



Lock on!

Chris Tribe shows you how to cut a lock into the back of a door and fit an escutcheon

▲ Pic.1 Chris fitted this oak display cabinet with a cut lock and covered his precise work with a workshop-made escutcheon



▲ Pic.2 If your plates are not absolutely square...



▲ Pic.3 ...correct the deviance by filing them to accuracy



▲ Pic.4 After setting the marking gauge to the depth of the top plate...



▲ Pic.5 ...Chris marked between the pencilled lines, and did the same for the thickness



▲ Pic.6 Chris opted for a router to create the recess...



▲ Pic.7 ...but he could have used a chisel, chopping down across the grain to remove...



▲ Pic.8 ...and pare away the waste



▲ Pic.9 Chris sneaked up on the gauge line...



▲ Pic.10 ...stopping just short at either end

In a recent article on hinge fitting I said that an otherwise good piece could be spoiled if the hardware was not fitted neatly. An important piece of hardware is the lock. It is also a rather complex shape, consisting of a number of layers, so neat fitting is dependent on good method.

The body of the lock is similar in both door and box locks so the fitting is the same, but the locking plate is different between the two types of lock. The bolt on a door lock often just engages with a slot in the frame while a box lock engages with a hooked striking plate. It's also a nice touch to have a decorative

escutcheon around the keyhole. Here's how I went about fitting both on an oak display cabinet (Pic.1).

The lock we will be fitting is known as a cut lock, which requires a recess to be cut into the back of the door to receive the lock rather than the lock being surface-mounted on the door. Machined brass locks look better than those that are pressed; the shape is crisper, particularly between the top plate (the narrow plate through which the bolt passes) and the back plate (the larger plate which is screwed to the back of the door).

Before starting check that the plates are

square and correct any error by filing; this makes the fitting easier later (Pics.2 and 3). Next, decide on the lock position and mark off the width lightly in pencil. Remember that the key will not be central in the lock body, so if you want the key to be central on the door you will need to allow for this.

TIP

If the door is low down you will probably not want it central as perspective distortion will make it look like it is below halfway; I usually set it a few inches above halfway in this case.

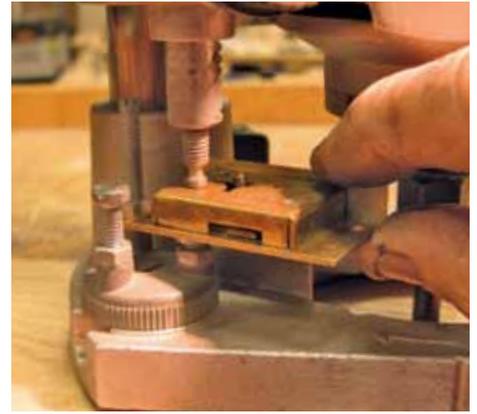
Technique



▲ Pic.11 His next job was to align the back plate between the marks followed by cutting the...



▲ Pic.12 ...recess depth to a tad more than the thickness of the body plus the back plate



▲ Pic.13 ...using either a router set to the depth of the lock



▲ Pic.14 ...or by making a series of angled saw cuts to break up the waste



▲ Pic.15 Next he chopped across the grain...



▲ Pic.16 ...then followed by precise paring to the gauge line...



▲ Pic.17 ...methodically using a well-fettled chisel...



▲ Pic.18 ...taking care not to bust out of the pencil marks...



▲ Pic.19 ...leaving half a mm of waste wood...



▲ Pic.20 ...that can be removed by cutting along the grain



▲ Pic.21 Now Chris turned his attention to the back plate...



▲ Pic.22 ...using a scalpel to make the finest marks...

Top plate recess

Set a marking gauge to the depth of the top plate (**Pics.4 and 5**) and mark between the pencilled lines, similarly with the thickness. The recess for the top plate can now be cut, either with a chisel or router (**Pic.6**); if using a router it's a good idea to clamp packing to the back of the stile to support the machine on the narrow edge. If cutting by hand make repeated chops down across the grain to break up the waste (**Pic.7**), then pare away the waste across the grain (**Pic.8**); do not cut immediately to the gauge line, but creep up on it so you just take a sliver on the final cut (**Pic.9**). Do not cut right to the pencil lines at either end; this will be marked accurately later with a scalpel (**Pic 10**).

Body recess

Now offer up the lock with the back plate between the pencilled lines, mark off the position of the lock body (**Pic.11**) and cut the

TIP

Accuracy is always greater if a scalpel is used for marking; a scalpel line is thinner than a pencil line and a chisel can be dropped into a scalpel line for the final cut.



▲ Pic.23 ...ultra-fine lines

recess depth to a smidgeon over the thickness of the body plus the back plate (**Pic.12**). If using a router the lock itself can be used to set the depth stop (**Pic.13**). If cutting by hand make repeated angled saw cuts to break up the waste (**Pic.14**), then chop across the grain (**Pic.15**) followed by careful paring to the line (**Pics.16-20**)

Once the recess for the body is cut you should be able to offer up the lock so that the precise width of the top plate can be marked with a scalpel (**Pics.19 and 20**).

Fitting top plate

The top plate can now be neatly fitted into its recess and the lock can again be offered up so that the position of the back plate can be accurately marked with a scalpel (**Pics.21 and 22**). If cutting by hand, mark the thickness of the back plate recess using a marking gauge and chop up the waste before paring it away. If using the router, set the depth stop using the back plate to rout to the thickness of the plate and set the fence to cut on the marked depth of the back plate. It would be difficult to rout up to the scalpelled width marks so work shy of them (**Pic.23 to 26**) and make the final cut with a chisel.

Sitting and fitting

All the cuts for the lock have now been made, but the lock will not sit into them properly. This is because the key post is protruding above the surface of the lock body. By pressing the lock within the recess, the position of the post will be impressed on the back surface. Punch the



▲ Pic.24 ...Chris used a router to remove most of the waste ...



▲ Pic.25 ...but left the final detailed cuts for the chisel



▲ Pic.26 Chris now marked the position of the key slot



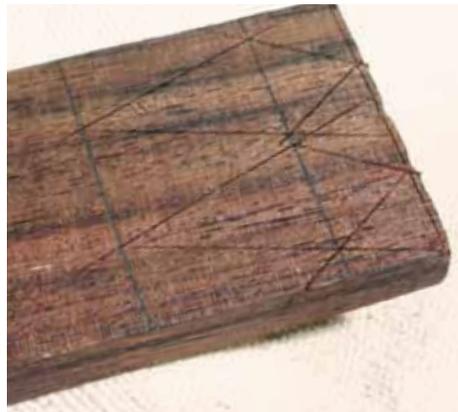
▲ Pic.27 He cut it with a 3mm straight-flute router bit



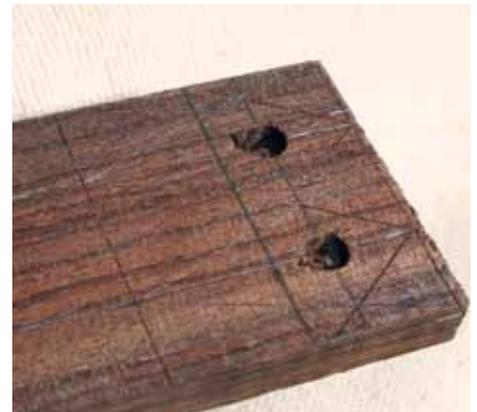
▲ Pic.28 The lock will benefit from some 600-grit abrasive...



▲ Pic.29 ...followed by 1000-grit steel wool



▲ Pic.30 The escutcheon was created from diamond shapes



▲ Pic.31 After marking the centres from the points, Chris drilled keyhole slots in the shapes



▲ Pic.32 Each layer was bandsawn to about 3mm thick...



▲ Pic.33 ...then the diamond shapes were cut on the bandsaw

marked position to aid drilling, then drill for the post using a bit about half a millimetre wider than the key shaft. Clamp a piece of scrap to the back of the stile to prevent break-out.

The key can now be offered up and the position of the key slot marked (Pic.26). The slot could be cut using a fret saw and cleaned up with fine files, but I prefer to use a 3mm straight-flute router bit (Pic.27). One of the advantages of using an escutcheon is that this part does not have to be terribly tidy because it will be covered by the plate.

The lock should now sit neatly into the cut recess. This method means the lock is accurately lowered into position by cutting a layer, then

progressively marking for the next layer.

Before finally fitting the lock it's worth polishing it up a bit, firstly using wet-and-dry abrasive to about 600 grit then 1000-grit steel wool (Pics.29).

Making escutcheon plate

In the example I am working on I used a diamond-shaped rosewood escutcheon; this

TIP

When cutting the diamonds, insert packing slips into the saw kerf to prevent flexing of the cut layers under the saw.

linked with rosewood details used elsewhere on the piece, and of course it was not there to cover scrappy work!

I cut a number of escutcheons from a small block of rosewood and fitted the plate after finishing the main part of the door, this allowing a clear run when rubbing down.

Start by marking out the shape of the diamonds (Pic.30), marking the centre from the points, then drill (Pic.31) and slot the keyhole; check that the key fits the hole smoothly.

Cut the block lengthways on the bandsaw to give layers about 3mm thick (Pic.32). Cut the diamond shapes on the bandsaw (Pic.33) or other fine saw.



▲ Pic.34 The points of the escutcheon were aligned and marked



▲ Pic.35 Again, when routing out the diamond recess, Chris made his final cuts with a chisel...



▲ Pic.36 ...before gluing the escutcheon into the recess



▲ Pic.37 Chris marked the position of the lock bolt on the opposing door...



▲ Pic.38 ...setting the gauge to the bolt from the door front...



▲ Pic.39 ...to give the length and breadth of the lock bolt slot...



▲ Pic.40 ...then either routing or chopping out the slot



▲ Pic.41 The aligned cover plate was marked with a scalpel prior to its recess being cut

You should now have a set of escutcheons with sawn edges. Clean up the edges by pulling them over a block plane; they are too small to put in a vice. Give the front edges a slight arris.

Fitting escutcheon

Lightly mark the vertical centre line of the keyhole, then place the escutcheon over it and insert the key to aid positioning. Ensure the points of the escutcheon are lined up on the vertical and mark with a scalpel (Pic.34).

Rout out the diamond recess to about 2mm, working shy of the scalpelled lines, then cut to the line with a chisel (Pic.35); you may have to cut the fine point of the diamond with a

scalpel. The escutcheon should now glue neatly into the recess (Pic.36).

Lock bolt slot

The last job is to cut the slot for the lock bolt to engage with. Most locks are not supplied with a striking plate, but just engage with a slot cut in the carcass. On the piece pictured I made up

TIP

Obviously it's important that the escutcheon does not move while the piece is marked up, so keep it steady with the help of a small piece of double-sided tape.

a brass plate to cover the slot. This piece has double doors so the bolt engaged with the other door. With that in mind cutting the slots may need to be adjusted for other situations. With the doors fitted, mark the position of the lock bolt onto the other door (Pic.37) and square round it. Gauge the bolt width between these marks, setting the gauge to the bolt from the front of the door (Pics.38 and 39), then either chop out the slot in a similar way to cutting a mortice, or rout it out (Pic.40). Check the fit of the bolt with the doors closed, then offer up the cover plate so the slots are aligned, mark the position with a scalpel (Pic.41) and cut the recess. Job done! 