

Straight Mortise and Tenon Fitting – Initial Sizing

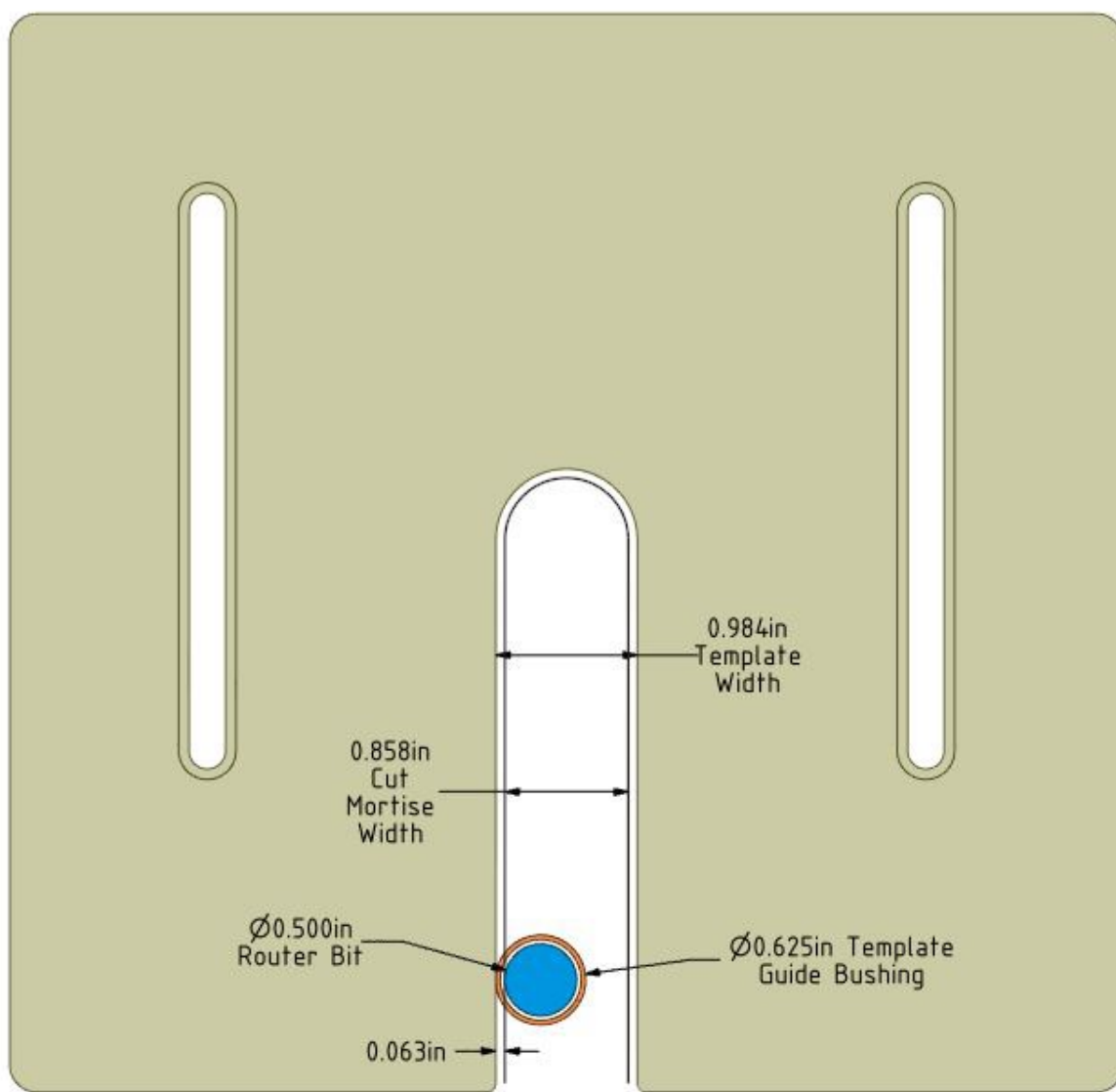
I've created a graphic to clarify template resulting cut dimensions. Using current drawings for reference and exact guide bushing/router bit diameters, the minimum tenon to mortise difference - in theory - is oversize at 0.097" => just over 3/32". Our machined templates may not match these dimensions exactly due to manufacturing tolerances but the function is the same. The cut tenon will always be larger than the cut mortise.

Referencing the 1/2" router bit / 5/8" guide bushing combo (cut offset 1/16"), the tenon will be 1/8" larger (1/16" each side) than the template. For the mortise, 1/8" smaller (1/16" each side) than the template.

In general there are a number of factors that affect the neck jig mortise_tenon size during machining. With a router bit less than 0.500" diameter - very common - the offset between the bit and the bushing would be greater than 0.063" shown in the drawing and would result in a larger tenon and a smaller mortise. An oversize template bushing would have the same effect. Adding both together will generate an even greater difference. A bushing not centered to the router bit could also affect this 0.063" offset producing an off-center mortise_tenon.

An exact size template set for mortise_tenon or dovetail is just not a functional reality.

Tenon Template and Tenon Size Dimensions



Mortise Template and Mortise Size Dimensions

$$\text{Tenon width} - \text{Mortise width} = 0.955 - 0.858 = 0.097\text{in minimum difference}$$

