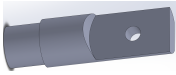

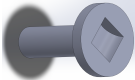

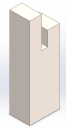
















Component	3D Model	Quantity	Manufacture Method	Material	Cost
Base		1	Laser Cutter	15/64" Cast Acrylic	\$7.78
Linkage		6	Laser Cutter	15/64" Cast Acrylic	\$2.77
Handle		1	Laser Cutter	15/64" Cast Acrylic	\$2.37
1-Dof Hapkit Base		3	Laser Cutter	15/64" Cast Acrylic	3*\$3.13
3D Hapkit Sector Pulley		3	FDM 3D Printing	ABS	All part will be printed by using UPrint SE Plus with ABS and dissolvable support material. The total weight of plastic used is about 300 grams.
3D Printed Actuating Arm		3	FDM 3D Printing	ABS	
3D Printed Connector(Male)		6	FDM 3D Printing	ABS	

3D Printed Connector(Female)		6	FDM 3D Printing	ABS	
3D Printed Tightening Washer		3	FDM 3D Printing	ABS	
3D Printed Drive Wheel/Magnet Holder		3	FDM 3D Printing	ABS	
Broad Holder 1		3	FDM 3D Printing	ABS	
Broad Holder 2		3	FDM 3D Printing	ABS	
Connection Bearing  3mm * 8mm*4mm		12	Purchased From Amazon	Alloy Steel	\$9.20  20 Pack 623ZZ Ball Bearing from <a href="#">Amazon</a>
Arm Bearing  8mm*22mm*7mm		6	Purchased From Amazon	Alloy Steel	2*\$10.99  4 Pack 608-2RS Ball Bearing from <a href="#">Amazon</a>
Screws (for capstan)		3	Purchased from McMaster-Carr	18-8 Stainless Steel	\$6.78 per pack of 100

adjustment) size 4-40, 3/4" length			Part ID: 91781A113		
Pan Head Phillips Screws(for Hapkit installation),1/4-20 3/4		12	Purchased from McMaster-Carr Part ID:91772A540	18-8 Stainless Steel	\$18.85 per pack of 50
Pan Head Phillips Screws(for bearing installation),M4 x 0.7mm Thread, 16mm Long		12	Purchased from McMaster-Carr Part ID:92000A226	18-8 Stainless Steel	\$10.85 per pack of 50
Neoprene tubing, 1/4" inner diameter, 3/8" outer diameter, cut to 3/4" length		3	Purchased from McMaster-Carr Part ID:51075K27	Neoprene	\$12.2 for a 10'-long tube (\$1.22 per foot)
Bearing: SAE 863 bronze flanged sleeve bearing.		3	Purchased from McMaster-Carr Part ID: 2938T3	863 Iron-Copper	3*\$0.92
Stainless Steel Thread-Locking Shoulder Screw, 1/4" Diameter x 5/8" Long Shoulder, 10-24 Thread		3	Purchased from McMaster-Carr Part ID: 90311A144	Stainless Steel	3*\$6.01
Shaft collar		3	Purchased from McMaster-Carr Part ID: 9414T6	Black-oxide steel	3*\$1.55
Screws for the Motor		6	Purchased from McMaster-Carr Part ID: 91735A104	316 Stainless Steel	\$4.59 For a Pack of 50

Washers for motor		6	Purchased from McMaster-Carr Part ID: 92150A101	Nylon Plastic	\$10.20 For a Pack of 100
Nylon Coated Stainless Steel Wire Rope,		3	Purchased from McMaster-Carr Part ID: 8930T16	18-8 Stainless Steel	\$10.00 For 25 feet
Zinc -Plated Copper Oval Compression Sleeve		3	Purchased from McMaster-Carr Part ID: 3898T29	Zinc-Plated Copper	\$2.63 For a Pack of 50
Zinc -Plated Steel Machine Screw Hex Nut		3	Purchased from McMaster-Carr Part ID: 90480A005	Zinc-Plated Steel	\$1.05 For a Pack of 100
Motor		3	Purchased from Jameco Part ID: 238473	Motor	3*\$5.95
Magnet:		3	Purchased from Jameco Part ID: 57295K73	Alnico	3*\$2.38
Magnetoresistive sensor		3	Purchased from DigiKey PartID: 568-8399-1-ND	Magnet Sensor	3*\$6.73
Hapkit board		3	Purchased from Seeed Studio Part ID :KIT04300M	Hapkit Board	3*\$35

Power supply for Hapkit board		3	Purchased from Pololu Part ID: 1471	Power Supply	3*\$7.95
Leads with alligator clips on both ends		3	Purchased from Mouser Part ID: 474-CAB-14303	Alligator Clips	\$7.57
USB cable for communication		1	Purchased from Monoprice Part ID: 4867	Cable	\$1.49