

Assignment 4

Goals	Safety	Ease of Use	Ease of Machining	Robustness	Ease of Maintenance	total
Safety	0	1	1	1	1	4
Ease of Use	0	0	1	0.5	1	2.5
Ease of Machining	0	0	0	0	1	1
Robustness	0	0.5	1	0	1	2.5
Ease of Maintenance	0	0	0	0	0	0

Goal:	Weight:
safety	100
ease of use	80
Robustness	80
Ease of machining	60
Ease of maintenance	40

Rating Factors						
Design Alternative	Safety	Ease of Use	Ease of Machining	Robustness	Ease of Maintenance	total
A	6	8	10	3	3	30
B	9	10	2	10	8	39
C	9	10	5	7	6	37

Goals						
	Safety	Ease of Use	Ease of Machining	Robustness	Ease of Maintenance	total
Weighting Factors						
Design alternative	100	80	60	80	40	
A	600	640	600	240	120	2200
B	900	800	120	800	320	2940
C	900	800	300	560	240	2800

From this analysis, design B, where the vise base is machined from a single piece of material, seems to be the best of the 3 designs presented. This analysis was of value because it allowed me to easily prioritize the different functions and features of the vise, in a way that is visual and easy to understand.