



# THERMA-KLEEN®

## TECH SHEET

### Why Therma-Kleen Dry Vapor Systems Are Better

#### Superior Design Characteristics

1. Superior Temperature & Pressure
2. Efficient Cleaning
3. Superior Sanitizing
4. Ecologically Friendly
5. Quick Drying
6. Superior Safety Features
7. Superior Operating Characteristics
8. Heavy Duty Boiler & Heating Element
9. Manufactured in the United States

We would like to start out by saying that not every machine that is marketed & sold as a dry vapor steam cleaner is in fact, a true dry vapor steam cleaner. Many machines produce steam, but that steam is often not much more than hot water and is nowhere near the effectiveness of the true vapor produced by Therma-Kleen Systems.

The superior cleaning/sanitizing power of the Therma-Kleen systems is a result of our industrial design which produces a consistent high temperature vapor output. These well-designed systems produce steam in a range in excess of 330°/380° F.

Therma-Kleen Dry Vapor steam cleaners are designed to withstand long hours of usage while producing higher steam temperature and pressures to clean and sanitize a wide variety of surfaces. they are widely used in hotels, medical facilities, bio-hazard cleanup , restaurants/bakeries, as well commercial and industrial facilities and processing equipment, including food and pharmaceutical, as well as any entity which needs a clean, sanitary and safe environment.

#### 1. Superior Temperature & Pressure:

Does Temperature & Pressure matter. Definitely.

- Temperature - It is the Vapor Temperature which dissolves dirt, grease & grime and kills pathogens, bacteria & viruses.
  - To effectively kill and clean, temperature must be above the 300° F/149° C. threshold.
  - All Therma-Kleen units range from 330° F/165° C to 380° F/194° C which is well above the threshold.
- Pressure – Sufficient pressure is necessary to force the vapor into the smallest of cracks and crevasses to get a meticulous kill and force out debris.
  - To accomplish this, pressure must be above 100 psi/6.89 Bar.
  - All Therma-Kleen units range from 100 psi/6.89 Bar to 180 psi/12.41 Bar.



- Unlike pressure washers, the pressures developed by our Dry Vapor units is not high enough to do damage to surfaces.

## 2. Efficient Cleaning:

The first and foremost advantage of Therma-Kleen Dry Vapor Steam Cleaners is their exceptional cleaning power which is a result of the high heat our units produce. These machines eject very high temperature Nano sized vapors onto the surfaces, which then melts or dissolves stains and dirt present and easily penetrates the smallest of cracks and crevices, forcing debris to the surface where it can be easily removed.

The whole process is fast and efficient. The high temperature dry vapor steam dissolves almost any kind of dirt, oils, grease and contaminants. The effect of the higher operating temperature of Therma-Kleen Systems result in a better and faster cleaning process.



## 3. Superior Sanitizing:

Heat is the most effective method known to man for killing pathogens. The Therma-Kleen Dry Vapor systems are known not just for their cleaning efficiency, but also for their superior sanitizing abilities. The Super-heated nano sized steam vapors our systems produce, penetrates deep into surface pores, nooks and crannies, killing harmful infectious microorganisms present on the surface, such as Listeria, Escherichia, MRSA, Salmonella and E. Coli, etc. Additionally, this super-heated dry vapor is effective at reducing allergy causing irritants, eliminating bed bugs, dust mites, fleas, ticks, pet dander, etc. The anti-microbial properties of the Therma-Kleen systems are a prime reason they are widely used in the hospitality, food and medical industries. This is the perfect solution for eliminating allergic reactions by removing the need for toxic cleaning agents from the environment. Additionally, this process does not contribute to producing strains of bacteria that are resistant to disinfectants and antibiotics.



## 4. Ecologically Friendly:

- Truly a Green Ecologically Friendly Technology
- Super-Heated Water Steam Vapor is the cleaning agent
- No toxic and costly chemical cleaning agents which produce fumes that may cause allergic reactions or future health concerns
- No worry of toxic runoff
- No toxic chemical disposal concerns

## 5. Quick Drying:

Therma-Kleen Dry Vapor systems deliver superheated vapor that has a low liquid water content, in the 5% range. This low moisture content is why it is called Dry Vapor Steam. Dry Vapor is not just better in cleaning but also uses less water in the process. This means little water is used during the cleaning process; thus, less moisture is left behind which equates to fast drying and easier cleanup.

## From Superior Industrial Design Comes

### 6. Superior Safety Features:

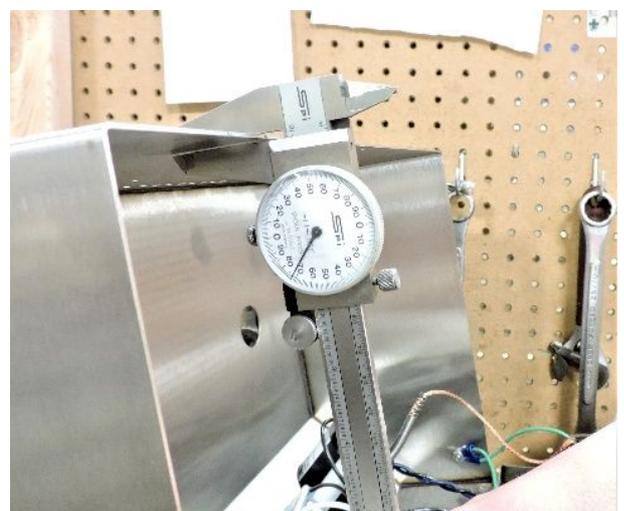
Therma-Kleen systems are designed to provide a higher degree of safety than others:

- Designed and Manufactured to Industrial Standards.
- Fused:
  - Fast Blow fuses prevents damage if a short circuit should occur.
  - Fuses are easily replaceable.
- Temperature/Pressure Safety Features:
  - Combistat
    - Reads the temperature and Shuts off the heater when the boiler reaches set point
  - Pressure Safety Sensor
    - Pre-set at factory to Shut off heater at a predetermined point.
  - Pressure Relief Valve/Cap
    - Allows steam to escape if pressure exceeds safe target limit.
- Heavy Duty Stainless-steel boiler:
  - 3/8" thick wall is safer & more rugged than others which are little more than sheet stock.
- Heavy Gage Stainless-steel body:
  - Provides a more ridged structure which equates to less flexing which can cause leaks.
  - If a leak should occur within the body, it will be contained much better than a plastic or lighter material enclosure.
- Low Water Alarm:
  - An Audible Alarm which notifies operator to shut off heater and fill with water, so heater does not over-heat and burn up.
- Check Valve:
  - Solenoid valve shuts to prevent back flow into pump
  - Check Valve – Stops back flow if solenoid valve should not completely shut.
- Filter:
  - Filter out contaminates in water.

NOTE: Not all safety features are on every machine

### 7. Superior Operating Features:

- Reads Actual Temperature:
  - It is temperature that is important, for it is what sanitizes by killing pathogens & bugs, etc., and breaks down dirt's bond. Pressure matters, but not as much as temperature.
  - Therma-Kleen units read actual temperature because you need to know what temperature you are working with. This is important for those who are concerned about effective sanitizing and cleaning.



- Others only read pressure, which tells you what?
    - Therma-Kleen systems allow the temperature to be adjusted to fit the application.
      - If you do not need the Maximum 330° / 380° F temperature (depending on which model you have) , it can be set to the level needed for the application.
        - Advantages:
          - Provides the most effective and efficient cleaning and sanitizing experience
          - Reduces operating cost
          - Even out operating characteristics
  - Stainless-steel handle
    - Designed to hold all accessories within easy reach of the operator.
    - Proper height and design to allow for easy movement from location to location
  - Pressure Fittings are all Stainless-steel or Brass which makes for a stronger and cleaner unit.
  - Plumbing lines are all Stainless-steel, Copper or High Pressure Insulated Tubing.
  - Heavy gauge Stainless-steel body affords year of use.
- NOTE: Not all operating features are on every machine

#### 8. Heavy Duty Boiler & Heating Element:

- Heavy Duty Stainless-steel boiler:
  - 3/8" thick wall is safer & more rugged than others which are little more than sheet stock.
  - Lifetime warranty on the boiler.
- Unlike others, Therma-Kleen units use an Incoloy 800 Super Alloy heating element internal within the boiler.
  - Incoloy 800 offers better corrosion resistance to hard water
  - Excellent strength resistance in high-temperature environments
  - Excellent oxidation resistance in high-temperature settings
  - When combined with low watt density output you have a perfect combination of efficient energy distribution in a long-life element
  - The heating element is removable if the occasion should ever occur

***These are all things which separate Therma-Kleen's American Engineered and Manufactured Industrial Grade machines from the lighter imported units***



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