



Master Distributor PermaSafe System Installation Guide

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PermaSafe Complete Vehicle Disinfection and Long Term Antimicrobial Protection System

Installation Instructions

WARNING: Please Read all Installation Instructions, Product Descriptions and Related Information before Attempting Use.

1.0 Introduction

The PermaSafe Vehicle Disinfection and Long Term Microbial Control “System” is comprised of two key products: “PermaSafe CLEAN™” (Step 1) and “PermaSafe SHIELD™” (Step 2), which are applied, via “fogging” equipment, to virtually all surfaces of a vehicle’s passenger cabin, including throughout its HVAC (Heating, Ventilation & Air Conditioning) system ductwork, and trunk or other storage areas.

1.1 PermaSafe CLEAN™

PermaSafe CLEAN™ (Step 1) is a powerful no-rinse, no-wipe, one-step, all-purpose cleaner, deodorizer, disinfectant and anti-allergen that sanitizes and disinfects surfaces to “prime” them for, and help ensure a permanent bond with, a subsequent application of PermaSafe SHIELD™.

A single fogged-on application of PermaSafe CLEAN™ will kill up to 99.999% of germs, bacteria, viruses, fungi, mold and other harmful microbes on hard, nonporous surfaces and 99.9% of same on fabrics and carpet, while also eliminating common odors and allergens.

NOTE: See Distributor Document: “About PermaSafe CLEAN™, Step 1 and EPA Approved Product Info” for additional information.

1.2 PermaSafe SHIELD™

PermaSafe SHIELD™ (Step 2) is a permanent antimicrobial surface protectant which, like PermaSafe CLEAN™, is fogged throughout a vehicle’s passenger cabin and trunk, and onto their many surfaces. Upon application, PermaSafe SHIELD™ forms a covalent bond with the surface to which it is applied. Once cured it will not wash off and can last, and remain antimicrobially active, for the life of the treated surfaces.

NOTE: See Distributor Document: “About PermaSafe SHIELD™, Step 2 and EPA Approved Product Info” for additional information.



2.0 Pre-Treatment Cleaning and Concerns

The PermaSafe System can only be effectively installed on clean, dry surfaces. Depending upon the condition of the vehicle to be treated, and its state of cleanliness, some initial cleaning may be necessary prior to commencing a PermaSafe System Installation.

Brand new vehicles at a new car dealership will typically require no pre-treatment cleaning, while the average customer-owned vehicle will usually require at least some pre-treatment attention. On the other hand, a dealership's preowned vehicles, or any vehicle with a heavily soiled or unkempt interior, should be professionally cleaned and "detailed" prior to treatment.

As a rule, encourage dealers who are participating in your new and/or preowned vehicle PermaSafe Preload programs to make the PermaSafe System Installation the very last step of their new and preowned vehicle pre-delivery detailing process.

2.1 Pre-Treatment Cleaning Instructions

To prepare a vehicle's passenger cabin and trunk for treatment, first remove all objects and contents not integral to the vehicle. Also remove its floor mats and set them aside for simultaneous treatment. The vehicle's cabin, trunk and floor mats should be free of all visible filth, such as soil, sand, ashes, dust, etc. Areas with any visible particulate should be vacuumed clean. Surfaces targeted for treatment must also be free of any and all wet or dry substances that may prevent PermaSafe SHIELD™ from bonding to them, such as oils or dried soda, ice cream or any other foreign matter. Again, heavily soiled vehicles should be professionally cleaned prior to treatment to ensure proper bonding.

2.2 Spot Cleaning with PermaSafe CLEAN™

While utilized primarily for its antimicrobial (disinfecting) capabilities, PermaSafe CLEAN™ is also a highly effective, heavy duty cleaner that can be used for removing a wide variety of even the toughest messes and stains prior to commencing a PermaSafe System Installation.

To clean soiled or stained non-porous surfaces, spray or fog area with PermaSafe CLEAN™ until wet, then wipe with clean sponge or microfiber cloth.

To clean soiled or stained fabric surfaces and carpets, spray or fog affected area with PermaSafe CLEAN™ until wet, then gently blot area with a clean damp sponge or microfiber cloth. Repeat as necessary for stubborn stains, then allow to air dry.



See Distributor Document “About PermaSafe CLEAN™, Step 1 and EPA Approved Product Info” for additional product uses.

2.3 Severe Passenger Cabin Odors

For vehicles with passenger cabin odors, please refer to Section **5.0 Severe Passenger Cabin and HVAC System Odors** before proceeding.

2.4 Cabin Air Filter Caution

Before proceeding with a PermaSafe System Installation, please read Sections **4.0 Cabin Air Filters** and **4.1 Cabin Air Filters and PermaSafe** to determine what care, if any, a specific vehicle’s Cabin Air Filter(s) may require before and/or after applying PermaSafe products.

3.0 Installing the PermaSafe System

PermaSafe CLEAN™ and PermaSafe SHIELD™ are applied by fogging with a PermaSafe approved fogger. Please read the Fogger Owner’s Manual completely, familiarizing yourself with the Fogger’s operation before use.

WARNING: Wear protective eyewear (goggles or face shield) and disposable gloves when applying PermaSafe CLEAN™ and PermaSafe SHIELD™.

3.1 Final Vehicle Preparation

Open all vehicle windows, doors and trunk to provide ventilation and ready access to all areas. To ensure thorough coverage, also open all interior compartments, such as the vehicle’s glovebox, center console, ash tray, etc.

3.2 Preparing Fogger for Use

Prepare the Fogger for use by following the Operating Instructions in the Fogger Owner’s Manual.

Once ready to use, remove the Fogger’s Reservoir Tank and pour the entire contents of an 8 ounce bottle of Step 1, PermaSafe CLEAN™ into the Tank and reattach it to the Fogger.

3.3 Applying Step 1, PermaSafe CLEAN™

Turn the Fogger on by sliding its Power Switch into the “ON” position.

Rotate the Flow Control Knob fully clockwise, in the “Decrease” direction, until it is just fully closed. DO NOT FORCE THE CONTROL KNOB further. Take notice of the position of the Control Knob relative to the “pointer” molded into the Fogger Housing above it,



marking it if necessary with a waterproof marker. Now fully closed, rotate the Control Knob one full turn, 360 degrees, counter-clockwise, in the “Increase” direction. This setting should provide the optimum spray pattern and a very fine mist or “Fog.” Fine tune the Control Knob if needed to achieve this result.

NOTE: Properly adjusted per above, the Fogger will empty the contents of an 8 ounce bottle of PermaSafe CLEAN™ or SHIELD™ from its Reservoir Tank in approximately 7 minutes.

The first area to be treated is the vehicle’s dashboard. Accessing it from either side of the vehicle, begin applying PermaSafe CLEAN™ to the top of the dashboard, starting at one far side and all the way forward, where it meets the bottom of the windshield. Fog the entire width and depth of the dashboard, working from the windshield inwards towards the steering wheel and down the front of the dash, fogging it in its entirety, including the instrument panel and controls, stereo system, A/C vents, steering wheel, etc.

Fog in a sweeping side-to-side motion, maintaining a distance of 6” to 12” between the Fogger outlet nozzle and target surface, making sure to cover the entirety of each target area without over-applying. As with a common Insect Fogger or Fumigator, for example, surface saturation is not necessary or desirable. Only a very fine mist or *fog* need fall on the target surfaces to effectively eliminate any existing surface germs or other surface contaminants

Once the entire dash area of the vehicle has been fogged, start the engine and turn on the air conditioner, setting the blower to its highest fan speed, the air flow direction to “Defrost” and the air mode to “Recirculate.” Running the air conditioning in this manner will draw the PermaSafe CLEAN™ into the vehicle’s cabin air intake and duct work and recirculate it throughout its ventilation system.

NOTE: For vehicles with severe odors, please refer to Section 5.0 Severe Passenger Cabin and HVAC System Odors.

Continue treating the interior by fogging thoroughly under the dashboard, where much of the vehicle’s ductwork is located. Then, leaving the engine and air conditioning running, lightly fog the remainder of the interior, all 360 degrees of it, systematically treating the headliner, all interior side and door panels and the complete vehicle floor, as well as everything on or bolted to it, such as its carpet, seat and center consoles. Finally, treat the vehicle’s trunk and floor mats in a similar fashion.

It is not necessary to use the entire 8 ounces of PermaSafe CLEAN™ to treat every vehicle. The amount of PermaSafe CLEAN™ required to achieve optimum results varies depending on a number of factors, including the size of the vehicle’s passenger cabin and



storage spaces as well as its age and sanitary condition. Any leftover PermaSafe CLEAN™ can be fogged into the vehicle to enhance effectiveness, returned to, and stored in, its original bottle for future use, or properly disposed of.

Because of their unique compatibility, it is not necessary to clean or dry any residual PermaSafe CLEAN™ from the Fogger's Reservoir Tank before filling it with Step 2, PermaSafe SHIELD™. It is also not necessary to wait until the just applied PermaSafe CLEAN™ completely dries before applying Step 2, PermaSafe SHIELD™.

Once the application of PermaSafe CLEAN™ is complete, inspect the interior for any visible liquid residue and wipe as needed with a clean microfiber towel or rag. To facilitate faster, more complete drying, keep the vehicle's doors and windows open and the engine and air conditioner running while preparing to apply Step 2, PermaSafe SHIELD™.

3.4 Applying Step 2, PermaSafe SHIELD™

With the application of PermaSafe CLEAN™ complete and the Fogger Reservoir Tank empty, remove the Reservoir Tank, if still attached to the Fogger, pour the complete contents from a bottle of PermaSafe SHIELD™ (8 Fluid Ounces) into the Tank and reattach it to the Fogger.

Keeping the vehicle's doors, windows, trunk and all interior compartments open, turn its engine off. Then, repeating the steps outlined in Section 3.3 Applying Step 1, PermaSafe CLEAN™, turn the Fogger on, confirming the Control Knob is adjusted as described and the Fogger is emitting a fine mist or "fog."

As with Step 1, begin applying PermaSafe SHIELD™ at the very front of the passenger cabin, first fogging the top of the dashboard, starting from one forward most corner where it meets the windshield, and working inward. Treat the entire width and depth of the dashboard by fogging with sweeping side-to-side strokes and maintaining a distance of 6" to 12" between the Fogger outlet nozzle and target surface. Once again, use care not to over-apply. A fine mist or fog is all that is needed to achieve optimum results.

Upon reaching the edge of the dashboard closest to the steering wheel, proceed to fog down the front of the dashboard, fogging it in its entirety, including the instrument panel and controls, stereo system, A/C vents, steering wheel, etc.

Once the entire dash area of the vehicle has been fogged, start the engine and confirm the air conditioner is on, its blower is set to its highest fan speed, the air flow direction is set to "Defrost" and the air mode is in the "Recirculate" position to draw the PermaSafe SHIELD™ into the vehicle's HVAC system.



Continue treating the interior by fogging thoroughly under the dashboard, down and across the carpeted floor, under the front seats and then all over and around the seat cushions, seat backs, head rests, seat belts, center console, etc., repeating this process with the back seat areas, up and across the door panels and covering the headliner and rear window shelf in their entirety, as well as the vehicle's trunk and floor mats.

As with PermaSafe CLEAN™, it is not always necessary to use the entire 8 ounces of PermaSafe SHIELD™ to treat a vehicle. Any leftover PermaSafe SHIELD™ can be fogged into the vehicle for extra coverage, returned to, and stored in, its original bottle for future use, or properly disposed of.

Once the application of PermaSafe SHIELD™ is complete, inspect the interior for any visible liquid residue and wipe as needed with a clean microfiber towel or rag.

To facilitate faster, more complete drying, keep the vehicle's doors, windows, trunk and all interior compartments open. If possible, allow the engine and air conditioner to continue to run for the next 10 - 15 minutes, with the blower remaining at its highest fan speed setting, in Recirculate mode, but with the air flow direction changed to the Center Vents.

Avoid contact with treated surfaces until they are "touch-dry." Drying time varies with environmental conditions and the extent of ventilation. PermaSafe SHIELD™ fully cures in 24 hours.

NOTE: The use of a high volume/velocity electric fan, or two, can substantially reduce drying times.

4.0 Cabin Air Filters

First appearing in vehicles around 2002, Cabin Air Filters are now standard equipment in virtually all new cars and light trucks sold in the US. Most Cabin Air Filters are made of pleated paper, cotton paper or fabric attached to a plastic or metal frame that fits into a vehicle's HVAC case. A Cabin Air Filter *filters* the incoming or "fresh" outside air that is drawn into a vehicle's HVAC system, preventing bugs, leaves, dirt and other debris from entering the system, while also, to varying degrees and depending on the vehicle and the type of filter medium, trapping dust, soot, pollen and more.

Most early Cabin Air Filters were designed, and positioned in HVAC systems, to filter only fresh, incoming outside air. Such systems provided no filtration of the passenger cabin air that was recirculated through the HVAC system when a so equipped system was operated in "Recirculation Mode."



With early systems, the rule of thumb was: if the Cabin Air Filter was located under the hood, at the fresh air intake, it would filter only incoming fresh air. On the other hand, if the Cabin Air Filter was located on the cabin side of the fire wall, it would usually filter both fresh, incoming air and recirculated air. These rules, however, no longer apply in all cases. Some vehicles are now equipped with multiple Cabin Air Filters, sometimes located in various sections of the HVAC system, and/or Cabin Air Filters of various filtration media. Higher efficiency and Electrostatic Cabin Air Filters can now capture and hold much finer particulate as well as some bacteria, while activated charcoal and other specialty filters can prevent odors from entering a vehicle's cabin by trapping unpleasant smelling gases, such as ozone, sulfur dioxide, nitrogen oxide and hydrocarbons.

4.1 Cabin Air Filters and PermaSafe

Due to the nature of a PermaSafe System Installation and the chemistry utilized, it is sometimes necessary to remove a vehicle's Cabin Air Filter(s) before proceeding with treatment. While Filter removal is usually unnecessary when performing Installations on new vehicles, it is frequently required when servicing used vehicles, depending on the condition of the existing Cabin Air Filter and other factors.

As stated in Sections 3.3 and 3.4, when performing a standard PermaSafe System Installation, the vehicle's HVAC system is run only in "Recirculate" mode, therefore drawing its intake air from inside the vehicle's cabin, as opposed to drawing "Fresh" air from outside of the vehicle. Hence, in many cases, neither our "CLEAN™" nor "SHIELD™" products will flow directly through the vehicle's Cabin Air Filter during an Installation. However, as stated prior, some vehicle HVAC systems are designed to direct forced air through the vehicle's Cabin Air Filter, or through a secondary Cabin Air Filtration system, even when operating in Recirculate mode.

Note that, properly administered, PermaSafe CLEAN™ will not harm clean standard paper, cotton paper or fabric Cabin Air Filters. However, because CLEAN™ is a powerful cleaner and disinfectant, it may partially dissolve some of the captured contaminants in dirty, used Cabin Air Filters, thereby possibly further obstructing the air flow through such filters, as well as the dispersion of PermaSafe CLEAN™ and SHIELD™.

PermaSafe SHIELD™, on the other hand, is not only harmless to standard paper, cotton paper and fabric Cabin Air Filter media, but quite beneficial to HVAC systems and vehicle occupants, as upon application, it transforms the treated filters into "Antimicrobial" Cabin Air Filters, further protecting the vehicle's passenger cabin and passengers from harmful microbes. However, treating dirty, used Cabin Air Filters with PermaSafe SHIELD™ is not recommended as SHIELD™ will adhere to the dirt captured in the filter, not the filter medium itself.



4.2 Cabin Air Filter Handling Pre and Post Treatment

New Vehicles: It is generally unnecessary to remove the Cabin Air Filter(s) from a new vehicle prior to performing a standard PermaSafe System Installation. However, prior to commencing an Installation on any new vehicle model for the first time, check the vehicle's manufacturer-produced shop manuals, or another reliable source, to confirm the vehicle's HVAC system air flow route and if it's Cabin Air Filters utilize any non-standard filtration media that could be damaged by our products.

Used Vehicles: Before commencing a PermaSafe System Installation on any used vehicle, we suggest removing and inspecting the condition of its Cabin Air Filter(s) and, if any unwanted odor, visible contamination or particulate exist, subsequently replacing it, post-System Installation.

Ideally, and to ensure optimum PermaSafe product performance, remove the vehicle's used Cabin Air Filter(s) prior to performing the PermaSafe System Installation and replace it with a new one, but only after the PermaSafe System Installation has been completed as follows:

- Remove the used Cabin Air Filter(s) and close/re-secure the Cabin Air Filter access cover(s).
- Perform the complete PermaSafe System Installation, as usual, with the Cabin Air Filter(s) removed.
- Upon completion of the PermaSafe System Installation, replace the discarded Cabin Air Filter(s) with a new one.

For added antimicrobial protection, treat the new replacement Cabin Air Filter with PermaSafe SHIELD™ before installing it in the vehicle's HVAC system. To do so, apply a single coat of PermaSafe SHIELD™ to each side of the new Cabin Air Filter, following the normal fogging instructions described in Section 3.4. DO NOT, however, first treat it with PermaSafe CLEAN™. Because the replacement filter is new, and due to the unique composition of standard paper and fabric Cabin Air Filters, it is unnecessary and not recommended to first treat them with PermaSafe CLEAN™.

5.0 Severe Passenger Cabin and HVAC System Odors

Although our focus is Vehicle Disinfection and Long Term Antimicrobial Protection, our products' ability to eliminate severe, stubborn odors from vehicle passenger cabins and HVAC systems provides a potentially lucrative additional business opportunity.



Note that every odor elimination service should be performed *in addition to*, and in conjunction with, a standard PermaSafe System Installation. While this combination may result in the duplication of some treatment steps, it also helps ensure the offending odor is truly eliminated, treats existing auxiliary odors and provides protection against future ones.

Also be aware that performing such odor removal services will require more time and, typically, more materials, than simply performing a standard PermaSafe System Installation. The amount of additional resources these services require is generally based on the cause and severity of the odor.

Should you elect to offer such additional services, you will find PermaSafe CLEAN™ to be the perfect solution for eliminating problem passenger cabin and HVAC system odors, while also applying PermaSafe SHIELD™, as part of our standard PermaSafe System Installation, will reduce the formation of future odors.

5.1 Odor Formation and Detection Basics

The most powerful component of our odor elimination solution is PermaSafe CLEAN™. Both recognized and approved for use by the EPA as a “Heavy Duty Odor Eliminator,” PermaSafe CLEAN™ does exactly that: *eliminates odors*. Instead of masking smells, CLEAN actually removes them by eliminating their source through a process of oxidation. CLEAN is effective on even the most challenging odors, such as tobacco smoke, deep-set pet and pet waste odors, strong ammonia and sulfur odors, and many others. However, to eliminate the source of an odor, PermaSafe CLEAN™ must come in contact with that source.

Thankfully, determining and locating the source of most vehicle passenger cabin odors is usually fairly simple, and will become much more so over time as you become familiar with, and accustomed to, such odors.

Most passenger cabin odors are the result of one of the following:

1. A spill or other accidental discharge of a substance that is, or over time becomes, odorous on a vehicle’s seats, floor/carpet or other surface.
2. A film of some substance, or substance byproduct, on the passenger cabin’s many surfaces and/or throughout its HVAC system.
3. Decaying matter or the growth of mold, mildew or bacteria.

Examples of common accidental spills and discharges that can lead to lasting unpleasant odors include wine, liquor or any of an array of pungent food products, as well as human and pet waste. While you may initially be unfamiliar with such odors, their sources are



usually localized and relatively easy to pinpoint, as most such spills leave stains that typically last as long as the odors do.

On the other hand, tobacco smoke odor is rarely localized and leaves no localized stain. Instead, tobacco smoke odors can emanate from a film of smoke residue that may cover any or every passenger cabin surface, including its floorboard and/or carpet and seats, headliner, door panels, dashboard and even the interior surfaces of its HVAC system duct work. While tobacco smoke may provide no immediately visible evidence of its source, you, or someone you work with, is probably familiar enough with its distinct odor to recognize it, enabling you to proceed with the applicable treatment.

Similar to odors from spills, some mold and mildew odors can be traced to visible mold or mildew stains, generally located on a vehicle's carpet, and most often on a section of carpet that is frequently exposed to moisture. Conversely, not unlike tobacco smoke odors, the majority of mold and mildew odors will provide no visible clues of their location, as the most common location for mold and mildew to form is in a vehicle's dark, and often damp, HVAC system. However, also like tobacco smoke, you are probably familiar enough with its unique musty odor to recognize it and proceed with the proper removal protocol.

5.2 Locating an Odor's Source

To determine the source of a passenger cabin odor, proceed as follows:

1. Observe the odor yourself, then ask the vehicle owner or, if owned by a dealer, whomever purchased or traded for the vehicle, to provide whatever information regarding the odor they can. Virtually 100% of the time, someone is aware of the odor and can provide an explanation as to its origin.
2. Look for visible evidence of the odor, such as a stain on the vehicle's carpet, seats or other fabric surfaces. If a stain is found, determine if it is giving off the offending odor.
3. Follow the odor with your nose. Working outward from a given location in the vehicle, determine in which direction from that specific location the odor becomes more pungent, until you have zeroed in on it.
4. If the odor is tobacco smoke, carefully observe the passenger cabin's interior surfaces to determine how much cleaning may be required to remove the odor. In severe cases, the smoke residue may have covered virtually all interior surfaces, from headliner to carpet and every surface in between.

To determine the severity of the residue, carefully observe each interior surface for obvious discoloration, initially concentrating around the driver seat, as the driver's position is most frequently where the smoking occurred. Starting at the



Headliner/Sun Visor area over the driver's seat and working downward, use a light colored rag slightly moistened with PermaSafe CLEAN™ to wipe a small section of each vinyl, rubber, plastic or glass surface. If coated in smoke residue, the spot wiped will immediately brighten, with the smoke residue now appearing as a dark brown spot on the rag you wiped with. If no residue is evident, either the odor is originating from another location, or the residue buildup is not yet sufficient to detect in this manner.

5. To determine if the odor is emanating from the vehicle's HVAC system, start the vehicle's engine and turn the air conditioning on, set the temperature to its lowest (coldest) setting, set the blower to its lowest fan speed, set the air flow direction to the Center Vents and set the air mode to "Recirculate." Then, observe the odor of the air flowing out of the Center Vents.

If no odor is present, reset the air mode from Recirculate to "Fresh Air." Making no other setting changes, allow the system to run for one minute and then observe the odor of the air flowing out of the Center Vents again.

If again no odor is detected, reset the temperature to its highest (warmest) setting. Making no other setting changes, allow the system to run for one minute and then observe the odor of the air flowing out of the Center Vents again.

If again no odor is detected, reset the air flow direction only, to Defrost, and recheck for the odor as described above, except now from the air flowing out of the defrost vents. Continue this process if needed by next resetting only the air flow direction to "Floor," or "Heater."

Finally, if again no odor is detected, reset only the air mode from "Fresh Air" to "Recirculate" again, keeping the blower at its lowest fan speed, the temperature at its highest (warmest) setting and the air flow direction to "Floor," or "Heater."

If the odor is not detected from the HVAC system while running in any of these mode combinations, it is unlikely the odor is emanating from the HVAC system.

5.3 Passenger Cabin and HVAC System Odor Elimination

Once the source of an odor has been located, follow the appropriate elimination procedures outlined below.

5.4 Passenger Cabin Odor Elimination:

Note that even though the following steps alone may appear to defeat a specific passenger cabin odor issue, cabin odor elimination services should be treated as separate, additional operations/services and always be followed by a complete, standard PermaSafe System Installation.



As noted prior, PermaSafe CLEAN™ is an extraordinarily effective, EPA Approved, Heavy Duty Odor Eliminator. However, as expected, to destroy the source of an odor, it must make contact with that source.

Vehicle passenger cabin odors that originate from mold, mildew, bacteria, tobacco smoke, pet urine, rotting/decaying food and beverage residue or other organic matter on nonporous surfaces can be eliminated by merely fogging or spraying PermaSafe CLEAN™ onto the affected area and allowing it to air dry. However, if any of these substances have stained or remain visible on the subject nonporous surface, their removal will require fogging or spraying the affected area with PermaSafe CLEAN™ for a longer period of time, until it is wet, allowing the PermaSafe CLEAN™ to remain on the soiled surface for one minute, wiping the soiled surface with a clean sponge or microfiber cloth and, finally, allowing the surface to air dry.

Eliminating passenger cabin odors that originate from any of the above or similar substances on porous surfaces, such as fabric upholstery and carpets, requires a heavier application of PermaSafe CLEAN™ and more drying time. When treating such porous surfaces for odors, fog or spray PermaSafe CLEAN™ onto the affected surface until slightly damp, then allow to air dry. Should the odor be accompanied by a stain, its removal will instead require fogging or spraying the affected area with PermaSafe CLEAN™ until wet, followed by blotting the area with a clean sponge or microfiber cloth dampened with PermaSafe CLEAN™. This process should be repeated, as necessary, until the stain and odor have been removed. Upon completion, allow the surface to air dry.

5.5 HVAC System Odor Elimination

The elimination of severe HVAC system odors may require a heavier, longer than typical, fogging of PermaSafe CLEAN™ through the vehicle's Cabin Air Intake and duct work, as described in Sections 3.0 and 3.3; the replacement of the vehicle's Cabin Air Filter(s), as discussed and described in Sections 4.0 - 4.2; and/or the additional step of treating the vehicle's HVAC system Fresh Air Intake and duct work.

A basic vehicle HVAC system Fresh Air Intake treatment is described below. This added step can be incorporated into, and performed simultaneously with, a standard PermaSafe System Installation, or delayed until after you have performed Step 1 of our standard PermaSafe System Installation (the fogging of PermaSafe CLEAN™, see Section 3.3) and confirmed that the offending HVAC system odor was not eliminated.

A vehicle's HVAC system Fresh Air Intake is an air duct which, when the HVAC system is running in the "Fresh Air" mode or with the "Recirculate" mode turned off, draws fresh air



from outside of the vehicle into the HVAC system, as opposed to recirculating the passenger cabin air.

The first step in treating a vehicle's HVAC system Fresh Air Intake is locating it. On most vehicles, the Fresh Air Intake is located outside of the vehicle in front, and at the base of its windshield, between the windshield and the hood, under or near the wiper arms. A Fresh Air Intake is usually identifiable by the plastic grillwork that covers it. While typically visible without raising the vehicle's hood, some Fresh Air Intakes are positioned just under the hood, again, at the base of the windshield, and most are best accessed for our purposes with the hood raised.

Note that some vehicles have more than one Fresh Air Intake, while others have plastic grillwork that runs the width of the vehicle, making it more difficult to locate the actual Fresh Air Intake duct(s). In such instances, simply treat the entire width of the grillwork, as described in the following.

Once located, and with the vehicle's doors open, windows down and the Cabin Air Filter removed (see Sections 4.0 - 4.2), start the engine, turn the air conditioner on, set the temperature to its coldest setting, the blower to its highest fan speed and the air flow direction to "center," so the air flows through the center vents. Finally, turn the "Recirculate" mode option OFF.

If necessary and accessible, you can now confirm you have properly identified the vehicle's HVAC system Fresh Air Intake(s) by carefully placing your hand or a paper tissue on the vent. With the engine and air conditioning running as described above, you should be able to feel a slight suction from the Fresh Air Intake or, if verifying with a paper tissue, see the tissue being drawn against the Fresh Air Intake Vent. Using the Fogger as previously described and maintaining a distance of about 4" to 6" between the Fogger outlet nozzle and the Fresh Air Intake, fog the Fresh Air Intake for about 45 seconds.

Next, making no other treatment process changes, turn the vehicle's air conditioning off and the heater on. Set the temperature to its warmest setting, the air flow direction to the "Defrost and Floor" combination setting, ensuring that the warm air is flowing through the defrost vents (the vents that blow air on the windshield) and, simultaneously, the floor vents (those that blow air into the front driver and passenger foot wells). Now, once again, fog the Fresh Air Intake(s) for about 45 seconds.

Once the fogging is complete, allow the engine and HVAC system to continue running as set, for about one minute, to ensure the PermaSafe CLEAN™ fully disperses. Repeat as necessary to eliminate the odor, then proceed with your PermaSafe System Installation.