



## *AES Informational Bulletin*

### Variations of Heat Output (BTUh)

Fuel quality is an important factor in the success of heating your home with renewable solid fuels. Variations in fuel size, quality, moisture content, cleanliness and consistency of fuel supply will affect your heat output into the home. If the appliance is not installed properly, venting and combustion air is not correct or balanced, the home is not balanced and has negative pressure and/or improper operating practices of the appliance are happening, the appliance will not be able to operate efficiently and heat output will suffer.

All Magnum appliances have been rated by the governing testing lab to produce an approximate input BTUh value based on the following conditions: The appliance is installed in accordance with governing codes and manufacturers instructions, acceptable HVAC standards for ductwork installation (if installing a furnace), proper venting and fresh air is supplied to the appliance and home, corn fuel with a moisture content of 11-14 percent (11-12 is ideal) and a test weight of at least 56 pounds per bushel cleaned of all dust, stalks, rocks, etc. (or if using other Biomass fuels, the fuel is clean and dry).

The size of the fuel along with the density of the fuel along with how dirty the fuel is can affect the fuel as much as 30%.

The following is an example of how conditions can affect BTUh:

78,000 beginning BTUh input (based on fuel at 56 test weight and 10-11 percent moisture)  
Deduct 10% for test weight being at 50 test weight  
Deduct 25% for moisture being at 14 percent instead of 10-11%  
Deduct 15% for size and condition (dirty) of fuel  
Deduct 10% for high moisture affecting feed rate through auger  
Deduct 15% for improper duct work static pressure that affects temperature rise  
Deduct 5-10% for improper fresh air intake configuration

Total possible deduct in BTUh input rating = 80%

**Average possible deduct in BTUh input rating that we see caused by the conditions listed above is 35%** Following this example you would see the heat output drastically affected as shown.

$78,000 \text{ BTUh} \times 35\% = 50,700 \text{ BTUh}$  X normal 75-78% overall efficiency output = 38,530 BTUh

Following the guidelines set up for proper installation and operation of your appliance along with making sure that your fuel quality is the best that it can be will allow your appliance to work at peak efficiency with trouble free operation. It is important to read your installation and operations manual completely, have the appliance professionally installed and make sure to ask your dealer questions on the right way to operate your appliance.

For more information on properly operating your appliance contact you're nearest dealership and visit [www.MagnumHeat.com](http://www.MagnumHeat.com)