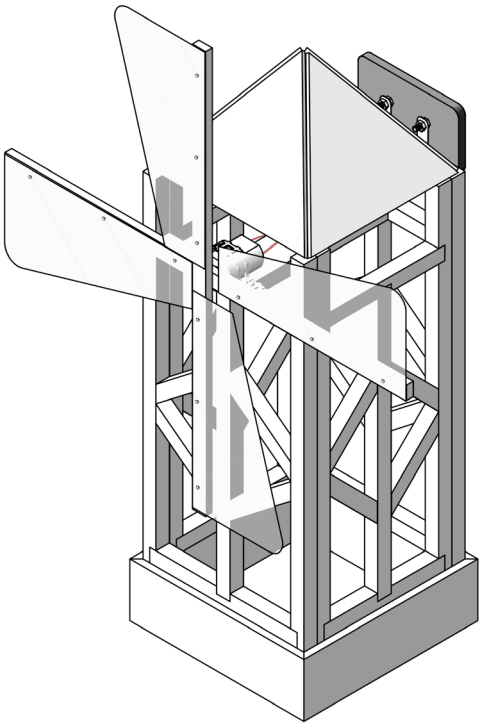
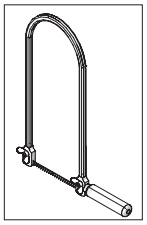
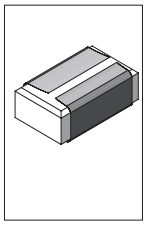
124.025

Solar Driven Mill

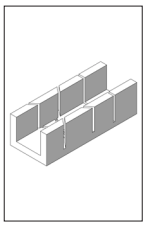


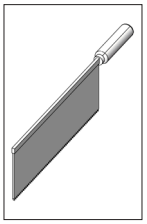
Tools required:


Fretsaw or Scroll Saw

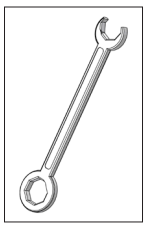

Sandpaper


Warding File

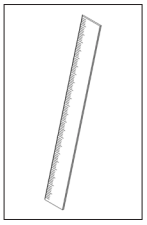

Mitre Box

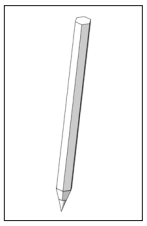

Dovetail Saw

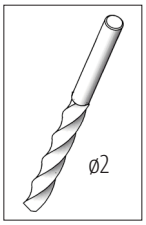

Philips Screwdriver


Wrench

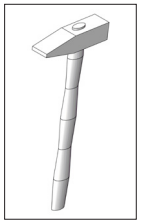

Scissors


Ruler

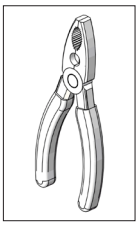

Pencil and Edding Marker



Drill Bit


Hammer


Soldering Iron and Solder

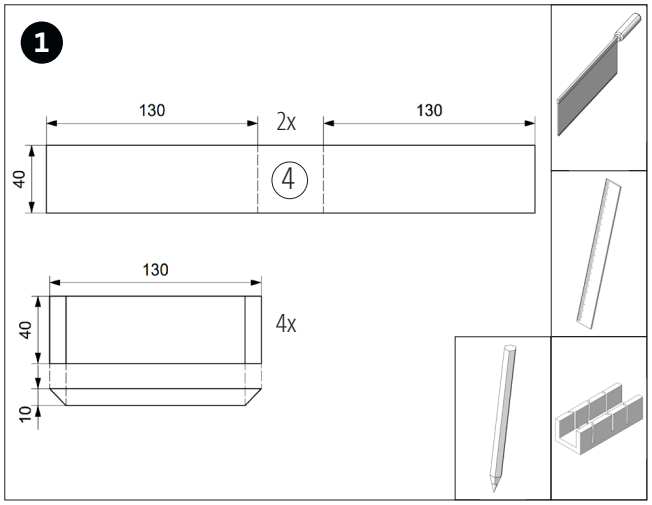

Wire Strippers

Please note:

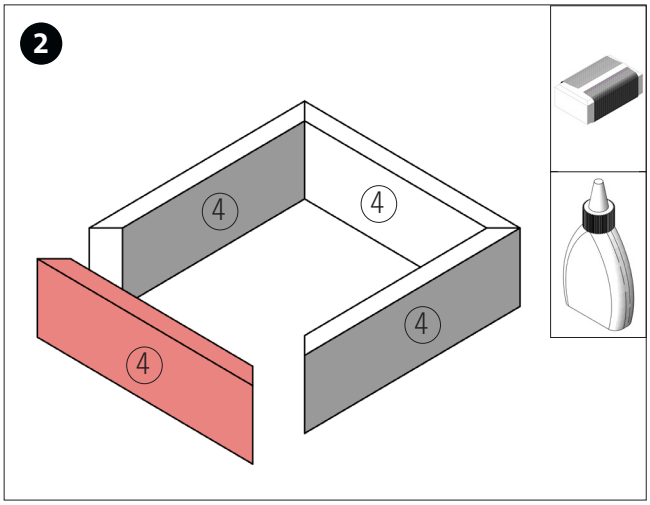
The OPITEC handicraft packs are not toys in a typical off-the-shelf sense, but rather additional teaching and learning material for educational purposes. This craft pack may only be constructed by children and adolescents under the guidance and supervision of experienced adults. Not suitable for children under 36 months. Choking hazard!

Stocklist	Quantity	Size (mm)	Description	Part No.
Wooden Strip	20	250x10x10	Framework	1
Wooden Strip	2	300x10x5	Wind Wheel	2
Wooden Strip	1	100x25x10	Engine Support	3
Wooden Strip	2	300x40x10	Rack	4
Cottonwood Plywood	1	300x135x3	Roof	5
Thermoforming Foil	1	DIN A5	Wind Wheel	6
Solar Cell 0,5V 400mA	1		Solar Cell	7
Solar Motor	1		Motor	8
Jumper Wire	1		Wiring	9
Tapping Screw	4		Mounting Motor + Solar Cell	10
Nails	12		Nails	11
Square Perforated Plate	1	100x10x0,5	Motor Mounting	12

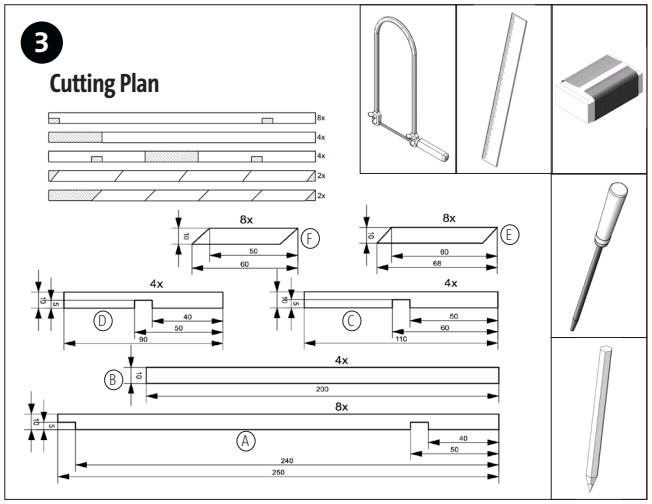
OPITEC



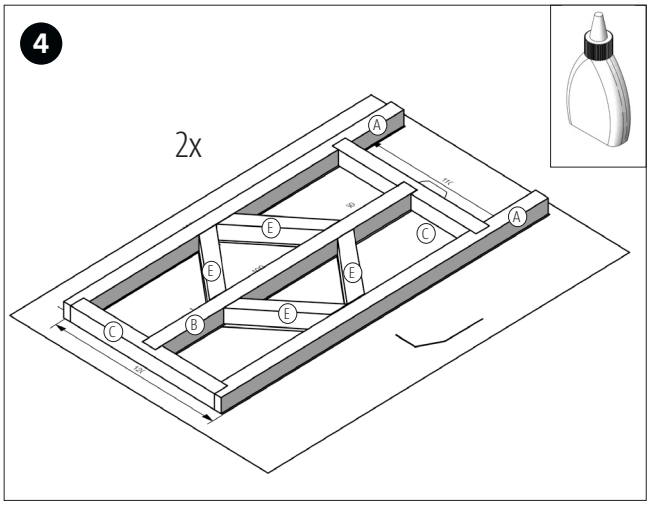
Cut two 130mm long pieces off the two wooden strips (2). Then bevel the outer edges at 45° as shown. Use the mitre box!



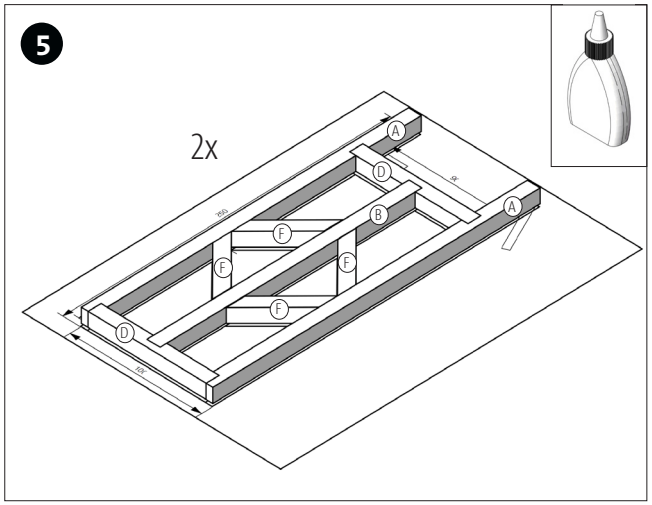
Furthermore, clean the saw cuts with sandpaper and glue the parts (4) together (wood glue) as depicted. Let the glue set thoroughly.



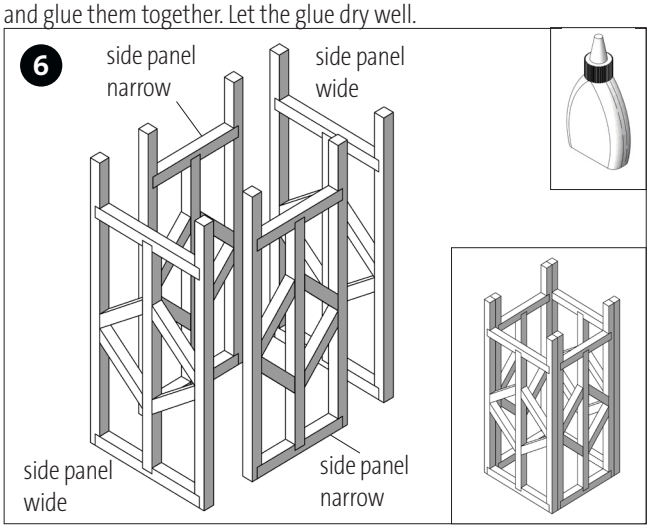
Cut the wooden strips (1) according to the template on page 5. Note quantity. Clean the saw cuts and saw out the recesses. Clean them too.



Glue the two wider side panels together as shown. For this process arrange the strips (A, B, C & E) according to the template on page 9 and glue them together. Let the glue dry well.



Glue the two smaller side panels together as shown. For this process place the strips (A, B, D & F) according to the template on page 11 and glue them together. Let the glue set thoroughly.



Glue the finished side panels together as illustrated and let the wood glue set thoroughly.

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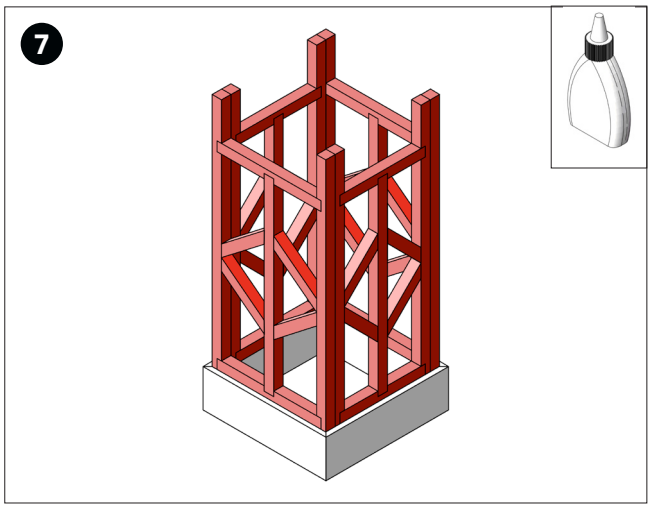
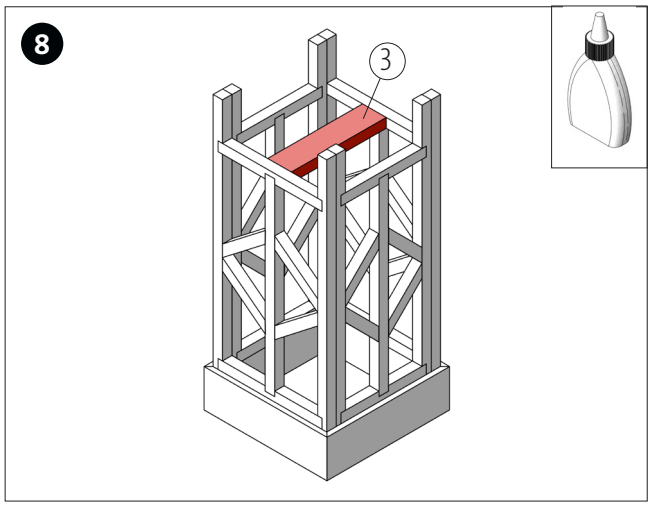
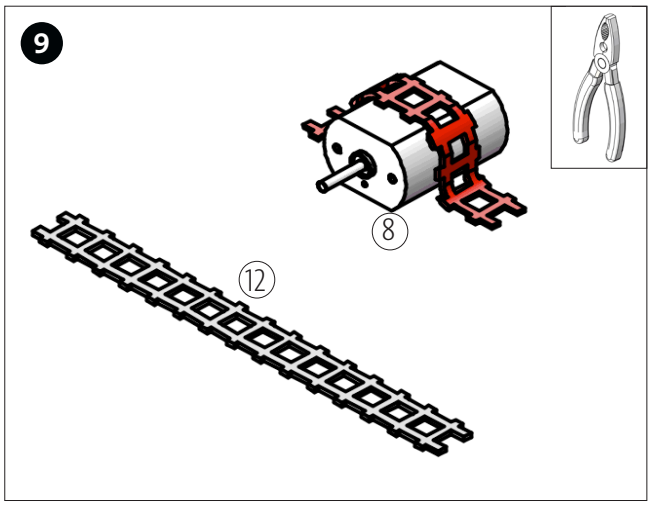


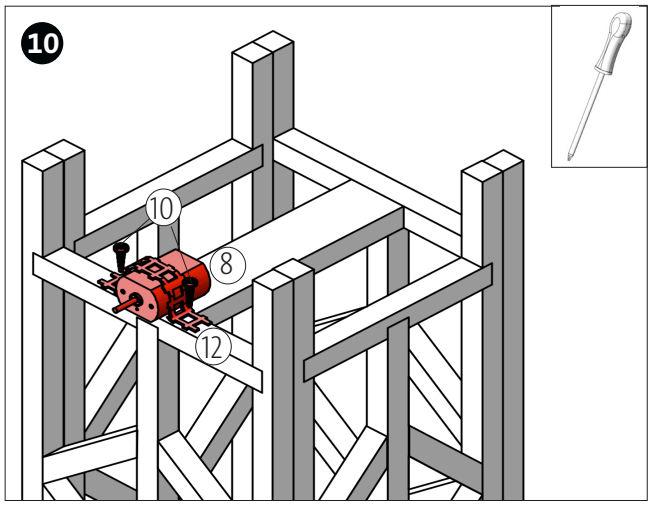
Glue the produced framework construction centrally to the base frame and let the glue dry well.



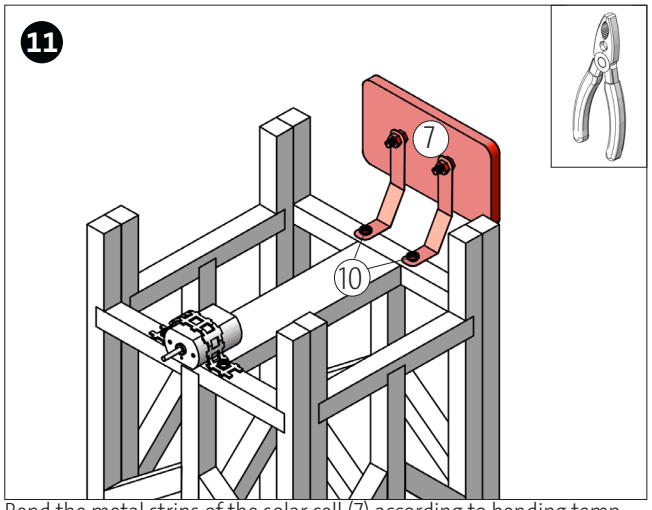
Glue the wooden strip (3) centrally into the upper frame of the framework construction.



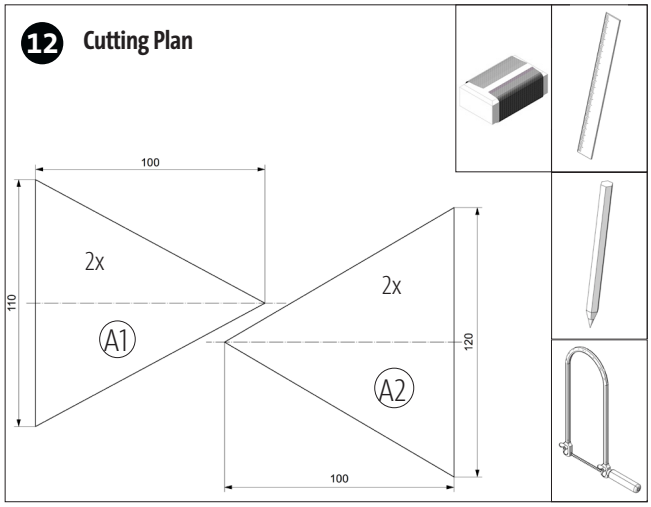
Bend the perforated plate strip (12) over the motor as shown.



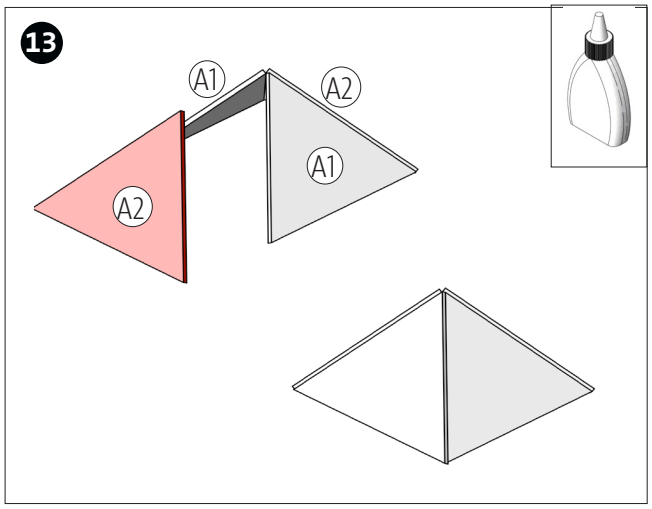
Screw the motor (8) with the perforated plate strip (12) to the upper frame and the transverse strip (3) as shown. Use two screws (10) .



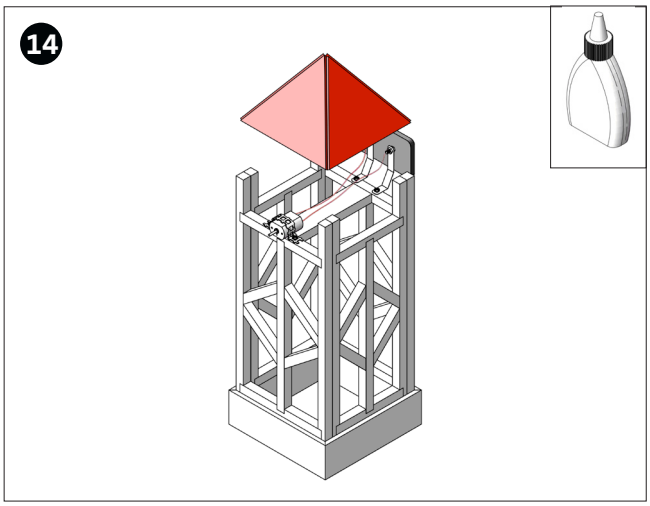
Bend the metal strips of the solar cell (7) according to bending template on page 9. Fasten it to the solar cell using the supplied nuts and washers. Then screw it to the framework building with 2 screws (10) as shown.



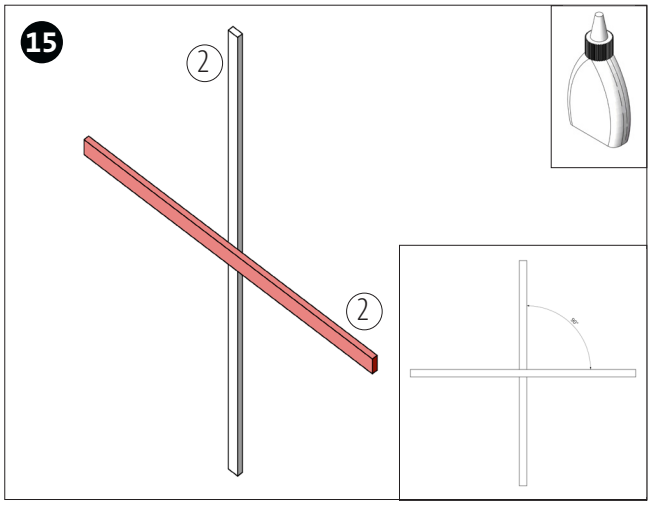
Transfer the roof template (page 7) two times onto the cottonwood plywood (5) and saw it out by using the fretsaw. Smoothen the saw cuts.



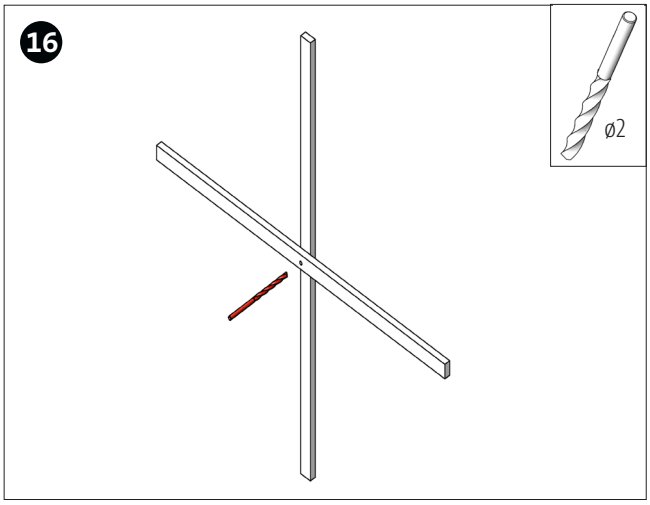
Build the roof by gluing the plywood cuts together.



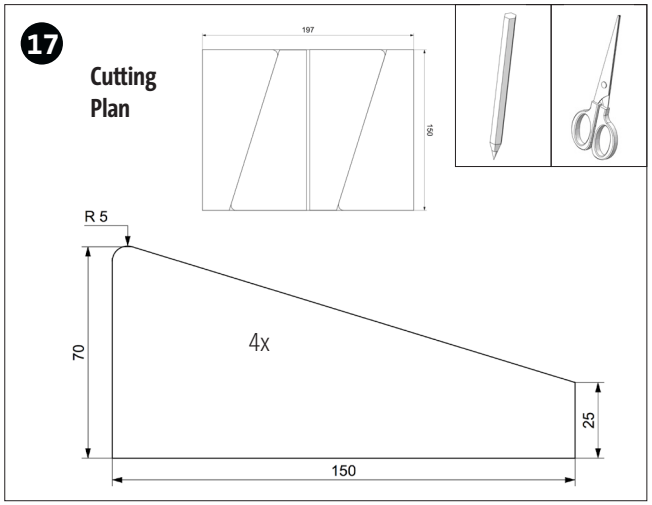
Glue the finished roof on the 4 corner pillars of the professional building as illustrated. Let glue dry thoroughly.



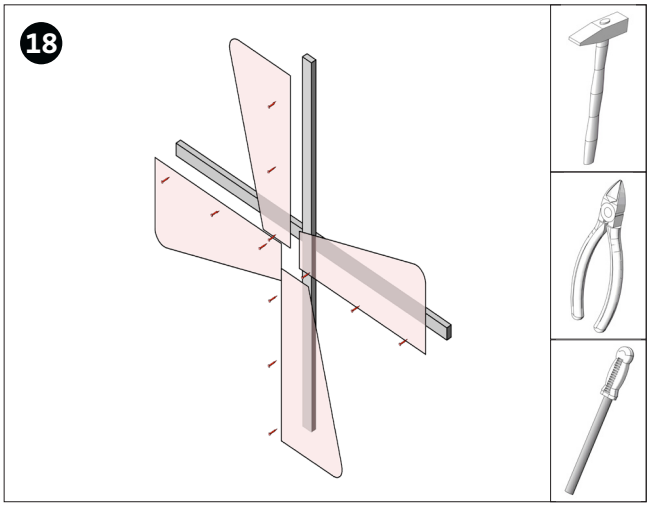
Glue one wooden strip (2) centrally onto the other strip (2) in a crossed manner (see illustration!).



Drill the wind wheel centrally (ø2 mm).



Transfer the template for the wings 4x onto the thermoforming film (DIN A5) with Edding. Cut them out. (Stick to cutting plan!)



Fix the 4 wings with 3 nails (11) to the wooden guide (3) as shown. Clipp off the protruding nails from the back side using a side cutter. Use a file to smoothen the surface.

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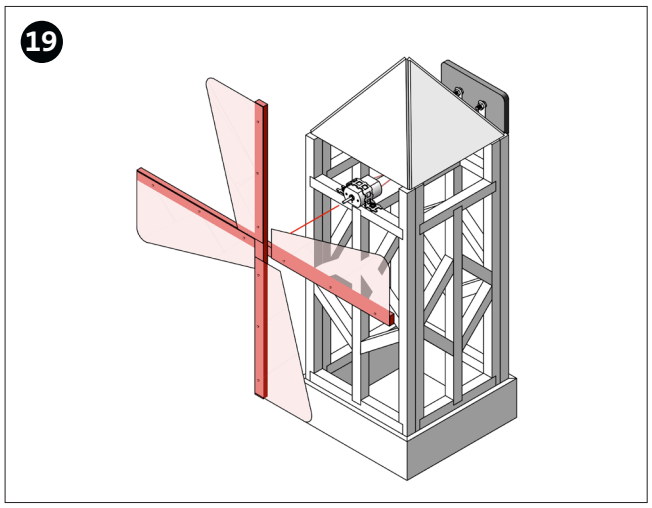
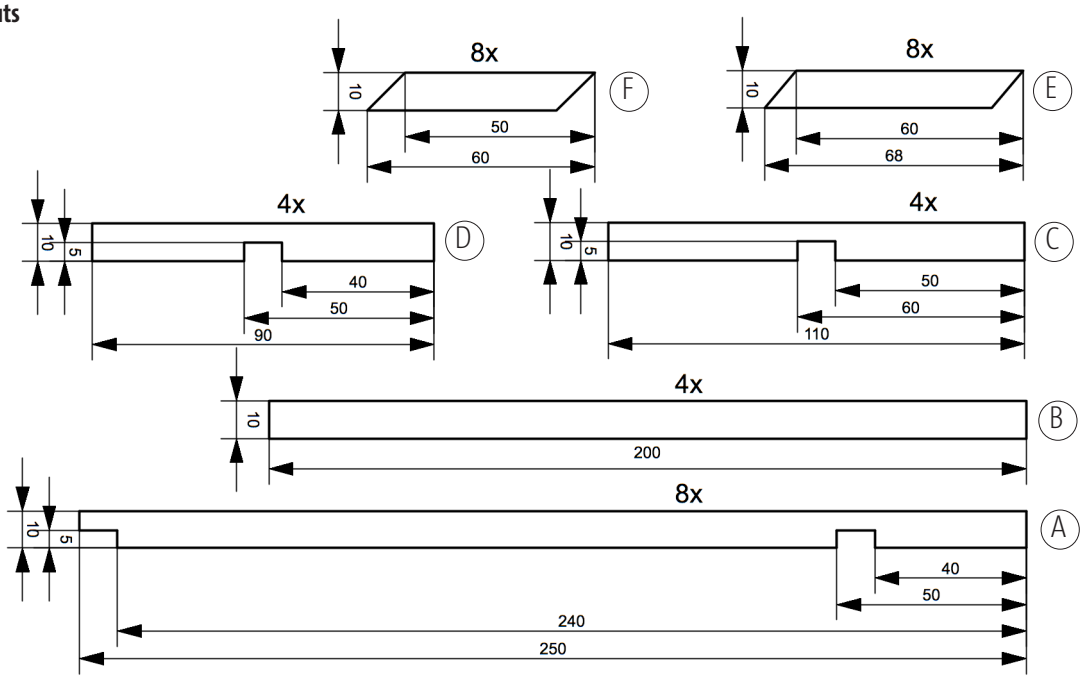
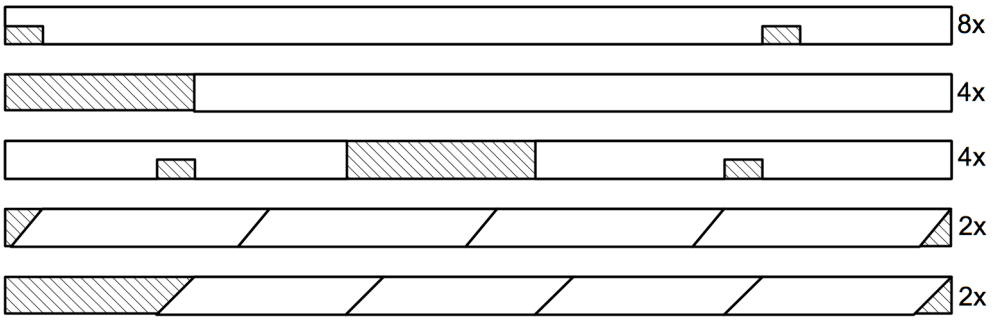


Put the wind mill to the motor shaft as shown.
Done!
Note: Check the radial run-out! If necessary, adjust the weight by filing down the wooden strip!

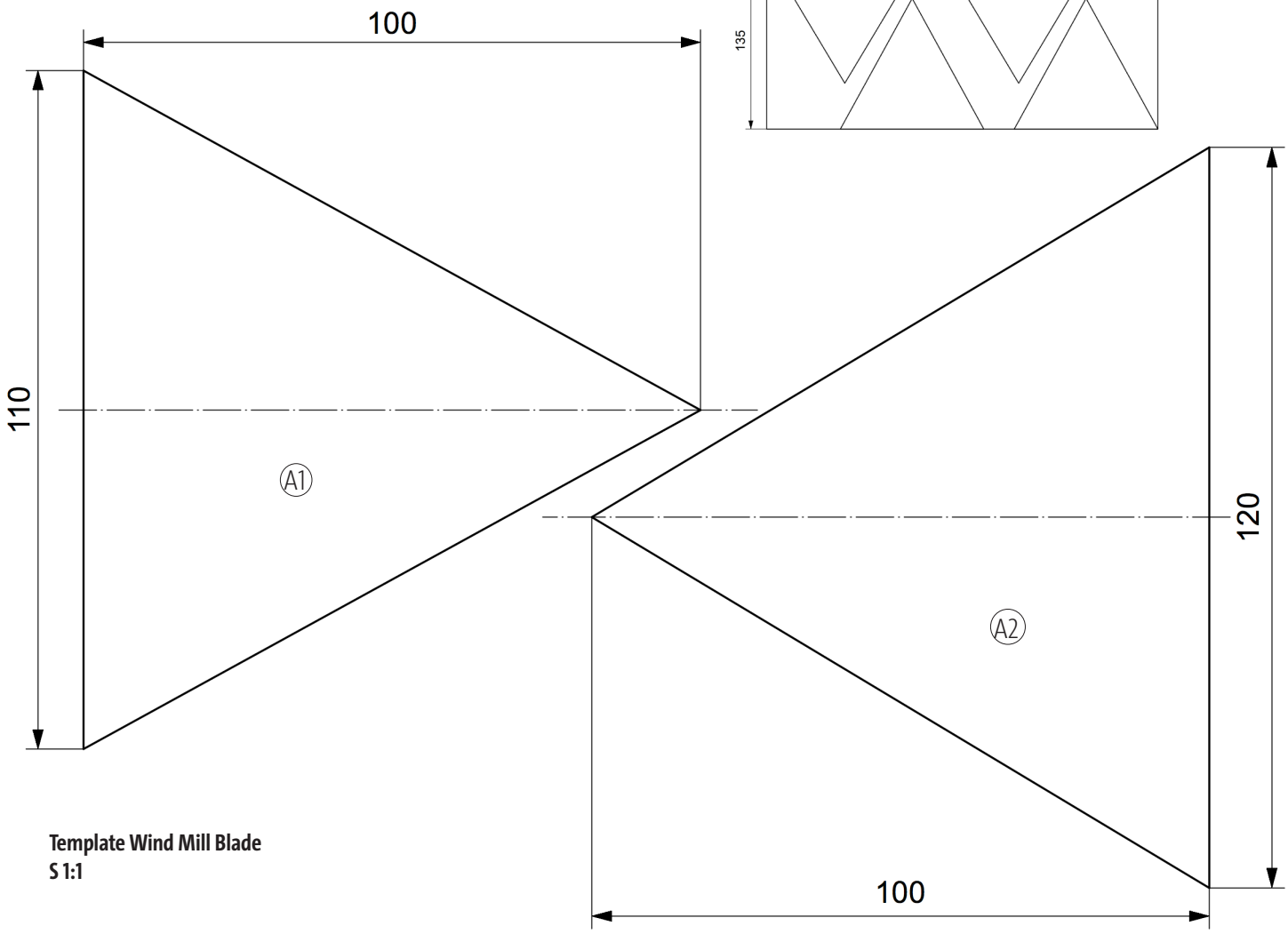
Template Strip Cuts
S 1:2



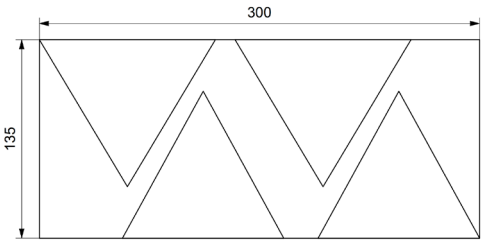
Cutting Plan Strips



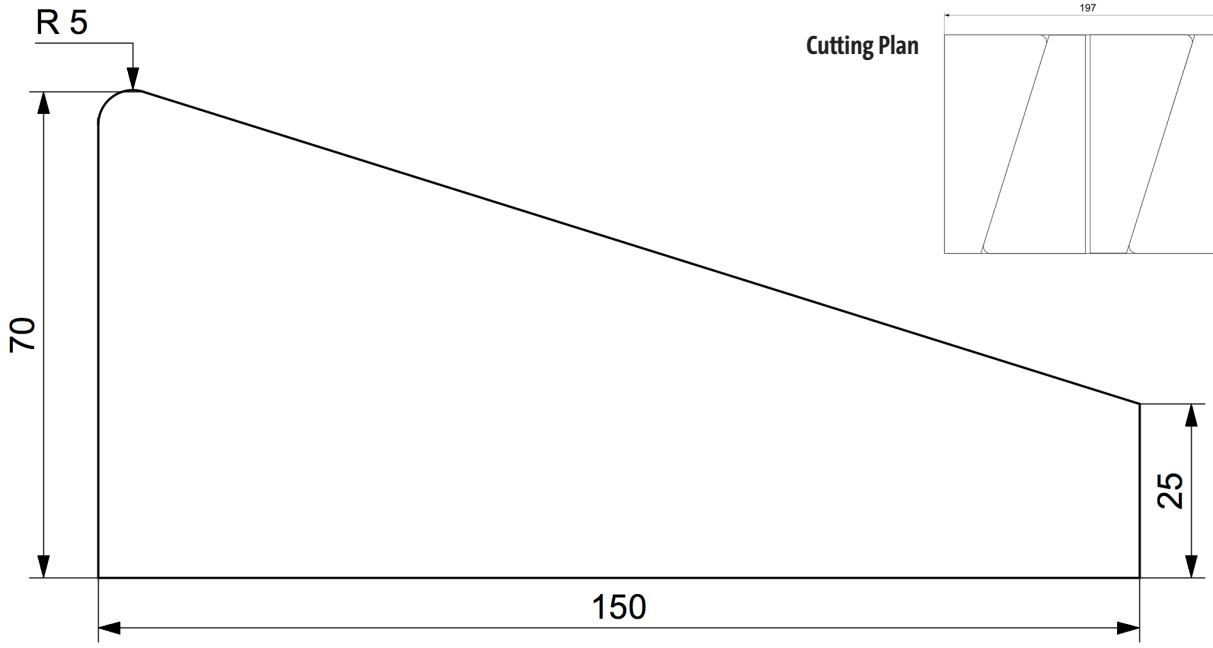
Template Roof
S 1:1



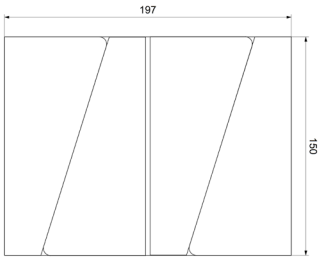
Cutting Plan



Template Wind Mill Blade
S 1:1

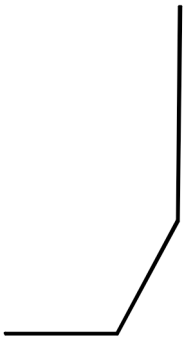


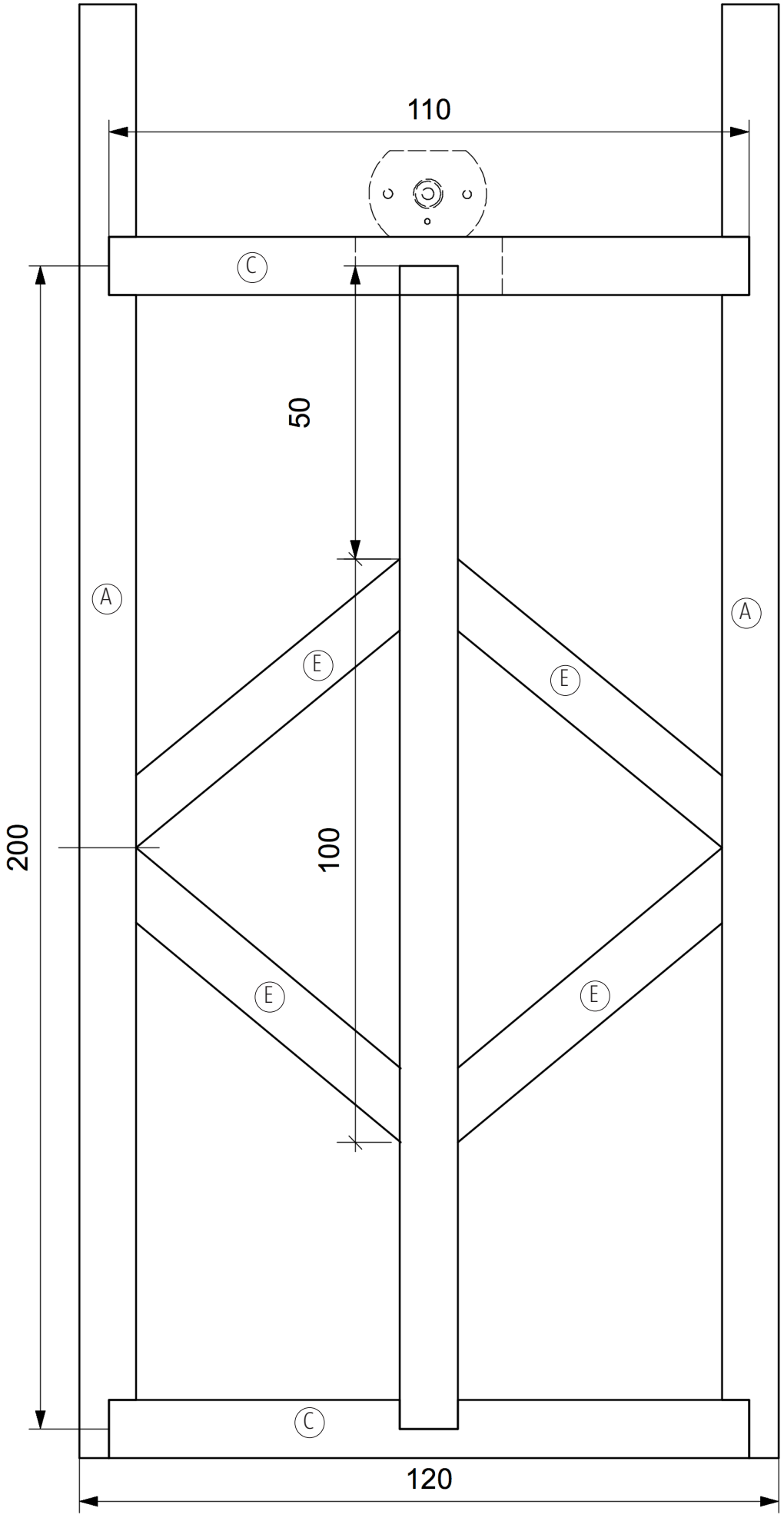
Cutting Plan



Template Framework Side Panel, wide
S 1:1

Bending Template
Solar Cell Supports





Template Framework Side Part, narrow
S 1:1