

Course Notes

Making a Serving Tray With Mitred Corners

Presented by

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Method

Day 1

1. **Assemble the base panel** (Materials: 2 or 3 boards dressed to thickness, oversize in length and width)
 - 1.1. Place the two base boards together on the bench in the desired orientation and draw a mark across the joint.
 - 1.2. Fold the two boards together along the joint and place them onto a long-grain chute board.
 - 1.3. Plane the two edges simultaneously, testing the joint as you go, until the two boards mate perfectly.
 - 1.4. Place the two boards on the bench and apply strips of masking tape firmly across the joint about 50mm apart.
 - 1.5. Turn the boards over and prop them up along the middle to expose the joint.
 - 1.6. Apply a small bead of glue along the joint and then press the boards flat.
 - 1.7. Scrape off the excess glue.
 - 1.8. Apply strips of masking tape firmly across the joint about 50mm apart.

2. **Dock and mitre the sides** (Materials: 4 boards dressed to thickness and width)
 - 2.1. Place the two long sides on the bench with the **outside face up** and the ends roughly flush.
 - 2.2. Tape the two sides together.
 - 2.3. Using a try square and a marking knife, scribe a line across both ends of both boards about 1mm from the end.
 - 2.4. Repeat 2.1 - 2.3 for the short sides.
 - 2.5. Use a block plane and a mitre chute board to form mitres on both ends of all four sides. By planing to the knife lines you will ensure that the ends are square and the opposing sides are the same length.
 - 2.6. If you plane past the knife line you will need to use a try square to check that the end is square and compare the sides to ensure that they are the same length.
 - 2.7. Check that the mitre joints are correct (45 degrees) by holding each joint together and checking with a try square.
 - 2.8. As a final check of the joints, lay out the four sides end to end in their correct order and tape them together. Fold the sides around and check that all four mitres meet correctly.

3. Cut grooves in the sides to accept the base.

3.1. Router Table Method

- 3.1.1. Mount a straight-cut bit (1/8" or 3/16") into the inverted router.
- 3.1.2. Set the height of the bit to 5mm (about half the thickness of the sides).
- 3.1.3. Using a test piece, set the fence to cut a groove such that the bottom face of the base will be slightly recessed from the bottom edges of the sides. For example, if the base panel is 6mm thick, the top edge of the groove should be at least 7mm from the bottom edge of the side. In any case, position the groove so that there is sufficient supporting wood below the groove.
- 3.1.4. Cut the grooves along the bottom of the inside faces of all four sides.

3.2. Table Saw Method

- 3.2.1. Install a rip blade into the table saw and remove the overhead guard and riving knife.
- 3.2.2. Adjust the blade height as in 3.1.2
- 3.2.3. Set the rip fence as in 3.1.3
- 3.2.4. Cut the grooves along the bottom of the inside faces of all four sides.

3.3. Hand plane method.

- 3.3.1. Set the depth stop on the grooving plane (if fitted) as in 3.1.2.
- 3.3.2. Set the fence on the grooving plane as in 3.1.3.
- 3.3.3. Clamp a side to the bench with the inside face up and plane the groove along the bottom edge. Repeat for the remaining sides.

Day 2

4. Prepare the base panel.

- 4.1. Scrape the glue joint with a card scraper and sand both faces of the panel. Be careful not to round over the edges.
- 4.2. Cut the panel to the correct length and width. To determine the length and width, measure the length of the **base** of the groove then subtract 2mm to allow for expansion.
- 4.3. Plane a chamfer around the edges of the underside of the base until it fits snugly into the grooves in the sides.

5. Assemble the tray.

- 5.1. Apply a smear of wax in the ends of the grooves to prevent the base from gluing into the corners.
- 5.2. Apply tape along the inside edge of the mitres to catch the excess glue.
- 5.3. Lay out the four sides in a line in their correct sequence with the outsides facing up.
- 5.4. Apply two strips of masking tape firmly across each joint.
- 5.5. Flip the sides over and, working quickly, apply glue into the valley of each joint.
- 5.6. Apply glue about 20mm long in the centre of the groove on both **short sides only**.
- 5.7. Position the base in the groove of one of the short sides, fold the other sides around the base and tape the last joint together.
- 5.8. Clamp the assembly with a frame clamp.
- 5.9. Use a diagonal gauge to check the squareness and adjust as necessary.

6. Insert Pins Across the mitre joints

- 6.1. Using try squares and a very sharp pencil mark the positions of the pins.
- 6.2. Attach a depth stop to a 3mm bit and drill a pilot hole at each mark approximately 15mm deep.
- 6.3. Dock sufficient lengths of 1/8" brass round bar at 15mm.
- 6.4. Dress one end of each pin to a rough point.
- 6.5. Place a small drop of adhesive into each hole and drive in each pin with a small hammer.
- 6.6. Flush off the pins with a hack saw, a file and finally a sanding block.

Day 3**7. Make and fit the handles.** (Materials: 1 stick approx 8 x 25 x 200 mm)

- 7.1. Cut a small rebate along one edge of the stick leaving a ¼” tenon.
- 7.2. Dock two lengths of the stick to about 80mm.
- 7.3. Reduce the length of the tenon to 70mm leaving 5mm shoulders at each end.
- 7.4. Cut a 75 mm mortise in both ends of the tray using a small plunge router with a ¼” bit fitted.
- 7.5. Glue the handles into the mortises.

8. Sand and finish the tray with furniture oil.

- 8.1. Sand the tray with 220 grit sand paper. Repeat with 320 grit then 400 grit.
- 8.2. Remove dust with compressed air or a brush.
- 8.3. Apply oil with a balled up rag in a circular motion.
- 8.4. Use a small artists brush to apply the oil to corners.
- 8.5. Rub along the grain to remove all excess oil before it begins to go tacky.
- 8.6. Apply 2 more coats of oil in the same way.