IC Equipment

IC Equipment: MiPT (6.5330.180)

Manual

8.110.8035EN / v2 / 2024-07-02

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Technical Communication
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This documentation has been prepared with great care. However, errors can never be entirely ruled out. Please send comments regarding possible errors to the address above.

Disclaimer

Deficiencies arising from circumstances that are not the responsibility of Metrohm, such as improper storage or improper use, etc., are expressly excluded from the warranty. Unauthorized modifications to the product (e.g., conversions or attachments) exclude any liability on the part of the manufacturer for resulting damage and its consequences. Instructions and notes in the Metrohm product documentation must be strictly followed. Otherwise, Metrohm's liability is excluded.

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1 Introduction

1.1 Description

The IC Equipment: MiPT expands your ion chromatography system to include the Metrohm intelligent Partial Loop Injection Technique (MiPT).

This technique allows you to fill the 250 µL sample loop with a precisely measured volume. In this process, the 800 Dosino with a 807 Dosing Unit 2 mL performs the precise dosing steps. MiPT enables calibration with only one standard solution, as the injection volume can be selected freely. The same also applies to sample injection, so that you can for instance select a small injection volume for a highly concentrated sample.

The sample needle is rinsed with ultrapure water in the rinsing unit of the Liquid Handling Station (6.2841.120) after each sample aspiration. The Liquid Handling Station (6.2841.120) can be mounted on any Sample Processor equipped with a Swing Head.

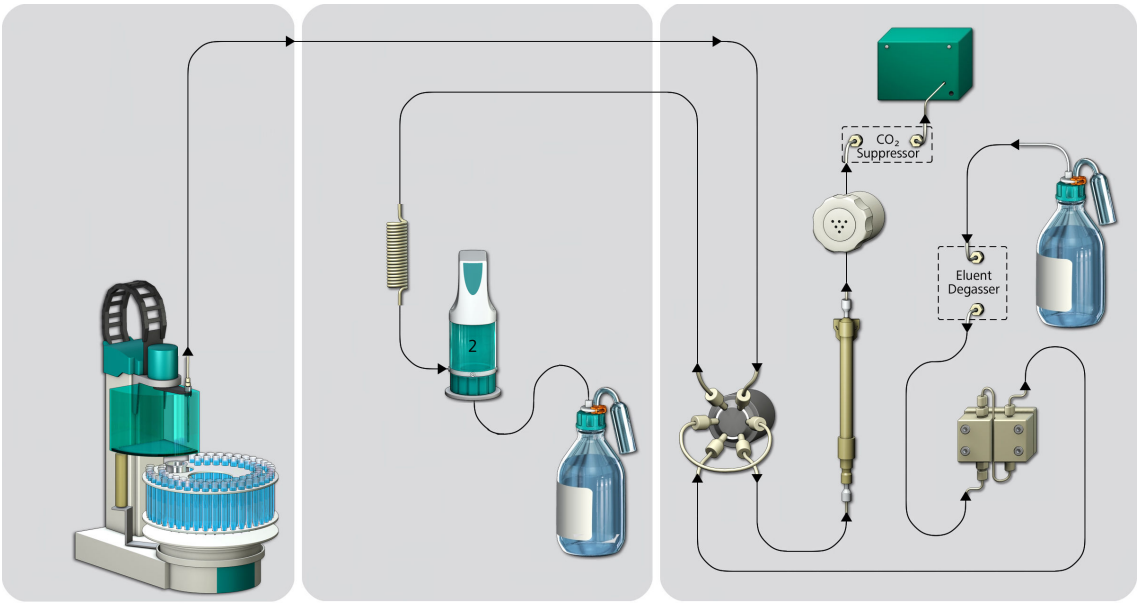


Figure 1 Overview MiPT

1.2 About the documentation

This manual describes the installation of the IC Equipment: MiPT and the connection of the capillary connections between the supply bottle, the Dosino and the injection valve in the ion chromatograph.

CAUTION

Please read through this documentation carefully before putting the equipment into operation. The documentation contains information and warnings which the user must follow in order to ensure safe operation of the equipment.

Additional documentation

Topic	Document
Mounting the Liquid Handling Station on the Sample Processor	Manual for the Liquid Handling Station
Installation of the Dosino	Manual for the Dosino
Care and maintenance of the 807 Dosing Unit	Manual for the 807 Dosing Unit

1.2.1 Symbols and conventions

The following symbols and formatting may appear in this documentation:

*(5-**12**)*	**Cross-reference to figure legend** The first number refers to the figure number, the second to the instrument part in the figure.
1	**Instruction step** Perform the steps one after the other.
Method	**Dialog text**, **parameter** in the software
File ► New	Menu or menu item
[Continue]	**Button** or **key**
	**WARNING** This symbol draws attention to a possible life-threatening hazard or risk of injury.
	**WARNING** This symbol draws attention to a possible hazard due to electrical current.

	**WARNING** This symbol draws attention to a possible hazard due to heat or hot instrument parts.
	**WARNING** This symbol draws attention to a possible biological hazard.
	**WARNING** Warning of optical radiation
	**CAUTION** This symbol draws attention to possible damage to instruments or instrument parts.
	**NOTICE** This symbol highlights additional information and tips.

2 Overview

2.1 Parts of the IC Equipment: MiPT

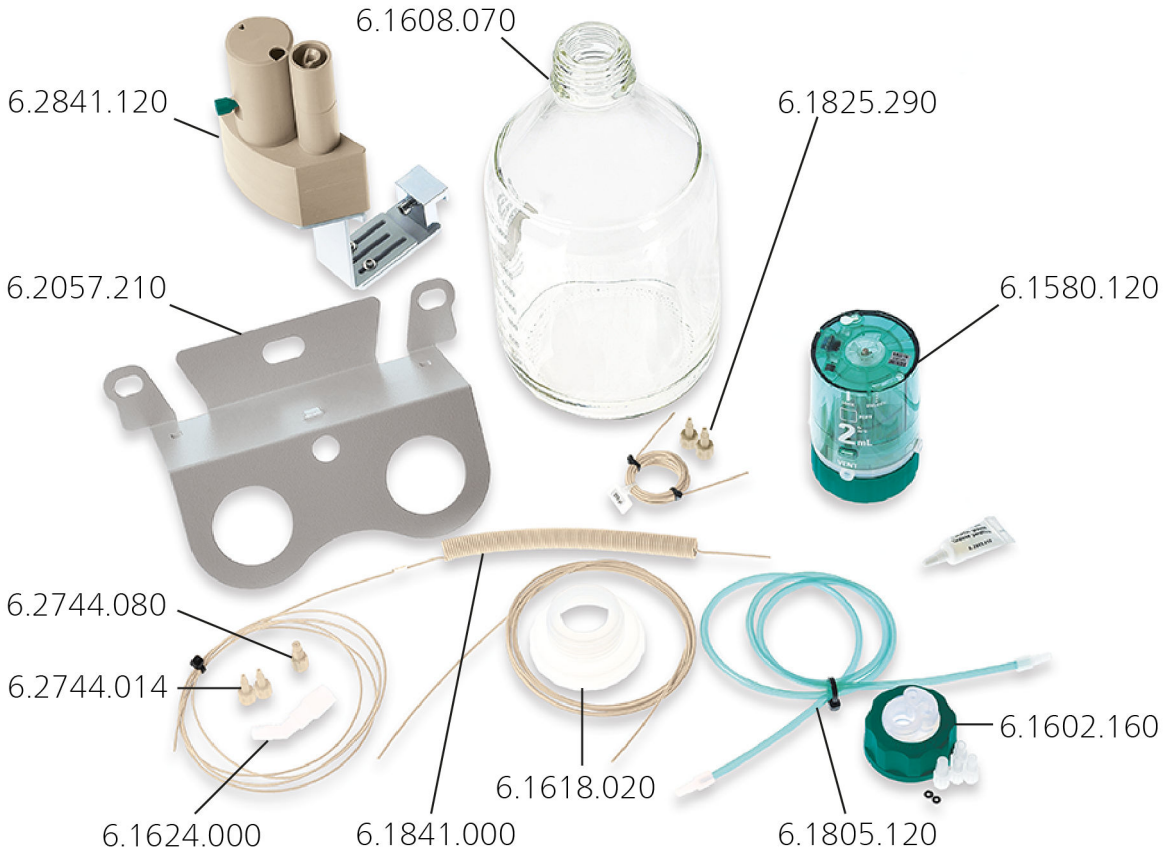


Figure 2 IC Equipment: MiPT – Parts

2.2 Parts of the Liquid Handling Station

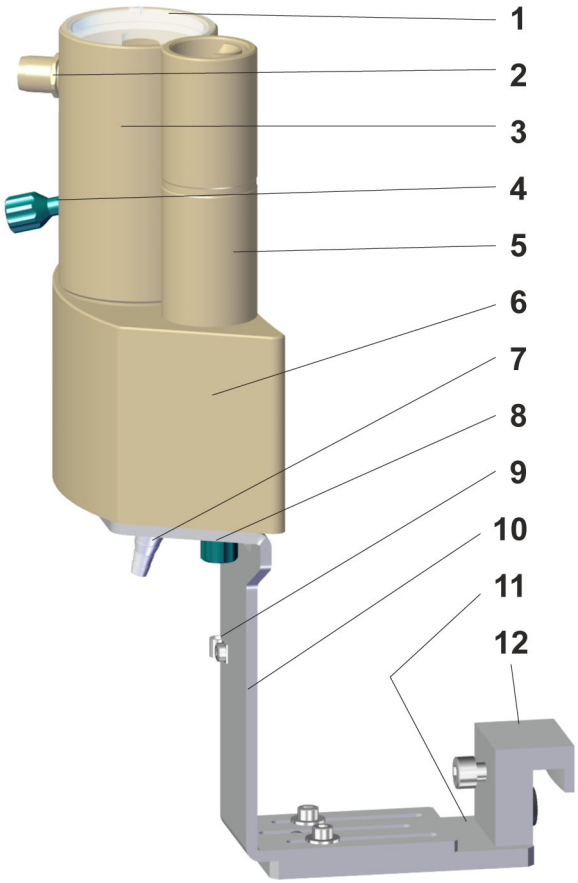


Figure 3 Overview of the device IC Equipment (left-handed version)

1	**Lid for the mixing vessel**	**2**	**Overflow** with connector
3	**Mixing vessel**	**4**	**Mixing vessel connector - UNF 10/32** sealed with threaded stopper
5	**Rinsing unit**	**6**	**Main body of the IC Equipment** with magnetic stirrer dummy
7	**Waste connector**	**8**	**Rinsing connector - UNF 10/32** sealed with threaded stopper
9	**Cable clip**	**10**	**Support bracket**
11	**Base plate**	**12**	**Clamping fastener**

2.3 Mode of operation of the intelligent Partial Loop Injection Technique

1. At the beginning of the determination, the 807 Dosing Unit 2 mL of the Dosino is emptied.
2. Aspirating the sample
    a. The sample (or the standard solution) is aspirated with the 807 Dosing Unit 2 mL into the transfer capillary.
    b. The Sample Processor needle is moved to the waste position (outer area of the rinsing unit).
3. Filling the sample loop
    a. The injection valve is switched to the **Fill** position.
    b. The 800 Dosino doses the injection volume from the transfer tubing to the 250 µL sample loop.
    c. Excess sample is transferred to the needle and discarded over the waste position.
4. Injecting and rinsing
    a. The injection valve is switched to the **Inject** position. The sample is injected into the separation column with the eluent.
    b. At the same time, the Sample Processor needle is moved to the rinse position (inner area of the rinsing unit) and cleaned.

3 Installation

3.1 Installing the Liquid Handling Station

The Liquid Handling Station forms part of the IC Equipment: MiPT.

1 **Installing the Liquid Handling Station**

Install the Liquid Handling Station on the left side of the Sample Processor (*see manual for the Liquid Handling Station*).

3.2 Mounting the Dosino

Attaching the Dosino to the 807 Dosing Unit

Required accessories

- 800 Dosino (2.800.0010)
- 807 Dosing Unit 2 mL without accessories (6.1580.120)

CAUTION

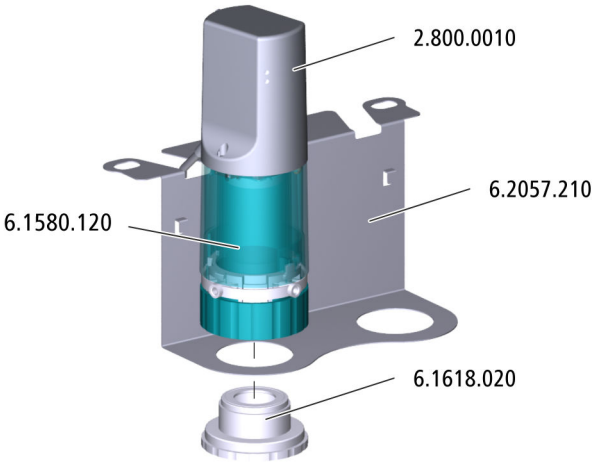
Please read through the correct procedure in the Manual for the 800 Dosino before you attach the Dosino to the 807 Dosing Unit.

1 Attach the Dosino to the 807 Dosing Unit, (*see Manual for the 800 Dosino*).

Fastening the Dosino to the ion chromatograph

Required accessories

- Dosino (2.800.010) with 807 Dosing Unit 2 mL without accessories (6.1580.120)
- Dosino holder (6.2057.210)
- Thread adapter (6.1618.020)



1 Fitting the Dosino holder onto the ion chromatograph

- Loosen the bottle holder on the ion chromatograph.
- Clamp the Dosino holder under it.
- Fasten the bottle holder again.

2 Attaching the Dosino to the holder

- Place the Dosino onto the Dosino holder.
- Fasten the Dosino to the Dosino holder by tightening the thread adapter from below.

3 Connecting the Dosino to the ion chromatograph

NOTE

The ion chromatograph **must** be switched off when the Dosino is being plugged to the MSB connector.

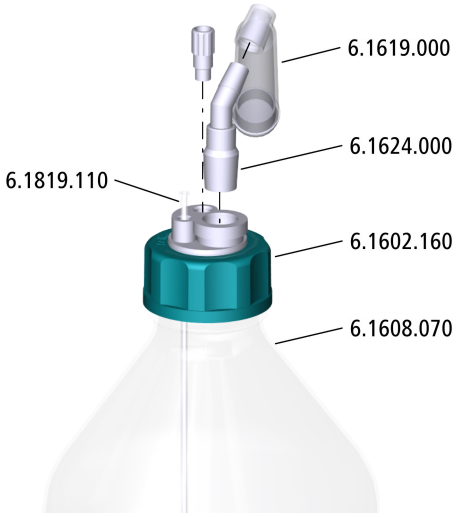
- Check whether the ion chromatograph is switched on.
  If this is the case, switch off the ion chromatograph.
- Plug the Dosino cable into one of the ion chromatograph's MSB connectors.

Alternatively, the Dosino can also be mounted to the Sample Processor (see the manual for the Dosino).

3.3 Equipping the supply bottle

Required accessories

- Bottle (6.1608.070) filled with ultrapure water
- Eluent bottle cap (6.1602.160)
- Adsorber tube (6.1619.000)
- Adapter for adsorber tube (6.1624.000)
- FEP aspiration tubing (6.1819.110)
- M8 stopper (6.1446.080), included in the accessories for the eluent bottle cap (6.1602.160)



1 Mounting the aspiration tubing

- Insert the aspiration tubing into the M6 opening of the eluent bottle cap.
- Use the capillary cutter to cut the aspiration tubing to such a length that it touches the bottom of the bottle.

2 Inserting the stopper

- Tighten the M8 stopper in the M8 opening of the eluent bottle cap.

3 Mounting the adsorber tube

- Fill the adsorber tube with some cotton and adsorber material.
- Place the adsorber tube onto the adapter.
- Insert the adapter into the SGJ opening of the eluent bottle cap.

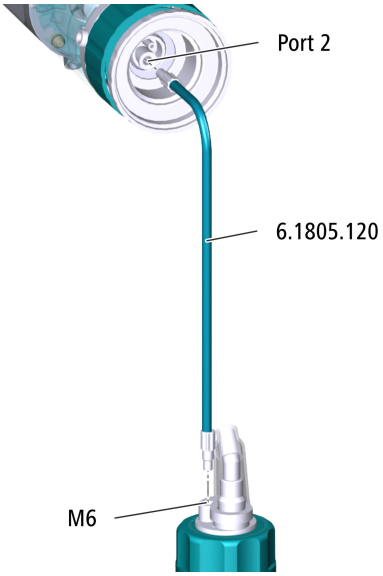
4 **Mounting the eluent bottle cap**

- Screw the eluent bottle cap onto the bottle filled with ultrapure water.

3.4 Mounting the FEP tubing

Required accessories

- FEP tubing (6.1805.120)



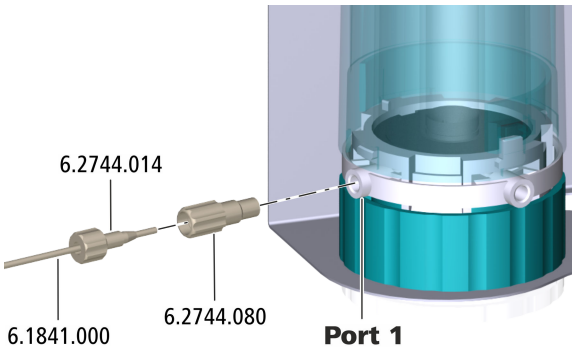
1

- Tighten one end of the FEP tubing in the M6 opening of the eluent bottle cap.
- Tighten the other end of the FEP tubing in port 2 of the Dosino.

3.5 Mounting the transfer capillary

Required accessories

- Transfer capillary (6.1841.000)
- Pressure screws (6.2744.014)
- Coupling M6 / UNF (6.2744.080)



1 ▪ Tighten the coupling to Port 1 of the Dosino.

2 ▪ Tighten one end of the transfer capillary to the coupling using a pressure screw.

3.6 Installing capillaries

Required accessories

- Transfer capillary (6.1841.000)
- PEEK capillary, 0.5 mm ID / 3 m (6.1831.180)
- Capillary cutter (6.2621.080)

1 **Connecting the transfer capillary**

- Guide the free end of the transfer capillary through one of the ion chromatograph's capillary feed-throughs.
- Tighten the end of the transfer capillary to Port 2 of the injection valve.

2

- Tighten the PEEK capillary to Port 1 of the injection valve.
- Guide the capillary out of the ion chromatograph through one of the capillary feed-throughs.
- Shorten the capillary using the capillary cutter in such a way that it can be easily connected to the Sample Processor needle. Keep the dead volume to a minimum.
- Tighten the shortened capillary to the Sample Processor's needle holder using a pressure screw.

3.7 Replacing the sample loop

Required accessories

- Sample loop 250 µL (6.1825.290)

1 Replace the sample loop on the injection valve with the 250 µL sample loop (*see the manual for the ion chromatograph*).

4 Operation and maintenance

4.1 807 Dosing Unit 2 mL without accessories (6.1580.120)

Maintenance work on the 807 Dosing Unit must be performed regularly. Information on the care and maintenance of the 807 Dosing Unit can be found in the Manual for the 807 Dosing Unit.

5 Displaying accessories

Up-to-date information on the scope of delivery and on optional accessories can be found on the Metrohm website.

1 Searching for a product on the website

- Go to *https://www.metrohm.com*.
- Click on 🔍.
- Enter the article number of the product (e.g. **2.1001.0010**) into the search field and press **[Enter]**.

The search result is displayed.

2 Displaying product information

- To display the products matching the search term, click on **Product models**.
- Click on the desired product.

Detailed information regarding the product is displayed.

3 Displaying accessories and downloading the accessories list

- To display the accessories, scroll down to **Accessories and more**.
  - The **scope of delivery** is displayed.
  - Click on **[Optional parts]** for the optional accessories.
- To download the accessories list, click on **[Download accessories PDF]** under **Accessories and more**.

NOTE

Metrohm recommends keeping the accessories list for reference purposes.

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