

Production of a pencil holder



pencil holder

The pencil holder is an individual, graceful object for your desk. This attractive machined piece, that will attract lots of attention, is milled from a blank using a SINUMERIK control system equipped with ShopMill. Standard clamping jaws are used to fix it in place when milling.

All information, tool data and ShopMil machining plans required for the reproduction are summarized in the following sections.

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1. Safety note

The handling of machines brings many dangers. Consequently, the legal and general company safety regulations must always be observed for the production of the beer mug lid.

2. Preliminary remark

The following description is oriented to technicians familiar with a CNC turning machine who have experience or knowledge of the SINUMERIK CNC with ShopMill. All technology data listed here is appropriate for the machines, tools, materials, machining plans and drawings used to produce the sample. Although the wide range of conditions prevailing in other workshops mean they are only exemplary for a reproduction, in most cases they should allow a problem-free reproduction.

ShopMill allows the pencil holder to be completely milled in just two or three clamping operations. In spite of this, you still have a lot of freedom when it comes to the individual design. For instance, the engraving cycle included in ShopMill is used. The wide range of options provided by ShopMill is in no way fully utilized, and you still have a high degree of flexibility when it comes to demonstrating your creativity.

To guarantee success, we recommend simulating the machining plans prior to the start. This detects and avoids any program errors. The "perform simulation" work step before starting the production is not essential.

You can download without charge all CAD drawings and production descriptions for the workpieces in the registered "My SINUMERIK" Internet area at www.siemens.com/cnc4you. We make the following files and formats available here:

DXF file / Jobshop file / drawings

3. Workpiece blank

- 1 blank, material AlMg 4,5Mn Werkstoff - Nr.: 3.3547, blank: 40 x 50 x 100 mm

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4. Milling machine and machining plans

- Milling machine and programs
- Milling machine with Sinumerik 840D, 3 axis or 3 plus 2 axis
- ShopMill Version 6.4

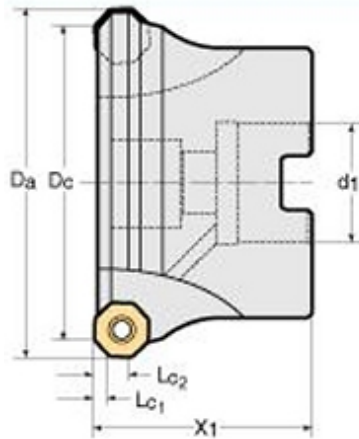
3-axis machine

- Program BEARB_S1 for milling the 1. clamping (3-axis machine)
- Program BEARB_S2 for milling the 2. clamping (3-axis machine)
- Program BEARB_S3 for milling the 3. clamping (3-axis machine)

3 plus 2 –axis machine

- Program B0ARB_S1_3_2 for milling the 1. clamping (3+2-axis machine)
- Program B0ARB_S2_3_2 for milling the 1. clamping (3+2-axis machine)

5. Tools used for turning and milling of the beer mug lid

designation	tool name machining plan	Tools FA. Walter	Figure
PLANFRAESE R_D63_Z5	face-milling cutter	F2280.B.063DC.Z05.04	

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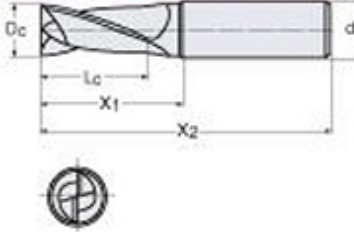
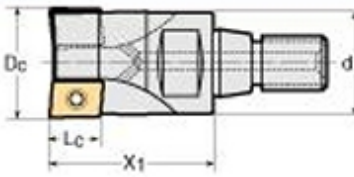
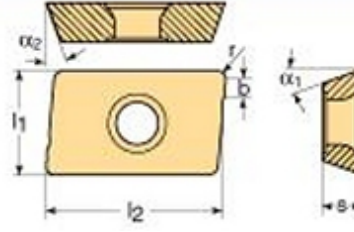


cutting insert		ODHT0605ZZN-G88 WXN15	
FRAESER_WS PL_D32	plunge milling	F3040.T28.032.Z02.15	
cutting insert		ZDGT150412R-K85 WXN15	
SCHAFTFR_W SP_D25	plunge milling	F3040.T22.025.Z02.15	
BOHRN_FR_V HM_D16	end mill cutter	F1720E.Z.16.Z2.26.45. W	
BOHRN_FR_V HM_D20	end mill cutter	F1720E.Z.20.Z2.32.45. W	

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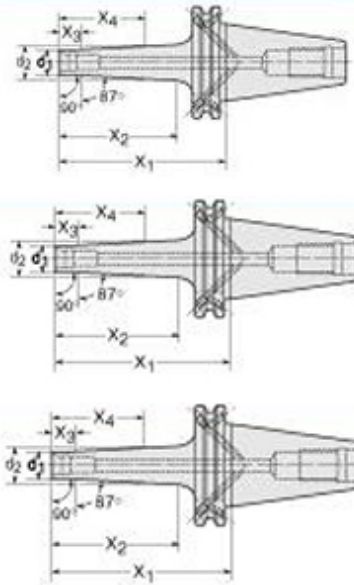


BOHRN_FR_V HM_D8	end mill cutter	F1720E.Z.08.Z2.16.45. W	
SCHAFTFR_W SP_D20	square shoulder milling cutter	F4042.T18.020.Z02.08	
cutting insert		ADHT0803PER-G88 WXN15	
VHM_BOHRER _D11.5	solid carbide drill	B1420.Z.11,5.Z2.40 WXM35	
NC_ANBO_D1 2_90GR	Center drill		
SPIBO_HSS_D 6.8	drill D6.8		

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<p>SK40</p>		<p>AK540.S40.T28.065</p> <p>AK540.S40.T22.060CO</p> <p>AK540.S40.T18.100</p> <p>C100.40.215</p>	
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6. Milling

The cut blank is clamped securely.

Work steps on the milling machine (3-axis)

1. Approach the reference point of the machine.
2. Import the BEARB_S1.mpf, BEARB_S2.mpf and BEARB_S3.mpf machining plans.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Clamp the workpiece
6. Set workpiece zero point.
 1. clamping BEARB_S1
zero point at the center, upperside workpiece at Z-axis
 2. clamping BEARB_S2
zero point at the center, upperside workpiece at Z-axis
 3. clamping (only 3-axis machine) BEARB_S3
zero point at the center, upperside workpiece at Z-axis
7. Perform simulation.
8. Start the manufacturing; process the machining plan.

Work steps on the milling machine (3+2-axis)

1. Approach the reference point of the machine.
2. Import the B0ARB_S1_3_2.mpf and B0ARB_S2_3_2.mpf machining plans.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Clamp the workpiece
6. Set workpiece zero point.
 1. clamping B0ARB_S1_3_2
zero point at the center, upperside workpiece at Z-axis
 2. clamping B0ARB_S2_3_2
zero point at the center, upperside workpiece at Z-axis
7. Perform simulation.
8. Start the manufacturing; process the machining plan.

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7. Information in the Internet

Design of the parts, creation of the drawings, development of the machining plans for the machining

Siemens AG, SINUMERIK TAC Application Center
Frauenauracher Strasse 80
91056 Erlangen
Germany
in the Internet: <http://www.siemens.com/cnc4you>

Dimensions and performance data for the tools to be used

WALTER DEUTSCHLAND
Derendinger Straße 53, D-72072 Tübingen
Phone +49-70 71-70 16 04
E-mail: tools@walter-ag.de

Details of the tool machine to be used

Gildemeister Aktiengesellschaft,
Gildemeisterstraße 60,
33689 Bielefeld,
Im Internet: www.gildemeister.com

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Siemens AG manuals and information

Manuals and detailed information about our products are available at www.siemens.de/sinumerik -> index or search: DOConWEB -> SINUMERIK

- "Simple turning with ShopTurn" training document
-> Info/training -> "Simple turning with ShopTurn" training document
- ShopTurn product brief
-> 840D/840Di/810D users -> ShopTurn 840D/810D product brief
- ShopTurn operating/programming
-> 840D/840Di/810D users -> ShopTurn operating and programming

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- You have the possibility to restrict the selection by clicking "A-Z"
(-> a search is now only made within this item in the index),
- Or click the magnifying glass
(-> the search is now made for complete text within this item).

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