

## Facilitator — June/July 2013



### The Heart and Soul of a Restaurant

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Real maintenance of kitchen exhaust fans

Kitchen exhaust fans seem like such a simple piece of equipment when you consider a restaurant in its entirety. However, the heart of the industry knows better than that. The reality is that these fans are the core functioning piece of the puzzle.

According to Patricia Wolter, from Facility Services Group, the fan is the “heart and soul of a restaurant.” Choosing cleanings for fans can ultimately result in a significant loss of money and a potential shut down of the restaurant indefinitely.

A simple definition of an exhaust fan is a mechanical ventilation device that creates an airway for impure or contaminated air to your restaurant. In turn, the fan improves the quality of air indoors. Any restaurant that utilizes cooking equipment to remove contaminants from the kitchen. This is vital to any restaurant to not only improve the quality of air within the facility for all customers and employees who enter the facility.

There are several styles of fans within restaurants: upblast, utility, inline and downblast. Each fan has a separate function to improve the overall quality of air within the facility.

The determining factors for selection of a fan are based on such variables as high temperature, grease content of the exhaust, handle friction, distance and airflow resistance. In order to prevent roof and building damage, exhaust fans should be installed adjacent to the equipment.

#### Types of Fans

**Upblast:** The most common fan used for exhaust systems is the upblast, or the “mushroom,” fan. This type of fan is used for the exhaust process. Most fast-food, casual and fine-dining restaurants utilize this style fan.

The housing of the upblast fan is constructed of aluminum, which comes with a list of requirements for rooftop installations. The “Installation Manual” states an upblast fan:

- Must be listed for commercial cooking use
- Must be able to drain grease out of any trap or low point into a non-combustible container or collection device
- Must have a grease collection device
- Must be hinged and have a flexible weatherproof electrical cable to allow for cleaning

**Utility:** Utility fans are also commonly found in commercial cooking establishments, but are made with steel instead of aluminum. In applications, compared to the upblast fan, and has a more powerful motor and lift. The lift refers to the cubic feet per minute of air that passes through the fan.

Utility fans differ from upblast fans in that they cannot be tipped or tilted and require access from the rear side of the fan. This requires additional maintenance due to the amount of ductwork that runs into the fan.

**Inline:** This fan is frequently used in larger systems where there are constraints on how the ductwork runs through the building. The ductwork may run into a parking garage. Highrise buildings that have a ground level restaurant are encouraged to use inline fans.

**Downblast:** The downblast (or downdraft) fan would not be suitable for a standard restaurant that produces a large amount of grease. The grease is drawn into the ductwork instead of lifting it out.

#### Common Issues

To avoid disasters related to exhaust fans, consider this advice from Patrick Kennedy, President at K-Kleen Inc.:

- Rattling occurs when components become defective due to lack of maintenance. Most rattles are caused by excessive grease buildup and belt change rectifies the problem.
- Screws are extremely important, because if a fan is out of balance, the screws keep the fan from bouncing around, and the fan will vibrate.
- Wiring failures occur due to a fan drawing too much amperage and heating up. This happens for various reasons: the fan belt (which is the key component that connects the motor and the blade) becomes loose or worn. Frayed or loose wiring can cause a fire caused from opening and closing the fan.

Wolter agrees that there are many concerns related to exhaust fans. “A major issue is when customers do not purchase cleaning,” she said. Access panels are necessary in kitchen exhaust systems where the ductwork has areas not accessible to build up in the areas of the ductwork that the cleaners cannot access, which can cause additional problems such as

“Before a cleaning, a technician needs to see a blueprint of the ductwork or at least some general documentation as to where access panels are located to complete the cleaning,” Wolter said.

Lack of maintenance of the fan and the roof containment system significantly increase the chance of grease leaks. If the housing of the fan is not thoroughly cleaned. The housing of the fan can be tricky to clean since it's the protector onto the roof of a building, it will eventually destroy the roof and can cost more than \$18,000 for repair or replacement well as a grease containment system.

#### Frequency of Cleaning

Grease containment systems provide a significant amount of protection from grease damage by trapping grease. The high-capacity grease containment system is the most expensive, but it decreases the risk for restaurants that produce a high volume of grease. It uses a combination of grease absorbing pads with a four-side

The side-kick variation differs in that it is designed for applications that produce much lower volumes of grease. This variation, along with grease absorbing pads to reduce the risk of grease leaking onto the roof. By protecting the roof, technicians and ultimately end up saving the customer money.

Hinge kits are a vital part of the fan that are too often overlooked during installation. However, without hinges, your fan can cause electrical damage can occur during cleanings, due to the fan being placed directly onto the roof. Often, the fan will be placed improperly. Hinge kits allow for safer and easier cleaning underneath the fan and down in the duct by tipping the fan onto the roof. This creates easier accessibility for the service technicians to complete their cleaning in the most efficient way.

#### Fire Prevention

Consistent maintenance of a restaurant's exhaust fan is one of the primary defenses against fire hazards. According to the NFPA, restaurant building fires occur annually in the United States, resulting in an estimated average of 75 injuries and \$172

million in damage. The cleaning process includes the exhaust of the hood, all ductwork and the exhaust fans themselves. Typically, the fan is removed from the entire system so it does not end up in the restaurant's floor drains. In order to remove all grease, a variety of different sanitizing methods, including chemical degreasers, scrubbing and power washing. Quality control is applicable to municipal, state and NFPA codes.

Upon completion, a proof-of-performance label should be posted on the hood. Be sure your hood vendor provides before-and-after photos. This proof-of-performance label proves when the cleaning was done and informs the fire marshal.

By keeping up with the maintenance of your kitchen exhaust fan, your restaurant will benefit from greater energy efficiency and a healthier working environment.