READ ME FIRST!

M01335 AEROSOL GENERATOR

CAUTION: The M01335 aerosol generator was designed to be used with and should only be operated with the supplied compressor pump (Modified Gast DOA-P704-AA, DOA-P504-BN, or DOA-P518-FD). The use of alternate compressed air sources can potentially result in personal injury and/or damage to the unit.

After unpacking the aerosol generator and compressor pump, inspect each unit for any damage that may have occurred during shipping. If any damage is noted, contact QVA Test Solutions. The unit(s) should be repaired or replaced prior to being put in operation.

For more information, please contact:
Service and Support
info@qvats.com
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Instruction Manual

M01335

Aerosol Generators

Introduction

This manual describes the operation of the Model M01335 aerosol generators. Please note that this manual gives a general overview of the units and that some features of custom aerosol generators may not be covered. All units are inspected prior to shipping. Please visually inspect each unit after receiving to ensure that the unit was not damaged during transport. Please immediately contact QVA Test Solutions if any defects are noted or if you have questions about the aerosol generator. The generators require little maintenance and contain no serviceable parts. Any attempt to repair or make adjustments to components of the unit will likely result in compromising the generator's operational performance.

The M-Style aerosol generators are compact low output units that generate poly-dispersed oil based aerosols in the concentration ranges of 0.02 (µg/l)* in 10cfm and up to 0.02 (µg/l) in 75,000 cfm of airflow. These aerosol generators are to be used in conjunction with particle counting systems for integrity testing of HEPA and ULPA filtration systems. The units are designed to significantly reduce the amount of oil exposure to the filtration system under test. Custom generation units can easily be produced to meet the needs of your challenge concentration requirements.

The M-Style aerosol generators provide a means to introduce aerosol into a system (positive or negative pressure) and easily adjust the aerosol levels to the desired concentrations. The M-Style generators rapidly respond to any adjustments made to the generator output and significantly reduce the delay required to reach stable output levels.

* 0.02 (µg/l) of aerosol is approximately equivalent to 6 million (0.3 µm-1.0 µm) particles/ft^3 of air.

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CAUTIONS

THE GENERATOR IS TO ONLY BE USED WITH THE SUPPLIED COMPRESSOR PUMP. INLET PRESSURE TO THE REGULATOR SHOULD NOT EXCEED 100 psig.

NOZZLE PRESSURE SHOULD NOT EXCEED 30 psig (recommended maximum pressure of 25 psig)

ALL LIQUID SHOULD BE DRAINED OUT OF THE GENERATOR PRIOR TO SHIPPING THE UNIT

WARNING: THE OUTLET OF THE AEROSOL GENERATOR MUST REMAIN UNBLOCKED AND UNRESTRICTED DURING OPERATION. OPERATING THE GENERATOR WITH A BLOCKED OR RESTRICTED OUTLET COULD RESULT IN POSSIBLE INJURY TO PERSONNEL AND COULD DAMAGE THE UNIT.

Overview

1. Compressor pump
2. Compressor outlet/tubing
3. Bleed off valve (only used in special applications)
4. Nozzle pressure gauge
5. Nozzle pressure adjust valve
6. Fill port (oil based aerosols)
7. Supply air quick connect - to compressor pump
8. Quick connect insert – to generator
9. "HIGH"/"LOW" output nozzle selection valve
10. Oil fill level sight glass
11. Drain valve
12. Generator outlet 3/8" FNPT

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Operation

1. Remove the cap to the fill port on the aerosol generator and fill the unit with the desired aerosol agent until the fill level is approximately half way between the MAX and MIN markings on the liquid level sight glass (~250ml). The volume of the supplied bottle will be enough to fill a drained generator.

The following aerosol agents may be used with the M-Style generators. Alternative agents may be compatible with the M-Style generators. Before using any aerosol agents, refer to the appropriate safety and usage guidelines as certain agents may pose health and safety risks.

DOS/DEHS - Di (2-Ethylhexyl) Sebacate
Mineral Oil – Arco Prime 200
Ondina Oil
PAO - Poly-Alpha Olefin/Emery 3004

NOTE: Never fill the generator when it is under pressure or in operation.

NOTE: Never overfill the generator with the aerosol agent. The generator will require additional aerosol agent when the liquid level reaches the min marking at the bottom of the sight glass.

2. Replace the fill port cap.

3. Attach the quick connect of the supplied compressor (modified GAST diaphragm pump) to the inlet of the generator.

WARNING: ONLY THE SUPPLIED COMPRESSOR PUMP SHOULD BE USED TO OPERATE THE GENERATOR. THE COMPRESSOR PUMP HAS BEEN EQUIPPED WITH THE APPROPRIATE FILTRATION AND PROVIDES THE NECESSARY PRESSURE/FLOW TO RUN THE GENERATOR. USE OF AN ALTERNATE COMPRESSOR OR AIRSOURCE CAN RESULT IN POSSIBLE INJURY TO PERSONNEL OR DAMAGE TO THE UNIT.

4. When testing small systems below 2000 cfm, the "LOW" output nozzle can be selected by rotating the quarter turn valve to the "LOW" position. This will allow one to correlate nozzle pressure vs output levels with more precision. When testing larger systems (up to 75,000 cfm), the "HIGH" output nozzle can be selected by rotation the quarter turn valve to the "HIGH" position.

5. Turn on the source of compressed air (Gast Diaphragm Pump) and adjust the valve knob until the desired nozzle pressure or output level is reached.
   NOTE: The compressor pump will not start if the pump is in a pressurized state. Allow the nozzle pressure of the generator to bleed off and reach zero before starting the pump.

6. When testing is complete, turn off the compressor pump, allow the pressure in the system to reach zero, and disconnect the compressor line from the generator enclosure. Once the compressor line is disconnected, turn back on the compressor pump and allow the compressor pump to run open (nothing connected) for 5 minutes to remove any condensation that could have possibly built up in the pump's head.

7. After the pump has been running open for a minimum of 5 minutes, shut off the pump and cap the end of the quick connects on the pump's outlet and the generator enclosure's inlet to prevent dust accumulation in the fittings during transport and storage.

8. The generator should be routinely drained to remove residue buildup and water that may have accumulated in the unit.