



**RHEA**  
Titan

**MOBILE AIRBORNE SURFACE DISINFECTION UNIT**



**USER MANUAL**

**RHEA Titan/X-CID**



In line with the Low Voltage Directives 2006/95/EC and EMC Directive 2004/108/EC

## WARNING

We strongly recommend that you read these instructions in their entirety before operating the **RHEA Titan/X-CID** for the first time (see section 2 – Use).

To make it easier for different types of users to access more detailed information, these instructions consist of 3 sections:

- **Section 1: general information.**
- **Section 2: end user instructions for use.**
- **Section 3: technical information for servicing and maintenance personnel.**

## PACKING LIST

- **RHEA Titan/X-CID** unit.
- Power supply cable.
- User Manual.
- Wooden transport crate
- 2 dip tubes
- 1 remote control
- 5 NFC door labels
- 1 key to open the lower door

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# 1 GENERAL INFORMATION

## 1.1 SAFETY INSTRUCTIONS

- **READ THESE INSTRUCTIONS THOROUGHLY** and strictly follow the chronological order of installation, start-up and maintenance.
- The unit can be used at an altitude of up to 2000 m at temperatures from +5°C to +35°C and a relative humidity of 100%.
- Do not allow any liquid to penetrate the device.
- Do not place the device near a heat source.
- Do not use the device in the presence of flammable gases.
- Never obstruct or cover the outlet nozzle when the device is in operation.
- Never obstruct or cover the air inlets when the device is in operation.
- Only use **airinspace®** supplies to replace the bottles (see section 2 – chapter 2.4 – Bottle Replacement).
- Do not twist, stretch or damage the power supply cable.
- Only connect the device to earthed sockets that meet legal requirements and are inspected periodically.
- Unplug the device when not in use for extended periods.

**ATTENTION :** HUMANS, ANIMALS AND VEGETATION SHOULD NOT BE PRESENT WHEN THE DISINFECTION PROCESS BEGINS. AT THE END OF THE DISINFECTION CYCLE, THE OPERATOR MUST ENSURE THAT THE HYDROGEN PEROXIDE LEVEL (H<sub>2</sub>O<sub>2</sub>) IS SUFFICIENTLY LOW (EXPOSURE LIMIT VALUE AT 8 HOURS ELV =1 PPM (1.5 MG/M<sup>3</sup>)).

IF AN OPERATOR HAS TO RE-ENTER THE ROOM BEFORE THE END OF THE DISINFECTION CYCLE, THEY MUST WEAR THE FOLLOWING PERSONAL PROTECTION EQUIPMENT: INDIVIDUAL RESPIRATORY PROTECTION DEVICE (EN 133) OR A GAS-FILTERING RESPIRATOR (EN 141); RECOMMENDED FILTER: ABEK-P2

**ATTENTION :** BEFORE CARRYING OUT ANY WORK ON AN ELECTRICAL COMPONENT, SWITCH OFF THE DEVICE AND DISCONNECT IT FROM THE MAINS.

**ATTENTION :** INTERVENTIONS ON THE RHEA Titan (NOTABLY FOR ELECTRICAL CIRCUITS, ELECTRONIC CARDS AND THE MOTOR) SHOULD ONLY BE CARRIED OUT BY **airinspace®** MAINTENANCE STAFF OR APPROPRIATELY TRAINED PERSONNEL.

THE USER IS LIABLE FOR ANY DAMAGE, REGARDLESS OF ITS NATURE, CAUSED BY NON-COMPLIANCE WITH THE USAGE RULES AND SAFETY INSTRUCTIONS.

## 1.2 REGULATORY STANDARD

**RHEA** Titan devices are CE-marked and comply with European regulations:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC

## 1.3 NORMATIVE STANDARDS

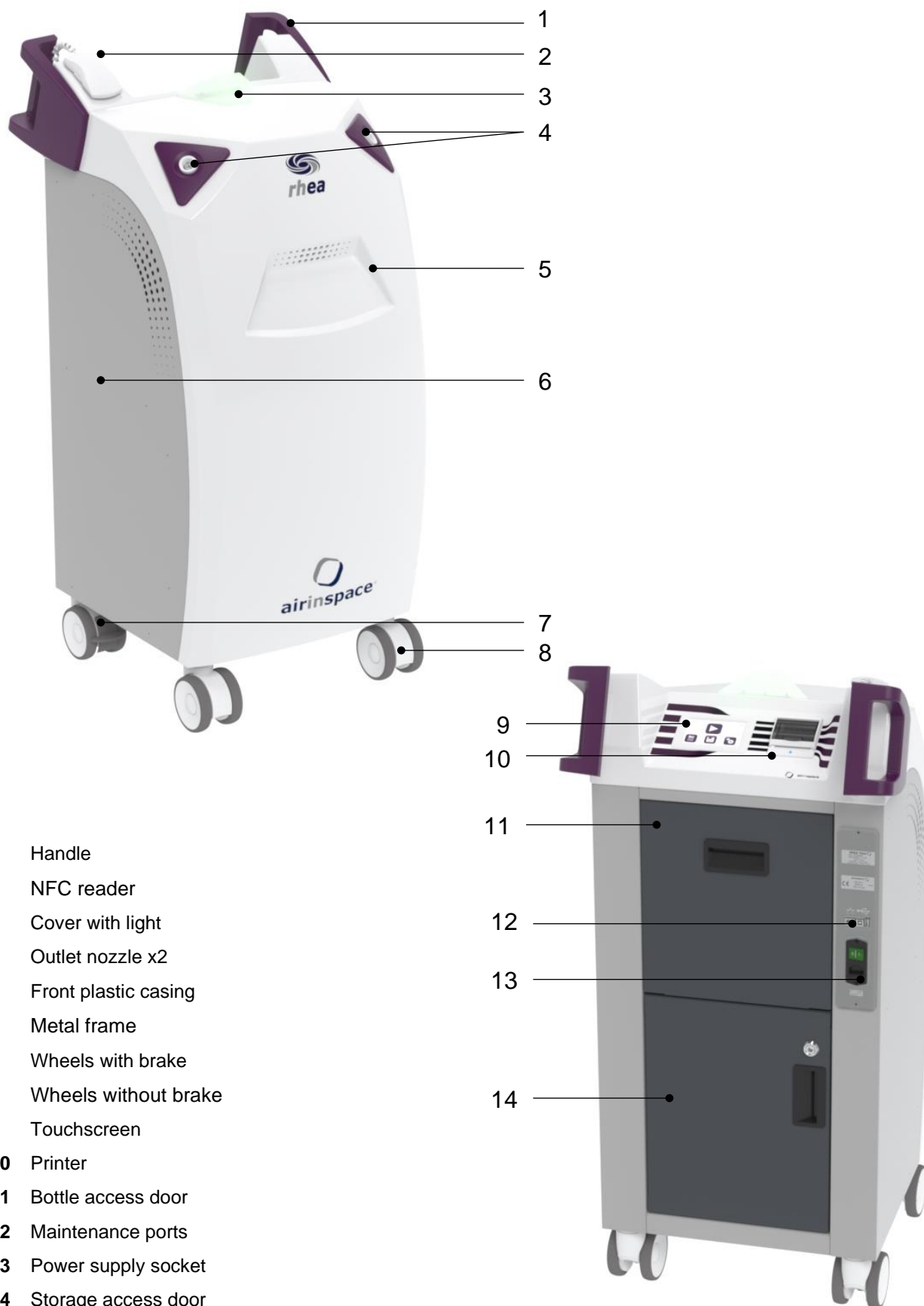
- NF EN 61010-1 (2011): Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements
- EN 61326-1 (2013). Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
- EN 17272 (2020) : Chemical disinfectants and antiseptics - Methods of airborne room disinfection by automated process - Determination of bactericidal, mycobactericidal, sporicidal, fungicidal, yeasticidal, virucidal and phagocidal activities

### Classification

Type of protection against electric shocks	<b>Class I</b> Earthing for all accessible metallic elements and internal metallic elements.
Level of protection of applied parts against electric shocks	<b>No applied parts</b>
Degree of protection against water and solids	<b>IP 40</b>
Level of safety when used in the presence of flammable anaesthetics mixed with air, oxygen or nitrous oxide	<b>Device not suitable for use with flammable anaesthetics mixed with air, oxygen or nitrous oxide.</b> The <b>RHEA</b> Titan is not an AP or APG category medical device. It must always be kept more than 25 cm from the point where there is a mixture of flammable anaesthetic with air or oxygen or nitrogen protoxyde. The user is thus responsible for positioning the <b>RHEA</b> Titan appropriately in the area to be processed.

## 1.4 DESCRIPTION OF THE DEVICE

### 1.4.1 OVERVIEW





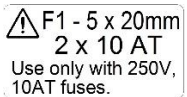
- 1 Handle
- 2 NFC reader
- 3 Cover with light
- 4 Outlet nozzle x2
- 5 Front plastic casing
- 6 Metal frame
- 7 Wheels with brake
- 8 Wheels without brake
- 9 Touchscreen
- 10 Printer
- 11 Bottle access door
- 12 Maintenance ports
- 13 Power supply socket
- 14 Storage access door

## 1.4.2 VIEW OF THE OPEN REMOVABLE CASING



- 15 Quick connector to attach to the dip tubes
- 16 NFC TAG
- 17 XCID product label
- 18 XCID 2.5 L bottle
- 19 Dip tube to screw into the bottle

## 1.5 LABELLING

Label	Description	Position
Product		Under a protective shield on the rear of the machine
Electrical characteristics		Under a protective shield on the rear of the machine
Fuse		Under a protective shield on the rear of the machine

## 1.6 FUNCTIONAL DESCRIPTION OF THE DEVICE

### 1.6.1 INTENDED USE

The **RHEA Titan / X-CID** is a mobile airborne surface disinfection unit which effectively combats fungi, yeasts, bacteria, viruses, mycobacteria and spores. As a unit designed to control surface contamination and combat hospital-acquired infections, the **RHEA Titan / X-CID** can be used wherever the risk of surface contamination must be controlled.

### 1.6.2 OPERATING PRINCIPLES

The **RHEA Titan / X-CID** generates a hydrogen peroxide (7%), acetic acid (5%) and peracetic acid (0.4%)-based disinfection solution using a technique that provides a diffusion of micro-droplets that form a dry and cold mist. This diffusion enables the disinfecting agents to make contact with all surfaces.

The diffusion time depends on the size of the room to be processed. Several protocols are available; the **RHEA Titan / X-CID** has a bactericidal, fungicidal, virucidal, yeasticidal, mycobactericidal, tuberculicidal and sporocidal activity in line with standard EN 17272 : 2020.

Please contact **airinspace®** for more information on these certifications.

The safety time is the time required for the concentration of hydrogen peroxide to become sufficiently low (the Exposure Limit Value is 1 ppm).

The combined action of an **eCHEM OX or CUBAIR** mobile chemical decontamination unit will significantly reduce the safety time.



### 1.6.3 DESCRIPTION OF THE DISINFECTION CYCLE:

- Manually bio clean the room.
- If needed, caulk the windows, doors, and intake and return outlets, as well as the smoke detectors. **If covering the smoke detectors, you must inform those responsible for fire safety on the site.**
- Position the device depending on the space in the room (see §1.8).
- Switch on the appliance (see §2.1.1) and follow the operating instructions.
- Leave the room and lock the door if needed.
- Ensure that a visible and understandable warning sign (DANGER – ACCESS PROHIBITED) is attached to the outside of the door. Use a high-quality adhesive. It is also recommended that a tape is crossed over the door to prevent access to the room.
- A countdown will run throughout the spray cycle. Spraying stops automatically when the required quantity of product has been sprayed.
- At the end of the spray cycle, a new countdown will run throughout the contact time.
- The machine will beep when the contact time is up. An operator wearing protective equipment such as an individual respiratory protection device (EN 133) or a gas-filtering respirator (EN 141), ABEK-P2 filter recommended, may enter the room to check the hydrogen peroxide concentration.
- Do not forget to uncover the smoke detectors at the end of the safety time (when the hydrogen peroxide level is less than or equal to 1 ppm).



DRY MIST DIFFUSION DIRECTION

**ATTENTION :** HUMANS, ANIMALS AND VEGETATION SHOULD NOT BE PRESENT WHEN THE DISINFECTION CYCLE BEGINS. AT THE END OF THE DISINFECTION CYCLE, THE OPERATOR MUST ENSURE THAT THE HYDROGEN PEROXIDE LEVEL (H<sub>2</sub>O<sub>2</sub>) IS SUFFICIENTLY LOW (EXPOSURE LIMIT VALUE AT 8 HOURS ELV =1 PPM (1.5 MG/M<sup>3</sup>)).

IF AN OPERATOR HAS TO RE-ENTER THE ROOM BEFORE THE END OF THE DISINFECTION CYCLE, THEY MUST WEAR THE FOLLOWING PERSONAL PROTECTION EQUIPMENT: INDIVIDUAL RESPIRATORY PROTECTION DEVICE (EN 133) OR A GAS-FILTERING RESPIRATOR (EN 141); RECOMMENDED FILTER: ABEK-P2

**ATTENTION :** MANUAL BIO CLEANING MUST BE CARRIED OUT BEFORE BEGINNING THE AIRBORNE DISINFECTION CYCLE OF SURFACES.

## 1.6.4 PHYSICAL CHARACTERISTICS OF THE RHEA TITAN

Electrical supply	~200/240 V; 50/60 Hz	
Maximum electrical power	1050 VA max / 980 W	
Electrical protection	<ul style="list-style-type: none"> <li>- Isolated by removable power cable</li> <li>- Fused Ph + N bipolar switch (2x10AT)</li> </ul>	
Volume output of the X-CID disinfectant product	40 ml/min ±5%	
Treatment capacity (room volume)	300 m <sup>3</sup> max. per device (optimum with one unit) 1600 m <sup>3</sup> cumulative volume (new X-CID bottles)	
Noise levels 1 m from the device	80 dB(A)	
<b>Bactericidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Pseudomonas aeruginosa</i></li> <li>- <i>Escherichia coli</i></li> <li>- <i>Staphylococcus aureus</i></li> <li>- <i>Enterococcus hirae</i></li> <li>- <i>Acinetobacter baumannii</i></li> </ul>	Logarithmic reduction: >5 log	
<b>Fungicidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Candida albicans</i></li> <li>- <i>Aspergillus brasiliensis (niger)</i></li> </ul>	Logarithmic reduction: >4 log	
<b>Tuberculicidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Mycobacterium terrae</i></li> <li>- <i>Mycobacterium avium</i></li> </ul>	Logarithmic reduction: >4 log	
<b>Sporicidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Bacillus subtilis</i></li> </ul>	Logarithmic reduction: >4 log	
<b>Yeasticidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Candida albicans</i></li> </ul>	Logarithmic reduction: >4 log	
<b>Virucidal efficacy in line with standard EN 17272*:</b> <ul style="list-style-type: none"> <li>- <i>Adenovirus type 5</i></li> <li>- <i>Murine novovirus</i></li> </ul>	Logarithmic reduction: >4 log	
Water/solids protection index	Complete device	IP40
	Control panel	Waterproof touchscreen
Overall dimensions	H 1145 x W 550 x D 643 mm	
Weight of RHEA Titan	50 kg	
Environmental operating range	Temperature	+5 °C to +35 °C
	Relative humidity	100%
Environmental storage range	Temperature	5°C to 35°C
	Relative humidity	20% to 90%
	Dust level	< 1 mg/m <sup>3</sup>

\* See §2.1.2 PROTOCOL SELECTION GUIDE.

The information contained in this table is for information only. For any information on measurements and tolerance intervals, please contact [airinspace®](#) at the address provided at the end of this document.

## 1.7 INSTALLATION INSTRUCTIONS

### Unpacking

1. Move the transport crate as close as possible to a clean, flat floor space.
2. Remove the unit from the transport crate:

**ATTENTION** : USE THE GRIPPING HANDLES TO HANDLE THE DEVICE

**ATTENTION** : KEEP THE ORIGINAL PACKAGING. THIS MAY BE REQUESTED FOR ANY RETURN TO THE SELLER OR MANUFACTURER.

**ATTENTION** : DO NOT TILT THE DEVICE ON ITS SIDES.

### Reception

3. Carefully examine the device delivered and check that the items on the packing list are present.
4. Connect the unit to a secure electrical socket. (see 1.6.4 – Physical specifications)
5. Switch on the unit and check that it starts up correctly (see 2.1.3 - Starting).
6. Write down any anomalies and potential damage on the delivery slip and notify the distributor or **airinspace®**. If you wish to contact the manufacturer or distributor, please provide the serial number and date of purchase.

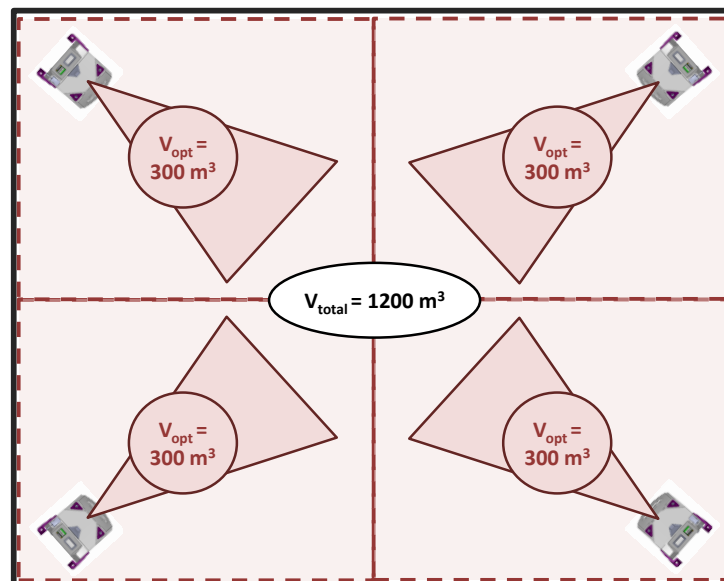
## 1.8 OPERATING RECOMMENDATIONS FOR RHEA TITAN

The positioning of the machine depends on the space in the room. Select a position near the entrance to the room. Place the device in such a way that the nozzle is at least 1 m 50 away from any obstacle.

Ensure that the machine is stable and in a vertical position.

If the maximum treatment capacity for a **RHEA** Titan unit is 1600 m<sup>3</sup> cumulative volume with two new **X-CID** bottles, it is recommended that you limit the operation of a unit for the treatment over one cycle of a maximum volume of 300 m<sup>3</sup> in order to obtain an optimum disinfection result.

For volumes higher than this, it is recommended that you use multiple **RHEA** units divided spatially to cover all of the target volume.

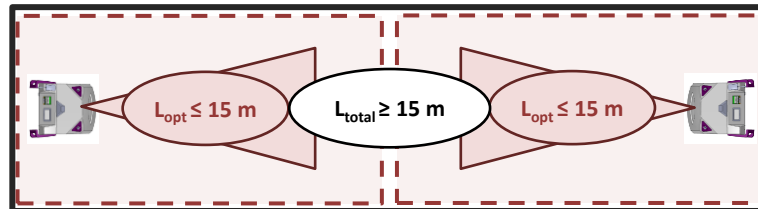


Beyond the single volume of the room, it is advisable to use several units to optimise the spatial coverage of the disinfection process in the following cases:

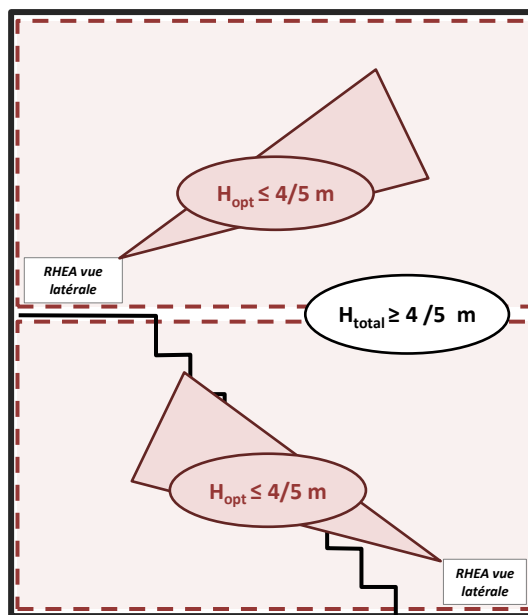
- Significantly long room: consider an optimal diffusion range over a length of approximately 10 metres/15 metres.
- Significantly high ceiling: consider an optimal diffusion range over a height of approximately 4 metres/5 metres.
- Restrictive geometry: consider an optimal diffusion range over spaces directly in line with the unit.

Examples:

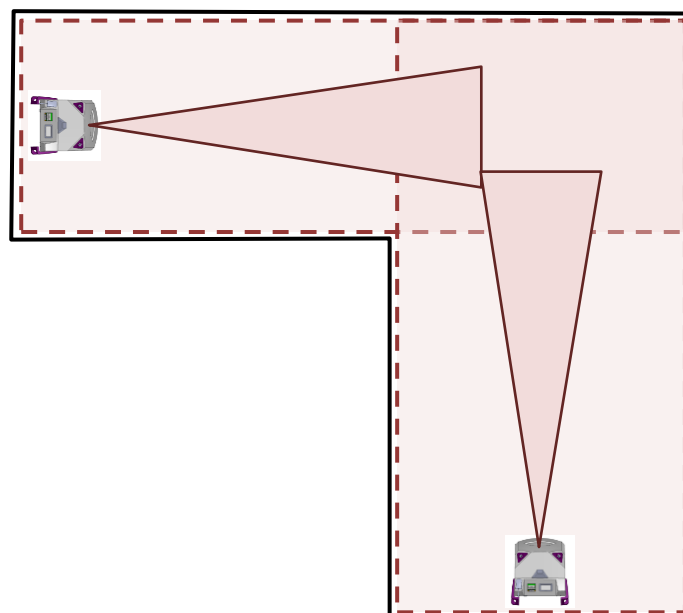
Disinfection of a corridor longer than 10/15 metres



Disinfection of an industrial production room with a height greater than 4/5 metres



Disinfection of a geometrically complex room



## 1.9 INSTRUCTIONS FOR HANDLING, STORING AND WAREHOUSING

### 1.9.1 STORING THE RHEA TITAN UNIT

1. The unit must be stored with its bottles inside in the operating position (4 months maximum for bottles, see. §1.8.2).
2. Check that the unit is switched off.
3. Arrange the power supply cable.
4. Position the unit in its storage area.
5. The unit must be stored in a clean area with an atmosphere not polluted by industrial activities.

The unit must be protected from dust, direct sunlight, heat sources, frequent changes in temperature and humidity, potentially corrosive chemicals or other products.

Storage temperature: from +5°C to +30°C.

Relative rate of humidity: from 20% to 90%.

Dust level: less than 1 mg/m<sup>3</sup>.

### 1.9.2 HANDLING AND STORAGE OF THE X-CID PRODUCT

The **X-CID** product is a hydrogen peroxide (H<sub>2</sub>O<sub>2</sub> 7%), acetic acid (5%) and peracetic acid (0.4%) -based solution. The product's characteristic smell is similar to vinegar. Handling, storing and transporting this product requires a certain number of precautions.

**ATTENTION :** THIS PRODUCT MUST BE HANDLED, STORED AND TRANSPORTED BY TRAINED PERSONNEL WHO ARE AWARE OF THE APPROPRIATE SAFETY MEASURES TO TAKE AND WEARING ADEQUATE PROTECTIVE EQUIPMENT (PVC GLOVES IN LINE WITH STANDARD 374 OR EQUIVALENT, GLASSES IN LINE WITH STANDARD 166 OR EQUIVALENT).

- Inhaling the **X-CID** fumes could cause irritation of the nose and throat.
- Contact with the skin could cause burns.
- Contact with the eyes could cause serious irritation and the risk of permanent injury.
- Ingesting the product could cause serious internal injuries.

For more information, refer to the product label and its Material Safety Datasheet.

**ATTENTION :** THE BOTTLES MUST BE STORED CLOSED, IN A VERTICAL POSITION IN AN UNHEATED AND ADEQUATELY VENTILATED ROOM, AND AWAY FROM SUNLIGHT AND ANY FLAMMABLE MATERIALS.

- Storage temperature: +5°C to +20°C.
- Shelf life: 24 months for a closed bottle/4 months after opening

**ATTENTION :** THE STORAGE OF THIS PRODUCT MUST COMPLY WITH LOCAL GUIDELINES GOVERNING THE STORAGE OF HAZARDOUS SUBSTANCES.

## 1.10 TRANSPORT

### 1.10.1 TRANSPORTING THE RHEA TITAN UNIT

Before transport: remove any bottles from the unit, close them with their original caps and store them in a dedicated place. Protect the unit against impacts and scratches.

Transport must be carried out by duly trained and qualified personnel.

The unit must be transported in its original packaging, maintained on its wheels, firmly anchored, and kept in an enclosed space (not transported on an open-air platform, for example).

**ATTENTION** : ONLY TRANSPORT THE UNIT IN THIS POSITION:



### 1.10.2 TRANSPORTING THE X-CID PRODUCT

The **X-CID** product must only be shipped by a courier or carrier specialised in the transport of hazardous substances.

**ATTENTION** : THE TRANSPORT OF THIS PRODUCT MUST COMPLY WITH LOCAL GUIDELINES GOVERNING THE TRANSPORT OF HAZARDOUS SUBSTANCES.

**ATTENTION** : TRANSPORT OF THIS PRODUCT MUST BE ENTRUSTED TO PROFESSIONALS WITH THE NECESSARY PERMISSIONS TO TRANSPORT HAZARDOUS SUBSTANCES.

### 1.11 DISPOSAL OF THE RHEA TITAN UNIT

This product is covered by European Directive 2012/19/EU of 04 July 2012 on waste electrical and electronic equipment (WEEE) and falls within category 6 “Electrical and electronic tools (with the exception of large-scale stationary industrial tools)” as defined in Appendix I to this directive.

Disposal of this product and the recovery of the resultant waste must respect regulations arising from the application of the European directive by the different member states, as well as any local regulations that complement it.











## 2 USE

### 2.1 DESCRIPTION OF THE USER INTERFACE

The **RHEA Titan** has been programmed to offer a simple, user-friendly interface to its users. The user interface comprises a 4.3-inch resistive colour touchscreen. It has an audible warning system.

#### 2.1.1 FIRST BOOT


Check that the **RHEA Titan** is connected to a ~230 V -50 Hz electrical network. During first use, the **RHEA Titan** offers you the option of changing the settings. Follow the steps below:

<p>After switching on, the <b>RHEA Titan</b> offers a choice of language:</p> <ul style="list-style-type: none"><li> French</li><li> English</li><li> German</li><li> Spanish</li><li> Chinese</li></ul> <p>Press the flag corresponding to the desired language.</p> <p>Then validate by pressing </p> <p>Then set the date and time.</p> <p>Once this is set, press  to move onto the next step</p> <p>Press  to go back.</p>	 
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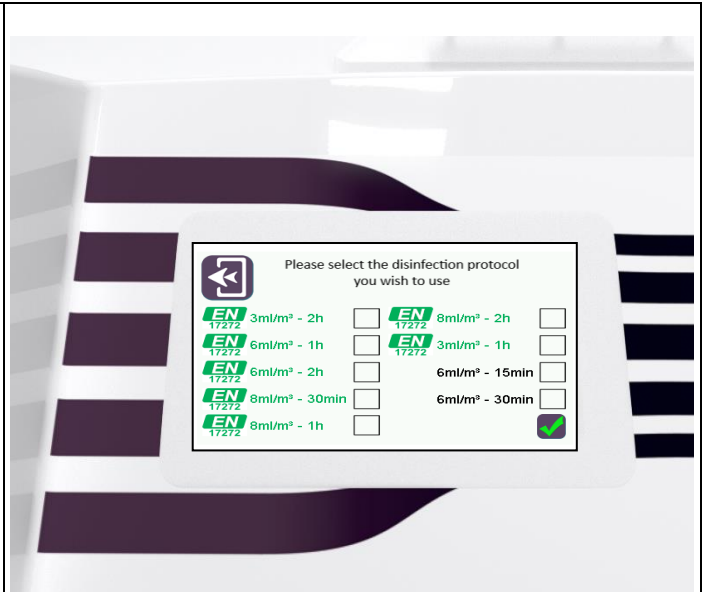
The next step is to choose the disinfection protocol:

There are 9 protocols:


- 3 ml/m<sup>3</sup> – 2 hours of contact time
- 6 ml/m<sup>3</sup> – 2 hours of contact time
- 8 ml/m<sup>3</sup> – 2 hours of contact time
- 3 ml/m<sup>3</sup> – 1 hour of contact time
- 6ml/m<sup>3</sup> – 1 hour of contact time
- 8ml/m<sup>3</sup> – 1 hour of contact time
- 6 ml/m<sup>3</sup> – 30 minutes of contact time
- 8 ml/m<sup>3</sup> – 30 minutes of contact time
- 6 ml/m<sup>3</sup> – 15 minutes of contact time
- 

After choosing your protocol, press 

Press  to go back.



After having chosen the protocol, a confirmation screen will appear

Press  to confirm the protocol

Press  to go back.





## 2.1.2 PROTOCOL SELECTION GUIDE

The **RHEA Titan** has been validated according to standard EN 17272 depending on the different protocols, in order to give the user the choice to adapt to the best use.

The table below will help with protocol choice:

Available protocols (Target X-CID concentration - contact time)	Selection criteria	Biocide range in line with EN 17272
3 ml/m <sup>3</sup> - 1 hour	<ul style="list-style-type: none"> <li>- <b>Low concentration of X-CID.</b></li> <li>Low consumption - Excellent material compatibility - Minimum aeration time</li> <li>- <b>No tuberculocide validation</b></li> <li>Compliant with EN 17 272 standard</li> </ul>	<ul style="list-style-type: none"> <li>- Bactericide</li> <li>- Fongicide</li> <li>- Sporicide</li> <li>- Levuricide</li> <li>- Virucide</li> </ul>
3 ml/m <sup>3</sup> - 2 hours	<ul style="list-style-type: none"> <li>- <b>Low concentration of X-CID.</b></li> <li>Low consumption - Excellent material compatibility - Minimum aeration time</li> <li>Quick cycle for volume &gt; 80 m<sup>3</sup> when using CUBAIR OX</li> <li>- <b>Double contact time - Long-time of exposure - Cost savings on filters</b></li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	<ul style="list-style-type: none"> <li>- Bactericide</li> <li>- Fongicide</li> <li>- Sporicide</li> <li>- Levuricide</li> <li>- Tuberculocide</li> <li>- Virucide</li> </ul>
6 ml/m <sup>3</sup> - 1 hour	<ul style="list-style-type: none"> <li>- <b>Concentration intermediaries X-CID.</b></li> <li>Quick cycle for volume &lt; 80 m<sup>3</sup> when using CUBAIR OX</li> <li>6 log efficiency on spores</li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	
6 ml/m <sup>3</sup> - 2 hours	<ul style="list-style-type: none"> <li>- <b>Medium concentration of X-CID.</b></li> <li>- <b>Double contact time - Safety margin on disinfection performances</b></li> <li><b>Long-time of exposure - Cost savings on CUBAIR OX filters</b></li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	
8 ml/m <sup>3</sup> - 30 minutes	<ul style="list-style-type: none"> <li>- <b>Maximum concentration of X-CID.</b></li> <li>- <b>Shortest contact time for quick cycle if the room is equipped with a performant HVAC system to eliminate the biocide at the end of contact time.</b></li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	
8 ml/m <sup>3</sup> - 1 hour	<ul style="list-style-type: none"> <li>- <b>Maximum concentration of X-CID.</b></li> <li>- <b>Doubled contact time - Safety margin on disinfection performances</b></li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	
8 ml/m <sup>3</sup> - 2 hours	<ul style="list-style-type: none"> <li>- <b>Maximal concentration of X-CID.</b></li> <li>- <b>Quadrupled contact time - Long-time of exposure - Safety margin on disinfection performances - Cost savings on CUABIR OX filters</b></li> <li>Compliant with EN 17 272 standard on all class of microorganisms</li> </ul>	
6 ml/m <sup>3</sup> - 15 minutes	<p><b>Protocol non-compliant with EN 17 272 under customer's validation</b></p>	<p>Non complaint with EN 17 272 standard Compliant with NF 72 281 standard</p>
6 ml/m <sup>3</sup> - 30 minutes	<p><b>Protocol non-compliant with EN 17 272 under customer's validation</b></p>	

### 2.1.3 SWITCHING ON THE UNIT

Check that the **RHEA** is connected to a ~230 V -50 Hz electrical network

When the **RHEA** Titan is connected to the mains via the power cable and the switch is set to “1”, the home screen is displayed for several seconds during software start-up. Once start-up has finished, the main screen is displayed automatically, the unit emits a validation beep and the green LED comes on.



**ATTENTION :** THE ELECTRICAL SUPPLY MUST COMPLY WITH REGULATORY TEXTS AND BE PERIODICALLY CHECKED.

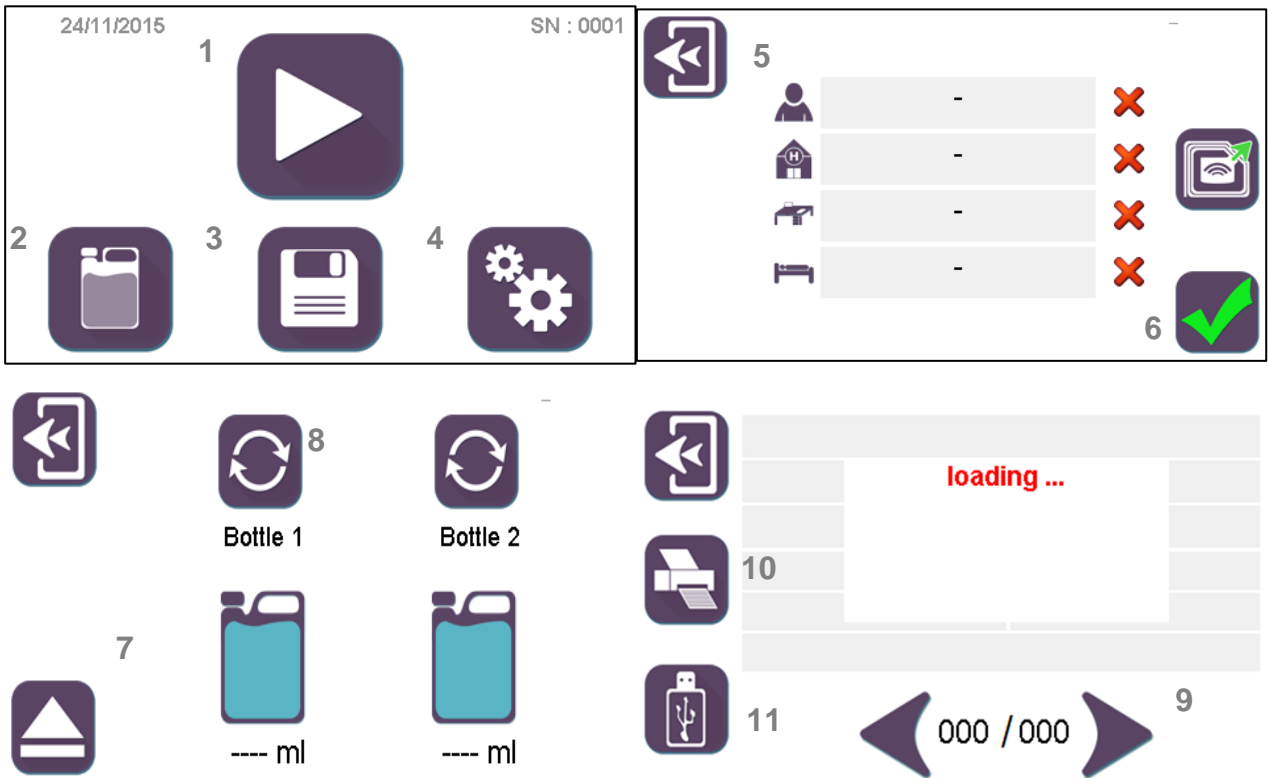
**ATTENTION :** ONLY USE POWER CABLES SUPPLIED BY THE MANUFACTURER.












### 2.1.4 SWITCHING OFF THE UNIT

To switch off the unit, simply set the switch to “0”. The green LED goes out.


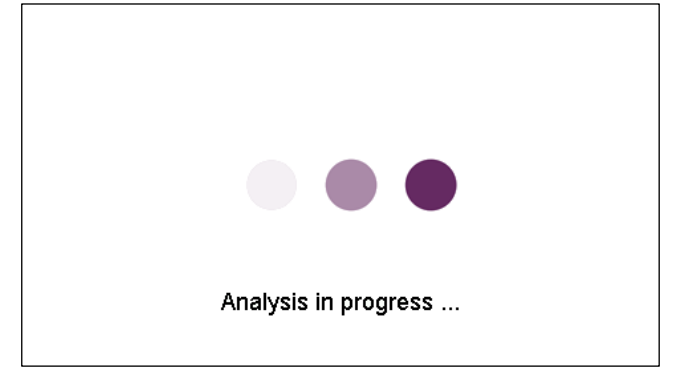

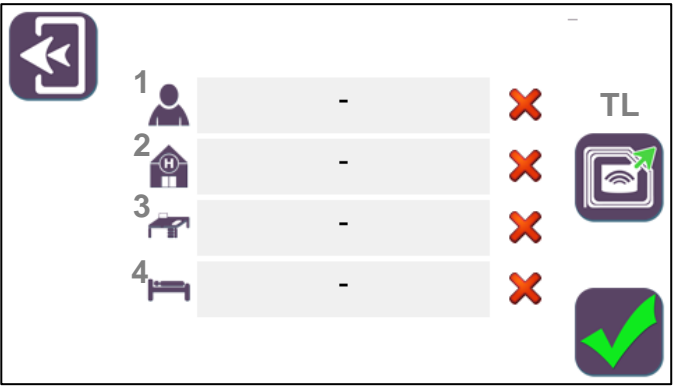



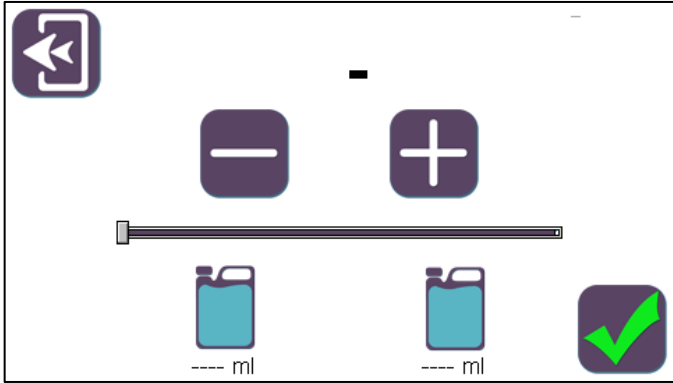

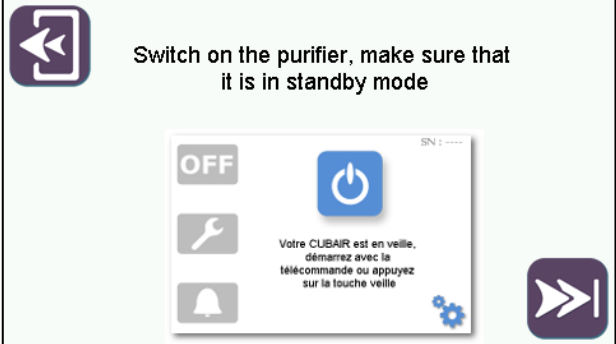
## 2.2 DESCRIPTION OF NAVIGATION ICONS

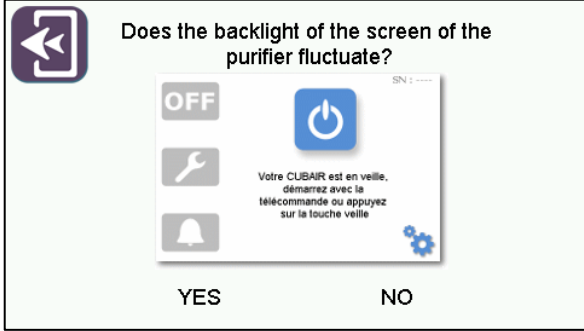
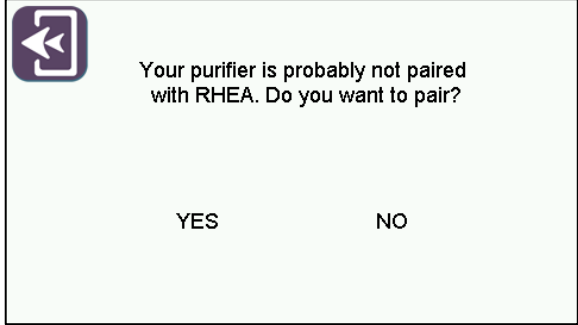
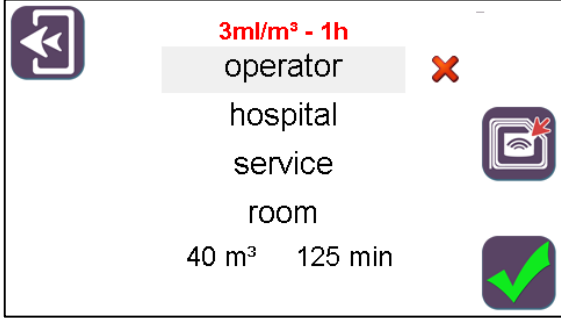



1		Run and set the disinfection cycle
2		Access the bottle menu
3		Access the datalog
4		Access the maintenance menu
5		Return to previous menu
6		Validate
7		Open the bottle compartment
8		Bottle replacement
9		Turn the page
10		Print the ticket
11		Data extraction to USB drives

## 2.3 SETTINGS MENU FOR THE ASD CYCLE

<p><b>Step 1:</b></p> <p>On the main screen, press the <b>Run disinfection cycle (1)</b> icon.</p>	
<p><b>Step 2:</b></p> <p>After pressing the button to launch the cycle, the machine will check the weight of the drums presents or not before going to the next step. It can take 10 seconds</p>	
<p><b>Step 3:</b></p> <p>During first use, or if the bottles are empty, or if they do not match the last bottles used, the system will ask you to install new bottles and to scan them using the NFC reader to access the disinfection cycle settings.</p> <p>Once the bottles are scanned, press the button again to run the disinfection cycle.</p>	
<p><b>Step 4:</b></p> <p>This brings you to the user settings screen. Press the grey rectangular boxes to enter the following information:</p> <p>1: Operator name 2: Company name 3: The department 4: The room number</p> <p>Press the validation button to proceed to step 4.</p>	

<p><b>Step 4 BIS:</b></p> <p>Option of sticking the quick programming tag, or NFC TAG, to the entrance of target rooms in order to save all of the information on a predefined cycle at once (TAG programming described in step 8).</p> <p>To read the TAG information, press the “TL” icon (see the image in step 3) and follow the instructions.</p> <p>Once the TAG is scanned, step 5 will be displayed automatically.</p>	 <p>Please scan the NFC tag</p>
<p><b>Step 5:</b></p> <p>This step is to enter the size of the room.</p> <p>Slide the cursor to quickly adjust the volume of the room to be processed then use the “-” and “+” buttons to refine your setting to the nearest m<sup>3</sup>.</p> <p>Press the validation button to move on to step 5 or the back button to go back to the previous screen</p> <p><b>Attention: The selectable volume depends on the amount of product available in the bottles and the protocol selected.</b></p>	
<p><b>Step 6:</b></p> <p>It is possible to use an air chemical decontamination unit:</p> <p>Press “Yes” if an air chemical decontamination unit is installed in the room. Go to step 6</p> <p>Press “No” if the air chemical decontamination unit is not used. Go to step 8</p>	
<p><b>Step 7:</b></p> <p>The use of an air chemical decontamination unit is validated.</p> <p>Position it in front of the RHEA Titan, ensuring that the display of the air chemical decontamination unit is visible.</p> <p>Check that the air chemical decontamination unit is switched on and that the red dot is present.</p> <p>Press the ‘next’ button if the red dot is present and move on to step 7.</p> <p>Go back if needed.</p>	

<p><b>Step 8:</b></p> <p>Press “Yes” if the chaser is active.</p> <p>Press “No” if the chaser is inactive, and move on to step 8 bis</p>	 <p>Does the backlight of the screen of the purifier fluctuate?</p> <p>OFF ON</p> <p>Votre CUBAIR est en veille, démarrez avec la télécommande ou appuyez sur la touche veille</p> <p>YES NO</p>
<p><b>Step 8 bis:</b></p> <p>Having pressed “No” in the previous step, it is possible to navigate to the pairing menu or to go back:</p> <p>Press “Yes” to go to the “pairing” menu</p> <p>Press “No” to return to step 5</p>	 <p>Your purifier is probably not paired with RHEA. Do you want to pair?</p> <p>YES NO</p>
<p><b>Step 9:</b></p> <p>A summary table is displayed with the information from previous steps (operator name, company, department, room number, size of the room, total cycle time).</p> <p>This information can be printed onto a TAG, which can then be affixed to the door, by pressing the “TE” button</p> <p>All of the information is recorded on the TAG. In step 8, only the name of the operator can be changed.</p> <p>To move on to step 9, press the validation button.</p> <p><b>If using without an air chemical decontamination unit, the total cycle time is equal to the diffusion time plus the contact time.</b></p> <p><b>If using with an air chemical decontamination unit, the total cycle time is equal to the diffusion time plus the contact time plus the purification time.</b></p>	 <p>3ml/m<sup>3</sup> - 1h</p> <p>operator hospital service room</p> <p>40 m<sup>3</sup> 125 min</p> <p>TE</p>  <p>Please scan the NFC tag</p>

**Step 10:**

After validating the summary table, the cycle launch screen appears.

There are two options to start the cycle:

- Automatic start: Press the start button (1), which goes directly to step 10
- Manual start: Press the remote control button (2). Leave the room. Once outside the room, press the “play” button on the remote control, which triggers step 10



**Step 11:**

Once the previous step is validated, the timeout screen is displayed.

It indicates the number of seconds remaining before spraying starts (45 seconds).

To stop the cycle, press the STOP button.

A warning beep signals to the operator that he must leave the room

The operator must have left the room before spraying starts (step 8).

**It is prohibited to remain in the room without wearing personal protective equipment (see §1.1).**



**Step 12:**

Once the timeout period has elapsed, the spray cycle begins. The spray screen appears.

It indicates the number of minutes and seconds remaining before the end of the spray cycle.

To stop the cycle, press the STOP button.



<p><b>Step 13:</b></p> <p>Once the required quantity of product is sprayed, spraying stops. The contact time screen appears.</p> <p>It indicates the number of minutes and seconds remaining before the end of the contact time.</p> <p><b>It is prohibited to remain in the room without wearing personal protective equipment (see §1.1).</b></p> <p><b>It is essential that the machine is not disconnected during the contact time.</b></p>	
<p><b>Step 13 (if air chemical decontamination unit):</b></p> <p>If using with an air chemical decontamination unit (see steps 5 to 7), this is started by the RHEA Titan at the end of the contact time.</p> <p>A theoretical purification time proportional to the size of the room is then displayed.</p> <p><b>It is prohibited to remain in the room without wearing personal protective equipment (see §1.1).</b></p> <p><b>It is essential that the machine is not disconnected during purification time.</b></p>	
<p><b>Step 14:</b></p> <p>Once the contact time (step 12) or the purification time (step 13) elapses, the disinfection cycle is finished and the end of cycle screen appears.</p> <p>It is possible to enter <b>wearing personal protective equipment (even when using an air chemical decontamination unit)</b></p> <p>If using an air chemical decontamination unit, check that the H<sub>2</sub>O<sub>2</sub> concentration is less than 1 ppm using a H<sub>2</sub>O<sub>2</sub> detector (sold separately). If the detector displays a value less than 1 ppm, remove the personal protective equipment and switch off the air chemical decontamination unit.</p> <p>If needed, press the print button to print a ticket summarising the data for this spray cycle.</p> <p>Press the validation button to go back to the main screen.</p>	



## 2.4 MANAGEMENT AND REPLACEMENT OF BOTTLES

To make the process safe and guarantee the performance of the surface disinfection cycles, when changing the bottles, the **RHEA Titan** checks that the biocide product used corresponds to the X-CID product. This check is carried out using the NFC reader (contactless) on the unit, which scans the NFC label on each bottle (see procedure below).

When the operator loads a bottle, the NFC label scanner reads the information stored on the bottle label to ascertain the quantity of biocide, the batch number and the serial number of the bottle.

During loading, the unit also verifies that the tag is valid. When the bottle has been loaded, its tag is marked Invalid, so that it cannot be used in another unit.

When the operator unloads a bottle, the label scanner makes it possible to enter the new quantity of remaining biocide on the label, and the tag is declared Valid so that it can be reused during subsequent cycles

In addition to checking the validity of the tag, the **RHEA Titan** checks the consistency between the quantity of product read on the NFC tag and the actual measurement on the scale. If there is any inconsistency, a warning message appears, and it is not possible to run a cycle.

Finally, before each cycle, the **RHEA Titan** checks the quantity of biocide in the bottles against the quantity of biocide recorded during the previous cycle in order to ascertain whether a bottle or product has been intentionally added without following the standard procedure for reloading the product.

The **RHEA Titan** has been designed to operate with 2 bottles.

For first use, the unit requires 2 bottles to be loaded and their tags scanned. It is possible to use both new and used bottles, as long as the used bottles have been correctly scanned when removed previously.

**Note 1: in this specific case, it is not possible to operate the RHEA Titan with a single bottle.**

Should one of the two bottles become empty during diffusion, the remaining quantity to be sprayed will be taken from the second bottle. X-CID diffusion is through a single nozzle while the other only produces a product-free airflow. The **RHEA Titan** total spray speed is thus halved, and the diffusion time required to diffuse the quantity of biocide is automatically adjusted.


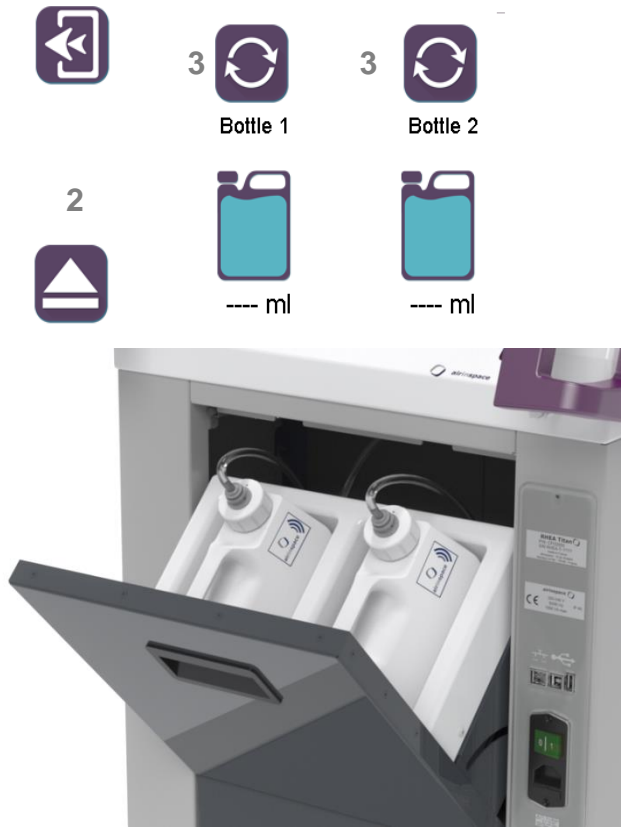
**Note 2: it is advisable to replace the two bottles at the same time so that the quantities of X-CID remain balanced between both bottles, which will guarantee optimal performances. Diffusion through a single nozzle should actually be considered a downgraded mode because the aerualics are different from those validated during the compliance tests for standard EN 17272. Moreover, the spray time indicated by the unit could be incorrect because it is operating with just one nozzle.**

**Note 3: it is advisable to use 2 new bottles when the residual quantity of X-CID is insufficient to treat the envisaged volume of the room. It is then necessary to scan the tags of bottles replaced when they are removed (see 1.1 - step 3) so that they can subsequently be reused on more suitable cycles with a lesser volume, jointly or with other old bottles whose residual quantity of X-CID is the closest to ensure a 50/50 split.**

Beyond the preceding notes, it is possible that the remaining quantities of product in the two bottles following several cycles of use will not be enough for the usual cycles and that these small residual amounts of X-CID will be difficult to divide equally between the bottles - example 1: 200 ml remaining in each bottle and average cycles over 80 m<sup>3</sup> at 6 ml/m<sup>3</sup>, therefore requiring 480 ml of X-CID each time. In these cases, it is possible to replace a single bottle, either with a new bottle (2500 ml) or a bottle containing sufficient product - in example 1, a bottle containing at least 280 ml to complete the 200 ml of the 2nd bottle to completely empty one of the two initial bottles and not lose any product. In these cases, the limitations in Note 2 apply and must be taken into account in a prior risk analysis. In order to empty the second initial bottle, it will be necessary to repeat this operation by changing the previously replaced bottle (after scanning) with another new bottle or a bottle with a capacity close to that of the previous one before the cycle, in order to have (after complete emptying) two equivalent bottles of residual X-CID for future cycles.

**Note 4: In the previous cases, it is possible to continue operating with an empty bottle after the cycle has emptied it. Even if the empty bottle is removed and the RHEA Titan requires you to scan a new bottle, it is possible in this specific case not to introduce a new bottle and to operate it with 1 single bottle. This option should only be used**

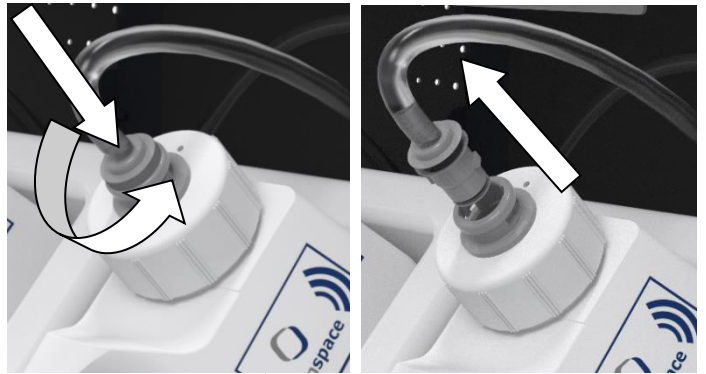
exceptionally when no other bottles of X-CID are available to reload the RHEA Titan and to restore optimum operation with 2 nozzles.

<p><b>Step 1:</b></p> <p>On the main screen, press the bottle button (1).</p>	 <p>The screenshot shows the main interface with a date '24/11/2015' and serial number 'SN : 0001'. A large play button is at the top center. Below it, there are three icons: a bottle icon labeled '1', a document icon, and a gear icon.</p>
<p><b>Step 2:</b></p> <p>Once in the bottle menu, you can check the quantity of product remaining in the bottles.</p> <p>To access the bottles, press the open button (2) then tilt the bottle compartment.</p> <p>Two options:</p> <ul style="list-style-type: none"><li>- Install the new bottles.</li><li>- The bottles currently in the machine are not completely empty and it is possible to keep them as there is enough product remaining for another room.</li></ul> <p>Press the bottle replacement button (3) Press the button for the bottle to be replaced (bottle 1 or bottle 2)</p> <p><b>It is advisable to replace the two bottles at the same time to optimise the machine's performance.</b></p> <p><b>Users must be informed that should one of the bottles become empty during diffusion, the remaining quantity to be diffused will be taken from the second bottle. In this case, diffusion will take place via a single nozzle.</b></p>	 <p>The screenshot shows the bottle menu with a back arrow icon (2) and two circular refresh icons (3) labeled 'Bottle 1' and 'Bottle 2'. Below these are two bottle icons with '---- ml' underneath. The photograph shows the machine's bottle compartment open, revealing two bottles inside.</p>

### Step 3:

Disconnect the old bottle:

- Disconnect the quick connector by pressing the top and turning it a quarter turn to unlock it then lift it upwards carefully
- Remove the bottle from the bottle compartment
- Unscrew the dip tube and remove it (use gloves and a cloth)
- Take a new bottle
- Screw the dip tube on top
- Put the bottle into the machine
- Correctly connect the quick connector



### Step 4:

Once the new bottle is in its compartment, scan it so that it is accounted for by the machine

Repeat these steps for bottle 2



Then close the bottle compartment to run a new disinfection cycle.




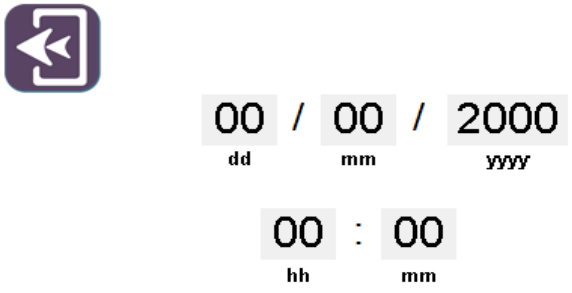
Please scan the NFC tag of new bottle 1 ...




## 2.5 CHANGING THE LANGUAGE

<p><b>Step 1:</b></p> <p>On the main screen, press the maintenance button (1).</p>	 <p>The screenshot shows a main screen with a date '24/11/2015' at the top left and 'SN : 0001' at the top right. There are four large buttons: a play button at the top center, a maintenance button (represented by a tank icon) at the bottom left, a document icon at the bottom center, and a gear icon (labeled '1') at the bottom right.</p>
<p><b>Step 2:</b></p> <p>Once in the maintenance menu, select the "language" button (2).</p> <p>To change the language, simply press the appropriate button. The flag as well as the text in the menu will change.</p>	 <p>The screenshot shows the maintenance menu with a back arrow button (labeled '2') at the top left. Below it are six buttons arranged in two rows of three: 'Language' (with a UK flag), 'Password' (with a lock icon), 'Date and time' (with a calendar icon), 'Protocol' (with a document and lock icon), 'Remote control' (with a remote icon), and 'settings' (with a wrench icon).</p>

## 2.6 SETTING THE DATE AND TIME

<p><b>Step 1:</b></p> <p>Go to the maintenance menu (see step 1 for changing the language)</p> <p>Once in the maintenance menu, use the “date and time” button (1).</p> <p>Press this button to move on to the next step.</p>	 <p>The image shows a maintenance menu with a back arrow icon in the top left. There are six icons arranged in a 2x3 grid: a UK flag for 'Language', a padlock for 'Password', a calendar for 'Date and time' (with a '1' above it), a yellow 'PROTOCOL' card with a padlock for 'Protocol', a remote control for 'Remote control', and a wrench for 'settings'.</p>
<p><b>Step 2:</b></p> <p>Once in the menu, press the boxes to display the digital keyboard and type in the figures corresponding to the Day, Month, Year, Hour and Minute.</p>	 <p>The image shows a digital keyboard with a back arrow icon in the top left. It has two rows of input boxes. The first row contains three boxes: '00 / 00 / 2000', with 'dd' below the first, 'mm' below the second, and 'yyyy' below the third. The second row contains two boxes: '00 : 00', with 'hh' below the first and 'mm' below the second.</p>

## 2.7 PROTOCOL MENU

<p><b>Step 1:</b></p> <p>Go to the maintenance menu (see step 1 for changing the language)</p> <p>Once in the maintenance menu, select the “protocol” button (1).</p> <p>Press this button to move on to the next step</p>	 <p>The image shows the same maintenance menu as in step 2.6, but with a '1' next to the 'Protocol' button (the yellow card with a padlock).</p>
--	--

**Step 2:**

After pressing the protocol button, a digital keyboard appears. Enter the 4-digit password.

Type the code to move on to the next step or press the back button to go back to the previous screen



**Step 3:**

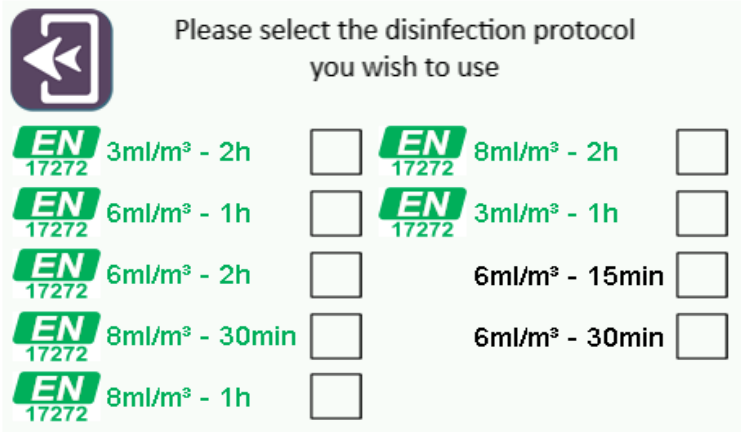
Once the password is validated, the “protocol” menu appears

There are 9 protocols:

- 3 ml/m<sup>3</sup> – 2 hours of contact time
- 6 ml/m<sup>3</sup> – 2 hours of contact time
- 8 ml/m<sup>3</sup> – 2 hours of contact time
- 3 ml/m<sup>3</sup> – 1 hour of contact time
- 6ml/m<sup>3</sup> – 1 hour of contact time
- 8ml/m<sup>3</sup> – 1 hour of contact time
- 6 ml/m<sup>3</sup> – 30 minutes of contact time
- 8 ml/m<sup>3</sup> – 30 minutes of contact time
- 6 ml/m<sup>3</sup> – 15 minutes of contact time

After choosing your protocol,

press  to go back.



## 2.8 DATALOG MENU

### Step 1:

On the main screen, press the Datalog button (1).



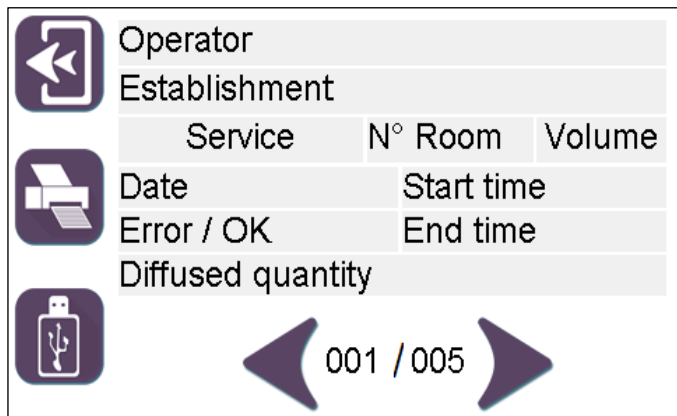
### Step 2:

This menu displays the spray cycles carried out by the machine.

Using the arrows, you can navigate through the different pages of spray cycles

From this menu, you can print a ticket by pressing the print button (2).

It is also possible to extract this data to a USB drive (see step 3).



### Step 3:

To collect the data and read it on a computer:

Insert a USB into the connector above the mains socket (see image opposite)

Press the USB button (3).

A “Loading” box appears with a loading progress status.

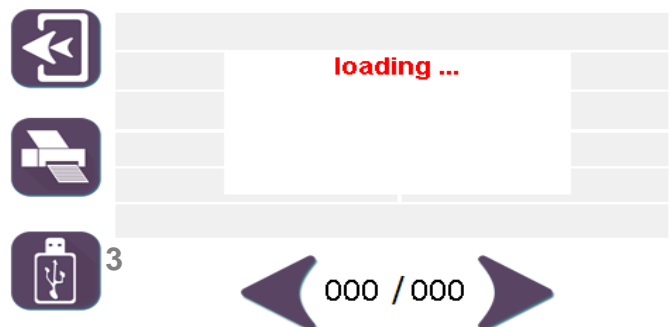
Once loading has finished, connect the USB to a computer to recover the file named “LOGRHEA”.

Use Excel to open the file.

#### Note: USB compatibility





The RHEA Titan is compatible with USB drives with a capacity of less than 32 GB and formatted to a FAT32 file system.

Use the airinspace® USB provided. Erase the Datalog file before loading any new information.



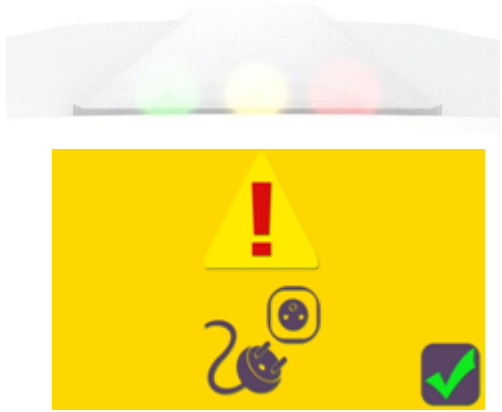
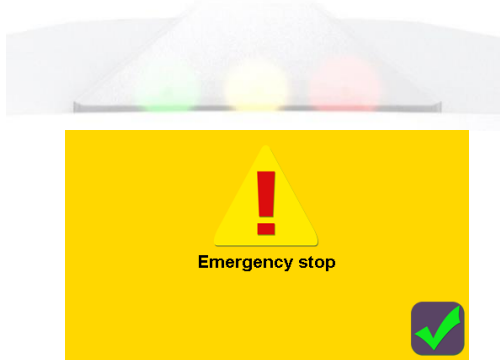
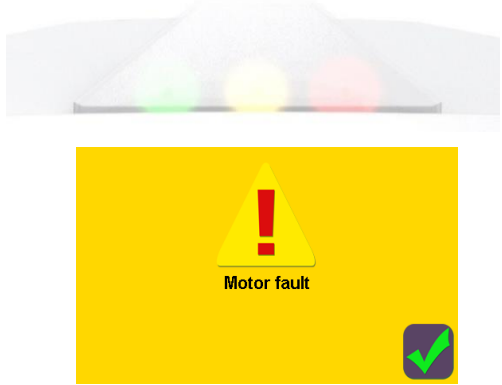
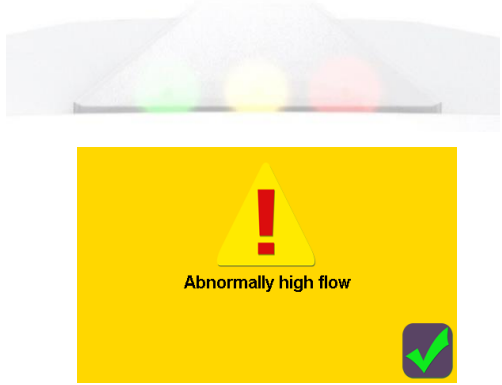
## 2.9 WARNINGS AND ERROR REPORTING

### 2.9.1 WARNINGS

<p><b>“Leave the room” warning</b></p> <p>This screen appears when the cycle is launched.</p> <p>You have 45 seconds to leave the room. After this, spraying begins</p> <p>For 45 seconds, the red LED flashes and a warning beep sounds.</p> <p>If needed, press STOP to cancel.</p>	
<p><b>“Spray” warning</b></p> <p>This screen appears when the spray cycle is launched.</p> <p>During the cycle, an animation appears as well as a countdown, which indicates the time remaining until the end of spraying. The red LED remains on.</p> <p>This time is proportional to the choice of protocol and the size of the room.</p> <p>If needed, press STOP to cancel.</p>	
<p><b>“Contact time” warning</b></p> <p>This screen appears during the contact time cycle.</p> <p>During the cycle, a countdown indicates the time remaining and the red LED flashes.</p> <p>This cycle is proportional to the choice of protocol.</p> <p>It is not advisable to disconnect the machine, otherwise the cycle will not be registered as completed in the datalog.</p>	
<p><b>“Cycle finished” warning</b></p> <p>This screen appears at the end of the cycle. The green and red LEDs flash.</p> <p>Use a mask to enter the room without risk.</p> <p>You can print a ticket or press the validation button.</p> <p>Pressing the validation button returns you to the main menu.</p>	



## 2.9.2 ERROR REPORTING

<p><b>Power outage</b></p> <p>This screen appears when there is a power outage during a disinfection cycle.</p> <p>The three LEDs flash.</p> <p>Press the validation button to exit the error.</p>	 <p>The image shows a top-down view of a disinfection unit with three flashing LEDs (green, yellow, red). Below it is a yellow error screen with a red exclamation mark in a triangle, a blue icon of a power plug, and a blue checkmark in a square.</p>
<p><b>Emergency stop</b></p> <p>This screen appears when the operator has stopped the cycle during spraying.</p> <p>The three LEDs flash.</p> <p>Press the validation button to exit the error.</p>	 <p>The image shows a top-down view of a disinfection unit with three flashing LEDs (green, yellow, red). Below it is a yellow error screen with a red exclamation mark in a triangle, the text "Emergency stop", and a blue checkmark in a square.</p>
<p><b>Motor error</b></p> <p>This screen appears when there is an absence of pressure at the motor outlet.</p> <p>The three LEDs flash.</p> <p>Press the validation button to exit the error.</p>	 <p>The image shows a top-down view of a disinfection unit with three flashing LEDs (green, yellow, red). Below it is a yellow error screen with a red exclamation mark in a triangle, the text "Motor fault", and a blue checkmark in a square.</p>
<p><b>High flow/low flow error</b></p> <p>This screen appears if the system registers a significant deviation in flow.</p> <p>Curative maintenance by an approved technician is necessary to resolve this error.</p> <p>The three LEDs flash.</p> <p>Press the validation button to exit the error.</p>	 <p>The image shows a top-down view of a disinfection unit with three flashing LEDs (green, yellow, red). Below it is a yellow error screen with a red exclamation mark in a triangle, the text "Abnormally high flow", and a blue checkmark in a square.</p>

## 3 MAINTENANCE - REPAIR

### 3.1 COMPATIBILITY OF MATERIALS WITH THE X-CID PRODUCT

The **X-CID** disinfection product is compatible with the following list of materials:

- Stainless steel 302, 316, 410
- Painted steel
- Inconel
- Acrylic and oil-based paint
- Teflon, Polyester, Polystyrene, Polycarbonate, Polypropylene, Polyethylene, Acrylic, PVC, Nylon 6, 6-6, 12
- ABS, Viton A, Nitrile, Silicone, Neoprene, Natural rubber

### 3.2 CLEANING

Use a single-use or recyclable wipe.

### 3.3 DISTRIBUTOR WARRANTY

Contact your local **airinspace®** dealer.

Note: any problems arising from an unauthorised repair attempt, modification, fall, use at incorrect voltage or operations that do not comply with the instructions in the User Manual, are not covered by the warranty.

### 3.4 MODEL IDENTIFICATION

When contacting **airinspace®** or a dealer, please provide the serial number for the **RHEA** and its date of purchase:



**RHEA Titan**  
P/N: CP22000  
S/N: RHEA-T-????  
made in France  
airinspace™ - 14 rue Jean Monnet  
Elancourt 78990 - FRANCE

### CONTACT **airinspace®**

**Airinspace S.E.**

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78990 Elancourt  
France

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📠 +33 1 30 07 01 02

[contact@airinspace.com](mailto:contact@airinspace.com)

[www.airinspace.com](http://www.airinspace.com)