

BUILDING THE VEHICLES

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1. Parts

The **Mini 3-Layer Round Robot Chassis Kit - 2WD with DC Motors** was purchased on Adafruit (<https://www.adafruit.com/product/3244>) for \$24.95.

As shown in Figure1, the kit includes:

- 2x Drive Motors (drive with 3-6VDC, 200-400 mA run, 1.5A hard stall)
- 2x Wheels
- 1x Plastic Caster Ball
- Anodized aluminum frames and all mounting hardware for assembly

Assembled Dimensions:

- Length of Metal Plates: 100mm / 3.9"
- Width of Car (wheels assembled): 109mm / 4.3"
- Height (wheels assembled, 3 plates): 66mm / 2.6"

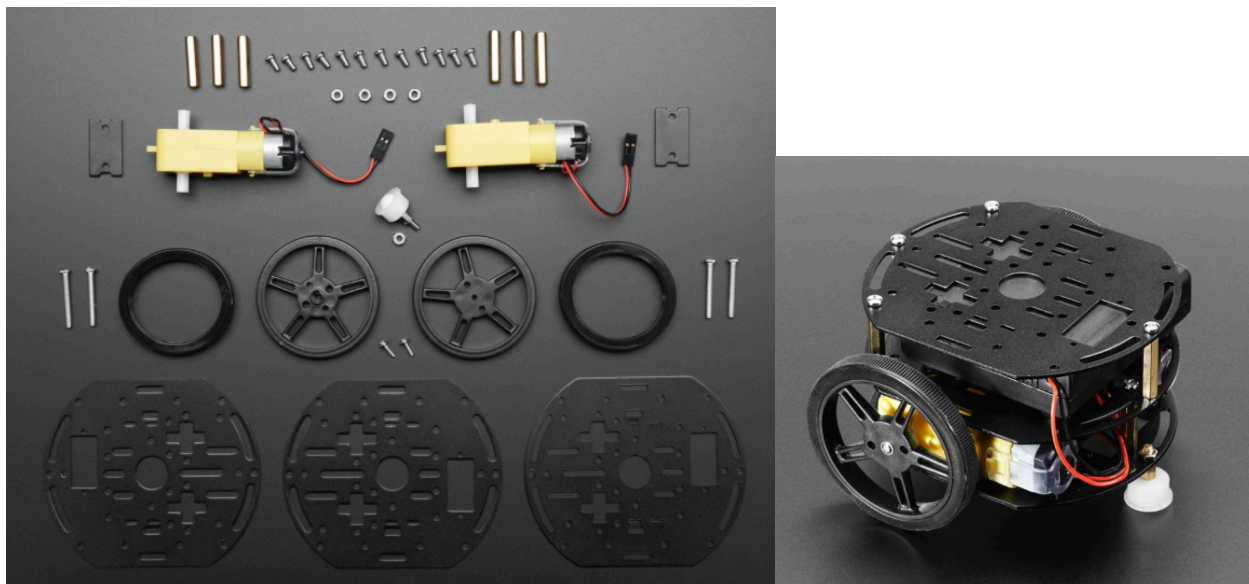


Figure 1. Components (left); Robot assembled (right).

2. How to assemble the Robot

Instructions on how to assemble the robot can be found in the Adafruit website
<https://learn.adafruit.com/adabox002/assembling-your-robot>

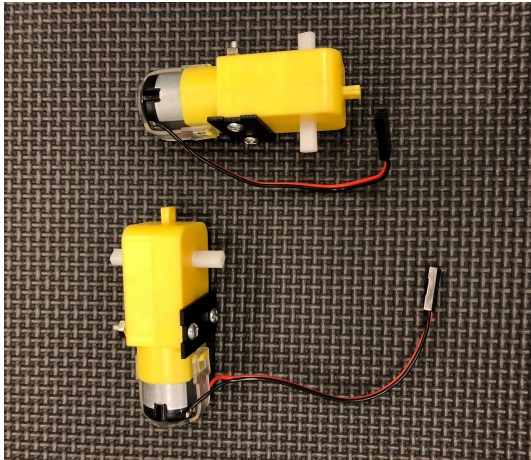


Figure 2. Motors with metal parts connected

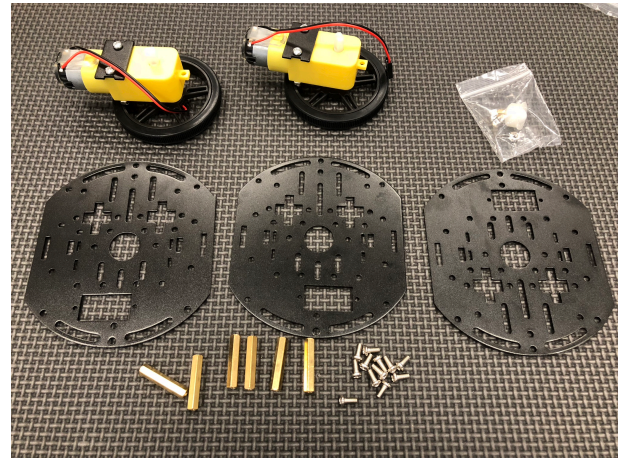


Figure 3. Wheels assembled and remaining parts.

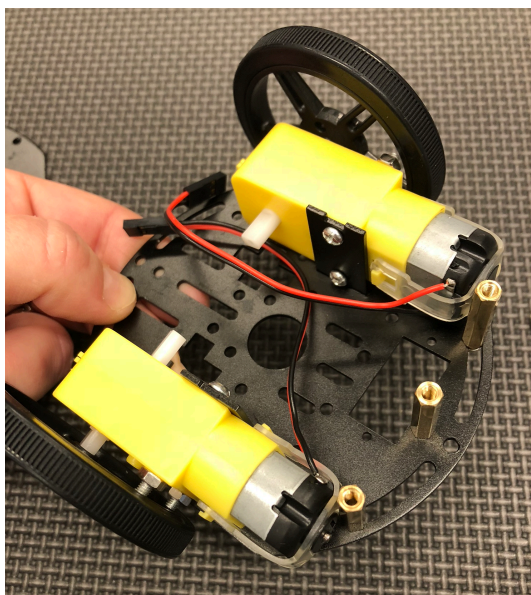


Figure 4. Motors fitted in the frame.

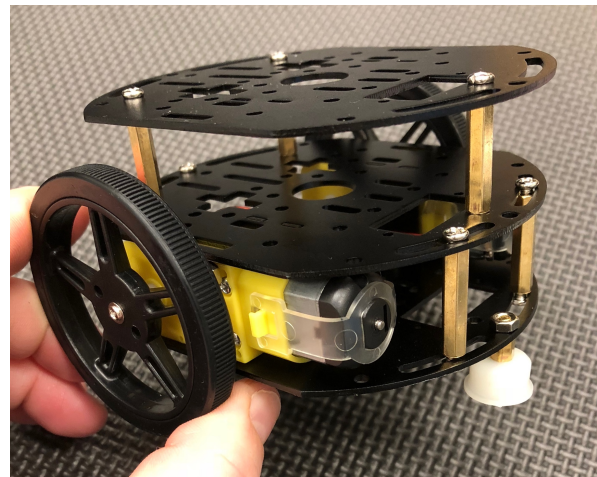


Figure 5. Robot assembled.

The following steps have to be followed to assemble the robot:

1. Connect the **small metal plates** to the motors using the two long screws and nuts as shown in Figure 2. Make sure the plates are mounted on the correct side of the motors.
2. Connect the motors to the **wheels** using the small pointed screws (Figure 3).
3. Mount the standoffs in the bottom frame.
4. Place the motors on top of the frame as shown in Figure 4. The metal plates installed in the first step fit perfectly in the chassis holes so that the motors won't move around.
5. Connect the first, second and third frames together using the standoffs and screws.
6. Connect the caster ball as shown in Figure 5.