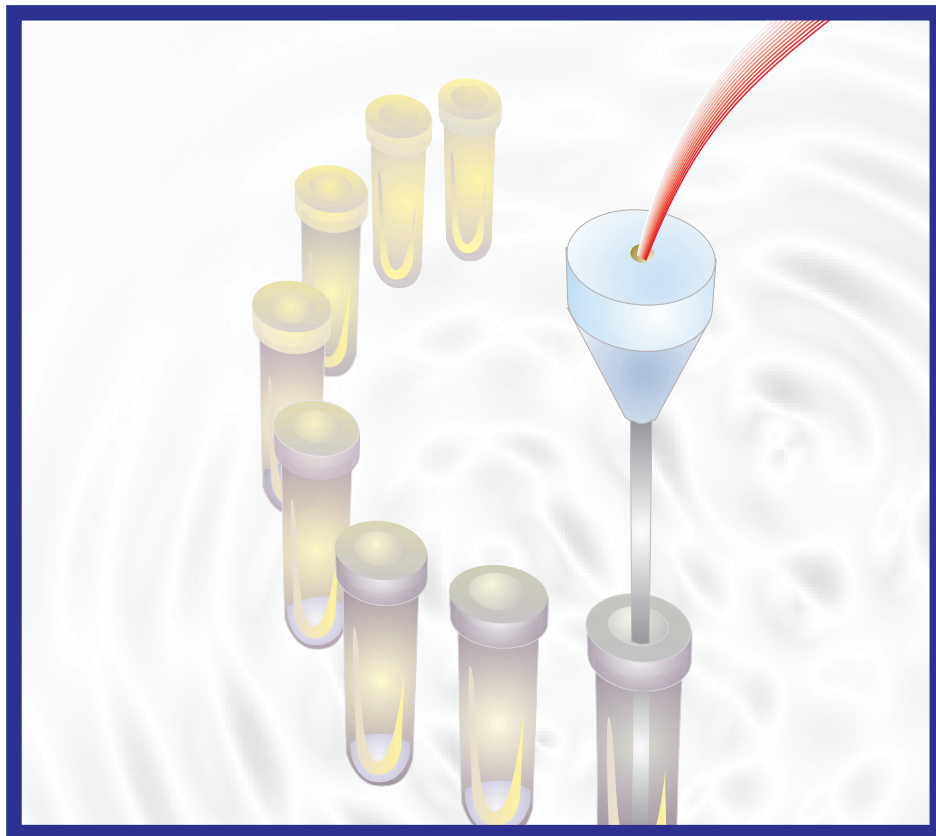


CMA 142 Microfraction Collector



User's Manual

CMA/142
MICROFRACTION COLLECTOR

CMA Microdialysis AB

Head Office, Sweden

Torshamnsgatan 30A, SE-164 40 Kista, Sweden

Tel: +46 8 470 10 00 • Fax: 46-8-470 10 50

E-mail: support@hbiosci.com • www.microdialysis.com6

Harvard Apparatus

84 October Hill Road

Holliston, MA 01746 USA

Phone Orders: 800-232-2380 • Fax: 508-429-5732

E-mail: support@hbiosci.com • www.harvardapparatus.com

TABLE OF CONTENTS

Section 1 INTRODUCTION	1
1.1 INTRODUCTION	1
1.2 ORGANIZATION OF THIS MANUAL	1
Section 2 WARRANTY & SERVICE	2
2.1 WARRANTY	2
2.2 DAMAGED SHIPMENTS	3
2.3 SERVICE	3
Section 3 INITIAL OPERATION	4
3.1 UNPACKING AND INSTALLATION	4
3.2 POWER SUPPLY	4
3.3 CONTROL PANEL	5
Section 4 OPERATION	6
4.1 GENERAL	6
4.2 INSTRUCTIONS	6
Section 5 ROUTINE MAINTENANCE	8
5.1 CLEANING THE INSTRUMENT	8
5.2 STORAGE	8
Section 6 TROUBLESHOOTING	9
Section 7 TECHNICAL INFORMATION	10
Section 8 ACCESSORIES AND REPLACEMENT PARTS	11
INDEX	12

Section 1 INTRODUCTION AND CAPABILITIES

1.1 INTRODUCTION

The CMA/142 is a Fraction Collector dedicated for collection of fractions with volumes of 1 μ l to 50 μ l. The CMA/142 Microfraction Collector combines ease-of-use with sampling of small volumes.

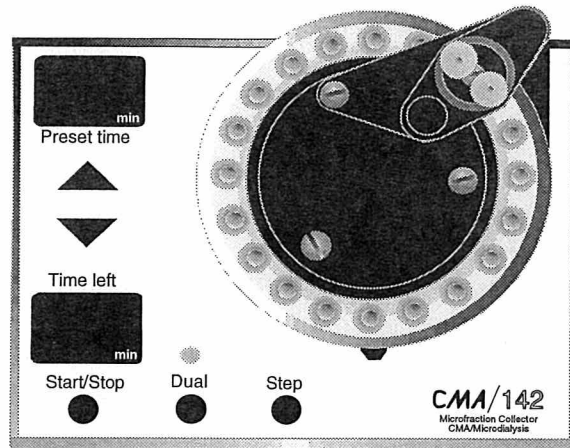


Figure 1.1 CMA/142 Microfraction Collector

1.2 ORGANIZATION OF THIS MANUAL

This manual describes the installation and operation of the CMA/142 Microfraction Collector. It also acts as a guide for troubleshooting the instrument and for performing routine maintenance as necessary. The manual is organized as follows:

- Section 1: Introduction.
- Section 2: Warranty & Service.
- Section 3: Initial Operation - describes the procedure for unpacking the Collector.
- Section 4: Operation.
- Section 5: Routine Maintenance - describes the procedures necessary for keeping the CMA/142 in good operating condition.
- Section 6: Troubleshooting - provides a guide for identifying and correcting problems.
- Section 7: Technical Information.
- Section 8: Accessories.

Section 2 WARRANTY & SERVICE

2.1 WARRANTY

CMA/Microdialysis AB (called CMA) guarantees all components of the CMA/142 Microfraction Collector to be free from defects of material and workmanship for a period of one year after initial purchase. CMA will repair and replace, at its discretion, all defective components during the aforementioned warranty period.

CMA reserves the right to waive all warranties in the case of problems due to improper handling.

For warranty service or repair, all CMA products must be returned to CMA, or your local representative. The Owner shall prepay shipping charges to CMA, and CMA shall pay shipping charges to return the product to the Owner. However, the Owner shall pay all shipping charges, duties and taxes for products returned to CMA from another country.

CMA warrants that its software and firmware designated for use with a CMA product will execute their programming instructions when properly installed on that product. CMA does not warrant that the operation of the instrument, software or firmware will be uninterrupted or error-free.

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Owner, Owner-supplied software or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

For any product expressly covered under this warranty, CMA is liable only to the extent of replacement of the defective items. CMA shall not be liable for any personal injury, property damage, or consequential damages of any kind whatsoever. The foregoing warranty is in lieu of all other warranties of merchantability and fitness for a particular purpose.

2.2 DAMAGED SHIPMENTS

Breakages of any part of this instrument during shipping should be reported immediately to CMA Customer Service. You must retain the original packing box and contents for inspection by the freight handler. CMA will replace any new instrument damaged in shipping with an identical product as soon as possible after the claim filing date. Claims not filed within 30 days after the shipping date will be invalid. Do not return damaged goods to CMA without first contacting Customer Service for a Return Authorization Number (RA#). When a defective part is returned to CMA, the RA# immediately identifies you as the sender, and describes the item being returned. CMA/Microdialysis refuses all unauthorized return shipments.

2.3 SERVICE

CMA has a skilled service staff available to solve your technical problems if an equipment-oriented problem should arise. For further details, call/fax customer service (tel. +46-8-6746310, fax +46-8-166050). Following assessment of your specific difficulties, an appropriate course of action will be described and the problem resolved accordingly. Do not return any products for service until a RETURN AUTHORIZATION NUMBER (RA#) has been obtained. The RA# identifies you as the sender and describes the problem in detail. Turnaround time for service can be quoted to you at the time your RA# is issued, although we cannot determine the actual amount of service required until we have received your unit and diagnosed the actual problem. All correspondence and shipments should be sent to:

RA#, Service Department
Harvard Apparatus
84 October Hill Road
Holliston, MA 01746 USA

Section 3 INITIAL OPERATION

3.1 UNPACKING AND INSTALLATION

When you are ready to install the CMA/142 Microfraction Collector, remove the instrument from the shipping container and inspect both the Collector and the packaging for any signs of damage. If any damage is noted, contact the shipping company immediately, see section 2.2.

In addition to this manual, the shipping container should contain the CMA/142 Microfraction Collector, mains voltage selection unit, and samples of plastic and glass vials.

Missing Items?

Carefully check the packing list against the contents of the shipping container. If anything appears to be missing, check the packaging material very carefully for any overlooked items. If any items are missing, contact your CMA representative immediately.

Additional Items Required

In addition to the CMA/142 Microfraction Collector, you will need 300 µl plastic or glass vials and FEP-tubing.

3.2 POWER SUPPLY

The instrument requires a power supply of nominal 12 VDC. Power consumption is 200-500 mA, depending on the instrument and which function is being carried out at the time. The actual supply voltage is not critical but has been adapted so that the instrument can be powered from a normal car battery which supplies a voltage between 10.5 and 14.4 volts. For connections to the mains, a transformer should be used (MASCOT type 8713, stabilized 12 VDC/600 mA). This power supply is available in the following types:

Europe	Input voltage: 230 VAC+6%/10%,50/60 Hz Output voltage: 12 VDC/600 mA
Japan	Input voltage:100 VAC±10%,50/60 Hz Output voltage: 12 VDC/600 mA
U.S.A.	Input voltage: 115 VAC±10%,50/60Hz Output voltage: 12 VDC/600 mA

Connecting cables For Mains, 1 metre long cable with permanently fixed Europlug or U.S.A. plug.
For CMA instruments, 1.2 metre long cable.

NOTE: By using the connecting cable for CMA instruments, the CMA/102 Microdialysis Pump can power the CMA/142 Microfraction Collector. Use any of the sockets on the CMA/142.

3.3 CONTROL PANEL

The following functions together with brief instructions are located on the panel of the CMA/142 Microfraction Collector (see fig 3.3).

Text	Function
Preset time	Shows preset fraction time in minutes. The collecting time in minutes is set by pressing the arrow buttons.
Time left	Shows the remaining time of the fraction in minutes.
Dual	The mode is changed by pressing the button. In single mode collection, 1 x 20 samples are collected. In dual mode, yellow with LED on, 2 x 10 samples are collected.
Step	Press "Step" to move carousel stepwise. For continuous stepping, hold down "Step" button.
Start/Stop	Press button to operate. Time left "display" will appear indicating that the instrument is operating.
Power	Socket for 12 VDC.

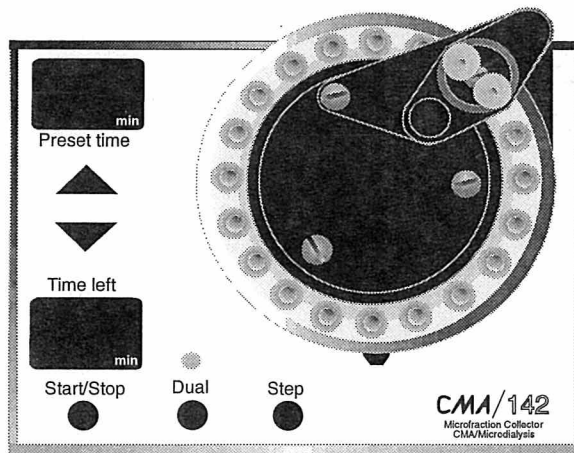


Figure 3.3

Section 4 OPERATION

4.1 GENERAL

The CMA/142 Microfraction Collector is easy to use and all the necessary instructions required are found on the control panel. It is advisable to read this User's Manual carefully before starting to use the instrument. The CMA/142 Microfraction Collector can collect fractions from one or two microdialysis probes by simply changing the mode.

4.2 INSTRUCTIONS

1. Connect the instrument to the AC adapter.

2. Insert VIALS.

Fill the carousel with plastic or glass vials. Samples of both are enclosed with the Collector.

3. Connect the FEP-TUBING into the TUBING HOLDER.

The outlet tubing from the Microdialysis probes (FEP-tubing) fits directly into the Tubing holders. The Tubing holders consist of a cannula and plastic sleeve (see fig 4.2.3). The tube from the probe is fed through the supporting cannula until it touches the bottom of the collecting vial. Secure the tubing by lifting the plastic knob. NOTE: Make sure that the FEP-tubing is not pushed so far into the vial that the end bends. This may cause damage to the instrument.

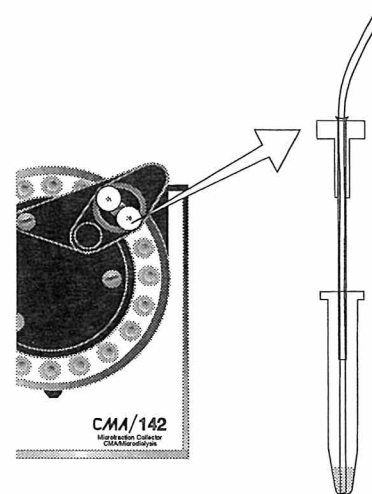


Figure 4.2.3

4. PRESET TIME for fractions.

Set the desired fraction time in minutes by pressing the arrow buttons. The up arrow increases the value. The down arrow decreases the value (see fig 4.2.4). NOTE: The maximum collection volume is 50 μ l for plastic vials and glass vials. If the collection volume is larger, the liquid collected will reach the steel cannula which may cause contamination from the previous sample.

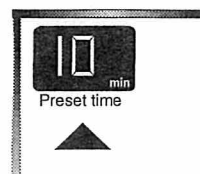


Figure 4.2.4

5. DUAL or SINGLE probe collection

Press the dual button for collection from two microdialysis probes. The yellow LED indicates that dual mode is in operation.

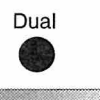


Figure 4.2.5

6. Change vials to start position by pressing STEP.

Step forward to the desired position. For continuous stepping, hold the button down.

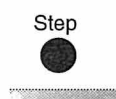


Figure 4.2.6

7. START COLLECTION.

By pressing the Start/Stop button, the CMA/142 Microfraction Collector will start collecting the first fraction.

The remaining time is shown in the lower LED display. When the preset fraction time is reached, the instrument moves the cannulae up and indexes to the next position or alternatively indexes two positions (dual collection).

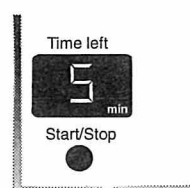


Figure 4.2.7

Section 5 *ROUTINE MAINTENANCE*

5.1 CLEANING THE INSTRUMENT

Keep your CMA/142 Microfraction Collector clean. Wipe off any spillage using a soft cloth with mild detergent. Do not use alcohol or any other solvent. Clean all parts that have been in contact with crystal forming substances (e.g. salts) by using a tissue soaked in distilled water.

5.2 STORAGE

If the CMA/142 Microfraction Collector is not to be used for a significant length of time, disconnect the power supply and clean the instrument. Store the instrument in the shipping carton in a safe place.

Section 6 TROUBLESHOOTING

Error code" 1,2,3," etc.

Vial is not correctly inserted and is blocking the movement of the carousel.

The carousel is blocked in position by the FEP-tubing or the cannula.

Please check the above suggestions. For other faults, please see section 2.3.

To reset, disconnect the power supply.

Technical Data

Power: 100/230 VAC, 50/60Hz

Dimensions 130 x 100 x 80 mm

Weight: 0.57 kg

Shipping weight: 1.5 kg

Minimum fraction time: 1 minute

Maximum fraction time: 99 minutes

Minimum fraction volume: 1µl

Maximum fraction volume: 50 µl

Number of fractions: 1x20 or 2x10

Display: Two-digit LED displays showing preset collection time and time left for the fraction.

Waste disposal



Do not dispose this product as unsorted municipal waste

Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of waste electrical and electronic equipment (WEEE)

European Union customers

Contact your local CMA Microdialysis representatives or your local authority for guidance

Section 8 ACCESSORIES AND REPLACEMENT PARTS

Part number	Description
743 1100	Plastic vial, size 300 μ l pkg=1000
743 1101	Plastic caps pkg=1000
743 1007	Glass vial, size 300 μ l pkg=500
743 2175	Caps/seals pkg=1000
743 2017	Crimper

INDEX

ACCESSORIES	11
CANNULA	6
CLEANING THE INSTRUMENT	8
COLLECTION	7
CONNECTIONS	6
CONTINUOUS STEPPING	5
CONTROL PANEL	5
DAMAGED SHIPMENTS	3
MAINTENANCE & SERVICE	8
MAXIMUM COLLECTION VOLUMES	7
OPERATING INSTRUCTIONS	6
PACKING LIST	4
POWER	4
SAMPLE CAROUSEL	6
SELECTING SAMPLE VOLUME	7
SERVICE	3
STEP	7
STORAGE	8
TECHNICAL INFORMATION	10
TROUBLESHOOTING	9
TUBING HOLDER	6
UNPACKING & ASSEMBLY	4
VIAL TYPES	11
WARRANTY	2