Mill Project: Process Plan

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Rough Stock

1. Select $1\frac{3}{4}$" square aluminum bar.

Bandsaw

2. Cut bar to 2.125" length.

Vertical Mill

3. Seat in vise with $1\frac{1}{2}$" parallels.
4. Face top with of material with $\frac{3}{4}$" end mill. Spindle speed should be 3000 RPM.
5. Face reference sides with endmill.
6. Mill remaining sides to final dimensions. (2.000" $\pm$0.010", 1.700" $\pm$0.010")
7. Drill first hole with #7 twist drill. Drill at 4000 RPM.
8. Countersink first hole. ($\phi = 0.300$", 90°.)
9. Tap first hole. (1/4-20 UNC-1B, depth 0.500")
10. Drill second hole with K twist drill.
11. Counterbore second hole with $\phi = 0.406$" counterbore to depth 0.281".
12. Reverse workpiece in vise and mill bottom to final dimension. (1.250" $\pm$ 0.010").
13. Deburr as needed.

Table 1: Inspection Report

Dimension	Value(")	Max(")	Min(")	Actual(")	In Tol?
Length	2.000	2.010	1.990		
Width	1.700	1.710	1.6990		
Height	1.250	1.260	1.240		