

How to assemble and hang your Magic Wooden Birds

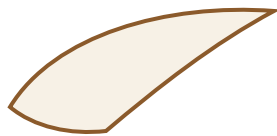
Everything that happens after you cut the wood: the joint, the glue-up, which line to use, where the three hanging points go, and how to get the bird to sit level in the air.



This is the finished bird, hanging. Everything below gets you here.

1 The pieces of each bird

Every bird is made of **4 pieces**. In the templates you'll see the color artwork (the side that shows) and the clean outline (the one you cut).



Body · side A



Body · side B (mirrored)

2 body halves. The second one is cut **mirrored**: print that sheet and glue it artwork-down onto the wood, or simply flip it before cutting.



center = sits inside the body



Tail

1 full wing (both wings are a single piece) and **1 tail**.

2 Which wood, and how thick

Piece	Recommended thickness	Material
Body halves (×2)	1/8 in · 3 mm each	Poplar or birch plywood, or 3 mm MDF
Wing	1/8 in · 3 mm	Same as the body. Thinner than that and the wing tips snap
Tail	1/8 in · 3 mm	Same

At those thicknesses a medium bird weighs **1.5 to 3 oz (40–90 g)**: light enough to turn with the air, stiff enough not to warp. If all you can get is 4–5 mm, that works too — it will hang heavier and wants slightly stronger line.

3 Cutting and sanding

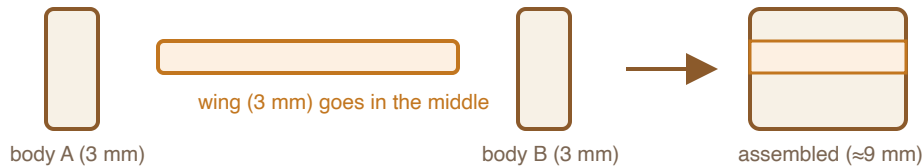
- Stick the printed template to the wood with a **glue stick** or repositionable spray adhesive. Don't use wood glue: it soaks the paper and distorts the template.
- Cut with a **scroll saw** (fine blade, small teeth) or a jigsaw with a curve-cutting blade. Go slowly around the wing tips.
- Sand the edges with **180 grit** and finish with **240**, always with the piece flat on the bench.
- Remove the paper: dampen it slightly and peel. To keep the printed artwork as the finish, leave it on.

⚠ The most common mistake

If you print with "Fit to Page" the template comes out smaller and the pieces won't fit together. Always print at **100% / Actual Size** and check the calibration ruler against a real one.

4 The joint and the glue-up

The wing and the tail sit **between the two body halves**, like a sandwich. The lines marked inside the body outline show you where they rest.

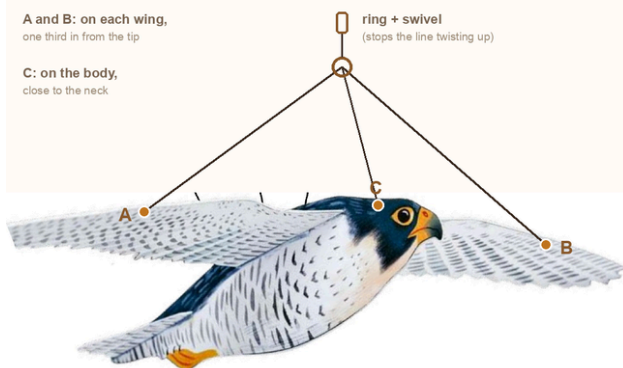


Dry-fit the joint **without glue** first.

- Use **PVA wood glue**. A thin coat on both inner faces of the body.
- Clamp with **masking tape** or clothes pins for **30 to 45 minutes**.
- Let it **cure for 4 hours** before hanging. Hang it sooner and the wing shifts.
- Wipe off the squeeze-out with a barely damp cloth while it's still wet.

5 The three lines: where they go

The bird hangs from **3 lines** that rise and meet at a single ring. Two go on the wing, one on the body. That's the whole trick: placed right, the bird sits level and turns on its own with the air.



A and B: on the wing, one third in from the tip, **equal on both sides**. **C:** on the body, close to the neck.

What	Exact spec
Line	Clear nylon monofilament, 0.010–0.014 in (0.25–0.35 mm) , 10–20 lb test. Nearly invisible. Alternative: fine invisible thread.
Drill bit	1/32 in (1 mm) for the holes. No drill? A hot pin or a fine awl works.
Length	12 to 16 in (30–40 cm) from each point up to the ring.
Knot	Double overhand knot plus a drop of super glue.
At the top	A split ring and a fishing swivel between the ring and the hook: stops the line from twisting up.

✓ The adjustment that makes it work

Hang it and look at it **from the side**. It should sit level, or with the head just slightly lower than the tail. If not, fix it with line C (step 6).

6 If it doesn't hang level

What you see	What to do
Tail drops (head rises)	Shorten line C (the neck one) by 1/2 in at a time, or move its hole 1/2 in toward the head.
Nose dives (head too low)	Lengthen line C, or glue a small washer (2–5 g) under the tail.
Leans to one side	Points A and B aren't even: measure again from the body and match them.
Spins and twists up	The swivel is missing. It's a cheap fishing part and it solves this completely.
Hangs perfectly still	Find a gentle draft: near a window or a hallway. A fan pointed straight at it just shakes it around.

7 Finishing and care

- If you kept the printed artwork as the finish, seal it with **matte water-based spray varnish**: 2 light coats, 20 minutes apart.
- If you're painting it, lay down a coat of **white primer** first and paint with acrylics.
- Don't hang it in a bathroom or outdoors: moisture delaminates thin plywood.
- **Safety**: line and small parts are not a toy. Hang it out of reach of children under 3.

8 About the CNC and laser files

The **Vector Templates — CNC & Laser** folder is only for people with a laser cutter or CNC machine, and those files open in design software (Lightburn, Inkscape, VCarve). **You don't need them.** If you're cutting by hand, use the regular PDF templates — they contain exactly the same birds.