

AHS-DRY SERIES - INSTALLATION GUIDE

Information to consider before installing your RAYPA autoclave.

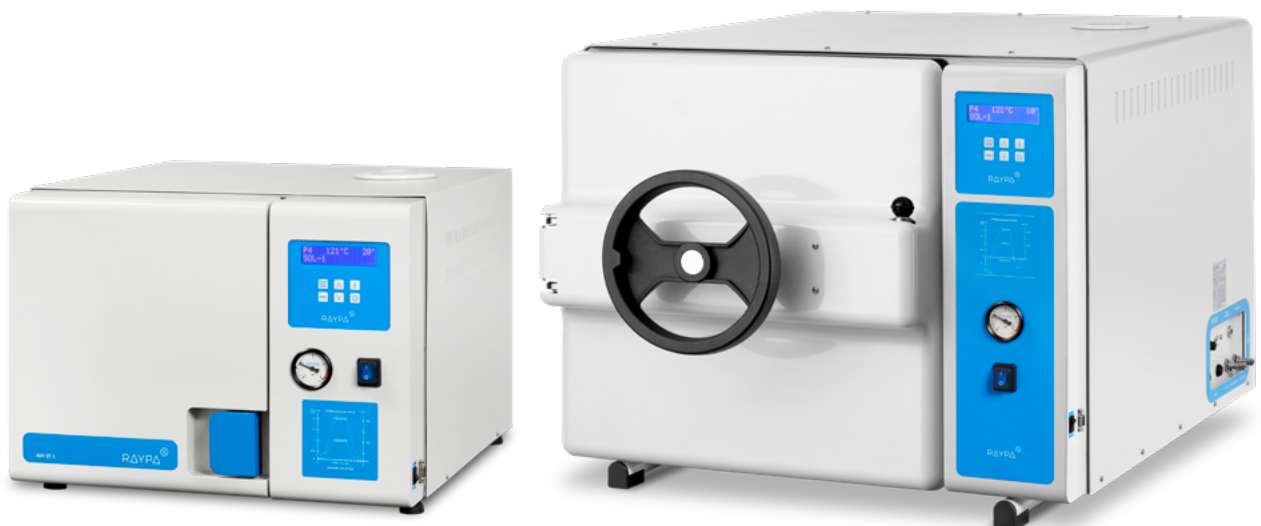
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AH-21-L MODEL

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AHS-50-DRY AND AHS-75-DRY MODELS

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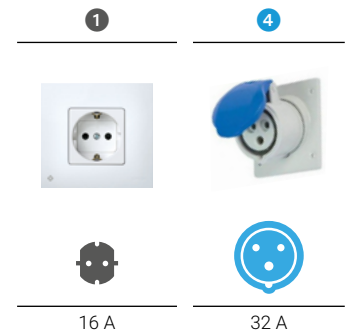
FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AH-21-L MODEL

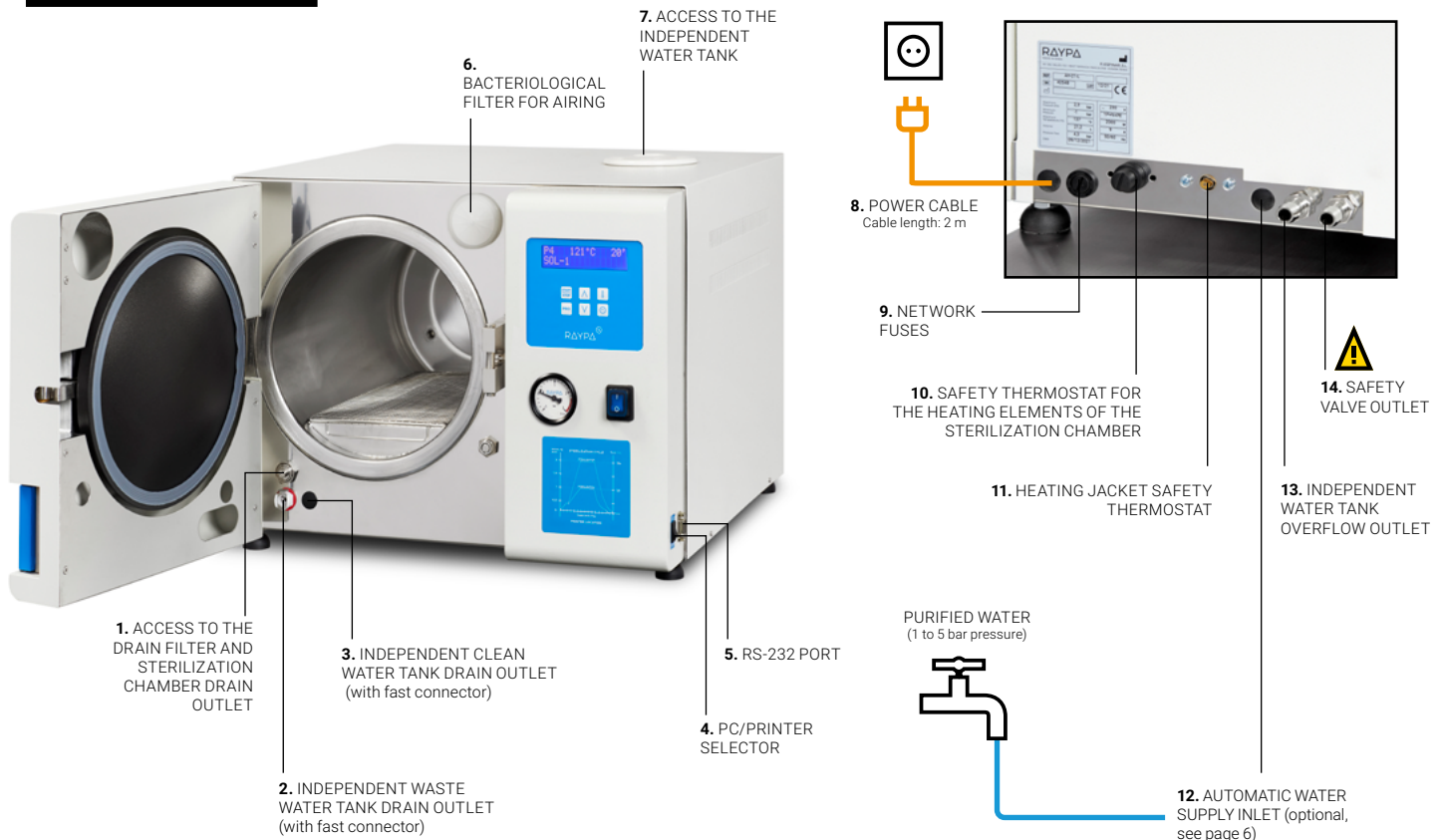
ELECTRICAL CONNECTION

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

| MODEL | FREQUENCY | POWER | AMPERES / PHASE | VOLTAGE | CONNECTION |
|--------------|-----------|--------|-----------------|-----------------|------------|
| AH-21-L | 50/60 Hz | 2000 W | 9 A | 230 (1P+N+PE) V | 16 A 1 |
| AH-21-L-115V | 50/60 Hz | 2000 W | 17 A | 120 (1P+N+PE) V | 32 A 4 |



CONNECTIONS GRAPH



AH-21-L MODEL

COMPONENTS INCLUDED

In addition to the accessories chosen at the time of purchase of the autoclave (software kit, basket, etc.), the following components are always included:



1 stainless steel protective cover for the heating elements of 175 x 370 mm to place on the inner base of the sterilization chamber.



1 stainless steel frame of 200 x 400 x 180 mm, with capacity for 4 trays. It includes 3 stainless steel wire trays of 190 x 350 mm. Special frame compatible with up to 5 trays available under request.



1 stainless steel tray support of 400 x 180 x 80 mm, with a capacity for 20 bags. The size of this accessory can be customized according to client needs. For more information, please contact us.



1 auxiliary plastic tray of 200 x 280 mm, for collecting condensed water after opening the door in cycles without final drying.



1 metal clamp for moving trays.



1 silicone hose with fast connection of $\text{Ø}5 \times \text{Ø}8$ mm and 1 m long, for draining the independent water tank.

For:

2. INDEPENDENT WASTE WATER TANK DRAIN OUTLET

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

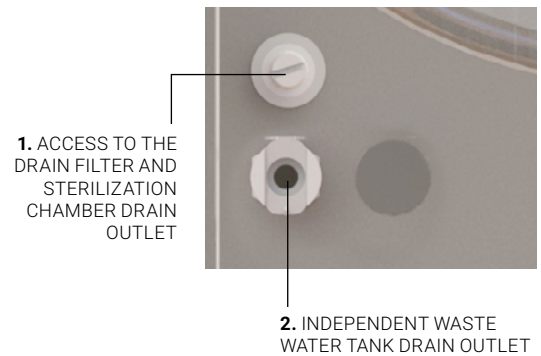
AH-21-L MODEL

DRAINAGE CONNECTIONS

To drain the independent water tank, connect the included quick connection silicone hose to the INDEPENDENT WASTE WATER TANK DRAIN OUTLET **(2)**.

See "DRAINAGE HEIGHT for draining the independent water tank" on page 8.

To clean the drain filter or drain the sterilization chamber, unscrew the screw on the ACCESS TO THE DRAIN FILTER AND STERILIZATION CHAMBER DRAIN OUTLET **(1)** while placing the supplied plastic tray underneath.



AH-21-L MODEL

SEMI-AUTOMATIC WATER SUPPLY

STANDARD

Purified water is necessary for the operation of the autoclave and is added manually into the independent water tank until the alarm (a "beep") is heard and the on-screen "LACK OF WATER" message disappears. Water distribution from the independent water tank into the sterilization chamber is automatic.

See "FREE HEIGHT for independent water tank filling" on page 8.

The independent water tank has a volume of 6L and is equipped with minimum and maximum water volume sensors.



If the independent water tank is not filled sufficiently, the following message will continue to appear on screen: "LACK OF WATER", and operation of the autoclave will be blocked. If overfilled, after an alarm (a "beep"), the excess water will come out through the INDEPENDENT WATER TANK OVERFLOW OUTLET (13).

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

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 $5 \mu\text{S/cm}$) is not recommended as it may cause long term corrosion on stainless steel and water level detection problems in some models.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AH-21-L MODEL

AUTOMATIC WATER SUPPLY

OPTIONAL

If you have chosen the **KLL-21** automatic water filling accessory (optional, but installed in the factory), there are the following water feed options **A**, **B**, and **C** using the AUTOMATIC WATER SUPPLY INLET connection **(12)**.

Autoclaves equipped with the KLL-21 accessory will have both the filling of the independent water tank and the distribution of water into the sterilization chamber fully automated during normal operation of the autoclave.

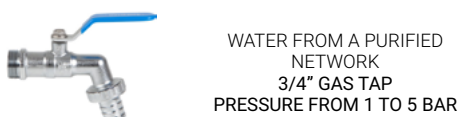
A. Use tap water (pressure from 1 to 5 bar) that goes through our ECOPUR-500 water purifier. Resulting water from the purifier will accumulate in a tank connected to the automatic water supply inlet of the autoclave.



B. Use customer's purified water tank that will connect directly to the automatic water supply inlet of the autoclave.



C. Use water from a previously purified network (pressure from 1 to 5 bar) which will connect to the automatic water supply inlet of the autoclave.



KLL-21 ACCESSORY

(installed inside the AH-21-L autoclave)

AH-21-L MODEL

USE OF ECOPUR-500 IN COMBINATION WITH AH-21-L MODEL

OPTIONAL

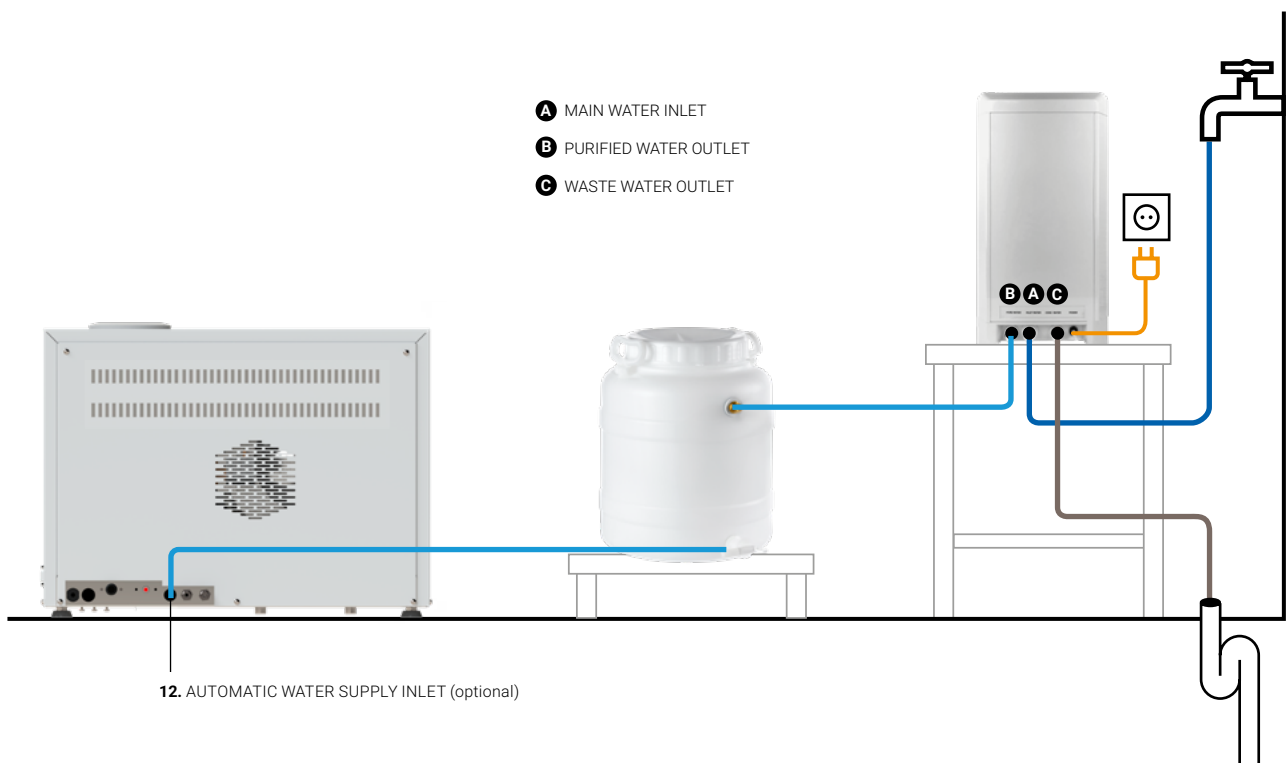
If you have chosen the **KLL-21** automatic water filling accessory (optional, but factory-installed), and you do not have a purified water supply at the location where you intend to install the autoclave, we recommend using our ECOPUR-500* water purifier.

The **MAIN WATER INLET (A)** must be connected from the purifier to a non-purified water main with the 1,2m hose (water temperature from the main must not exceed 38°C or be less than 5°C).

Water must be driven from the **PURIFIED WATER OUTLET (B)** to the **TANK-KLL** accessory inlet and, from there, to the **AUTOMATIC WATER SUPPLY INLET (12)** of the autoclave using the provided 1,2m hose.

Waste water must be driven from the **WASTE WATER OUTLET (C)** to a drain with the 1,2m provided hose.

Bear in mind that the inlet and drain hoses in the purifier must always be visible and in perfect working condition.



Read the specific manual before installing this accessory.

*It is recommended to use a single purifier for each autoclave. In case you would like to use the same purifier for more than one autoclave contact our technical support.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

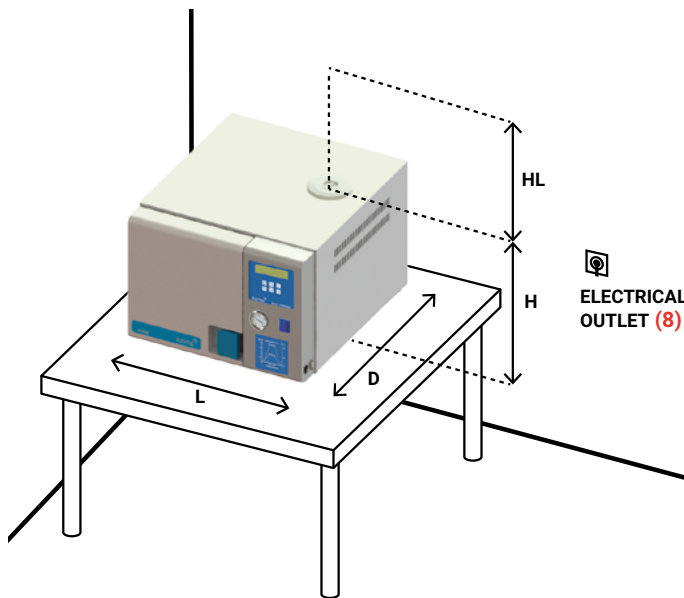
AH-21-L MODEL



DIMENSIONS TO CONSIDER FOR THE INSTALLATION OF YOUR AUTOCLAVE

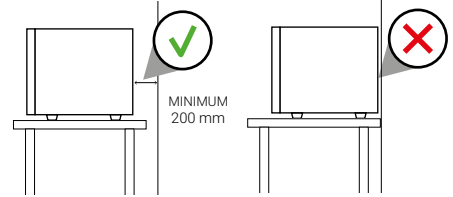
For safety reasons, the distance between both sides of the autoclave and the wall or any other object must be 100 mm, and between the autoclave and the rear wall must be at least 200 mm.

| MODEL | L LENGTH with closed door | L1 LENGTH with maximum door opening | D DEPTH | D1 DEPTH with maximum door opening | H HEIGHT | LA x DA SUPPORT AREA | HL FREE HEIGHT for filling the independent water tank | HD DRAINAGE HEIGHT independent water tank overflow outlet |
|---------|---------------------------------|--|------------|---|-------------|-------------------------|---|--|
| AH-21-L | 560 mm | 740 mm | 660 mm | 970 mm | 425 mm | 537 x 527 mm | 400 mm | 50 mm |

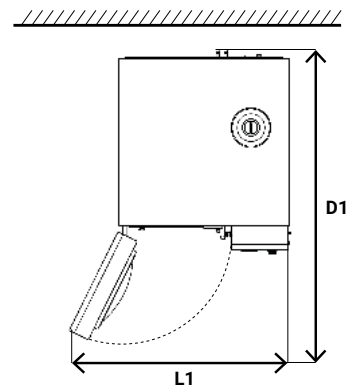


WARNING:

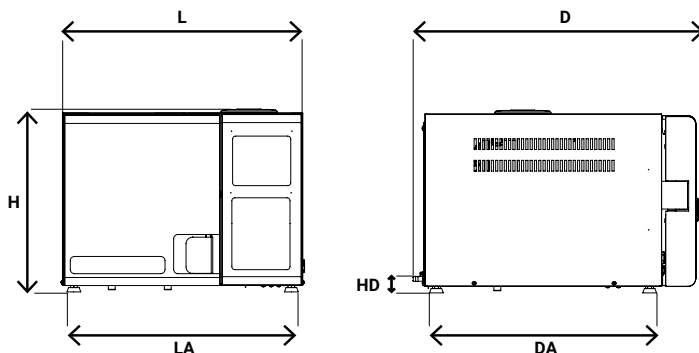
Respect the recommended distances.



PLAN VIEW



FRONTAL AND LATERAL VIEWS



ENVIRONMENTAL CONDITIONS

This autoclave can operate under the following maximum conditions:

- Ambient temperature: 30 °C
- Humidity: 75%
- Altitude: 3,000 meters above sea level. In case of higher altitudes, consult with our technical team.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AH-21-L MODEL

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.

Empty the integrated water tank completely, removing all its contents, and then refill it exclusively 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

Autoclaves from the AHS-DRY Series are equipped with a bacteriological filter, which should be replaced either upon reaching the recommended interval or when a filter blockage is detected.

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.



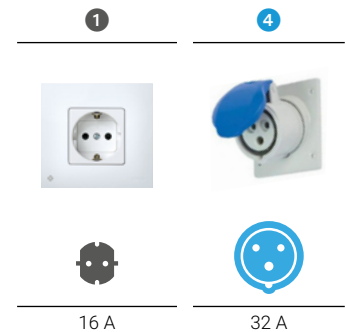
FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

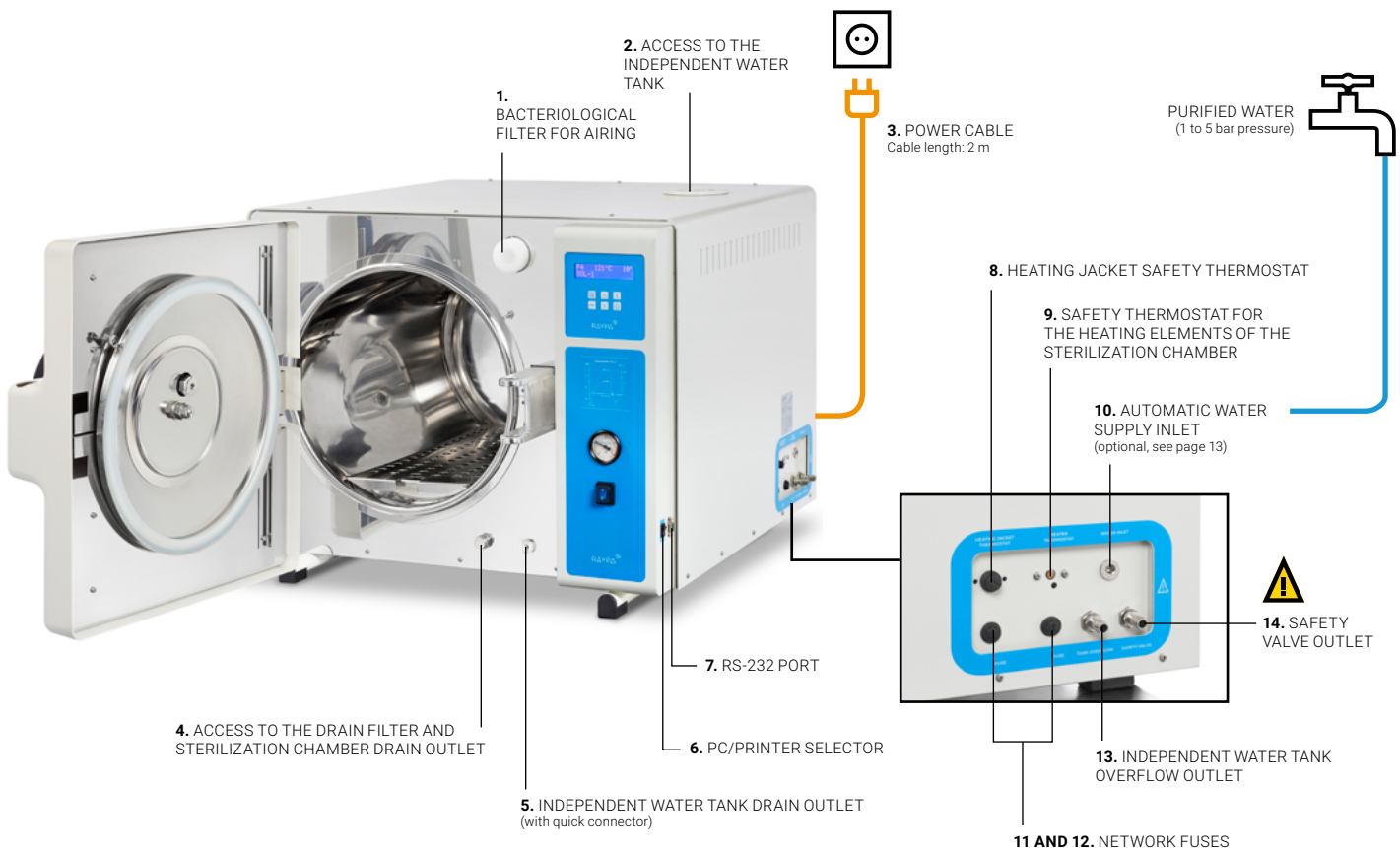
ELECTRICAL CONNECTION

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

| MODEL | FREQUENCY | POWER | AMPERES / PHASE | VOLTAGE | CONNECTION |
|-----------------|-----------|--------|-----------------|-----------------|------------|
| AHS-50-DRY | 50/60 Hz | 2000 W | 9 A | 230 (1P+N+PE) V | 16 A ① |
| AHS-50-DRY-115V | 50/60 Hz | 2000 W | 17 A | 120 (1P+N+PE) V | 32 A ④ |
| AHS-75-DRY | 50/60 Hz | 3200 W | 14 A | 230 (1P+N+PE) V | 16 A ① |
| AHS-75-DRY-115V | 50/60 Hz | 3200 W | 27 A | 120 (1P+N+PE) V | 32 A ④ |



CONNECTIONS GRAPH



FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

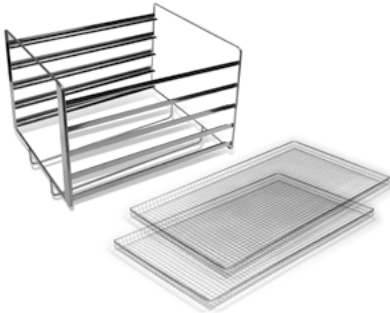
COMPONENTS INCLUDED

In addition to the accessories chosen at the time of purchase of the autoclave (tray support, software kit, basket, etc.), the following components are always included:



1 stainless steel protective cover for the heating elements to place on the inner base of the sterilization chamber.

| MODELS | DIMENSIONS L X D |
|------------|---------------------|
| AHS-50-DRY | 235 x 370 mm |
| AHS-75-DRY | 235 x 570 mm |



1 stainless steel frame with capacity for 5 trays. Includes 2 stainless steel wire trays.

| MODELS | FRAME DIMENSIONS L X D X H | TRAY DIMENSIONS L X D |
|------------|-------------------------------|--------------------------|
| AHS-50-DRY | 320 x 360 x 270 mm | 315 x 330 mm |
| AHS-75-DRY | 320 x 565 x 270 mm | 315 x 530 mm |



1 auxiliary plastic tray of 250 x 350 mm, for collecting condensed water after opening the door in cycles without final drying.



1 metal clamp for moving trays.



1 silicone hose with fast connection of $\text{Ø}5 \times \text{Ø}8$ mm and 1 m long, for draining the independent water tank.

For:

5. INDEPENDENT WATER TANK DRAIN OUTLET



2 stainless steel threaded pins which must be installed at the lateral connections.

For:

13. INDEPENDENT WATER TANK OVERFLOW OUTLET

14. SAFETY VALVE OUTLET

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

DRAINAGE CONNECTIONS

To drain the independent water tank, connect the included quick connection silicone hose to the INDEPENDENT WATER TANK DRAIN OUTLET **(5)**.

See “DRAINAGE HEIGHT for draining the independent water tank” on page 16.

To clean the drain filter or drain the sterilization chamber, unscrew the screw on the ACCESS TO THE DRAIN FILTER AND STERILIZATION CHAMBER DRAIN OUTLET **(4)**, while placing the supplied plastic tray underneath.



4. ACCESS TO THE DRAIN FILTER AND STERILIZATION CHAMBER DRAIN OUTLET

5. INDEPENDENT WATER TANK DRAIN OUTLET (with quick connector)

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

SEMI-AUTOMATIC WATER SUPPLY

STANDARD

Purified water is necessary for the operation of the autoclave and is added manually into the independent water tank until the alarm (a "beep") is heard and the on-screen "LACK OF WATER" message disappears. Water distribution from the independent water tank into the sterilization chamber is automatic.

See "FREE HEIGHT for independent water tank filling" on page 16.

The independent water tank has a volume of 10L and is equipped with minimum and maximum water volume sensors.



If the independent water tank is not filled sufficiently, the following message will continue to appear on screen: "LACK OF WATER", and operation of the autoclave will be blocked. If overfilled, after an alarm (a "beep"), the excess water will come out through the INDEPENDENT WATER TANK OVERFLOW OUTLET (13).

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: ≤ 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 and water level detection problems in some models.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

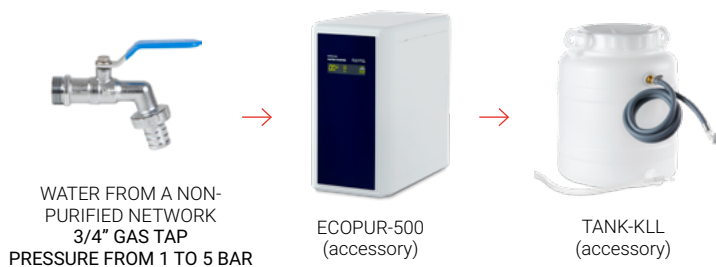
AUTOMATIC WATER SUPPLY

OPTIONAL

If you have chosen the **KLL-AHS** automatic water filling accessory (optional, but installed in the factory), there are the following water feed options **A**, **B**, and **C** using the AUTOMATIC WATER SUPPLY INLET connection **(10)**.

Autoclaves equipped with the KLL-AHS accessory will have both the filling of the independent water tank and the distribution of water into the sterilization chamber fully automated during normal operation of the autoclave.

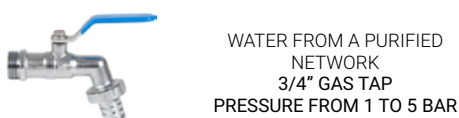
A. Use tap water (pressure from 1 to 5 bar) that goes through our ECOPUR-500 WATER PURIFIER. Resulting water from the purifier will accumulate in a tank connected to the automatic water supply inlet of the autoclave.



B. Use a customer's purified water tank that will connect directly to the automatic water supply inlet of the autoclave.



C. Use water from a previously purified network (pressure from 1 to 5 bar) which will connect to the automatic water supply inlet of the autoclave.



KLL-AHS ACCESSORY
(installed inside AHS-50-DRY / AHS-75-DRY autoclaves)

AHS-50-DRY AND AHS-75-DRY MODELS

USE OF ECOPUR-500 IN COMBINATION WITH AHS-50-DRY AND AHS-75-DRY MODELS

OPTIONAL

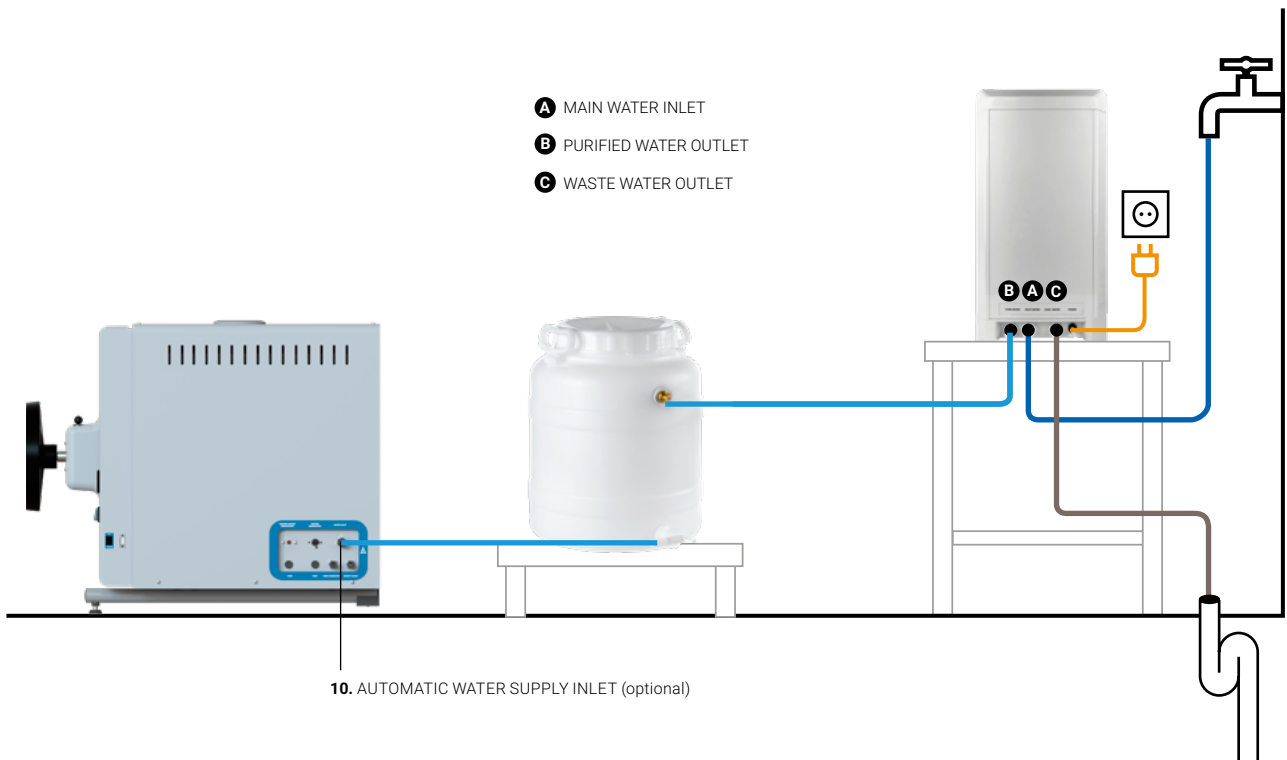
If you have chosen the **KLL-AHS** automatic water filling accessory (optional, but factory-installed), and you do not have a purified water supply at the location where you intend to install the autoclave, we recommend using our ECOPUR-500* water purifier.

The MAIN WATER INLET (**A**) must be connected from the purifier to a non-purified water main with the 1,2m hose (water temperature from the main must not exceed 38°C or be less than 5°C).

Water must be driven from the PURIFIED WATER OUTLET (**B**) to the TANK-KLL accessory inlet and, from there, to the AUTOMATIC WATER SUPPLY INLET (**10**) of the autoclave using the provided 1,2m hose.

Waste water must be driven from the WASTE WATER OUTLET (**C**) to a drain with the 1,2m provided hose.

Bear in mind that the inlet and drain hoses in the purifier must always be visible and in perfect working condition.



Read the specific manual before installing this accessory.

*It is recommended to use a single purifier for each autoclave. In case you would like to use the same purifier for more than one autoclave contact our technical support.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

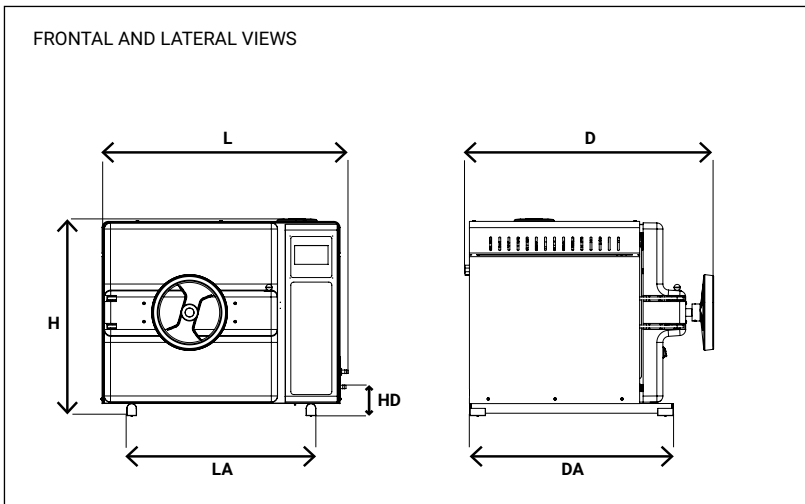
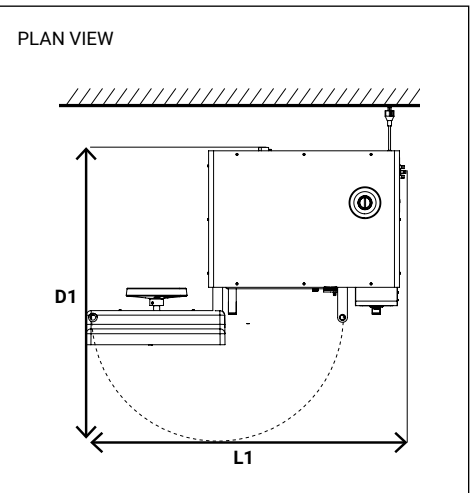
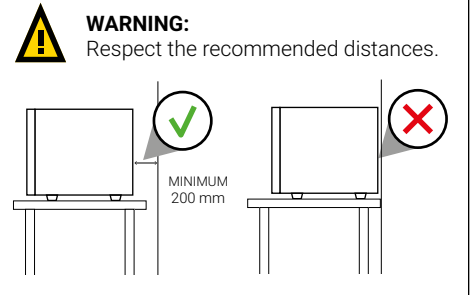
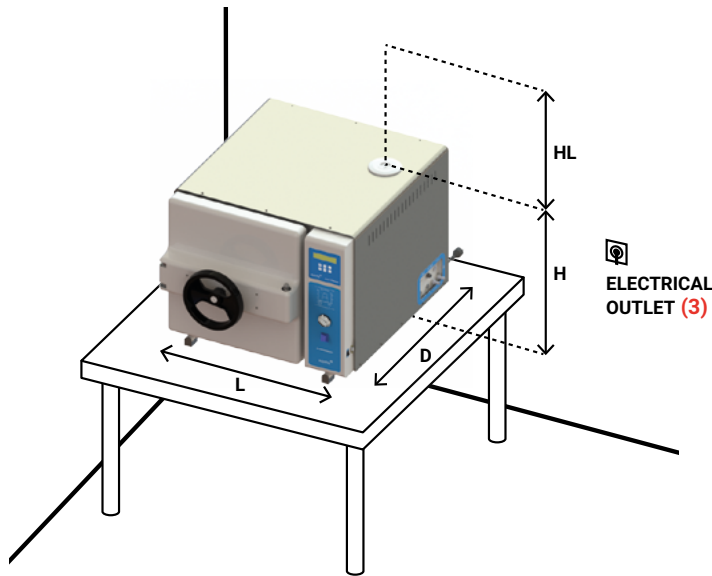
AHS-50-DRY AND AHS-75-DRY MODELS



DIMENSIONS TO CONSIDER FOR THE INSTALLATION OF YOUR AUTOCLAVE

For safety reasons, the distance between both sides of the autoclave and the wall or any other object must be 100 mm, and between the autoclave and the rear wall must be at least 200 mm.

| MODEL | L LENGTH with closed door | L1 LENGTH with maximum door opening | D DEPTH | D1 DEPTH with maximum door opening | H HEIGHT | LA x DA SUPPORT AREA | HL FREE HEIGHT for filling the independent water tank | HD DRAINAGE HEIGHT independent water tank overflow outlet |
|------------|---------------------------------|--|------------|---|-------------|-------------------------|--|--|
| AHS-50-DRY | 805 mm | 1240 mm | 805 mm | 1230 mm | 650 mm | 622 x 670 mm | 400 mm | 95 mm |
| AHS-75-DRY | 805 mm | 1240 mm | 1005 mm | 1430 mm | 650 mm | 622 x 830 mm | 400 mm | 95 mm |



ENVIRONMENTAL CONDITIONS

This autoclave can operate under the following maximum conditions:

- Ambient temperature: 30 °C
- Humidity: 75%
- Altitude: 3,000 meters above sea level. In case of higher altitudes, consult with our technical team.

FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY SERIES

AHS-50-DRY AND AHS-75-DRY MODELS

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.

Empty the integrated water tank completely, removing all its contents, and then refill it exclusively 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

Autoclaves from the AHS-DRY Series are equipped with a bacteriological filter, which should be replaced either upon reaching the recommended interval or when a filter blockage is detected.

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.



FRONT-LOADING BENCHTOP AUTOCLAVES WITH DRYING AHS-DRY 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 AHS-DRY 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)

+ info

 YouTube



CLICK!

ACCESS THE
AHS-DRY
SERIES
VIDEO

Find out more about our AHS-DRY Series on our **YouTube** Channel.

