



**Figure 1** The Tuning Fork. Note the tuning fork should be symmetric about its centerline. All edges should be rounded slightly. Exact length of forks can be changed to tune the tuning fork's frequency. Optional hole in handle is for a key chain.



## Suggested order of operation in making the tuning fork

1. Cut Stock
  - a. Measure and mark a 3 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 your tuning fork
  - 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. Cut handle end
  - a. Mark on piece the layout of the handle
  - b. Mount in milling machine vise with enough stock for the entire handle plus some sticking out.
  - c. Move cutter perpendicular to end, but stop a bit before you line marking the length of the handle. Note which direction of cutting produce a cleaner cut, and only cut in this direction.
  - d. Take full depth cuts, and about 0.03 - 0.5" cuts.
  - e. On last cut
    - i. Take 0.01" cut.
    - ii. Go to length line for handle, then change direction of motion by 90° and finish shoulder.
  - f. Remove burred edge with file or de-burring tool.
  - g. Cut other side of handle.
  
4. Cut the forked end.
  - a. Mark on piece the layout of the fork..
  - b. Mount the piece in the milling machining vise, with whole length in the vise.
  - c. Change milling Machining cutter to a 1/4" end mill ( change collet.)
  - d. Center the end mill on the centerline between the forks and with the bottom of the cutter just touching the top to the piece.
  - e. Cut parallel to the length of the fork, stopping just short of your layout line.
  - f. Make shallow ( 0.05" ) cuts NOT FULL DEPTH
  - g. Once your cut is through, make full depth cuts on the insides of the forks until they are the desired thickness. Note which direction of cutting produce a cleaner cut, and only cut in this direction.
  - h. Finish fork to handle area.
  - i. Remove burred edges with file or de-burring tool.
  
5. Tune the tuning fork by shortening the ends of the fork or deepening the cut between the forks
6. Drill key-chain hole.
7. Cleanup surface with file and/ or sandpaper. Round edges as desired.
8. Sign piece with engraver.

