

## Using the CNC machine to make templates

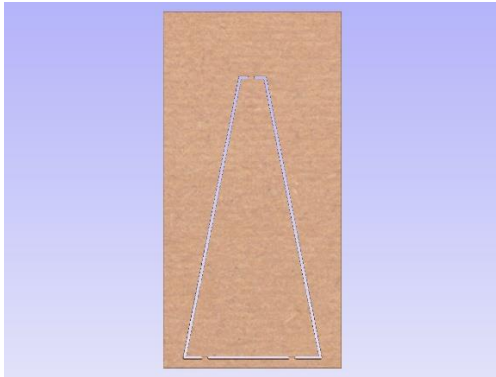


Figure 1 Template for 16 segment sled

The double angle sled uses a template to set the angle for cutting segments. One way to make a template is to use a CNC machine to cut one out of a stable material such as MDF. The template in Figure 1 is cut from 1/4" MDF. Tabs are used to stabilize the template during cut out and are placed in the design so they are not on the reference edges of the template.

This template was made by calculating the X [horizontal] dimension of half of the base based on the height, Y [vertical], suitable to for the sled.

$$X = Y * \tan(11.25) \quad [\text{use any calculator with trig functions}]$$

A line of Y length [in this case 15"] was drawn up the center of the workpiece and another from the base of the Y line to the left a calculated distance of 2.98". A third line was drawn to connect the diagonal from the open ends of these two vectors. The diagonal and the horizontal lines are then copied to the opposite side of the center to make a triangle with the base of twice the original X dimension [in this case very close to 6" and the original Y dimension of 15". Another line was used in this example to cut off the point for convenience. Connect the two outside diagonals and the X axis lines into one vector and create a tool path with tabs to stabilize the workpiece without interfering with the two diagonals which will form the references edges.