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INSTRUCTIONS: CLEAN LENS ADAPTOR – LFD1

Introduction

The BGI Clean Lens Adaptor (**CLA**, Patent No. 7,256,882 B2) is designed to prevent the deposition of aerosols on the lens surfaces of photometers. This function is achieved by structuring a laminar flow which will bridge the air gap at the light beam without the loss of particles. This effect is achieved at any flow rate from 0.5 to 16 Lpm, (*provided that the flow is smooth and non-pulsating*). Part Number **LFD1**, was specifically developed for the Casella Microdust Pro when used in Inhalation Toxicology and Bioaerosol Laboratory applications. It is also usable on the previous AMS 950 (However, BGI can not guarantee the uniformity of the tube diameter of earlier units. If difficulty is encountered contact BGI).

Assembly

Note: *The adaptor is shipped completely assembled as shown in Figure 1.*

Attaching the Unit to the Microdust Pro Probe.

- 1) Remove the Inlet and outlet fittings from the adaptor block:
 - a) Unscrew the inlet fitting (this is the stainless steel compression fitting attached directly to the adapter block). Be aware that the nozzle insert is designed to be loose and should fall out if the adaptor block is inverted. *If it does not pull out easily, it can be withdrawn by screwing a #4-40 screw into the hole on the adaptor flange.*
 - b) The outlet fitting is attached to both the adapter block and the filter housing. It should be removed in the same fashion as the inlet. *Do not mix up the inlet and outlet since the outlet nozzle is larger than the inlet nozzle. Reversing them will cause particle contamination.*
- 2) With the inlet and outlet removed, the round opening of the adaptor block should be slid over the probe of the Microdust. If it does not readily slide along the length of the probe apply light lubricant to the internal o-rings.
- 3) The inlet and outlet hole must align visually with the corresponding hole on the probe.
- 4) Re-insert the correct inlet and outlet nozzles into the openings and then screw their covers back into place. Never use more than hand tight force.

Application Setup

Note: *In order to preserve laminar flow within the system, it is only necessary for the user to provide a pump which falls within the flow rate range of the adaptor, 0.5 to 16 Lpm, and has sufficient static pressure capability to overcome the resistance of your chosen filter. For laboratory applications, particularly with no filter, a water aspirator may prove useful. A BGI choke set is available to control flows down to 2 Lpm.*

Connecting the System.

- 1) The inlet compression fitting should be connected to a length of 5/8 inch O.D. tubing exiting the test chamber.
- 2) The outlet compression fitting should be connected using a length of 5/8 O.D. tubing to the pumping source.



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Figure 1: Assembled Adapter



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Figure 2: Exploded Adapter

Note: *The outlet fitting is designed to accept a 47mm filter housing assembly that terminates with another 5/8 inch compression fitting. Teflon ferrules may be used in place of the stainless steel ferrules provided. Although a filter may be left out of the filter holder, there will be the risk of aerosol damage to the pump that provides the vacuum.*

Cleaning

Note: *It is up to the user to determine how often cleaning will be required as this is dependent upon aerosol concentration and frequency of use.*

- 1) Disassemble and remove the adaptor from the probe.
- 2) Wipe excess soil as warranted. If an ultrasonic cleaner is available, clean using a water-soluble cleaner. If unavailable clean with hot soapy water and rinse thoroughly with clear or distilled water. At all times observe good Occupational Health and Safety practice.

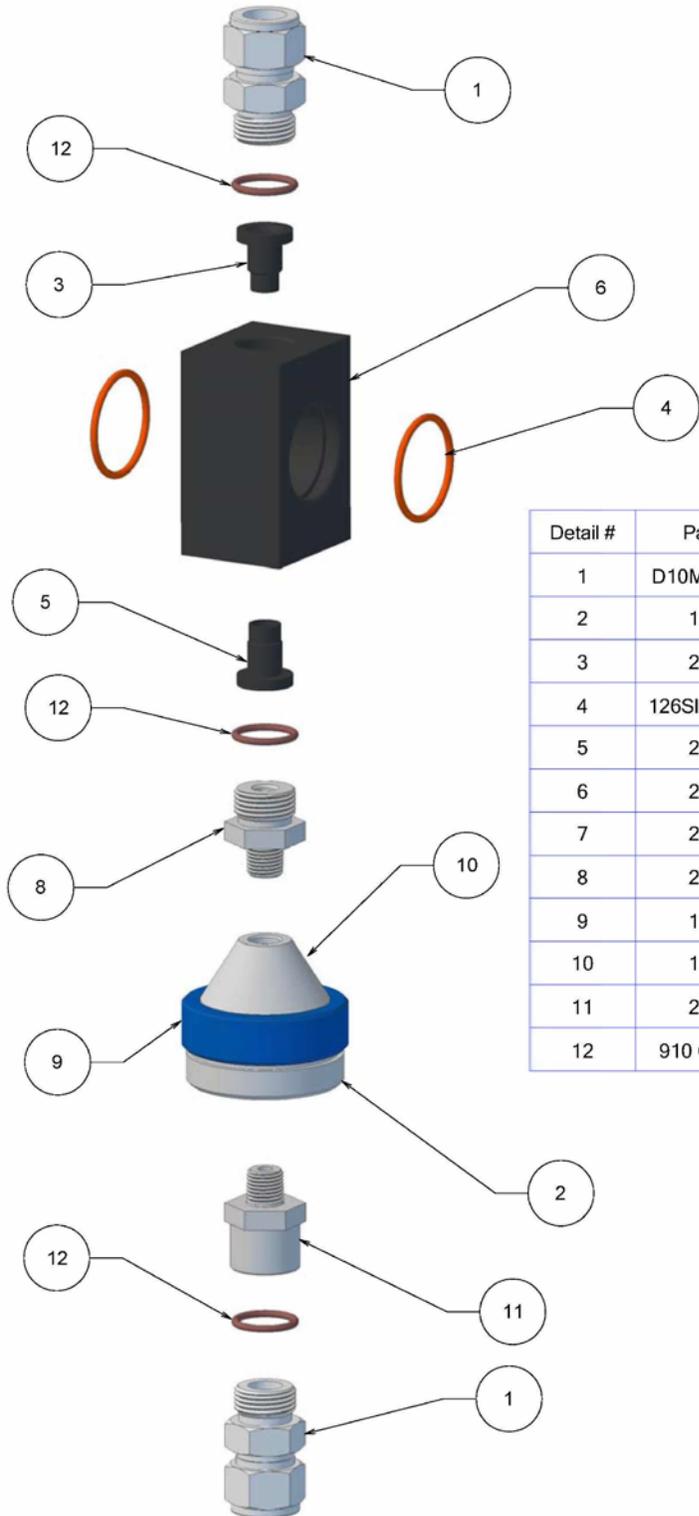
Specifications

Inlet/Outlet inside diameter: 0.625 inch (1.59 cm)
Outlet filter modified BGI F-1 (<http://www.bgiusa.com/agc/holder.htm>)
Height o/a: 9.5 inches (24.1 cm)
Width: 1.625 x 2 inches (4.13 x 5.08 cm)

Weight: 25.8 oz. (731 grams)

Mounting points: 2 1/4 -20 (1/4 Whit.) holes provided on narrow face on C.L., 2 in. apart.

Parts List



Detail #	Part #	Qty.	Description
1	D10MCST10	2	D10MCST10
2	1093	1	1093 47mm FILTER HOLDER BASE
3	2698	1	2698 LAMINAR INLET
4	126SILICONE	2	126 ORING
5	2699	1	2699 LAMINAR OUTLET
6	2700	1	2700 MAIN BLOCK
7	2341	1	2341 GASKET
8	2701	1	2701 ADAPTER
9	1614	1	1614 47mm FILTER HOLDER NUT
10	1615	1	1615 47mm FILTER HOLDER CAP
11	2704	1	2704 ADAPTER (MICRODUST)
12	910 ORING	3	910 ORING

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