

Broken Lightbulb Badge Assembly

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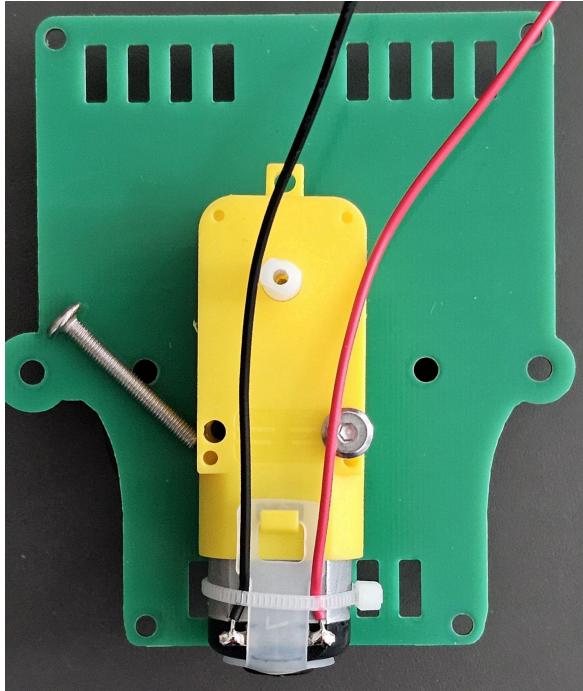
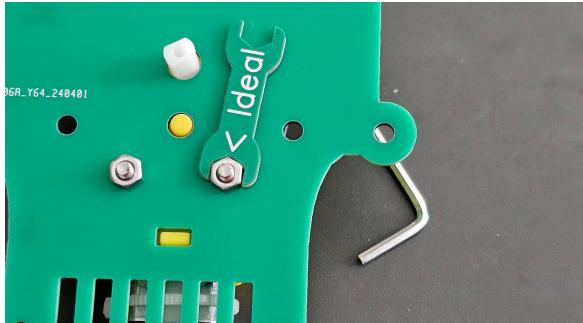
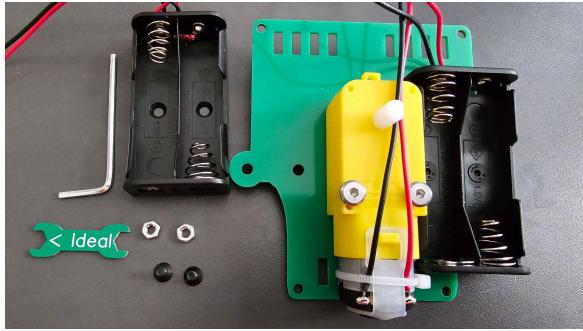
This badge is a magnetic mixing plate to stir liquids, like drinks or lab chemicals.

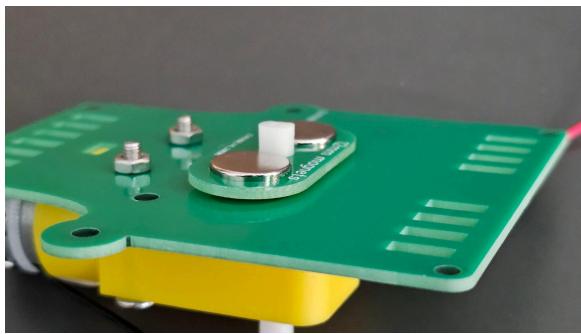
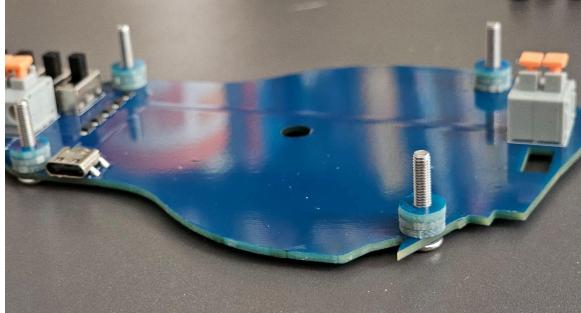
Parts:

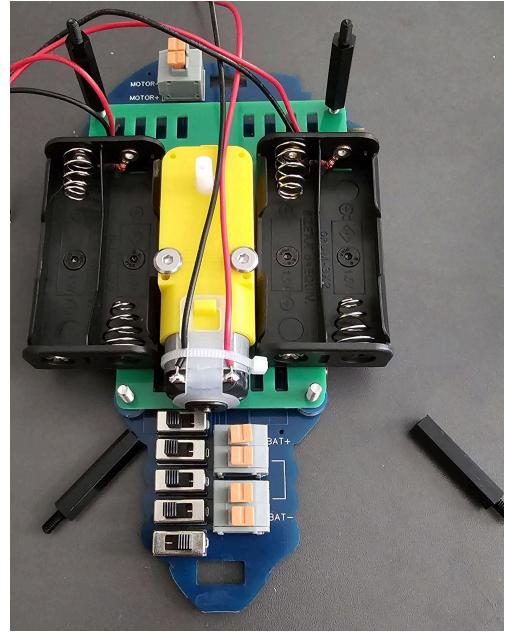
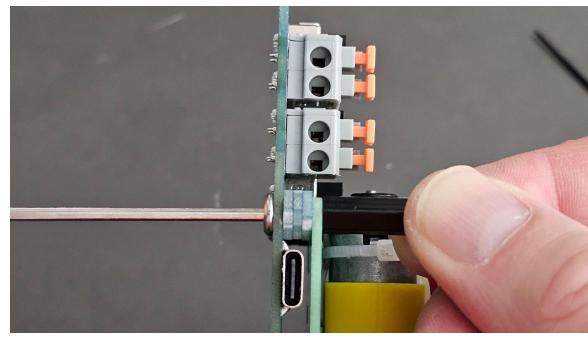
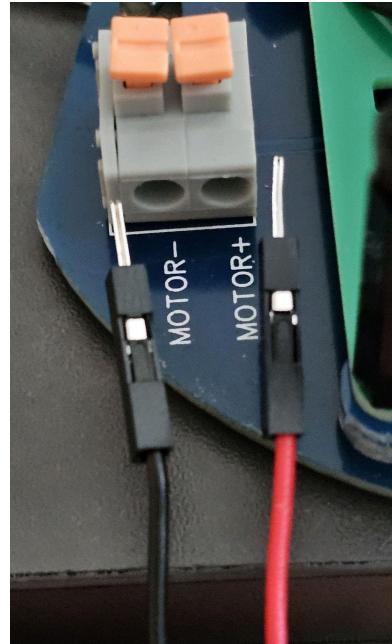
Qty	Description	Picture
1	Broken lightbulb PCB Front and back shown Graphics and color may differ	
1	Lanyard	
1	"12mm magnets" holder	
2	12mm disc magnets, reflective chrome	
2	Battery holder	
4	AA batteries	

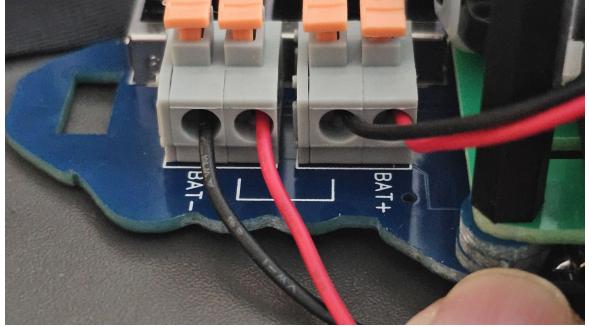
1	Motor mount. (Green or wood) Kind of looks like a skull.	
1	“< Ideal” wrench (Green)	
12	Fiber washers (Blue)	
1	Yellow motor	
2	M3 x 25mm bolts (Chrome)	
1	Hex key (Chrome)	
6	Hex nuts (Chrome)	
4	M3 x 6mm bolts (black)	
4	Acorn nuts (Black)	
4	Standoffs (Black)	
4	M3 x 16mm bolts (Chrome)	
1	Magnetic stir rod (White)	
2	Zip ties (Black)	

Assembly:

Step 1	Attach the motor to the mounting plate with the 25mm bolts. Match the picture because the board is not symmetrical. Install so the wires are away from the board.	 A photograph showing a yellow DC motor mounted onto a green rectangular PCB (Printed Circuit Board). Two silver Phillips head screws are visible, securing the motor to the board. A black wire and a red wire extend from the motor's terminals through holes in the board. The board has several cutouts and mounting holes.
Step 2	Add nuts to the bolts going through the motor and plate. Tighten them with the included wrench and hex key. Do not tighten enough to crack the plastic.	 A photograph of the green PCB with the yellow motor attached. Two silver nuts have been placed onto the two bolts that were previously secured with Phillips head screws. A green hex key wrench is resting on the board next to the nuts. The board is labeled "96A_Y64_24B481".
Step 3	Install the battery holders. The wires should be toward the wide end of the board. Each holder uses two black flathead M3 x 6mm bolts. Tighten the chrome nuts the same way as Step 2.	 A photograph of the green PCB with the yellow motor and two black battery holders installed. The wires from the motor and the battery holders are visible. Two green hex key wrenches are on the board, one near each battery holder. The board is labeled "96A_Y64_24B481".

Step 4.1	<p>The magnets need to be installed with opposite poles facing up. They will stick together on the edges if they are aligned like the picture.</p>	
Step 4.2	<p>Lay the magnet holder on a hard flat surface and push the magnets into the round holes. This will require significant pressure. The magnets will be flush with the bottom of the holder.</p>	
Step 5	<p>Add the magnet array to the motor's axle that sticks through the mounting plate. Align this carefully before pushing the pieces together. The boards should be at least 1mm apart.</p>	
Step 6	<p>Add the M3 x 16mm bolts through the badge face and stack three fiber washers as shown. Do not try to pick up the board, as the bolts will fall out.</p>	

Step 7	<p>Place the motor mount so it aligns with the M3 x 16mm bolts and seat it fully down. Add the standoffs to the exposed bolts, but do not worry about getting them tight. These are just here to keep the parts from flying off when we pick it up.</p>	
Step 8	<p>Tighten the standoffs with the hex key and your fingers. Do not over-tighten.</p>	
Step 9	<p>Run the motor wires to the spring-loaded wire connectors.</p> <ul style="list-style-type: none"> • Red wire is positive (+) • Black wires are negative (-). <p>To insert wires, push down the orange button, slide in the wire, and release the button.</p>	

Step 10	<p>Insert the battery pack wires into the connectors as shown. Each pack will go to one connector.</p>	
Step 11	<p>Install the batteries and flip the switches to ensure the motor moves. Add the lanyard to the top or bottom, depending on how you wish to wear it. Add the black acorn nuts to the standoffs. Wrangle the wires with the zip ties.</p>	
Step 12	<p>Add the stir bar or a magnetic accessory board, and you are done!</p>	