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**INSTRUCTIONS:**  
**SCC-2.354 for Photometers**

***Introduction:***

This cyclone is intended to be used with any photometer air sampler which has a 3/8 inch O.D. (9.52 mm) vertical inlet tube and requires PM 2.5 performance at 8 Lpm in the ambient, industrial or indoor environment

At the stipulated flow rate of 8 Lpm the unit, which is based on the Sharp Cut Cyclone model<sup>1</sup> conforms to EPA ideals for size selective sampling at this cut point. It is fitted with an omni directional inlet designed to the TSP standard which requires an intake velocity equal to the sedimentation velocity of a 100  $\mu$ m AED particle. The use of this type of fundamental design is intended to minimize the aspiration of large particles and aerosol water droplets. The assembled unit is generically depicted in Figure 1 and detailed part numbers are shown in Figure 2.

***Calibration:***

When using the unit on a photometer, for the first time, it will be necessary to audit the flow rate calibration of the photometers flow management system. The reason for this procedure is to make any necessary adjustments for the increased resistance of the cyclone, upon the system.

SCC 2.354 1.5 cm. of H<sub>2</sub>O

In order to perform this check it is necessary to remove the omni directional inlet in order to attach a hose, leading to the calibration device. Remove the cap securing screw (10002) and the cap (2536). Loosen the three set screws (10004) and pull the cap support (2290) from the inlet tube. The cyclone may now be installed on the photometer with a hose leading to the calibration device. Calibrate according to the photometer manufacturers instructions.

BGI calibrators that may be used for this purpose are the triCal and the deltaCal with the DC-X adapter. Once the calibration is complete, remove the cyclone from the photometer and reassemble the inlet shroud.

*Operation:*

The Complete cyclone is installed on the photometer and switched on. When using in the ambient environment some thought must be given to operation in the presence of precipitation and fog. The inlet shroud will minimize but not eliminate the ingress of particulate water. Therefore, if the photometer will, in any way, be damaged by the effect of water being drawn in, it should not be operated during inclement weather.

*Cleaning:*

The cleaning interval for the cyclone is entirely dependent upon the environment in which it is deployed. In ambient environments it should be inspected and cleaned on a weekly basis until sufficient experience is gained, such that longer intervals can be utilized. A month between cleanings is entirely possible. In harsh industrial environments, daily attention may be required,

Remove the grit pot (2535) by unscrewing it. Dispose of its contents and clean and dry it. Remove the three screws (10003) from the top of the cyclone and remove the top. The parts can now be cleaned, thoroughly. The method of first choice is immersion in an ultrasonic cleaner with water and mild soap. Usually hand wiping with a water dampened lint free cloth will suffice. ***PROTRACTED SOAKING IN SOAP/CAUSTIC SOLUTIONS WILL DAMAGE THE ALUMINUM COMPONENTS!***

**WARNING:** Because of the almost infinite variety of dusts which may be sampled with this device, it is not possible to give specific, recommendations for cleaning substances. Also, it must be noted to be careful not to re-aerosolize hazardous materials when using compressed air for cleaning. Utilize good hygiene practices at all times.

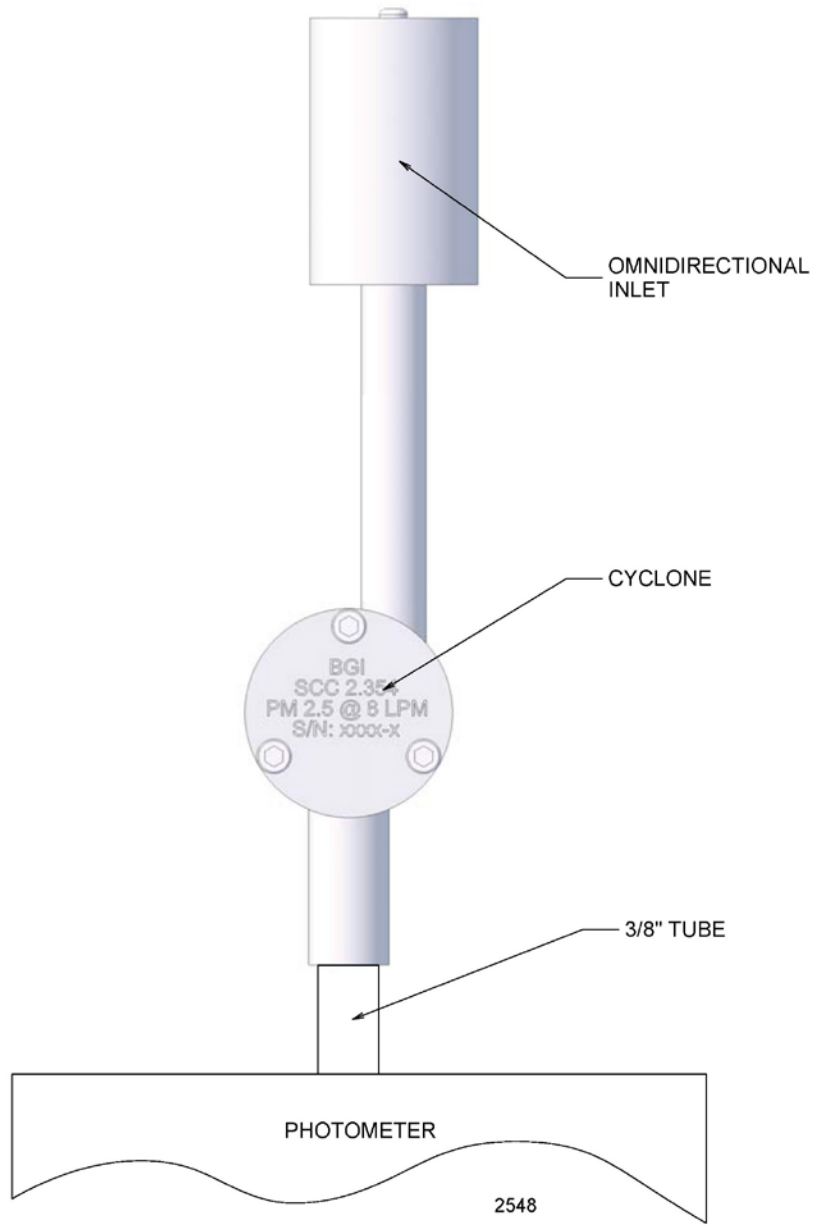


Figure 1 – View of Assembled Cyclone

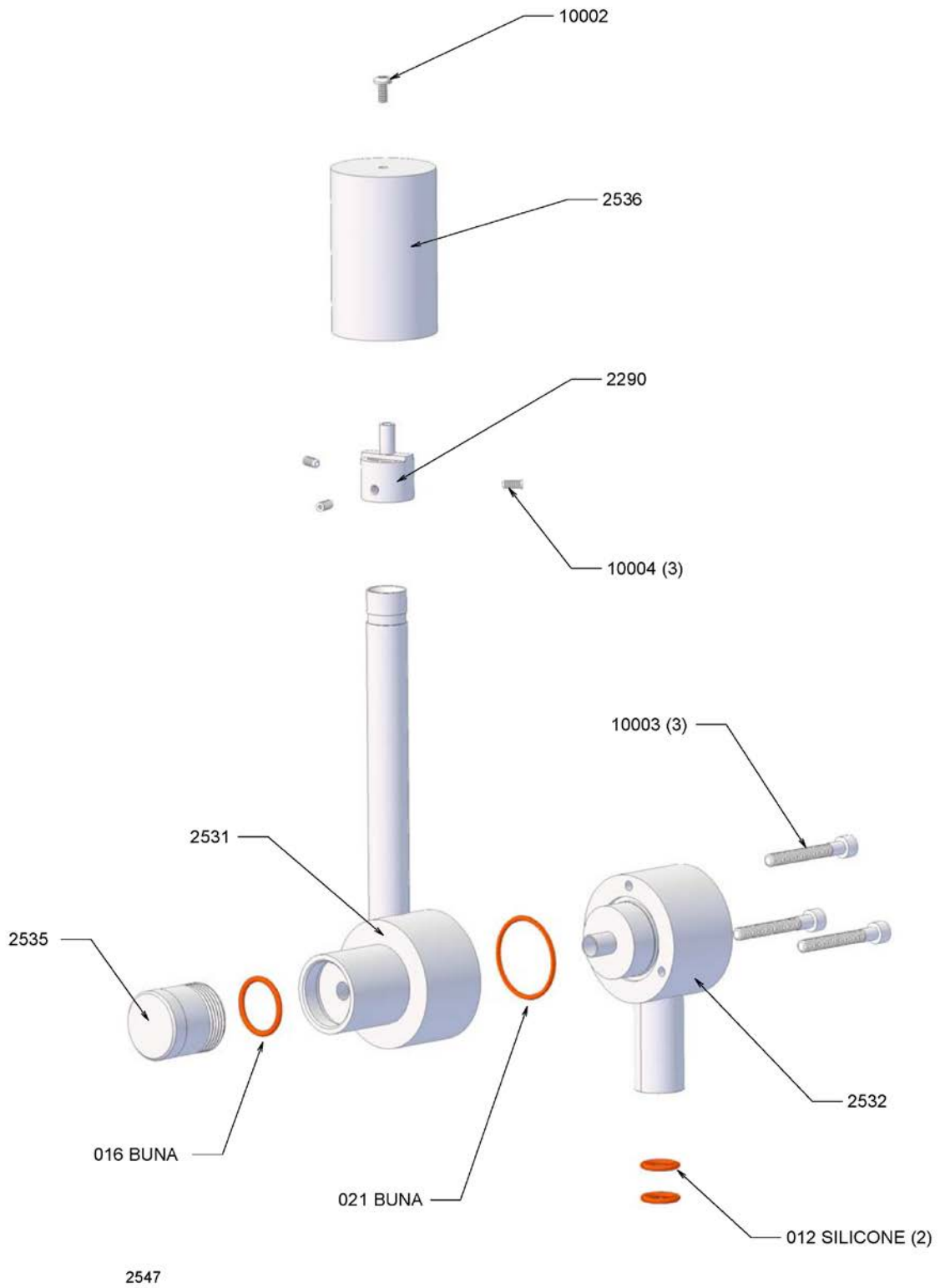


Figure 2 – Exploded View of SCC 2.354 Cyclone