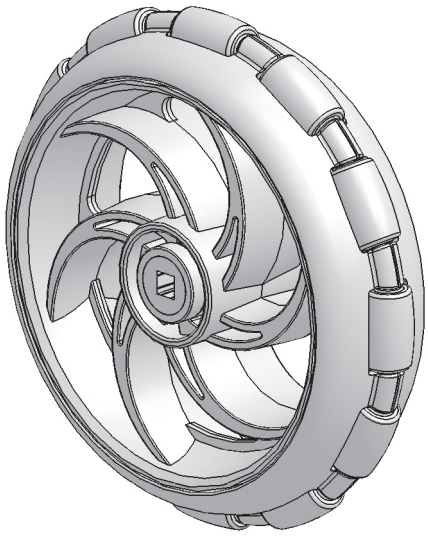
omni-directional wheel kit

As the name suggests, an omni-directional wheel can travel in more than one direction. When the axle spins, it behaves like a normal wheel. However, you'll notice that there are rollers all around the outer circumference. These rollers allow the wheel to travel sideways as well!

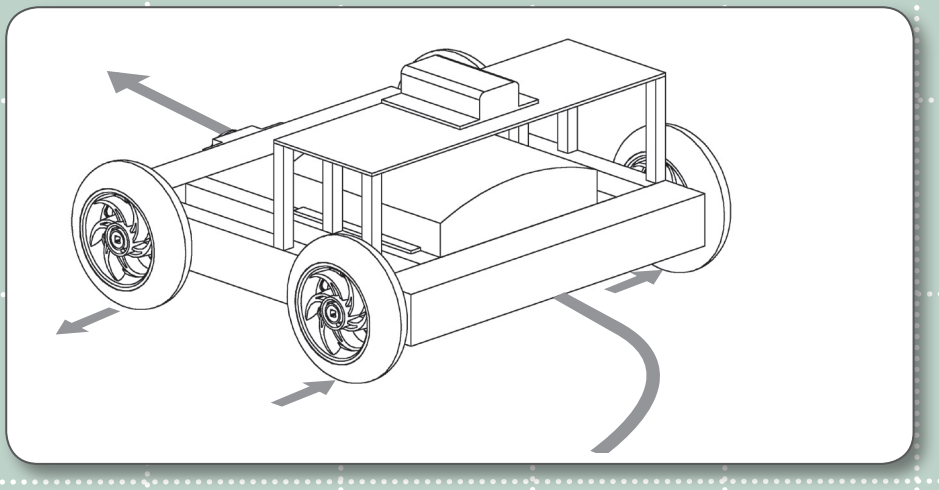
INSERT THIS PAGE at the **back of the Motion chapter** in your Vex Inventor's Guide.

omni-directional wheel x 2

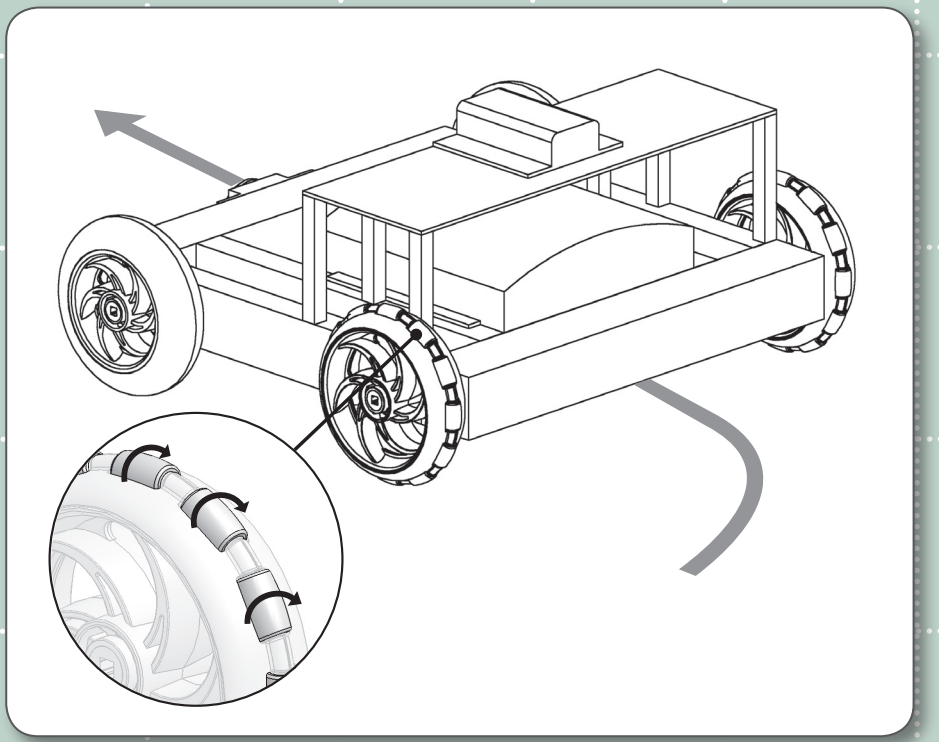


omni-directional wheel kit, continued

The example robot shown in the Vex Inventor's Guide uses two motors to drive four wheels, with each wheel mounted on its own, separate axle. This means that the wheels only move in one axis. To turn the robot, the wheels on one side are driven in one direction, and those on the other side are driven in the opposite direction. This is tank-style driving, and while it's pretty effective, it's not very efficient. You'll notice that the wheels tend to get dragged sideways when the robot turns. This generates a lot of friction, which takes a lot of energy to overcome. Using that extra energy causes your batteries to run down faster.



With an omni-directional wheel, though, the rollers on the circumference mean that the wheel isn't dragged sideways – it rolls smoothly. This means that it takes far less energy to turn the robot.



Innovation One, Inc.
350 North Henderson Street
Fort Worth, TX 76102

08/05

Printed in China

0405