Production of a tape roller

tape roller

The tape roller is not just a decorative turned part for your desk, it has a form and function that you can use everyday in the office. It is turned in two machining steps, using ShopTurn.

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

www.siemens.com/cnc4you

Contents

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 ShopTurn. 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 examplary for a reproduction, in most cases they should allow a problem-free reproduction.

ShopTurn permits the turning of the tape roller using just two clampings.

In the first clamping is the underside of the tape roller is manufactured. With the help of the engraving cycle of ShopTurn, you can create the lettering easily. In the second clamping, the outside contour is turned. The final outside contour is realised by plunge turning.

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

- One piece of round stock, AlCuMgPb material, material no. 3.1645;
  cut diameter 90 mm, thickness approximately 85 mm.

4. Turning machine and machining plans

- Turning machine SAEILO CONTUR TSL-300 with Sinumerik 810D and ShopTurn
- ShopTurn Version 6.4
- Machining plan TESA.MPF for turning and engraving.
- Machining plan TESA_2.MPF for turning the upper side und milling the contour.

5. Tools

Tools used for turning the lower side

Designation	Tool name in the machining plan	Tools from Iscar
Turning tool holder outer, indexable insert for aluminum	SCHRUPPER	3600849 SCLCL 2020K-12 5540002 CCGT 120408-AS IC 20
Holder for plunging tool, face cutting plate	STECHER_PLAN	2500038 HFHL 20-35-5T20 620043 HFPL 5004 IC20
Turning tool holder outer, indexable insert for aluminum	SCHLICHTER	33601062 SVJCL 2020K-16 5540005 VCGT 160404-AS IC 20
Profile miller ∅6	FRAESER_KUGEL	5620319 EB030A05-2C06 IC08

Tools used for turning the upper side

Designation	Tool name in the machining plan	Tools from Iscar
Turning tool holder outer, indexable insert for aluminum	SCHRUPPER	3600849 SCLCL 2020K-12 5540002 CCGT 120408-AS IC 20
Turning tool holder outer, indexable insert for aluminum	SCHLICHTER	33601062 SVJCL 2020K-16 5540005 VCGT 160404-AS IC 20
Holder for plunging tool, face cutting plate	STECHER_PLAN	2500038 HFHL 20-35-5T20 620043 HFPL 5004 IC20
Holder cutoff tool outer adapter cutting plate	STECHER	2300757 SGTBU 20 5G 2800004 CGHN 26-5D 6402108 GIPA 4.00-0.40 IC20
Finishing cutter ∅12	FRAESER_12	5620756 ECA120B25-2C12 IC08
Chamfer cutter ∅10, 90°	FRAESER_FASE	5621185 ECF D-4/45-4C10 IC900
Holder for threading tool, indexable insert ISO, P1.25	GEWINDESTAHL	3800003 SER 2020 K16 5901586 16ER 1.25 ISO IC908

6. Turning the lower side

The cut blank is clamped securely.

Work steps on the turning machine

1. Approach the reference point of the machine.
2. Import the TESA.MPF machining plan.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Clamping workpiece, programming length, 50 mm
6. Set workpiece zero point by scratching.
7. Perform simulation.
8. Start the manufacturing; process the machining plan

7. Turning and milling the upper side

The cut blank with the lower side to be machined is clamped securely.

Work steps on the turning machine

1. Approach the reference point of the machine.
2. Import the TESA_2.MPF machining plan.
3. Enter measured tools in the tool list.
4. Place tools in the magazine.
5. Clamping workpiece, programming length, 75 mm
6. Set workpiece zero point by scratching.
7. Perform simulation.
8. Start the manufacturing; process the machining plan

8. Informationen im 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

ISCAR Germany GmbH,
Eisenstockstraße 14,
76275 Ettlingen,
Internet: www.iscar.de

Details of the tool machine to be used

SAEILO Deutschland GmbH,
Hauptstraße 68,
35585 Wetzlar-Blasbach,
Internet: www.saeilo.de

Siemens AG manuals and information

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

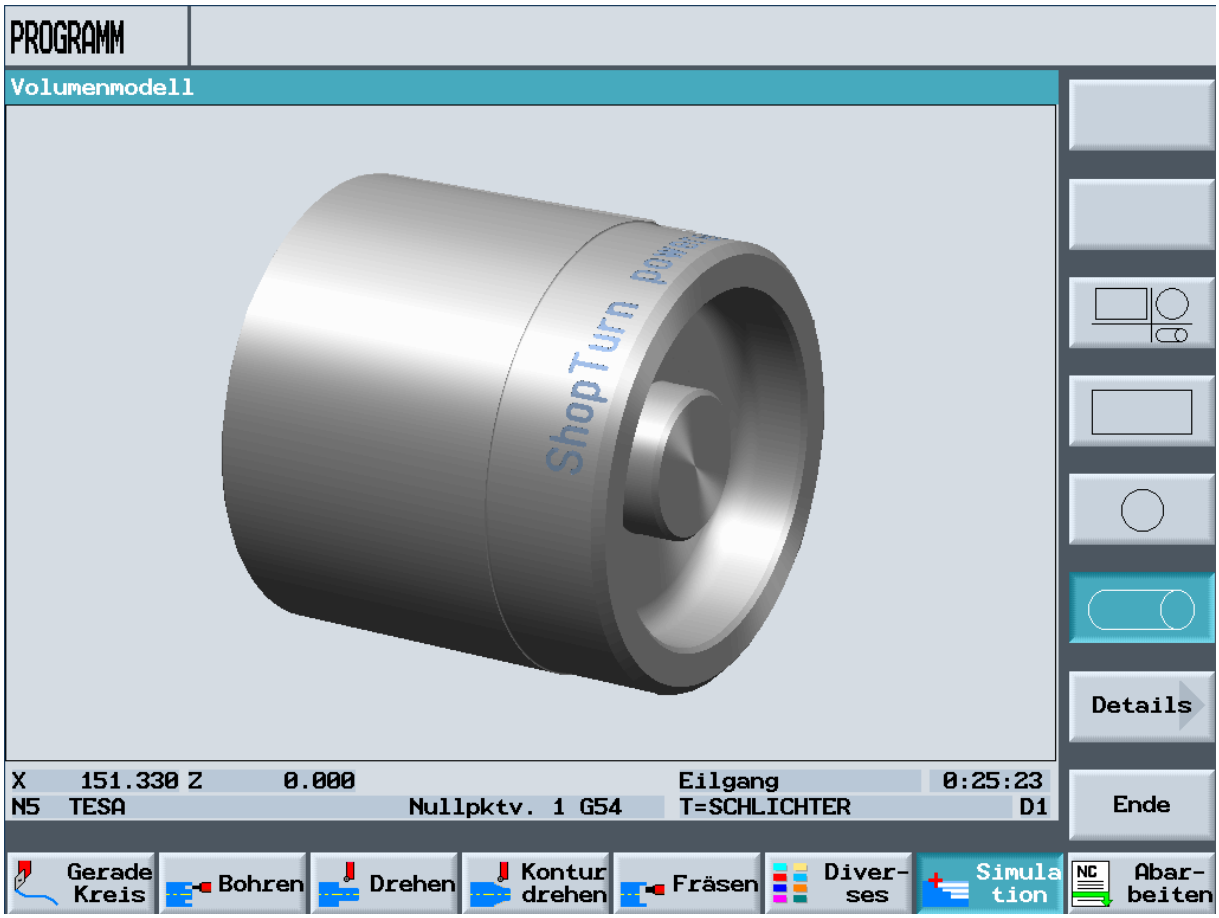
- "Simple turning with ShopTurn" training document
  -> Info/training -> "Simple turning with ShopTurn" training document
- ShopTurn product brief
  -> 840D/840Di/810D users -> ShopTurn 840D/810D product brief
- ShopTurn operating/programming
  -> 840D/840Di/810D users -> ShopTurn operating and programming

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).

9. Figures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Volumenmodell
ShopTurn powered
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Nullpktv. 1 G54
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Ende
Gerade Kreis
Bohren
Drehen
Kontur drehen
Fräsen
Diver- ses
Simula tion
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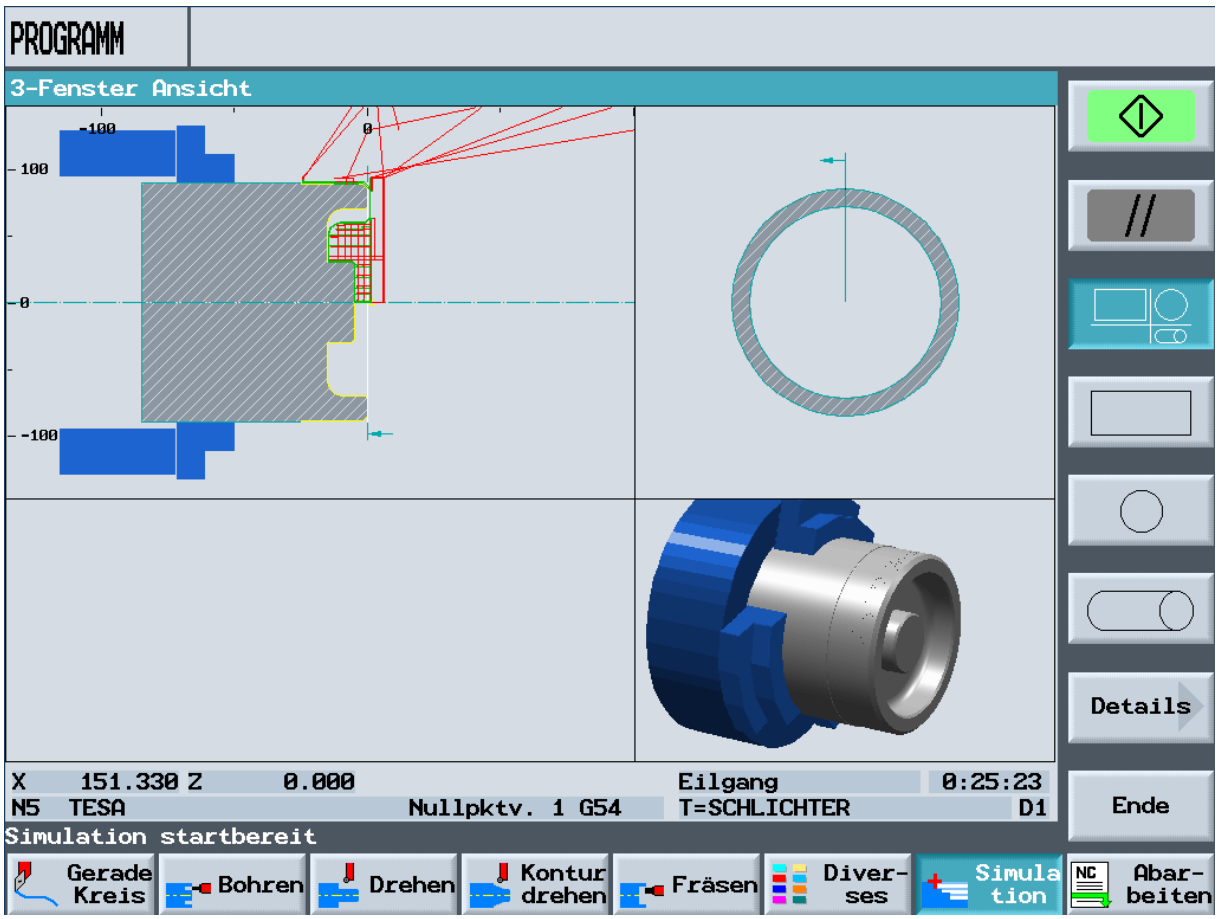
Simulation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Details
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Eilgang 0:25:23
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Nullpktv. 1 G54
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Ende
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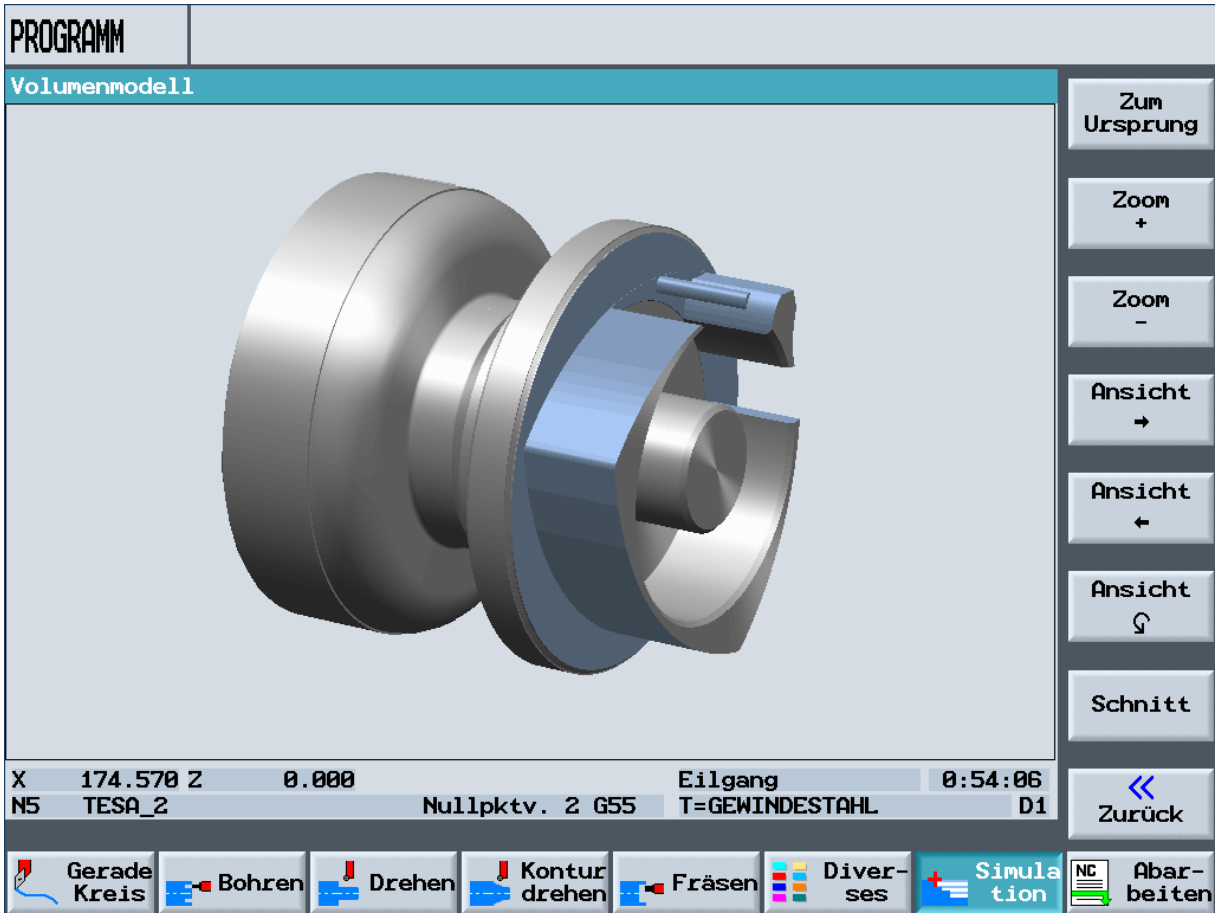
Bohren
Drehen
Kontur drehen
Fräsen
Diver- ses
Simula tion
Abar- beiten

Simulation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Volumenmodell
Zum Ursprung
Zoom +
Zoom -
Ansicht →
Ansicht ←
Ansicht
Schnitt
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N5 TESA_2
Nullpktv. 2 G55
T=GEWINDESTAHL D1
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Gerade Kreis
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Drehen
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Simula tion
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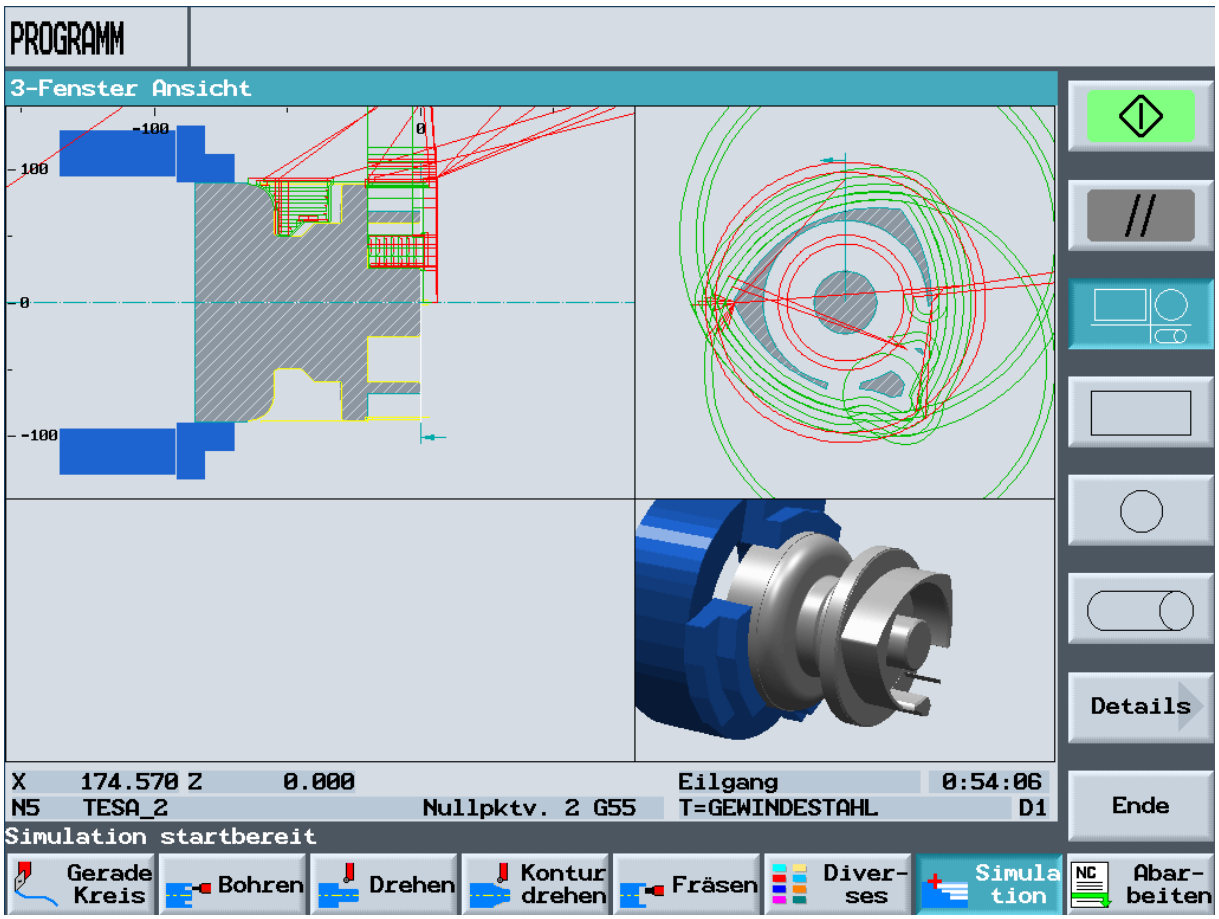
Simulation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Nullpktv. 2 G55
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Ende
Simulation startbereit
Gerade Kreis
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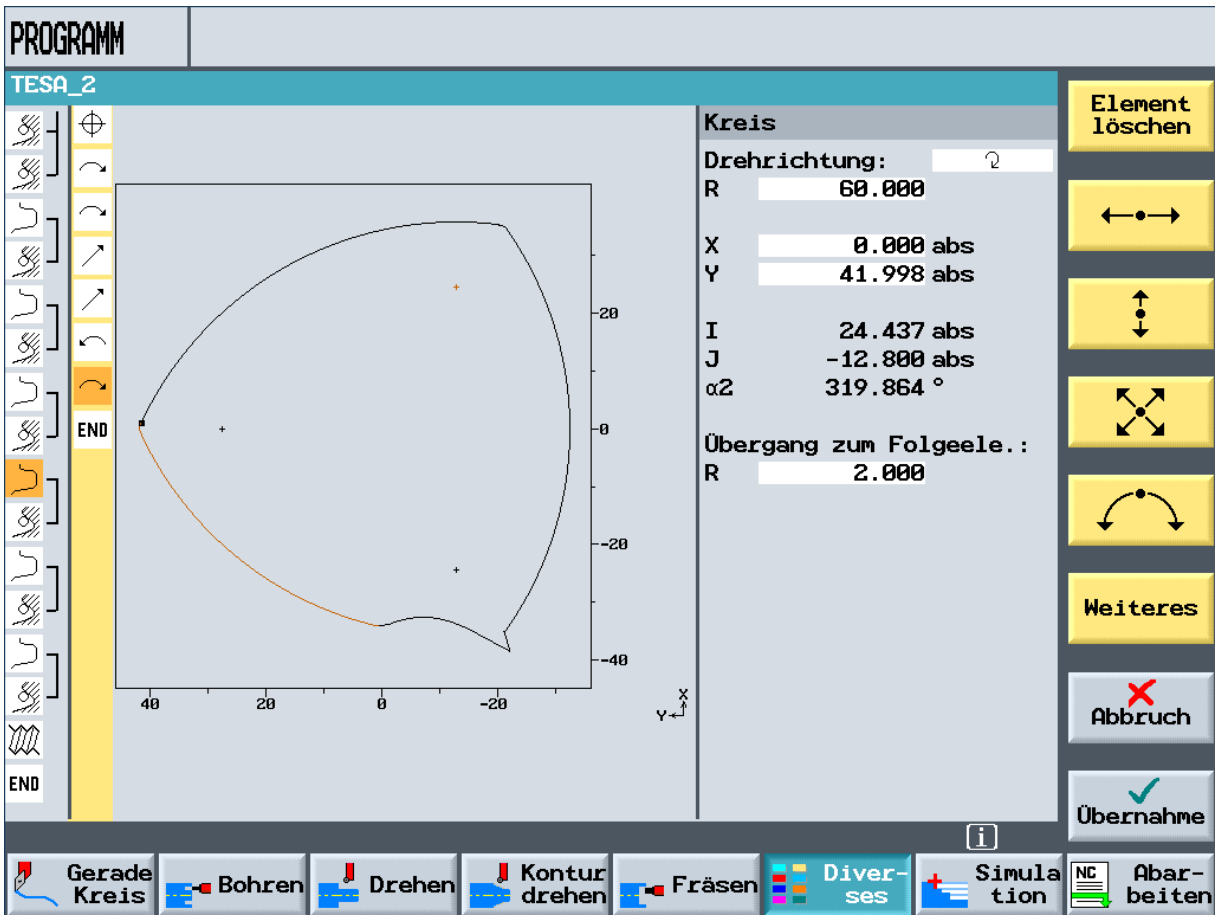
Diver- ses
Simula tion
Abar- beiten

Contour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I 24.437 abs
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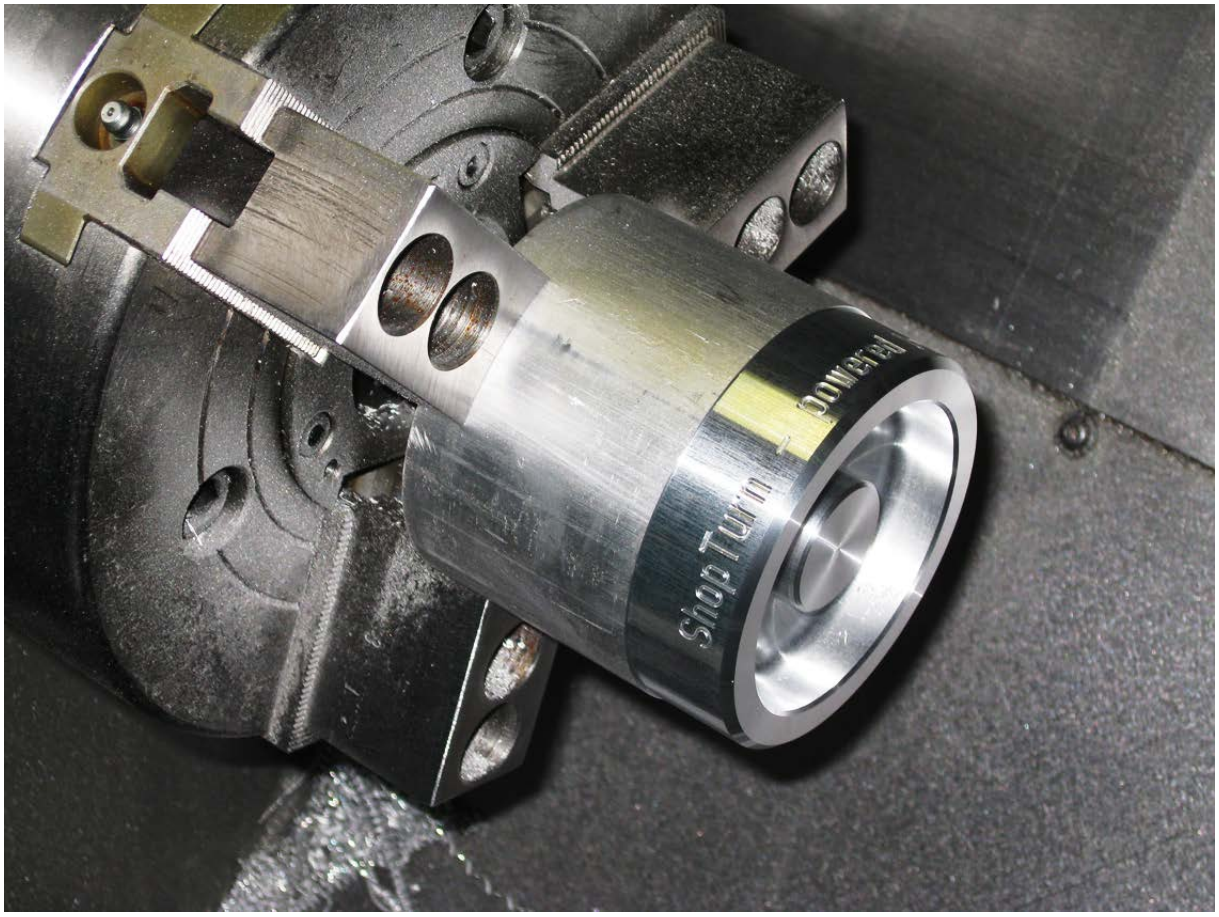
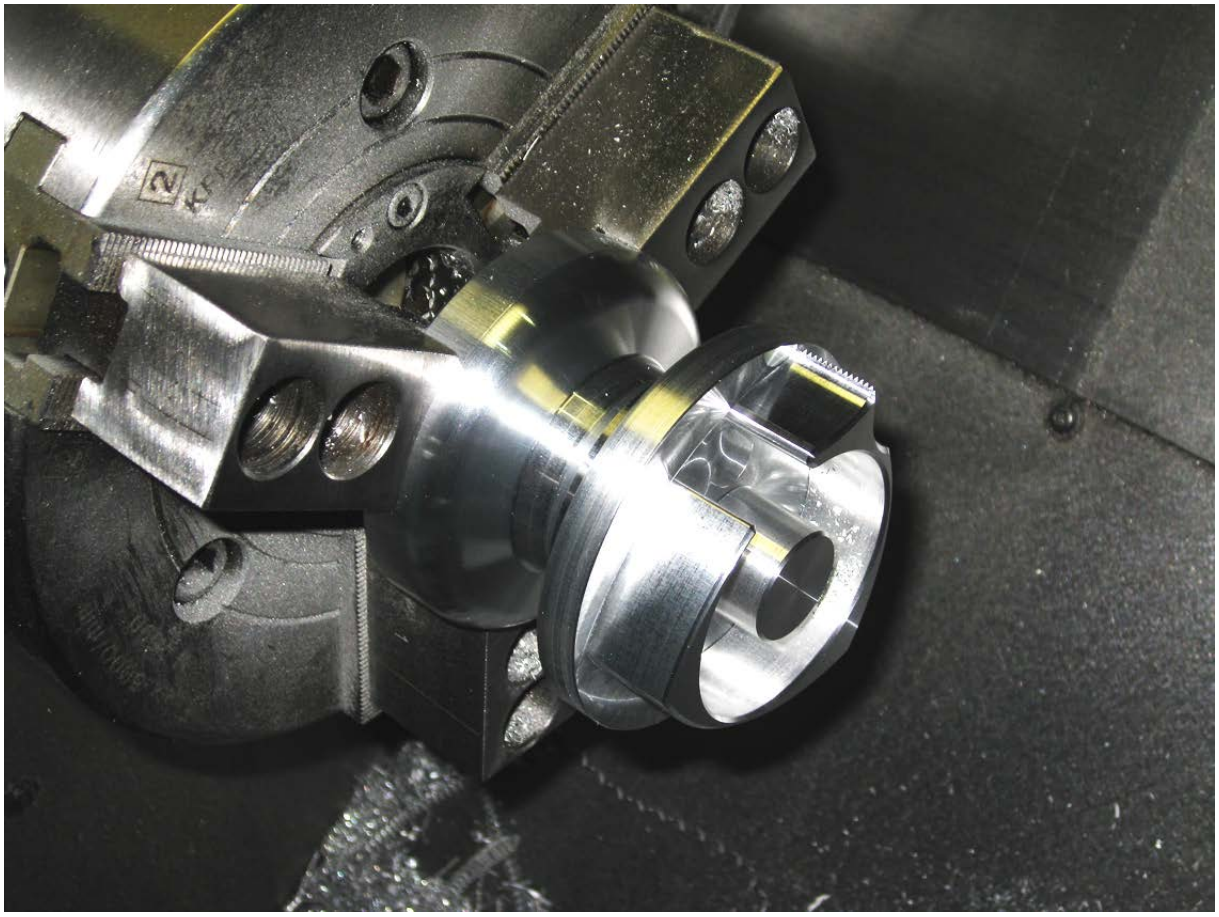
α2 319.864 °
Übergang zum Folgeele.:
R 2.000
Element löschen
Weiteres
Abbruch
Übernahme
Gerade Kreis
Bohren
Drehen
Kontur drehen
Fräsen
Diver- ses
Simula tion
Abar- beiten

10. Workpiece

Tape roller lower side



Tape roller upper side



tape roller

3D