



# How to Control Your Industrial Food Processing Emissions

White Paper



ENGINEERING YOUR SUCCESS.

# Achieve Regulatory Compliance and Control Emissions

Controlling emissions is an important issue for industrial food processing facilities. Finding pollution control solutions that will capture visible cooking emissions and odor in an effective, safe and economical manner is essential.

Key considerations include:

- Regulatory compliance
- Controlling emissions
- Enhanced performance of existing equipment



## Achieve Compliance

As federal and local regulations for air quality become more stringent, food processing facilities are feeling the impact. Whether these regulations come from the EPA, zoning boards, the health department or another authority having jurisdiction, it is increasingly important to control emissions generated during cooking processes. Emissions include particulate matter such as smoke, oil or grease and may also include odor. Identifying effective solutions that will help food processing companies achieve regulatory compliance is critical.

Since food processing facilities are located in both urban and rural areas, uncontrolled cooking emissions can coat facility roofs, cars in proximate

parking lots and even neighboring buildings or homes. Associated odors may migrate throughout nearby neighborhoods causing issues with tenants or homeowners. In some cases, municipalities are asking food processors who have been in business at a location for many years to now address and control their emissions in order to support other development projects going on around them. This is where Parker Hannifin and our team of Field Managers and Distributors can assist you in controlling these emissions.

## Enhance Existing Operations

Cooking emissions are sometimes controlled through the use of incinerators which are costly systems to purchase, to operate (due to natural gas usage) and to maintain. By reducing the emissions with an air pollution control device, incinerators can be reduced in size or even eliminated, which can save operating costs and extend maintenance intervals all while reducing emissions. There are inherent risks of fire when collecting some cooking emissions so proper collection is essential to keep both workers and facilities safe.

SmogHog® Efficiency – Single Pass

| Particle Size (um) | Test Flow Rate |       |       |
|--------------------|----------------|-------|-------|
|                    | 715            | 1100  | 1430  |
| 0.25               | 96.57          | 91.71 | 77.20 |
| 0.3                | 96.80          | 90.22 | 78.68 |
| 0.35               | 96.56          | 90.73 | 80.02 |

SmogHog® Efficiency – Double Pass

| Particle Size (um) | Test Flow Rate |       |       |
|--------------------|----------------|-------|-------|
|                    | 715            | 1100  | 1430  |
| 0.25               | 99.16          | 98.67 | 96.50 |
| 0.3                | 99.30          | 98.70 | 96.19 |
| 0.35               | 99.21          | 98.59 | 96.56 |

Source: Blue Heaven Technologies Test Report, Dated March 13, 2013

# Clean Air Solutions

## Advantages of ESPs For Industrial Food Processing Emissions

- Low Energy Consumption
- No barrier (media) filtration for static pressure to build
- No Replacement Filters
- Collection cells can be washed and reused
- Collects Wet or Dry Particulates
- High Fractional Efficiencies
  - Single Pass Efficiency – 94%
  - Double Pass Efficiency – 98%

## Clean Air Solutions

As a leading solutions provider within the air pollution control industry, Parker has the products, expertise and experience with cooking applications to meet your specific air pollution control needs. Parker has provided SmogHog® system solutions for a wide variety of industrial food processing applications like fish smoking/frying, meat smoking, snack food manufacturing, as well as for high-profile commercial kitchen applications including the World Trade Center, Rockefeller Center and Yankee Stadium.

## Proven Technology, Optimum Performance

Parker's SmogHog® electrostatic precipitator (ESP) technology is ideally suited for controlling emission for industrial cooking applications. The ESP process charges particles and strips them from the airstream, capturing even sub-micronic contaminants, and leaves only clean air to be exhausted from the unit. This technology offers high levels of efficiency with low pressure drop for a proven combination of performance with low energy consumption. The ESP collection cells can be cleaned so there is no need for recurring filter replacement purchases.



ESP technology in the SmogHog PSG delivers high levels of efficiency with low pressure drop for a proven combination of performance.

## Flexible System Configuration for Smoke, Grease and Odor Control

Applications vary greatly based on the process or method of cooking involved. Parker offers configurable systems that can accommodate a wide range of airflows along with customizable options to tackle your most challenging processes. For heavy particulate loading such as wood-fired cooking or smoking applications, multiple passes can be used to achieve higher levels of removal efficiency. For grease or “sticky” particulate, in-place cell washing systems are available which also extend maintenance intervals. To control odor, Parker offers carbon or potassium permanganate filters. These systems are ETL listed and for an additional safety measure, the units can be equipped to work with Ansul fire suppression systems.



For heavy particulate loading such as wood-fired cooking or smoking applications, multiple passes can be used to achieve higher levels of removal efficiency.



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