



Chess Set



Dato: 13-12-2022

Creative, Innovative, Fun

Made By: Skye Hempel

Indhold

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Introduction

As an assignment, I have to make a chess game, where I'll have plenty of opportunities to challenge myself creatively. In total, I have 2 weeks to do it and must submit the project in ONE COMPLETE PDF (use Adobe Acrobat DC by collect it all), it's due no later than Friday 16/12 at 14:25.

Requirements:

1. The bottom of the chess pieces must be 30 x 30 mm in whatever shape you want them to be. (Circle, square, polygon, etc.)
2. The height of the pieces must be the following:
 - Pawn = 40 mm
 - Rook = 60 mm
 - Knight = 70 mm
 - Bishop = 80 mm
 - Queen = 90 mm
 - King = 100 mm
3. The black and white squares must be 50 x 50 x 10 mm.
4. White and black fields + pieces, as well as the frame, must be made in different part files (ipt).
5. A frame must be made into which the fields must fit. Frame and panels must be attached to a base.

Intent

Brainstorm:

When we got the assignment, my first thought was the wizard chess from Harry Potter. But that's a big task and hard to do in Inventor, where it would be easier to sculpt in Blender. So, a simpler version of wizard chess... Now, what could that be? After a few google searches, I found out that LEGO has made a wizard chess set¹.

I also saw a couple of other ideas here².

¹ https://www.proshop.dk/LEGO/LEGO-76392-Hogwarts-Troldmandsskak/3087498?utm_source=pricerunner&utm_medium=cpc&utm_campaign=pricesite

² <https://all3dp.com/2/3d-printed-chess-set-pieces/>



Final decision:
The Harry Potter Wizard Chess

Inspiration:

So, my main inspiration is the Harry Potter Wizard Chess by LEGO.

I have mainly copied the set, except for the rook, there is more information in the main section.



All the other pieces are made roughly from this image:



Materials reasons:

So, there were no specific materials, but the assignment said to use wood, until it was changed to all materials. Now the idea was that since the pieces are complicated to make on a turning bench, it would be easier to make on a 3D printer. The board was a different matter. Since the original assignment required wood, I thought it would be a good idea to incorporate wood somewhere.

Main Section

Design conclusions:

Here I will go over the design decisions, the materials I chose, and how to construct it.

The design is simple there is no mechanism or light. The board is simple yet classic.

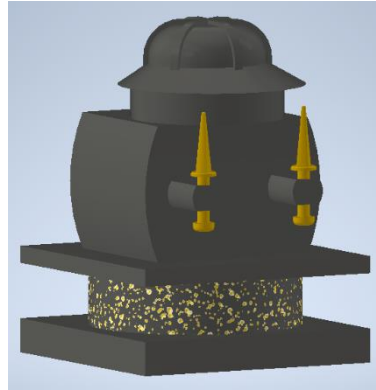
Pawn³:

The pawn is a sub-assembly made of 3 components, the pawn's base, and 2 daggers.

The pawn is made to resemble the LEGO wizard's chess' pawn.



LEGO



mine.

Now the daggers are smaller because LEGO's don't look like daggers, they look more out of place.

The height requirement is 40mm⁴, and you can see that here⁵.

Rook⁶:

Now the rooks are a different story, it didn't look like a tower, and the name tower is directly translated from Danish. So, I took some inspiration from the regular chess set



LEGO



Original



Mine

³ See Attachment / Drawing: Part - 001

⁴ See page 3 – requirements – 2

⁵ See Attachment / Drawing: Part - 001

⁶ See Attachment / Drawing: Part - 002

As you can see above, I added the tower aspect and removed the sword in since it would have looked awkward. Now the rook is made of 2 parts, the head is a separate part because it's easier to duplicate that way. I had to duplicate it since the knight and bishop use the same head. As you can see in the picture on the next page.

As you can see here, they share the same head type.

You can see the drawings for more info.

The height requirement is 40mm⁷, and you can see that here⁸.

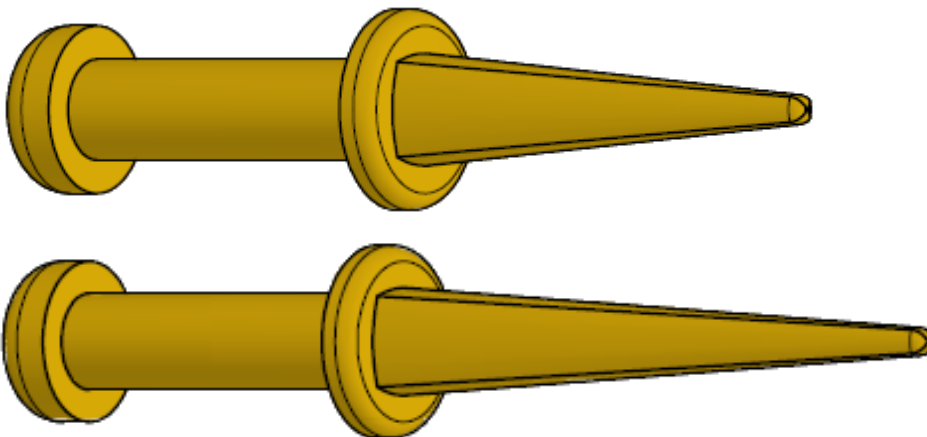


Knight⁹:

For the knight, are there 3 different parts, the head, base, and the sword? Now the head is the same as the Bishop and Rook.

The Cylinders with the gold specs are used for the height adjustments, this is true for all pieces.

The height requirement is 40mm¹⁰, and you can see that here¹¹.



So, the sword is a longer version of the dagger, I moved the plane for the 2 parts of the loft, up to 10 mm from 7 mm¹².

⁷ See page 3 – requirements – 2

⁸ See Attachment / Drawing: Part - 002

⁹ See Attachment / Drawing: Part - 003

¹⁰ See page 3 – requirements – 2

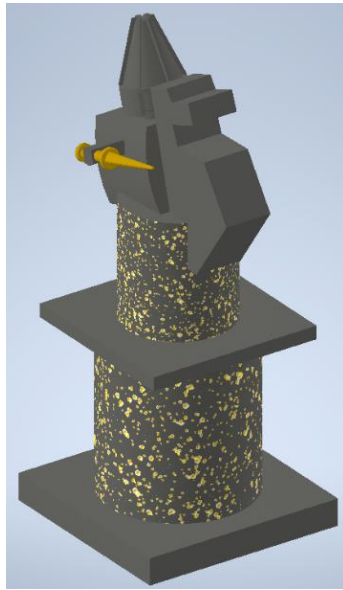
¹¹ See Attachment / Drawing: Part - 003

¹² See Attachment / Drawing: Part – 007 & Part - 009

LEGO



Mine



For the base, I tried to copy the horse from the LEGO set. As you can see here

The body and horse are at an angle, the horse was made first, and then the body. I used the back of the horse as the plane.

Now the original has a morning star and not a sword. But the LEGO version has a sword, so I went with that. The original also has a shield, but again since the LEGO version doesn't. So, I didn't integrate that aspect.

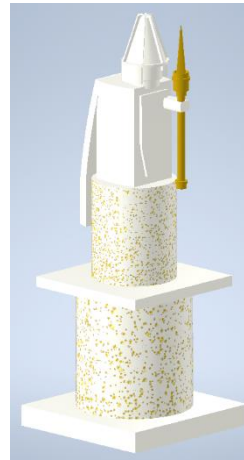
Original



Original



Mine



LEGO



Bishop¹³:

The bishop has a staff that has a spiral on the end. It would have been very difficult to measure. So instead of the staff with the spiral, I changed it to a spear.

It also has the same head, as the rook and knight.

There is also a cape, on the original bishop, and a hint of a cape on the LEGO version. But I decided the caped looked cool, so I included it¹⁴.

And again, the Cylinders with the gold specs are used for the height adjustments, this is true for all pieces.

The height requirement is 40mm¹⁵, and you can see that here¹⁶.

¹³ See Attachment / Drawing: Part - 004

¹⁴ See Attachment / Drawing: Part - 004

¹⁵ See page 3 – requirements – 2

¹⁶ See Attachment / Drawing: Part - 004



Original

Mine

LEGO

Queen¹⁷:

The queen is a combination of 3 parts, the queen's head, the base, and a sceptre. So, the queen is mostly a copy of the LEGO design.

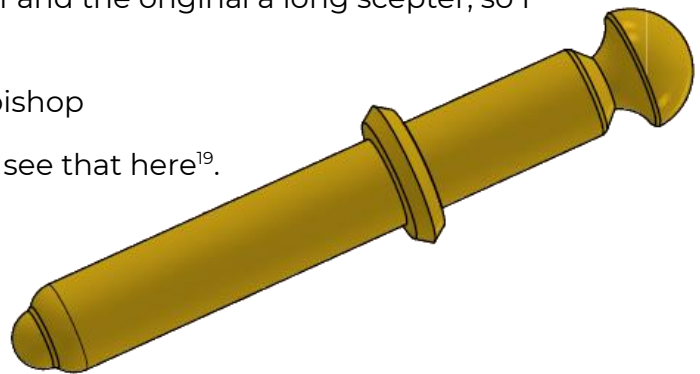
The head is just a normal LEGO head base with a queen's crown on it. It would have been too complicated to do the original and the LEGO version looks weird.

The detail on my stomach of mine, there so it doesn't look bare.

Now the LEGO version has, what looks like a staff and the original a long scepter, so I combined the two.

This also has a cape for the same reason as the bishop

The height requirement is 40mm¹⁸, and you can see that here¹⁹.



¹⁷ See Attachment / Drawing: Part - 005

¹⁸ See page 3 – requirements – 2

¹⁹ See Attachment / Drawing: Part - 005

King²⁰:

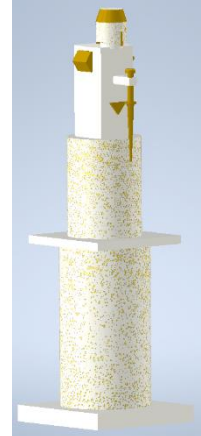
So, the king is also made of 3 components, it is also the head, base and a long sword.

I just, made a copy of the LEGO version, where some details are different like the shoulder pads are kind of different, and the helmet details aren't an exact copy. The long sword is a longer version of the sword, I moved the plane for the 2 parts of the loft, up to 14 mm from 10 mm²¹.

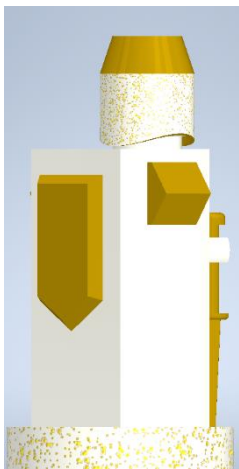
Original



Mine



LEGO



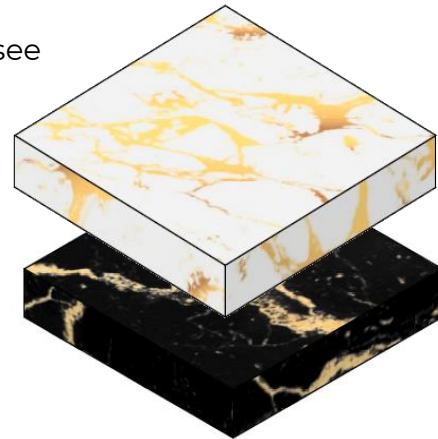
As for the cape, the original has one, but the LEGO version doesn't. The original has heavy-duty armour, so I added a shield on the back.

The triangle on the pelvis is also to simulate armour.

The height requirement is 40mm²², and you can see that here²³.

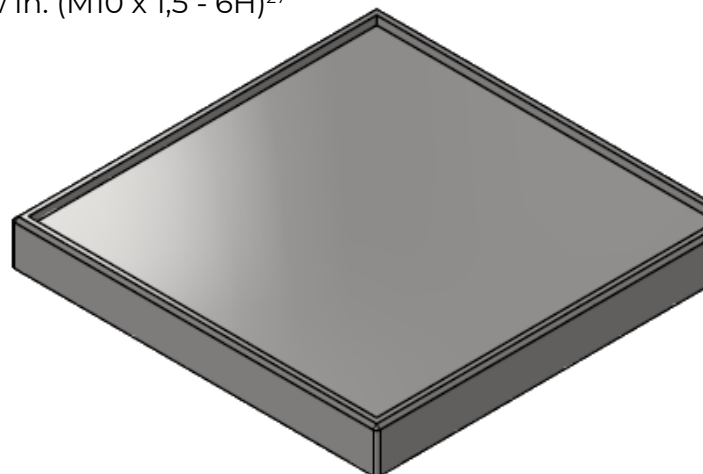
Checkerboard squares²⁴:

So, the pieces have to stand on some checkerboard squares. It's in a checker pattern, in black and white. The squares must be 50 x 50 x 10 mm²⁵. And if you look at drawing x and x, you can see that they are.



Base²⁶:

As for the board, it's a simple design, and its only function is to house the checkerboard squares. It has threaded holes for the feet to screw in. (M10 x 1,5 - 6H)²⁷



²⁰ See Attachment / Drawing: Part - 006

²¹ See Attachment / Drawing: Part - 009 & Part - 012

²² See page 3 - requirements - 2

²³ See Attachment / Drawing: Part - 006

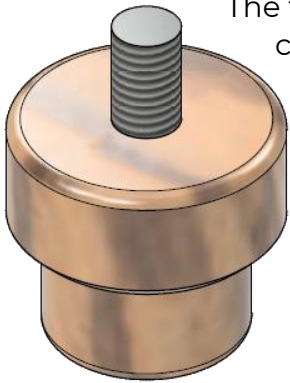
²⁴ See Attachment / Drawing: Part - 018 & Part - 019

²⁵ See page 3 - requirements - 3

²⁶ See Attachment / Drawing: Part - 015

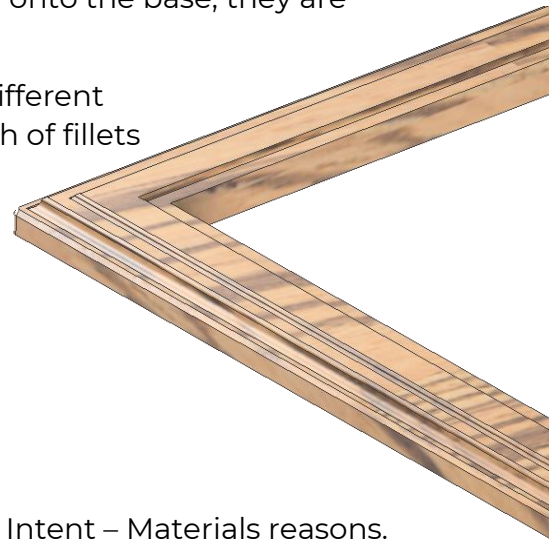
²⁷ See Attachment / Drawing: Part - 015

Frame and Feet:



The feet It has a threaded rod that can be screwed onto the base, they are cylinder in design²⁸.

The frame is a bunch of layers that vary in different length/width and height. Also, it has a bunch of fillets and a chamfer. it is a square. ²⁹



Materials:

So, for materials we got free rain, I have reasoned why under Intent – Materials reasons.

Pieces

For the pieces, have chosen to 3D print. I want to 3D print in ABS – in a white/black colour, because it's easier to paint. A set of black and white pieces must be printed and painted.

The pieces also have a silicone pad³⁰ on the bottom of each piece to minimize their tipping over.

PLA plastic is a thermoplastic type, It's one of the main 2 types used for 3D printing. PLA is a tough and stiff plastic³¹. PLA's main uses are plastic cups and cutlery³². The other plastic mainly used for 3D printing is ABS³³, which is also a thermoplastic. LEGO uses ABS on their LEGO bricks³⁴. ABS is less tough and stiff than PLA, but it's more durable and has heat resistance. Since LEGO uses ABS that's why it's my choice.

How to paint:

The pieces must be painted. The gold part on the 3D renders must be painted gold of course.

And the cylinders and the king's heads, where there are gold specs, have to be splashed with gold paint. There are multiple techniques you can use for that effect. There's a technique where you have a toothbrush – you put some paint on the end and

²⁸ See Attachment / Drawing: Part - 00

²⁹ See Attachment / Drawing: Part - 00

³⁰ https://aag.world/shop/aag-silikone-transparent-1000p.html?gclid=CjwKCAiAy_CcBhBeEiwAcoMRHE-X15TON5BnWPuX9FNn7zy2L99W2qsDV3D4lOiDWjVDG99NlGpKbBoC2_8QAvD_BwE

³¹ <https://markforged.com/resources/blog/pla-abs-nylon>

³² <https://www.hubs.com/knowledge-base/pla-vs-abs-whats-difference/>

³³ <https://markforged.com/resources/blog/pla-abs-nylon>

³⁴ <https://www.hubs.com/knowledge-base/pla-vs-abs-whats-difference/>

flick the paint on with or finger, this is a messy method so remember to cover up the parts you don't want colouring. There is also a technique with an airbrush.

I recommend acrylic paint meant for plastic, remember to prime, and seal.

Base

As for the base, that's made from stainless steel.

It is a great metal, in that it's a strong/tough metal. It's also heavy (8g/cm³) but not as heavy as brass, copper, or bronze. The reason why I didn't pick the heavier metals is, that brass is only semi-hard and the wrong colour. I use wood so no red/warm colours. Bronze has the same reasons as brass, and it oxidizes, and I didn't want that. Copper is also red and it's soft, so that was a no. Now steel is a different story, it's a grey, heavy, hard material. I picked stainless steel over regular steel because, stainless steel has a chrome component, which makes it more beautiful (in my opinion.)³⁵



Frame and feet.

The frame and feet are made of wood. As for the wood, it's a wood called Zebrano wood³⁶. I chose this wood because it is beautiful. The light wood undertone with the dark stripes. If you can't get Zebrano wood, then something similar is okay.

The feet have a threaded rod, that's made from stainless steel. The stainless steel has the same reason as the base.

Checkerboard squares

There are 2 types of checkerboard squares, white and black. Both types are made from marble. I chose marble since it's heavy and beautiful. So, to summarize you would need two types of marble slabs to make the squares out of.

A black and gold marble slab³⁷ and a white and gold marble slab³⁸. Below you can see an example of where you could find it.

How to construct:

Now how do we construct the chess set? Well, we need a 3D printer for the pieces. For the frame, you might need a table saw, a mitre saw or/and a router table. For the feet, a wood lathe is a good idea. The Base gets milled on a CNC machine. And for the checkerboard squares you can use a mitre saw or a circular saw, just with a diamond saw blade.

³⁵ From a Power Point, we got from the teacher.

³⁶ <https://duffieldtimber.com/the-workbench/categories/buyers-guides/most-beautiful-luxury-types-of-wood>

³⁷ <https://falkegranit.dk/marmor-paa-maal-236/marmor-dark-matter-p10522>

³⁸ <https://falkegranit.dk/marmor-paa-maal-236/marmor-calacatta-gold-eksklusiv-marmor-p11832>

Pieces

The pieces must be printed as a hole, which means that the pawn is the full version with the daggers. So, the pawn and daggers get printed into one. This applies to all the pieces. Then you need to slice the Inventor 3D files (the sub-assemblies). Slicing is a communication tool so Inventor and any 3D printer can communicate. The slicing program tells the printer where and when to print. It's called a slicer since the program separates your model into layers, so the printer knows what to do. They get printed in ABS white/black. After everything has been printed, a silicone pad must be glued to the bottom of the pieces. The silicone pad is 0,5mm³⁹.

Frame

Since the frame is made of wood, some power tools might get the best result. Such as a table saw to cut the basic shape and a router table for the fillets and chamfers. It may also be possible to make on a CNC machine.

Base and Feet

The Base gets milled on a CNC machine. CNC stands for Computer Numerical Control and is an automatic system that via a computer-generated code can mill, turn, bend, cut etc. This is done by converting CAD files from, for example, Inventor or SolidWorks, to CAM files (Computer Aided Manufacturing). The CAM files use the geometry data of the CAD files, to form NC codes, which the CNC machine then uses. It works by having a massive block in any given material, where a milling head saw layer by layer removes material from the object⁴⁰.

Now the feet are a bit different since they are cylinder shaped. A wood lathe is the best method forward. It may also be possible to make on a CNC machine.

The threaded rod is connected with contact glue on the feet. So there for, the feet are screwed on with some contact glue. Contact glue must be between where the base and feet meet and not on the threaded rod/hole. It would be a good idea to put silicone pads on the bottom of the feet, so the board don't slip.

Checkerboard squares

For the checkerboard squares, the marble slabs get cut, in 50mm x 50mm x 10mm and then placed on the base in a checkerboard pattern, with contact glue.

³⁹ https://aag.world/shop/aag-silikone-transparent-1000p.html?gclid=CjwKCAiAy_CcBhBeEiwAcoMRHE-X15TON5BnWPuX9FNn7zy2L99W2qsDV3D4IOiDWjVDG99N1GpKbBoC2_8QAvD_BwE

⁴⁰ From a Power Point, we got from the teacher.

Conclusion

I think this fun and challenging project. it has been fantastic to see one's project develop into an almost finished object. To see how the process works. And to use all that I have learned so far.

The project has been heavily inspired by the LEGO wizard chess set. In addition, it's been challenging to get the pieces just right.

The material choices are based on how the design looks and what makes good sense for the production, as well as using not-too-heavy or not-too-light materials, since the pieces are very light, and could get knocked over.

The base I had to rethink when the weight came up to 45kg. – but I got it knocked down to 17kg, so the total weight wouldn't be too much.

But in the end, the chess set came out how I wanted it to. And I feel like I did it to the best of my abilities.

Schedule

Chess Set – Schedule

Date: 16/12 -2022

Day	Week 48					Week 50				
	Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri
Brainstorm	Allocated time		Other Classes		Other Classes			Other Classes		Other Classes
3D Modelling		Allocated time	Allocated time	Allocated time	Allocated time	Time used		Other Classes		Other Classes
Drawings			Other Classes		Other Classes	Allocated time	Allocated time	Other Classes		Other Classes
Renderings			Other Classes		Other Classes		Time used	Other Classes		Time used
Report			Other Classes		Other Classes			Other Classes	Allocated time	Allocated time
			Other Classes		Other Classes			Other Classes	Time used	Time used

Legend:

Other Classes	=	Other Classes
Allocated time	=	Allocated time
Time used	=	Time used

Source references

Source – 1: https://www.proshop.dk/LEGO/LEGO-76392-Hogwarts-Troldmandsskak/3087498?utm_source=pricerunner&utm_medium=cpc&utm_campaign=pricesite

Source – 2: <https://all3dp.com/2/3d-printed-chess-set-pieces/>

Source – 3: https://aag.world/shop/aag-silikone-transparent-1000p.html?gclid=CjwKCAiAy_CcBhBeEiwAcoMRHE-X15TON5BnWPuX9FNn7zy2L99W2qsDV3D4lOiDWjVDG99N1GpKbBoC2_8QAvD_BwE

Source – 4: <https://markforged.com/resources/blog/pla-abs-nylon>

Source – 5: <https://www.hubs.com/knowledge-base/pla-vs-abs-whats-difference/>

Source – 6: <https://duffieldtimber.com/the-workbench/categories/buyers-guides/most-beautiful-luxury-types-of-wood>

Source – 7: <https://falkegranit.dk/marmor-paa-maal-236/marmor-dark-matter-p10522>

Source – 8: <https://falkegranit.dk/marmor-paa-maal-236/marmor-calacatta-gold-eksklusiv-marmor-p11832>

Source – 9: <https://www.chess.com/article/view/how-to-set-up-a-chessboard>

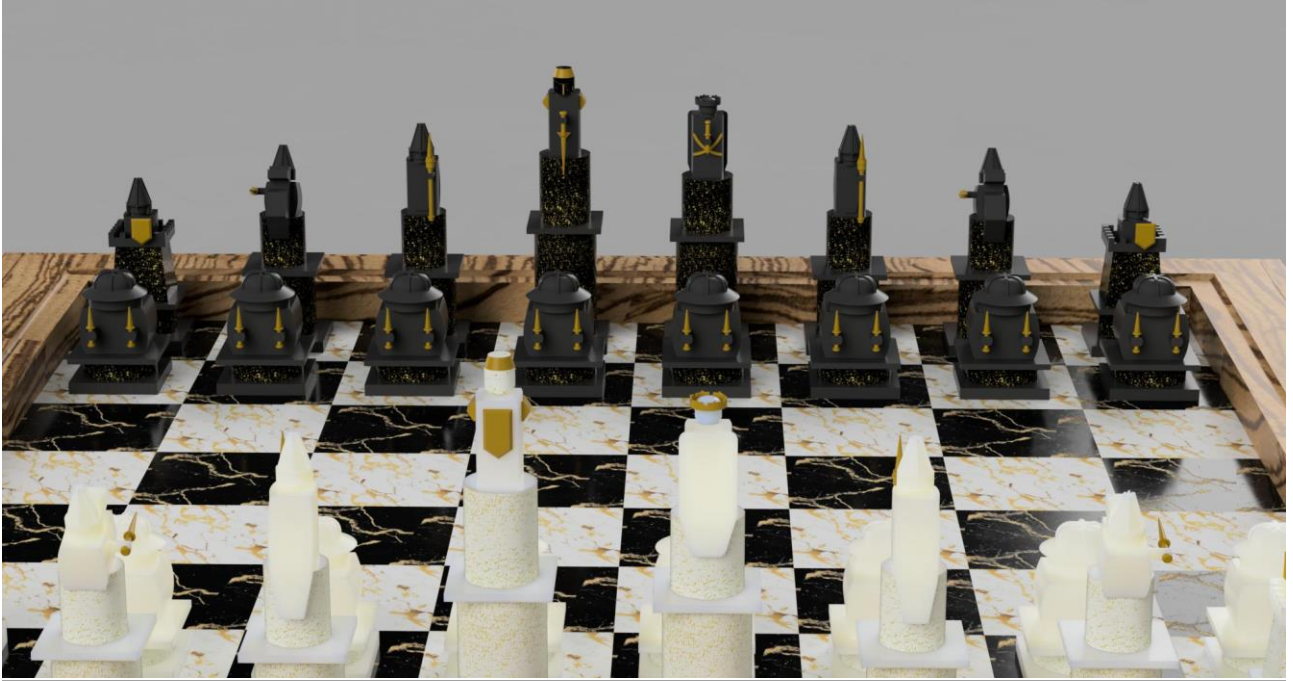
Drawing list

Drawing number:	Drawing name:
Part – 001	Pawn - Base
Part – 002	Rook - Base
Part – 003	Knight – Base
Part – 004	Bishop – Base
Part – 005	Queen – Base
Part – 006	King - Base
Part – 007	Dagger
Part – 008	Head
Part – 009	Sword
Part – 010	Spear
Part – 011	Scepter
Part – 012	Long Sword
Part – 013	Queen Head
Part – 014	King Head
Part – 015	Base
Part – 016	Frame
Part – 017	Feet
Part – 018	White Squares
Part - 019	Black Squares
Sub Ass. - 001	Pawn - Full
Sub Ass. - 002	Rook - Full
Sub Ass. - 003	Knight - Full

Sub Ass. - 004	Bishop - Full
Sub Ass. - 005	Queen - Full
Sub Ass. - 006	King - Full
Sub Ass. - 007	Board
Ass. - 001	Chess Set

Renderings



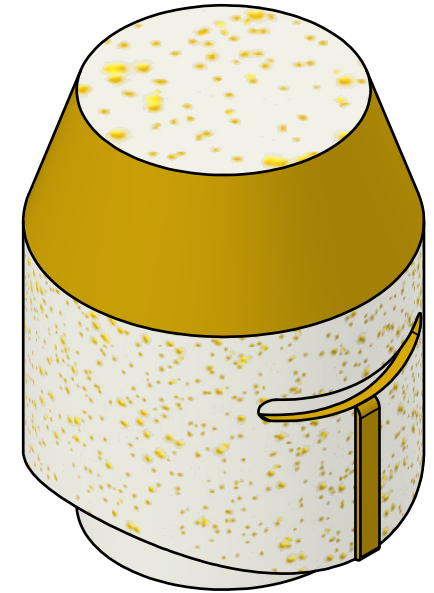
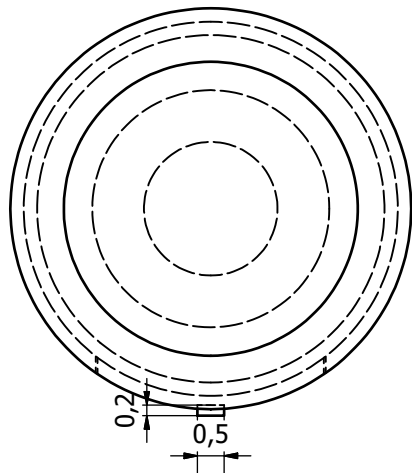
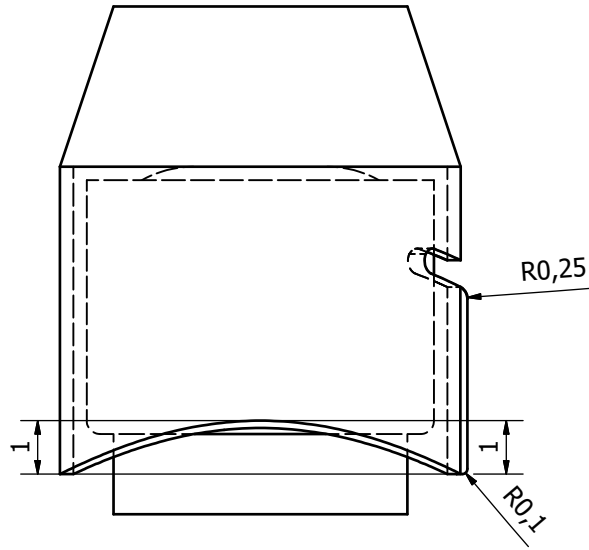
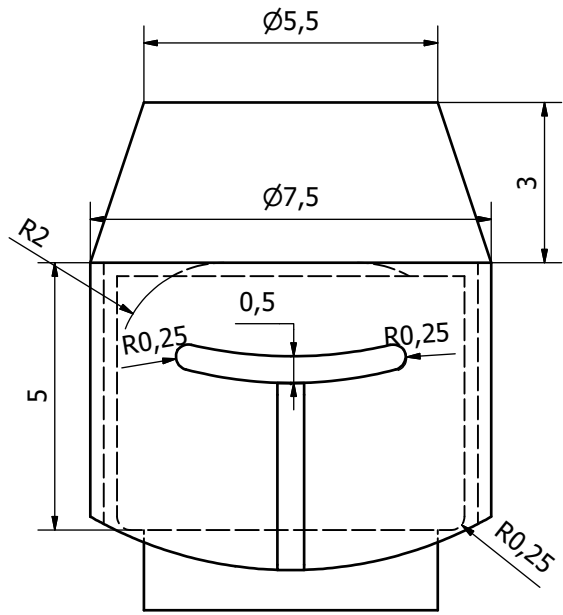










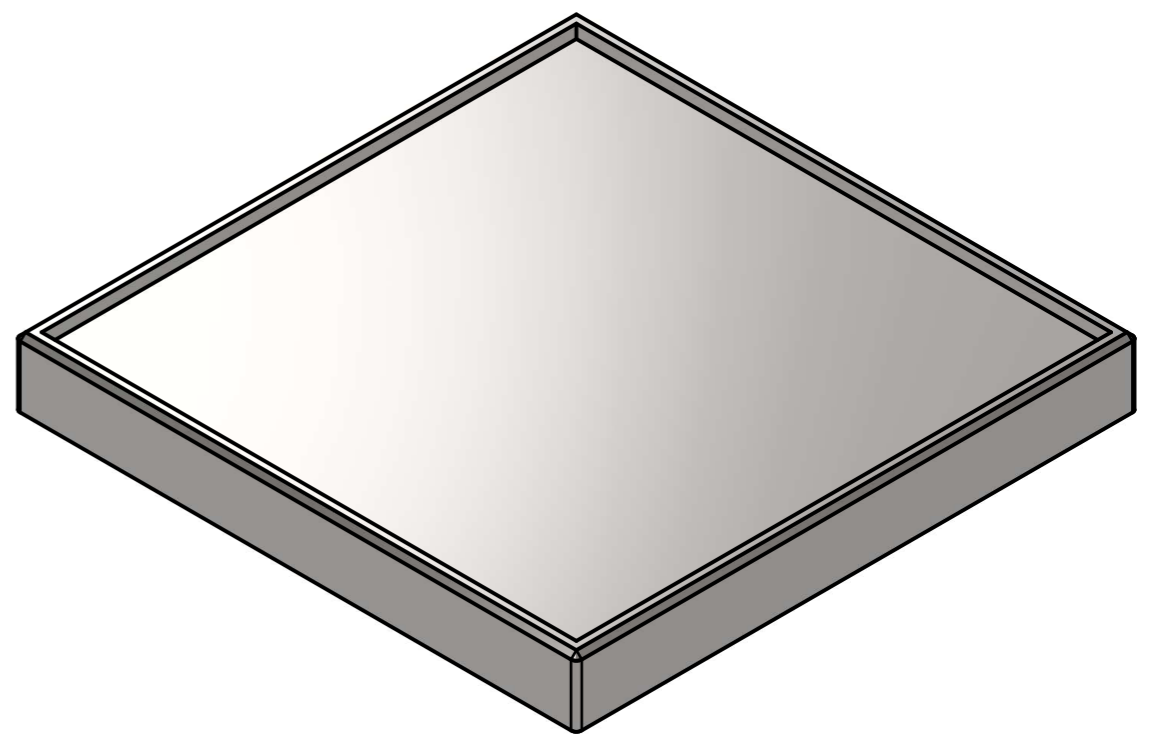
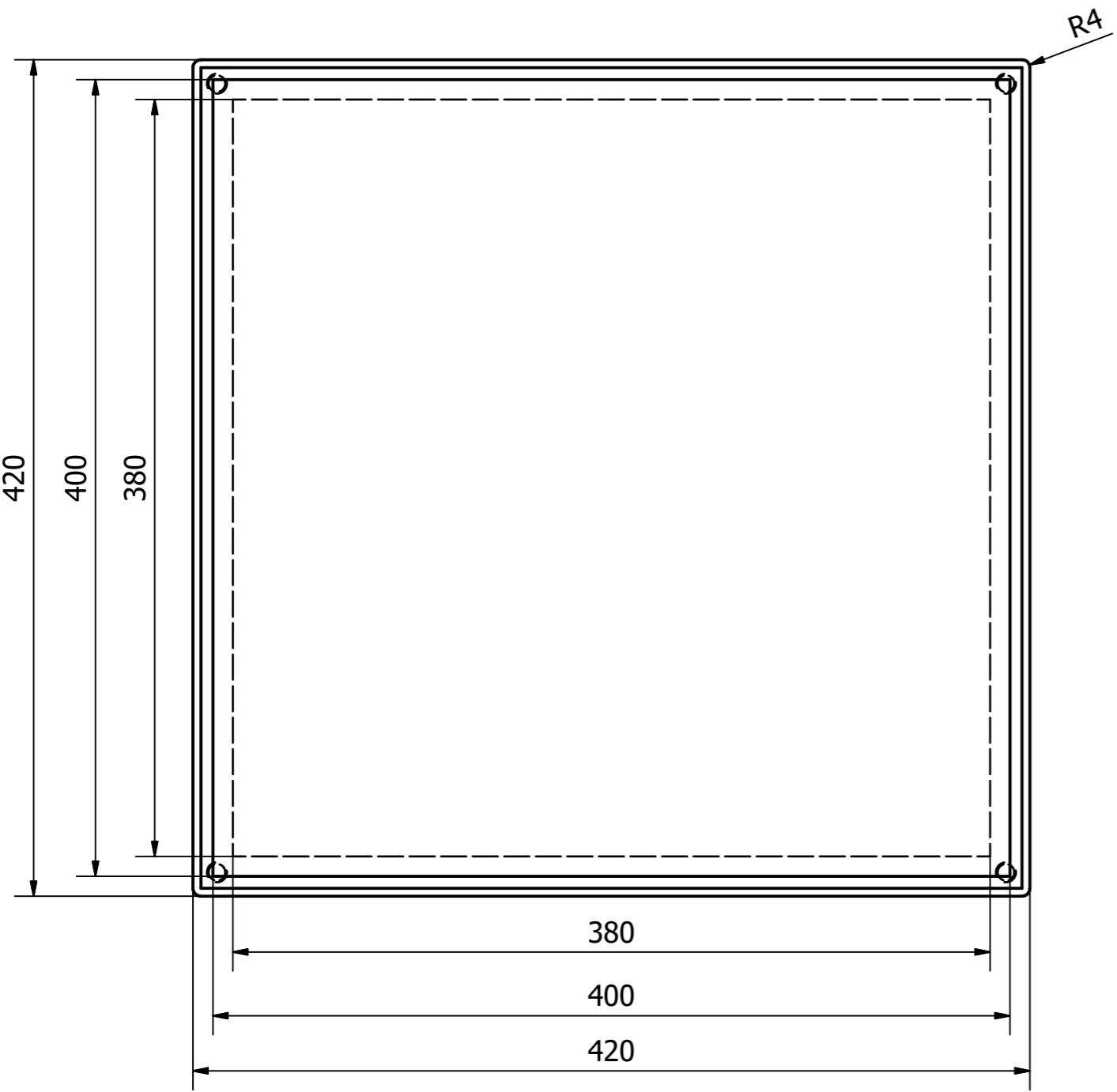
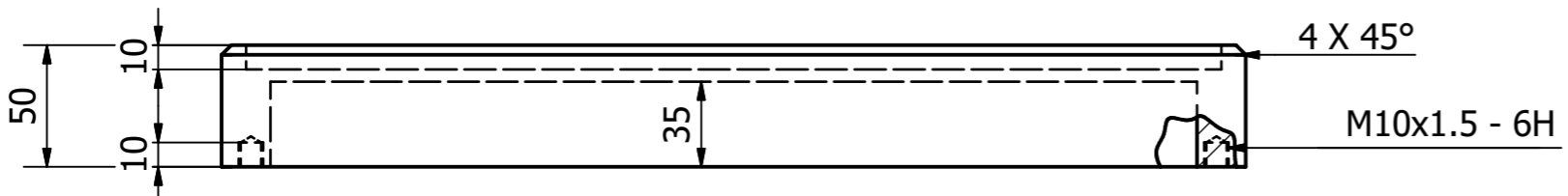
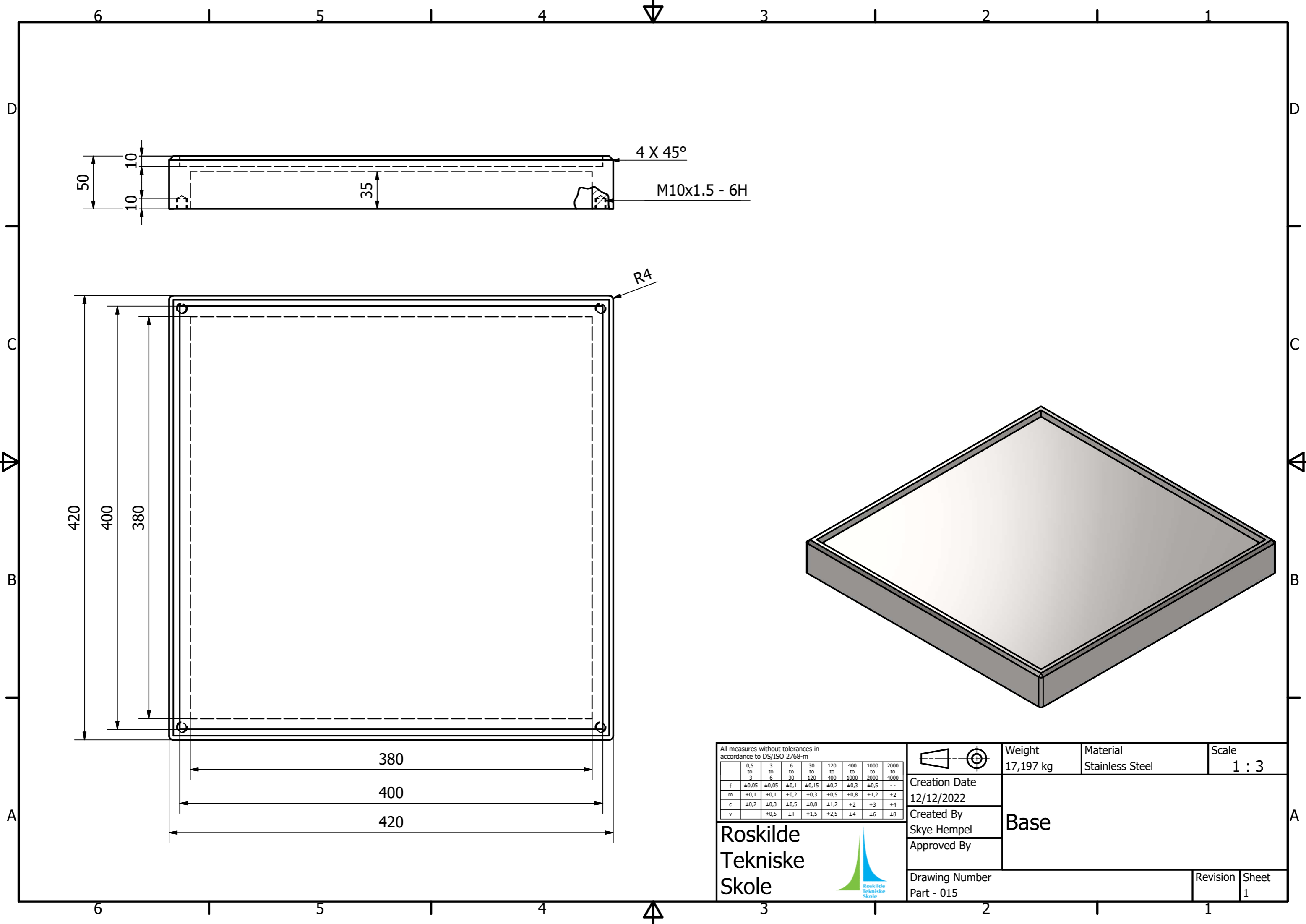


All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,000 kg	Material ABS Plastic	Scale 10 : 1
Creation Date 12-12-2022	King Head		
Created By Skye Hempel			
Approved By	Drawing Number Part - 014	Revision 1	Sheet 1

Roskilde
Tekniske
Skole

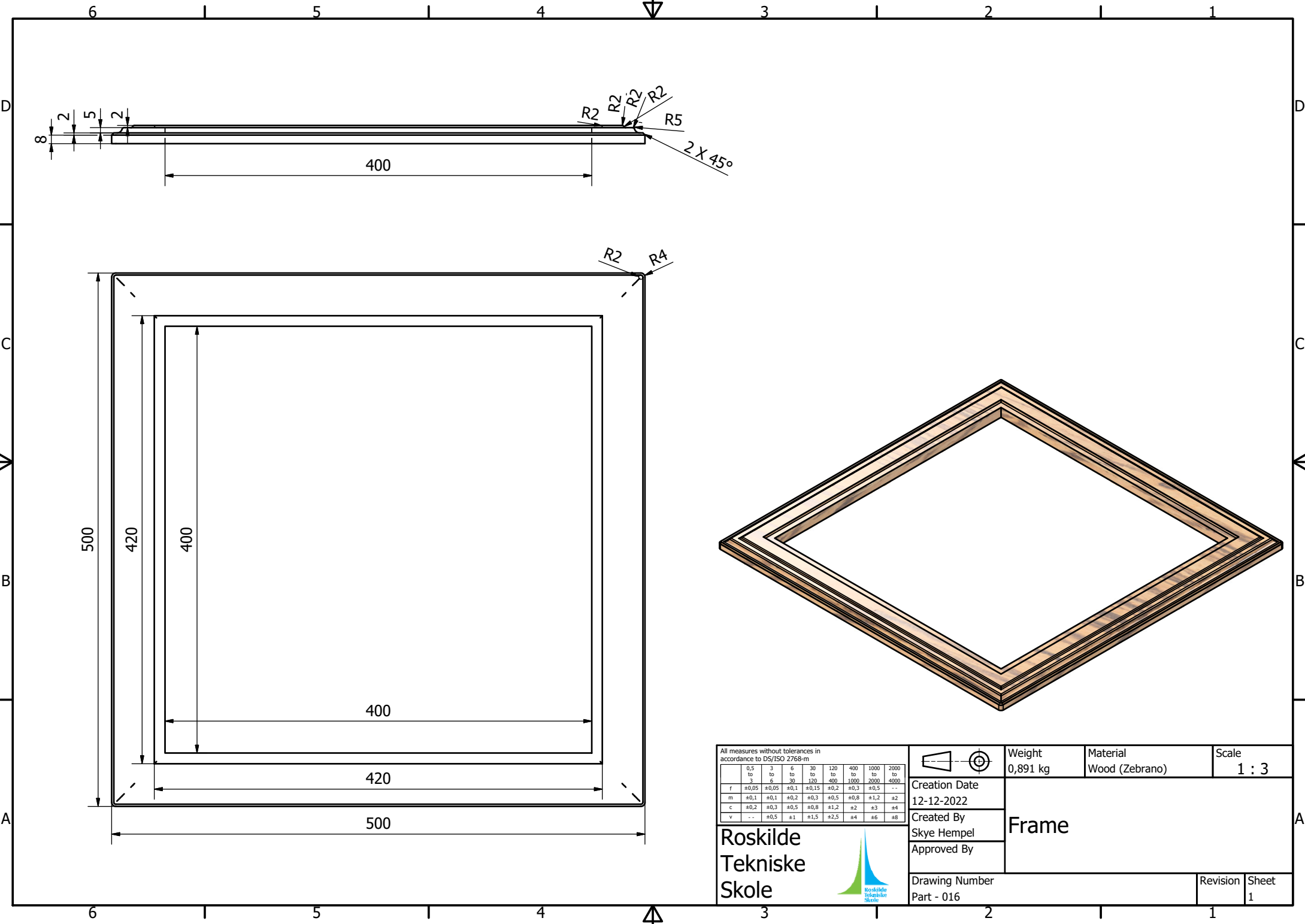


All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	--
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	--	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 17,197 kg	Material Stainless Steel	Scale 1 : 3
Creation Date 12/12/2022	Base		
Created By Skye Hempel			
Approved By			
Drawing Number Part - 015	Revision 1	Sheet 1	

Roskilde
Tekniske
Skole



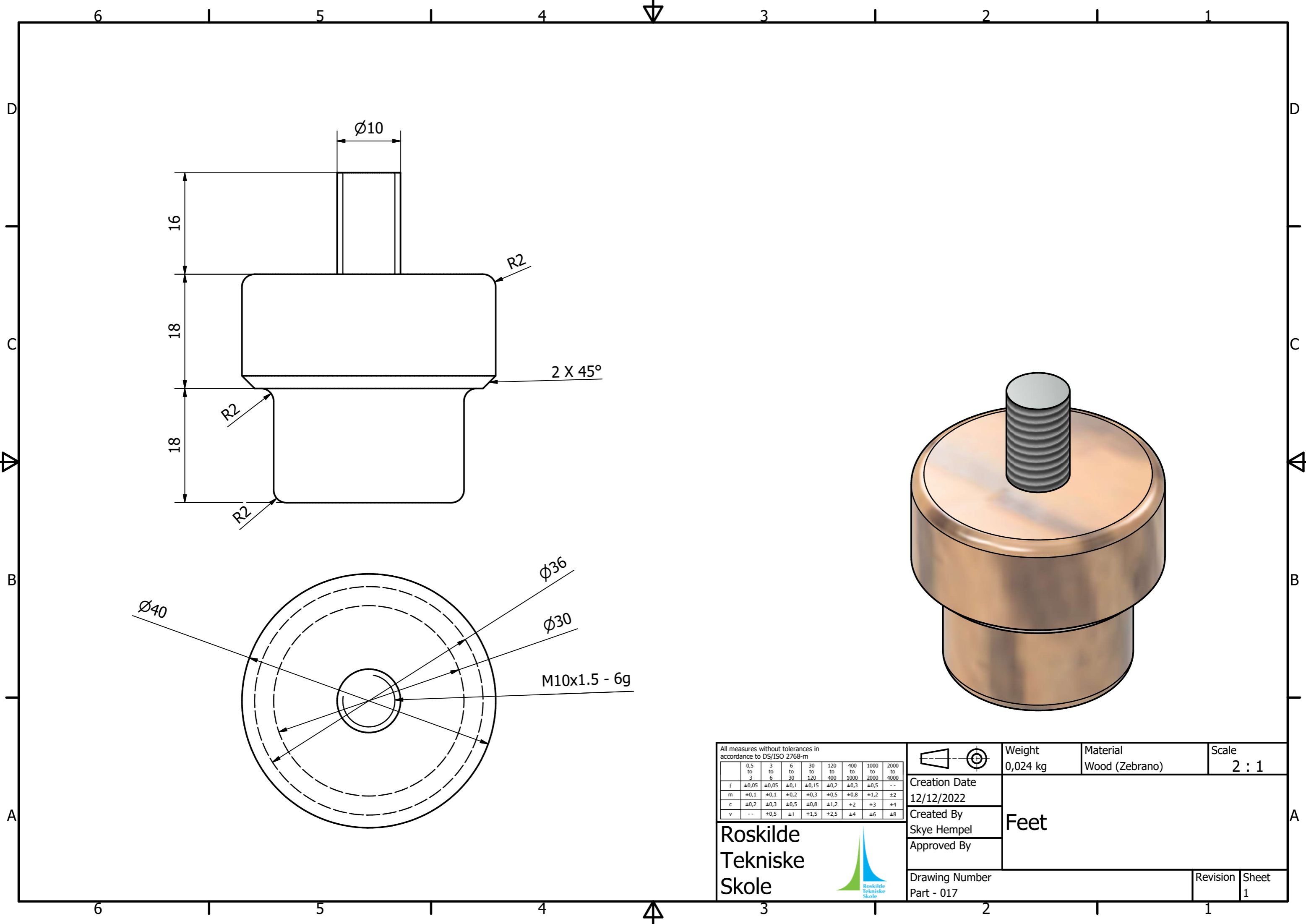
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,891 kg	Material Wood (Zebrano)	Scale 1 : 3
Creation Date 12-12-2022	Frame		
Created By Skye Hempel			
Approved By	Revision 1		
Drawing Number Part - 016	Revision 1		Sheet 1

Roskilde
Tekniske
Skole





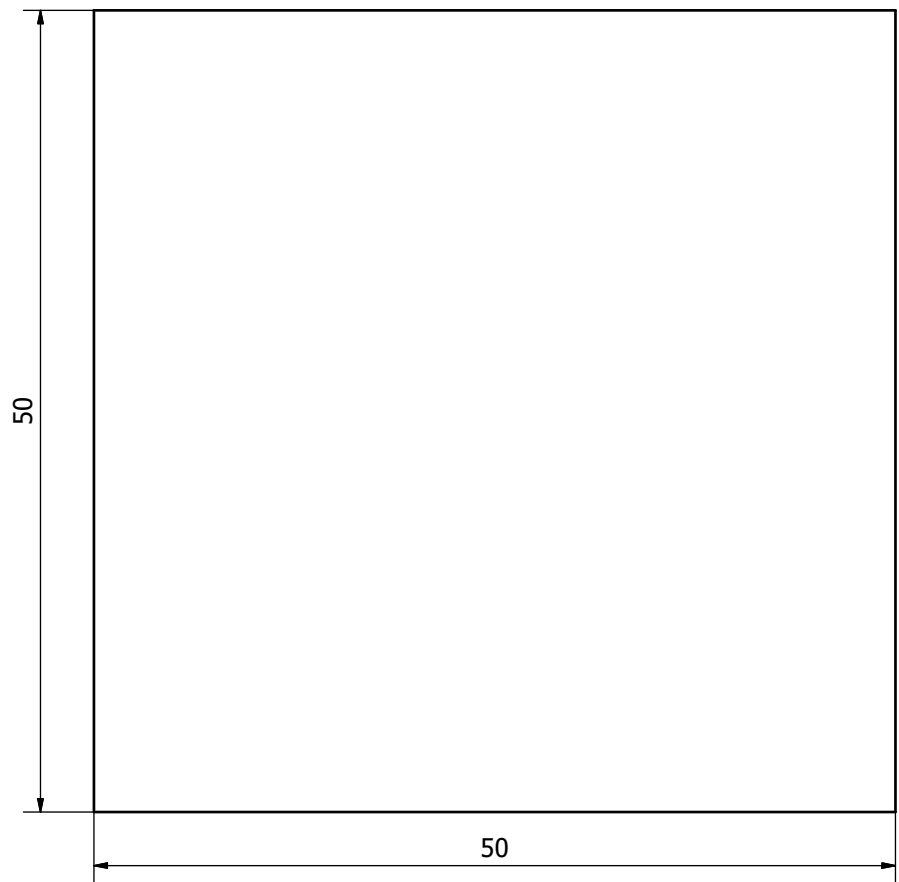
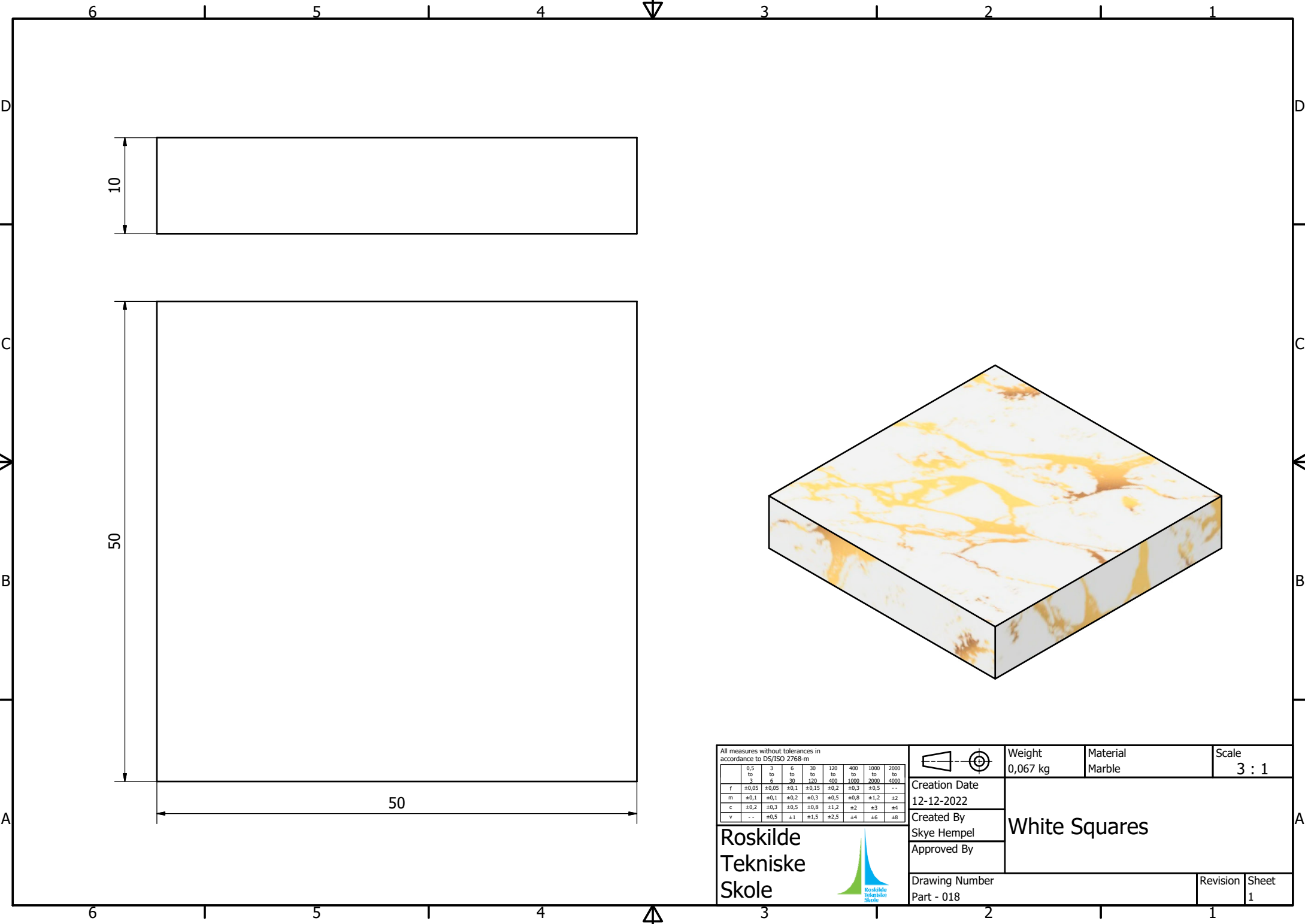
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	--
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	--	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,024 kg	Material Wood (Zebrano)	Scale 2 : 1
Creation Date 12/12/2022	Feet		
Created By Skye Hempel			
Approved By			
Drawing Number Part - 017	Revision 1	Sheet 1	

Roskilde
Tekniske
Skole





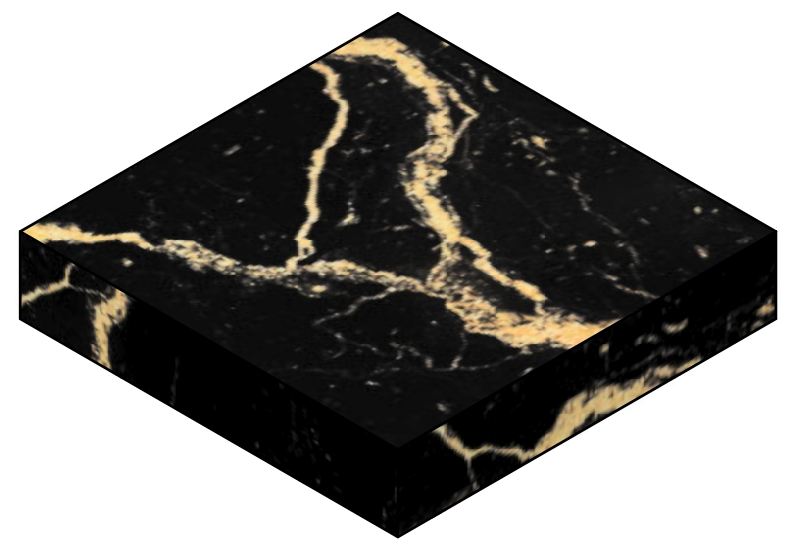
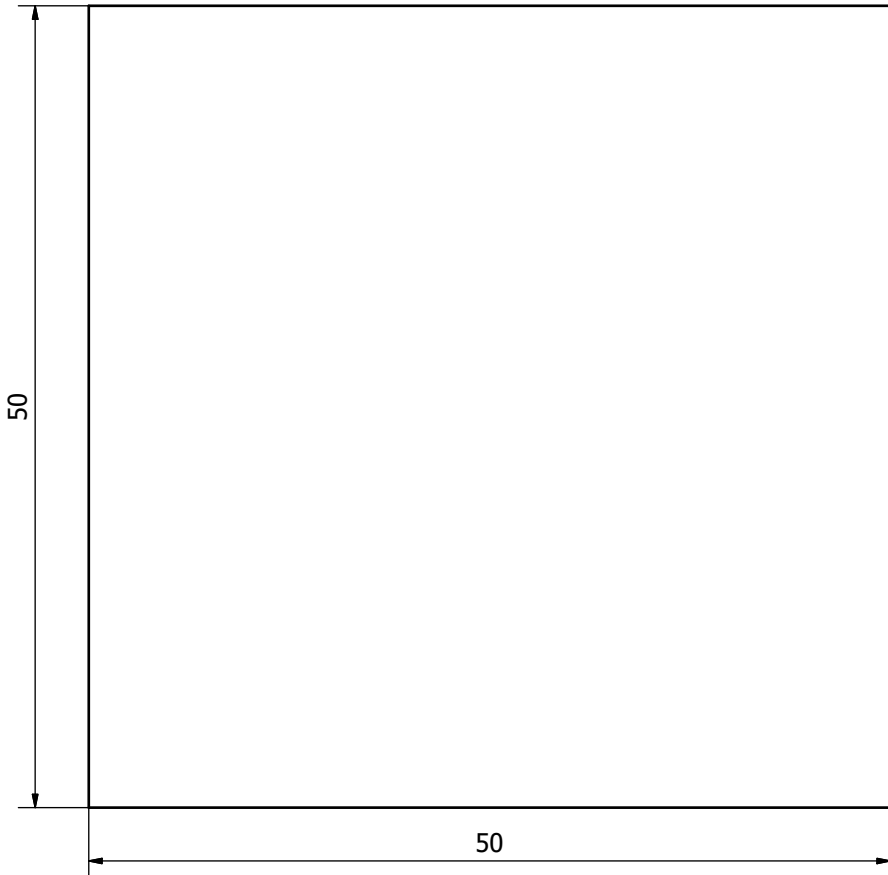
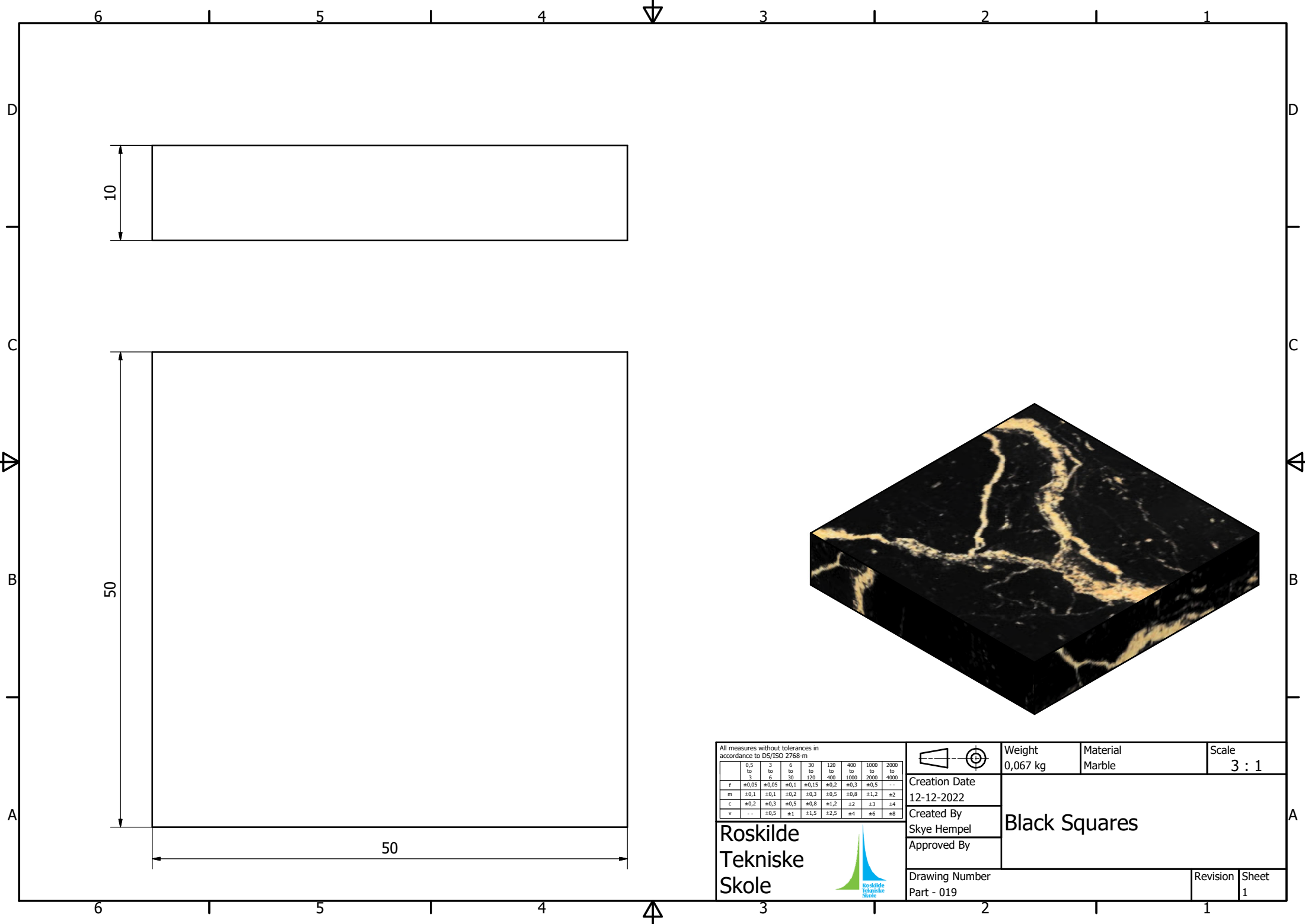
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,067 kg	Material Marble	Scale 3 : 1
Creation Date 12-12-2022	White Squares		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Part - 018	Revision		Sheet 1

Roskilde
Tekniske
Skole

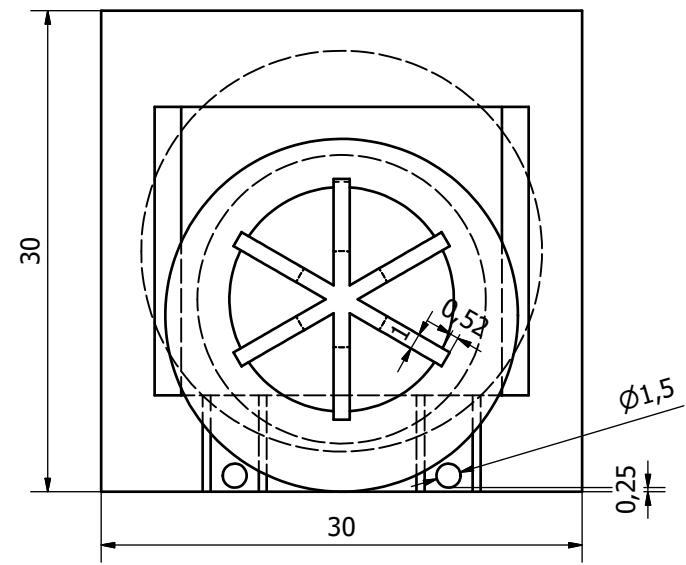
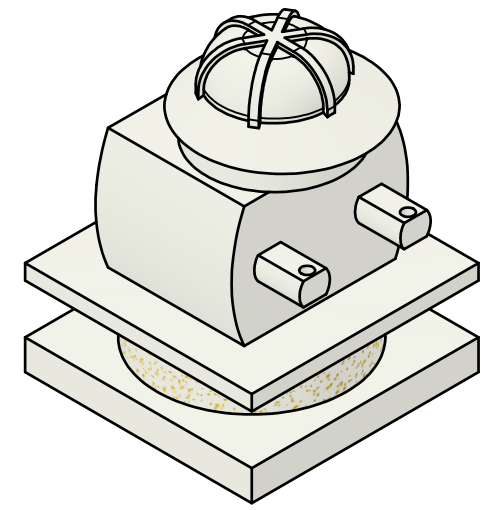
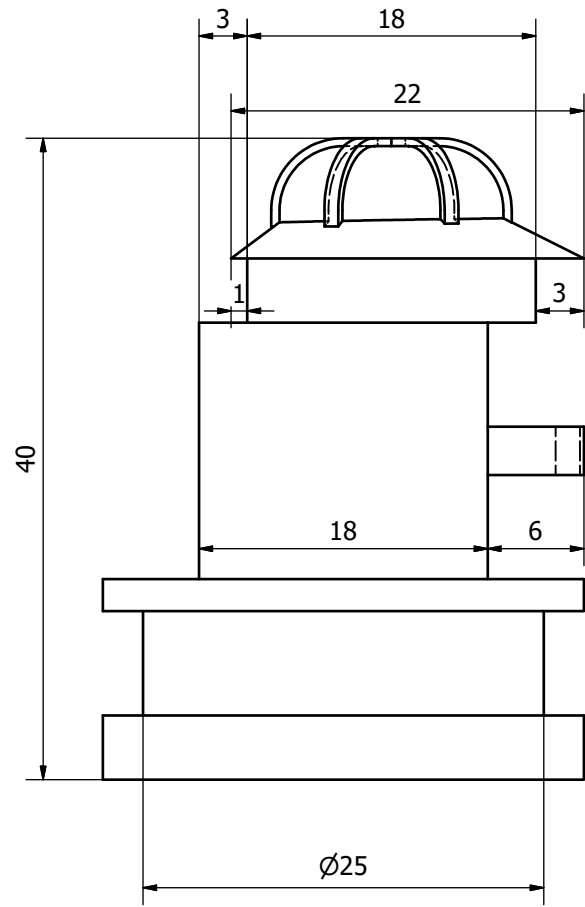
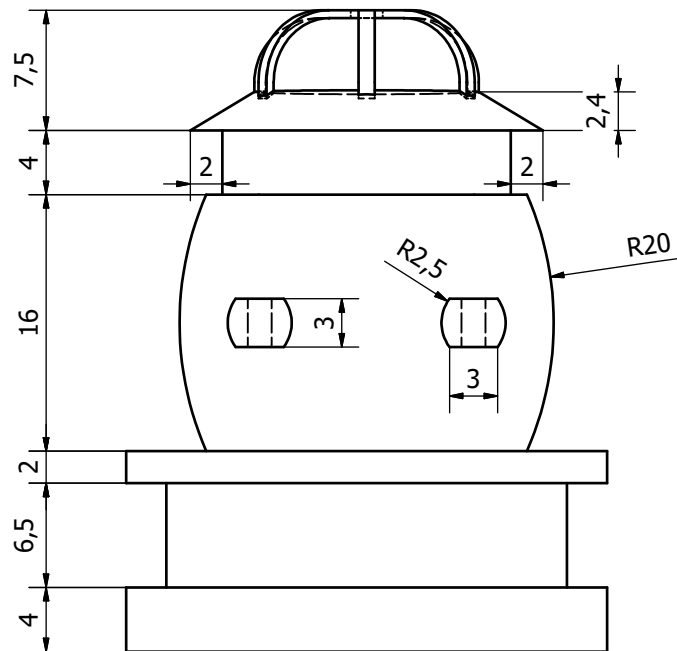




All measures without tolerances in accordance to DS/ISO 2768-m			Weight	Material	Scale
			0,067 kg	Marble	3 : 1
		Creation Date	Black Squares		
		12-12-2022			
		Created By Skye Hempel			
		Approved By			
		Drawing Number	Revision	Sheet	
		Part - 019	1	1	

Roskilde
Tekniske
Skole



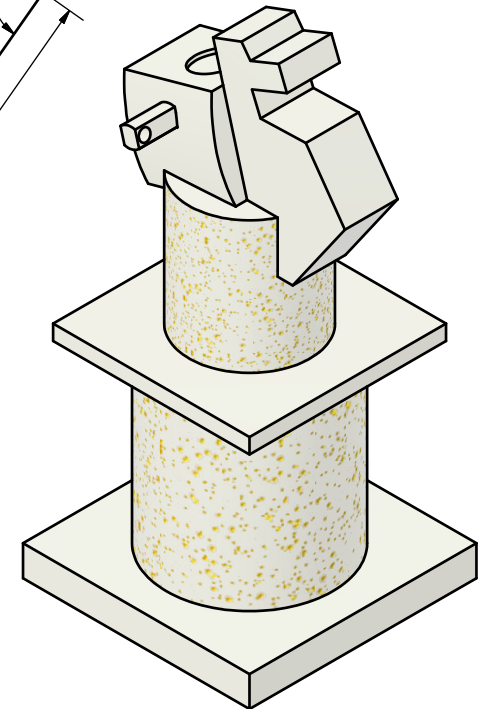
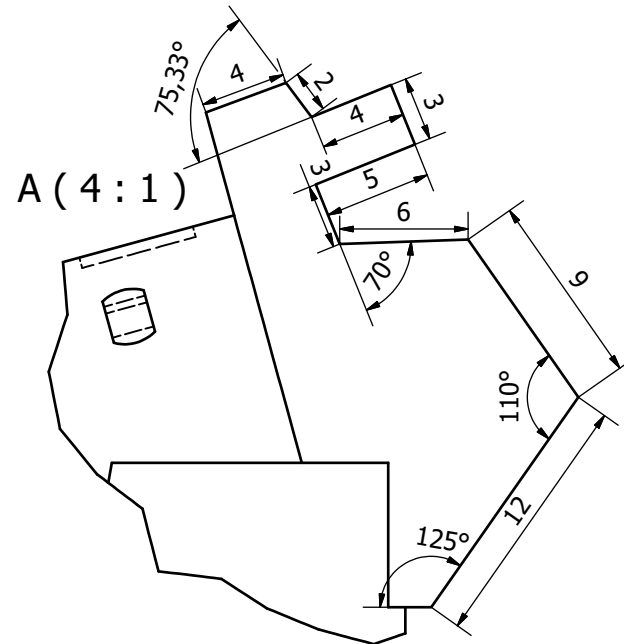
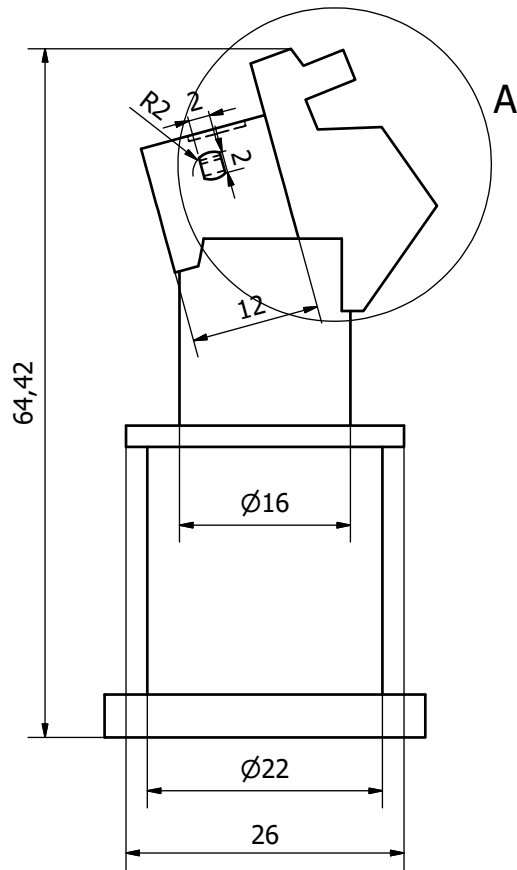
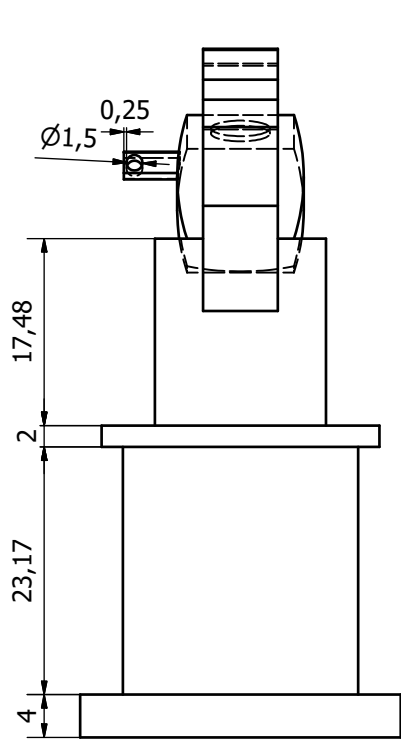


All measures without tolerances in accordance to DS/ISO 2768-m

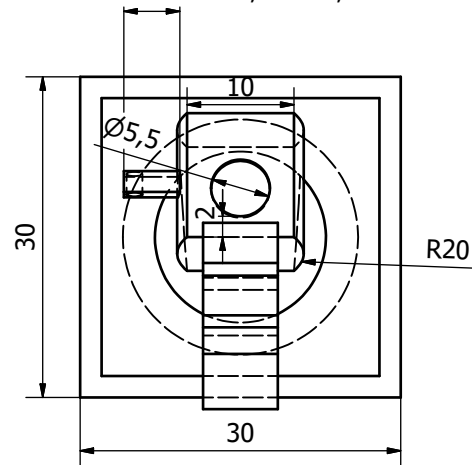
	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

Roskilde Tekniske Skole

	Weight 0,018 kg	Material ABS Plastic	Scale 3 : 1
Creation Date 12/12/2022	Pawn - Base		
Created By Skye Hempel			
Approved By	Drawing Number Part - 001	Revision	Sheet 1



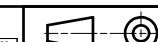
Extrude 5mm out and 0,25 in 5,25



All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
to	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	±1
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	±0,5	±1	±1,5	±2,5	±4	±6	±8	±12

Roskilde
Tekniske
Skole



Creation Date

12/12/2022

Created By

Skye Hempel

Approved By

Drawing Number

Part - 003

Weight

0,021 kg

Material

ABS Plastic

Scale

2 : 1

Knight - Base

Revision 1 Sheet 1

6 5 4 3 2 1

D

C

B

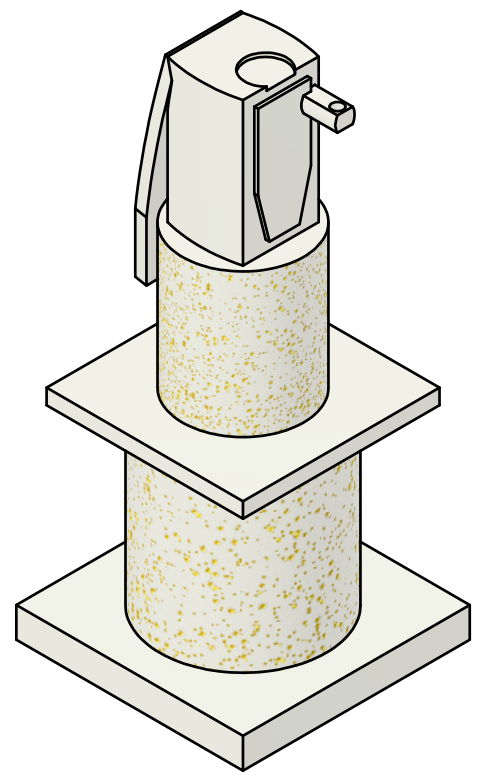
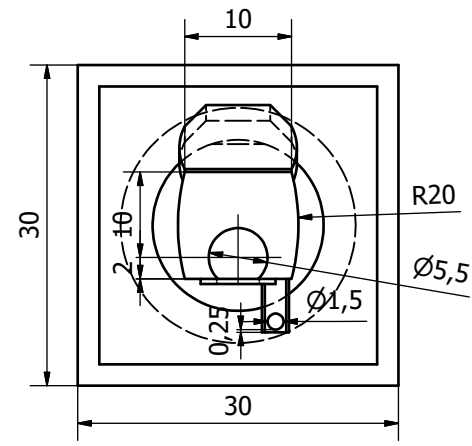
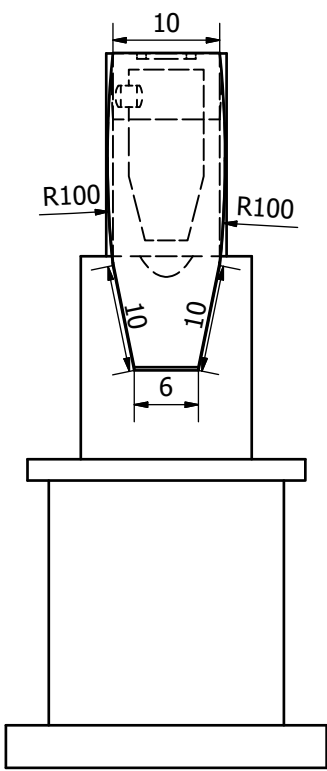
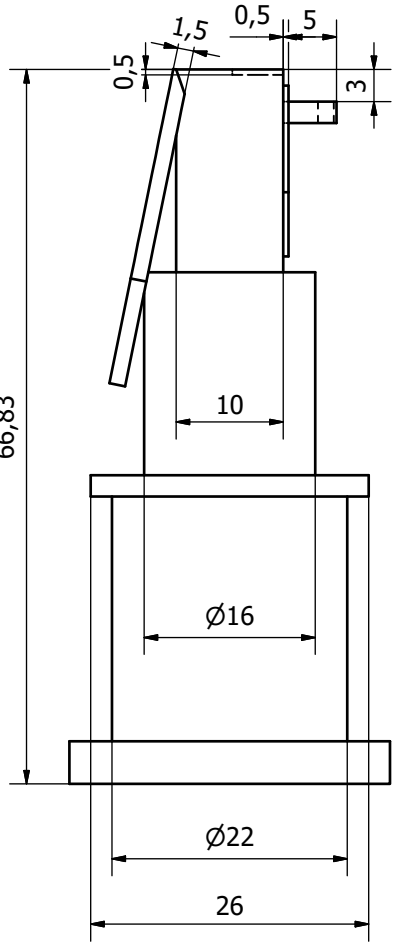
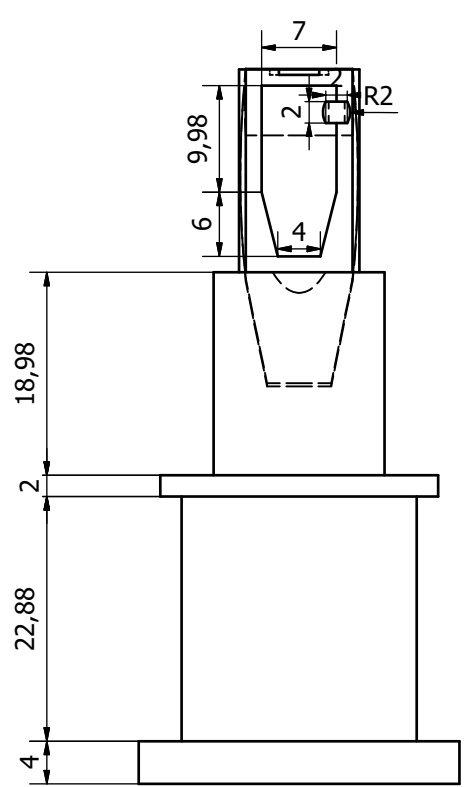
A

D

C

B

A



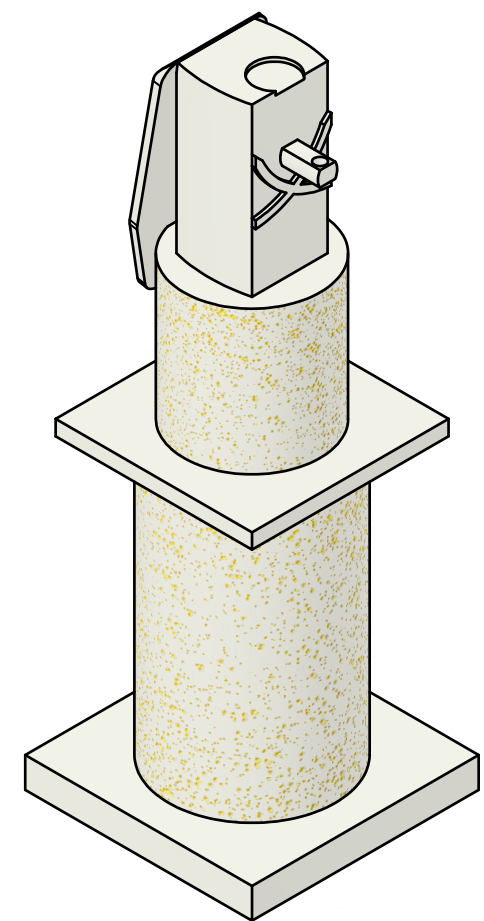
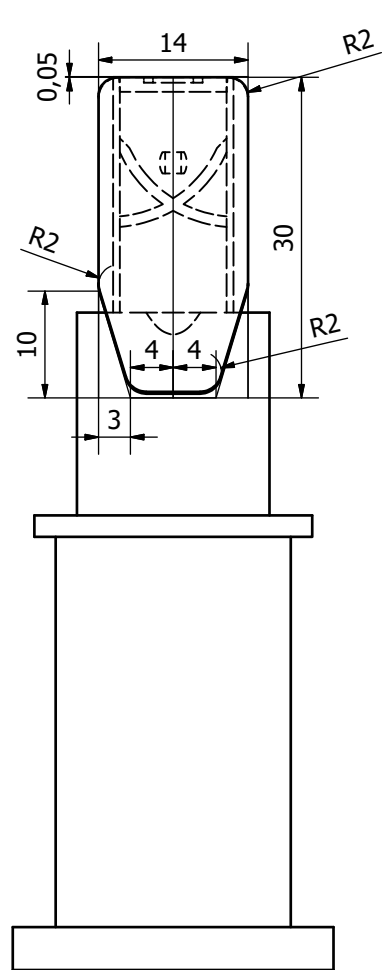
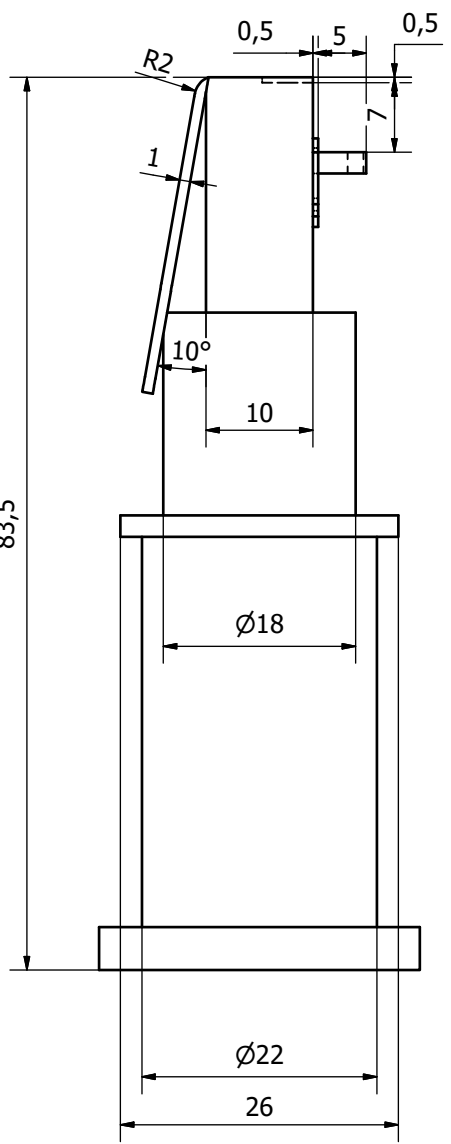
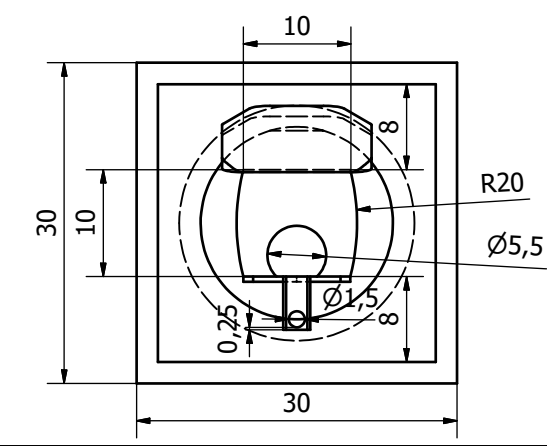
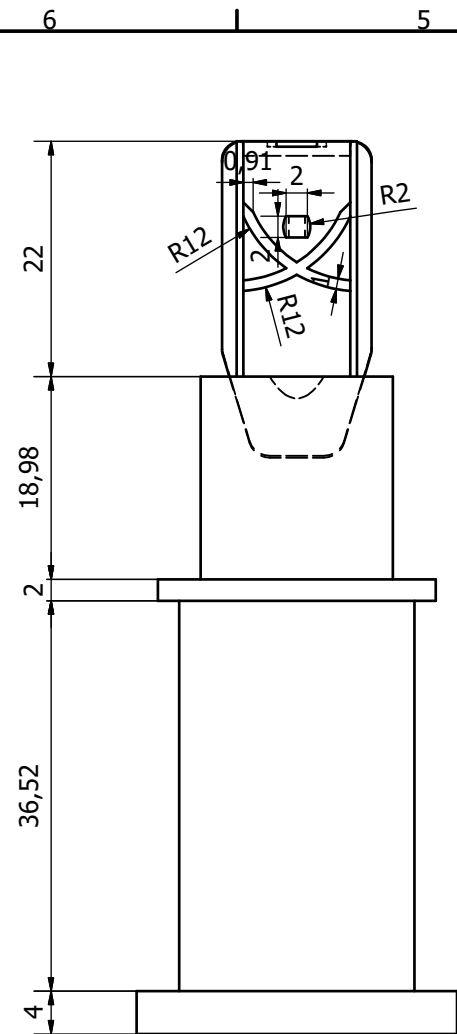
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

Roskilde Tekniske Skole

	Weight 0,021 kg	Material ABS Plastic	Scale 2 : 1
Creation Date 12/12/2022	Bishop - Base		
Created By Skye Hempel			
Approved By	Revision 1	Sheet 1	
Drawing Number Part - 004			

6 5 4 3 2 1

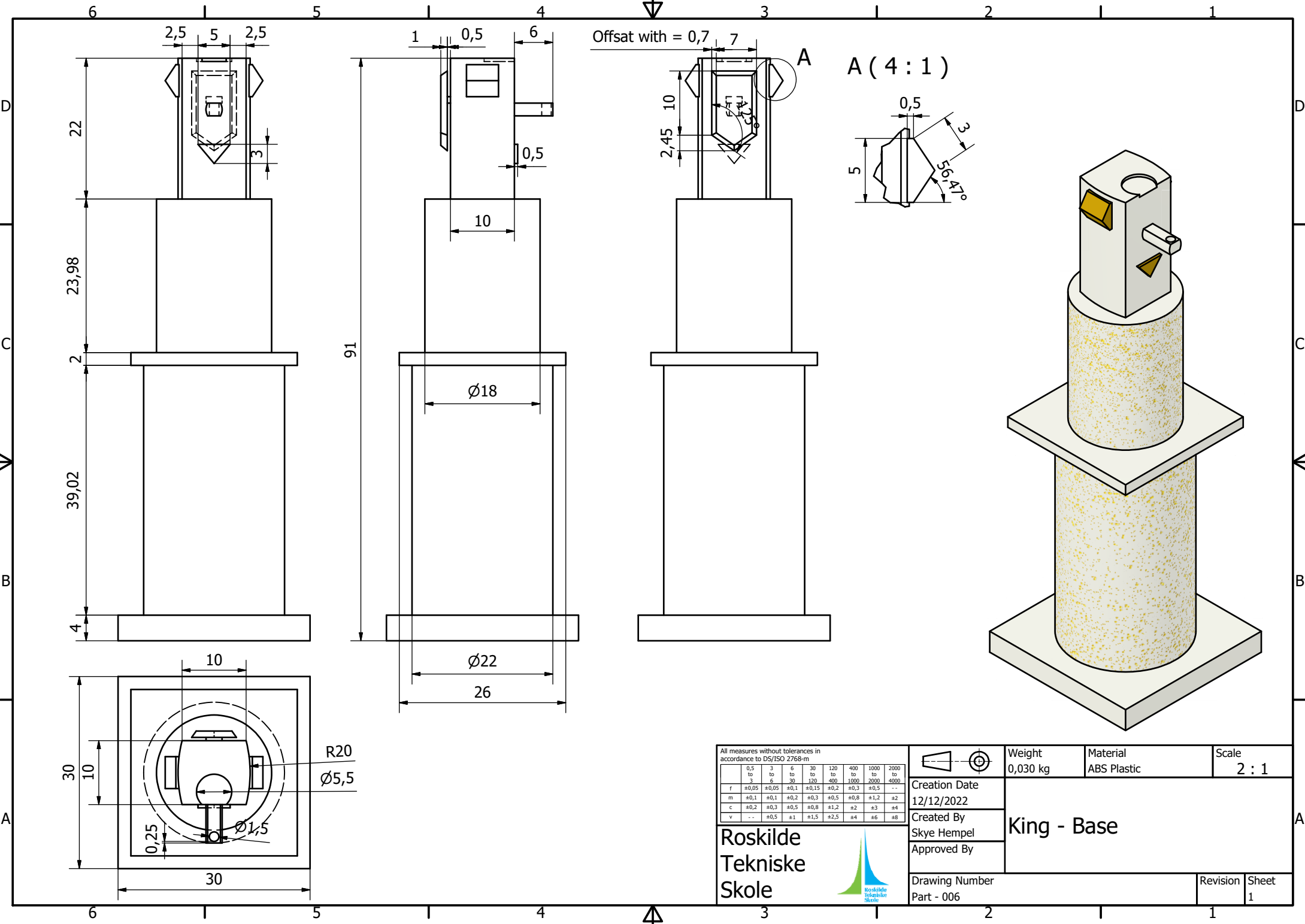


All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
to	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

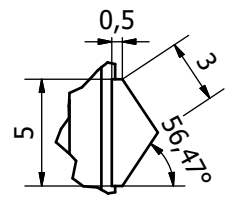
Roskilde Tekniske Skole

	Weight 0,028 kg	Material ABS Plastic	Scale 2 : 1
Creation Date 12-12-2022	Queen - Base		
Created By Skye Hempel			
Approved By	Drawing Number Part - 005	Revision	Sheet 1



Offsat with = 0,7 7

A (4:1)

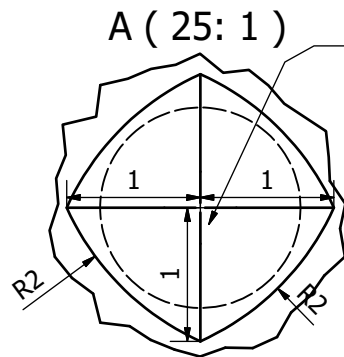
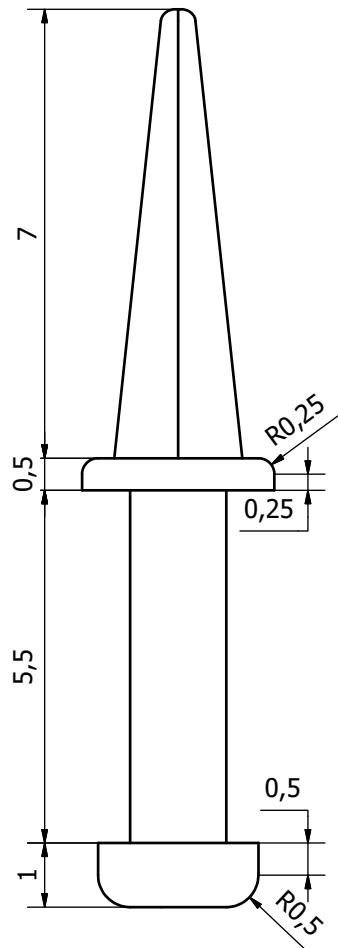


All measures without tolerances in accordance to DS/ISO 2768-m

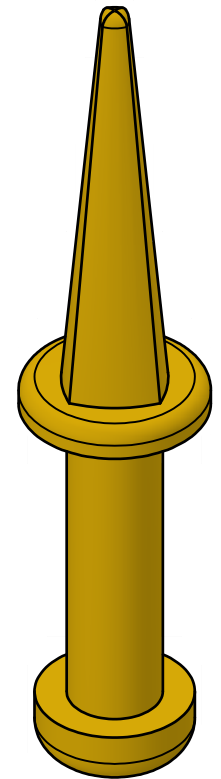
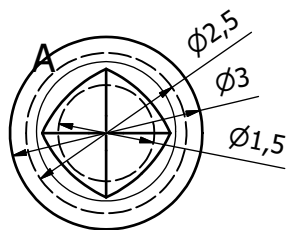
	0,5	3	6	30	120	400	1000	2000
to	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,030 kg	Material ABS Plastic	Scale 2 : 1
Creation Date 12/12/2022	King - Base		
Created By Skye Hempel			
Approved By	Drawing Number Part - 006	Revision 1	Sheet 1

Roskilde
Tekniske
Skole



The loft is a scaled down version of the measured lines, its scaled down to 0.25 mm from 1 mm. They have the same center point

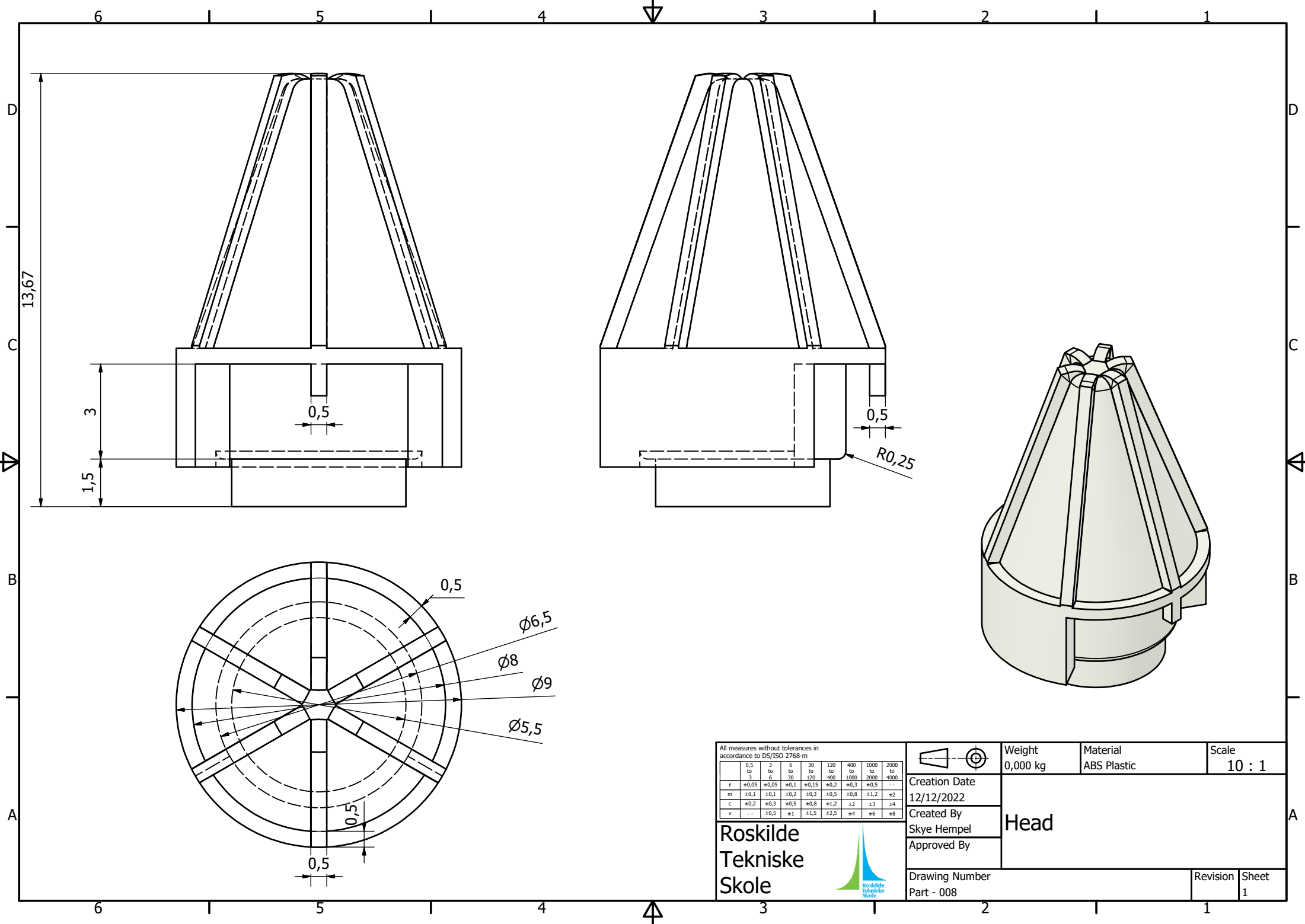


All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
to	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight N/A	Material ABS Plastic	Scale 12: 1
Creation Date 12-12-2022	Dagger		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Part - 007	Sheet 1		

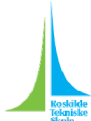
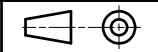
Roskilde
Tekniske
Skole



All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

Roskilde
Tekniske
Skole

Creation Date
12/12/2022
Created By
Skye Hempel
Approved By

Weight
0,000 kg

Material
ABS Plastic

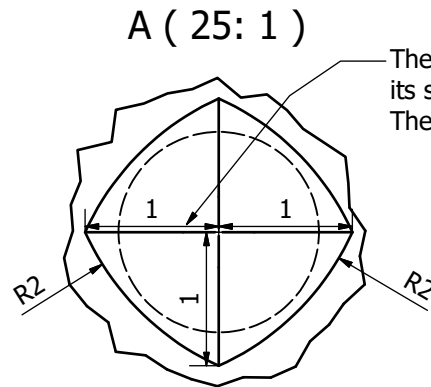
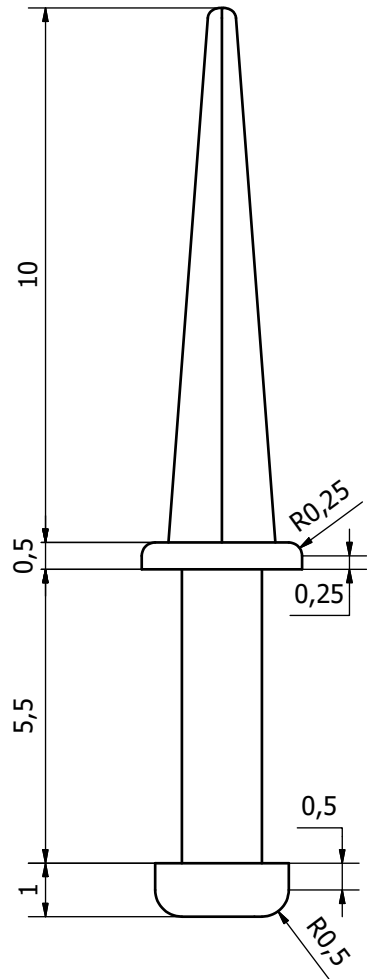
Scale
10 : 1

Head

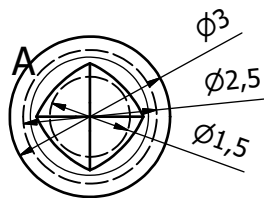
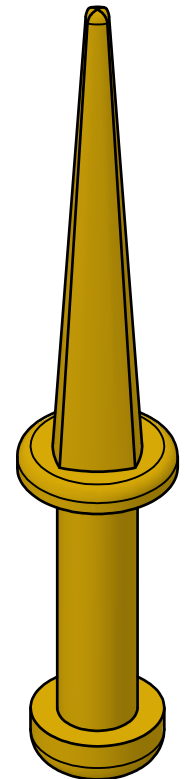
Drawing Number
Part - 008

Revision
1

Sheet
1



The loft is a scaled down version of the measured lines, its scaled down to 0.25 mm from 1 mm. They have the same center point

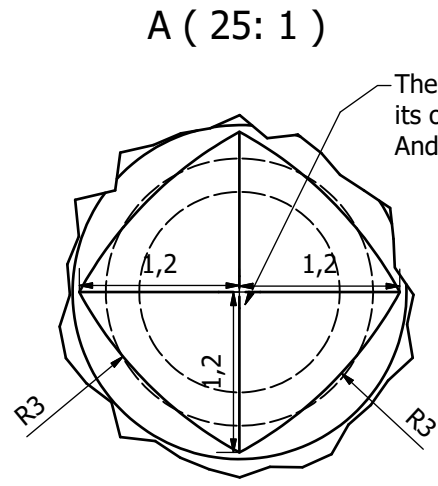
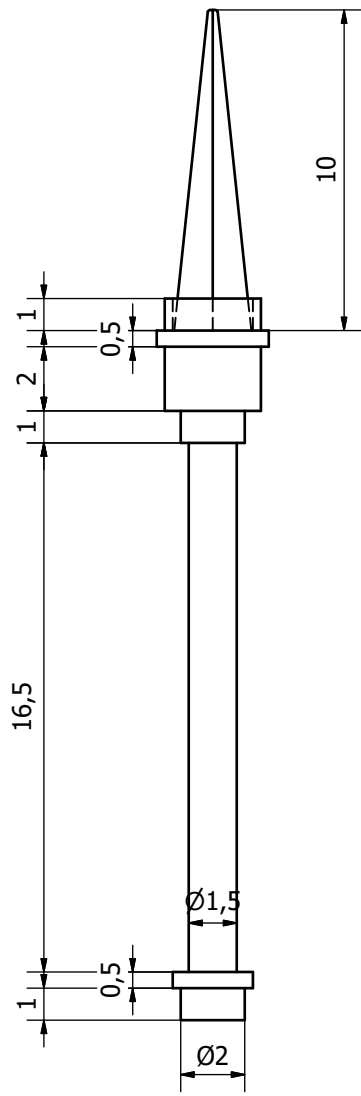


All measures without tolerances in accordance to DS/ISO 2768-m

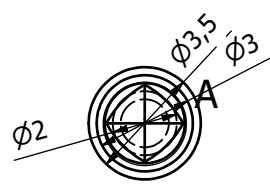
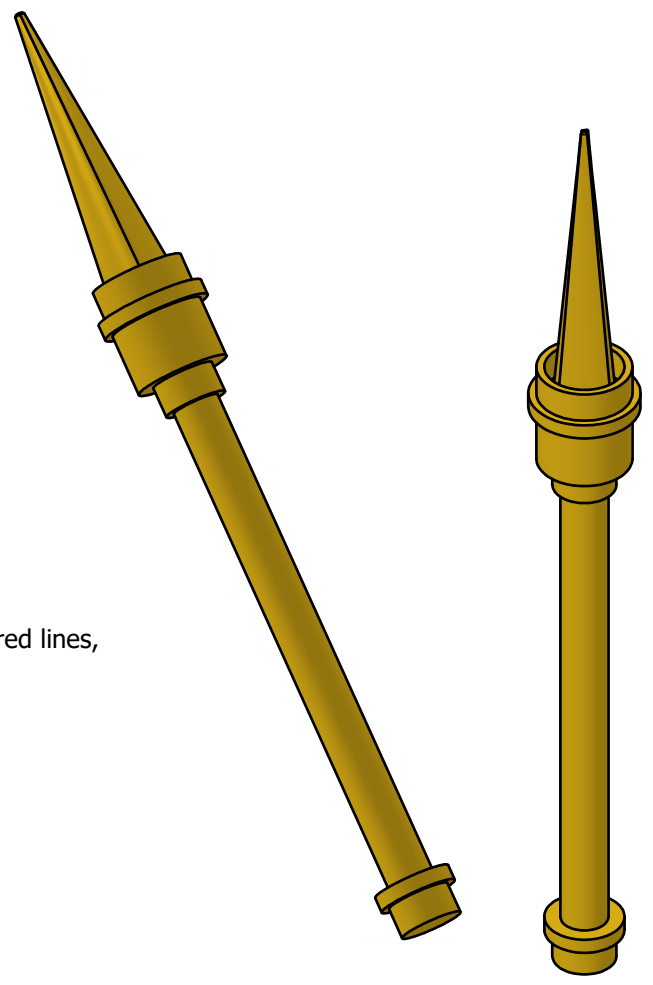
	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,000 kg	Material ABS Plastic	Scale 10 : 1
Creation Date 12-12-2022	Sword		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Part - 009	Sheet 1		

Roskilde
Tekniske
Skole



The loft is a offset of the measured lines,
its offset with 0.5 mm.
And then moved to the center

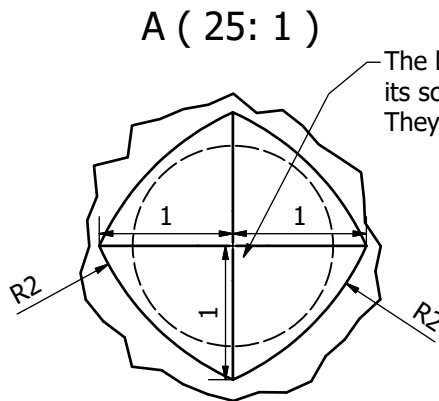
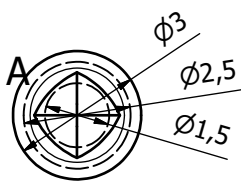
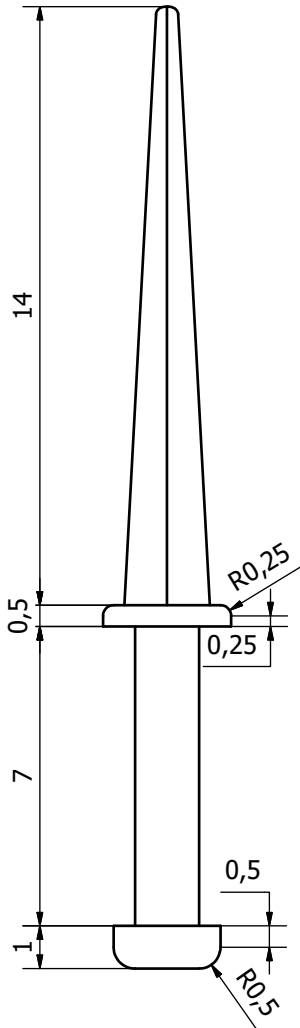


All measures without tolerances in accordance to DS/ISO 2768-m

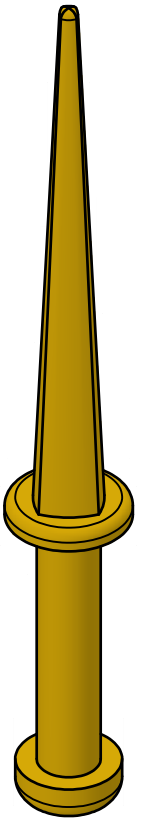
	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,000 kg	Material ABS Plastic	Scale 6 : 1
Creation Date 12-12-2022	Spear		
Created By Skye Hempel			
Approved By	Drawing Number Part - 010	Revision 1	Sheet 1

Roskilde
Tekniske
Skole



The loft is a scaled down version of the measured lines, its scaled down to 0.25 mm from 1 mm. They have the same center point

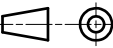


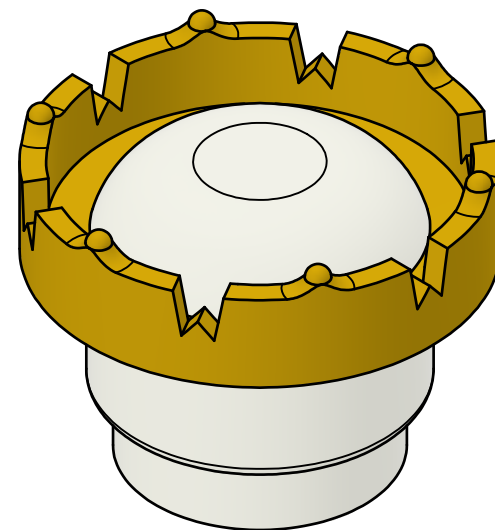
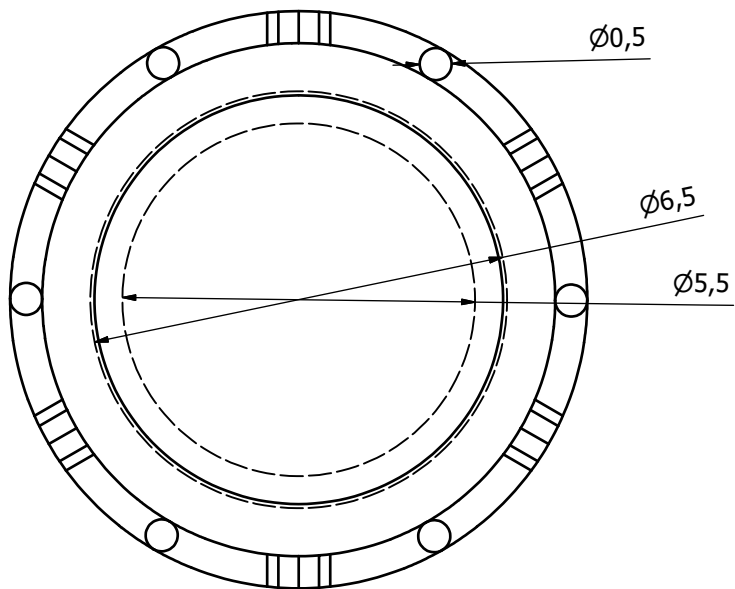
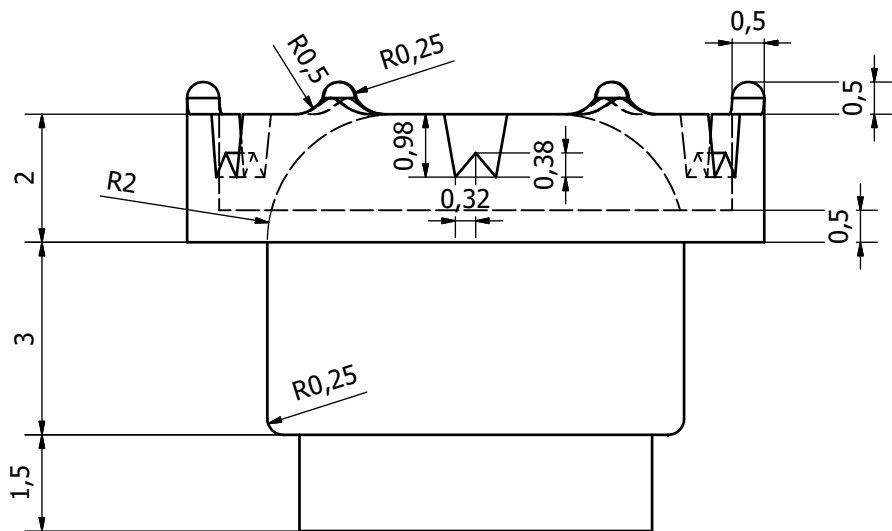
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
to	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

Roskilde Tekniske Skole



	Weight 0,000 kg	Material ABS Plastic	Scale 8 : 1
Creation Date 12-12-2022	Long Sword		
Created By Skye Hempel			
Approved By	Drawing Number Part - 012	Revision 1	Sheet 1



All measures without tolerances in accordance to DS/ISO 2768-m

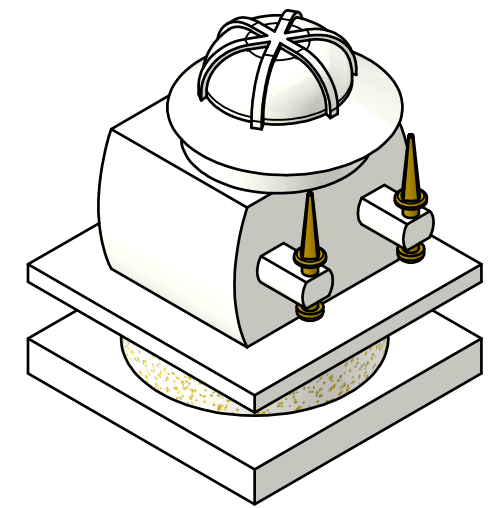
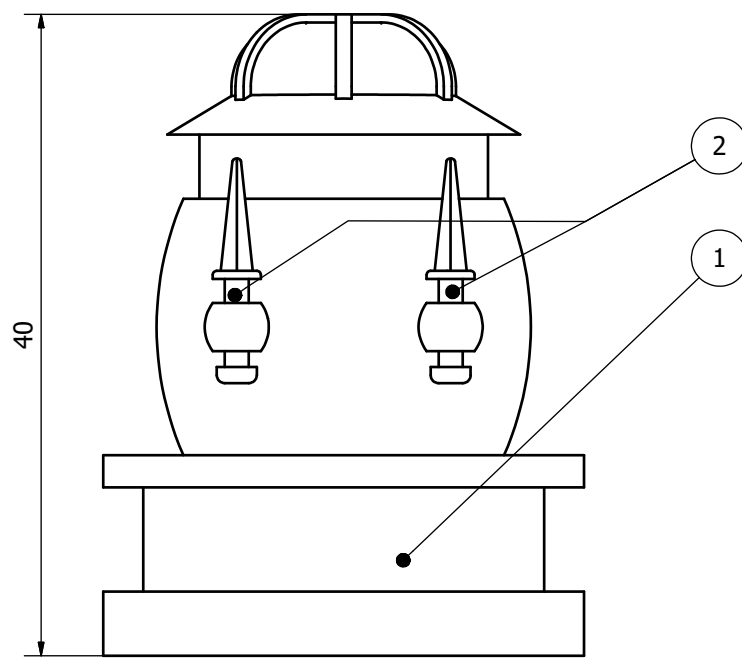
	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,000 kg	Material ABS Plastic	Scale 12: 1
Creation Date 12-12-2022	Queen Head		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Part - 013	Sheet 1		

Roskilde
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Skole



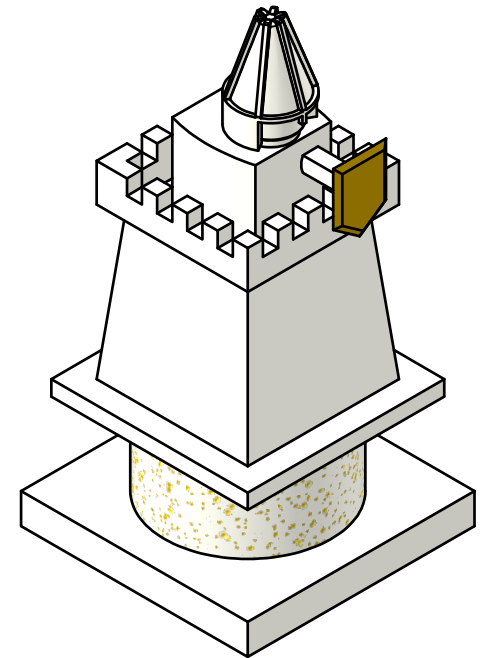
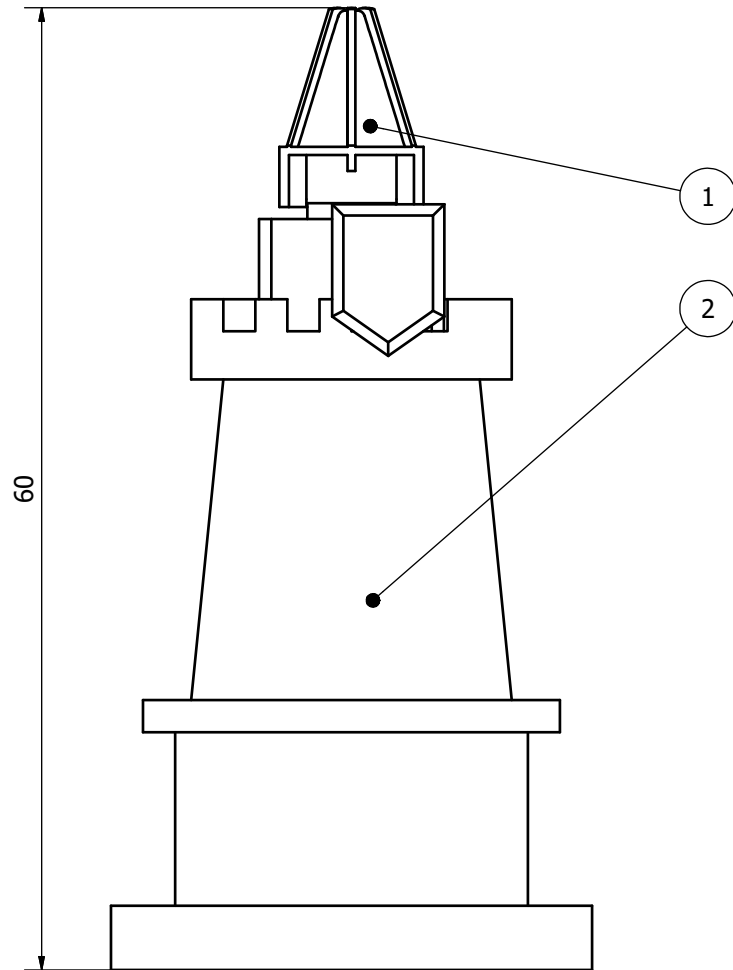
PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Pawn - Base	Part - 001	0,018 kg	ABS Plastic
2	2	Dagger	Part - 007	0,000 kg	ABS Plastic



<small>All measures without tolerances in accordance to DS/ISO 2768-m</small> <table border="1"> <tr> <td></td> <td>0,5</td> <td>3</td> <td>6</td> <td>30</td> <td>120</td> <td>400</td> <td>1000</td> <td>2000</td> </tr> <tr> <td></td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> </tr> <tr> <td></td> <td>3</td> <td>6</td> <td>30</td> <td>120</td> <td>400</td> <td>1000</td> <td>2000</td> <td>4000</td> </tr> <tr> <td>f</td> <td>±0,05</td> <td>±0,05</td> <td>±0,1</td> <td>±0,15</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>...</td> </tr> <tr> <td>m</td> <td>±0,1</td> <td>±0,1</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> </tr> <tr> <td>c</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> <td>±3</td> <td>±4</td> </tr> <tr> <td>v</td> <td>...</td> <td>±0,5</td> <td>±1</td> <td>±1,5</td> <td>±2,5</td> <td>±4</td> <td>±6</td> <td>±8</td> </tr> </table>		0,5	3	6	30	120	400	1000	2000		to	to	to	to	to	to	to	to		3	6	30	120	400	1000	2000	4000	f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...	m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2	c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4	v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8	 Weight 0,018 kg	Material Pawn - Full.ipt	Scale 3 : 1
		0,5	3	6	30	120	400	1000	2000																																																									
		to	to	to	to	to	to	to	to																																																									
		3	6	30	120	400	1000	2000	4000																																																									
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...																																																										
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2																																																										
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4																																																										
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8																																																										
Creation Date 13-12-2022	Weight 0,018 kg																																																																	
Created By Skye Hempel																																																																		
Approved By	Material Pawn - Full.ipt																																																																	
Drawing Number Sub Assy. - 001				Revision 1	Sheet 1																																																													

Roskilde
Tekniske
Skole

PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Head	Part - 008	0,000 kg	ABS Plastic
2	1	Rook - Base	Part - 002	0,018 kg	ABS Plastic



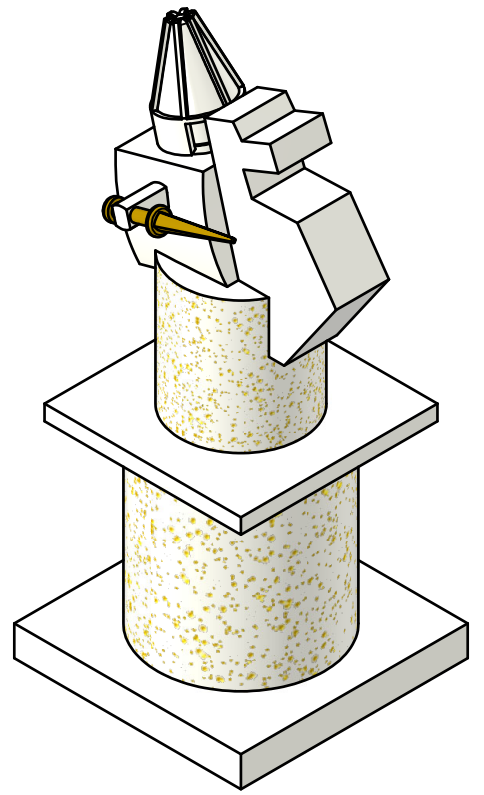
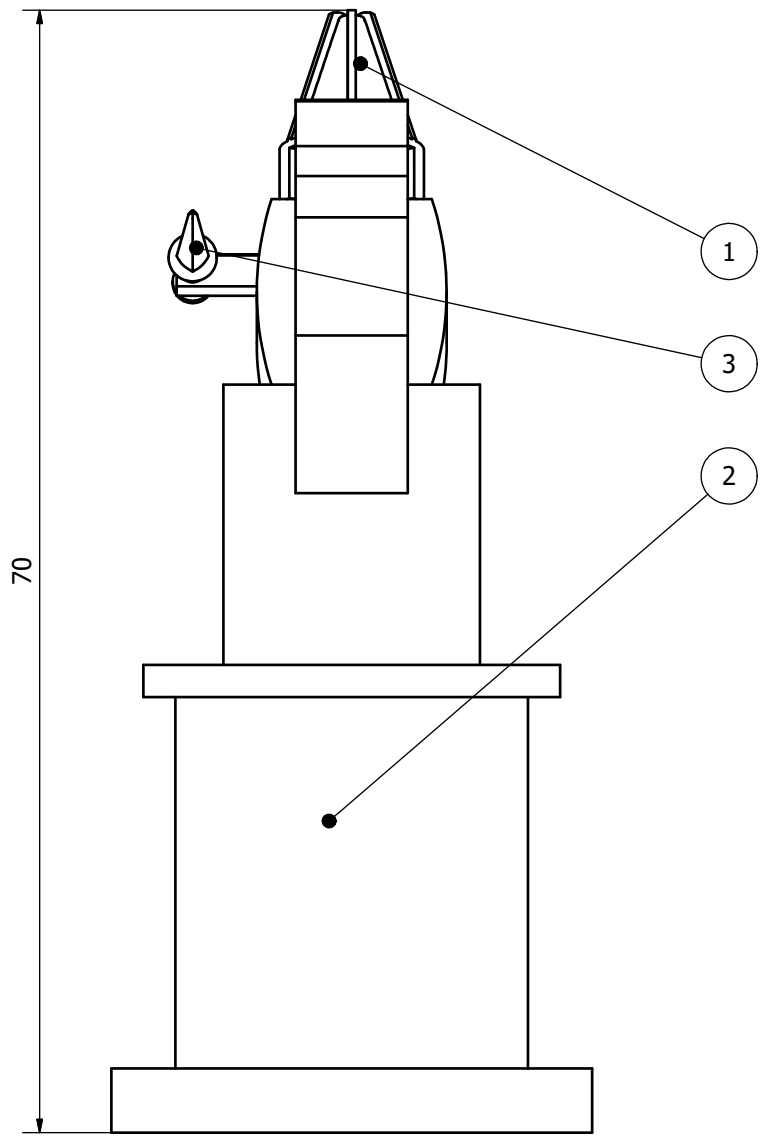
All measures without tolerances in accordance to DS/ISO 2768-m

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to	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

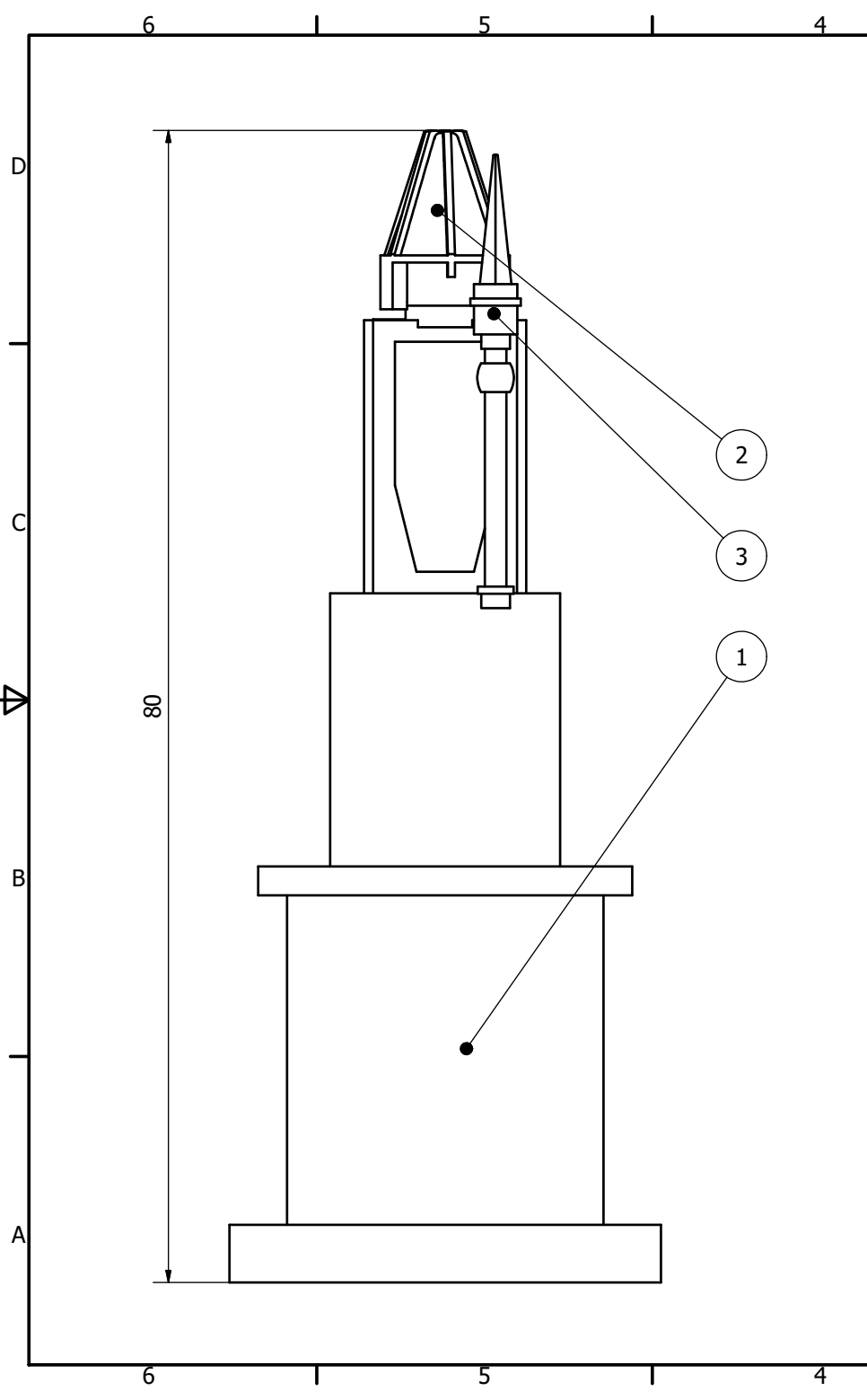
	Weight 0,019 kg	Material	Scale 3 : 1
Creation Date 13-12-2022	Rook - Full.ipt		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Sub Assy. - 002	Sheet 1		

Roskilde
Tekniske
Skole

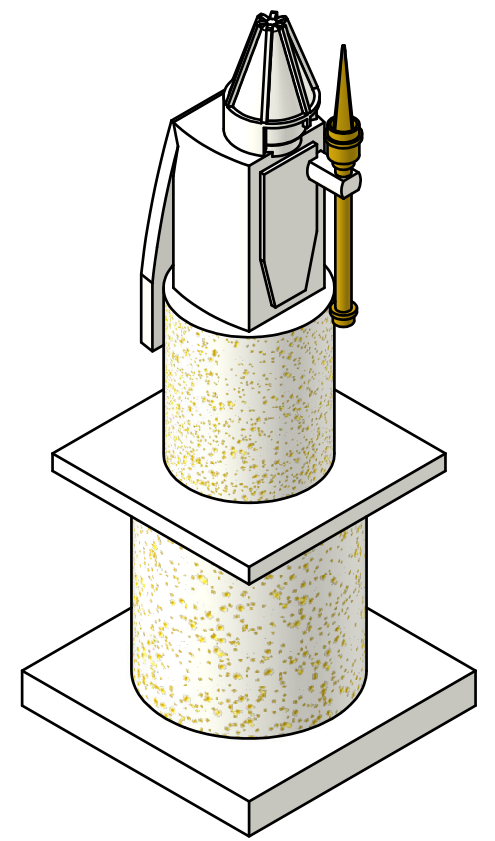
PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Head	Part - 008	0,000 kg	ABS Plastic
2	1	Knight - Base	Part - 003	0,021 kg	ABS Plastic
3	1	Sword	Part - 009	0,000 kg	ABS Plastic



All measures without tolerances in accordance to DS/ISO 2768-m			Weight 0,022 kg	Material	Scale 3 : 1																																																															
<table border="1"> <tr> <td></td> <td>0,5</td> <td>3</td> <td>6</td> <td>30</td> <td>120</td> <td>400</td> <td>1000</td> <td>2000</td> </tr> <tr> <td></td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> <td>to</td> </tr> <tr> <td></td> <td>3</td> <td>6</td> <td>30</td> <td>120</td> <td>400</td> <td>1000</td> <td>2000</td> <td>4000</td> </tr> <tr> <td>f</td> <td>±0,05</td> <td>±0,05</td> <td>±0,1</td> <td>±0,15</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>..</td> </tr> <tr> <td>m</td> <td>±0,1</td> <td>±0,1</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> </tr> <tr> <td>c</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> <td>±3</td> <td>±4</td> </tr> <tr> <td>v</td> <td>..</td> <td>±0,5</td> <td>±1</td> <td>±1,5</td> <td>±2,5</td> <td>±4</td> <td>±6</td> <td>±8</td> </tr> </table>			0,5	3	6	30	120	400	1000	2000		to	to	to	to	to	to	to	to		3	6	30	120	400	1000	2000	4000	f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..	m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2	c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4	v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8	Creation Date 13-12-2022	Knight - Full.ipt		
	0,5	3	6	30	120	400	1000	2000																																																												
	to	to	to	to	to	to	to	to																																																												
	3	6	30	120	400	1000	2000	4000																																																												
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..																																																												
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2																																																												
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4																																																												
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8																																																												
Roskilde Tekniske Skole		Created By Skye Hempel																																																																		
		Approved By	Revision 1																																																																	
		Drawing Number Sub Assy. - 003		Sheet 1																																																																

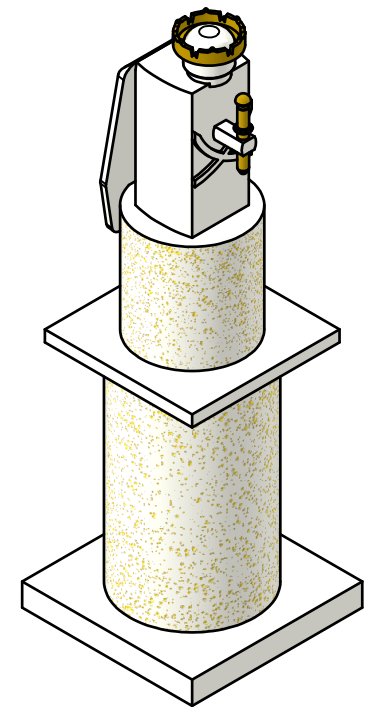
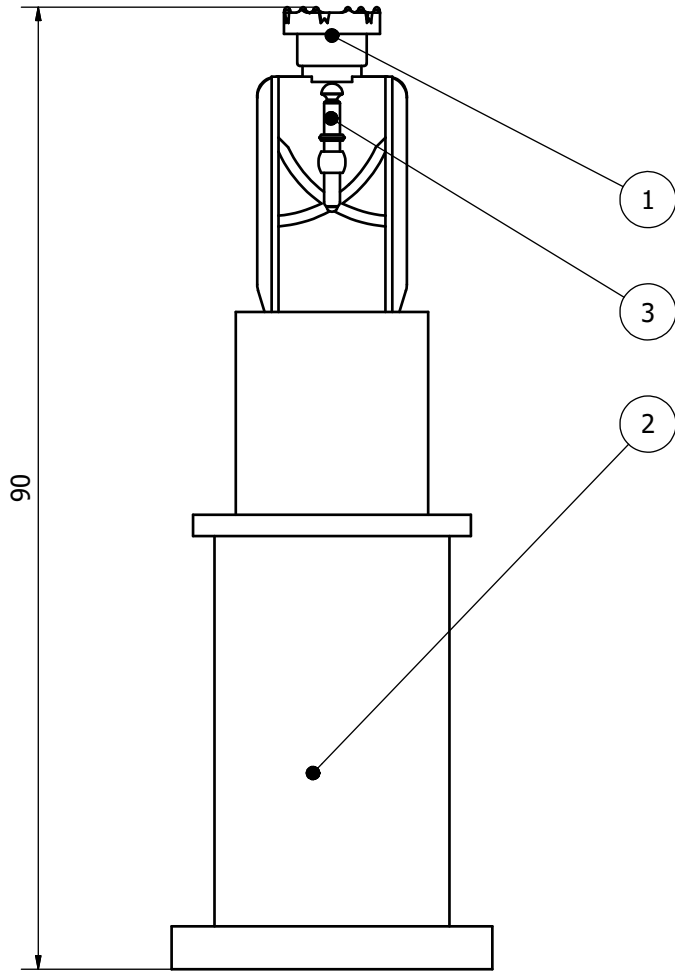


PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Bishop - Base	Part - 004	0,021 kg	ABS Plastic
2	1	Head	Part - 008	0,000 kg	ABS Plastic
3	1	Spear	Part - 010	0,000 kg	ABS Plastic



All measures without tolerances in accordance to DS/ISO 2768-m				Weight	Material	Scale																																																															
<table border="1"> <thead> <tr> <th></th> <th>0,5</th> <th>3</th> <th>6</th> <th>30</th> <th>120</th> <th>400</th> <th>1000</th> <th>2000</th> </tr> <tr> <th></th> <th>to</th> <th>to</th> <th>to</th> <th>to</th> <th>to</th> <th>to</th> <th>to</th> <th>to</th> </tr> <tr> <th></th> <th>3</th> <th>6</th> <th>30</th> <th>120</th> <th>400</th> <th>1000</th> <th>2000</th> <th>4000</th> </tr> </thead> <tbody> <tr> <td>f</td> <td>±0,05</td> <td>±0,05</td> <td>±0,1</td> <td>±0,15</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>..</td> </tr> <tr> <td>m</td> <td>±0,1</td> <td>±0,1</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> </tr> <tr> <td>c</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> <td>±3</td> <td>±4</td> </tr> <tr> <td>v</td> <td>..</td> <td>±0,5</td> <td>±1</td> <td>±1,5</td> <td>±2,5</td> <td>±4</td> <td>±6</td> <td>±8</td> </tr> </tbody> </table>			0,5	3	6	30	120	400	1000	2000		to	to	to	to	to	to	to	to		3	6	30	120	400	1000	2000	4000	f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..	m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2	c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4	v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8	13-12-2022 Skye Hempel Approved By		0,022 kg	Bishop - Full.ipt	3 : 1
	0,5	3	6	30	120	400	1000	2000																																																													
	to	to	to	to	to	to	to	to																																																													
	3	6	30	120	400	1000	2000	4000																																																													
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..																																																													
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2																																																													
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4																																																													
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8																																																													
Roskilde Tekniske Skole 		Drawing Number Sub Assy. - 004		Revision	Sheet																																																																
				1	1																																																																

PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Queen Head	Part - 013	0,000 kg	ABS Plastic
2	1	Queen - Base	Part - 005	0,028 kg	ABS Plastic
3	1	Scepter	Part - 011	0,000 kg	ABS Plastic



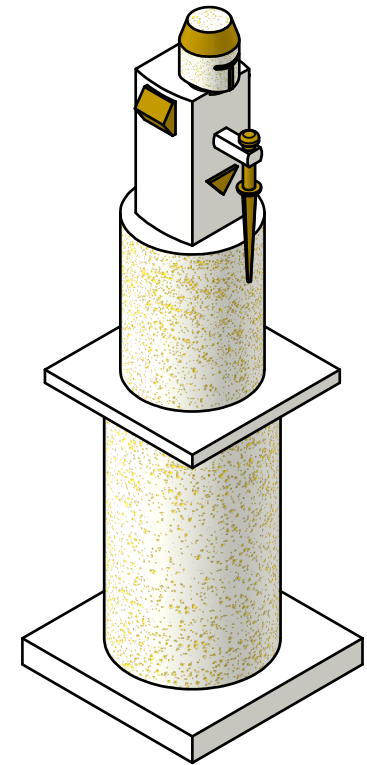
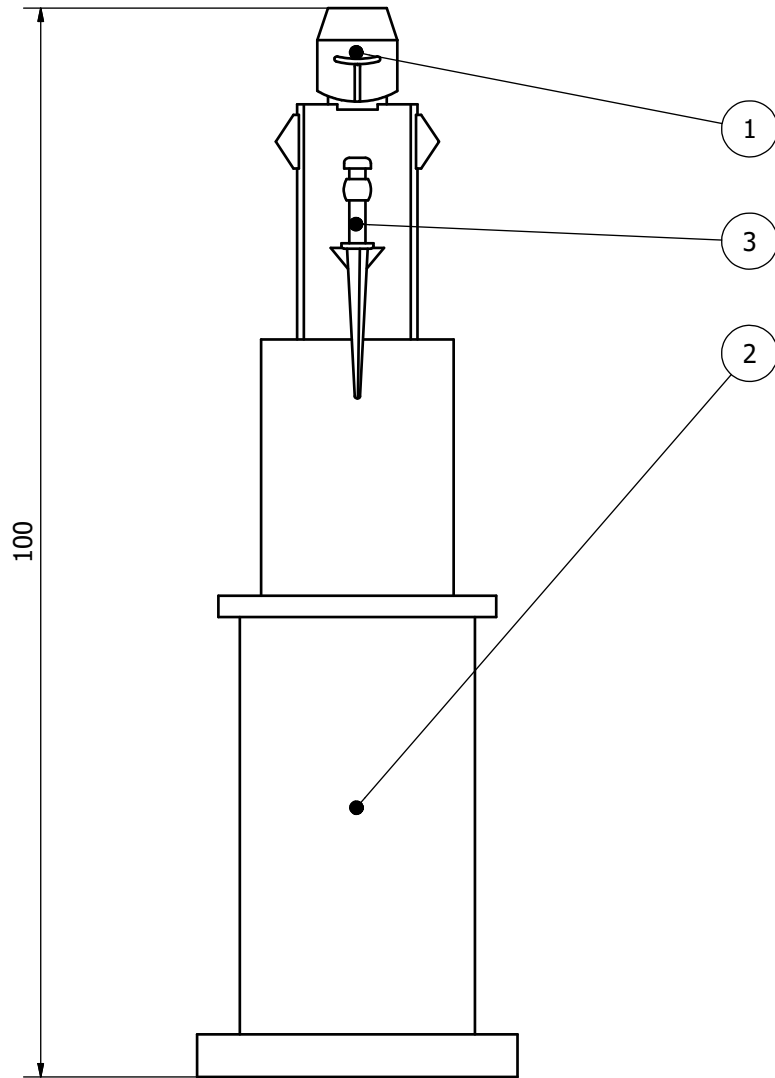
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	...	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 0,028 kg	Material	Scale 2 : 1
Creation Date 13-12-2022	Queen - Full.ipt		
Created By Skye Hempel			
Approved By	Drawing Number Sub Assy. - 005	Revision 1	Sheet 1

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Skole

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	King Head	Part - 014
2	1	King - Base	Part - 006
3	1	Long Sword	Part - 012

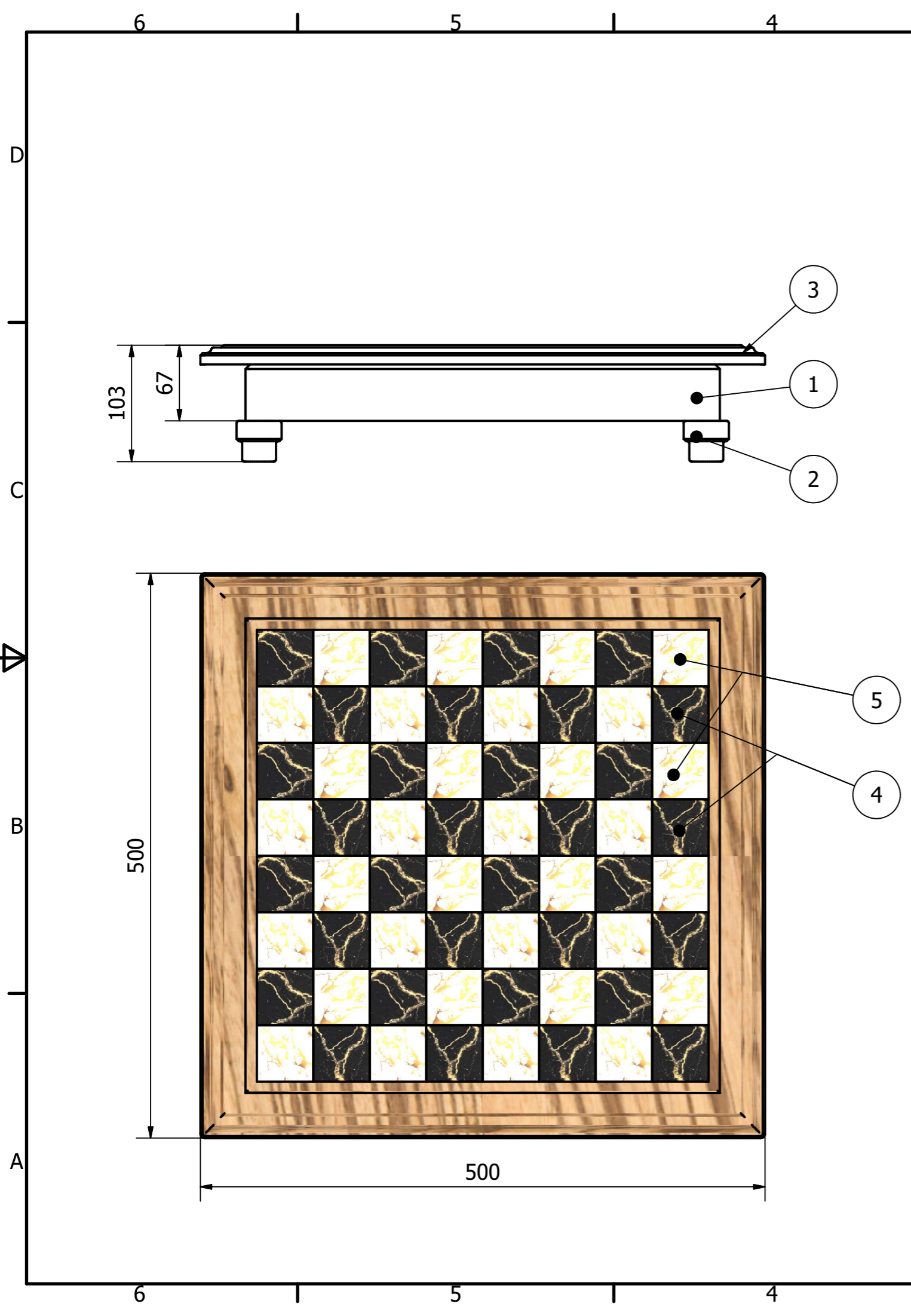


All measures without tolerances in accordance to DS/ISO 2768-m

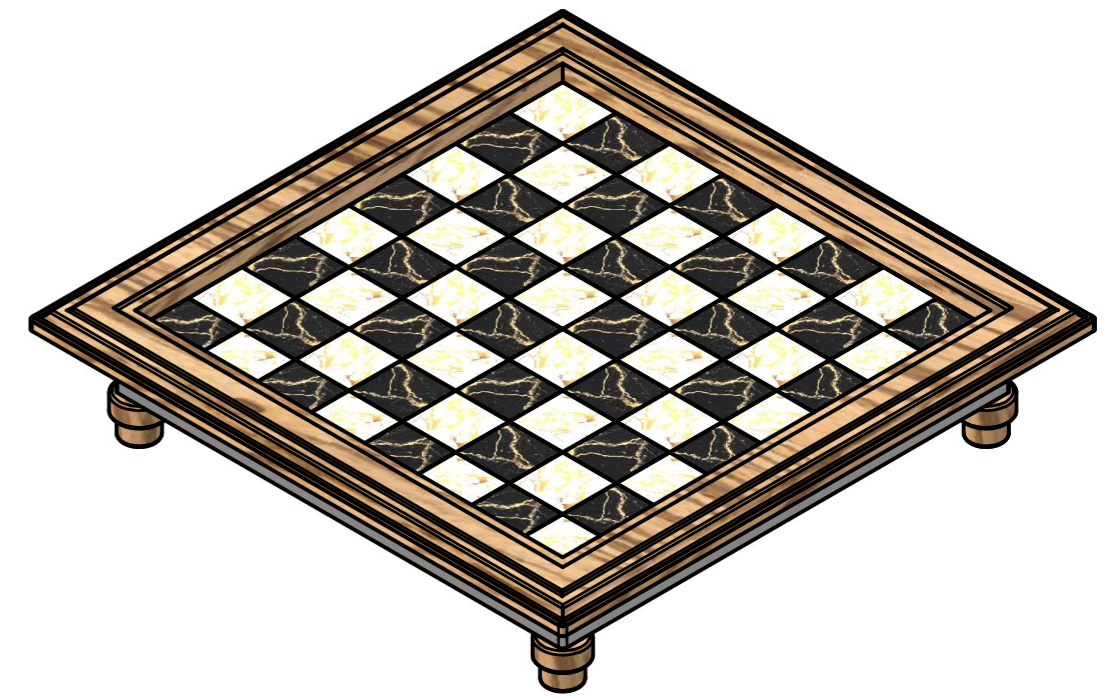
	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	±1
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	±0,5	±1	±1,5	±2,5	±4	±6	±8	±12

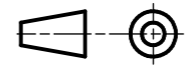
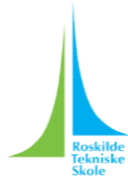
	Weight 0,031 kg	Material	Scale 2 : 1
Creation Date 13-12-2022	King - Full.ipt		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Sub Assy. - 006	Sheet 1		

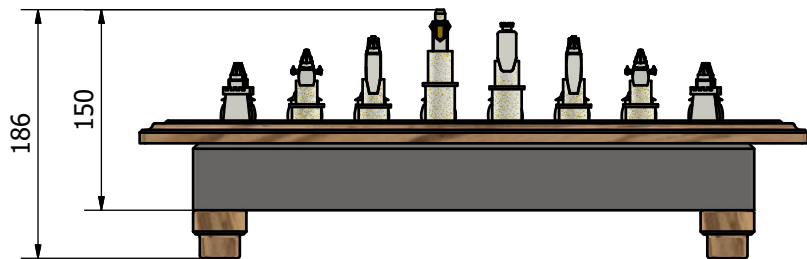
Roskilde
Tekniske
Skole



PARTS LIST					
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS	MATERIAL
1	1	Base	Part - 015	17,197 kg	Stainless Steel
2	4	Feet	Part - 017	0,024 kg	Wood (Zebrano)
3	1	Frame	Part - 016	0,891 kg	Wood (Zebrano)
4	32	Black Squares	Part - 019	0,067 kg	Marble
5	32	White Squares	Part - 018	0,067 kg	Marble



All measures without tolerances in accordance to DS/ISO 2768-m			Weight	Material	Scale																																											
<table border="1"> <tr> <td></td> <td>0,5 to 3</td> <td>3 to 6</td> <td>6 to 30</td> <td>30 to 120</td> <td>120 to 400</td> <td>400 to 1000</td> <td>1000 to 2000</td> <td>2000 to 4000</td> </tr> <tr> <td>r</td> <td>±0,05</td> <td>±0,05</td> <td>±0,1</td> <td>±0,15</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>--</td> </tr> <tr> <td>m</td> <td>±0,1</td> <td>±0,1</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> </tr> <tr> <td>c</td> <td>±0,2</td> <td>±0,3</td> <td>±0,5</td> <td>±0,8</td> <td>±1,2</td> <td>±2</td> <td>±3</td> <td>±4</td> </tr> <tr> <td>v</td> <td>--</td> <td>±0,5</td> <td>±1</td> <td>±1,5</td> <td>±2,5</td> <td>±4</td> <td>±6</td> <td>±8</td> </tr> </table>			0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000	r	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	--	m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2	c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4	v	--	±0,5	±1	±1,5	±2,5	±4	±6	±8	22,489 kg	
	0,5 to 3	3 to 6	6 to 30	30 to 120	120 to 400	400 to 1000	1000 to 2000	2000 to 4000																																								
r	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	--																																								
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2																																								
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4																																								
v	--	±0,5	±1	±1,5	±2,5	±4	±6	±8																																								
Roskilde Tekniske Skole 		Creation Date 13/12/2022 Created By Skye Hempel Approved By	Board		Drawing Number Sub Assy. - 007																																											
					Revision 1	Sheet 1																																										

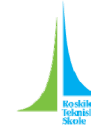


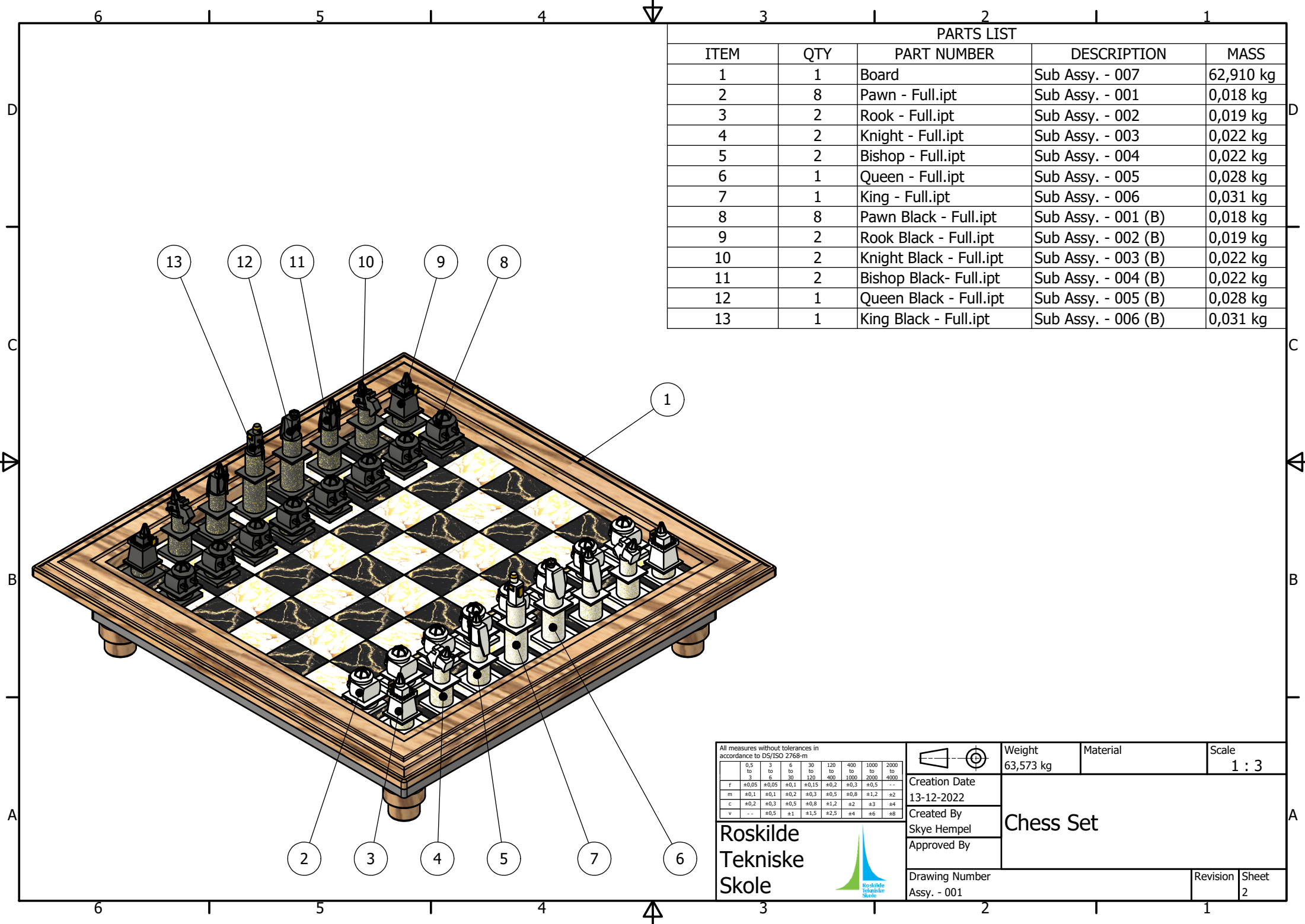
All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	...
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 63,573 kg	Material	Scale 1 : 4
Creation Date 13-12-2022	Chess Set		
Created By Skye Hempel			
Approved By	Revision 1		
Drawing Number Assy. - 001	Sheet 1		

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PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS
1	1	Board	Sub Assy. - 007	62,910 kg
2	8	Pawn - Full.ipt	Sub Assy. - 001	0,018 kg
3	2	Rook - Full.ipt	Sub Assy. - 002	0,019 kg
4	2	Knight - Full.ipt	Sub Assy. - 003	0,022 kg
5	2	Bishop - Full.ipt	Sub Assy. - 004	0,022 kg
6	1	Queen - Full.ipt	Sub Assy. - 005	0,028 kg
7	1	King - Full.ipt	Sub Assy. - 006	0,031 kg
8	8	Pawn Black - Full.ipt	Sub Assy. - 001 (B)	0,018 kg
9	2	Rook Black - Full.ipt	Sub Assy. - 002 (B)	0,019 kg
10	2	Knight Black - Full.ipt	Sub Assy. - 003 (B)	0,022 kg
11	2	Bishop Black- Full.ipt	Sub Assy. - 004 (B)	0,022 kg
12	1	Queen Black - Full.ipt	Sub Assy. - 005 (B)	0,028 kg
13	1	King Black - Full.ipt	Sub Assy. - 006 (B)	0,031 kg

All measures without tolerances in accordance to DS/ISO 2768-m

	0,5	3	6	30	120	400	1000	2000
	to	to	to	to	to	to	to	to
	3	6	30	120	400	1000	2000	4000
f	±0,05	±0,05	±0,1	±0,15	±0,2	±0,3	±0,5	..
m	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	±2
c	±0,2	±0,3	±0,5	±0,8	±1,2	±2	±3	±4
v	..	±0,5	±1	±1,5	±2,5	±4	±6	±8

	Weight 63,573 kg	Material	Scale 1 : 3
Creation Date 13-12-2022	Chess Set		
Created By Skye Hempel			
Approved By	Revision		
Drawing Number Assy. - 001	Revision		Sheet 2

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