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Instructions: GK2.05 (KTL) and GK2.05 SH (KTL) 2.5 Cyclone (Rev. 2)

Introduction:

This cyclone is intended to be used with the BGI AFC-123 R/T or BGI 400 personal sampling pump or any personal sampling pump meeting the following pressure volume characteristics:

GK2.05 (KTL)

<i>37mm Media Type</i>	<i>Flow Rate - LPM</i>	<i>Pressure Drop cm of H₂O</i>
GF/A Fiberglass	4.0	10.2
0.8µm MCE	4.0	33.0
Gelman Teflo, 2µm	4.0	7.0

GK2.05 SH (KTL)

<i>37mm Media Type</i>	<i>Flow Rate - LPM</i>	<i>Pressure Drop cm of H₂O</i>
GF/A Fiberglass	3.5	8.9
0.8µm MCE	3.5	29.0
Gelman Teflo, 2µm	3.5	6.2

At the stipulated flow rate of 4.0 lpm (GK2.05) or 3.5 lpm (GK2.05 SH) the instrument conforms to US EPA (PM) 2.5 Standard with a 50% cut point of 2.5µm.

Operation:

Remove the front portion of a 3 piece cassette (blue plug) by inserting a coin in the annular slot closest to the blue plug and twisting. Save the portion removed to reinstall for filter protection after sampling. Press the portion of the cassette containing the filter onto the tapered top of the cyclone □ fitted with an orange □ ring.

Next, remove the red plug from the back of the cassette and push in the taper luer plug, which is attached to the hose.

The cyclone is clipped to the worker's lapel and the long hose is run over the worker's shoulder to the personal sampler appropriately situated on the worker's waist belt.

Proceed with sampling according to your experience, regulations, or the instructions for the personal sampler being used. The procedures are the same as for a routine cassette dust sample, except that only the (PM)_{2.5} fraction actually reaches the filter surface. Selection of filter materials varies with different countries and regulations.

Calibration GK2.05:

Attach your calibration device (rotameter or preferably a soap film meter or BGI TetraCal (formally triCal)) to the inlet tube of the cyclone with a suitable section of □ inch I.D. tubing. The cyclone should be set up for normal use with a fresh filter. Turn the personal sampler on and adjust the flow rate to 4 liters per minute. Because of the inlet tube used on this cyclone design, the old fashioned calibration jar is no longer necessary.

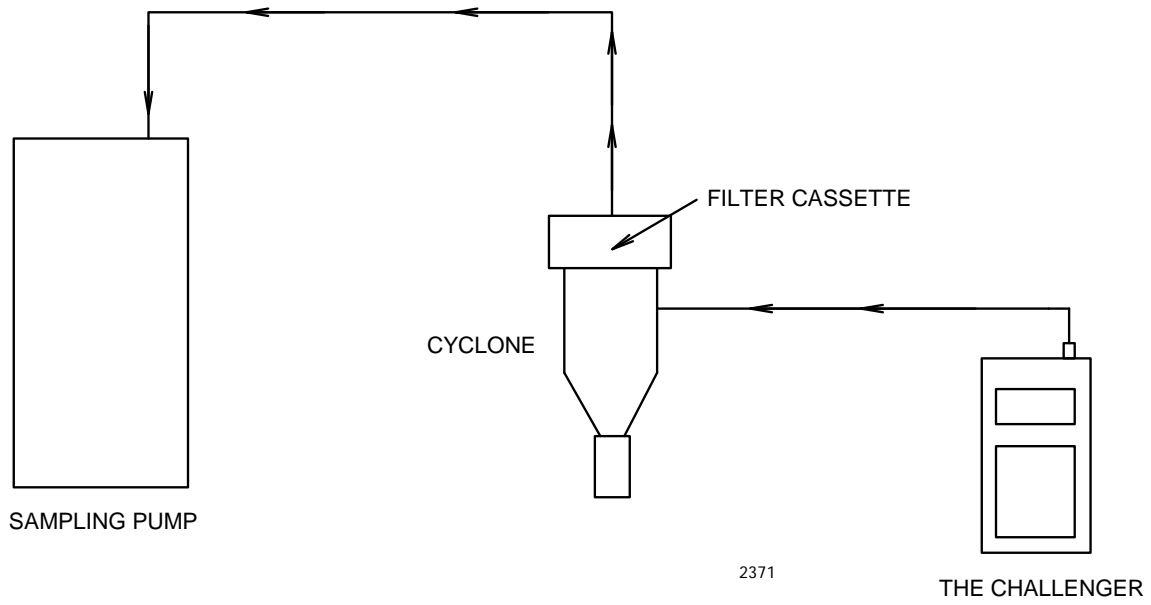
Calibration GK2.05 SH

Press the calibration adapter (GK2.05CC) onto the body of the cyclone. Attach your calibration device (rotameter or preferably The Challenger) to the calibration adapter of the cyclone with a suitable section of ¼ inch I.D. tubing. The cyclone should be set up for normal use with a fresh filter. Turn the personal sampler on and adjust the flow rate to 3.5 liters per minute.

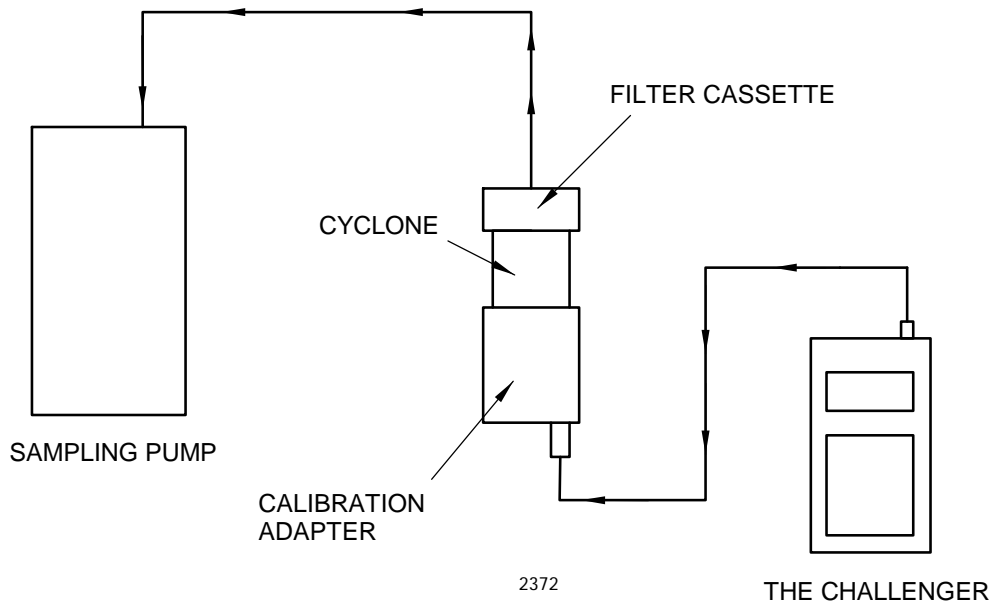
Cleaning:

After disconnecting the suction tubing, carefully remove the cassette and replace the cover and red plug. Remove the grit pot by unscrewing it. Dispose of its contents and clean and dry it. Unscrew the top of the cyclone. The parts can now be cleaned, thoroughly. ***Protracted soaking in soap/caustic solutions will damage the aluminum components!***

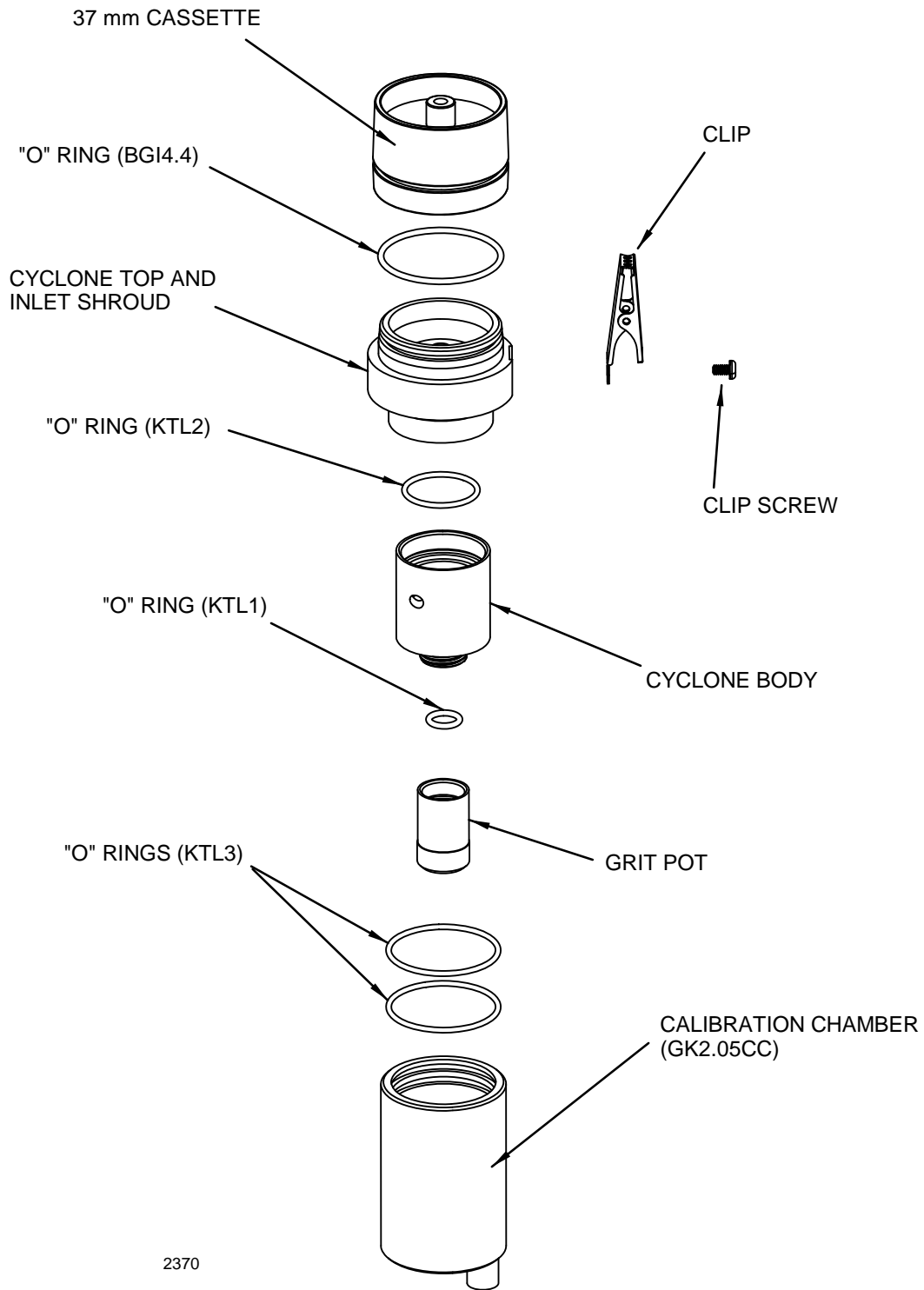
WARNING: Because of the almost infinite variety of dusts, which may be sampled with this device, it is not possible to give specific recommendations for cleaning substances. Also, it must be noted to be careful not to re-aerosolize hazardous materials when using compressed air for cleaning. Utilize good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



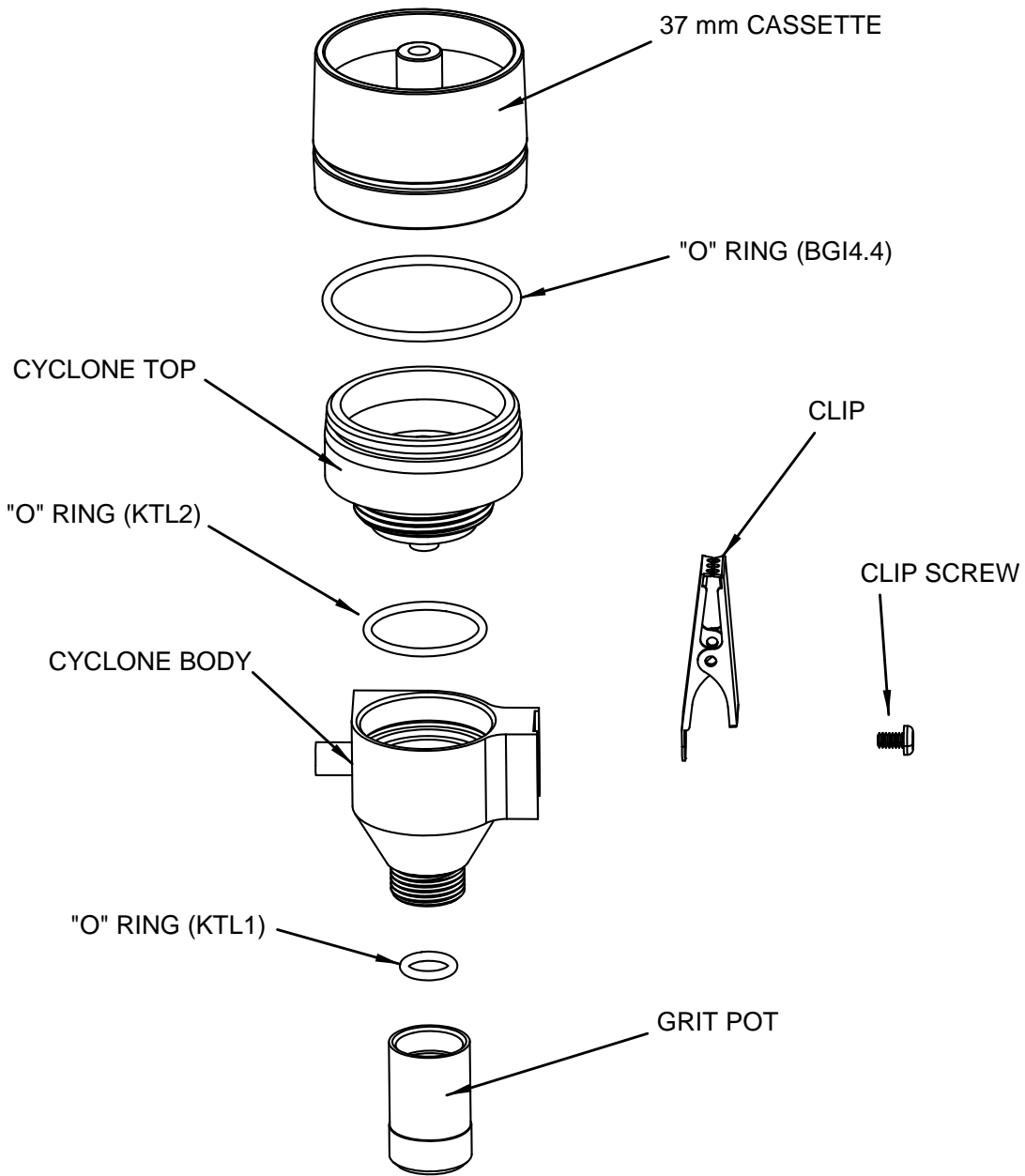
Schematic Diagram of Connections for Calibrating a GK2.05 Sampling Cyclone



Schematic Diagram of Connections for Calibrating a GK2.05SH (KTL) Personal Sampling Cyclone



Exploded View of GK2.05SH (KTL) Cyclone



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Exploded View of GK2.05 (KTL) Cyclone

REVISIONS

May, 2007

Added tetraCal

June, 2007

Added "The Challenger" to Figures