V1.0 | APRIL 2022

Spinning Light Wand Toy Adaptation
ASSEMBLY GUIDE

Required Components

BOM

1. Spinning Wand Toy
2. 3D Printed Base
3. 3D Printed Base Bottom Cover
4. 3.5 mm Mono jack
5. 2X 20 cm 26AWG multi-core wire or stranded wire (24-26 AWG)

Required Tools

- #0 Phillips Screwdriver
- Flat head screwdriver
- Soldering Iron
- Hot Glue Gun
- Solder
- Hot Glue Sticks
- Super Glue

Required Personal Protective Equipment (PPE)

- Safety Glasses

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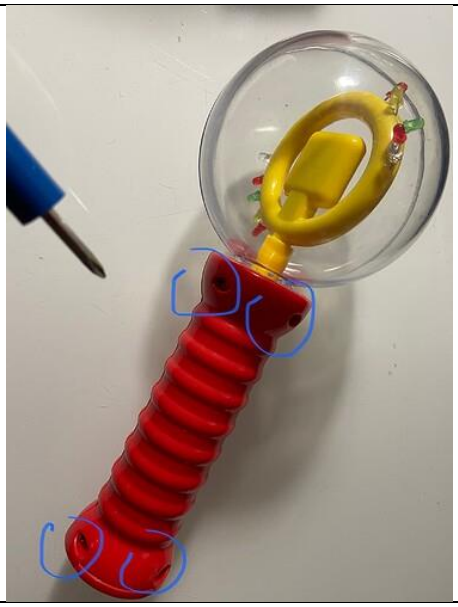
Assembly Instructions

Step 1

Loosen the screw and remove the battery cover and batteries. **CAUTION!** The springs on the battery contacts may cause the batteries to be ejected forcibly.	

Step 2

Unscrew the four (4) screws on the back of the Spinning Light Wand. Reference the image below. Store the screws for later reassembly. CAUTION! Don't lose the screws.	

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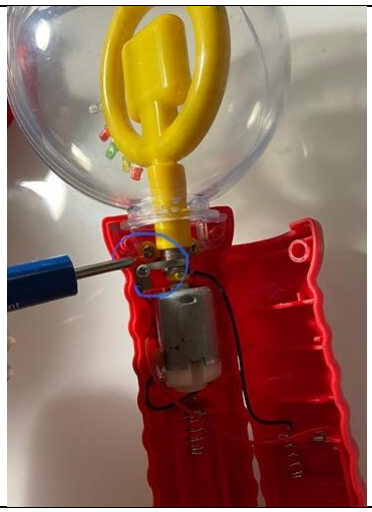
Step 3

Gently pry apart the two halves of the handle along the seam using a flat head screwdriver.	

Step 4

Remove the screw holding the motor down. marked in photo and remove the piece of metal contact. Keep the screw for later reassembly. CAUTION! Don't lose the screw or the metal contact.	

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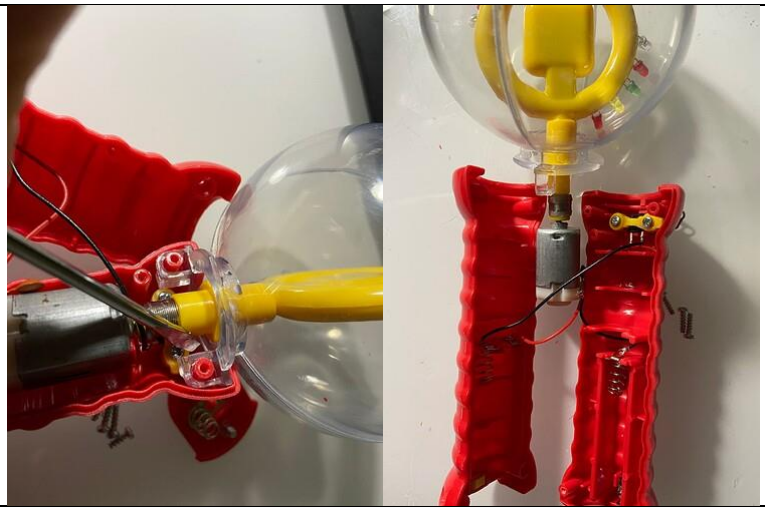
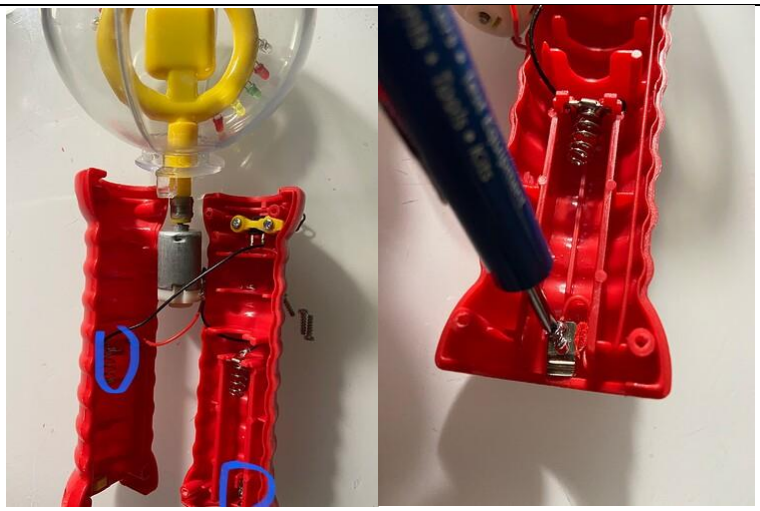
Step 5

Gently pry the clear globe free from the button half of the handle The motor and the clear globe is part of the same assembly, carefully lay all the part out, and try and avoid putting strain on any of the solder joints.	

Step 6

De-solder the wires at points marked on the photo. For the bottom red wire, it may be easier to you unscrew and remove the metal clip from the plastic shell first	

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Step 7

Unscrew the screws attached to the yellow piece shown below. Remove and discard the entire button assembly. They are no longer needed.	

Step 8

Split 5 cm of the wires. If you are using multi-conductor wire, strip the red wire.	

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Step 9

Solder the red wire to the bottom metal clip and route the wire as shown below.	

Step 10

Trim back the black wire, the length of black wire should reach the battery clips in the middle of the handle. Strip the black wire.	

Step 11

Solder the black wire to the battery clip.	

Step 12

Thread the wires through the hole that the button occupied. Avoid leaving too much slack on the wires inside as it might interfere with the moving bits.			
Route the wires through the inside of the handle as shown.			

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Step 13

Apply hot glue to fill up space between the wire and the hole, to add strain relief to the wire	

Step 14

Start reassembling the wand by putting the globe and motor assembly back into the half of the handle with the button hole. Note the alignment of the motor and the clear globe. See photos.	 

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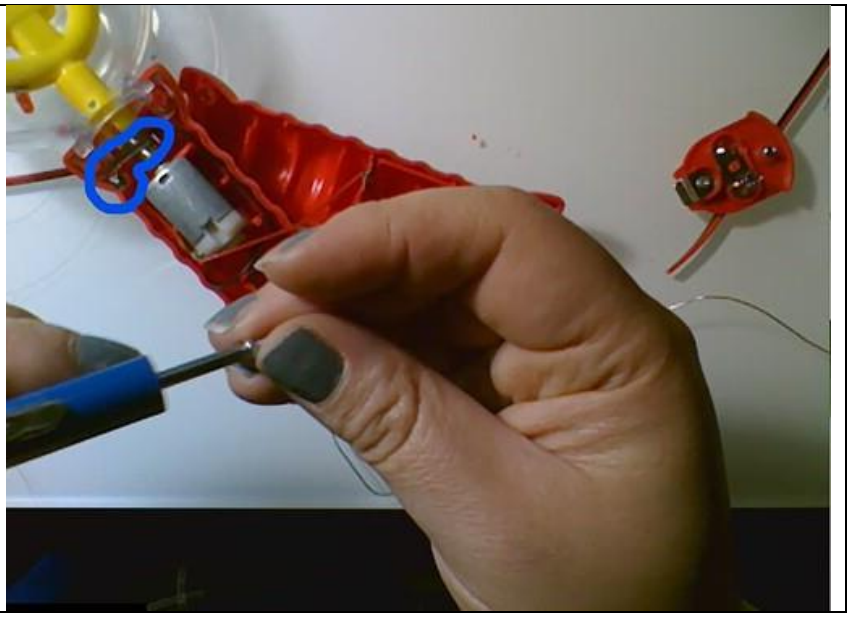
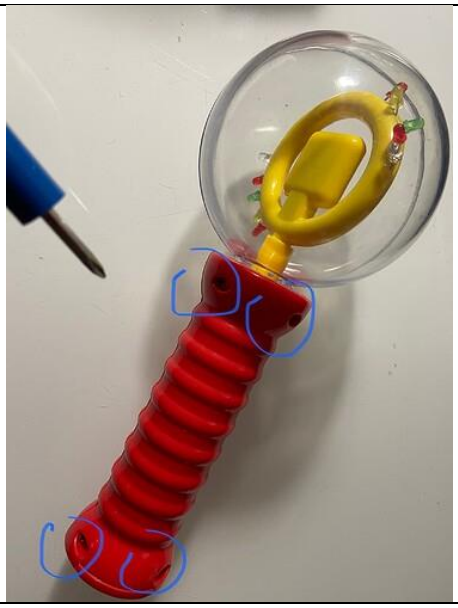
Step 15

Reattach the L-shaped metal contact. Replace the screw.	

Step 16

Snap the handle closed, being careful not to pinch any wires inside. Replace all four screws. Re-insert the battery and tighten the battery cover screw.	

Step 17

Test the switch adaptation.

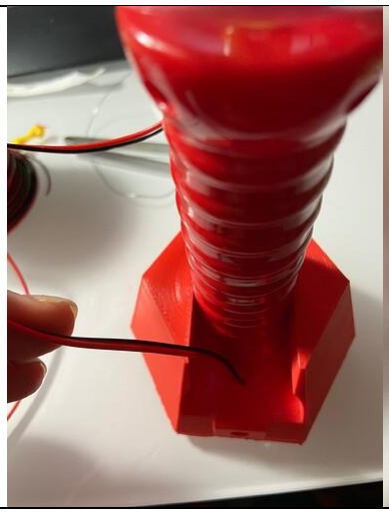
Strip the other end of the wire and touch them together. If all goes well, the motor should spin and the light would come on. If not, re-open the handle and check:

- wiring: no cold solder joints or frayed/pinched wires
- mechanical interference: now wires are rubbing on the axle
- the L-shaped metal piece is making good contact against the spring on the motor axle.

Step 18

Slide the wand into the stand. Make sure the battery cover is lined up with the opening in the stand.	 

Step 19

Thread the wire through the opening of the stand. Solder the wires to a mono jack as shown in photo. The wires should attach to the tip and sleeve contacts on the jack.	 

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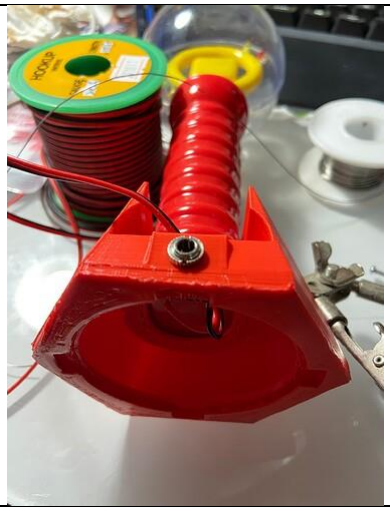
Step 20

Insert the jack into the hole in the base. Thread on the nut to secure the jack in place.	

Step 21

Superglue something heavy like two hex nuts to the Base Bottom Cover to weigh the stand down.	

Step 22

Assemble the base bottom cover into the base.	