WIND TURBINE

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。

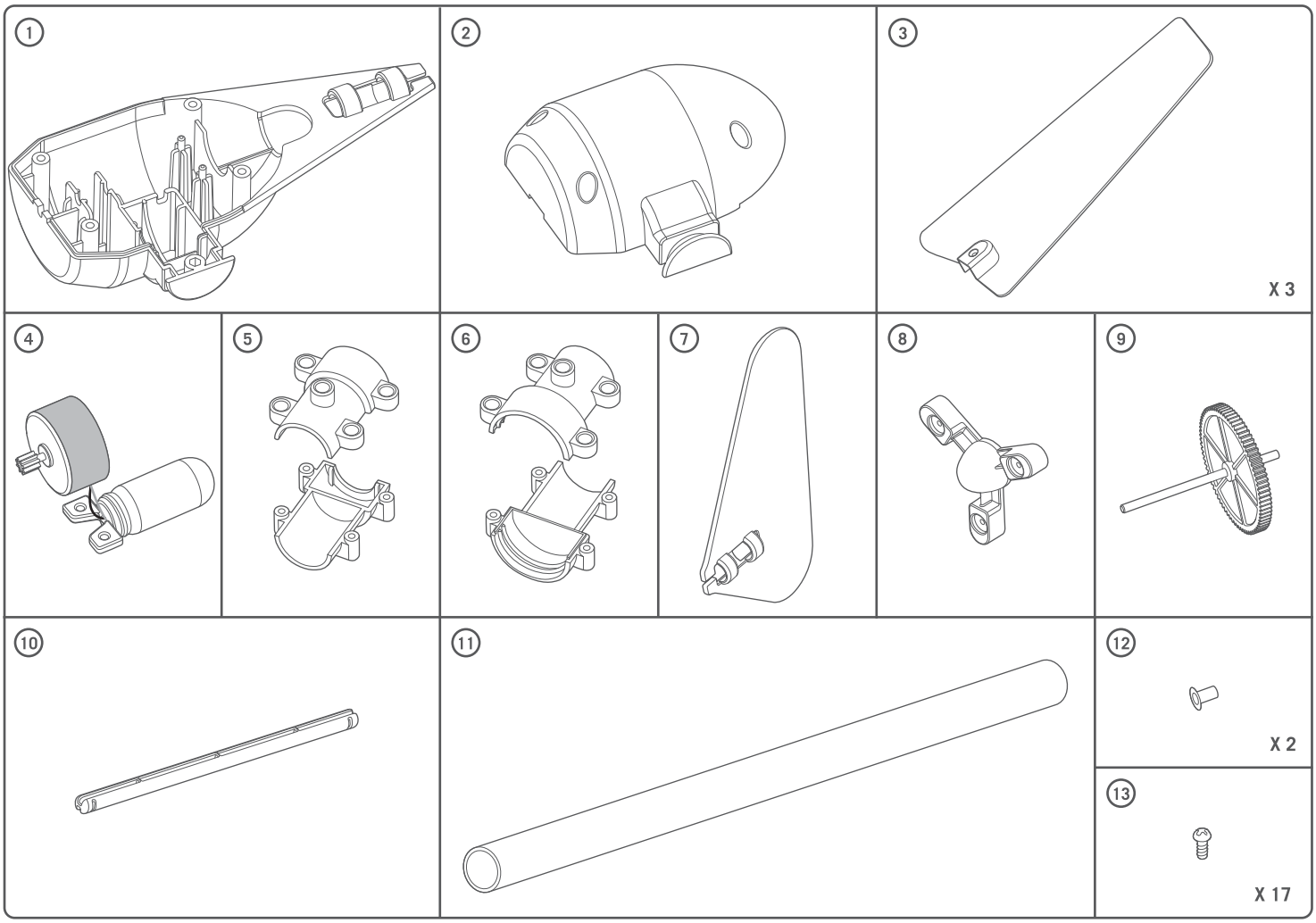
⚠ WARNING:
CHOKING HAZARD - Small parts
Not for Children under 3 years.

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

A. SAFETY MESSAGES

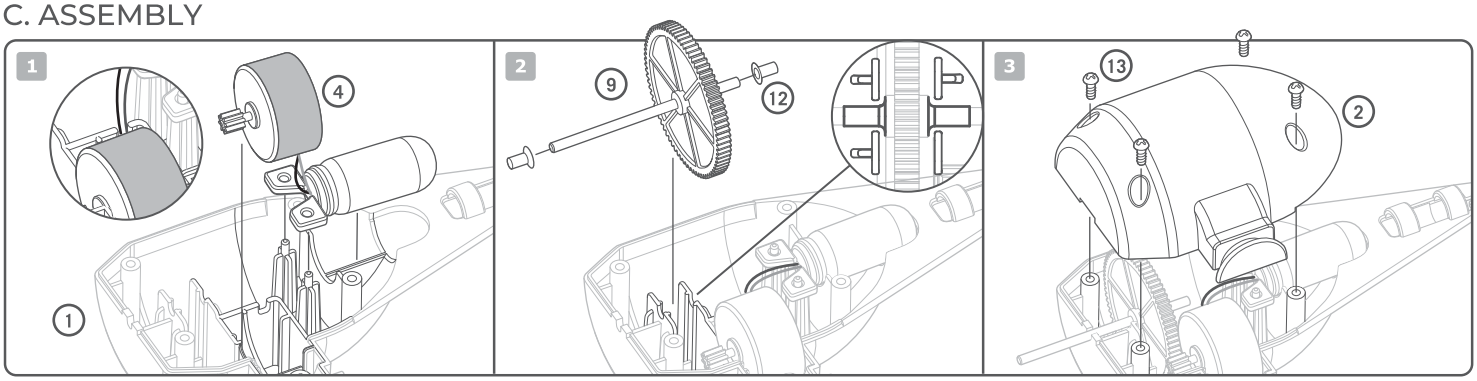
1. Please read these instructions carefully before assembling the model.
2. Adult supervision and assistance are recommended at all times.
3. This kit is intended for children over 5 years of age.
4. This kit and its finished product contain small parts which may cause choking if misused. Keep away from children under 3 years old.
5. You are advised to wear eye protection and gloves when the wind generator is working, as strong winds may cause parts to fly off.

B. CONTENTS



Part 1: Nacelle body x 1, Part 2: Nacelle cover x 1, Part 3: Rotor blade x 3, Part 4: Generator and LED assembled x 1, Part 5: Bearing halves pair x 1, Part 6: Tower halves pair x 1, Part 7: Tail fin x 1, Part 8: Rotor hub x 1, Part 9: Gear wheel on axle x 1, Part 10: Tail boom x 1, Part 11: Tower x 1, Part 12: Metal sleeve x 2, Part 13: Screw x 17. Also required, but not included in the kit: a small crosshead screwdriver and a clean 2-litre soda bottle.

C. ASSEMBLY



1. Carefully insert the generator and LED assembly into the nacelle body (this is the longer half of the nacelle). The generator's shaft and gear must point to the flat end of the nacelle, and the pins in the nacelle must fit into the holes in the LED casing.
2. Slide a metal sleeve onto each end of the gear wheel's axle, and slide them along until they touch each side of the gear wheel. Place the gear wheel and axle into its slot in the nacelle body so that the teeth on the gear wheel interlock with the teeth on the generator's gear.
3. Place the nacelle cover over the body and secure it with four screws.

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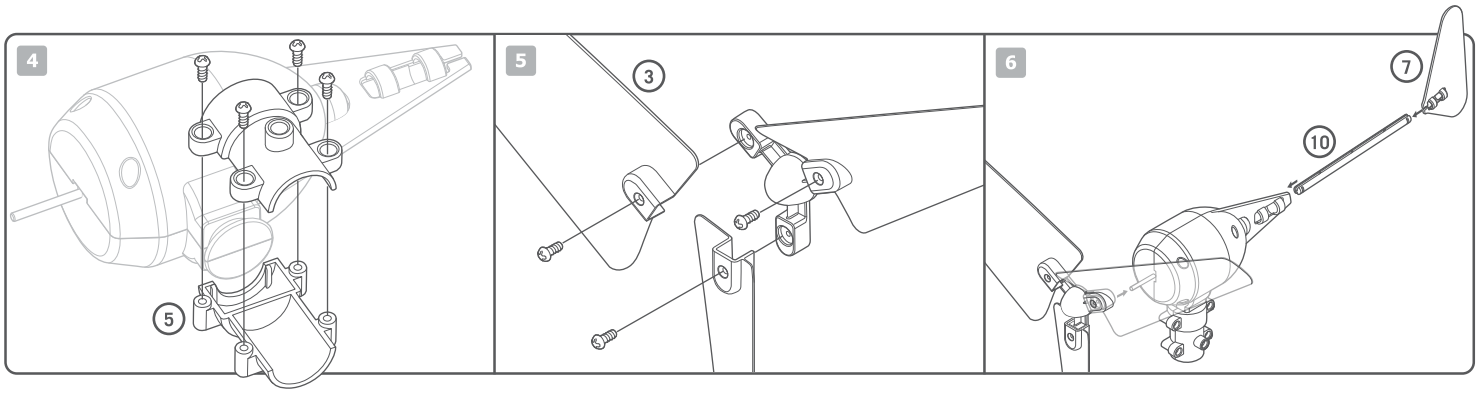
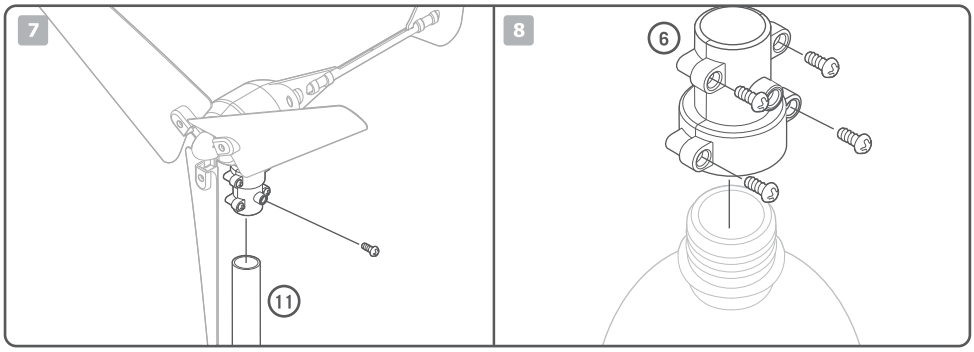
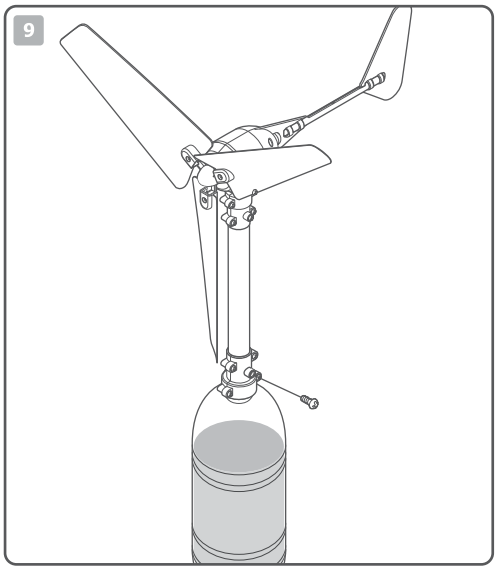


4. Join the bearings together with the base of the nacelle slotted freely within the gap provided. Apply some lotion to reduce friction. Secure the bearings with four screws.
5. Slot the three rotor blades onto the rotor hub and secure each one with a screw.
6. Push the tail boom into its slot on the rear of the nacelle, and push the tail fin onto the end of the boom until it clicks into place. Carefully push the rotor hub onto the axle on the nacelle. Now test your turbine by spinning the rotor anti-clockwise with your finger and check if the LED on the back of the nacelle turns on.

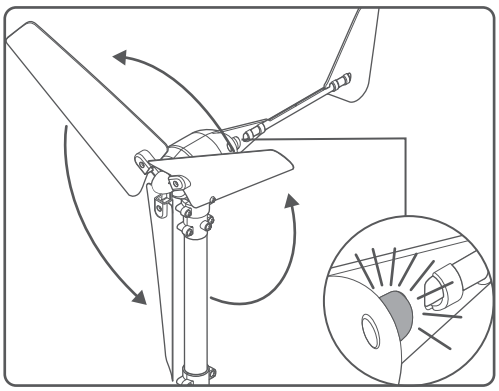




7. Slot the nacelle bearing onto one end of the tower and secure it in place with one screw.
8. Fill a clean 2 litre soda bottle with water. Screw the two halves of the tower base together with 4 screws. Install the tower base on the neck of the bottle. (Note: Use sand to fill the bottle if it is not heavy enough to support the nacelle.)
9. Slot the tower with nacelle into the tower base on the bottle and secure it with one screw. Your wind turbine is now ready to go!

D. OPERATION

Place your wind turbine outdoors as far as possible from trees and buildings to ensure that the wind is not obstructed. If necessary, stand the wind turbine on a table to help it catch the wind. When the wind blows, the nacelle should turn so that the rotor faces towards the wind, and the rotor should begin to turn. When the rotor spins above a certain speed, the LED on the back of the nacelle will light up, indicating that the generator is producing electricity.



E. HOW IT WORKS

Your wind turbine turns wind energy into light. The logic behind this technology is simple - wind is simply moving air, and anything that's moving has energy. The angle of the blade converts linear wind energy into a rotational force, and this makes the rotor spin. The wind turbine then captures the wind energy and transfers it to the generator through the rotor hub and the axle. The generator turns the kinetic energy from the rotor into electricity, which powers the LED.
The wind vane keeps the rotor pointing towards the direction of the wind to ensure that the rotor catches as much wind as possible. If the rotor is sideways on to the wind, the wind pushes on the side of the vane, which makes the nacelle spin until the rotor is facing the wind.

F. FUN FACTS

- Wind energy is a form of renewable energy. It is renewable because the world's winds will never stop blowing (even though the wind does not necessarily blow all the time in all places).
- Wind energy originates from the Sun, because the Sun's heat makes the world's winds blow.
- The world's biggest wind turbine is the Vestas V164. It is 220 metres high, and each of its three rotor blades is 80 metres long. It can produce enough electricity for a small town.
- The world's biggest wind farm is currently being built in the Chinese province of Gansu. By 2020 it will be producing 20 gigawatts of electricity — enough to power several of China's largest cities.
- Windmills used the power of the wind to grind wheat to make flour.
- Wind pumps are used to pump water up from underground, or to pump water out of saturated ground.

QUESTION AND COMMENTS: We value you as a customer and your satisfaction with this product is important to us. If you have any comments or questions, or if any parts of this kit are missing or defective, please do not hesitate to contact our distributor in your country, whose address is printed on the packaging. You are also welcome to contact our marketing support team via email: infodesk@4M-IND.com, fax (852) 25911566, telephone (852) 28936241, or our website: WWW.4M-IND.COM.