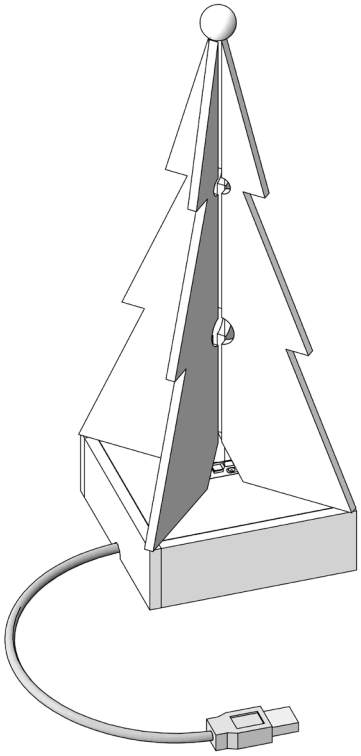
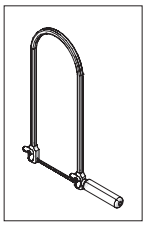
116.253

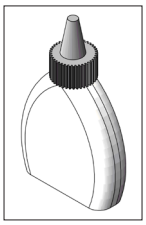
Miracle Tree with LED Lighting and USB

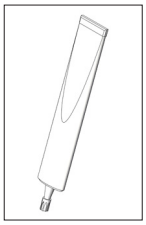


Tools Required:

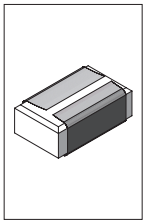

Fretsaw or Scroll Saw

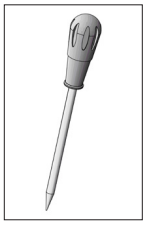
Hammer

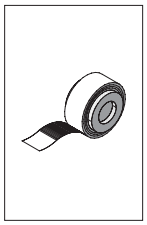

Wood Glue

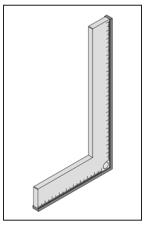

All Purpose Glue

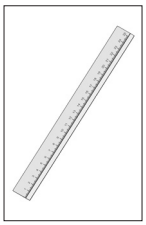
Slot Screwdriver


Sandpaper


Pricking Awl


Aadhesive Tape


Square


Ruler

Round File

Please note:

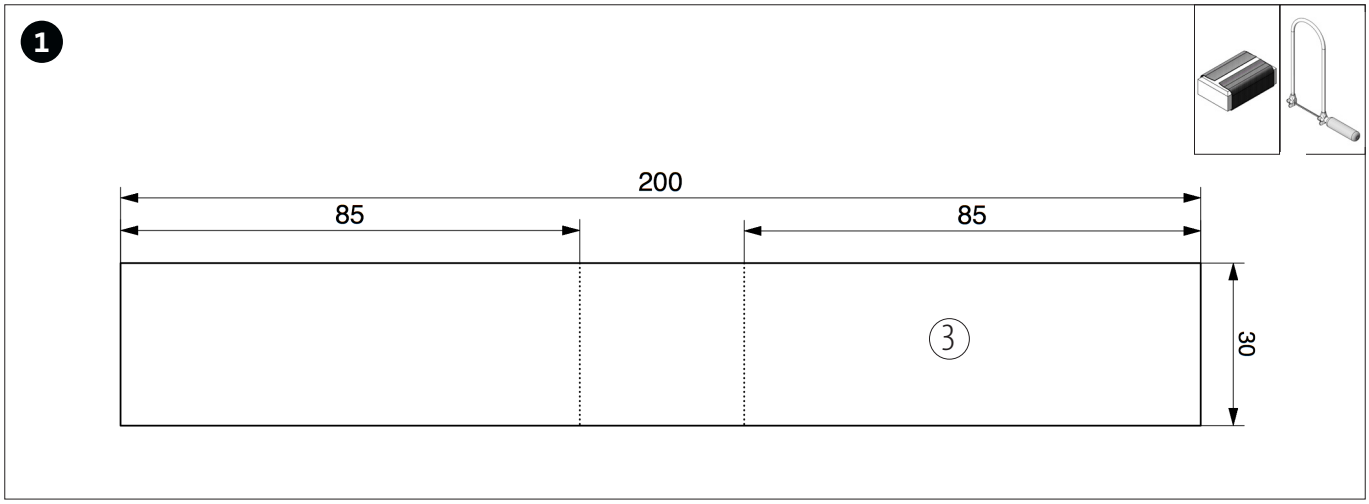
The OPITEC handicraft packs are not toys in a typical off-the-shelf sense, but rather additional teaching and learning material for educational purposes. This craft pack may only be constructed by children and adolescents under the guidance and supervision of experienced adults. Not suitable for children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

Stocklist	Quantity	Size (mm)	Description	Part No.
Plywood	1	220x220x4	Tree Construction	1
Plywood	1	80x80x8	Base Plate	2
Wooden Strip	2	200x30x5	Frame Strip	3
Acrilyc Glass Rod	1	245x6	Glowstick	4
USB-charging Cable	1		USB Connection	5
LED Light	1		Lighting	6
Wooden Ball with blind hole	1	ø 15	Wooden Ball	7
Eyebolt	1	12	Cable Mounting	8
Nail	2	15x1	Connection LED	9
Lustre Terminal	3		Wiring	10
Resistor 100 Ohm	1		Resistor	11

Grey Cardboard (not included in the kit!)

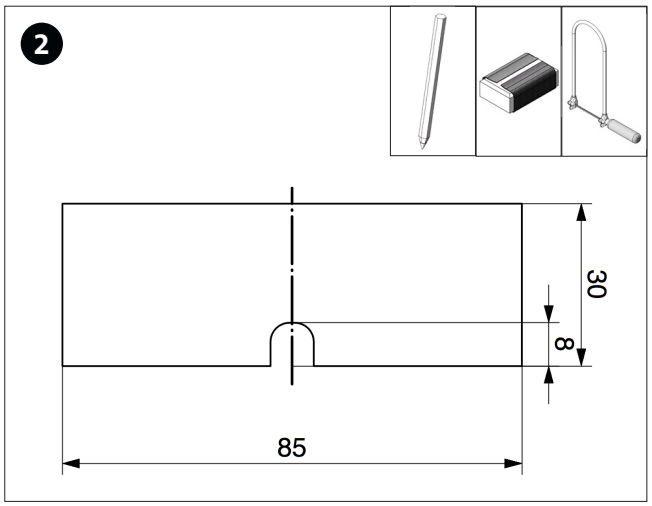
OPITEC

1



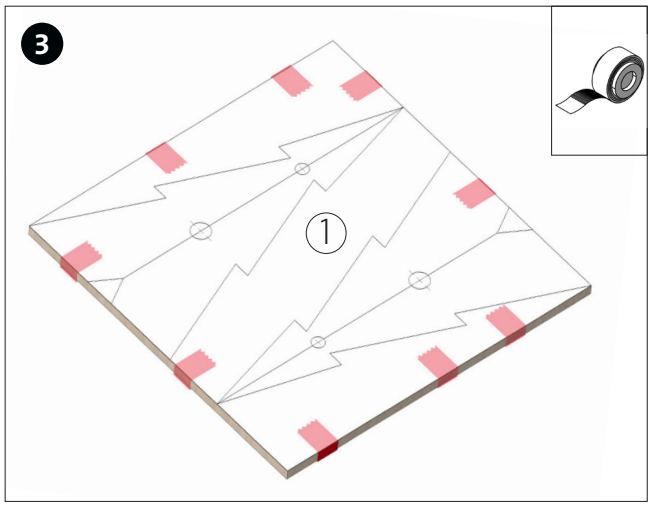
Cut off 2 strips with a length of 85mm from each of the two wooden strips (3) as shown. Clean the saw edges.

2



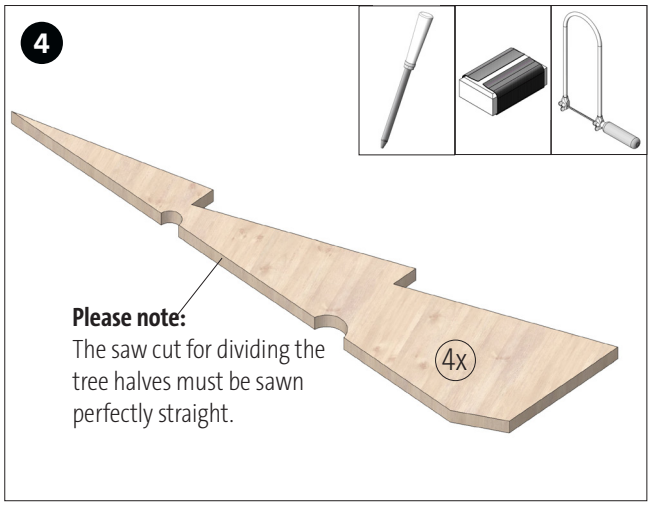
Mark a recess on one of the 85mm strips (3a) as shown and saw out with the fretsaw. Clean the saw cuts.

3



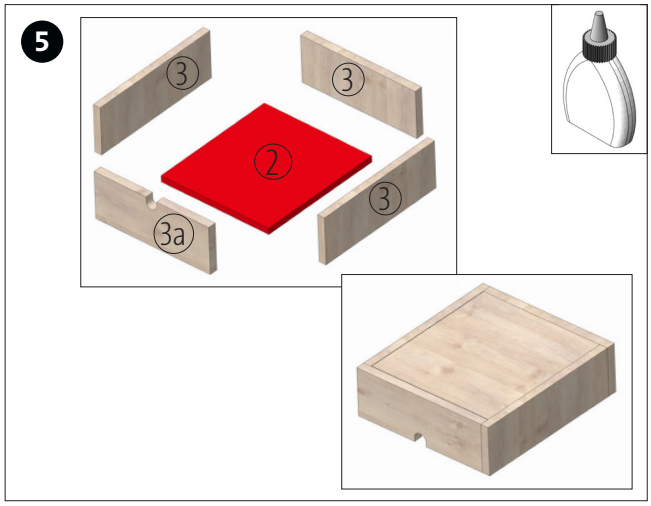
Cut out the template (page 7 + 9) and stick it to the plywood plate with adhesive tape.

4

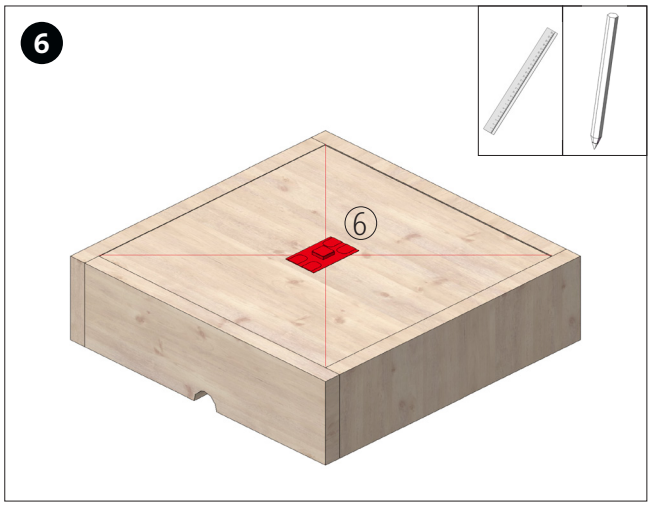


Cut out both tree halves and clean the saw edges. Then saw through the tree halves halfway and work out the curves with a round file.

5

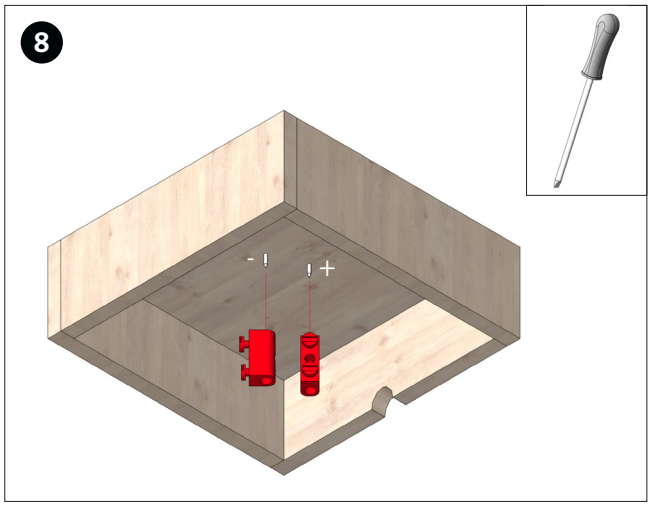


Glue the four cuts (3 + 3a) around the plywood (2) as shown. Let the glue dry well.

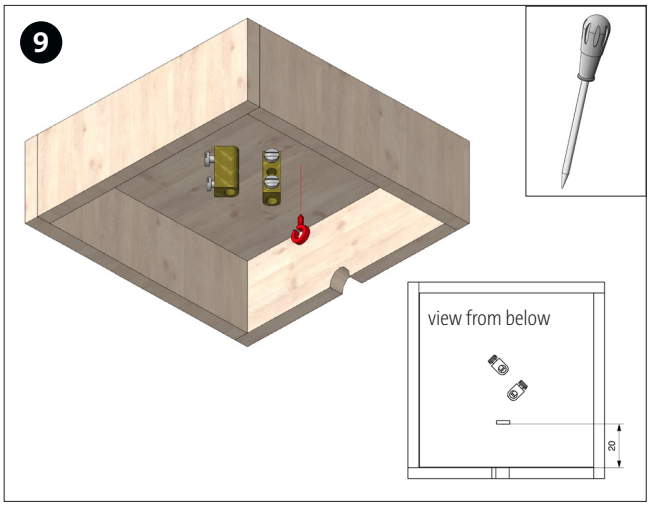


Mark the middle of the base plate (2) by diagonals. Glue the self-adhesive LED light (6) centrally to the base plate (2).

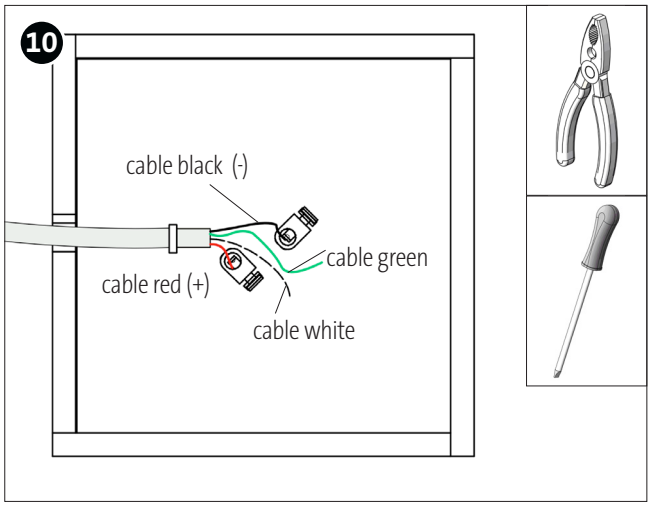
Pin a nail (9) through the positive pole of the LED (6). Place a second nail (9) diagonally to the first nail at the minus pole of the LED.



Fix a luster clamp insert (10) to each nail (9) with the help of screws from below. <1 /> Note: <2 /> The two luster terminals must not touch each other. Mark the poles!

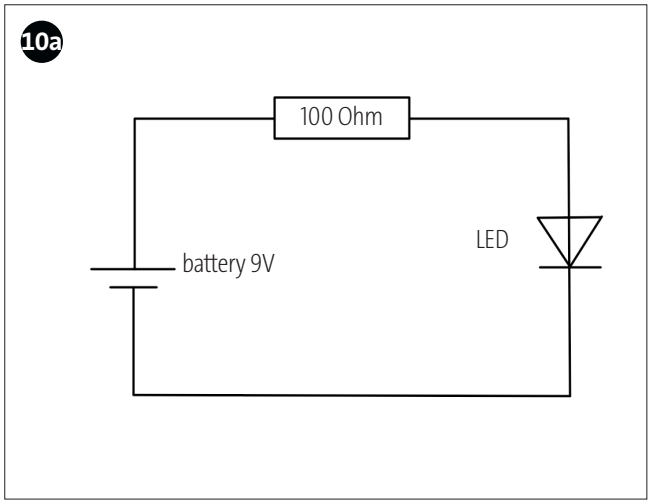


Measure 20 mm from the recess on the underside and screw in the ring screw (8). <1 /> Note <2 />: Possibly prepunch!



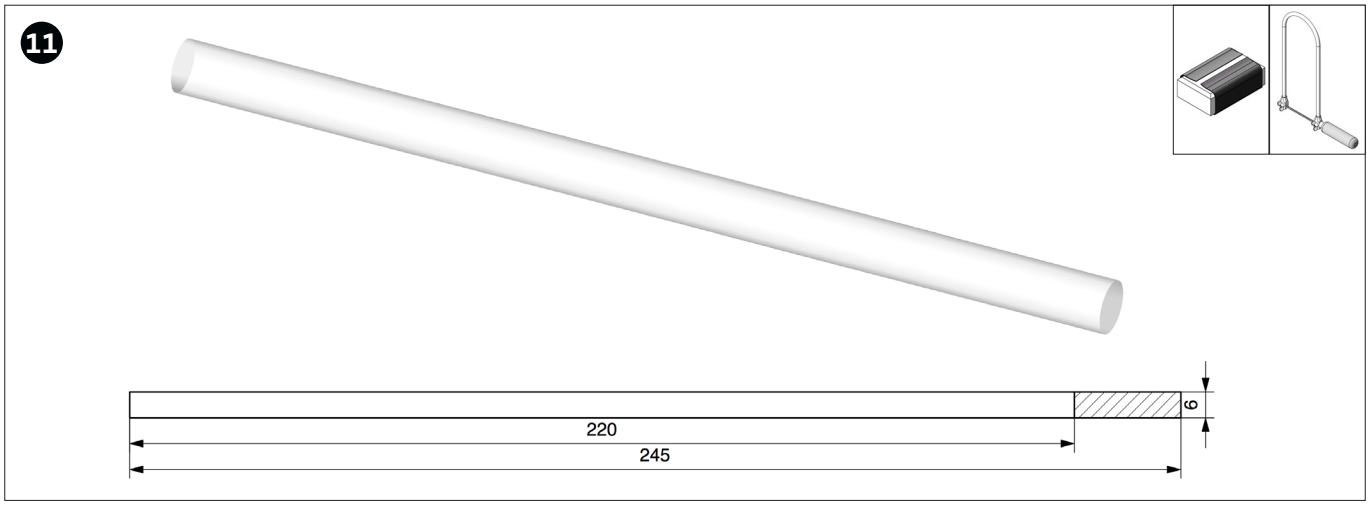
Remove the insulation of the USB cable by 10 mm at the end. Strip the black and red cable by approx. 5mm. Then lead the USB cable through the recess in the side rail (3) and through the ring screw (8) as shown. Connect the black cable to the - pole of the luster terminal and connect the red cable to the + pole of the LED (luster terminal).

Please note:
Connect the USB cable to the computer, powerbank or power supply (mobile phone charger with USB) and check the function. LED must light up. If this is not the case, check the circuit.

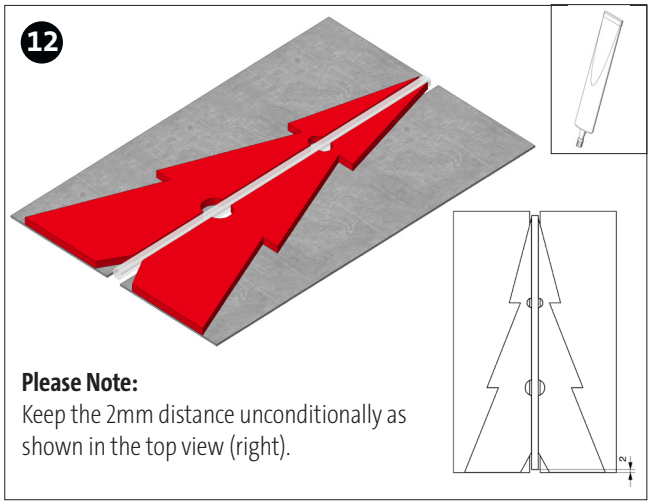


Alternatively, the miracle tree can also be operated by a 9 V battery. This requires the resistance as well as the third luster terminal. You also need a battery clip, that ist not included in this package. For connection see wiring diagram!

General:
Before the LED - miracle tree is put together, colour it. Adhesive surfaces should not be coated with paint if possible.

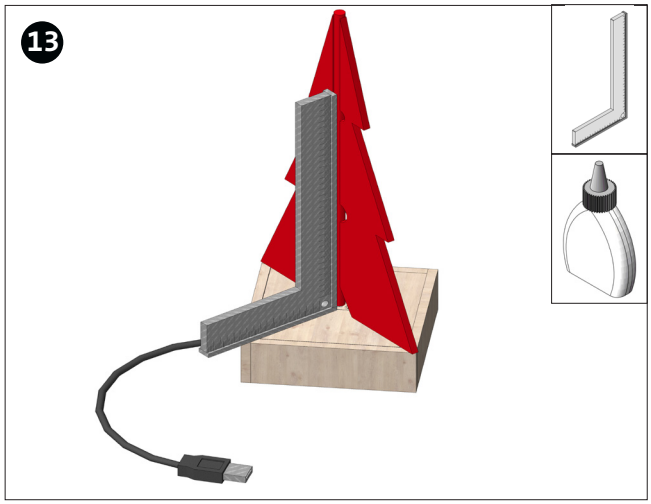


Shorten the acrylic glass stick (4) with the fretsaw to 220mm. Clean the saw cut.

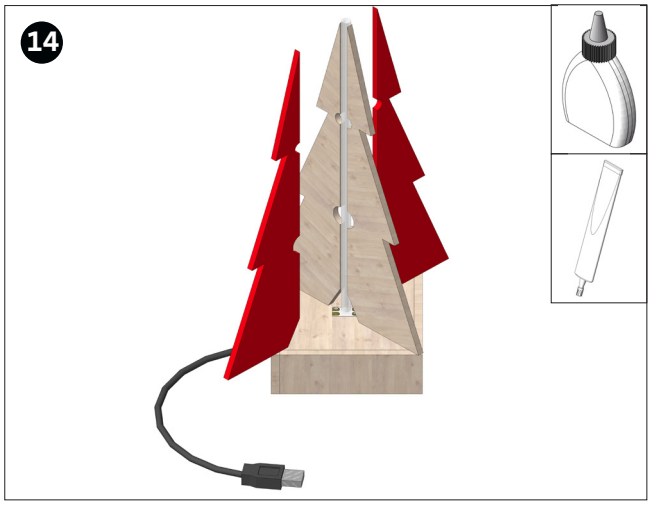


Please Note:
Keep the 2mm distance unconditionally as shown in the top view (right).

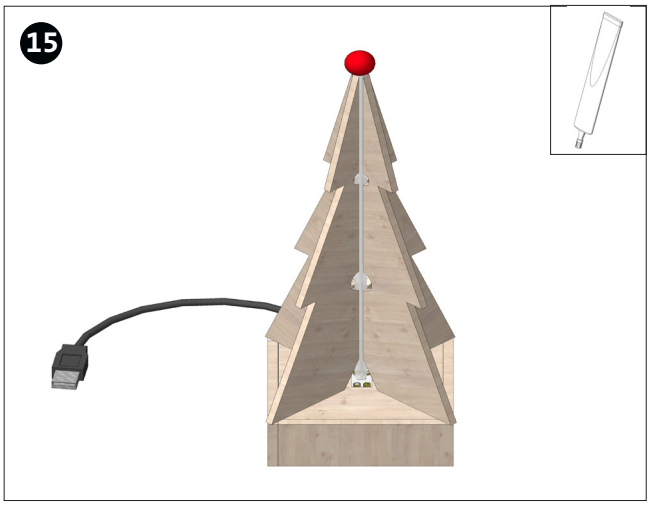
Place the acrylic rod (4) between two pieces of grey cardboard (1mm thick). Coat the adhesive surfaces of two tree quarters (1) with all purpose glue and glue them to the rod, so that this is at least 2mm indented to the tree quarters from below. Let the glue dry well.



Place and glue the tree half with the rod diagonally on the base as shown. The round rod has to be exactly above the LED! Possibly support the construction with an angle.



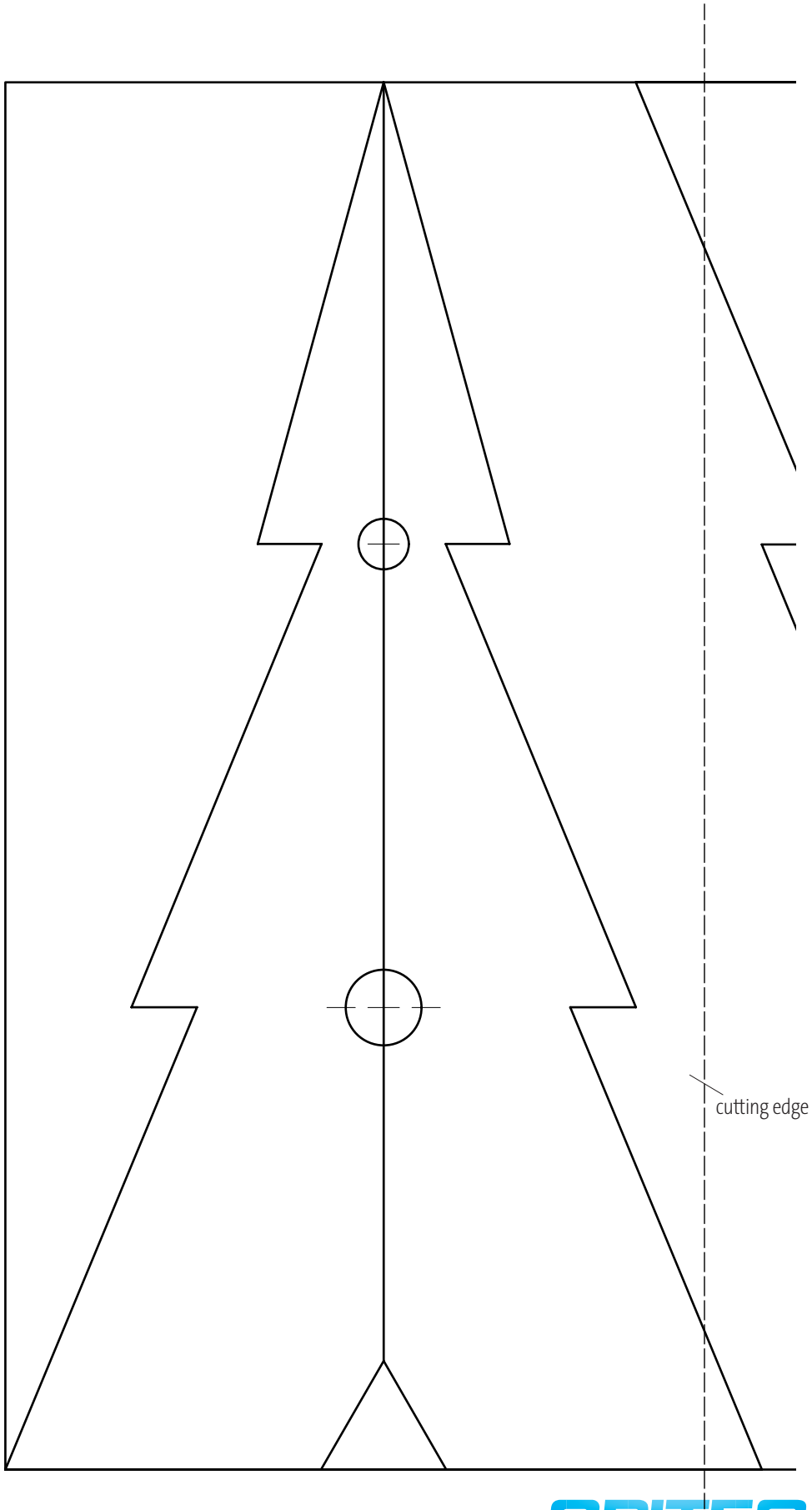
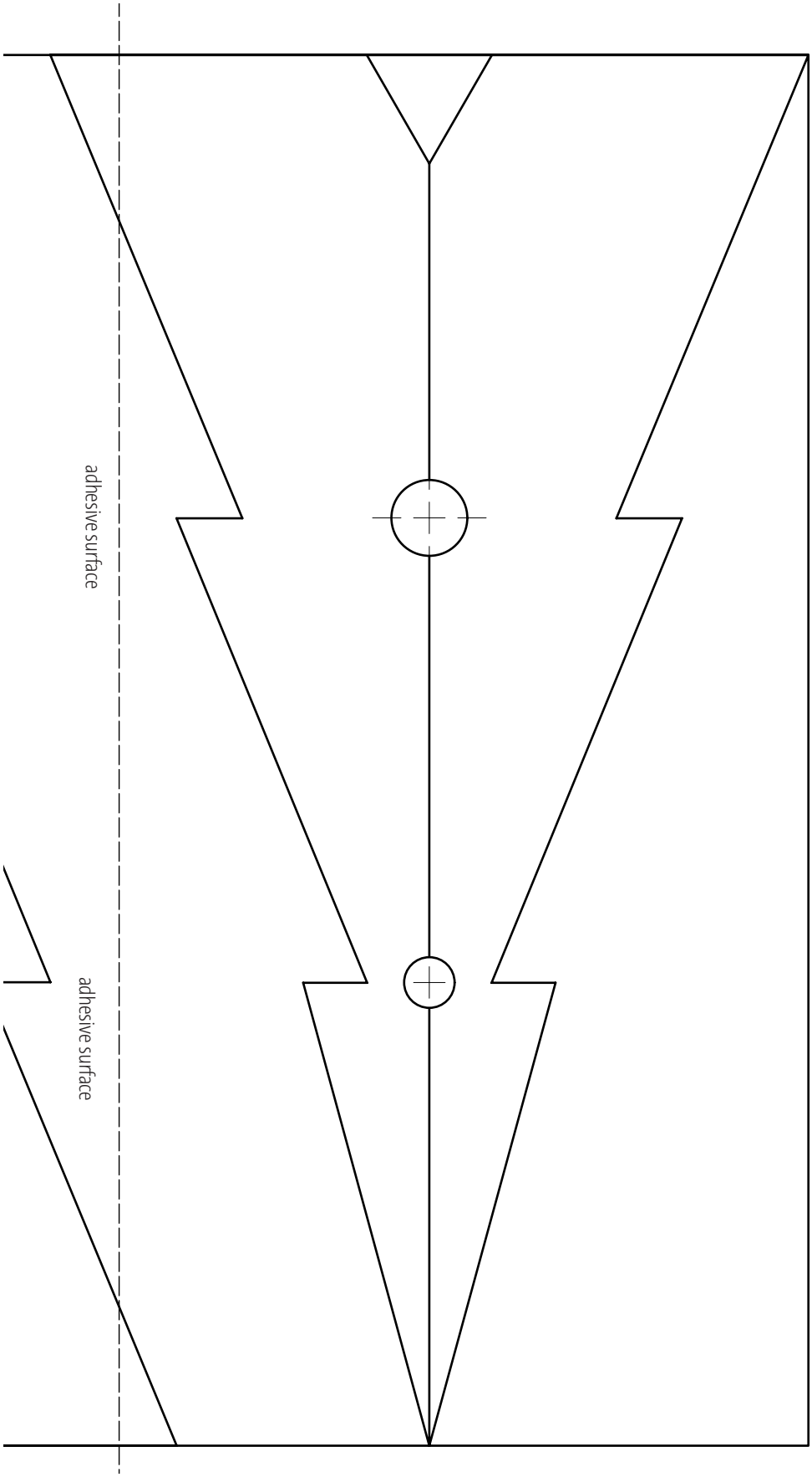
Without a break apply glue to the adhesive surfaces of the two remaining tree areas and stick them to the center of the round rod as well as on the stand.



Glue the wooden ball (7) to the acrylic rod by using all purpose glue. Let the glue dry well. (at least 60 minutes!)
Hint: Adjust the tree areas well!

Template Tree Halves
S 1:1

Please note:
If you want to produce the curves with a drill, you should drill before sawing out the parts!



Template Tree Halves
S 1:1