



# Thermo Scientific™ Capit-All™ Flex Automated Decapper

## User Manual

4120-FLEX • Revision A • October 2024

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## Power Failure

The system requires stable power to operate correctly. Thermo Fisher Scientific has no responsibility whatsoever for system malfunctions arising from line power failures.

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# Preface

## About This Manual

This manual is for the Thermo Scientific™ Capit-All™ Flex (P/N 4120-FLEX).

## Intended Use

The Capit-All Flex is intended for general laboratory use by a trained professional. The product is designed to open and close screw caps from tubes in an SBS (Society for Biomolecular Screening) footprint rack. Screw caps are referred to as caps in this manual. The instrument is not to be used for any other purpose. If the system is used beyond the limits of the technical specifications without written consent from Thermo Fisher Scientific, it is no longer being used for its intended purpose.

**Note:** Use of the instrument in a manner without expressing written consent from Thermo Fisher Scientific is considered misuse and may impair the safety features and cause personal injury.

## How to Use the User Manual

This user manual is designed to give you the information to:

- review safety precautions
- install the instrument and its accessories
- navigate the user interface
- operate the instrument
- perform basic cleaning and maintenance procedures
- troubleshoot the instrument

This user manual also describe all the features and specifications of the instrument, as well as ordering information.

**Read the manual in its entirety before operating the instrument.**

Save the user manual for future reference. This manual is an important part of the instrument and should be readily available. An online version of the manual is available at <https://www.thermofisher.com/order/catalog/product/4120-FLEX>.

## Contacting Us

For latest information on products and services, visit our website at <http://www.thermofisher.com>.

In our efforts to provide useful and appropriate documentation, we would appreciate any comments you may have on this user manual to your local Thermo Fisher Scientific representative.

**EU:** [techsupport.labproducts.eu@thermo.com](mailto:techsupport.labproducts.eu@thermo.com)

**US:** [Info.LH@thermofisher.com](mailto:Info.LH@thermofisher.com)

# Safety Standards

Capit-All Flex is CE compliant and certified to NRTL (US and Canada standards).

## Signal Words and Symbols

**IMPORTANT NOTE:** The equipment has several safety labels intended to protect the operator from injury. Always pay attention to these labels.

These symbols are intended to draw your attention to particularly important pieces of information and alert you to the presence of hazards as indicated.

## Safety Symbols and Markings on the Instrument

The following symbols and markings appear on the type label and the instrument itself.



**CAUTION:** This symbol indicates a potentially hazardous situation which if not avoided could result in minor or Moderate injury or damage to the equipment.



**WARNING:** This symbol indicates risk of electrical injury to the user(s).



Before installing, using, or maintaining this product, please be sure to read this manual and product warning labels carefully. Failure to follow these instructions may cause this product to malfunction, which could result in injury or damage.



Use this product only in the way described in the product literature and in this manual. Before using it, verify that this product is suitable for its intended use. If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



**WARNING:** Biohazard Risk.



**WARNING:** Mechanical injury.



**WARNING:** Laser beam.



**WEEE Symbol:** This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) directive 2012/19/EC.



**Note:** Marks a hint, important information that is useful in the optimum operation of the system or an item of interest.



# Package Contents

- Capit-All Flex automated screw cap decapper (P/N 4120-FLEX)
- Preinstalled Matrix/Nunc cassette (Cat. No 4130-MAT-NUN)
- Power supply (GST280A24-C6P)
- Power cable suitable for UK / US / EU / AU-NZ markets
- 9-pole RS485 cable NULL modem

Remove the content from the package and check that all items listed above are included.

## Product Link

Latest version of the manual and product information can be found at <https://www.thermofisher.com/order/catalog/product/4120-FLEX>.

## Safety Precautions

### General



The following safety precautions provide important information intended to prevent personal injury to the operator and/or others, and damage to the Capit-All Flex instrument.

Before using this equipment, ensure that you are properly trained in the correct and safe operation of the Capit-All Flex. Read the safety instructions in the instructions manual carefully to avoid any danger of accidents while operating the instrument.

- Read all instructions and safety warnings before use.
- There are no known hazards associated with the Capit-All Flex when used for its intended use and when following the instructions listed in this user manual.
- Never reach into the workspace while the instrument is running an operation. Unintended use could result in crushed fingers.
- Failure to follow all warnings and instructions may result in electric shock, fire and/or serious injury.
- The Capit-All Flex should only be used in the correct operating conditions by trained users.
- Always use the correct Capit-All Flex cap driver cassette designated for the screw cap tube type(s).
- Do not store the Capit-All Flex at temperatures below 5 °C (41 °F) or above 40 °C (104 °F).
- Do not open the casing, modify, or drop the Capit-All Flex.
- Personal injury or damage to the equipment may result if the product is operated or serviced by unauthorized personnel.
- Only qualified personnel can assemble, operate, or maintain the product.
- If the Capit-All Flex requires any repair, please contact your supplier before further operation to avoid any additional potential damage.



If the Capit-All Flex is used to open or close sample tubes filled with potentially hazardous substances, then users must be trained to manage potential contact due to spillage from such samples and take necessary action as required.

- The Capit-All Flex must always be kept clean. Refer to **Cleaning & Maintenance** section in this manual.
- Thermo Fisher Scientific will not be liable for any loss or damage resulting from the use of the Capit-All Flex.
- Use only the power cable and power adapter supplied with the unit. Please refer to **General Specifications** in this manual.
- Do not put fingers under cover while instrument is in operation.
- Do not touch moving parts while the instrument is in operation.

## Mechanical



**WARNING:** Risk of injury to the user(s). Device can crush fingers if not properly used.

## Laser Radiation - Class 1 Laser Product



The Device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of laser class 1 and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed, 3., as described in Laser Notice No. 56, dated May 8, 2019.

- Observe the applicable statutory and local laser protection regulations.
- The device must not be tampered with and must not be changed in any way.
- There are no user-serviceable parts inside the device.
- Do not stare into beam of Class 1 laser.

## Use Limits



The Capit-All Flex instrument is for General Laboratory Use and must be operated indoors under the environmental specifications by trained professionals only.

- Do not modify the instrument beyond its original design.
- The Capit-All Flex instrument should only be used with the power supply provided. Please contact Thermo Fisher Service Center for power supply or part replacements.
- Do not attach other devices or substitute cables as this could cause damage to the system or compromise safety features. Contact technical support before attaching any new cables or accessory to the system.
- Duty cycle 50% equals to a decap / recap cycle of 2 minutes followed by 2 minutes pause.

# Introduction

The Capit-All Flex Automated Decapper maintains sample integrity with a hands-free method of capping and decapping tubes quickly and easily. It is designed for either benchtop/local or integrated use and is compatible with 48 and 96 format Thermo Scientific™ Matrix™ and Thermo Scientific™ Nunc™ Screw Cap tubes, providing the flexibility for any application. Contact your local sales representative for availability of cassettes for other brands. The caps are applied with the optimal torque to ensure a leak proof seal. The instrument supports different tubes using cassettes (Refer to **Appendix 1 - Cassettes** for cassettes ordering).

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# Unpacking & Packing Instructions

## Unpacking Instructions



### WARNING:

- The weight of the Capit-All Flex is approximately 22 kg (48.5 lbs). Ensure that it is handled safely by at least two people and that appropriate lifting methods are used.
- Check that all the tables, safety cabinets, or mounting brackets supporting the equipment, have been built to accommodate the respective weight.
- Inspect for possible shipping damage.
- This equipment requires a protective grounding. The grounding pin must be connected to an earthed ground. Use the power adapter and the power cord supplied with the instrument, or an alternative power cord certified for the country of use.
- The power supply is connected at the back of unit. Ensure the power switch is off before connecting to or disconnecting from the power cables. The equipment is designed for use with the following mains supplies:

Voltage: 100-240 VAC

Frequency: 50/60Hz

1. Move the packed instrument to its site of operation. Unpack the instrument and accessories carefully with the arrows on the transport package pointing upwards.
2. Place the box on a flat surface and open it.
3. Remove the top foam support.
4. Remove the power adapter.
5. Remove the Capit-All Flex from the packing material with the help of two people.
6. Hold the handles on the back and front of the unit, and lift the Capit-All Flex carefully out of the inner foam support.
7. Place the unit on to a level surface (e.g., lab bench) that can hold a weight of at least 25 kg (55 lbs).
8. Remove the anti-static bag.
9. Retain the original packaging and packing material for future transportation. The packaging is designed to assure safe transport and minimize transit damage. Use of alternative packaging materials may invalidate the warranty. Also, it is recommended to save all the instrument-related documentation provided by the manufacturer for future use.



**Figure 1. Front View**

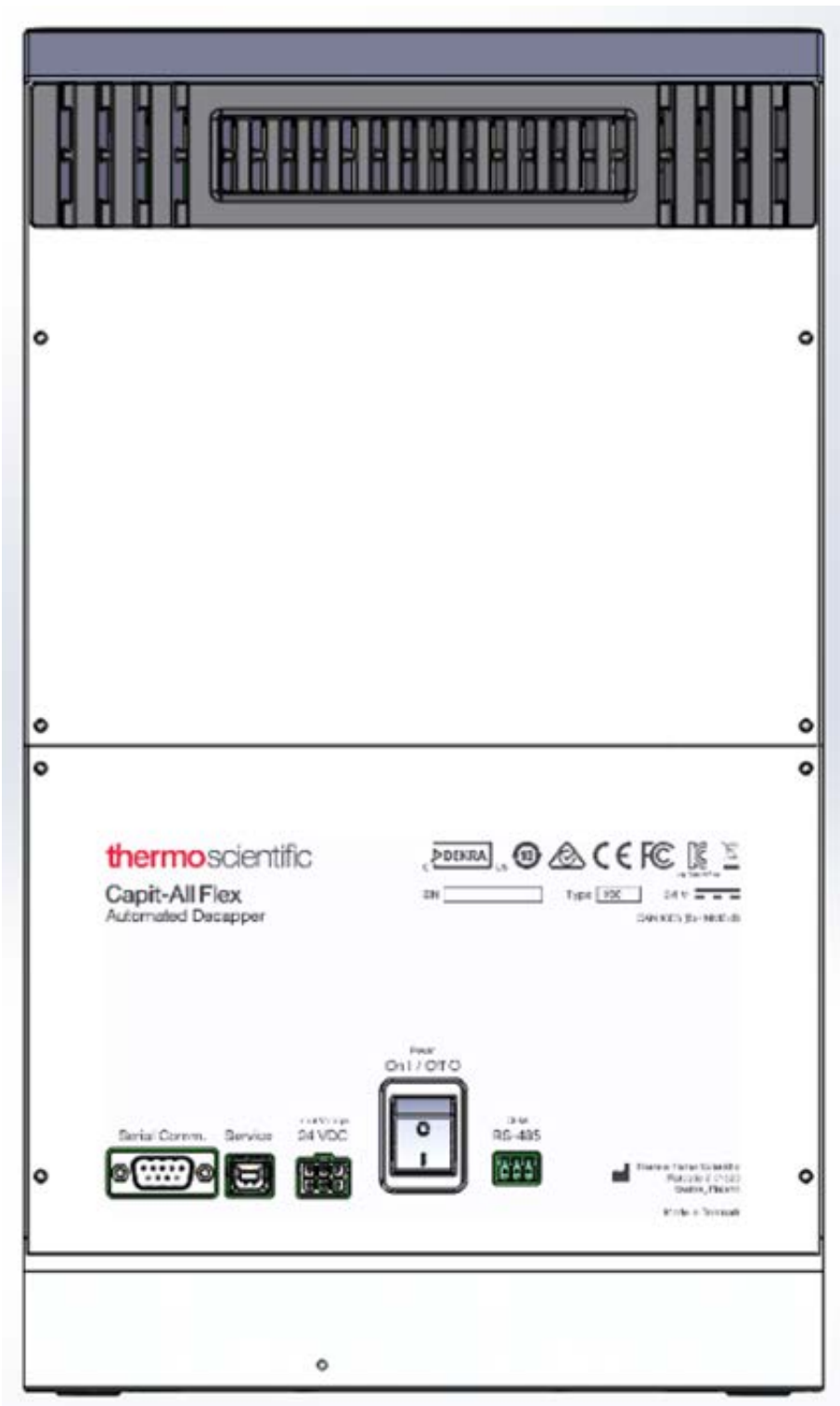
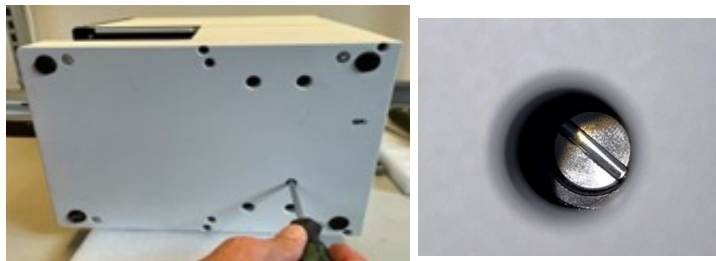


Figure 2. Rear View

# Packing Instructions

Secure the decapping head properly to avoid transportation damage to it.

1. Place the foam on the stage of Capit-All Flex and press **Decap**.
2. Wait for the stage to go into home position and the door to close.
3. Power off the instrument immediately using the ON/OFF switch located at the back of the unit. Disconnect all the cables from the unit.



**Figure 3. Manual Adjustment Screw**

4. Tilt the instrument on the side to gain access to the screw head in the slot on the base of the instrument.
5. Use (-) screwdriver to rotate the screw clockwise until some pressure is felt, ensuring that the head is properly positioned and is secure for shipping.
6. Place the unit in its original protective shipping box for transit.



**WARNING:** The weight of the Capit-All Flex is approximately 22 kg (48.5 lbs). Ensure that it is handled safely by at least two people and that the appropriate lifting methods are used.



# Functional Description

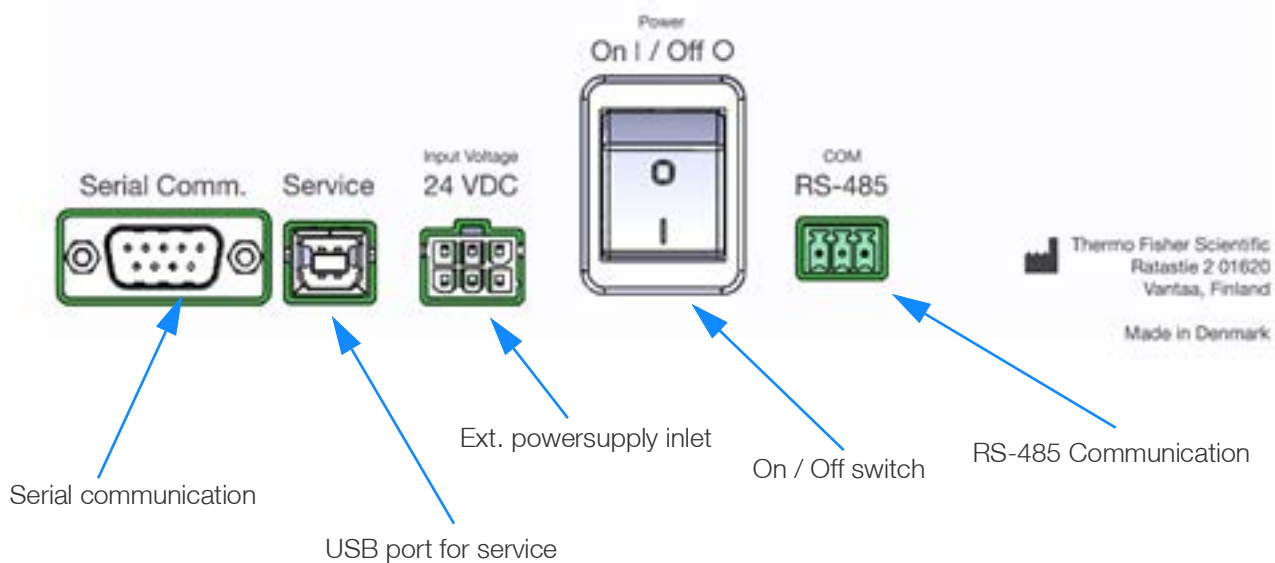
The Capit-All Flex contains no user serviceable parts, and the following diagrams summarize the major elements of the instrument.



**Figure 4. Front View**

thermo scientific

Capit-All Flex  
Automated Decapper



**Figure 5. Rear View Connections**

**Note:** For more information on Regulatory symbols, refer to **Appendix 4 - Certifications**.

# Installation

This section details the procedures to be carried out after the instrument is received.

## Positioning

Ensure the Capit-All Flex is positioned in a well-ventilated area with enough space surrounding the unit to make the area comfortable to work. Place the unit on an even surface suitable to carry the weight of the unit.

Do not use the instrument in a potentially explosive environment or with potentially inflammable chemicals. Avoid placing the unit in direct sunlight.

## Requirements

While you set up the instrument, ensure to avoid sites of operation with excessive dust, vibrations, strong magnetic fields, direct sunlight, draft, excessive moisture, or heavy temperature fluctuations. Also, follow the conditions given below:

- Make sure that the working area is flat, dry, clean and vibration-proof.
- Make sure that the ambient air is clean and free of corrosive vapors, smoke, and dust.
- Make sure that the ambient temperature range is between 15 °C and 35 °C (59 °F to 95 °F).
- Make sure that the relative ambient humidity is between 10% and 80% (non-condensing).
- Make sure that there is sufficient space (at least 10 cm (3.9 in)) on both sides and at the back of the unit for proper ventilation or air circulation.
- Make sure that the instrument is placed in a way that the main switch and the external power supply (disconnecting) are easily accessible.
- Operational noise produced by the instrument is not harmful. Sound level measurements are not necessary after installation.
- Place the instrument on a normal laboratory bench.
- The instrument operates at voltages of 100 - 240 VAC and a frequency range of 50/60 Hz.

## Precautions

Ensure that the local supply voltage in the laboratory matches the rating label on the external power supply.

- Do not smoke, eat, or drink while using the instrument.
- Wash your hands thoroughly after handling test fluids.
- Observe normal laboratory procedures for handling potentially dangerous samples.
- Follow the good laboratory practices by wearing proper protection clothing, such as disposable gloves, laboratory coats, etc.
- Ensure that the working area is well ventilated.

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# Instrument Operation

## Instrument Initialization

1. Ensure the power switch is in OFF position before connecting power.
2. Connect the supplied power cable to the AC-DC adapter and the 6-pin Molex connector to the instrument.
3. Turn the Capit-All Flex ON using the ON/OFF switch on the back of the unit.
4. The instrument starts and begins the initialization process.  
**Note:** Remove the foam material when the instrument is powered up for the first time.
5. A blue LED light will blink to indicate that the initialization is in process.  
DO NOT INTERRUPT THIS OPERATION.
6. The Capit-All Flex initializes, and the **HOME MENU** screen will appear as shown in **Figure 6**.
7. The following sections detail how to set up and operate the Capit-All Flex and the safety instructions described in this instruction manual must be observed carefully.
8. The Capit-All Flex must only be used to remove and replace screw caps on tubes in SBS footprint rack types compatible with the unit and the cap driver cassette installed.
9. The Capit-All Flex comes with a preinstalled Matrix / Nunc cassette. After the unit is powered on, the main Decap screen will appear. The instrument is now ready for use.
10. If the Capit-All Flex starts up without a cassette, the initial sequence will be followed by the option to load a cassette.



**Figure 6. Home Screen**

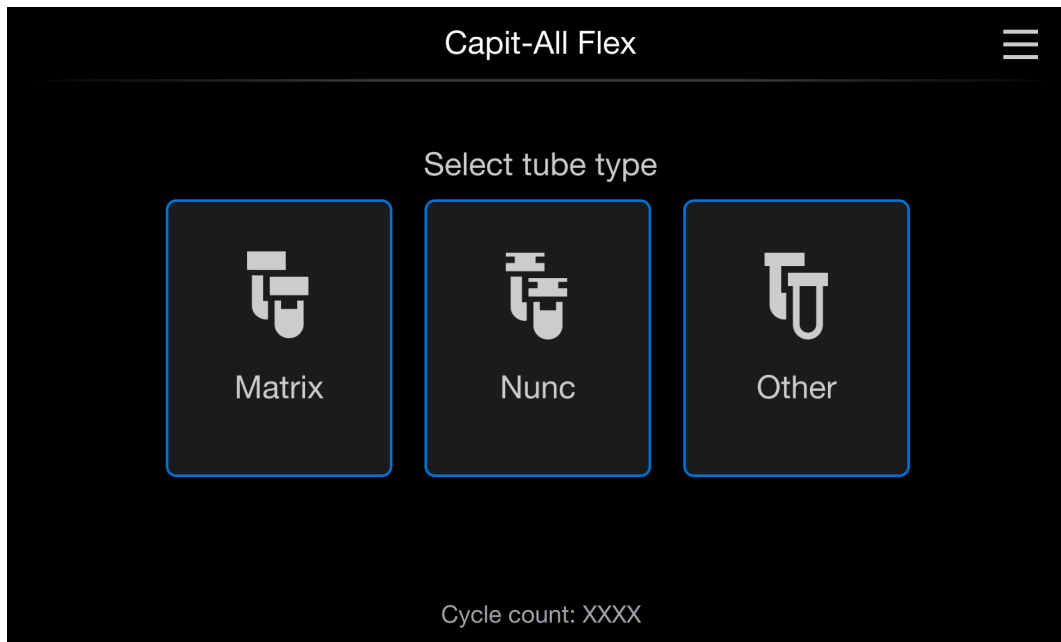


Figure 7. Select Tube Type

## Opening and Closing of the Door



**WARNING:** The Capit-All Flex features an automatic sliding door on the front of the unit. The door opens and closes automatically during each decapping and recapping cycle.

Operation will stop automatically if the door is forced open during the de/re-capping cycle. The manual override function is designed to be used in case a user press the **STOP** button on the screen while the instrument is in active state.







**WARNING:** A user may jam/crush fingers from moving parts if it tries to access the door through manual override function.













## LED Light Definitions

LED lights indicate different states of instrument operation.

Table 1. LED Light Definitions

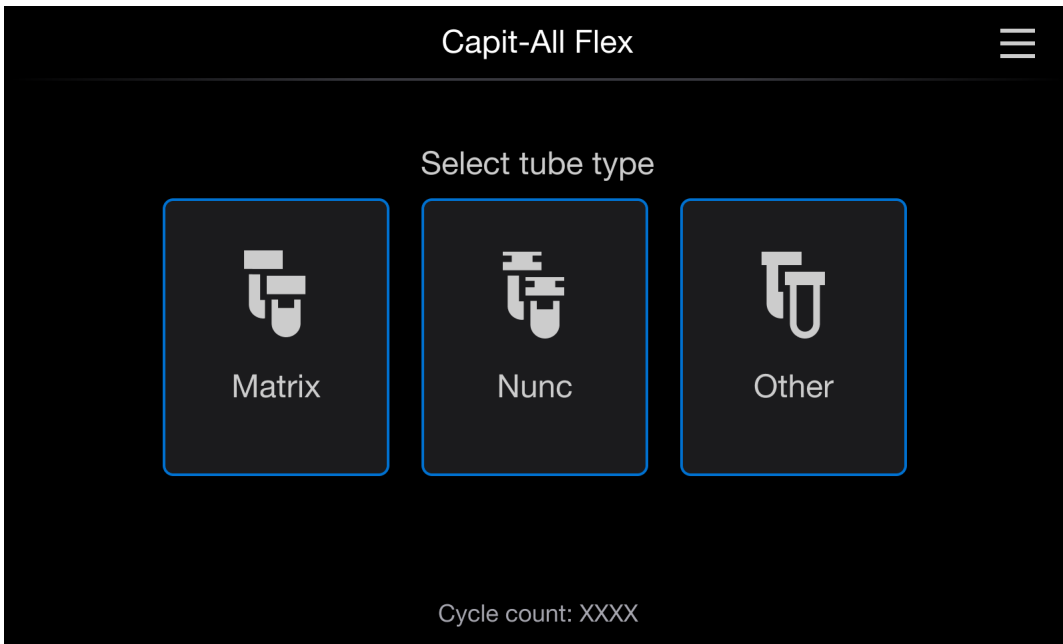
Color Codes	State of Operation	Light Displayed
	Boot up Screen	Blue Blink
	Ready for Decap	Blue Solid
	Decapping	Blue Blink
	After Decap	Blue Solid

**Table 1. LED Light Definitions (Continued)**

<b>Color Codes</b>	<b>State of Operation</b>	<b>Light Displayed</b>
	Recapping	Blue Blink
	After Recap	Blue Solid
	Initializing	Blue Blink
	Error / Stop	Amber Solid
	Unloading Cassette	Blue Blink
	Unloaded Cassette	Blue Solid
	Loading Cassette	Blue Blink
	Loaded Cassette	Blue Solid
	Cleaning	Blue Blink
	Cleaning waiting for user	Blue Solid
	After inserting cassette and continue after cleaning > <b>Initializing</b>	Blue Blink
	After inserting cassette and continue after cleaning > <b>Ready</b>	Blue Solid

## Cycle Counter

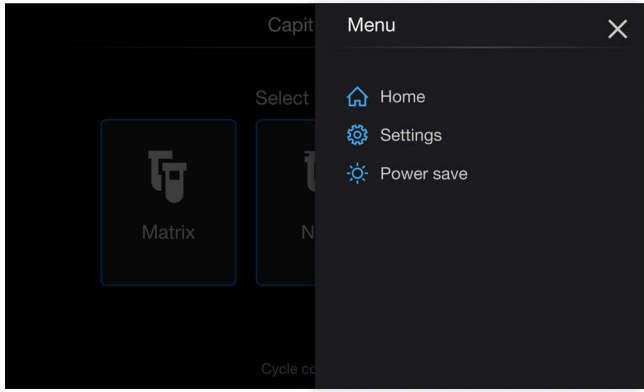
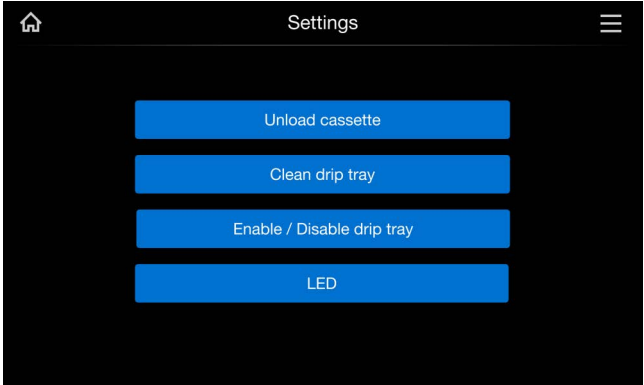
The Capit-All Flex is equipped with a cycle counter, counting each time a capping cycle is complete. The Cycle Counter, displayed at the bottom of the screen, will display several counts when the unit is first installed. This happens as the capping cycles getting completed during quality control testing. If you contact technical support regarding your Capit-All Flex, you may be asked to provide the cycle count number on the display.




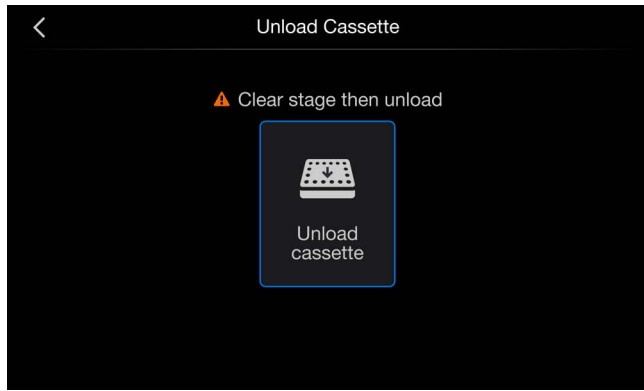
**Figure 8. Select Tube Type**



# Settings Menu

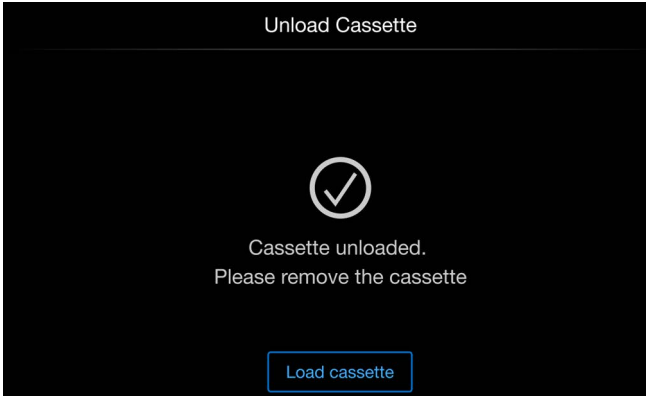
 <p>The screenshot shows a dark-themed main menu with a 'Menu' overlay on the right. The overlay contains three options: 'Home' (with a house icon), 'Settings' (with a gear icon), and 'Power save' (with a sun icon). The 'Settings' option is highlighted with a blue border.</p>	<ol style="list-style-type: none"> <li>1. Select the button on top right corner of the screen.</li> <li>2. A menu appears with different options to select: <ul style="list-style-type: none"> <li>• <b>Home:</b> if selected, closes the menu.</li> <li>• <b>Settings:</b> if selected, opens settings menu.</li> <li>• <b>Power save:</b> if selected, goes to power saving mode.</li> </ul> </li> </ol>
 <p>The screenshot shows the 'Settings' screen with a home icon and a menu icon at the top. Below the title, there are four blue buttons: 'Unload cassette', 'Clean drip tray', 'Enable / Disable drip tray', and 'LED'.</p>	<ol style="list-style-type: none"> <li>3. Press <b>“Settings”</b> and the following options will be displayed: <ol style="list-style-type: none"> <li>a. Unload Cassette</li> <li>b. Clean Drip Tray</li> <li>c. Enable/Disable Drip Tray</li> <li>d. LED</li> </ol> </li> </ol>

# Unload Cassette

	<ul style="list-style-type: none"> <li>• This is to remove the installed cassette: <p><b>CAUTION:</b> Ensure there are no consumables like caps, trays or racks of tubes in the equipment.</p> </li> </ul>
 <p>The screenshot shows the 'Unload Cassette' screen. At the top left is a back arrow. Below the title, there is a warning icon and the text 'Clear stage then unload'. In the center, there is a button with a cassette icon and the text 'Unload cassette'.</p>	<ul style="list-style-type: none"> <li>• Select <b>Unload Cassette</b>.</li> </ul>

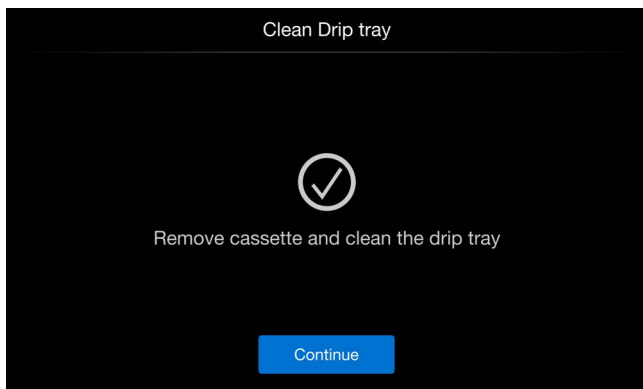
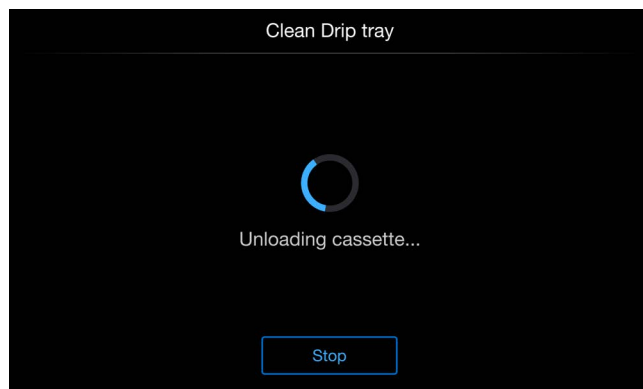
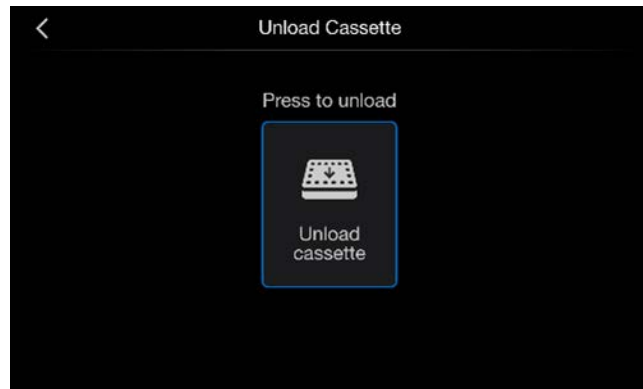
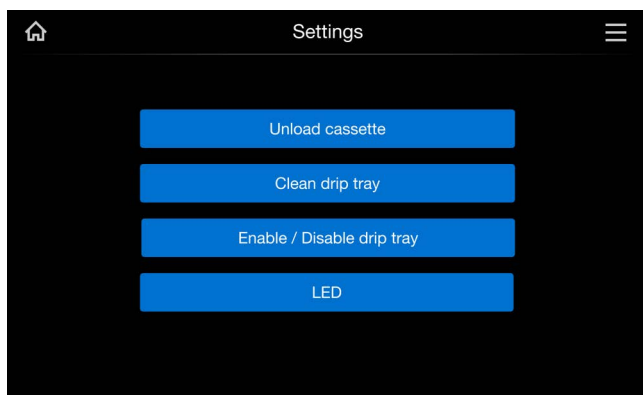


- Wait until the **Unloading Cassette** function is complete.
- Note:** In case a user presses stop while **Unloading Cassette** is in process, the instrument may go to **Recovery Menu**. Refer to **Recovery Menu** for further details.



- Go to **Load Cassette** (at the bottom of the screen) section and follow the instructions to load a cassette.

# Clean Drip Tray

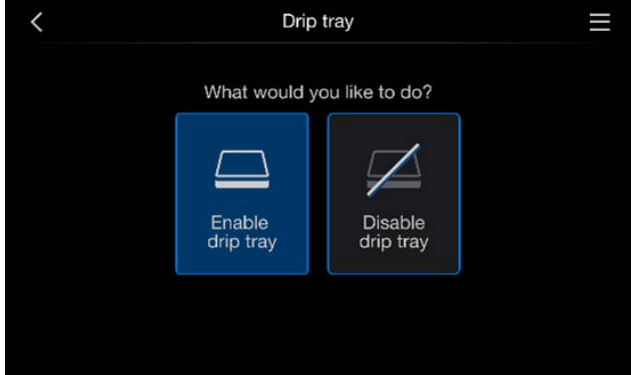


- To clean the drip tray, first unload the cassette and pull the drip tray to allow access.
- This selection performs cleaning sequence.
- Selecting an option is highlighted blue and will be the one in operation.

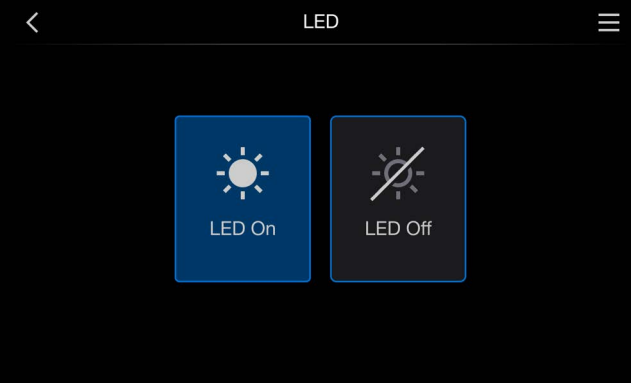
- The Capit-All Flex starts the **UNLOAD CASSETTE** sequence and moves the drip tray forward.

- Remove cassette completely.
- Wipe the drip tray with 70% alcohol on a lint free cloth to disinfect and clean the surface. Refer to **Cleaning & Maintenance** for further details.
- Press **Continue** to load a cassette. Refer to **Load Cassette** for further details.

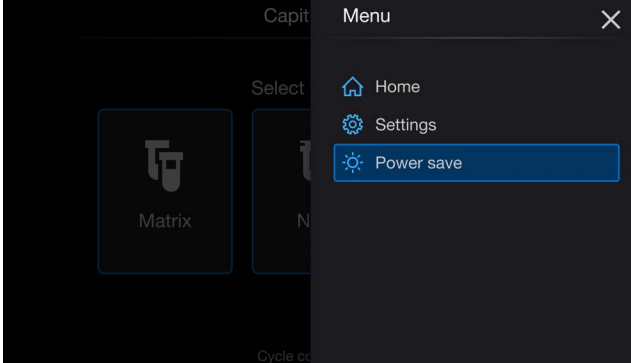
## Enable / Disable Drip Tray

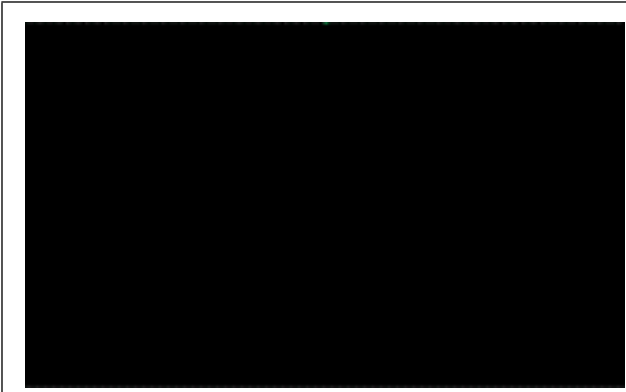
	<ul style="list-style-type: none"><li>• Toggles the drip tray on and off.</li><li>• Selecting an option is highlighted blue and will be the one in operation.</li></ul>
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

## LED

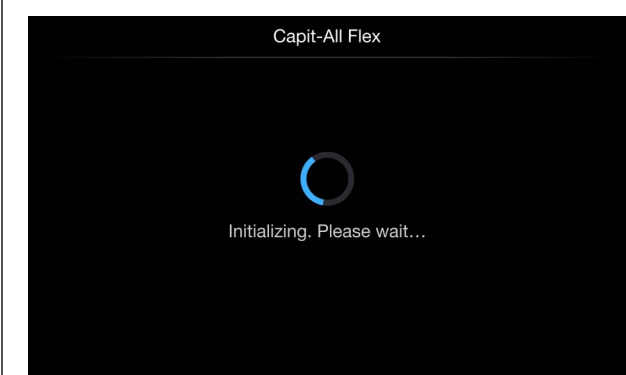
	<ul style="list-style-type: none"><li>• Toggles LED on and off.</li><li>• Selecting an option is highlighted blue and will be the one in operation.</li></ul>
------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------

## Power Save

	<ul style="list-style-type: none"><li>• The Capit-All Flex features a power save mode. The POWER SAVE mode will return the stage to the home position and close the door.</li><li>• It is not possible to enter POWER SAVE mode with caps loaded on the cap drivers.</li><li>• Select the <b>Menu</b> button on the top right corner of the screen.</li><li>• Select <b>POWER SAVE</b> to turn off the home screen.</li></ul>
-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



- Pressing POWER SAVE turns off the screen and de-energize the motors.

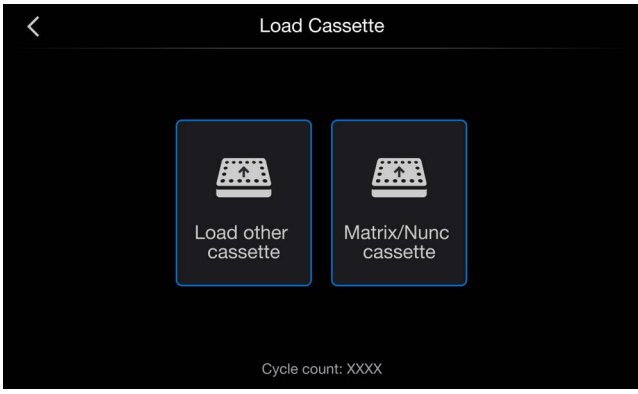


- To wake up the screen, tap it and the machine starts initialization.

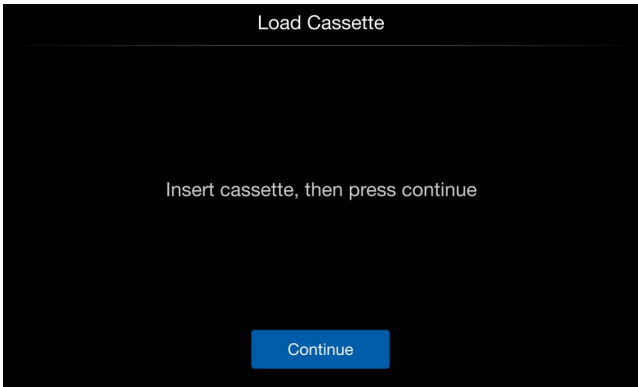
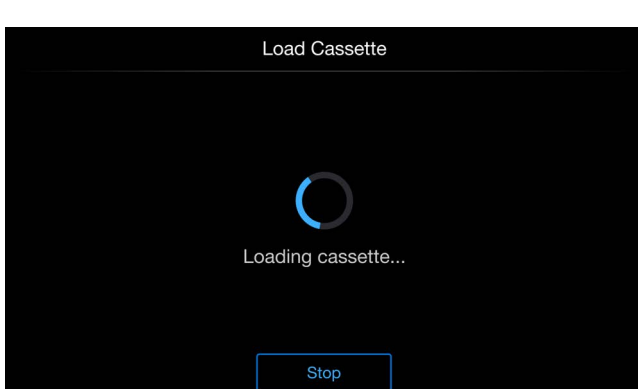
# Load Cassette

Wait for the instrument to complete the initialization process or the previous unloading cassette process.

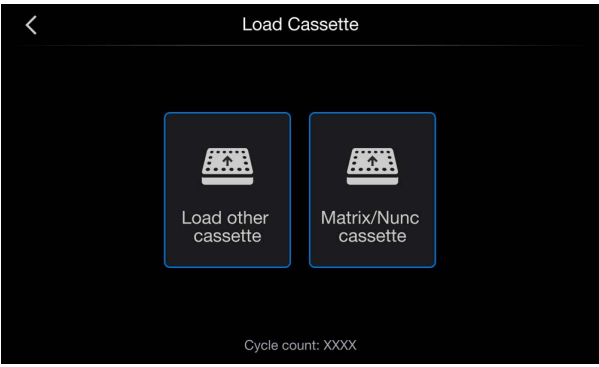
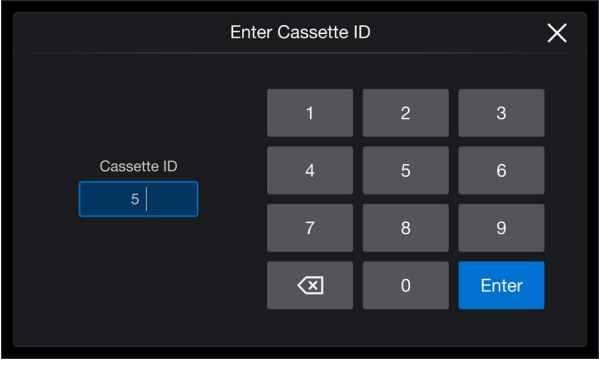
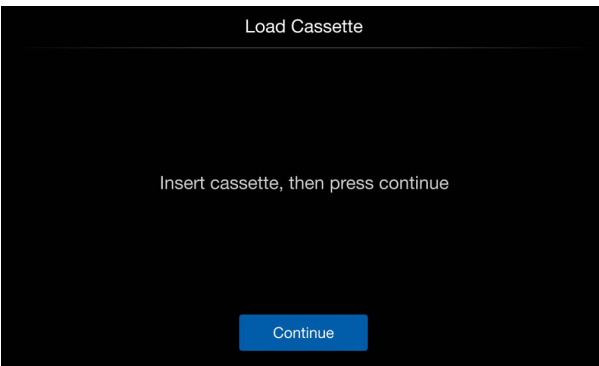
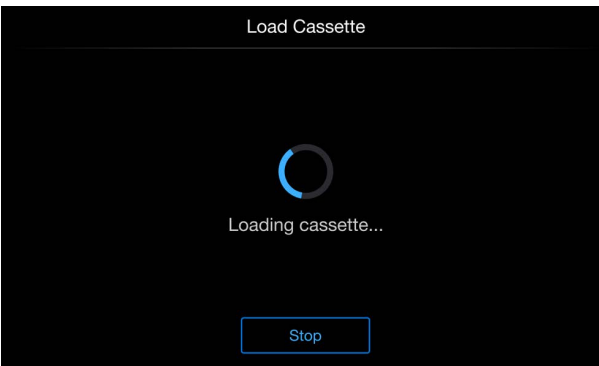
**Change Cassette:** Follow the on-screen instructions to load a cassette.

	<ul style="list-style-type: none"><li>• Select <b>Matrix/Nunc Cassette</b> to load CAT No. 4130-MAT-NUN cassette.</li></ul> <p>OR</p> <ul style="list-style-type: none"><li>• Select <b>“Load other cassette”</b> to load cassettes as shown in <b>Appendix 1 - Cassettes</b>.</li><li>• Load <b>Matrix / Nunc cassette</b> will load the profiles needed to process Thermo Scientific brand of tubes. Refer to <b>Appendix 2 - List of Tubes</b> for list of tubes supported.</li><li>• <b>Load other cassettes</b> will load the profiles needed to process other brands of tubes.</li></ul>
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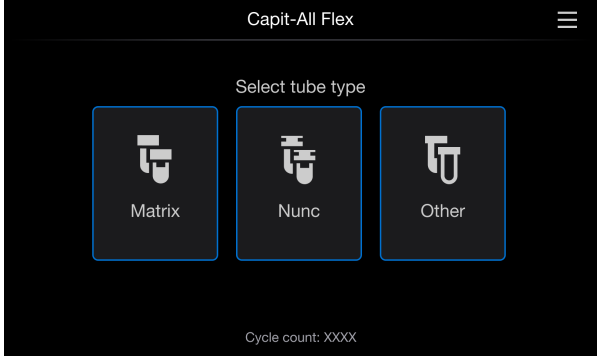

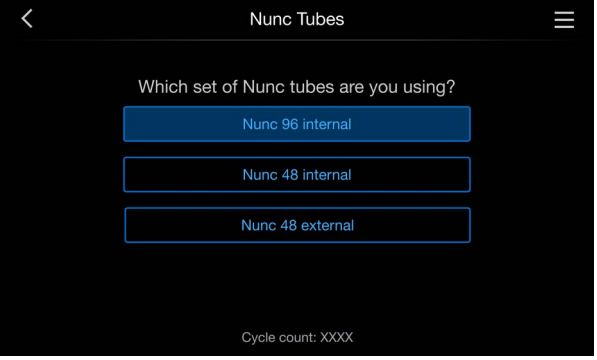
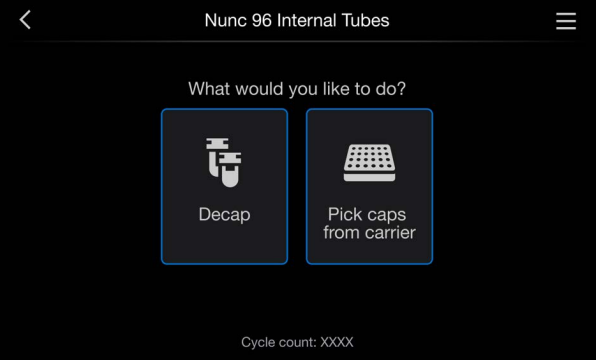
## Load Matrix / Nunc Cassette:

	<ul style="list-style-type: none"><li>• Select <b>Matrix/Nunc Cassette</b>.</li><li>• The head will now be in a lower position to allow access. Insert CAT No. 4130-MAT-NUN cassette.</li><li>• Press <b>Continue</b>.</li></ul>
	<p>For the Matrix / Nunc cassette a cassette ID is not needed. Refer to <b>Appendix 1 - Cassettes</b> for cassette ID information. This will initialize the instrument and automatically perform a <b>LOAD CASSETTE</b> sequence. Once the Capit-All Flex has completed the homing process the screen will change to main decap screen.</p> <p>Pressing stop at this stage activates the manual override functions where manual steps can be performed, Refer to <b>Recovery Menu</b> for further details. The load sequence at this point cannot be continued.</p>

## Load Other Cassette:

	<ul style="list-style-type: none"><li>• Select <b>Load other cassette</b>.</li></ul>
	<ul style="list-style-type: none"><li>• Enter Cassette ID: Number will be located on cassette label.</li><li>• The head will now be in a lower position to allow access.</li></ul>
	<ul style="list-style-type: none"><li>• Insert cassette into the instrument</li><li>• Press <b>Continue</b>.</li></ul> <p>This will initialize the instrument and automatically perform a LOAD CASSETTE sequence. Once the Capit-All Flex has completed the homing process the screen will change to main decap screen.</p> <p>Pressing stop at this stage activates the manual override functions where manual steps can be performed, Refer to <b>Recovery Menu</b> for further details. The load sequence at this point cannot be continued.</p>
	<p>Once the Capit-All Flex has completed the homing process the screen will change to main decap screen.</p>

# Decap or Pick up Caps

 <p>The screenshot shows the 'Capit-All Flex' main interface. At the top, it says 'Capit-All Flex' with a menu icon. Below that, the instruction 'Select tube type' is displayed. There are three large buttons: 'Matrix' with a tube icon, 'Nunc' with a tube icon, and 'Other' with a tube icon. At the bottom, it says 'Cycle count: XXXX'.</p>	<p>The default cassette in the instrument is assumed to be the Matrix/Nunc cassette that is used to decap only Matrix or Nunc tubes (Refer to <b>Appendix 2 - List of Tubes</b> or list of tubes tested with the product). Decapping of other brands of tubes will require specific cassette hardware to be installed in the machine. Refer to <b>Appendix 2 - List of Tubes</b> for further details.</p> <p>For a machine with Matrix Nunc cassette this is the main screen to select tube type.</p> <ul style="list-style-type: none"><li>• Select one of the options, Matrix or Nunc tube type from the screen to proceed further.</li></ul> <p><b>Note:</b> If you select “Other” it will guide you to unload cassette screen.</p>
 <p>The screenshot shows the 'Matrix Tubes' screen. It has a back arrow and a menu icon. The text 'Matrix Tubes' is at the top. Below it, the question 'What would you like to do?' is shown. There are two buttons: 'Decap' with a tube icon and 'Pick caps from carrier' with a carrier icon. At the bottom, it says 'Cycle count: XXXX'.</p>	<p>For Matrix tubes the screen at the left will appear. After selection of tube type, the door of the Capit-All Flex opens.</p> <ul style="list-style-type: none"><li>• Place the selected capped rack of tubes or a filled cap carrier onto the stage.</li><li>• Select <b>DECAP</b> or <b>Pick caps from carrier</b>.</li></ul>
 <p>The screenshot shows the 'Nunc Tubes' screen. It has a back arrow and a menu icon. The text 'Nunc Tubes' is at the top. Below it, the question 'Which set of Nunc tubes are you using?' is shown. There are three buttons: 'Nunc 96 internal', 'Nunc 48 internal', and 'Nunc 48 external'. At the bottom, it says 'Cycle count: XXXX'.</p>	<p>For Nunc tubes the screen at the left will appear. Select one of the tube types (displayed in the figure): Nunc 96 internal, Nunc 48 internal, Nunc 48 external.</p>
 <p>The screenshot shows the 'Nunc 96 Internal Tubes' screen. It has a back arrow and a menu icon. The text 'Nunc 96 Internal Tubes' is at the top. Below it, the question 'What would you like to do?' is shown. There are two buttons: 'Decap' with a tube icon and 'Pick caps from carrier' with a carrier icon. At the bottom, it says 'Cycle count: XXXX'.</p>	<p>For Nunc tubes the screen at the left will appear after selection of the tube type.</p> <ul style="list-style-type: none"><li>• Place the selected capped rack of tubes or a filled cap carrier onto the stage.</li><li>• Select <b>DECAP</b> or <b>Pick caps from carrier</b>.</li></ul>



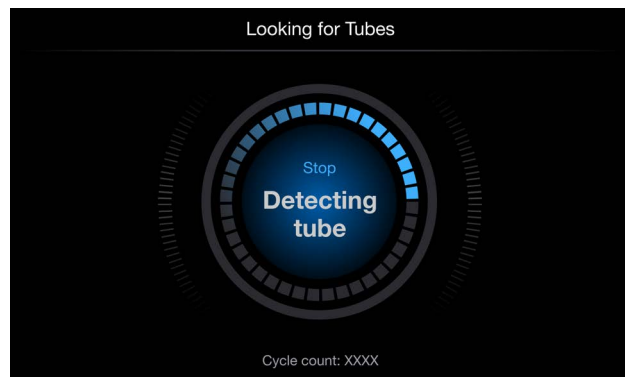


For a machine with **Other cassette** installed this is the main screen for **“decap”** and **“Pickup caps from carrier”** function. After installation of cassette, the door of the Capit-All Flex is open.

- The cassette ID at the bottom of the screen will indicate the brand of tubes to be used. Refer to **Appendix 1 - Cassettes** for further details on cassette ID.

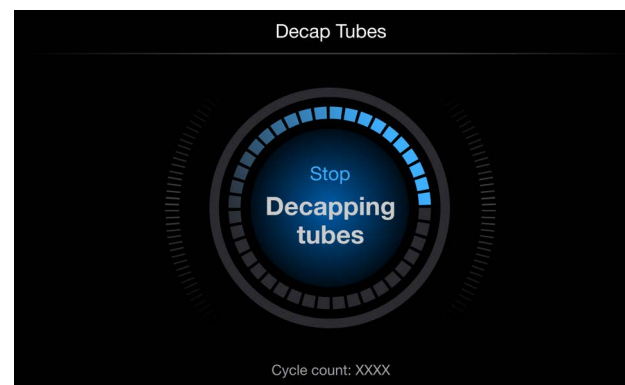
**Note:** If you select **“Change Cassette”** it will guide you to unload cassette screen.

- Place the selected capped rack of tubes or a filled cap carrier onto the stage.
- Select **DECAP** or **Pick caps from carrier**.



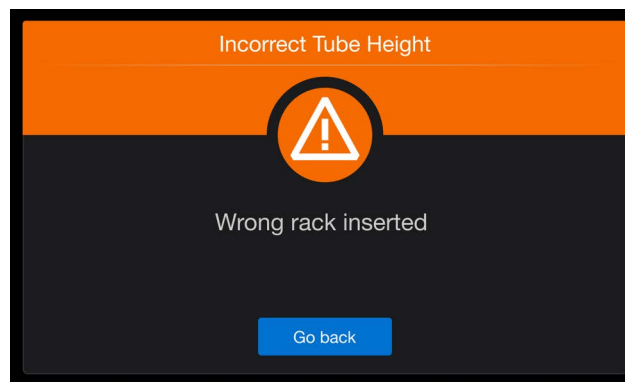
Wait while the Capit-All-Flex decaps the tubes or picks up caps. The BLUE LED light blinks indicating the unit is looking for tubes and decapping them.

When the decapping has finished the blue LED will be solid.



Pressing stop at this stage activates the manual override functions where manual steps can be performed, Refer to **Recovery Menu** for further details.

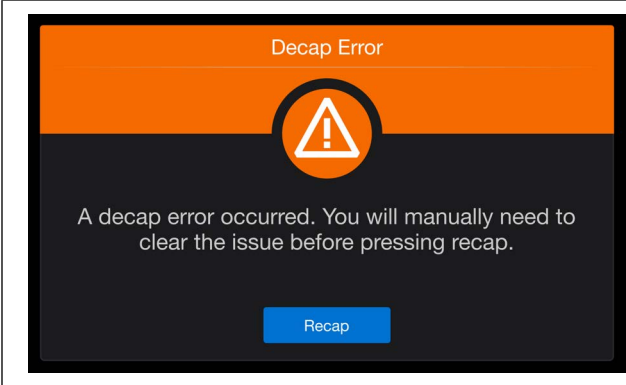
It is not possible to continue the decap sequence at this point.



If the wrong rack of tubes is inserted or if nothing is detected, the screen at the left will appear.

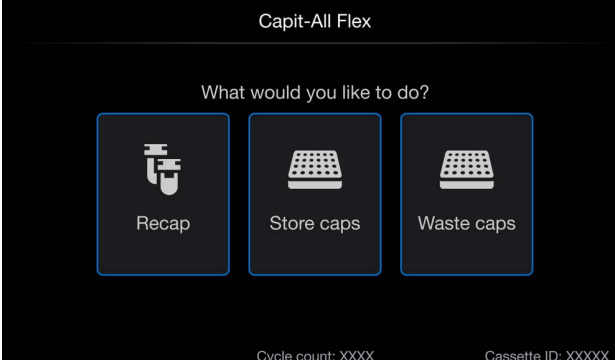
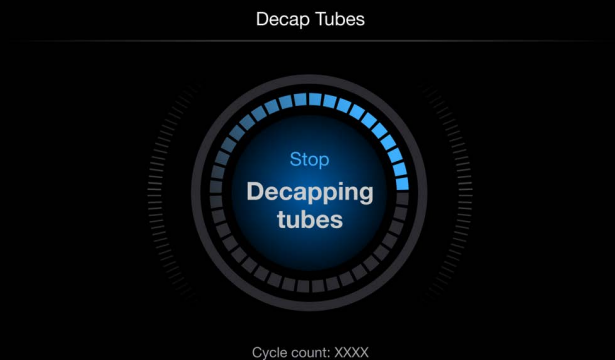
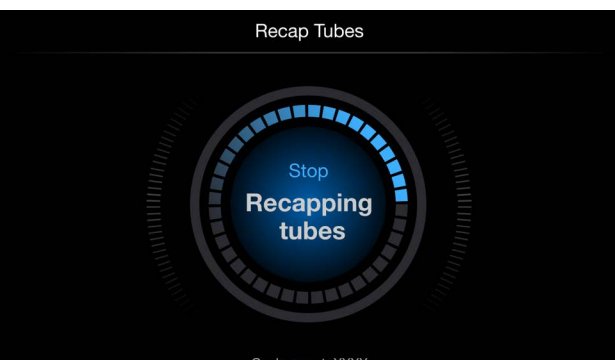
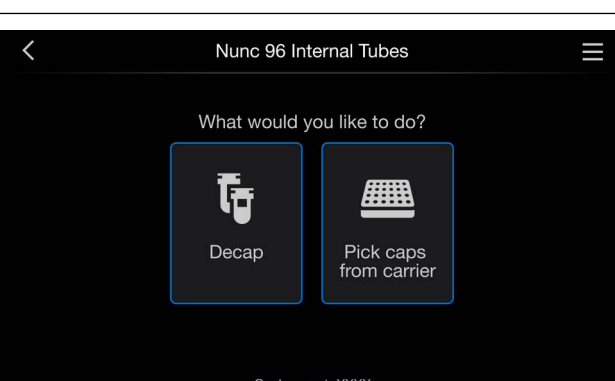
Remove rack and press **Go back**.

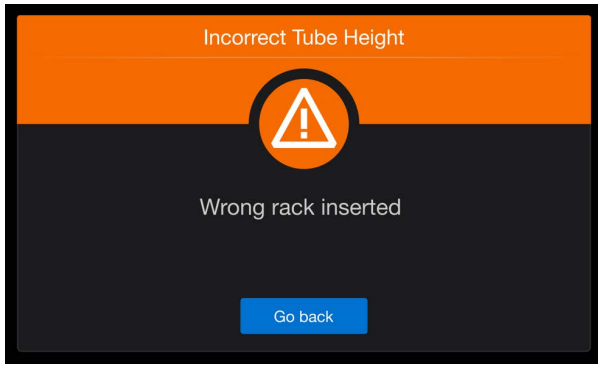
This will return to the tube selection screen. Insert correct labware and try again.



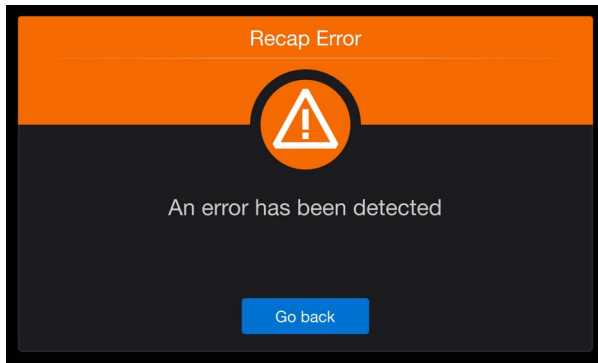
If a decap error occurs, follow the on-screen instructions to recap to correct error and re-start decapping process.

# Recapping Same Rack of Tubes

 <p>Capit-All Flex</p> <p>What would you like to do?</p> <p>Recap      Store caps      Waste caps</p> <p>Cycle count: XXXX      Cassette ID: XXXXX</p>	<ul style="list-style-type: none"><li>• Place the rack of open tubes onto the stage.</li><li>• Select <b>Recap</b>.</li></ul>
 <p>Decap Tubes</p> <p>Stop Decapping tubes</p> <p>Cycle count: XXXX</p>	<ul style="list-style-type: none"><li>• Wait while the Capit-All Flex recaps the tubes. The BLUE LED light blinks indicating the unit is capping the tubes. <b>Note:</b> Pressing stop at this stage activates the manual override functions where the cassette can be unloaded again, Refer to <b>Recovery Menu</b> for further details. The recap sequence cannot be continued at this point.</li></ul>
 <p>Recap Tubes</p> <p>Stop Recapping tubes</p> <p>Cycle count: XXXX</p>	<ul style="list-style-type: none"><li>• Once completed, the Decap home screen will appear and the blue LED turns solid, indicating the unit is ready to decap.</li></ul>
 <p>&lt;      Nunc 96 Internal Tubes      ≡</p> <p>What would you like to do?</p> <p>Decap      Pick caps from carrier</p> <p>Cycle count: XXXX</p>	<ul style="list-style-type: none"><li>• Note that it will be ready to decap the same tube type again (shown in the header of the screen). If a different tube type is needed, press the back arrow, and select another tube type.</li><li>• Remove the rack of capped tubes from the stage.</li></ul>

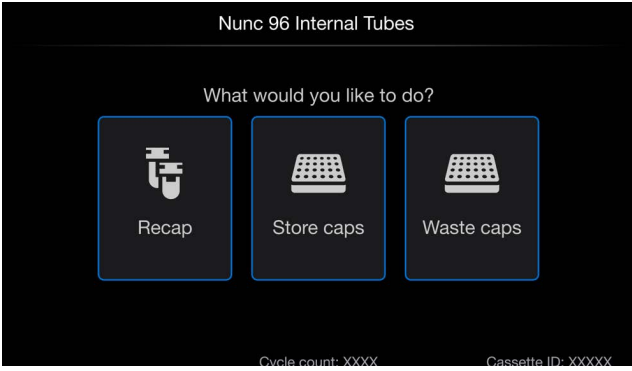
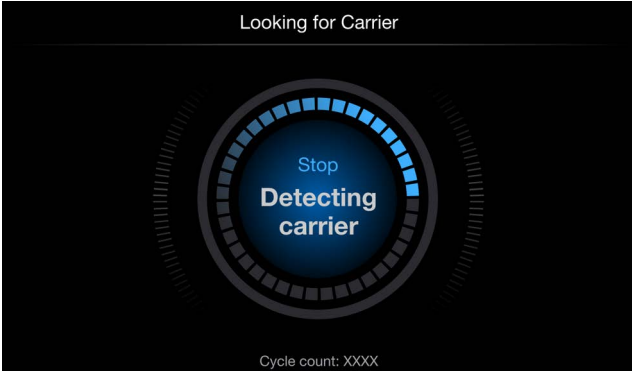

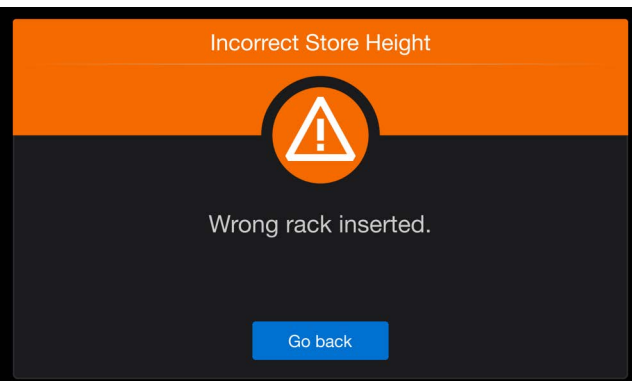


- If a wrong rack of tubes is inserted or if nothing is detected, the warning screen will appear.
- Pressing **Go back** will return to the Recap main screen.

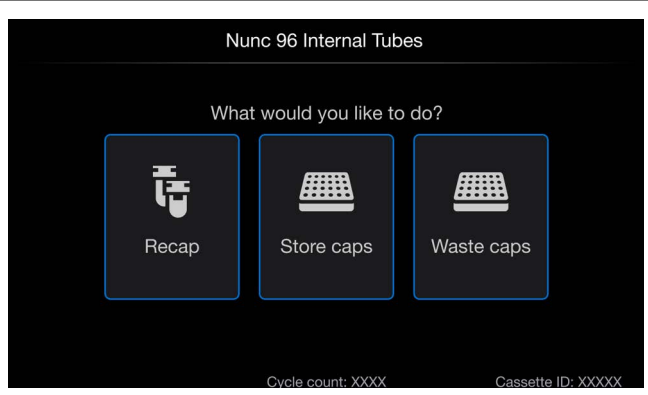
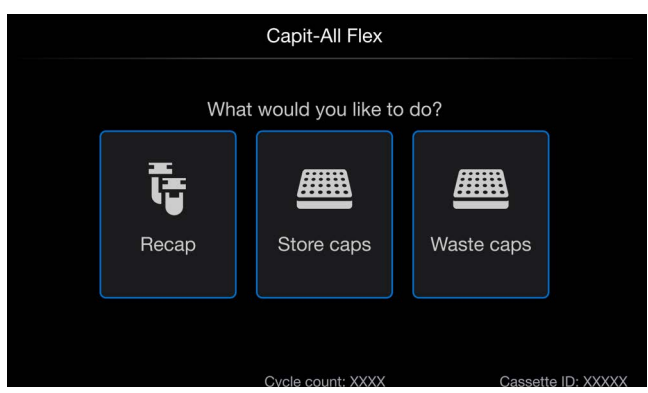

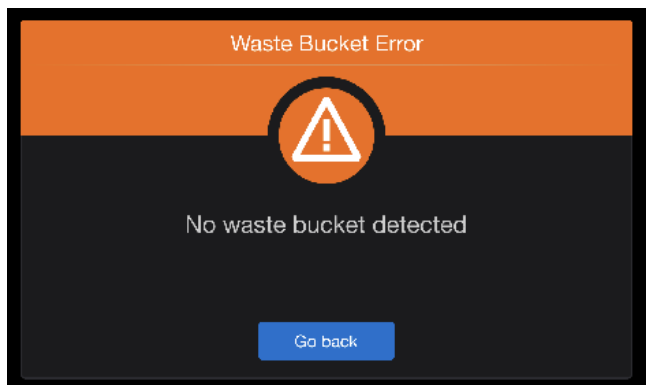


- If a recap error occurs, the warning screen will appear.
- Pressing **Go back** will return to the Decap main screen.

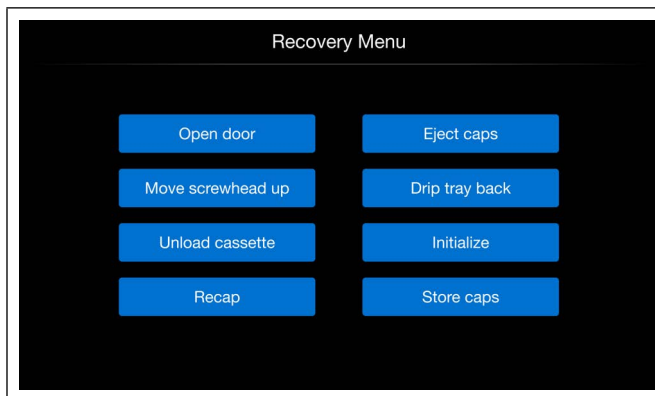
# Storing Caps in Cap Carrier

	<ul style="list-style-type: none"><li>• Place the empty cap carrier onto the stage.</li><li>• Select <b>Store caps</b>.</li><li>• Wait while the Capit-All Flex stores the caps.</li></ul> <p>During the process the blue LED is blinking, indicating it is busy.</p>
	<ul style="list-style-type: none"><li>• Once the caps have been placed into the cap carrier the home screen will appear and the blue LED turns solid again.</li><li>• Remove the cap carrier from the stage.</li></ul>
	<p><b>Note:</b> Pressing stop at this stage activates the manual override functions where manual steps can be performed, Refer to <b>Recovery Menu</b> for further details.</p>
	<p>If a wrong cap carrier is inserted or if nothing is detected, the error screen will appear.</p> <p>Pressing <b>Go back</b> will return to the Recap main screen.</p>

# Discarding Caps into a Waste Bucket

	<ul style="list-style-type: none"><li>• A waste bucket is the general term for a container within SBS-1 format e.g. a lid that fits on the stage. The height of this container should not be taller than the tube processed or lower than the cap carrier with caps. The detection grid automatically detects the container and discard the caps into this. The screen shows the Waste caps function for a Matrix/Nunc cassette.</li></ul>
	<ul style="list-style-type: none"><li>• The screen shows “<b>Waste caps</b>” for the “<b>Other Cassette</b>” indicated by the cassette ID information to the bottom of the screen.</li><li>• Select <b>Waste caps</b>.</li></ul>
	<p>Place the waste bucket onto the stage.</p> <ul style="list-style-type: none"><li>• Select <b>Waste caps</b>.</li><li>• Wait while the Capit-All Flex discards the caps. During the process the blue LED is blinking, indicating it is busy.</li><li>• Pressing stop at this stage activates the manual override functions where manual steps can be performed, Refer to <b>Recovery Menu</b> for further details. The waste sequence at this point cannot be continued.</li><li>• Once the caps have been placed into the waste bucket, the Decap home screen will appear and the LED turns solid blue again.</li><li>• Remove the waste bucket from the stage.</li></ul>
	<p>If there is no waste bucket or if it is too low, this error screen will show. Pressing <b>Go back</b> will take you to the Recap screen where you can retry with a suitable waste bucket.</p>

# Recovery Menu

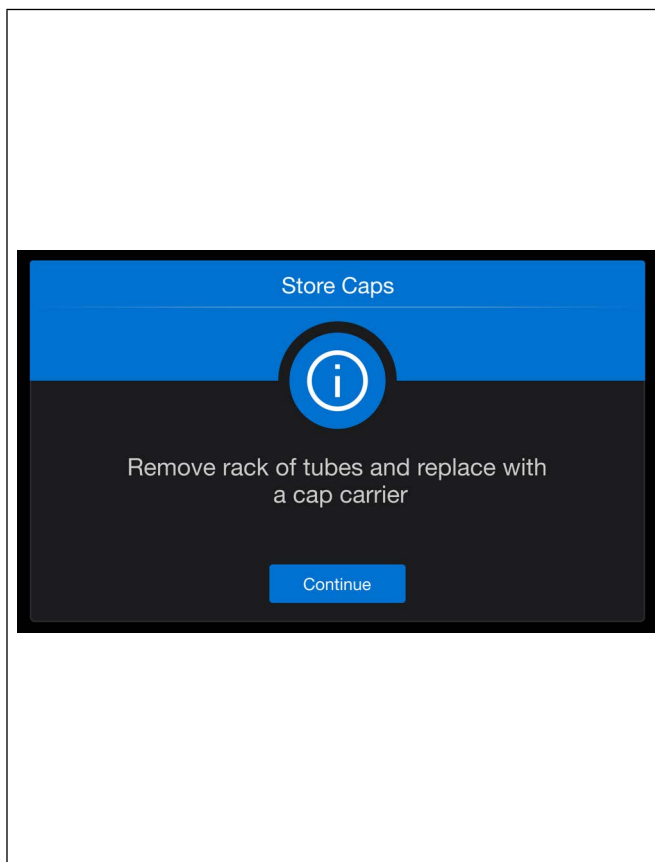


Press **STOP** to stop the process immediately but ensure to use this command only if/when something goes wrong. If STOP is activated it will not be possible to continue the aborted process.

The screen at the left will be displayed and will allow the user to manually perform certain steps to recover samples.

**WARNING:** The manual override function is designed to be used in case of an error. The operator risks injury from moving parts if access via the door is attempted through the manual override function.

## Recommended Steps for Manual Recovery



- Press **Recap** to recap the tubes and return to main decap screen. This option is available if the tubes are decapped and the caps are free from the tubes.
- Press **Store caps** to move the head up to its home position and open the door. User must remove rack with tubes and place a cap carrier. Pressing **Continue** will store the caps and return to main decap screen. This option is available if the tubes are decapped and the caps are free from the tubes.

Other options in recovery menu allows user to perform simple moves. Note that certain moves are not available before other steps are completed.

- Press **OPEN DOOR** to move the door up to home position.
- Press **EJECT CAPS** to move the ejector plate up to home position and eject any caps loaded.
- Press **MOVE SCREW HEAD UP** to move the head to its home position.
- Press **DRIP TRAY BACK** (if enabled) to move the drip tray back to its home position.
- Press **UNLOAD CASSETTE** to unload the cassette and then return to the recovery menu.
- Press **INITIALIZE** to initialize the Capit-All Flex.

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# Cleaning & Maintenance

For cleaning tasks, follow safe work practices. These includes personal protective equipment, and that machinery and components are put in a safe condition before the task is initiated.

The machine requires no user maintenance other than cleaning with one of following chemicals. Do not spray cleaning fluid directly in or on the unit.

- 70% Isopropanol solution and a lint free cloth.
- 70% Ethanol solution and a lint free cloth.
- 5-10% Bleach solution on metal and plastic parts.
- RNase Away.
- 1% Virkon solution.

Keep a logbook or a similar sheet to document the cleaning schedules. If regular cleaning of the machine cannot be shown, the manufacturer's warranty may lapse.

On a regular basis clean the drip tray following the instructions in **Clean Drip Tray** section of this manual.



**WARNING:** Before cleaning the Capit-All Flex ensure the power supply to the unit is disconnected. Decontamination should be performed in accordance with normal laboratory procedures. Any decontamination instructions provided with the reagents used should be followed. It is strongly recommended to perform the complete decontamination procedure before relocating the instrument from one laboratory to another.

1. Switch the unit off and disconnect the power supply to avoid any risk of personal injury.
2. Wipe the outer surface with a lint-free cloth.
3. Wipe the stage to remove any plastic debris from the cap drivers or tubes.

**Note:** A new cassette can produce minor amounts of plastic dust when first used.

4. Use above mentioned cleaning agents to disinfect and further clean surfaces.

## Disposal

Follow laboratory and country-specific procedures for biohazardous or radioactive waste disposal. Refer to local regulations for the disposal of infectious material.



**WARNING:**

- The samples/caps can be potentially infectious. Dispose of all materials according to the good laboratory practice as biohazardous waste.
- Dispose of the cassette according to the legislation stipulated by the local authorities.

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# Specifications

## Instrument Dimensions

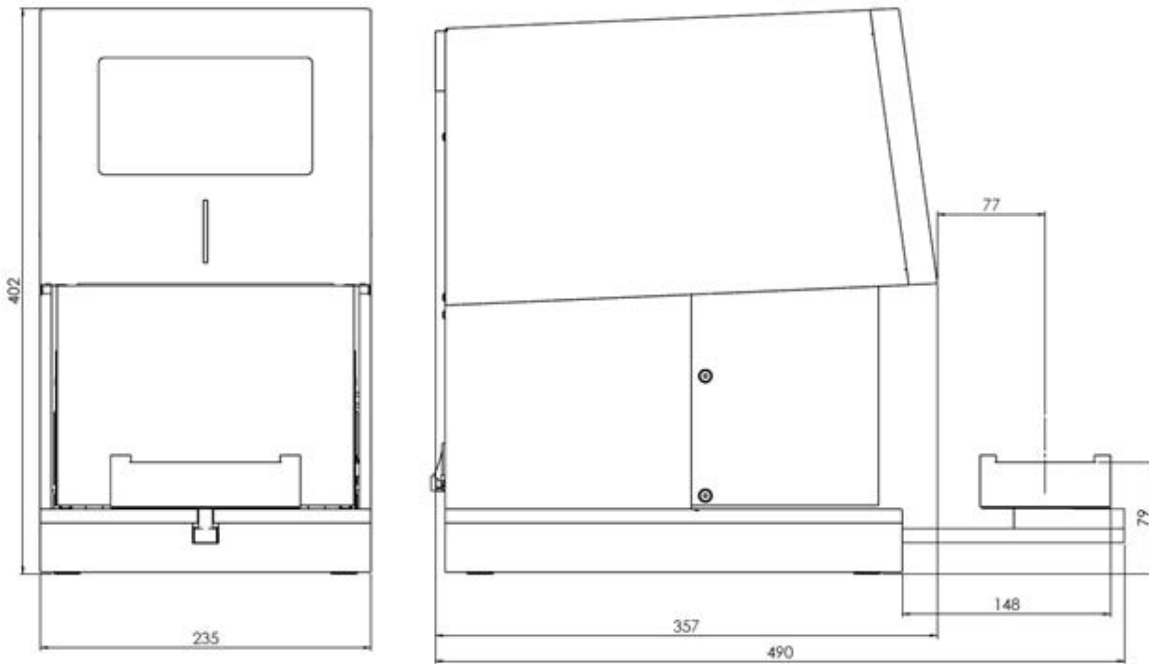




Figure 9. Instrument Dimensions

## General Specifications

Table 2. General Specifications

Description	Values
Noise level	The machine does not emit a high level of noise during operation: < 70 dBA
Dimensions (L X W X H) (mm)	357 x 235 x 402 mm (14 x 9.25 x 15.83 in) (L 490 mm (19.3 in) arm extended)
Stage distance (extended)	148 mm (376 in)
Weights	
Capit-All Flex	22 kg (48.5 lbs) (without cassette)
Cassette 96	0.32 kg (0.71 lbs)
External Power supply	1.28 kg (2.83 lbs)
Opening torque	12 - 15 cN.m
Closing torque	Min. 7 cN.m

**Table 2. General Specifications (Continued)**

Description	Values
Main Power Supply	<p>3 pole AC inlet IEC 320-C14, Class I power unit AC 100-240 VAC, 50/60Hz, 4.5 A Voltage fluctuations +/- 10% Overvoltage category: Category II</p> <p> <b>CAUTION:</b> USE SUPPLIED IEC 320-C13, 250V, 10A PLUG ONLY. . GROUND MUST ALWAYS BE CONNECTED.</p>
Fuse	<p>Two fuses on the PCB.</p> <ul style="list-style-type: none"><li>• 250 V, 5A (5X20 mm)</li></ul> <p> <b>WARNING:</b> DO NOT ATTEMPT TO REPLACE THE FUSE ON YOUR OWN. CONTACT TECHNICAL SUPPORT FOR SERVICE.</p>
Operation time	<p>Approx. 60 seconds to decap and approx. 60 seconds to recap a rack of tubes.</p> <p><b>Note:</b> The decap / recap time can vary depending on the tubes.</p>
Interface	Serial RS485

# Environmental Specifications

Thermo Fisher Scientific reserves the right to change any specifications without prior notice as part of our continuous product development program. Refer to **General Specifications** for more information on the instrument.

The machine must be operated indoors and under the following environmental specifications only:.

**Table 3. Environmental Specifications**

Parameters	Description
Operating temperatures	<p>5 °C to 40 °C (41 °F - 104 °F)</p> <p>Use of the instrument in an environment where the temperature is more than 35 °C (95 °F) or higher, can cause the screen's contrast to change; there could be a decrease in the brightness of the LCD.</p> <p><b>Important Note:</b> While the instrument can operate within the nominal range of 5 °C to 40 °C (32 °F - 104 °F), for optimal performance it is recommended to use the instrument between 20 °C to 25 °C (68 °F - 77°F).</p>
Ambient humidity	10 to 80% relative humidity, non-condensing
Storage temperature	5 °C to 40 °C (41 °F to 104 °F) packed in transportation packaging.
Storage humidity	10 to 70% relative humidity, non-condensing.
Transportation condition	5 °C to 40 °C (41 °F to 104 °F), packed in transportation packaging (Temporary storage)
Interface	RS485 serial port
External lighting	All external surfaces are resistant to UV lighting. LCD might be affected.
IP 20	Protection against solid objects > 12 mm (e.g. a finger), and no protection against water
Dust	0.1 mg/m <sup>3</sup> and below (non-conductive levels)
Pollution degree	For use in pollution degree 2 environment. Decontamination with hydrogen peroxide needs to be avoided as it might damage the electronic parts.
Usage	Indoor use only
Altitude	Up to 2000 m above sea level

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# FAQs

Q 1. Am I able to Decap partial racks?

A. Yes, partial racks can be inserted for decapping or capping functionality.

Q 2. What kind of container is acceptable for Waste caps?

A. Containers with a SBS footprint and a height less than the tubes being used, i.e., the lid from a rack of tubes.

Q 3. Can the torque value be adjusted?

A. No, torque values are fixed for each tube/cap configuration based on the manufacturer's recommendations.

Q 4. Can the decapper be integrated into an automated system?

A. Refer to **Appendix 3 - Serial Commands** for instructions on external control and command set.

Q 5. Do you have a driver?

A. We do not provide drivers. We only provide the command set. Integration companies can provide the driver.

Q 5. Is the decapper compatible with other tubes besides Matrix or Nunc?

A. Yes, additional cassettes for other tube types can be purchased. Refer to **Appendix 1 - Cassettes** for compatibility.

Q 6. Do you recommend a Preventative Maintenance?

A. Yes, we recommend that the cassette be replaced after 10,000 cycles.

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# Appendix 1 - Cassettes

Table 4. Cassettes and Description

Cassettes	Description	Cassette ID for Software	Catalog No.
Matrix / Nunc	Matrix Nunc cassette for Matrix tubes in 96 format and Nunc tubes in 96 and 48 format	Matrix 96 Int.: 80 Nunc 96 Int.: 90 Nunc 48 Int.: 91 Nunc 48 Ext.: 92	4130-MAT-NUN
Other Cassette	Cassette for other tube brands	N/A	Contact local sales representative

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# Appendix 2 - List of Tubes

**Table 5. List of Tubes**

Brands	Group Description	Rack Formats	Tube Volume
Matrix	Matrix cap trays compatible with Matrix 0.2, 0.5, and 1.0 mL tubes	96	Cap holder
	Matrix 0.2 mL tubes in racks	96	0.2 ml
	Matrix 0.5 mL tubes in racks	96	0.5 ml
	Matrix brand 1.0 mL tubes in racks	96	1.0 ml
Nunc Cryobank	2.0 mL Nunc Cryobank tubes in latch rack	48	2.0 ml
	2.0 mL Nunc Cryobank tubes in low profile rack	48	2.0 ml
	5.0 mL Nunc Cryobank tubes in latch rack	48	5.0 ml
	Nunc Cryobank tubes in racks, with caps, 0.5 mL	96	0.5 ml
	Nunc Cryobank tubes in racks, with caps, 1.0 mL	96	1.0 ml
	Nunc Cryobank cap trays compatible with 0.5 mL and 1.0 mL Cryobank tubes	96	Cap holder
Nunc Universal	Nunc Universal tubes in racks, 1.8 mL	48	1.8 ml
	Nunc Universal tubes in standard racks, 2.0 mL	48	2.0 ml
	Nunc Universal tubes without caps, in automation compatible racks (BIOS), 2.0 mL	48	2.0 ml
	Nunc Universal cap trays compatible with 2 mL Universal tubes, and 2.0 / 5.0 Cryobank tubes	48	Cap holder

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# Appendix 3 - Serial Commands

COM Settings			
9-pole RS485, NULL Modem cable		<b>Parity</b>	none
<b>Baud rate</b>	9600	<b>Stop Bit</b>	1
<b>Data bit</b>	8	<b>Handshake</b>	OFF
Command list No.: 0001 Legend: -/= empty string, nothing is sent, received, or changed			

**Table 6. Serial Commands**

Action	Command PC-PLC {Case Sensitive}	Command Acknowledge -dgment	Completion Response, Success	Success Status	Completion Response, Failure	Failure Status
INITIALIZE	A	AOK	INIT_OK	STATUS_OK	INIT_ERR	STATUS_MANUAL
DECAP	B	BOK	DECAP_OK	STATUS_RECAP	DECAP_ERR	STATUS_MANUAL
RECAP	C	COK	RECAP_OK	STATUS_OK	RECAP_ERR	STATUS_ERROR / STATUS_MANUAL
STORE	D	DOK	STORE_OK	STATUS_OK	STORE_ERR	STATUS_MANUAL
WASTE	E	EOK	WASTE_OK	STATUS_OK	WASTE_ERR	STATUS_MANUAL
PICK FROM CAPCARRIER	V	VOK	DECAP_OK	STATUS_RECAP	DECAP_ERR	STATUS_MANUAL
POWERSAVE MODE	Q	QOK	ASLEEP	STATUS_SLEEP	-	STATUS_MANUAL
WAKE UP	R	ROK	AWAKE	STATUS_OK	INIT_ERR	STATUS_MANUAL
ASK STATUS	S	SOK	Example: STATUS_OK	-	-	-
CASSETTE ID	PXX	PXXOK	Example: CASSETTE ID_XX_OK	-	NO_CASS_ID	NO_CASS_ID
SAFETY DOOR DISABLE	Y3	Y3OK	-	-	-	-
SAFETY DOOR ENABLE	Y4	Y4OK	-	-	-	-
DISABLE AUTO SLEEP	Y5	Y5OK	-	-	-	-

**Table 6. Serial Commands (Continued)**

Action	Command PC-PLC {Case Sensitive}	Command Acknowledge	Completion Response, Success	Success Status	Completion Response, Failure	Failure Status
SET AUTO SLEEP TO 60 MIN.	Y7	Y7OK	-	-	-	-
QUERY	U	U_OK	W,X,Y,Z			

**Note 1:** Starting a decap is only possible if system does not have caps on pins. Response will be BOK -> CommandIgnore.

**Note 2:** Starting a RECAP is only possible if system has caps on pins. Outside scope the response is COK -> CommandIgnore.

**Note 3:** Starting a WASTE or STORE command is only possible if system has caps on pins. Outside scope the response is: DOK -> CommandIgnore or EOK -> CommandIgnore.

**Note 4:** Initiating the POWERSAVE command is only possible with no caps on pins otherwise response will be QOK -> CommandIgnore.

**Note 5:** WAKE UP is only possible if the unit is in POWERSAVE MODE otherwise respond will be ROK -> CommandIgnore.

**Note 6:** Possible answers in priority order: STATUS\_MANUAL (System halt, needs inspection and initialization) STATUS\_ERROR (errorcode activated, command resend), STATUS\_SLEEP (POWERSAVE MODE is activated), STATUS\_BUSY (Command in progress), STATUS\_RECAP (Decap successful, caps on pins), STATUS\_OK (Idle / Ready for command).

**Note 7:** Changing cassette is only possible with no caps on pins otherwise respond will be IOK -> CommandIgnore.

**Note 8:** A query returns a list of: Firmware version, profile ID, tube ID & counter.

## Command Structure

The Capit-All Flex serial command mode is overall structured as a 3-step response. All responses are started and ended with ASCII control characters **char2 (Text Start)** and **char3 (Text End)**. 1st step is confirming command received with **char6 (ACK)**. 2nd Step is confirming start of operation by return the command followed by OK (e.g. **AOK**). 3rd step is to report success (**INIT\_OK**) or failure (**INIT\_ERR**). The Capit-All Flex is intelligent and will evaluate your inputs and disregard any unfeasible commands with a "**CommandIgnore**".

# Appendix 4 - Certifications

The documents in this section provide evidence of certifications obtained for the Capit-All™ Flex.

## Europe

To whom it may concern,

Hereby, Thermo Fisher Scientific Oy declares under its sole responsibility that our product Capit-All Flex Automated Decapper comply with the essential requirements and relevant provisions of the low voltage directive LVD 2014/35/EU and with the directive 2011/65/EU (EU RoHS 2) and its amendment Directive EU 2015/863 (EU RoHS 3).

## WEEE Compliance

The Capit-All Flex meets the European Union's waste & Electronic Equipment (WEEE) Directive 2012/19/EU and is marked with the following symbol. Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of WEEE.



## Canadian ISED IC Compliance

Capit-All Flex complies with ICES-003 Issue 7, class B requirements. Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

# USA FCC Statement



This device complies with Part 15 Subpart B of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
2. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications NOT explicitly APPROVED by Thermo Fisher Scientific Oy could cause the device to cease to comply with FCC rule's part 15, and thus void the user's authority to operate the equipment.

## Certificate of Decontamination

To ensure the safety of your colleagues, transport personnel, Thermo Fisher Scientific's employees and anyone handling any items to be returned (e.g., instruments, part of instrument, accessories, reusable packaging), it is essential that any potential contaminants to which the item was exposed are identified and adequately decontaminated. Prior to returning any item to a Thermo Fisher Scientific facility or contracted eWaste recycler (whether for repair, maintenance, trade-in, loan or disposal), this form must be completed in full, signed by the Customer, one copy to be attached to the outside of transport packaging and one copy to be included with the item. Similarly, prior to any servicing activity of an instrument this form must be completed in full, signed by the Customer, and given to the Thermo Fisher Scientific contact person.

## Radioactive Materials

- a. Apply an industry standard radioactivity decontaminant (e.g. Radiacwash®, Rad-Con® or equivalent) to the item, and wipe surfaces as directed by the decontaminant manufacturer.
- b. Survey the item with an appropriate radioactivity-measuring instrument (e.g. Geiger Counter or scintillation counter).
- c. Satisfactory decontamination is defined as survey results at or below background level or in the US only, for service work excluding transportation, levels designated to be clean or safe as stated in the Customer's regulatory approved Site Radioactive Materials License.



# Biological Agents

The World Health Organization's (WHO) Laboratory Biosafety Manual describes decontamination procedures that are widely used for item decontamination. Customer is required to refer to the current version of this Manual (available at <http://www.who.int/csr/resources/publications/biosafety>) and administer the appropriate decontamination procedures.

However, the Customer must assess the suitability of these methods for the biological agents concerned and adherence to any warnings in the item user manuals. Commonly used decontamination agents prescribed by the above Manual include:

oa. Sodium hypochlorite Sodium hypochlorite (1:10 dilution of domestic bleach) that gives 5g/l concentration is a general all-purpose disinfectant. However, it should be prepared fresh each time. Avoid mixing bleach with acid as this would release toxic chlorine gas.ob. Formaldehyde Commonly marketed as Formalin, a solution of gas in water of about 37% concentration. It is effective for all microorganisms and spores at temperatures > 20°C, but is not active against prions. Formaldehyde is a suspected carcinogen and safety precautions must be followed when working with the chemical.oc. Glutaraldehyde Generally supplied as a solution of about 2% concentration. It is active against vegetative bacterias, spores, fungi and lipid-/nonlipid-containing viruses. However, it takes several hours to kill bacterial spores. Glutaraldehyde is toxic and an irritant. Safety precautions must be followed when using the chemical.ed. Phenolic compounds Active against vegetative bacteria and lipid-containing viruses and, when properly formulated, against mycobacteria. However, they are not active against spores and produce variable results against non-lipid viruses. Some phenolic compounds may be inactivated by water hardness. Phenolic compounds are toxic and can penetrate the skin. Safety precautions must be followed.ee. Alcohols 70% ethanol or 70% isopropanol are active against vegetative bacteria, fungi and lipid-containing viruses but not against spores. Their actions on non-lipid viruses are variable. Alcohols are flammable and must not be used near open flames.sf. Hydrogen Peroxide A strong oxidant and can be potent broad-spectrum germicides. However, a 3-6% solution of hydrogen peroxide alone is relatively slow and limited as germicides. Hydrogen peroxide can be corrosive and affect skins and mucous membranes. Safety precautions should be exercised when dealing with the chemical.sSpecial Instructions, Hazard Group 3 or 4ea. Items situated in Biosafety Level/Containment Level 3 or 4 laboratories must be decontaminated, by the customer, using an internationally approved sterilization procedure. The customer must then move the item to either a Containment Level 1 or 2 laboratory for service.

- a. Thermo Fisher Scientific employees are not permitted to enter Biosafety Level/Containment Level 3 or 4 laboratories without the prior consent of Thermo Fisher Scientific Management and EH&S.
- b. It may not be possible for Thermo Fisher Scientific to service or transport these items.

# Hazardous Chemicals

- a. Areas exposed to hazardous chemicals should be washed with an acceptable solvent such as ethyl alcohol or isopropyl alcohol.
- b. Rinse with detergent and water.

**Please note that Thermo Fisher Scientific cannot accept any item that may be contaminated with viable biological agents, harmful quantities of hazardous chemicals, or radioactive materials.**

**Please attach one copy to the outside of transport packaging and include one copy with the item.**

# Korean KC Declaration

## 사 용 자 안 내 문

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.



### 사용자 안내문

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**WARNING Statement:** EMC Registration is done on this equipment for business use only. It may cause interference when the product would be used in home. This warning statement applies a product for business use.

## CALIFORNIA PROPOSITION 65 COMPLIANCE STATEMENT

This certificate is to inform concerned parties that items produced by Thermo Fisher Scientific, Inc. do not contain chemicals which are listed on California's safe Drinking Water & Toxic Enforcement Act of 1986. This Act, commonly known as Proposition 65 (Prop 65), establishes a list of chemicals which the state of California's risk assessment process has determined to present a risk of cancer, birth defects or other reproductive harm.

The Proposition 65 chemical list can be found at: <https://oehha.ca.gov/proposition-65/proposition-65-list>.

Thermo Fisher Scientific, Inc. is committed to providing safe, high-quality products for our concerned parties. We have worked with our vendors and our supply chain partners to ensure the purchase of raw materials that will meet Prop 65 standards. Be assured, Thermo Fisher Scientific, Inc. will continue to monitor the Prop 65 regulations for any new chemicals. Thermo Fisher Scientific, Inc. will compare any newly listed chemicals with the raw materials in our finished product and communicate this information to our concerned parties.

# China RoHS Declaration

Table 7. Hazardous Substances Information

Component Name 部件名称	Hazardous Substances 有害物质					
	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 镉 (Cd)	Hexavalent Chromium 六价铬 (Cr (VI))	Polybrominated biphenyls 多溴联苯 (PBB)	Polybrominated diphenyl ethers 多溴二苯醚 (PBDE)
Metal parts	X	O	O	O	O	O
Plastic parts	O	O	O	O	O	O
Cable assemblies	X	O	X	O	O	O
Electronic circuit modules PCA's	X	O	O	O	O	O
Display	X	O	O	O	O	O
Power Supply	X	O	O	O	O	O
Packing material	O	O	O	O	O	O

This table was developed according to the provisions of SJ/T 11364.

本表格依据 SJ/T11364 的规定 编制

O: The content of such hazardous substance in all homogeneous materials of such component is **below** the limit required by GB/T 26572.

表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下

X: The content of such hazardous substance in all homogeneous materials of such component is **beyond** the limit required by GB/T 26572.

表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求

This statement is based on information and data provided from third parties and may not have been verified through destructive testing methods or other chemical analysis.

本声明基于第三方提供的信息和数据，可能未经破坏性检测方法或其他化学分析进行验证



The environment-friendly use period (EFUP) of this product is 10 years which is only valid when under the normal operation procedure that listed on the instruction.

本产品的环保使用期限为 10 年 仅在按照说明书所列的正常操作程序下有效。

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# Warranty

## Standard Warranty

ThermoFisher warrants that the Products will operate or perform substantially in conformance with ThermoFisher's published specifications and be free from defects in material and workmanship, when subjected to normal, proper and intended usage by properly trained personnel, for the period of time set forth in the product documentation, published specifications or package inserts. If a period of time is not specified in ThermoFisher's product documentation, published specifications or package inserts, the warranty period shall be the earlier of one (1) year from the date of shipment to Buyer or 10,000 cap-recap cycles as measured by the cycle counter (the "Warranty Period"). During the Warranty Period, ThermoFisher agrees in its sole discretion, to repair or replace Products and/or provide additional parts or services as reasonably necessary to cause the Products to perform in substantial conformance with said published specifications; provided that Buyer shall (a) promptly notify ThermoFisher in writing upon the discovery of any defect, which notice shall include the product model and serial number (if applicable) and details of the warranty claim; and (b) after ThermoFisher's review, ThermoFisher will provide Buyer with service data and/or a Return Material Authorization ("RMA"), which may include biohazard decontamination procedures and other product-specific handling instructions, then, if applicable, Buyer may return the defective Products to ThermoFisher with all costs prepaid by Buyer. ThermoFisher further reserves the right in its sole discretion to extend any Warranty Period if at the time that the Warranty Period would otherwise expire there are ongoing concerns regarding a Product's conformance to the warranty stated herein. Replacement parts may be new or refurbished, at the election of ThermoFisher. All replaced parts shall become the property of ThermoFisher. Shipment to Buyer of repaired or replacement Products shall be made in accordance with the Delivery provisions of the ThermoFisher's Terms and Conditions of Sale. If ThermoFisher elects to repair defective medical device instruments, ThermoFisher may, in its sole discretion, provide a replacement loaner instrument to Buyer as necessary for use while the instruments are being repaired.

Notwithstanding the foregoing, Products supplied by ThermoFisher that are obtained by ThermoFisher from an original manufacturer or third party supplier are not warranted by ThermoFisher, but ThermoFisher agrees to assign to Buyer any warranty rights in such Product that ThermoFisher may have from the original manufacturer or third party supplier, to the extent such assignment is allowed by such original manufacturer or third party supplier.

In no event shall ThermoFisher have any obligation to make repairs, replacements or corrections required, in whole or in part, as the result of (i) normal wear and tear, (ii) accident, disaster or event of force majeure, (iii) misuse, fault or negligence of or by Buyer, (iv) use of the Products in a manner for which they were not designed, (v) causes external to the Products such as, but not limited to, power failure or electrical power surges, (vi) improper storage and handling of the Products or (vii) use of the Products in combination with equipment or software not supplied by ThermoFisher. If ThermoFisher determines that Products for which Buyer has requested warranty services are not covered by the warranty hereunder, Buyer shall pay or reimburse ThermoFisher for all costs of investigating and responding to such request at ThermoFisher's then prevailing time and materials rates. If ThermoFisher provides repair services or replacement parts that are not covered by this warranty, Buyer shall pay ThermoFisher therefore at ThermoFisher's then prevailing time and materials rates. ANY INSTALLATION, MAINTENANCE, REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCTS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL, OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED PRODUCTS.

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