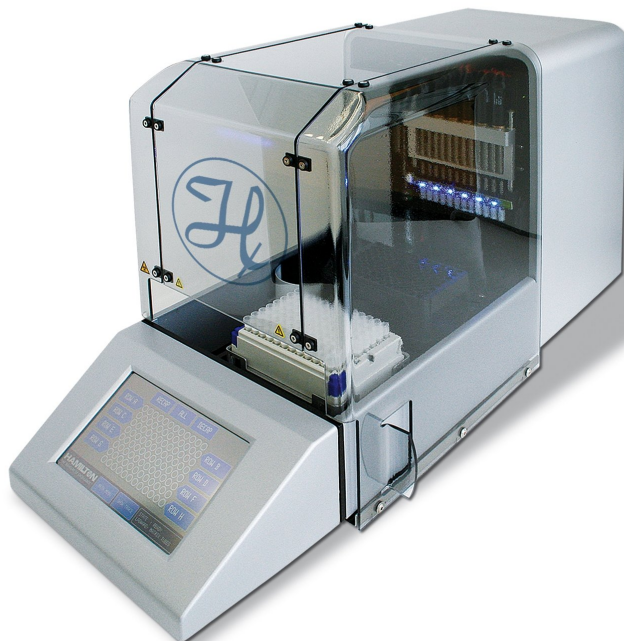




HAMILTON
THE MEASURE OF EXCELLENCE™

DeCapper

Automated Opening and Closing of Screw Cap Tubes



Eliminate Contamination and Optimise Workflow

Features

- Graphical Touch Screen Interface
- Torque Monitoring
- Permanent Sensor Control
- Removable Cap Holder Rack
- Open 12 Tubes in Parallel
- No Cap Moves Over Opened Tubes

Benefits

- Simplifies Programming and Ease of Use
- Ensures Optimal Sealing Quality
- For Enhanced Process Safety
- For Batch Processing
- Open and Close Selected Rows or the Entire Rack
- Eliminates the Risk of Cross Contamination



For a demonstration or additional information on the Hamilton DeCapper, please call our Sales Office

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Introduction

The number of different compounds and biological samples stored for screening purposes is steadily growing. Tubes which can be rearranged within one 96-tube rack (SBS format) are one of the most commonly used solutions for the huge number of test candidates. The tubes can be closed either with push fit plugs or with screw caps.

Screw caps seal tubes effectively at very low temperatures (-80°C or lower) and have been developed by various lab-ware producers.

In order to open and close these screw cap tubes, HAMILTON has developed a new DeCapper.

Technical Design

General Description

The HAMILTON DeCapper is a compact, high speed decapper for screw cap tubes. Decapping or recapping of a complete rack of 96 tubes takes less than one minute. It works independently with different labware types. The DeCapper is also compatible with various sizes of lab-ware. Every size from 0.5mL to 1.4mL tubes can be used.

HAMILTON's DeCapper combines the advantages of a stand alone unit with an integrated unit: It is designed as a stand alone instrument but also engineered to allow integration into a totally automated robotic system without the need for further modifications.

Processing a Complete Rack of 96 Tubes

Twelve independent DC-motors in the HAMILTON DeCapper rotate in parallel to open the tubes of a landscape orientated rack. The decapping and recapping of each single tube is monitored by torque control on each individual motor guaranteeing a fully controlled process. After decapping the caps are placed on a disposable cap holder rack. In order to avoid cross contamination, no cap passes over an open tube.

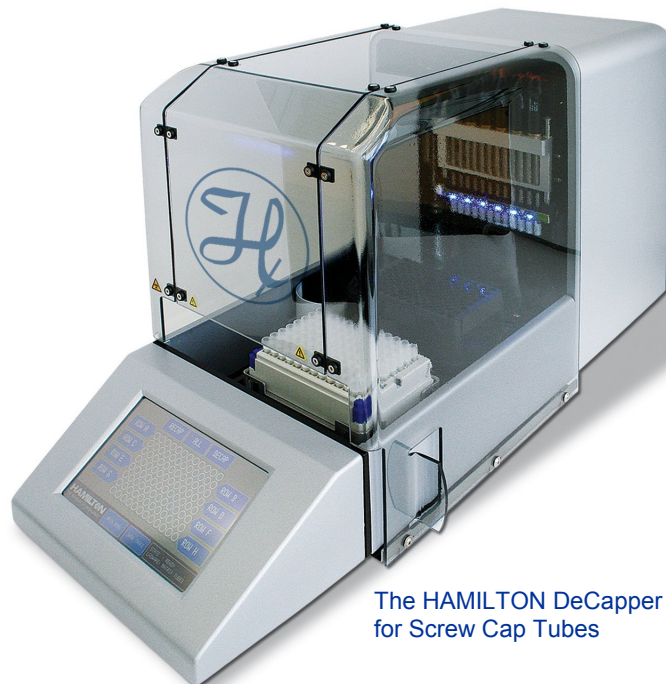
Once a complete rack of tubes has been decapped both the open tube rack and the cap holder rack can be removed to allow a second decapping cycle. Therefore not only one single rack can be processed at a time but batch processing of multiple plates is possible.

The HAMILTON DeCapper for Screw Cap Tubes

Finally the DeCapper can recap the tubes: Screw caps are picked up from the cap holder rack, transported to the open tubes and rotated to recap the tubes again. This process is also controlled by a predefined labware-specific torque of each single motor to ensure process safety of the sealing.

Row Wise Opening of Tubes

A complete 96-rack plate as well as individual rows can be decapped. The touch screen panel allows single rows to be chosen prior to the decapping process. The HAMILTON DeCapper will open only the selected rows. The same procedure can be adopted in tube recapping.



Permanent Sensor Control

In order to increase process safety, sensors continuously monitor the presence of the screw caps. The sensors have two functions: They are able to detect the presence or absence of caps on the top of closed or opened tubes and to permanently monitor the presence of the caps during movement between the tubes and the cap holder rack.

The continuous sensor control and the torque monitoring of each motor lead to a stable process. They guarantee optimized recapping for each individual tube and therefore protect the valuable contents.

Easy to Use Touch Screen Panel (7.0")

HAMILTON's DeCapper is operated by an easy to use touch screen panel. All DeCapper operations can be simply entered on the touch screen.



Easy to Use Graphical Touch Screen

For stand alone purposes, touch screen is attached to the front of the DeCapper. Where integration restricts space at the front of the DeCapper, the screen can be placed beside the DeCapper. In this case, the integrated unit can still be used as a stand alone DeCapper, controlled either by the automation system software or by the touch screen, unifying the advantages of a stand alone and an integrated system.

Transparent Safety Cover

HAMILTON's DeCapper is completely housed within a manually moveable transparent safety cover. This housing fulfils two requirements: First, the user is unable to reach into the instrument where the parts are moving during the run.

Second, the valuable contents of the opened tubes are protected from the environment.

Simple Integration by RS 232 or Ethernet

HAMILTON's DeCapper can be easily integrated to a complete auto-mation system. The integration into a HAMILTON STAR Line robot is available. If a software driver for other robotic systems is required, HAMILTON will provide a description of the interface and commands via RS 232 or Ethernet on request.

Features and Benefits

- Plug & Play stand alone unit
- Easy to use graphical touch screen
- Selective row wise decapping and recapping possible
- Permanent sensor control for enhanced process safety
- Torque controlling to ensure optimal sealing quality
- Removable cap holder rack for batch processing
- Cap holder rack also available as disposable
- No cross contamination as no cap moves over opened tubes
- Compact unit fits in environmental controlled cabinets

Technical Specifications

Instrument Dimensions	Width (X)	Height (Z)	Depth (Y)
• with Touch Screen Panel	306mm	363mm	687mm
• without Touch Screen Panel	306mm	363mm	546mm
Weight	20Kg		
Throughput	Less than 60 seconds per 96 Rack		
Labware	Compatible with Matrix, Micronic and Nunc. Others on request		
Operating Data	Maximum Power Consumption	140 VA	
	Voltage	100 V~/240 V~ (Tolerance: 88VAC to 264 VAC)	
	Frequency	47-63 Hz	
	Temperature Range	15°C - 35°C	
	Relative Humidity	30% - 85% (Non Condensing, Indoors)	
	Noise Level	Regarding EN27779 (<63 dBA)	
	Communication	Ethernet and RS232 for integration	
	Low Voltage Directive	73/22/EEC	
CE conformity	EMC Directive	89/336/EEC	



Figure 1: Easy to Use Graphical Touch Screen Panel

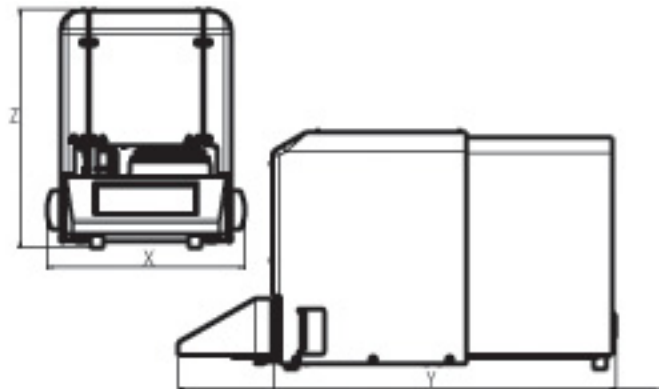


Figure 2: Instrument Dimensions

Ordering Information

Part No.	Description
193000	Decapper for Screw Cap Tubes
including:	P/N 193216 User Interface
	P/N 193510 Adapter Kit Matirx
	P/N 193511 Adapter Kit Micronic
	P/N 193512 Adapter Kit Nunc
	P/N 193514 Cap Holder Rack (Box of 20 Racks)