ANALYT MESSTECHNIK



INSTRUCTIONS FOR USE

SKC Aluminium Cyclone

Assembly, flow-rate verification, sampling and cleaning for the SKC aluminium respirable dust cyclones 225-01-01 (25 mm) and 225-01-02 (37 mm).

AMTC-IN-0001

Rev. 2 · October 2026

About this document

These instructions cover the SKC aluminium respirable dust cyclone in both sizes: 225-01-01 for 25 mm filter cassettes and 225-01-02 for 37 mm filter cassettes. It takes you through assembling the cyclone with a filter cassette, verifying the flow rate, taking a respirable dust sample and cleaning the cyclone afterwards.

Read Safety (p. 4) and Product and supplied items (p. 5) first. Then follow Before use (p. 6), which includes Flow-rate verification (p. 6), and Procedure (p. 8) in order; After use and sample handling (p. 9) covers the cleaning. The sampling method you work to sets the filter, the flow rate and the analysis; these instructions do not replace it.

Keep these instructions for the lifetime of the product. The current revision is on the product page at analyt-mtc.com.

How these instructions mark information

NOTICE

Practices not related to personal injury — damage to the product, the process or the sample.

Note
Information that helps understanding; never a hazard.

Document information

Title	SKC Aluminium Cyclone — Instructions for use
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Revision history

Rev.	Date	Change
2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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Contents

1 Safety 4
- Intended use 4
- Safety messages 4

2 Product and supplied items 5
- Versions 5
- Flow rate 5
- What you need 5

3 Before use 6
- Fit the cyclone to the cassette 6
- Mount the assembly in the holder 6
- Flow-rate verification 6

4 Procedure 8
- Take the sample 8
- End the sample 8

5 After use and sample handling 9
- Seal and send the sample 9
- Clean the cyclone 9
- Disposal 9
- Further reading 9

6 Ordering information 10
- Accessories 10

7 Service and contacts 11

CHAPTER 1

Safety

Read this chapter before you use the cyclone. It states what the cyclone is intended for and brings together the safety messages of these instructions.

Intended use

The SKC aluminium cyclone samples respirable dust from workplace air, close to the breathing zone of a worker. Use it with a sample pump and a filter in a three-piece filter cassette of the matching size, 25 mm or 37 mm, mounted in the filter cassette holder 225-1. Run it at the flow rate your sampling method sets (see Flow rate (p. 5)).

Safety messages

The messages in these instructions protect the validity of the sample. Each one is repeated at the step it concerns, in Before use (p. 6) and Procedure (p. 8).

NOTICE

A flow-rate verification or a sample taken without the grit pot on the cyclone is invalid. Keep the grit pot on the cyclone during flow-rate verification and during sampling.

NOTICE

A sample taken without the grit pot on the cyclone is invalid. Do not remove the grit pot: sample with it on the cyclone, as during flow-rate verification.

CHAPTER 2

Product and supplied items

The SKC aluminium cyclone is a light respirable dust sampler. It fits into the middle ring of a three-piece filter cassette, which holds the filter that collects the sample.

Air enters at the cyclone, at the grit-pot end, and leaves through the cassette outlet to the pump. Particles too large to be respirable drop out into the grit pot; the respirable fraction travels on to the filter (Figure 2-1 (p. 5)).

The grit pot stays on the cyclone during flow-rate verification and during sampling. Whatever it collects is not part of the respirable sample and is discarded.

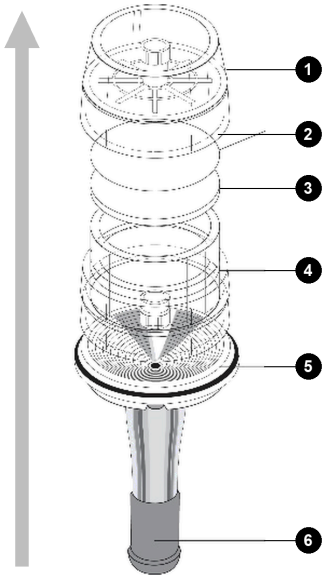


Figure 2-1. Cyclone and filter cassette, exploded. (1) Cassette outlet. (2) Support pad. (3) Filter. (4) Cassette ring (middle section). (5) Cyclone. (6) Grit pot. The arrow shows the direction of the air flow.

Versions

Cyclone	For filter cassettes	Order code
SKC aluminium cyclone, 25 mm	three-piece, 25 mm	225-01-01
SKC aluminium cyclone, 37 mm	three-piece, 37 mm	225-01-02

Flow rate

Run the cyclone at **2.5 L/min**. At this flow rate it samples to the respirable criteria of ISO 7708 and CEN, which the OSHA and MSHA rules on respirable crystalline silica adopt. Other flow rates give other cut-points and can be used for other applications; take the flow rate from your sampling method.

What you need

- the cyclone, with its grit pot;
- a three-piece filter cassette of the matching size, with the filter and support pad your sampling method specifies;
- the filter cassette holder 225-1, with its rubber tubing, Luer adapter and Tygon tubing;
- a sample pump;
- for flow-rate verification: the calibration adapter 225-01-03, a flowmeter and a length of flexible tubing.

Order codes of these accessories: see Accessories (p. 10).

CHAPTER 3

Before use

Build the cyclone into a filter cassette, then mount the assembly in the filter cassette holder. Use the same assembly first for flow-rate verification and, with a fresh filter, for sampling.

Fit the cyclone to the cassette

NOTICE

A flow-rate verification or a sample taken without the grit pot on the cyclone is invalid. Keep the grit pot on the cyclone during flow-rate verification and during sampling.

1. Take the three-piece cassette apart. Put the inlet section aside (it is usually marked “inlet”) and pull the plug out of the cassette outlet.
2. Choose the filter and support pad that your sampling method specifies. Place the support pad and then the filter in the cassette outlet, and push the cassette ring (the middle section) into the outlet (Figure 2-1 (p. 5)).
3. Push the cyclone into the cassette ring and press it home firmly. Leave the grit pot on the cyclone.

Mount the assembly in the holder

1. Push the cyclone and cassette assembly through the large opening of the filter cassette holder (Figure 3-1 (p. 6)).
2. Seat the assembly firmly: the side pin of the cyclone, a small round nodule on its rim, must sit in the notch of the holder.
3. Stretch the spring-loaded hold-down plate of the holder over the cassette to hold the assembly in place.
4. Push the Luer adapter at the end of the rubber tubing into the cassette outlet.

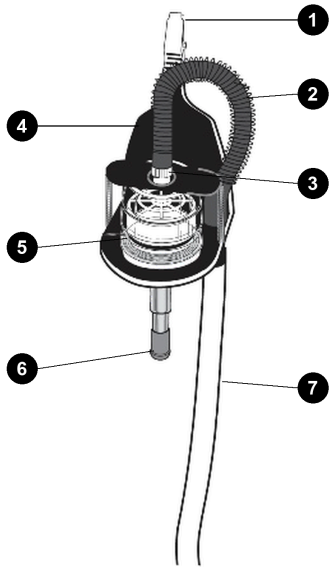


Figure 3-1. Assembly in the filter cassette holder. (1) Collar clip. (2) Rubber tubing. (3) Luer adapter. (4) Filter cassette holder. (5) Cyclone and filter cassette assembly. (6) Grit pot. (7) Tygon tubing, to the pump.

Flow-rate verification

Verify the flow rate through the complete assembly before sampling. The calibration adapter 225-01-03 fits over the stem of both cyclone sizes and connects the cyclone inlet to a flowmeter, so that the

flowmeter sees the same air path as the sample (Figure 3-3 (p. 7)).

1. Prepare a cyclone and filter cassette assembly in its holder, as in Before use (p. 6). **Verify the flow rate with the grit pot on the cyclone.**
2. Moisten the O-ring inside the large end of the calibration adapter (Figure 3-2 (p. 7)). Push the adapter over the cyclone stem until it fits snugly.
3. Connect the Tygon tubing of the filter cassette holder to the inlet of the sample pump. Connect the calibration adapter to the flowmeter with flexible tubing.
4. Set and verify the flow rate as the operating instructions of your pump and flowmeter describe.
5. Disconnect the flowmeter. Replace the filter you used to set the flow with a fresh, unused, pre-weighed filter for the sample.

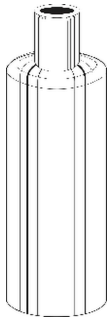


Figure 3-2. Calibration adapter 225-01-03. The large end goes over the cyclone stem, the narrow end takes the tubing to the flowmeter.

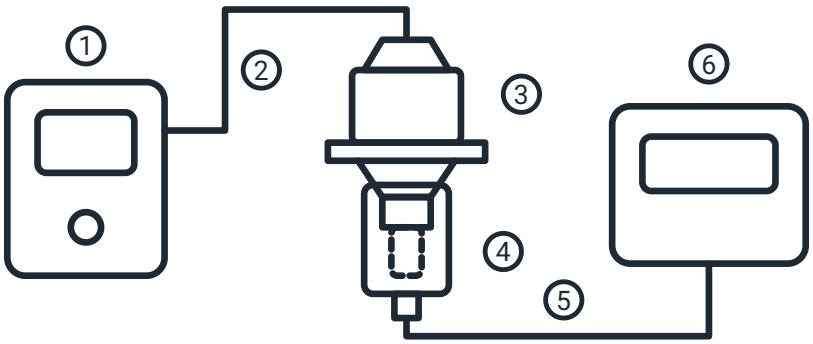


Figure 3-3. Verification train. (1) Sample pump. (2) Tygon tubing from the holder to the pump inlet. (3) Holder with the cassette and the cyclone, grit pot in place. (4) Calibration adapter pushed over the cyclone stem; the grit pot (dashed) stays on inside it. (5) Flexible tubing. (6) Flowmeter. Air flows from the flowmeter through the cyclone and the filter to the pump.

CHAPTER 4

Procedure

NOTICE

A sample taken without the grit pot on the cyclone is invalid. Do not remove the grit pot: sample with it on the cyclone, as during flow-rate verification.

Take the sample

1. Check that the flow rate has been verified (Flow-rate verification (p. 6)) and that the fresh, pre-weighed filter is in the cassette.
2. Connect the Tygon tubing of the filter cassette holder to the inlet of the sample pump.
3. Clip the holder with the cyclone and cassette to the worker's collar or pocket, close to the breathing zone.
4. Start the pump.
5. Write down the sample details your method asks for.

End the sample

1. Stop the pump.
2. Write down the finish time.
3. Take the cyclone and cassette assembly out of the holder.
4. Pull the cyclone out of the cassette.

Note
Particles caught in the grit pot are not part of the respirable sample. Discard them.

CHAPTER 5

After use and sample handling

Seal and send the sample

1. Fit the inlet section back on the cassette.
2. Close the inlet and the outlet with their plugs.
3. Send the cassette and all the sample data to a laboratory for analysis.

Clean the cyclone

Clean the cyclone before you use it for the next sample.

1. Wash every part of the cyclone, including the inside of the grit pot, in mild soapy water.
2. Dry it: wipe it with a clean, dust-free tissue, let it dry in air or blow it dry. Alternatively, wipe it with isopropyl alcohol.

Disposal

Dispose of the cyclone under local regulations; separate metal, glass and plastic parts for recycling where possible.

Further reading

- SKC Respirable Dust Cyclone Performance Guide.
- OSHA final rule on respirable crystalline silica.
- MSHA final rule on respirable crystalline silica.

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes.

Accessories

Description	Size	Order code
Three-piece filter cassette blanks	25 mm	225-3-25LF
Three-piece filter cassette blanks	37 mm	225-3LF
Filter cassette holder	25 or 37 mm	225-1
Calibration adapter	25 or 37 mm	225-01-03

CHAPTER 7

Service and contacts

Contact and support

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Before you call

Have the following at hand so that Analyt-MTC can help you quickly:

- the order code of the cyclone (225-01-01 or 225-01-02);
- the sample pump, flowmeter and filter cassettes you use with it;
- the sampling method and flow rate you are working to.

Contact Analyt-MTC for spare parts, technical questions and warranty matters concerning your SKC aluminium cyclone. Warranty is handled under Analyt-MTC's terms of sale. Analyt-MTC's contact details are above and on the back cover.

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