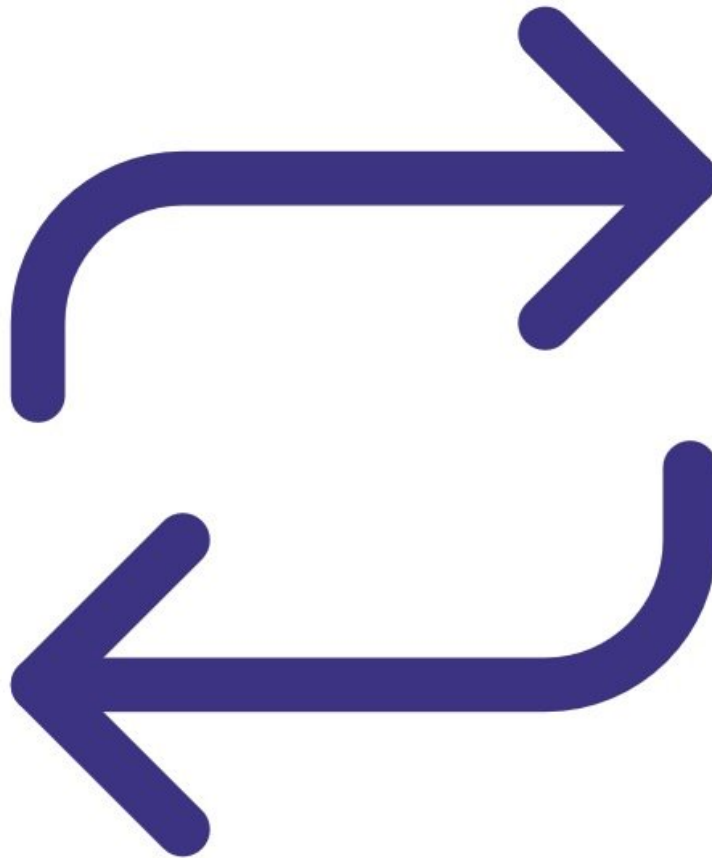




Change filter for particle monitor

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INTRODUCTION

A particulate system has a set of two filters – one for sample and one for purge. The sample filter protects the sample pump from the particle-laden sample air. The purge filter cleans purge air during the automatic zero.

If the sample and purge filters aren't changed at appropriate intervals, the filters can become overly laden (saturated) with particle matter. When the monitor runs its regular auto zero check, purge air passes through the purge filter and through the optics of the engine. If there's excessive particle matter in the purge filter, this can contaminate the purge airstream. This causes the H0 value, which controls the zero of the module, to be set too high and causes negative particle matter readings.

To understand how often you should perform this service activity, [click here](#).



TOOLS:


- [Large flat head screwdriver](#) (1)



PARTS:

- [Filters for particle monitor](#) (1)

Step 1 — Enter service mode



Normal operation

Calibration

History

Manual Entry

Manual service mode Start

Calibration parameters

	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m³	PM2.5 µg/m³	TEMP °C	RH %
Gain	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Offset	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.0
a	1.100		2.550					
b			1.870					

Real time measurements

Time	NO2 ppb	Ox ppb	O3 ppb	O3 raw ppb	PM2.5 raw µg/m³	PM2.5 µg/m³	TEMP °C	RH %
11:42 a.m.	2.9	29.6	24.2	23.7	1.7	1.1	15.74	86.1
11:41 a.m.	2.8	29.2	24.0	23.5	1.6	1.0	15.63	86.1
11:40 a.m.	3.1	29.7	24.2	23.8	1.9	1.2	15.60	86.1
11:39 a.m.	3.6	30.2	24.1	23.7	1.5	1.0	15.55	87.1
11:38 a.m.	4.7	30.4	23.4	23.0	1.3	0.8	15.48	87.1

- [Enter service mode](#) so any fluctuations in the data caused from this activity can be excluded from air quality reports.

Step 2 — Locate filters



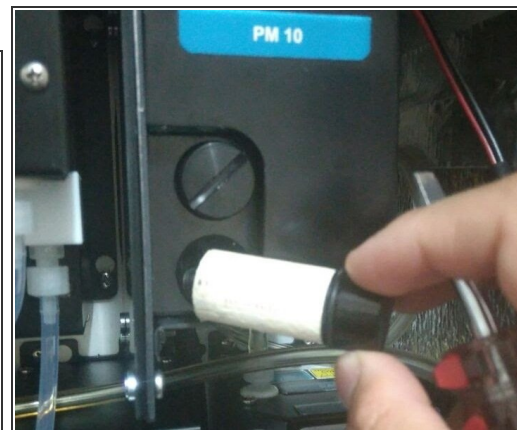
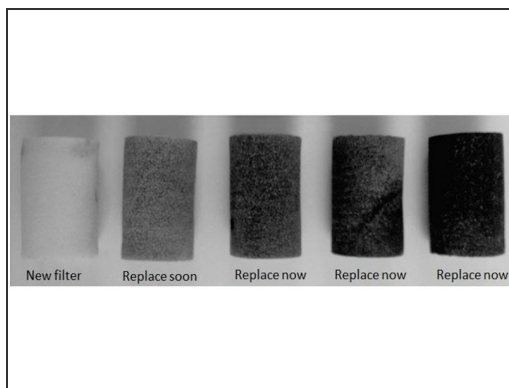
- The filters for the particle monitor are located inside the optical engine.

Step 3 — Disconnect pumps



- Stop the the sample and purge pumps by pulling out the black and red power cables from the electronics module.

Step 4 — Change filters



- Unscrew the top sample inlet filter from the side of the optical engine.
- If the filter needs replacing, slide the dirty filter off the filter mount and put on a new one.
- Screw in the new sample inlet filter.
- Repeat for the bottom purge filter.
- Reconnect the sample and purge pumps to the electronics module.

Step 5 — Check inlet flow



- [Measure the inlet's flow rate](#) to ensure you've fitted the filters correctly.
- ❗ The flow rate should be 2.0 LPM. If the flow is lower, check the filters are screwed all the way into the optical engine.

Step 6 — Record in journal

Instrument ▾ Air Quality Monitor (AQM65 04082015-437) ▾

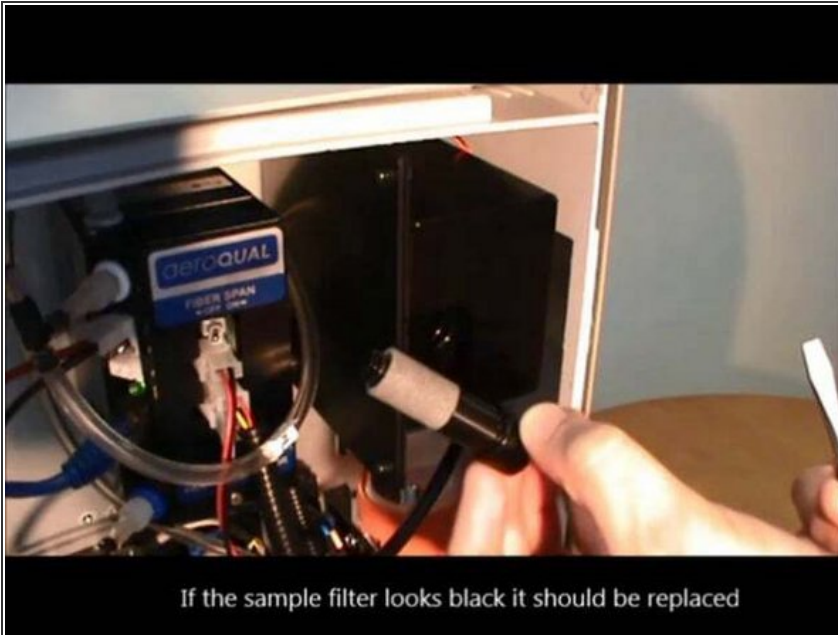
All journal types ▾

User entry | Cloud user - John Wagner

1. Site Inspection:	No new local emission sources Instrument in good condition No obstructions to monitoring equipment	2. Instrument inspection:	Cooling fan operational PM and gas inlet secure Instrument has been running at stable
3. Equipment:	Aeroqual Gas dilution calibrator: Aircal 1000 Aeroqual Ozone calibrator: AQM O3Cal Aeroqual Flow meter: AQM R7	4 Gas cylinders:	CO 1000 ppm in Air (expiry March) SO2 20 ppm in Air (expiry December) NO2 20 ppm in Air (expiry November)
4. Flow rate check:	Expected flow rate = 0.450 ml per min, Measured flow rate = 0.452 ml per min Main inlet flow rate OK, individual module flow rates were not measured.	5. Open door and change gas inlet filter	
6. Zero calibration	All modules passed zero calibration, all modules were stable and all offsets were within acceptable limits.		
7. Span Calibration	CO @ 10.00 ppm Module response was 8.95 ppm gain adjustment to 1.15 pass SO2 @ 0.2 ppm Module response was 0.210 ppm gain adjustment to 0.92 pass NO2 @ 0.2 ppm Module response was 0.090 ppm gain adjustment to 2.10 pass (module may need replacing soon contact Aeroqual)		
8 Pack up.	Next scheduled calibration 3 months from now. June 2017.		

- [Record the results of this service activity in the monitor's journal.](#)
- [Exit service mode.](#)

Step 7 — Video of steps



- For extra help, watch our video.

For further support, contact [Technical Support](#).