

Subsystem - Feedback Devices

	Visual Feedback		Concepts	Audio Feedback
	LED's	Lightbulbs	Digital Protractor (LCD Degree display)	Speaker
Tilt Range	-	-	0	0
Service Intervals	+	-	0	0
Levels of Tilt	+	+	0	0
Cost	+	+	0	0
Sum +'s	3	2	0	0
Sum 0's	0	0	4	4
Sum -'s	1	2	0	0
Net Score	2	0	0	0

Subsystem
Signal Processing

Concepts

HW -Electronics
(Reference)

	Micro-Computer	Laptop	HW -Electronics (Reference)
Tilt Range	0	0	0
Portability	0	-	0
Adjustment Tools	+	0	0
Service Intervals	0	0	0
Levels of Tilt	0	0	0
Cost	0	-	0
Sum +'s	1	0	0
Sum 0's	5	4	6
Sum -'s	0	2	0
Net Score	1	-2	0

Subsystem**Feedback Subsystem - Sensors**

	Concepts						
	Accelerometer	Switch Mechanical	Prox Sensor and Key	Gyroscope	Digital Level- Electronic Protractor (Reference)	Potentiometer	Encoder
Tilt Range	0	-	-	0	0	0	+
Portability	0	0	0	0	0	0	0
Adjustment Tools	-	0	0	-	0	0	0
Service Intervals	0	0	0	0	0	0	0
Levels of Tilt	0	0	0	0	0	0	0
Cost	-	+		-	0	+	-
Total Weight of Bike (moving bike by PT)	0	0	0	0	0	0	0
Sum +'s	0	1	0	0	0	1	1
Sum 0's	5	5	5	5	10	6	5
Sum -'s	2	1	1	2	0	0	1
Net Score	-2	0	-1	-2	0	1	0

Tilt Resistance

		Concepts						
	EM Shocks	Weighted Pulleys	Worm Gear/Spring	Springs	Worm Gears	Rubber Bands	Bushings*	Pneumatics
Tilt Range	0	0	0	0	0	0	0	0
Bike Capacity	0	0	0	0	0	0	0	0
Portability	-	-	-	0	-	0	0	-
Adjustment Tools	+	-	+	0	+	0	0	+
Service Intervals	0	+	0	+	0	0	0	-
Levels of Tilt	+	0	+	0	+	0	0	+
Locked Position	+	-	+	0	+	0	0	+
Cost	-	0	-	0	-	0	0	-
Physical Therapist able to control patients movements	+	0	+	0	+	0	0	+
Trip Hazard	-	-	-	-	-	-	0	-
Sum +'s	4	1	4	1	4	0	0	4
Sum 0's	3	5	3	8	3	9	10	2
Sum -'s	3	4	3	1	3	1	0	4
Net Score	1	-3	1	0	1	-1	0	0

Hydraulic

0

0

-

+

-

+

+

-

+

-

4

2

4

0

Pivot**Concepts**

	Platform	Hinge	Bushing*
Tilt Range	-	+	0
Bike Capacity	+	0	0
Portability	-	0	0
Service Intervals	0	0	0
Cost	-	0	0
Total Weight of Bike (moving bike by PT)	-	0	0
Trip Hazard	-	0	0
Sum +'s	1	1	0
Sum 0's	1	6	7
Sum -'s	5	0	0
Net Score	-4	1	0

Tilt Level

	Concepts				
	Movable Bump Stops	Pin Lock Bump Stops	Worm Gear	Actuators	Bushing*
Tilt Range	0	0	0	0	0
Bike Capacity	0	0	0	0	0
Portability	0	0	-	-	0
Adjustment Tools	0	0	+	+	0
Service Intervals	+	+	0	0	0
Cost	0	0	-	-	0
Physical Therapist able to control patients movements	0	0	+	+	0
Trip Hazard	-	-	-	-	0
Sum 0's	6	6	3	3	8
Sum -'s	1	1	3	3	0
Net Score	0	0	-1	-1	0

Steering

	Concepts			
	Pulley System	Electric	Hydraulic	Mechanical*
Portability	-	-	-	0
Service Intervals	-	-	-	0
Cost	-	-	-	0
Total Weight of Bike (moving bike by PT)	-	-	-	0
Trip Hazard	0	0	0	0
Sum +'s	0	0	0	0
Sum 0's	1	1	1	5
Sum -'s	4	4	4	0
Net Score	-4	-4	-4	0

Seat Height

	Compression Clamp	Pin-Lock*	Concepts Hydraulic/ Pneumatic	Worm Gear/ Elec. Screw	Crank Gear
Seat Height Range	+	0	+	+	+
Bike Capacity	-	0	0	0	0
Portability	0	0	-	-	-
Adjustment Tools	0	0	+	+	0
Service Intervals	0	0	-	-	0
Cost	0	0	-	-	-
Total Weight of Bike (moving bike by PT)	0	0	-	-	0
Sum +'s	1	0	2	2	1
Sum 0's	5	7	1	1	4
Sum -'s	1	0	4	4	2
Net Score	0	0	-2	-2	-1

Pedal Mechanism

Concepts

	Shaft Driven	Belt	Chain*	Free Wheel	Magnetic
Adjustment Tools	0	0	0	+	0
Cost	-	0	0	+	-
Pinch Points	-	0	0	+	0
Sum +'s	0	0	0	3	0
Sum 0's	1	3	3	0	2
Sum -'s	2	0	0	0	1
Net Score	-2	0	0	3	-1

Pedal Resistance

Concepts

	Gears*	Fluid	Friction	Constant
Pedal Resistance Range	0	0	0	-
Portability	0	0	0	0
Adjustment Tools	0	+	0	+
Service Intervals	0	0	0	+
Cost	0	-	0	+
Sum +'s	0	1	0	3
Sum 0's	5	3	5	1
Sum -'s	0	1	0	1
Net Score	0	0	0	2

Subsystem - Mount/Dismount - Bike to floor Stability

	Concepts			
	Drive Anchors	Legs	Wide Base Plate	Platform
Bike Capacity	0	0	0	0
Portability	-	0	0	0
Cost	0	0	0	-
Bike Flipping Over	+	0	0	0
Total Weight of Bike (moving bike by PT)	+	0	0	-
Trip Hazard	+	0	0	-
Sum +'s	3	0	0	0
Sum 0's	2	6	6	3
Sum -'s	1	0	0	3
Net Score	2	0	0	-3

Subsystem - Mount/Dismount - Locked Position

	Concepts				
	Friction Lock	Movable Bump Stops	Robust Pin Lock	Stationary Bike	Leverage Handle
Bike Capacity	-	0	0	0	0
Portability	0	-	0	0	-
Adjustment Tools	0	0	0	0	0
Service Intervals	0	0	0	0	0
Cost	-	-	-	0	-
Pinch Points	-	-	-	0	-
Trip Hazard	0	-	-	0	-
Sum +'s	0	0	0	0	0
Sum 0's	4	3	4	8	3
Sum -'s	3	4	3	0	4
Net Score	-3	-4	-3	0	-4

Hydraulic / Pneumatic /

Electric

0

-

0

-

-

-

-

0

2

5

-5

Subsystem - Mount/Dismount - Crossmember

	Concepts				
	Low design	High design removeble seat	Rotating	Decoupling	Telescoping
Bike Capacity	0	0	-	-	-
Cost	0	0	-	-	-
Pinch Points	0	0	-	-	-
Total Weight of Bike (moving bike by PT)	0	0	0	0	-
Trip Hazard	0	-	0	0	0
Sum +'s	0	0	0	0	0
Sum 0's	5	4	2	2	1
Sum -'s	0	1	3	3	4
Net Score	0	-1	-3	-3	-4