HEIDENHAIN

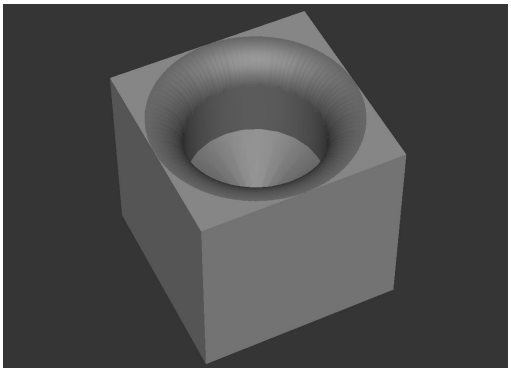
NC Solutions

Description of NC program 3230

English (en)
4/2017

1 Description of the NC program 3230_en.h

NC program for machining a radius at the upper edge of a hole



Description

With this NC program, the control rounds the upper edge of a hole. It does so through a series of profile cuts with an end mill. The profile cut consists of individual elements in the X/Z plane. The control repeats the profile cut on the circumference of the hole edge. You define the number of profile cuts on the circumference of the hole and the number of linear elements per profile cut in two parameters. This enables you to influence the radius to be machined and the machining time.

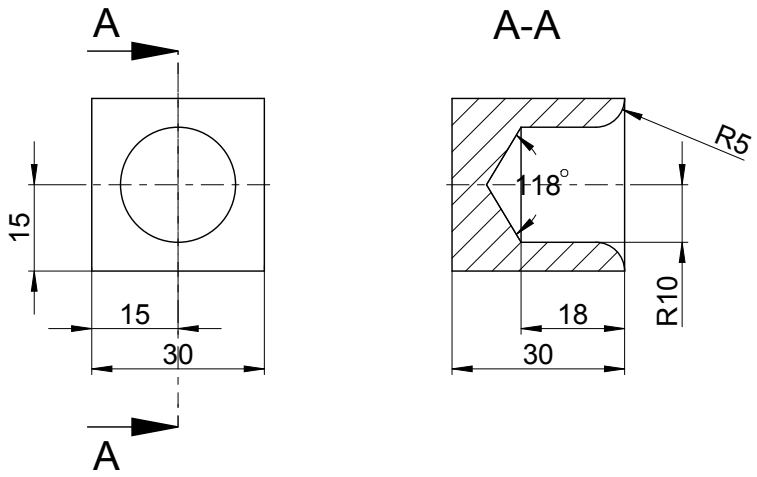
The first part of the example program defines a drilling tool. To create the hole, simple linear blocks are programmed. You can also use a cycle here.

After making the hole you define all parameters needed for making the radius and the tool. Then the control makes some calculation and does the machining.

Sequence of machining:

1 Pre-position the tool in the hole center
2 Move the Z axis to the clearance height
3 Plunge the tool in Z direction
4 Move the datum to the hole center
5 Position the tool to the hole edge
6 Move by the linear element in the X/Z plane
7 Repeat the linear element until the profile cut in X/Z is complete
8 Move the Z axis to the clearance height
9 Position the tool to the hole center
10 Rotate the coordinate system in the X/Y plane
11 Mill the next profile cut
12 Repeat the coordinate system rotation and profile cut until the radius is finished along the complete circumference
13 Reset the coordinate system rotation and datum shift
14 Retract the tool and end the program

Parameter	Name	Meaning
Q1	CENTER IN 1ST AXIS	X coordinate of the hole center
Q2	CENTER IN 2ND AXIS	Y coordinate of the hole center
Q3	HOLE RADIUS	Radius of the hole
Q4	NUMBER OF MILLING PATHS	Number of profile cuts that the control makes on the hole's edge
Q5	RADIUS TO BE MACHINED	Radius at edge of hole
Q6	MILLING PATH PITCH	Number of linear elements into which the control divides the profile cut
Q7	SAFETY CLEARANCE	Safe Z coordinate to which the control move the tool
Q8	FEED RATE FOR PECKING	Traversing speed of the tool in the Z axis
Q9	FEED RATE FOR MILLING	Tool traversing speed during machining



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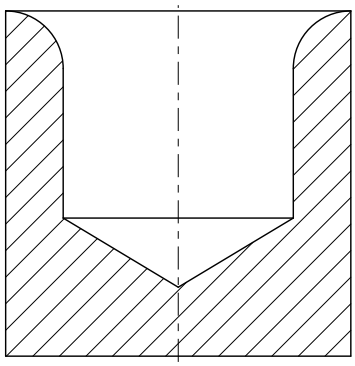

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				ID number
Text:				Release number: C000941-5
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RoHS	1:1	A4		
Maße in mm / Dimensions in mm			Einzelteilzeichnung / Component Drawing	●blanke Flächen/Blank surfaces
Werkstückkanten nach ISO 13715 Workpiece edges ISO 13715 -0.3 +0.3	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
			Oberflächenbehandlung: Surface treatment:	

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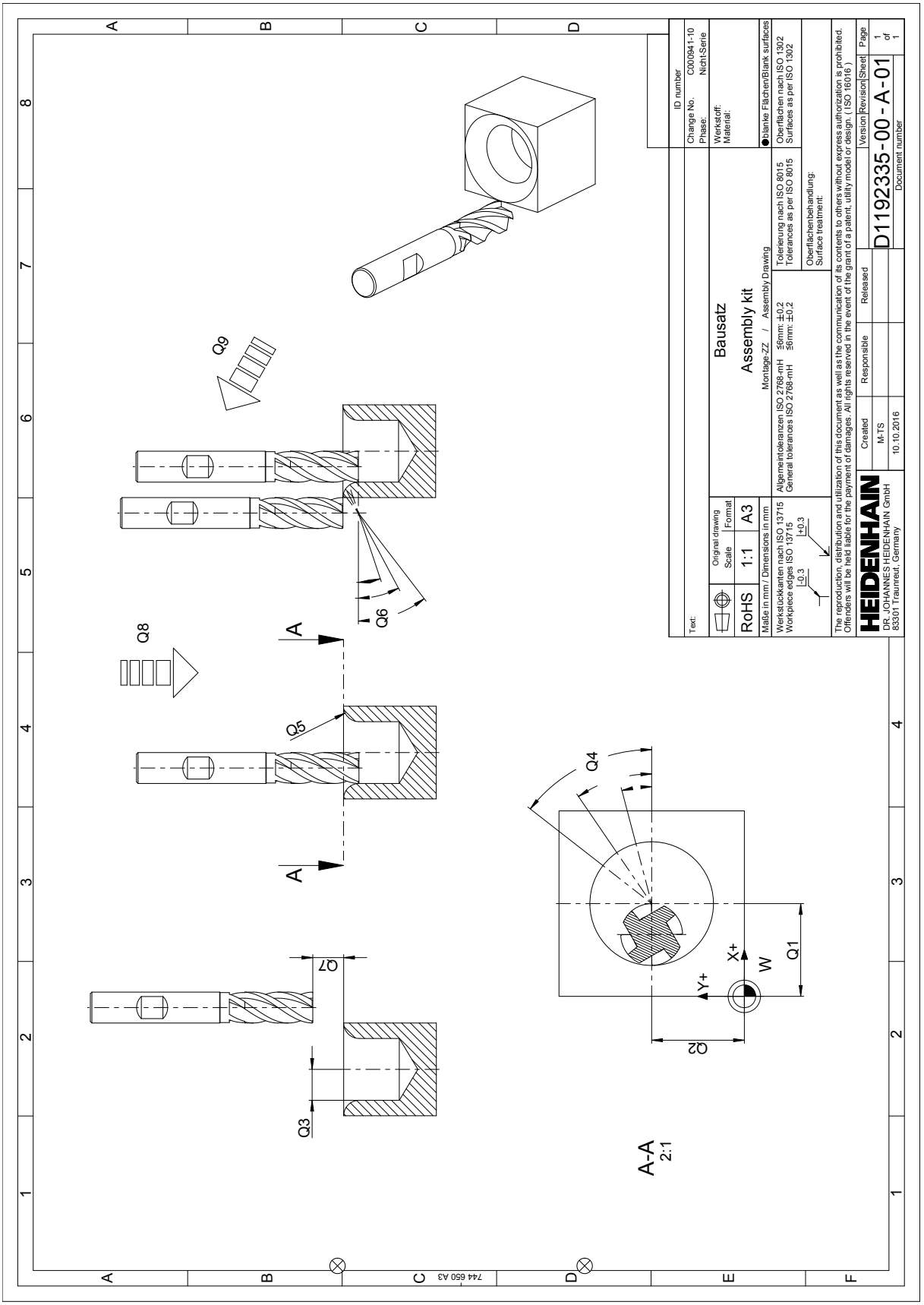
Q9
Q8
Q6
Q5
Q4
Q7
Q3
Q2
Q1
X+
Y+
W
A
A
A-A
2:1
Bausatz
Assembly kit
Montage-ZZ / Assembly Drawing
ID number
Change No. C000941-10
Phase: Nicht-Serie
Werkstoff:
Material:
blanke Flächen/Blank surfaces
Oberflächen nach ISO 1302
Surfaces as per ISO 1302
Toleranzen nach ISO 8015
Tolerances as per ISO 8015
Oberflächenbehandlung:
Surface treatment:
Original drawing
Scale 1:1
Format A3
RoHS
Maße in mm / Dimensions in mm
Allgemeintoleranzen ISO 2768-mH ≤6mm: ±0.2
General tolerances ISO 2768-mH ≤6mm: ±0.2
Werkstückkanten nach ISO 13715
Workpiece edges ISO 13715
+0.3
-0.3
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