






Mechanical parts

Part Name	Picture	Price (\$)	Vendor	Part #
37mm 12V Motor w/ encoder (50:1)		\$ 47.79	Pololu	4753
37mm 12V Motor w/ encoder (70:1)		\$ 47.79	Pololu	4754
37mm 12V Motor w/ encoder (100:1)		\$ 47.79	Pololu	4755
37mm 12V Motor w/ encoder (131:1)		\$ 47.79	Pololu	4756
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (78:1)		\$ 27.75	Pololu	3489
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (100:1)		\$ 27.75	Pololu	3490
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (125:1)		\$ 27.75	Pololu	3491
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (156:1)		\$ 27.75	Pololu	3492
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (195:1)		\$ 27.75	Pololu	3493
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (250:1)		\$ 27.75	Pololu	3494
20 mm Motor With Extended Motor Shaft for Encoder (Separate) (313:1)		\$ 27.75	Pololu	3495
6V Micro Metal Gearmotor HPCB w/out encoder (100:1)		\$ 21.57	Pololu	3075
6V Micro Metal Gearmotor HPCB w/out encoder (150:1)		\$ 21.57	Pololu	3076
6V Micro Metal Gearmotor HPCB w/out encoder (210:1)		\$ 21.47	Pololu	3077
6V Micro Metal Gearmotor HPCB w/out encoder (298:1)		\$ 21.47	Pololu	3079
6V Micro Metal Gearmotor HPCB w/out encoder (380:1)		\$ 21.47	Pololu	4797
6V Micro Metal Gearmotor HPCB w/out encoder (1000:1)		\$ 21.47	Pololu	3080
22mm Henkel Planetary Gear Brush Motor P222GR 9120R w/out encoder (84:1) (Instrumentation Motor)		\$ 3.90	Amazon	B07XMFLSPB
L-Bracket for 37 mm Pololu motor		\$ 8.42	Pololu	1084
Pololu 20D mm Metal Gearmotor Bracket Pair		\$ 7.31	Pololu	1138
Bracket for Micro Metal Gearmotor (Pair)		\$ 2.99	Pololu	989
Extended Bracket for Micro Metal Gearmotor (pair)		\$ 2.99	Pololu	1089

Ball Castor Kit (3/4", 1/2", 3/8")		\$ 3.95	Pololu	951/953/955	
Scooter/Skate Wheel 70 x 25 mm for 37mm motor	 Pololu	\$ 2.99	Pololu	3272	
Scooter/Skate Wheel 84 x 24 mm for 37mm motor		\$ 3.65	Pololu	3275	
Scooter/Skate Wheel 100 x 24 mm for 37mm motor		\$ 4.55	Pololu	3278	
2.75" Omni-Directional Wheel		\$ 11.99	VEX Robotics	276-1902	VERY LIMITED QUANTITY
3.25" Omni-Directional Wheel		\$ 19.99	VEX Robotics	276-3526	
4" Omni-Directional Wheel		\$ 29.99	VEX Robotics	276-2185	
Wheel - 32mm x 7 mm for Micro Metal Gearmotor with 3mm shaft (Pair)		\$ 3.63	Pololu	1087	
Aluminum Scooter Wheel HUB Adapter for 6mm shaft (Fits 37mm motors)		\$ 5.47	Pololu	2674	
Aluminum HUB adapter for 3mm shaft (Pair) (Fits Micro Metal Gearmotors)		\$ 6.89	Pololu	1079	Note: These will not work with the scooter wheels.
Aluminum HUB adapter for 4mm shaft (Pair) (Fits 20D Metal Gear Motor)		\$ 7.81	Pololu	1081	Note: These will not work with the scooter wheels.
Power HD Standard Servo 3001HB		\$ 12.17	Pololu	1058	Discontinued item: limited to stock on hand
FEETECH FS90 Micro Servo		\$ 4.95	Pololu	2818	
FEETECH Standard Servo FS5103B		\$ 11.23	Pololu	3424	
FEETECH Standard Servo FS5106B		\$ 14.95	Pololu	3425	
400 mm GT2 Timing belt		\$ 5.99	Amazon	B014U7OSVA	
200 mm GT2 Timing belt		\$ 1.50	Amazon	B07V6N32B1	
GT2 Timing belt by length		2.52/meter	Amazon	B07CDDPCM8	
GT2 4mm bore, 20 teeth pulley		\$ 2.12	Amazon	B07CXSSGF8	
GT2 5mm bore, 20 teeth pulley		1.8/pulley	Amazon	B077GNZK3J	
GT2 6mm Bore 16 tooth pulley		\$ 1.10	Amazon	B07K7DD822	

GT2 Idler Pulley Timing Belt Pulley 20 Teeth 4mm Bore		\$ 1.47	Amazon	B07K8CB8JN
GT2 Idler pulley toothless 4mm bore		\$ 1.48	Amazon	B07K8D1VX7
6mm shaft coupler		\$ 5.06	McMaster	5395T111
4mm to 4mm Bore Rigid Coupling Set Screw L25XD14 Aluminum Alloy,Shaft Coupler		\$ 4.75	Amazon	B07PBBHYLC
5mm to 5mm rigid shaft coupler		\$ 4.00	Amazon	B07QQM472Q
6mm to 6mm rigid shaft copuler		\$ 4.00	Amazon	B07QPJLQNH
Flexible Beam Couplings 4mm to 4mm Flexible Coupler Shaft		\$ 4.17	Amazon	B08XGBPX11
Flexible Beam Couplings 5mm to 5mm Flexible Coupler Shaft		\$ 4.00	Amazon	B07M5Q7HTV
Flexible Beam Couplings 3mm to 4mm Flexible Coupler Shaft		\$ 4.05	Amazon	B08XJ52NCM
6mm to 6mm flex shaft coupler		\$ 3.20	Amazon	B07M6PJW9C
4.1mm bore shaft collar		\$ 0.63	Amazon	B07T56M983
5mm Shaft Collar		\$ 0.95	Amazon	B0BPSXPL4P
6mm shaft collar		\$ 1.00	Amazon	B0B1C4XX65
8mm Shaft Collar		\$ 1.00	Amazon	B08SK2LNNV
F608ZZ Shilded Flanged Bearing 8x22x7mm Shielded Chrome Steel Bearing		\$1.00	Amazon	B085DRNJ6R
F606ZZ Flanged Ball Bearing 6x17x6mm Shielded Chrome Steel Bearings		\$1.27	Amazon	B0723D1T2R
F625ZZ Flanged Ball Bearing 5x16x5mm Shielded Chrome Steel Bearings		\$1.10	Amazon	B0723DXF14
4mm Flanged Ball Bearing		\$0.55	Amazon	B07VDN77ZT
4mm x 100mm Ground Shaft Round Rod		\$ 0.90	Amazon	B07CNR3LXQ
5mm x 200mm 304 Stainless Steel Solid Round Rod		\$ 1.25	Amazon	B082ZNFVS
6mm x 100mm Stainless Steel Round Rod		\$ 1.00	Amazon	B082ZP2NLY
6mm x 150mm stainless steel round rod		\$ 1.30	Amazon	B082ZNWBRJ
8mm x 150mm Stainless Steel Round Rod		\$ 1.80	Amazon	B082ZNNWR1G




Electrical Parts

Part Name	Picture	Price (\$)	Vendor	Part #
ELGOO Arduino UNO-R3 Clone		\$ 16.99	Amazon	B01EWOE0UU
ELGOO Mega-R3 (Arduino clone)		\$ 21.00	Amazon	B01H4ZLZLQ
Dual TB9051FTG Motor Driver Shield		\$ 27.55	Pololu	2520
TB9051FTG Single Brushed DC Motor Driver Carrier		\$ 10.99	Pololu	2997
DAOKI L298N Dual Motor Controller (for Micro Metal Gear motors or 22mm instrumentation motors)		\$ 2.92	Amazon	B00XAGRQTO
TB6612FNG Dual Motor Driver Carrier		\$ 9.15	Pololu	713
9.6 V Battery Charger		\$ 15.99	Amazon	
Tenergy 9.6V 2000mAh NiMH Battery Pack		\$ 16.99	Amazon	11401-01
Barrel Connector for Powering Arduinos		\$ 0.75		B07SV2WY4S
9.6V Battery Connector, Tamiya, Male, w/ 14 awg wire terminals (BDHI-46)		\$ 1.60		
Sharp GP2Y0A51SK0F Analog Distance Sensor 2-15cm		\$ 11.50	Pololu	2450
Sharp GP2Y0A41SK0F Analog Distance Sensor 4-30cm		\$ 11.50	Pololu	2464

Sharp GP2Y0A21YK0F Analog Distance Sensor 10-80cm		\$ 12.95	Pololu	136
3-Pin Female JST ZH-Style Cable (30cm) for Sharp GP2Y0A51 (2-15cm range) Distance Sensors		\$ 1.26	Pololu	2411
3-Pin Female JST PH-Style Cable (30 cm) for all range Sharp Distance Sensors EXCEPT 2-15 cm range		\$ 1.18	pololu	117
QTR-MD-01RC Reflectance Sensor: 1 Channel 7.5mm Wide RC Output		\$ 1.98	Pololu	4141
QTR-MD-01A Reflectance Sensor: 1-Channel, 7.5mm Wide, Analog Output		\$ 2.00	Pololu	4241
QTR-MD-07RC Reflectance Sensor Array: 7-Channel, 8mm Pitch, RC Output		\$ 7.24	Pololu	4147
QTR-MD-08RC Reflectance Sensor Array: 8-Channel, 8mm Pitch, RC Output		\$ 7.31	Pololu	4148
Mini push button		\$ 0.35	Sparkfun	COM-00097
Large push button		\$ 0.50	Sparkfun	COM-09190
Mini Snap-Action Switch with 13.5mm Lever: 3-Pin, SPDT, 1A		\$ 0.77	Pololu	1528
EATON 150011E SWITCH, ROCKER, SPST, 15A, 125V, BLACK		\$ 1.36	Digikey	432-1111-ND
Asahi Kasei EQ783L Hall Effect Sensor		\$ 2.00	digikey	974-1167-ND
5V 1.5A Linear Voltage Regulator - L7805CV		\$ 1.10	digikey	497-1443-5-ND

Heat sink - for 5V regulator		\$ 0.50	Digikey	HS107-ND
Adjustable Buck Converter (Voltage Converter)		\$ 1.80	Amazon	B07VVXF7YX
Optical Interrupter switch		\$ 1.30	Amazon	B01MRELR51
Magnetic Encoder Pair Kit for Micro Metal Gearmotor, 12 CPR, Side Entry		\$ 7.31	Pololu	4761
6-Pin Single-Ended Female JST Cable (30cm) for Micro Metal Gearmotor Encoder		\$ 1.74	Pololu	4763
Magnetic Encoder Kit for 22D mm Henkel Instrumentation Motor, 20 CPR, 2.7-18V (Pair)		\$ 8.23	Pololu	3499
5mm RGB Multicolor LED Diode Lights COMMON ANODE 4 pin Light Emitting Diodes (Use this with a phototransistor to build your own color sensor. See Construction guide for more info.)		No Charge	Amazon	B01C19ENFK
5mm RGB Multicolor LED Diode Lights COMMON CATHODE 4 pin Light Emitting Diodes (Use this with a phototransistor to build your own color sensor. See Construction guide for more info.)		No Charge	Amazon	B01C19ENDM
INL-5APT30, 5mm Phototransistor (This is NOT an LED. Use this with an RGB LED to build your own color sensor. See Construction guide for more info.)		No Charge	Digi-Key	INL-5APT30
Prototype PCB for Arduino UNO R3 Shield Board		\$ 1.40	Amazon	B01J1KM3RM
Prototype PCB for Arduino Mega 2560 R3 Shield Board		\$ 1.70	Amazon	B01J1L447I
ARDUINO STACKABLE HEADER KIT		\$ 3.03	mouser	375-LS-00010

Raw Materials

Part name	Price \$
1/2" Aluminum Gap Channel x 19" section 	\$ 4.50
1"x1"x.065" x 48" aluminum angle 	\$ 5.97
.75" x.57"x.065" x 48" aluminum angle 	\$ 4.75
6mm x 12" x12" Sintra Sheet (can not be laser cut)	\$ 2.50
3mm x 12" x12" Sintra Sheet (can not be laser cut)	\$ 1.29
.236" x 12" x12" clear acrylic sheet	\$ 5.50
.118" x 12" x 12" clear acrylic sheet	\$ 2.28
.22" x 12" x 12" white acrylic sheet	\$ 2.69
0.236" x 12" x 12" Black ABS (textured on one side)	\$ 4.26