DirectPower DE157 Cordless drill-screwdriver Teardown

See the insides of a typical cheap Chinese-made cordless drill/driver.

Written By: Jasper

INTRODUCTION

Find out what makes a cordless drill/driver whirr.

TOOLS:

- Phillips #1 Screwdriver (1)

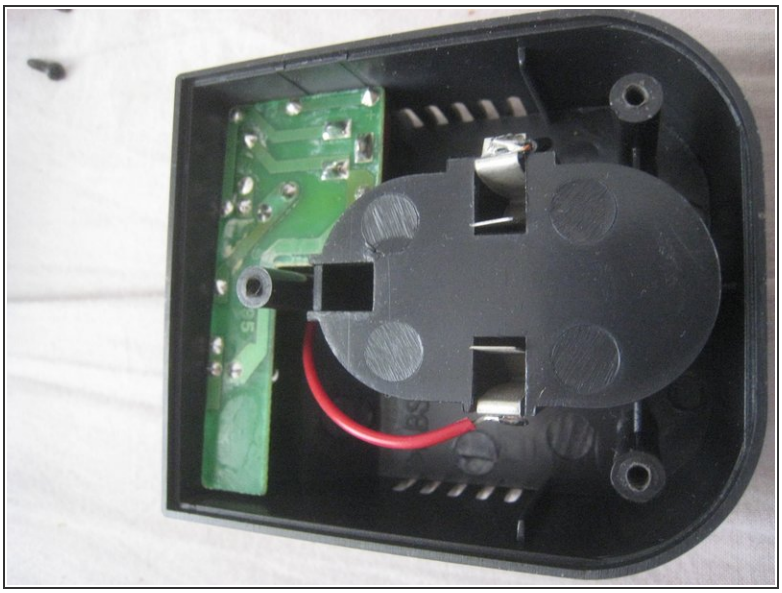
Step 1 — DirectPower DE157 Cordless drill-screwdriver Teardown

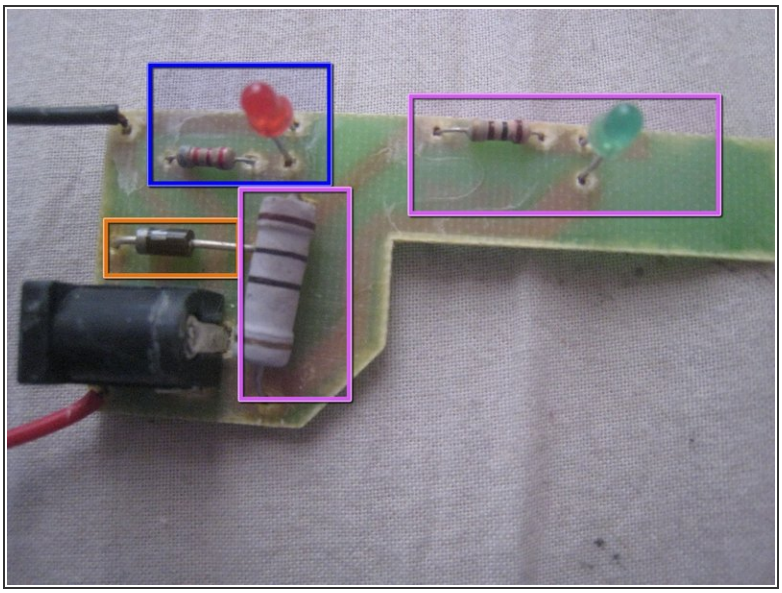
- The driver kit.
- This is a more-or-less no-name cordless screwdriver/drill kit, but its construction more or less matches most of these devices.

Step 2

- The charger consist of a standard wallwart, output 14.4V 350mA, along with a little block (weighing nothing at all) to connect to one of the battery packs.
- To open the charger block, unscrew three #1 Phillips screws.

Step 3



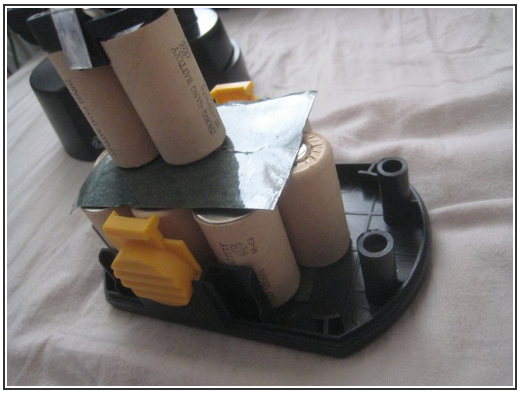


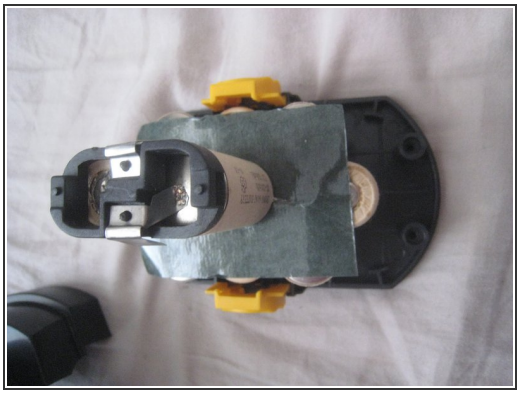
- After lifting off the bottom, the PCB is exposed, and you can lift it out of the charger block along with the battery contacts. On the PCB we find:
  - A diode to protect against reverse current.
  - An LED and resistor that is on so long as the box gets power.
  - A giant 10 Ohm resistor to slightly current-limit the charge, and across which the green led and resistor are placed -- this will therefore light up as long as significant current passes to the battery.

Step 4

- One of the two battery packs. To open, remove
  - Four #1 Phillips screws.

Step 5





- After removing the screws, turn right side up again and lift off the plastic cover, exposing 12 NiCd cells in a string, and nothing else.
- Note that there is room on the right side for three more cells, which would make a 18V battery pack.
- Especially cheaper makers usually have versions for 7.2V/9.6V/12/14.4/18V all using the same plastic, just more or less cells and a different motor.

To reassemble your device, follow these instructions in reverse order.

