

Production of a double egg cup



Double egg cup – duet for all situations

The double egg cup is the ideal accompaniment throughout the whole year. Irrespective whether as egg cup at Easter, as decorative candle holder at Christmas or simply as accompaniment for him and her at any time of the year. It is turned in two work steps using ShopTurn.

All information, drawings, tool data and ShopTurn machining plans required for a 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 egg cup.

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 ShopTurn. All technology data listed here is appropriate for the machines, tools, materials, machining plans and drawings used to produce the W. Andreas Pfeiffer Co. sample piece. 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.

ShopTurn permits the turning of the double egg cup with just two clampings. The rear side of the double egg cup is produced in the first clamping. The rear side is predrilled to allow an Inside turning tool to produce the hole. The outside contour is then rough cut and the inside and outside contour finished. The hole can also be used to accept the second clamping to machine the front side.

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In the second clamping, the workpiece is clamped in the hole and the outside contour turned. To avoid turning over the center during the facing, the workpiece is first milled to size using a milling tool. A torus milling tool then uses the position template to mill the two holes and the workpiece chamfered with a chamfer cutting tool. This by no means exhausts the wide range of possibilities of the turning program. For example, it would be possible without additional clamping to engrave the names of the two persons with the program's engraving function. In the example program, the associated names are engraved next to the hole. With the help of ShopTurn's engraving function, you can easily change the names.

To guarantee success, we recommend simulating the machining plans prior to the start. This detects and avoids any program errors.

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:

PDF file of the model with dimensions / IGS file / Jobshop files

3. Drawing list

- Egg cup turned part drawing, drawing list, sheet 1-3

4. Workpiece blank

- One piece of round stock, AlCuMgPb material, material no. 3.1645; 190 mm diameter, cut length approx. 42 mm

5. Turning machine and turning program

- Gildemeister CTX 510 turning machine equipped with SINUMERIK 840 D.
- ShopTurn version 6.4 turning program (minimum equipment).
- EIERBECHER_1 machining plan for turning the lower side.
- EIERBECHER_2 machining plan for turning the upper side, milling the holes and engraving.

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6. Used tools

Tools for turning the rear side

Designation	Tool name in the machining plan	Order no. of the Hoffmann Group tool
43 mm diameter drill tool inserts	DREHBOHRER 43	235502 43
12 mm diameter VHM milling tool	SPIPO	202160 12
Right-hand external turning tool	EX WN	256800 20
Right-hand external turning tool	EX DC 107.5 R	266500 20
Right-hand internal turning tool	IN CC 16x42	267600 16
Right-hand internal turning tool	IN V 107.5 0.8	268446 16

Tools for turning the front side

Designation	Tool name in the machining plan	Order no. of the Hoffmann Group tool
12 mm diameter VHM milling tool	SPIPO	202160 12
External turning tool	VPLAN RE	256900 20
12 mm diameter VHM torus milling tool	FRAESER ANG	206350 12/4.0
10 mm diameter VHM deburrer	FASE 10 60 GRAD	208140 10
90° NC spotdrill with tool insert	FRASER GRAVIER	231500 10 231520 10G

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7. Manufacturing steps

Turning and drilling the rear side

Work steps on the turning machine

1. Approach the reference point of the machine.
2. Import the EIERBECHER_1 machining plan.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Clamp the round stock, clamping length approx. 20 mm.
6. Set workpiece zero point by scratching.
7. Perform simulation.
8. Start the manufacturing; process the machining plan.

Turning and milling the front side

The turning of the rear side of the egg cup is now finished and the workpiece is clamped in the hole.

Work steps on the turning machine

1. Approach the reference point of the machine.
2. Import the EIERBECHER_2 machining plan.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Workpiece clamped with inside chuck, clamping length approx. 40 mm.
6. Set workpiece zero point by scratching.
7. Perform simulation.
8. Start the manufacturing; process the machining plan.



8. Information in the Internet

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

W. Andreas Pfeiffer Maschinen- und Apparatebau
Buchackerstrasse 4
90513 Zirndorf / Germany
in the Internet: www.wapfeiffer.de

Dimensions and performance data for the tools to be used

Hoffmann Group
Werkzeughersteller Hoffmann GmbH Qualitätswerkzeuge
Haberlandstrasse 55
81241 Munich / Germany
in the Internet: www.hoffmann-group.com

Details of the tool machine to be used

Gildemeister Aktiengesellschaft
Gildemeisterstrasse 60
33689 Bielefeld / Germany
In the Internet: www.gildemeister.com

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

Searching tips at DOConWEB

DOConWEB permits the fast access to individual pages from documents without loading the complete file.

- 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).

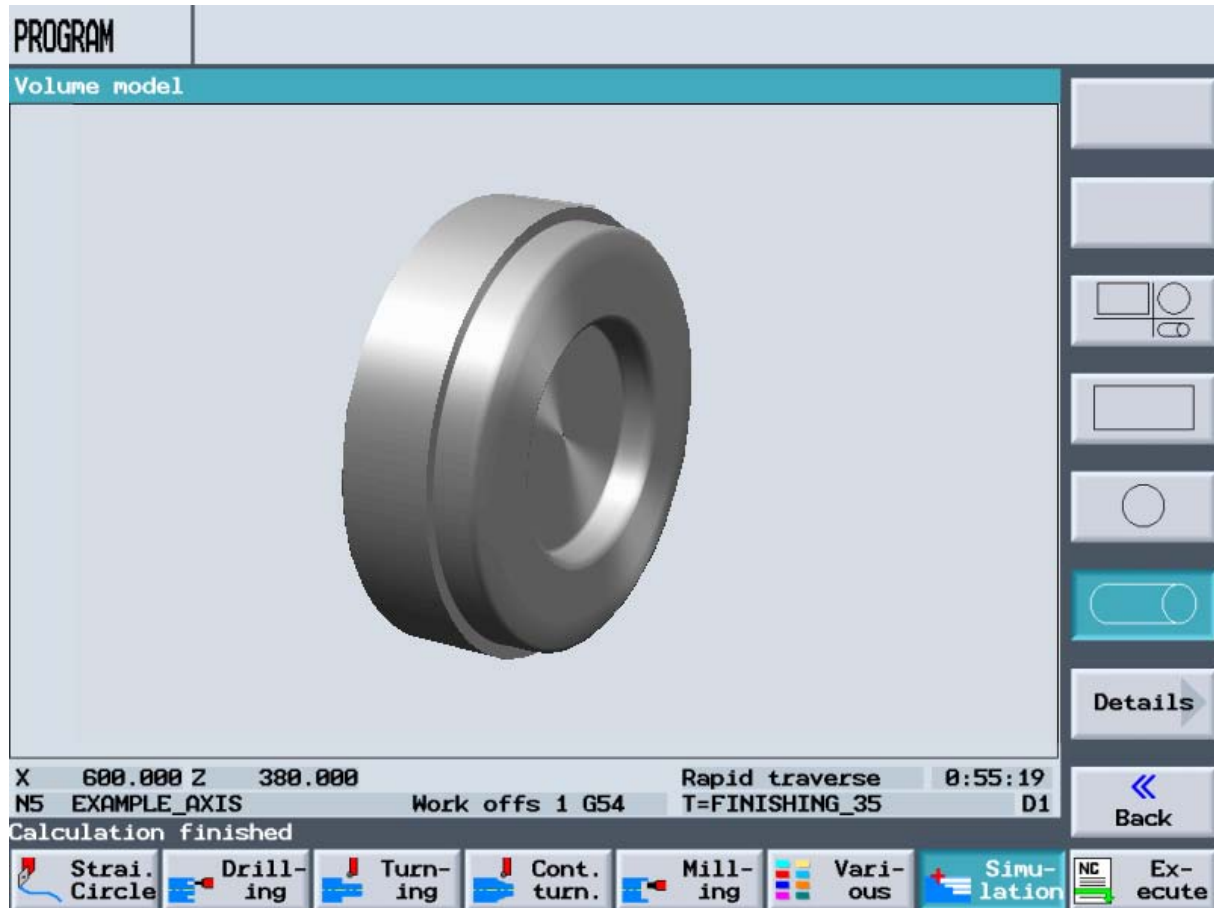
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9. Simulation pictures of the programs

Volume model of the rear side machining with ShopTurn

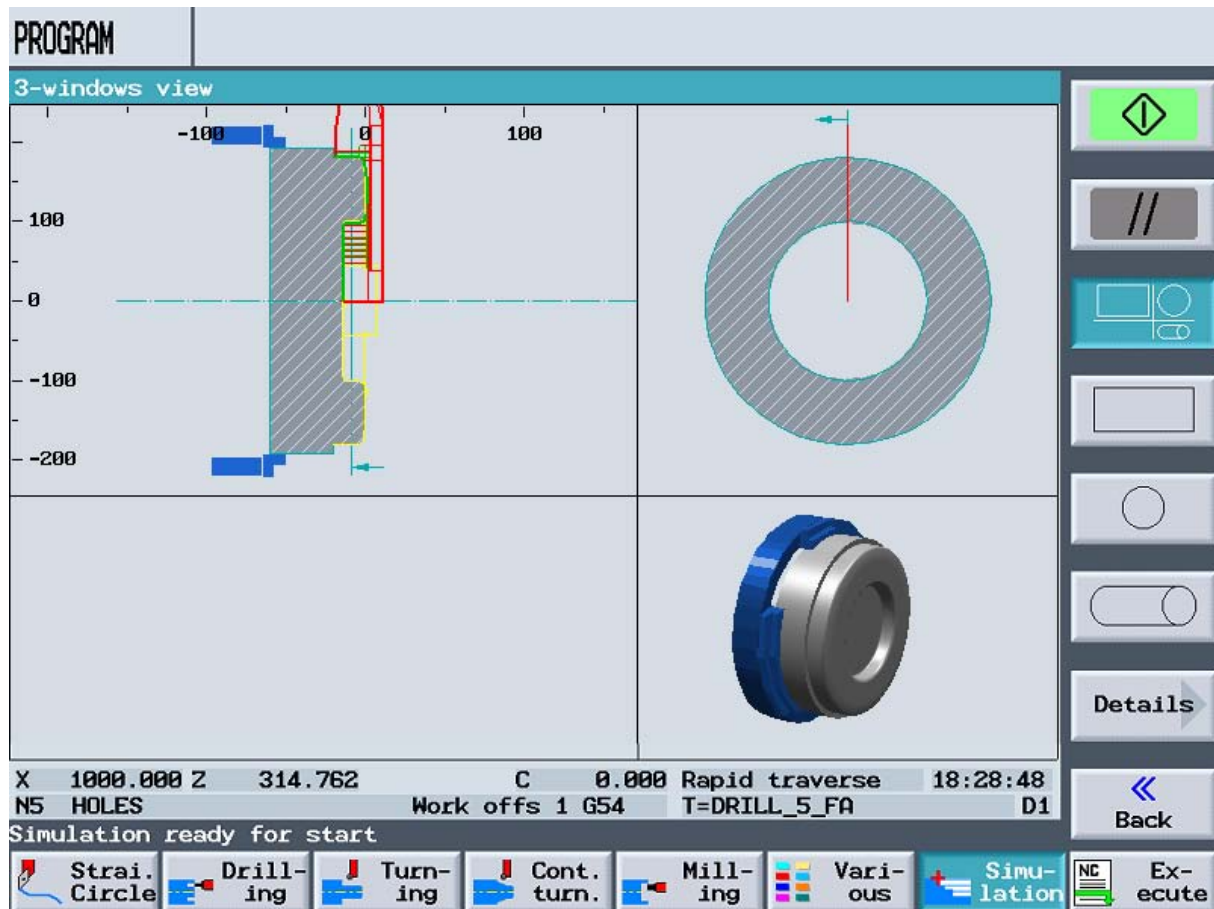


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3-windows view of the rear side machining with ShopTurn

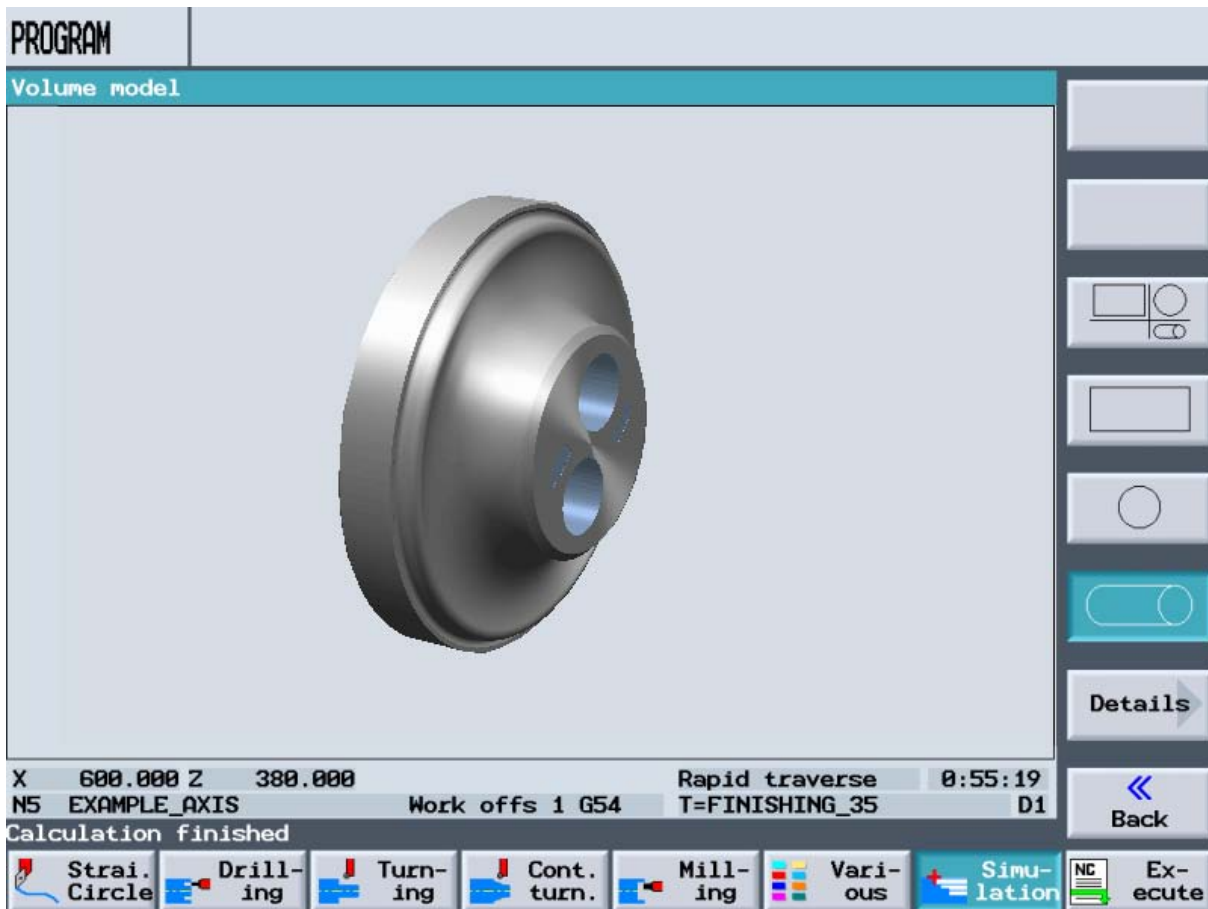


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Volume model of the front side machining with ShopTurn

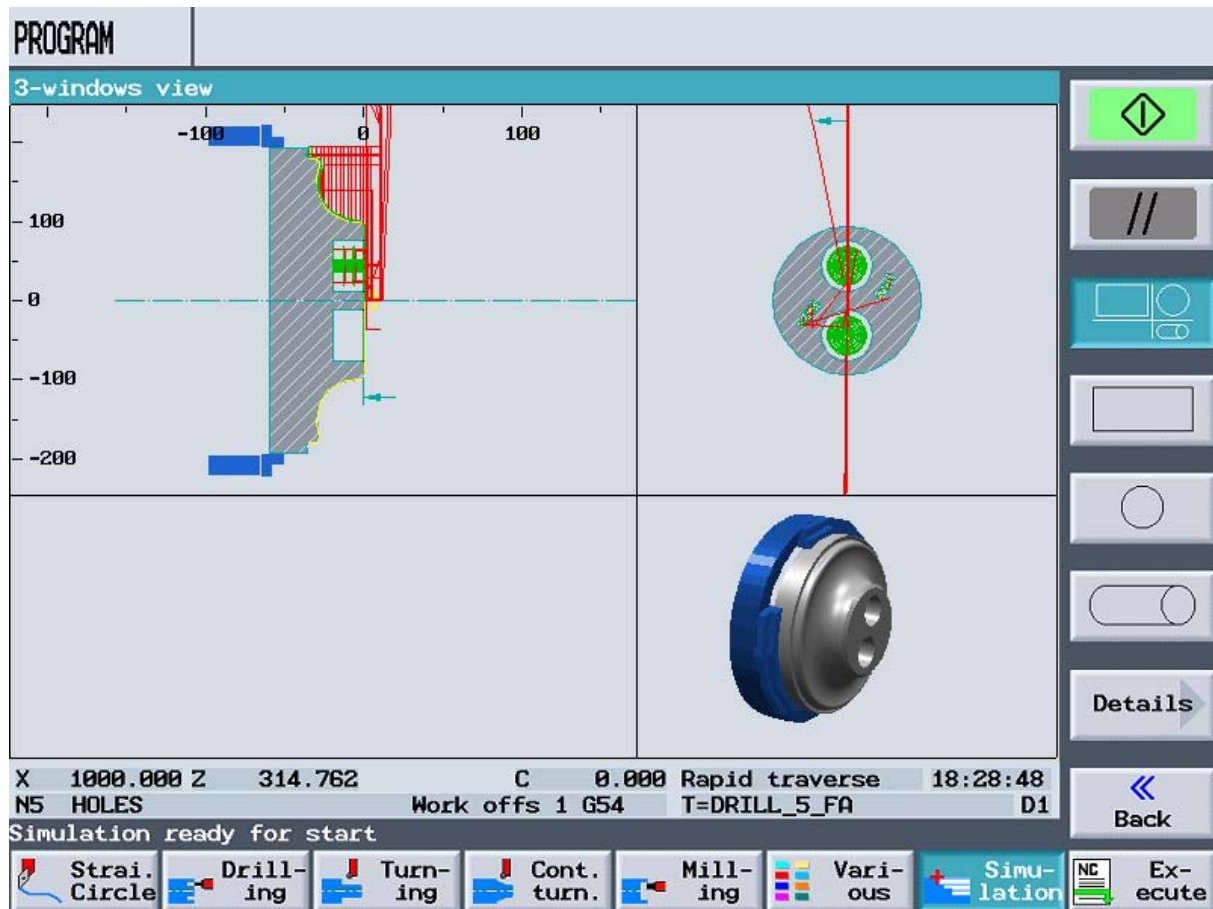


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3-windows view of the front side machining with ShopTurn



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10. Workpiece figures

Double egg cup upper side



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Double egg cup lower side



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Egg cup for shared breakfast



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Decorative candle holder for the whole year



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Candle holder at Christmas



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