

F. TROUBLESHOOTING

If the motor does not run:

- Check that you are using fresh batteries.
- Check that the batteries are inserted the correct way round in the battery case.
- Check that all four wires are touching the metal terminal caps.

If the Propeller Racer moves backwards:

- The propeller is turning the wrong way. Remove the terminal caps, swap over the wires from the motor and replace the caps. This will make the propeller turn the opposite way.

If your Racer does not run in a straight line:

- Loosen the screws that secure the connecting rods, make sure the rods are pushed all the way into their slots, and re-tighten the screws.

G. HOW DOES IT WORK?

The batteries provide electricity to the motor, which turns the propeller at high speed. The propeller blades force air backwards. The laws of physics say that every force has an equal force that pushes in the opposite direction. So when the propeller pushes the air backwards, the air pushes the propeller forwards. This pushes the Propeller Racer along.

H. FUN FACTS

- A propeller has blades that push air along as the propeller spins. The blades are angled to push the air like a wedge. The blades are twisted because they move much faster at their tips than at their roots.
- Propeller-powered cars are very rare. A propeller car called the Helica was made in France between 1913 and 1926, but only thirty were ever built.
- In 1934 a propeller-powered car reached the dizzy speed of 137 kilometres per hour (85 miles per hour).
- Hovercraft and water-skimming craft are moved by propellers that push through the air instead of propellers under the water.
- Jet-powered cars and rocket-powered cars work in a similar way to Propeller Racer. They send out a stream of gases backwards, which push the cars forwards. The world land-speed record is held by Thrust SSC, powered by two jet engines.

Questions & 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, Fax (852) 25911566, Tel: (852) 28936241, Web site: WWW.4M-IND.COM

PROPELLER RACER

A. SAFETY MESSAGES

1. Adult supervision and assistance are required at all times.
2. This kit is intended for children of ages over 8.
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. To prevent possible short circuits, never touch the contacts inside the battery case with any metal.
5. Examine the plastic propeller carefully before you put in on the motor spindle. If there are any breaks in the blades or the outer rim, do not run the motor. Contact our customer service for a replacement.
6. Do not touch the spinning propeller with your finger or any object.

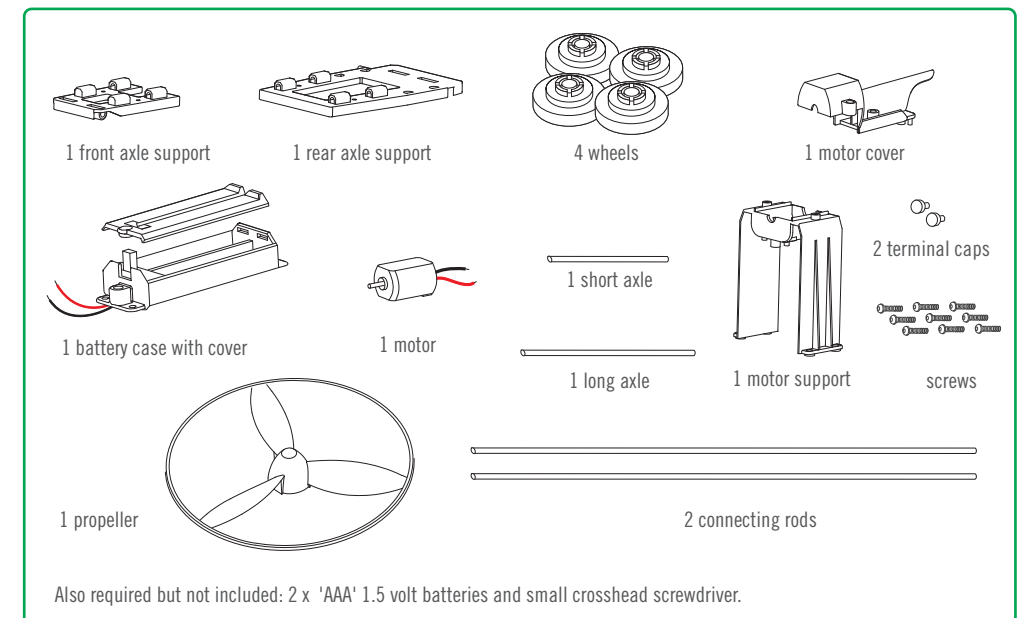
To Parents: Please read through these instructions before giving guidance to your children.



B. USE OF THE BATTERY

1. Requires two 1.5V "AAA" batteries (not included).
2. For best results, always use fresh batteries.
3. Make sure you insert the batteries with the correct polarities.
4. Remove the batteries from the kit when not in use.
5. Replace exhausted batteries straight away to avoid possible damage to the kit.
6. Rechargeable batteries must be removed from the kit before recharging.
7. Rechargeable batteries should be recharged under adult supervision.
8. Do not attempt to recharge non-rechargeable batteries.
9. Do not mix old and new batteries.
10. Do not mix alkaline, standard (carbon-zinc), or rechargeable (NiCd or NiMH) batteries.
11. Make sure that the supply terminals in the battery case are not short circuited.

C. CONTENTS



D. ASSEMBLY

1. Attach the motor support to the rear axle support. The short pins on the motor support fit into the holes in the axle support. Make sure the motor support is the right way round (see diagram - the smaller cut-out in the motor case points forwards). Secure the supports together with four screws.

2. Carefully drop the motor into the motor support, with the wires at the top and the spindle pointing forwards.

3. Feed the motor's wires through the slots in the motor cover and locate the cover over the motor, so that the fin points backwards. Secure the cover with two screws.

4. Feed the two wires from the battery case through the two holes on either side of the fin on the motor cover. Locate the battery case onto the short pins on the motor support and the motor cover. Secure it in place with two screws.

5. Now you need to connect the wires from the battery case to the wires from the motor. There are two terminal holes on the motor cover, one each side of the fin. Push the bare ends of the red wire from the battery case and the red wire from the motor into one hole. Push a terminal cap into the hole to trap and connect the wires. Repeat with the black wires in the other hole.

6. Find the two longest metal rods. These connect the front and rear axle supports. Push the rods into the slots in the rear axle housing. Secure each with a screw screwed into the holes under the support.

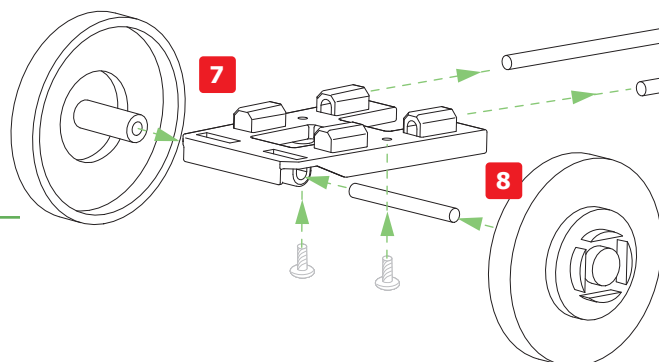
7. Slot the front axle support onto the free ends of the two connecting rods. Secure each with a screw screwed into the holes under the support.

8. Push one wheel onto each axle. Push the longer axle through the slots under the rear axle support, and the shorter axle through the slots under the front axle support. Push a wheel onto the other end of each axle. With the shorter axle, don't push the wheel on too far, otherwise the wheels will press on the support and the axle will not turn freely.

9. Push the propeller onto the motor spindle.

10. Insert two 1.5 V "AAA" batteries into the battery case. The negative terminal (the flat end) of each battery goes against one of the springs in the battery case. If the motor runs, switch the switch to turn it off. Attach the battery case cover with a screw.

Congratulations! Your Propeller Racer is ready to go!



E. OPERATION

Switch the switch on the battery case to make the motor run and the propeller turn. Keep your fingers away from the propeller when you turn the motor on, as it could hurt them.

Put your Propeller Racer on a flat surface and watch it accelerate away. The Racer will work best on a hard, smooth surface, such as a tiled or wooden floor.

Try marking out start and finish lines with string and timing your Racer along the course. How about organising races with your friends?

