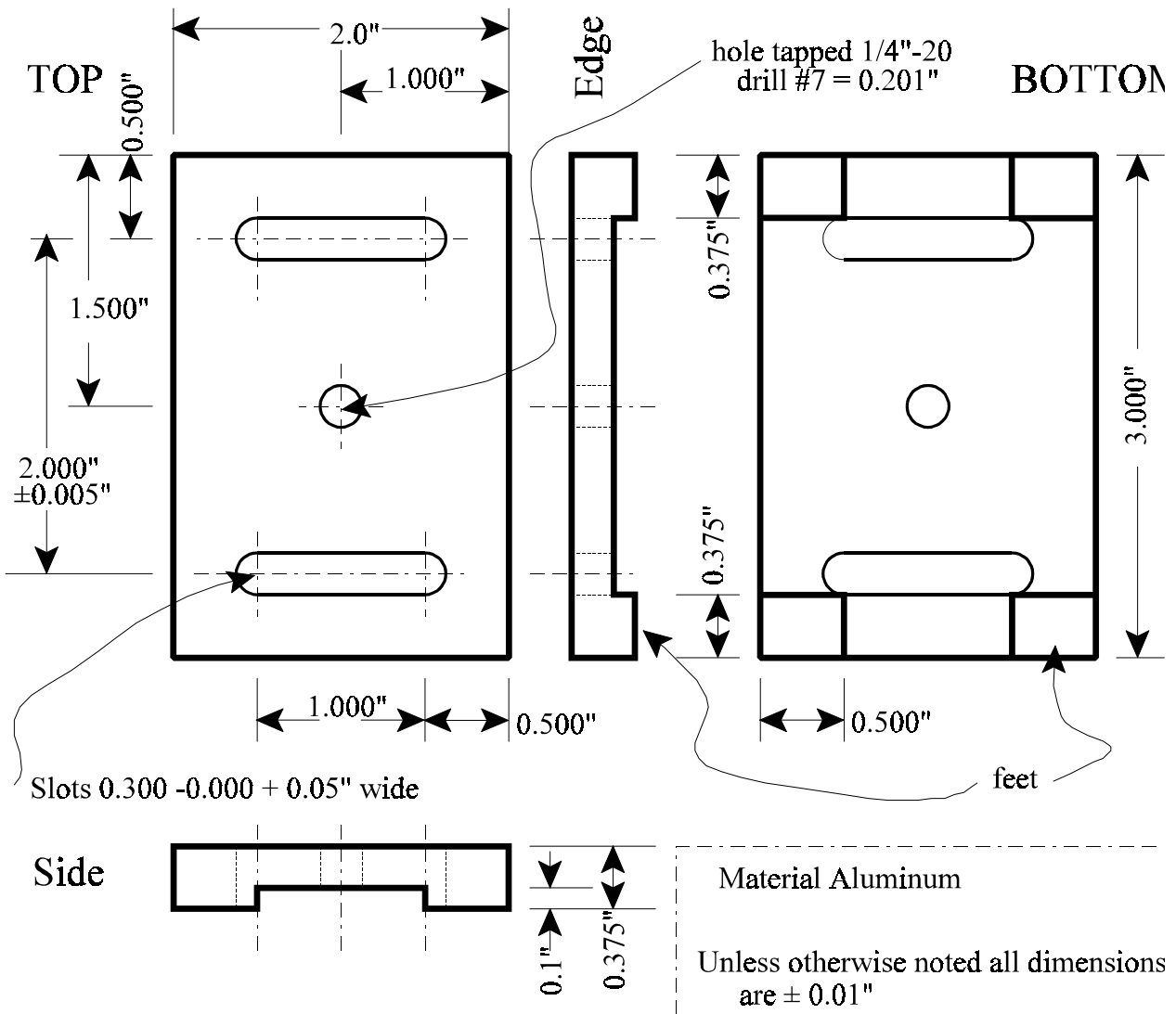


MOUNTING BASE FOR USE WITH AN OPTICAL TABLE



For a detail description of mill use please see:

<http://155.217.58.58/cgi-bin/atdl.dll/tc/9-524/toc.htm>

Suggested order of operation in making the optical base

1. Cut Stock
 - a. Measure and mark a 3.5 inch length of stock.
 - b. Hold it in the vise and cut with a hacksaw.
2. Square the ends
 - a. Mount the piece in the milling machining vise with one in sticking out.
 - b. Square this end using a 1/2 " end mill.
 - i. Move cutter parallel to the end. Note which direction of cutting produce a cleaner cut, and only cut in this direction.
 - ii. Take full depth cuts, and about 0.03 - 0.5" cuts. (advance the piece perpendicular to the end.
 - iii. On last cut take 0.01" cut.
 - iv. Remove burred edge with file or de-burring tool.
 - c. Starting from squared end, measure and mark total length of the optical base
 - d. Reserve the piece and mill it square.
 - i. With the piece still in the vise, measure as you work. Use the calibrated dials to control your position.
3. Face the bottom, leaving the feet.
 - a. Mark the position of the feet
 - b. Use a 1/2 " endmill, starting off the piece
 - c. Leaving a little extra around the feet, remove 0.025" of thickness each pass. Remove an entire layer before changing the depth of cut. Measure as you work, but always leave the piece mounted. Use depth lock.
 - d. After the final thickness is reached, cut the feet. Measuring as you work.
4. Mounting hole
 - a. Note you may need to switch to a drill chuck
 - b. Mark position and center punch it.
 - c. Use a # 7 drill bit. (The correct size for a hole to be tapped to a 1/4" -20 thread.)
 - d. Mount piece in vise and center drill bit over the punch mark.
 - e. Drill hole.
 - f. Move piece to vise on workbench, top up.
 - g. Use a 1/4" - 20 tap in T-handle. Be careful to keep tap vertical, turning slowly and carefully. If it becomes harder to turn, back the tap out 1/2 turn (feel the pop.) and/or ask for help.
5. Slots
 - a. Note you may need to switch to a drill chuck
 - b. Consider using stops on mill.
 - c. Mark position of the slot,
 - i. Especially the center of curvature of the ends of the slot
 - (1) Center punch these four centers.
 - d. Using a 1/4" drill (or slightly smaller) drill through the piece on the four centers you just marked.
 - e. Switch to a 1/4 inch end mill.
 - f. Start over one of the holes and plunge down 0.025".
 - g. Move the piece to cut off a thin layer. Stop over hole at the other end of the slot.
 - h. Repeat steps f. and g. above until through.
 - i. Make slot full width
 - j. Make other slot.
6. Sign piece with engraver.