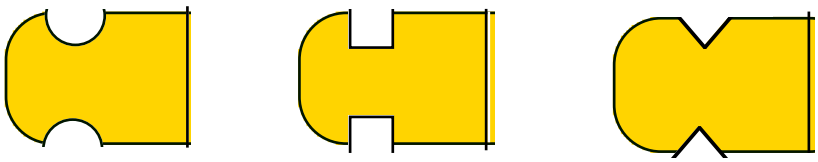
Box Bits #7
Lid Lifts & Drawer Pulls

Introduction
There's always a need for lid lifts and draw pulls when making boxes and small cabinets. Due to their small size, to make them individually is quite difficult and depending on the machines used, a little bit on the dangerous side of things. So, here's a system that will enable you to mill and shape multiple items using common woodworking machines before separating them into individual pieces.

The end profiles of some of the items that can be produced by this system are shown at Figure 1. The coves made during milling may be altered to be straight grooves or "V" shaped, whatever takes your fancy, however, in the interests of stability, each intrusion should not exceed one quarter of the total depth of the stock.



End Profile Examples

Figure 1

The Stock
Usually these items are madefrom scrap or off-cuts gleaned from other projects, and they are often made in a contrasting colour to the item they are mounted on. The stock thickness is most times around 10mm - 12mm as this seems in proportion for box lids or small draw pulls, and it is best to joint the stock until all faces are smooth & true which eventually reduces the time spent sanding and finishing. A jointing fence used with a router table is ideal for this size stock
If this system were used to make draw pulls for a large chest of drawers, the scale of operations will need to be increased, but the principle remains the dame.

The Tools
To make the items detailed here you will need:

A Table Saw, a Band Saw, a scroll Saw or a hand saw and a lot of patience.
A Router mounted in a Router Table fitted with a bit of your choice from thefollowing list:

- a 1/4" Cove Bit
- a 1/8" Straight Bit
- a 1/4" Straight Bit
- a 1/4" V Bit
- a 1/4" Bullnose Bit
- a 1/2" Bullnose Bit
- a 1/4" Round over Bit
- a 45° Chamfer Bit. (This list is by no means complete)

A Cut-off saw. Either powered or hand operated (Your choice)
Sandpaper and you chosen finishing method

and so the fun begins.....

The plan
To make these small items safely it is best to mill and shape them in rows of pairs, or if you need a life time's supply in one go, you could make them in a piece four wide. But as you'll see, a 50mm x 350mm x 12mm scrap piece will yield about 20 completed items**.**
For the purpose of this exercise let's make each finished item 20mm wide, 10 -12 mm thick and 30mm long. This is shown in Figure 2, which also shows the centre of the cove, slot or "V" as being 6mm from the front of the finished item, and at a depth of 2.5mm.

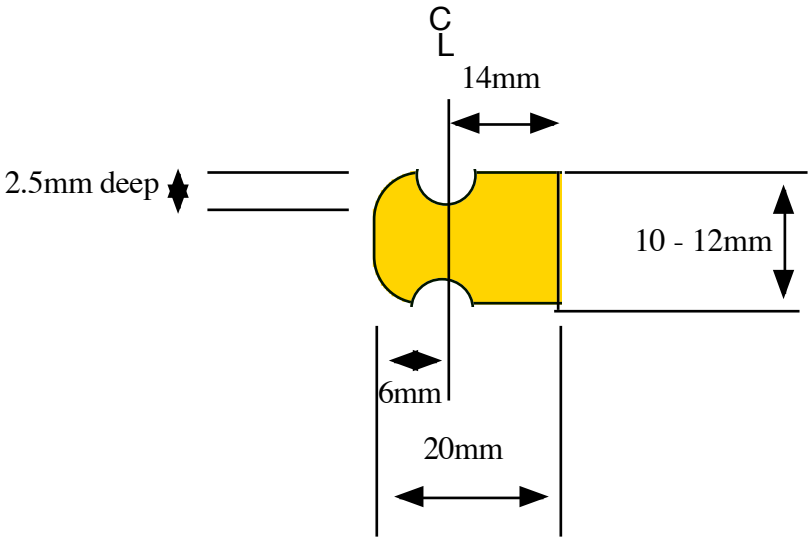


Figure 2

We will make the items from stock that will allow pairs of items to be milled safely, and depending on the method used to separate the rows of pairs (Table Saw, Band Saw or other) an allowance must be made for the kerf of the blade used to separate the rows. In this example we will use a Table Saw blade with a kerf of 3mm.
Therefore, given the dimensions shown in **Figure 2** our stock should be neatly milled and jointed to 43mm wide. **Figure 3** shows the details.

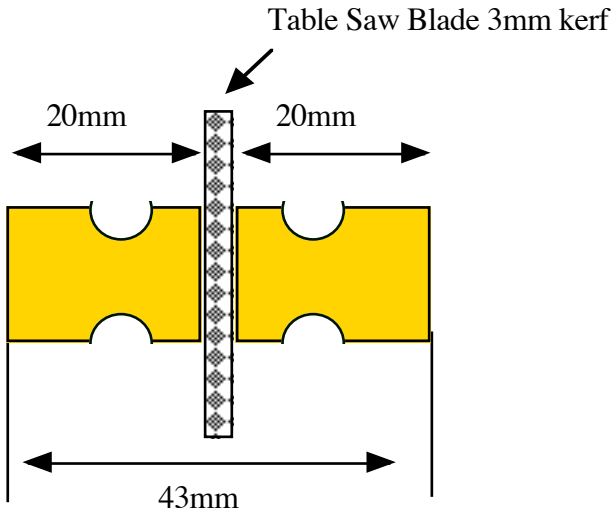


Figure 3

Routing the Grooves
The first action once the stock is milled to size (43mm wide x 10 -12mm thick) is to accurately mark the centre line of the stock, as all measurements will use this line as a reference point. It may also be wise to mill some scrap to the same dimensions, and also mark the centre line on it and use it for set-ups and test cuts.
In **Figure 2** we have shown the centre of the grooves as being 6mm from the front edge of the finished item, which would make this point 7.5mm from the centre line (taking into account the saw kerf). Set your router table fence so that the centre of the groove will be as shown below in **Figure 4** and set the height of the bit at 2.5mm.

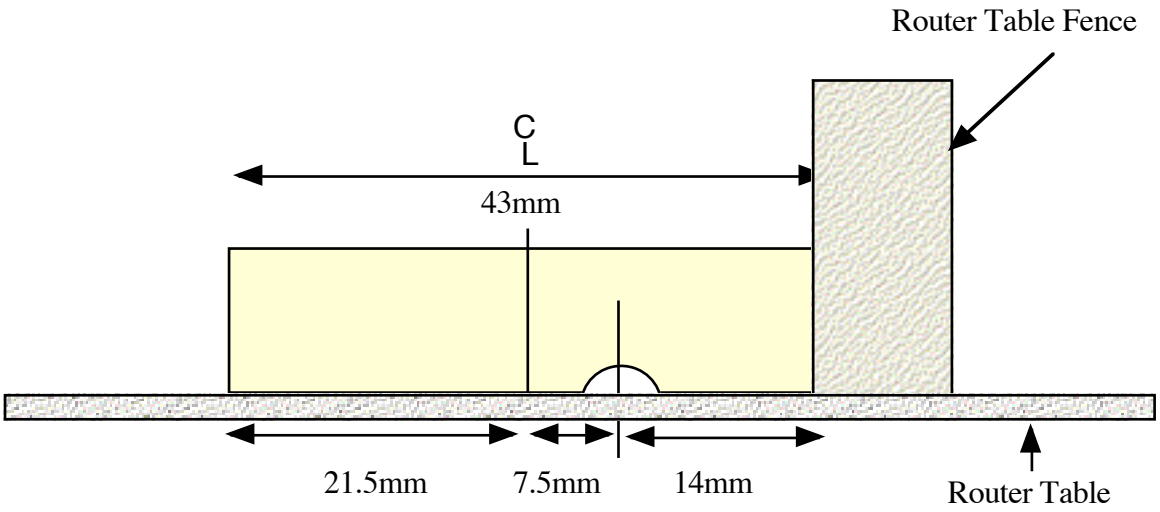


Figure 4

Method
Rout the first groove, then without moving the fence, flip the stock end for end and rout the next. Then flip the stock to the right with respect to the centre line and rout the third groove, flip again end for end, and rout the fourth groove. The result should be as shown in **Figure 5** below.

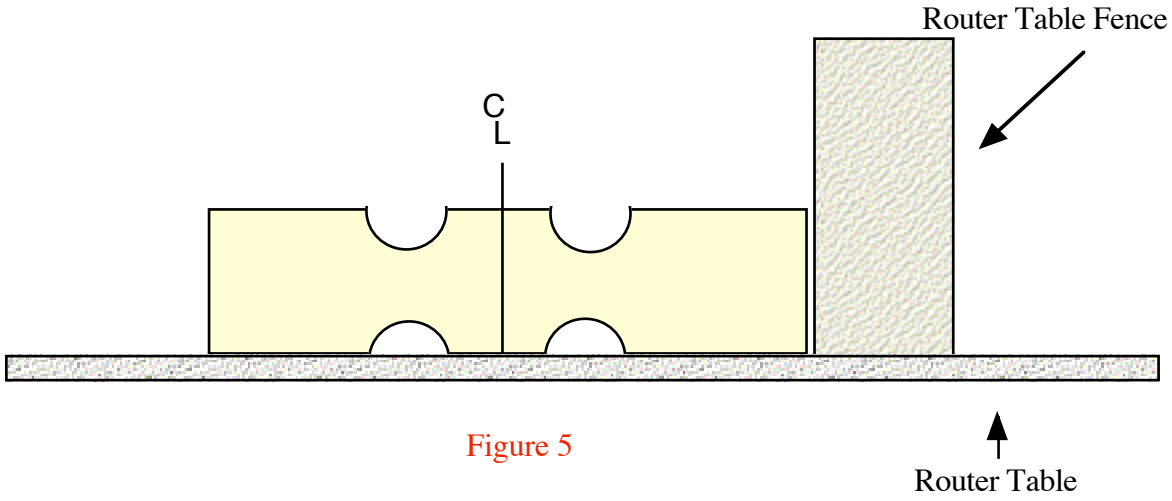


Figure 5

The First Separation
If that is the end of your chosen shaping, the next step is to separate the two rows. If you choose to continue shaping, further methods are detailed in **Box Bits # 8.**
As we chose to do the separation on the Table Saw, with a 3mm kerf, the set-up for thetable saw is shown in **Figure 6**.

For the Table Saw set-up, to get the cut exactly on the centre line, this may be the time to use the milled scrap with centre line that you produced whilst milling the actual stock.

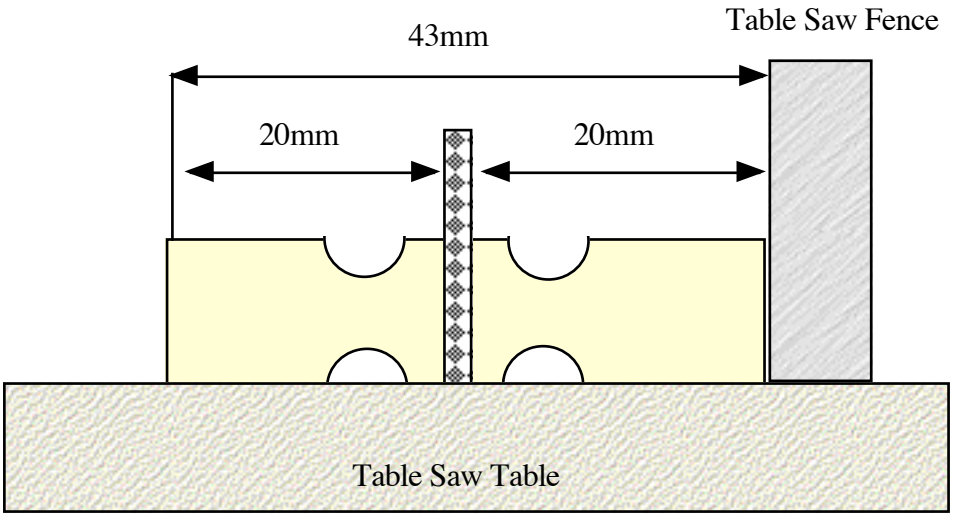


Figure 6

Once the cut is done you will have two shaped pieces as shown in **Figure 7**, and before separating them into individual pieces, the front edge should be further shaped on the router table either with a **Round Over** bit or a **Chamfer** bit or any of the shaping bits from the list on Page 1 of this article. Examples are also shown in **Figure 7**

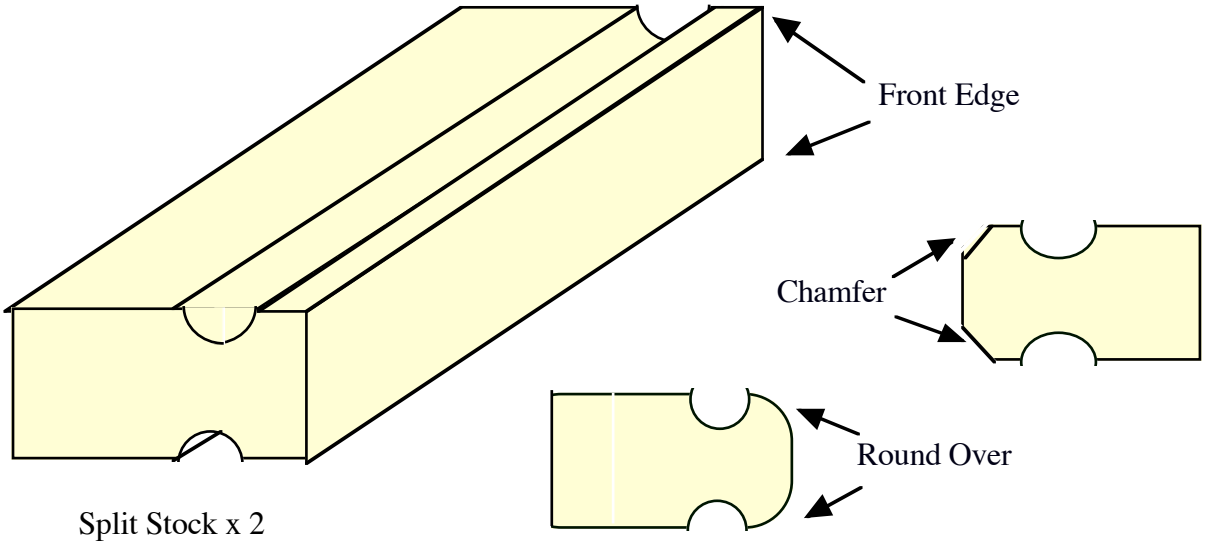


Figure 7

Now you've got two milled lengths of stock with routed front edges and two grooves/coves or v's down their length, and its time to decide what dimensions and shape the finished item will be. They can be cut straight across the width (at about 30mm lengths) or at an angle or a combination of straight and angled cuts That's all up to you. Examples are shown over the page in **Figure 8**

These are some of the shapes (viewed from above) that you can easily define as you separate the individual pieces

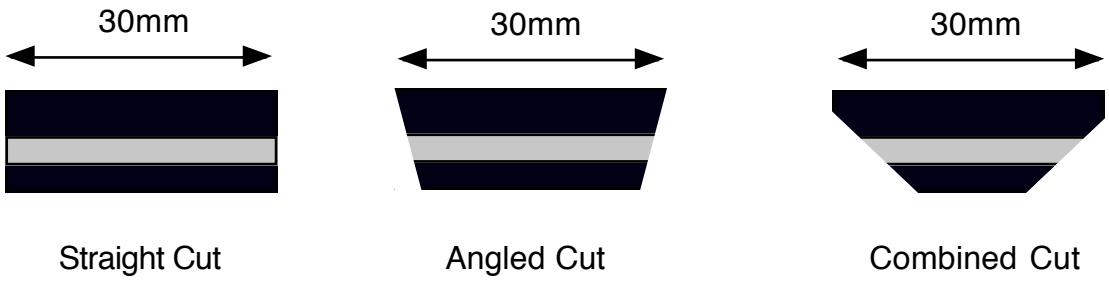


Figure 8

Below are some of the shapes that will be discussed in **Box Bits #8**

So that's a start on making Lifts & Pulls safely and quickly.

Keep your fingers out of the way.....and Have Fun!