



ROOM DECONTAMINATION SYSTEM OPERATOR MANUAL

Model(s): mRDS

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this manual, primarily, is to establish guidelines for the safe operation of the mRDS system. Secondly, it establishes a method for proper hand-application using the optional APA.

1.2 Terms/Definitions

mRDS: modular Room Decontamination System

APA: AeroClave Portable Applicator

Injection Phase: In this phase, the solution is aerosolized and applied evenly to the treatment area. A typical injection phase can last anywhere from 5-30 minutes, depending on the size of the treatment area.

Dwell Phase: Once an injection phase has completed, the treatment area is allowed to sit for a minimum of 10 minutes in a dwell period. The dwell period gives the aerosolized solution an opportunity to evenly distribute throughout the treatment area, ensuring complete coverage on all surfaces.

Aeration Phase: The aeration phase is the final stage when the treatment area is returned to its normal habitable state. Do not re-enter the area until the air is clear (minimum 20 minutes).

1.3 Equipment and Media

- mRDS Unit
- 4 Liter AeroClave Solution Tank
- AeroClave Approved Solution
- APA
- Touchscreen Controller



2.0 SAFETY GUIDELINES

READ AND UNDERSTAND THIS OPERATOR'S MANUAL PRIOR TO USE OF THE SYSTEM. STRICTLY FOLLOW ALL SAFETY INSTRUCTIONS IN THIS OPERATOR'S MANUAL PRIOR TO, DURING, AND AFTER USE OF THE SYSTEM. SYSTEM OPERATOR'S MUST COMPLY WITH ALL SAFETY PRECAUTIONS MENTIONED IN THIS SECTION.

Use only AeroClave-approved solutions when operating this equipment. Failure to do so will result in voiding of warranty and may result in INJURY or DEATH. Follow all label instructions on approved solutions.

2.1 Operational Safety Guidelines

- 2.1.1 Only trained and qualified personnel should operate the mRDS unit.
- 2.1.2 Levels of training:
 - a) Demonstration Training: individuals who will be operating the mRDS unit for demonstration purposes only, using only de-ionized or distilled water as a surrogate solution must read and understand this document.
 - b) mRDS Operator Training: individuals who will be operating the mRDS unit for facility or asset decontamination using AeroClave solution must be trained and qualified. See the requirements in Section 2.2 Operator Qualifications.
- 2.1.3 Only an authorized AeroClave service technician may repair or maintain this equipment.
- 2.1.4 The mRDS unit is designed to operate on a standard 120V, 15-amp grounded power receptacle. To avoid electrical hazards or damage to the machine, this minimum power requirement must be met.
- 2.1.5 The fine aerosol generated by the mRDS unit may activate smoke detectors. Optical based smoke sensor systems are typically the most susceptible to false alarms. The facility or asset being treated must be evaluated on a case-by-case basis for this. Appropriate measures must be taken prior to treatment.
- 2.1.6 Review and follow all labels and warnings marked on AeroClave products.
- 2.1.7 **Before plugging in power cord**, make sure the trigger on the APA, if the APA is connected, is not pressed down.
- 2.1.8 It is recommended that the operator don a minimum level of PPE consisting of, at least, an N95 respirator and goggles (or full-face shield) prior to APA operation.



- 2.1.9 **Do not** modify the power cord provided. This machine must be properly grounded to ensure safety of end users. Improper connection of the equipment can result in mechanical failure or electrical shock.
- 2.1.10 **Do not** put fingers, tools, or other foreign objects into spray area. Improper use may result in severe pain, injury or death.
- 2.1.11 Risk of injury including shock, death, or burn may occur if improperly handled.
- 2.1.12 Only use AeroClave-approved solutions for decontamination. Use of other solutions poses risk of injury, machine failure, and/or unintended results, and is prohibited.
- 2.1.13 Use only de-ionized or distilled water to flush, demonstrate, or practice with the system.
- 2.1.14 Prior to transport or storage of the machine, remove solution tank and transport or store separate from machine.
- 2.1.15 Read and understand the AeroClave solution MSDS and retain the document in an employee accessible location.

2.2 Operator Qualification

- 2.2.1 The operator must be trained and qualified to this manual or equivalent preceding manual. Hands on training in the operation of the mRDS unit is recommended.
- 2.2.2 The operator must review and understand the AeroClave product manual and complete the necessary training given by qualified AeroClave personnel.



3.0 PRODUCT DESCRIPTION

3.1 Technical Specifications

Technical Specifications for mRDS

| Model: mRDS | SPECIFICATIONS |
|--------------------|---------------------------|
| Voltage | 110VAC |
| Dimensions | 43.0” H x 9.0” W x 6.5” D |
| Total Weight | 51 lbs. |
| # of Static Heads | 2 |
| # of SmartPorts | 1 |
| Bottle/Reservoir | 1.2 Gal, 4 Liter |

4.0 SET-UP/OPERATION

4.1 Pre-decontamination Set-up

- 4.1.1 Survey the area being decontaminated. Be sure to note the following:
 - a) That all personnel/animals have been vacated from the treatment area.
 - b) That all doors (other than exit/entry) and windows have been properly shut.
 - c) That any and all items not wished to be decontaminated have been removed from the treatment area.
 - d) That all surfaces wishing to be decontaminated are exposed (e.g., open drawers and cabinet doors).
- 4.1.2 Adequately isolate area by shutting down and/or close off all HVAC, ventilation, or exhaust.
- 4.1.3 Once the treatment area has been deemed safe, exit the area, being sure to properly shut exit/entry door.
- 4.1.4 Begin activation of the mRDS at the touchscreen controller located in proximity to the treatment area.

4.2 Decontamination Cycle Start

- 4.2.1 The following section describes mRDS operation set-up from the Touchscreen Controller.
- 4.2.2 These steps describe the process involved with initiating a decontamination cycle but do NOT include information regarding operation during a decontamination cycle.
- 4.2.3 Only verified operator's may access and operate the mRDS from the touchscreen controller.
- 4.2.4 The Touchscreen Controller is used to monitor and control the mRDS through all phases of its operation.
- 4.2.5 Activate the mRDS by pressing the "Start" button on the bottom-left corner of the Touchscreen Controller "Default Screen" (Figure 1).

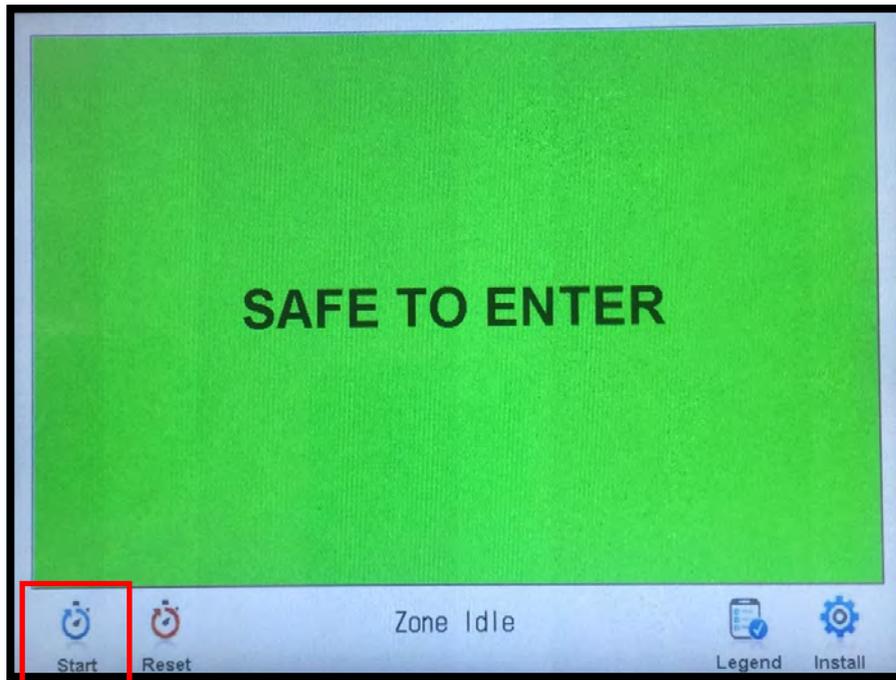


FIGURE 1

4.2.6 Upon initial activation a safety prompt will appear (Figure 2).

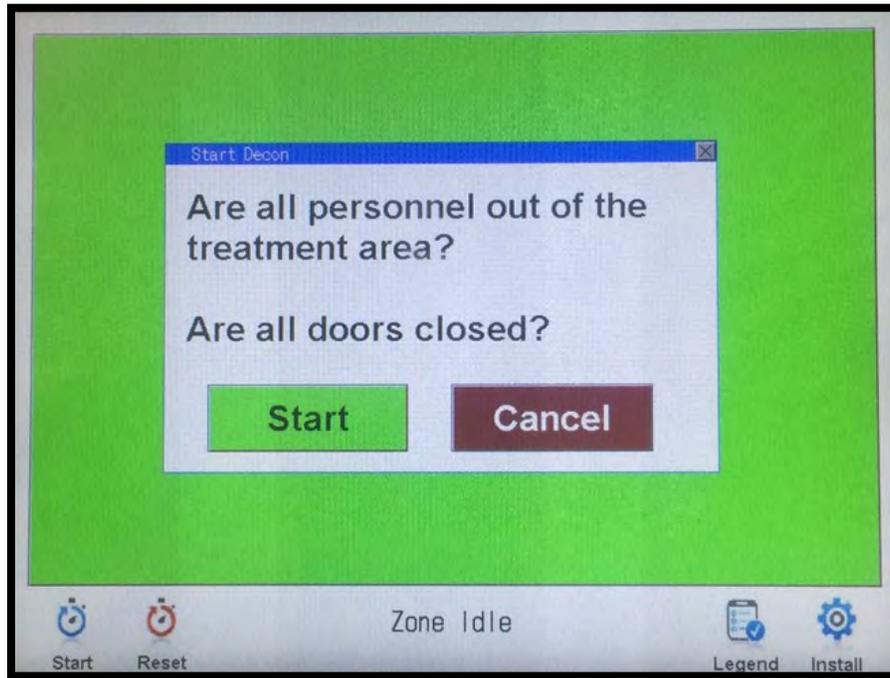


FIGURE 2

4.2.7 Once criteria on the safety prompt have been met, tap the “green” start button to begin the decontamination process (Figure 3).

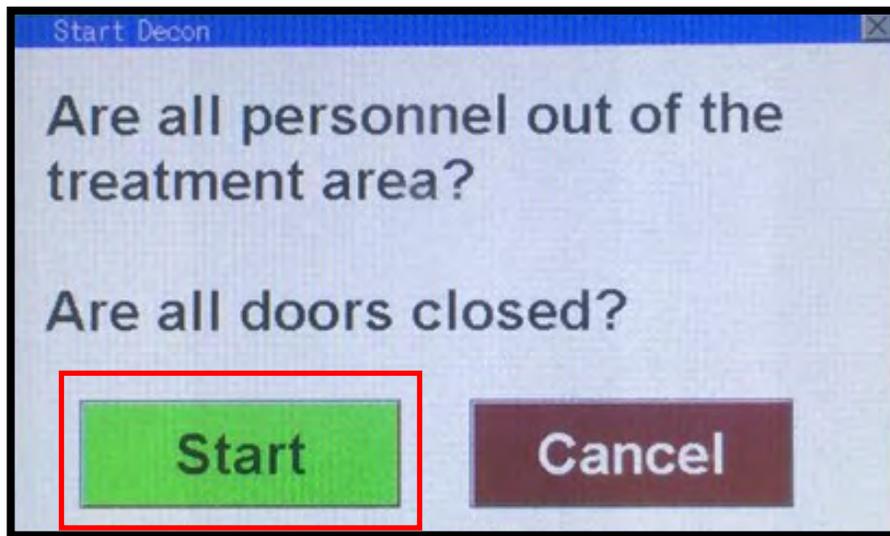


FIGURE 3

4.3 Decontamination Cycle Operation

- 4.3.1 The following section describes how to monitor a decontamination cycle using the touchscreen controller, which is located in proximity to the treatment area.
- 4.3.2 These steps describe the process and screens regarding operation DURING a decontamination cycle.
- 4.3.3 The touchscreen controller is used to monitor and control the mRDS through all phases of its operation.
- 4.3.4 Activate the mRDS by following the steps described in Section 4.2.
- 4.3.5 Prior to the start of the decontamination process , the system will cycle through an initial warning stage.
- 4.3.6 This “Warning Countdown” stage precedes all operation stages and allows for additional time to ensure all safety criteria have been met (Figure 4).

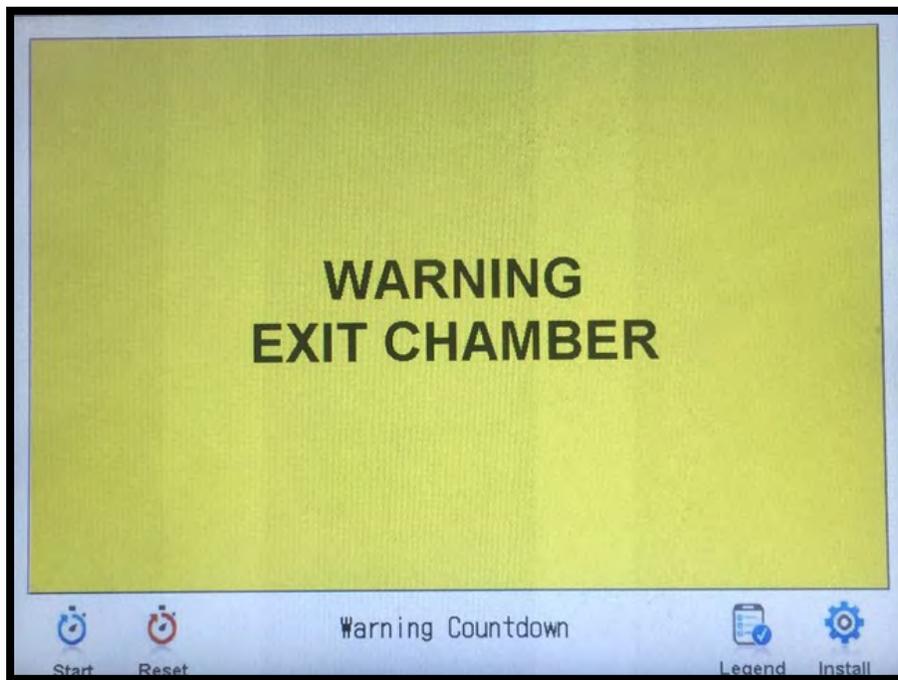


FIGURE 4

- 4.3.7 After the “Warning Countdown” stage, the decontamination process will begin.

4.3.8 The first stage of the decontamination process is the “Injection” stage. This is when the disinfectant solution is atomized into the treatment area. (Figure 5).

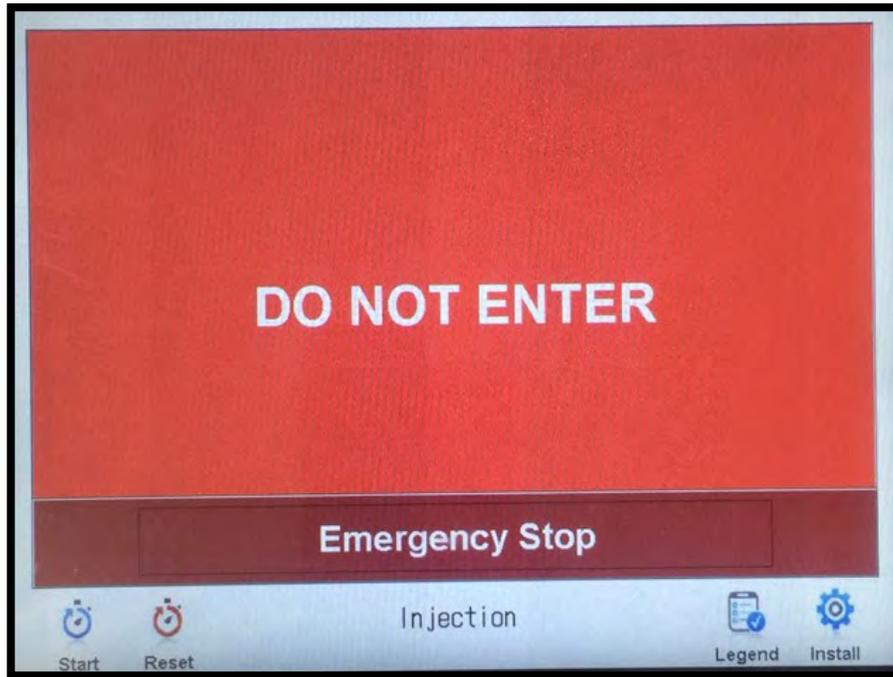


FIGURE 5

4.3.9 The second stage of the decontamination process is the 10 minute “Dwell” stage. This is when the disinfectant solution achieves the necessary surface contact time (Figure 6).



FIGURE 6

4.3.10 The third and final stage is the “Aeration” stage. This is when ventilation of the treatment area occurs to return the environment to normal operating conditions. During this stage, normal operation of HVAC, exhaust, or ventilation can resume (Figure 7).



FIGURE 7

4.3.11 The Touchscreen Controller will switch from red to yellow to green as the “Aeration” stage and the decontamination process finishes (Figure 8).



FIGURE 8

- 4.3.12 Once the Touchscreen Controller has returned to the green “SAFE TO ENTER” screen AND the air in the treatment area is clear, it is safe to resume normal operation and habitation of the treatment area (Figure 9).

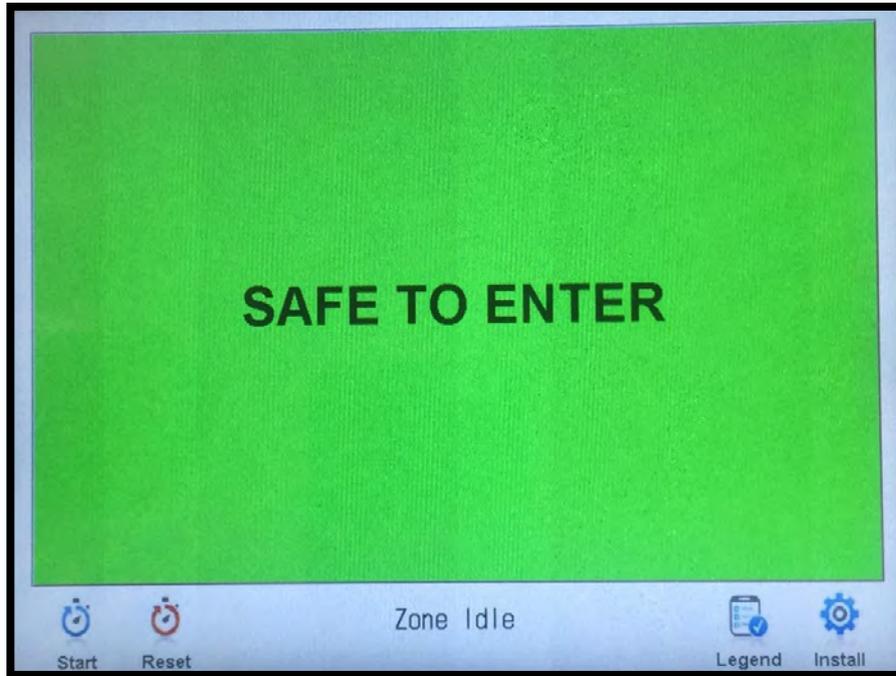


FIGURE 9

4.4 Emergency Stop Operation

- 4.4.1 The following section describes mRDS' emergency stop operation.
- 4.4.2 These steps describe the process and screens regarding emergency stop operation DURING a decontamination cycle.
- 4.4.3 The mRDS emergency stop procedure initiates a total shutdown of the system.
- 4.4.4 To initiate an emergency stop, simply press the red "Emergency Stop" bar at the bottom of the Touchscreen Controller (Figure 10).

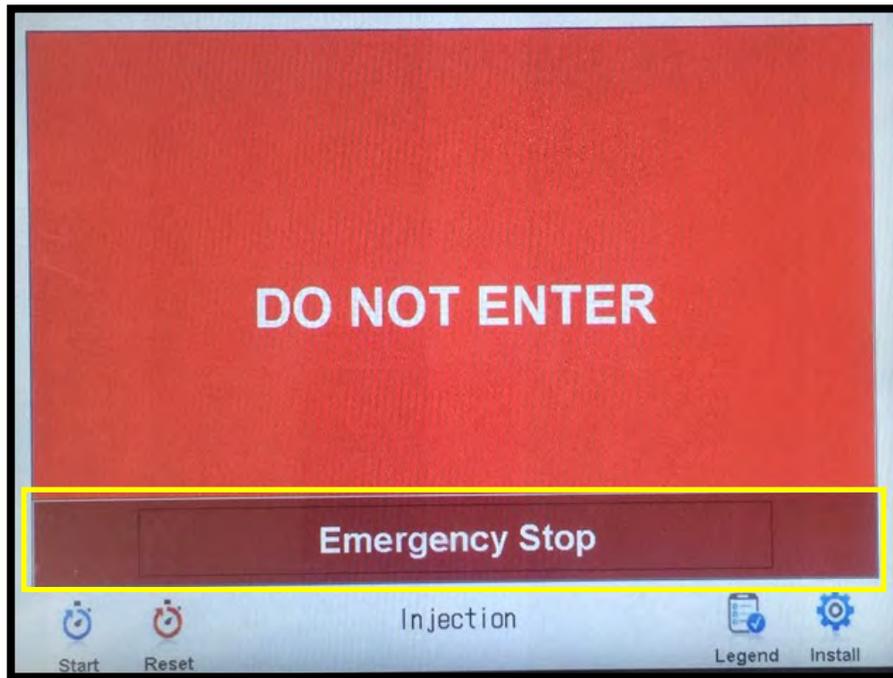


FIGURE 10

- 4.4.5 Once an emergency stop has been initiated, determine the reason why emergency stop occurred and attempt to resolve the situation.

4.4.6 Once the situation has been resolved, reset the mRDS by pressing the “Reset” button on the bottom left corner of the Touchscreen Controller prior to operation (Figure 11).

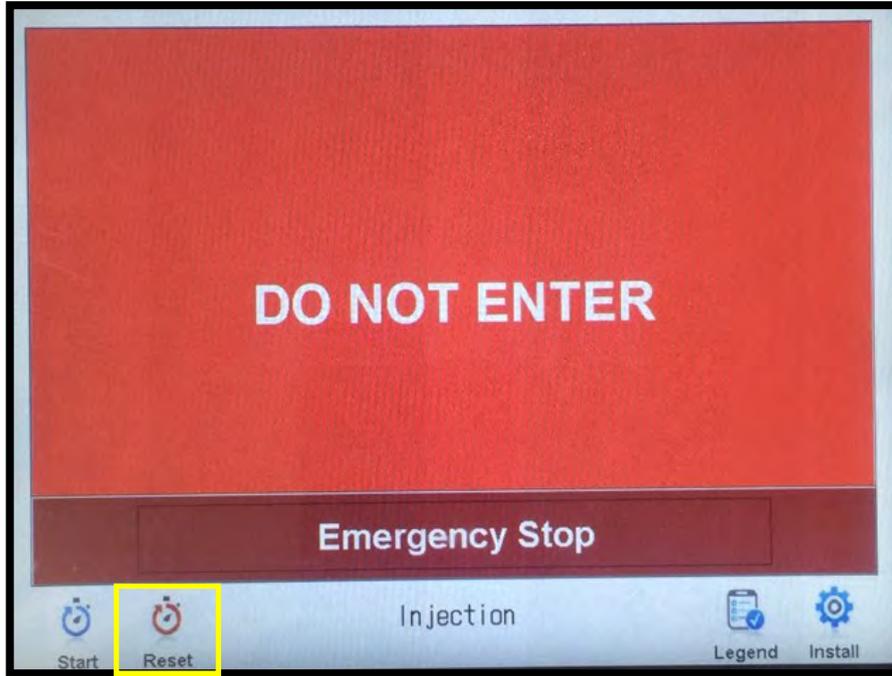


FIGURE 11

4.4.7 Upon pressing “Reset”, the Touchscreen Controller will return to the green “SAFE TO ENTER” screen. At this point, operation of the mRDS can resume (Figure 12).

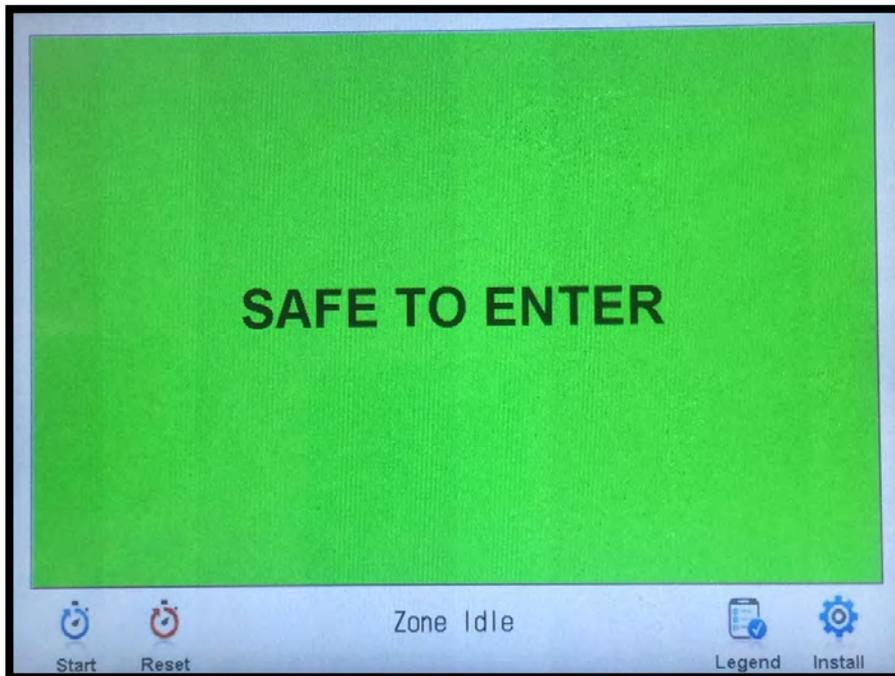


FIGURE 12



5.0 PREVENTATIVE MAINTENANCE

The mRDS must be flushed with distilled water on a monthly basis to ensure proper operation and a long life. The length of time necessary to fully flush the system is dependent on the number of nozzles installed inside the treatment area. After flushing the system, you should re-prime the system by switching the reservoir back to Vital-Oxide and running for the prescribed time. Please refer to Table 1 for Flush and Re-Prime times. You must follow the following steps flush the system correctly.

5.1 General Guidelines

- 5.1.1 Flush mRDS completely on a monthly basis.
- 5.1.2 Use **only** distilled or deionized water when flushing the mRDS.
- 5.1.3 After the maintenance flush, re-prime the mRDS with disinfectant

5.2 Maintenance Steps

- 5.2.1 Replace on-board operating reservoir with the provided maintenance reservoir.
- 5.2.2 Ensure that the maintenance reservoir is filled with **distilled or deionized water only**.
- 5.2.2 Start the operation of the mRDS unit like normal.
- 5.2.3 Use the Touchscreen Controller as an E-stop to stop the unit after it has run for the prescribed Flush Time (see Table 1).
- 5.2.4 Reset the system.
- 5.2.5 Replace the on-board operating reservoir filled with Vital-Oxide
- 5.2.6 Start the operation of the mRDS unit like normal.
- 5.2.7 Use the Touchscreen Controller as an E-stop to stop the unit after it has run for the prescribed Re-Prime Time (see Table 1).
- 5.2.8 Reset the system.

Table 1

| System | Flush Time | Re-Prime Time |
|---------------|-------------------|----------------------|
| mRDS | 4 minutes | 3 minutes |

6.0 MISCELLANEOUS

6.1 Configuration

6.1.1 The length of time associated with each stage of the decontamination process can be adjusted, if necessary, by accessing the “Configuration” screen.

NOTE: Do NOT adjust these values without first consulting with authorized AeroClave personnel.

6.1.2 To access the “Configuration” screen, press the “Install” button on the bottom right corner of the Touchscreen Controller (Figure 13).

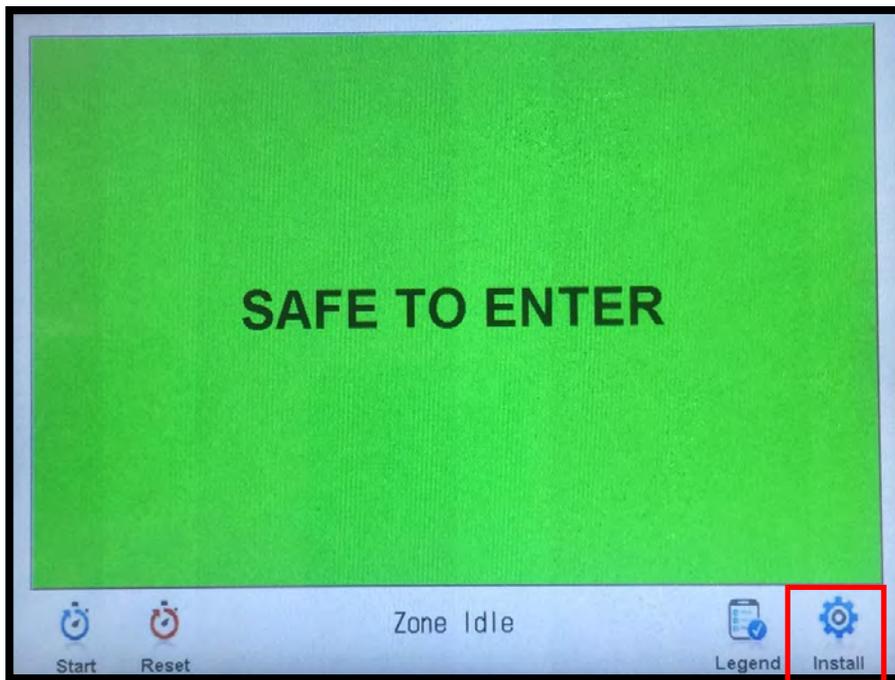


FIGURE 13

6.1.3 Tap the white dialog boxes to input the time for each stage of the process (Figure 14).

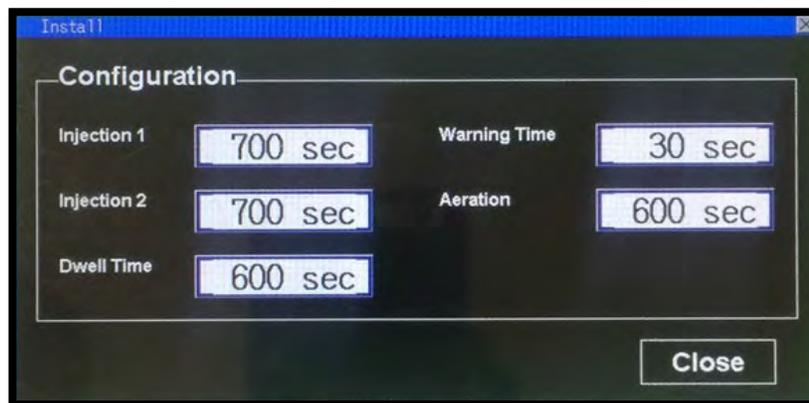


FIGURE 14