OPITEC

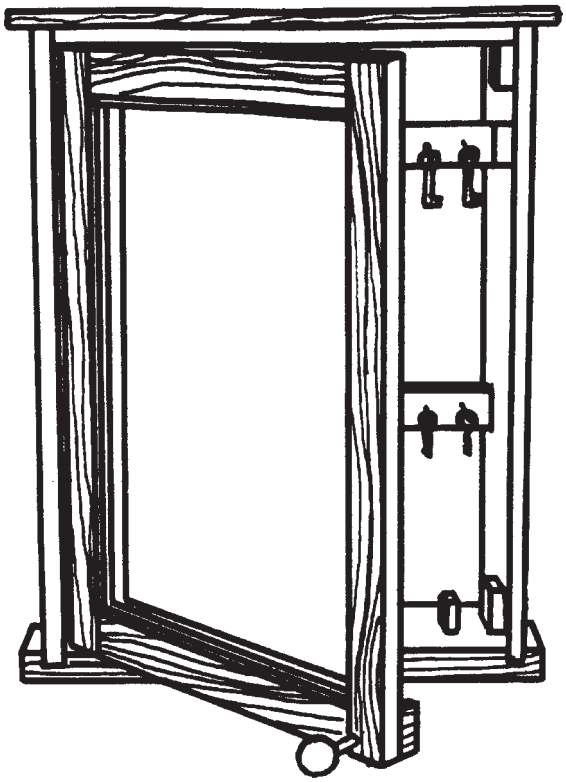
Hobbyfix

108.010

LT- Key cupboard

LT

Instruction
Idea, text and illustration by Prof. Walter Hanko



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!

Warning!
This product contains small parts that can be swallowed
There is a danger of choking

Planning and making simple pieces of furniture is an important part of understanding design.
It is not only the manufacturing techniques that need to be understood ,but also the basic planning and making.
Teachers can adjust the methods of construction according to the ability of their pupils. They in turn should be encouraged to incorporate their own ideas and work as independently as possible.
The LT– range of projects have been produced specifically for this purpose. The various parts do not just slot together but must be measured and cut to fit, decisions must be made and planning undertaken.
This pack has been designed with these points in mind , not only will the pupils be able to construct something they can be proud of, but will have experienced a range of planning and making skills.
In addition the pupils will able to understand what can be achieved with relatively few simple materials

1. Product Information

Article: Small cupboard in project pack format

Use: In Design Technology , Key stage 3-4

2. Material Information

2.1 Material: Pine (Coniferous) softwood
Wood should be relatively dry before working
Plywood, multi- layered with each
layer set in the opposite direction

Working: Wood must sawn, shaped, drilled and planed, mark according to measurement or use patterns.

Joining: PVA white woodworking glue

Finish: Wax (Liquid or solid)
Wood varnish (Base and top coat)
Stain (Coloured , water soluable-finish with varnish)
Linseed oil

2.2 Material: Mirror card (Polystyrol, PS) Thermoplastic
Aluminium layer

Working: Ready made

Joining: Glue

Finish: No special finish necessary

3. Tools

Saws: Use a Fret saw for all round shapes and curves that cannot be cut with a straight backed saw.

Note! Fret saw blades should be inserted with the teeth facing forward.

Use a Fret saw board and work with slow constant stokes, turning the work as you go.

Use a fine toothed saw Dovetail saw for dowels and small pine strip etc.

Note! Use a bench hook to hold the work whilst sawing.

Use a mitre saw for 45 degree cuts.

Rasp /Wood file: Use the correct grade of file or rasp according to the work in hand

Note! files only cut on the forward stoke!

Sanding: Use a block and glasspaper on all flat surfaces and loose sheet for curves etc.

Drilling: Use a Hand drill or Electric drill stand

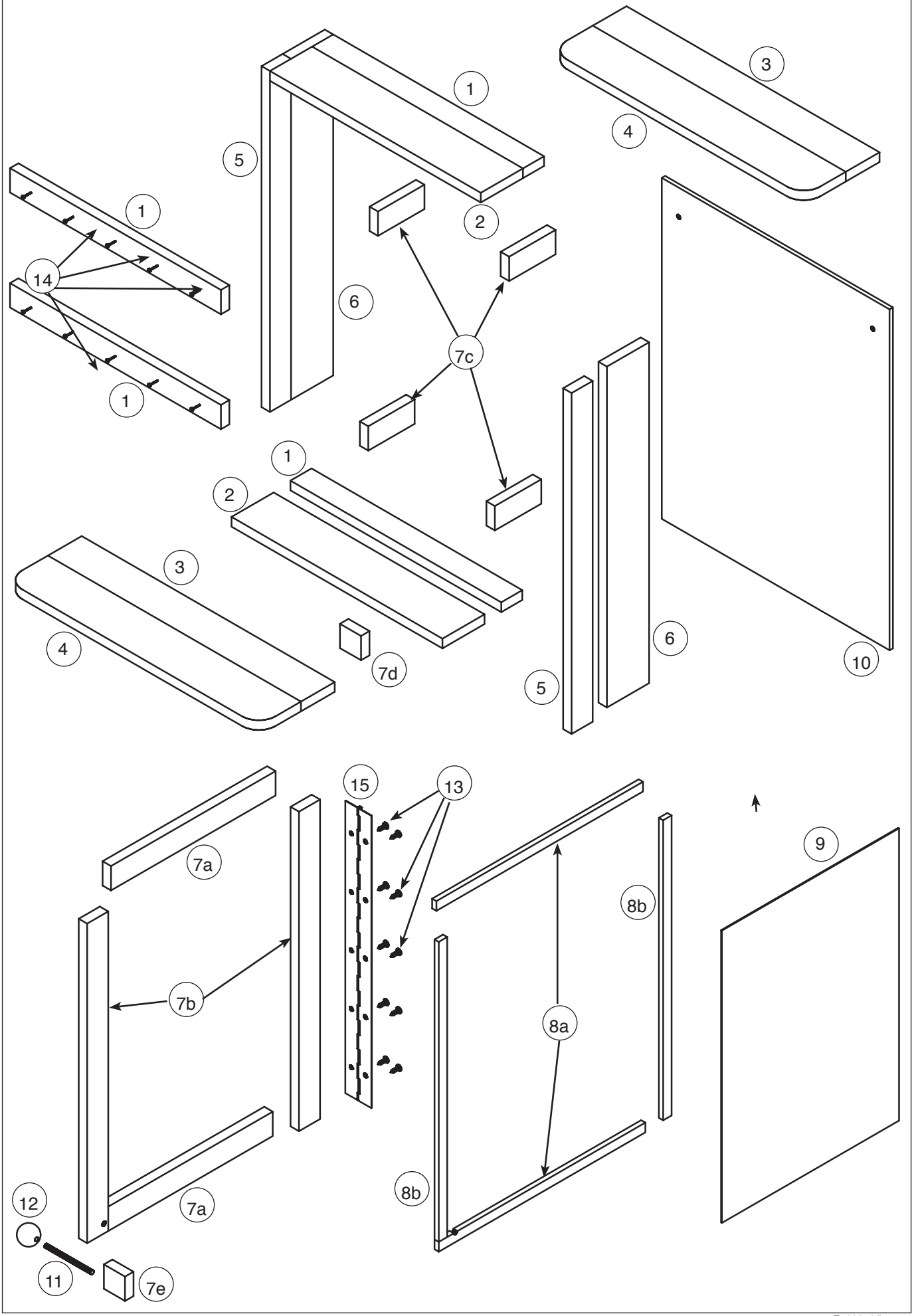
Note! Adhere to the safety rules, wear safety glasses, tie all long hair back, remove jewellery and wear an apron. Hold the work in a machine vice when drilling.

Clamping: Use G Clamps to hold the work whilst the glue is drying. (Do not over tighten them or they may leave marks)

4. Parts list:

Part	Material	Quantity	Size	Diagram
Pine strip **Carcase base** **Carcase top**	Pine	4	10 x 25 x 250 mm	1
	Pine	2	10 x 50 x 250 mm	2
Cover	Pine	2	10 x 40 x 300 mm	3
	Pine	2	10 x 50 x 300 mm	4
Carcase **Sides**	Pine	2	10 x 25 x 350 mm	5
	Pine	2	10 x 50 x 350 mm	6
Key strip **Door frame**	Pine	4	10 x 25 x 350 mm	7
Door frame	Pine	4	5 x 10 x 350 mm	8
Mirror	Polystyrol	1	1 x 210 x 300 mm	9
Back wall	Plywood	1	4 x 270 x 350 mm	10
Key	Dowel	1	ø 4 x 100 mm	11
	wood ball, drilled	1	ø 20 mm	12
Screws	Metal	10	3 x 10 mm	13
Nails	Brass	10	20 mm	14
Piano hinge	Metal	1	300 mm	15

5. Exploded diagram



6. Planning overview

6.1 Designing and Making the door frame with mirror and lock.

6.2 Making the carcase and rear wall etc.

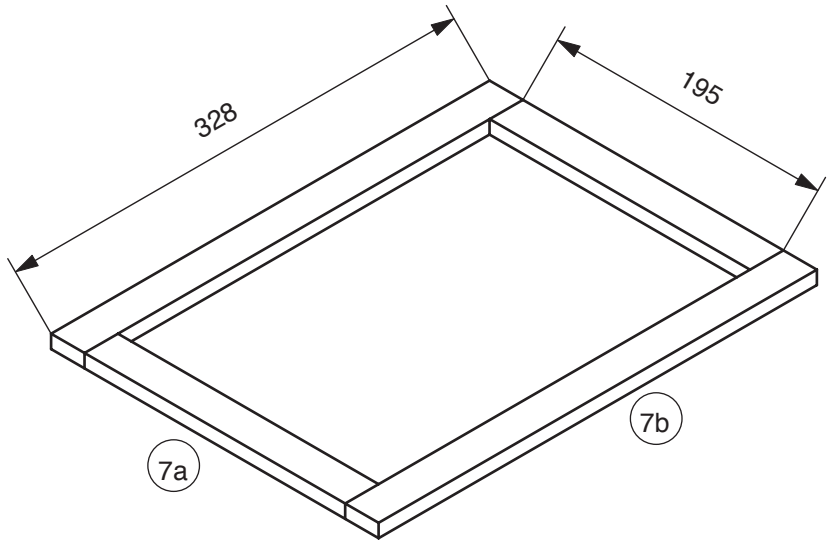
6.3 Final assembly.

6.1 Designing and Making the door frame, mirror and lock

6.1.1 Cut the two pine strips (7) 10 x 25 x 350mm to a length of 175mm (7a) and the two remaining pine strips (7b) to 328mm.

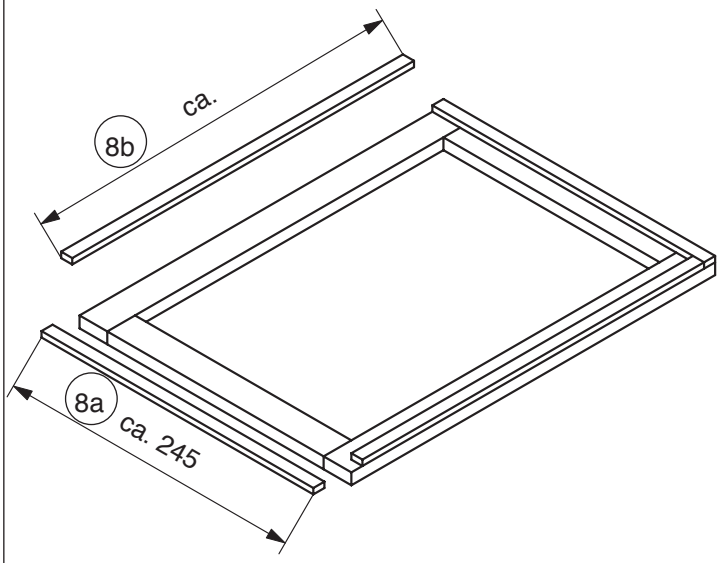
Note: Any remaining pine strip will be needed at a later stage.

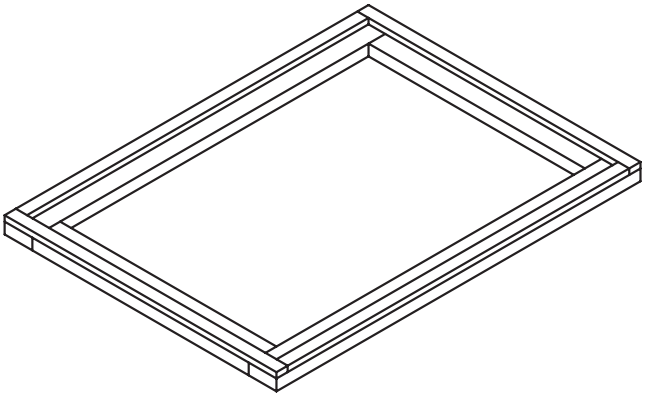
6.1.2 Parts (7a) and (7b) must be glued together to make the frame (See diagram)
6.1.3 Once the frame has been glued together an inner frame to hold the mirror is made up from the thin pine strip



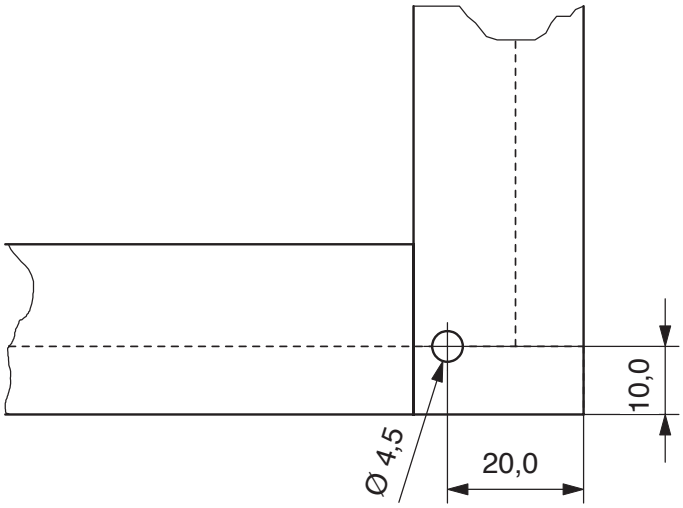
(8) 5 x 10 x 350mm and glued in place as shown. Once dry the next stage is to add the mirror into the 'Step' running around the frame. (Line 6.1.5)

Note: Cut the thin pine strip (8) to fit the door frame you have made.



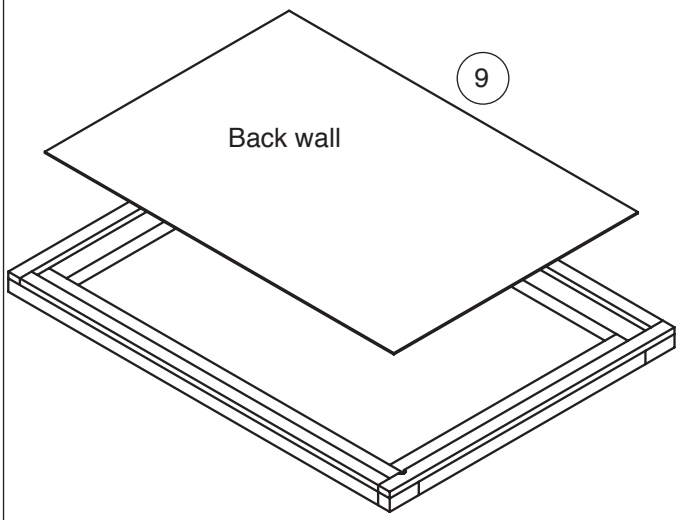


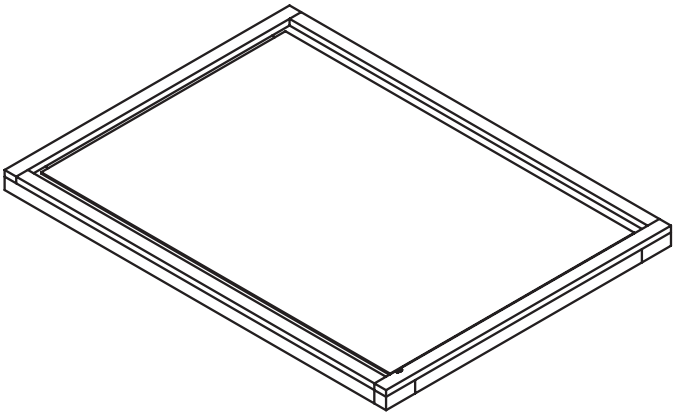
6.1.4 Once the frame is dry, mark out and drill the 4,5mm hole for the lock (See diagram)



6.15 Lay the frame on a flat surface with the 'Step' side uppermost. Take the mirror (9) and lay it on the frame and adjust it to fit. Remove the protective foil and use an all purpose glue to hold it in the frame.

Note: Be careful that no glue 'creeps' on to the surface of the mirror.



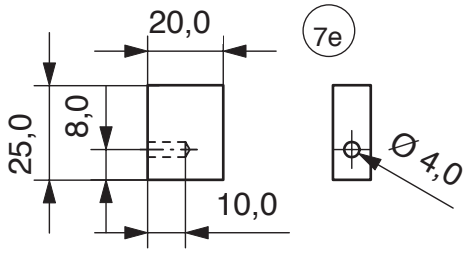


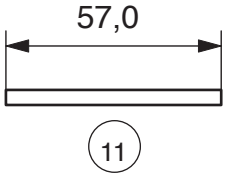
Tip:
To stiffen the mirror back it can be firstly glued to a sheet of card or thin wood, cork tile (Not included in the pack)

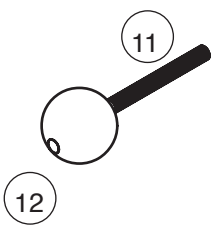
6.1.6 Saw a 57 mm length of the dowel (11) and clean up the ends.

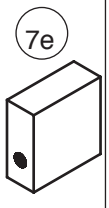
6.1.7 Glue this pieces into the wooden ball (12)

6.1.8 Use a small remainder of wood (7e/approx 20mm) and drill as show in the diagram.

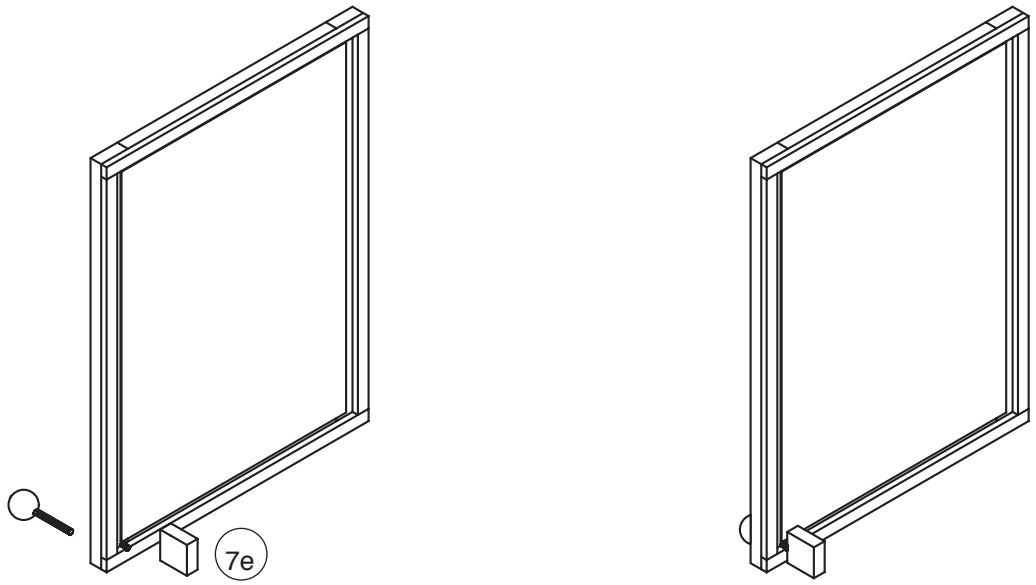






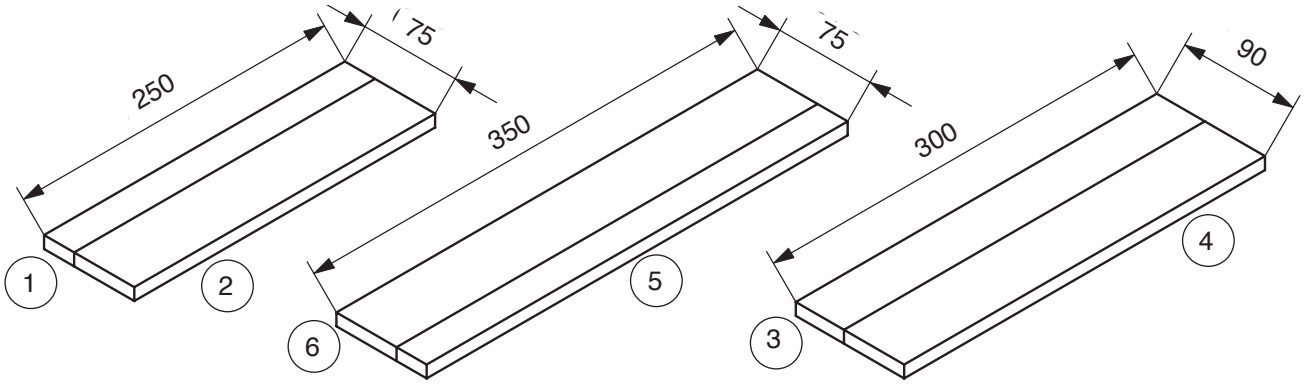


6.1.9 Insert the locking parts (11/12) in the hole in the frame so that the 'Ball handle' is on the mirror side and then glue on the back of the lock (7e).



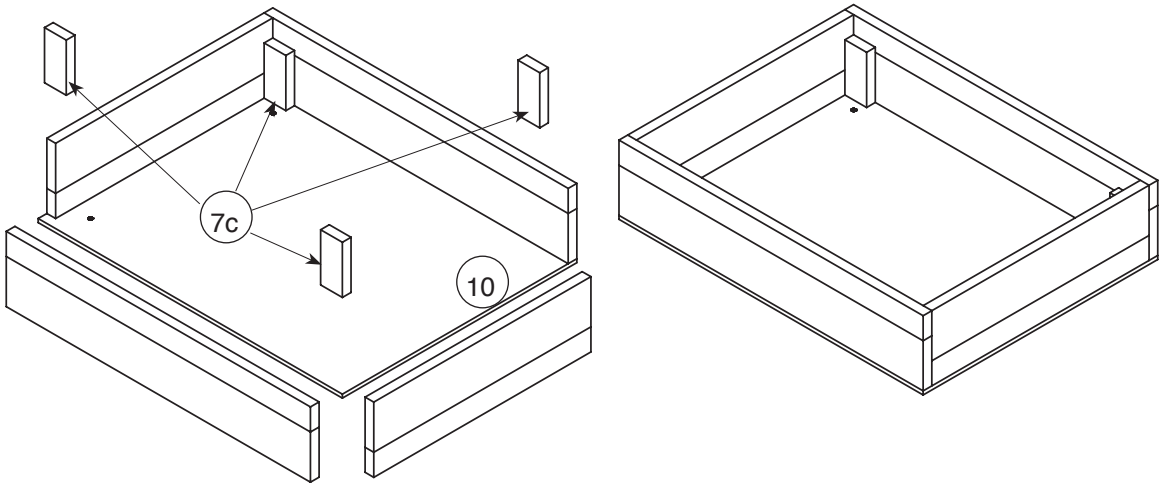
6.2 Making the carcase and rear wall.

6.2.1 The carcase sides and top are made from 2 pine strips sawn from (1) 10 x 25 x 250mm and from (2) 10 x 50 x 250mm, glued together, edge to edge (See diagram)
The sides are made up from one part (5) 10 x 25 x 350mm and part (6) 10 x 50 x 350mm glued together, edge to edge.
The top and bottom 'Caps' are made from two strips (3) 10 x 40 x 300mm and (4) 10 x 50 x 300mm glued together.

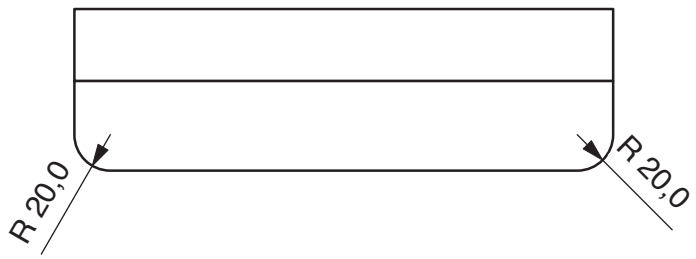


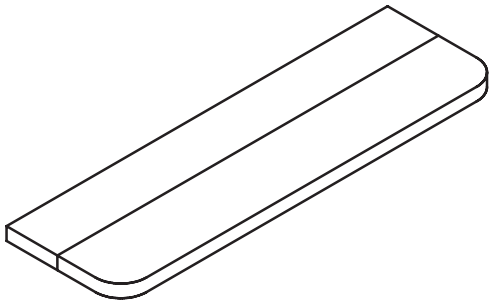
6.2.2 Use the remaining off-cuts from part 7 to make 4 blocks 55mm wide (7c) to strengthen the corners and then glue them in corners as shown.

6.2.3 Mark out and drill (See page 10) 2 x 4mm holes in the back for fixing the cabinet to a wall. Glue the parts (1+2/5+6) to the back panel (10) and the offcuts (7c) in the corners as shown

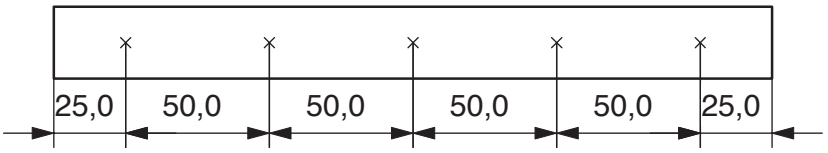


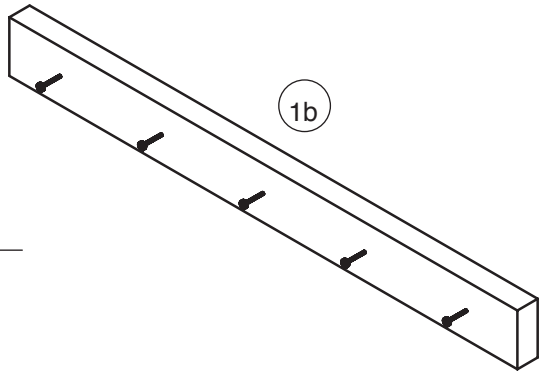
6.2.4 Mark out and saw the radius on the top and bottom capping (3&4).





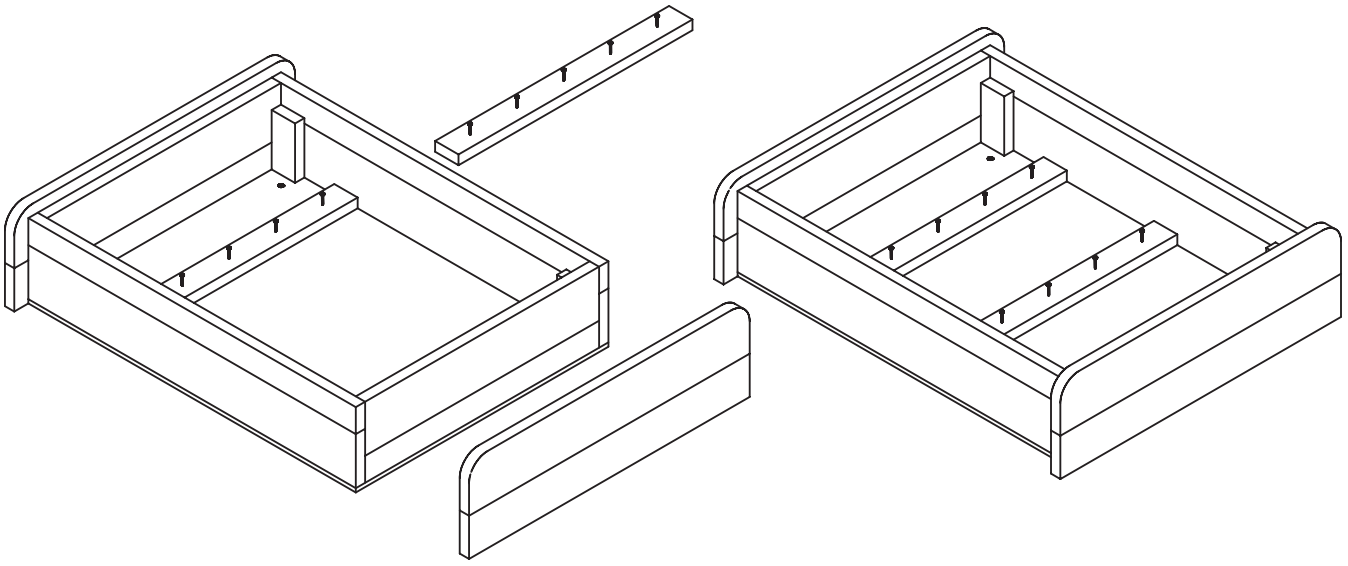
6.2.5 Mark out two strips (1) 10 x 25 x 250mm as shown and insert 5 brass pins (14) as key holders in each marked place.





6.2.6 Glue these key holder strips on the rear wall.

Note : The distance between the key holder strips depends on the length & type of keys to be stored!!

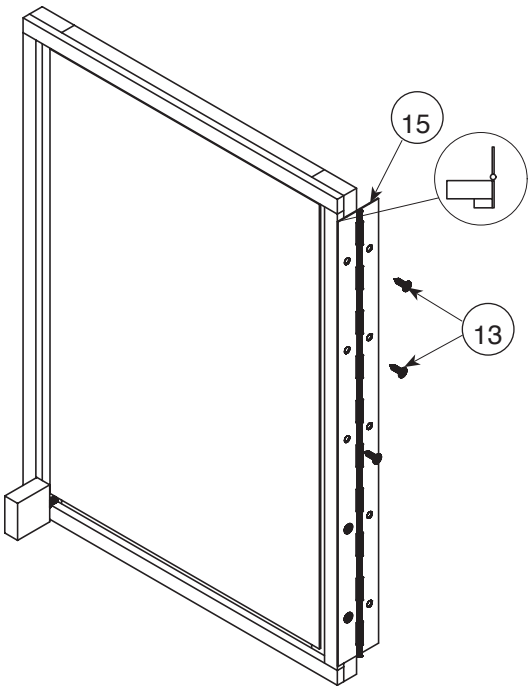


6.2.7 The caps (3/4) are glued in place at either end of the carcase.

6.3 Final assembly.

6.3.1 Screw the piano hinge in the middle, on the side of the door frame so that it lines up with the inner edge (step) and screw (13) it in position.

Note: Use a pointed bradawl to make the holes first.

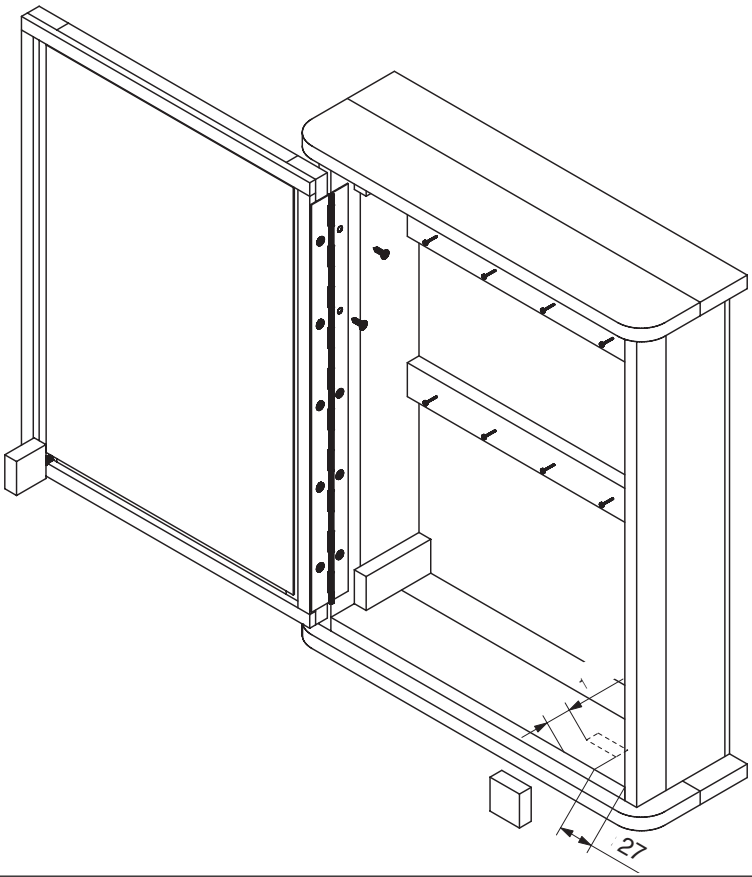


6.3.2 Mount the other half of the piano hinge on the cupboard carcase (As shown)

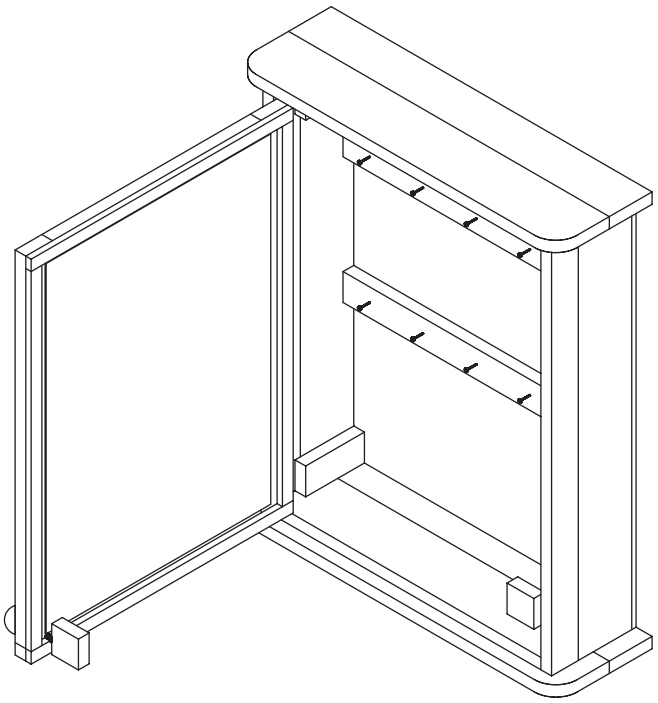
Hinweis: Wie in der Darstellung gezeigt, die Tür im geöffneten Zustand an die Korpusseite anlegen und dann festschrauben!

6.3.3 Check that the door so that it opens and shuts correctly and then finally tighten.

6.3.4 Use a remaining strip (7) 10 x 25 x20mm as a stop for the door. Let it in about 27mm from the side and



6.3.5 The finish is left up to you. We recommend a either finishing with clear varnish or a coat of wax polish.



6.3.6 Mounting your finished product on a wall

Use two screws and rawplugs (not included in the pack) to hang the cupboard on a wall.

7. Marking out the holes for the wall fixing.