Making a Simple Box with a Sliding Dovetail Lid.

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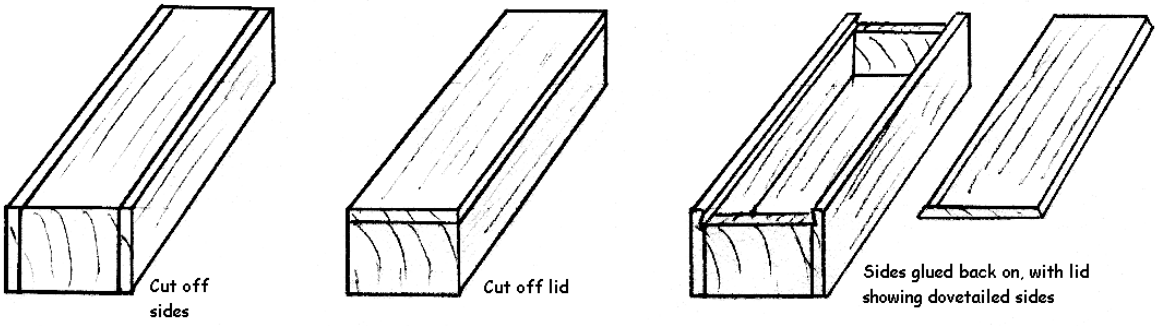
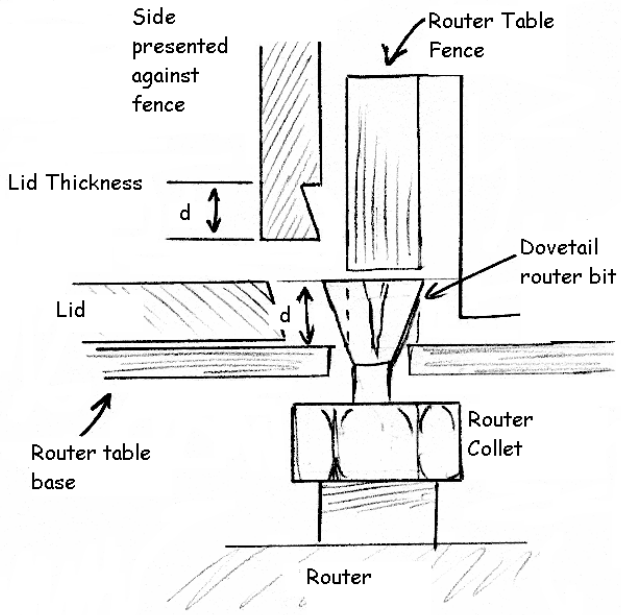
Last month I described a box with a lid that dropped in between the sides and ends, with a small handle to allow it to be pulled out. Here is an alternate design that has a sliding dovetail lid. There are a lot of similarities, but some significant differences too, so I have described the complete procedure.

1. As before, start with a squared off block of wood slightly larger than you want the finished box to be. This design assumes that the grain runs along the longest axis. If you want to orient the grain differently, you can, but you must be more careful in dealing with end grain. Remember, depending on the width of the kerf that your bandsaw makes, and the cleaning up of the inside that you wish to do, you will loose a few millimetres from your initial size. Your final dimensions will be three to four millimetres smaller all round, typically.
2. As before, crosscut the ends square and finish off all the other surfaces to the final smoothness you wish to see.
3. As before, you may wish to fit a 6mm blade in your bandsaw. Set the fence to take a 6mm cut (or thereabouts). A wider blade is also OK, but cutting out the inside will waste more wood.
4. As before, slice off the sides of the box from the block of wood. To keep the grain matching, keep track of the locations of the side and the core. The diagrams below should help you picture the procedure.

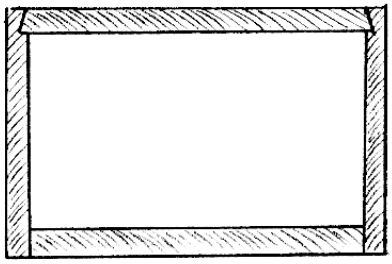


5. Depending on the finish you want, you may want to plane the inside surfaces of the sides to remove bandsaw blade marks. Don't remove too much material if you are concerned about the grain matching.
6. Slice off the lid from the core and clean up the inside as required,
7. Fit a dovetail bit into your router, with the depth set to match the lid thickness. Set the fence on your router or router table so that depth of cut of the dovetail groove that will be cut in the sides just matches the thickness of the lid. This is shown in the diagram below. Use some scrap wood cut on the bandsaw using the same fence setting as you used for the lid to confirm the set-up for the procedure below.
8. Run a dovetail groove in the sides by holding the inside against the fence and upside down, so that the wider part of the groove is away from the edge.

9. Using the same set-up on the router table, run each long side of the lid flat on the router table, with the edge against the fence, so that the upper side of the lid is narrower. The sides of the lid will match the depth of the dovetail grooves in the sides.
10. Remember all the precautions when using the router – eye and ear protection, keep your fingers well away from the spinning bit and use a push stick if you think your fingers might get too close to the bit!



11. If you put the sides and top together with the remaining core, you will see that the core is too thick now. You need to reduce the width so the dovetail will engage. Plane down the core, using a hand plane or on the jointer. Try to keep the sides parallel. Confirm the fit of the sliding dovetail of the lid in the sides, with the sides pressed against the core and the lid in place.
12. As before, cut out the inside from the core. Both the ends and the bottom can be 6mm thick. If you use a narrow bandsaw blade there will be less wastage. Be aware that the ends are end grain and somewhat weaker until the box is glued together again. At this point, any cracks in the wood may result in pieces of the ends breaking off. Just glue them back together carefully. The glue will clean up when you trim the ends and be almost invisible.
13. As before, smooth the inside of the cutout in the base and sides with a rabbet plane if required. Be careful with the end pieces as noted above.



Cross section showing how lid fits into sides

14. Confirm the fit of the lid. If it is too loose, now is the last chance to thin down the width of the core, carefully. Hold the sides on with your fingers or gently clamp the sides around the core in a vice to check this. When the sides are clamped on for gluing, they will distort and the lid will be locked in place, so don't panic, until you release the box from the vice or clamps. If the lid is too tight, this can be rectified afterwards, so rather too tight than loose.
15. Glue the sides back onto the core. Because the kerf between the lid and ends has removed some material, the sides will be slightly larger than the core, top to bottom. Make sure the dovetail grooves line up with the ends so the lid slides in smoothly with no interference or gap. Clamp the assembly in a vice or between clamps.
16. When the glue has set, remove the box from the vise or clamps and insert the lid. Trim the overhangs at the top and bottom using a conventional hand plane. Pay attention to

grain direction to avoid tear-out. You may find that the sides are not completely parallel, so the lid slides out more easily one way than the other. I sometimes found that a little glue squeeze out held the lid from sliding out, but a gentle tap with a mallet was enough to release it. If the fit of the lid is very tight, then take a single shaving off the side with a finely set plane and retry the fit – don't overdo it.

17. As before, trim the ends with a crosscut on the circular saw and/or a block plane. Be careful to avoid tear-out of the end grain by planing towards the centre from each side.
18. Soften the edges with 220-grit sandpaper and generally sand as required. An oil finish that does not build up too much is preferable, so that the lid retains its good fit and does not stick.

The sliding dovetail lid is more difficult to make, as you need a router and have to be careful with the set-up and cuts to get a good fit of the sliding dovetail. You could install a stop at one end of the lid, by cutting off a small piece, and gluing it in place, like the previous design. But then, you will need to put a cutout into or a handle onto the lid to allow the lid to be slid open.

Another alternative design is to recess the lid and have it slide into a groove cut in the sides.

If you have a moulding plane with a dovetailing cutter, you can use this to make the grooves in the sides. The sides of the lid can be tapered to match the dovetail using a normal plane held at the appropriate angle. (I'm thinking of Winston in this last paragraph.)