

length or width of the pieces. All cuts were made on the table saw with the blade tilted to 30 degrees. The front and bottom boards require a cross cut and the front cap and cleats need rip cuts.

Front and bottom boards

- tilt the table saw blade to 30 degrees and raise it to about 2" above the table.
- place your mitre gauge in the slot to the right of the blade (so the blade will be tilted away from the workpiece during the cut). Attach a length of scrap board or plywood about 2" wide x 18" long to the mitre gauge to make a fence - with the left end of the fence just short of the highest point of the blade. Turn on the saw and cut the end off this attached fence.
- lower the blade to the height for cutting the 3/4" boards
- place a board flat on the table with the long edge against the fence. Position the piece so the top face of the board is in line with the angled end of the fence (Fig. 6).
- turn on the saw, and hold the piece firmly against the mitre gauge to prevent it from sliding as you make the cut.
- use this technique for all the front and bottom boards. NOTE: remember the bevelled ends on the front boards are parallel.



Fig. 6 To cut the end bevels, line up the top edge with the mitre on the mitre gauge fence.

Front cap, front cleat and front bottom cleat

- leave the blade set at 30 degrees and use one of the cleats to set the rip fence to bevel the edge without reducing the width (2 1/2" at 3/4" above the table). Clamp a feather board to the fence to keep some downward pressure on the workpiece during the cut.
- turn on the saw and cut the bevels on each of these components.

Side board mitre cuts

The front ends of the side boards need a 60 degree mitre to create the sloped front of the cart. You can make these cuts on the table saw or a mitre saw. The upper side boards are longer for attaching the handle at the rear of the cart. The tongues and grooves also impact this cutting operation - the middle board is the key to getting the pieces cut to the correct length.

- test fit and choose which boards will make up each side, as well as the inside and outside faces of the boards. Label them accordingly.
- since the middle board has the grooves, it's the best reference for marking the other pieces. Use an angle gauge to mark a 60 degree line from the upper front corner of the board.
- dry fit the tongue and groove boards together as shown in Fig. 7 and extend the cut line across all three boards. NOTE: The hole for the handle and the shaped end of the upper board will be completed at a later stage.

- cut the front mitres on all six of the side boards.

Assembling the box

The box is held together with cleats using 1 1/4" deck screws for face to face connections and 1 1/2" deck screws to attach the sides. I chose deck screws (green) because they have a fairly aggressive thread for maximum hold, and they're treated to resist rust. I drove the screws most of the way with a drill driver and did the final tightening by hand to avoid overdriving them.

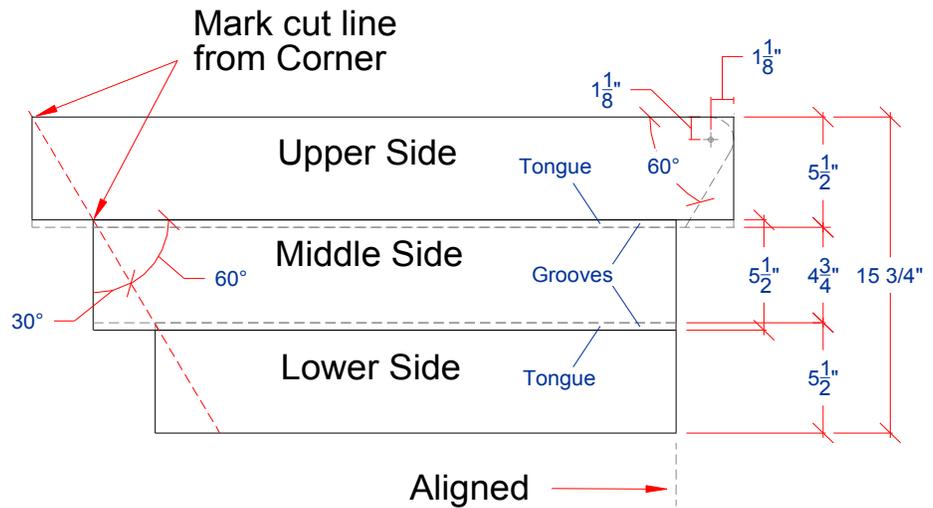


Fig. 7 Cutting layout for cart side boards. Label boards left and right so you can reassemble them for the best fit.

Before starting assembly, I gave all the pieces an initial sanding with 100 grit paper using a palm sander or sanding block, focusing on the areas that would be hard to reach after they were assembled. All screw holes should be pre-drilled with a # 8 countersink bit to avoid splitting the wood. Place the screws as far away from the joints as practical to allow for the boards to expand and contract without splitting. Figure 18 on pg 13 shows the screw locations.

Sub-assemblies

Cleats are attached to the bottom, front and back before the box is assembled. The assembled width of the three tongue and groove boards should be 15"

Bottom

- using a pencil, mark a centre line on each of the cleats and both ends of the grooved centre board.
- dry assemble the bottom boards on the workbench with the bevel facing up and clamp the front cleat centred in position. Check the assembly with a square. Make sure the outer board edges are flush to the end of the cleat, and any expansion space at the joints.
- drill pairs of holes - toward the front and back edges of the cleat - to allow for two screws per board. Attach the front cleat with (6) 1 1/4" deck screws.
- rotate the assembly repeat the process for the rear cleat which should be flush with the end and sides.



Fig. 8 Bottom cleats are attached to boards with 1 1/4" deck screws.