



Technical Guideline

Number

9.12e

CSVS

Sealing Cap for CF Flanges

Status

2015-06-30

Contents

1. Scope	1
2. General Requirements	1
3. Engineering Drawings	2
4. References	3

1. Scope

- I. This Technical Guideline (TG) comprises the specification of sealing caps made of aluminium for CF flanges of vacuum components and chambers, respectively, which are to be used **instead** of generally used blind flanges made of stainless steel.
- II. This document is not related to any other purpose as aforementioned.

2. General Requirements

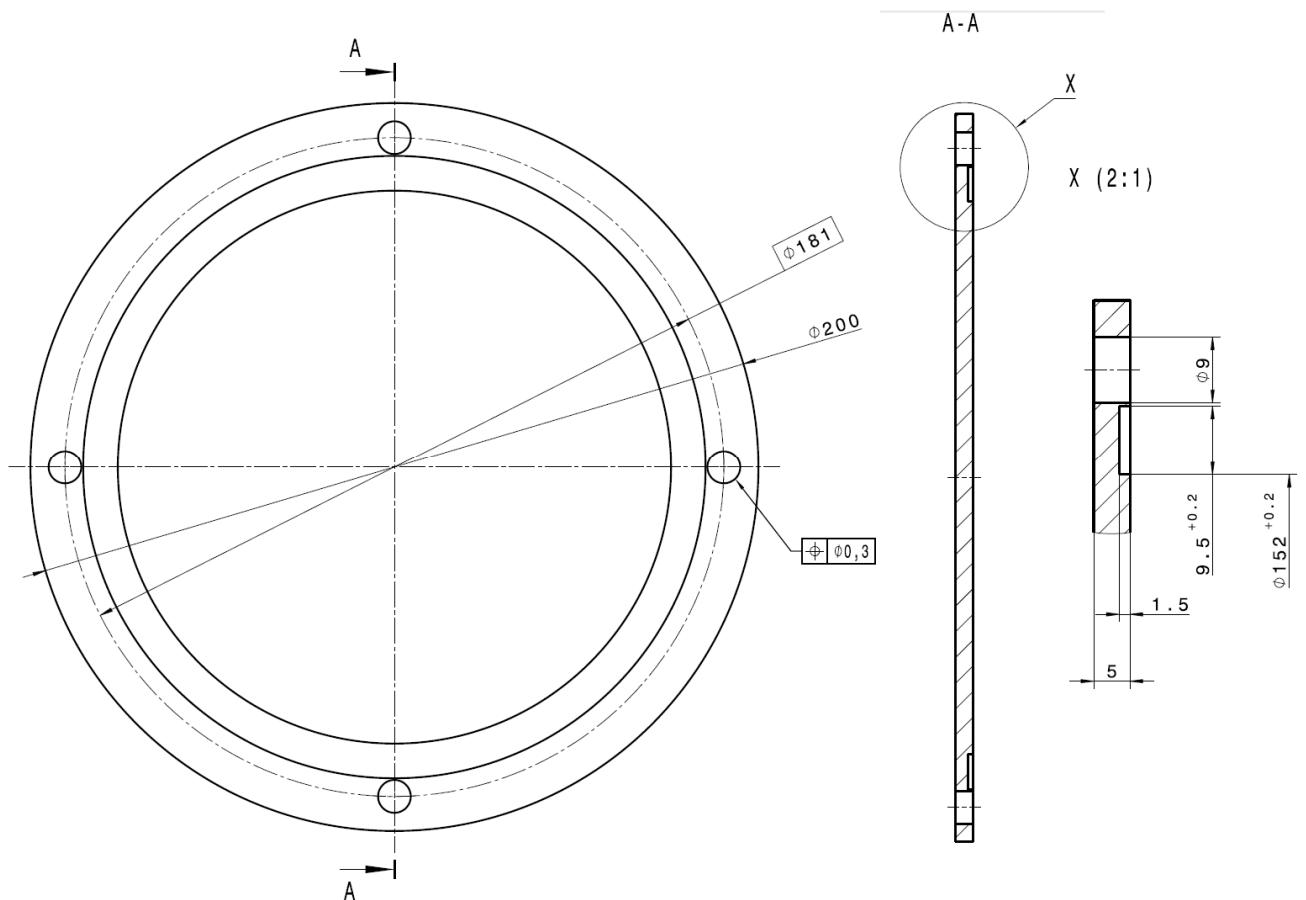
- I. The allowed material to be used for the sealing caps is specified in F-TG-V-2.2e [1].
- II. The allowed material to be used for the gaskets (o-rings) for the sealing caps must be nitrile butadiene rubber (NBR) or any other comparable vacuum-suitable material, respectively.
- III. Prior to use, the sealing caps must be cleaned according to F-TG-V-6.5e [3]. The gaskets must be thoroughly and appropriately cleaned with a vacuum-suitable cleaning agent, e.g. ethanol or isopropanol. The flanges, CF knife-edges and gaskets must be visually examined for any damage or contamination. The use of UHV-suitable gloves during assembly is mandatory.
- IV. The assembly of the sealing caps to the flange must be carried out under clean conditions. Suitable stainless steel bolts and nuts must be employed.
- V. After assembly, the packaging and transport of the vacuum component or chamber, respectively, must be carried out according to F-TG-V-9.1e [4].
- VI. All corresponding engineering drawings (refer to paragraph 3.) will be provided by the Company. The drawing numbers are as follows:

DN	Sealing cap	Gasket
DN16CF	VC-1016645-P-000	VC-1016657-P-000
DN40CF	VC-1016645-P-V01	VC-1016657-P-V01
DN63CF	VC-1016645-P-V02(A)	VC-1016657-P-V02
DN100CF	VC-1016645-P-V03	VC-1016657-P-V03
DN125CF	VC-1016645-P-V04	VC-1016657-P-V04
DN160CF	VC-1016645-P-V05	VC-1016657-P-V05
DN200CF	VC-1016645-P-V06	VC-1016657-P-V06
DN250CF	VC-1016645-P-V07	VC-1016657-P-V07
DN300CF	VC-1016645-P-V08	VC-1016657-P-V08
DN350CF	VC-1016645-P-V09	VC-1016657-P-V09
DN400CF	VC-1016645-P-V10	VC-1016657-P-V10

3. Engineering Drawings

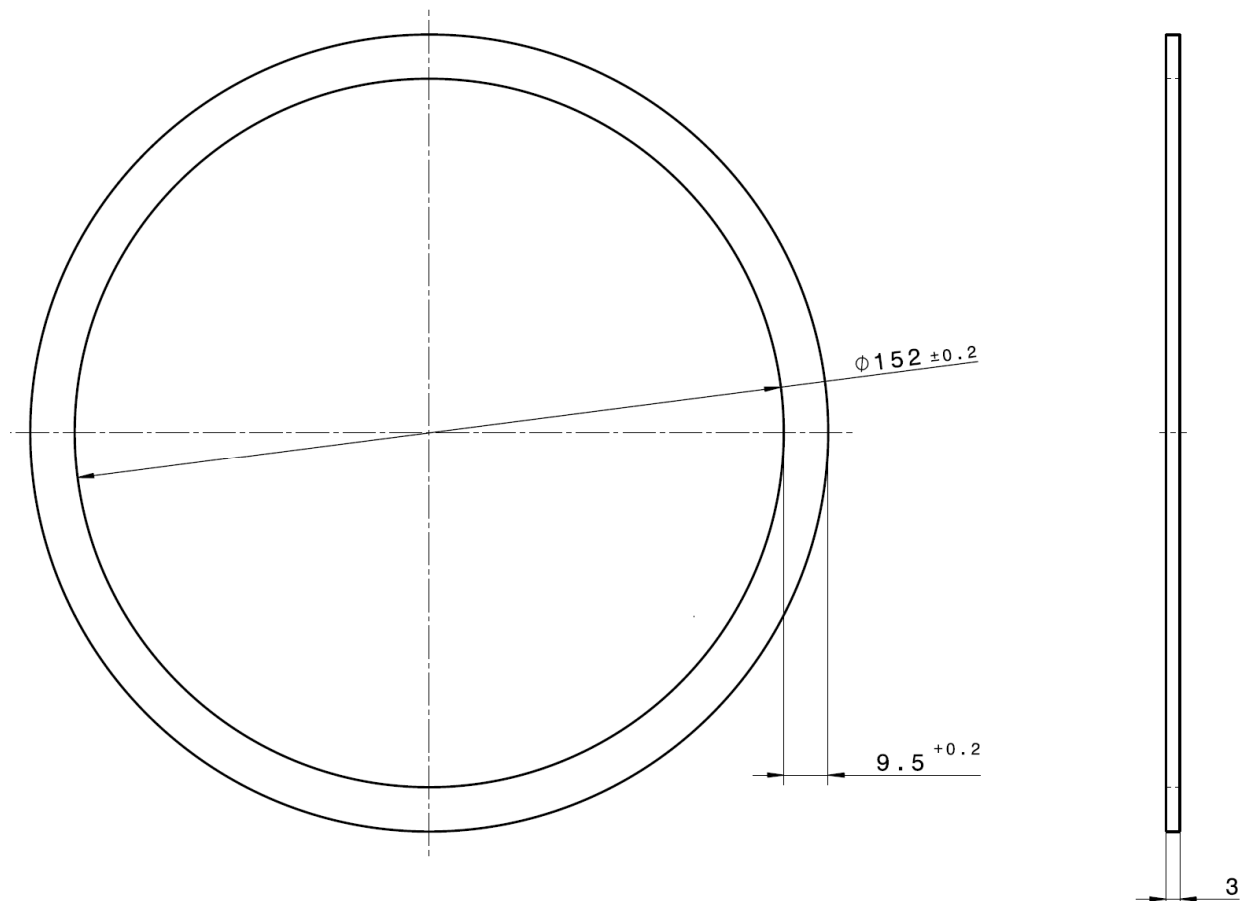
Exemplarily, engineering drawings of a DN160CF sealing cap and gasket are shown.

Aluminium sealing cap for DN160CF flange:



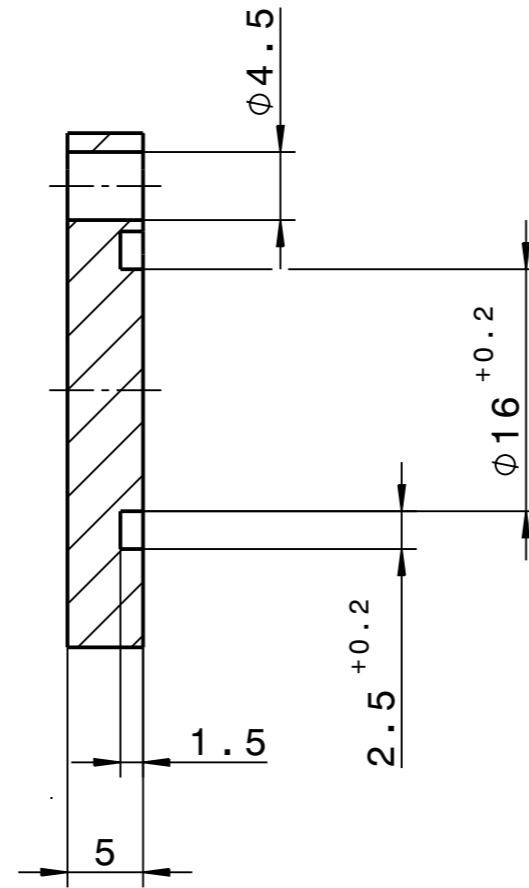
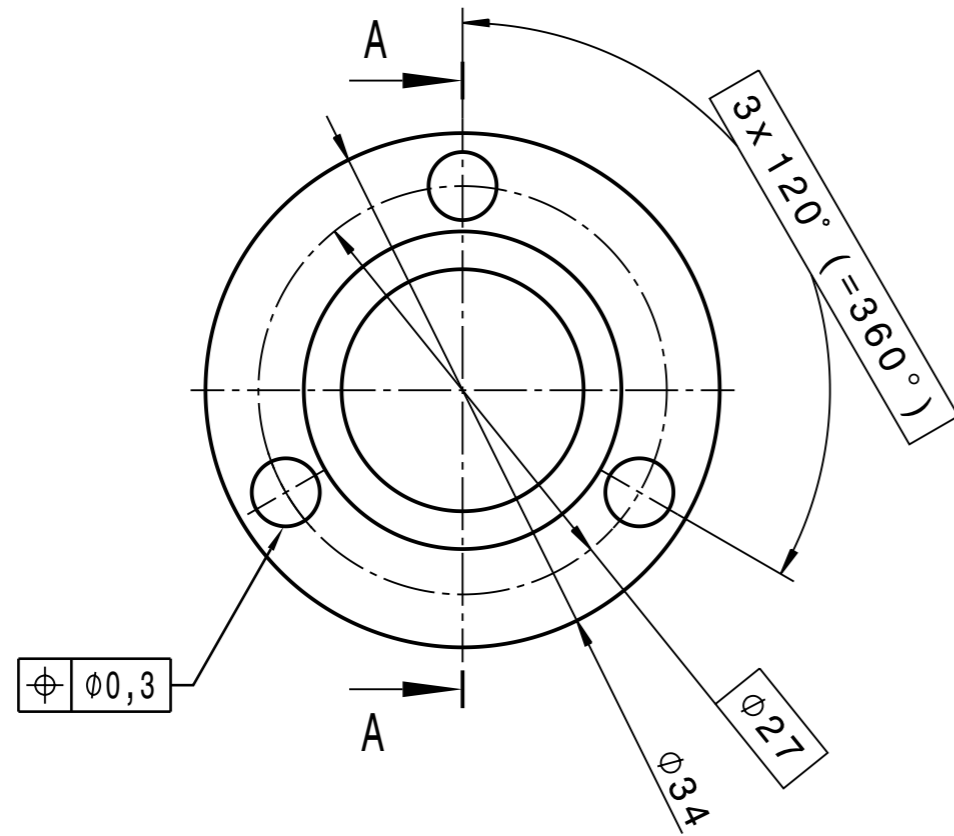
Prepared by:	I. Pongrac	Doc. Name:	F-TG-V-9.12e_Sealing_Cap_CF_Flanges_v1.1.docx
Date:	2015-06-30	Version:	1.1

Rubber gasket for DN160CF flange: (complementary to F-TG-V-3.42e [2])



4. References

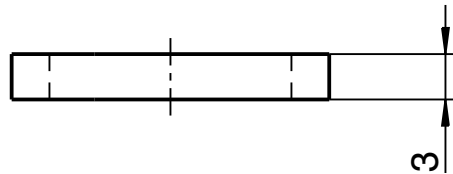
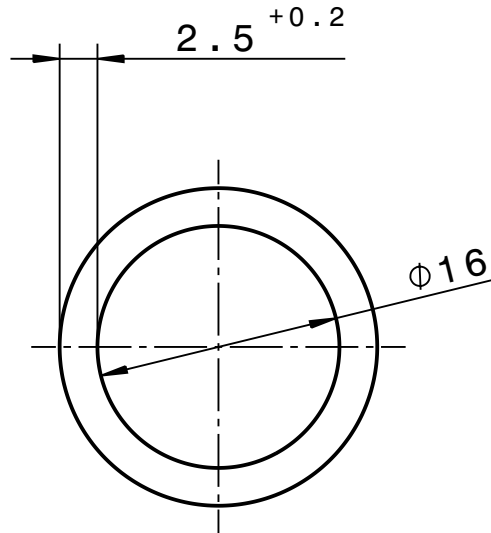
- [1] F-TG-V-2.2e Aluminium for Vacuum Applications
- [2] F-TG-V-3.42e Copper Gaskets for CF Flanges
- [3] F-TG-V-6.5e Cleaning of Aluminium Components
- [4] F-TG-V-9.1e Transport and Packaging of Vacuum Components



Technische Richtlinien / Technical guidelines	
aktuellen Stand beachten / take note of current status	
Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components

Kanten ISO 13715 $\begin{matrix} +0.3 \\ -0.1 \end{matrix}$ $\sqrt{Rz 25}$

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Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	2:1															
		Material EN AW-2007 (AlCu4PbMgMn)																
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Approved	20.10.2014	Neufingerl, P.																
Deckel DN 16 CF-Flansch			A3															
FR		Drawing No. VC-1016645-P-000			Rev.	Sheet 1 of 1												
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GSI

Helmholtzzentrum für Schwerionenforschung GmbH
Planckstrasse 1, 64291 Darmstadt

Dimensions without tolerance indication

DIN ISO 2768-mK
EN ISO 13920-BF

Weight

Material

NBR

Scale

2:1

	Date	Name
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Checked	08.10.2014	Meister, M.
Approved	20.10.2014	Neufingerl, P.

Description

Dichtung DN 16 CF-Flansch

Size

A4

Drawing No.

VC-1016657-P-000

Rev.

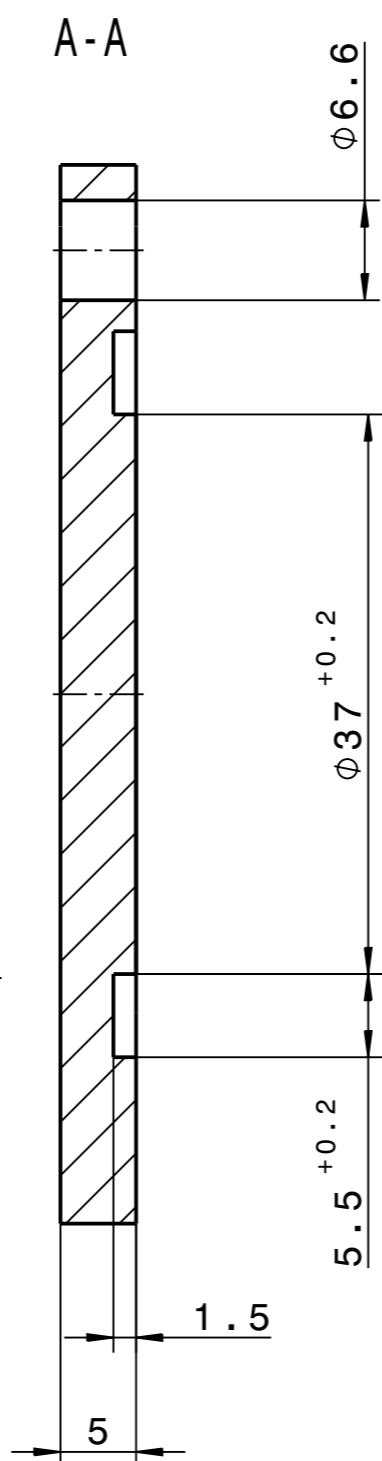
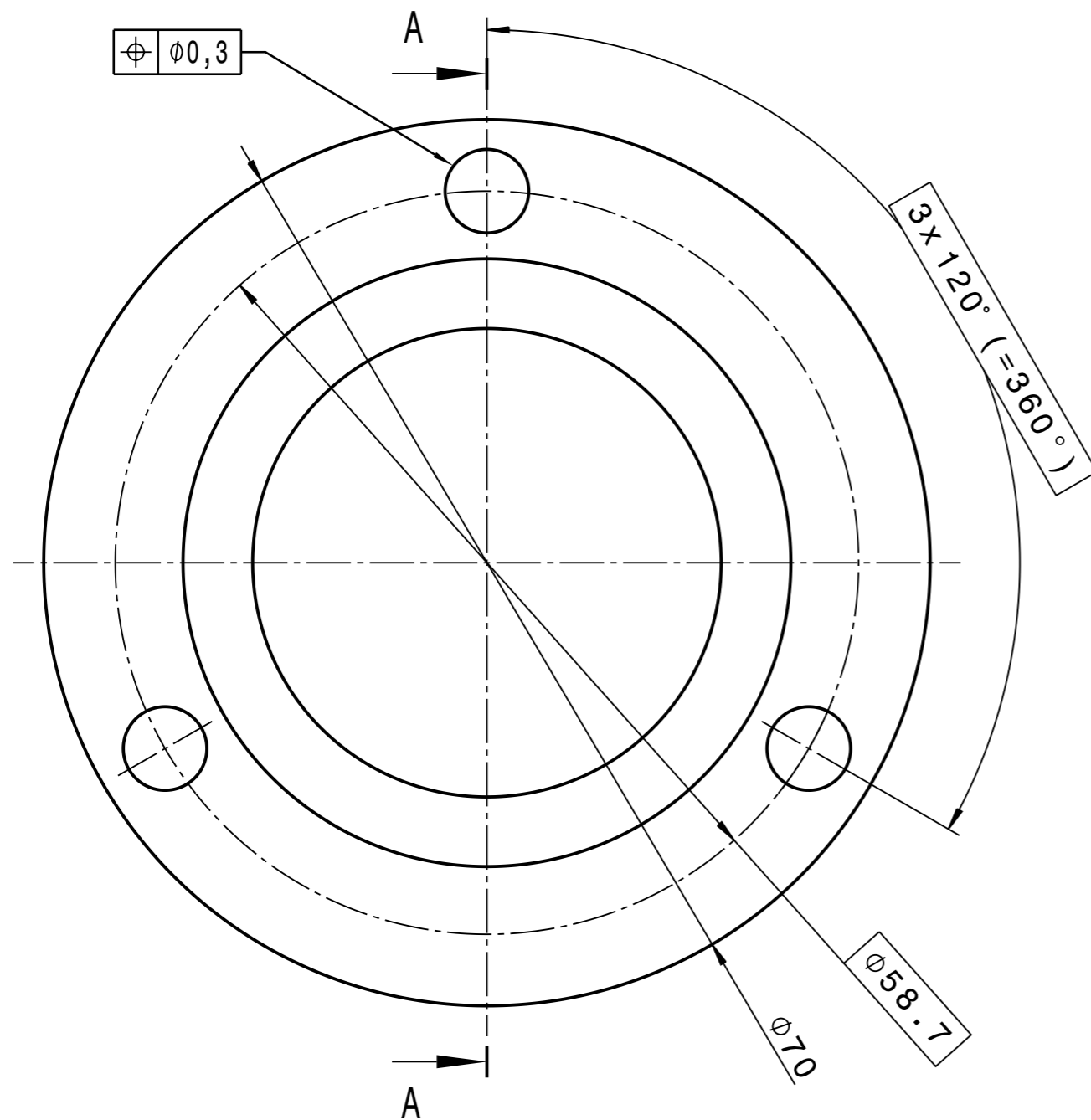
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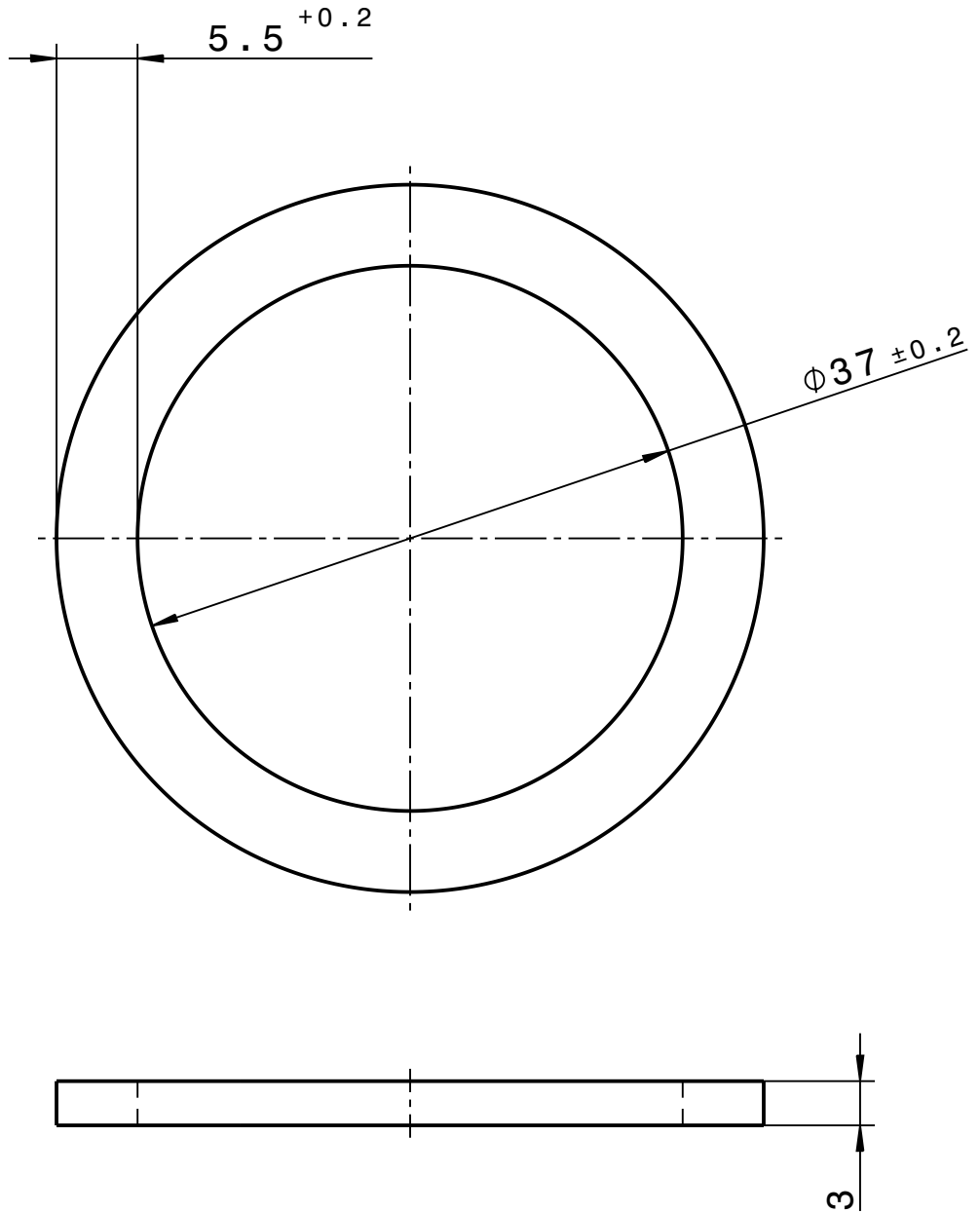




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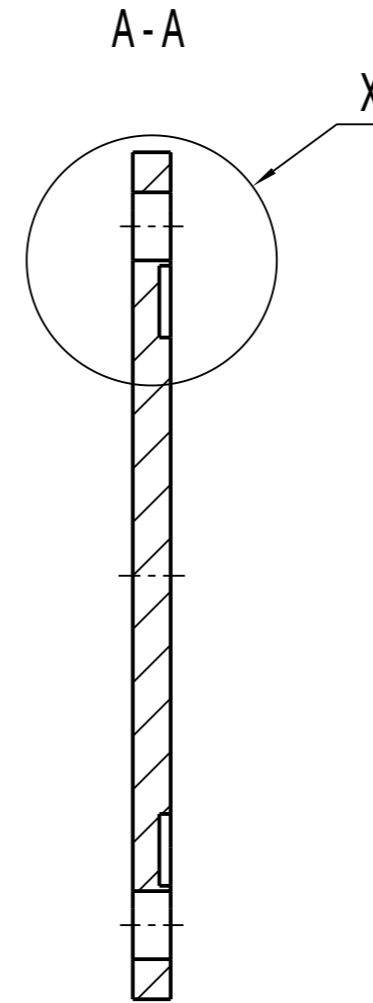
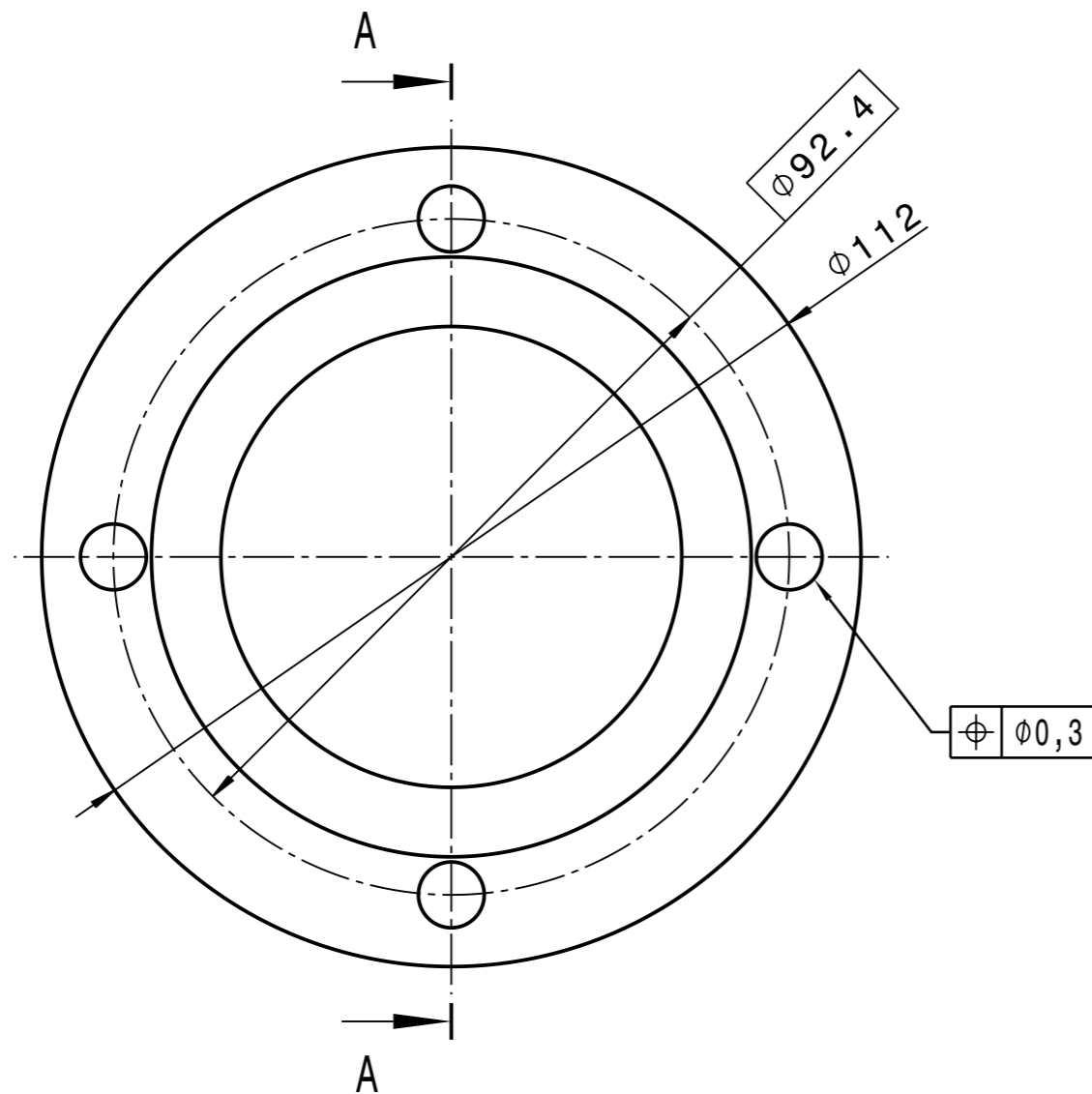
Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components

Kanten ISO 13715 $\sqrt{+0.3}$ $\sqrt{-0.1}$ $\sqrt{Rz 25}$

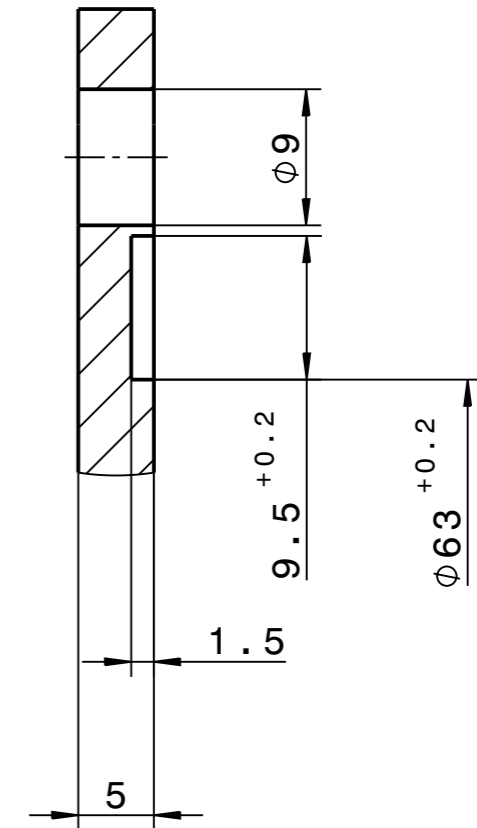
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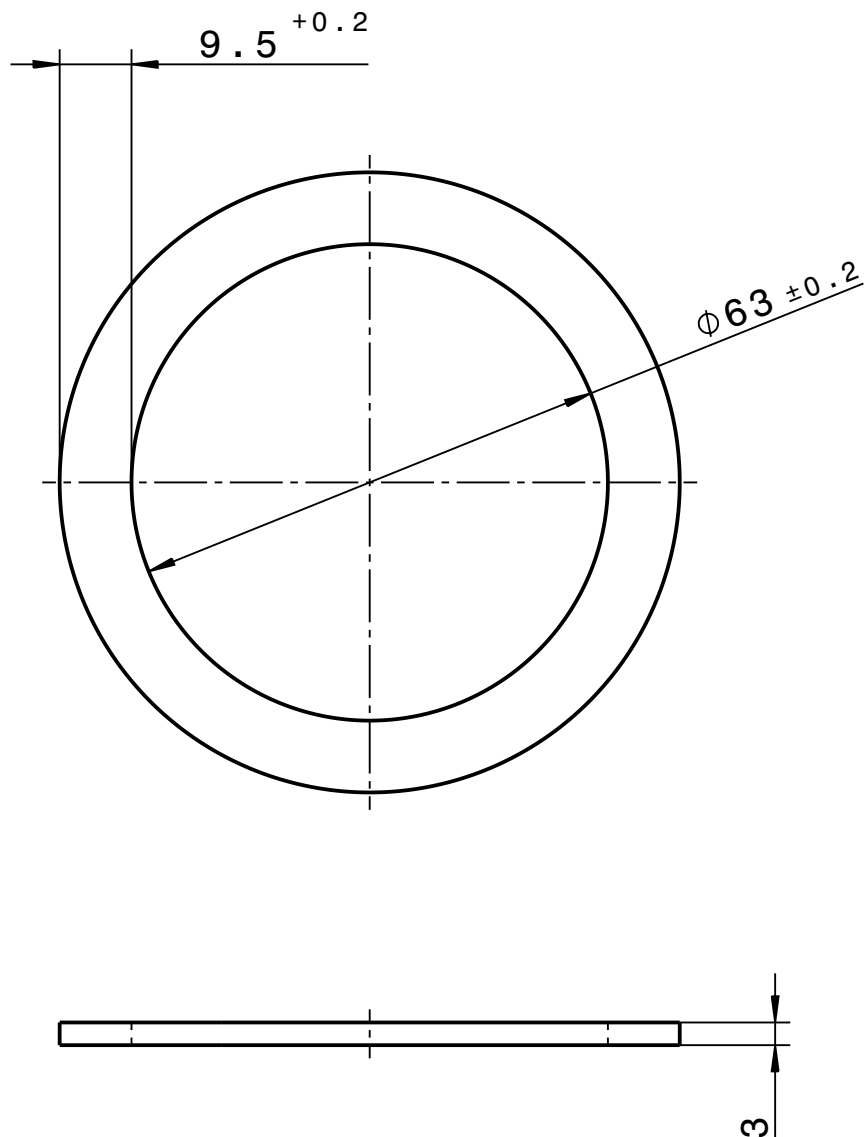
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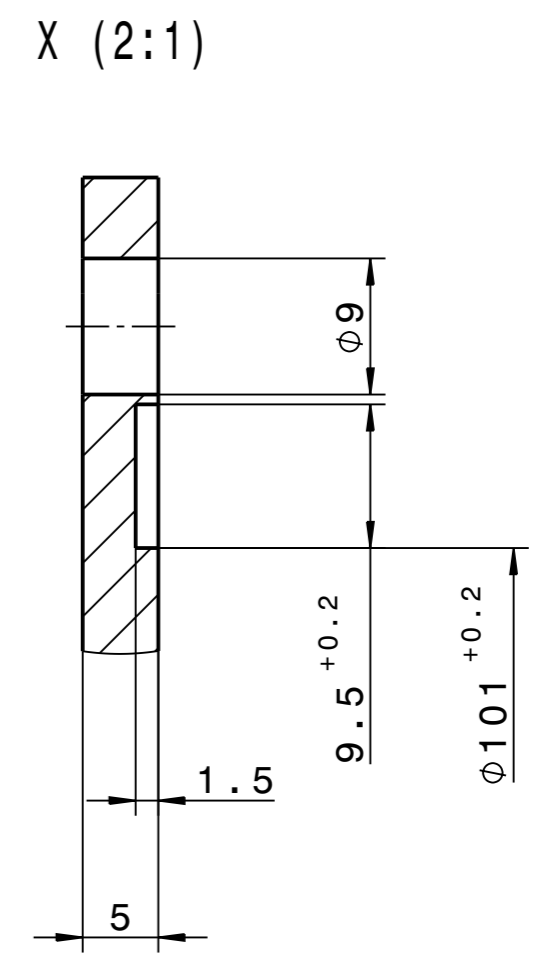
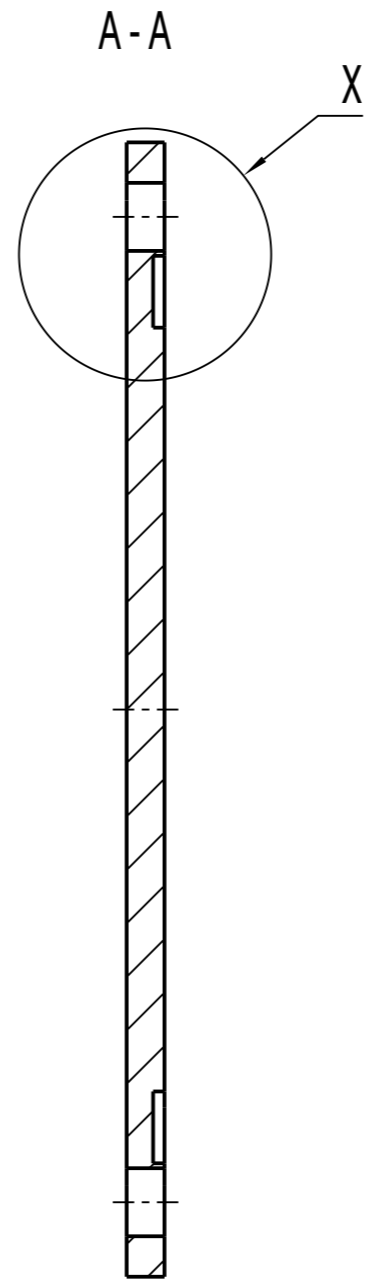
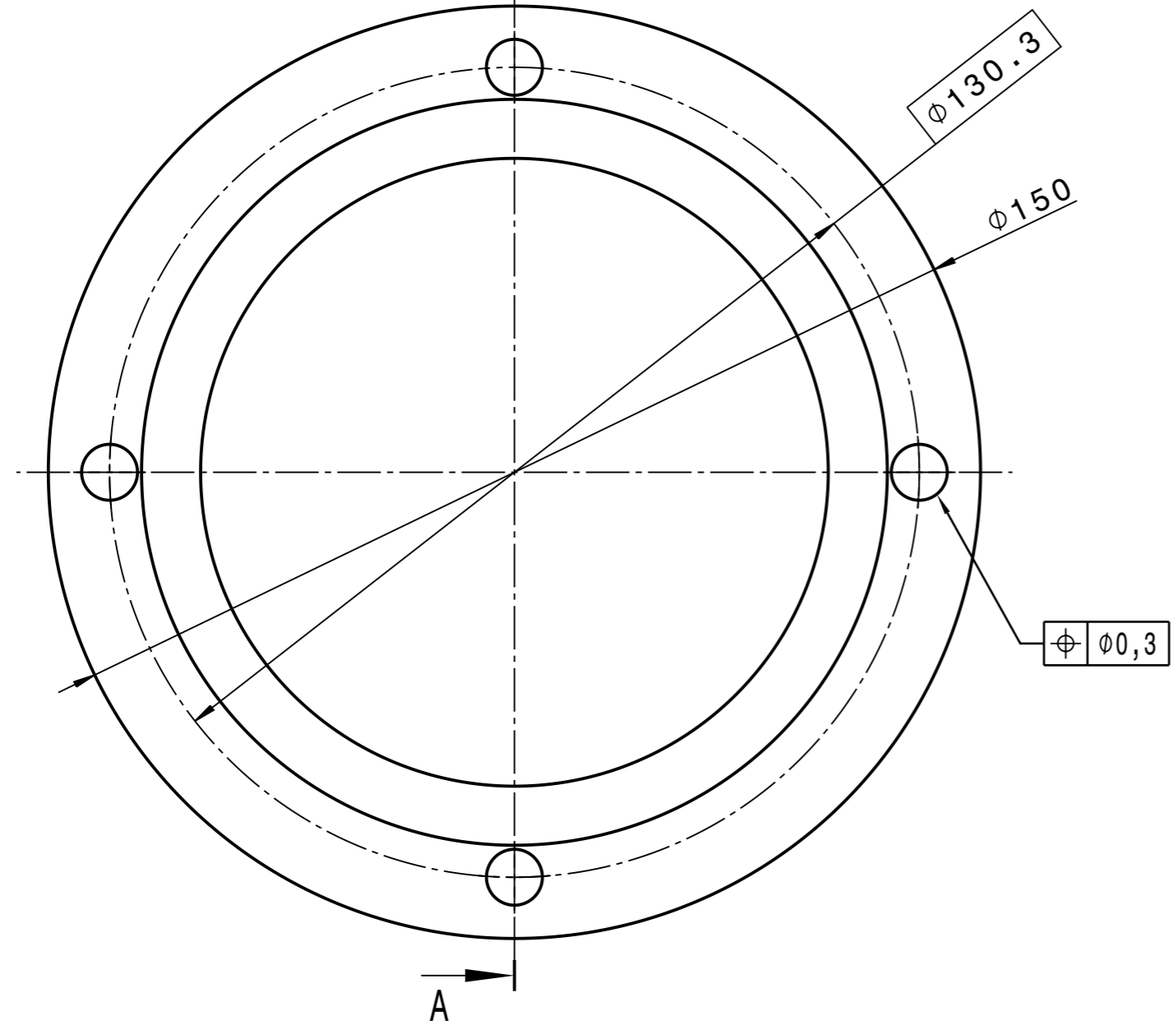
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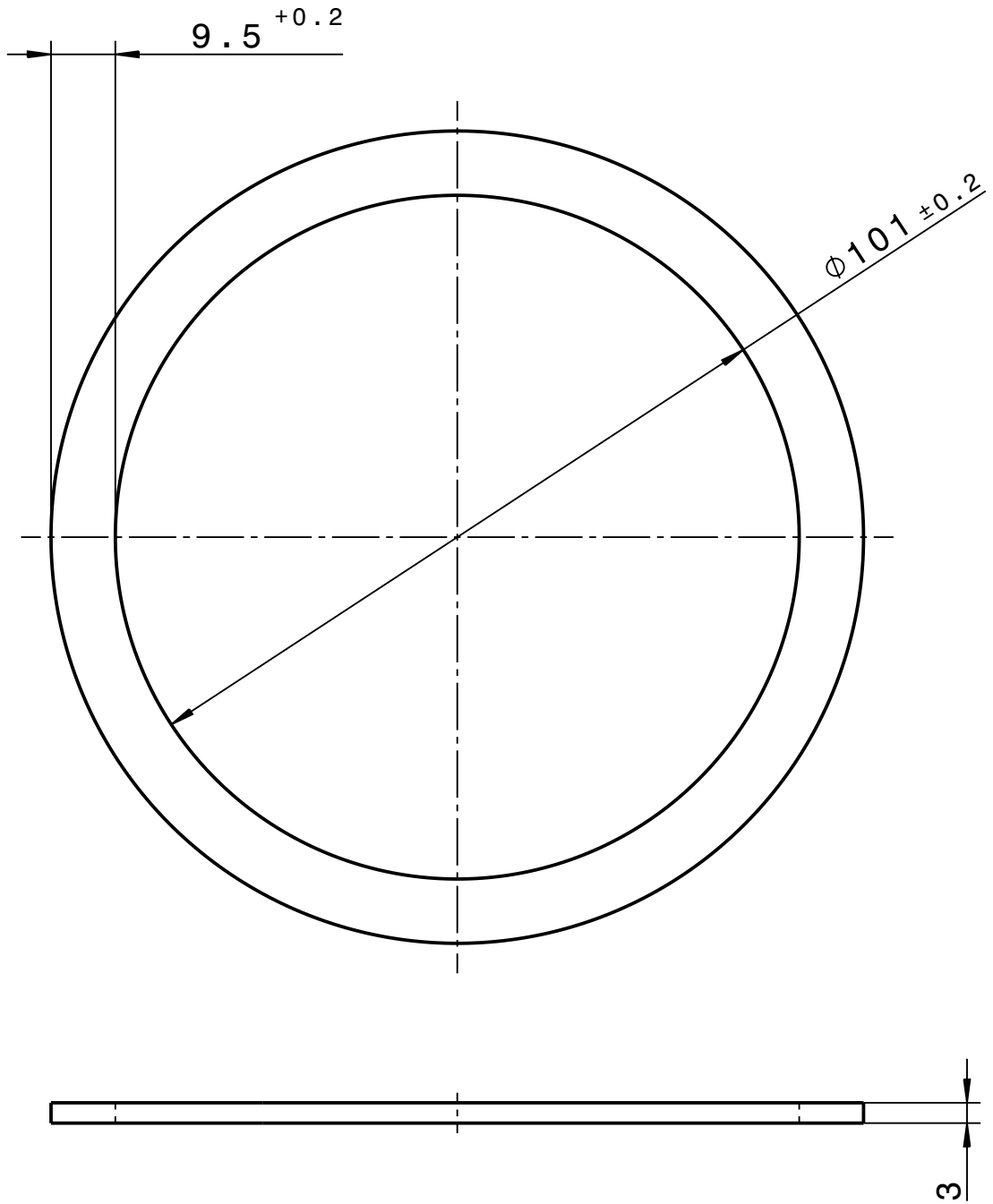
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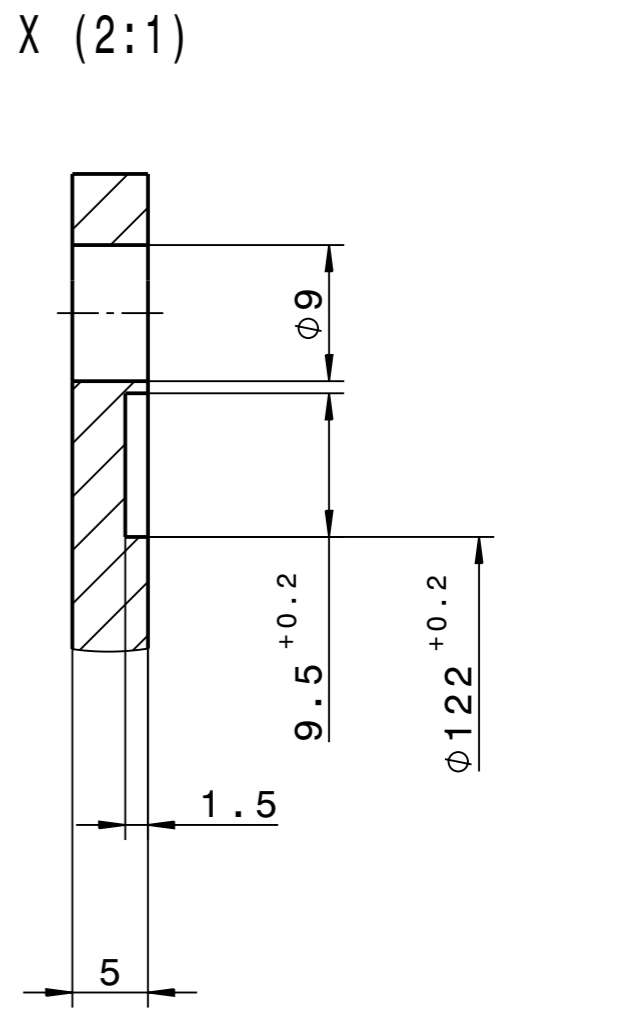
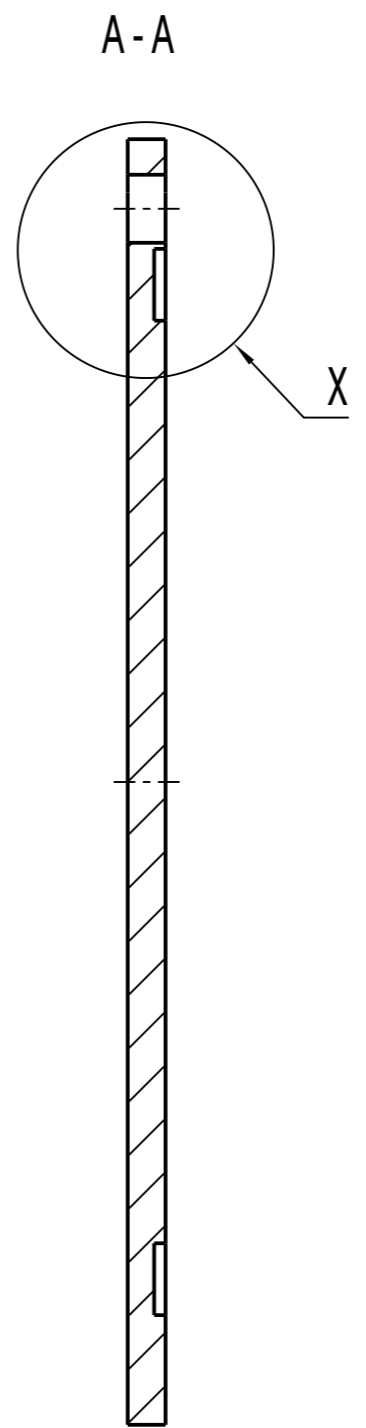
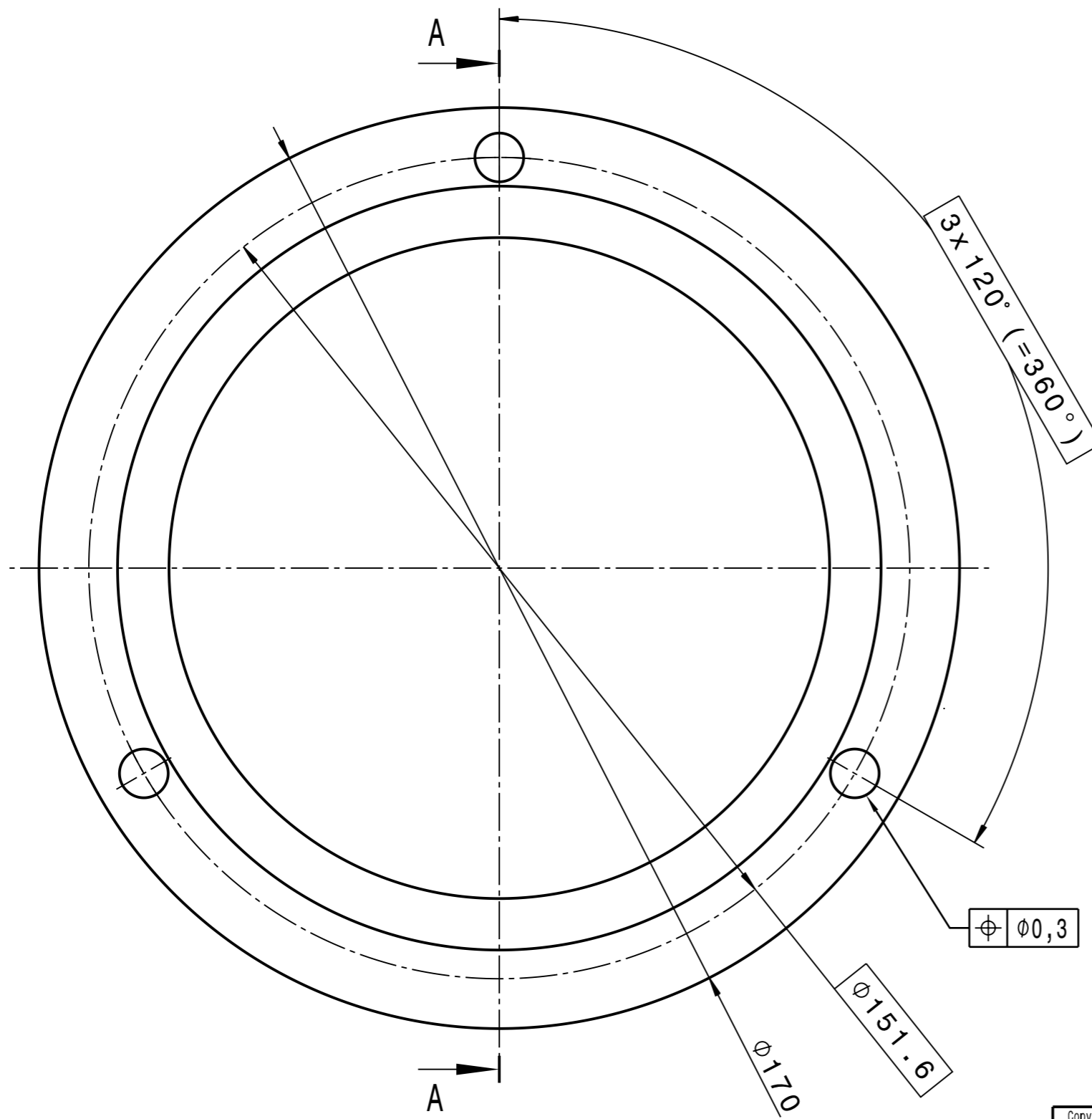
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Technische Richtlinien / Technical guidelines	
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Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components

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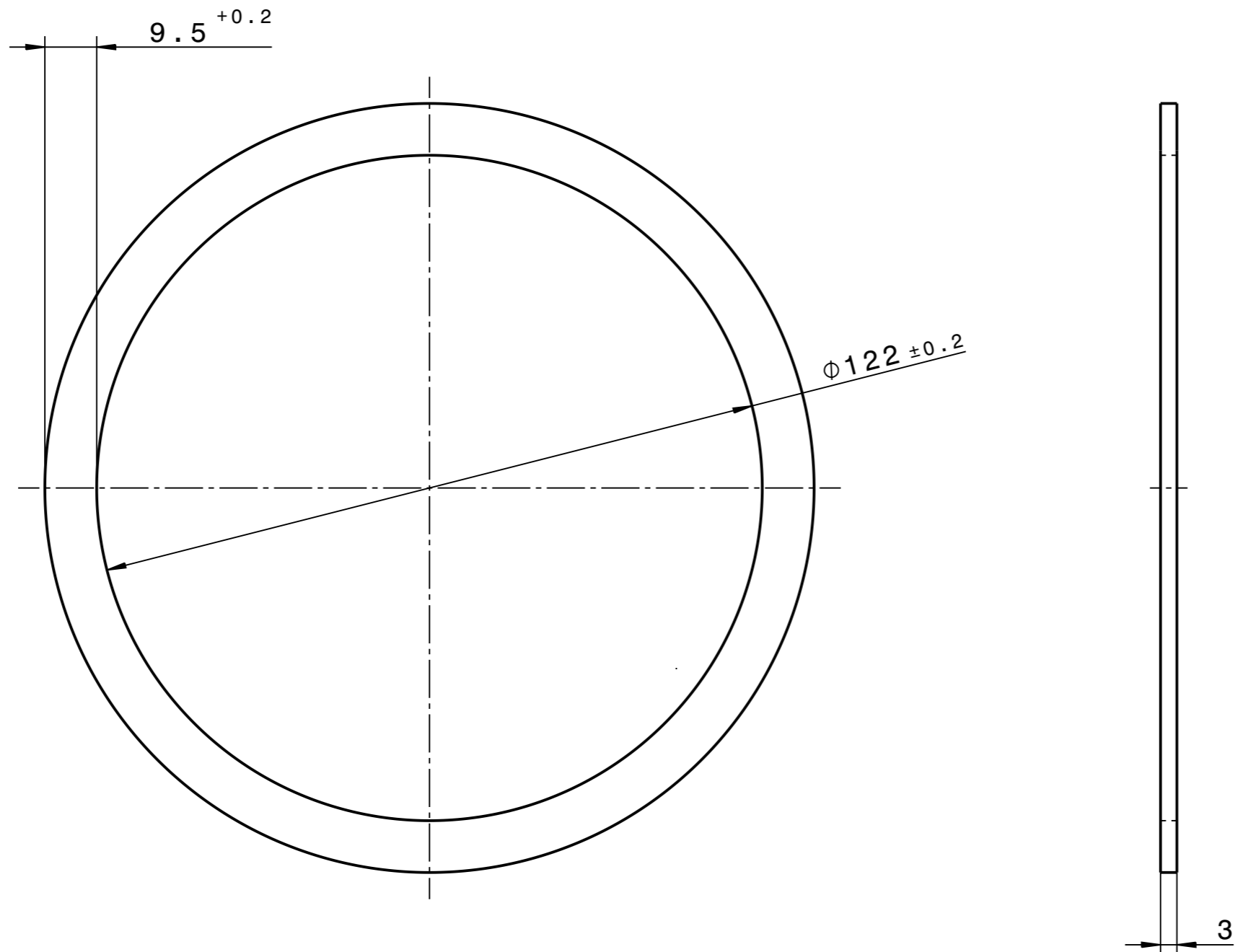
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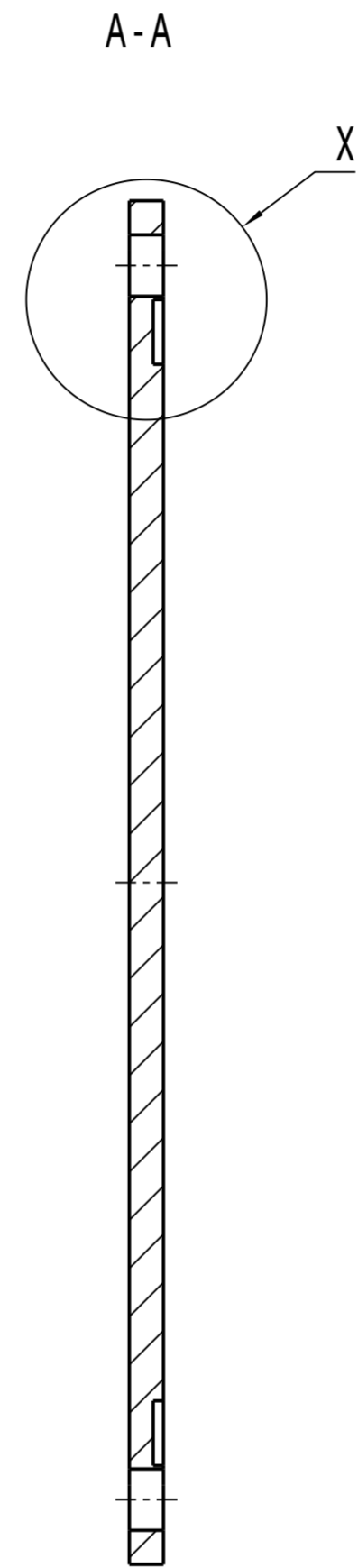
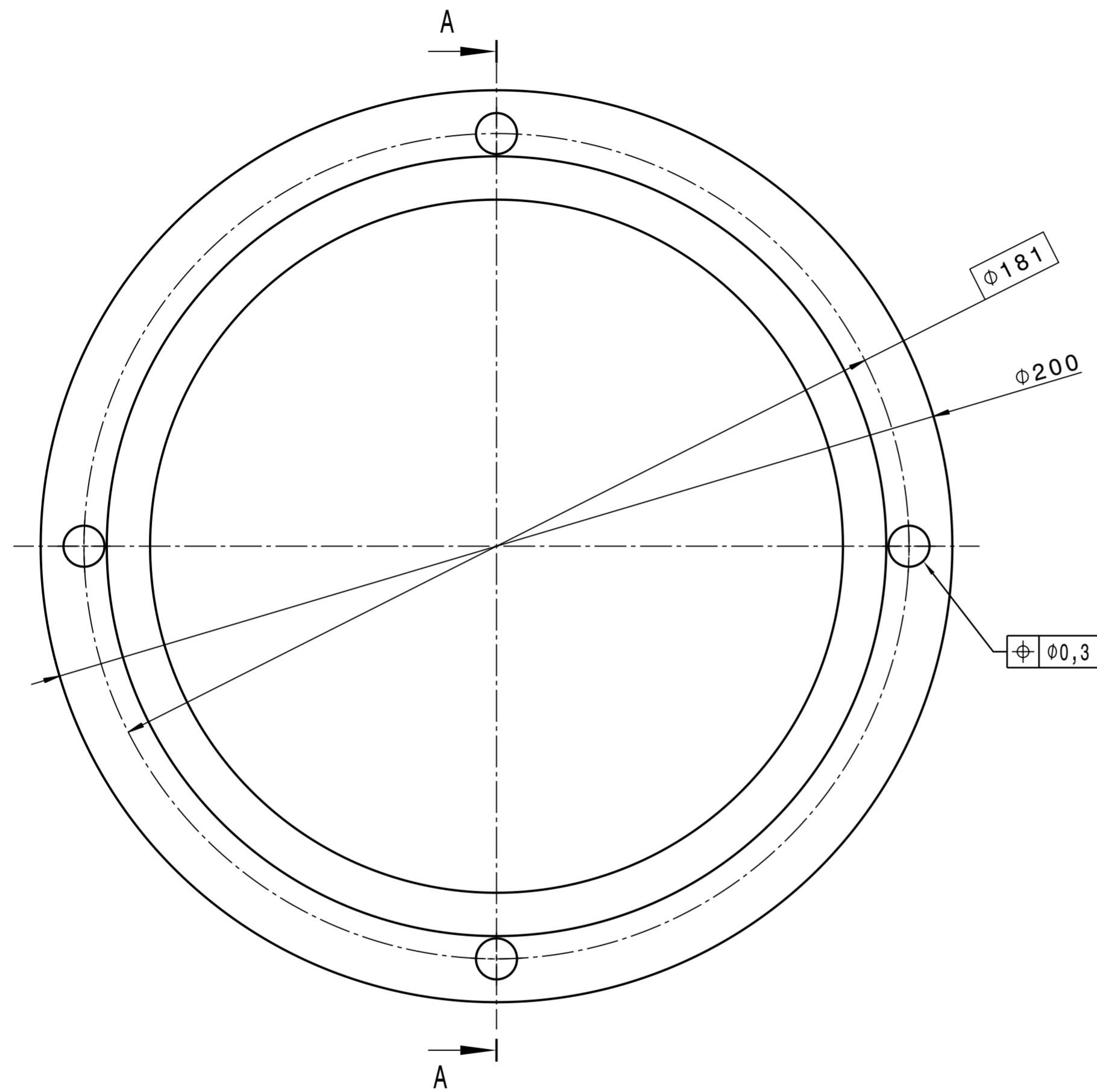
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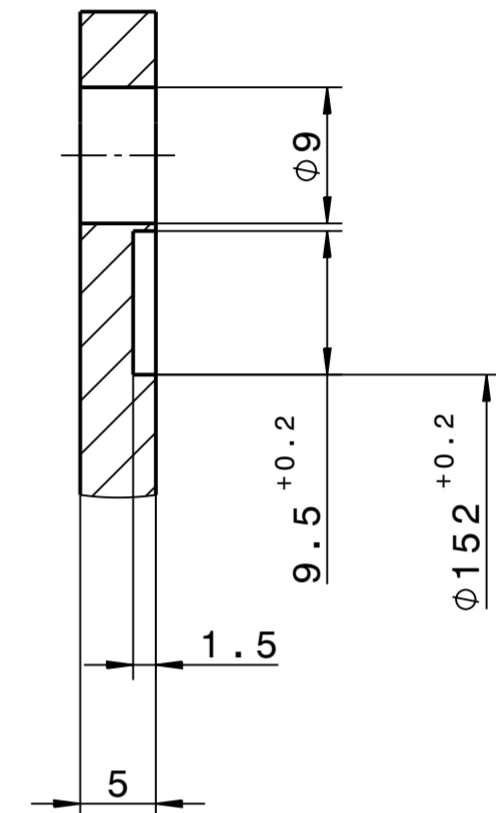
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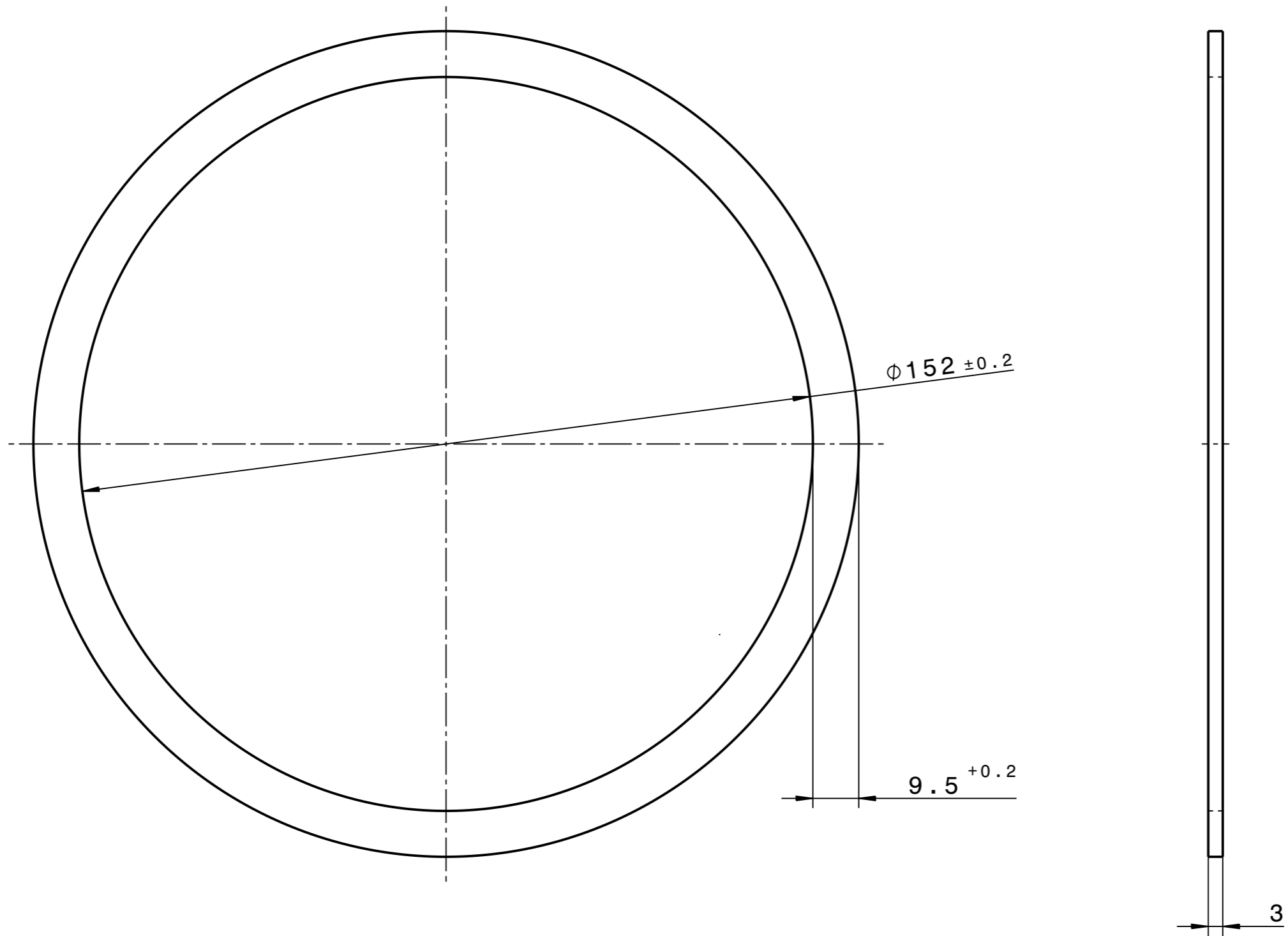




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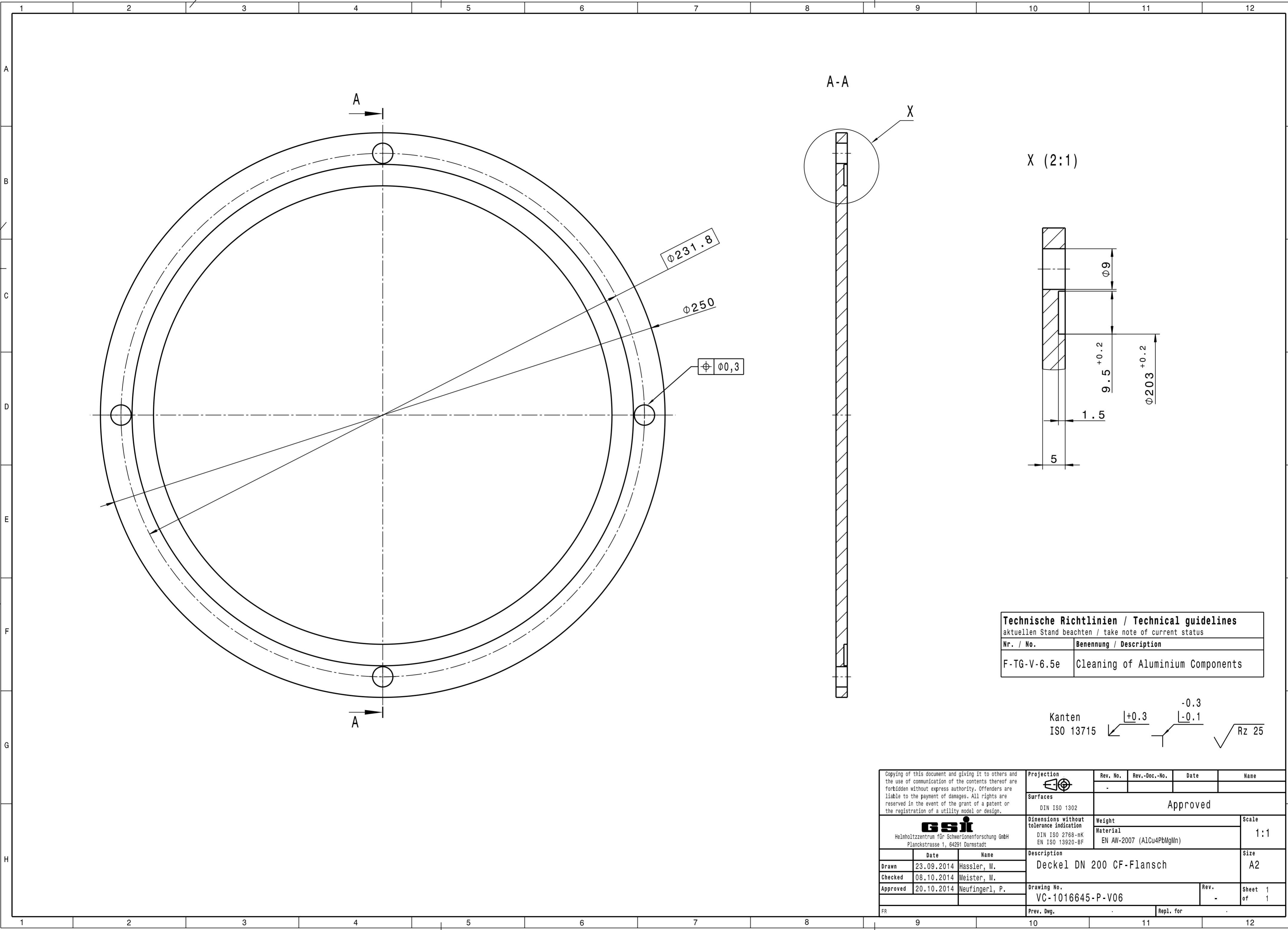
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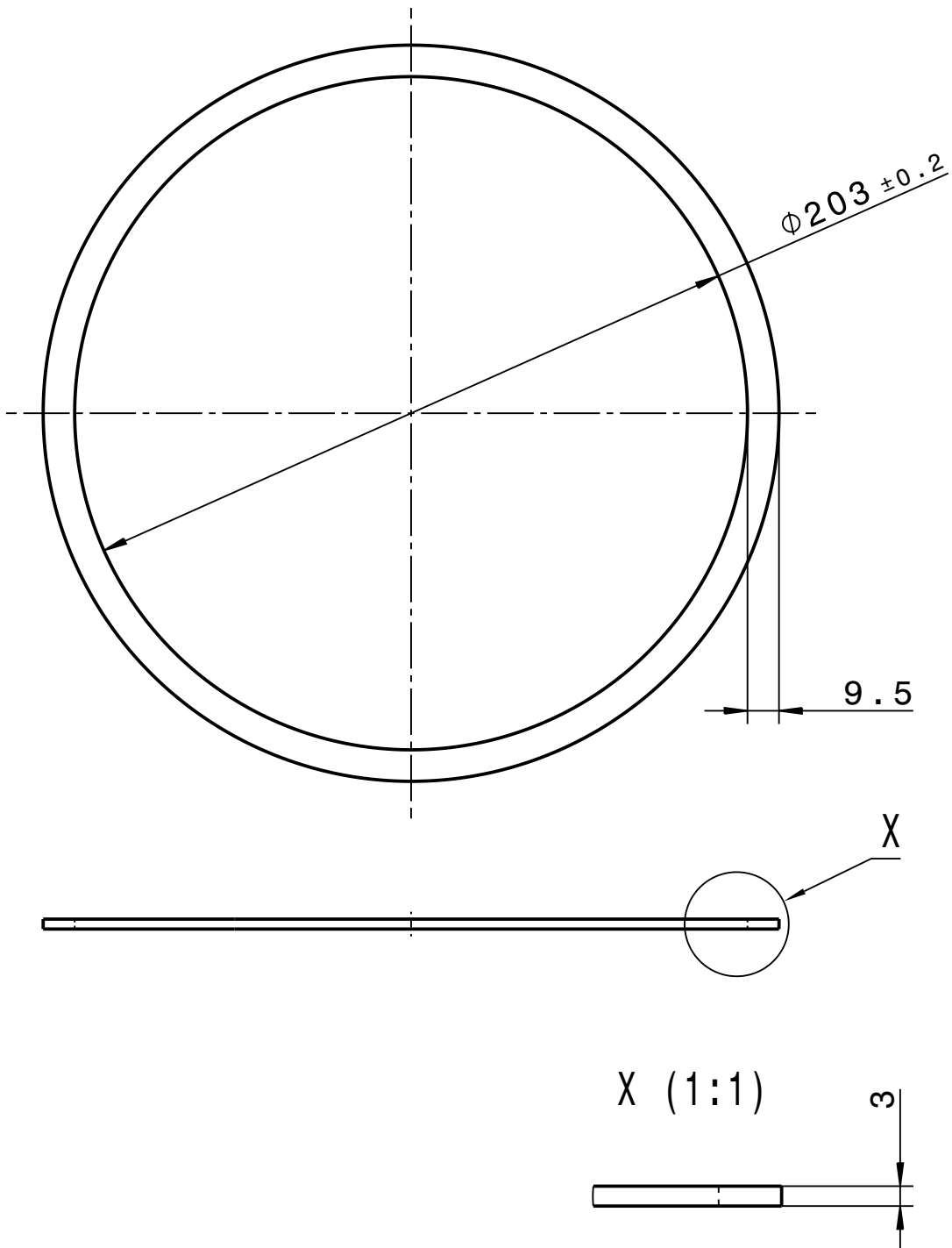
Kanten ISO 13715

+0.3

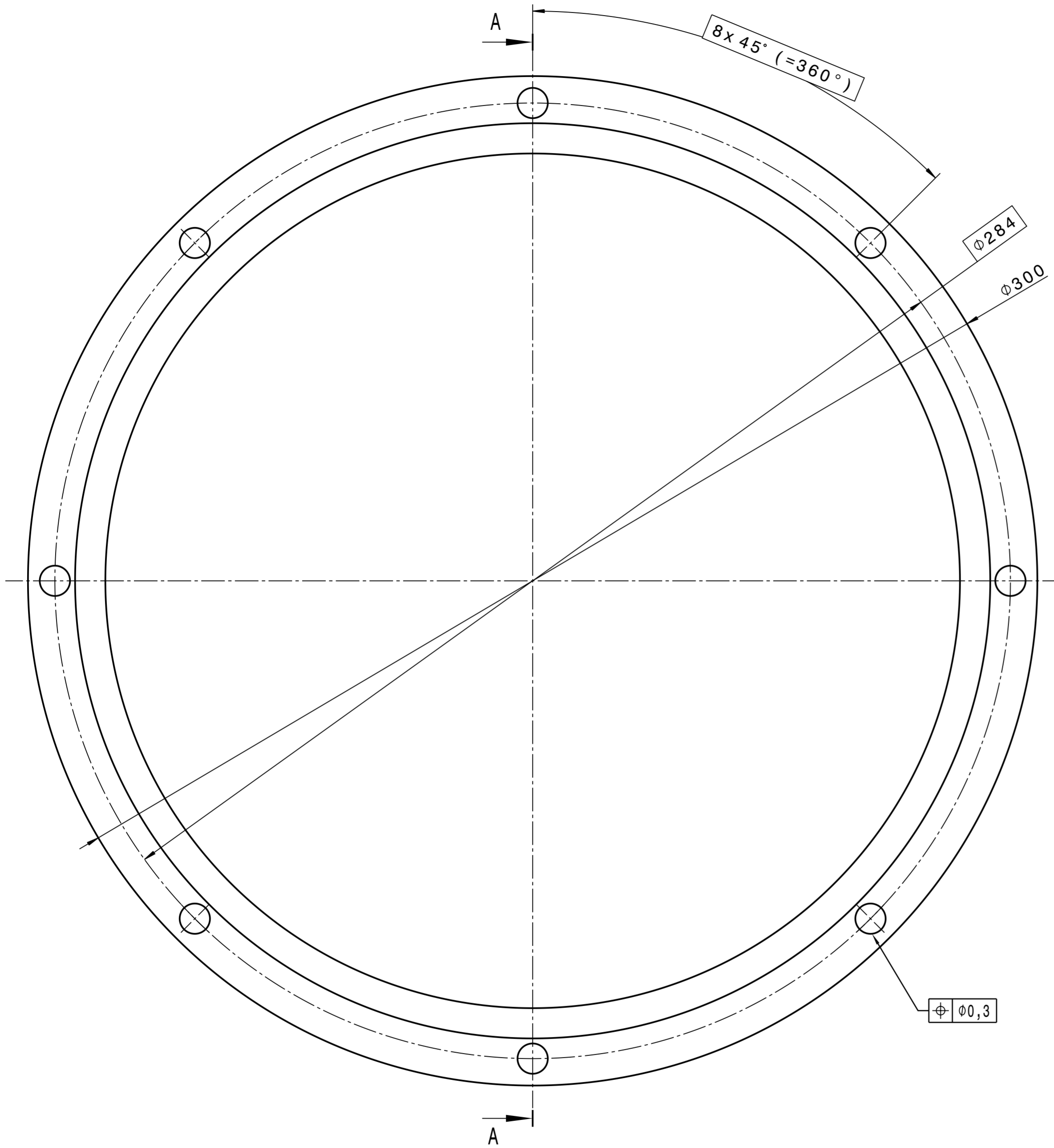
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Rz 25

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			-	-	-	-
gsi Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Surfaces	Approved			
		DIN ISO 1302				
Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	Material EN AW-2007 (AlCu4PbMgMn)		Scale	
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Drawn	23.09.2014	Hassler, M.	Description Deckel DN 200 CF-Flansch			Size
Checked	08.10.2014	Meister, M.				A2
Approved	20.10.2014	Neufingerl, P.				
		Drawing No.	Rev.	Sheet		
		VC-1016645-P-V06	-	of		1
		Prev. Dwg.	Repl. for			



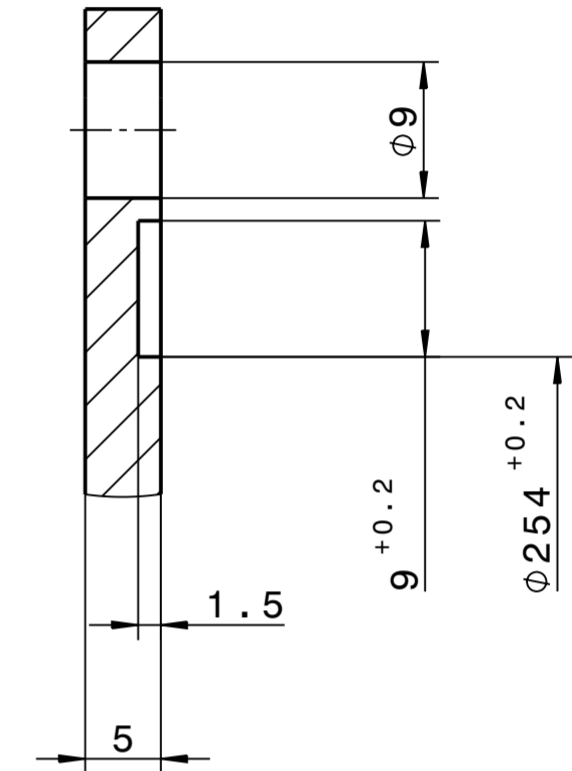
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 Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF	Weight Material NBR		Scale 1:2		
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	Date	Name	Drawing No.			Rev.	Sheet 1
Drawn	25.09.2014	Hassler, M.	VC-1016657-P-V06			-	of 1
Checked	08.10.2014	Meister, M.					
Approved	20.10.2014	Neufingerl, P.					
FR	Prev. Dwg.		Repl. for				



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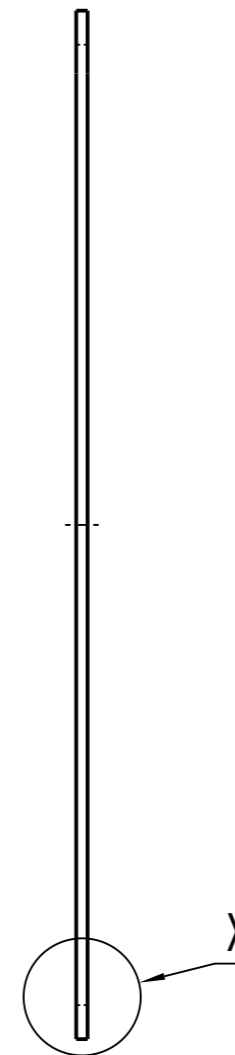
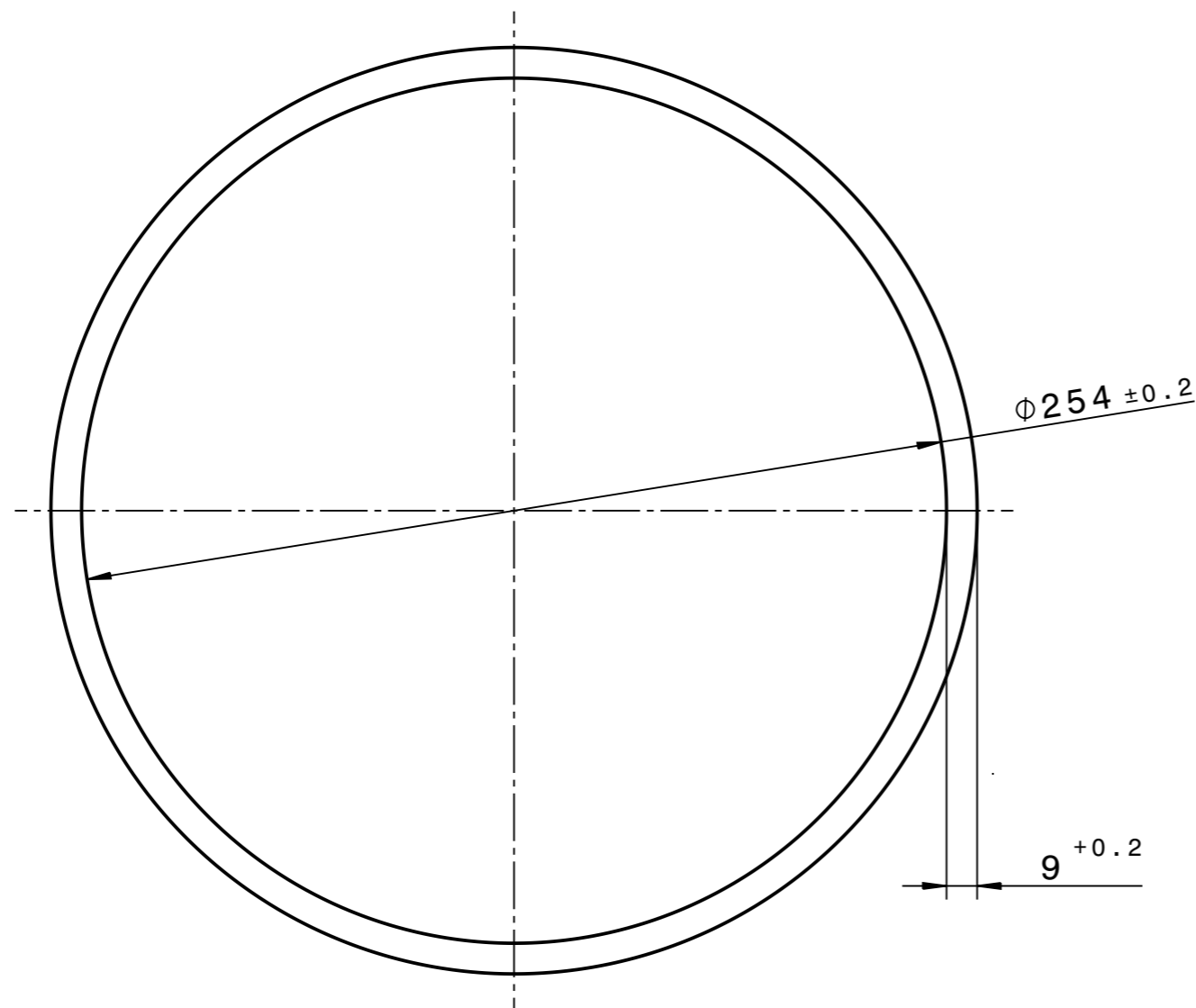
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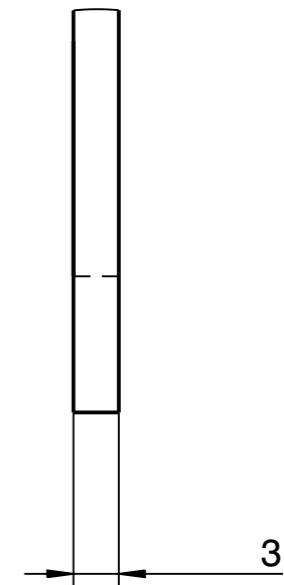
Technische Richtlinien / Technical guidelines	
aktuellen Stand beachten / take note of current status	
Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components



Kanten ISO 13715 $\sqrt{+0.3}$ $\sqrt{-0.1}$ $\sqrt{Rz 25}$

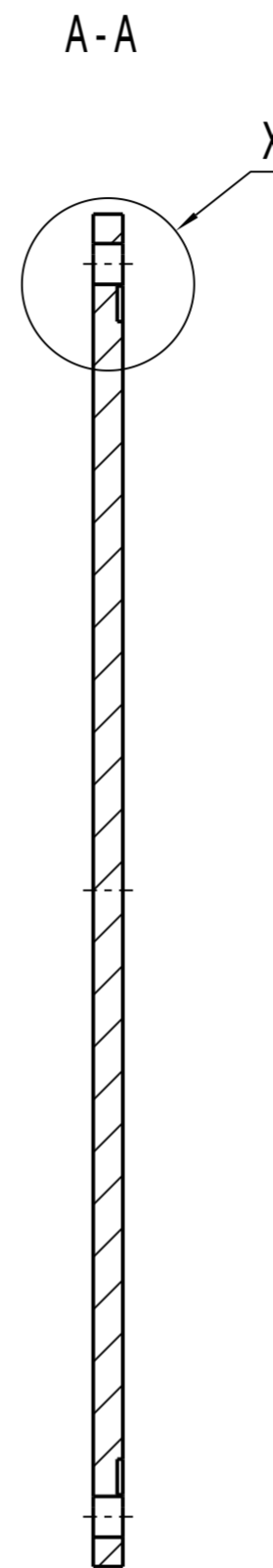
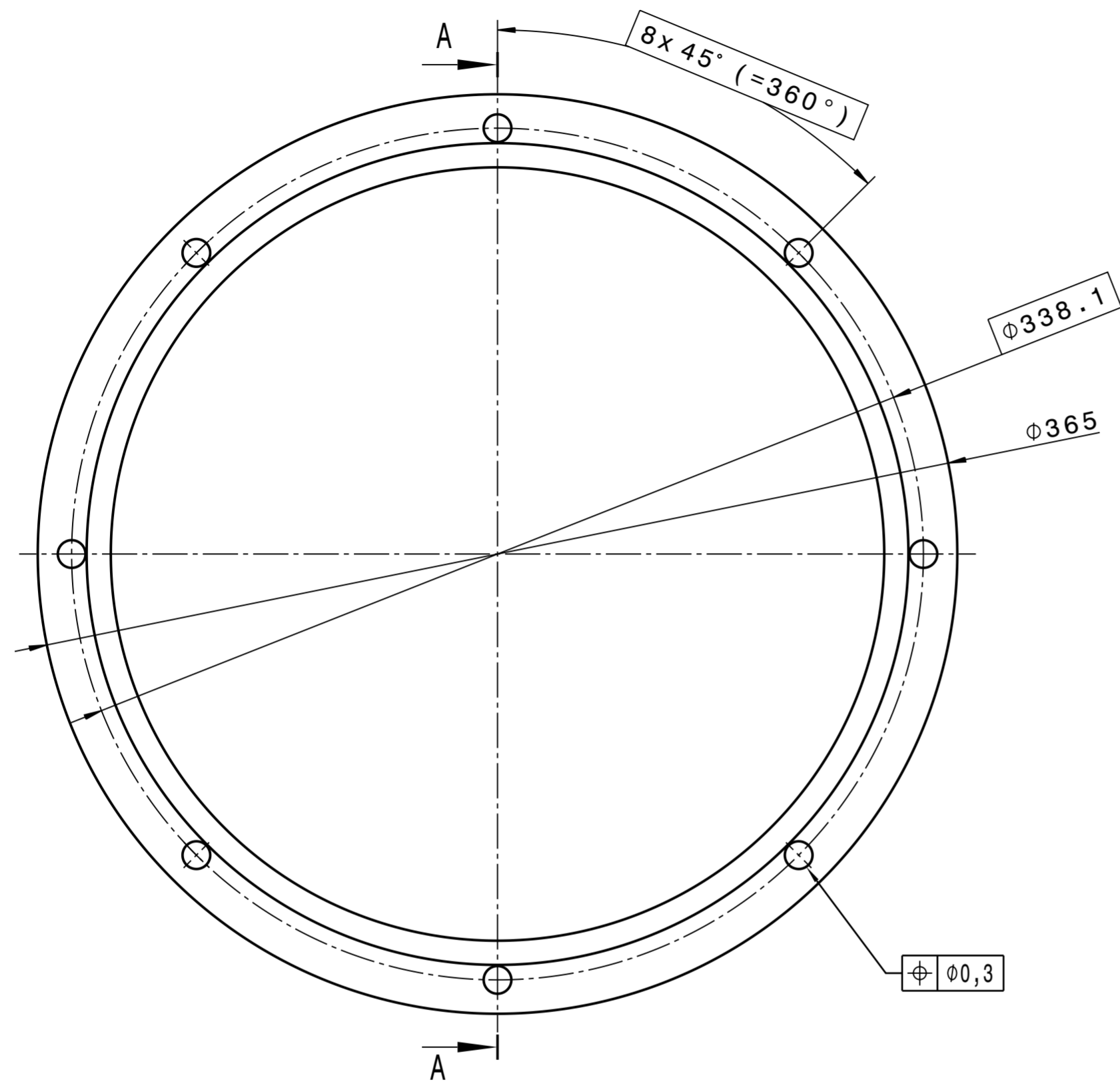
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gsi Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Surfaces	Approved			
		DIN ISO 1302				
Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	Scale 1:1			
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Drawn 23.09.2014 Hassler, M.	Date 23.09.2014 Name Hassler, M.	Description Deckel DN 250 CF-Flansch				Size A2
Checked 08.10.2014 Meister, M.	Date 08.10.2014 Name Meister, M.					
Approved 20.10.2014 Neufingerl, P.	Date 20.10.2014 Name Neufingerl, P.	Drawing No. VC-1016645-P-V07			Rev. -	Sheet 1 of 1
FR	Prev. Dwg.				Repl. for	



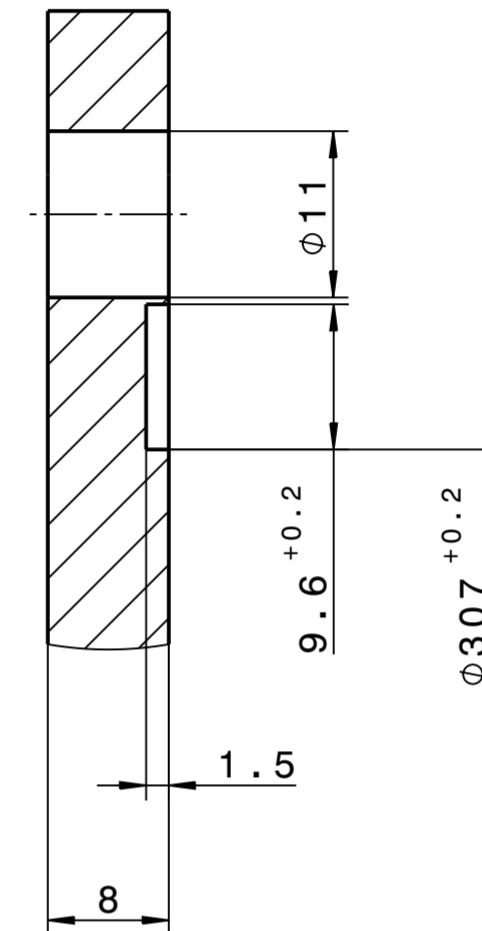
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 Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF			Weight 		Scale 1:2
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Checked 08.10.2014 Meister, M.	Date 	Name 	Description Dichtung DN 250 CF-Flansch		Size A3		
Approved 20.10.2014 Neufingerl, P.	Date 	Name 	Description Dichtung DN 250 CF-Flansch		Size A3		
FR			Prev. Dwg. 		Repl. for 		Sheet 1 of 1



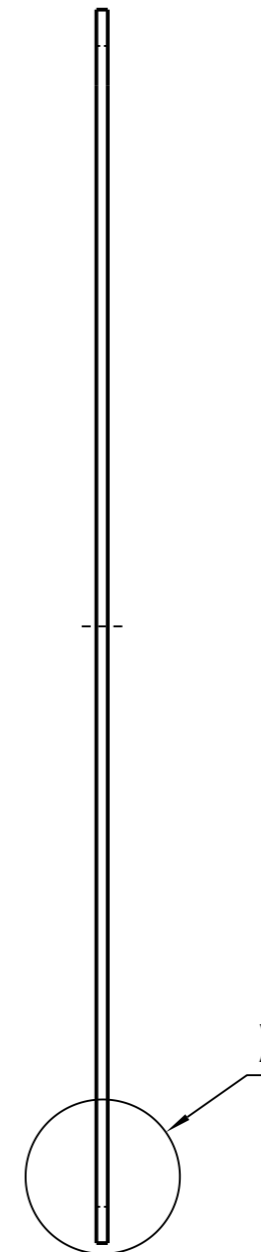
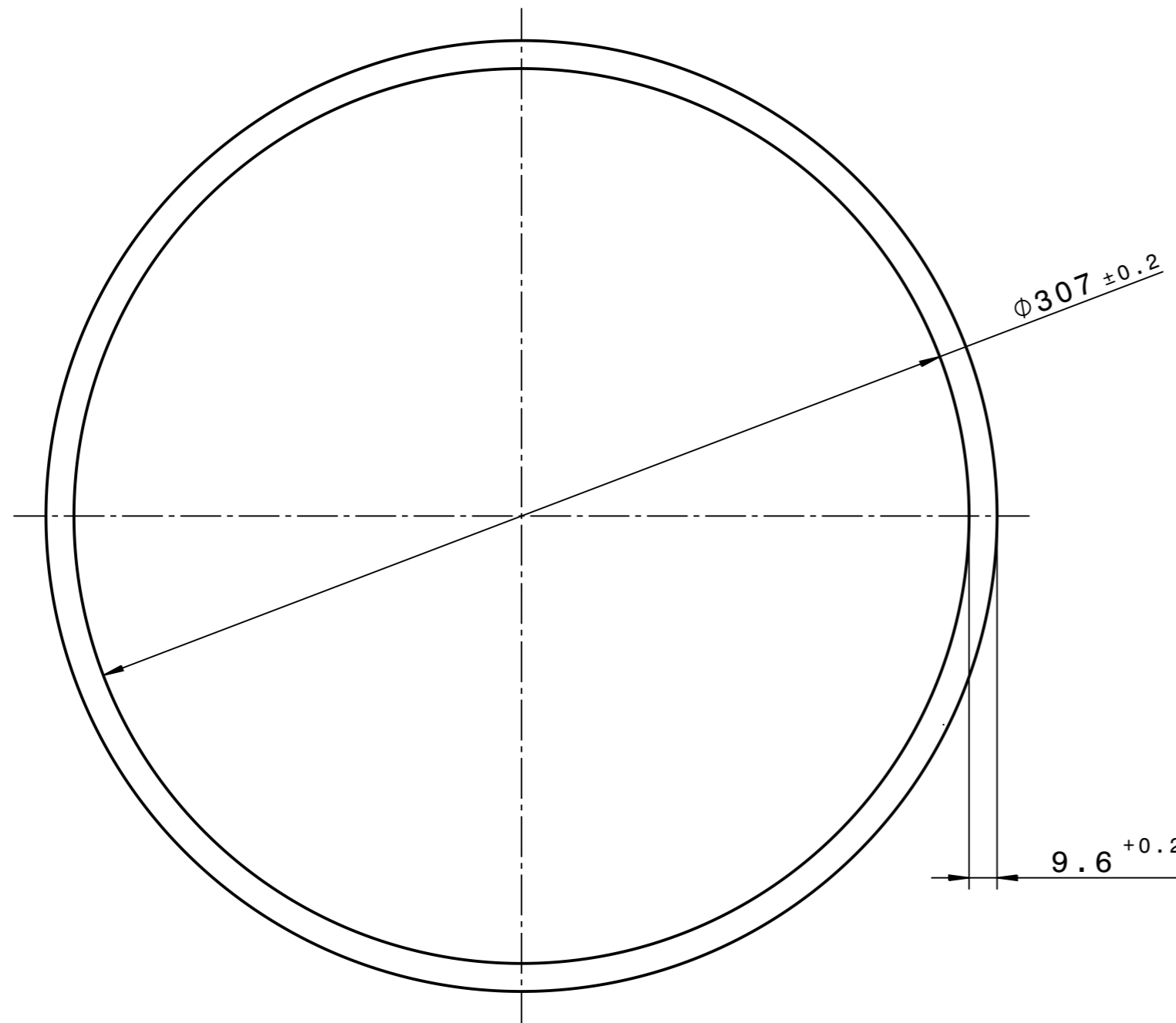
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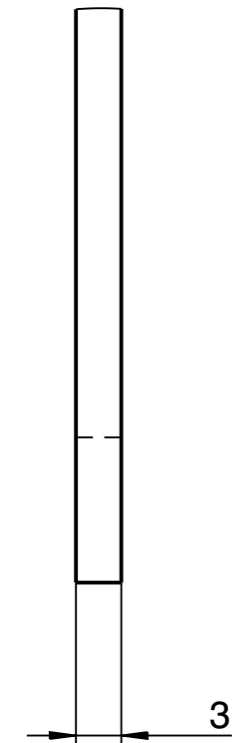
Technische Richtlinien / Technical guidelines	
aktuellen Stand beachten / take note of current status	
Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components


Kanten ISO 13715 $\begin{matrix} +0.3 \\ -0.1 \end{matrix}$ $\sqrt{Rz 25}$

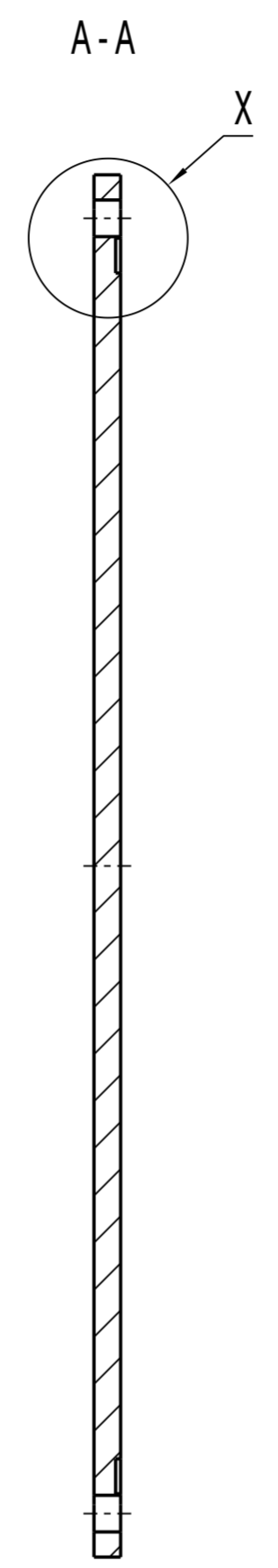
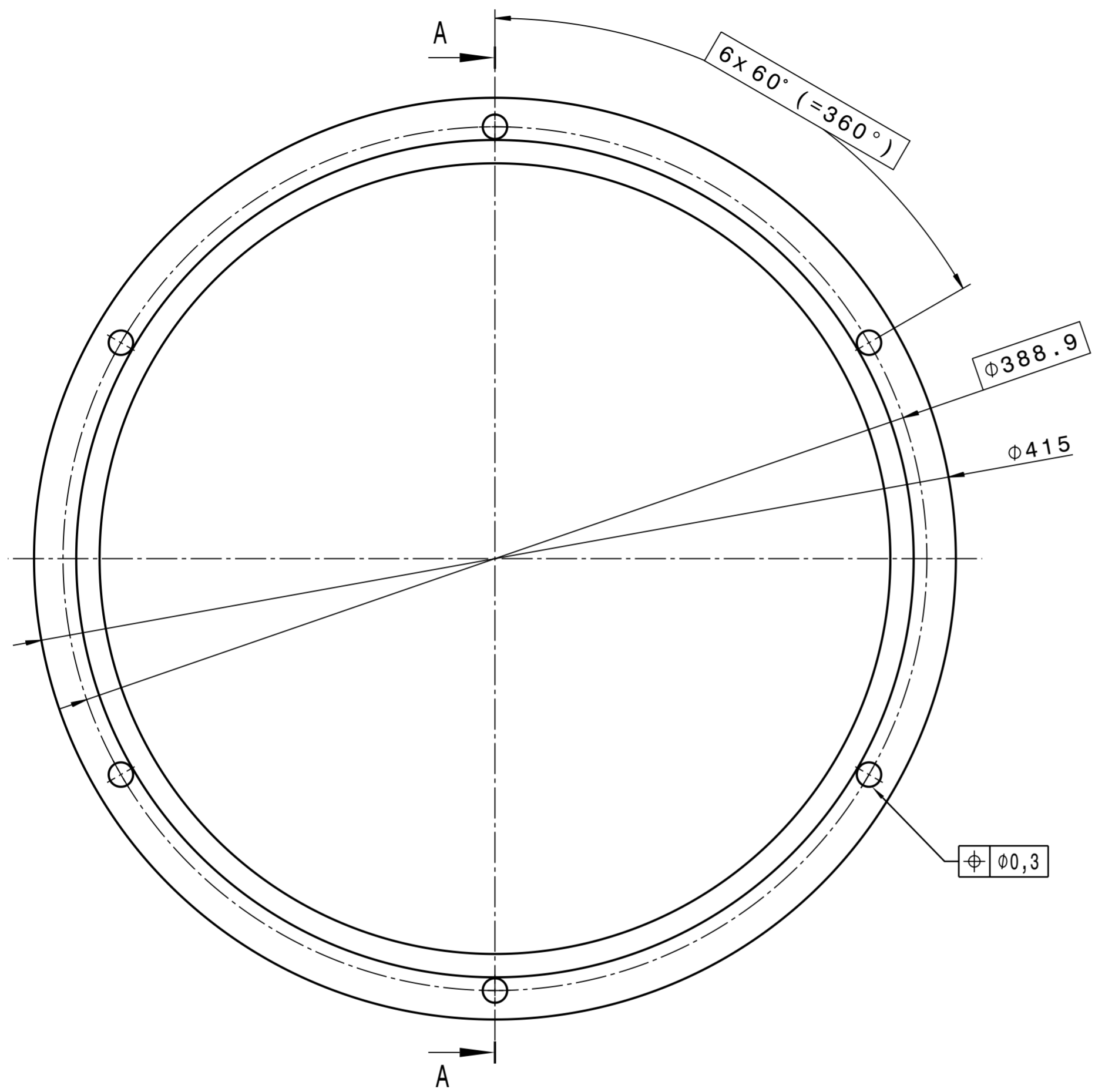
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Gsi Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Surfaces	Approved			
		DIN ISO 1302				
Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	Material EN AW-2007 (AlCu4PbMgMn)			Scale
						1:2
Drawn	23.09.2014	Hassler, M.	Description Deckel DN 300 CF-Flansch			Size
Checked	09.10.2014	Meister, M.				A2
Approved	20.10.2014	Neufingerl, P.				Drawing No. VC-1016645-P-V08
FR	Prev. Dwg.		Repl. for			



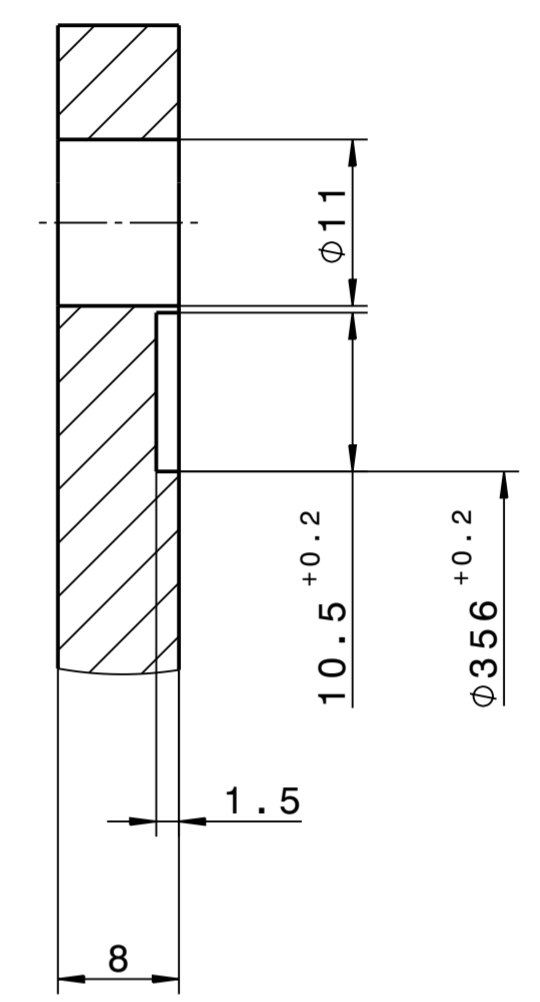
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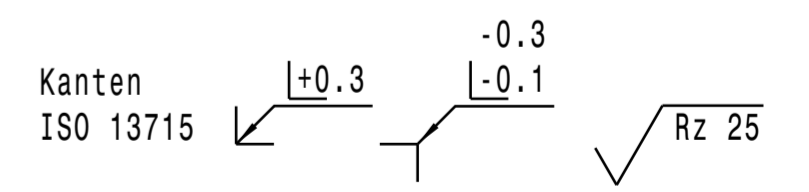
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				Surfaces DIN ISO 1302		Approved			
GSI Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt				Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF			Weight Material NBR		Scale 1:2
				Description Dichtung DN 300 CF-Flansch		Size A3			
	Date	Name		Drawing No.			Rev.	Sheet	
Drawn	25.09.2014	Hassler, M.		VC-1016657-P-V08			-	1 of 1	
Checked	09.10.2014	Meister, M.							
Approved	20.10.2014	Neufingerl, P.							
FR	Prev. Dwg.			Repl. for					



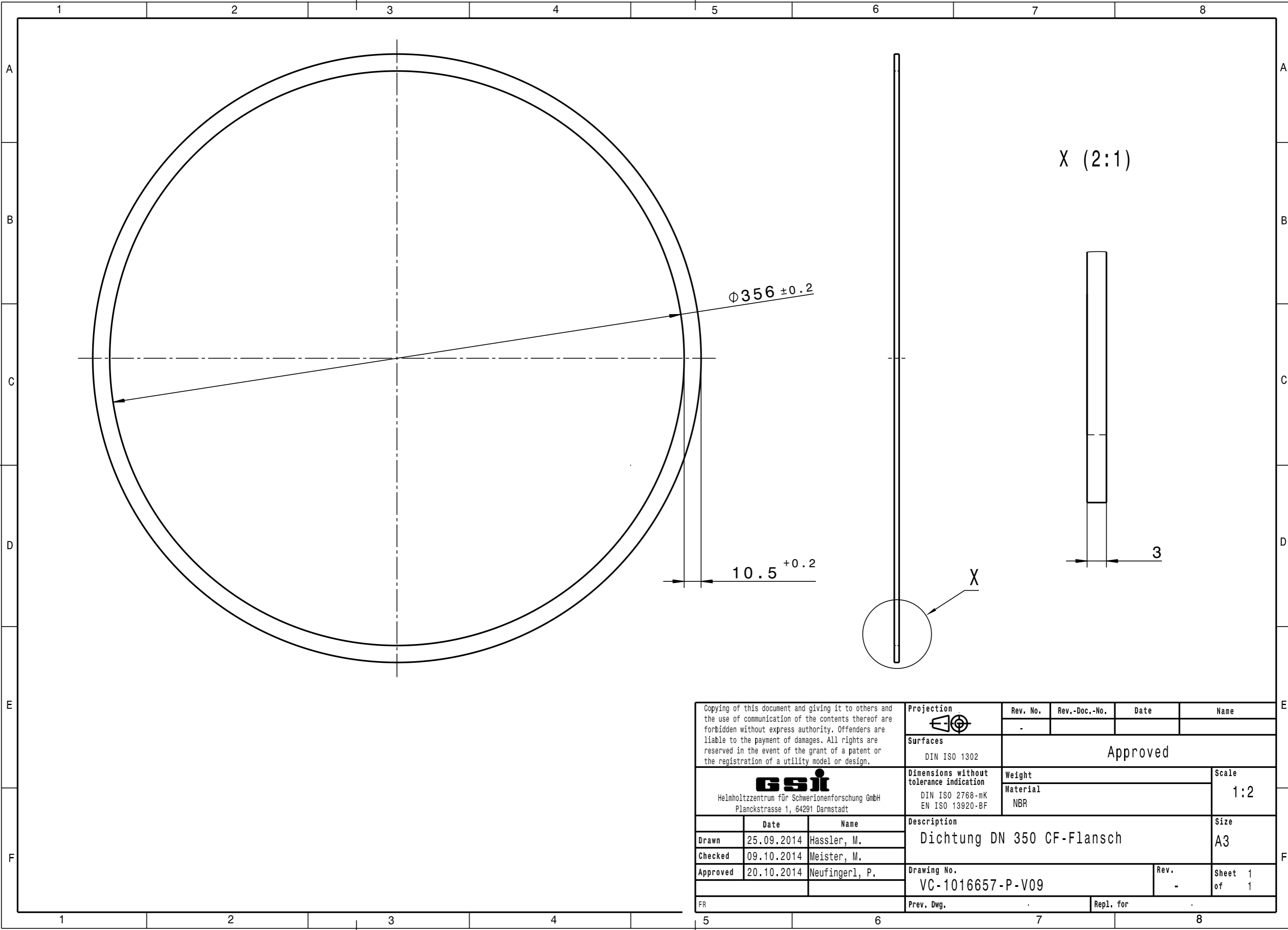
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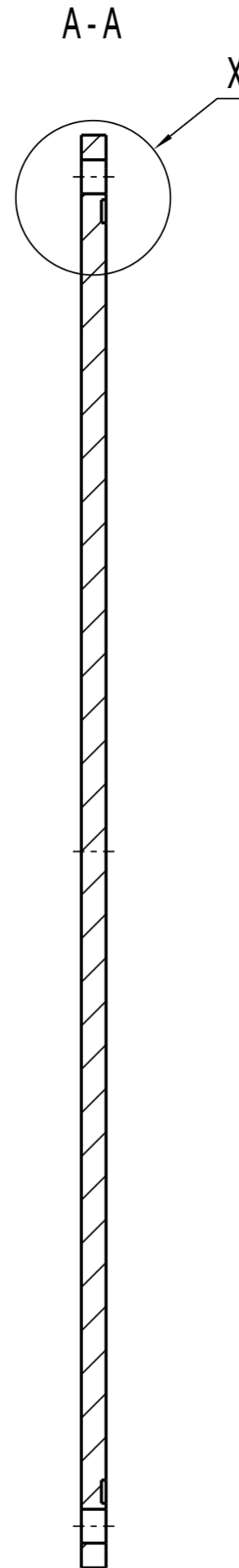
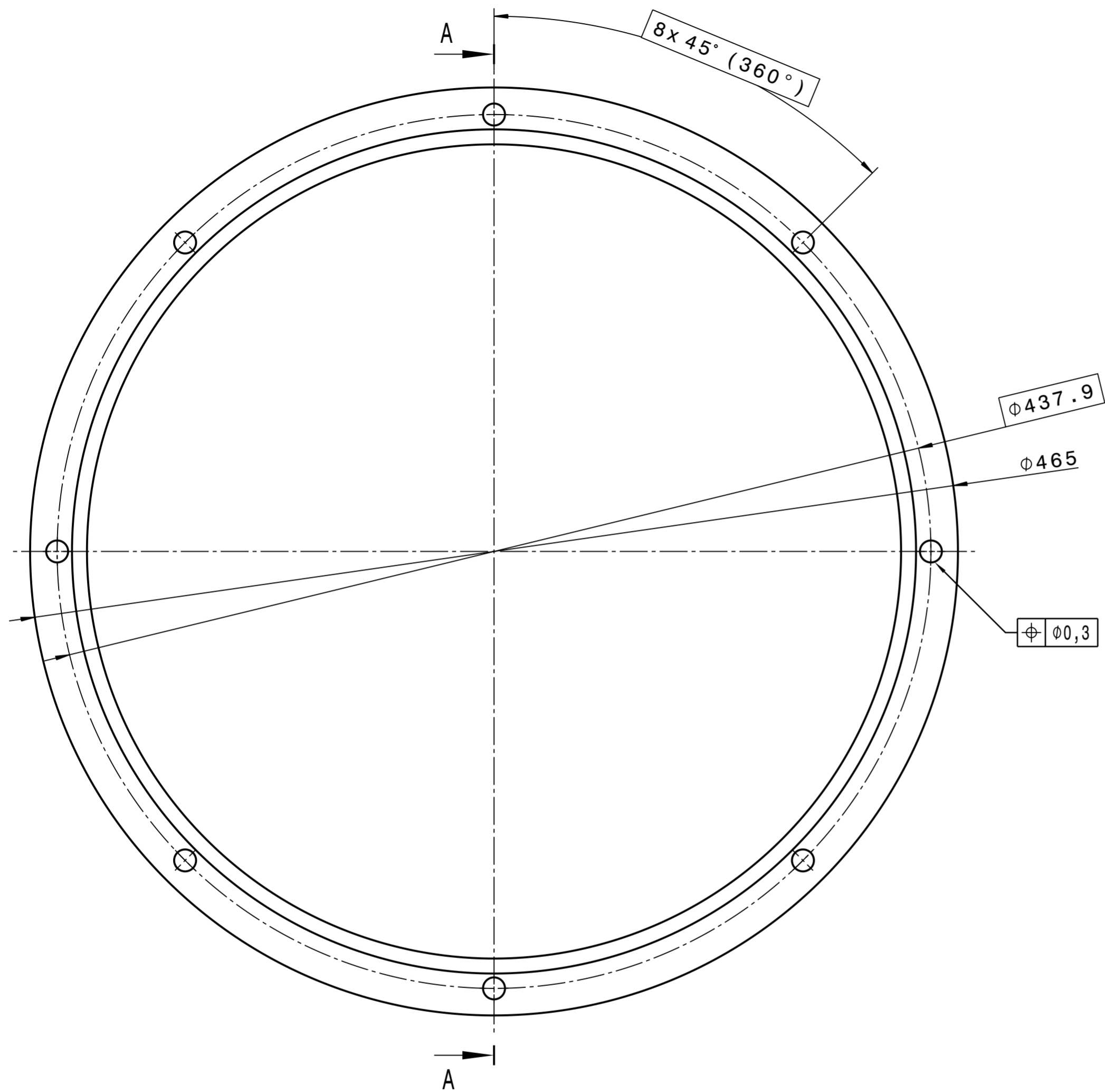
Technische Richtlinien / Technical guidelines	
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Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components



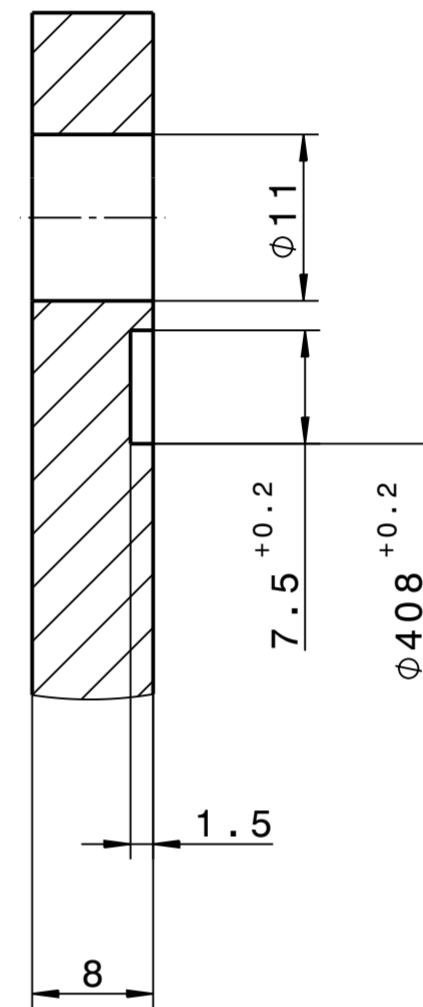
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GSI Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Surfaces	Approved			
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Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	Scale 1:2			
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Drawn 23.09.2014 Hassler, M.	Name Hassler, M.	Description Deckel DN 350 CF-Flansch				Size A2
Checked 09.10.2014 Meister, M.	Name Meister, M.					
Approved 20.10.2014 Neufingerl, P.	Name Neufingerl, P.	Drawing No. VC-1016645-P-V09		Rev. -	Sheet 1 of 1	
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GSIT Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF	Weight	Scale 1:2			
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	Date	Name	Description Dichtung DN 350 CF-Flansch			Size A3	
Drawn	25.09.2014	Hassler, M.					
Checked	09.10.2014	Meister, M.					
Approved	20.10.2014	Neufingerl, P.	Drawing No. VC-1016657-P-V09			Rev. -	Sheet 1 of 1
FR	Prev. Dwg.		Repl. for				



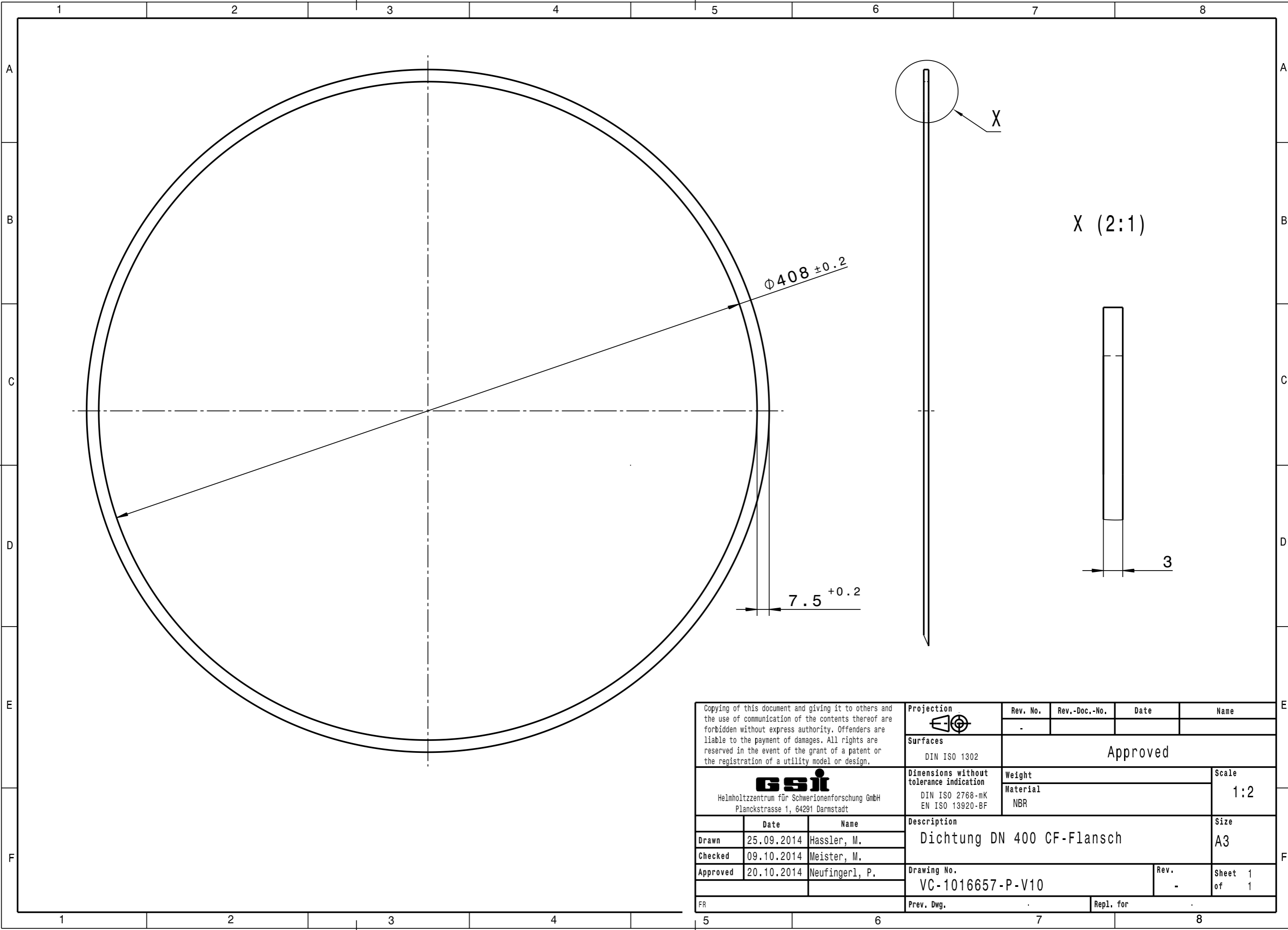
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Technische Richtlinien / Technical guidelines	
aktuellen Stand beachten / take note of current status	
Nr. / No.	Benennung / Description
F-TG-V-6.5e	Cleaning of Aluminium Components

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Gsi Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt		Surfaces	Approved			
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Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF		Weight	Scale 1:2			
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Description Deckel DN 400 CF-Flansch		EN AW-2007 (AlCu4PbMgMn)	Size A2			
Drawn	23.09.2014	Hassler, M.	Drawing No. VC-1016645-P-V10		Rev. -	Sheet 1 of 1
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GSIT Helmholtzzentrum für Schwerionenforschung GmbH Planckstrasse 1, 64291 Darmstadt				Dimensions without tolerance indication DIN ISO 2768-mK EN ISO 13920-BF	Weight 	Scale 1:2		
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Date 	Name 		Description Dichtung DN 400 CF-Flansch				Size A3	
Drawn 25.09.2014	Hassler, M.							
Checked 09.10.2014	Meister, M.							
Approved 20.10.2014	Neufingerl, P.							
Drawing No. VC-1016657-P-V10				Rev. -	Sheet 1 of 1			
FR				Prev. Dwg.		Repl. for		