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SKC Disposable Personal Impactor (DPI) Cat. Nos. 225-3521-PW and 225-3501-PW Operating Instructions

The single-stage impaction-based SKC Disposable Personal Impactor (DPI) samplers Cat. Nos. 225-3521-PW and 225-3501-PW are designed to efficiently collect PM2.5 or PM10 in outdoor air at a flow rate of 3 L/min. The single-use DPI eliminates sampler assembly and cleaning, and its small size provides worker comfort, even under helmets or other PPE.

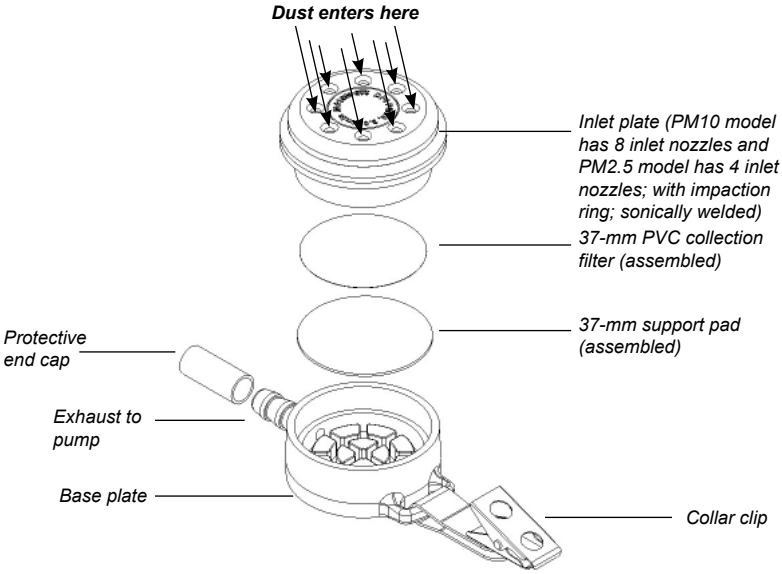
The DPI is pre-assembled with an impaction ring, a 37-mm filter, and a support pad. The preloaded 5.0-µm PVC filter is preweighed at 70 F ± 3 F and 50% ± 5% relative humidity by SKC for gravimetric analysis. SKC recommends using an AirChek® Touch Series pump with this sampler.

Performance Profile

Flow Rate	3 L/min
50% Cut-point	2.5 or 10 µm (depending on model)
Sample Time	Depends on method used
Impaction Substrate	Impaction ring
Sample Media	37-mm, 5.0-µm PVC filter
Support	37-mm support pad
Analysis	Chemical or gravimetric
Body Material	Conductive ABS plastic
Dimensions	**Height:** 4.25 in (10.8 cm) - clip to exhaust **Diameter:** 1.8 in (4.6 cm) **Depth:** 1.2 in (3 cm)
Weight	1.1 oz (31.2 gm)
Shelf-life	Limited; check expiration date on packaging
Tubing	1/4-in ID

Principle of Operation

SKC DPI Samplers are single-stage impactors with an impaction ring and a filter. A sample pump operating at 3 L/min pulls air through the inlet nozzles (four in the PM2.5 model and eight in the PM10 model) onto the impactor ring in the inlet plate. Particles larger than each impactor's 50% cut-point are scrubbed and retained by impaction on the impaction ring and smaller particles continue to the 37-mm PVC collection filter for analysis. *See the exploded view below.*



DPI Cat. No. 225-3501-PW for PM10 is shown.

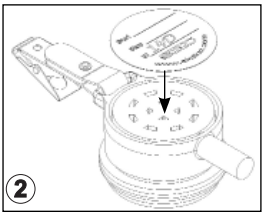
Sampler Preparation

SKC DPIs are supplied assembled and ready to use. Follow the instructions below to prepare the sampler.

1. Remove shrink wrap from sampler. Two labels are provided: one for sampling and one for Post-use. The sampling label will be used in step 2 below; set aside the Post-use label for when sampling is complete (*see Sampling, step 8*).

2. On the sampling label, write sample ID. Adhere sampling label to **bottom** of base plate.

3. Remove protective end cap from exhaust.

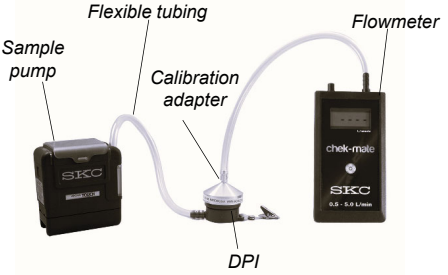


Flow Rate Verification and Sampling

As the particle load on the filter increases during sampling, the pressure drop will also increase. Therefore, use a compensating sample pump such as the AirChek Touch Series.

Flow Rate Verification

1. Verify the flow rate through the sampling train with a representative DPI sampler. Ensure the pump has run for 5 minutes before verifying flow rate.
2. Align the bottom of the calibration adapter with the inlet plate of an assembled, loaded representative DPI and press down firmly until the calibration adapter's O-ring is engaged and creates an even seal.
3. Use flexible tubing to connect the DPI exhaust to the sample pump inlet.
4. Use flexible tubing to connect the inlet of the calibration adapter to the suction port (outlet) of a flowmeter.
5. Verify that flow rate is 3 L/min. Follow the flow rate verification directions in the pump and flowmeter operating instructions.
6. When flow rate is verified, disconnect the tubing from the flowmeter and calibration adapter.
7. Grasp the DPI with one hand and the calibration adapter with the other hand. Firmly pull/twist to remove the calibration adapter from the DPI inlet plate.
8. Replace the representative DPI used to set the flow with a new, unused DPI for sample collection.



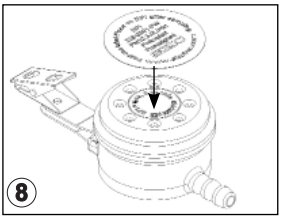
Using excessive pressure to seal the calibration adapter to the DPI may make the calibration adapter difficult to remove.

Sampling

1. As per good industrial hygiene practice, replace representative sampler used for flow rate verification with a new, unused sampler.
2. Record sample start time on sampling label.
3. Clip DPI onto a worker's collar or lapel in the breathing zone or in the area to be sampled.
4. Clip sample pump at the worker's waist or close to the DPI.
5. Use flexible tubing to attach the DPI exhaust to the inlet of the sample pump.
6. Turn on pump and record pertinent sample data.
7. After the desired sample time has elapsed, turn off the pump and unclip sampler from sampling location.

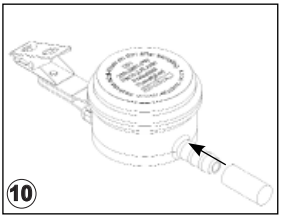
8. Apply Post-use label to inlet plate to seal the sampler.

9. Record sample stop time on sampling label on the bottom of sampler.



10. Disconnect sampler from pump and reinstall protective end cap on the exhaust.

11. Reinstate flow rate verification train with representative DPI and verify flow rate. *See Flow Rate Verification*.



Sample Transport and Analysis

Package and transport samples and blanks to an accredited laboratory for gravimetric or chemical analysis.

Ordering Information

Disposable Personal Impactor (DPI) Samplers, *select the DPI for desired PM size to be sampled. Designed for one-time use*	**Cat. No.**
Samplers contain impaction ring, 37-mm PVC after-filter preweighed to 5 decimals, and support pad	
DPI PM2.5 (green)	**225-3521-PW**
DPI PM10 (gray)	**225-3501-PW**
Accessory	
Calibration Adapter	**225-389**

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to www.skcinc.com/warranty-information.