

In 1956, *Boys' Life* readers met "Gismo the Great," a lanky robot they could make from tin cans, wood and electrical parts.

In February 1987, we showed how to build a more modern fellow, GISMO2BL. Thousands of little robots resulted.

Now meet GISMO 3. He is the easiest to build yet, because he sits atop the chassis of a radio-controlled toy truck. There are no motors to wire and no control cables to mess with.

GISMO 3 is remote-controlled and wickedly quick. You can direct his moves from up to 70 feet away.

The basic robot can be built for about \$65. He will cost even less if you can find parts around the house.

Gismo Is Back

Meet—*and build!*—

the popular robot using these plans that first appeared in our September 1990 issue.

You can buy the parts you need at department and hardware stores. (See box on page 28 for a list of parts you'll need.)

GISMO 3's head is a clear plastic storage container. He has red lights for eyes. His body is a durable plastic wastebasket. His arms consist of flexible hose. For hands, we used ribbon cartridges from a computer printer.

The heart of GISMO 3 is a radio-controlled truck chassis, including motor and wheels. Choose a truck



with four-wheel drive. It will have a rugged motor and good traction.

We used a Radio Shack truck. With high ground clearance and big tires, it runs well even on carpet. Other r/c trucks will work too; note that wiring will vary from that shown on our plans. [The 1996 version of this truck does not have wires for GISMO's eyes.]

What can GISMO 3 do? The only limits are your imagination, skill and budget.

Give GISMO 3 a high-tech look by using an old circuit board under his clear dome. It will be his electronic "brain." Or try a metallic look, as our artist did (page 27), with some kitchen utensils. Mount a tray on GISMO so he can carry things.

A tape player or walkie-talkie hidden inside will give GISMO 3 the gift of gab.

Let's Start Building

1. Buy a radio-controlled truck. Add batteries. Test-drive the truck before you remove the chassis. Stores might not honor the warranty afterward.

2. Remove the screws that hold

the truck body to the chassis. Carefully lift off the body, working the antenna wire through the hole. (Some trucks will have a winch assembly; remove this first. Don't forget the screws in the cargo bed.) Save body parts and screws.

3. Remove the screw that holds the on/off switch to the chassis. Move this switch to the right side of the chassis, facing down, where it will be easy to reach. Glue the side of the switch to the chassis with a small amount of epoxy. Don't get glue on the sliding part. Tape or clamp it in place and let dry.

4. Center the 2-by-2-inch wood blocks and chassis, wheels up, on the wastebasket body. Mark and cut the blocks so they fit snugly inside the wastebasket. Glue the blocks to the flat part of the wheel wells. Check the fit inside the wastebasket, then set aside to dry.

5. Build the arms. Apply glue inside the hoses and push them onto the plastic pipe fittings. Twist gently to work them into place; it will be a tight fit. Set aside to dry. You might want to insert bent coat-hanger wires to stiffen the hoses.

6. Mark locations for the arms on the sides of the wastebasket. Carefully cut holes in the soft plastic. Make them small enough for the pipe fittings to fit snugly.

7. Center the food-storage container's lid on the bottom of the wastebasket. Use an awl or drill to make a hole through both. Attach the lid with a nut, bolt and two washers. Make a second hole to wire the eyes.

8. This step is optional because "GIS" doesn't need eyesight to motor around. But if your truck has an on/off indicator light or headlights, a bit of simple wiring can give your robot glowing eyes. Here's how to do it: Remove the on/off indicator light from the chassis and cut the two wires close to the light. Check the instruction booklet or look for markings that will determine which wire is positive and which is negative. Next, prepare two 40-inch lengths of wire for each eye. Strip 3/8-inch of insulation off the wire ends. Solder the wires to the LED lights. (See diagram.)

Mark locations on the clear container for the eyes, and carefully drill holes. Route the wires through the holes, and press the LED's gently until they snap in place. Run the wires through the "neck" hole and into the body. Snap the head in place.

Now, attach the positive eye wires to the positive truck wire, and the negative wires to the negative truck wire using wire nuts or solder. (See diagram. The positive wires are those attached to the longer prongs on the LED "eyes.")

9. Mount the wastebasket to the chassis's wooden blocks with small wood screws. Be sure there is enough clearance for the wheels to turn and move freely.

GISMO 3 is now complete. Dress him up however you like. Paint him. Glue on some plastic parts to make him look more robotic. You may even want to add a cargo compartment.

If you have some experience with electronics or radio-controlled vehicles, you might want to use the switching circuits in the receiver board to operate other accessories such as lights, buzzers, moving arms or a speaker. ✦

—Mark Haverstock

GISMO'S PARTS

1. Chassis from a radio-controlled truck or tank, \$49.99.
2. Two red snap-in LED lights for eyes (Radio Shack catalogue no. 276-018), \$2.19.
3. Plastic wastebasket, 20-quart or larger, \$4.99.
4. Plastic storage container, \$2.97.
5. Two 1 1/4-inch, 90-degree plastic pipe fittings, \$1.89.
6. Two 12-inch lengths of pool hose, \$1.99.

TOTAL: \$64.02

You'll also need two 1-foot lengths of 2-by-2-inch lumber, alkaline batteries, screws, wire, epoxy glue, tape and solder or small wire nuts.

Build My GISMO '96

If you build GISMO 3, send a color photograph along with a brief description to "My GISMO '96," *Boys' Life*, S216, P.O. Box 152079, Irving, TX 75015-2079. We'll feature some in a later issue. Come on, guys. Let's see how creative you can be.

ROBOT ASSEMBLY

HEAD →

Base of head is attached with bolt, washers and nut.

ARM

← **BODY (wastebasket)**

Wooden mounting blocks glued to chassis

Wires to eyes

Screws attach body to mounting blocks.

R/C TRUCK CHASSIS

WIRING THE EYES

EYE LIGHT

40 inches

A. Solder wires to eyes.

B. Route wires to chassis.

Longer prong is positive (+)

Positive (+) Negative (-)

wires from eyes

Positive wire Negative wire from chassis circuit board

C. Strip 1/4 inch of insulation from each wire. Twist on wire nut.

TRANSMITTER

← Antenna

New location of on/off switch