

Component	Description	Subsystem	Part Number	Manufacturer	Quantity	Price Per Unit	Total Cost
2-56 Hex Nut (25 pk)	Connects line sensor to attachment	Attachments	1067	Polulu	1	\$2.25	\$2.25
2-56 Screw (25 pk)	Connects line sensor to attachment	Attachments	2715	Polulu	1	\$1.39	\$1.39
6 mm T Slot Nuts (100 pk)	Allows for attachments to extruded aluminum	Attachments	N/A	Amazon	1	\$9.78	\$9.78
Assorted Nylon Hardware	Assorted hardware for attaching components	Attachments	N/A	Amazon	1	\$7.99	\$7.99
PLA Filment	For 3D printing components	Attachments	N/A	Amazon	1	\$17.99	\$17.99
1/4 - 20 Screw (20 pk)	Hardware for line following sensor attachment	Attachments	N/A	Amazon	1	\$8.99	\$8.99
1/4 Washer (100 pk)	Hardware for line following sensor attachment	Attachments	N/A	Amazon	1	\$6.19	\$6.19
M4 - 8 mm Screws (50 pk)	Screws for T-slot nuts	Attachments	N/A	Amazon	1	\$7.99	\$7.99
Panel Mount 3-Prong Receptacle	Female IEC 320 C13	Battery Management	6100.33	SCHURTER Inc.	5	\$1.15	\$5.75
IEC 320 C13 - C14 Power Cable	IEC 3-Prong power cable for connecting battery charger to receptacle	Battery Management	AK500-OE-11-.5	Assmann WSW Components	1	\$3.67	\$3.67
C13 - C13 Adapter	IEC Female-Female adapter for connecting cable to receptacle	Battery Management	C13 to C13 Power adapter	TeKit	1	\$14.99	\$14.99
12 Foot 3-Prong AC Power Cable	IEC-NEMA 3-Prong power cable for connecting to standard US wall socket	Battery Management	P010-012	Tripp Lite	2	\$10.62	\$21.24
Lithium Iron Phosphate Battery Charger	Lithium Iron Phosphate battery charger that will charge and manage battery	Battery Management	PCCG-LFP14.4V10A	ZEUS Battery Products	1	\$129.27	\$129.27

Lithium Iron Phosphate Battery	12.8 V 7.2 Ah lithium iron phosphate battery that serves as the main power source for the robot	Battery Management	PSL-SC-1270 F2	Power Sonic Corporation	1	\$91.43	\$91.43
6 mm Aluminum Corner Connectors (20 pk)	Connects extruded aluminum together	Chassis Frame	N/A	Amazon	1	\$13.64	\$13.64
300 mm Extruded Aluminum (4 pk)	The horizontal bars of chassis frame	Chassis Frame	N/A	Amazon	1	\$17.99	\$17.99
250 mm Extruded Aluminum (4 pk)	The vertical bars of chassis frame	Chassis Frame	N/A	Amazon	1	\$16.99	\$16.99
M3 - 8 mm Flat Screws (50 pk)	Flat screws from slotted peices to attach without raised heads	Layout and Organization	N/A	Amazon	1	\$6.49	\$6.49
Wire Labels	Labels for wire organization	Layout and Organization	N/A	Amazon	1	\$9.00	\$9.00
M3 Nut (50 pk)	Nuts for flat screws	Layout and Organization	N/A	Amazon	1	\$4.34	\$4.34
Spacer Stand off Screws	Spacers for microcontrollers	Layout and Organization	N/A	Amazon	1	\$13.99	\$13.99
Reflectance Array	Line following sensor	Line Sensing	961	Pololu	1	\$9.95	\$9.95
Grove - Ultrasonic Distance Sensor V2.0	Ultrasonic transducer that utilizes ultrasonic waves to measure distance.	Location Sensing	101020010	Seeed Technology Co., Ltd	4	\$4.30	\$17.20
Jetson Nano	Master Controller for mapping, localization, and communication	Master Control	N/A	NVIDIA	1	\$149.00	\$149.00
Keyboard and Mouse	Used for interfacing with Jetson Nano	Master Control	N/A	HP	1	\$15.99	\$15.99
Memory Card	Memory for Jetson Nano	Master Control	N/A	SanDisk	1	\$26.50	\$26.50
MicroUSB cable	Power Cable for Jetson Nano	Master Control	N/A	StarTech	1	\$4.95	\$4.95
Motor Mounts (2- pack)	Connects motor to the chassis	Motor Control	2676	Pololu	2	\$9.95	\$19.90
Motor with Encoder	Moves robot and sends info through encoder	Motor Control	2828	Pololu	4	\$51.95	\$207.80

Mecanum Wheels (4-pack)	Wheels for 360 motion	Motor Control	14209	Orzorobotics	1	\$17.00	\$17.00
Aluminum Mounting Hub	Aluminum hub that connects the wheels to the motor and has a 6mm opening	Motor Control	18077	Orzorobotics	4	\$6.90	\$27.60
Motor Driver (4- pack)	Driver to control motors based on microcontroller input	Motor Control	L298N	HiLetgo	1	\$2.87	\$2.87
Microcontroller (Arduino Mega)	Microcontroller	Motor Control	Megaa 2560 Rev3	Arduino	1	\$43.56	\$43.56
Grove I2C Bus	I2C Bus	Navigation Microcontroller	N/A	Seed Studio	4	\$1.70	\$6.80
OLED Display	I2C Display	Navigation Microcontroller	N/A	Amazon	1	\$8.95	\$8.95
Arduino Mega	Microcontroller	Navigation Microcontroller	N/A	Amazon	1	\$43.56	\$43.56
ESP 32	Wifi Module	Navigation Microcontroller	N/A	Amazon	1	\$19.95	\$19.95
Grove - Time of Flight Distance Sensor	High speed, high accuracy and long-range ToF distance sensor based on VL53L0X.	Object Detection Sensing	101020532	Seeed Technology Co., Ltd	8	\$36.99	\$295.92
Accelerometer	Sensor to detect heading	Orientation	4517	Adafruit Industries LLC	1	\$19.95	\$19.95
Grove Connectors	I2C bus for sensors	Orientation	4528	Adafruit Industries LLC	1	\$1.95	\$1.95
Male/Female Pin Headers	3.54 mm pitch female pin headers for 3.3 V and 5 V rail connections	Power Distribution	5583	Adafruit Industries LLC	5	\$0.95	\$4.75
Screw Terminals	2.54 mm pitch screw terminals for 3.3 V and 5 V rail connections	Power Distribution	397730002	Molex	25	\$1.24	\$30.97
10 A Fuse	12 V rail protection fuse	Power Distribution	0685H9100-01	Bel Fuse Inc.	10	\$0.31	\$3.12
6 A Fuse	3.3 V and 5 V rail protection fuse	Power Distribution	0685P6000-01	Bel Fuse Inc.	10	\$0.70	\$7.00
10 uFarad Capacitor	10 uFarad 1206 surface mount capacitor	Power Distribution	CL31A106KAHNNN E	Samsung Electro-Mechanics	30	\$0.12	\$3.66
22 uFarad Capacitor	22 uFarad 1206 surface mount capacitor	Power Distribution	CL31A226KAHNNN E	Samsung Electro-Mechanics	30	\$0.24	\$7.17

0.1 uFarad Capacitor	0.1 uFarad 1206 surface mount capacitor	Power Distribution	CL31B104KBCNNN C	Samsung Electro-Mechanics	30	\$0.08	\$2.34
Printed Circuit Board	Power distribution printed circuit board that takes power from battery and supplies power to 3.3 V, 5 V, and 12 V rails	Power Distribution	N/A	JLPCB	5	\$5.16	\$25.80
Emergency Stop Button	Push and reset emergency stop button for cutting power to motors	Power Distribution	TWTADE / 22mm 2 NC Red Mushroom Latching Emergency Stop Push Button Switch 10A 600V YW1B-V4E02R	TWTADE	2	\$12.99	\$25.98
LED	Light emitting diode for fuse blowing indicator	Power Distribution	QBLP615	QT Brightek (QTB)	20	\$0.29	\$5.78
Flyback Diode	Schottky Diode for back-EMF motor protection	Power Distribution	RB070MM	Rohm Semiconductor	20	\$0.28	\$5.54
10k Ohm Resistor	10 kOhm 1206 surface mount resistor	Power Distribution	RMCF1206FT10K0	Stackpole Electronics Inc	50	\$0.01	\$0.73
33k Ohm Resistor	33 kOhm 1206 surface mount resistor	Power Distribution	RMCF1206JT33K0	Stackpole Electronics Inc	20	\$0.02	\$0.40
56k Ohm Resistor	56 kOhm 1206 surface mount resistor	Power Distribution	RMCF1206JT56K0	Stackpole Electronics Inc	20	\$0.02	\$0.40
2.2 uH Inductor	2.2 uHenry surface mount inductor	Power Distribution	SPM6530T-2R2M	TDK Corporation	10	\$0.99	\$9.91
3.3 uH Inductor	3.3 uHenry surface mount inductor	Power Distribution	SPM6530T-3R3M	TDK Corporation	10	\$0.99	\$9.91
On/Off Switch	SPST Toggle switch for starting robot	Power Distribution	ST141D00	E-Switch	1	\$6.07	\$6.07
3.3/5V Regulator	High Current Reconfigurable Buck Converter	Power Distribution	TPS565201	Texas Instruments	10	\$1.29	\$12.92
Aluminum Foil	Aluminum foil for capacitive wireless power transfer sheets	Wireless Charging	Amazon Basics Aluminum Foil, 250 Sq Ft	Amazon	1	\$13.49	\$13.49

Magnet Wire	Magnet wire for transformer and quarter-wave resonators for capacitive wireless power transfer	Wireless Charging	610222	CNC Tech	1	\$120.57	\$120.57
Total without Wireless Charing					58		\$1,513.21
Total					60		\$1,647.27