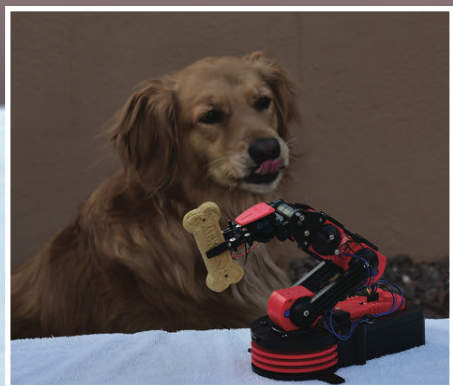


# GET A GRIP WITH A WIRELESS ROBOTIC ARM KIT

By Gary Wollenhaupt



**A**utonomous robots are going to be a fact of life someday – those Boston Dynamics robotic dogs already may be delivering parcels in your neighborhood.

To help kids prepare for careers in mechatronics or the field of building and maintaining automated equipment, parents and grandparents will love the OWI Robotic Arm Edge with wireless control as a gift or a kit to complete together. The wireless version is an upgrade of the previous wired version.

After assembly, users control the robotic arm with wireless control. The gripper opens and closes on command. Movements include radial wrist motion of 120 degrees, an extensive elbow range of motion of 300 degrees and the base rotates 270 degrees.

It's basically a plastic modeling kit constructed with screws, bolts and nuts instead of adhesive or soldering.

However, this is not a "Let's take it home and play with it" kit. It will take an adult a few hours to put everything together. Older teenagers could handle it with some help.

Like any reasonably complex model kit, you have to pay attention to the well-illustrated manual. It starts with a complete component listing of screws, shafts and washers. Watch carefully for the orientation of parts and do the steps as listed. A shortcut won't turn out that way.

*There are plenty of unique uses for a robotic arm around the house, like handing out dog treats.*



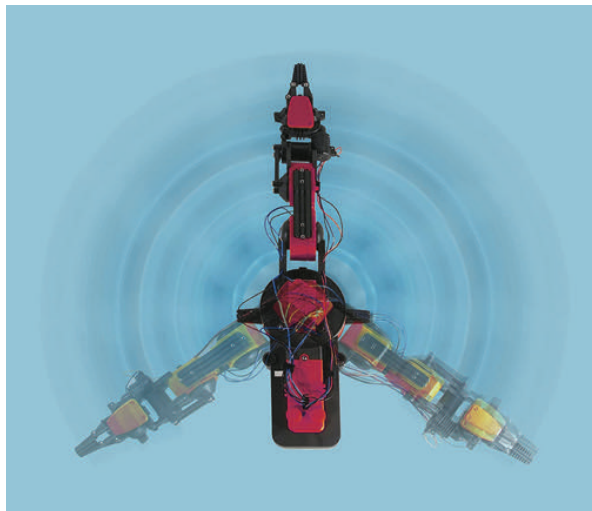
One of the early steps calls for inserting small nuts into recesses on the motor assembly first. I followed the instructions on the first of three assemblies.

On the second one, I thought it would make more sense to do that last so there would be less chance of the nuts falling out. I dropped in three of the four nuts just fine. The final nut is right beside the electric motor, so the magnet in the motor reached out and grabbed the nut from the tweezers. I felt like I was in that episode of Gilligan's Island where Gilligan is struck by lightning and gets magnetized. After that, I followed the process as instructed.

My kit came with most of the plastic bags of screws and small parts numbered to match the materials list. That addresses a complaint I saw in a YouTube video where the builder felt it took a lot of time to compare the screws to the list to make sure he had the right one.

Kits like this are an opportunity to add tools and accessories to the sale. I'd recommend a pair of tweezers, a sprue cutter or something similar and a set of hobby screwdrivers. Most people don't have a set of screwdrivers small enough in the garage. A hobby knife and/or a bit of sandpaper is helpful to get rid of burrs after cutting plastic parts off the runners. In some cases, the burrs could interfere with moving parts.

It also takes four D-size batteries, which are becoming surpris-



*The OWI Robotic Arm Edge with a wireless controller offers exposure to science disguised as hours of fun.*

ingly rare in many stores. I guess the shift to LED flashlights means D batteries are a thing of the past.

The Robotic Arm Edge Wireless has a vertical reach of 15 inches, horizontal reach of 12.6 inches, and can lift 100 grams, or about 3.5 ounces. It includes a search light design on the gripper, and a safety gear audible indicator is included on all five gear boxes to prevent any potential injury or gear breakage during operation.

OWI offers a CD with a curriculum that provides multiple step-by-step activities and experiments for the Robotic Arm Edge Wireless robots in both manual and computer control modes. Students are challenged to measure and record robot specifications, perform experiments, solve problems, record data, reflect

about their activities and answer questions in each robot lab activity. Using the site license that comes with the product, directions may be read off a computer screen or used to create printed masters and copies. Answer keys are provided.

This is a flexible robotics curriculum for individual student use, home schooling, science museums and schools. The CD is Mac and PC compatible.

OWI offers a wide range of STEM kits and accessories and have stepped up their retail distribution channel through Stevens International. **HM**

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