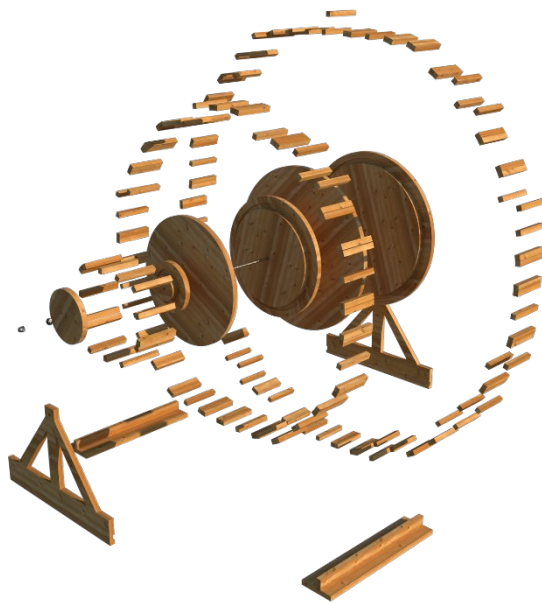


# Tambour de degradation / triple speed drum

Construction manual for Scale one to four model

Scale model of a "Tambour de degradation" - triple drum, used for baroque machinery experiments and demonstrations. A triple drum is used to move different objects like clouds in a way they move synchronically but at different speeds. The model can be built in a basic, but well equipped workshop.



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## Tambour de degradation / triple speed drum

### Materials list

Circles					
Number	Type	thickness	diameter	center hole	remark
2	Cirkel	15 mm	500 mm	8mm	groove see drawing
2	Cirkel	15 mm	430 mm	8mm	
2	Cirkel	15 mm	360 mm	8mm	groove see drawing
2	Cirkel	15 mm	290 mm	8mm	
2	Cirkel	15 mm	140 mm	8mm	groove see drawing
2	Cirkel	15 mm	70 mm	8mm	

Slats					
Number	Type	thickness	width	length	
2	slat with grove	15 mm	100 mm	430 mm	groove see drawing
2	slat	15 mm	30 mm	430 mm	
169	slat	15 mm	15 mm	113.5 mm	

Other					
Number	Type	Thickness			
2	feet frames	15 mm			see drawing for details

Other materials	
470 mm	threaded rod M8
2 pc.	nut 8 mm
2 pc.	washer 8 mm
18 pc	Screws 3.5 x 20mm
6 pc	Screws 3.5 x 35mm
2 pc.	head nut M8
	glue

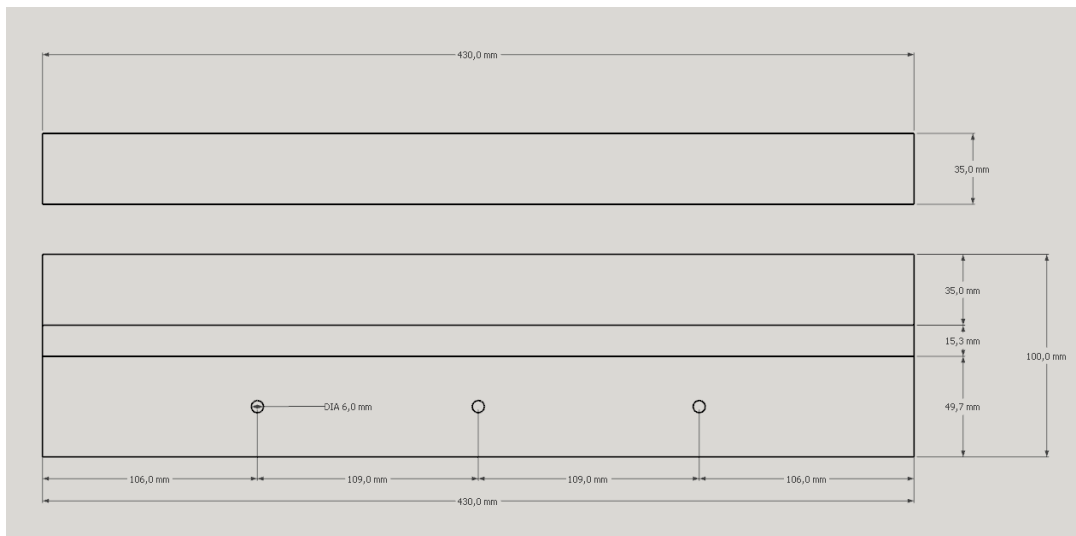
#### Notes:

The different parts can be cut out of one 15 mm multiplex plate.

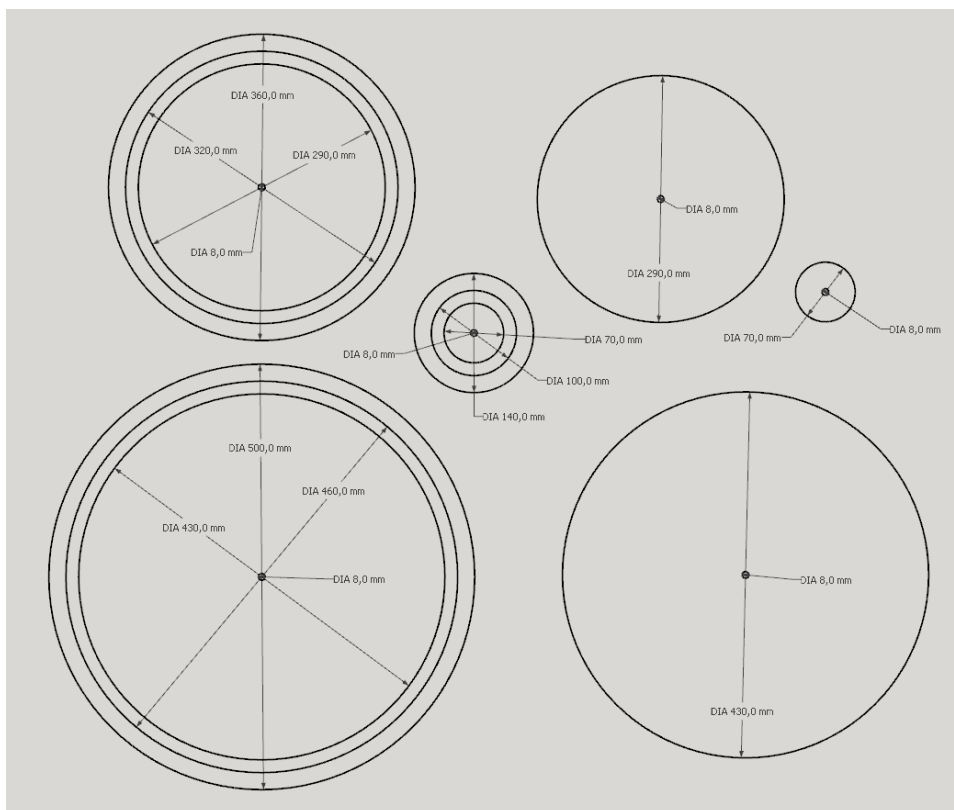
The slats (15 mm x 15 mm) can be cut out of leftover material.

# Tambour de degradation / triple speed drum

## Detail drawings

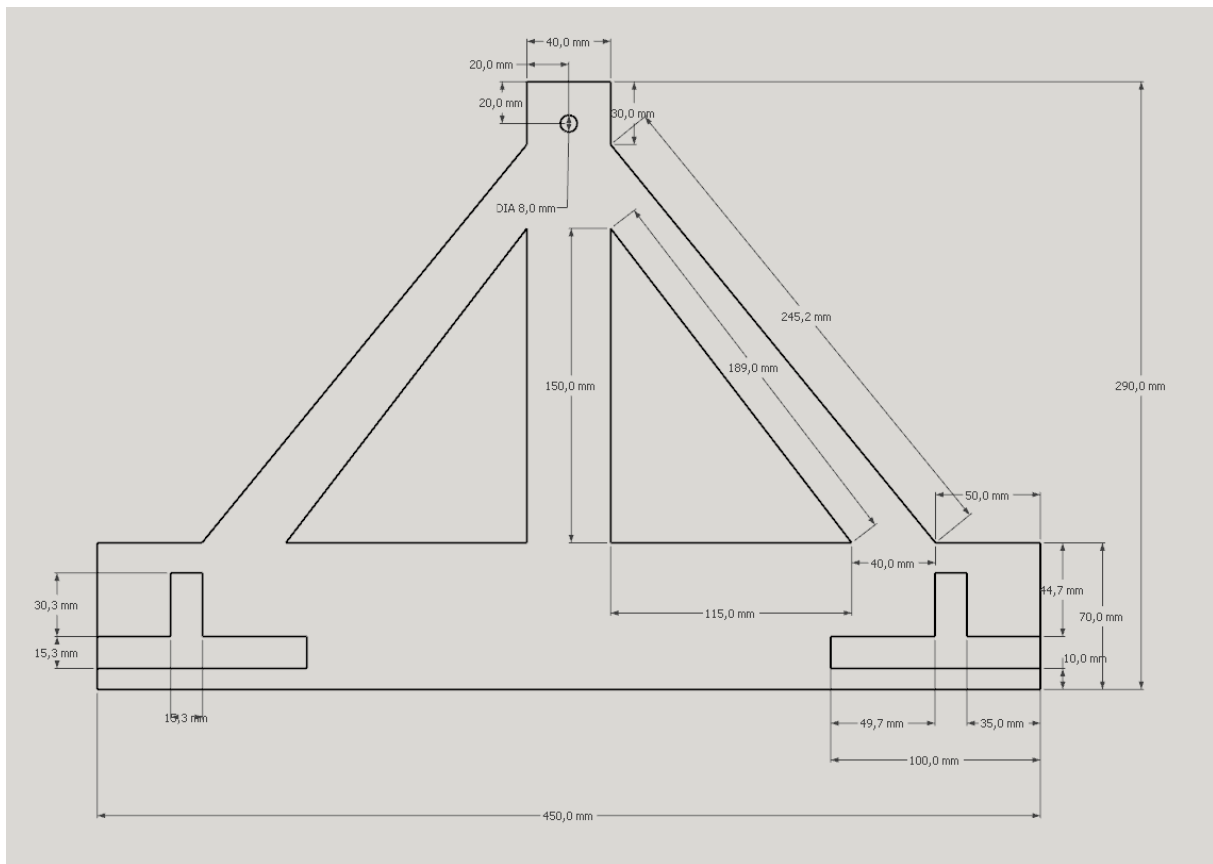


(all grooves are 5 mm deep)



(all grooves are 5 mm deep)

# Tambour de degradation / triple speed drum

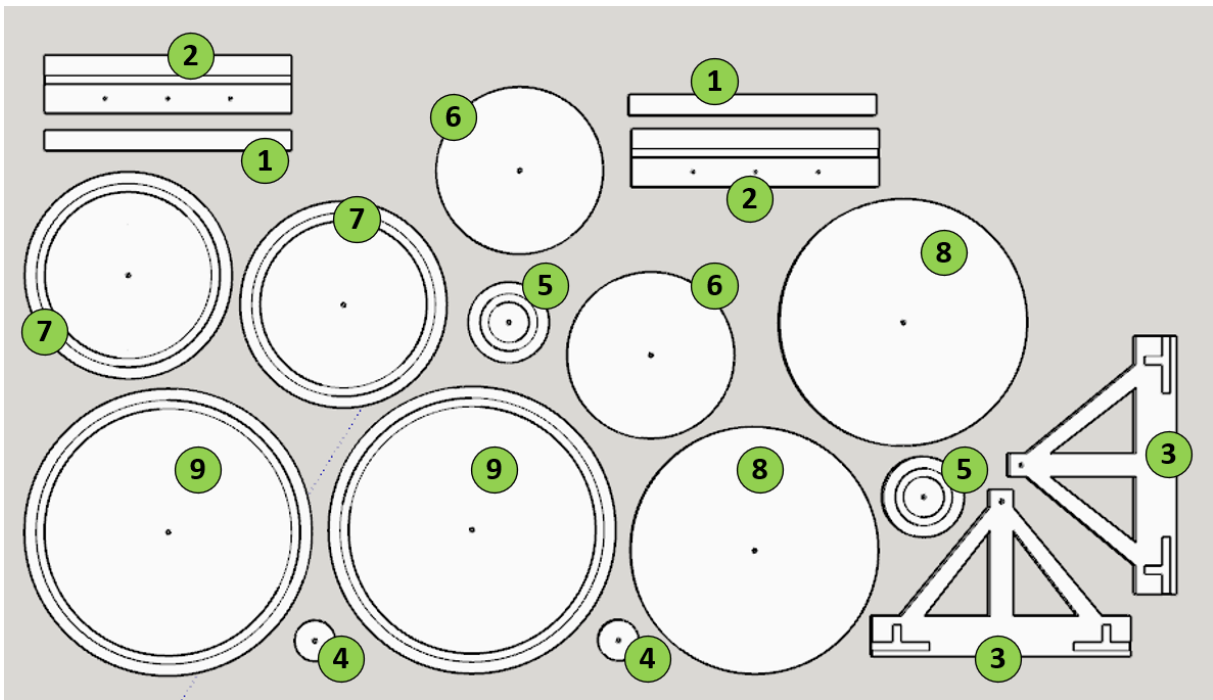


(all grooves are 5 mm deep)

# Tambour de degradation / triple speed drum

## Construction

1. Cut all the parts to size. This can be done by CNC or hand in a good workshop.



2. Make sure that all milled out areas are free of dust.
3. The straight milled out grooves are not perfectly straight in the corners, take a breaker knife and remove the remaining obstacles in the corners of these grooves.
4. Glue board 1 into the milled out groove of board 2. Do this 2 times
5. You now have a combined plank of plank 1 and plank 2. Now glue this into the milled out groove on board 3.
6. Now glue the second board 3 to the other side of the combined boards 1 and 2.
7. Now attach 2 glue clamps to the glued section and leave to dry for a few hours. If you don't have glue clamps make sure you put at least 5kg/cm of pressure on the glued parts.



8. The basic structure is now ready.

## Tambour de degradation / triple speed drum

9. Glue board 4 in the milled out area onto board 5. To make a perfect fit, use an M8 bolt and put it through the drilled hole in both boards. Now screw some screws into board 4 and 5 so that they are fixed. Screw these screws from board 4 to board 5. This prevents these screws from being visible at the end.
10. Do the same for boards 6 and 7 and for boards 8 and 9.
11. Now take a combined board 6 and 7 and a combined board 8 and 9.
12. Now glue these 2 composite boards together with the not milled out side. To ensure a perfect fit, use an M8 bolt and put it through the drilled hole in both boards. Now screw some screws from board 4 to board 6 so that they are fixed. This prevents these screws from being visible at the end.
13. Do the same operation for the composite board 6 and 7 with a composite board 4 and 5.
14. Now take 91 sawn slats of 15mm x 15mm x 113,6mm
15. Glue these slats into the groove between plank 8 and 9.
16. When the groove is completely full, take paper tape and tape around the laths so that they are secured and cannot fall out.
17. Now glue the last board 8 and 9 with the board 6 and 7 attached to it on the other side of the slats.
18. Clamp this like the basic structure and let it dry for a few hours.



## Tambour de degradation / triple speed drum

19. Once everything is dry, we can now finish the small drum.
  20. Take 59 sawn laths of 15mm x 15mm x 113.6mm
  21. Take the large drum with the board 6 and 7 already attached to it.
  22. Glue the slats in the remaining slot between boards 6 and 7.
  23. When the slot is completely full, take paper tape and tape around the slats so that they are secured and cannot fall out.
  24. Now glue the last board 6 and 7 with the board 4 and 5 attached to it on the other side of the slats .
  25. Clamp this like the basic structure and let it dry for a few hours.
- 
26. Take 19 sawn slats of 15mm x 15mm x 113,6mm (It is possible you need to sand the corners a bit to fit them in the groove)
  27. Glue the slats into the remaining slot between board 4 and 5.
  28. Glue the last assembled board 4 and 5 to the slats.
  29. Clamp this like the basic structure and let it dry for a few hours.



## Tambour de degradation / triple speed drum


30. Take a threaded rod of 470mm / M8
31. Insert the threaded rod through the first hole of the base structure screw a bolt between the base structure and the drum and place a washer between the nut and the base structure, continue turning until when you are through the drum. When you are through the drum turn another bolt between the drum and the base structure and a washer between the nut and the base structure. Now take turns turning the nuts to get the threaded rod through the last hole. Once you're through all the holes, you can now secure everything with a washer and a nut with a locknut on each side.

## Credits

The drawings and construction method are based on the Final work of Rens Plankaert, RITCS 2014.

The drawings are remade, updated and transformed in 3D Sketchup by Beno van Goethem, Signyture design.

Translation, text and lay-out is done by Chris Van Goethem, RITCS.

 <b>Canon</b> <small>TREASURY TECHNICAL HISTORY</small>	Tambour de degradation / triple speed drum	Drawing by: Beno Van Goethem	
Canon Tools	Construction drawing	Version: 02.01	Version date: 20/12/2022