

## The Shield plans

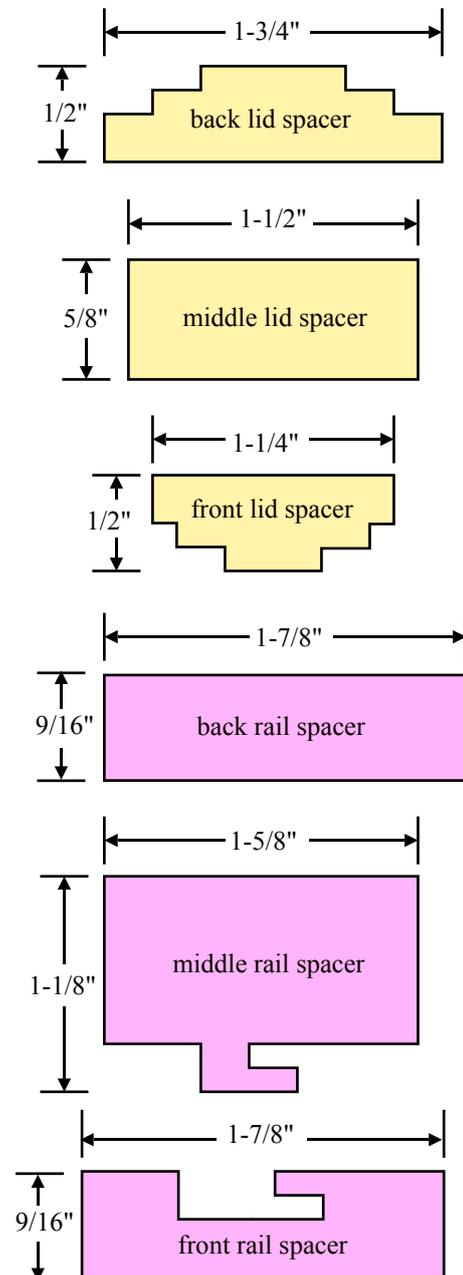
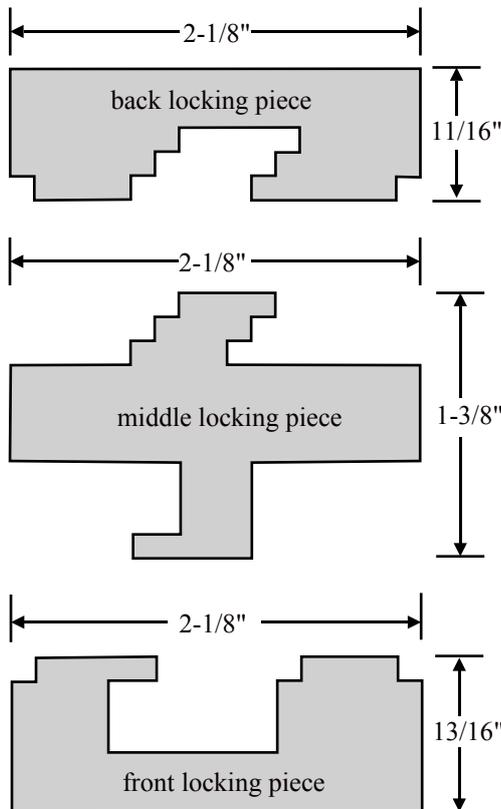
A rather plain, metallic looking box, with an embossed shield on the top, without any visible moving parts. Yet this is another 'sliding panel' puzzle box. The shield itself has to be manipulated in order to get the lid off. The only moving parts are in the lid. This is quite a precise little puzzle to make, and there are only 9 moves to get the lid off. However, it's quite tricky to get off, because the shield seems to jam up now and again. That's because the shield is in three parts, and the inside layers are interlocked. The box measures 3" x 3" x 4": the lid is made of 1/8" plywood: the box made of 3/16" ply, with bevelled corners.



Cut all these pieces from 1/8" ply.

The easiest way to cut these pieces, is to cut around these shapes roughly with scissors, glue them to the plywood, and cut them to the lines.

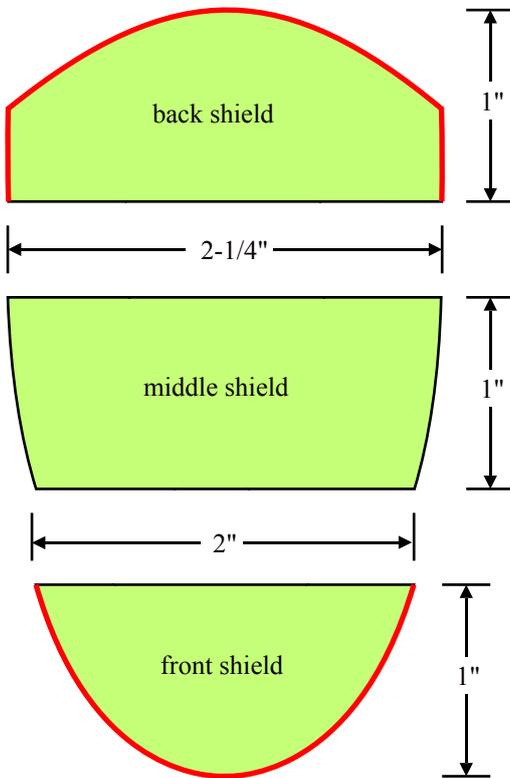
These are full size drawings



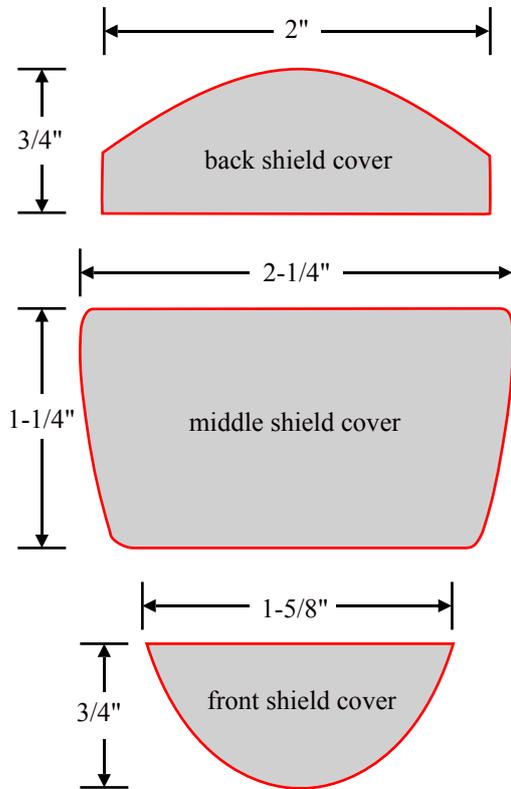
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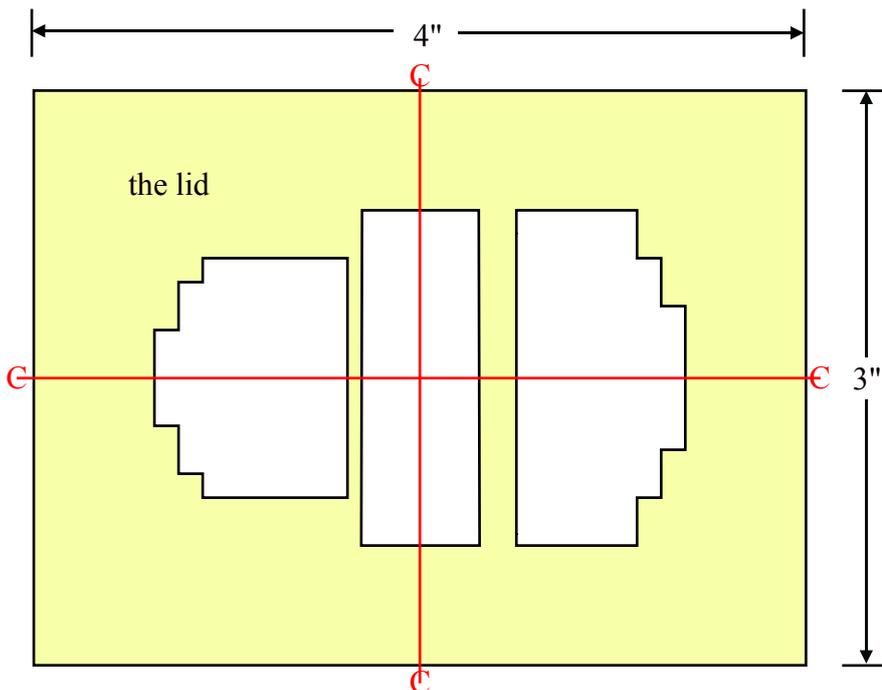


When the shield parts are cut, round off the top of the red edges.



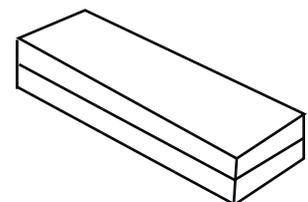
outer shield covers

When the shield cover parts are cut, round off all the top edges.



After the lid is cut, round off all the outer edges.

Cut a piece at 1-7/8" x 3-3/8": this will be the lid cover.  
 Also cut 2 pieces at 1-7/8" x 1/4": lid cover supports.  
 You could make four pieces at 1/8" thick, and glue two sets of two together to make 2 pieces 1/4" thick.

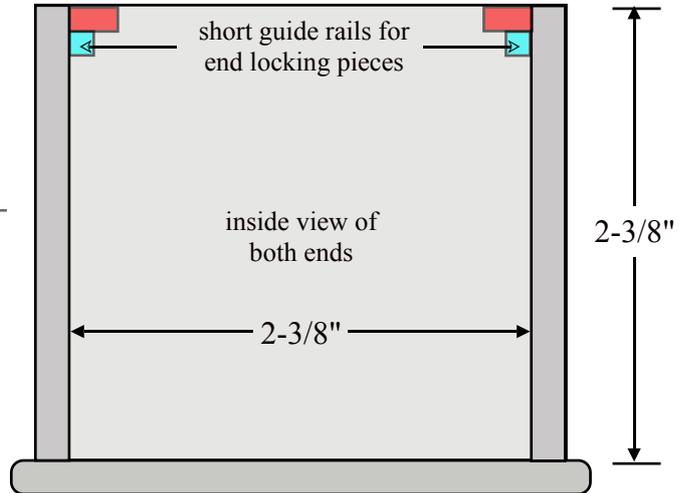
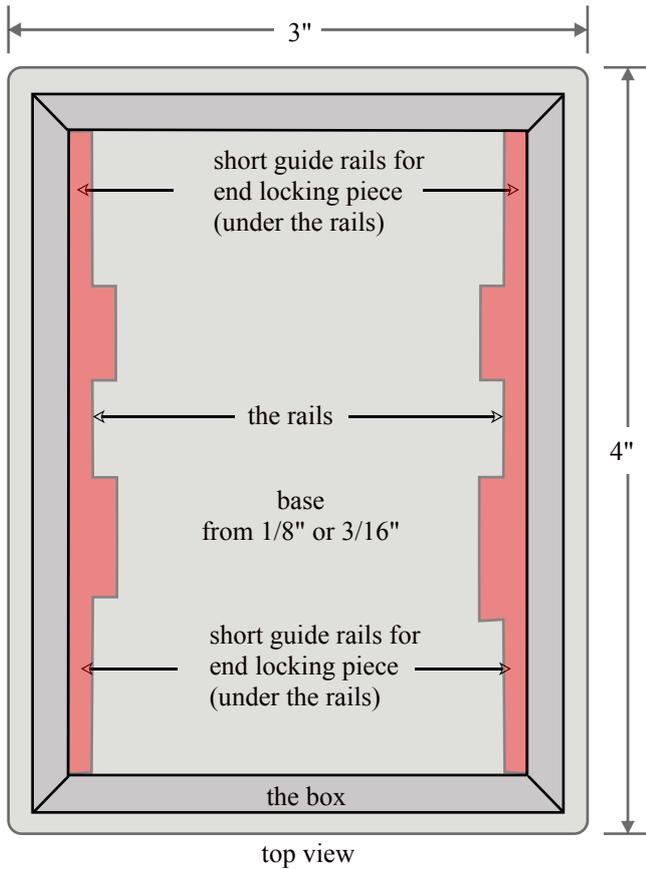


## The box

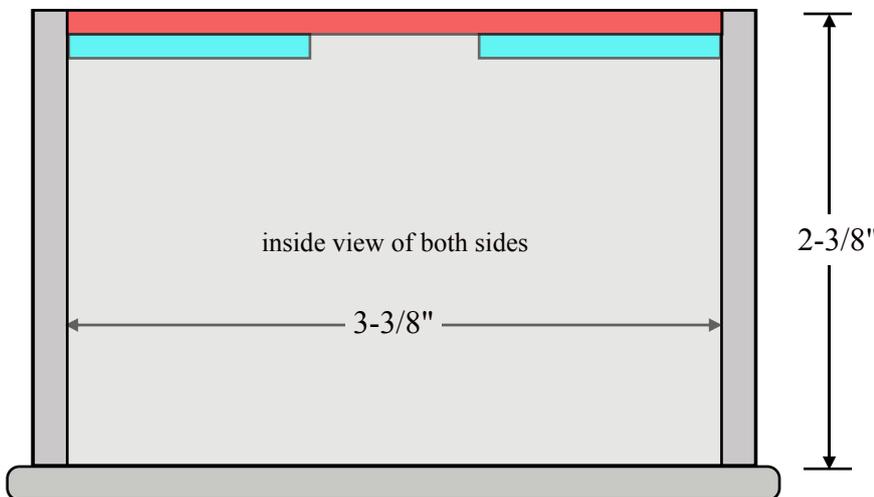
The box can be made from any thickness wood you prefer, and the corner joints can be bevelled or straight, but the inside dimensions MUST be 2-3/8" wide by 3-3/8" long. The height should be 2-3/8", but is not critical.

I used 3/16" plywood, and bevelled the corner joints. The rails are glued to the inside faces of the long sides, flush with the top edges. Glue the short guide rails just under the rails, at both ends and both sides.

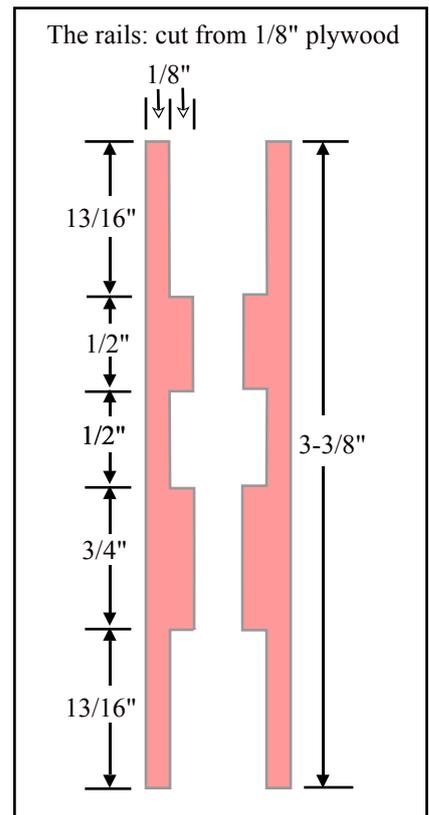
Cut four pieces at 1/8" x 1/8" x 1-1/4". These are the short guide rails for the end locking pieces.



Position of rails: flush with top edges of long sides.  
Position of short guide rails: directly under the rails, at both sides and both ends.

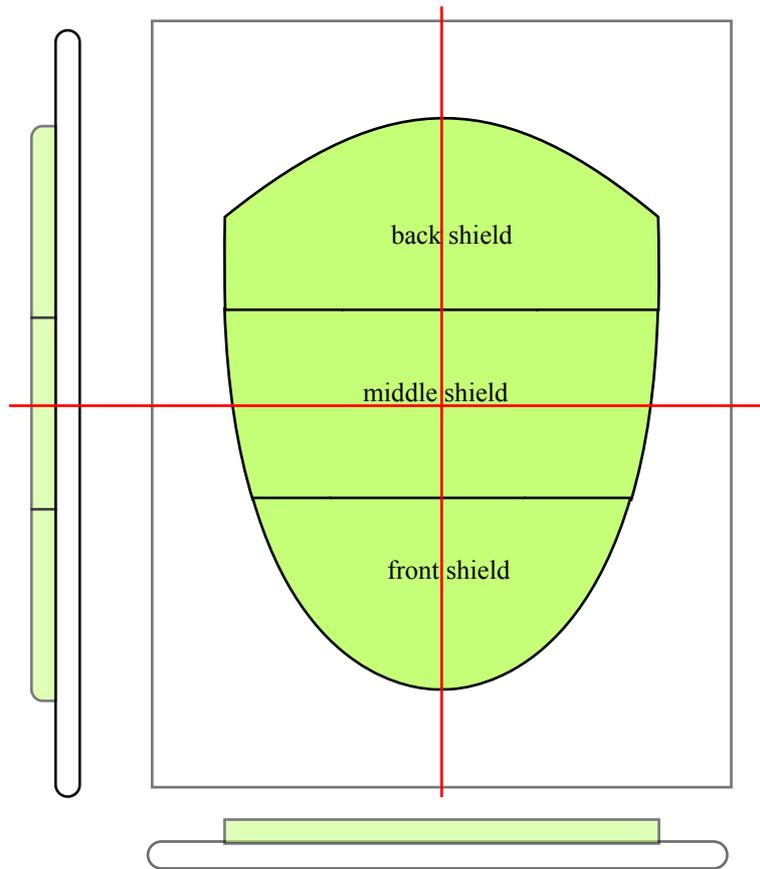


**DO NOT GLUE THE BASE ON AT THIS TIME.**

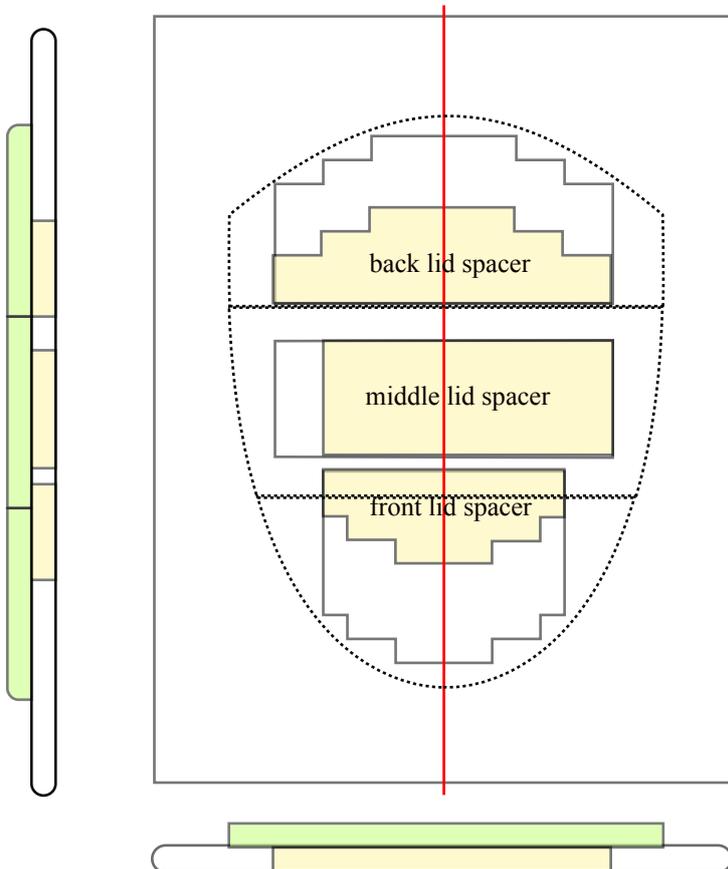


Assembly of the lid parts.

Position the shield parts centrally on the lid.  
Hold them in place temporarily with tape.

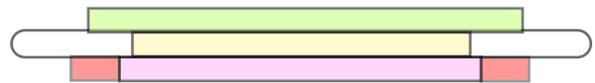
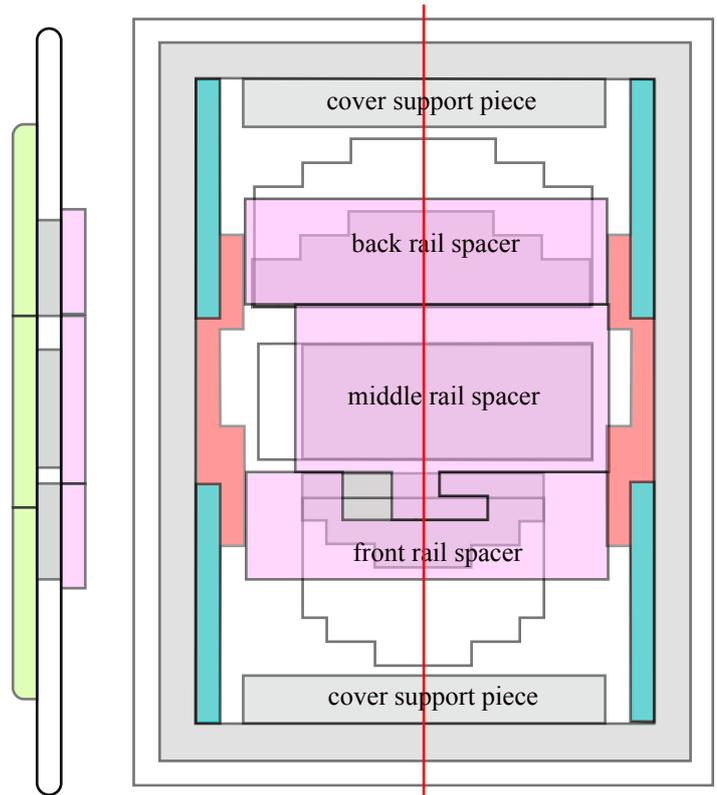


Turn the lid over, making sure the shield parts haven't moved.  
Glue the lid spacers to the shields in these positions.

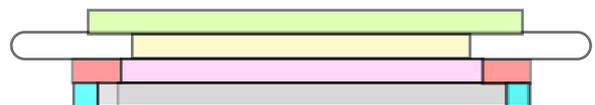
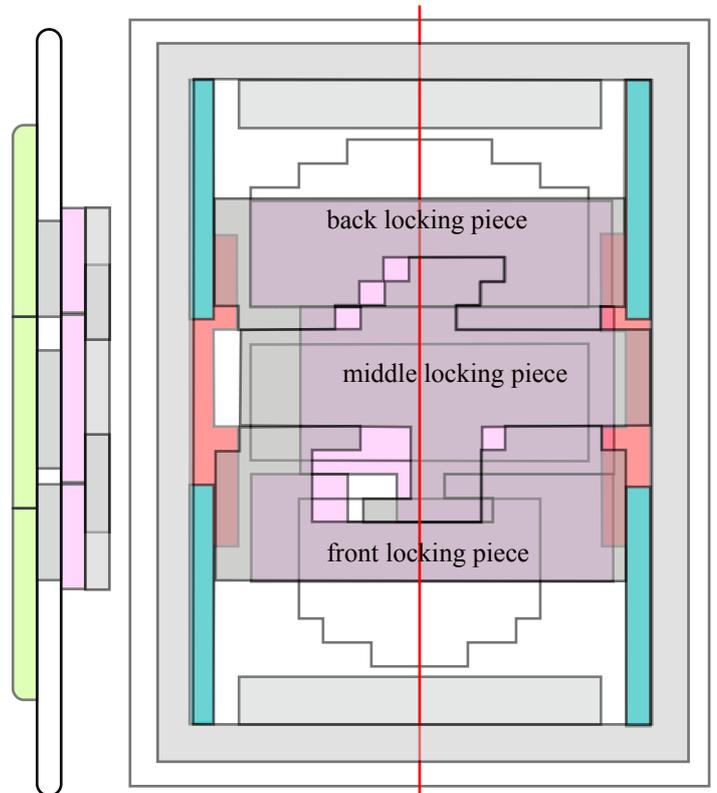


Turn the box over, so the rails are facing down.  
 Place the box centrally on the lid.  
 Glue the cover supports onto the underside of the lid, at each end.

The rail spacers pieces are positioned at the same level as the box rails, and glued to the lid spacers.



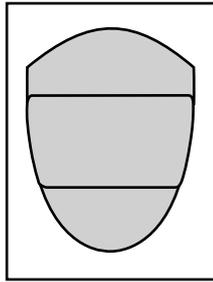
The locking pieces are positioned under the rail pieces, at the same level as the short guide rails, and glued to the rail spacers.  
 In this view, the locking pieces will be on top of the rails.



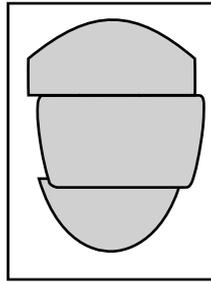
These views show the box LOCKED, looking up from the bottom of the box.

At the moment, the lid is locked to the box. Turn the box right side up, and remove the tape. Now follow these steps to remove the lid:

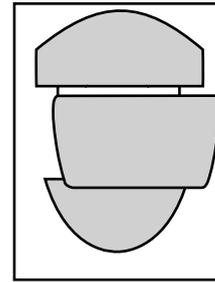
Starting position



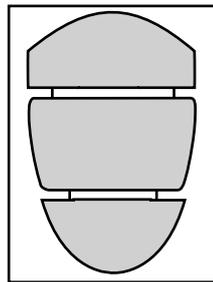
Move the middle part to the right, and the back part backwards.



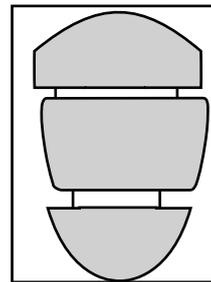
Repeat those movements.



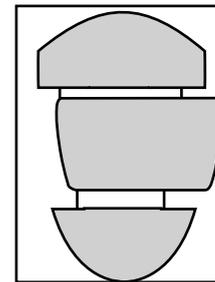
Move the front part forwards, then the middle part left.



Move the front part forward again, then the middle part **halfway** to the right.



If the middle part is moved too far, the lid will be re-locked.

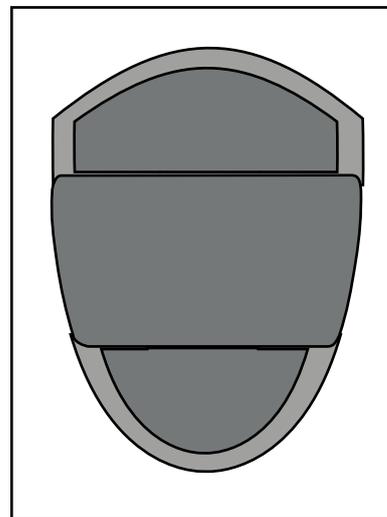


Now take off the lid.

When you're certain all the lid parts are working properly, glue the lid cover onto the cover supports. Make sure the lid will still fit inside the box top, then glue the base onto the box.

Glue the three shield covers in place. The middle cover will overlap the back and front shield parts by 1/8" each. The back edge of the front shield cover should be against the middle cover front edge. The front edge of the back shield cover should be against the back edge of the middle cover.

The box was painted metallic bronze, the lid metallic copper, the edges of the shields gold. The middle part of the shields were painted black, and some Celtic patterns printed from the computer. These were sprayed with Artist's Fixative before glueing to the the black areas.



**Enjoy your puzzle!**

I've taken every care in preparing these plans. However, if you find something wrong, please let me know, so that I can put it right.

These plans are free.  
If you sell or give away this puzzle,  
please mention where the plans came from.  
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