant 3 argued that D5 does not disclose feature (i) either.
  
- 1.2 Regarding the first part of feature (e) according to which that *"the head portion (34) has a narrow axial forward extension (44)"*, the appellant 3 correctly pointed out that when assessing the shape of the head portion of the toolholder of the cutting assembly shown in figure 1 of D5 the cutting insert must be disregarded because it is a separate element not belonging to the head portion itself. Furthermore, the appellant 3 observed that the term *"extension"* is generally understood as an additional portion protruding from the main body of an element clearly discernible and distinguishable therefrom. This is not the case of the head portion of the toolholder of the known cutting assembly which is formed as a smooth continuation of the block-shaped toolholder from which a corner portion has been cut away, said continuation being not clearly discernible from the shank of the toolholder. The appellant 3 thus concluded that the head portion of the toolholder cutting tool of D5 is not provided with an axial forward extension stretching

only along the axial direction of the toolholder. The appellant 3 further observed that the wording of the claim purposely uses term "*narrow*" instead of "*narrowing*" or "*tapering*" in order to clearly differentiate the shape of the head portion of the cutting assembly of claim 1 from the one of the cutting assembly of D5. The appellant 3 concluded that the person skilled in the art, on the basis of common general knowledge, understands that the cutting assembly of document D5 is not provided with a head portion with a "*narrow axial forward extension*" in the meaning that this expression has in the technical context of the claim which implicitly relates to a cut-off tool assembly (reference was made to document D1, last paragraph of page 1 and to document D9, page 1, lines 24 to 45).

1.3 The Board does not agree for the following reasons:

As convincingly stated by the opposition division in the contested decision and by the appellants 1 and 2, claim 1 is neither explicitly nor implicitly limited to a cut-off tool assembly. Therefore, there is no reason for the person skilled in the art to interpret the expression "*narrow axial forward extension*" in a restricted way, i.e. as meaning a geometry of the head portion typical of a cut-off tool assembly, thereby excluding the shape of the head portion of the cutting tool assembly shown in figures 1 and 6 of D5.

1.4 In addition, as correctly argued by the appellant 1, the relative term "*narrow*", as such, can only be interpreted broadly, i.e. as meaning that the claimed axial forward extension of the head portion is simply narrower than the width of the shank of the toolholder from which it protrudes. Therefore, no clear

distinction can be seen with respect to the head portion of the toolholder of the cutting assembly shown in figures 1 and 6 of D5 showing that the width of the head portion, starting from a certain point of the shank, progressively decreases in the direction of the seat provided for the cutting insert (12). The allegation of the appellant 3 that the head portion of the known cutting assembly does not extend forward along the axis of the toolholder is not convincing because it is evident from figure 1 of D5 that its main extension lays along the axial direction of the toolholder as required by the wording of feature (e) of claim 1 of the main request. In conclusion, the Board agrees with the opposition division that the cutting assembly of D5 is provided with an head portion having "*a narrow axial forward extension*" in the meaning of feature (e) of claim 1 at stake. That a geometry of the head portion according to the remaining part of feature (e) is also disclosed in D5 is not contested by the appellant 3.

1.5 Regarding the alleged distinguishing feature (i), the appellants 1 and 2 objected that the arguments presented by the appellant 3 in this respect have been submitted for the first time at the oral proceedings and, as such, should be disregarded. The appellant 3 referred to the submission filed with letter dated 12 April 2017.

1.6 However, this admissibility issue can be disregarded because the Board concurs with the appellants 1 and 2 that D5 directly and unambiguously discloses a cutting insert (12) including "*a top surface with an upwardly extending protuberance*" with the functionality of feature (i) of claim 1. As convincingly explained by the appellant 1, the V-shaped top surface of the

cutting insert (12) in figure 5 of D5 results in two protrusions located on both sides of the channel (24) and forming the V-shaped recess of the cutting insert (12). When the cutting insert (12) is mounted in the slot (32) provided between the upper and lower section of the head portion of the toolholder, these protrusions come into engagement with the corresponding surfaces of the slot (32), thereby rigidly mounting the cutting insert (12) in the head portion. Feature (i) is thus disclosed in document D5 either.

- 1.7 Regarding feature (g), the appellant 3 argued that the exit of the cooling channel (52) of the cutting assembly of D5 directly faces the transversal passage provided in the fastener (50) and therefore it is not "*adapted to direct coolant to the cutting insert*" as required by feature (g) of claim 1, but rather into the aforesaid passage of the fastener (50). The Board does not agree:

As convincingly put forward by the appellants 1 and 2, the wording of claim 1, feature (g), only requires that the exit must be "*adapted to direct coolant to the cutting insert*". This functionality is obviously fulfilled by the exit provided in the head portion of the cutting assembly of D5 which directs the coolant through the passageway machined in the shank of fastener (50) to the cutting insert (see figure 1). In fact, claim 1 does not contain the limitation alleged by the appellant 3 that the exit must direct the coolant directly to the cutting insert.

- 1.8 Furthermore, the Board concurs with the opposition division that, although in the tool assembly of D5 the fastener (50) is interposed between the exit of the passageway in the head portion and the coolant channel

(24,40) provided in the cutting insert (12), said coolant channel is geometrically positioned directly opposite said exit as required by claim 1, feature (k), first part.

1.9 Regarding the second part of the feature (k) requiring that the coolant channel acts *"as a nozzle to enhance the flow rate of the coolant delivered to an interface between the cutting insert (24) and the workpiece"*, the appellant 3 argued that D5 does not explicitly disclose a nozzle effect enhancing the flow rate of the coolant delivered to the tip of the cutting insert. Furthermore, a nozzle effect cannot be implicitly derived from D5 either because no change in the cross-section within the coolant channel of the cutting insert is shown in the figures which could determine such a nozzle effect. The Board does not agree for the following reasons:

1.10 Under the term "nozzle" the person skilled in the art understands a spout provided at the end of a pipe or hose from which a jet of fluid under pressure is delivered. Unlike the view of the appellant 3, a nozzle does not mandatorily present a change or restriction of the cross-section of the fluid passageway provided therein. Therefore, the coolant channel formed by the cooperating grooves (24) and (40) machined on the upper surface of the cutting insert (12) and on the corresponding upper section of the head portion of the cutting assembly of D5 respectively acts as a nozzle either. In this respect the appellants 1 and 2 convincingly put forward that the expression "enhance the flow rate" has a relative character and that, in absence of any further information, it must be interpreted broadly as meaning that the flow rate is enhanced with respect to the provision of an open

channel. The coolant flowing out of the channel (52) provided in the toolholder of D5 is conveyed to and restricted into the coolant channel (24,40) formed between the upper head portion and the cutting insert, thereby avoiding any dispersion of the coolant onto the whole upper surface of the cutting insert. The claimed arrangement thus achieves an enhanced flow rate of the coolant in the sense that no dispersion of coolant occurs and the full available flow rate is directed to the interface between the cutting edge and the workpiece. In conclusion the functionality defined by the second part of feature (k) of claim 1 is also achieved by the cutting assembly of D5.

- 1.11 The Board thus concurs with the assessment of the opposition division that document D5 is prejudicial to novelty of the subject-matter of claim 1 of the main request.

### **AUXILIARY REQUESTS 1 AND 3**

#### Admissibility

2. The auxiliary request 1 and 3 have been submitted for the first time with the statement of the grounds of appeal of the appellant 3. Their admissibility is contested by the appellants 1 and 2 with the reason that these requests could have been presented in the first instance proceedings.
- 2.1 Independent claim 1 of the auxiliary requests 1 and 3 corresponds to claim 1 of the main request and of the auxiliary request 1 underlying the decision under appeal respectively, amended in order to specify that the cutting assembly is a "cut-off tool assembly".

2.2 According to Article 12(4) RPBA in the version 2007 which applies to the present appeal in view of the transitional provisions of Article 25(2) RPBA 2020, the Board has a discretion to hold inadmissible requests which could have been presented in the first instance proceedings.

2.3 The appellant 3 explained that during the oral proceedings the opposition division made clear that in its view the cutting assembly of D5 was to be considered a cut-off tool assembly. This interpretation of the technical content of D5 is confirmed under the section labelled "Arguments 3" of the contested decision. Therefore, under these circumstances and in view of the procedural economy, the appellant 3 did not consider it to be expedient to further limit claim 1 of the main request to a cut-off tool assembly. In fact, being already aware of the aforesaid interpretation of the technical content of document D5 given by the opposition division, the patent proprietor realized that a limitation to a cut-off tool assembly would not have led to a promising fall-back position suitable for overcoming the objection of lack of novelty in view of document D5. The same considerations apply to the auxiliary request 3, taking into account that the auxiliary request 1 was considered by the opposition division to lack inventive step in view of document D4 in combination with document D9, and that document D4 indisputably related to a cut-off tool assembly. The appellant 3 thus refrained from the introduction of an explicit limitation to a cut-off assembly in claim 1 of the main request and of the auxiliary request 1 submitted at the oral proceedings because this amendment would have not changed the negative assessment of the opposition division regarding to

novelty and inventive step respectively.

2.4 The appellant 01 countered that the question of whether document D5 discloses a cut-off tool assembly had been extensively discussed through the whole opposition procedure and that the appellant 3, in order to limit the subject-matter of claim 1 with respect to D5 or to the combination of D4 and D9, had instead chosen to amend the claim by further specifying the geometry of the narrow axial forward extension (see auxiliary request 2 filed at the first instance oral proceedings).

2.5 The appellant 2 pointed out that there is no record in the minutes of the oral proceedings confirming that the opposition division had informed the parties during the oral proceedings that in its view document D5 disclosed a cut-off tool assembly.

2.6 After having considered the arguments submitted by the parties at the oral proceedings, the Board comes to the conclusion that the auxiliary requests 1 and 3 could and should have been presented in the first instance proceedings. The reasons are the following:

The circumstance alleged by the appellant 3 that the opposition division had informed the parties during the oral proceedings that in its view document D5 was considered to disclose a cut-off tool assembly does not justify the decision of the patent proprietor not to make use already at this stage of the proceedings of the opportunity to file an auxiliary request limited to a cut-off tool assembly and to get a reasoned decision on this issue. The Board considers that as the appellant 3 was (and still is) convinced that document D5 does not disclose a cut-off tool assembly, there



was no justifiable reason for postponing the filing of a request containing this limitation until the appeal stage. Instead, faced with the decision of the opposition division to reject the main request for lack of novelty over D5 and the auxiliary request 1 for lack of inventive step in view of D4 and D9, the patent proprietor decided to amend the independent claim by introducing different limitations without any attempt to defend its position that document D5 does not disclose a cut-off tool assembly.

- 2.7 Therefore the Board, by making use of the discretion provided by Article 12(4) RPBA 2007, decides that the auxiliary requests 1 and 3 are not admitted because, as explained above, they could and should have been presented in the first instance proceedings.

### **AUXILIARY REQUEST 2**

#### Admissibility

3. Having been clarified that the auxiliary request 2 filed with the statement of the grounds of appeal corresponds to the auxiliary request 1 underlying the contested decision (labelled auxiliary requests 1a in the annex to the minutes of the oral proceedings) the admissibility issue raised by the appellant 1 with the reply dated 31 August 2018 no longer applies. This has been confirmed at the oral proceedings.

#### Article 123(2) EPC

4. Compared with claim 1 of the main request, claim 1 of the auxiliary request 2 comprises, among others, the additional feature that the narrow axial forward extension has:

*"a constant transverse dimension (F)".*

4.1 The appellants 1 and 2 objected that the application as originally filed does not provide any basis for a narrow axial forward extension having a constant transverse dimension (F). The appellant 3 countered that a constant transverse dimension of the narrow axial forward extension (44) can be directly and unambiguously derived from figures 1, 2, 5 and 6 of the originally filed application viewed together.

4.2 In this respect, the appellants 1 and 2 put forward that in figure 1 only one side of the narrow axial forward extension is visible, whereby the person skilled in the art can only speculate whether its transverse dimension (F) is constant or not. Furthermore, the appellants 1 and 2 alleged that figure 2 shows the head portion of the tool holder without the cutting insert mounted on it. In their view, this is confirmed by the fact that in both figures 1 and 2 the axial forward end (28) of the axial forward extension is (44) is depicted. This would be not the case if the cutting insert was shown in figure 2 as well, thereby hiding the axial forward end (28). The appellants 1 and 2 concluded that in view of the varying transversal dimension of the last portion of the axial forward extension (44) clearly visible in figure 2, the allegation of the appellant 3 that the person skilled in art would unambiguously derive a constant transversal dimension of the narrow axial forward extension from the figures is incorrect. Moreover, the view of the appellant 3 that the figure 2 represents the toolholder with the cutting insert mounted on it is not convincing because, if this would be the case, the resulting top view shown in the figure 2 would not be

consistent with the geometry of the cutting insert represented in figures 6 to 8.

4.3 The appellant 2 brought forward that the tapering portion of the head portion in figure 2 starting just after the fastener also belongs to the narrow axial forward extension, whereby, in view to its decreasing transversal dimension, no constant transverse dimension of the narrow axial forward extension can be derived. In reply to the objection of the appellant 3 observing that this line of argument has been presented for the first time at the oral proceedings, the appellant 2 submitted that this argument should be merely considered as a development of the original line of arguments.

4.4 The Board cannot follow the arguments of the appellants 1 and 2 for the following reasons:

As convincingly put forward by the appellant 3, figure 5, which is a cross-section taken along line 5-5 of figure 2, confirms that the latter does represent a top view of the toolholder with the cutting insert mounted there on. The squared portion of relatively larger width visible at the end of the axial forward extension thus represents the upper surface of the cutting portion of the cutting insert and not, as alleged by the appellants 1 and 2, an enlarged portion of the narrow axial forward extension. The fact that the cutting portion of the cutting insert in the top view appears larger than the underlying seat (48) of the axial forward extension is due to the presence of required inclined flank surfaces (150) of the cutting insert depicted in figure 8 of D5. Unlike the view of the appellants 1 and 2, the presence of the reference (28) indicating the axial forward end of the head

portion is not inconsistent with the above interpretation of figure 2 because, although said forward end is not visible in the top view due to the presence of the forward cutting edge (148), it can be assumed that the reference (28) is provided for merely indicating the position of the forward end visible in figure 1. Furthermore and irrespectively of the admissibility issue raised in respect of this new argument, the Board agrees with the appellant 3 that the tapering portion in figure 2, unlike the appellant 2's view, does not belong to the narrow axial forward extension (44) of the head portion (34), but to the rearward portion of the head portion in which the fastener is located.

- 4.5 It follows that the Board is convinced that the person skilled in the art, on the basis of the content of figures 1, 2, 5 and 6, has no reason to assume that the narrow axial forward extension depicted in isometric view in figure 1 has a non-constant transverse dimension, and this also taking into account that a non-constant transverse dimension would not make technically sense in such a cutting assembly.
- 4.6 The appellant 2 further objected that there is no disclosure in the originally filed application for the feature introduced in claim 1 of the auxiliary request 2 that the coolant discharged by the exit (98) is *"deflected by the cutting insert"*.

The Board does not agree, because as convincingly argued by the appellant 3, this feature is directly and unambiguously derivable from figure 5 of the originally filed application.

- 4.7 However, the Board concurs with the appellants 1 and 2 that the omission of the particular ratio  $F/G$  in claim 1 of the auxiliary request 2 results in an unallowable intermediate generalisation of the particular embodiment disclosed in paragraph [0012] in combination with figure 2 of the originally filed application which has been indicated by the appellant 3 as basis for the amendment at stake introduced in claim 1.
- 4.8 The appellant 3 argued that the first 2 sentences of paragraph [0012] define the maximum transverse dimension (G) and the transverse dimension of the narrow axial forward extension (F) shown in figure 2 respectively without mentioning any particular ratio  $F/G$ . The specific ratio and the specific ranges indicated in the following sentences of paragraph [0012] should thus be considered to represent further preferred embodiments/selections not inextricably linked to the previous statements. In the appellant 3's view, the value or the range of the ratio  $F/G$  can be omitted in the claim without infringing Article 123(2) EPC. The Board does not agree for the following reasons:
- 4.9 The person skilled in the art would directly and unambiguously realize that all the information presented in the first 3 sentences of paragraph [0012] of the originally filed application explicitly refer to the particular embodiment of figure 2 which is explicitly mentioned therein (see lines 48 to 54). As this embodiment is the one serving as basis for the feature now introduced in claim 1 that the transverse dimension  $F$  is constant, the Board concurs with the appellants 1 and 2 that the omission of the particular ratio  $F/G$  0.16 explicitly indicated in relation to the embodiment of figure 2 (see lines 51-54 of paragraph [0012]) results in an intermediate generalisation

infringing Article 123(2) EPC. The Board is convinced by the arguments presented by the appellants 1 and 2 that the person skilled in the art cannot directly and unambiguously derive from paragraph [0012] or from any other passage of the originally filed application that any value F of the transverse dimension can be selected, independently from the value of the maximum transverse dimension G, as now permitted by claim 1.

- 4.10 For this reason the auxiliary request 2 does not meet the requirements of Article 123(2) EPC and it is thus not allowable.

#### **AUXILIARY REQUEST 4**

##### Admissibility

5. The auxiliary request 4 has been filed for the first time on 11 November 2020 and its admissibility is contested by the appellants 1 and 2.
- 5.1 The Board notes that claim 1 of the auxiliary request 4 is based on claim 1 of the previous auxiliary request 2 (corresponding to the auxiliary request 1 underlying the contested decision) further amended in order to specify a range for the ratio F/G between 0.15 and 0.50.
- 5.2 The submission of the auxiliary request 4 results in an amendment of the party case in the meaning of Article 13(1) RPBA in the version 2020. The Board notes that in the present case the summons to oral proceedings was notified before the date on which the RPBA 2020 entered into force, i.e. 1 January 2020 and therefore, in accordance with Article 25(3) RPBA 2020, Article 13(2) RPBA 2020 does not apply to the question whether to

admit the auxiliary request 4. Instead, Article 13 RPBA in the version of 2007 continues to apply. However, as held in some recent decisions (see T 634/16 and T 32/16), Article 13(1) RPBA 2020 is not excluded by Article 25 RPBA 2020 and applies to the present case.

- 5.3 Article 13(1) RPBA 2020 stipulates that any amendment to the party's appeal case is subjected to the party's justification and may be admitted only at the Board's discretion. This discretion shall be exercised in view of, *inter alia*, the current state of the procedure, the complexity of the amendment and its suitability to overcome the issues raised by another party or by the Board without giving rise to new objections.
- 5.4 The appellant 3 put forward that the auxiliary request 4 has been submitted in reaction to preliminary opinion of the Board which considered, unlike the opposition division, that the omission of the ratio F/G in claim 1 results in an unallowable intermediate generalisation infringing Article 123(2) EPC. Furthermore, it was pointed out that this objection has not been raised by the appellants 1 and 2 before the appeal oral proceedings either, and that the amendment at stake is neither surprising for the other parties nor imply new and complex subject-matter giving rise to new objections, questions and/or points of discussions.
- 5.5 The appellants 1 and 2 countered that the omission in claim 1 of any specific ratio F/G was already objected under Article 123(2) EPC before the communication issued by the Board, namely with the reply of the appellant 1 dated 31 August 2018, page 9 and with the statement of the grounds of appeal of the appellant 2, point IV-A respectively. The appellants 1 and 2 further argued that the late submission of the auxiliary

request 4 nearly eight months after the date of the preliminary opinion of the Board was not justified by the circumstances.

5.6 After having considered the arguments submitted by the parties at the oral proceedings, the Board, by exercising the discretion provided by Article 13(1) RPBA 2020, decides to admit the auxiliary request 4 for the following reasons:

5.7 The Board concurs with the appellant 3 that the issue relating to the alleged unallowable intermediate generalisation due to the omission of any specific value or range for the ratio F/G was clearly raised for the first time by the Board in its preliminary opinion. The arguments brought by the appellants 1 and 2 in this respect are not convincing for the following reasons:

5.8 The appellant 1 is correct in asserting that in its reply to the statement of the grounds of appeal of the appellant 3 dated 31 August 2018, page 9, it was mentioned that the omission in the independent claim under discussion of any kind of relationship between the dimension F and G led to an infringement of Article 123(2) EPC. However, due to an ambiguous indication given by the appellant 3 of the basis for the auxiliary request 2 filed in appeal, this objection was directed to the subject-matter of claim 1 of the original first instance auxiliary request 1 (labelled as "auxiliary request 1" in the annex to the minutes) which however was replaced in the course of the oral proceedings by a new auxiliary request 1 (labelled as "auxiliary request 1a" in the annex to the minutes), the latter corresponding indeed to the auxiliary request 2 filed in appeal.



5.9 The appellant 2 drew the attention to paragraph IV-A of its statement of the grounds of appeal where it is alleged that the feature (e) of claim 1 as maintained by the opposition division resulted in an unallowable intermediate generalisation of the embodiment shown in figure 2 of the originally filed application because *"all the other features of the tool shown in figure 2 are not included in claim 1"*. This general statement of the appellant 2 does not thus clearly point to the specific issue at stake, namely the omission of the specific value or ranges for the ratio  $F/Q$  specified in paragraph [0012] of the originally filed application which forms the basis for the amendments in claim 1 of the auxiliary request 4.

5.10 The Board is of the opinion that the amendment introduced in claim 1 of the auxiliary request 4 is suitable for removing the unallowable intermediate generalisation objected under Article 123(2) EPC in respect of claim 1 of the auxiliary request 2 (see points 4.7 to 4.9 above). The range now defined in claim 1 for the ratio  $F/G$  is disclosed in paragraph [0012] of the originally filed application, lines 54 to 57. Although this passage does not explicitly refer to the embodiment of figure 2 supporting, as explained under points 4. to 4.5 above, the amendment that the transverse dimension  $F$  is constant, the Board, unlike the view of the appellant 2, considers that the person skilled in the art would have no doubt that the range 0.15-0.5 mentioned in lines 54 to 57 of paragraph [0012] and now introduced in claim 1 represents a further preferred selection of ratio  $F/G$  defined in the previous lines 48 to 54 of the same paragraph which explicitly refer to the embodiment in figure 2.

5.11 The appellants 1 and 2 argued that the amendment at stake introduces additional subject-matter thereby giving rise to new points of discussion at a very late stage of the appeal procedure. The Board does not agree for the following reasons:

5.12 As novelty is not contested, the only question which still arises is whether the subject-matter of claim 1 involves an inventive step over the prior art in the meaning of Articles 52(1) and 56 EPC. As confirmed by the appellant 3 and acknowledged by the appellants 1 and 2 during the oral proceedings, the specific range for the ratio  $F/G$  (with  $F$  constant) has been introduced only in order to clearly distinguish the cutting assembly according the contested patent from the cutting assembly of D5, whereby these additional features are not deemed to add any inventive contribution over the prior art. In fact, as asserted by the appellant 3, the alleged inventiveness of the subject matter of claim 1 rather relies on the particular cooling arrangement defined in the claim. It follows that the discussion on inventive step can be focused on the same subject-matter of claim 1 of the auxiliary auxiliary request 2 filed in appeal (and thus of the auxiliary request 1 discussed at the first instance oral proceedings). For this reason the Board is convinced that the amendments in the auxiliary request 4 do not rise any new issues or points of discussion negatively affecting the procedural economy and/or putting an undue burden either on the Board or on the other parties.

5.13 Therefore, in view of the reasons given above, the Board, by exercising the discretion conferred by Article 13(1) RPBA 2020, decides to admit the auxiliary request 4 in the appeal procedure.

Inventive Step: Articles 52(1) and 56 EPC

6. The Board is of the opinion that the subject-matter of claim 1 of the auxiliary request 4 involves an inventive step over the prior art.
- 6.1 The appellants 1 and 2 submitted a single line of attack based on document D4 as closest prior art in combination with document D9. It was essentially argued that the person skilled in the art, aiming to improve the life of the cutting insert of the cutting assembly of document D4, would obviously consider introducing a cooling arrangement of the kind disclosed in D9 in the known cutting assembly thereby arriving, without any inventive step, to the subject-matter of claim 1 under discussion. The arguments provided by the appellants 1 and 2 are not convincing for the following reasons:
- 6.2 There is agreement in considering document D4 as representing the closest prior art. This document unambiguously disclosed a cutting assembly as defined in claim 1 with the exception that no ratio  $F/Q$  at  $F$  constant is explicitly indicated, and that no cooling arrangement suitable for delivering coolant to the interface between the cutting insert and the workpiece is disclosed. It is further uncontested that document D9 discloses a cutting assembly provided with a passageway suitable for directing coolant liquid to the cutting edge of a removable cutting insert (see page 2, lines 12-15 and page 3, lines 45 to 51 in combination with figures 6 to 9). However, the Board is convinced by the arguments provided by the appellant 3 that a major structural difference between the cutting tools disclosed in D4 and D9 consists in the fact that the

head portion of the cutting assembly of document D9 is realized in 2 separate pieces connected by a bolt (18) in order to secure the cutting insert in the cutting insert seat. On the contrary, unlike the view of the appellants 1 and 2, the cutting assembly of D4 is provided with a head portion realized in one-piece which is divided by a slot in accordance with the structure of the cutting assembly defined in claim 1. The Board agrees with the appellant 3 that this major structural difference would not encourage the person skilled to combine document D4 with document D9 and to incorporate the cooling arrangement of D9, which has the final portion of the coolant passage machined in the separate and removable clamp (16), into the one-piece head portion of the toolholder of the cutting assembly of D4. Furthermore, the Board agrees with the view of the appellant 3 that the cooling arrangement of the cutting tool of D9 does not comprise a cutting insert including a coolant channel with the structure and functionality according to features (j) and (k) of claim 1. While it is true, as pointed out by the appellants 1 and 2, that the cutting insert (20) shown in details in figures 4 and 5 of D9 is provided with a groove (21) on its top surface, the Board agrees with the appellant 3 that the groove (21) has only the functionality to cooperate with the narrow nose (17) of the clamp (17) in order to secure the cutting insert in the toolholder pocket (14). Therefore, even if from the geometrical point of view the groove (21) can be considered as a "channel", document D9 does not disclose that it has the additional functionality of a coolant channel acting *"as nozzle to enhance the flow rate of the coolant delivered to an interface between the cutting insert and a workpiece"* according to features (j) and (k) of claim 1. In fact, unlike the contested patent, the nozzle of the cooling arrangement

of the cutting assembly of D9 is located at the end of the coolant passageway provided in the clamp (16) and not at the end of a coolant channel machined in the cutting insert as instead defined in claim 1. It follows that, unlike the appellants 1 and 2's view, even by combining document D4 with D9, which the Board does not consider to be obvious in view of the structural differences underlined by the appellant 3, it would not be possible to arrive, without an inventive step, to the subject-matter of claim 1 according to the auxiliary request 4, because the essential teaching of the contested patent consisting in the idea of providing the final portion of the coolant passageway and the nozzle on the cutting insert itself, thereby maximizing the flow of coolant effectively delivered to the interface between the cutting edge and the workpiece, would still be missing. The subject-matter of claim 1 of the request at stake thus involves an inventive step in view of the combination of document D4 and D9.

6.3 As no further inventive step attacks have been submitted by the appellants 1 and 2, the Board concludes that for the reasons given above, the subject-matter of claim 1 of the auxiliary request 4 involves an inventive step in the meaning of Article 52(1) and 56 EPC.

6.4 As no further objections have been raised by the appellants 1 and 2, the claims according to auxiliary request 4 together with the description and figures of the patent as granted is considered to meet all the requirements of the EPC.

**Order**

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

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in the following version:

Claims 1 to 12 of the auxiliary request 4 filed with the letter of 11 November 2020;

Figures and description as granted.

The Registrar:

The Chairman:



D. Magliano

G. Pricolo

Decision electronically authenticated