

USER MANUAL

MICRONIC
PUSH CAP
DECAPPER
CP620

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1 INTRODUCTION

1.1 ABOUT THIS DOCUMENT

The current user manual has been designed to give general users access to required information concerning the *Micronic* Push Cap Decapper. Any variations from the procedures described in this manual may lead to instrument malfunctions.

The following signal words and symbols are included in this user manual to emphasize important instructions and to alert users to potential hazards.

Symbol	Definition
	WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in damage to the instrument or personal injury. This signal is used only in extreme situations and, therefore, requires special attention.
	ATTENTION: Indicates problems or important information. Read the accompanying text carefully as it is important for understanding the specific topic or command.
	NOTE: Indicates information that is useful, but not essential, to a task. Read the accompanying text carefully as it can help to clarify particular issues.

1.2 SPECIAL ATTENTION

The *Micronic* Push Cap Decapper, developed by Micronic Manufacturing B.V., is a device to automatically decap Micronic TPE caps from Micronic tubes. Micronic has developed the *Micronic* Push Cap Decapper with acknowledgement of existing regulations and the components that are used are CE-regulated (see also paragraph 6.5 'CE marking').



ATTENTION: Special care and attention during use is recommended. Do not adjust settings without permission from Micronic and do not open the decapper by yourself.

2 INTRODUCING THE MICRONIC PUSH CAP DECAPPER

The purpose of this chapter is to give users a basic understanding of the *Micronic* Push Cap Decapper.

2.1 ABOUT THE MICRONIC PUSH CAP DECAPPER

2.1.1 Intended use

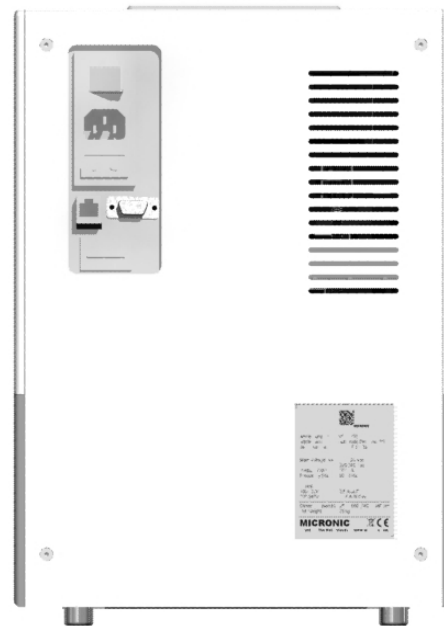
The *Micronic* Push Cap Decapper operates as a stand-alone device or in an automated situation. It can decap different types of push cap or screw cap tubes (i.e. 0.50ml, 0.75ml, 1.10ml, 1.40ml). It should be noted that parts of the device that may come in contact with the content of a tube via the cap are made from chemical resistant material, like anodized aluminum or stainless steel.

2.1.2 Overview of the Micronic Push Cap Decapper



Front view:

- Human Interface Panel
- Start button (GREEN)
- Stop button (RED)
- Drawer entrance
- Entrance for the cap retrieval box



Back view:

- Main power switch
- Connection to power supply
- Main fuse
- Ethernet connection RJ45
- ID-label
- SUB-D connector

2.1.3 Display and main menu



Display explanation:

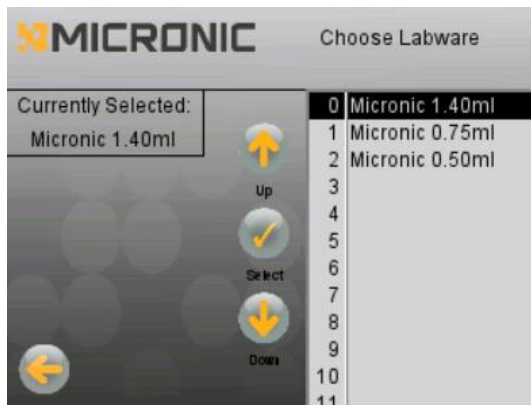
1. Homing Procedure



2. Main Screen



3. Labware Selecting



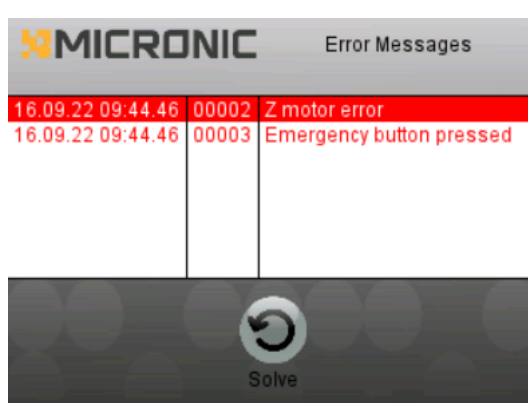
4. Decapping Cycle



5. Warning Messages



6. Error Messages



7. Standby



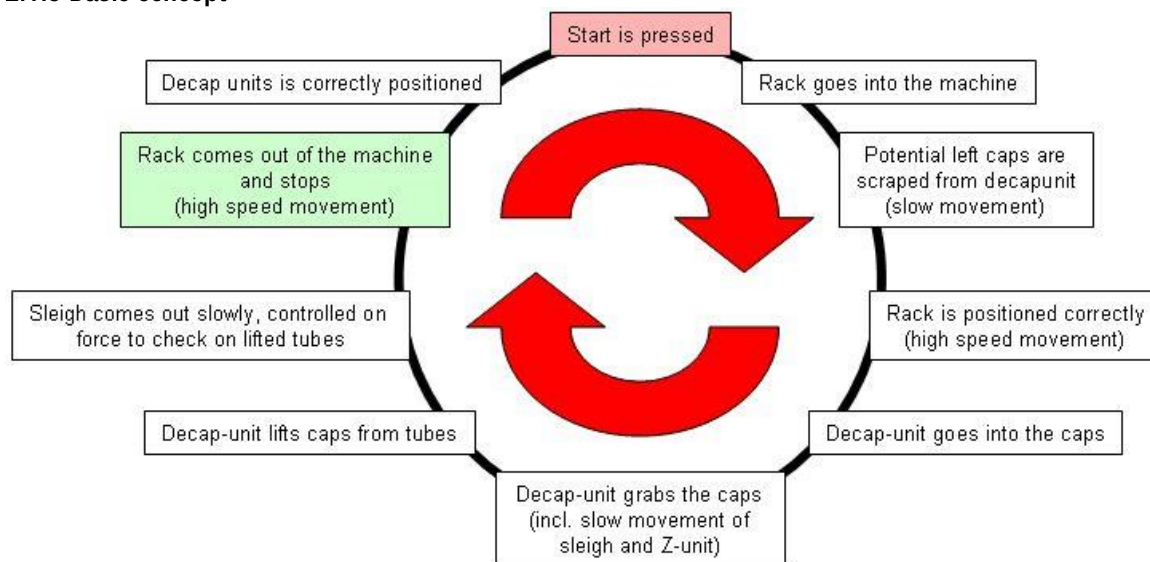
2.1.4 Basic specifications

- Any Micronic rack filled with 0.50ml, 0.75ml, 1.10ml or 1.40ml tubes can be decapped.
- The *Micronic* Push Cap Decapper works electrical and can be installed in laboratories as well in automated environments.
- The caps can be collected in a cap retrieval box (placed on the front side).
- Easy to follow and user-friendly menu.
- Space saving compact design.
- Eliminates manual decapping of tubes.
- Time saving procedure.
- Minimizes contamination risks.



NOTE: The *Micronic* Push Cap Decapper is developed to be compatible with the Micronic product line. The decapper can also be used with other brands of tubes, caps or racks, but no guarantee will be given when these products are used solely or in combination with one of the Micronic products.

2.1.5 Basic concept



2.2 GENERAL INFORMATION

2.2.1 Safety precautions



WARNING: For personal security, the Micronic Push Cap Decapper must be switched off and disconnected from power supply and other equipment before any installation, repair, cleaning or maintenance work is carried out.



WARNING: To prevent unintended damage to the device it is absolutely essential that you read and understand the operating instructions. Furthermore, the owner is responsible for ensuring that appropriate instructions are provided to users of the device.



ATTENTION: In the event of a situation arising where safe operation of the *Micronic* Push Cap Decapper cannot be guaranteed, the device must be switched off and not be used until qualified personnel can repair it. Examples of such situations may include:

- The *Micronic* Push Cap Decapper is visibly damaged
- The *Micronic* Push Cap Decapper stops working properly
- When turning the *Micronic* Push Cap Decapper on, fuses immediately blow

Repairs must only be carried out by authorized personnel, using Micronic parts.

The device must only be operated by appropriately trained and instructed personnel who are familiar with all aspects of safety relating to this device. The *Micronic* Push Cap Decapper must not be used for any purpose apart from the outlined application (see paragraph 2.1.1 'Intended use').

Do not leave the *Micronic* Push Cap Decapper unattended when running.

2.2.2 Service and maintenance

It is recommended to check the operation of the *Micronic* Push Cap Decapper at least once a year. This service must be carried out by authorized personnel only.

2.2.3 Warranty and liability



WARNING: Repairs should only be carried out by a specialist from Micronic or under the close supervision of Micronic.

Micronic accepts no liability for possible mistakes or its consequences arising from this manual. In addition, Micronic accepts no liability for possible dysfunction of the *Micronic* Push Cap Decapper in case service and maintenance is carried out by unauthorized personnel.

While great care has been taken in the development of the *Micronic* Push Cap Decapper, any damages, losses or discrepancies arising from using this device are entirely at your own risk and Micronic cannot be held responsible. The product contains proprietary and confidential information and such information must not be disclosed to other parties for any purpose, or used for manufacturing purposes, without prior written permission from Micronic.

Differences in appearance between the device and pictures or drawings in the current manual do not effect the use of both.

2.2.4 How to react after malfunctioning of the Micronic Push Cap Decapper

1. When the *Micronic* Push Cap Decapper itself signals a malfunction, for example exceeding cycle time limit or fault-signals from other components, the device will stop.
2. Switch off the power supply and disconnect the device from all the mains.
3. Please read chapter 5 'Maintenance' before contacting Micronic.
4. **Do not open the decapper by yourself**, only with permission by Micronic.
5. If the *Micronic* Push Cap Decapper is opened, carefully use manual force to move component(s).
6. In case of malfunction or other questions please contact Micronic:

Tel: +31 320 277070 (Micronic Europe) or +484-480-3372 (Micronic America)

E-mail: Helpdesk@micronic.com



NOTE: In case of repairs, the *Micronic* Push Cap Decapper or parts of it should be send to Micronic for inspection, maintenance, replacement or repair.

3 INSTALLATION

The purpose of this chapter is to give a step-by-step guide to install the *Micronic* Push Cap Decapper.

3.1 COMPONENTS

The package should contain the following parts:

- *Micronic* Push Cap Decapper CP620
- Power cord, specific to your country (European, United States or United Kingdom use)
- Getting started with the *Micronic* Push Cap Decapper CP620
- Allen key to remove transport protection

3.2 INSTALLATION CONDITIONS

- The *Micronic* Push Cap Decapper must be placed on a clean, dry, stable and horizontal surface which is capable of holding at least 60kg (132 lbs).
- For manual use, for user convenience and ease of access, the front edge of the device must be positioned near the front of the bench.
- The device must be positioned in such way that the on/off power switch on the back is always accessible.



WARNING: Do not use the device in an area with the following characteristics: high concentrations of dust, high humidity, explosion danger or storage of toxic chemicals.

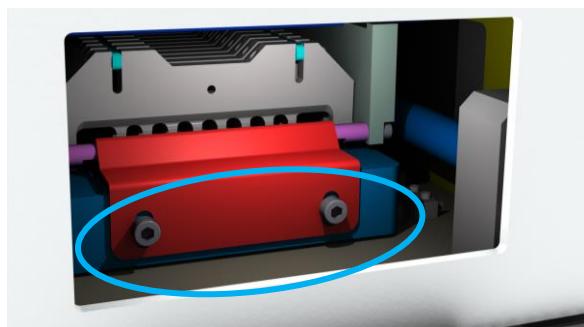
The chosen area must not present a hostile environment to the device or its intended use.

- When the *Micronic* Push Cap Decapper has been recently transported, the machine should be acclimated to room temperature for 24 hours. Also, if the machine has not moved during a long period of time, sometimes the spindle has to be moved manually to moisturize the lubrication.
- The device can only be used at room temperature (the caps may not be frozen and should be above 15°C).

3.3 INSTALLATION INSTRUCTIONS

3.3.1 Remove transport protection

Before the *Micronic* Push Cap Decapper can operate, the transport protection needs to be removed from inside the machine by unscrewing 2 screws (see below).



3.3.2 General

1. Ensure that the network voltage and fuse rating are compatible with the *Micronic* Push Cap Decapper (115 VAC – 230 VAC, 50-60 Hz).
2. To prevent electric shocks or damage to the device, always plug the *Micronic* Push Cap Decapper into fully grounded power sources (PE).
3. The correct fuse in the appropriate fuse housing should be:

115 VAC.....	2.5AT
230 VAC.....	1.25AT
4. Remove protective foil from display
5. Ensure that the power switch is in the “off”-position (press right side of the switch).
6. Install the mains.

3.4 MOVING INSTRUCTIONS



NOTE: Before moving the Micronic Push Cap Decapper, it must be emptied and disconnected from the mains. Two persons are required to lift the Micronic Push Cap Decapper. For transportation please restore the transport protection bracket.

3.5 CLEARING PROCEDURE



NOTE: Although the machine is designed to be shipped and moved under normal circumstances, it is recommended to first do some initial testing.

The following procedure gives a brief overview of the functionality of the device:

- Run one cycle without a rack placed on the drawer, and observe if no problems occur. Successfully passing this test indicates that no parts are in between the moving parts inside.
- Run one cycle with a rack (without cover) filled with empty tubes placed on the drawer, and observe if no problems occur. Tubes should not be damaged. When this test has been passed successfully it can indicate that the removal grippers are correctly positioned in the x-y- plane.
- Run one cycle with a rack filled with capped empty tubes, and observe if no problems occur. All caps should be removed from the tubes. Successfully passing this test indicates that the removal grippers are correctly positioned in the z- plane.



ATTENTION: Caps will fall inside the cap retrieval box. In some cases, for example if the caps are slightly dirty or moisturized, caps stick on the decap-grippers. These caps are removed when the drawer goes inside the machine. This can mean that when not all caps are inside the cap retrieval box, an extra cycle should take place to retrieve all caps.

3.6 GENERAL USE

- Please allow sufficient space around the drawer entrance.
- Do not place anything but a rack filled with capped tubes on the drawer.
- Do not move or push the *Micronic* Push Cap Decapper during operation.

4 OPERATION INSTRUCTIONS

The purpose of this chapter is to give a step-by-step guide to operate the *Micronic* Push Cap Decapper.

4.1 BRIEF EXPLANATION OF BASIC OPERATION (QUICK START)

- Be sure that the device is correctly connected and the clearing procedure is fulfilled.
- Be sure the cap retrieval box is placed and emptied.
- Press the main power switch.
- The decapper will start with initializing. When ready with initializing the display will switch to the Main Screen and present the message "Ready for operation".
- Place a rack with capped tubes on the drawer.
- Press the green start button or the "Start Decapping" button and the decapper will start with decapping.
- The rack will come out of the decapper uncapped.
- When the next rack moves into the decapper, the caps which were taken off with the rack before will fall into the retrieval box.



ATTENTION: Be sure that the rack with caps are placed without retaining foil and cover. When racks with foil and/or cover have been incidentally inserted, damage might occur to the product. React as written in the malfunction paragraph; switch off the main switch on the back of the decapper.



WARNING: Be aware that the drawer comes out of the decapper. Do not look into the decapper during operation, because the drawer can abruptly come out of the decapper. Do not put your hand and/or other equipment in the decapper.

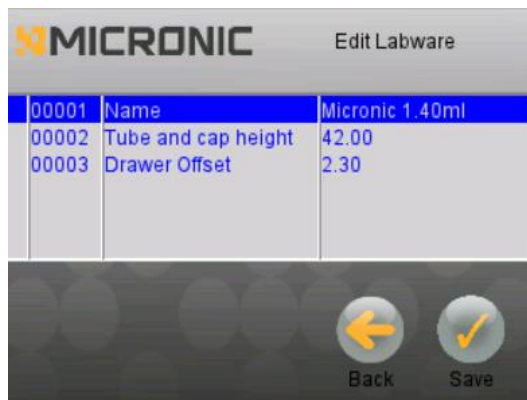
4.2 ADJUST SETTINGS

The *Micronic* Push Cap Decapper has preset settings and settings that can be customized. The settings can be customized by service personal only and are hidden for operators.

Machine Parameter Settings



Labware Parameter Settings



Pressing the “Load Default Parameters” button, will (re)load the preset Machine Parameter Settings. If changes are made to the Labware Parameter Settings, press the “Save” button to keep these changes.

4.3 CAP RETRIEVAL BOX SETTINGS

- The cap retrieval box is placed on the front of the *Micronic* Push Cap Decapper.
- After 25 cycles, the decapper will show a message on the display that the box needs to be emptied. Press “Bin Empty” to set the internal counter to 0 (zero) again, the message will automatically disappear.



- If the bin is removed, the following message will be shown:



- The device removes the caps during the insertion of the drawer. This might cause falling of caps during removing of the cap retrieval box. Please clear the entrance before replacing the cap retrieval box into the decapper.



ATTENTION: If the retrieval box is removed, the internal counter is switched back to 0 (zero). If not properly emptied, the retrieval box can be overfilled and cause damage. Do not place any bag inside the retrieval box.



NOTE: When the Micronic Push Cap Decapper is not used, the device is still working (the position of the drawer is maintained continuously).

4.4 START DECAPPING SESSION



WARNING: Ensure that the tube rack is positioned flat and in the center of the position plate. When the device operates with a rack positioned off center or tilted it could damage the device and lab ware.



ATTENTION: Be sure that the correct tube and rack are selected.



1. The *Micronic* Push Cap Decapper shows the message "Ready for operation"



2. Place a rack filled with capped tubes on the drawer



3. Press the green button or the "Start Decapping" button to start the decapping session; the rack will go inside the decapper automatically



4. After the removal of the caps, the rack with decapped tubes will come out automatically



5. A new rack filled with capped tubes can be placed on the drawer and a new decapping session can be started by pressing the start button

4.5 END OF DECAPPING SESSION/ SWITCH DECAPPER OFF



1. The *Micronic* Push Cap Decapper can be switched off by flipping the power switch on the back of the machine.



2. The *Micronic* Push Cap Decapper can be put in standby mode by pressing the “standby” button. Press the “standby” button again to put the machine back to “ready for operation mode”



3. Please empty the cap retrieval box when indicated on the display.

5 MAINTENANCE

The purpose of this chapter is to give a step-by-step guide to reduce and solve problems, and to give better understanding in operating the *Micronic* Push Cap Decapper. Also a clear guide on how to clean the *Micronic* Push Cap Decapper is given.

5.1 CLEANING

Periodic cleaning procedures must be performed to ensure optimal performance of the decapper.

- Cap retrieval box
- The outside of the decapper and the drawer should be cleaned with a normal cloth
- Inside all parts are maintenance free

5.2 TROUBLE SHOOTING

The following table can help to remedy certain problems that may be encountered when operating the *Micronic* Push Cap Decapper. The table contains the symptom, possible cause and corrective action related to the particular problem. If the problem is not solved by reading the symptoms in the table, please inform Micronic right away.

Symptom	Possible Cause	Corrective Action
Device does not start up	<ul style="list-style-type: none"> ▪ Main fuse has blown ▪ Other fuses inside the decapper are blown 	<ul style="list-style-type: none"> ▪ Check connection to power ▪ Check fuse under power connector
Device does not continue	<ul style="list-style-type: none"> ▪ Cap retrieval box is not placed correctly ▪ Caps that have fallen into the retrieval box are obstructing the retrieval box 	<ul style="list-style-type: none"> ▪ Shut down and disconnect all mains ▪ Place cap retrieval box correctly ▪ Restart the device
Not all tubes are decapped properly	<ul style="list-style-type: none"> ▪ Parts inside the device are broken ▪ Rack is not well placed 	<ul style="list-style-type: none"> ▪ Shut down and disconnect all mains ▪ Look into the device and see if caps are still inside ▪ Connect the device and do a decap session without a rack placed

The device is in error	<ul style="list-style-type: none"> Tubes are pulled up inside the machine 	<ul style="list-style-type: none"> Shut down and disconnect all mains Remove the tubes inside Connect the device and do a decap session without a rack placed
Caps are wedged between hooks	<ul style="list-style-type: none"> Caps stay on the gripper 	<ul style="list-style-type: none"> Shut down and disconnect all mains Remove the caps with a small brush Connect the device and do a decap session without a rack placed
Error Message Screen	<ul style="list-style-type: none"> Error message 	<ul style="list-style-type: none"> Reset motors by pressing "Solve" button (check situation before solving) Device will initialize again
Warning Message Screen	<ul style="list-style-type: none"> Warning Message 	<ul style="list-style-type: none"> Empty bin/place bin back in place
Rack is not decapped	<ul style="list-style-type: none"> Settings are not correct Rack is not well positioned 	<ul style="list-style-type: none"> Ensure correct selection of tube-rack combination Ensure rack is well positioned

5.3 ERROR HANDLING



NOTE: When an error is not solved or regularly occurs, please contact Micronic.

5.3.1 General error handling

Displayed text	Description	Action
Spindle error	<ul style="list-style-type: none"> An obstruction of the drawer has occurred Electrical malfunction of the drawer motor or its control 	<ul style="list-style-type: none"> Shut down and disconnect all mains Check for any mechanical failure or obstruction in the device Connect the device and do a decap session without a rack placed
Z-axis error	<ul style="list-style-type: none"> An obstruction of the vertical movement has occurred Electrical malfunction of the Z-axis motor or its control 	<ul style="list-style-type: none"> Shut down and disconnect all mains Check for any mechanical failure or remove obstruction in the device Connect the device and do a decap session without a rack placed
Decapper error	<ul style="list-style-type: none"> An obstruction of the decap movement has occurred Electrical malfunction of the decap motor or its control 	<ul style="list-style-type: none"> Shut down and disconnect all mains Check for any mechanical failure or remove obstruction in the device Connect the device, and do a decap session without a rack placed
Multiple-axis error	<ul style="list-style-type: none"> An obstruction involving multiple movements has occurred 	<ul style="list-style-type: none"> Shut down and disconnect all mains Check for any mechanical failure or remove obstruction in the device Connect the device and do a decap session without a rack placed

5.3.2 Dustbin error handling

Displayed text	Description	Action
Cap bin not present/ Cap bin full, please empty	<ul style="list-style-type: none"> When the device decapped 25 times it is possible that the cap retrieval box is full 	<ul style="list-style-type: none"> Check the cap retrieval box If necessary remove cap retrieval box Empty it and replace

5.4 FREQUENTLY ASKED QUESTIONS

Question	Answer
Does the <i>Micronic</i> Push Cap Decapper also decap other products than mentioned in the compatibility list?	Yes. Other products can be decapped but use of these products is at your own risk. Also liability of Micronic is not valid when other products than explained in the compatibility list are used.

In which temperature range does the <i>Micronic</i> Push Cap Decapper work?	Room temperature (the caps may not be frozen and should be above 15°C).
When not using the device, a low noise can be heard.	The motor, maintaining for its position, causes this low noise. It will not harm the device. A new decap session might solve this aspect.

6 TECHNICAL REFERENCES INFORMATION

6.1 PHYSICAL PROPERTIES

Height:360mm
 Length:550mm
 Length with drawer out:740mm
 Width (including side closing):255mm
 Net Weight:25kg / 55lbs
 Total cycle time:15-20 seconds
 Total decapping time:8 seconds

6.2 FIXED VOLTAGE

For all countries world-wide, a protective earth (PE) is required.

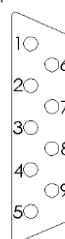
Main Voltage (VAC)	115VAC / 230VAC	093-132 VAC
.....	Autorange	187-264 VAC
Power (VA)	290 VA	
Frequency (Hz).....	50-60 Hz	

Fuses:
 115V.....2.5 AT Slow
 230V.....1.25 AT Slow

6.3 EXTERNAL SUB-D CONNECTOR

Pin 1: GND for external input
 Pin 2: External Input Start
 Pin 3: N/A
 Pin 4: N/A
 Pin 5: N/A
 Pin 6: External output Ready (Complete cycle)
 Pin 7: External output Error
 Pin 8: External output Dustbin Full
 Pin 9: N/A

9-pole Sub-D



6.4 MANUFACTURER

Micronic Manufacturing B.V.

	Platinastraat 51, 8211 AR Lelystad, The Netherlands
	Tel: +31 (0)320 277 077
	Fax:+31 (0)320 277 088
	Info@micronic.com
	www.micronic.com

6.5 CE MARKING



Declaration of conformity

**Micronic Manufacturing B.V.
located in Lelystad, the Netherlands**

Declares on its own responsibility that the product,

Micronic Push Cap Decapper,
Serial numbers MIC-CP620-###

In accordance with the EC directives

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2012/19/EU	Waste Electrical & Electronic Equipment
2015/863/EU	RoHS 3 Directive

Is in compliance with the following standards or normative documents:

IEC 61010-1:2010+A1:2016-CSV en	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
NEN-EN-IEC 61326-1:2013 en	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

Lelystad, 25 March 2021.

Patrick van Wijk, General Manager

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7 CUSTOMER SERVICE

7.1 SERVICE

For any questions, please contact your local Micronic Distributor or use the contact information mentioned below:



Tel: +31 (0)320 277 070 (Micronic Europe) or +484-480-3372 (Micronic America)



Helpdesk@micronic.com

PD812204