



Better Gas Fryers & Filters + Better Oil Management = Better Food Quality

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The days of a metal fry pot with flames impinging on the sides and bottom are now nearly a thing of the past. Innovative gas fryer technology has brought the art of cooking to a new level. New heat exchanger configurations direct more heat into the oil where it belongs, thereby cooking product faster, increasing production and enhancing the taste and quality of the finished food product.

Successful deep fat frying is the result of using quality equipment, quality shortening and quality food that is properly prepared for the frying process. Each component is dependent upon the other. The operator who trains their fry cooks to follow a regimen of

cleaning and routine filtering will get maximum life from fryer shortening and the fryer itself. And most importantly, will consistently produce a quality product that will keep customers coming back.

A Focus on Fryer Improvements

Manufacturers have introduced natural gas fryers that have raised the bar for operating efficiency, cooking production and extending the life of the fryer oil.

- The Vulcan PowerFry incorporates an innovative FivePass™ heat transfer technology that increases production by 25% or more, while reducing energy use by about 50% when compared to traditional fryers. This new heat exchanger design maximizes heat transfer to the fryer oil resulting in faster cook times and faster recovery. This design employs a single heat source that enters the fryer's patented multi-pass heat exchange tube and forces the heat back and forth in the fryer five times before allowing it to exit the fryer. With traditional fryers, the heat path has only one opportunity to heat the oil before it exits the fryer, often with flue stack temperatures up to 1250°F. The PowerFry™ VK fryers have flue exhaust temperatures below 500°F directing more heat into the oil. The PowerFry™ series has earned ENERGY STAR's® highest gas energy cooking efficiencies for full vat fryers in all three of Vulcan's fry tank sizes - 45, 65, and 85 pound capacities.
- The Frymaster Triple Play™ high-production gas fryer truly lives up to the long-standing gas motto of "giving you more for less"! The Model HD1814 gas fryer delivers the production of a typical 80 pound oil capacity fryer (with an 18 inch wide by 18 inch deep fryer vat), in a 14 inch deep (front-to-back)





model that reduces the cooking oil requirement to 63 pounds. In tests conducted by the Food Service Technology Center it was established that a single unit is capable of producing over 96 pounds of fries per hour, which is among the best in the industry, and has earned ENERGY STAR® status. The fryer incorporates a computerized control system that

provides “pin-point response” to 1°F changes in oil temperature or load condition. This sophisticated but simple-to-use control package allows product-specific cook programming and more precise control of oil temperature and product cooking curves. The burner tubes have stainless steel flow baffles to facilitate better heat transfer. The larger six inch heat transfer tubes have more surface area than four inch tubes, so they are also easier on the oil, extending oil life, thereby further reducing overall oil costs.

- Ultrafryer™ Systems has created an array of ENERGY STAR rated fryers that have a proven track for providing rapid recovery and faster cook times. And due to the recovery capacity and faster cook times that the Ultrafryer provides, it becomes possible for more food to be cooked per hour, which is particularly beneficial during the busiest times of the day. For some operations, fewer Ultrafryers are needed to keep up with the same volume produced by lower performing technologies. Imagine the benefits of having one less fryer: a smaller hood; less exhaust and make-up air; lower operating costs; and a reduction in appliance footprint, just to name a few. As hot air travels through the tubes and boxes of the patented PAR-2 and PAR-3 heat exchangers the heat energy is efficiently transferred to the metal frypot. Air temperatures entering the burner tube are over 3000°F but exiting temperatures are around 500° F, resulting in faster recovery and a cooler kitchen, effectively transferring more heat to the fry pot and oil where it belongs. Most users discover that food cooks faster in the PAR-3 vat. And due to the faster cook times the food absorbs less oil, resulting in improved food taste and quality. Ultrafryer users have documented significantly less oil usage than lower efficiency fryers. Since less oil is absorbed in the food, there is less “drag out” reducing the amount of oil that must be added back to the fry pot.



A Fryer Management Program

Heat, air, moisture and the “drop off” of particles from food breading, batters, and flour, are among the chief enemies of fryer oil that ultimately lead to breakdown and short oil life. Deteriorating oil very



Adopt An Oil Management System

- Add fresh fat on a daily basis or after a prolonged period of “heavy” cooking to keep the vat at optimum levels. This will enhance overall production and assist the fryer in maintaining temperature.
- Skim out as much sediment and floating particles as possible throughout the daily cooking process.
- Prevent “scorching” of the fat through proper loading of the frypot. This is an extremely critical point if using a solid fat product as air pockets or voids can cause the frypot to actually burn up. Liquid fat products are easier to use and eliminate the air pocket potential.
- Keep oil splatters wiped clean throughout frying operations to prevent the gumming of oil on the fryer.
- Lower the thermostat to 200°F or lower during long idle or off-peak cooking periods.
- When not in use, keep the vats covered to protect the oil from light, air and dust.
- Avoid excessive frying temperatures. Most foods can be fried at temperatures ranging from 350°F –375°F. Too low of a temperature will cause product to absorb oil and will compromise hold time and integrity.
- Shake off excess breading of products prior to frying. Foods should be as dry as possible to reduce the introduction of moisture into the fat. This will increase production and overall life cycle of the frying medium.
- Avoid salting foods over the fryer and keep batter spices to a minimum. And do not fry salted or cured meats unless under exceptional circumstances.
- Watch your exhaust hoods and keep them clean. Any drips from the hood system into the fryer vat will cause immediate oil breakdown.
- Keep your fryers meticulously clean.
- Filter your oil as often as necessary, but especially after each frying period.

quickly affects the taste and quality (hedonics) of fried foods. Once this breakdown starts, the process is irreversible, and the oil must be immediately discarded or product quality will be compromised.

Some gas fryers (both pressure and open vat models) are equipped with built-in or continuous filtration systems. For others, filtering and adding fresh oil on a daily basis are two major methods of avoiding premature oil breakdown. This process may be as simple as draining the fry vat of its oil through a filtering cone or paper or through a cloth-lined sieve. This is a feasible method, but only practical for operators who do limited frying and who operate one or two small fryers. Large-scale frying operations, such as a quick serve chicken or seafood house, will strain the oil through cloth-lined sieves and also will filter the oil in some type of automatic filtering machine.

Where heavy-duty frying is accomplished with a battery of fryers, or even with a couple of large heavy-duty units, a system must be devised to ensure the oil is kept in good condition. For this purpose, an operator should adopt an oil management system. (See sidebar at left.)

Avoiding Carbonized Particulates

Plain and simple...good food needs good oil. The objective of filtering is to remove the greatest amount of burnt or scorched food solids (often referred to as “CPs” or carbonized particulates), moisture and free fatty acids in the shortest time. Since maximum purification equals maximum oil life, the degree to which impurities are removed is extremely important.

Not all filtering mechanisms are efficient to the same degree. Where one may handle 30 pounds OPM (oil per minute) another might handle 50 pounds in an hour. Features to look for include portability and ease of setting up without the use of tools; safety factors such as hoses with insulated safety grips to direct hot oil into the filter without the danger of splattering or spilling; incorporating straight drain pipes since curved piping can cause blockage, particularly where solid shortening is used.

Some of the newer automated filtration systems now offered by many of today’s manufacturers



incorporate built-in oil melting capacities or may be purchased with an optional fat melting mechanism. Where solid shortening is used, this is an excellent feature and well worth the added cost of the filtering system. Some machines utilize a re-useable paper filter. Others have reverse pumping mechanisms, particularly useful where fry pots do not have a drain valve. Some filter systems even use a diatomaceous earth substance, similar to swimming pool filters, which is an excellent porous material through which the fat is filtered.

Constant abuse of oil such as scorching, the introduction of excessive amounts of moisture, dirty fry pots, drips from exhaust hoods, the wrong type of breading and batters, faulty thermostats or frying at high temperatures will definitely take its toll. So

as I mentioned earlier, attention to these issues will provide long-term benefits and definite bottom line improvements. Remember good food needs good oil.

Overall Better Food Quality

Investing in a high-efficiency natural gas fryer system is a great way to save energy and increase production. And staying on top of your fryer management will not only save your establishment money but it will also provide a higher food quality that your valued customers are certain to appreciate.

To learn more about how natural gas can benefit your operation, log onto the Gas Foodservice Equipment Network at www.gfen.com. 

