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## 4/6/21

The shelves are wire frame units 60 " $\times 24$ " $x 2$ ". The shelves are supported by a frame made of 112 X 4 X 8 s . The shelves slide into the frame and are held in place by gravity. The frame was designed to fit into the xmas container to make storage of stuff more efficient. The height of the shelves was set to allow the maximum number of the plastic tubs to fit on the shelves.


Shelves assembled


Frame without shelves

Each unit requires 112 x 4 x 8 s Cut the lumber as shown in Figure 1. There are 21 pieces of 2 x 4 s required for the unit.
The four 89 " pieces are cut from $42 \times 4 x 8 s$. The $22 \times 4 \times 5.5$ " pieces are also cut from this $2 \times 4$.
Two 21 " pieces and two 24 " pieces are cut from the $9^{\text {th }} 2 \times 4 \times 8$.
The last two 24 " pieces are cut from the $10^{\text {th }} 2 \mathrm{x} 4 \mathrm{x} 8$.
The last $2 \mathrm{x} 4 \times 8$ is used for the diagonal support on the rear. The angels are 45 degrees and the length is 89.125 ".



Figure 1


Exploded view of the frame


First assemble the base using two 24 " pieces and two 60.25 " pieces as shown in Figure 2. Make sure it is squared by measuring the diagonals


Figure 2
Next assemble the side panels with the two 89 " corner posts, the two $24 "$ sections and the two 25.5 in sections. Note the offsets on the 24 " sections. All four posts can be stacked and marked at the same time. Also, make sure the panel is square by measuring the diagonals. See figure 3


Figure 3

Attach sides to base. Use clamps to hold sides to base before screwing together with only one screw at each corner. Figure 4A. Attach the third 60.25 " section as shown in Figure 4B with only one screw on each sice.


Figure 4A


Figure 4B

Lie the unit down on its front as shown in Figure 5A. Measure the diagnols to make the unit square and attach a $2 \times 4 \times 8$ as a temporary brace as shown int Figure 5B


Figure 5A


Figure 5B

Install the fourth 60.25 " section as shown in Figure 6.


Figure 6
Mark the temporary brace and cut on an angle and screw into place. See Figure 7. It should be 89.125 and the angles should be 47.3 and 42.7 degrees. Position so as not to interfere with the shelves. This serves as a backstop for the top 3 shelves.


Figure 7
Add the appropriate screws to secure the frame. The last items to install are the 5.5 " pieces which are the backstop for the bottom shelf.

