LED Robot Ornament

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**TOOLS:**
- Hot Glue gun & hot glue (1)
- Pencil or pen (1)
- Pliers (1)
- Utility knife (1)

**PARTS:**
- Cardboard (1)
- Spray paint (1) **silver**
- LED Sewing Kit (1)
  or two LEDs and a coin cell battery with holder
- Yarn, string, or other cord (1)

**SUMMARY**

Crafting under pressure is irresistible. This year the Craftzine gals suggested an ornament swap-- 12 days before Christmas. With a lot on our plates we all agreed to make time for crafting eight handmade ornaments each, and the deadline made it even more intense. Cheers to speed crafting!
Step 1 — LED Robot Ornament

- Spray paint some scrap cardboard — I chose silver.
- Sketch out your robot designs, either in a notebook first or directly on the cardboard.

Step 2

- Cut out your robots' bodies.
- Cut legs and arms from small strips of cardboard.
Step 3

- Glue on arms and legs.
- Keep a bowl of ice water nearby when using a hot glue gun.

Step 4

- Pierce two holes for each LED with an awl.
- Feed the LED legs through the holes, minding the polarity. The long (+) leads should both be facing the same way.
Step 5

- On the back, twist the two long leads (+) together, and twist the two short leads (-) together. This is called wiring the LEDs in parallel.

- Look for the (-) symbol near one side of the battery holder. Stack the holder on top of the LED leads matching + to + and - to -.

- The circuit is the same as my LED shoe clips project as well as my firefly embroidery project.

Step 6

- Use pliers to twist the LED leads around the battery holder legs, and insert a battery to confirm the circuit illuminates the robot’s eyes.

- Use hot glue to secure the battery holder while it's still on.
Step 7

- Slide a strip of paper between the battery and the holder to provide a pull-to-start tab.
- Insert the battery in the holder, pinching the paper strip between.
- Write "pull here" on the paper strip.

Step 8

- Draw buttons, dials, the current year, or any other decorations on your robot.
- Don't forget to sign the back!
- Glue on a loop of string for hanging.
- Merry Xmas!

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