

# Building a Box Fan Air Filter

## Materials List

- 20" box fan
- Two 20x25x1" MERV 13 furnace filters (MERV 13 is important for removing smoke)
- Cardboard from shipping box
- Packing tape or Duct tape
- Marker pen
- Scissors

## Step 1 - Unbox

Unbox the fan and filters, being careful not to cut the filters and save the large cardboard pieces for later.

## Step 2 – Hinge the Filters

Take the filter out of any plastic covers and lay the filters together on a table with the arrows pointing toward each other.



With the filters lined up, tape one of the short (20") edges of the filters to create a hinge between the two filters, as shown below.



**Step 3 – Tape the filters to the fan**

Lay the box fan face down on a flat surface to mount the filters to the back of the fan, making sure the bottom of the filters are about flush with the bottom of the fan and do not extend past the bottom of the fan.

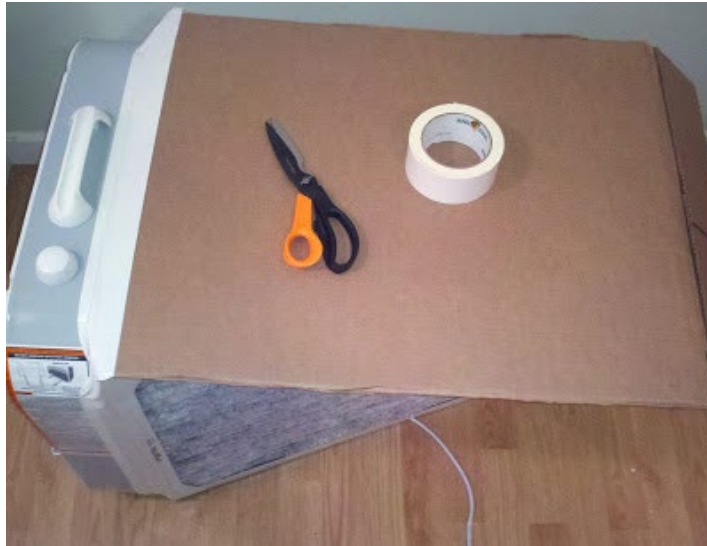


Use a strip of tape to secure each end of the filters to the fan. **NOTE: It is better if there are some small leaks, so don't worry about getting it airtight.**

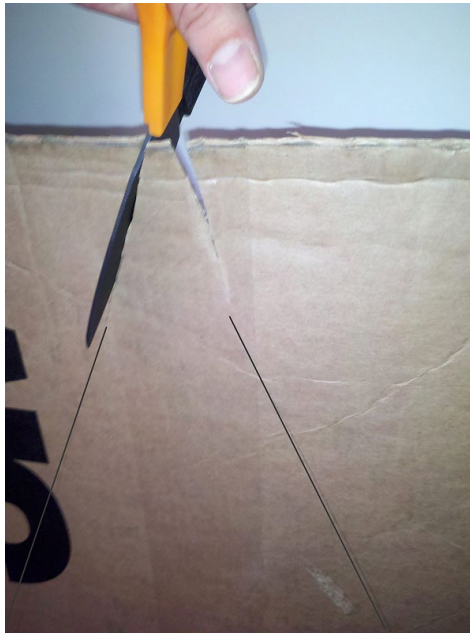


#### **Step 4 – Cut and attach the Cardboard**

Using large sides of from the cardboard box, tape one to the top of fan centered so all of the opening is covered. Using a marker, trace along the filters while holding down on the cardboard to mark where the cardboard needs cut.



Flip the cardboard up using the taped edge as a hinge and cut along the traced lines with scissors. Then tape the cut edges of the cardboard to the filters.



Repeat the process for the bottom of the box filter, but remember to make room for the feet of the fan. You can pull the feet out while taping the cardboard to the fan then slide them back into the fan later.

**Step 5 – Reinforce taped edges, but it is preferable not to plug all the small leaks**

**Replacing Filters** – When the filters get dirty, leave the cardboard taped to the fan and just cut the filters free from the cardboard. Hinge the new filters together with the arrows facing toward each other like in Step 2 and attach them to the cardboard on the fan.

**Caution: The fan should not be run continuously unattended or while you are asleep**