



This bug suction device is so much fun to use that you'll relish home spider infestations.

SPIDER RIFLE

Humane, compressed-air-powered bug trapper.

By Matt Lind

I created the spider sucker rifle because my wife and mother-in-law are terrified of spiders in the house. I had seen "bug vacuums" on infomercials but didn't want to shell out the \$30-\$60 for something that runs on batteries and probably doesn't perform all that well.

What you are about to build is not technically a rifle, as it does not launch a projectile, but it does look like a rifle. It works by directing compressed air downward through the "drop tube," which draws air from the barrel, along with any hapless bug that happens to be next to the barrel end.

Make It

Important! If you use a saw for cutting the pipe, make sure you wear proper respiratory equipment. This also applies for drilling. Dust from CPVC

is toxic and can stay in your lungs. Using a pipe cutter instead of a saw will minimize dust. Check out the materials list on the next page, then begin.

1. Cut the 1/2" CPVC pipe into 4 lengths: 18" (1), 4" (2), 3/4" (1).
2. On one of the two 4" pieces of pipe, cut a slit lengthwise 1/2" from one end. The slit should be about 3/4" long and go completely through the pipe. This slit will be used to clamp the can of compressed air to the Spider Rifle.

You can either drill a few pilot holes through the pipe and cut the rest out with a utility knife or use my preferred method: a Dremel with a cutting bit. Be careful with a knife, as it can slip easily, and as always, wear a dust mask or respirator.

3. Use a 3/32" drill bit and drill a single hole in the center of the CPVC T-fitting. This will be the

MATERIALS

To construct the Spider Rifle, you will need the following parts:

5' or 10' length of ½" CPVC plumbing pipe \$2 for 10 (10' usually costs only 50 cents more than 5')

½" CPVC coupler

½" CPVC T-fitting

½" CPVC 45° elbow fitting

½" CPVC 90° elbow fitting

1"x½" PVC coupler

1" PVC end cap

70mm hose clamp

Can of compressed air \$5

Small piece of thin, semi-rigid plastic, such as from a coffee can lid or the walls of a soda bottle

Total approximate cost is \$10. This can be more or less depending on the cost of individual components in your area, as well as your choice of adhesive.

OPTIONAL ITEMS

You can use PVC cement, hot glue, or another form of adhesive for connecting parts. I use PVC cement, as it provides a permanent bond.

Combination pack containing 1 can of PVC primer and 1 can of multipurpose PVC cement \$4

Can of spray paint in color of your choice \$1

Can of spray clear coat (protects paint) \$1

hole that the straw from the can of compressed air goes into. You can use other sizes of drill bits, but you may have to ream it out a little if you use a smaller one or fill the gaps with hot glue if you use a larger one. Any type of drill should work, but a drill press is best. Since you are working with a fitting, you can connect a piece of scrap pipe into the end, to give you a handle to hold on to.

4. Drill as many holes as possible into the 1" end cap. The more the better, to let air through.

5. Trace and cut out the T-fitting stop valve. This can be cut out of pretty much any semi-rigid plastic. I prefer coffee can lids, as they are thick enough, easy to trace on, and easy to cut.

First, take a piece of ½" pipe, stand it on top of the plastic, and trace around it using a marker such as a Sharpie.

Then cut out the circle with scissors and place it into the T-fitting. If it doesn't slide in easily, cut small amounts off until it does. Be careful not to cut too much off or it will slide through. You want the stop to rest up against the ridge near the middle.

6. Push the 4" piece of pipe without the slit firmly into the side of the T-fitting that contains the plastic stop.

7. Connect the 90° elbow to the end of the 4" pipe.

8. Push the ¾" pipe into the bottom of the T-fitting.

9. Connect the 45° fitting to the ¾" pipe as shown in the illustration on the previous page (it's used to attach the "roach motel").

10. Connect the other 4" pipe to the 90° elbow fitting.

11. Connect the ½" to the 1" coupler to the end of the 45° elbow.

12. Connect the barrel to the T-fitting.

13. Connect the ½" coupler to the end of the barrel.

14. Prime and cement all the joints, or use the adhesive of your choice.

15. Cut the ½" coupler at the end of the barrel in half. There is usually a seam on the coupler that you can use as a guide.

16. Insert the clamp through the handle and partially tighten.

17. Twist the 1" end cap onto the bottom of the 1" coupler.

18. At this point, you can paint the rifle if you so choose. Allow the paint to dry thoroughly.

19. Insert the plastic air tube that came with the can of compressed air into the top of the T-fitting.

20. Slide the can of compressed air up through the clamp so that the top rests firmly against the rifle. Tighten the clamp so that it is snug. Don't overtighten, as the can is under pressure. Connect the air tube to the can of air.

To use the rifle, simply point the barrel near the insect and squeeze the trigger. The air is forced through the bottom of the drilled PVC end cap. Since the T-fitting is blocked on the side connected to the handle, by forcing air downward and out the bottom a vacuum is created in the barrel. This vacuum draws the insect inward and into the "catch" (drilled 1" end cap). Build and use this at your own risk. But most importantly, enjoy your soon-to-be spider-free home!

 See an animation of the Spider Rifle in action here: mslworks.com/SR1.gif

Matt Lind is a frustrated consumer living in Appleton, Wis., who has always enjoyed thinking of new uses for the parts in existing products.