

PICARRO

Maintenance Guide

Fan Dust Filter Replacement for Picarro Analyzers



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1. Introduction

1.1 Applicability

This maintenance guide (MG) provides back panel cooling fan filter replacement instructions for Picarro analyzers.

The fan filter should be replaced annually for preventive maintenance.



NOTE

The vast majority of analyzers require simply removing the fan dust filter retainer piece, replacing the filter, then snapping the retainer back in place.

A small number of analyzers require that to replace the dust filter, the entire filter assembly must be removed, flipped over and reinstalled with the filter retainer facing out.



Figure 1: Fan Filter Assembly (Located at Analyzer Back Panel)

2. Safety

Read the following safety warnings prior to servicing the analyzer.



CAUTION

Do not turn off the pump or disconnect the vacuum line before the analyzer is turned off. Doing so could result in damage to the optics.



CAUTION

A flow of clean, relatively dry gas should always be directed to the instrument for several minutes prior to shutting down. Trapping a high-moisture content gas sample in the cavity can cause condensation damage to the mirrors as the instrument cools from its operating temperature.



CAUTION

If you have trouble turning off the analyzer software, do NOT use the Windows Task Manager to kill the process(es). Instead, double-click on the “*Stop Instrument*” icon in the Diagnostics folder located on your desktop and select the option to “*Turn off analyzer in current state*”. See *Section 3.2* and *Figure 3*.



WARNING

Picarro analyzers weigh 20 kg (44 lbs) or more. If it is necessary to move the analyzer to perform this maintenance, use the technique described below (or follow your local regulations) when lifting the analyzer.

- a. Lift with two people, one on each side of the analyzer.
 - b. Crouch down and stay close to the unit. Always keep your back as straight as possible.
 - c. Position your feet for sturdy balance. Lift with your legs, not your back.
 - d. Do not twist the back while carrying the unit. Rotate direction with hip joints.
 - e. Lower the unit by bending at the knees.
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3. System Shutdown

To avoid instrument damage or personal injury, ensure the instrument has been shut down per the instructions below.

3.1 Shutdown Using the GUI

1. With the pump still running, switch to a source of clean, dry gas at the sample inlet and allow it to run until the water channel reading on the GUI falls below 0.2% (2000 ppm). This will prevent any damage from condensation to the cavity surfaces.
2. Click the **Shutdown** button located on the left side of the Data Viewer window.
3. A window will pop-up (Figure 2) asking the user to confirm the shutdown. (Note: If three options are given on an older instrument, choose the “**For Shipment**” option.)

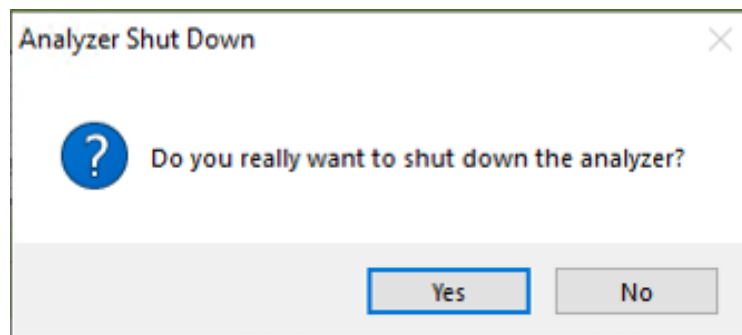


Figure 2: Shutdown Confirmation Pop-Up Dialog

- After clicking **Yes** to confirm shutdown, the analyzer software and then the computer OS will shut off after a few minutes. *Leave any dry gas or desiccant attached to the inlet during this process.*
4. When the instrument fans audibly turn off, and when the green power button light on the front of the instrument turns off, shut off the pumps manually from the rocker switch on the side of the pump.

3.2 Shutdown from *Stop Instrument* in Diagnostics Folder

To shut down instrument if analyzer software does not respond to a normal Shut down attempt from the UI:

1. Open the Diagnostics folder and double-click the *Stop Instrument* icon.

2. Select "Turn of analyzer in current state".

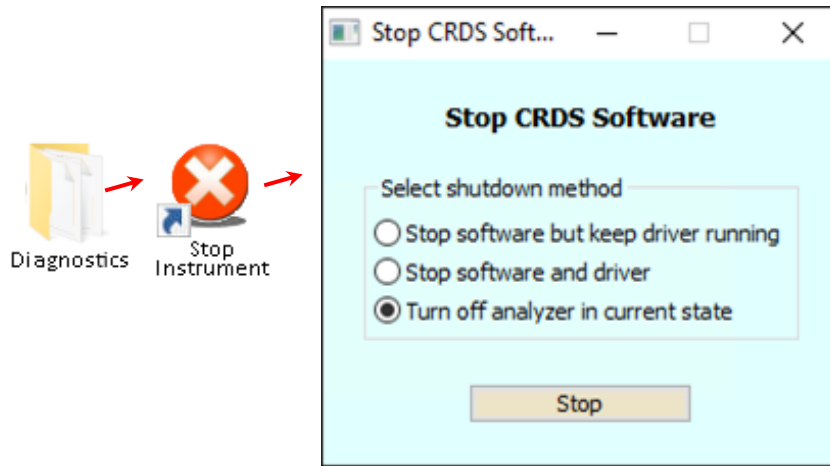


Figure 3: Shutting Down Analyzer from Stop Instrument Icon.

4. Fan Dust Filter Replacement

4.1 Items/Tools Required

- Replacement fan dust filter: Picarro PN S2062 (Pkg of 5)
- 2.5 mm hex (Allen) wrench (for use in Section 4.3 only)

4.2 Simple Dust Filter Replacement

1. To avoid instrument damage or personal injury, ensure the instrument has been shutdown per the instructions in **Section 3, System Shutdown**.
2. Turn the analyzer around so back panel is exposed.
3. Pry off the filter retainer piece from the assembly (Figure 4).
4. Remove the old dust filter and install the new one.
5. Snap the retainer back in place.
6. Restart the analyzer per the instructions in your instrument user manual.

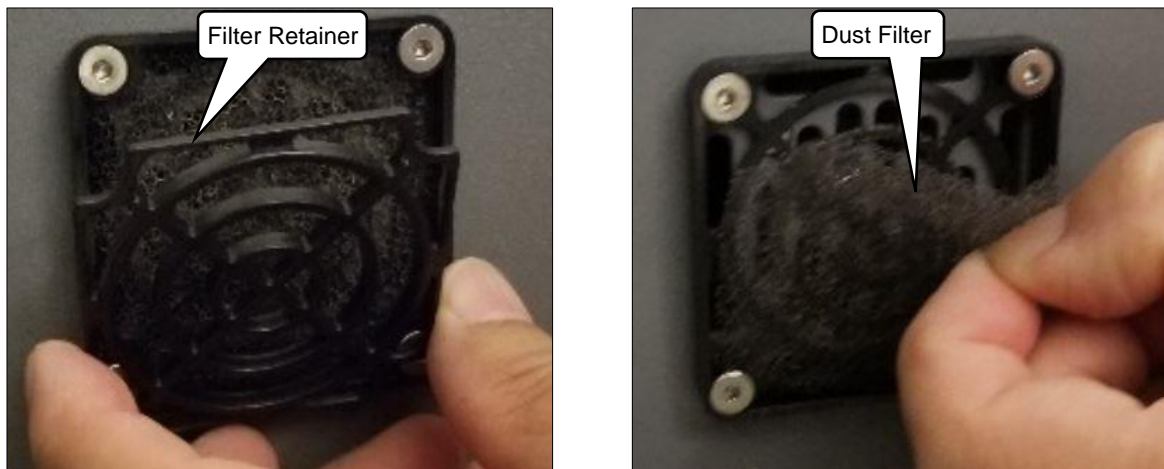


Figure 4: Simple Dust Filter Replacement

4.3 Dust Filter Replacement for Reversed Filter Assembly

A small number of analyzers were manufactured with the fan filter assembly reversed. The only way to replace the dust filter in this case is to remove the filter assembly and replace the filter as done in **Section 4.2**, then *reinstall the assembly correctly with the filter retainer facing out*.

1. To avoid instrument damage or personal injury, ensure the instrument has been shutdown per the instructions in **Section 3, System Shutdown**.
2. Turn the analyzer around so back panel is exposed.
3. Using a 2.5 mm hex wrench, remove the four screws holding the fan cover assembly to the back panel (Figure 5).
4. Flip the assembly over and pry off the filter retainer piece (see Figure 4).
5. Install the new dust filter and snap the retainer piece back into place.
6. Reinstall the filter assembly, this time making sure the filter retainer piece (see Figure 4) is now facing out.
7. Restart the analyzer per the instructions in your user manual.

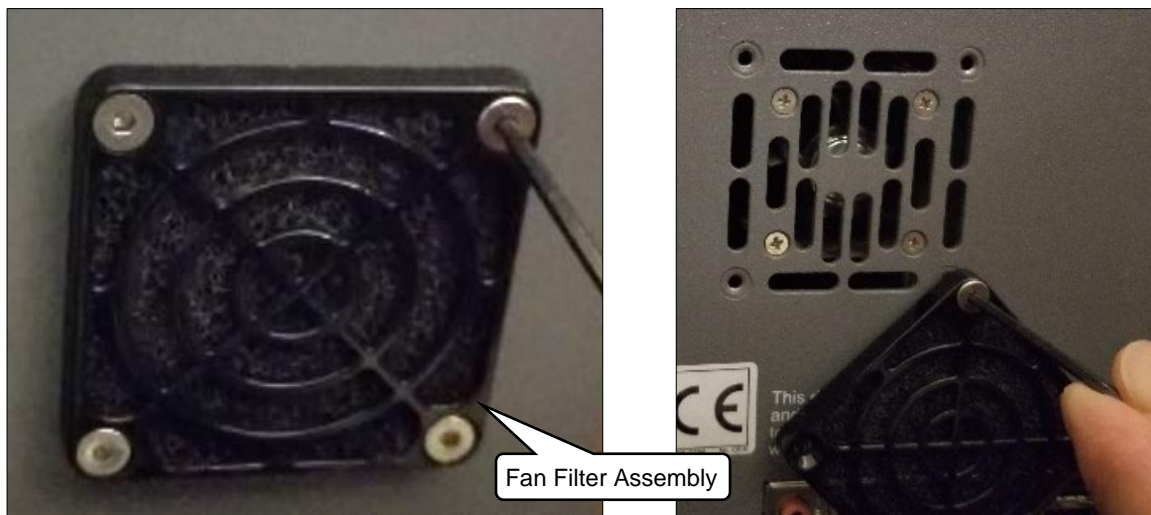


Figure 5: Removing Fan Cover Assembly for Filter Replacement