REPLACEMENT CATALYTIC COMBUSTORS



ζ 5 YEAR LIMITED WARRANTY

Replacement Catalytic Combustors

Five to thirty percent of the chemical energy contained in every log escapes up the chimney when wood is burned in a conventional airtight stove. Our catalytic combustors are designed to make use of this energy, converting it into useful heat as it lessens chimney creosote build up and air pollution. When wood smoke contacts this catalyst, chemical changes occur that cause the smoke to ignite at temperatures around 500° F. (260° C.) - temperatures easily found in a wood-stove firebox. Normally, smoke will ignite and burn only at temperatures around 1000° F. (540° C.)

Our catalytic combustors consist of a durable, temperatureresistant ceramic composition that is extruded into a specific cell density, creating a honeycomb configuration. It is then cut to manufacturers' specified sizes and fired. Next the ceramic honeycomb is wash coated with alumina oxide for high surface area coating and precious metal support. Later a noble-metal catalyst, like Palladium, is applied.

90% LESS POLLUTION* - Gases and particles in smoke cause air pollution. The combustor eliminates 90% of this pollution by burning these gases and particles before they exit the stove.

90% LESS CREOSOTE* - Condensation of smoke in chimneys and flues creates creosote build up which is the primary cause of chimney fires. The combustor reduces this danger because it burns most of the smoke and reduces creosote accumulation as much as 90%. However, you should continue to inspect your chimney regularly for safety.

* Performance may vary depending on stove design, operation and combustor age.

The life expectancy of a unit is around 6 years. Some units have been reported to have lasted as long as 10 years. However, it is recommended the unit be changed out every 6 years for maximum efficiency of the stove.

A catalyst does not burn out like a light bulb. Most catalytic combustors that are returned are destroyed by flame impingement, broken due to accidents or mishandling, or there is nothing wrong with them but fly ash buildup. A catalyst can be "saturated" with byproducts of wood burning such as potassium. This is chemical saturation. The prohibitive chemical will fill the chemical

"holes" that the gases normally use for reaction. This process of saturation can be slowed by regular maintenance of the catalyst. Saturation can take several years. Most units will last for a minimum of six years or 12,000 operating hours.

The catalyst was designed to burn seasoned dried wood only. Burning garbage, painted wood, products with glue, plastic, rubber, large amounts of colored paper, petroleum products and other foreign materials will poison your unit if done on a regular basis. Eliminate all doubt on this subject by BURNING ONLY SEASONED DRIED WOOD.

Direct flame contact is death to the catalyst. A catalyst burns the by-products in the smoke. The gases such as CO, HC, and O2 ignite with each other in a chemical reaction in the presence of the catalyst (while passing through the honeycomb configuration.) Direct flame inhibits this reaction by changing the chemical makeup of the catalyst breaking down the substrate or ceramic. Today's modern wood burning stoves are designed so that flame impingement is unlikely. However, it is not impossible. A strong fast draft can pull the flames into the catalyst. A hot fire with all the primary air controls wide open or perhaps the firebox door or ash pan door ajar are other ways the catalyst might receive flame impingement.

A sudden temperature change or uneven temperatures to the combustor's substrate can cause cracking. One of the main reasons for this happening is refueling with wood containing some form of moisture. This can be wood that has been exposed to snow or rain, or perhaps green wood that has not been stacked and seasoned for at least one year. The thermal shock comes when the moist smoke contacts the combustor running at temperatures in excess of 1000° F (540° C). The cell walls will develop hairline cracks and eventually pieces will start to fall off the combustor. This loss of surface area means there will be less catalytic surface space and less efficiency of the combustor.

Note: Use of a wood moisture meter is very helpful in determining if your firewood is properly seasoned. See our wood moisture meter item # 7276.