



EO Abator

Operation and Installation Manual

Models 50AN, 50AE, 50AJ

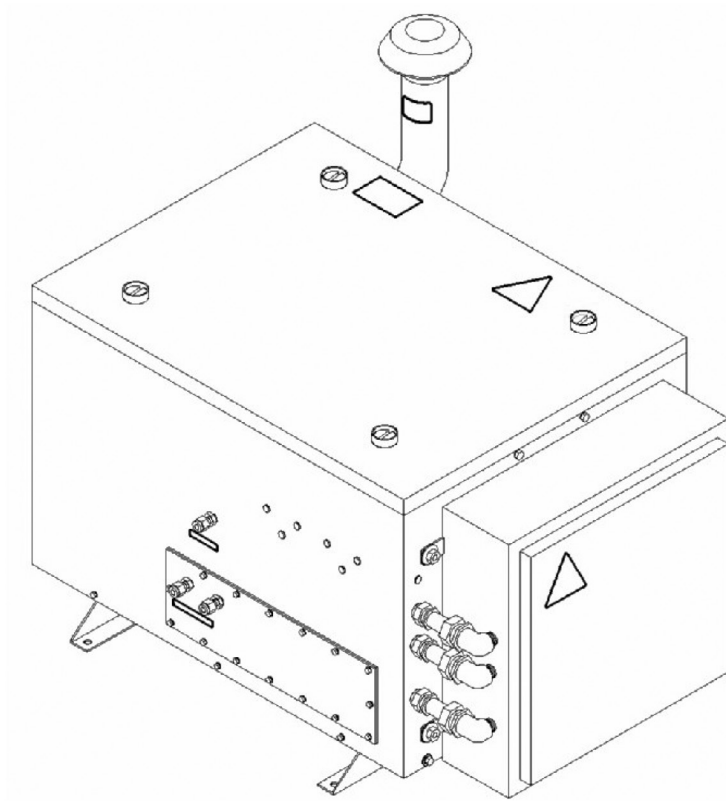








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Read, understand, and follow all safety information contained in these instructions prior to using the 3M EO Abator. Retain these instructions for future reference.

Intended Use:

The 3M™ EO Abator is intended to remove ethylene oxide (EO) from the exhaust of 3M™ Steri-Vac™ Sterilizers and Aerators. The EO Abator converts EO into carbon dioxide and water vapor through a heated catalytic process. Use with other than 3M™ Steri-Vac™ Sterilizers and Aerators could lead to an unsafe condition.

Explanation of Signal Words and Symbols		
Symbol Title	Symbol	Description and Reference
Caution		Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself. Source: ISO 15223, 5.4.4
Flammable		Product is classified as flammable. Source: Globally Harmonized Symbols for Classifying Hazardous Chemicals
Health hazard		The product contains an ingredient classified as a health hazard. Source: Globally Harmonized Symbols for Classifying Hazardous Chemicals
Warning, electricity		To warn user to avoid coming into contact with electricity. Source: ISO 7010-W012
Follow instructions for use		To signify that the instructions for use must be followed. Source: ISO 7010-M002
Caution, hot surface		Indicates product can be hot and should not be touched without taking care. Source: IEC 60417-5041

For more information see, HCBGregulatory.3M.com

 WARNING
<ul style="list-style-type: none"> ● To reduce the risk associated with hazardous voltage, which if not avoided, could result in death or serious injury: <ul style="list-style-type: none"> - Do not attempt to service and/or open the EO Abator. - Service should only be performed by 3M Authorized Service Personnel. ● To reduce the risk associated with high temperature, which if not avoided, could result in death or serious injury and/or property damage: <ul style="list-style-type: none"> - Do not touch the exhaust lines or the immediate area around them. - Do not place items next to the EO Abator. Follow clearance requirements listed in the Operation and Installation Manual.

Safety Information:**⚠ WARNING**

- **The 3M EO Abator processes ethylene oxide gas exhausted from 3M Steri-Vac Sterilizers.**
Please read and understand all instructions before using the Steri-Vac sterilizer/aerator.

⚠ DANGER

The Steri-Vac sterilizer/aerator uses ethylene oxide gas to sterilize heat-and/or moisture-sensitive devices. Ethylene oxide is flammable and toxic. Follow all instructions and precautions carefully.

**Flammability****Health Hazard**

See the Safety Data Sheet (SDS) for effects of Overexposure and Hazard statements for ethylene oxide.

Precautions

Keep away from heat, sparks, open flames, and hot surfaces; do not smoke near the Abator.

Avoid breathing gas. Store and use with adequate ventilation.

Avoid exposure to eyes, skin, or clothing. Use personal protective equipment: indirect vented safety goggles, long sleeves, and butyl rubber gloves.

Use only in accordance with Directions for Use.

First Aid

See the Safety Data Sheet (SDS) for additional information.

Inhalation

Remove exposed person to fresh air. Seek medical attention.

Skin or Clothing Contact

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. Discard all leather items exposed to EO. If symptoms develop, seek medical attention.

Eye Contact

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do so. Promptly seek medical attention.

If Swallowed

Rinse mouth. DO NOT INDUCE VOMITING. Immediately seek medical attention.

Leak or Fire

In case of leak or fire, evacuate area and follow your facility's emergency response plan.

Positive-pressure self-contained breathing apparatus or positive-pressure full-face supplied air respirator may be used to remove cartridges from the area as part of an emergency response.

⚠ CAUTION

- **To reduce the risk associated with environmental contamination, which if not avoided, may result in minor or moderate injury:**
 - The EO Abator must be properly installed as indicated in the Operation and Installation Manual.
 - Return used catalytic cells to 3M Health Care Service Center for proper handling.
 - At the end of product life, dispose of all components in accordance with applicable governmental regulations.
- **To reduce the risk associated with environmental contamination and/or hazardous voltage, which if not avoided, may result in minor or moderate injury:**
 - The EO Abator has been designed and tested only to be used with 3M Steri-Vac Sterilizers and Aerators.

Safety Information:

Environmental Operating Conditions

Environmental Condition	Operating Condition	Units
Altitude	2500 (max)	meters
Operating Temperature	0 – 49	°C
Normal Exhaust Temperature	238	°C
Max Exhaust Temperature	260	°C
Relative Humidity	20-80 (non-condensing)	%
Voltage 50AN (US/Canada)	220-230V Single Phase	Volts AC
Voltage 50AE (Europe)	400V (+/-10%), Three Phase	Volts AC
Voltage 50AJ (Japan)	200V (+/-10%), Three Phase	Volts AC
Frequency	50/60	Hertz
Current 50AN (US/Canada)	30	Amps
Current 50AE (Europe)	17	Amps
Current 50AJ (Japan)	28	Amps
Installation/Over Voltage	Category II	
Pollution Degree	2	

Health and Safety Information

Device Safety Compliance

The EO Abator complies with the standard IEC/EN 61010-1 and IEC/EN 61010-2-010 as demonstrated by the IEC Test Report that Underwriters Laboratories Inc. (UL) generated. The EO Abator is listed as Laboratory equipment and carries the UL and c-UL marks based on compliance to the standards UL 61010A-1 and CSA 22.2 No. 61010-1.92.

The Model 50AN and Model 50AE EO Abators comply with the CE mark related to the Low Voltage Directive 2014/35/EU as confirmed in the Declaration of Conformity.

EMC Compliance

The Model 50AN and Model 50AE EO Abators comply with IEC/EN 61326-1 as confirmed in the Certificate of Compliance generated by 3M. The Model 50AN and Model 50AE EO Abators comply with the EMC requirements of the CE mark EMC Directive 2014/30/EU.

The Model 50AN Abator complies with the Australian EMC requirements as confirmed in the Supplier's Declaration of Conformity that is linked to the RCM (Regulatory Compliance Mark).

Note: The Model 50AN EO Abator has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

General Information

Physical Dimensions

Width.....	900 mm (36.0 in.)
Height.....	800 mm (31.5 in.)
Depth.....	1050 mm (41.5 in.)

Suggested Service Area:

Top.....	900 mm (36 in.)
Left Side.....	500 mm (20 in.)
Right Side.....	500 mm (20 in.)
Front.....	500 mm (20 in.)
Back.....	100 mm (4 in.)

Heat Source.....6 kW Electric Air Duct Heater

Minimum Air Flow.....1.4 NCMM (50 SCFM)

Weight.....163 kg (360 lbs.)

Maximum EO Feed Rate.....7.7 g/min (0.017 lbs./min)

Exhaust Temperature:

Idle (“Ready”).....	138°C (280°F)
Typical Operating (Processing EO).....	238°C (460°F)
Upper Limit.....	260°C (500°F)

Section 1: Operating Instructions

System Description:

The 3M EO Abator is intended to remove ethylene oxide (EO) from the exhaust of 3M Steri-Vac Sterilizers and Aerators. The EO Abator converts EO into carbon dioxide and water vapor through a heated catalytic process.

The 3M EO Abator was designed for use with 3M Steri-Vac Sterilizers and Aerators. The Abator includes all controls and indicators necessary to maintain safe operating conditions within the processing limits of the machine. This system provides an internal operating condition where the EO concentration is well below the lower flammability limit of 30,000 ppm EO in air.

The process by which the Abator system works is one in which ambient air is pulled by the blower into the Abator system through the air inlet and pre-filter. The air then passes through the electric heater where it is heated to approximately 138°C (280°F). The heated air then passes through the catalytic cell inlet where EO is fed into the air stream through a solenoid valve and injection manifold. As the EO enters the heated air stream, it is diluted with air before it enters the catalytic cell where the EO is catalyzed. The heat given off by this catalytic process raises the temperature of the catalytic cell and the effluent air stream in proportion to the amount of EO introduced into the Abator system. When properly installed with 3M Steri-Vac Sterilizers and/or Aerators, the temperature should not exceed 260°C (500°F). If this value is exceeded, damage to the catalytic cell and other internal components will result.

The EO Abator achieves at least 99.9% efficiency (time weighted average) in removing EO during sterilization portion of cycle (when EO>100ppm) at normal operating temperatures and concentrations.

The EO Abator achieves at least 99.0% efficiency (time weighted average) in removing EO during aeration portion of cycle (when EO<100ppm) at normal operating temperatures and concentrations.

The EO Abator should be tested for efficiency on a regular basis as required by local, state or federal regulations.

Explanation of Indicator Panel:

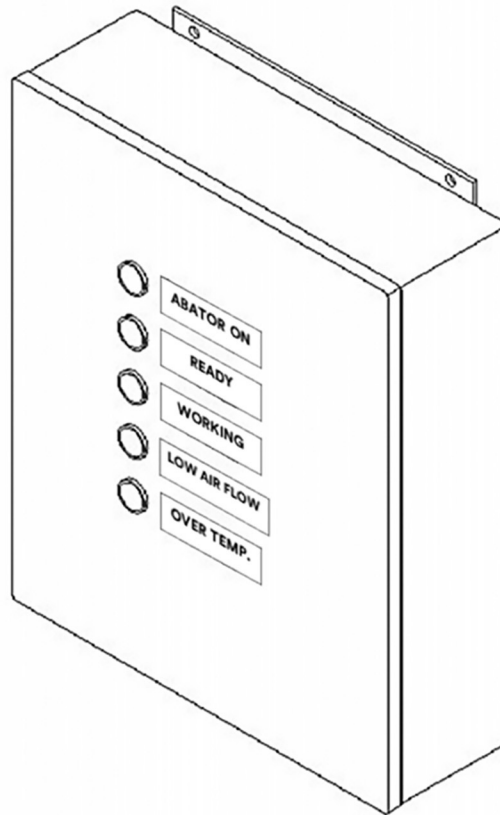
Indicator	Normal Status	Malfunction
Abator On (Green)	ON/OFF	Indicates Abator is on. If OFF, check main disconnect to Abator.
Ready (Green)	ON	OFF indicates one of the following problems: <ol style="list-style-type: none"> 1. Low process temp 2. High process temp 3. Low air flow 4. Open RTD
Working (Green)	ON/OFF	ON indicates Abator is processing EO. OFF indicates no or low concentrations of EO.
Low Air Flow (Red)	OFF	ON indicates one of the following problems: <ol style="list-style-type: none"> 1. Plugged pre-filter (Must replace every 6 months or sooner) 2. Blocked Outflow 3. Blower Malfunction
Over Temperature (Red)	OFF	ON indicates system malfunction. After completion of cycle, shut down. Call for service. DO NOT RESTART.
Over Temperature (Red) Slow Flash (1 flash/second)	OFF	ON indicates high heater sheath temperature or open RTD.
Over Temperature (Red) Fast Flash (3 flash/second)	OFF	ON indicates the temperature rate of rise too fast due to low airflow

Operating Instructions for 5XL/8XL and GS Series Steri-Vac Sterilizers

1. Auto-On: The Abator is turned on automatically by the sterilizer.

Note: The Abator will be automatically turned on if the power to the Steri-Vac is turned off, or the communication connections between the sterilizer and Abator are lost.

2. Abator system ready indicator (green) on indicator panel illuminates when the Abator is ready to process EO. With ambient temperature of 21°C (70°C), the indicator should illuminate within 40 minutes. If the Abator system ready indicator light does not illuminate within this time frame, observe the fault lights on the control panel and correct problem before operating unit.



3. End of cycle. The Abator system is stopped automatically by the sterilizer. A timer lets the blower run 30 minutes to cool the Abator before shutting down.
4. When performing maintenance or when the over temperature indicator is on, the system should be shut down. When shutting down the Abator, make sure the sterilizer is not venting EO and that the Abator is not processing EO. In an emergency situation, the Abator can be shut down at any time. To shut down the system in an emergency, have an authorized person switch the external disconnect and main circuit breaker in the control panel to the off position.

Typical Abator System Cycle for 5XL/8XL and GS Series Steri-Vac Sterilizers:

After the sterilizer is loaded, the sterilizer door is closed and the cycle is started. The Abator system starts automatically. After approximately 40 minutes, the Abator ready light illuminates indicating the Abator is ready to begin processing EO. When the sterilizer purges EO from the cycle, it enters the Abator through the EO inlet where it is internally fed to the catalytic cell. The temperature of the catalytic cell increases proportionately to the amount of EO fed into the Abator. After the sterilizer cycle is complete and the abatement of EO is halted by the sterilizer, the Abator continues to run for 30 minutes to cool the system down before shutting off. Ambient air flows through the Abator and cools the catalytic cell.

Section 2: Installation Instructions

Planning the EO Abator Installation

Plan for the installation before the equipment is purchased. Consider such things as location, machine service requirements, and code compliance. Obtain all state and local regulations affecting the use of Ethylene Oxide (EO). If possible, review the proposed installation with the department manager, facilities engineer, architect, 3M sales or service representative.

Ensure that anyone who will be involved with the EO Abator system installation receives a copy of this Operation and Installation Manual. Contact your local 3M Health Care representative or 3M Health Care Field Service at (800) 688-5888 for additional copies, or if you have any questions about installing the EO Abator system.

Service Installation Review and Checkout

Contact your local 3M service representative by phone when the EO Abator system is installed (i.e. all electrical and mechanical services are connected and functioning).

Do not operate the EO Abator system without having a 3M service representative check the installation.

Complete the customer checklist. Call your service representative to review the installation. Discuss any necessary changes before the checkout visit to assure that the sterilizer and EO Abator system are installed and will operate according to 3M specifications.

Optional Configurations

The EO Abator can be used with 5XL, 8XL, and the GS Series 3M Steri-Vac sterilizers. A maximum of two Model 5XL, two Model 8XL, or two GS Series sterilizers can be connected to a single EO Abator unit. Any combination of two of the Model 5XL or 8XL sterilizers can be connected to a single EO Abator unit. The GS Series sterilizer must be connected to a separate Abator. **The Model 5XL or Model 8XL sterilizers CANNOT be combined with a GS Series sterilizer when connecting to an Abator.** Up to two additional Model XL Aerators can be added to the installation. The EO Abator interfaces with the Model 5XL, Model 8XL, and GS Series sterilizers to start and stop automatically.

For 3M Model XL Aerator installations with the 5XL or 8XL sterilizer, the EO Abator must be configured to either run continuously, or be wired as shown in Figure 7. For 3M Model XL Aeration installations with the GS Series sterilizers, the sterilizer must be set to “Abator always on” in the Menu->Site Setup->Setup. See Figure 7 for Aerator venting connections.

Contact your 3M service representative with questions.

Customer Checklist

Read this entire Operation and Installation Manual carefully before installing your EO Abator system. The following checklist is provided to ensure that you consider all important aspects of the installation. Contact your local 3M service representative with any questions.

The completed checklist is to be used when contacting your 3M service representative to review your EO Abator system installation. Completion helps ensure that 3M installation specifications are met.

Customer Checklist

Location of EO Abator System

- | | | | |
|----|--|------------------------------|-----------------------------|
| 1. | Is the unit mounted in a well ventilated area, away from ignition sources and personnel traffic? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 2. | Is the unit bolted securely to the floor? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 3. | If the unit is located outdoors, is the EO Abator system in a heated weatherproof enclosure easily accessible by service personnel? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4. | Is the heated enclosure maintained at or above 0°C (32°F) at all times? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 5. | Are there 910 mm (36 inches) of clearance on top and 510 mm (20 inches) of clearance on front, back, and electrical box side, and 100 mm (4 inches) of clearance on the side opposite the control box? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

Customer Checklist

- 6. What is the distance between the indicator panel and the EO Abator system? (must be less than 40M (130 ft.)) _____ M (ft.)
- 7. What is the distance between the earth ground and the EO Abator system? (must be less than 40M (130 ft.)) _____ M (ft.)
- 8. How many sterilizers and/or aerators are connected to the EO Abator system? List sterilizer model and quantity. Model _____ Quantity _____
Model _____ Quantity _____

Electrical Supply

- 9. What current is the EO Abator system electrical supply fused at? _____
- 10. What is the supply voltage rating? _____
- 11. What is the voltage reading at the EO Abator system? _____
- 12. Is an external disconnect switch installed in close proximity to the EO Abator system? Yes No
- 13. Is a 7.5 to 10 KVA boost transformer installed if supply voltage is 208 VAC? Yes No
- 14. What gauge (AWG) ground wire is used for the indicator panel to control panel connection? _____ AWG
- 15. What gauge (AWG) ground wire is used for the earth ground to the control panel connection? _____ AWG
- 16. Are jumper wires installed if only one sterilizer is connected to the EO Abator system? Yes No

EO Inlet – Vent line from Sterilizer to Abator

- 17. Does the EO inlet line connect directly to the EO Abator system without being terminated into any other exhaust system? Yes No
- 18. What type of material is the EO inlet line made of? _____
- 19. What is the diameter in mm (in.) of the EO inlet line? _____ O.D.
- 20. What is the total length in M (ft.) of the inlet line? _____ M (ft.)
- 21. How many sterilizers vent to the EO inlet line? _____
- 22. Has the EO inlet line been checked to ensure it is gas tight? Yes No

Safety Vent Line

- 23. Does the safety vent line go directly from the EO Abator system to the outside atmosphere without terminating at any other exhaust system? Yes No
- 24. What type of material is the safety vent line made of? _____
- 25. What is the diameter in mm (in.) of the safety vent line? _____ O.D.
- 26. What is the length in M (ft.) of the safety vent line? _____ M (ft.)
- 27. Does the safety vent line termination have a downward bend? Yes No
- 28. Is the safety vent line outlet located within 8 M (25 ft.) of any possible sources of ignition or any openings to the building interior? Yes No

Customer Checklist

29. Has the safety vent line been checked to ensure that it is gas tight? Yes No

Exhaust System – Arrangement 1

30. Is there a negative pressure in the duct? Yes No

Exhaust System – Arrangement 2

31. Is the measured air flow in the 152 mm (6 inch) duct between 5.66-7.08 m³/min (200-250 ft³/min)? Yes No

32. Has an insulated duct been connected to the EO Abator outlet? Yes No

33. Is the insulated duct dedicated solely to the EO Abator system outlet all the way to its outside termination? Yes No

34. Is the exhaust system leak tight? Yes No

35. Is the back pressure in the exhaust duct with the “abator ready” light illuminated, less than 7.62 mm (0.3 in.) H₂O? Yes No

36. Is the ductwork material impervious to EO? Yes No

37. What is the diameter in mm (in.) of the duct? _____ mm (in.)

38. What is the distance in M (ft.) between the outside exhaust termination and any sources of building air intake? _____ M (ft.)

General

39. Did you obtain all state and local regulations concerning EO emissions? Yes No

Purchaser’s Responsibility

Only health care professionals, or other appropriately trained personnel in health care and industrial areas, should use this equipment. It is a violation of federal law to use this product in a manner inconsistent with its labeling. Injury to persons or property can result unless the operating instructions are followed carefully.

It is the purchaser’s responsibility to provide the necessary machine service requirements to the area where the sterilizer and EO Abator system are to be installed. These services include electricity, EO inlet line, safety vent line, and a dedicated exhaust system.

Because of varying local codes and labor policies, it is also the responsibility of the purchaser to locate the EO Abator system in its permanent location and to connect the services to the machine. It is the purchaser’s responsibility to ensure that local requirements are met.

EO Abator Efficiency Testing

During the installation and start up process performed by 3M, the EO Abator is tested for electronic function. It is the recommendation of 3M Company that the EO Abator be tested for efficiency on a regular basis as required by local, state or federal regulations by using a gas chromatography method. This method of testing is accepted by most local and state agencies and will provide an efficiency baseline of performance. If independent certification of efficiency is required by state or local authorities or if it is desired by your facility, 3M Company recommends that your facility contact a test lab or company certified by state or local agency. 3M does not perform efficiency testing of the Abator.

Return used catalytic cells to 3M Health Care Service Center for proper handling.

Unpacking the EO Abator

Uncrate the unit and remove any packing material. Examine the EO Abator system and indicator panel for any damage that may have occurred during shipment. If any damage occurred, immediately fill out a damage claim with the transportation company and notify your 3M service representative. The transportation company assumes liability for shipping damage only for a ten-day period starting the day of delivery. After ten days, the purchaser must accept the merchandise as delivered.

Packaged with the EO Abator system are cardboard boxes containing: a plastic rain cap with metal clamp, an air pre-filter with metal clamp, a data cable assembly, caps for test fittings, the indicator panel, and the Operation and Installation Manual. Install the rain cap to the top of the air inlet tube with the clamp provided (see Figure 5). Remove the cover of the EO Abator and install the air pre-filter on the air inlet tube inside the EO Abator with clamp provided (see Figure 5).

Note: Pre-filter must be changed by authorized service personnel every 6 months or sooner under normal operation.

Locating the EO Abator System

Since Ethylene Oxide is both flammable and toxic, it is important to locate the EO Abator system in a well-ventilated area away from main traffic areas of personnel and any ignition sources. Hot exterior surfaces on the EO Abator system are normal during operation. The EO Abator system exterior cabinet can reach temperatures as high as 50°C (122°F). Temperatures within the machine can approach 260°C (500°F).

Select an appropriate site well in advance of purchasing the EO Abator system. Contact your building engineering department for help in selecting a site. **It is suggested that the EO Abator system be installed indoors.** This saves added installation expense. If this is not possible, the EO Abator system must be installed in a weatherproof enclosure easily accessible by service personnel. This enclosure must be maintained between 0°C to 49°C (32°F to 120°F) at all times. All wiring to and from the control box must be liquid tight until it is indoors.

The EO Abator system must be bolted down. Therefore, position the EO Abator system in its proper location and secure it to the floor with 9.53 mm (3/8 in.) diameter bolts or lag screws (minimum 38 mm [1 ½ in.] long) through holes in feet to the floor. To meet seismic requirements, the EO Abator system must be installed using fasteners designed to meet the current local building code or governing jurisdiction. You must have your local architect recommend the proper fasteners. Provide adequate space all around unit for periodic maintenance and service access (see Figure 5).

Securely mount the indicator panel indoors and near the sterilizer in a location that is easily visible by the sterilizer operator. Wiring connections between the EO Abator system, the indicator panel, and the sterilizer are discussed in Electrical Requirements.

Do not install the EO Abator system in areas where flammable gases or liquids other than EO are present.

Section 3: Installation Requirements

General Electrical Requirements

All internal wiring within the EO Abator system has been connected at the factory. External wiring must be in accordance with local and/or national codes and plant procedures.

Connect a dedicated service to the main circuit breaker located inside the control box. A main disconnect is not provided on the EO Abator System and needs to be included in the building installation. It must be mounted in close proximity to the EO Abator system within easy reach of the operator, and shall be marked as the disconnecting device for the EO Abator system.

If connecting Model 50AN to 208 VAC single phase service, use a boost transformer to bring the voltage to 220 VAC (recommended 7.5 to 10 KVA Boost transformer).

Model	Voltage	Current Rating	Main Breaker	Frequency
50AN	220-230VAC, 1 Phase	30A	40A	50/60Hz
50AE	400VAC, 3 Phase	17A	20A	50/60Hz
50AJ	200VAC, 3 Phase	28A	40A	50/60Hz

Electrical Requirements: Models 5XL, 8XL and GS Series Sterilizers

Connect corresponding wire numbers between indicator panel terminal strip and the control box terminal strip (see Figures 2, 3, 5, and 6). Use three-pair (6 wire) shielded cables (recommended Belden 18 AWG Part #83656) and limit the length of the wire to 40 M (130 ft.). The shield on the control panel end of the cable must be connected to the ground lug in the control panel. A ground wire from the indicator panel to the EO Abator system is required. If the indicator panel is within 12 M (40 ft.) from the EO Abator system, a 12 AWG ground wire should be used. If the length is 12-24 M (41-80 ft.), a 10 AWG ground wire should be used. For 25-40 M (81-130 ft.) length, an 8 AWG ground wire should be used. **In no case is the indicator panel to be mounted more than a maximum of 40 M (130 ft.) away from the EO Abator system. The indicator panel must be located in the sterilizer area.**

A ground wire from the ground lug in the control panel to earth ground is required. Use the same wire criteria as listed above for the indicator panel to determine the proper wire AWG for the distance run between the control panel and earth ground.

Using the DB-15 connector(s) with cable, connect wiring between the sterilizer(s) and the EO Abator system indicator panel (see Figures 2, 3, 5, and 6). Install cable between the EO Abator system indicator panel and the Abator using 6 conductor 18 AWG shielded cable (recommended Belden Part #83656). A 3M service representative will connect the wires to the Abator terminal strip.

When connecting only one sterilizer, a jumper wire must be connected from terminal 27 to 25 and from terminal 28 to 26 inside the control box.

EO Inlet Line Requirements – Vent Line from Sterilizer to Abator

A combination of two Steri-Vac gas sterilizers Model 5XL, 8XL, or GS Series sterilizer may be vented through a common vent line to the EO Abator system.

Note: The Model 5XL or Model 8XL sterilizers CANNOT be combined with a GS Series sterilizer when connecting to an Abator.

Connect the sterilizer vent line to the EO Abator system's 1.9 cm (3/4 in.) National Pipe Thread (NPT) EO inlet. An adapter may be needed to facilitate the need for a 2.5 cm (1.0 in.) vent line. See Figure 5.

The diameter of the vent line used for the EO inlet and safety vent depends on the combined length of the two vent lines. Use 2.5 cm (1 in.) to 3.8 cm (1.5 inch) copper tubing to connect sterilizer discharge to the EO Abator system EO inlet. Refer to table for line sizes. Use a 1.9 cm (3/4 in.) National Pipe Thread (NPT) connection at the EO Abator system.

Avoid sags or loops in all lines to prevent moisture buildup at other points in the line. Ensure that the vent line is gas tight

from the sterilizer to the EO Abator system. Use flanged or compression fittings at the sterilizer outlet. Braze or solder all the other line fittings. For additional information refer to the 3M Steri-Vac installation guide.

Length and Diameter of Vent Line (XL Series)			
Number of Sterilizers (XL Series)	Length < 31m (100 ft.)	31m (100 ft) ≤ length < 61m (200 ft)	61m (200 ft) ≤ length ≤ 91.5m (300 ft)
1	1.9 cm (3/4 inch)	1.9 cm (3/4 inch)	1.9 cm (3/4 inch)
2	1.9 cm (3/4 inch)	2.5 cm (1.0 inch)	2.5 cm (1.0 inch)

Length and Diameter of Vent Line (GS Series)			
Number of Sterilizers (GS Series)	Length < 31m (100 ft.)	31m (100 ft) ≤ length < 61m (200 ft)	61m (200 ft) ≤ length ≤ 91.5m (300 ft)
1	2.5 cm (1.0 inch)	2.5 cm (1.0 inch)	2.5 cm (1.0 inch)
2	2.5 (1.0 inch)	3.8 cm (1.5 inch)	3.8 cm (1.5 inch)

Table 1.

Safety Vent Line Requirements

The EO Abator system is equipped with a safety vent port to vent EO to the atmosphere in the event of an EO Abator system malfunction. Connect a safety vent line to the 1.9 cm (¾ in.) NPT port using properly sized O.D. copper tubing. Install 180° elbow (turned down) with a “bug screen” at the end of the line. Refer to Table 1 for determining proper line size based upon the combined length of both safety vent and EO inlet lines. Note: Adapters may be required.

The safety vent line could contain significant amounts of Ethylene Oxide in the event of a system malfunction.

Do not terminate the line within 8 M (25 ft.) of any possible sources of ignition or any opening to the building interior such as fresh air inlets, unsealed windows, or pedestrian traffic areas. Keep all of the vent line, with the exception of a turned down extension terminating on the roof top or exterior wall, inside the building. This prevents moisture from freezing in the line and blocking the vent. For additional information refer to the appropriate (XL Series or GS Series) 3M Steri-Vac Sterilizer Site Planning and Installation Guide.

Exhaust System Requirements

The temperature of the air exhaust from the EO Abator can be as high as 260°C (500°F). The EO Abator exhaust can contain low concentrations of EO, typically less than 2.5 PPM. **The EO Abator exhaust must be connected to a dedicated exhaust system supplied by the customer.** Note: There are two exhaust ducting arrangements that can be used (see Figure 1).

Arrangement 1

The EO Abator exhaust is mixed with room air in a negative pressure duct. The advantage of this arrangement is that all leaks are into the duct. The dedicated duct used for the sterilizer hood (if the sterilizer is equipped with a hood) may be used for this arrangement if the ducting and blower is sized to handle the extra 5.66 m³/min (200 ft³/min) of air required for the EO Abator. For 5XL or 8XL, use the information in the 3M Steri-Vac XL Series Site Planning and Installation Manual (78-8078-8490-9) and for the GS Series sterilizers use the information in the 3M Steri-Vac GS Series Site Planning and Installation Guide (78-8083-3481-3) for ducting and blower installation.

This arrangement requires an air mixing valve that is attached to the EO Abator exhaust. Air mixing valve (part number 78-8078-9814-9) is available through the 3M Health Care Service Center. Connect the air mixing valve to the EO Abator exhaust flange using high temperature RTV to seal the flanges, then tighten flange clamp (part number 78-8069-7474-3) to lock the parts together. Connect the outlet of the air mixing valve 152 mm (6 in.) O.D. to the duct system with 152 mm (6 in.) metallic ducting (Figures 1 and 8). An airflow damper will be required in the 152 mm (6 in.) duct downstream of the mixing valve to balance the airflow between the EO Abator and the hood duct system. The airflow in the 152 mm (6 in.) duct must be maintained between 5.66-7.08 m³/min (200-250ft³/min) with the EO Abator running and the “abator ready” light illuminated.

Arrangement 2

The exhaust system is a sealed type which uses the blower in the EO Abator to move the exhaust out of the building. This duct is under positive pressure and must be sealed. It must be dedicated to the EO Abator exhaust only. The suggested ducting to use is Selkirk Metalbestos Model PS in 152 mm (6 in.) size. It must be installed per the manufacturer's recommendation.

The 152 mm (6 in.) Model PS ducting can be used for runs up to 183 meters (600 ft.) long minus 12 meters (40 ft.) for each 90° elbow.

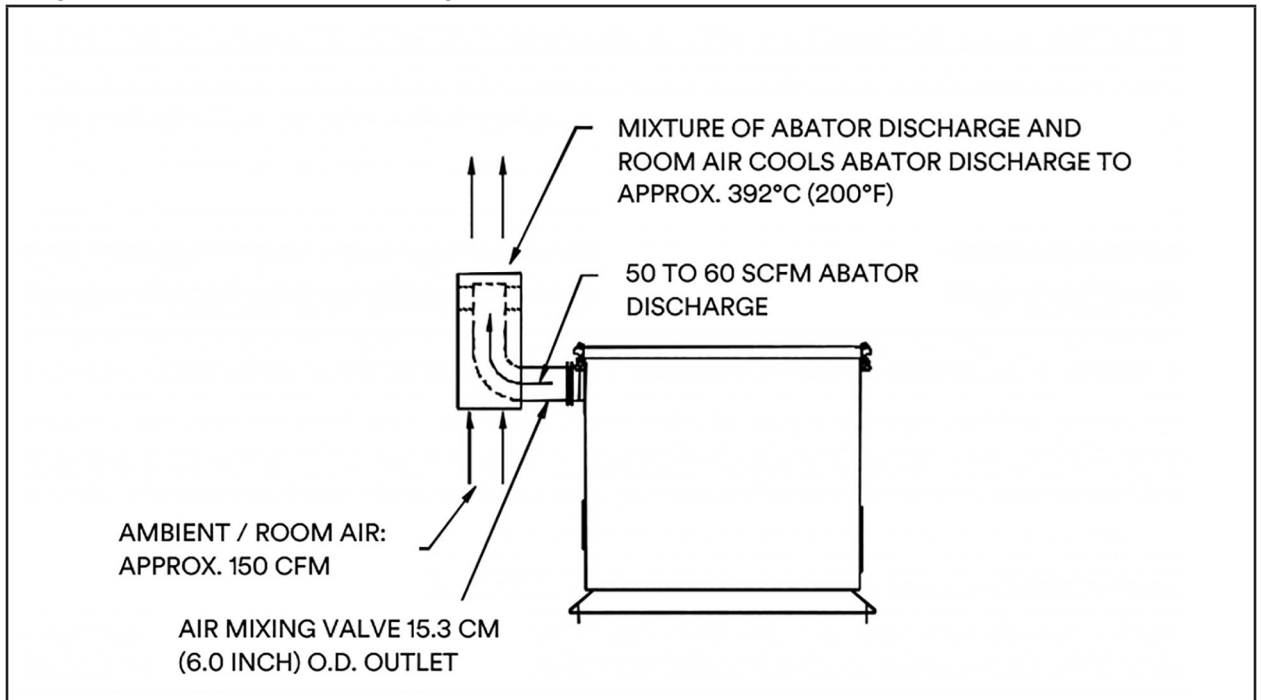
The Metalbestos adapter (part number 78-8078-9813-1) is needed to connect the EO Abator exhaust to the Metalbestos ducting, and is available through the 3M Health Care Service Center.

Connect the Metalbestos adapter to the EO Abator exhaust using high temperature RTV between the two flanges and then clamp the flanges together with clamp (part number 78-8069-7474-3) to lock the parts together.

The termination for either ducting arrangement must not be within 8 meters (25 ft.) of any opening to the building interior such as fresh air inlets, unsealed windows, and/or pedestrian traffic.

Section 4: Figures

Figure 1 Negative Pressure System – Arrangement 1



Positive Pressure System – Arrangement 2

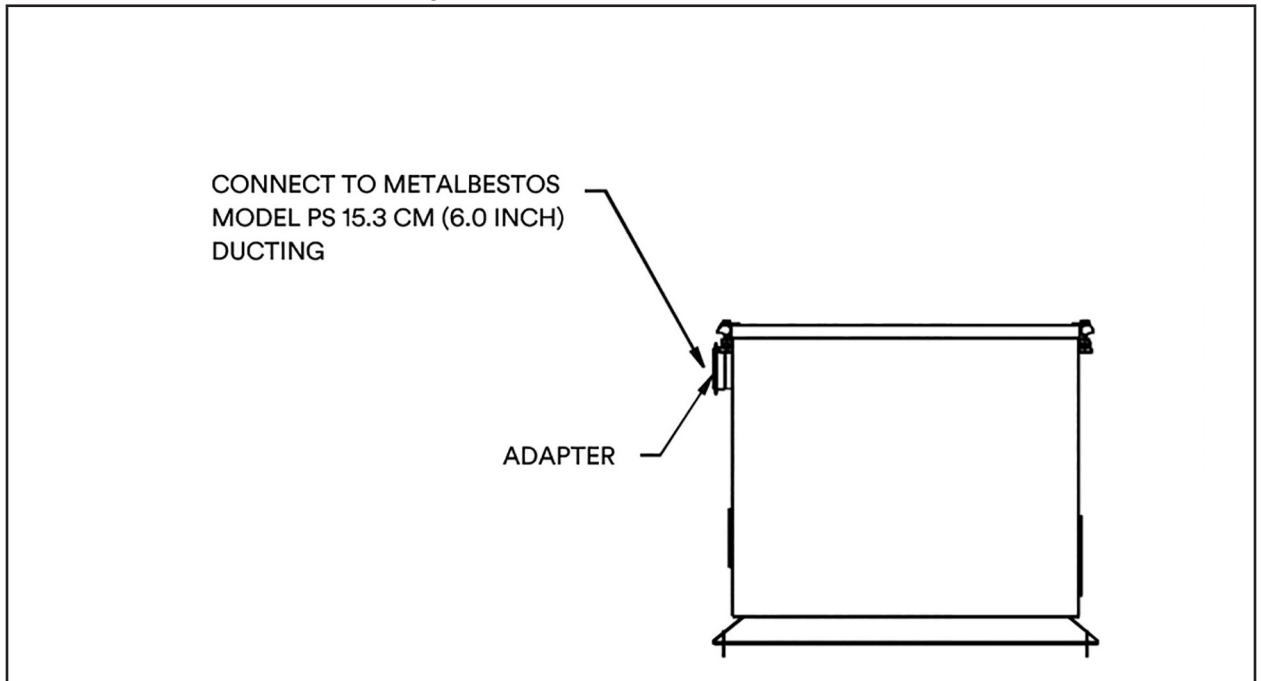


Figure 2

View of Inside the EO Abator Control Box

Model 50AN:

Connect 220-230 VAC to circuit breaker (1) and connect ground wire to ground lug (2).

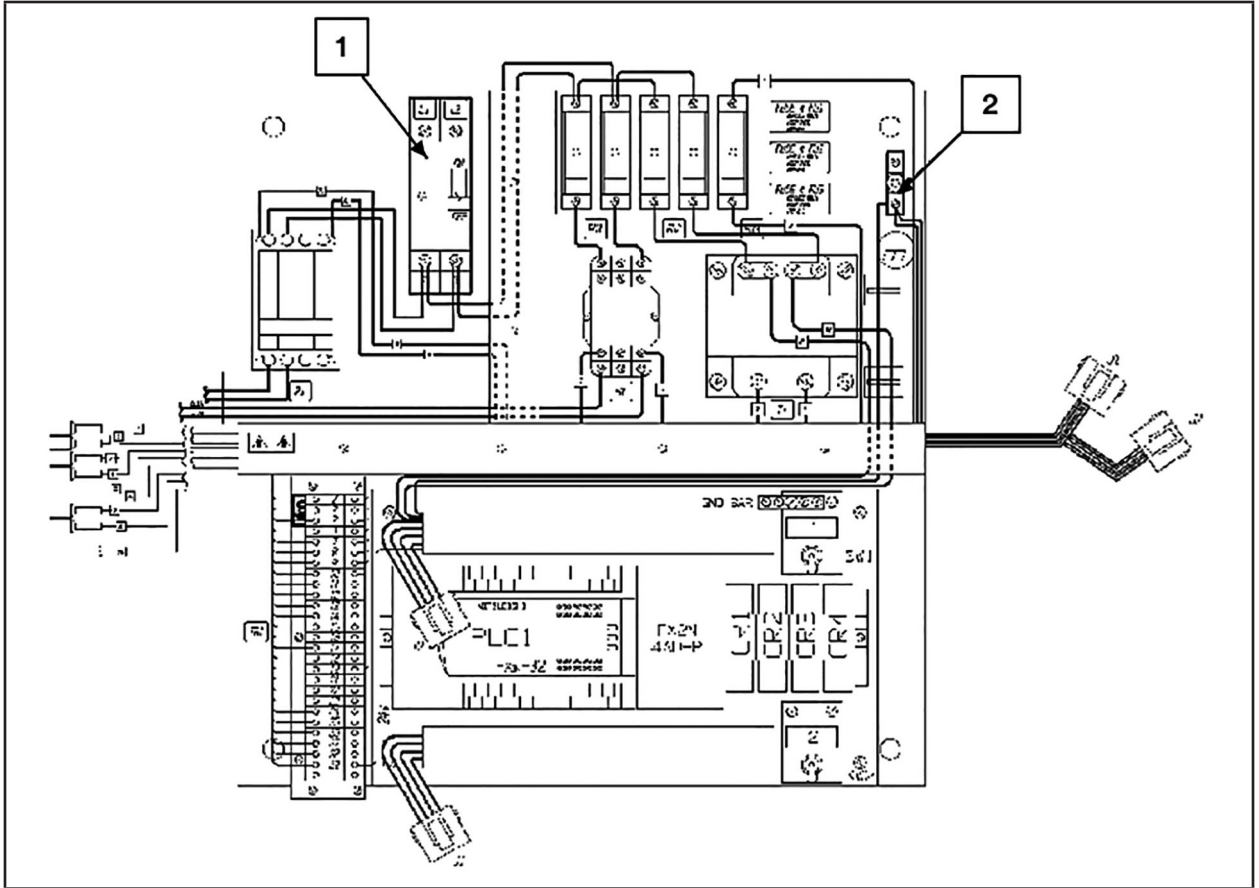


Figure 2
(cont.)

Model 50AE:

Connect Three Phase 400 VAC and Neutral to circuit breaker (1) and connect ground wire to ground lug (2).

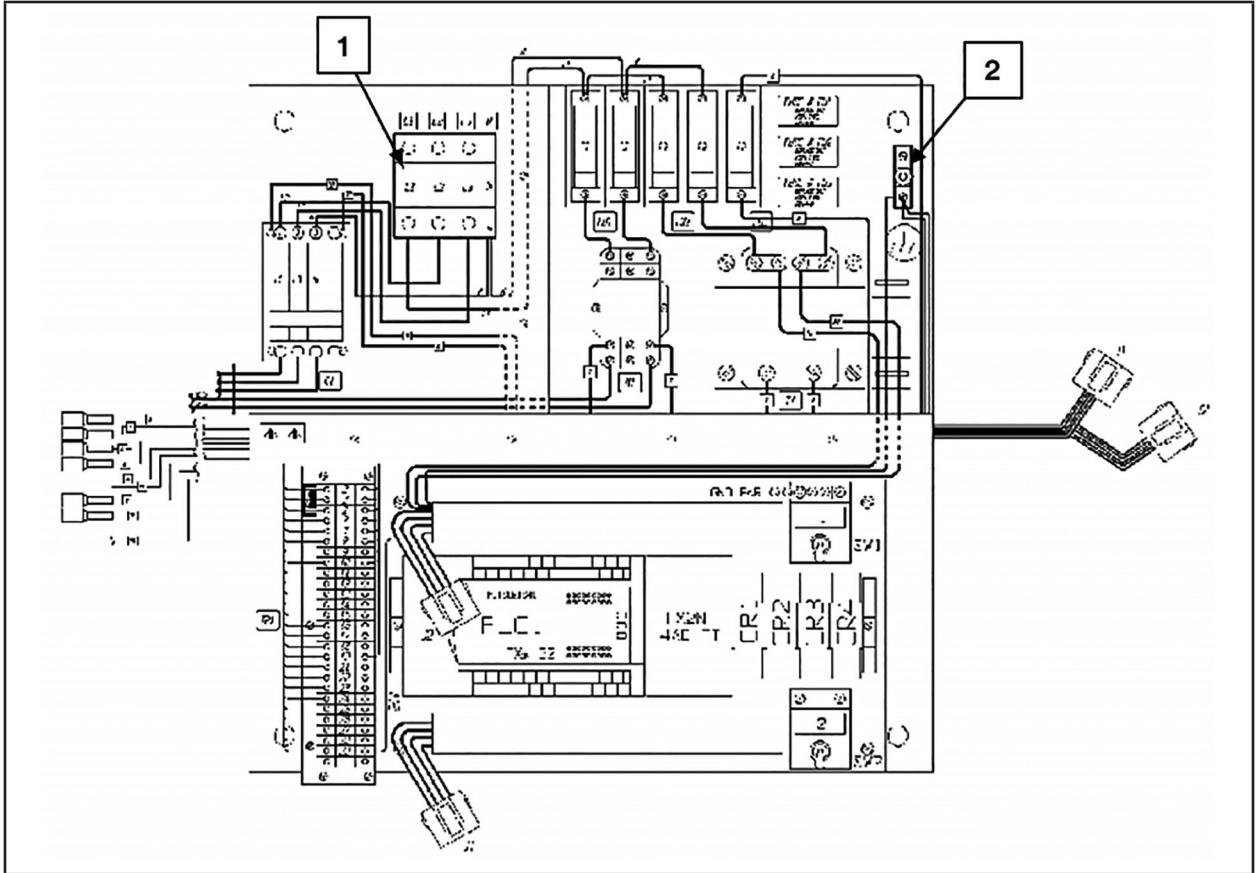


Figure 2
(cont.)

Model 50AJ:

Connect Three Phase 200 VAC to circuit breaker (1) and connect ground wire to ground lug (2).

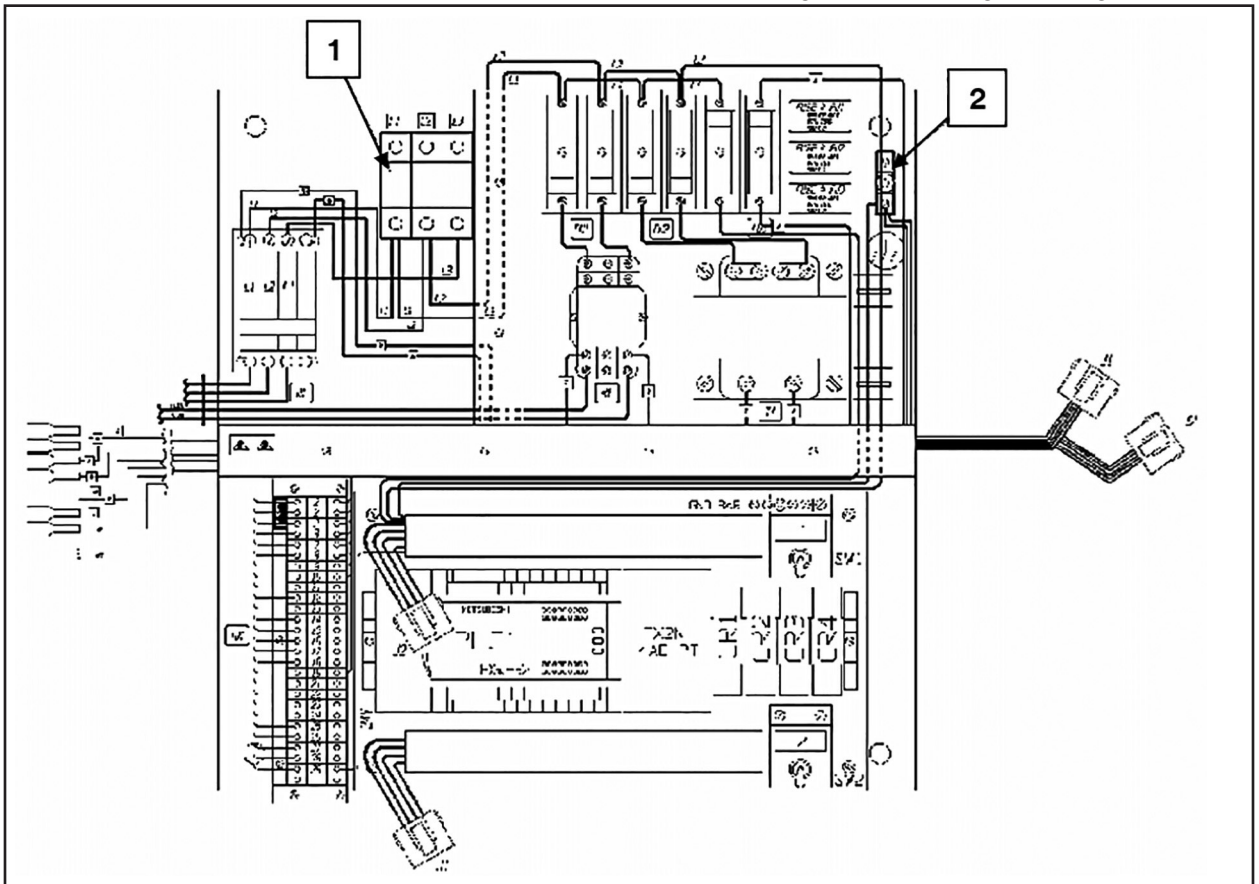


Figure 3 For 5XL, 8XL, and GS Series Sterilizers("D" Connector)

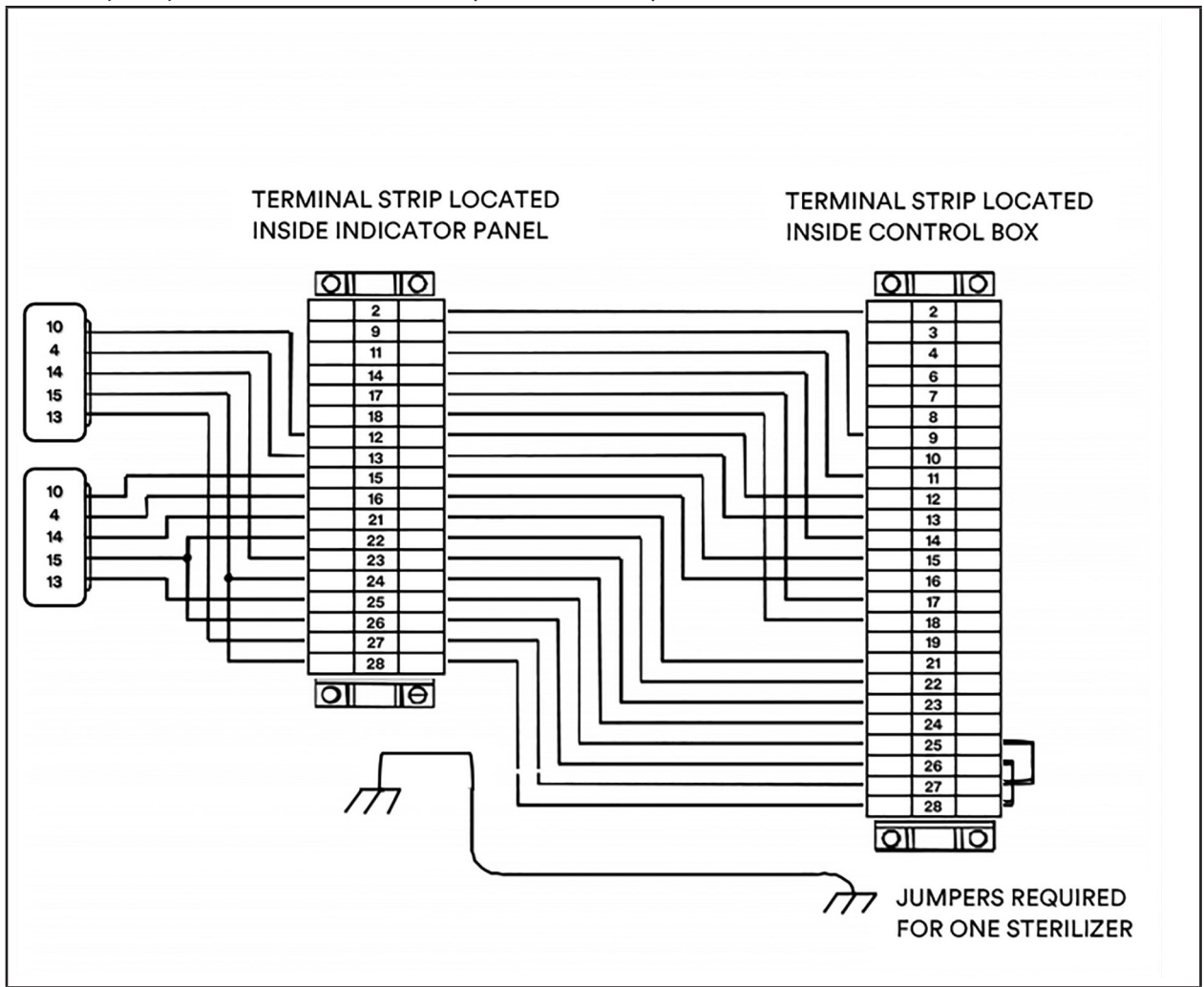


Figure 4 To connect 3M Steri-Vac Models 5XL, 8XL, and GS Series Sterilizer(s) to EO Abator

If only one 5XL/8XL/GS Series sterilizer is connected, connect its wires as follows: A jumper wire is connected from abator terminal 27 to 25 and from terminal 28 to 26.

If a second sterilizer is connected, connect wires to these terminals:

8XL / 5XL "D" Connector Sterilizer #2 PIN #	4XL / 5XL 3M Steri-Vac Sterilizer #2 Wire #	to	EO Abator System Indicator Panel Terminal #
10	20		15
15	22		22
-	22		26
13	25		25
4	38		16
14	40		21

Note: One 5XL/8XL/GS Series "D" connector cable (part number 78-8078-6209-5) is provided with each EO Abator. Additional cables are available through the 3M Health Care Service Center.

Note: Use shielded cable (Belden 18 AWG Part #83656).

Figure 5 Clearances Required

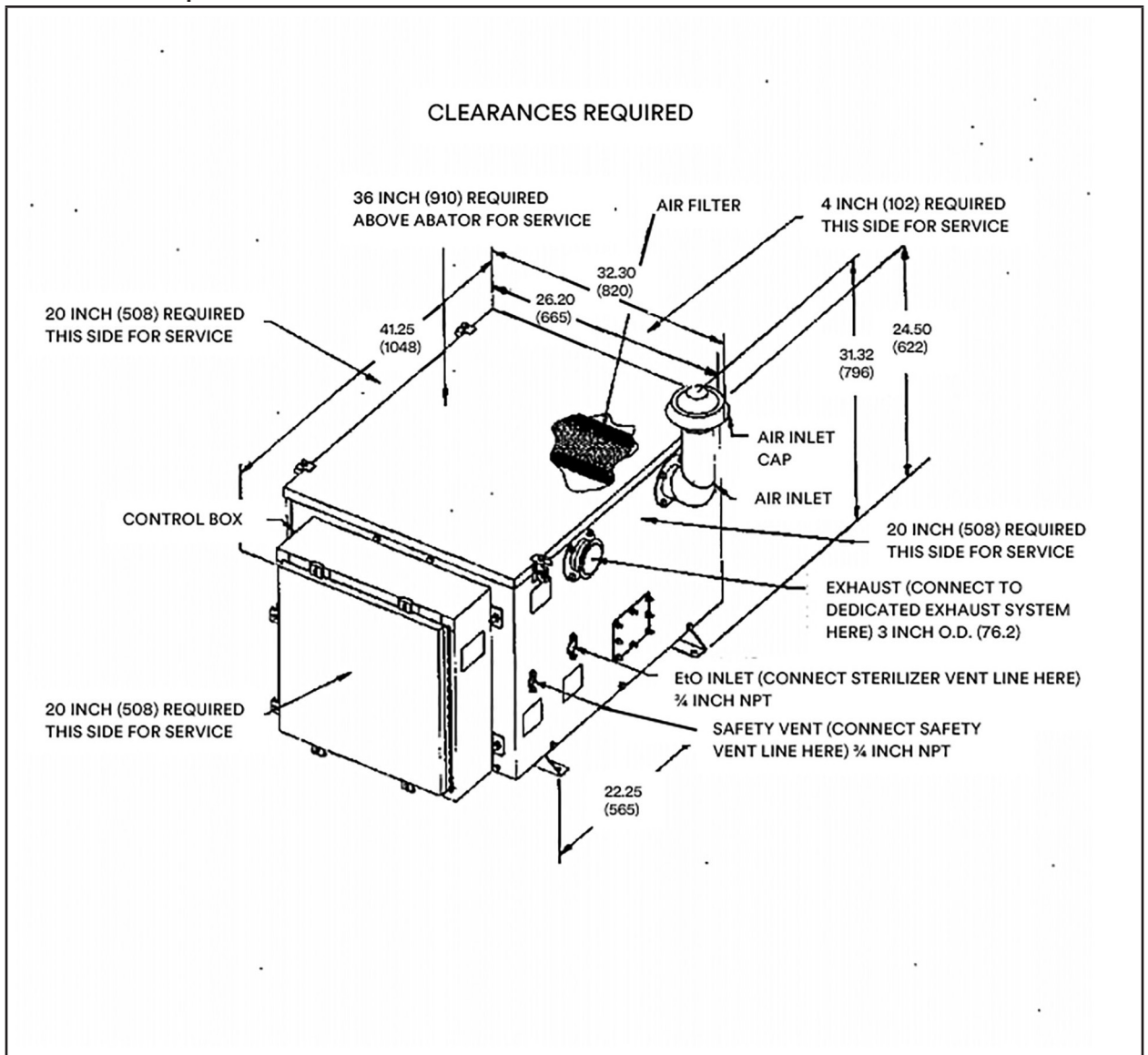


Figure 6 Multiple Hoods, Aerators and EO Abator Vented into a Common System

Note: Safety Vent Line required, but not shown.

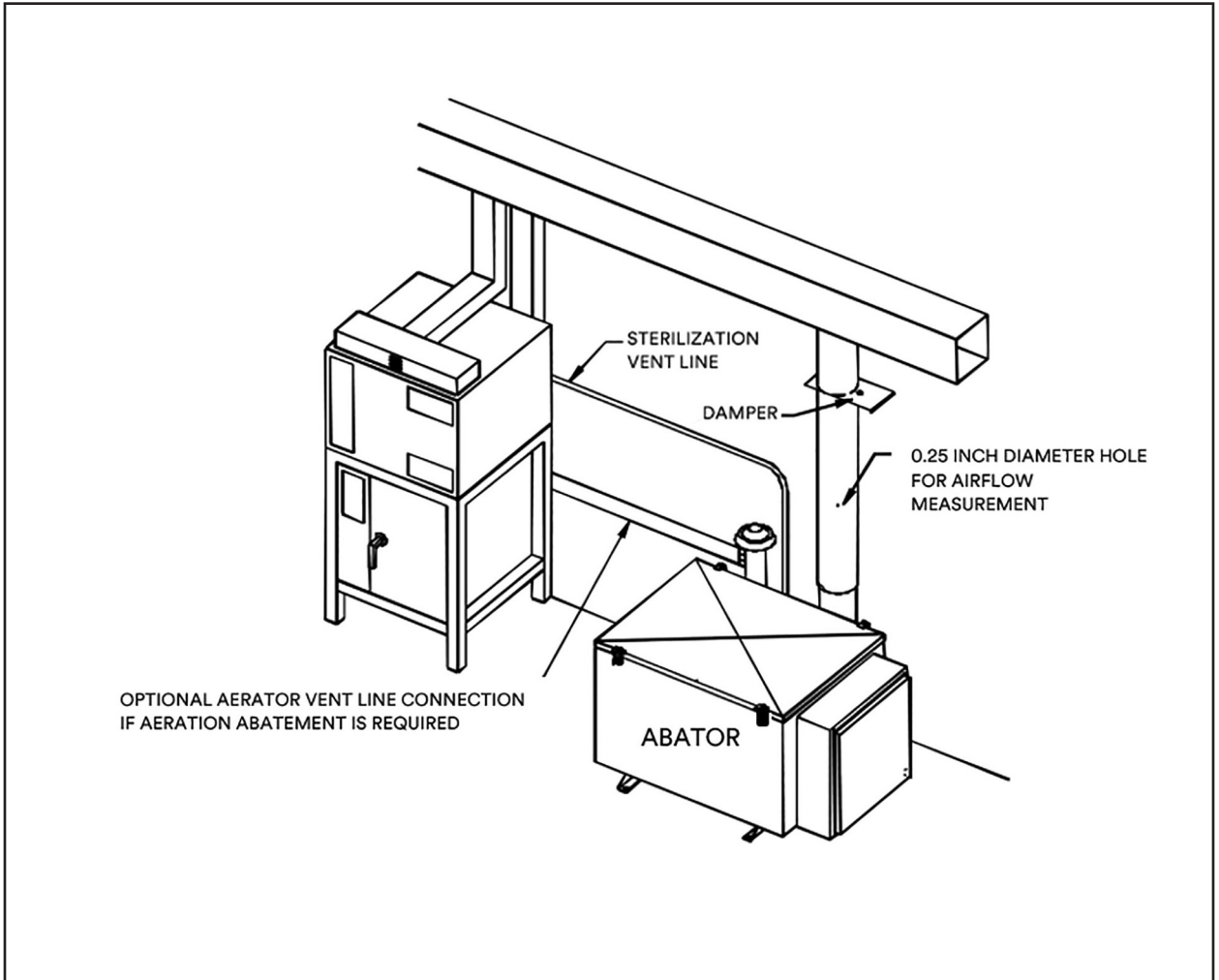
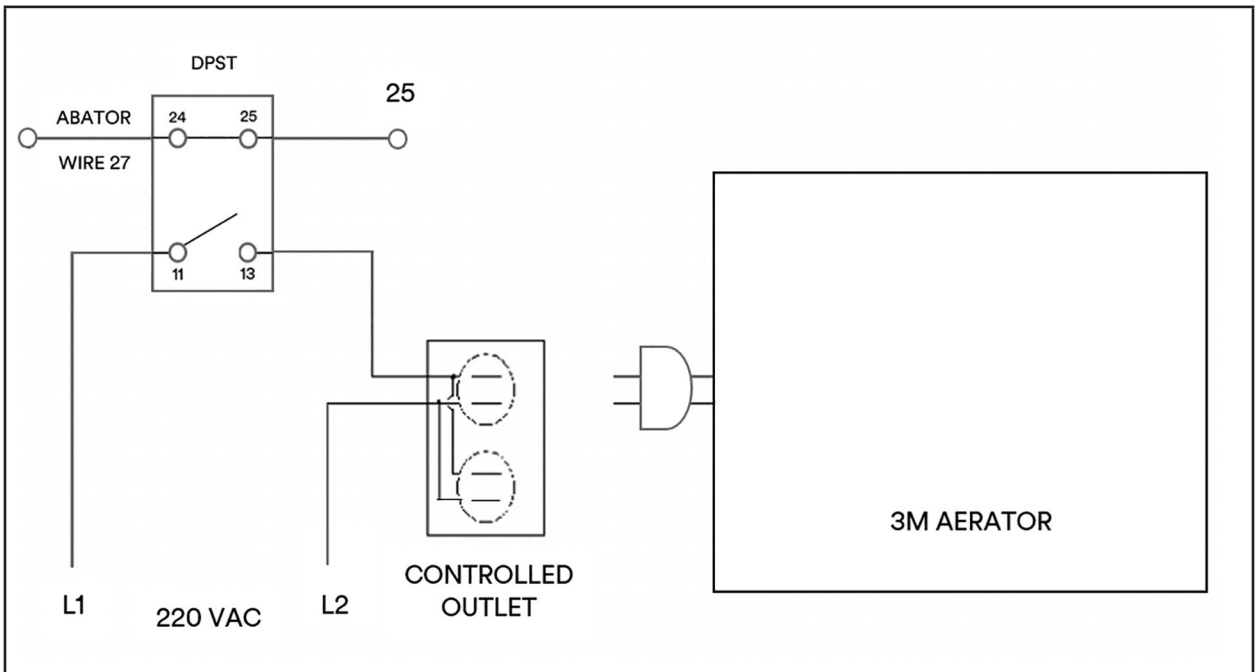
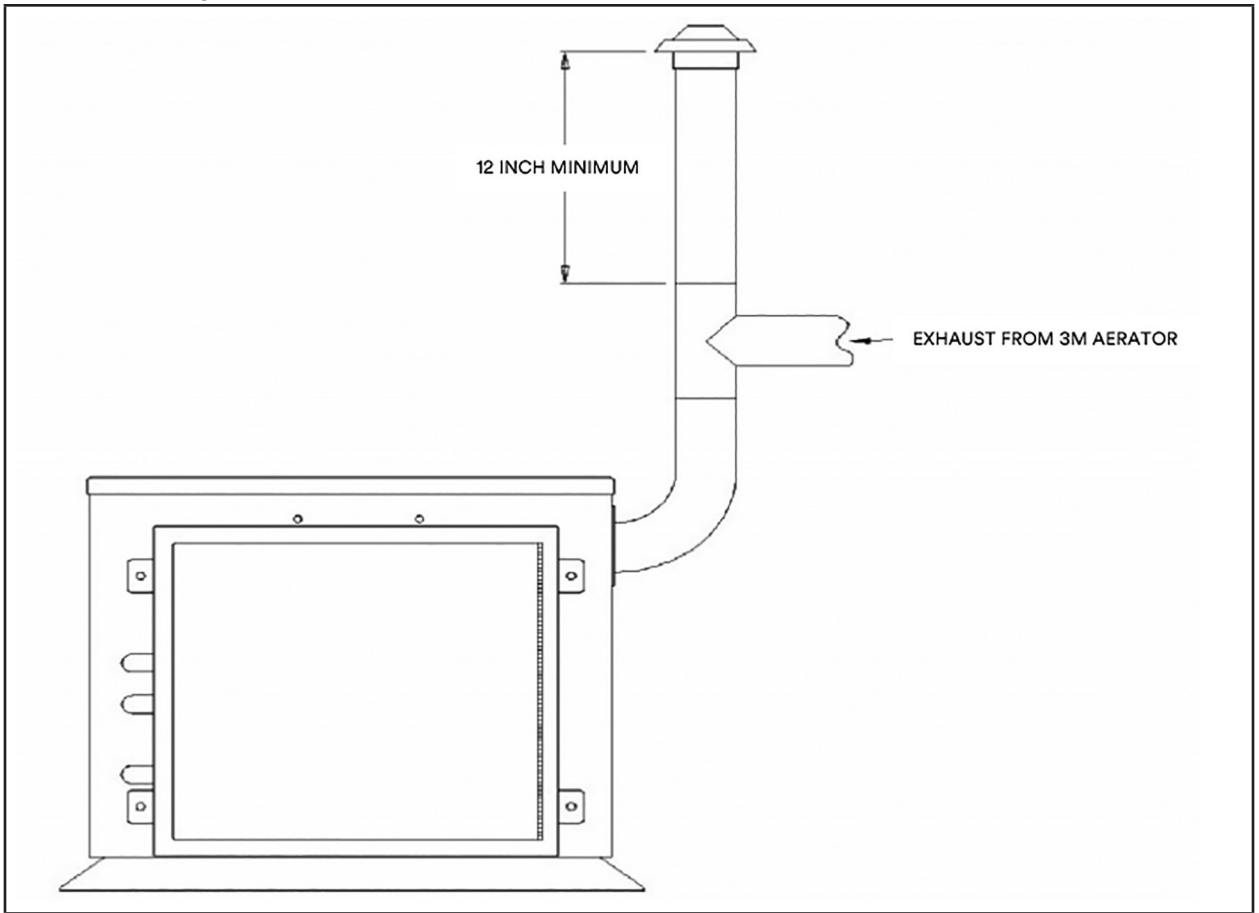


Figure 7 Aerator Venting Connection / Aerator Electrical Connection



3M Authorized Service

3M Health Care has established a worldwide service organization to provide trained technicians to care for your equipment. It is recommended that service of the EO Abator be closely coordinated and combined with the service program established for the sterilization equipment connected to the EO Abator. The EO Abator should be tested for efficiency annually to ensure proper operation and to determine when the catalyst cell needs to be replaced. The efficiency testing is to be conducted by a competent testing laboratory that is familiar with the testing and handling of EO. 3M does not perform efficiency testing.

For servicing information in the USA, contact your local 3M service representative or the 3M Health Care Service Center at the following Address:

3M Health Care Service Center
Bldg. 502-1W-01
3350 Granada Ave North
Suite 200
Oakdale, MN 55128

If you have questions, call 3M Field Service: 1-800-688-5888.

Outside the USA, contact the local 3M Subsidiary.

Preventive Maintenance Agreement

For your convenience, 3M provides a preventive maintenance agreement (PMA) for purchase with your EO Abator. The PMA assures you of periodic maintenance of your EO Abator and emergency services. Contact your local 3M Health Care service representative or the 3M Health Care Service Center at the above address for PMA information.



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 **3M Company**

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Manual-Installation-05-264058_3

Issue Date: 2019-12, rev. 3

34-8725-3776-5

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