

**AES SERIES - INSTALLATION GUIDE**

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Information to consider before installing your RAYPA autoclave.

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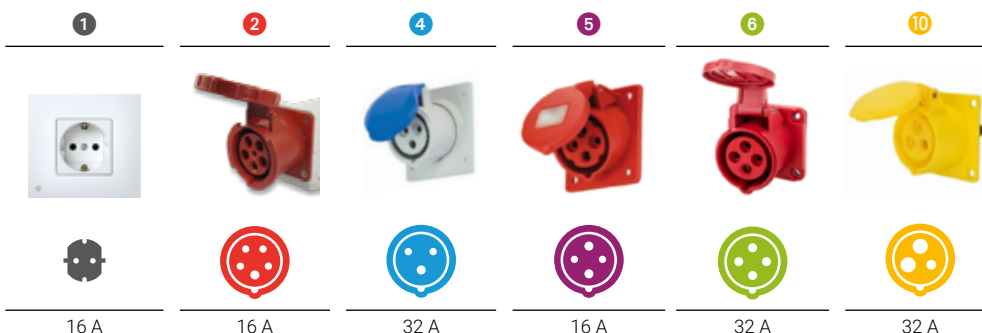


## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### ELECTRICAL CONNECTION STANDARD

The following table shows the plug configuration according to international IEC and SCHUKO standards. For customers requiring other plugs and other electrical configurations, please contact our technical service.

MODEL	FREQUENCY	POWER	AMPERES / PHASE	VOLTAGE	CONNECTION
AES-28	50/60 Hz	2000 W	9 A	230 (1P+N+PE) V	16 A ①
AES-28-115V	50/60 Hz	2000 W	17 A	120 (1P+N+PE) V	32 A ⑩
AES-50	50/60 Hz	3200 W	14 A	230 (1P+N+PE) V	16 A ①
AES-50-115V	50/60 Hz	3200 W	27 A	120 (1P+N+PE) V	32 A ⑩
AES-50-5K	50/60 Hz	5000 W	22 A	230 (1P+N+PE) V	32 A ④
AES-75	50/60 Hz	3200 W	14 A	230 (1P+N+PE) V	16 A ①
AES-75-115V	50/60 Hz	3200 W	27 A	120 (1P+N+PE) V	32 A ⑩
AES-75-6K	50/60 Hz	6000 W	9 A	400 (3P+N+PE) V	16 A ②
AES-110	50/60 Hz	4500 W	7 A	400 (3P+N+PE) V	16 A ②
AES-110-220T	50/60 Hz	4500 W	12 A	230 (3P+PE) V	16 A ⑤
AES-110-220M	50/60 Hz	4500 W	20 A	230 (1P+N+PE) V	32 A ④
AES-110-6K	50/60 Hz	6000 W	9 A	400 (3P+N+PE) V	16 A ②
AES-110-6K-220T	50/60 Hz	6000 W	15 A	230 (3P+PE) V	16 A ⑤
AES-110-9K	50/60 Hz	9000 W	13 A	400 (3P+N+PE) V	16 A ②
AES-110-9K-220T	50/60 Hz	9000 W	23 A	230 (3P+PE) V	32 A ⑥
AES-150	50/60 Hz	6000 W	9 A	400 (3P+N+PE) V	16 A ②
AES-150-220T	50/60 Hz	6000 W	15 A	230 (3P+PE) V	16 A ⑤
AES-150-220M	50/60 Hz	6000 W	26 A	230 (1P+N+PE) V	32 A ④
AES-150-9K	50/60 Hz	9000 W	13 A	400 (3P+N+PE) V	16 A ②
AES-150-9K-220T	50/60 Hz	9000 W	23 A	230 (3P+PE) V	32 A ⑥



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ELECTRICAL CONNECTION NORTH AMERICA

The following table shows the plug configuration according to the NEMA standard for the United States and other countries. For customers requiring other plugs and other electrical configurations, please contact our technical team.

Attention: The following table lists standard electrical configuration versions. The power of each model can be increased if needed. Furthermore, the voltage can be modified to suit other configurations if required. Moreover, certain models can be adjusted between single-phase and three-phase. Additionally, the provided NEMA plug can also be customized if needed.

MODEL	FREQUENCY	POWER	AMPERES / PHASE	VOLTAGE	CONNECTION
AES-28-115V-US	50/60 Hz	2000 W	17 A	120 (1P+N+PE) V	NEMA 5-20P <span>1</span>
AES-50-115V-US	50/60 Hz	3200 W	27 A	120 (1P+N+PE) V	NEMA 5-50P <span>2</span>
AES-75-115V-US	50/60 Hz	3200 W	27 A	120 (1P+N+PE) V	NEMA 5-50P <span>2</span>
AES-110-220T-US	50/60 Hz	4500 W	12 A	230 (3P+PE) V	NEMA L15-15P <span>3</span>
AES-150-220T-US	50/60 Hz	6000 W	15 A	230 (3P+PE) V	NEMA L15-20P <span>4</span>

1



5-20R

2



5-50R

3



L15-15R

4



L15-20R

## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### CONNECTIONS GRAPH



**7. 2 POSITION DRAIN TAP:**  
- OPEN  
- CLOSED



- 1. RS-232 PORT
- 2. PC/PRINTER SELECTOR



**3. POWER CABLE**  
(AES-28, AES-50, and AES-75 models)  
Cable length: 2 m




**3. POWER CABLE**  
(AES-110 and AES-150 models)  
Cable length: 2 m

**4. SAFETY THERMOSTAT FOR  
THE HEATING ELEMENTS OF THE  
STERILIZATION CHAMBER**

**5. SAFETY VALVE OUTLET**

**6. STERILIZATION CHAMBER DRAIN  
AND PURGE OUTLET**

 **ATTENTION:** The water from outlet 6 may be at a high temperature if it is expelled shortly after the completion of a sterilization cycle.

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COMPONENT INCLUDED

In addition to the accessories chosen at the time of purchase of the autoclave (baskets, tray supports, software kit, etc.), the following component is included:

1 stainless steel protective cover for the heating elements, with legs to place at the bottom of the sterilization chamber.



MODELS	DIAMETER Ø
AES-28	290 mm
AES-50	290 mm
AES-75	390 mm
AES-110	390 mm
AES-150	490 mm


## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### DRAINAGE CONNECTION

The installation of the AES Series autoclaves is **plug and play**, meaning that to operate the equipment, you only need to plug it in. However, all models are equipped with a drainage outlet to empty the sterilization chamber and discharge condensates produced during the regular operation of the equipment.






There are three options for managing the autoclave's discharge: **A**, **B**, and **C** using the connection for the STERILIZATION CHAMBER DRAIN AND PURGE OUTLET **(6)**.

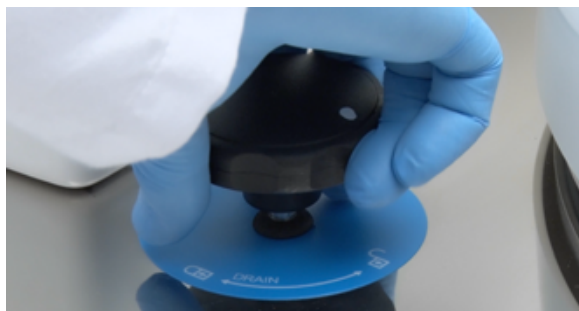
#### STANDARD

**A.** Place a container (such as a drum, tray, etc.) under the STERILIZATION CHAMBER DRAIN AND PURGE OUTLET **(6)** to collect the condensate generated during each sterilization cycle. To proceed with a water change, the drain tap must be manually operated by turning it to the open position  to allow the water to flow out.


##### Maximum water volume

If you choose this drainage option, it is crucial to consider the maximum water volume of the sterilization chamber before performing a water change, as it may vary depending on the model.

				
<b>AES-28</b>	<b>AES-50</b>	<b>AES-75</b>	<b>AES-110</b>	<b>AES-150</b>
3L	3L	5,5L	5,5L	9,5L



#### OPTIONAL

**B.** An external tank offered by RAYPA can also be used, permanently connected to the equipment, to collect condensates during the purge phase and drain dirty water during cleaning operations. To do this, the STERILIZATION CHAMBER DRAIN AND PURGE OUTLET **(6)** must be connected to the external TANK-AE using the supplied silicone hose (Ø5 X Ø8mm, 1m long). It is important to position the bottle so that its base is lower than the autoclave's drainage outlet. To perform a water change, the drainage valve must be manually operated by turning it to the open position  to allow the water to flow out.


##### TANK-AE accessory

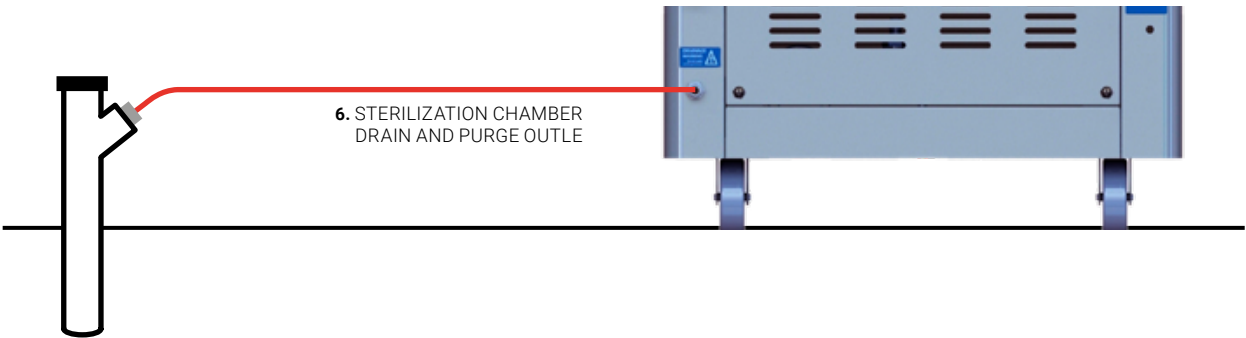
The TANK-AE accessory consists of a hose and a 12L bottle with a built-in tap to collect the condensates during the purge phase, and also to drain the sterilization chamber during autoclave cleaning operations. It is especially useful in cases where there is no access to a drainage connection near the autoclave.



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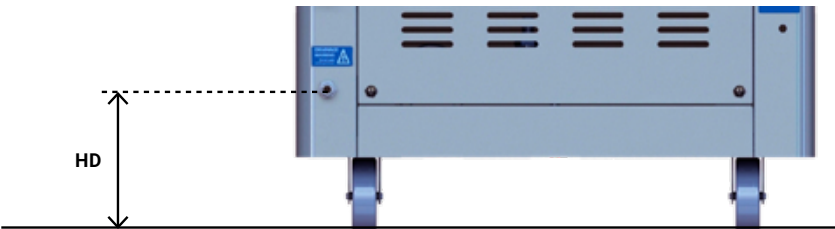
OPTIONAL

C. Finally, there is a third option for managing the discharge of condensates and draining the chamber for customers who have a floor drain. In this case, a hose (not included) should be connected from the STERILIZATION CHAMBER DRAIN AND PURGE OUTLET (6) to the drain. To perform a water change, the drainage valve must be manually operated by turning it to the open position  to allow the water to flow out.



**CONSIDER:**  
Height and position of drain connection


MODEL	HD STERILIZATION CHAMBER DRAIN AND PURGE OUTLE
AES-28	140 mm
AES-50	140 mm
AES-75	140 mm
AES-110	140 mm
AES-150	140 mm

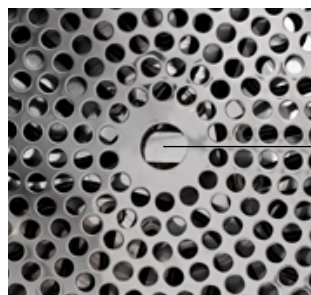


## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### WATER SUPPLY FOR STERILIZATION

Purified water is necessary for the operation of the autoclave and is added manually in the sterilization chamber until it covers completely the heating elements cover.

The correct position of the drainage tap while filling the sterilization chamber and during normal work with the autoclave is .



Central level of the protective rack indicating the water fill limit

### ECOPUR-500 accessory

The ECOPUR-500 accessory is an eco-efficient purifier designed to filter water directly from a water inlet, allowing for easy and economical filling of containers. This system is ideal as an alternative in situations where purified water networks are unavailable or when purchasing purified water containers is not preferred. With high-efficiency reverse osmosis technology, our ECOPUR-500 water purifier removes up to 99% of chlorine and chemical contaminants, ensuring high-quality water. Additionally, it features a quick-connect system for easy and secure installation, making this accessory a practical and sustainable solution for providing purified water anywhere.



### IMPORTANT NOTE:

#### PURIFIED WATER

The water used to feed the autoclave must be free of contaminants and meet the following hardness and conductivity requirements:

- Hardness:  $\leq 0.02$  mmol/l
- Conductivity: between  $5 \mu\text{S}/\text{cm}$  and  $15 \mu\text{S}/\text{cm}$

Multiple systems can be used to obtain water with these requirements: osmotized, demineralized, decalcified, distilled water, etc\*.

\*Note: Take into account that distilled water that is too pure (conductivity less than  $5 \mu\text{S}/\text{cm}$ ) is not recommended as it may cause long term corrosion on stainless steel.



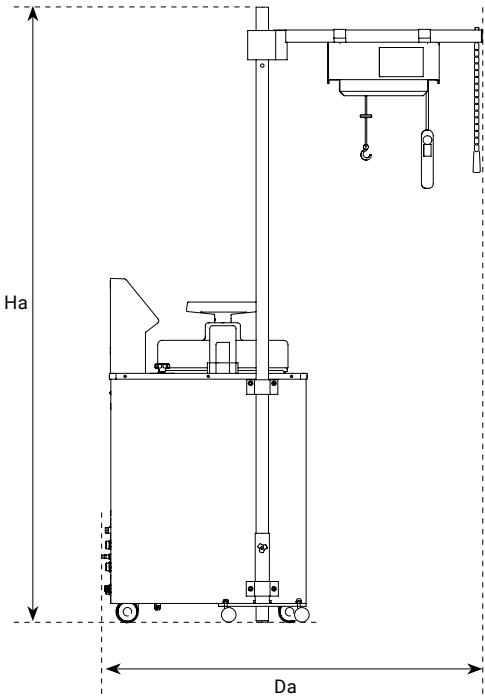
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INTEGRATED BASKET LIFT SYSTEM INSTALLATION

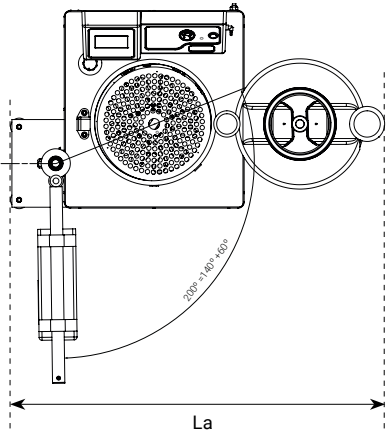
To ensure safe handling of baskets in larger-volume autoclaves, it is recommended to use a basket lifting crane with a rotating mast. For the AES Series autoclaves, the recommended models are the CLASSIC-LIFT and CLASSIC-LIFT-R cranes, compatible with loads of up to 30 and 40 kg, respectively.

REFERENCE	CRANE DIMENSIONS L x D x H	MAXIMUM LOAD PER BASKET	AUTOCLAVE MODEL COMPATIBILITY	DIMENSIONS OF THE CRANE + AUTOCLAVE SET La x Da x Ha
CLASSIC-LIFT	800 x 300 x 2100 mm	30 Kg	AES-75	1276 x 1296 x 2100 mm
			AES-110	1276 x 1296 x 2100 mm
CLASSIC-LIFT-R	800 x 300 x 2600 mm	40 Kg	AES-110	1276 x 1296 x 2600 mm
			AES-150	1543 x 1536 x 2600 mm

SIDE VIEW



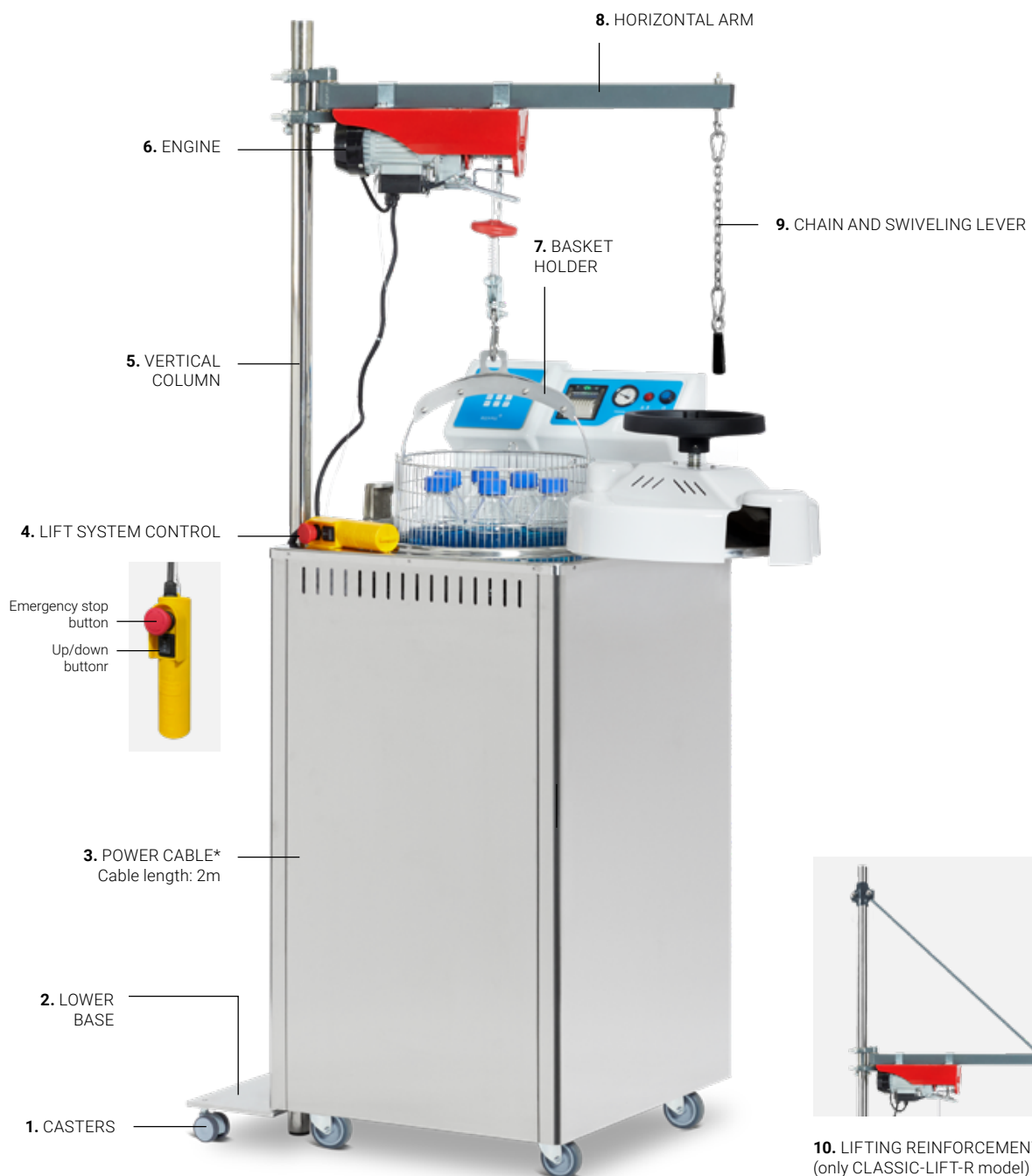
PLAN VIEW



**ATTENTION:** Each crane is factory-adjusted according to the specific measurements of the autoclave with which it is installed. In case you want to install a basket lift system after the purchase of the autoclave, please contact the technical service.

## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### INTEGRATED BASKET LIFT SYSTEM DESCRIPTION



## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### SIMPLIFIED INSTALLATION GUIDE



#### ATTENTION

Read the specific manual of the integrated basket lift system before assembling, installing and handling this accessory.

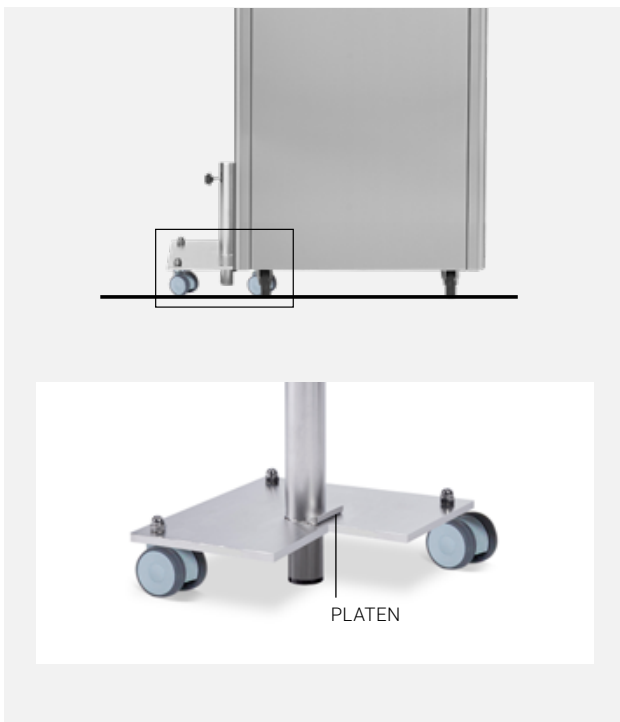
#### Step 1

Place the autoclave in the chosen working location and verify that it is placed on a stable surface.

You should also ensure the autoclave has the necessary boreholes on its left side to install the basket lift system. The height and distribution of these holes is factory set according to the specific purchased autoclave model.

After performing all the previous steps, install the lower support by embedding the platen into the autoclave base, in order to fasten the support into the furniture. The height of the lower base is factory set according to the specific purchased autoclave model.

This operation requires lifting the autoclave slightly sideways to introduce the platen beneath.



#### Step 2

Insert the vertical column and tighten the indicated screw to fasten the column.

Fasten the vertical column to the autoclave chassis with the metal flanges and screws supplied.

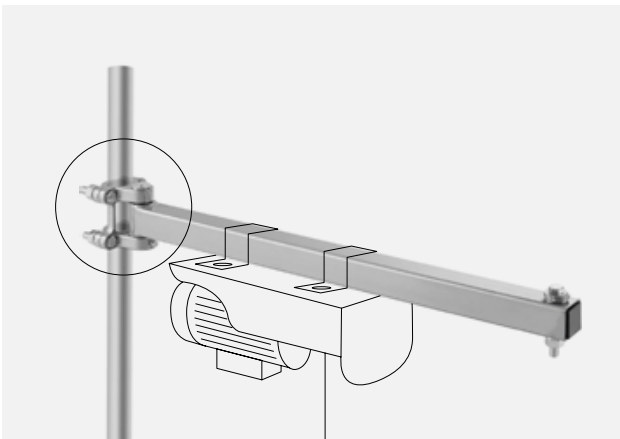


## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### Step 3

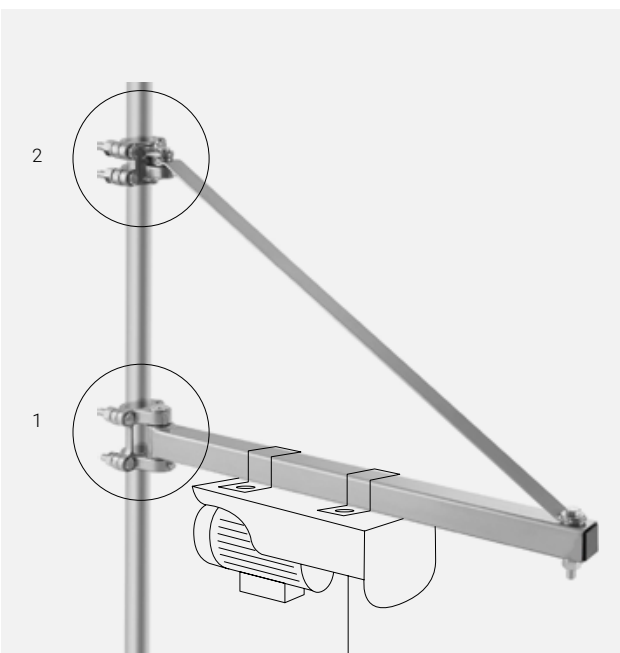
#### CLASSIC-LIFT model

Install the horizontal arm with the engine.



#### CLASSIC-LIFT-R model

First, install the horizontal arm with the engine (1). Then, screw the reinforcement bar (2).



### Step 4

Once the assembly is complete, place a basket on the hook and check that the basket moves vertically in and out of the autoclave.



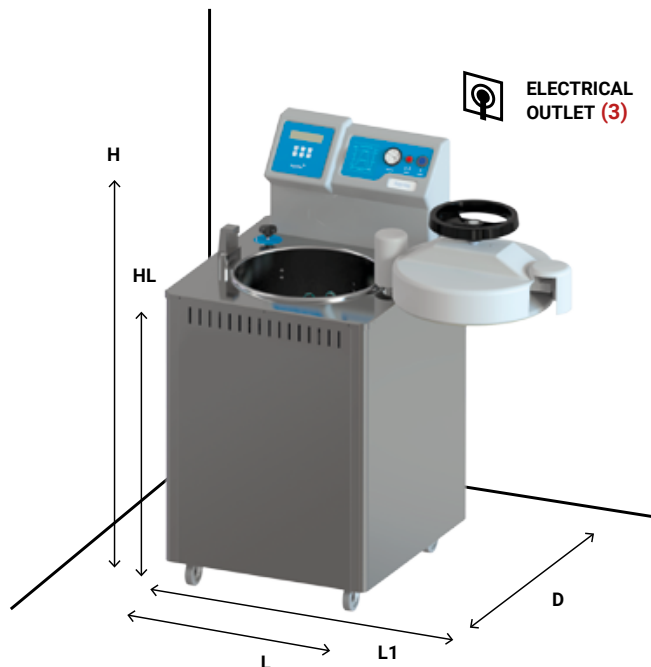
## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES



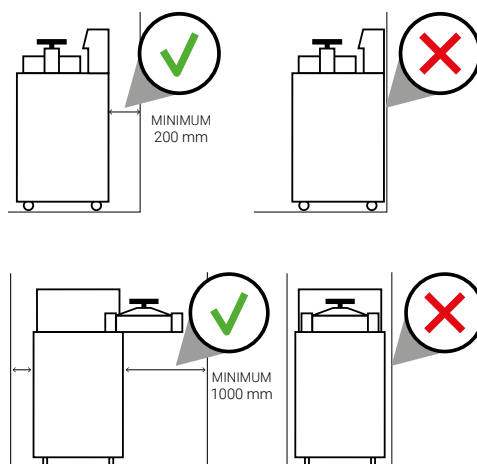
### DIMENSIONS TO CONSIDER FOR THE INSTALLATION OF YOUR AUTOCLAVE

For safety reasons, the autoclave must maintain a minimum distance of 100 mm from the wall or any other object on the side opposite to the door opening, while on the side where the door opens, the minimum distance must be 1000 mm. Additionally, a minimum clearance of 200 mm must be maintained at the back.

MODELS	L LENGTH with closed door	L1 LENGTH with maximum door opening	D DEPTH	H HEIGHT	HL LOADING HEIGHT	HD DRAIN OUTLET HEIGHT
AES-28	505 mm	900 mm	580 mm	1110 mm	788 mm	140 mm
AES-50	505 mm	900 mm	580 mm	1290 mm	967 mm	140 mm
AES-75	610 mm	1100 mm	700 mm	1185 mm	860 mm	140 mm
AES-110	610 mm	1100 mm	700 mm	1435 mm	1112 mm	140 mm
AES-150	750 mm	1380 mm	820 mm	1400 mm	1073 mm	140 mm



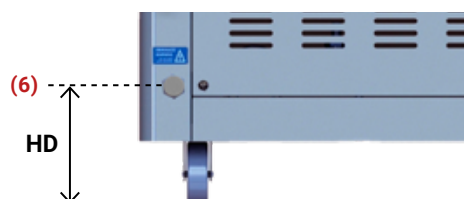
**WARNING:**  
Respect the  
recommended distances.



#### CONSIDER:

Height and position of the drain outlet.

\*If you need to collect purges and empty the sterilization chamber into an external container, usage of **TANK-AE** ACCESSORY is recommended (see page 6).



## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### ENVIRONMENTAL CONDITIONS

This equipment can operate under the following maximum conditions:

- Ambient temperature: 30°C
- Humidity: 75%
- Altitude: 3000 meters above sea level. Please note that from 1000 meters above sea level, an adjustment of the purge parameter must be made. Consult with RAYPA technical team.

### RECOMMENDED MAINTENANCE

Autoclaves are like cars: they need regular maintenance for them to work properly, to ensure good condition, prevent deterioration of its components, and maximize their useful life. Frequent cleaning and regular maintenance are essential, as autoclaves work at high pressures and temperatures and are therefore subject to a high level of stress.

For clients that perform multiple cycles each day, we recommend carrying out maintenance and cleaning tasks more frequently.

#### DAILY MAINTENANCE

Clean the gasket using a clean cotton cloth with a mild vinegar solution (or a comparable product) to reduce the formation of lime deposits.

Wipe the external surfaces with a clean cotton cloth moistened with water and a neutral detergent. Ensure all surfaces are thoroughly dried afterwards.

#### WEEKLY MAINTENANCE

Clean the sterilization chamber and all the components with a clean cotton cloth dampened with water and neutral detergent. Dry them after

Perform a complete drainage of the sterilization chamber and proceed to refill it with purified water.

#### MONTHLY MAINTENANCE

Carefully clean the discharge filter under running water, following the detailed instructions in the user and maintenance manual. If it is clogged with agar, hot water will be needed. If the filter cannot be restored, replace it with a new one.

#### ANNUAL MAINTENANCE

Conducting a technical inspection is essential to ensure consistent process safety over time. It is necessary to periodically verify the thermodynamic process parameters (pressure and temperature), ensuring they remain within the accepted limits.



## VERTICAL AUTOCLAVES WITHOUT DRYING AES SERIES

### TECHNICAL SUPPORT, ORIGINAL SPARE PARTS AND EXPERIENCED CONSULTING SERVICES

For an optimal operation of the autoclave, always use original spare parts and schedule periodically, with a specialized technician, the relevant maintenance tasks, such as calibration of the temperature and pressure sensors or replacement of the sterilization chamber door gasket.

Additionally, we provide a comprehensive range of services to ensure a satisfactory user experience throughout the entire lifespan of our products. These services include support and training programs, guided start-up and qualification services, preventive and corrective maintenance, periodic calibration, technical support and repairs, as well as consulting on special applications.

Should you encounter any issues, have questions, or require further information regarding maintenance of the AES Series autoclave, please don't hesitate to reach out to our technical support service using the following contact details.



#### Technical support

<https://www.raypa.com/en/contact/>  
+34 937 830 720 (Ext. 2109)

more info

 YouTube



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AES SERIES  
VIDEO

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