1 Introduction

Now it’s time to see who the real DIY experts are: Our next project is quite challenging, with a circular table top.

The following assembly instructions apply to 20-mm-thick beech glued laminated timber board. You must adapt the list of materials accordingly if you opt for other materials or material with a different thickness.

Ask your DIY store or carpenter to cut the required boards to size.

**Required power tools:**
- Jigsaw
- Multi-sander
- Cordless drill/driver
- Cordless screwdriver
- Router

**Other accessories:**
- Circle cutting guide with extra long guide rods
- Chamfering bit and straight bit with maximum possible diameter
- 8-mm wood drill bit
- 20-mm Forstner bit
- Countersink bit
- Sanding paper, grits of 120–240, sponge
- Cloth, brush
- Folding rule, soft pencil, rubber, pencil sharpener
- Wood glue
- Small nail, string or compass with diameter of 455 mm
- Clamps
- Backing board measuring approx. 550 x 550 mm

**Detailed material list:**
<table>
<thead>
<tr>
<th>pcs</th>
<th>Designation</th>
<th>Length</th>
<th>Width</th>
<th>Thickness</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Table top</td>
<td>455 mm</td>
<td>455 mm</td>
<td>20 mm</td>
<td>Beech glued laminated timber</td>
</tr>
<tr>
<td>2</td>
<td>Leg panels</td>
<td>468 mm</td>
<td>380 mm</td>
<td>20 mm</td>
<td>Beech glued laminated timber</td>
</tr>
<tr>
<td>1</td>
<td>Table rim panel</td>
<td>455 mm</td>
<td>455 mm</td>
<td>20 mm</td>
<td>Beech glued laminated timber</td>
</tr>
<tr>
<td>4</td>
<td>Flat head screws, 4 x 45 mm</td>
<td>approx. 12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2  Cutting and routing the round table top
Place the square panel with the visible side face down on a clean surface. Using two diagonal lines from the panel corners, determine the centre point. Drive a small nail into this point and then use a string compass to draw a circle with a diameter of 455 mm around this point. (This diameter is slightly larger than the table top (which will measure 450 mm) because you can only get the precise circular shape of the table edges by using the router and therefore need to leave a margin for routing the round edges.) A string compass consists of a knotted loop of string that is the same length as the circle radius (= half the diameter, in this case 227.5 mm). Draw the piece of string taut between the nail and a sharp pencil, and then use the pencil to trace the circular line on the panel. Now secure the panel with clamps onto a firm working surface; use buffer blocks made from scrap pieces of wood to avoid leaving pressure marks on the workpiece. Using the jigsaw, cut the panel along the line. Then trim the table top to its final diameter of 450 mm with the router on the circle cutting guide and the straight bit.

3  Chamfering the table top edge
To give the table a more refined edge, chamfer the table top downwards at an angle to create a wide 45° bevel. Using clamps, secure the table top with the visible surface facing downwards (remembering to use buffer blocks) and carry out chamfering with the router on the circle cutting guide and the corresponding chamfering bit with thrust ring.

4  Drawing and cutting out the table legs
With a pencil, draw the outlines of the table legs on the leg panels, according to the specifications in our illustration. Then use the drill and 8-mm wood drill bit and 20-mm Forstner bit to make holes in all of the inside corners so that you can cut the corners cleanly with the jigsaw. Make sure that the holes do not intersect with the pencil lines – the lines should form tangents with the holes. You can now cut out the table legs with the jigsaw. Finally, assemble the table legs by applying wood glue to the insides of the connection piece and press these together until the glue is dry.

5 **Joining the table top and table frame**

Place the table top with the top facing down on a clean surface into which you can drill. Align the pedestal frame (with the legs pointing upwards) so that it is centrally positioned below the table top. Now use a pencil to draw the cross-shaped outline of the top of the frame onto the table top. Then remove the frame again.

Using the drill and 4-mm wood drill bit, make a hole through the table top in the centre of each of the four arms of the cross shape. Now turn the table top so that the top is face up. You can countersink the holes using the drill and countersink bit (a conical tapered drill bit) to match the screw head size.

Place the pedestal frame on the floor and arrange the table top (with the visible side and countersunk holes facing upwards) on top. Now fasten the table top to the frame using the cordless screwdriver and flat head screws (4 x 45 mm). The basic table is complete.

6 **Routing the table rim**

To make the outer edge of the table rim, follow the procedure described above for the table top in step 1.

Once you have routed the outer edge to the precise diameter of 450 mm, draw the inner edge of the rim with a diameter of 340 mm (that is, with a radius of 170 mm) on the table rim panel, once again using the string compass.

Carve out the inside edge of the table rim completely using the router. To do this, you must screw the table rim panel to the centre of a backing board measuring approximately 550 x 550 mm.

On one side of the backing board, draw the inner and outer edges of the table rim; on the other side of the backing board, draw only the outer edge of the table rim, once again using the string compass from the centre of the panel.

Secure the table rim panel with the traced inner edge facing upwards on the side of the backing board showing only the outer edge of the rim.

Using the cordless screwdriver, fasten the table rim panel from below with screws through to the other side of the backing board; this way, screw holes will not be visible on top of the table rim. Insert the screws far enough outside on the rim so they will not block the path of the router head later when you are routing the rim. You must also fasten the inner part of the table rim with screws: the circle cutting guide is placed in the centre of this part and must therefore also be secured at the end of the final routing process.

Once everything has been secured with screws, use the router on the circle cutting guide to carve out the inner section with the straight bit. Complete the
routing process in several steps rather than just one: work on about 4 mm at a time. Once this is finished, release the table rim from the backing board with the cordless screwdriver.

7 **Mounting the table rim on the table top**
Using the drill and the 3.5-mm wood drill bit, make six holes from below at a distance of 20 mm from the bottom table edge. Countersink the holes. Now lay the table rim on the table top so that all the edges are flush and secure it in place with clamps (remembering to use the buffer blocks as usual). Mount the table rim through the pre-drilled holes using the cordless screwdriver and screws (4 x 35 mm).

8 **Sanding the wood surfaces**
First buff all edges with sanding paper with a grit of 120 or 180 at a 45° angle to create a small bevel. Sand all visible surfaces in the direction of the wood grain, first with coarse sanding paper (grit of 180) and then with fine sanding paper (grit of up to 240). Afterwards rub the surfaces with a damp sponge to wipe off the dust. Some loose wood fibres may protrude while the wood is drying. You can remove these with sanding paper with a grit of 180. The wood is now ready for surface treatment. Little tip: Make sure that the sanding paper is sharp enough to remove the wood fibres properly, not just flatten them.

9 **Surface treatment**
First read the wax manufacturer’s safety and handling instructions thoroughly. Make sure the room you are working in is well ventilated and not used for smoking, eating or drinking.
Generously apply the wood wax with a fine spray system and remove any excess wax with a cloth. Observe the drying times specified by the wax manufacturer.
If you want to apply a second coat of wax, you need to sand the surface between coats using sanding paper with a grit of 240. Once again, you must always sand in the direction of the wood grain. Repeat the application as described in the section above. Once the wax has dried, polish the surface with a soft brush until it gleams.

10 **Done!**