

112.765

Metal-Lantern with acrylic panels



Necessary tools:

Hacksaw
Fretsaw with metal working blade
Pillar drill
Drill ø3, ø 4mm
Countersink
Emery paper etc , file
Round nose pliers
Vice with jaw protectors
Pencil
Ruler
Wooden strip 10mm (Folding aid)
Centre punch

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 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!

PARTS LIST				
		Size (mm)	Descriptioncs:	
Aluminium sheet	1	200x200x0,8	Stages	1
Acrylic sheet	2	150x100x2	Panes	2
Aluminium wire	1	250	Handle	3
Threaded rod	4	150x4	Joiner	4
Machine screws	4	20x4	Distance pieces, staging	5
Domed nuts	12	M4	Fixings	6
Washers	4	9/4,3	Middle part	7
Brass tubes	10	50x7	Distance pieces bottom and middle parts	8
Brass tubes	4	15x5	Distance pieces, top	9

INSTRUCTIONS

General:

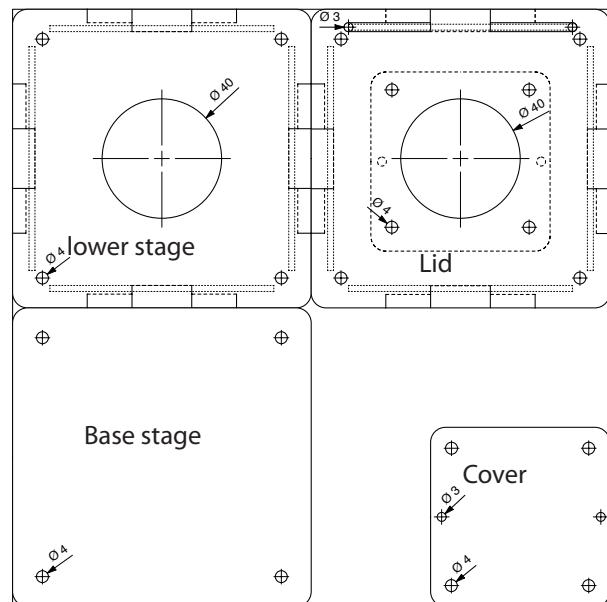
The lantern can be made in two variations. These instructions describe the first variation. In Variation 2 the top part is different and the metal must be formed into a rounded shape

Preparing the various parts:

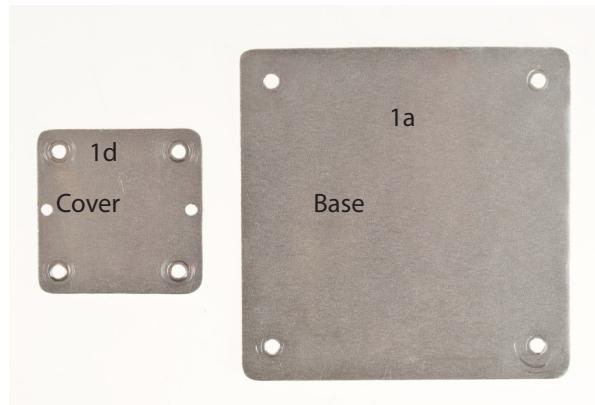
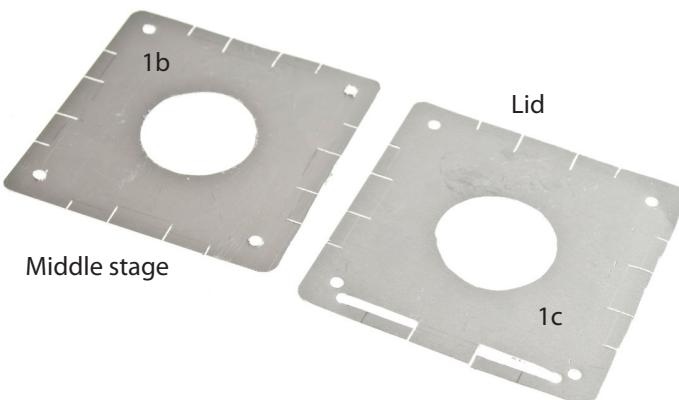
1. Trace the patterns (Page 5) on to the aluminium sheet (1) die Schablone Mark the holes with a centre punch!

Please note:

The broken lines are the folding lines. When tracing the patterns on the aluminium sheet , start by tracing the solid lines only , so that thee is less likelihood of any mistakes.



2. Drill all the holes 3/ 4 mm dia Remove any sharp edges with a countersink bit. The various parts (Lid, Cover , Middle stage, Base) should be sawn eith a fretsaw (with metalworking blade) Remove the burr from the sawn edges with a file. The central hole in the lid, middle stage is drilled out to allow the insertion of the saw blade. Saw out the shape and remove burr

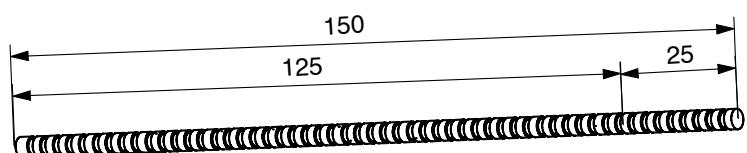


Making the spacer tubes for the bottom and top

3. Take two brass tubes (8) mark off 10mm and them saw to length. Remove any burr with a file. At the end you should have 4 tubes each 10mm long, with smooth ends

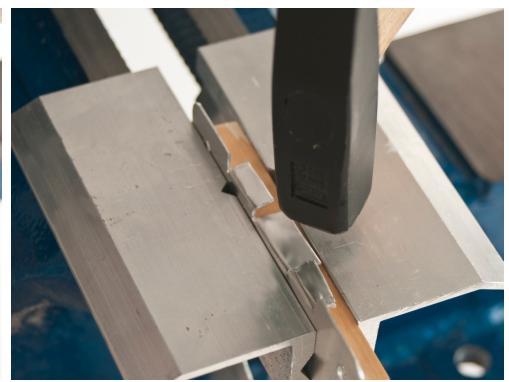


4. Shorten the threaded rod (4) as shown in the diagram. Remove any burr from the ends



INSTRUCTIONS

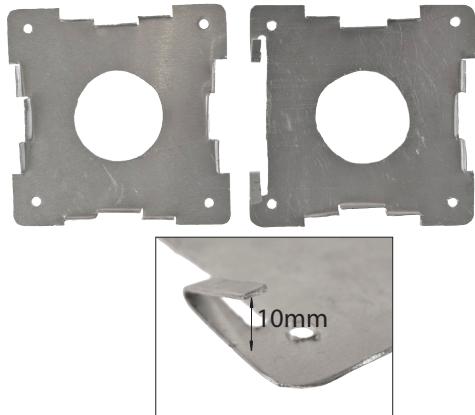
Bending:



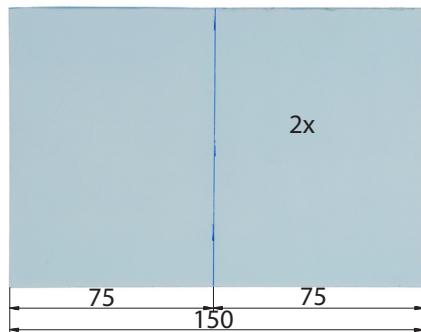
5. Draw out the folds (broken line) from the pattern (Page 5) with a pencil (see diagram)

6. Place the metal in a vice with jaw protectors. In order to bend the sides you will need a 10mm thick piece of strong wood, without this you will not be able to bend the last side. Firstly bend the the 4mm tabs. Mark out the metal sheet and bend as shown

7. Once the 4mm tabs are bent, then mark out the 8mm tabs and set them up for bending. Bend the 8mm tabs taking care not to bend any previously bent tabs. Note bend all the tabs in the same direction



8. Bend the tabs in the lid in the same direction as shown.

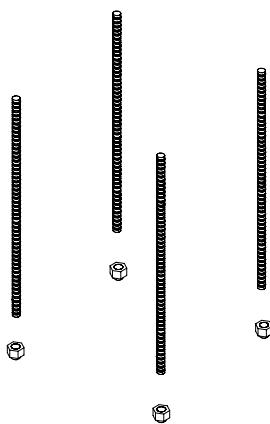


9. On the acrylic sheets (2) (Middle) ,measure and mark out as shown

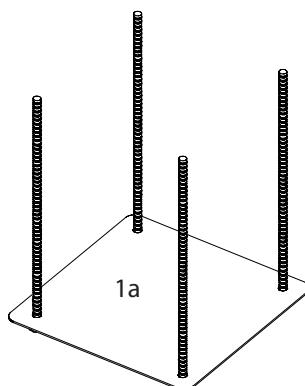


10. Cut the acrylic sheet in two and then clean up the sawn edges

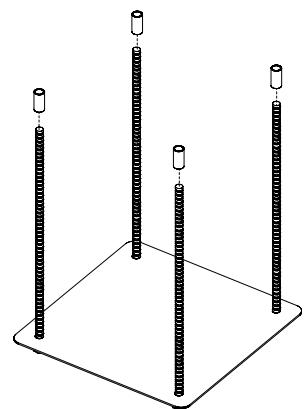
Assembly



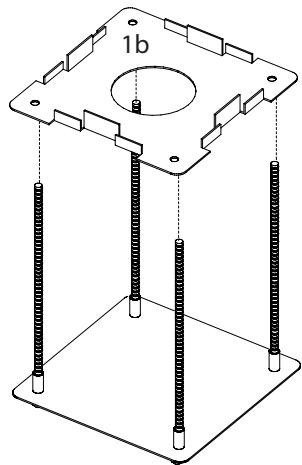
11. Screw a domed nut (6) on each of the 4 threaded rods



12. Place the base (1a) on the four threaded rods so that it rests on the four domed nuts

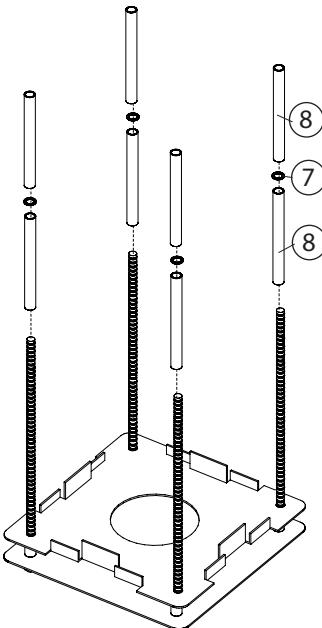


13. Then add 4x 10mm- metal tubes on the threaded rod

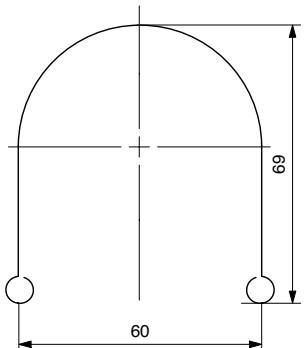


14. The add the lower stage (1b) with the tabs upwards

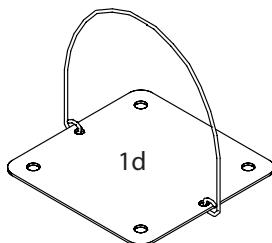
INSTRUCTIONS



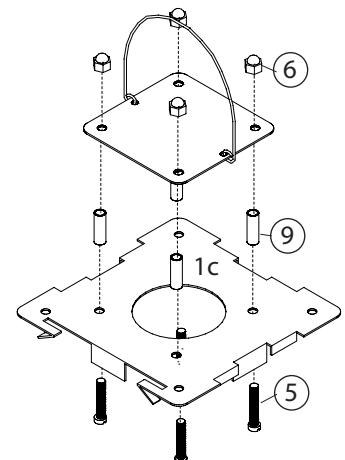
15. Add the four brass tubes (8) Then 4 washers (7) and once more four brass tubes (8)



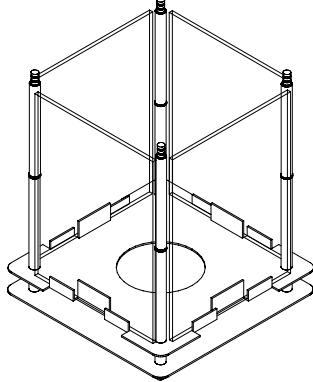
16. Cut the aluminium wire to 219mm. On each end bend a 8mm eye loop Use the pattern as a help



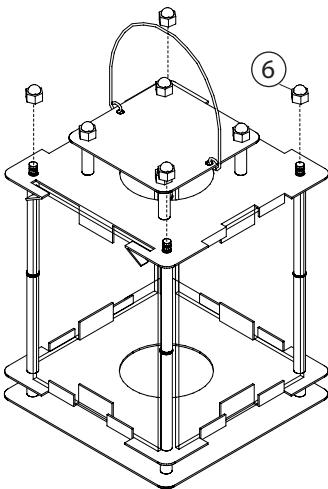
17. Fix the handle to the lid (1d) as shown Use a pair of pliers to fit it into the holes securely.



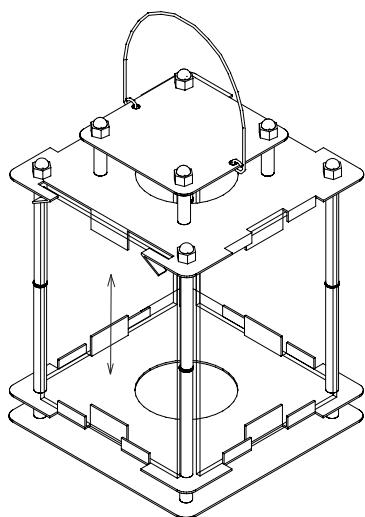
18. From underneath the lid (1c) insert 4 machine screws (5) then 4 brass tubes (9) Finally add the cover 4 domed nuts (6) then tighten !
Note:
The tabs on the lid (c) face upwards!



19. Insert the acrylic panels in place as shown.



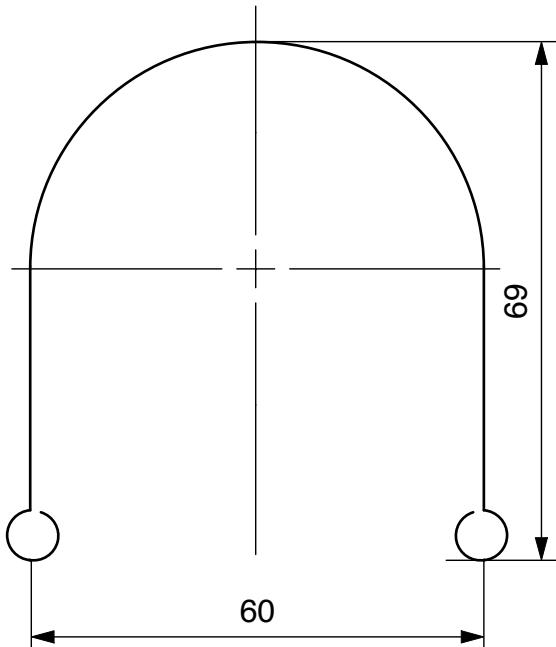
20. Place the lid on the lantern making sure that the acrylic sides sit properly in place. Fix it place with 4 domed nuts (6) and tighten



Finished!

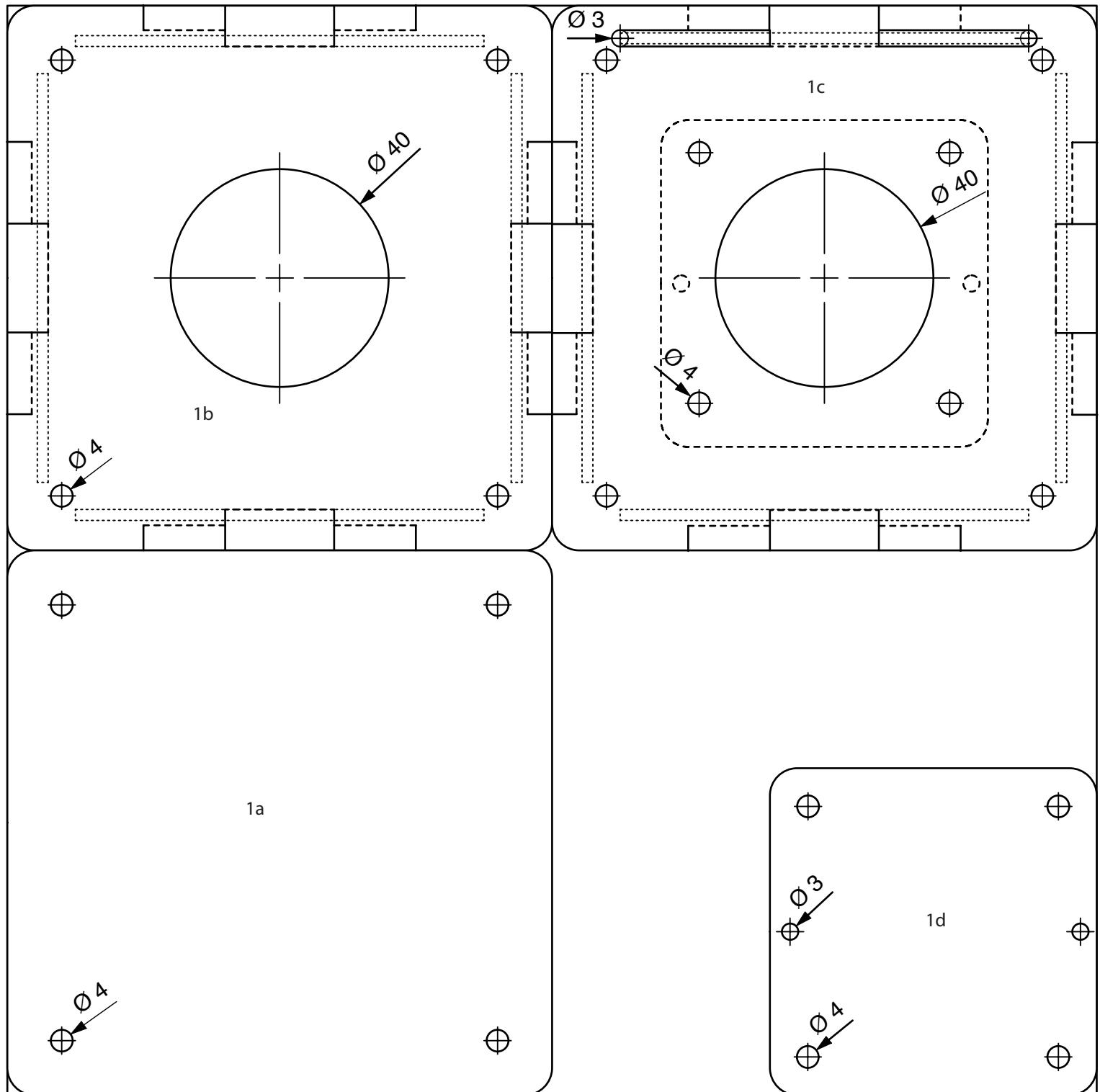
To insert the tea light candle slide the front panel upwards!

Bending pattern for the handle 1:1

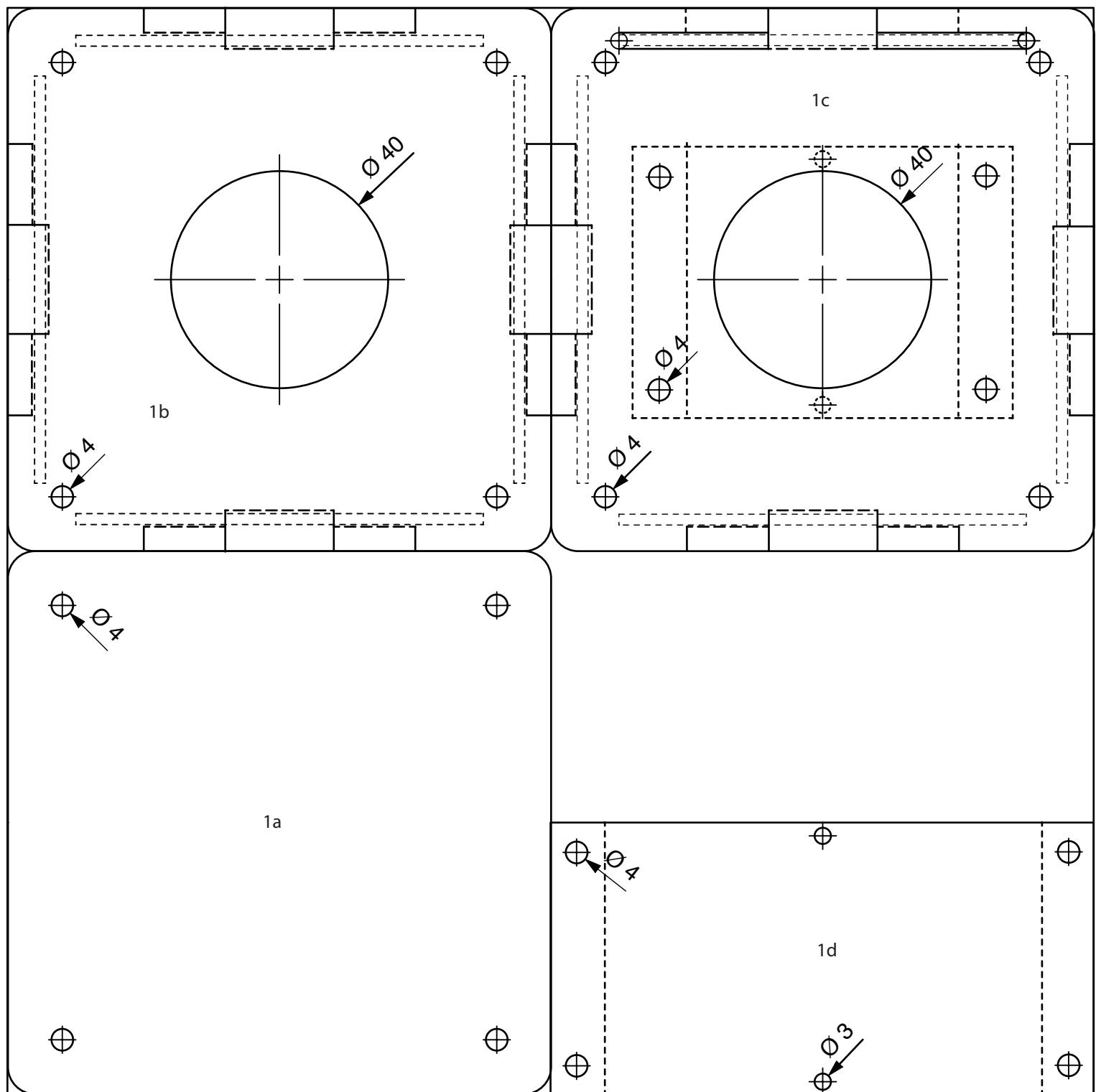


INSTRUCTIONS

Pattern variation 1



Pattern variation 2



Bending pattern for variation 2 (1d)
M 1:1

