Model 5380 PFPD Quick Reference Guide

Setting Flows for the PFPD

1. Turn off the detector base heater, all detector gases, and the detector controller.
2. Allow the detector to cool and close the needle valve.
3. Install the barbed flow adapter in place of the flame arrestor.
3. Measure the column flow. It should be <2 mL/minute for optimum performance.
4. Open needle valve four turns.

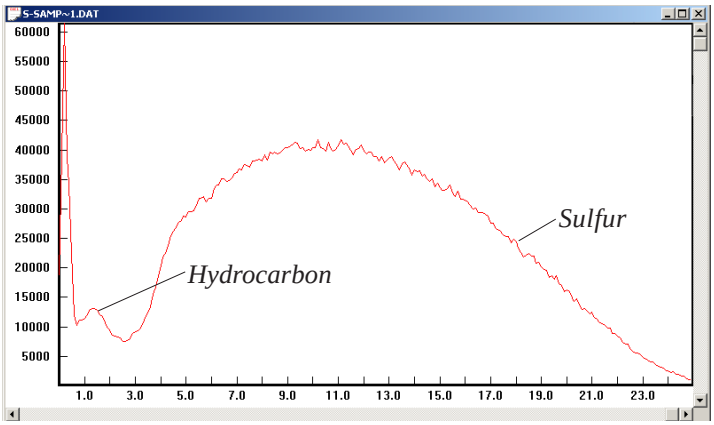
Measure flows with a flow meter. DO NOT use the set point on the EPC.

5. Add 11.5 mL/minute H_2. Be sure to add the column flow.
6. Add 10 mL/minute of Air 1.
7. Add 10 mL/minute of Air 2 (makeup).
8. Re-install the flame arrestor and turn on the detector heater. Set it to 250 °C for sulfur or 300 °C for phosphorus.
9. When the detector temperature reaches 100 °–150 °C, turn on the controller. Pulsing should start within a few seconds.
10. Record the initial settings.

Have any questions? Call us and let us help!
(800) 336-1911

Tuning the PFPD

1. Confirm installation of the blue, BG-12 filter or the clear, UV-34 filter.
2. Introduce a constant sulfur source for tuning (e.g., a permeation device, PN 290411). OI Analytical recommends tuning the gas flows using a sulfur emission, regardless of the application.
3. After the sulfur equilibrates and the sulfur emission is on scale, click **Hold** in WinPulse.
4. Adjust H_2 flow up or down with approximately 1 mL/minute adjustments until the sulfur emission extends to 25 msec (if using a 3-mm combustor, the emission only extends to 18–20 msec). See the *Model 5380 PFPD Operator's Manual* for more information.
5. Use Air 2 (makeup) to adjust frequency to between 3–4 Hz. Readjust H_2/Air 1 ratio as necessary.
6. Slowly close the needle valve by turning it clockwise until the PFPD goes into tick-tock mode.
7. Open the needle valve by turning it counterclockwise until the PFPD is out of tick-tock mode, then open another ½- to ¾-turn. Attaining tick-tock mode is sometimes not possible. In this case, just open the needle valve four turns.
8. Record the final settings.
9. For phosphorus applications, install the yellow RG-495 filter and increase Air 1 by 1 mL/minute.
10. Adjust the gate and board parameters for the chosen application.



Suggested Board Parameters

PMT voltage Adjust until the first sharp emission (at about 0.5 msec) appears just below full scale. It is usually between 500 and 650 volts, but can vary depending on the application.
Igniter current 2.8
Trigger level 400–500
Range 10

For most sulfur applications:

Parameter	Channel 1	Channel 2
Mode	Sulfur	Carbon
Interpolation	Spline	Spline
Attenuation	16 or 32	256
Output zero	<100*	<10,000*

*See the *Model 5380 PFPD Operator's Manual* for instructions on how to properly set the Zero.

Suggested Gate Parameters

Element	Gate	Square Root
Sulfur	6–24 msec	On
Carbon	1–3 msec	Off
Phosphorus*	4–15 msec	Off

* These settings are suggested starting points for adjusting the gates. Adjusting the gate start time to eliminate the background HC emission may be necessary. This is especially important for phosphorus applications. Use the dual gate subtraction feature for matrices with high sulfur backgrounds (e.g., garlic, onion, etc.). See Chapter 4 in the *Model 5380 PFPD Operator's Manual* and application note 1127 at www.oico.com for details.

For more information contact OI Analytical Technical Support at (800) 336-1911 for assistance.

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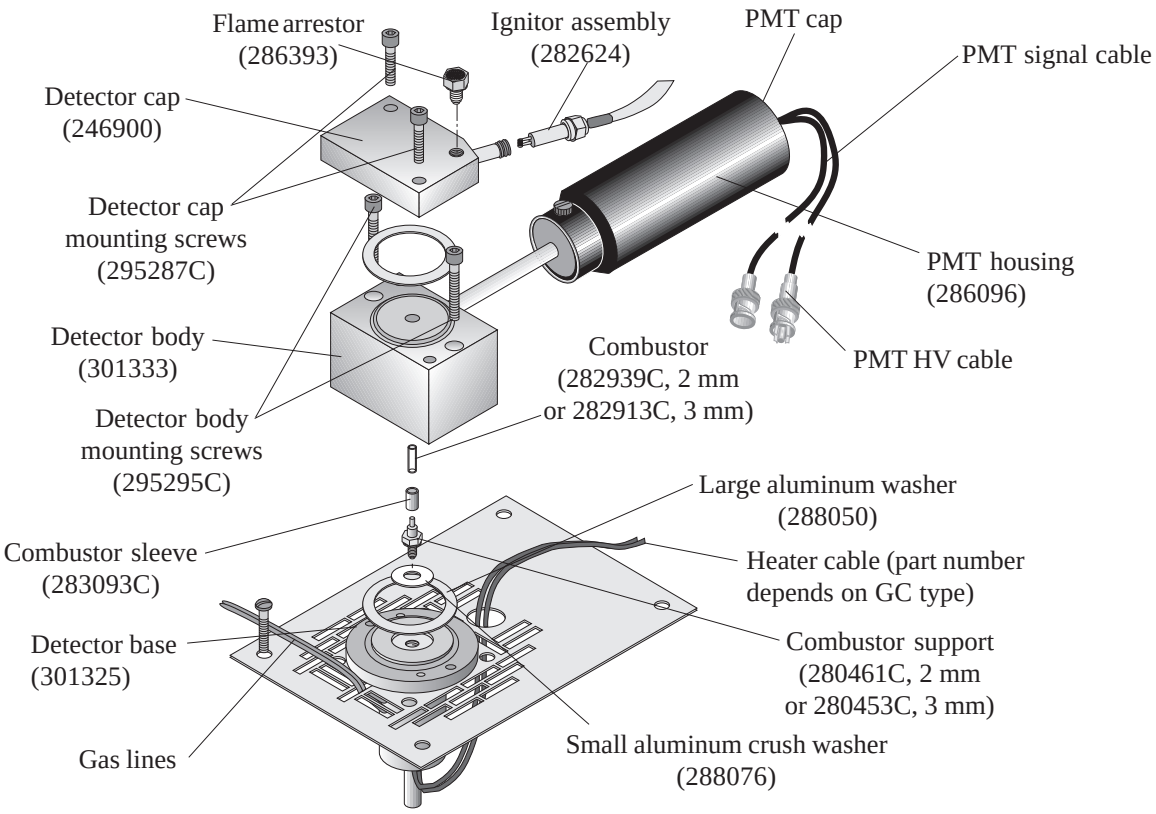
Model 5380 PFPD Assembly



OI Analytical recommends keeping the following tools and consumables on hand for quick and easy PFPD maintenance:

Item	Units	Part Number
Tested combustors	1 or 2 each	282939C, 2 mm 282913C, 3 mm
Large aluminum crush washers	1 pkg	288050 (pkg of 10)
Small aluminum crush washers	1 pkg	288076 (pkg of 10)
Ignitor assembly	1 each	282624
Cap-to-body screws	2 each	295287C
Body-to-base screws	2 each	295295C
Fuse	2 each	298984
Column nut	1 each	223057
Combustor extraction tool	1 each	280719, 2 mm 280727, 3 mm
Teflon®-coated forceps	1 each	283051
Allen wrench	1 each	284539
Column positioning tool	1 each	318949
Flow adaptor	1 each	202077

Warning: Do not use graphite ferrules. Only use graphite/Vespel® ferrules to avoid graphite pieces contaminating the detector combustor.

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