

BX-807

PM_{2.5} SHARP CUT CYCLONE INLET

OPERATION MANUAL

BX-807-9800 REV C



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1 INTRODUCTION

1.1 About This Manual

This document is organized with the most important information toward the front of the manual. All users should read and understand the sections on setup, operation, and maintenance. Toward the back are sections that provide in-depth information on subjects such as maintenance and parts. These sections should be consulted as needed.

This manual is periodically revised for maximum accuracy and to incorporate new features or updates. User feedback is welcome. Electronic versions of this manual are available upon request.

1.2 Technical Service

Should support still be required after consulting the printed documentation, contact one of the expert Met One Instruments, Inc. Technical Service representatives during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Standard Time, Monday through Friday. In addition, technical information and service bulletins are often posted on our website. Please contact us and obtain a Return Authorization (RA) number before sending any equipment back to the factory. This allows us to track and schedule service work and to expedite customer service.

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Please have the instrument serial number available when contacting the manufacturer. On most models manufactured by Met One Instruments, it will be located on a silver product label on the unit, and also printed on the calibration certificate. The serial number will begin with a letter and be followed by a unique four or five digit number such as X12345.

1.3 Sharp Cut Cyclone



Figure 1-1 BX-807

The BX-807 Sharp Cut Cyclone (SCC) is a PM_{2.5} size selective inlet for use in ambient particulate monitoring. It is a non-US-EPA designated device. This lack of designation means that any data collected using the BX-807 cannot be considered as FRM 2.5 equivalent. For applications requiring this designation, the Met One Instruments, Inc. BX-808 or BX-809 size selective inlets must be used.

The BX-807 may be used with any of the following Met One Instruments, Inc. products:

- BAM 1020
- BAM 1022
- E-BAM
- E-BAM Plus
- E-FRM
- E-SEQ-FRM

1.4 Model BX-807 Specifications

PARAMETER	SPECIFICATION
U.S. EPA Designations	None
Required Flow Rate	16.7 LPM
Overall Dimensions	6.5" high, 6.5" wide, 3" deep.
Weight	2.4 lbs

Specifications may be subject to change without notice.

2 INSTALLATION

Use the following information to properly deploy the BX-807. Installation of the SCC should ideally be performed by personnel familiar with environmental monitoring equipment. There are no special precautions or handling concerns except for the normal level of care required for handling scientific equipment. Refer to the instructions and diagrams on the following pages.

2.1 Unpacking

Unpack the cyclonic separator and inspect it carefully. Any damage incurred to the equipment during shipping is the responsibility of the carrier. If any damage to the shipment is noticed before unpacking, **a claim must be filed with the commercial carrier immediately**. Follow any special unpacking instructions provided by the carrier as all items are carefully removed from the containers and each component inspected. It is recommended to document and photograph all damaged packages and items before, during, and after unpacking them. Contact Met One Instruments, Inc. (see section 1.2 of this manual) to arrange for any replacement items needed.

Please keep all of the special shipping items (box, foam packing material, etc.) used to ship the SCC. They should be re-used if the BX-807 is to be transported or shipped (changing site locations, returning to the factory, etc.). Contact Met One Instruments, Inc. (see section 1.2 of this manual) for replacement packing materials if necessary.

2.2 Instrument Assembly and Deployment

The BX-807 is designed for easy deployment. It is installed on top of the sample inlet tube as a second stage after the BX-802 PM₁₀ inlet. Follow the installation instructions of the instrument with which the SCC is being used. For example, if deploying as part of a BAM 1020 installation, the setup instructions in the BAM 1020 operation manual should be followed.



Figure 2-1 Typical BX-807 Installation

Once the BX-807 is installed, verify all O-rings are functional and a proper seal has been achieved by performing a leak check on the system. The instructions for performing a leak check will also be found in the operation manual of the instrument with which the SCC has been deployed.

3 OPERATION AND MAINTENANCE

The BX-807 is designed to operate with an airflow rate of 16.67 LPM. After passing through the PM10 separator, the sample air flows down into the top of the SCC, through the cyclonic separator, into the grit pot, and then exits the bottom of the BX-807 after passing through the top cap and transfer tube (see Figure 3-2 for component labels). The airflow path is shown in Figure 3-1. Proper configuration and operation of the instrument with which the SCC is being used will be necessary to maintain the required airflow rate. See the operation manual of the associated instrument for details.

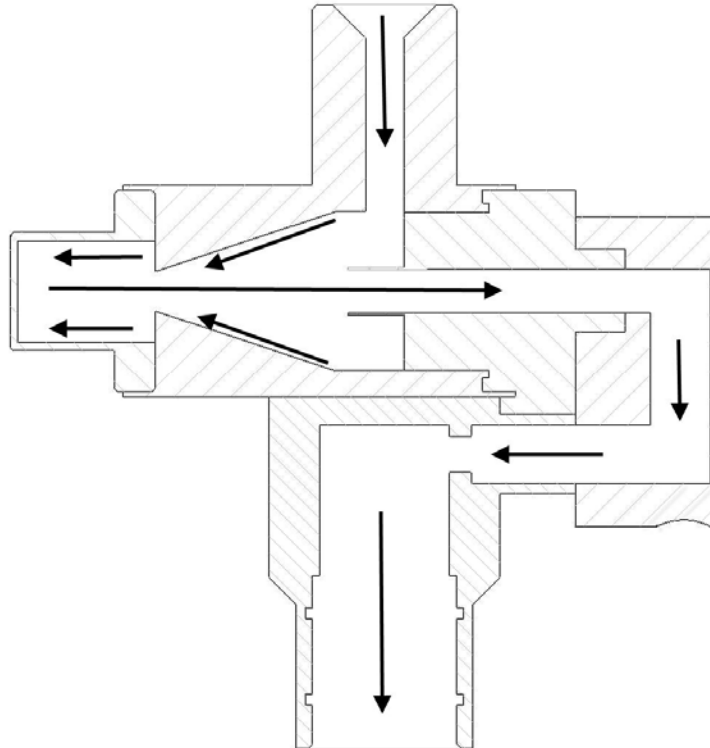


Figure 3-1 BX-807 Air Flow Path

3.1 Recommended Periodic Maintenance Table

Table 3-1 shows the recommended interval for the regular maintenance, field checks, and service tasks.

Maintenance Item	Period
Leak Check	Monthly
Clean PM _{2.5} cyclonic separator particle trap.	Monthly
Completely disassemble and clean PM _{2.5} cyclone.	Quarterly
Replace O-rings	As Needed

Table 3-1 Recommended Maintenance Schedule for the BX-807

3.2 Disassembling the BX-807

An exploded view of the BX-807 is shown in

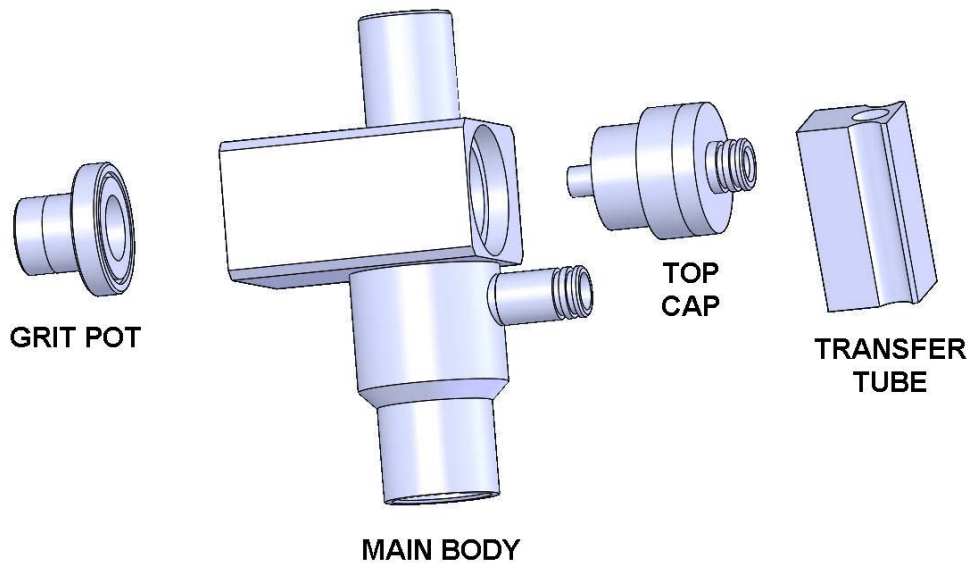


Figure 3-2. It demonstrates how the BX-807 comes apart for cleaning. Recommended cleaning materials are clean mineral free water and lint free lab wipes. In cases where stubborn deposits are observed, ultrasonic cleaning is recommended.

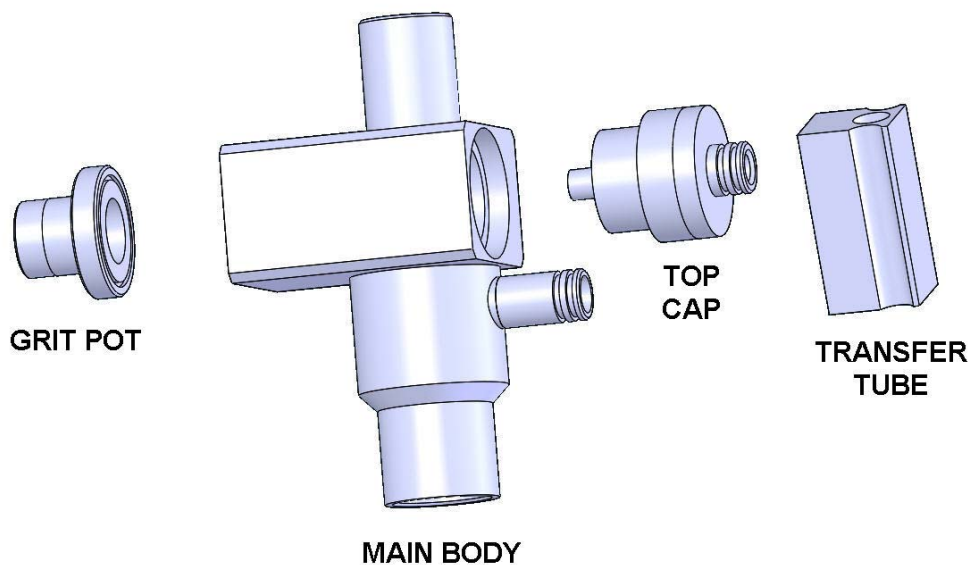


Figure 3-2 Exploded View of the BX-807

To disassemble:

1. Remove the BX-807 from the sampling line.
2. Pull off the transfer tube. If it is too tight to remove by hand, pry it off with a rigid plastic lever. Plastic should be used to avoid damaging the protective finish.
3. Remove the top cap and the grit pot by unscrewing them.
4. Wet a lint free wipe with water and remove all visible deposits. These are most likely to be found at the bottom of the cone inside the grit pot.
5. Inspect the O-rings for shape and integrity. If any deformation or cracking is noted, all O-rings should be replaced. When installing new O-rings, lightly lubricate them with O-ring grease. In particular, the top cap and main body O-rings should be well lubricated for ease of installing the transfer tube.
6. Reinstall the SCC and then verify all O-rings are functioning properly. This should be done by performing a system leak check as described in the operation manual of the instrument being used with the BX-807.

4 SPARE PARTS

The following parts are available from Met One Instruments, Inc. for maintenance.

Consumables

Description	Part Number
Complete replacement O-ring set for the BX-807	720097
O-ring grease, dielectric silicone, 5 grams	995712