



AlteCap™ Switch
Handheld screw cap decapper

User Manual



Rhinostics AlteCap™ Switch User Manual

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This is Version 1.0 of the
AlteCap™ Switch user manual

For use with:

Part Number	Description
AC-SW00001	Rhinostics AlteCap™ Switch & 8/12 channel cassette Rhinostics semi-automated handheld decapper. Electronic capping and decapping. Ergonomically designed dual handle. Benchtop space saving design. Compatible with all Rhinostics screw cap tubes in 96 SBS rack format. Includes: manual, stand, USB charging cable.

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Intended Use

The AlteCap™ Switch is a semi-automatic handheld device for the electronic screw cap decapping and capping of SBS rack format sample tubes. A range of Switch cap driver cassettes are available for different types and different manufacturer's brands of screw cap tubes in 24, 48 and 96 SBS rack formats.

Hazards and Precautions

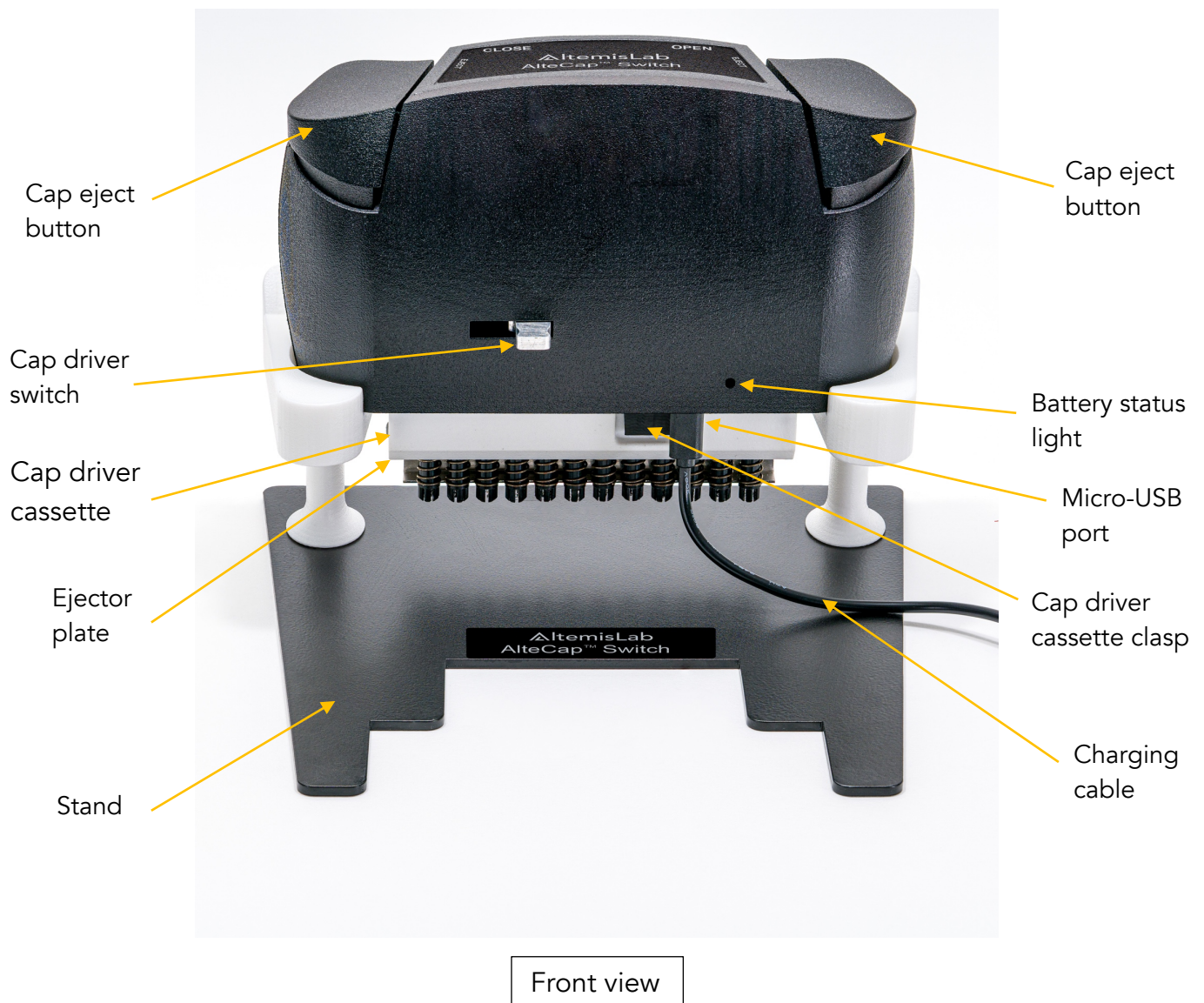
- Read all instructions and safety warnings before use.
- There are no known hazards associated with the AlteCap™ Switch when used for its intended use and when following the instructions listed in this user manual.
- Failure to follow all warnings and instructions may result in electric shock, fire and/or serious injury.
- The AlteCap™ Switch should only be used in the correct operating conditions by trained users.
- Always use the correct AlteCap™ Switch cap driver cassette designated for the screw cap tube type(s).
- Always hold by the base plate when moving the Switch stand.
- Do not store the AlteCap Switch at temperatures below 15°C.
- Do not open, modify, or drop the AlteCap™ Switch.
- 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 AlteCap™ Switch requires any repair, please contact your supplier before further operation to avoid any additional potential damage.
- If the AlteCap™ Switch 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 AlteCap™ Switch must always be kept clean. Please refer to the to the cleaning instructions in this manual.
- Do not autoclave the AlteCap™ Switch.
- Do not immerse the AlteCap™ Switch or the cap driver cassette in liquid. Strictly avoid excessive amounts of liquids on the AlteCap™ Switch or the cap driver cassette.
- Do not exceed the maximum charging time of 3 hours.
- The manufacturer or supplier will not be liable for any loss or damage resulting from improper use of the AlteCap™ Switch.

Setting up the AlteCap™ Switch

Included in the box:

- AlteCap Switch semi-automated handheld screw cap decapper
- Micro-USB charging cable
- Stand
- User manual
- AlteCap™ Switch Cassette – compatible with the screw cap tube type specified at time of order (boxed separately).

AlteCap™ Switch parts

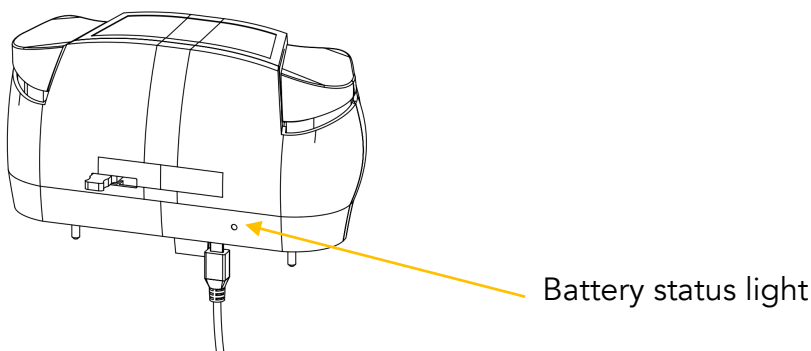




Back view

Charging the AlteCap™ Switch

1. Before first use **charge the Switch handheld decapper for approximately 2 hours** to achieve a full battery charge. *Do not charge the Switch for more than 3 hours continuously.*
 2. Connect the micro-USB cable to the micro-USB port on the Switch. Plug the cable into a charging port of a computer or into a charging plug designed for a Li-ion battery (5W charger) and connect to a standard 100-240V/50-60Hz power socket
- The RED battery status light indicates the Switch is charging
 - The battery status light turns GREEN once the Switch is fully charged and ready for use



- The performance of the AlteCap™ Switch (opening and closing torque) can be affected by the condition of the battery. *The Switch battery, like all rechargeable batteries, is a consumable component that becomes less effective as it ages. To increase the lifespan of the battery it is recommended that the battery is recharged occasionally even if the Switch is not to be used.*

Switch between tube types by changing the AlteCap™ Switch Cassette

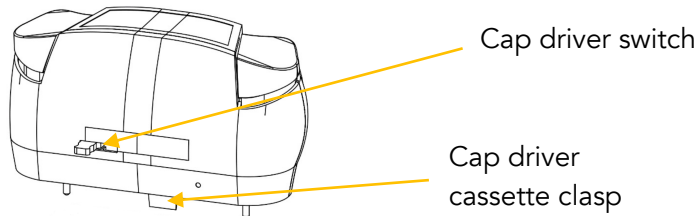
Each AlteCap™ Switch cassette is designed with cap drivers for specific screw cap tube types in 24, 48 or 96 SBS rack formats and for tube types from different manufacturers. Always use the correct AlteCap™ Switch cassette for the tube type to be processed.

Attaching the AlteCap™ Switch Cassette

1. Select the appropriate cap driver cassette for the screw cap tube type to be used

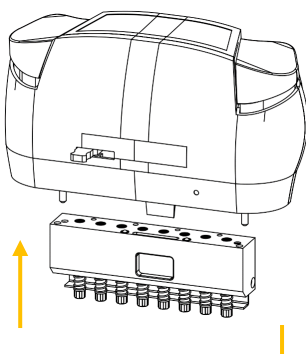


2. Select the correct cap driver switch position for the cap driver system to be used

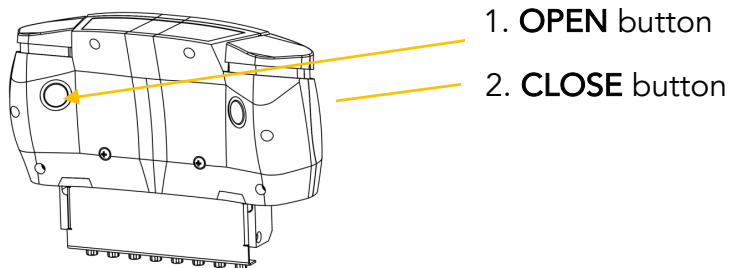


Rack type	Cap driver cassette	Cap driver switch position
24 SBS rack	6 Channel cassette	RIGHT
48 SBS rack	8 Channel cassette	LEFT
96 SBS rack	12 Channel cassette	RIGHT

3. While holding the cap driver by the short sides, align the guide pins and the cap driver cassette clasp on the Switch with the holes on the cap driver cassette

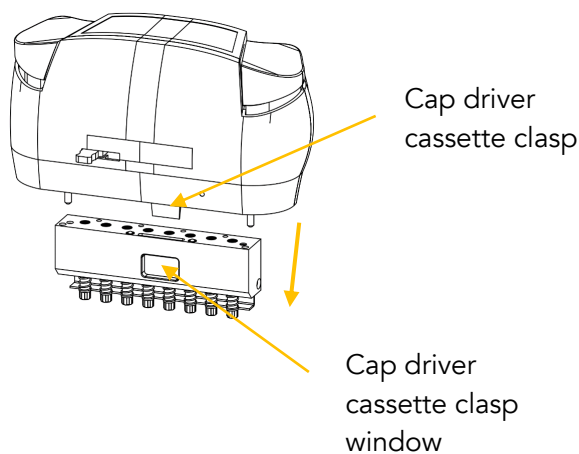


4. Push the cap driver cassette and the Switch together while pressing the **OPEN** or **CLOSE** button until a click sound is heard, and the cap driver clasp is engaged. This action allows the cap drivers to align and engages the cap driver cassette before use.
5. Press the **OPEN** button for ~5 seconds and then the **CLOSE** button for ~5 seconds or until all the cap drivers are rotating and level.



Removing the AlteCap™ Switch Cassette

1. The cap driver cassette clasp is accessed through the window on the cap driver cassette when installed on the Switch
2. Press the cap driver cassette clasp inwards while sliding the cap driver cassette downwards and away from the Switch



Using the AlteCap™ Switch

Holding the AlteCap™ Switch

The AlteCap™ Switch has been specifically designed to reduce user effort and prevent repetitive strain injuries that may be associated with repeatedly capping and decapping screw cap tubes by hand. The AlteCap™ Switch is designed for use with both hands for comfort and to allow the maximum visibility of the sample tubes and screw caps being processed.

- Lift the Switch upwards out of the stand with both hands. Thumbs should be placed over both ejector buttons located on the top of the unit and fingers over the open and close buttons on the back of the unit



Positioning of the SBS format rack to be processed

Place the SBS format rack of tubes to be decapped in the cut-out section on the base of the Switch stand:

Portrait orientation

capping or decapping columns* of tubes



Landscape orientation

capping or decapping rows of tubes

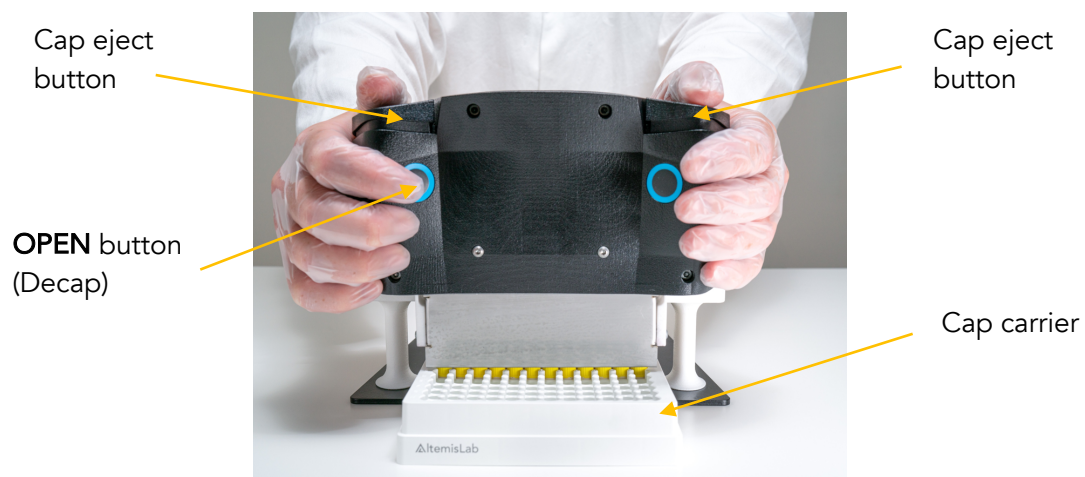


** Not all cap drivers will be used with this rack orientation (for example: 8 of the 12 cap drivers will be used for a 96 SBS format rack in portrait orientation)*

Decapping screw cap tubes from a SBS format rack – OPEN

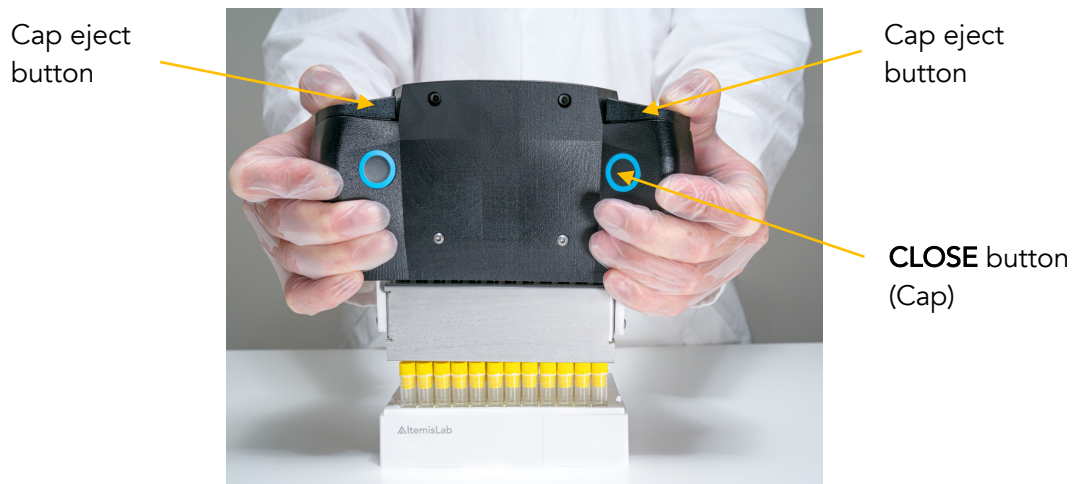
1. Hold the Switch directly above the column or row of the screw capped tubes to be processed
2. Press and hold the **OPEN** button while moving the Switch cap drivers down towards the top of the screw capped tubes
3. Fully insert the cap drivers by pressing the Switch straight down directly into the top of the screw caps

(When the cap drivers first engage with the caps there will be a clicking sound which is normal and to be expected)
4. Ensure all cap drivers are fully inserted into the caps and that the Switch is in a parallel position above the caps
5. Continue to press and hold the **OPEN** button to open/decap the caps from the tubes, while slowly raising the Switch upwards and away from the tubes
6. With the caps attached, place the Switch back on the stand (if the caps are to be re-used directly) or position the Switch above an empty row or column of a cap carrier or above a waste container
7. Press **both cap eject buttons simultaneously** to release the caps from the individual cap drivers



Capping screw cap tubes with caps from a cap carrier – CLOSE

1. Place the SBS format rack of tubes to be capped in the cut-out section of the Switch stand
2. Hold the Switch directly above the column or row of screw caps in the cap carrier
3. **Press** and hold the **OPEN** button while moving the Switch cap drivers down towards the top of the screw caps
4. Fully insert the cap drivers by pressing the Switch straight down directly into the top of the caps
5. Ensure all cap drivers are fully inserted into the caps and the Switch is in parallel position above the caps
6. **Release** the **OPEN** button and lift the Switch with caps attached up and away from the cap carrier
7. Position the Switch above the row or column of tubes to be capped and establish direct contact between the caps and the tubes
8. **Press** and hold the **OPEN** button while moving the Switch cap drivers down towards the top of the screw caps
9. Ensure all caps are in direct contact with the tube openings and in a parallel position
10. Continue to press and hold the **CLOSE** button to close/cap the tubes while gently pressing the Switch downwards onto the tubes
11. Release the CLOSE button once all* cap drivers have come to a stop
** un-used cap drivers will continue to rotate when capping tubes in the portrait orientation*
12. Press **both cap eject buttons simultaneously** to release the caps from the individual cap drivers



Cleaning and maintaining the AlteCap™ Switch

- The AlteCap™ Switch, cap driver cassette and the Switch stand can be cleaned with a cloth dampened with water and a mild cleaning solution or with 70% ethanol in water. Do not use harsh solvents or chemicals to clean the Switch. Do not autoclave the AlteCap™ Switch, the cap driver cassette, or the Switch stand.
- Remove the cap driver cassette from the Switch prior to cleaning.

Technical information

Opening torque	12 – 15 cN.m
Closing torque	Minimum 7 cN.m
Input	Micro USB 5V – 1A
Operation time	Decap 96 tubes in 90 seconds
Battery	Li-ion rechargeable battery: 1020 mAh. 7.4V
Charging time	Approximately 1.5 to 2 hours
Approximate usage with a fully charged battery	15 full rack capping and decapping cycles

Warranty Information

One-year factory warranty

