fun robotics for tomorrow's inventors!

Your EdVenture into Robotics

Tune up Your Edison

Our Spare Parts Pack has all of the latest parts required to tune up your Edison.

Introduction

If your Edison has been used as a roller skate and now one or both wheel won't drive or is making a lot of noise, then this guide will help you get your Edison back on track.

This guide shows you how to tune up your Edison by replacing damaged gears with the new roller-skating friendly clutch gears. The spare parts pack includes two sets of replacement clutch gears this is enough to repair two Edisons.

Also use the spare parts packs to:

Increase programming compatibility across more devices with the new EdComm cable.

Upgrade Edison with our new super-tough plastics! These new wheels and battery doors have been reinforced and specially treated to withstand high impacts.

Replace any damaged Philips head screws for the more robust hex head screws.

Note all new shipments of Edisons include the latest parts with the new EdComm cable and the new clutch enabled gears.

Tools

Required:

- Spare parts pack
- Needle nose pliers
- Scissors

Maybe Required:

- Philips head screw driver

Step One

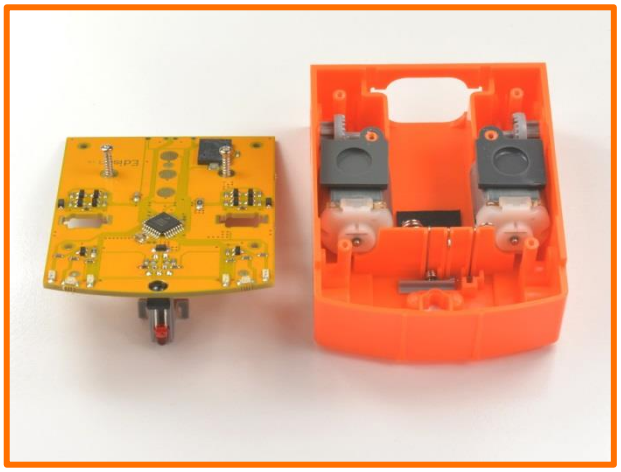
Remove the wheels from Edison.

Flip Edison over and remove the tiny clear plastic skid.

Once those are removed lay the Edison right side up on the table and remove the clear top by unscrewing the four screws located in each corner

Remove the rubber buttons and IR guard.

Step Two

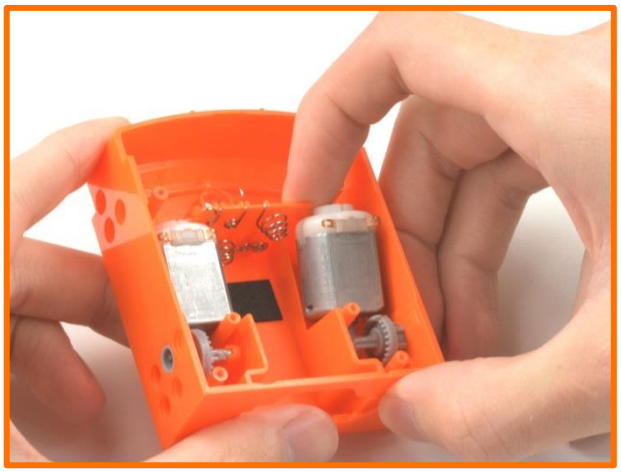


Remove the printed circuit board (PCB) by unscrewing the two screws either side of the button pads.

Once the circuit board has been placed to one side, remove the silicone wedges from the top of the motors (if your Edison has foam pads leave them attached).

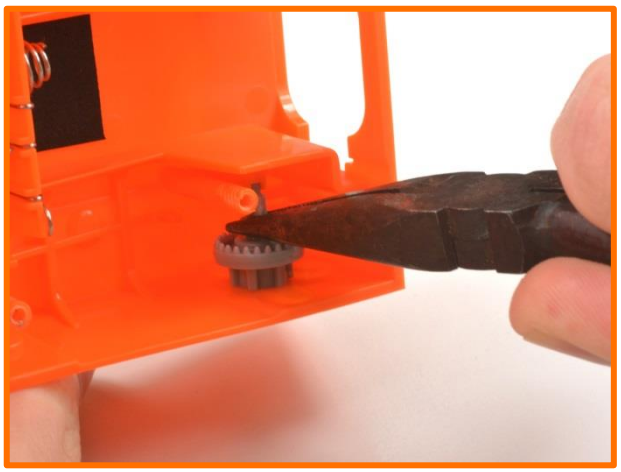
Step Three

Remove the motors by pulling the white plastic section up.



Step Four

Remove the old gear on one side by pinching the axle with pliers, pushing back towards the outer wall and lifting out.



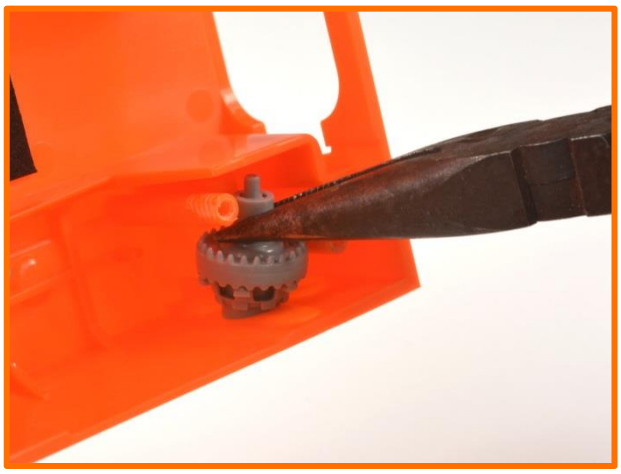
Step Five

Assemble the clutch gear by sliding the clutch pieces together as shown.

The clutch can be tricky to install, so grasp the clutch assembly with pliers on an angle as shown. Use caution when doing this as the gear shaft can become crushed if too much force is applied.

Step Six

Install the gear by placing the outer shaft into the hole in the outer wall of Edison, then pushing out and down to click the top of the axle into place.



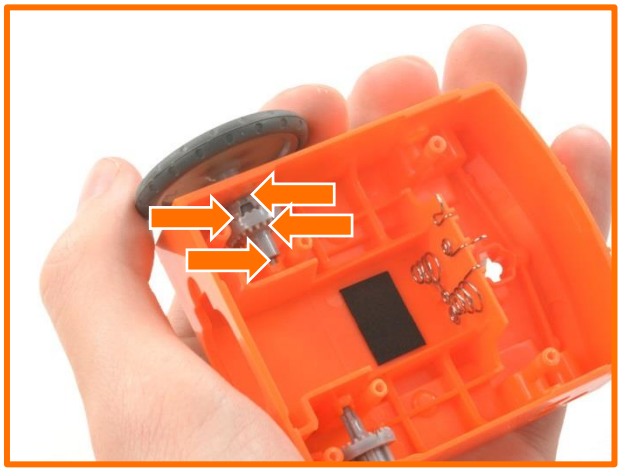
Step Seven

Using scissors cut off the edge (1mm) of one corner of the grease packet.

Step Eight

Lightly push a wheel into the axle hole of the new gear, this will allow you to rotate the gear and spread grease evenly in the next step.

Look at the image to the right, in the next step grease needs to be added to each join between the gear parts and Edison's body as shown by the arrows.

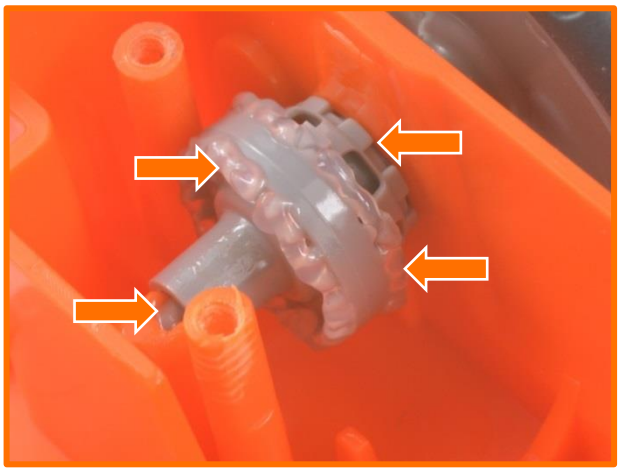


Step Nine

Apply grease to the four connection points shown in the previous step, going slowly and rotating the gear to evenly apply grease to the whole gear.

Step Ten

Ensure that grease has been applied evenly and liberally. Your gear should look similar to the image on the right, with grease applied to all places shown

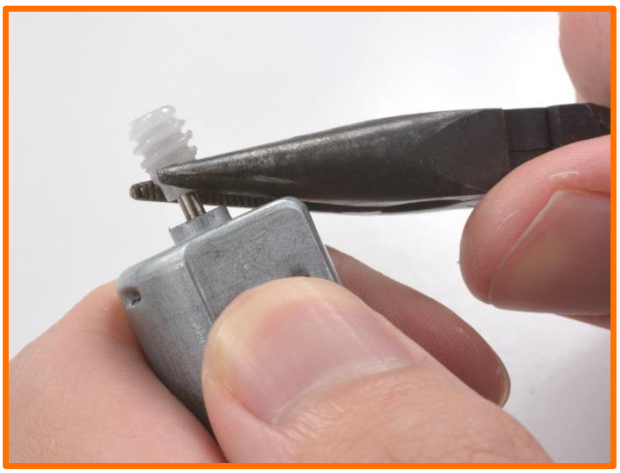


Step Eleven

Set aside your Edison for the moment.

Using the pliers remove the worm gear from one of your motors.

The easiest way to remove the worm gear is to grip the gear at the base and leaver it off using the side of the motor as a leverage point.



Step Twelve

Slide the cardboard out of the spare parts pack and lay it on the table, this will save your table from potential marks in the next step.

Place a worm gear on the cardboard, making sure that the internal bevelled edge is face up, as shown in the image.

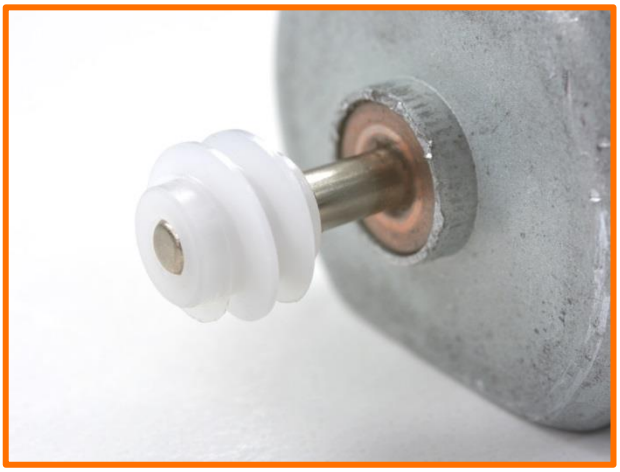
Step Thirteen

Centre the motor shaft over the worm gear and push down hard to attach the gear to the motor.

Step Fourteen

Make sure that the worm gear is flush with the end of the motor shaft.

If it is not flush repeat step thirteen.



Step Fifteen

Slide the motor back into Edison's body pushing down hard between the terminals until you hear a click.

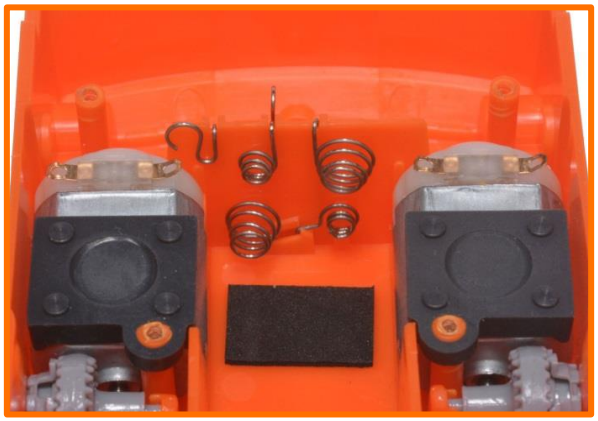
Step Sixteen

Repeat steps four through fifteen for the gear and motor on the other side.

Step Seventeen

Replace the silicone pads on top of your motors and check that each of the springs is sitting into its notch in the battery wall.

Edison should be set up as shown to the right.

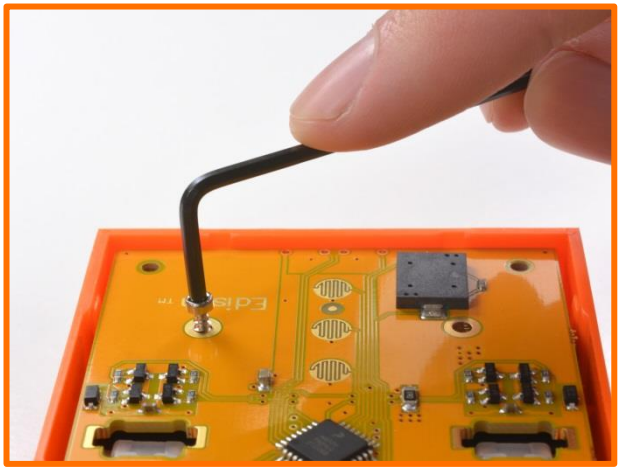


Step Eighteen

Replace the PCB, making sure that the line tracker sits into the hole in the bottom of Edison.

Screw the PCB down with the two screws towards the back of the board.

If the original screws from your Edison have become damaged during this process install the screws provided in the spare parts pack, using the provided Allen key.



Step Nineteen

Place the clear plastic top upside down on the table and place in the buttons and IR shield.

Flip Edison over and clip the body onto the clear plastic top.

Finally, screw in the four screws in each corner to secure the top and replace the wheels and plastic skid.

Congratulations you have tuned up your Edison!