Attic Whole House Fan Plans

Including How to get a Blower at no cost

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Feel free to email questions

This report is intended to reveal all the design features and methods used to obtain parts and install a whole house fan system in a house that already has an attic air conditioning system installed.

Background
There were two popular whole house fan systems before this was designed.
One uses a huge bladed fan in a housing mounted right at the ceiling. It is effective, but very noisy.
The second is called "QuietCool" and uses blower mounted up in the attic hanging from the roof pulling air through new openings cut in various locations. This is much quieter but requires new holes be put in the ceiling.

The design shown here is unique because it taps into the ducts and vents already being used by your central air conditioning system. This design is also unique because it makes use of blowers that you can get for free.

First, let's talk about how to get a blower for free. I learned that most A/C contractors throw out the forced air units that they replace. Many of the units are young – the one I got was only 9 years old!
All I did was call a local AC company and ask how I might get a blower from an old unit. I was told to come in each day and look at the units they were discarding. The owner even told me that on one specific day he was going to have a newer unit and that I should come by that day. I did so, and there was a trashed FAU with a great big powerful blower ready to dismantle.

It turned out that the blower I got was a very common one with a ¾ HP motor with 5 speeds!! In my case, I do not need all 5 speeds, but I could use them if I wanted.

Taking out the blower required removing just a few screws and a few small bolts. It was wired to a small printed circuit board that is not needed and it has a capacitor on the side that is needed. So you can cut the wires to the pc board, but keep the capacitor and its wiring. You can see the capacitor in one of my pictures below. I also have a picture of the PC board below.

The motor has a nameplate that tells the purpose of each of the color coded wires. I used the two wires that are the high speed wires. I then devised a neat way to connect this blower motor to the AC power in my attic using X10 remote control. You can get X10 controls on Ebay and other places, or direct from X10. I bought the X10 MC10A minicontroller and one PAM04 Heavy Duty appliance module. Total cost $40. I then added some old extension cords to make a switched extension cord that you can build and install without being an electrician.

Now on to the rest of the attic system:

The design is simple. There are three key elements –

1. There is a large metal tee duct installed between your existing air inlet and the forced air unit.
2. There is a gravity operated one way valve duct installed between the tee and the blower.
3. There is a large blower that pulls air up into the attic through your existing ducts all over the house.

Note that while this taps into your air conditioning system, there is no reason why you could not get multiple blowers and put inlets in ceilings for the blowers without the one way air duct.

I was able to obtain almost every element of this system at no cost. Here is how.

I got to know a local air conditioning contractor after referring business to him. You can get to know your local company through simply calling for advice. You will find that most AC guys have referral deals where you can get cash for referring business to them. You won't have to buy a thing. How do you find someone to refer? Ask your family, friends, neighbors, everyone – if they need a new air system. Tell them about this report and design so they can do it too.

It was simple to unbolt the blower from the FAU body and disconnect the wiring.
What I got was a ¾ HP 10 AMP max motor with a 12 inch diameter by 10 inch wide squirrel cage blower in a metal case. Blowers like that cost over $600 new!

I then asked the AC guy how to get a one way flow duct. He sold me a new one for $120. I was in a hurry and did not look at other ways to get one for less. You can probably find one for way less. In fact, I just discovered that Pex sells the part for HALF what I paid. Here is the link.

http://www.pexsupply.com/Honeywell-SPRD14-14-Round-Static-Pressure-Regulating-Damper-13608000-p?gclid=CKv2q7LzpZwCFRFWagodnzvBkA

Since I was now a paying customer he offered to look into his old discarded parts to find other parts I needed. The main part was the tee to tap off my AC input duct. I measured mine in the attic and it is an 18 inch dia duct. He recommended a 14 inch system to the blower. So he found me a tee duct in a scrap heap and gave it to me. He then found a scrap of 14 inch flex duct about 9 feet long that he gave me.

So now I will show you some pictures of the installation.

Details are pictured and described below

Figure 001. This is the intake duct before modification. The ceiling intake is to the right and the air conditioning box is lower left.

002. I was lucky to have lots of room in the attic.

003. I cut plywood into 2 by 4 foot pieces and made a floor.

004. I decided to put the tee right on top of the unit so I disconnected the 18 inch duct there.

005. Here is the tee. I modified the shape a bit to make it easier to install.

006. Here is the tee mounted on the air box with the original duct now attached to the top. My mod was to make the bottom a bit bigger and the top a bit smaller so it fit easy.

007. I used silver duct tape on all joints.

008. This shows the blower with an adapter riveted to the side. The adapter is a 14 inch ring that is very cheap – I got it for free. It had a square flange and I trimmed it to round.

009. The blower is very heavy – I put it on a box to hold it near the roof while I attached cross bars and “plumbers tape” steel straps to the roof. Be sure to hang it – don’t mount it on the ceiling joists – it

010. This is what the one way duct looks like. Mine does not have the big fitting on the lower right. It just sits horizontal so the inner plate falls to a closed position when my new blower is off. When it is on, it pulls the flap open. Perfect!

011. Here is the X10 controller. You plug it in anywhere you want and the top left ON button will turn the switch on and run the blower motor after to connect the extension cord to the motor.

012. Here is the X10 appliance module and the special receptacle in a metal box at the end of an extension cord.

013. To save a few bucks I modified an old extension cord to fit the special pins on the X10 appliance module. I twisted one carefully and it works fine.

The importance of using extension cords is that they are legal in an attic and do not need an electrician to install them. Technically, however, you need a metal junction box at the motor to connect the motor leads to the extension cord. Or, you can attach the motor leads to a simple plug and put a receptacle at the end of your extension cord. That way it is all extension type parts.

Any questions? Feel free to email me at kurt@invisco.com!

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