




# A Cleaner Tomorrow

A horizontal bar with a white background and a dark green downward-pointing triangle on the left side. The bar is divided into five colored segments: blue, green, red, dark blue, and orange.

Identifying safer, more effective methods  
for kitchen hood grease removal

# The Threat Posed by Kitchen Hood Grease

The current generation of commercial kitchen exhaust hoods has two essential goals: removing smoke, effluents and heat from the cooking area and eliminating grease from the air stream. As technology has evolved, recent industry trends have focused on reducing and controlling the volume of air removed from the cooking area while achieving the lowest volumes of pollutants in the shortest amount of time.

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## Critical Factor in Cutting Costs

The proper extraction of grease from kitchen air is vital.

One compound in particular stands out as an especially dangerous factor in kitchen ventilation: grease. The proper extraction of grease from kitchen air is vital in order to prevent the erosion of ventilation units themselves, specifically vulnerable rubber and aluminum components.

Stakeholders across the foodservice industry have long been concerned with the problem of settling grease buildup in exhaust ducts — an issue that not only creates a significant cleaning challenge, but also a dangerous fire hazard.

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## Lack of Efficiency

Despite evolving methods, efficient grease removal has continued to be a problem.

The consequences of ineffective grease removal are costly, with millions of dollars spent each year on replacement parts, as well as countless hours of labor to clean equipment. More seriously, the prospect of grease fires poses a significant threat to the safety of kitchen staff.

# Kitchen Hood Grease Removal Over the Years

In the past, the industry has dealt with grease buildup and removal in various ways, each with its own unique challenges. While the methods evolved over time, the results were the same: far too much grease and far too inefficient.

Removal Methods	How They Work	Drawbacks
<b>1 Wire Mesh Filters</b>	<ul style="list-style-type: none"> <li>Similar to the hood designs in domestic kitchens, with a wire weave to capture grease, though seldom used commercially any longer</li> </ul>	<ul style="list-style-type: none"> <li>Excessive buildup prohibits air flow, affecting the function of the exhaust fan by increasing static pressure</li> </ul>
<b>2 Baffle-type Filters</b>	<ul style="list-style-type: none"> <li>Popular in kitchens today, designed to force air to turn internally, using centrifugal force to deposit heavier grease on baffles while liquefied grease flows down into a trough</li> </ul>	<ul style="list-style-type: none"> <li>Often the grease particles dispersed during cooking are extremely minute and not affected by centrifugal force</li> </ul>
<b>3 Water-wash Hoods</b>	<ul style="list-style-type: none"> <li>Designed with ease of cleaning in mind, using hot water and detergent sprayed directly into the hood to remove buildup</li> </ul>	<ul style="list-style-type: none"> <li>Can use up to 1.2 gallons of hot water per foot per minute, plus the cost of time and labor</li> </ul>
<b>4 Modular Extractors</b>	<ul style="list-style-type: none"> <li>Conceived as high-velocity grease extractors that could be removed and cleaned by hand, minimizing the water and detergent required</li> </ul>	<ul style="list-style-type: none"> <li>Extremely heavy</li> </ul>
<b>5 Electrostatic Precipitators/ Air Purification Units</b>	<ul style="list-style-type: none"> <li>Designed to be placed under the hood, in mechanical rooms or on rooftops, using water baths or electrified baffles and a series of filters to remove additional grease, smoke and odors from the air stream</li> </ul>	<ul style="list-style-type: none"> <li>Very high cost, often ineffective at keeping ductwork clean since ESP and APU units are downstream from the hood</li> </ul>
<b>6 Multi-stage Hood Filters</b>	<ul style="list-style-type: none"> <li>Designed to remove smaller grease particles using a combination of centrifugal force and filtering media</li> </ul>	<ul style="list-style-type: none"> <li>Often heavy, costly and difficult to "unload" grease, requiring a regimented cleaning schedule much like wire mesh filters</li> </ul>

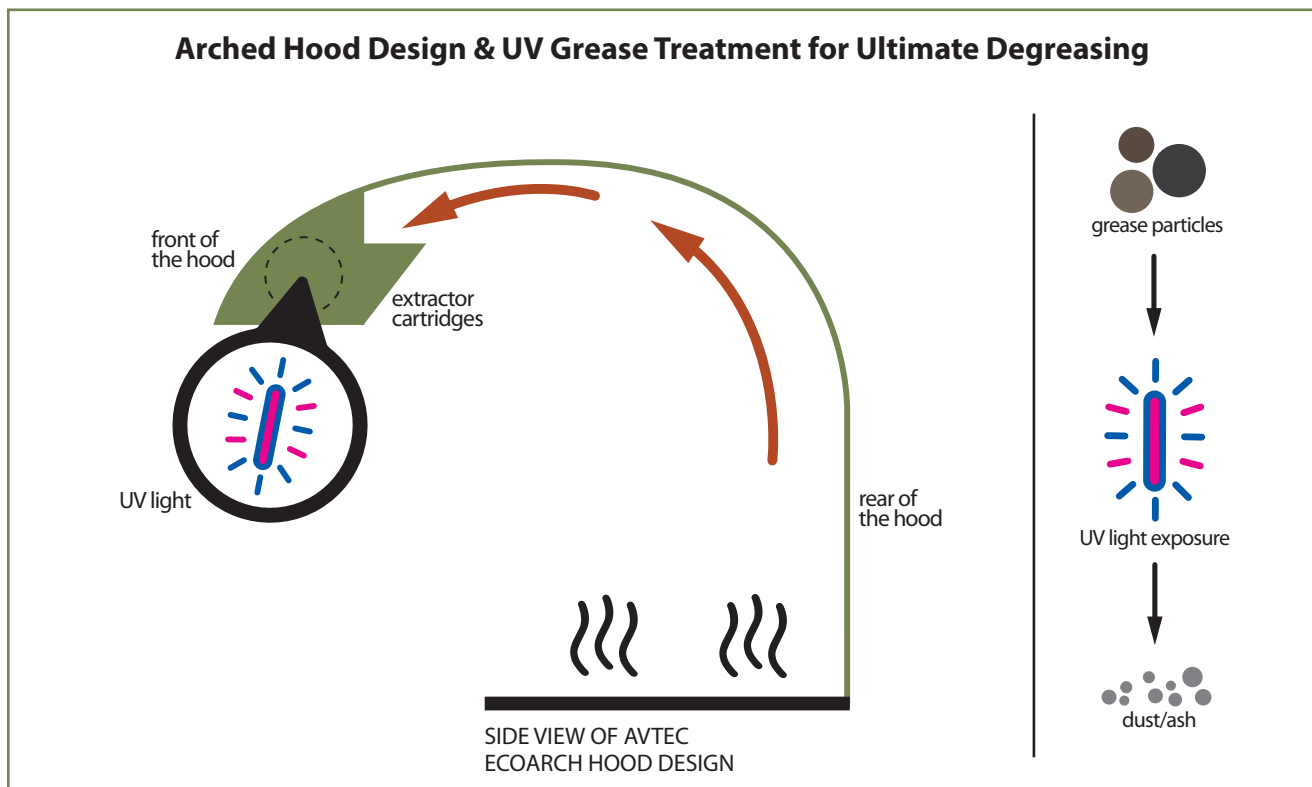
# Ultraviolet Light: The Right Way to Degrease

## Most Effective

Ultraviolet light is the most effective way to extract grease from hood surfaces.

By breaking down oxygen molecules to the atomic level to create ozone, ultraviolet light is the most effective way to extract grease from hood surfaces. Inside the plenum, a UV light system transforms oxygen molecules — causing them to join with other particles in the air like grease.

The combination of an oxygen atom and a grease particle creates oxygen molecules and hydrocarbons, resulting in a basic dust or ash that is easily removed from the plenum of the hood.



The reverse arch directs the smoke, heat and grease particles from the rear of the hood to the extractor cartridges at the top front of the hood. The high intensity UV bulb treats the small grease particles turning them into dust/ash. The result is no flammable grease buildup.

# Implementing the Best Solution

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## Recent Innovations

Operators get the benefits of UV grease removal without breaking the bank.

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## Smarter Clean

- Easy to Access
- No need for cartridge or bulb removal by technician
- No flammable grease

Installing a new UV light system can create significant challenges from a cost standpoint, leaving operators with the false impression that they must choose between improving air quality and saving money. But thanks to recent innovations, operators can get all the benefits of UV grease removal technology without breaking the bank.

So-called “reverse” designs place the extraction plenum at the front of the hood, allowing for easy access to cartridges as well as UV bulbs. New high-intensity bulbs are also replacing multiple bulb configurations used by some manufacturers, boosting efficiency and reducing upfront costs considerably.

Industry experts focused on foodservice equipment and design have documented quantifiable results with UV technology, and are increasingly recommending these configurations to prevent grease buildup and reduce necessary cleaning time.

With innovations like the Avtec EcoArch UV already available, the latest UV technology is revolutionizing kitchen ventilation and grease extraction — making installation, operation and maintenance more affordable and efficient than ever before.