HEIDENHAIN
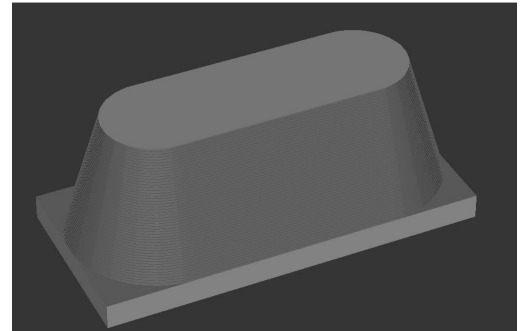
NC solutions

Description of NC Program 3175

1 Description of the NC program 3175_en.h

NC program for the outer milling of a tapered machine key.

> ℹ️ The datum must be located in the X/Y plane in the center and in the Z axis at the upper edge of the machined area.

Description

With this NC program, the control creates a tapered machine key. The control performs this machining operation with an end mill in contour lines. You define the number of contour lines in a parameter. This allows you to influence the surface quality and the machining time.
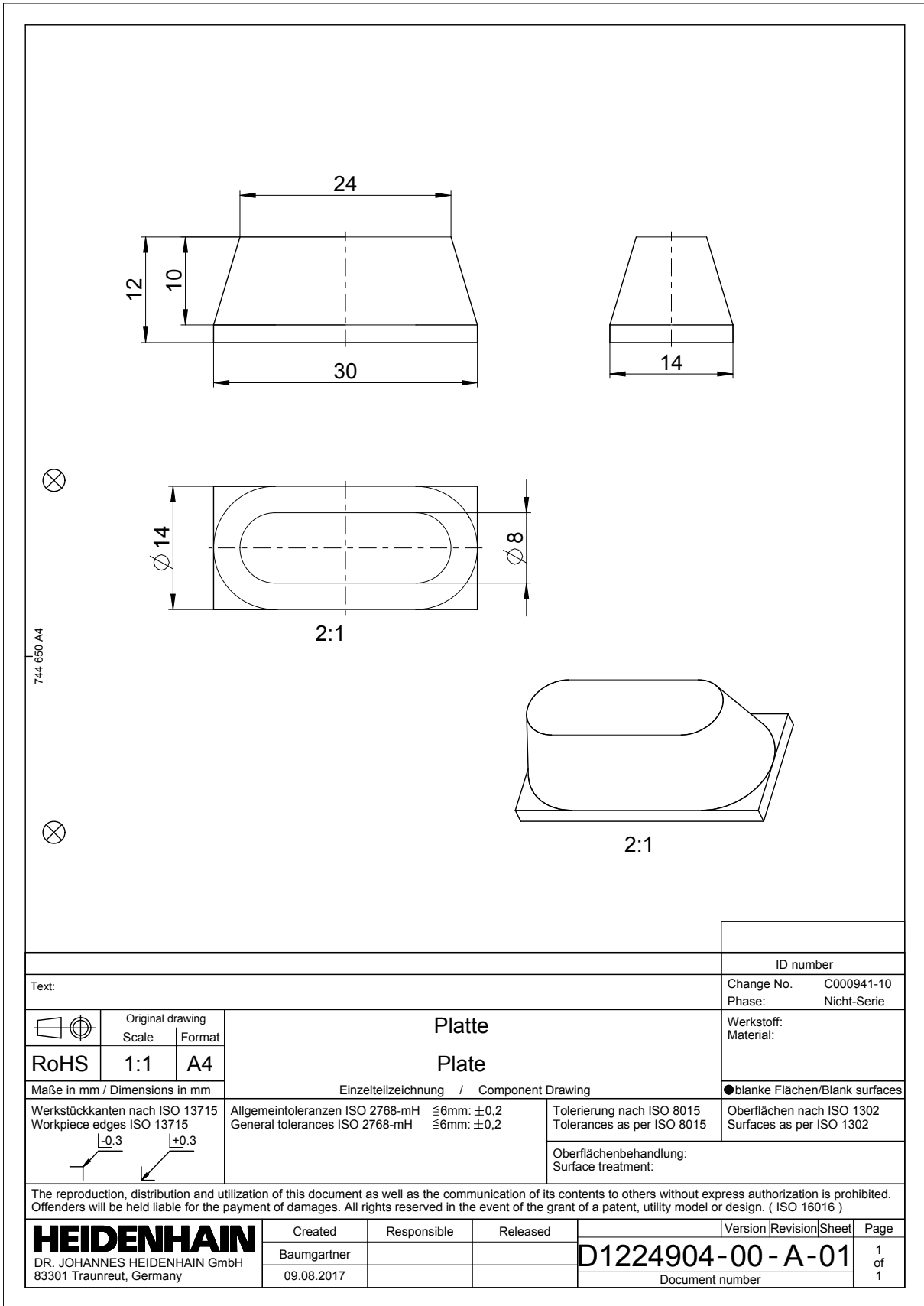
At the start of the program, you define the tool and all of the parameters required for machining. The control then performs multiple calculations.
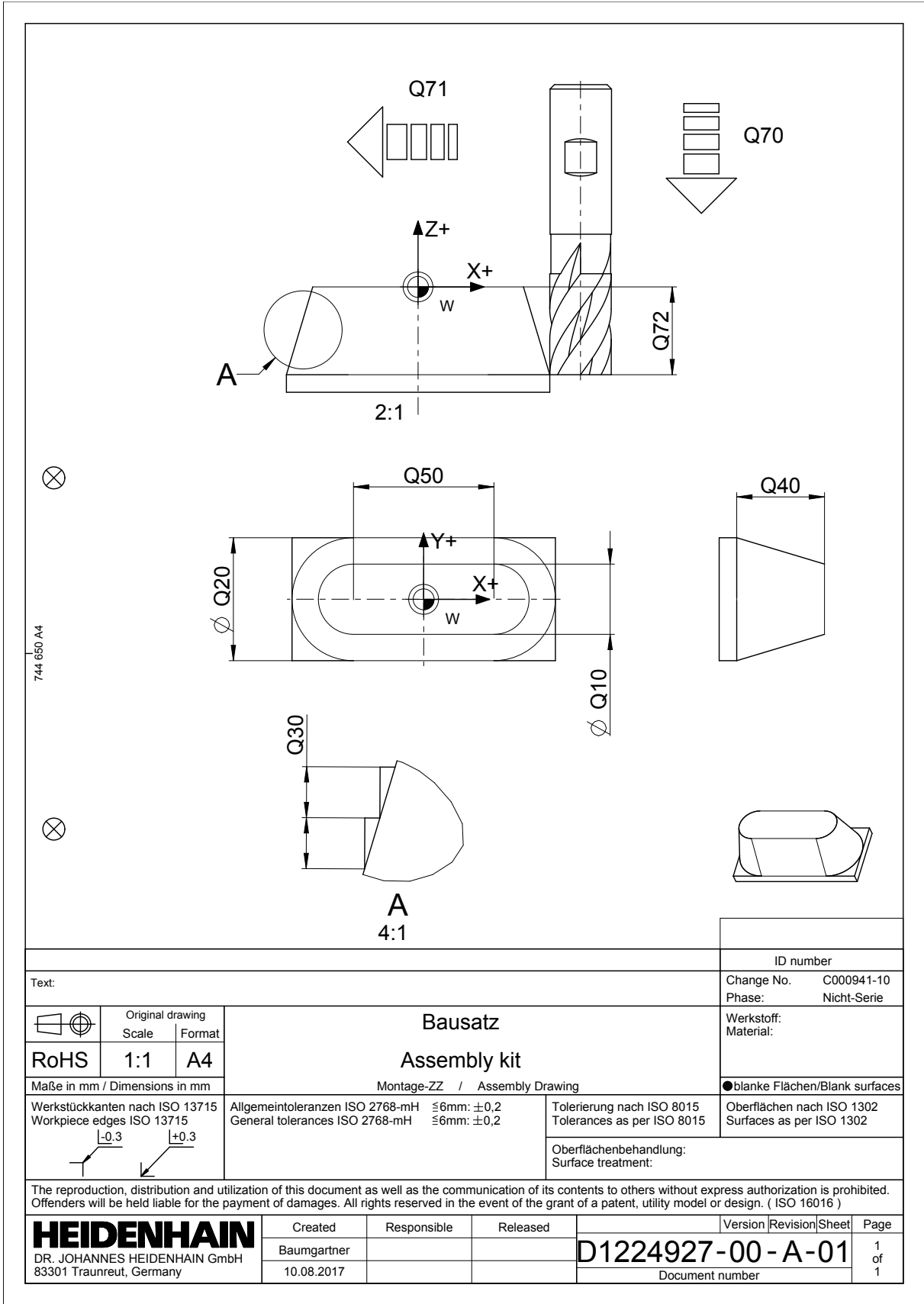
After this, a cycle 25 is defined for the machining operation. With this cycle, the control processes the calculated contour lines. After machining, the control calculates the next depth and the contour change. The machining operation and the performance of calculations are then repeated by the control until the defined number of contour lines have been produced.

In the final program step, the control retracts the tool and ends the program.

The contour of the machine key is programed in a subprogram following the end of the program using Q parameters.

Parameter	Name	Meaning
Q10	ROUNDING DIAMETER ABOVE	Width of the machine key at the upper edge
Q20	ROUNDING DIAMETER BELOW	Width of the machine key at the lower edge
Q40	DEPTH	Milling depth
Q50	LENGTH OF STRAIGHT LINE	Length l_{tr} of the machine key
Q30	SALE	The number of contour lines into which the control divides the machining operation
Q70	FEED RATE FOR PECKING	Traversing speed of the tool in the Z axis
Q71	FEED RATE FOR MILLING	Traversing speed of the tool during milling
Q72	MAXIMUM PLUNGING DEPTH	Maximum plunging depth in the Z axis

744 650 A4

24

12

10

30

14

⌀ 14

⌀ 8

2:1

2:1

		ID number	
Text:		Change No.	C000941-10
		Phase:	Nicht-Serie

Original drawing		Platte	Werkstoff: Material:
Scale	Format		
RoHS	1:1	A4	Plate	

Maße in mm / Dimensions in mm   Einzelteilzeichnung   /   Component Drawing   ●blanke Flächen/Blank surfaces

Werkstückkanten nach ISO 13715 Workpiece edges ISO 13715	Allgemeintoleranzen ISO 2768-mH ≦6mm: ±0,2 General tolerances ISO 2768-mH ≦6mm: ±0,2	Tolerierung nach ISO 8015 Tolerances as per ISO 8015	Oberflächen nach ISO 1302 Surfaces as per ISO 1302
-0.3 +0.3		Oberflächenbehandlung: Surface treatment:	

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Q71

Q70

Z+

X+

W

Q72

A

2:1

Q50

Y+

X+

W

⌀ Q20

⌀ Q10

Q40

Q30

744 650 A4

A
4:1

	ID number	
Text:	Change No.	C000941-10
	Phase:	Nicht-Serie

	Original drawing		Bausatz	Werkstoff: Material:
	Scale	Format		
RoHS	1:1	A4	Assembly kit	

Maße in mm / Dimensions in mm	Montage-ZZ / Assembly Drawing	●blanke Flächen/Blank surfaces

Werkstückkanten nach ISO 13715 Workpiece edges ISO 13715	Allgemeintoleranzen ISO 2768-mH ≦6mm: ±0,2 General tolerances ISO 2768-mH ≦6mm: ±0,2	Tolerierung nach ISO 8015 Tolerances as per ISO 8015	Oberflächen nach ISO 1302 Surfaces as per ISO 1302
-0.3 +0.3			Oberflächenbehandlung: Surface treatment:

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