

EZbot Kit Instructions

Congratulations on your EZbot purchase! You are about to enter the world of robotics in one of the easiest ways possible. Your EZbot can be built in about 5 minutes, and has great potential for alternate configurations.

Assembly is required. You will need electrical tape, a screwdriver, and eight "AA" batteries to complete the kit. These items are not included.

After you build it, you can come up with other ways to configure the components, or add on your own materials to come up with a robot idea all your own!

Here are some statistics about your EZbot:

- The 2.4Ghz radio system is so much more than a regular 'toy' controller. Because of the modulation of the radio and receiver, there is almost NO chance that another radio or other electronic item will interfere with your signal.
- Your radio will control your robot up to 330 feet away!
- Your radio can control up to 4 functions, even though this robot only uses 2!
- You can use this same radio system for many other projects, including RC cars, tanks, boats, and even airplanes!
- The servo motors are very powerful, enough that your robot can actually haul a decent amount of weight (over 1 pound!).

Here are the step-by-step instructions on building your EZbot:

1. Install 4 of the AA batteries into the back of the radio controller. Do not turn it on at this time.
2. Install 4 of the AA batteries into the battery box.
3. Stretch one of the rubber tread bands all the way around each wheel. It may take a bit of effort, but will center nicely once in position. You only need to use 1 rubber tread per wheel.
4. Using a screwdriver, take the main servo horn screw out of each servo, and set the screw and white servo arm aside.
5. Using electrical tape, attach the two servos together, back to back, so that the servo splines are exactly opposite of each other.
6. Using the tape again, attach the two servos to the backside of the AA battery holder, keeping them centered and with the batteries exposed side facing down. Note that the wires for the servos will both be going in the same direction, that is the "Front" of your robot.

7. Press the wheel firmly onto the servo spline. This might take a bit of pushing, it may seem like it doesn't fit, but just press firmly and make sure you are pushing it on straight, not at an angle. Eventually it will pop all the way on.

8. Hold the wheel in place by screwing each wheel onto the servo's splines using the same screw you set aside in step 4.

9. Plug the right side servo into Channel 2 of the receiver, and the left side servo into Channel 3. (Remember the front of the robot is the side with the wires) **IMPORTANT:** The black wire will be on the **OUTSIDE** of the receiver, not on the inside. Don't worry, if you reverse it, it won't hurt anything, but your robot will not work.

10. Using the electrical tape again, tape the radio's receiver to the 'front' of your robot (the side where the wires are all coming out), making sure that the connector pins of the receiver can still be accessed. Or, if you like you can just bundle the wires from the servos together and tape the wires, leaving the receiver hanging.

11. On the front of the radio controller, access the small blue panel on the front and switch channel 3 to REV, using a screwdriver or pen.

12. Almost done! Turn on the power to your radio controller by sliding the big switch in the middle of the front panel. The red LED on the front should come on. If not, check that the batteries were installed correctly. Always remember to turn the radio ON first, and OFF last.

13. Now turn on the power of the robot by plugging the connector from the AA battery holder into the BAT port of the receiver. The LED on the receiver should come ON. If not, check your battery installation in the AA battery holder.

14. If the robot starts moving without you touching the sticks, then the trims on your radio need to be set. The trim is a small slider next to each stick of the radio. Slowly slide the trim up or down from center until the robot's wheels stop moving. If you get no movement at all, check all power and that you have the servo wires plugged into the receiver in the right channels and in the right direction (black wire out).

15. Set the robot on the ground and test to make sure the directions are correct: if you push the right stick up, the right wheels of the robot should move forward. If you push up on the left stick, the left wheels should go forward. If either of these are going opposite, you may need to mess around with the radio's reversing options of channel 1 or 2 to get it just right. (see step 11)

That's it! Now just drive your robot, using the controller. It is just like driving a tank, each stick controls the speed and direction of each of the robot's wheels. Have fun, and remember to turn the robot OFF, you need to unplug the battery pack from the receiver and turn the radio power OFF.

Enjoy your EZbot!

More ideas:

- add on a rechargeable battery pack for longer duration and less waste (do not exceed 6.0 volts MAX)
- add on some sensors and a programming module for a great autonomous platform!
- add in a pair of Y-cables and another set of servo motors and wheels, and make a 4-wheel drive platform!
- build your own baseplate using plastic, wood, or whatever you can think of, and make a payload-carrying platform
- add on some armor and a weapon, and build a combat robot!