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ELECTRONICS

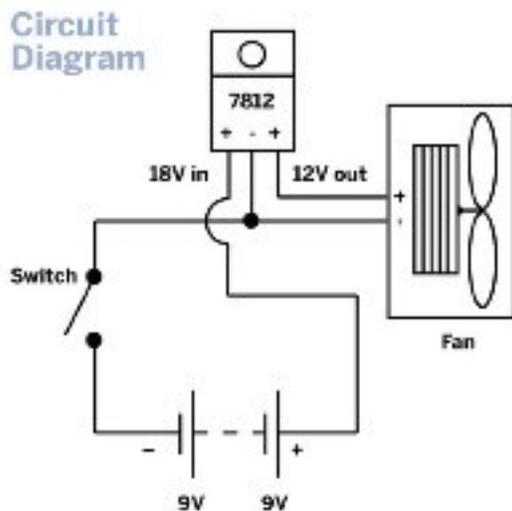
## POCKET SIZE FUME EXTRACTOR KIT | JAMECO PART NO. 2137481



VISIT [WWW.JAMECO.COM/FUMEEEXTRACTOR](http://WWW.JAMECO.COM/FUMEEEXTRACTOR) FOR COMPLETE KIT BUILD

Experience Level: Easy | Time Required: 1 Hour

A fume extractor uses an activated carbon filter and fan to remove the smoke and noxious fumes created from soldering.



### Step 1 — Build the circuit

A quick mock-up is always a good idea. The final circuit (left) uses a simple switch, two 9V batteries, a 40mm case fan, and a 7812 voltage regulator. The 7812 takes voltage from the 9V batteries wired in series and steps the voltage down from 18V to 12V, which is what the fan requires.

### Step 2 — Solder the components

The battery connectors are not the hard plastic type but the flexible vinyl version. This allows both batteries to fit in the case. The vinyl snaps are only minimally smaller, but it's enough to make the difference.

This is a very simple circuit. Solder it according to the diagram, making sure to attach the component leads to the 7812 properly. Use heat-shrink tubing on all connections; this is in a metal box... and metal conducts electricity!

### Step 3 — Make sure the components fit

Although a bit snug, you should be able to stuff everything into the tin, packing the batteries side by side next to the fan.

#### **Step 4 — Cut and drill the holes**

Always wear safety glasses when drilling and cutting metal! Use a template and a marker for the fan openings, making them 35mm square on each side. After you cut the first fan hole, close the box and use the template to align the second hole. Placement can be "eyeballed", there's room for error.

#### **Step 5 — Paint and decorate**

You may choose to paint the tin. Two quick coats are plenty. Spray paint can be fairly toxic and flammable, so paint outside and away from everything.

#### **Step 6 — Add the filter and fan guards**

The guard-filter-fan-guard sandwich. The fan guards are 50mm and the filter is 40mm square. Apply hot-glue or epoxy to the corners of the guards and sandwich the filter and fan in between. Once the tin is closed, compression will hold it all together.

#### **Step 7 — Test the extractor**

Now put it to the test. It should run continuously for hours without heat buildup from the 7812. It works quite well, and although it's no replacement for a large fume extractor, it will come in handy for small projects.

Remember, follow all safety guidelines when soldering, and work in a well-ventilated area at all times.

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