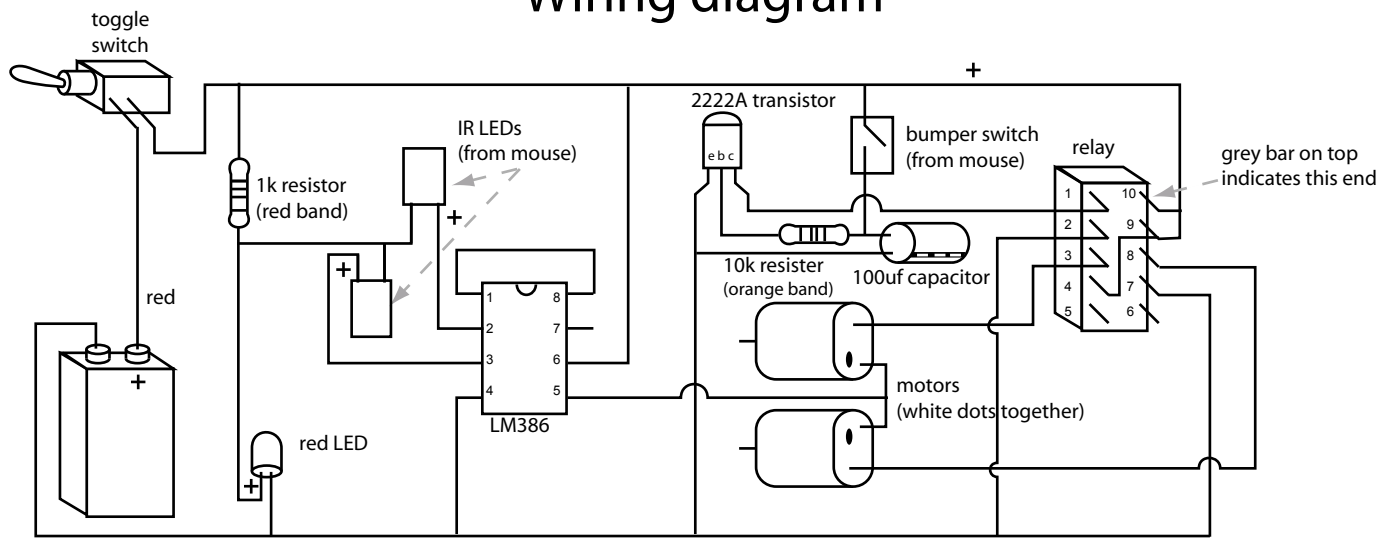


Wiring diagram



the instructable is a great source of information, and pictures. READ IT! but be aware that the relay we are using is different than the one they use. ours has its commons on pins 3 & 8, instead of where they are shown in the instructable.

the article in MAKE: vol2. is also good, but the circuit they printed has several mistakes.

HINTS

1. red means positive(+), black means negative(-), usually.
2. the flat side of the transistor is the front.
3. on the mouse switches NO means normally open, and C means common.
4. the capacitor has a black line to indicate the negative (-) lead (connects to transistor).
5. the relay has a grey bar on the top to indicate the coil end (connected to transistor). it also has 2 unused pins at the other end. you can bend them out of the way, cut them off (careful!), or just ignore them.
6. the LM386 chip has a notch at the pin 1 & 8 end. LOOK FOR IT
7. if your bot runs in circles you have one motor reversed. if it goes backwards switch them both.

Identifying the IR LEDs and their + side

1. in most mice the LEDs are clear, and the sensors are dark red (almost black). in some they are both clear, and you will need to see how many connections they have. the LEDs will only ever have 2, and the sensor will usually have 3. if none of this is clear, get another mouse!
2. examine the circuit board BEFORE you unsolder them. sometimes the board is marked with a diode symbol (→|) in this case the bar indicates the - side. failing that, if you have a multi-meter switch it to the lowest voltage scale it has and attach the diode. if you have it hooked up correctly you should see around .5 volts in sunlight. it will be less than that under a light bulb, but should be measurable. if you see a negative voltage you have it hooked up wrong. if you get nothing in either direction you probably fried the LED unsoldering it. if you don't have a meter, get one (they can be had pretty cheap and will be a good investment). if that does not work for you try hooking it all up without soldering the LEDs by carefully wrapping the wires around the legs. this is tricky, but you should be able to test and make sure you have them connected correctly.

WHEELS

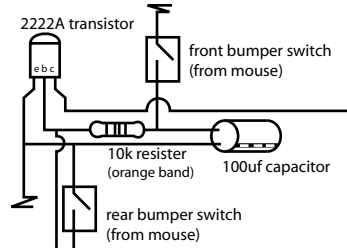
take a motor with you to a bead store. find a few cheap plastic beads which fit over the shaft of the motor. super glue the beads on (don't get any in the motor). then put the clear rubber disks over the beads. you can also use the idler wheels from a cassette tape as suggested in the instructable. i was unable to find ones which fit, but i only tried one cassette.

for the front wheel (if you want one) i suggest you use another bead (a larger one) and make a U shaped axle out of a paper clip or other stiff wire. you can heat the ends of the wire up with your soldering iron and push them through the plastic body of the mouse to hold it in place.

Parts list

1. 1x 2222A transistor (similar to 3904, black thing w/ 3 wire)
2. 1x LM 386 low power amplifier (chip w/ 8 wires)
3. 1x dpdt relay (black w/ 10 wires)
4. 2x motors
5. 1x 1k resistor (brown - black - red bands)
6. 1x 10k resistor (brown - black - orange bands)
7. 1x 100uF capacitor (blue thing)
8. 1x red LED
9. 1x toggle switch
10. 1x battery clip
11. 2x rubber tires

Bonus extra points use for second mouse switch



put the other switch from the mouse across the resistor/capacitor, and mount it at the back. this will un-reverse the bot if it backs up into something. DO NOT press both switches at the same time or you will short out the battery.