

OPITEC

Hobbyfix

110.420

Christmas pyramid



Please Note

The OPITEC range of projects is not intended as play toys for young children. They are teaching aids for young people learning the skills of Craft, Design and Technology. These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation!

Necessary tools:

Pencil, ruler, set square
 Fretsaw
 Block and sandpaper
 Files
 Machine vice
 Drill ø 4 mm
 Wood glue , adhesive
 Pliers
 Brush, Acrylic paints

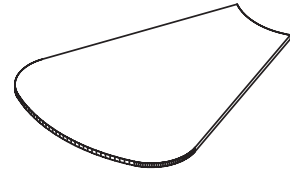
Warning!

This product contains small parts that can be swallowed
 There is a danger of choking

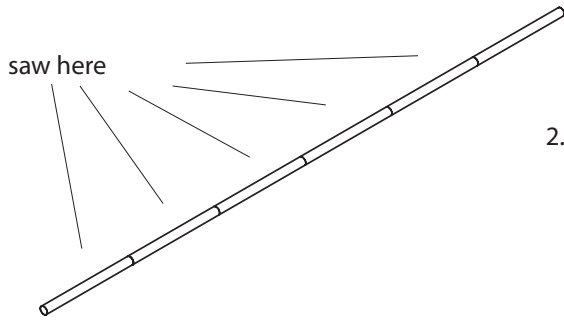
PARTS LIST				
		Size (mm)	Description	
Beech dowel	1	300x6	Sail holder	1
Modelling plywood	1	240x235x1,5	Sails	2
Gabun plywood	1	450x200x5	Base, plate, arch	3
Welding rod	1	250x3	Shaft	4
Screw eye	1	10	Bearing	5
Glass bearing	1	ø 8x5	Bearing guide	6
Beech wheel	1	ø 40x15	Rotor head	7
Wooden ball	1	ø 25	Rotor top part	8
Reducer	2	4/3	Shaft guide	9
Tea light holder	3		Candle holder	10

INSTRUCTIONS

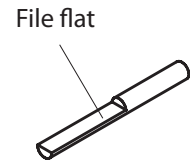
1. Trace the patterns for the 6 sails on to the modelling plywood (2) Use a Fretsaw to cut them out and sand to finish.
(Pattern on page 9/11)



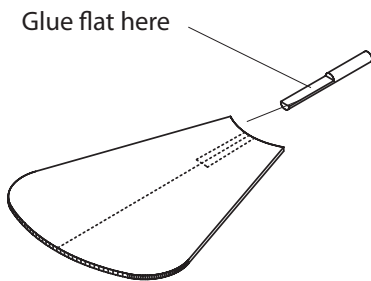
2. Cut 6 pieces of dowel each 45mm long from the beech dowel.



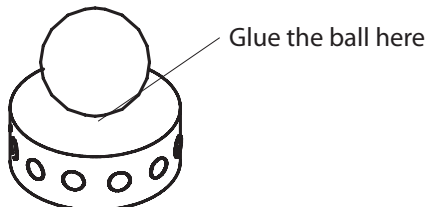
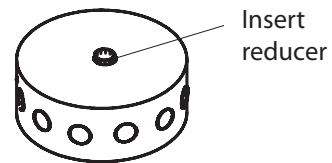
3. Make a mark 26mm in on each piece of dowel. Then clamp the dowel pieces one at a time a machine vice so that the 26mm protrudes. Flatten the dowel that protrudes with a workshop file. (See diagram).



4. Glue the sail holder in place in the middle of the sail as shown. Leave to dry thoroughly.

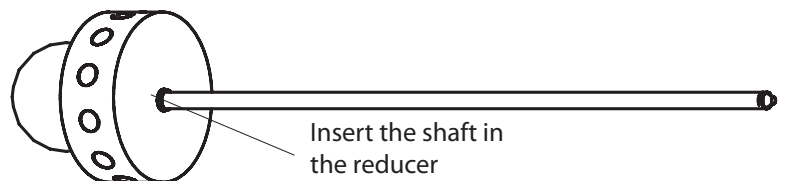


5. Insert reducer (9) into the rotor head (7)

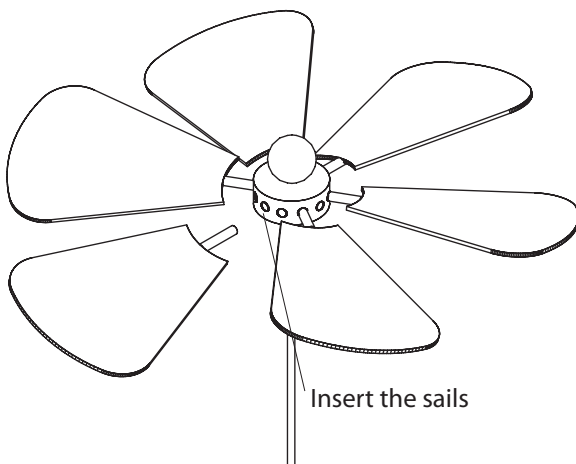


6. Turn the rotor head over and and glue it in the middle of the wooden ball.

7. Shorten the shaft (4) to 190 mm and file a point on one end (Sanding block, workshop file). Form the point carefully, as it depends on the finish to run smoothly. Finally inset the non-pointed end in the reducer in the rotor head.



8. Now insert the sails (angled at ca. 15°) in the rotor head
One sail in every other hole (Leave one hole between the sails free)

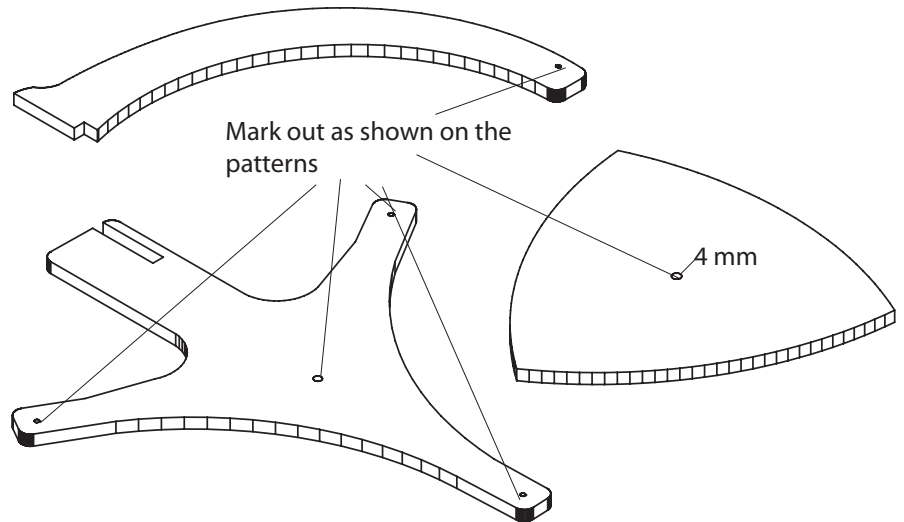


INSTRUCTIONS

9. Trace the shape of the base, the plate and the arm on the plywood sheet (3) using the patterns are on page 5/6. Saw out the shapes with a Fretsaw.

On the plate mark out and drill the 4mm hole

Also mark the place for the glass bearings on the base and arm.

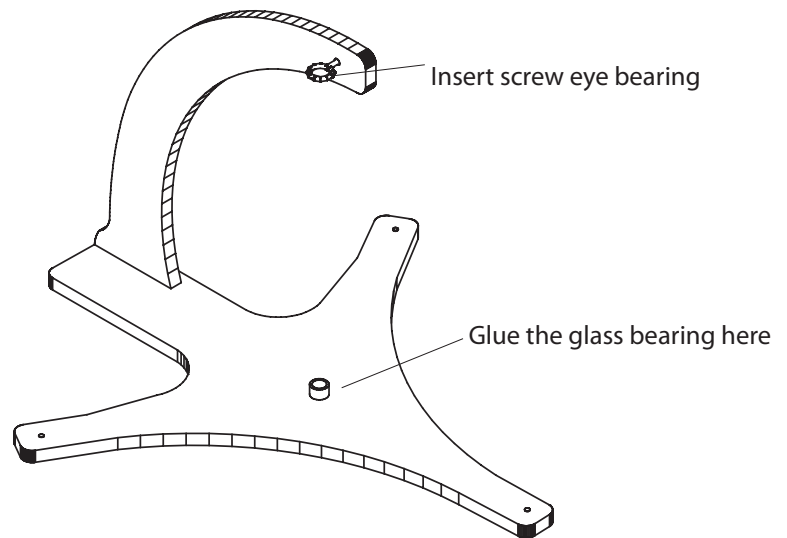


10. Screw in the ring eye (5) in the marked place.

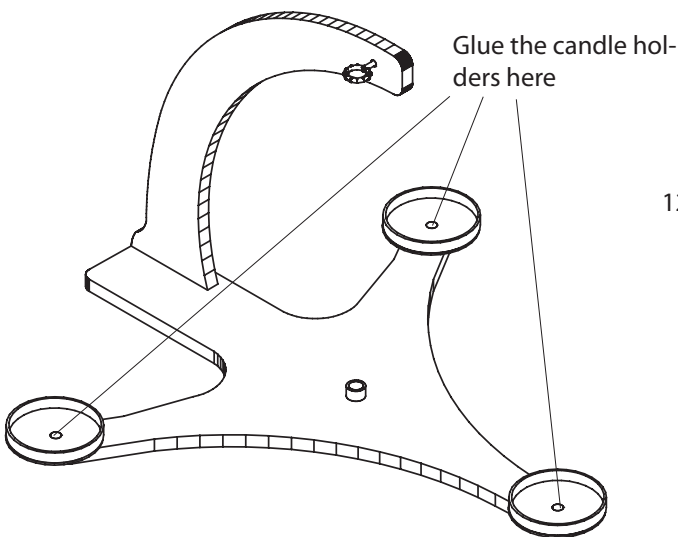
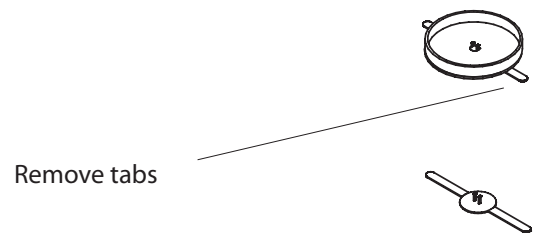
Check that it lines up with the bearing on the base. Adjust if necessary BUT do not glue them together!

When the arm sits properly check it with a set square. Then check again that the shaft sits properly -when you are happy the arm that the shaft is upright the base and arm can be glued together

Glue the glass bearing on the base with a strong adhesive and laeve it to dry



11. Remove the tabs from the candle holder- using pliers.



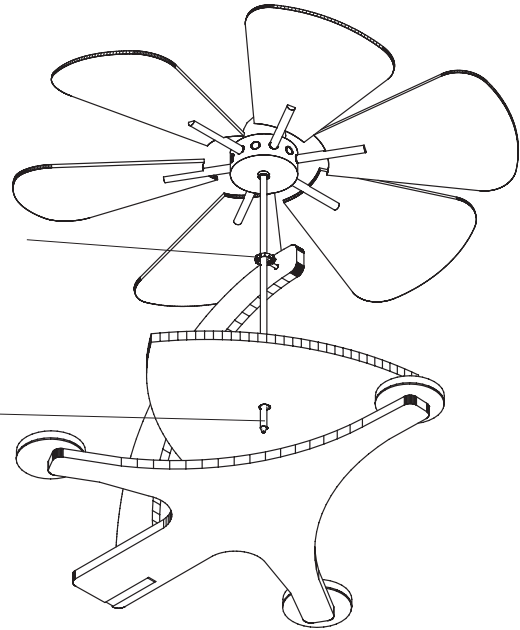
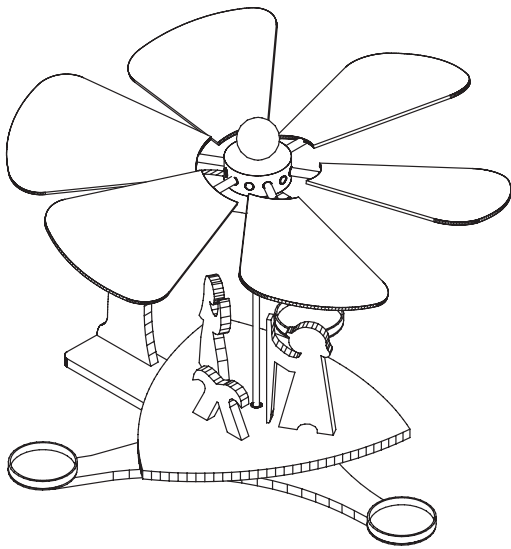
12. Glue the candle holder (less tabs) with a strong glue. The candle holder should stand out ca 10mm.all round

INSTRUCTIONS

13. Insert the reducer (2) in the plate. Then guide the rotor, sails and shaft through the plate and through to the glass bearing. The plate should be about 15mm from the base.

Insert the rotor and shaft in place

Adjust the plate ca. 15 mm on the shaft



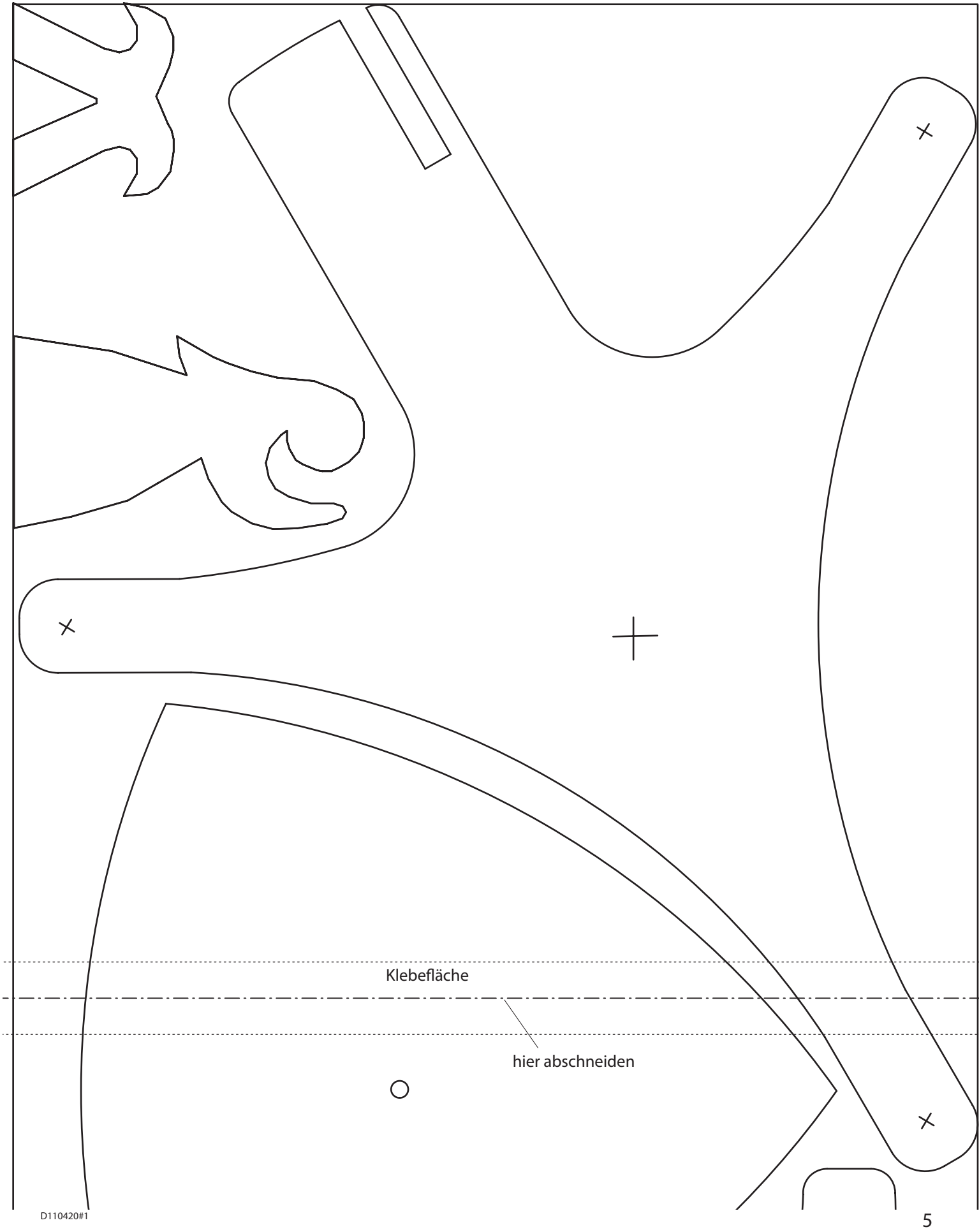
14. Make the figures from the plywood remainders (3) the patterns are on page 5/6. Use a Fretsaw to cut them out and sand to finish. Arrange and glue them on the plate ensuring the balance is correct

Finish as you wish !

Your project is now complete!!

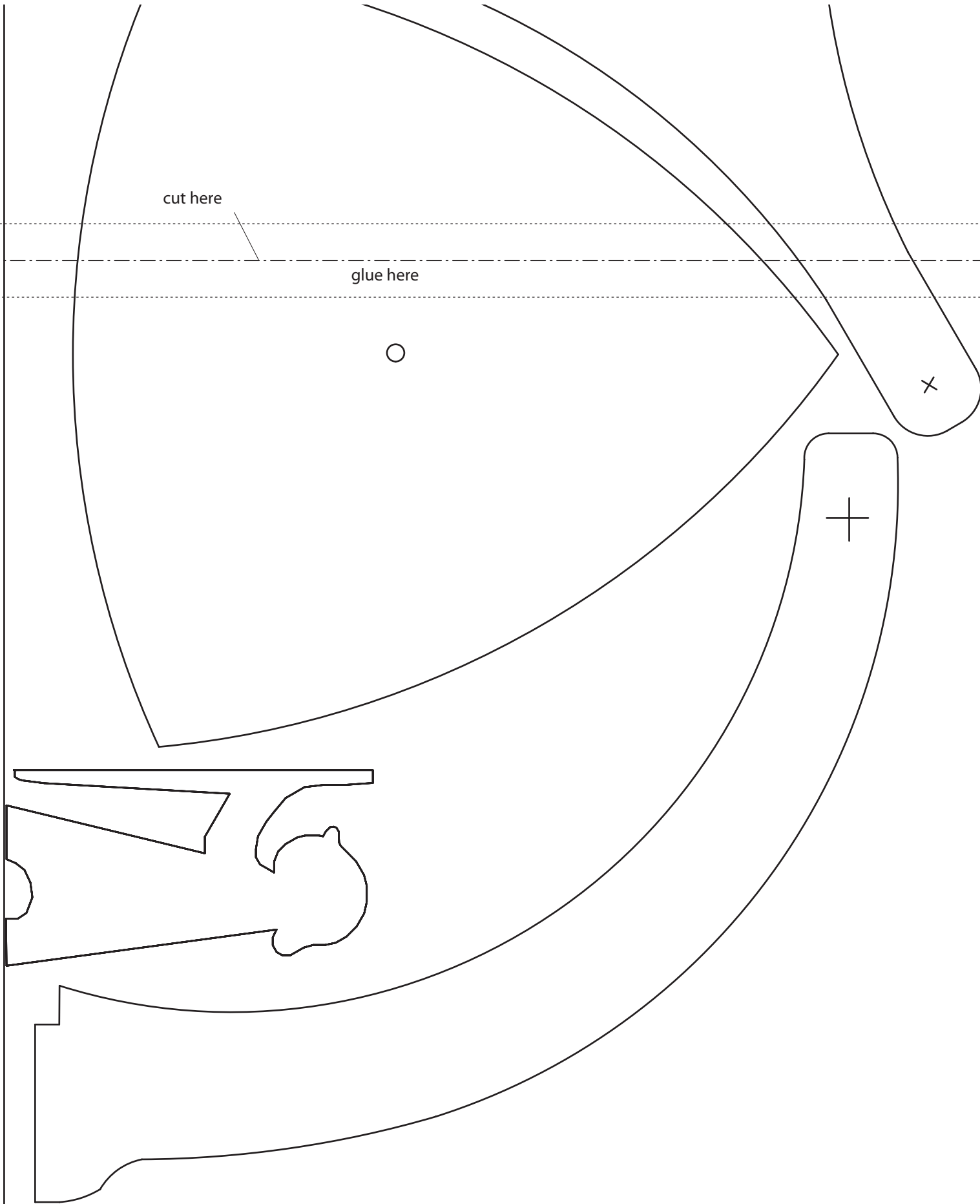
INSTRUCTIONS

Patterns for the base, plate.arm,figures
M 1:1



INSTRUCTIONS

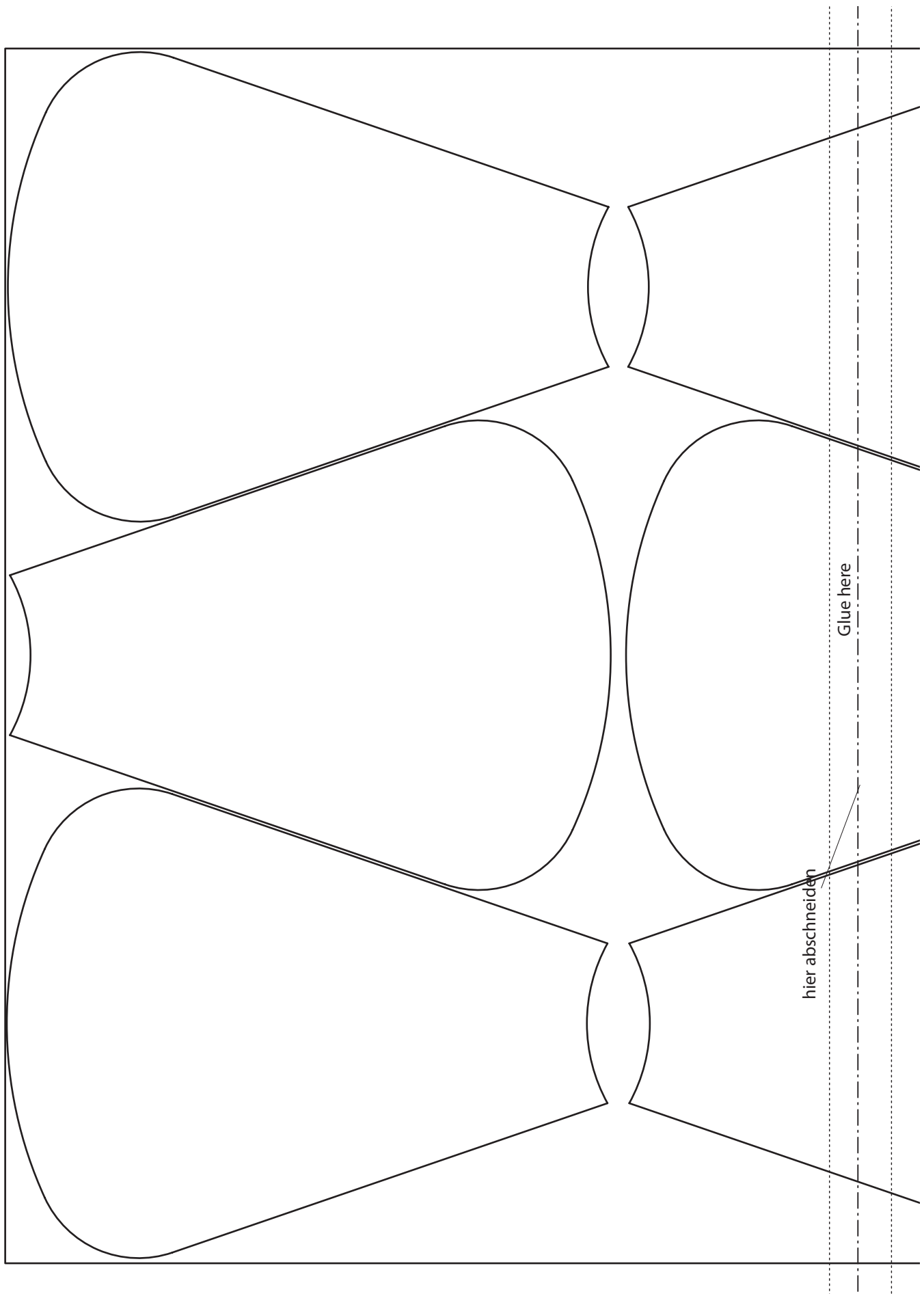
Pattern for the base, plate, arm and wooden figures made from
plywood (3)
M 1:1



INSTRUCTIONS

Patterns for the sails made from modelling plywood (2)

M 1:1



INSTRUCTIONS

Pattern for sails from modelling plywood (2)

M 1:1

