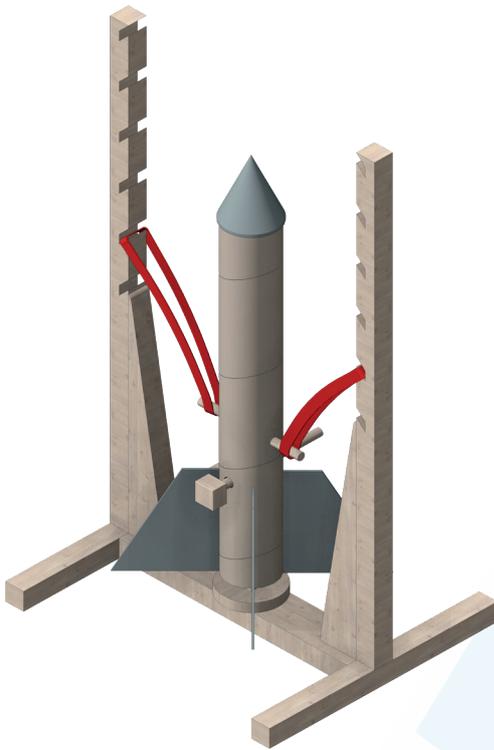


127.142

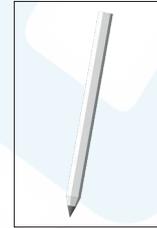
Rocket with launch pad



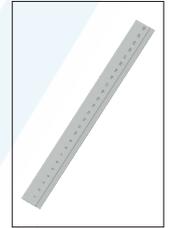
Tools Required:



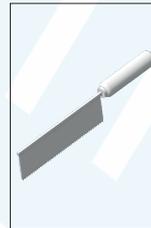
Jig saw



Pencil



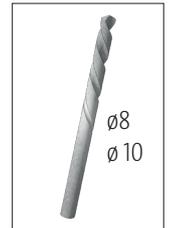
Ruler



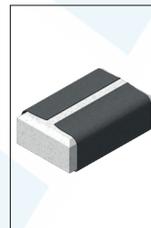
Miter saw



Wood glue



Drill



Sandpaper



File



All purpose glue



Scissors



Adhesive tape



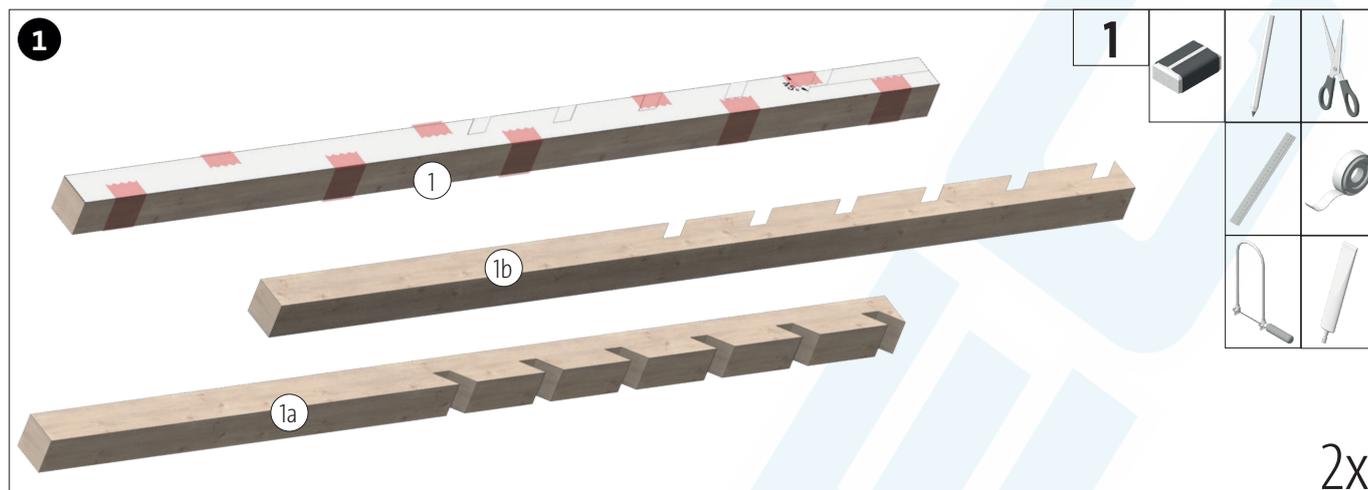
Cutter knife

NOTE:

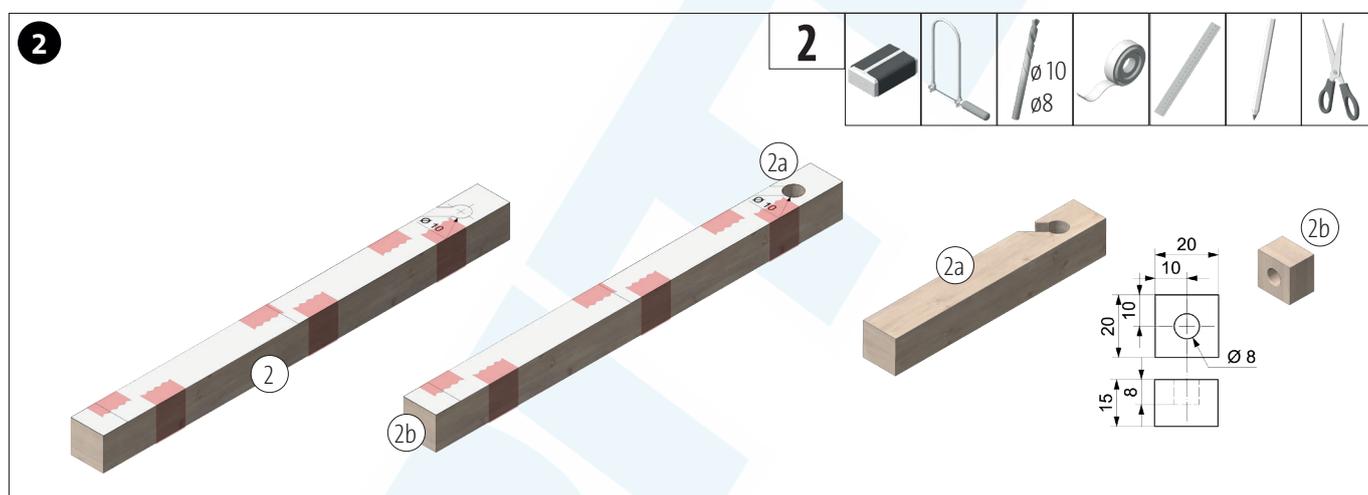
The OPITEC range of projects is not intended as play toys for young children. They are teaching aids for young people learning the skills of Craft, Design and Technology. These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation! Not suitable for children under 36 months. Choking hazard!

Part List	Quantity	Dimensions (mm)	Description	Part no.
Wooden strip	2	500x20x20	Launching Ramp	1
Wooden strip	3	250x20x20	Launching Ramp	2
Wooden strip	2	250x40x20	Launching Ramp	3
Wooden wheel	1	ø60	Launching Ramp	4
Wooden round bar	1	ø8x500	Launch pad/rocket	5
Cardboard roll	1	ø50x700	Rocket	6
Foam sheet	2	290x400	Rocket	7
Elastic Band	4	ø100	Drive	8

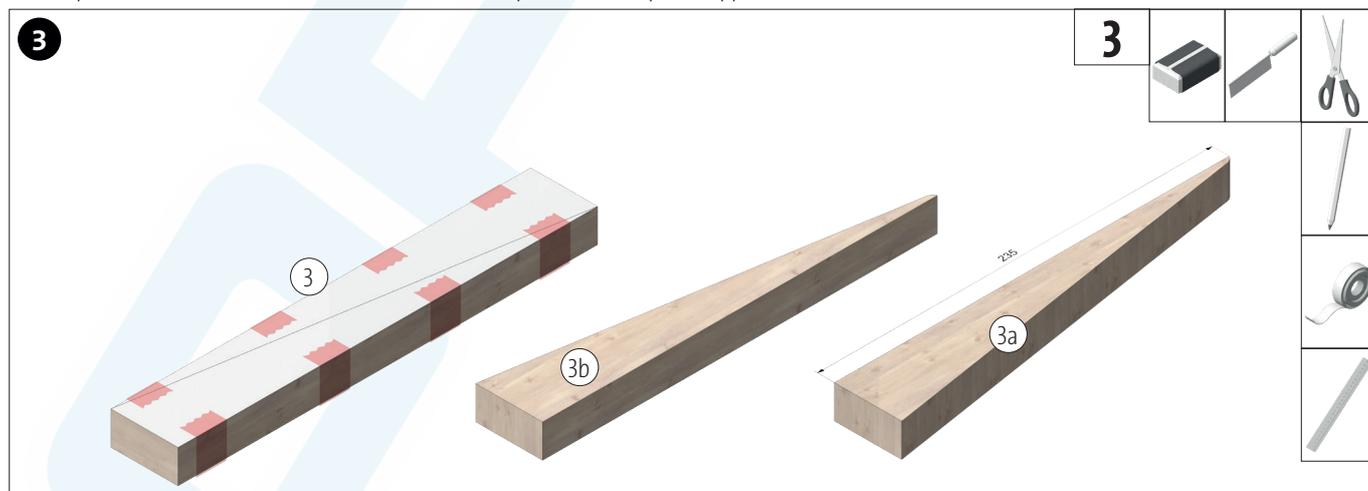
Instructions 127.142
Rocket with launch pad



Cut out the template (A) and glue it together. Glue onto the wooden mouldings (1) (see illustration) or transfer according to the dimensions. Then saw out and clean the saw cuts.

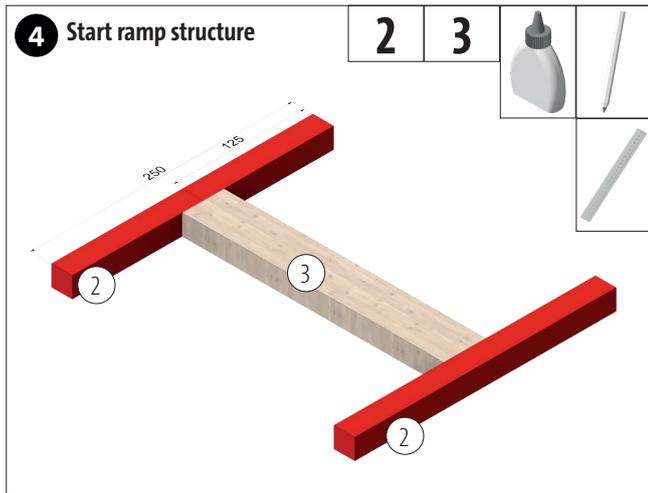


Cut out the template (B) and glue it onto one of the three wooden mouldings (2) or transfer it according to the dimensions. Then drill through the $\varnothing 10$ mm hole in part (2a). Saw out both wooden parts (2a+2b) and clean the saw cuts. Saw and clean the opening from the outer edge to the $\varnothing 10$ mm hole in part 2a with the fretsaw. Drill the $\varnothing 8$ mm hole in part 2b to a depth of approx. 8mm.

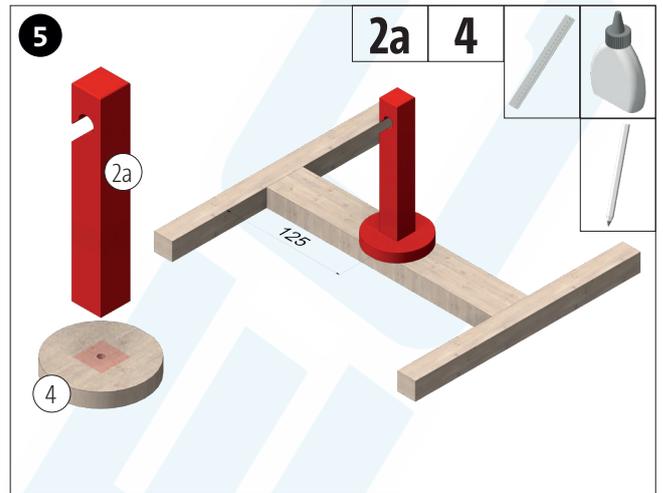


Cut out the template (C) and transfer it to one of the wooden mouldings (3) or draw a diagonal line on the wooden moulding (3). Divide into 2 equal parts using the fine saw as shown. Shorten both parts to 235mm length and grind the tips round.

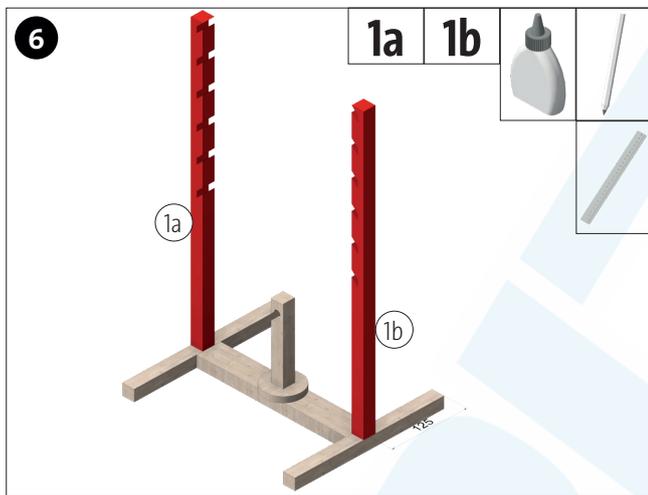
Instructions 127.142
Rocket with launch pad



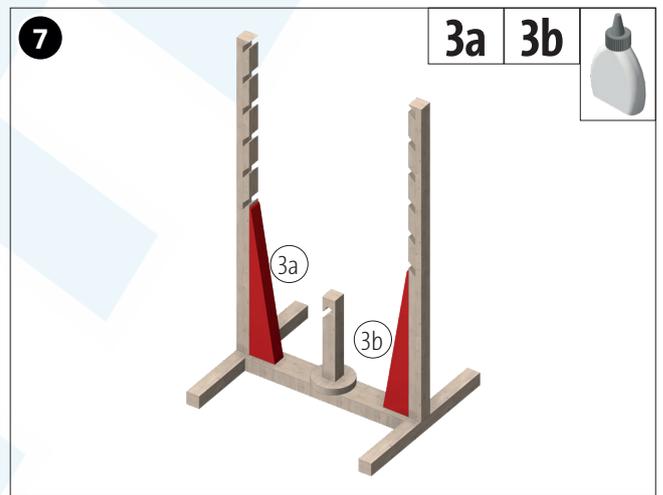
Glue the two remaining wooden slats (2) to the remaining wooden slat (3) to form the base. Observe dimensions!



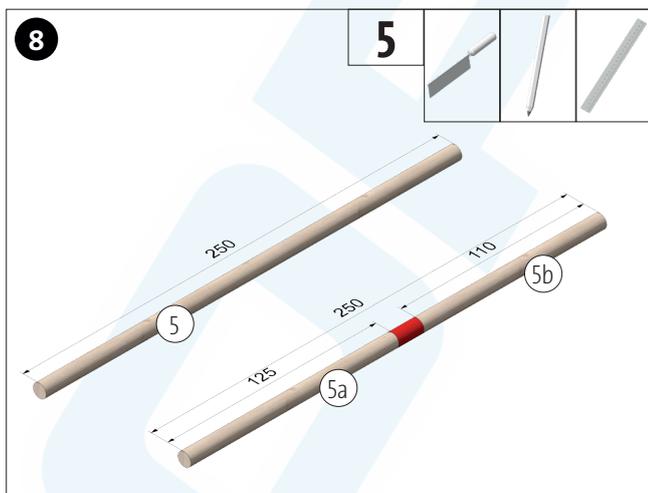
For the rocket seat, part 2a is glued onto the wooden wheel (4), centred as shown. Allow glue to dry well. Glue the finished rocket seat to the centre of the base and allow the glue to dry thoroughly



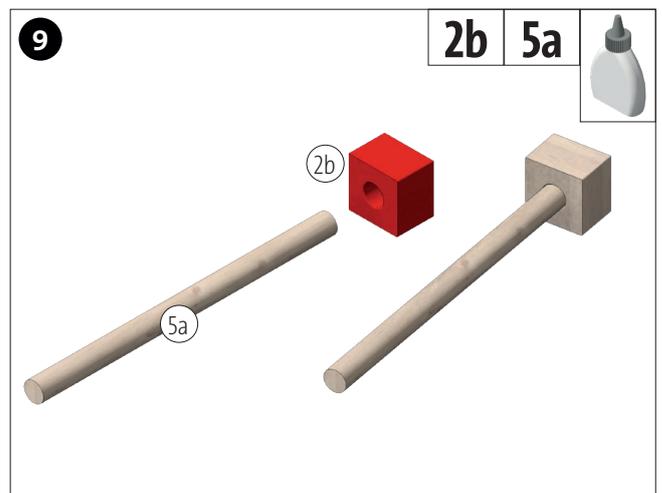
Glue the clamping device (1a+1b) onto both outer strips of the stand as shown. Allow glue to dry well.



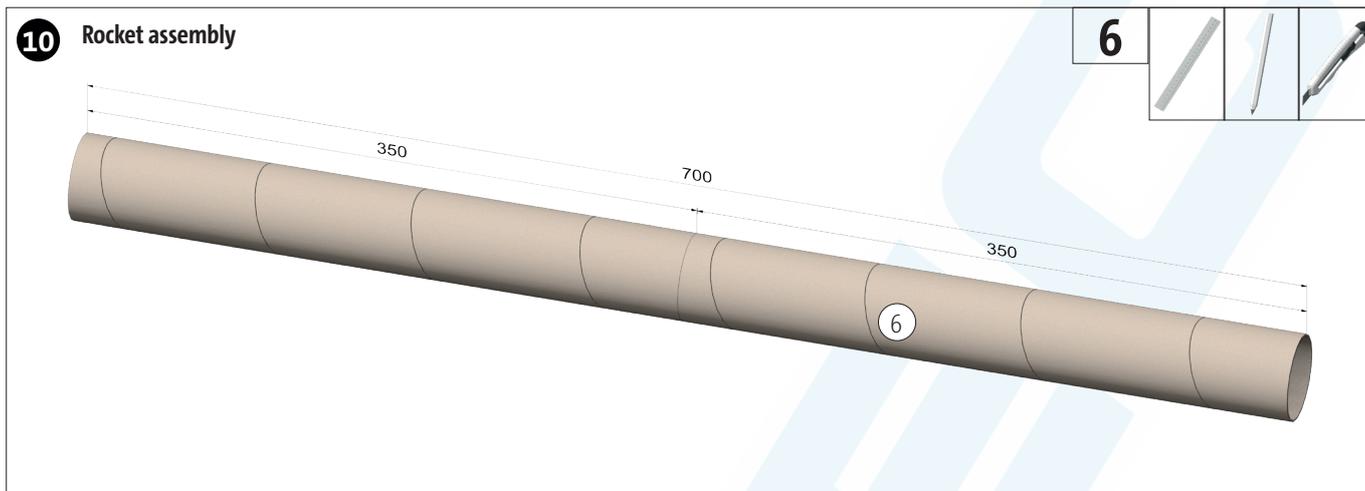
Glue in the two wooden parts (3a+3b) to stabilise the clamping device as shown. Allow glue to dry well.



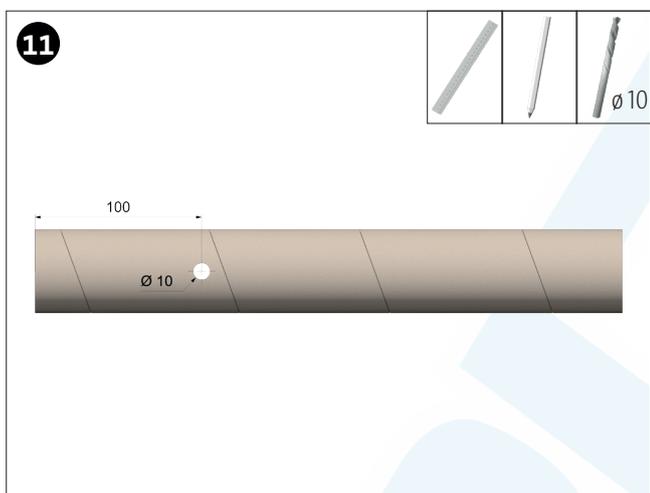
Cut 2 parts (5a+5b) to length from the round bar (5) according to the dimensions and clean the saw cuts.



Glue the round bar (5a) into the hole of the drilled moulding piece (2b) as shown.

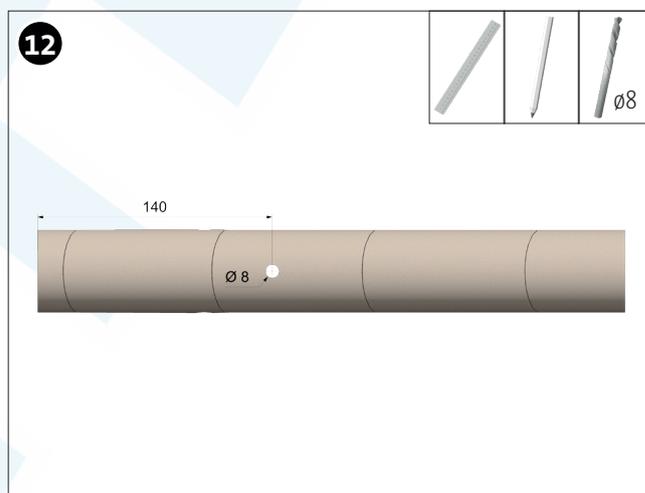


Divide the cardboard roll (6) into two equal pieces of 350mm each. 2 rockets can be made from the enclosed material.

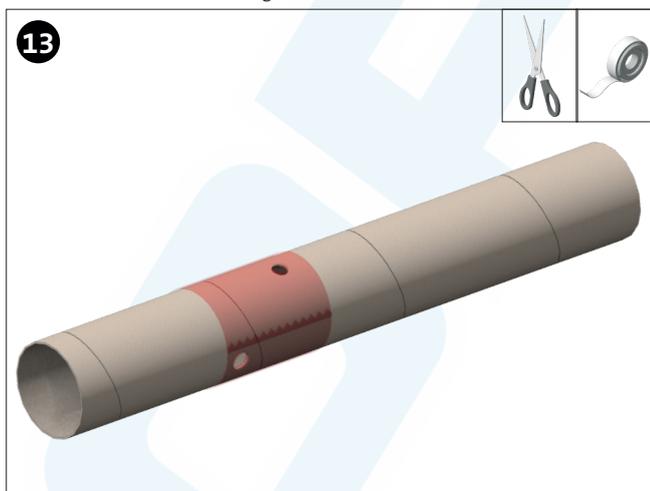


Measure the position for the required $\varnothing 10$ mm hole on both sides of the roll and drill the hole through the cardboard roll.

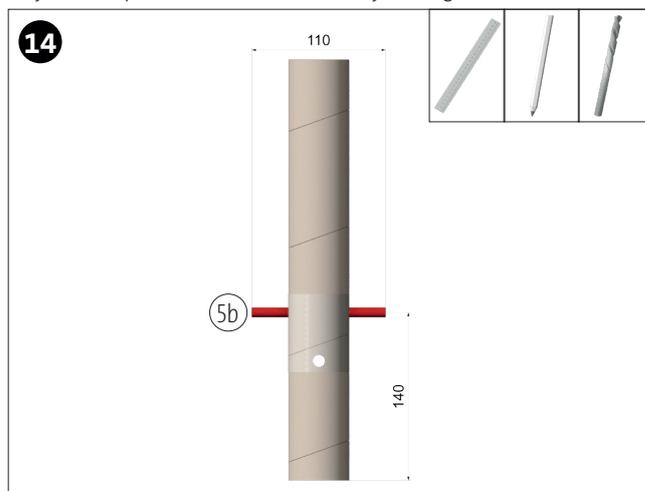
Note: The holes must be aligned.



Turn the cardboard roll by 90° and measure the position for a second hole ($\varnothing 8$ mm). Drill the hole through the cardboard roll in the same way as in step 11 and make sure that they are aligned.

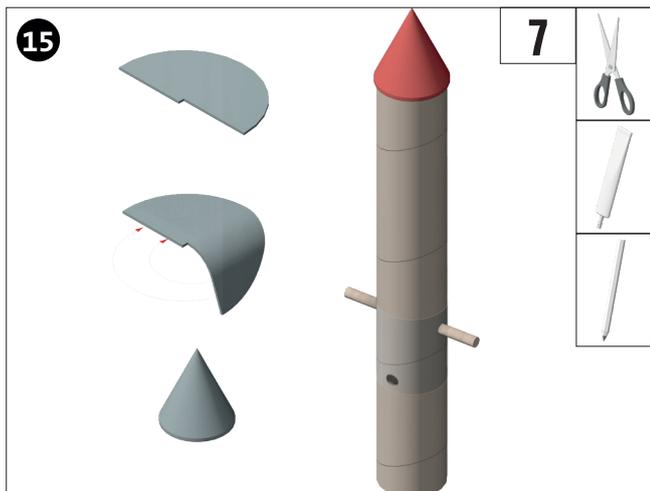


Reinforce the drill holes with adhesive tape or armoured tape as shown. Cut the adhesive tape at the drill holes and glue inwards.

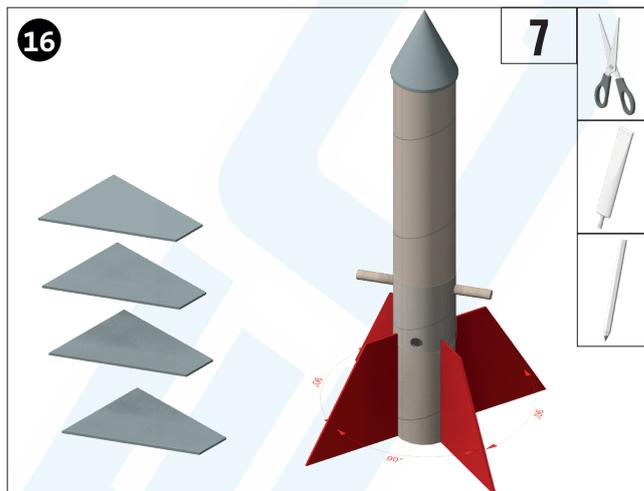


Insert the round rod (5b) through the $\varnothing 8$ mm holes, centre it and glue it in place. Allow the adhesive to dry well.

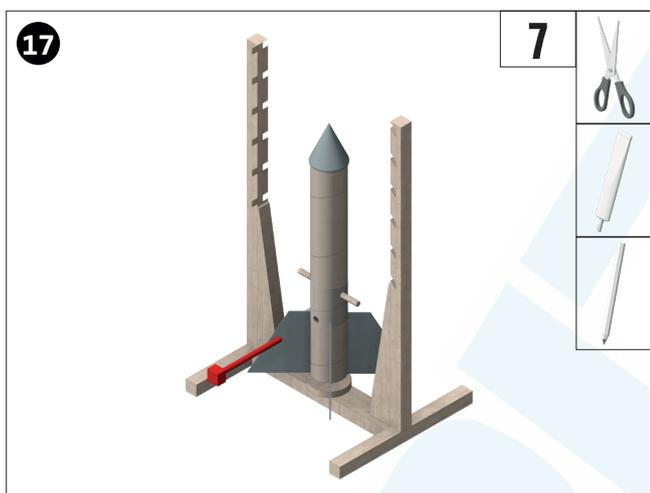
Instructions 127.142
Rocket with launch pad



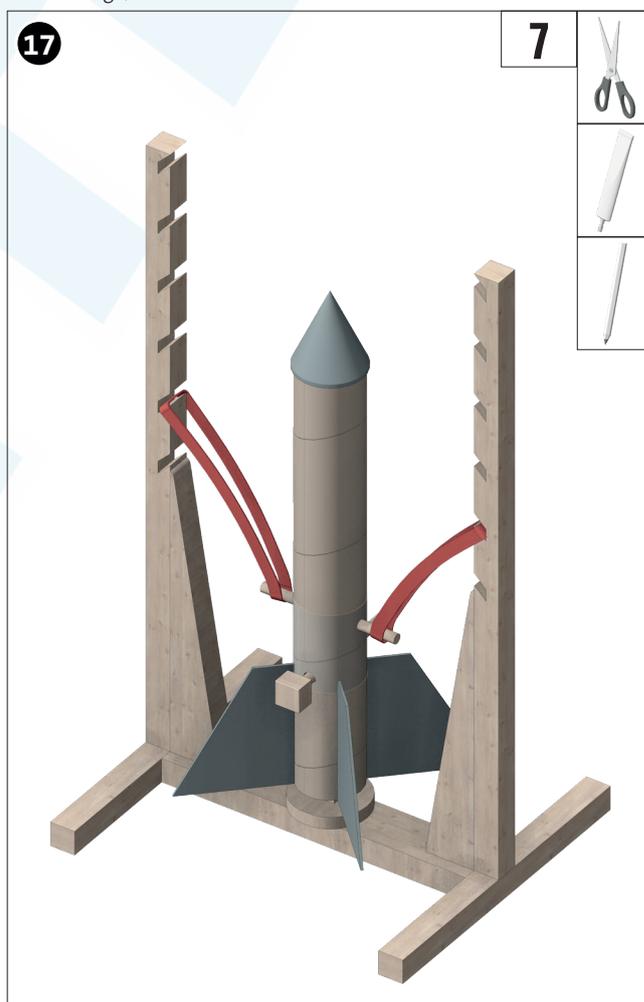
Transfer the template (D) for the rocket tip to the foam rubber (7), cut it out, glue it together to form a tip and glue it to the rocket.



Transfer the template (E) for the stabilising fins to the foam rubber (7), cut it out and glue it to the rocket, rotated by 90°, flush with the bottom edge, as shown.



Place the rocket on the rocket seat and secure it with the holding rod.

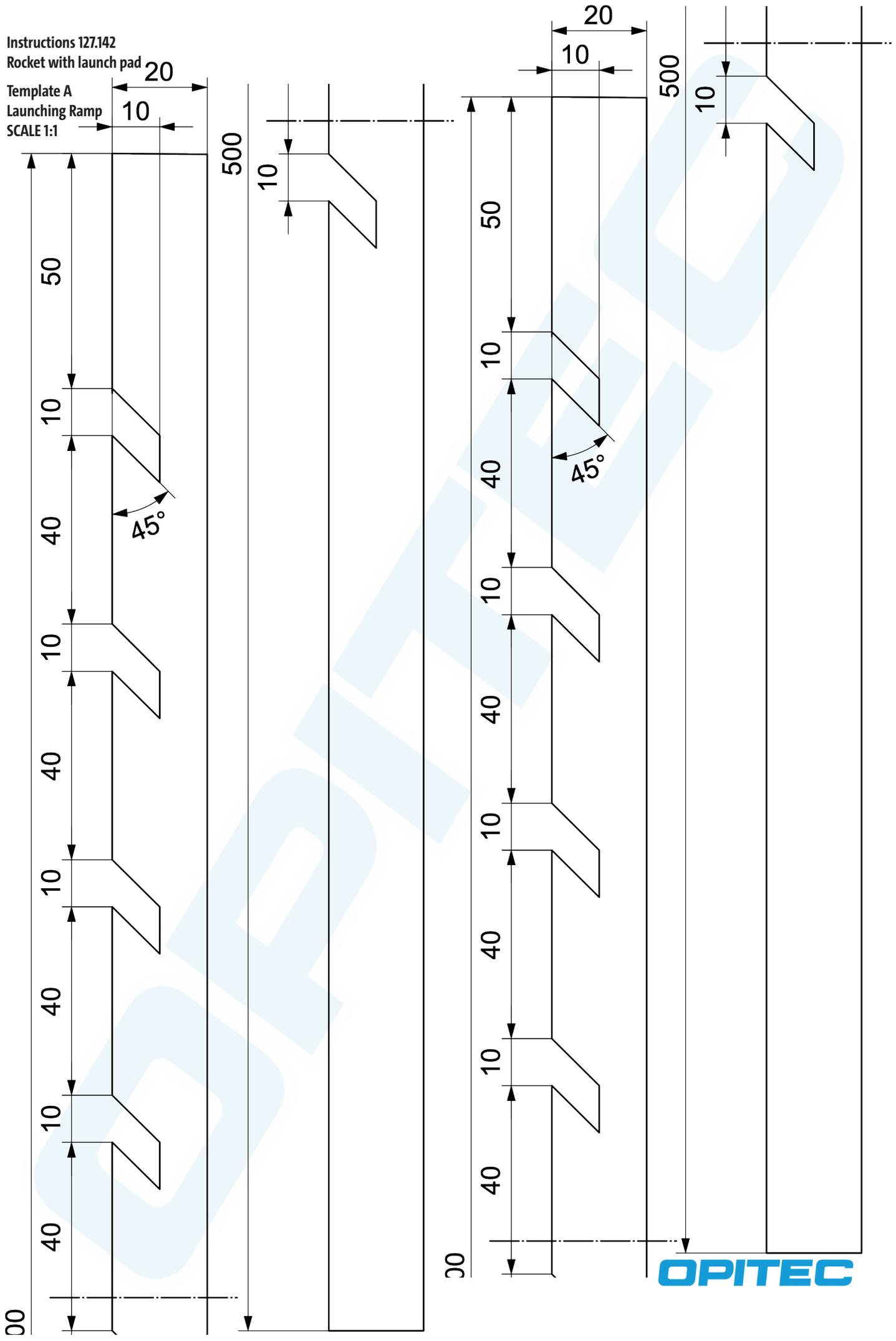


To launch the rocket, the rubber bands are placed on both sides in the launch ramp and on the cross arm of the rocket. Then tighten and release. The greater the tension of the rubber bands, the higher the rocket flies.

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Instructions 127.142
Rocket with launch pad

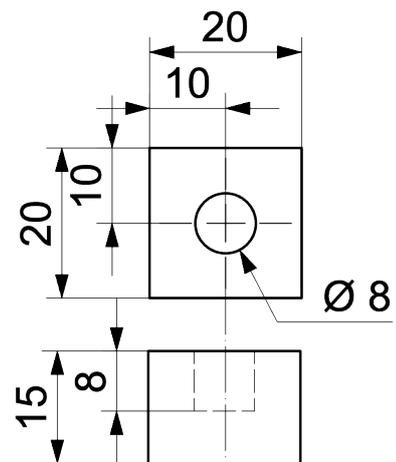
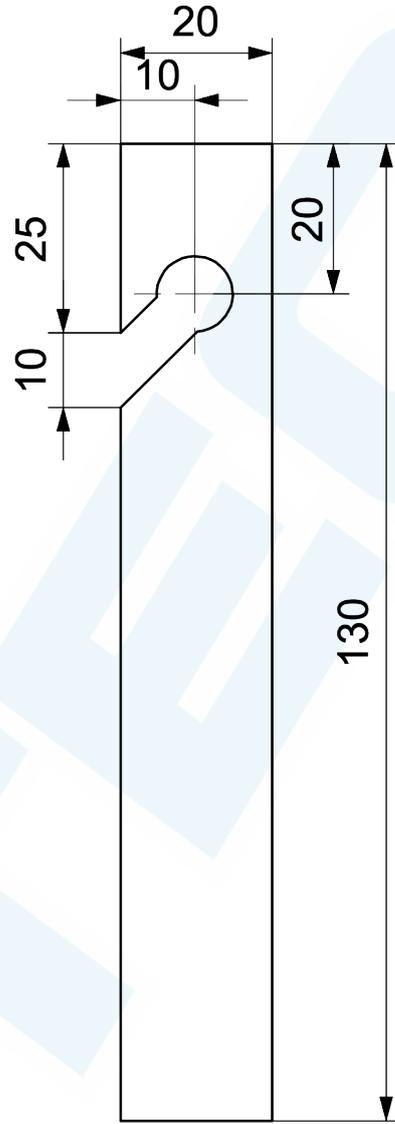
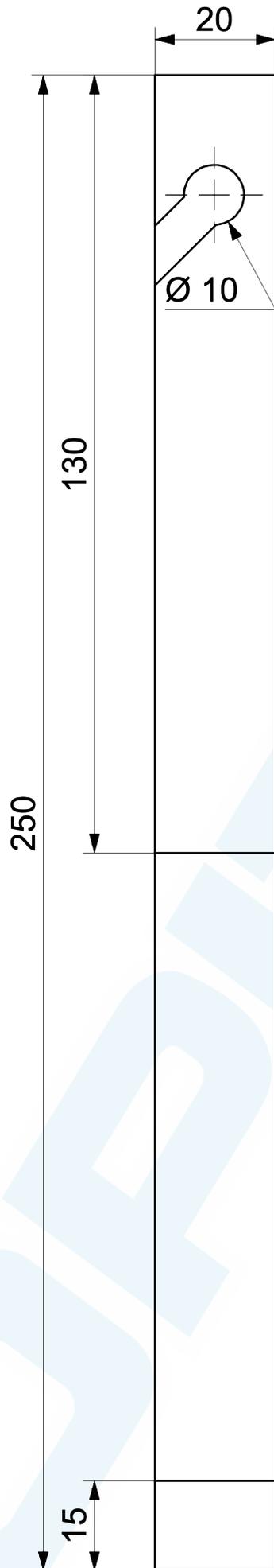
Template A
Launching Ramp
SCALE 1:1



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Instructions 127.142
Rocket with launch pad
Template B
Launching Ramp
SCALE 1:1

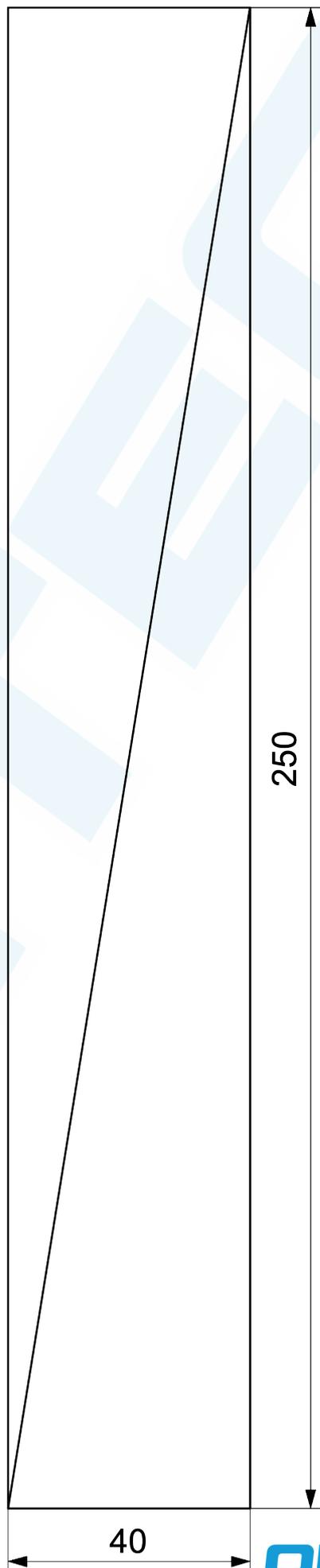
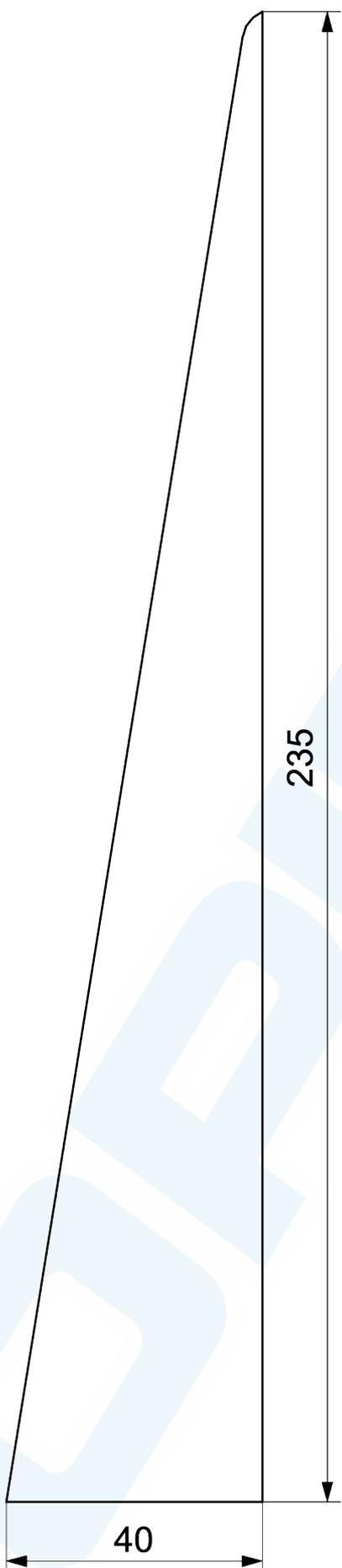


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Instructions 127.142
Rocket with launch pad

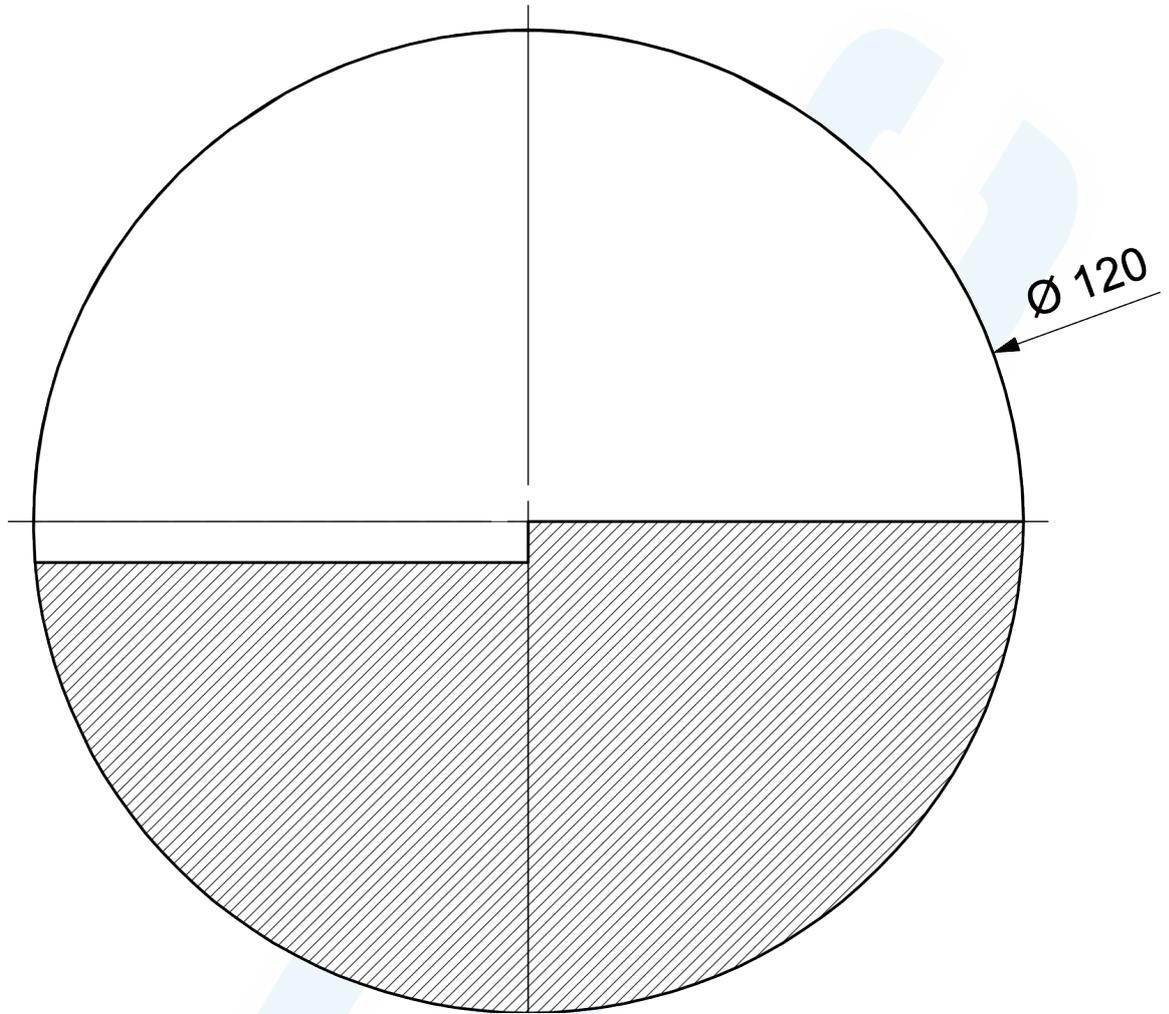
Template C
Launching Ramp
SCALE 1:1



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Instructions 127.142
Rocket with launch pad
Template D
Rocket
SCALE 1:1



Template E
Rocket
SCALE 1:1

