

## Energy Tax Credits for Advanced Main Circulating Fan

*The following information is offered to assist taxpayers with properly obtaining energy tax credits and is for educational purposes only. This information does not replace the assistance of a professional tax preparation specialist, professional accountant or attorney.*

First and foremost, when you purchase any energy improvement items you must **SAVE THE RECEIPT(s)**. You will need the receipts to prove that you did, in fact, purchase these items. Be sure to list (itemize) the energy improvement items that you have purchased during the calendar years of 2006 and 2007.

To explain the advanced main circulating fan, let's begin by examining the types of furnaces available. There are two basic types of furnaces sold in America and around the world; The lower efficiency model uses a metal flue pipe and has an Annual Fuel Utilization Efficiency or AFUE of approximately 80% - The higher efficiency model has a \*PVC (plastic) flue pipe that typically is routed outward through a side wall of the building rather than upwards. The higher efficiency models tend to have AFUE ratings of 90% or better.

Many installations of the higher efficiency models have two plastic pipes extending through a sidewall of a building; one for exhausting flue gases and the other for bringing in fresh combustion air for the fire. This installation has benefits in that the closed-circuit nature of the piping, called 'sealed combustion', does not allow flue gases to escape into the interior environment and cause problems. Plus, the two-pipe installation does not use inside air for combustion, thereby isolating the furnace combustion operation from the internal environment. The one-pipe installation is sufficient to allow the furnace to operate but it is not as 'safe' as the two-pipe installation.

Many lower efficiency furnaces come equipped with a blower motor/fan unit that uses direct alternating current or AC electricity. The amount of energy needed for a typical furnace using an AC blower motor can be 500 watts or more. This means that for every hour that the furnace operates, the 500 watt motor will use one-half of a kilowatt hour or kWh. Every two hours of furnace operation will use one kWh. If a furnace operates 10 hours per day, it will use 5 kWh per day. If you multiply 5 kWh times 30 days per month, you will find that the AC blower motor uses 150 kWh per month.

A percentage of the lower efficiency furnaces will accept the installation of an advanced main circulating fan that uses direct current or DC power to spin the blower fan. DC motors use approximately 10% of the energy required to operate the fan as opposed to an AC fan. In other words, the DC blower motor will only use approximately 50 watts of power to move the air inside your ductwork, instead of 500 watts for the AC version. So, the DC powered fan will only use approximately 15 kWh per month versus the 150 kWh per month for the AC fan. At 10 cents per kWh, the DC fan will cost you \$1.50 per month versus the AC fan at \$15.00 per month, a savings of \$13.50 per month.

Higher efficiency furnaces typically have DC blower motors installed, but it is advisable to check with the installing contractor of your furnace to see if it does have the DC blower motor installed. Most heating and cooling dealers or contractors can inform you as to whether your lower efficiency furnace can accept a DC fan blower motor. You will receive an energy tax credit of \$50 for the installation of an advanced main circulating fan.

If you do not know who installed your furnace, you can go to your local yellow pages phonebook and look under the heading of "Air Conditioning Contractors." Under this heading you should find a grouping of contractors listed by the brand of air conditioner or furnace that they install. If you happen to have a brand of furnace called "Heat Pro", you should be able to find a listing of contractors who install that brand under this heading in the phonebook. When you call them, give them the model number of the furnace and they should be able to tell you if you can install an advanced main circulating fan in that particular furnace. The model number for furnaces is normally located inside the upper removable panel on the furnace on a small white or shiny aluminum nameplate. The local heating and cooling dealer should be able to tell you where to locate the furnace model number, should you not be able to find it. \*PVC – Polyvinyl Chloride