



Forklift Entryway Sanitizing System

Patent Pending



INSTALLATION AND OPERATION MANUAL

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READ ALL INSTRUCTIONS BEFORE ATTEMPTING TO INSTALL AND OPERATE THIS EQUIPMENT



WARNINGS

Read this manual completely before attempting to install or use this system.

- Always wear proper personal protective equipment (PPE's) when installing or servicing this unit.
- Always follow all chemical safety precautions and handling instructions provided by the chemical manufacturer or product Safety Data Sheet (SDS).
- If this unit is modified or serviced with parts not listed in this manual, the unit may not operate correctly and may void any warranty.
- **Chemical Spray Hazard:** Wear splash goggles or glasses when required by chemical manufacturer, SDS, or OSHA when installing or servicing this unit.
- Use only authorized sanitizers in this unit to avoid damage to the pump, lines, check valves, and nozzles.
- **Use of Unauthorized Sanitizers will void all warranties.**
 - Only authorized chemical sanitizers may be used in this system. Many sanitizer products are not compatible with the materials of construction in this system. Use of incompatible sanitizers may damage the lines, check valves assemblies, nozzles and pump seals. Do not use any sanitizer in this unit that is not supplied by or authorized by your equipment supplier.
- **Magnet Warning (physical injury):**
 - This unit uses very strong magnets. Care must be taken when handling to prevent pinch and other personal injuries. Serious injury can occur to fingers if caught between large magnets. Small magnets can be a choking hazard and should never be swallowed or inserted into any part of the body. Small magnets are considered a choking hazard that can result in death and should be treated as such. Keep all magnets away from animals and children. If a magnet should break gather all small pieces and dispose of accordingly.
- **Magnet Warning (magnetic field):**



- THIS UNIT CONTAINS MAGNETS THAT MAY BE HARMFUL TO THOSE WEARING A PACEMAKER OR OTHER DEVICE SENSITIVE TO MAGNETS.

INTRODUCTION:

This system is designed to aid in the sanitizing of wheels on forklifts prior to entering and exiting critical control areas, especially where reduced moisture is advantageous. This system has been designed to provide an uninterrupted uniform distribution of sanitizer solution onto the tire tread surface. Using only minimal effort, the operator can depress the pump one full stroke forcing the pump to dispense 1.0 ounce of sanitizer evenly split to all nozzles. Any modification or alteration of the system may result in poor performance which may include uneven spray patterns, interrupted spray, or excessive dripping of sanitizer. To avoid these issues it is highly recommended that only authorized parts or components be used in this system.

SPECIFICATIONS:

Dimensions:	Shipping package size, approximately 12" x 12" x 12"
Shipping Weight:	without sanitizer, approximately 9 lbs
Pump Capacity:	1.0 fluid oz per pump stroke

PACKAGE CONTENTS:



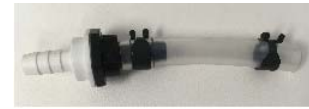
(4) Fan nozzles with swivel adapters, screens, check valves, & magnet mounts



(1) Y-Manifold with tubing reducers, hose fitting, clamp & magnet mount.
(2) Tubing branch T's



(1) Gallon jug adapter cap, push-fit tubing adapter, tubing insert & clamps.



(1) Check valve, tubing section & clamps



(20) Magnetic tubing holders



(25) Plastic cable ties



(1) Tubing cutter



(1) Sanitizer pump, magnet mount base



(50 Ft)
1/4" Black
nozzle tubing



(10 Ft)
1/2" Clear
pump tubing



(1) Sanitizer jug rack with magnetic mounts and safety cable assembly

TOOLS NEEDED TO INSTALL:

Adjustable Wrench

Used to tighten nozzle bodies and adjust nozzles



Pliers

Used to install spring clamps



Angle Cutters

Used to cut plastic ties



Tubing Cutter (provided)

Used to cut tubing



NOTE

All components of this system are attached to the vehicle with magnets. The only tools needed for installation are an adjustable wrench, pliers, diagonal cutters, and the tubing cutter supplied in this kit. The tubing connections are either a barbed connection with a spring clamp retainer, or a push-fit style connection which when firmly pushed into the fitting will provide a tight, leak free connection. To release a push-fit style connection, press in on the fitting collar while pulling on the tubing.

INSTALLATION INSTRUCTIONS:

READ ALL INSTRUCTIONS BEFORE INSTALLING THIS EQUIPMENT

1. Unpack the entire contents and inspect to ensure all components shown on page 4 “Package Contents” are included.



2. Review the vehicle this unit will be installed on and determine which location is desired for placement of the one gallon sanitizer jug rack. The jug rack can be attached by either the bottom mount magnets (figure 1) or the side mount magnets (figure 2). Keep in mind that the jug rack can be moved to facilitate inspections and maintenance. You may want to identify a location that is the best fit during use, such as inside the ROP upright and another during inspection, such as outside the ROP upright.



Figure 1



Figure 2

Installation and Operation Manual: Forklift Entryway Sanitizing System



Figure 3

3. The jug rack includes a safety cable that prevents the unit from falling to the ground if it is accidentally knocked off the vehicle. This safety cable will need to be attached to the vehicle roughly 18 inches from the jug rack. This will allow about 5 inches of slack in the cable. It is preferable to attach the cable above the level of the jug rack as shown (figure 3). If you plan to use alternate locations for the jug rack, make sure there is enough slack in the cable to allow movement to each of the alternate locations.

Attach the clip using the supplied large plastic cable tie. Route the cable tie through the small closed end of the clip and secure it around the upright or other object (figure 4)

Ensure that the cable clip gate is easily accessible. The loop end of the cable will need to be removed each time the jug is replaced.



Figure 4

4. Determine the desired location for the manual hand pump. Attach the pump by setting the base mounted magnet on a suitable metal surface to the left or right of the operator's seat. Ensure the magnet holds the pump securely in place and allows the operator to easily depress the pump. If the desired pump location is non-metallic, a steel plate (not provided) can be attached to the forklift to mount the pump.



Figure 5

Installation and Operation Manual: Forklift Entryway Sanitizing System

5. Find the positions on the body of the vehicle that will allow the nozzles to point to the tire tread with at least a 2 to 3 inch spacing. If the nozzle is located too close to the tire it will not cover the entire tread surface area. If it is located too far away from the tire it will spray wider than the tire tread surface area and waste sanitizer. Affix the nozzles for all three or four tires, depending on the lift.



Figure 6

NOTE: The kit comes with nozzle assemblies set for each side of the forklift, (2) left and (2) right. If required, you may remove the clamp from the nozzle assembly and reverse if needed to properly locate the nozzle. Determine which locations and configurations work best for your particular installation. Positions and angles can be adjusted after installation to achieve optimum coverage.



Figure 7



Figure 8

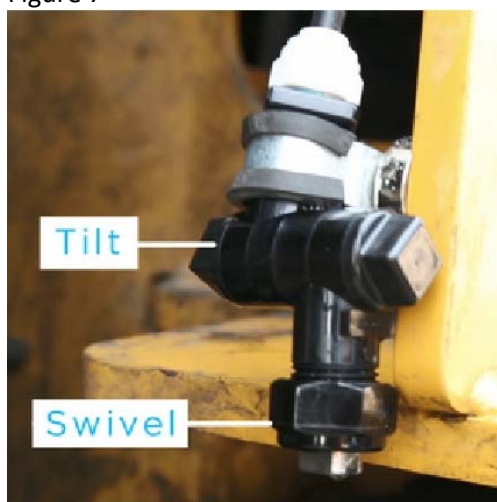


Figure 9

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6. With the jug rack, pump, and nozzles located, you may now install the chemical tubing. Start by placing a one gallon container of sanitizer in the jug rack. Unclip the safety cable from the cable clip and route the cable through the handle of the jug (figure 10) and then reattach to the clip. Remove the cap from the sanitizer jug and attach the one gallon adapter cap assembly by pushing down firmly as you turn the adapter clockwise. Insert the tubing insert into one end of the clear tubing, then press the tubing into the push-fit fitting on the adapter cap. Route the tubing from the one gallon container to the pump and mark the cut location using a pen. **DO NOT CUT THE TUBING AT THIS POINT.**



Figure 10

Lift the engine inspection cover and or seat, depending on your lift design, and ensure that the tubing does not get in the way or become pinched. If this requires temporarily moving the jug rack to an alternate location for inspection, you may move it. Be sure to leave enough extra tubing to allow both locations. Be sure to also leave enough extra tubing to be able to lift the jug from the jug rack without disconnecting the tubing.

Now pull the jug rack loose from the vehicle and allow it to be suspended by the safety cable. Ensure that the tubing from the jug to the pump does not get pulled tight or placed under any strain. Allow extra tubing if necessary. (figure 11)



Figure 11

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Once you have determined the desired routing, you may attach the tubing using several of the magnetic tubing magnet mounts and plastic ties.

SAFE TUBING INSTALLATION QUICK CHECK: Tubing is not kinked, pulled, or pinched...

	With the jug rack in the normal operating position
	With the jug rack in the alternate / maintenance / inspection position.
	When the inspection cover or seat are lifted for maintenance or inspection
	When the one gallon container is lifted from the jug rack
	When the jug rack and one gallon container are suspended by the safety cable

7. Locate the check valve and 3" tubing supplied in the kit. (figure 12) Install the check valve on the inlet of the pump by pushing the tubing over the inlet fitting (bottom fitting labeled "inlet"). While squeezing the spring clamp tabs with pliers to release it, slide the spring clamp down over the tubing you just pushed onto the pump inlet fitting. Ensure that the black end of the check valve is closest to the pump.

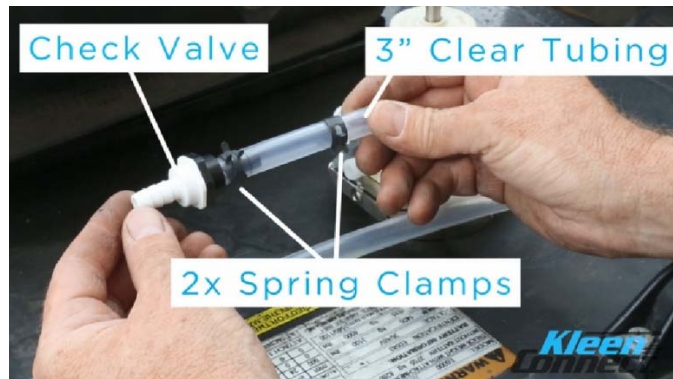


Figure 12

With the tubing properly routed, establish the final correct length from the one gallon jug to the white end of the check valve and cut the tubing with the supplied tubing cutter. Install another spring clamp onto the tubing from the one gallon jug and insert the white end of the check valve into the tubing and secure with the spring clamp.

8. Locate the Y-manifold and using the supplied spring clamp, attach the remaining clear tubing to the inlet of the Y-manifold. Using its magnet mount, position the Y-manifold in a convenient location that allows the tubing to be routed to the pump discharge fitting. Usually near the back counterweight or somewhere behind the seat. Ensure that the tubing will not be kinked or pinched when inspecting or moving the seat. Once the desired location has been found, you may secure the tubing with the magnetic tubing holders and **mark** the cut length. **DO NOT CUT THE TUBING AT THIS POINT.**
9. The Y-manifold reduces to $\frac{1}{4}$ " push fit style fittings and splits the flow into two directions, typically one for the front and one for the rear. Depending on your lift, these outlets will need to be split again to each nozzle previously mounted near each tire. It is generally easiest to cut a 3" to 4" piece of the black $\frac{1}{4}$ " tubing and use it to connect the first branch T directly to the Y-manifold. (figure 13)



Figure 13



Figure 14

Starting at one of the rear wheel nozzles located on either side of the lift, attach the black $\frac{1}{4}$ " tubing to the spray nozzle push fit fitting. Route the tubing up the body of the forklift to the branch T just installed on the Y-manifold. Be sure to route the tubing so that it is least likely to be damaged, kinked or smashed. Leave a couple inches of extra tubing near the nozzle to allow minor adjustments to the nozzle location. Secure the tubing with the magnetic tubing holders (figure 14) and cut the tubing to length. Connect it to either side of the branch T.

Repeat for the rear wheel on the other side and connect to the other end of the branch T. Now that both lines to the rear wheels are connected and you're sure about the location of the Y-manifold, you can cut the clear tubing. Install the spring clamp onto the tubing and connect it to the discharge fitting on the pump. Secure it by using pliers to slide the spring clamp down over the fitting.

10. To supply the front nozzles it is usually easiest to route one tubing alongside the body or up over the roll cage to the front of the lift and install the branch T somewhere on the front of the lift. Therefore, connect the black $\frac{1}{4}$ " tubing to the remaining outlet port on the Y-manifold and route it to the front of the lift using the magnetic tubing holders. (figure 15) If routing alongside, be aware of hazards such as stepping and smashing the tubing. If routing overhead, be aware of hand holds, battery lift openings, and lighting.

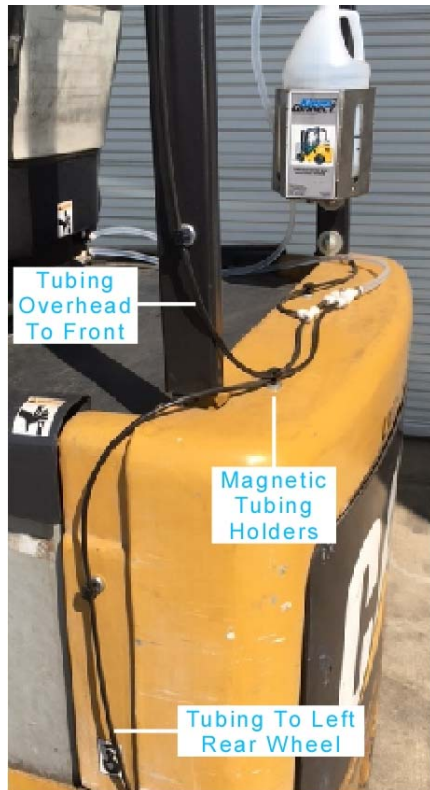


Figure 15

At the front of the fork lift, find a location to install the branch T. Usually between the mast and the front of the fork lift body. (figure 16)



Figure 16

Cut the tubing and install the branch T, then use the remainder of the tubing and tubing holders to route each end of the branch T to the front spray nozzles.

PRIMING THE SYSTEM:

Once the installation is complete, walk around and check to make sure all tubing is routed and secured properly. Open and close any engine compartment doors or access covers. Lift the seat and body inspection cover on electric forklifts. Make sure there are no interferences with tubing or components.

The system is now ready for priming and use. Gently and firmly, push down on the pump completely (figure 17) and release allowing the pump to return to normal position. Repeat this until all air has been purged from the lines (figure 18) and back pressure is felt while pressing the pump. When the nozzles have achieved a spray pattern the priming is complete. Check to make sure there are no leaks at connection points. Make sure all tubing connections have been fully inserted into the push fit style fittings, and all squeeze clamp connections are secure and dry.



Figure 17



Figure 18

ADJUSTING THE NOZZLES:

Have an assistant turn the steering through the complete range of motion while you observe and ensure clearance with the nozzles. Pay attention to anything that might contact the nozzles. Relocate the nozzles if necessary.

Have an assistant press the pump handle while you observe the spray pattern at each wheel. The goal is to achieve a flat fan spray that covers the entire width of the wheel. Adjust as required by placing the magnet mount in an alternate location, adjusting the nozzle swivels, or turning the nozzle itself to align with the wheel. Make sure to tighten the nozzle swivel assemblies as well as the caps. You may also trim any excess tubing at this point.

If you relocated the nozzles, be sure to re-check for clearance when turning the wheels.

Have an assistant drive the forklift in a straight line at approximately 3mph and press the pump one full stroke while you observe the spray patterns and coverage on each wheel. Determine if one full stroke will be adequate for your tire size and ensure full coverage of all tread areas. (figure 19)



Figure 19

OPERATING THE SYSTEM:

TO OPERATE THE SYSTEM PERFORM THE FOLLOWING:

While traveling in a straight line towards the entry of the critical control area, depress the pump handle firmly and completely one to two times to cover the surface of the rotating tires with sanitizer. (figure 20).



Figure 20

The speed you are traveling and the tire size will determine the coverage. In most cases the average solid tired forklift traveling at moderate speeds of 2-4 mph will only require one application to cover the entire wheel surface. If your condition requires two applications, simply press the pump down the first time, release and immediately press again. The pump will maintain a smooth spray between back to back strokes.

WARRANTY:

Thank you for your purchase of a Kleen Connect Forklift Entryway Sanitizing System. We've carefully chosen materials to be compatible with the approved sanitizers and hope this system gives you years of service with minimal maintenance. Your purchase is covered by a limited warranty and replacement parts are available directly from Kleen Connect.

For replacement parts call (530) 895-0521

LIMITED WARRANTY:

This Limited Warranty applies to the physical components, and only for physical components purchased through an authorized Kleen Connect Distributor. This Limited Warranty covers any defects in material or workmanship under normal use during the Warranty Period.

During the Warranty Period, Kleen Connect will repair or replace, at no charge, products or parts of a product that prove defective because of improper material or workmanship, under normal use and maintenance.

The Warranty Period for the Forklift Entryway Sanitizing System purchased from an Authorized Distributor is **12 Months from the date of purchase**. A replacement system or component assumes the remaining warranty of the original Forklift Entryway Sanitizing System.

This Limited Warranty does not cover any problem that is caused by conditions, malfunctions, or damage not resulting from defect in material or workmanship. This includes but is not limited to problems caused by:

- Physical damage, dropping, crushing, or other abuse outside normal operating conditions.
- Improper installation, maintenance, or modifications to the system.
- **USE OF UNAPPROVED CHEMICALS.**
- Contact with wheels or other moving objects such as masts, chains, etc.

To obtain warranty service, contact Kleen Connect at (530) 895-0521 to determine the problem and the most appropriate solution for you. Please have the Serial Number of your system available. The Serial Number can be found inside the one gallon jug rack, beneath the foam pad.

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