OPITEC Hobbyfix

113.107

Wooden version FLying Duck/

Necessary tools:
Pencil,ruler
Fretsaw
File
Sandpaper
Screwdriver
Bradawl
Drill bit ø4/5 mm
Wood glue, all purpose glue
Spanner M4
Hacksaw

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!

PARTS LIST				
	Part	**Size (mm)**	**Description**	**Part-Nr.**
Wood	1	300x100x15	Base	1
Polystyrol	1	210x150x2	Wings/paddle	2
Wooden ball	2	ø 25	Fixing wing/paddle	3
Threaded rod	1	150x4	Axle	4
Dowel	1	ø15x350	Stand	5
Welding rod	1	ø3x100	Stand	6
Wooden strip	2	75x15x15	Wing bearing	7
Brass trube	1	ø5x50	Stand fixing	8
Brass tube	2	ø5x15	Bearing wings/paddle	9
Nut	10	M4	Fixing wing/paddle	10
Washer	8	ø9/4,3	Fixing wings/paddle	11

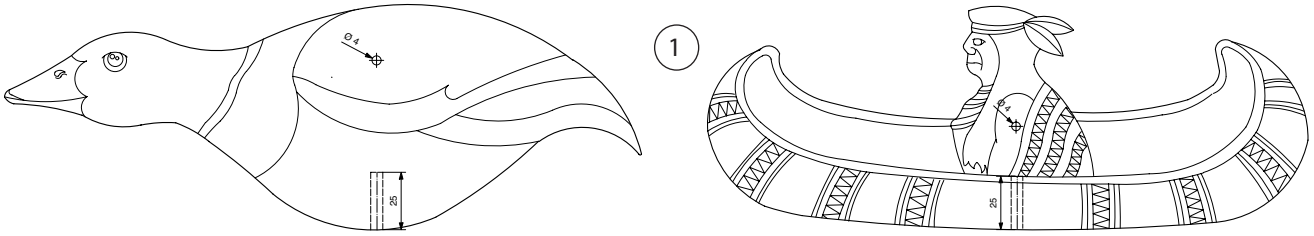
Instructions

Making the body:

1. The design has two versions (Patterns on page 5/6) choose your design and transfer the patterns on to the wood length (1) mark the hole centres with a bradawl.

Please note:

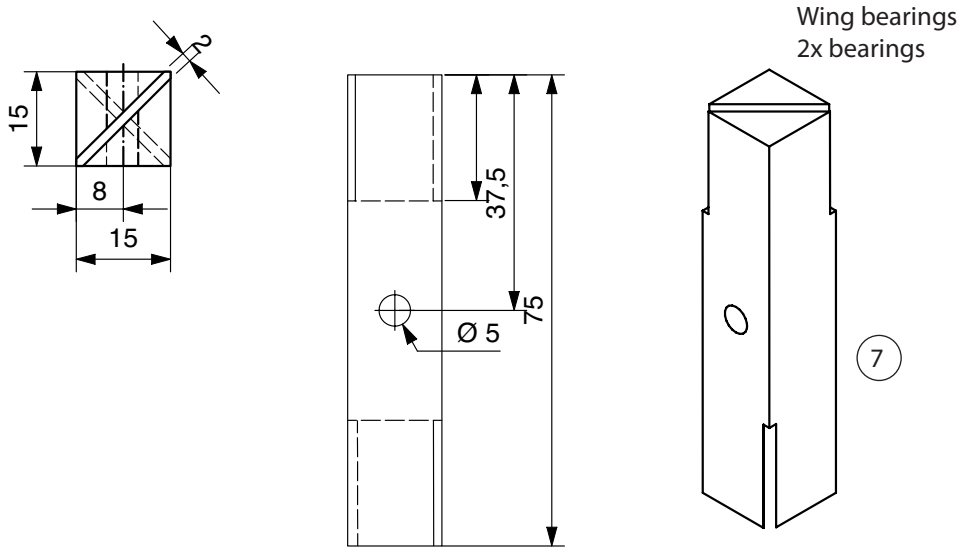
Please note that wood is a natural product and may have knots, where branches were. These knots should not effect the quaity of your finished product. The knots will not fall out or effect the sawing of the outline. On contrary they can add to the finished decorative effect of your project especially if it is finished with a coloured wood stain.



2. Drill the ø5 mm and ø4 mm holes. Finally saw out the outline of your chosen design. Once sawn out sand the edges to finish
Next stain the design to finish

Making the wing bearings:

3. Mark out the diagonals and drill the hole 5mm dia through the wood parts(7)

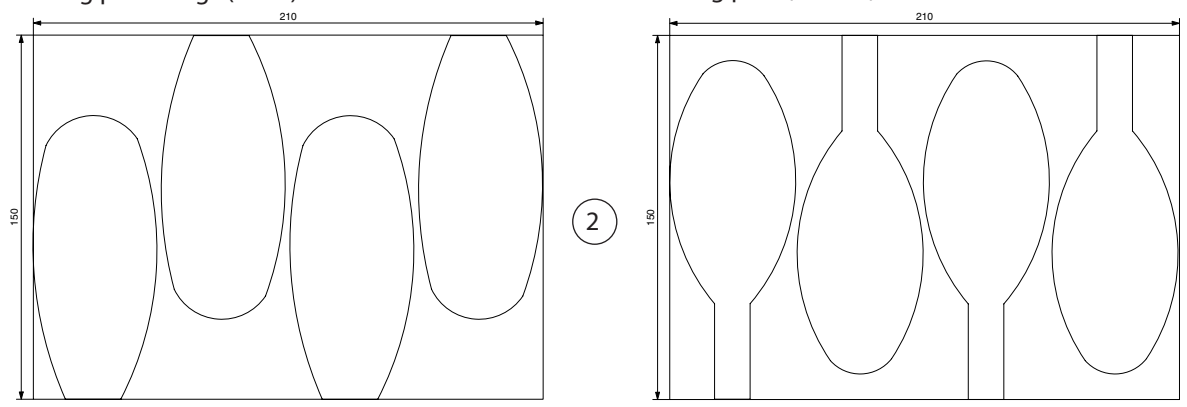


Making the Wings/Paddle:

4. Wings-/Rudder patterns (See page 5/6) must be transfered to the Polystyrol sheet (2) and saw the sheets out.Sand to finish

Cutting plan wings (Duck)

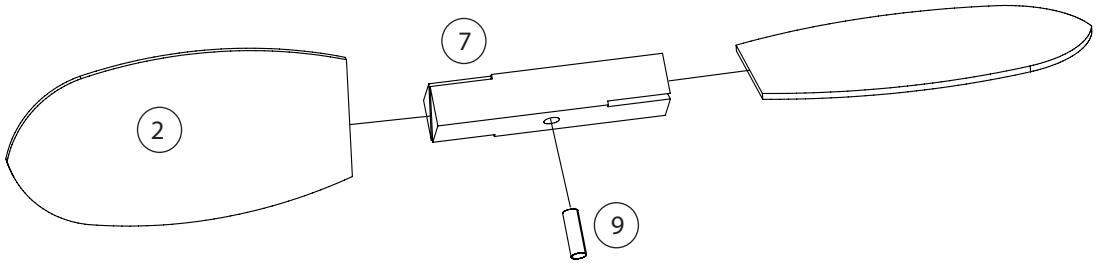
Cutting plan (Paddle)



Instructions

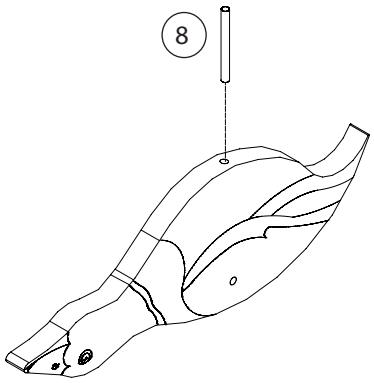
Assembling the Wings/Paddle:

5. Place the wings/paddles in the bearings as shown and glue them in place
   Insert the brass tube bearing (9) in the 5mm hole
   Add the second wing/paddle in the same way

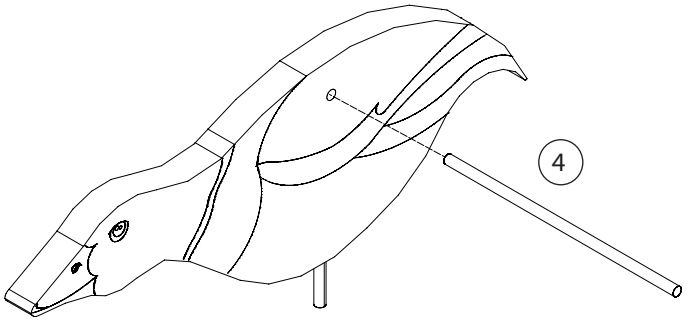


Final assembly:

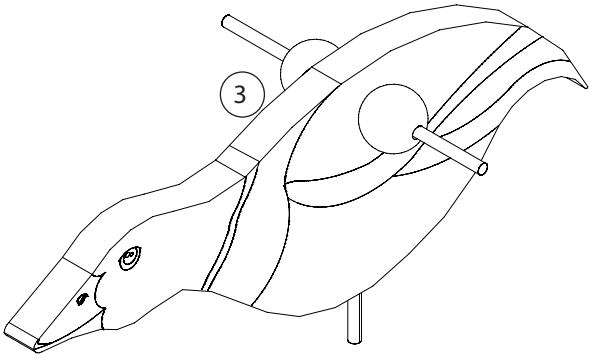
6. Insert the brass tube (8) in the lower 5mm dia. hole as shown



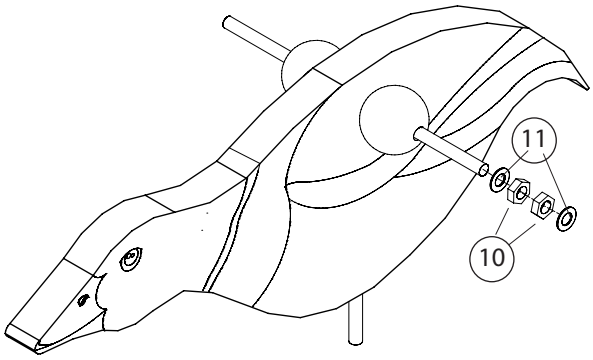
7. Insert the thread rod (4) in the middle of the main body



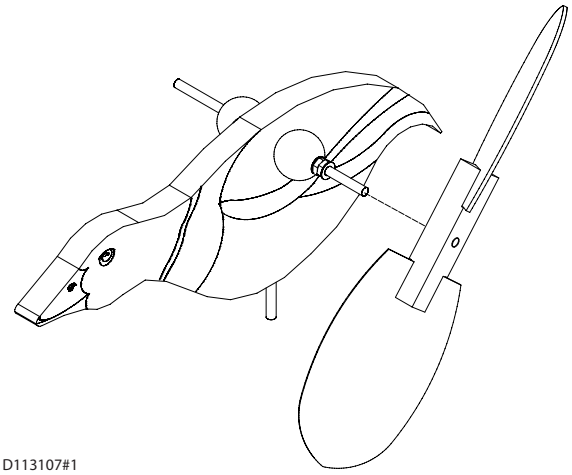
8. Place the wooden balls (3) one on each side of the threaded rod



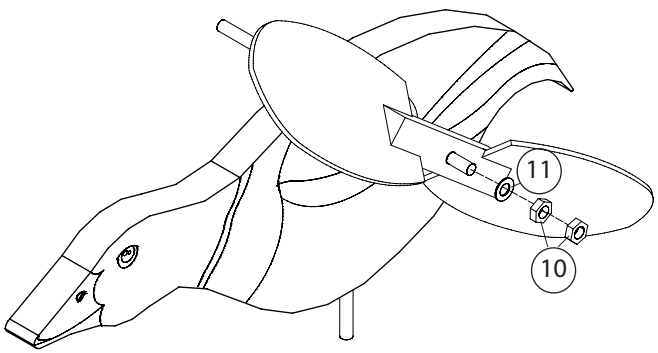
9. Then on one side of the threaded rod place a washer (11). The add 2 nuts (10) and screw them up the the ball, then contra tighten the nuts. Finally add another washer



10. Add a Wing/Paddle on the threaded rod

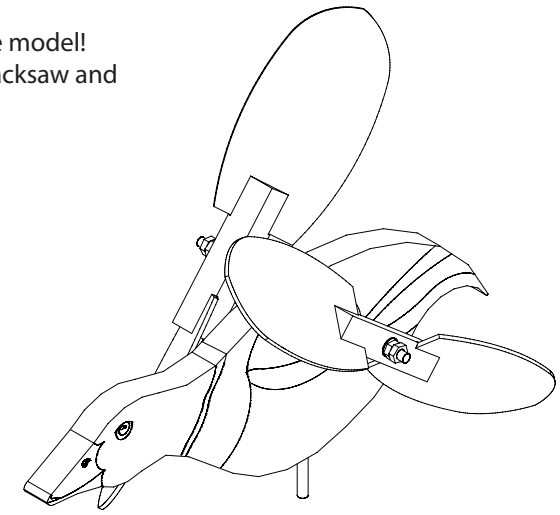


11. add a washer (11) then two nuts (10) adjust and contra tighten the nuts so that the wings turn without any play



Instructions

12. Repeat steps 8-11 on the other side of the model!
    Saw off any excess threaded rod with a hacksaw and remove any burr with a file



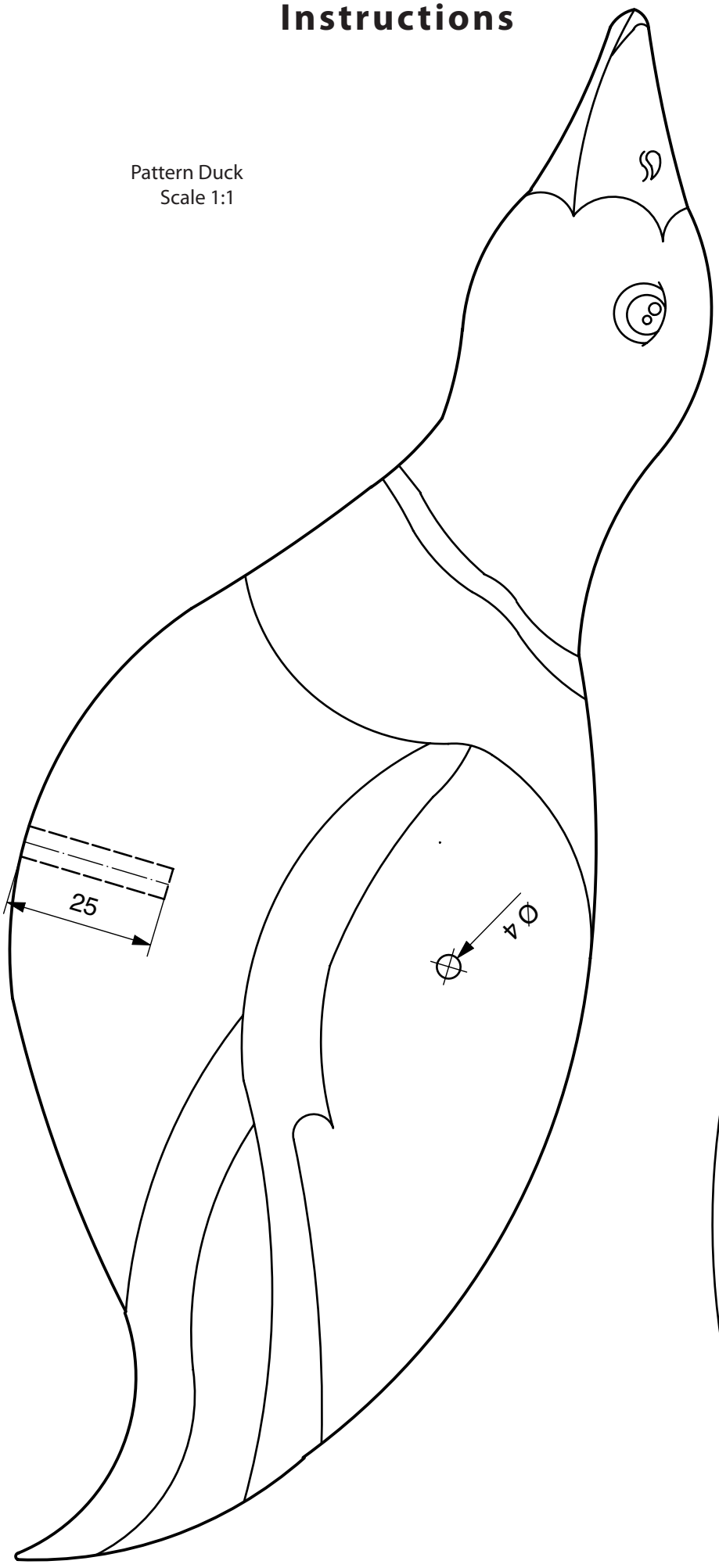
13. Drill a 3mm dia hole ca55mm deep centrally in the end of the dowel(5)
    Remove any burr (File) from the end of the welding rod (6) and hammer it in the end of the dowel.

    Place a washer (11) over the welding rod and place the model on the welding rod

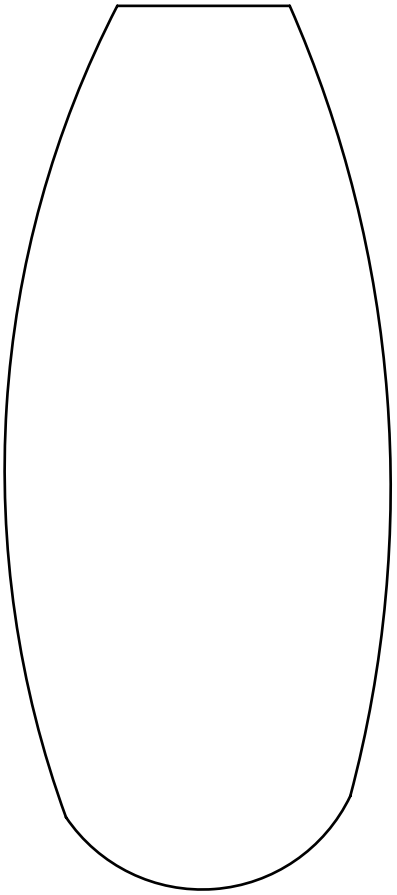
    Finished !

Instructions

Pattern Duck
Scale 1:1

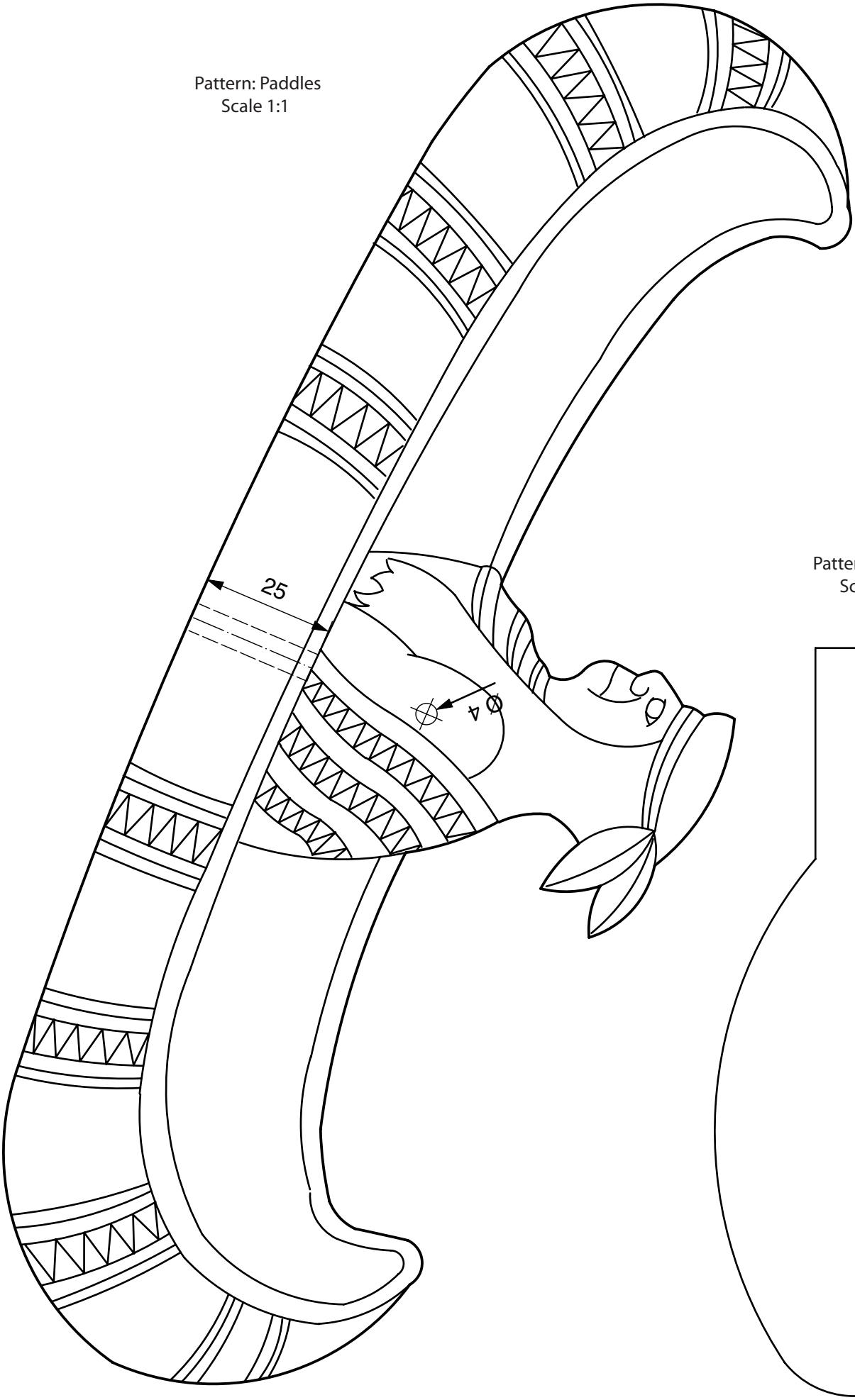


Pattern :Wing (Duck)
Scale M 1:1

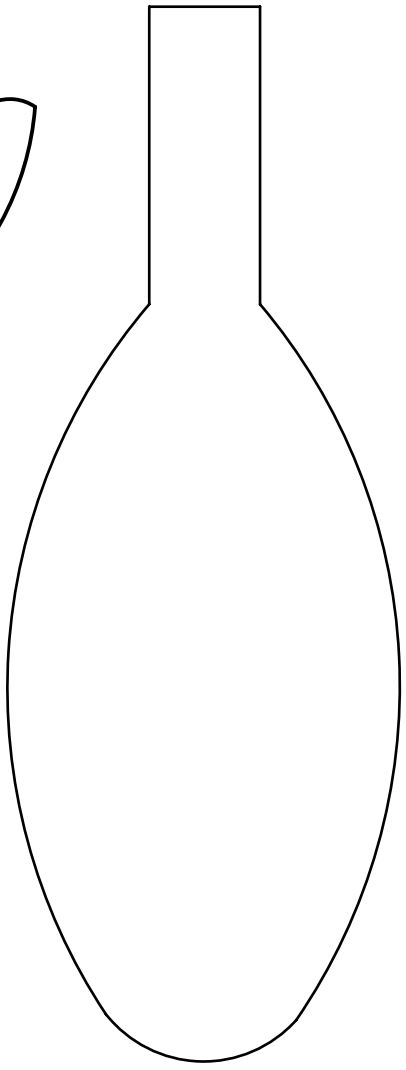


Instructions

Pattern: Paddles
Scale 1:1



Pattern : Paddles (Rower)
Scale 1:1



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