



THERMA-KLEEN

INDUSTRIAL DRY VAPOR CLEANERS

Food Processing Plant Sanitation Using Dry Vapor

OBJECT OF PLANT SANITATION:

To provide a clean and safe workplace that produces food products which are safe, clean and sanitary to a point where no harm will come to the consumer.

Cleaning with steam is growing in popularity as food/beverage processors seek better ways to meet sanitation requirements of The Food Safety Modernization Act (FSMA). To meet all the needs within the facility, the Therma-Kleen line of industrial equipment can provide both Dry & Wet steam systems. Therma-Kleen line of equipment is well suited for the processors of Meats, Fish, Baked goods, Beverages, Syrups, Powdered products, Confectionary, Snack bars, Agricultural products, Etc. Food processing sanitation is a key element in protecting the public from potentially dangerous organisms that can lead to serious illness and allergic reactions. Traditionally the food/beverage industry used strong (potentially dangerous) cleaning and sanitizing chemicals to eliminate pathogens.

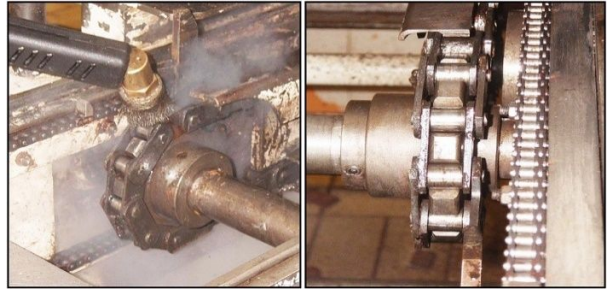


WHY USE THERMA-KLEEN INDUSTRIAL DRY VAPOR SYSTEMS:

- Reduce Material & Labor Cost while Improving Cleaning Effectiveness.
- The basic physics behind why Therma-Kleen Dry Vapor systems are so efficient, is the very high temperature & low moisture, which produces vapor droplets which are Nano sized, allowing them to enter the tiniest of opening, and when these hot vapors encounter the cool surfaces, they will violently expand expelling residue.
- Only clean water is used – No harsh and costly chemical cleaning agents which bring there-own set of health concerns.
- Reduction in containment and toxic chemical disposal cost.
- Cleaning and Sanitizing becomes a one step process – Eliminates the multiple step process of cleaning than sanitizing with chemicals.
- Ability to reach down into the smallest cracks and openings and dislodge debris which conventional chemical cleaning can leave behind for infectious microorganisms to grow and leaving the potential for cross contamination.
- Clean-in-place – No need to completely dismantle equipment since steam can reach down into tiny spaces.
- The Therma-Kleen Industrial Dry Vapor Systems produce a very high-temperature dry vapor (up to 380° F/193°C) - (340° F at tip) which will kill microorganisms such as, Salmonella, Listeria, E-coli, and other pathogenic microorganism's, obliterate fats, oils, dirt and kill mold bacteria.
- Ability to adjust operating temperatures to the application.
- Therma-Kleen Industrial units can accommodate up to four (4) nozzles while maintaining pressure and temperature.
- All Stainless-steel heavy-duty industrial construction.
- The dry vapor evaporates quickly, leaving minimal moisture behind, resulting in a clean and dry surface which is especially important to processors of powder products.
- High heat melts oils & greases making them easy to wipe up and remove.
- Has the ability to rapidly eliminate difficult-to-remove animal and plant materials from surfaces and equipment.

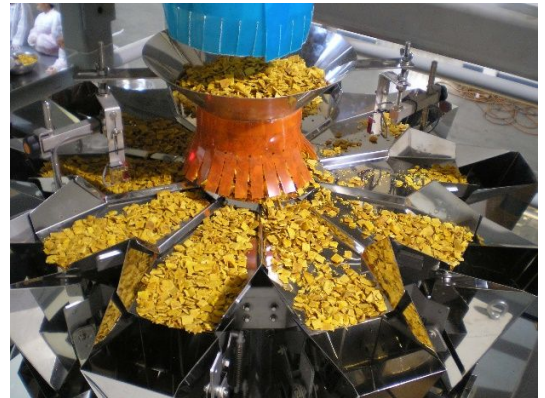


- The common and most labor-intensive way to clean sticky residues is to stop the line, disassemble and remove food-contact surfaces to clean in a wash-down room. This can take many hours of costly downtime. The next step, hand wiping sticky residues can also take a long time and creates the potential for repetitive movement injuries. The most efficient way to clean sticky residues in a dry environment is to use Therma-Kleen Industrial Dry Vapor Systems.
- Manufactured in America.



LOW MOISTURE:

- 5% to 6% water content equates to much less water usage that is experienced with pressure washing.
- Eliminates the cleaning and sanitizing challenges which plague dry processing facilities, such as those making bakery items, snack foods, confections, dry ingredients, powered mixes, seasonings, coffee, dry pet food, etc., where there is zero tolerance for moisture.
- Low moisture means it can be used around electrical equipment and controls without danger of causing damage. There is no need for time consuming masking off an area prior to cleaning.
 - Therma-Kleen Dry Vapor systems can even be used to clean computer circuit boards using the proper protocol
- Up to 95% reduction in water consumption over pressure washers which equates to reduced wastewater disposal cost.
- With little water to clean up, there is a substantial labor savings.
- Low water usage means Therma-Kleen Industrial Dry Vapor Units can be used in areas without drains.
- Low moisture and high heat leaves surfaces dry and ready for almost immediate use, reducing costly downtime.
- Low moisture (usually less than ambient humidity) will not cause an increase in humidity.



LOW PRESSURE:

- Discharge pressure of around 180 psi compared to 1000 to 3000 psi for pressure washers.
- Reduces the likelihood of cross contamination.
- Will not damage surfaces, bearing seals, motors, sensitive equipment, etc., so there is no need to protect them prior to cleaning.
- Minimal scattering of debris and moisture allows for adjacent equipment to remain running.
- Low pressure and minimal vapor moisture will cause powders and dry ingredients to fall to the floor in the immediate area.
- Reduced safety hazard to personnel.



ECO-FRIENDLY:

- The elimination of chemical cleaning agents makes chemical-free sanitation possible.
- Dry vapor cleaning is eco-friendly as there are no chemicals to contaminate or dispose of.
- Dry Vapor cleaning is economical – no costly chemical cleaning agents.
- Truly a Green Ecologically friendly cleaning method as only clean water is used.



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