OPITEC

Hobbyfix

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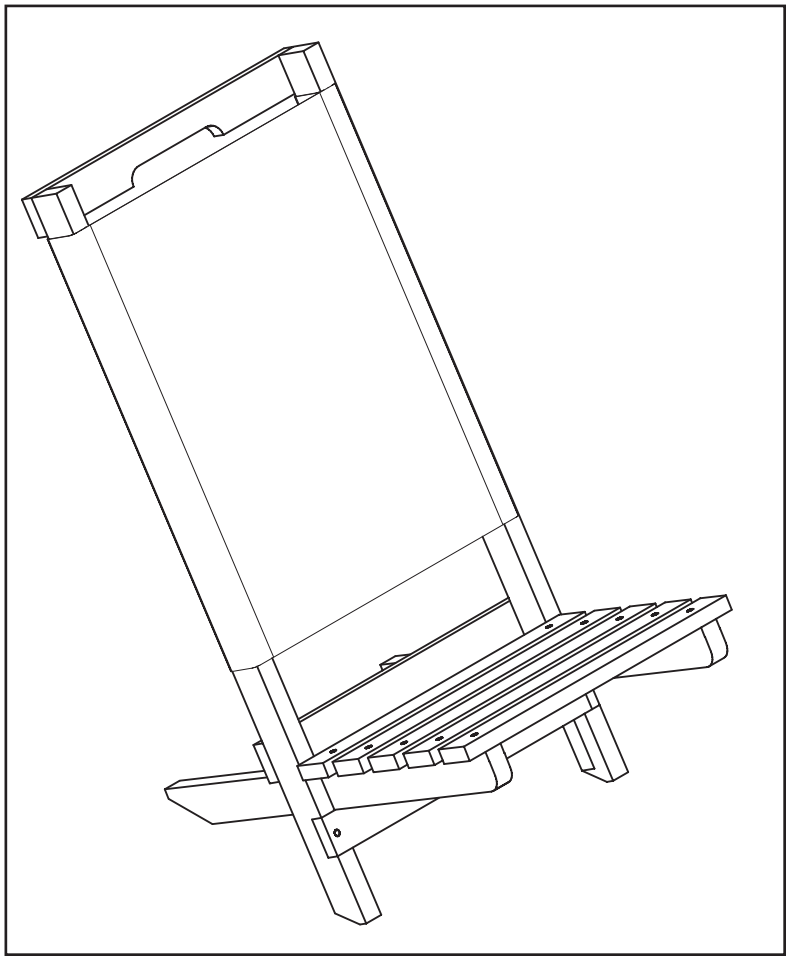
B e a c h c h a i r



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 Technolo- gy.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. Dan- ger of suffocation!

1. Article Information:

Article: Wood based project

Use: In Design Technology Key stage 3

2. Material information:

2.1. Materials: Pine (coniferous) softwood
Beech (Deciduous) hardwood
wood should be relatively dry before being worked

Working: Wood can be sawn, shaped, planed, drilled and sanded

Joining: PVA white wood glue
Screws
Dowels

Finish: Wax (liqiud or hard)
Wood varnish
Staining (coloured and water soluable) then clear varnished

2.2. Material: Cotton (Coloured, woven)

Working: Sewing

Joining: Gluing and tacking

3. Tools

Saws: Use a **fine toothed saw** for straight cuts

Note! Hold the work in a clamp when sawing

A **Puk Saw** (see cat) is suitable for cutting dowels and small strip wood.

Rasps/wood files: Choose the grade according to the work in hand
Small parts can be worked on with a needle file

Note! Files only cut on the forward stroke

Sanding: Use a block and glasspaper for flat surfaces and loos sheet for individual forms.

Drilling: Use a handrill or electric pillar drill

Note! Take care when drilling to adhere to the safety rules tie all long hair back, remove rings and jewellery, wear safety glasses and hold the work in a machine vice

Holding: Use good quality clamps
Vices: use protective soft jaws

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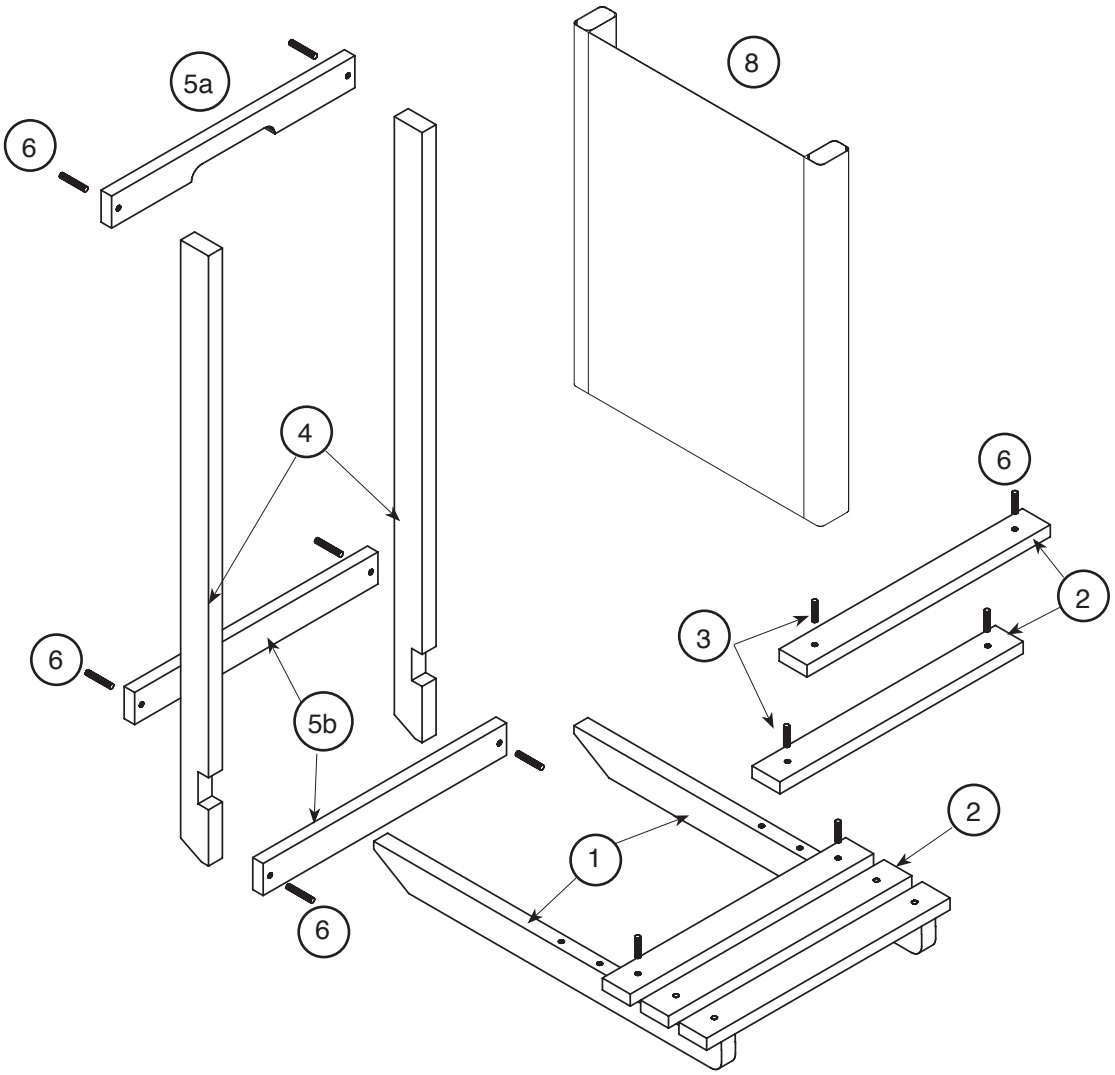
4. Parts list

Part	Material	Quantity	Size	Diagram
Seat	Pine	2	20 x 40 x 500 mm	1
	Pine	5	15 x 40 x 350 mm	2
	Dowel	2	6 mm dia x 250 mm	3
Backrest	Pine	2	20 x 40 x 700 mm	4
	Pine	3	15 x 40 x 350 mm	5
	Dowel	1	6 mm dia x 250 mm	6
	Screws	6	4 x 40 mm	7
	Material	1	500 x 600 mm	8

5. Exploded diagram:



6. Planning overview

6.1 Planning and making the seat

6.2 Making the cover

6.3 Making the backrest

6.4 Testing and evaluating

6.1. Designing and making the seat

6.1.1 Cut the two long pine side strips (1) as shown in the diagram(page 8). Markout and drill the holes, then round the ends. Finally clean them up with glasspaper.

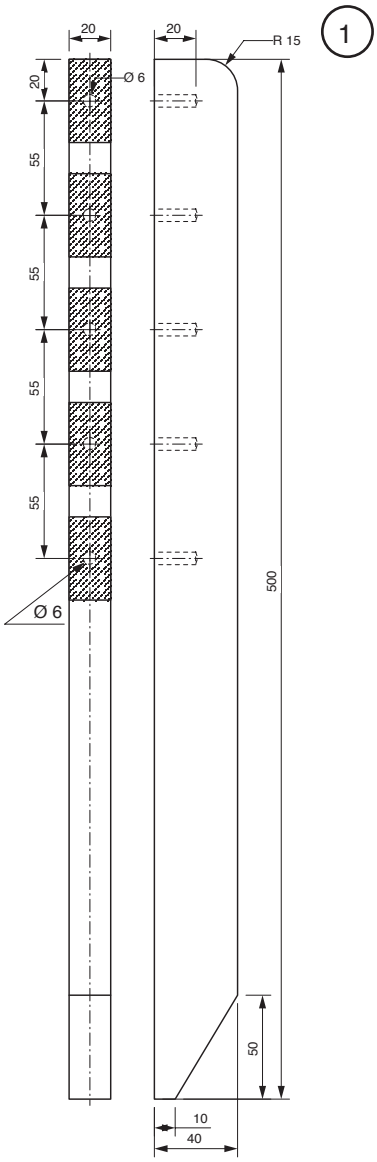
Note! the holes for the dowel can also be drilled after the cross braces (2) have been added.

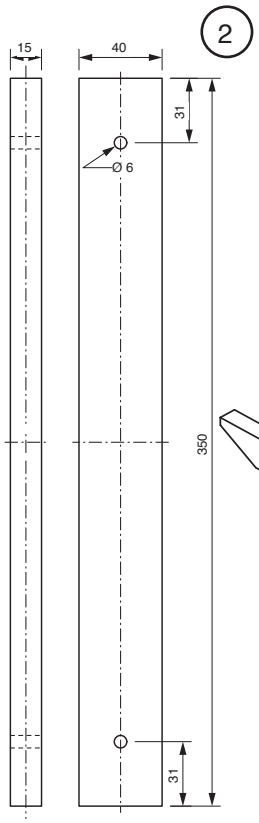
6.1.2 Drill a 6mm dia hole in the 5 crossbraces (2) as shown in the plan (see page 8).

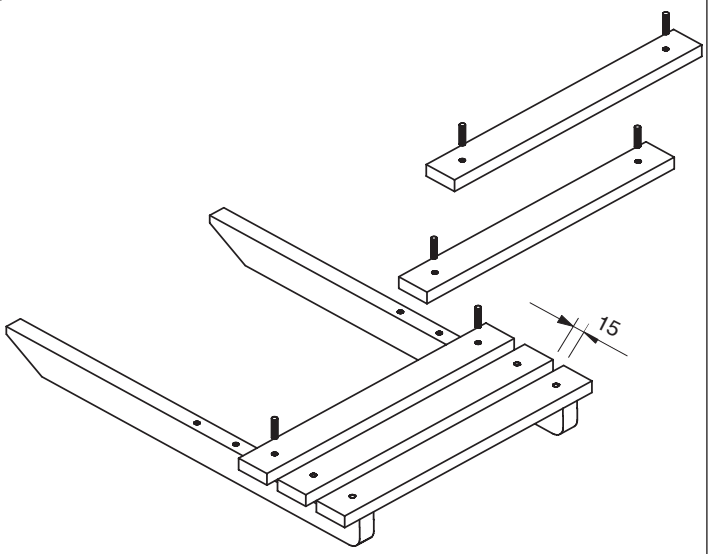
6.1.3 Cut 10 small 30mm dowels from the two lengths supplied (3) keep the remainder for the backrest.

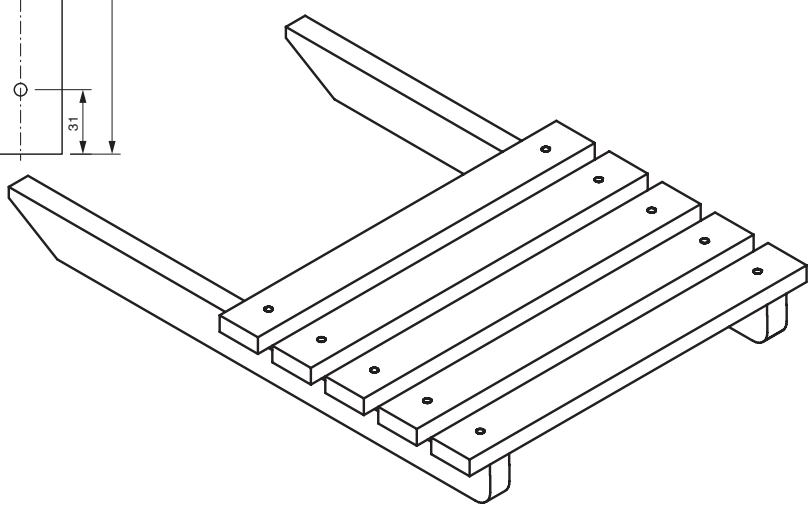
6.1.4 Fit the cross braces to the long sides using the dowels

Note: If you have not drilled the blind holes for the dowel you must wait until the glue has dried and then drill them.







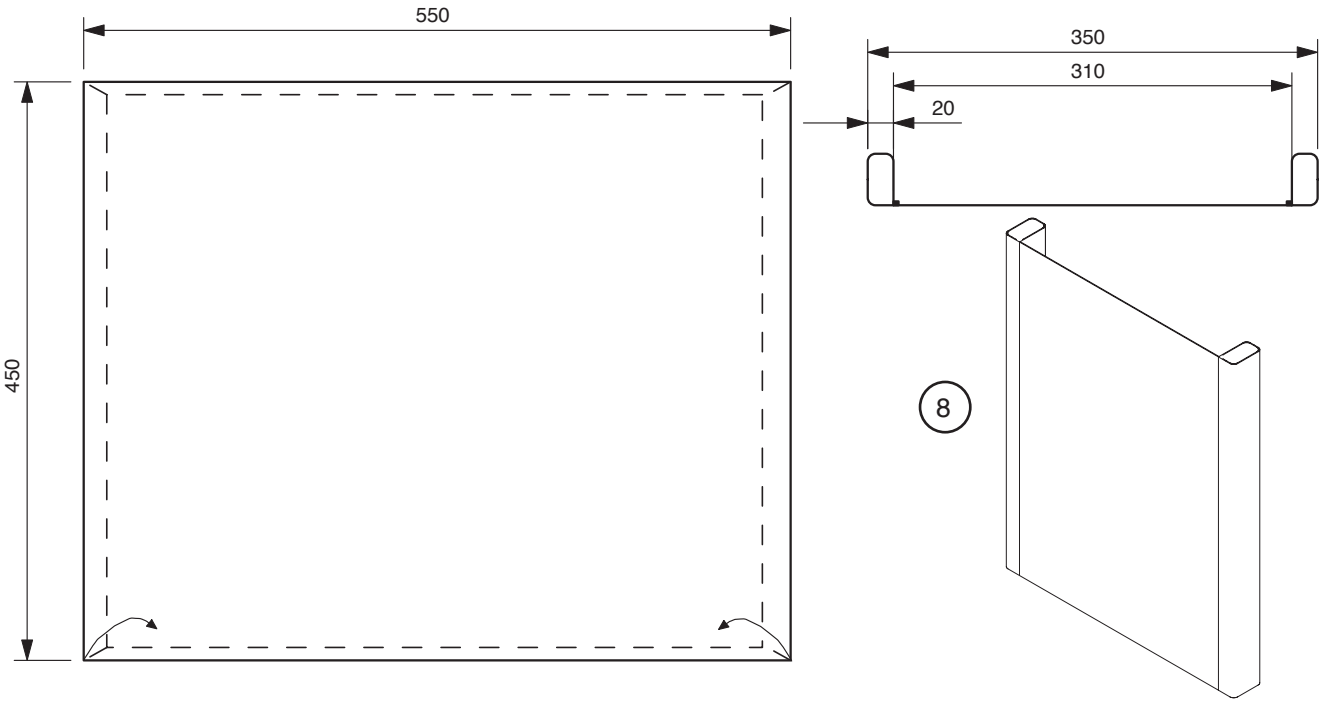


6.2 Constructing the cover

6.2.1 Sew a folded seam around all four sides of the cotton material so that the final length is 450mm and the width is 550mm

6.2.2 Then fold the two edges (450mm) so that it will fit tightly over the long sides (4) of the chair. Finally sew the edges in position..

Note: The cover can also be glued to the chair or held in position with a tacker gun.



6.3 Making the backrest

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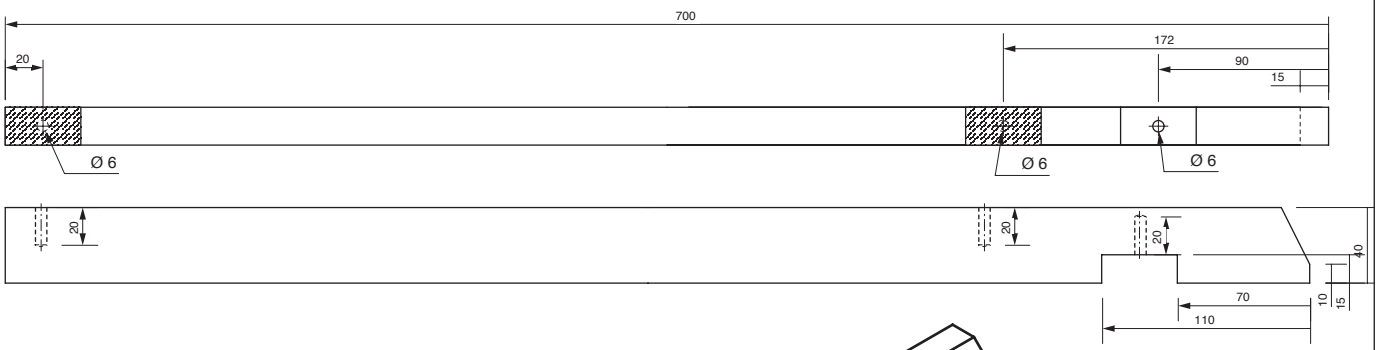
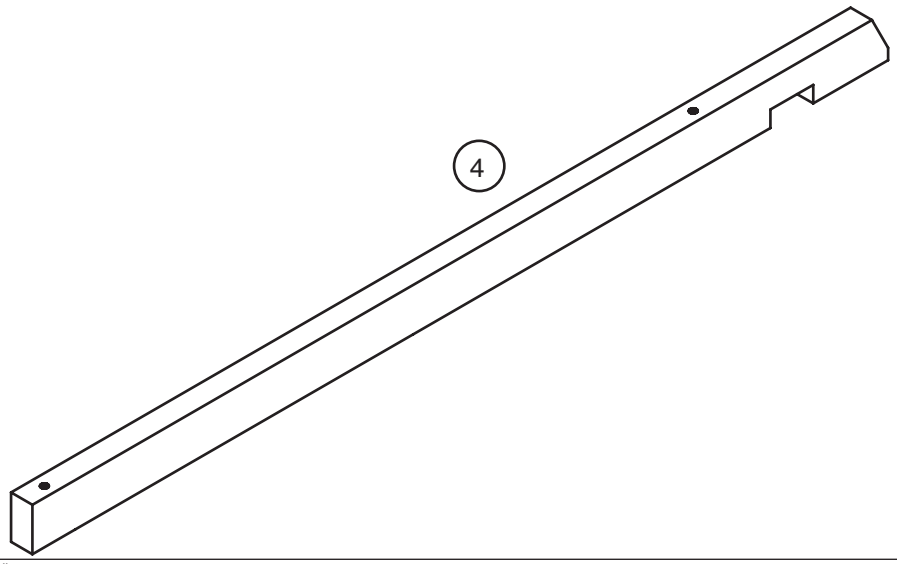
6.3.1 Make the backrest from the pine strips (4) as shown in diagram on page 9.

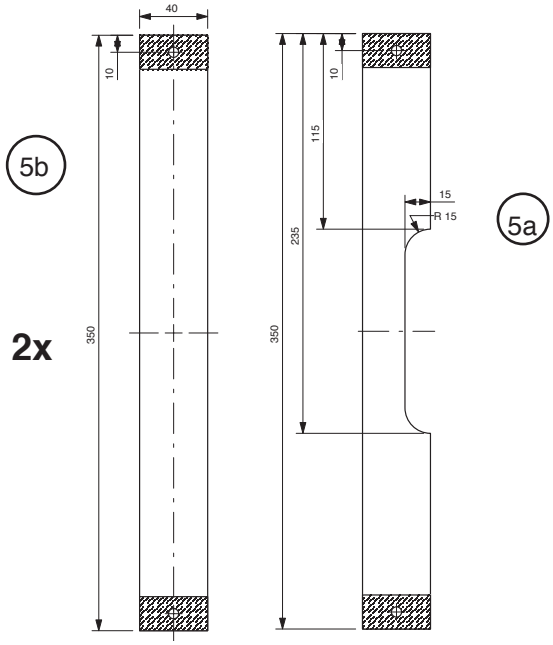




6.3.2 Drill the cross strips (5) as shown in the diagram (see page 10)

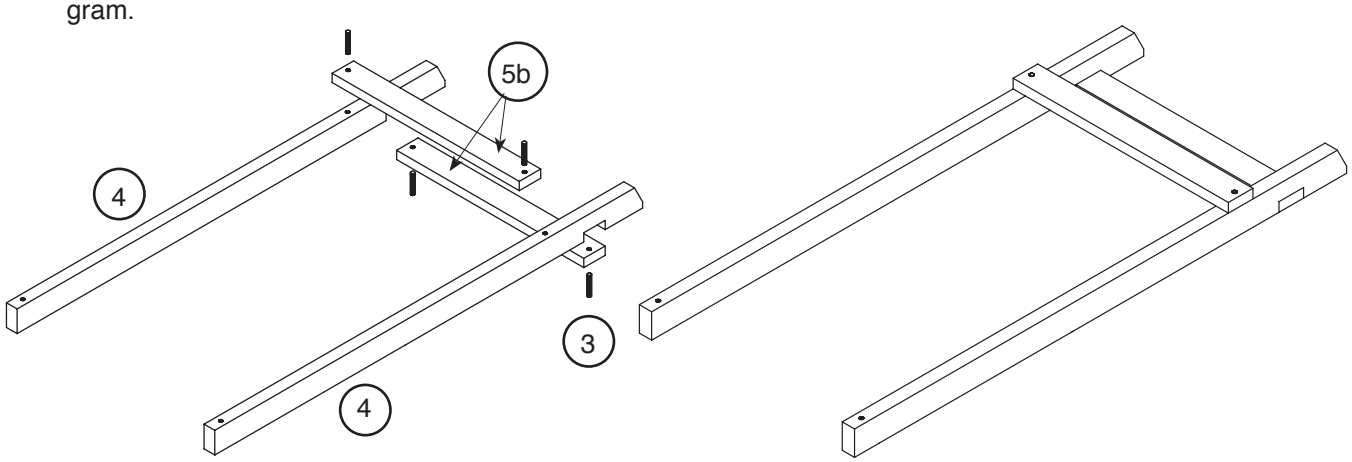
Note: If you use the screwing method do not drill holes larger that 4mm

6.3.3 Mark out and saw a notch from the pine strip 5a



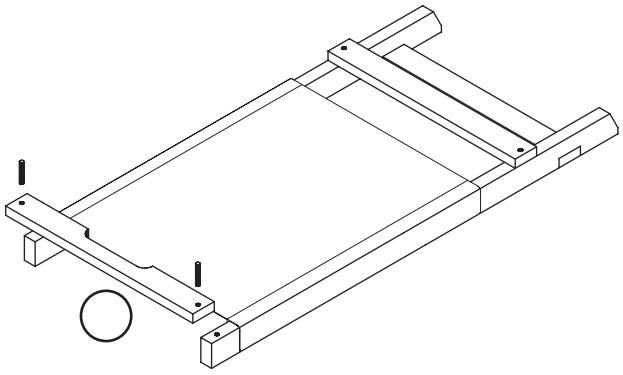
6.3.4 From the remaining dowels saw 6 pieces, each 30mm long.

6.3.5 The cross members (5b) can be designed to fit with dowel joints or screwed in position as shown in the diagram.



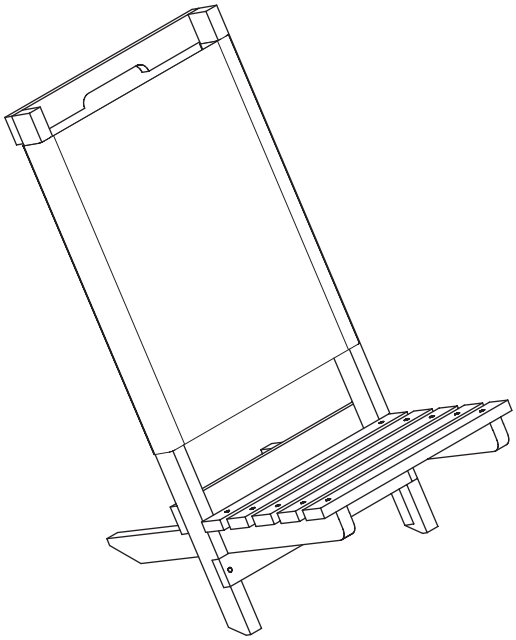
6.3.6 Slide the cover in position and then add the the last cross member 5a, fix with dowels

Note: If you want to glue or tack the material in position you should fix the cross member 5a in position first

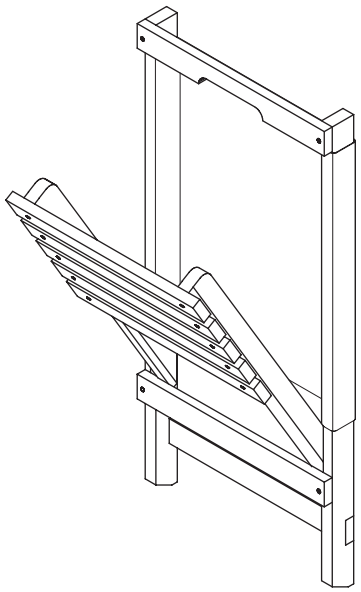


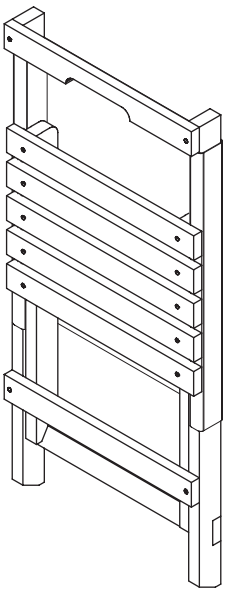
6.4 Testing and evaluation

6.4.1 When all the glued parts are thorougly dry, open the chair and lock (on part 5b) the seat in the open position. Place it on the ground and carefully try it to see if there are any faults.



6.4.2 For ease of transport the seat can be removed and stored in the back part.



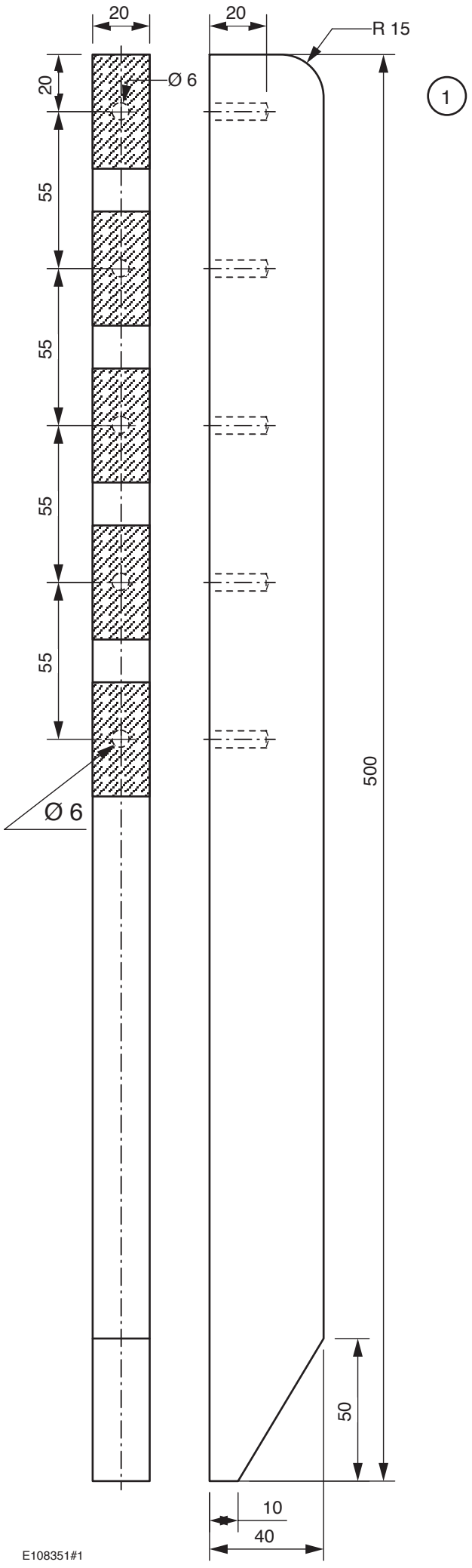


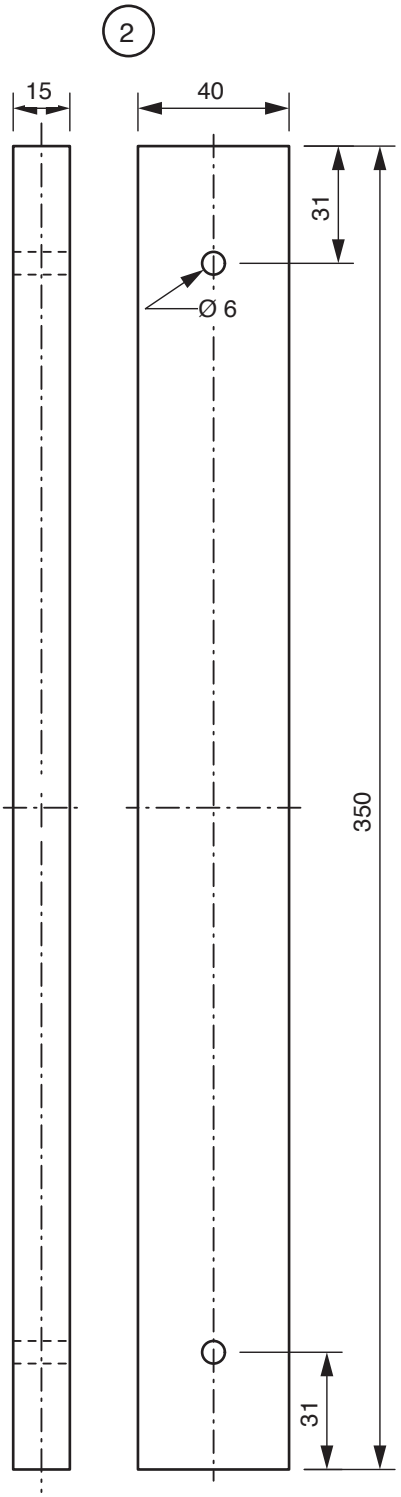
7. Plans

Seat

Cross members and long sides

M 1 : 2





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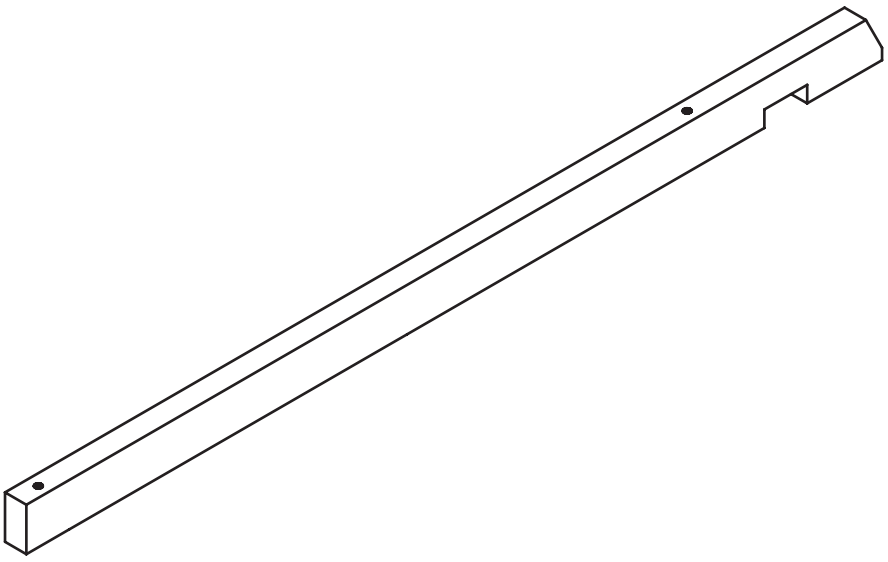
7. Plans

B a c k r e s t long sides (Version I)

M 1 : 2



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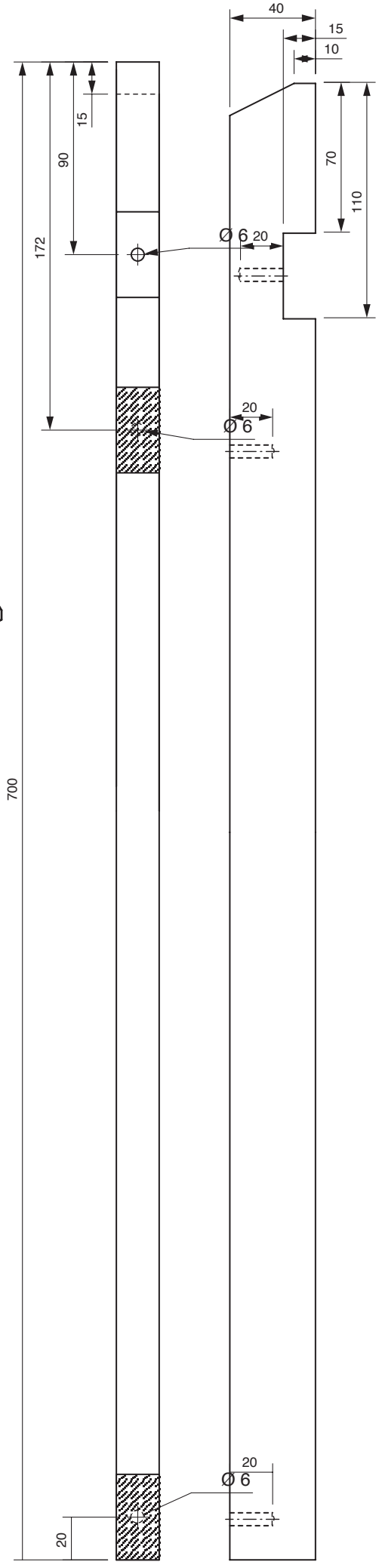

7. Plans

B a c k r e s t cross members

M 1 : 2