HEIDENHAIN

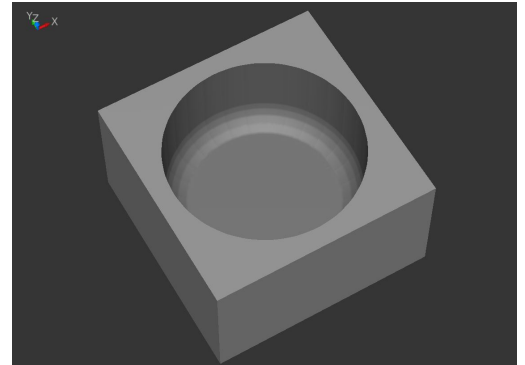# NC solutions

Description of NC Program 2150

1 Description of the NC program 2150_en.h

NC program for milling a circular pocket with a rounding radius on the pocket floor.

Description

With this NC program, the control creates a circular pocket in which the pocket floor and lateral surface are rounded together with a radius.

At program start, you define the tool and all of the parameters required for machining. The control then performs multiple calculations. Then you define two circular pocket cycles. With these cycles, the control pre-mills the circular pocket in two depths. The cycle parameters for the circular pockets come from the parameter definition and the calculations, meaning that you do not have to perform editing in the cycles.

For finishing, the control executes a **TOOL CALL**. During this tool change, the control compensates for the calculated tool length by the amount of the cutter radius.

Then the control performs all of the calculations and contour movements for the finishing operation.
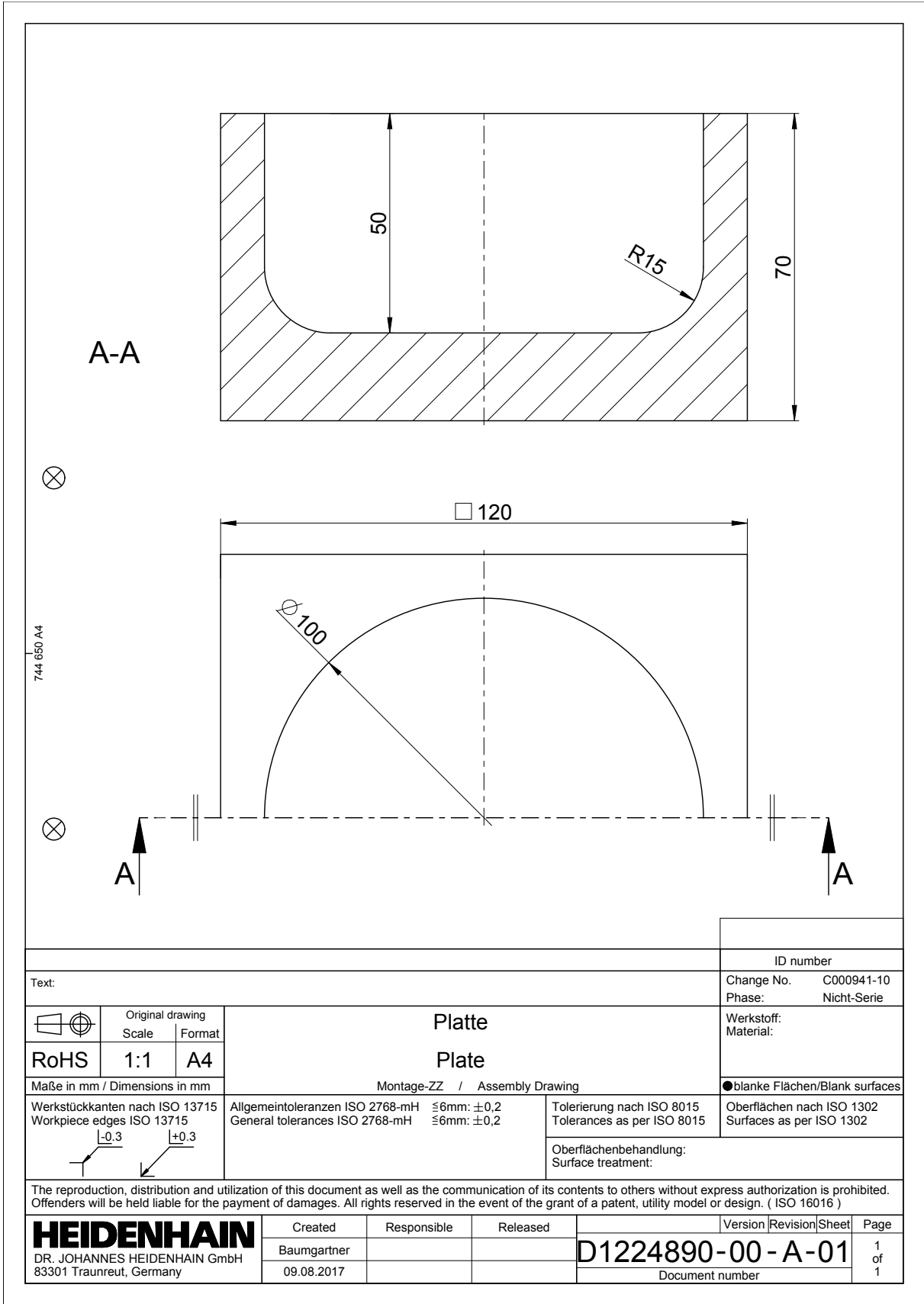
After the complete execution of the operation, the control initially retracts the tool to the second safety clearance. It then moves to a safe position and ends the NC-Program.
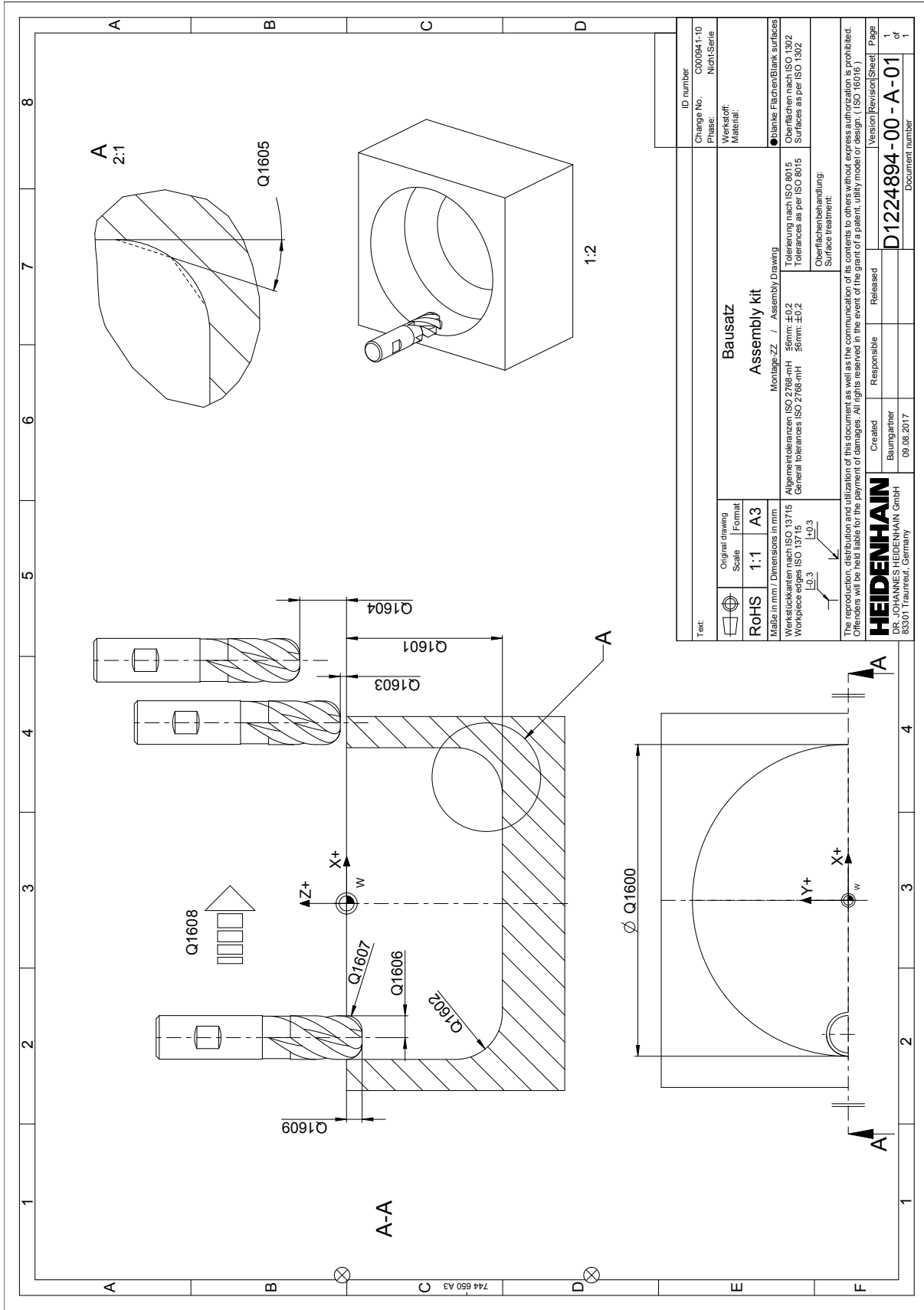
> **i** Programming notes:
> - The center and upper edge of the machining operation are located on the active datum. It may be necessary to shift the datum prior to the machining operation.
> - The machining operation is carried out using a toroid cutter. You must define the tool data, radius, and cutting radius at the start of the program in the parameters.

Parameter	Name	Meaning
Q1600	DIAMETER	Diameter of the circular pocket
Q1601	DEPTH	Milling depth
Q1602	ROUNDING RADIUS	Radius with which the lateral surface and the pocket floor are rounded
Q1603	SAFETY CLEARANCE	Coordinate in the Z axis that the control approaches in rapid traverse
Q1604	2. SAFETY CLEARANCE	Z coordinate that the control approaches after machining
Q1605	ANGLE STEP IN THE RADIUS	Incremental polar angle by which the contour lines are shifted in the radius
Q1606	TOOL RADIUS	Radius of the tool
Q1607	TOOL TOOTH RADIUS R2	Radius of the cutting edge
Q1608	MILLING FEED RATE	Traversing speed of the tool during milling
Q1609	PLUNGING DEPTH FOR PRE-ROUGHING	Incremental plunging depth during pre-roughing of the pocket

A-A

50

R15

70

744 650 A4

□ 120

⌀ 100

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

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

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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DR. JOHANNES HEIDENHAIN GmbH 83301 Traunreut, Germany	09.08.2017			Document number				

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2:1

Q1605

1:2

Q1604

Q1601

Q1603

A

X+

Z+
W

Q1608

Q1607

Q1606

Q1602

Q1609

A-A

∅ Q1600

X+

Y+
W

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