

Lawnbot400 Parts Lists

For the R/C:

R/C transmitter and receiver that outputs a servo signal Most do.
I bought an ESky EK2-0420A 6-channel set on eBay for \$50.

For the R/C and fail-safe controllers:

All parts are available at RadioShack.

ATmega128 IC chips (2)

Small pieces of perf board (2)

Insulated stranded wire, 22 gauge

28-pin sockets (2)

LM7805 voltage regulators (2)

16MHz crystal oscillators (2)

5V 1A SPDT switches (2)

Capacitors: 0.1 μ F (2), 220 μ F (4)

1k Ω 1/4W resistors (6)

12V toggle switches (2)

Screw terminal blocks: 2-contact (19), 3-contact (2)

6 \times 1 female pin headers (3) for the R/C

LEDs, any color (4) 3 for the R/C

330 Ω 1/4W resistors (4) 3 for the R/C

1N4001 1A diode for the fail-safe

12V 60A normally-open automotive relay \$6, for the fail-safe

40A–60A fuse for the fail-safe

For the motor controller:

All components are available from Digi-Key (digikey.com).

P-channel MOSFET transistors, 47A 60V (12) Digi-Key part #FQP47P06

N-channel MOSFET transistors: 52A 60V (12) and 200mA 60V (4) parts #FQP50N06L and #2N7000

47Ω bussed resistor networks (8) #4606X-1-470LF-ND

2-position screw terminal blocks (6) #ED1609-ND

Resistors: 4.7kΩ 1/8W (24) #CF1/84.7KJRCT-ND

PC board, 1-sided copper-clad, 3"×4½" #PC9-ND

Capacitors, 1,000μF or similar (4) #P5575-ND

LED, 3mm, any color

Resistor, 330Ω–1kΩ ¼W for the LED; doesn't have to be exact

80mm PC cooling fan

TO-220 heatsinks, bolt-on or clip-on (24) (optional)

#8 bolts, 3" long (4) with matching nuts (12)

Power distribution block (optional) helps with wiring

For the drivetrain:

Wheelchair motors (2)

Sprockets: 17-tooth (2) and 23-tooth (2) part #G13610 from Electronic Goldmine (goldmine-elec.com) and part #23Z054 from All Electronics (allelectronics.com)

¼" bolts, 4½" long (6) with matching nuts (18) and lock washers (6)

#25 roller chain, 10', with 2 universal links about \$12

Drive wheels with bearings (2) part #36054 from Harbor Freight Tools (harborfreight.com)

For the mower and carriage:

Gasoline-powered push mower about \$50 used

12V sealed lead-acid marine batteries (2) \$20–\$50 each

Metal stock, 36" lengths: 1"×1" angle iron (2); 2"×2" angle iron (2); 1"×1" square tubing (2); 1" flat steel \$6–\$8 each from Home Depot

Threaded rod, 5/8"×36" long (1) with matching nuts and washers (6)

1/2" bolts: 3/4" long (20) and 2" long (10) with matching nuts, washers, and lock washers

Caster wheels (2) Harbor Freight #38944, \$14

Scrap of plywood to carry the electronics