

Tilt Resistance		Concepts													
		A (reference) Bushing		B EM shock		C Movable/spring		D Spring		E Worm gear		F Pneumatics		G Hydraulics	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	30%	3	0.9	3	0.9	4	1.2	3	0.9	3	0.9	3	0.9	3	0.9
Bike Capacity	7%	3	0.21	3	0.21	4	0.28	3	0.21	3	0.21	3	0.21	3	0.21
Portability	3%	3	0.09	1	0.03	2	0.06	3	0.09	2	0.06	1	0.03	1	0.03
Adjustment tools	2%	3	0.06	4	0.08	4	0.08	3	0.06	4	0.08	4	0.08	4	0.08
Service intervals	2%	3	0.06	3	0.06	3	0.06	3	0.06	3	0.06	3	0.06	3	0.06
levels of tilt	5%	3	0.15	4	0.2	5	0.25	3	0.15	4	0.2	4	0.2	4	0.2
locked position	10%	3	0.3	5	0.5	4	0.4	3	0.3	4	0.4	5	0.5	5	0.5
cost	30%	3	0.9	1	0.3	2	0.6	3	0.9	2	0.6	1	0.3	1	0.3
Control movement	6%	3	0.18	4	0.24	3	0.18	3	0.18	3	0.18	4	0.24	4	0.24
trip hazard	5%	3	0.15	2	0.1	2	0.1	2	0.1	2	0.1	2	0.1	2	0.1
Total Score		3.00		2.62		3.21		2.95		2.79		2.62		2.62	
Rank															
Continue?						YES!!!!!!!!!!									

Pivot		Concepts			
		A (reference) Bushing		B Hinge	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	40%	3	1.2	5	2
Bike Capacity	20%	3	0.6	3	0.6
Portibility	5%	3	0.15	3	0.15
Servive Intervals	5%	3	0.15	3	0.15
Cost	20%	3	0.6	3	0.6
Bike Weight	5%	3	0.15	3	0.15
Trip Hazard	5%	3	0.15	3	0.15
Total Score		3.00		3.80	
Rank					
Continue?					

Tilt Level		Concepts					
		A (reference) Bushing		B Moveable bump		C Pin Lock Bump	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	35%	3	1.05	5	1.75	4	1.4
Bike Capacity	15%	3	0.45	4	0.6	4	0.6
Portibility	5%	3	0.15	2	0.1	2	0.1
Adjusment tools	2%	3	0.06	3	0.06	3	0.06
Service Intervals	2%	3	0.06	3	0.06	3	0.06
Cost	30%	3	0.9	2	0.6	2	0.6
Controlled movement	7%	3	0.21	4	0.28	4	0.28
Trip Hazard	4%	3	0.12	2	0.08	2	0.08
Total Score Rank		3.00		3.53		3.18	
Continue?							

Seat Height		Concepts			
		A (reference) Pin Lock		B Compression	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score
Seat Height Range	40%	3	1.2	4	1.6
Bike Capacity	25%	3	0.75	2	0.5
Portability	5%	3	0.15	3	0.15
Adjustment tool	15%	3	0.45	2	0.3
Service Intervals	5%	3	0.15	3	0.15
Cost	5%	3	0.15	3	0.15
Bike Weight	5%	3	0.15	3	0.15
Total Score		3.00		3.00	
Rank					
Continue?					

Pedal Resistance		Concepts							
		A (reference) Gears		B Fluid		C Friction		D Constant	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Resistance Range	20%	3	0.6	3	0.6	3	0.6	1	0.2
Portabilty	10%	3	0.3	3	0.3	3	0.3	3	0.3
Adjusment tools	5%	3	0.15	4	0.2	3	0.15	5	0.25
Service Int.	30%	3	0.9	3	0.9	3	0.9	4	1.2
Cost	35%	3	1.05	1	0.35	4	1.4	4	1.4
Total Score		3.00		2.35		3.35		3.35	
Rank									
Continue?									

Stability		Concepts							
		A (reference)		B		C		D	
		Wide base plate		Legs		Drive Anchors		Platform	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Bike Capacity	25%	3	0.75	3	0.75	3	0.75	3	0.75
Portability	20%	3	0.6	3	0.6	1	0.2	2	0.4
Cost	30%	3	0.9	4	1.2	4	1.2	1	0.3
Total Weight	10%	3	0.3	4	0.4	4	0.4	1	0.1
Trip Hazard	15%	3	0.45	2	0.3	4	0.6	1	0.15
Total Score Rank		3.00		3.25		3.15		1.70	
Continue?									

Locked Position		Concepts					
		A (reference) Stationary		B Pin Lock		C Friction Lock	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Bike Capacity	35%	3	1.05	3	1.05	2	0.7
Portability	5%	3	0.15	3	0.15	3	0.15
Adjustment Tools	10%	3	0.3	3	0.3	3	0.3
Service Intervals	10%	3	0.3	3	0.3	2	0.2
Cost	5%	3	0.15	2	0.1	2	0.1
Pinch Point	25%	3	0.75	2	0.5	2	0.5
Trip Hazard	10%	3	0.3	3	0.3	3	0.3
Total Score		3.00		2.70		2.25	
Rank							
Continue?							

Cross Member		Concepts			
		A (reference)  Low Design		B  High/Removable seat	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score
Bike Capacity	35%	3	1.05	3	1.05
Cost	15%	3	0.45	3	0.45
Pinch Points	30%	3	0.9	2	0.6
Total Weight	5%	3	0.15	3	0.15
Trip Hazard	15%	3	0.45	2	0.3
Total Score		3.00		2.55	
Rank					
Continue?					

Sensors		Concepts													
		A (reference)		B		C		D		E		F		G	
Digital Level- Electronic P		Accelerometer		Switch Mechanical		Prox sensor and Key		Gyroscope		Potentiometer		Encoder			
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	20%	3	0.6	3	0.6	2	0.4	2	0.4	3	0.6	3	0.6	4	0.8
Portability	10%	3	0.3	3	0.3	3	0.3	3	0.3	3	0.3	3	0.3	3	0.3
Adjustment tools	5%	3	0.15	2	0.1	3	0.15	3	0.15	2	0.1	3	0.15	3	0.15
Service intervals	15%	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45
levels of tilt	15%	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45	3	0.45
Total Weight of Bike	5%	3	0.15	3	0.15	3	0.15	3	0.15	3	0.15	3	0.15	3	0.15
Cost	30%	3	0.9	2	0.6	4	1.2	3	0.9	2	0.6	4	1.2	2	0.6
Total Score		3.00		2.65		3.10		2.80		2.65		3.30		2.90	
Rank				5		2		4		5		1		3	
Continue?		Yes, if cost effective and reasonable to implement				No - not variable		No - not variable		Yes, if cost effective and reasonable to implement				Yes	

Signal Processing		Concepts					
		A (reference) Electronics (HW)		B Micro-Computer		C Laptop	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	10%	3	0.3	3	0.3	3	0.3
Portability	5%	3	0.15	3	0.15	2	0.1
Adjustment Tools	25%	3	0.75	4	1	3	0.75
Service Intervals	20%	3	0.6	3	0.6	3	0.6
Levels of Tilt	5%	3	0.15	3	0.15	3	0.15
Cost	25%	3	0.75	3	0.75	2	0.5
Total Weight of Bike	10%	3	0.3	3	0.3	2	0.2
Total Score		3.00		3.25		2.60	
Rank							
Continue?		Yes - May use other electronics to reduce complexity		Yes - allows for "dynamic" operation			

Visual/ Audio Feedback		Concepts							
		A (reference) Dig. Protractor (LCD Degree Disp.)		B LED		C Lightbulb		D Speaker	
Selection Criteria	Weight	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
Tilt Range	30%	3	0.9	2	0.6	2	0.6	3	0.9
Service Intervals	10%	3	0.3	4	0.4	2	0.2	3	0.3
Levels of Tilt	30%	3	0.9	4	1.2	4	1.2	3	0.9
Cost	30%	3	0.9	4	1.2	4	1.2	3	0.9
Total Score		3.00		3.40		3.20		3.00	
Rank									
Continue?				Yes		No		Yes	