

Part Name	Part / Identification Number	Quantity Needed Per Box
McMaster		
5 mm Linear Motion Shaft	6112K37	1
Clear polycarbonate film (Wraps around wheel)	85585K15	1
Female Threaded Round Standoff	93330A541	10
Black Screws (Secures top and bottom headplates)	91290A111	2
Pololu		
Aluminum Mounting Hub for 5mm Shaft	1203	1 (Pack of 2)
s holding bearing holder	1962	1
Thorlabs		
0.75 Inch Post	TR075	1
2 Inch Post	TR2	2
4 Inch Post	TR4	5
6 Inch Post	TR6	2
8 Inch Post	TR8	2
10 Inch Post	TR10	2
2 Inch Post Holder	PH2	1
3 Inch Post Holder	PH3	4
6 Inch Post Holder	PH6	1
Right Angle End Clamp	RA180	4
Rotating Clamp	SWC	1
Right Angle Post Clamp	RA90TR	1
Mini Optical Post	MS3R	1
12" x 18" Aluminum Breadboard	MB1218	1
Breadboard lifting handles	BBH1	2
Cap screws for holding female post	SH4S038	10

Thumbscrews for securing ball bearings	TS25H	2
SparkFun		
Rotary Encoder (Resin Coupling Adaptor Included)	E6B2-CWZ3E (E69-C06B)	1
Digikey		
Speaker 80hm 5w top port 104db	2104-SP500208-3-ND	1
Amazon		
5 mm Steel Ball Bearing (Boca Bearing)	SMR115-ZZ #5 LD	2
S-mount lens with IR filter (Xenocam)	SPM16214000924	1
Mini-USB 2.0 Type A to Mini-B cable (VOTY)	B07NJW2ZPJ	1 (Pack of 2)
0.33-Inch Varifocal lens 2.8-12mm F1.3 Auto Iris (Computar)	B002HRE2ZS / TG4Z2813FCS-IR	1
3 mm UV light, 395-400nm (Chanzon)	100F3T-YT-WH-PU	1 (Pack of 100)
5 mm super-bright IR LED, 940nm (Adafruit)	ADA388 / B00ULB0U44	1 (Pack of 25)
24 AWG 50 feet Electrical Wire (Fermerry)	B089CX3FVV	1
Arduino Mega 2560 Rev3 Microcontroller Board (Arduino)	A000067 / B0046AMGW0	1
USB 2.0 Cable Type A/B (Arduino)	M000006 / B013EOQUAW	1
2.54mm Pitch Single Row Pin Header Strip (HiLetgo)	B07R5QDL8D	1
PCB Mount Screw Terminal Block Connectors (Tnisesm)	CATN-T03B	1
2N2222 NPN TO-92 Power Transistors (Ardest)	B07222XY81	1 (Pack of 100)
Real Time Clock Module DS3231 AT24C32 IIC (Adeept)	2pcsDS3231 / B097PMNMQZ	1 (Pack of 2)
3V Lithium Battery (Junpower)	CR2032 / B07LGL9LQ1	1 (Pack of 10)
Heat Shrink Tubing (Electfun)	ELECFUN / B08SQBPVJB	1
Black Adhesive contact paper (Yancorp)	B082CPSVPW	1
IPS Weld-On 3 Acrylic Plastic Cement (Weld-On)	TLLPN-21847771	1
12V 5A DC Power Cable Male Female Connector (Centro Power)	B07C7VSRBG	1 (Pack of 10)
12V DC Power Connector Barrel Adaptor (Centro Power)	B07C61434H	1 (Pack of 10)
12V Red LED Flexible Strip Ribbon Light (Alitrove)	B07MXXDWDM	1
Power Strip Surge Protector 10Ft (Mifaso Power)	B0BTPB5Z4W	1

Anti Vibration Pads (Functional Necessities)	B08NWRFLDC	1 (Pack of 4)
1" x 12" x 12" Sound Absorption Wall Panels (Xin & Log)	B078VVJTXQ	1 (Pack of 24)
4 inch Zip Ties with 18 lb Tensile Strength	B0BC1VH4XB	1 (Pack of 200)
Custom Parts		
Rotary Encoder Adaptor (Aluminum 304)	CNC Machining (eMachineShop)	1
Head Plate Holder (Aluminum 304)	CNC Machining (eMachineShop)	2
Head Plate (Top Piece) (Aluminum 304)	CNC Machining (eMachineShop)	1
Head Plate (Bottom Piece) (Aluminum 304)	CNC Machining (eMachineShop)	1
Head rings (Aluminum 6061-T6)	CNC Machining (eMachineShop)	X
Rotary Wheel (1/8 Thick Clear Cast Acrylic)	Laser Cutting (Ponoko)	2
Rotary Wheel Curved Surface (Clear Cast Acrylic)	Laser Cutting / Manual Cutting	1
Rotary Wheel Curved Surface (Black Adhesive Contact Paper)	Laser Cutting / Manual Cutting	1
Waste Management Ramp (Resin)	3-D Printing (Craftcloud3d)	1
Arduino Mega 2560 Rev3 Compatible PCB (Surface-Mount Technology Printed Circuit Board)	PCB Manufacturing (JLC PCB)	1
FLIR		
Firefly S Camera	FFY-U3-16S2M-S	1
Tripod Adapter for Firefly S Camera	ACC-01-0017	1
USB 3.1 Locking Cable	ACC-01-2300	1
GPIO cable w/ 6 pins	ACC-01-3015	1
The Imaging Source		
USB 2.0 CMOS Monochrome Camera	DMK-22BUC03	1