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**Datasheet for the decision
of 22 March 2024**

Case Number: T 1059/22 - 3.5.05

Application Number: 14894814.4

Publication Number: 3001264

IPC: G05B19/404, G05B19/4093,
B23B1/00, B23Q15/14, B23Q15/26

Language of the proceedings: EN

Title of invention:
TURNING PROCESSING CONTROL DEVICE AND TURNING PROCESSING
ASSIST PROGRAM

Patent Proprietor:
Yamazaki Mazak Corporation

Opponent:
Siemens Aktiengesellschaft

Headword:
Turning processing control/YAMAZAKI MAZAR

Relevant legal provisions:
EPC Art. 116(1), 123(2)
EPC R. 103(1)(a)
RPBA 2020 Art. 12(8)

Keyword:

Amendments - unallowable intermediate generalisation
Decision in written proceedings - (yes): oral proceeding not
expedient and no pending request
Reimbursement of opponent's appeal fee - (no): interlocutory
revision not possible

Decisions cited:

G 0001/99



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Case Number: T 1059/22 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 22 March 2024

Respondent: Yamazaki Mazak Corporation
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Appellant: Siemens Aktiengesellschaft
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
9 March 2022 concerning maintenance of the
European Patent No. 3001264 in amended form.**

Composition of the Board:

Chair J. Eraso Helguera
Members: N. H. Uhlmann
C. Almberg

Summary of Facts and Submissions

- I. The opponent appealed, by a combined notice and statement of grounds of appeal, against the opposition division's decision to maintain the European patent in suit in amended form according to a "fifth auxiliary request".
- II. The patent proprietor filed a notice of appeal but withdrew it subsequently. No further submissions by the proprietor were received.
- III. Final requests of the parties
- The opponent requests that the decision under appeal be set aside and that the patent be revoked.
 - The proprietor has no requests on file.
- IV. Claim 1 of the patent as maintained reads as follows:
- "A turning control device (50) using a turning device (30) including:
a spindle (12) to be rotated with a workpiece (10) held thereon;
a tool holding unit (14) for holding a tool (36) for turning the workpiece (10);
a Z-axis driving unit (44) for displacing at least one of the spindle (12) and the tool holding unit (14) in a Z-axis direction which is a direction parallel to a rotation axis of the spindle (12);
an X-axis driving unit (42) for displacing at least one of the spindle (12) and the tool holding unit (14) in an X-axis direction orthogonal to the Z axis; and

a B-axis driving unit (46) for inclining the tool holding unit (14) around a Y axis orthogonal to both of the Z axis and the X axis,
to rotate the workpiece (10) held on the spindle (12) and relatively feed the tool (36) in at least the Z-axis direction in a cutting state in a predetermined cutting depth (ap) in the X-axis direction with respect to the workpiece (10), thereby performing turning work, the turning control device (50) comprising:
a storage unit (54) for storing a working program (64) for defining the turning work and tool shape data (60) indicative of a shape of the tool (36);
a working program processing unit (M22) for analyzing the working program (64) and calculating and outputting command amounts for the Z-axis driving unit (44), the X-axis driving unit (42), and the B-axis driving unit (46);
a command value setting processing unit (M24) for setting an approach angle command value (58) for defining an approach angle (α) which is an angle formed by a cutting edge (32) of the tool (36) and a direction orthogonal to a relative feeding direction of the tool (36) with respect to the workpiece (10) when performing the turning work;
an approach angle setting command amount calculation processing unit (M26) for calculating, as an approach angle setting command amount, a B-axis command amount for controlling to cause the approach angle (α) to have the approach angle command value (58) based on the tool shape data (60); and
a command processing unit (M34) for outputting the approach angle setting command amount to the B-axis driving unit (46), wherein
the working program (64) includes cutting depth data for defining a cutting depth and approach angle data for defining the approach angle (α),

the turning control device (50) further comprises an approach angle calculation processing unit (M16) configured to calculate the approach angle (α) at which an absolute value of a thrust force to be applied to the workpiece (10) by the tool (36) is equal to or smaller than a specified value by using thrust force data (68) including information about cutting speed or feeding speed when performing the turning work according to the cutting depth data of the working program (64),

the approach angle calculation processing unit (M16) is configured to register the calculated approach angle as the approach angle data into the working program (64), and

the command value setting processing unit (M24) is configured to set the approach angle data to the approach angle command value (58),

the turning control device (50) further comprises an angle adjustment reception processing unit (M28) for receiving an instruction to change the approach angle command value (58) set by the command value setting processing unit (M24), and changing the approach angle command value (58) based on the received instruction after start of the turning work and before completion of the turning work, wherein

the command processing unit (M34) outputs, to the B-axis driving unit (46), the approach angle setting command amount corresponding to the changed approach angle command value (58), the approach angle setting command amount being calculated by the approach angle setting command amount calculation processing unit (M26),

the angle adjustment reception processing unit (M28) has a function of temporarily stopping the turning work upon receipt of the instruction to change the approach angle command value (58) during the turning work, and

the command processing unit (M34) outputs, to the B-axis driving unit (46), the approach angle setting command amount corresponding to the changed approach angle command value (58) during the stop of the turning work by the angle adjustment reception processing unit (M28), the approach angle setting command amount being calculated by the approach angle setting command amount calculation processing unit (M26), the storage unit (54) further stores tool data (62) indicative of a cutting edge position of the tool (36) when the tool (36) is held by the tool holding unit (14), the turning control device (50) further includes a compensation amount calculation processing unit (M30) for calculating, based on the tool data (62), an operation compensation amount for compensating a displacement in an XZ plane between a cutting edge position in a latest B-axis position and an cutting edge position in B-axis inclined in accordance with the approach angle setting command value when the angle adjustment reception processing unit (M28) changes the approach angle command value (58), and the command processing unit (M34) simultaneously outputs the approach angle setting command amount and the operation compensation amount to the B-axis driving unit (46), the X-axis driving unit (42), and the Z-axis driving unit (44)."

Reasons for the Decision

1. Patent as maintained - claim 1 - Article 123(2) EPC

- 1.1 Claim 1 includes, *inter alia*, the following limiting feature M15 (emphasis added):

"the turning control device (50) further comprises an approach angle calculation processing unit (M 16) configured to **calculate the approach angle** (α) at which an absolute value of a thrust force to be applied to the workpiece (10) by the tool (36) is equal to or smaller than a **specified value by using** thrust force data (68) including information about cutting speed or feeding speed when performing the turning work **according to the cutting depth data of the working program** (64)".

- 1.2 The opponent submitted that the wording "according to the cutting depth data of the working program" in feature M15 extended beyond the content of the application as originally filed. In particular, the "cutting depth" was only disclosed in combination with "data indicative of working shapes". Hence, an unallowable intermediate generalisation was present in claim 1.
- 1.3 In the opposition proceedings, the proprietor argued that this feature was based on paragraphs [0034] to [0036] of the translated description as filed upon entry into the regional phase at the EPO on 21 December 2015. The opposition division referred to the second sentence in paragraph [0034] and to Figure 7 and came to the conclusion that claim 1 complies with Article 123(2) EPC.
- 1.4 The reasons in the decision under appeal are not convincing.

The second sentence in paragraph [0034] cannot provide a basis for the wording objected to because it refers to a thrust force of **zero** while feature M15 states "an absolute value of a thrust force to be applied to the

workpiece by the tool is **equal to or smaller than a specified value**". Additionally, this sentence teaches that the tool (i.e. its properties) must be known to set the thrust force to zero, thereby confirming the opponent's argument that not only the "cutting depth" but also further data, e.g. "data indicative of working shapes" is needed to calculate the approach angle.

Furthermore, the additional parameters disclosed in Figure 7 (material, chip breaker, coolant) cannot be seen as optional, contrary to the assertion in the impugned decision ("not essential", page 11, penultimate paragraph), cf. paragraph [0039], which states that it is necessary to experimentally obtain the relationship between the approach angle and the thrust force for each of the various conditions ("material [...], presence or absence of a chip breaker of the insert 32, and whether or not a coolant has been used in the turning work").

1.5 For these reasons the board agrees with the opponent's assertion, maintained on appeal, that claim 1 involves an unallowable intermediate generalisation. Thus, claim 1 does not comply with Article 123(2) EPC and hence the patent as maintained does not meet the requirements of the EPC.

1.6 Since there is no allowable claim request on file, the patent must be revoked.

2. Decision in written procedure - Article 12(8) RPBA

2.1 The proprietor had an opportunity to comment on the opponent's written submission but never did. Since this decision is based on the ground of added subject-matter

as discussed in the appealed decision (page 11), and as argued by the opponent on appeal (pages 6-8), the right to be heard has been respected (Article 113(1) EPC).

2.2 In its notice of appeal, the proprietor made requests as follows:

"It is requested that the impugned decision be set aside and the above-mentioned patent be upheld in its entirety.

As an auxiliary request, oral proceedings are requested."

2.3 Given the appealed decision's maintenance of the patent in amended form, "in its entirety" leads the board to understand that the proprietor, at that stage, sought maintenance of the patent to its fullest extent, i.e. as granted.

2.4 In that light alone, the auxiliary request is to be interpreted as conditional in that it applies only if the board intends to deviate from maintaining the patent as granted. This inference is further supported by the absence, in the appeal proceedings, of any auxiliary claim requests, which speaks against any interpretation that the request for oral proceedings was "auxiliary" also in respect of an outcome less favourable than the maintenance of the patent as granted.

2.5 When later the proprietor withdrew its appeal, and turned respondent, it was no longer possible (under the prohibition of *reformatio in peius* in cases where the opponent is the sole appellant, cf. G 1/99) to attain

anything better than the status quo, i.e. maintenance of the patent as amended based on the upheld fifth auxiliary request.

2.6 Since the condition for the proprietor's request for oral proceedings could thus never be met, this request is obsolete. The condition for the winning opponent's corresponding request is unmet. With no pending such request, and no expediency to gain, oral proceedings will not be held (Article 116(1) EPC).

2.7 Since, in addition, the time limit for replying to the opponent's appeal has expired (Article 12(1)(c) RPBA), this decision may be handed down in written procedure (Article 12(8) RPBA).

3. Reimbursement of the opponent's appeal fee

3.1 The opponent requests that the appeal fee be reimbursed in the event of interlocutory revision ("abgeholfen wird"), but did not submit any supporting arguments.

3.2 The relevant legal basis for such a request would be Rule 103(1)(a) EPC. However, in the *inter partes* case at hand no interlocutory revision is possible (Article 109(1), second sentence, EPC). The board is also not aware of any circumstances in this case which would justify the reimbursement of the opponent's appeal fee under one of the other available legal bases.

3.3 Consequently, the opponent's request for appeal fee reimbursement is refused.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



B. Brückner

J. Eraso Helguera

Decision electronically authenticated