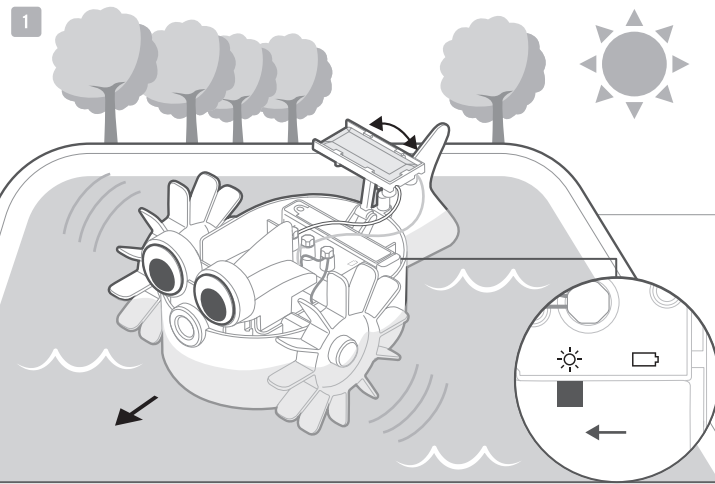
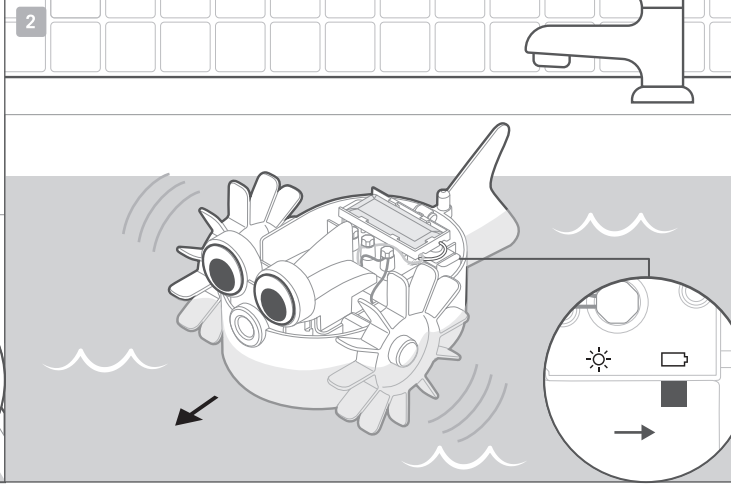


F. OPERATION

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This is hybrid solar-powered Aqua Robot. It can be powered by solar energy or battery.

1. Place your Aqua Robot in a water tray and put the tray outside in the sunshine, or put the Aqua Robot in an outdoor inflatable pool. Push the switch to the "sun ☀" sign to make the wheels turns using solar power. Twist and tilt the solar panel so that the panel faces the sun. This ensures that the panel collects as much sunlight as possible. Your Aqua Robot is now ready for action!

2. When there is not enough sunlight, slide the switch to the "battery 🔋" sign to make the wheels turn using battery power. Place the Aqua Robot in a bath tub. Your Aqua Robot is now ready for action! When the robot is not in use, move the switch to the "sun ☀" sign to power off.

G. HOW IT WORKS

- Sunlight is a form of energy. When sunlight falls on the solar panel, the solar cells in the panel convert some of this light energy into electricity. Electric current flows from the cells to the motor, making the motor turn. Switching to battery power allows electricity from the battery to flow to the motor instead.
- The gears on the gearbox reduce the speed of the motor to a slower speed for the paddle wheels. The paddle wheels push water backwards, which makes the robot move forwards.

H. TROUBLESHOOTING

If the robot does not move in solar-powered mode or battery mode:

- Check that you have made the correct connections on the terminal blocks (see section E, step 6).
- Check that the bare metal on all the wires is in contact with the metal terminals.

If the motor does not run in solar-powered mode:

- The sunlight may not be strong enough. Adjust the angle of the panel so that it directly faces the sun.
- Check that the gears are lubricated. Friction between the gear wheels will affect the performance of the motor.
- Slightly turn the paddle wheel to get it started.

If the motor does not run in battery mode:

- Check that you have a fresh battery and that the battery is inserted into the battery holder the correct way round.
- Check that the gears are lubricated. Friction between the gear wheels will affect the performance of the motor.
- Slightly turn the paddle wheel to get it started.

If water spills into the body during use, remove the water with a cloth or dryer.

I. FUN FACTS

- The word 'hybrid' means a mixture of two different things. The Aqua Robot uses a hybrid power system that combines solar power and battery power.
- Hybrid solar / battery power systems are used in many small devices, such as calculators, radios and watches.
- In many hybrid solar / battery systems, spare energy from the solar cells is used to recharge the battery.
- Experimental hybrid solar cars have been built. However, solar cells alone cannot provide enough power to move a heavy car.
- There are several experimental robotic fish that swim in the same way as fish, moving their tails from side to side. Using natural movements in robots like this is called biomimicry.
- A scientific swimming robot called Sailable travels across the ocean using a hybrid of sail, solar and battery power.

**QUESTION AND COMMENTS:** We value you as a customer and your satisfaction with this product is important to us. If you have comments or questions, or you find any part of this kit missing or defective, please do not hesitate to contact our distributor in your country. You will find the address printed on the package. You are also welcome to contact our Marketing Support Team: Email: [infodesk@4m-ind.com](mailto:infodesk@4m-ind.com), Fax (852) 25911566, Tel: (852) 28936241, Web site: [WWW.4M-IND.COM](http://WWW.4M-IND.COM)

# HYBRID SOLAR-POWERED AQUA ROBOT

PLEASE SCAN THE QR CODE FOR VIEWING MULTI-LANGUAGE INSTRUCTIONS.



FR. Veuillez scanner le code QR pour afficher les instructions multilingues pour ce kit. DE. Bitte scanne den QR-Code, um die mehrsprachige Anleitung für dieses Set anzusehen. NL. Scan de QR-code om de instructies voor deze set in verschillende talen te bekijken. IT. Scansiona il codice QR per visualizzare le istruzioni multi-lingua per questo kit. ES. Escanee el código QR para ver instrucciones en varios idiomas para este kit. JA. QRコードをスキャンして、本キットの多言語説明書をご覧ください。

**WARNING:**  
CHOKING HAZARD - Small parts  
Not for Children under 3 years.

TO PARENTS: PLEASE READ THROUGH THESE INSTRUCTIONS  
BEFORE GIVING GUIDANCE TO YOUR CHILDREN.

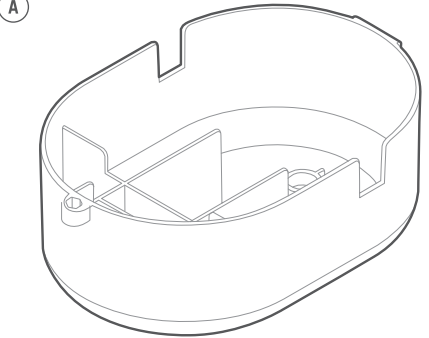
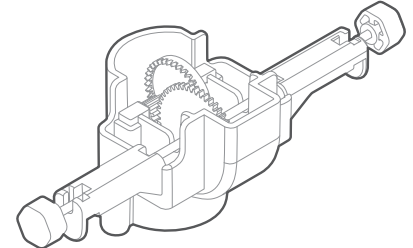
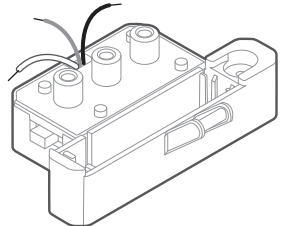
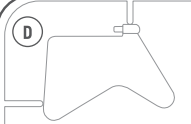

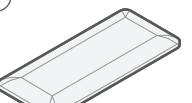
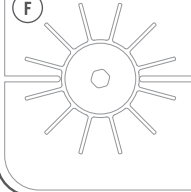
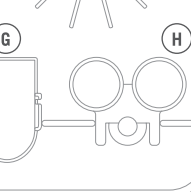
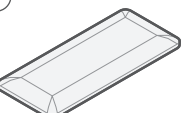
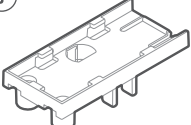

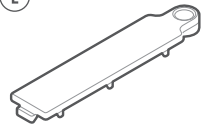
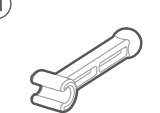
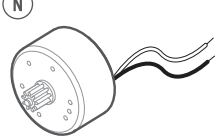
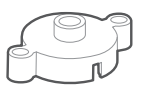

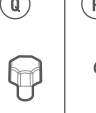

A. SAFETY MESSAGES

1. Adult supervision and assistance are required at all times.
2. This kit is intended for children over 5 years of age.
3. This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old.
4. Do not attempt to take the solar panel apart.
5. To prevent possible short circuits, never touch the contacts inside the battery case with any metal objects.
6. Only install battery after you have assembled the product. Adult supervision is required.
7. The toy is to be operated in water only when fully assembled in accordance with the instructions.

B. USE OF BATTERY

1. Requires one 1.5V AAA battery (not included).
2. For best results always use fresh battery.
3. Make sure you insert the battery with the correct polarities.
4. Remove the battery from the kit when not in use.
5. Replace exhausted battery straight away to avoid possible damage to the kit.
6. Rechargeable battery must be removed from the kit before recharging.
7. Rechargeable battery should be recharged under adult supervision.
8. Make sure that the supply terminals in the battery case are not short circuited.
9. Do not attempt to recharge non-rechargeable battery.

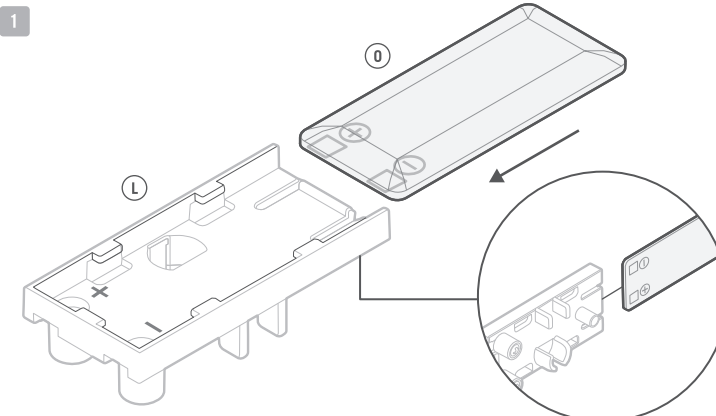
C. CONTENTS

<div>A</div> 	<div>B</div> 	<div>C</div> 
<div>D</div> 	<div>E</div> 	<div>F</div> 
<div>G</div> 	<div>H</div> 	<div>I</div> 
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<div>X 2</div>	<div>X 3</div>	<div>X 5</div>

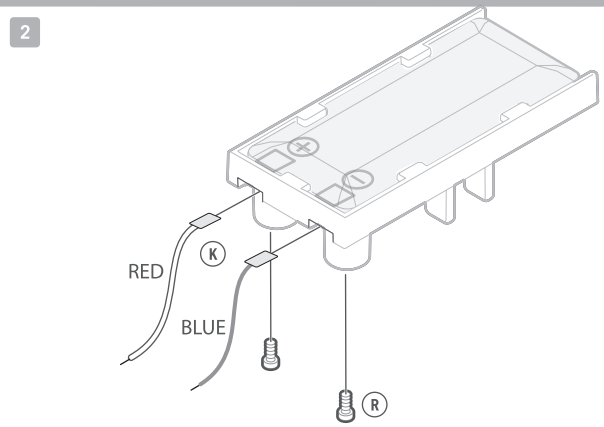
Part A: Body x 1, Part B: Gearbox x 1, Part C: Battery holder x 1, Part D: Tail x 1, Part E: Paddle wheel, Part F: Paddle wheel, Part G: Gearbox cover x 1, Part H: Eye support x 1, Part I: Solar panel x 1, Part J: Solar panel holder x 1, Part K: Pair of wires x 1, Part L: Battery cover x 1, Part M: Support arm x 1, Part N: Motor x 1, Part O: Motor cover x 1, Part P: Eyes x 2, Part Q: Terminal caps x 3, Part R: Screws x 5, Also required but not included with this kit: Small crosshead screwdriver, one 1.5 V AAA battery.

D. ASSEMBLING THE HYBRID SOLAR-POWERED UNIT

1



2



1. Examine the solar panel. At one end of the bottom side (the flat side) you will find a "+" and "-" sign. With the "+" and "-" signs facing forwards, slide the panel into its holder until it clicks into place.
2. On the underside of the solar panel holder, there are two connections for wires with screw holes. Refer to the position as shown, slide the tab on the blue wire into the right-hand connector. Secure it with one of the screws. Slide the tab on the red wire into the left-hand connector and secure it with a screw.

3. Clip the solar panel holder onto the top joint of the supporting arm.

4. Clip the solar panel holder onto the battery holder.

### E. ASSEMBLING THE ROBOT

Remark: It is recommended that you apply some lubricant to the joints or moving parts when assembling the product. This helps to reduce friction and enhance mechanical performance. You may use some cooking oil or lotion for this purpose. In the instructions, the "oil drop symbols" indicate the areas which may require lubrication.

1. Slot the motor into the gearbox.
2. Secure the gearbox cover with two screws.
3. Turn the gear box upside down and slot it into the body. The pin on one end of the gearbox should slot into the cylinder inside the body.
4. Slot the Hybrid Solar-Powered Unit (assembled in section D) into the body. The battery container fits into the recess in the body as shown in the diagram.

5. Find the three red wires (one from the Hybrid Solar-Powered Unit (assembled in section D), one from the solar panel, and one from the motor). Push the bare metal ends of these wires into one of the terminals. Repeat with the two blue wires in the central terminal. Repeat with the two black wires in the remaining terminal. Add three terminal caps to keep the wires in place.
6. Follow the diagram to ensure the wires are connected correctly.
7. Stick the two eyes onto the eye holder.
8. Slot the eye holder onto the rim of the body.
9. Clip the gearbox cover over the gearbox.
10. Slot the tail onto the back of the body.
11. Push the two paddle wheels onto the ends of the axles.
12. Insert a 1.5 V AAA battery into the battery compartment and secure the cover with a screw. You can move the solar panel out of the way if you need to. After moving the solar panel, place the wires within the body area.