RAYPA

Sterilization

EXPERT MEDIA PREPARATORS
TLV-MP SERIES

TLV-MP SERIES - INSTALLATION GUIDE

Information to consider before installing your media preparator.

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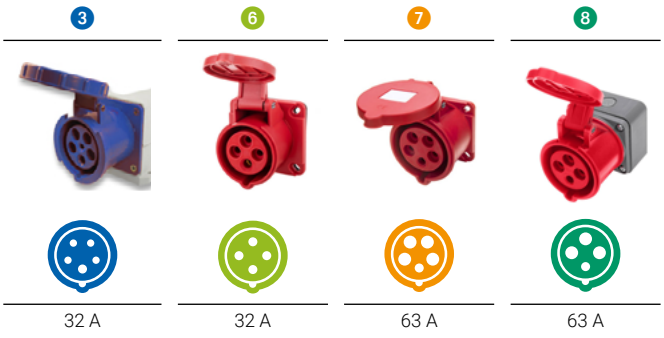
EXPERT MEDIA PREPARATORS
TLV-MP SERIES

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.

MODELS	FREQUENCY	POWER	AMPERES / PHASE	TENSION	CONNECTION
TLV-40MP-12K	50/60 Hz	12000 W	18 A	400 (3P+N+PE) V	32 A 3
TLV-40MP-12K-220T	50/60 Hz	12000 W	30A	230 (3P+PE) V	32 A 6
TLV-60MP-15K	50/60 Hz	15000 W	22 A	400 (3P+N+PE) V	32 A 3
TLV-60MP-15K-220T	50/60 Hz	15000 W	38 A	230 (3P+PE) V	63 A 8
TLV-80MP-20K	50/60 Hz	20000 W	29 A	400 (3P+N+PE) V	32 A 3
TLV-80MP-30K	50/60 Hz	30000 W	43 A	400 (3P+N+PE) V	63 A 7
TLV-80MP-20K-220T	50/60 Hz	20000 W	51 A	230 (3P+PE) V	63 A 8
TLV-100MP-20K	50/60 Hz	20000 W	29 A	400 (3P+N+PE) V	32 A 3
TLV-100MP-30K	50/60 Hz	30000 W	43 A	400 (3P+N+PE) V	63 A 7
TLV-100MP-20K-220T	50/60 Hz	20000 W	51 A	230 (3P+PE) V	63 A 8



ELECTRICAL CONNECTION NORTH AMERICA

The following table shows the plug configuration according to NEMA standards for the United States of America and other regions. For customers requiring other plugs and other electrical configurations, please contact our technical service.

Attention: The following table lists standard electrical configuration versions. The power of each model can be reduced if needed. Furthermore, the voltage can be modified to suit other configurations if required. Additionally, the provided NEMA plug can be customized if needed.

MODELS	FREQUENCY	POWER	AMPERES / PHASE	TENSION	CONNECTION
TLV-40MP-12K-220T	50/60 Hz	12000 W	30 A	230 (3P+PE) V	NEMA 15-50P 4
TLV-60MP-15K-220T	50/60 Hz	15000 W	38 A	230 (3P+PE) V	NEMA 15-50P 4
TLV-80MP-20K-220T	50/60 Hz	20000 W	51 A	230 (3P+PE) V	NEMA 15-60P 5
TLV-100MP-20K-220T	50/60 Hz	20000 W	51 A	230 (3P+PE) V	NEMA 15-60P 5

4

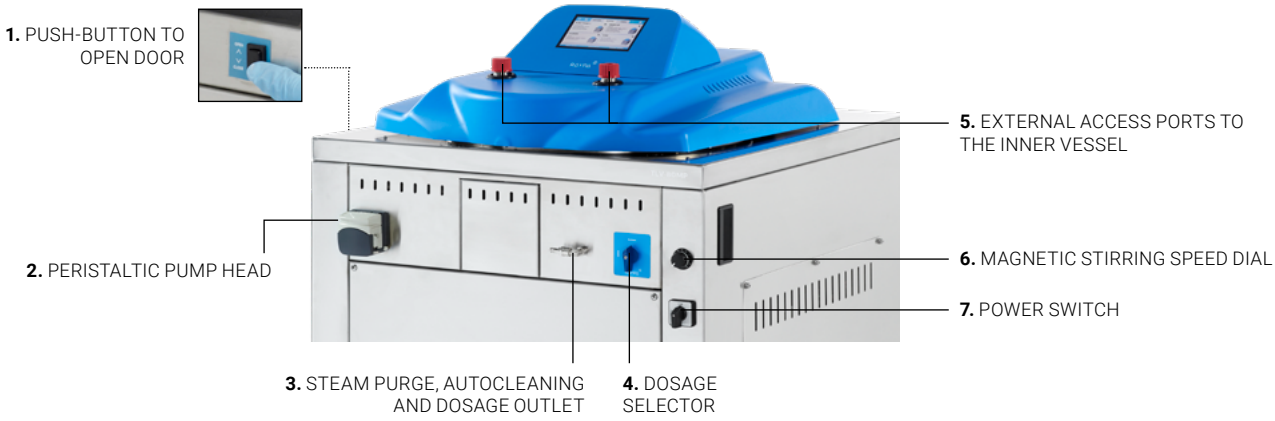
15-50R

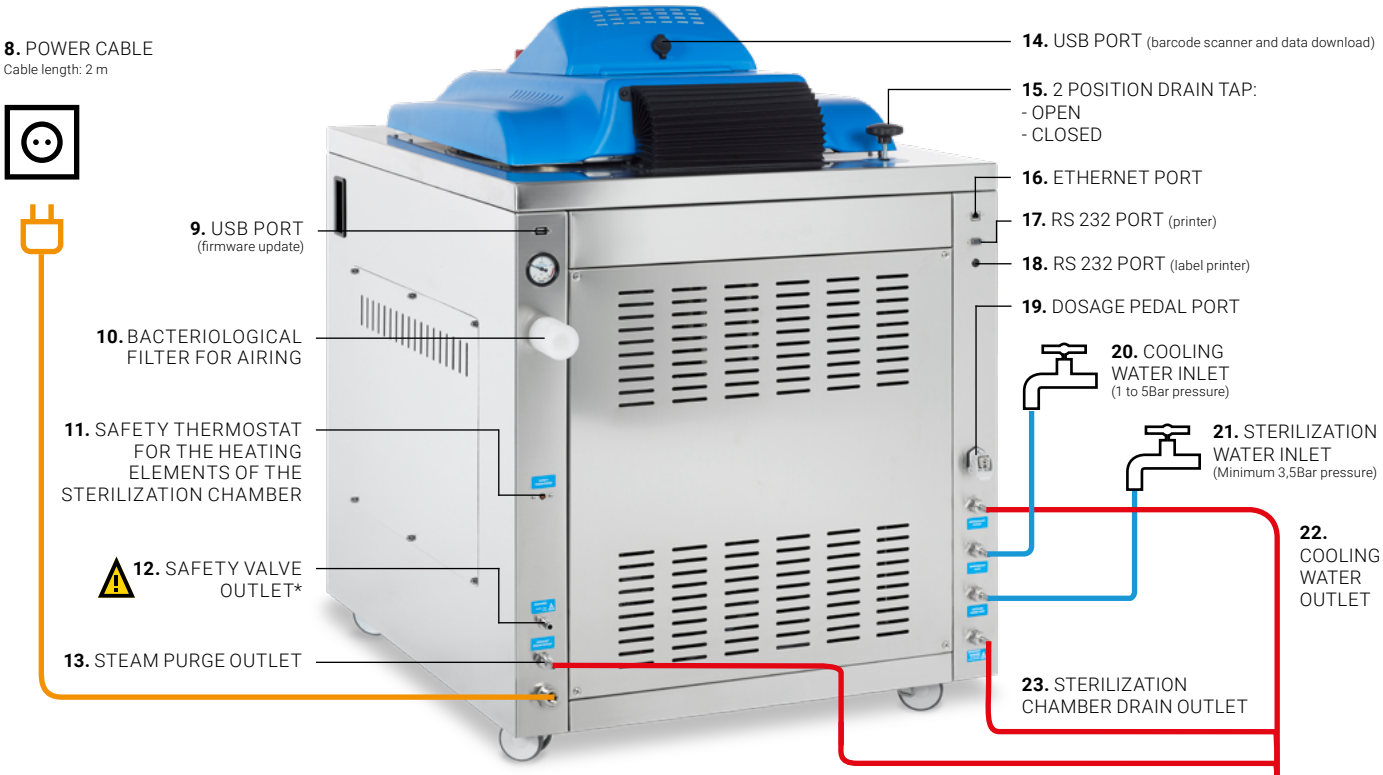
5

15-60R

EXPERT MEDIA PREPARATORS
TLV-MP SERIES

CONNECTIONS GRAPH





***Outlet 12 must be left unobstructed at all times.**

ATTENTION!
Connections to the drainage must be properly fixed.

INCLUDED COMPONENTS

In addition to the accessories chosen at the time of purchase of the media preparator (printer, dosage station, etc.), the following components are included:

2 reinforced silicon hoses 2m long of Ø9 x Ø16mm with fast connection to the media preparator and a threaded connection for a 3/4" GAS tap on the other end.

For:
20. COOLING WATER INLET
21. STERILIZATION WATER INLET

3 reinforced silicon hoses 2m long of Ø9 x Ø16mm with fast connection to the media preparator and a free connection to the drain on the other end.

For:
13. STEAM PURGE OUTLET
22. COOLING WATER OUTLET
23. STERILIZATION CHAMBER DRAIN OUTLET

Set of 2 silicon dosage pipes 2m long with a press-fit connection to the media preparator and a metalic nozzle on the other end.
- Ø6,4mm tube with a Ø6mm nozzle
- Ø8mm tube with a Ø8mm nozzle

For:
3. STEAM PURGE, AUTOCLEANING AND DOSAGE OUTLET

1 quick connection with plug that must be placed in the media preparator if the KLL-MP automatic water filling accessory is not installed.

For:
21. STERILIZATION WATER INLET

INCLUDED COMPONENTS

1 mechanical pedal for dosage with a 1,8m long cable with an electrical connection to the media preparator.

For:
19. DOSAGE PEDAL PORT

1 bottle to collect condensed steam during the automatic self-cleaning and disinfection of the dispensing lines, prior to the sterilization phase, during the emptying of the lines with pressurized air, and during the predefined automatic cleaning program.

1 stand equipped with a 650mm height rod and two adjustable height clamps to hold the dispensing line.

1 media volume indicator for the internal bucket to ease the dosing of water.

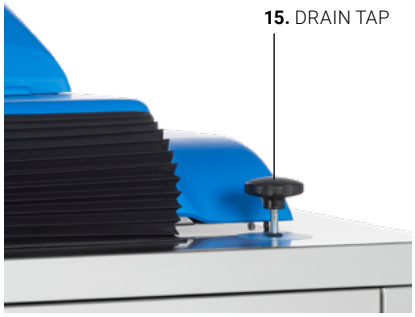
DRAINAGE CONNECTIONS

Connect the provided hose to the STEAM PURGE OUTLET **(13)**, lead it to a drain and ensure it is properly fixed.

Connect the provided hose to the STERILIZATION CHAMBER DRAINAGE OUTLET **(23)**, lead it to a drain and secure it in place to allow the drainage from the sterilization chamber.

Connect the provided hose to the COOLING WATER OUTLET **(22)**, run it to a drain and ensure it is properly connected.

Then, manually operate the DRAIN TAP **(15)** to release the water.



ATTENTION:
If drains and outlets are used shortly after a sterilization cycle has finished, water may run out at a high temperature.

CONSIDER:
Height and position of drain outlets.

MODEL	HP STEAM PURGE OUTLET	HD STERILIZATION CHAMBER DRAIN OUTLET	HE COOLING WATER OUTLET
TLV-40MP	180 mm	140 mm	365 mm
TLV-60MP	180 mm	140 mm	365 mm
TLV-80MP	180 mm	140 mm	365 mm
TLV-100MP	180 mm	140 mm	365 mm

AUTOMATIC CLEANING OF THE DISPENSING LINES

Connect the provided silicon hoses in the STEAM PURGE, AUTOCLEANING AND DOSAGE OUTLET **(3)** to perform the following actions on the media preparator while the cycle is occurring:

IMPORTANT
When performing any of the 3 processes listed in this section, always place the metalic nozzle inside the supplied bottle to avoid possible burn wounds and collect the condensed steam. Also, it is recommended to perform these processes inside a laminar flow hood to avoid contamination problems.

1. BEFORE DISPENSING MANDATORY

Self-cleaning and disinfection of the lines with continuous steam, which is automatically activated in each cycle, just before starting the sterilization phase. To perform this action, you must follow the steps below:

1. Set the dosing selector to "CLOSED" mode.

2. Check that the dispensing line is not pinched by the peristaltic pump or the external dosing station.

3. Place the metal nozzle of the dispensing line inside of the supplied bottle.

2. DURING DISPENSING OPTIONAL

The activation of pressurized air causes the emptying of the lines. This mode allows the dispensing process to be stopped, usually for breaks or when the operator needs to be absent for an extended period of time. To perform this action, you must follow the steps below:

1. Set the dosing selector to "CLOSED" mode.

2. Check that the dispensing line is not pinched by the peristaltic pump or the external dosing station.

3. Place the metal nozzle of the dispensing line inside of the supplied bottle.

4. Select the purge option with pressure support.

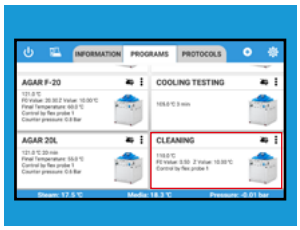
3. AFTER DISPENSING RECOMMENDED

The predefined P1 CLEANING program is essential for daily maintenance. By generating continuous steam, this program performs a deep cleaning inside the circuit, ensuring that the lines and conduits of the media preparator are completely clean. It must be activated at the end of the working day or when changing media type. To perform this action, you must follow the steps below:

1. Set the dosing selector to "CLOSED" mode.

2. Check that the dispensing line is not pinched by the peristaltic pump or the external dosing station.

3. Place the metal nozzle of the dispensing line inside of the supplied bottle.



4. Select the P1 CLEANING program.

SUGGESTION

To enhance the effectiveness of the P1 CLEANING program, it is recommended to first perform a pre-wash by following the steps below:

1. Add 1L of distilled water to the inner vessel.

2. Set the dosing selector to "OPEN" mode and ensure the dispensing line is pinched by the peristaltic pump.

3. Activate the magnetic stirring of adjustable speed.

4. Dispense continuously into a container using the peristaltic pump.

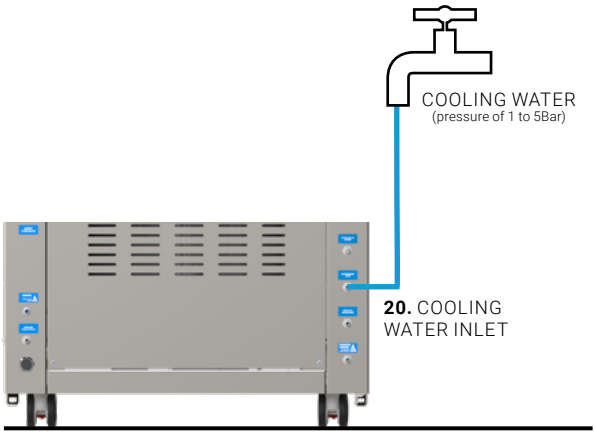
WATER SUPPLY FOR COOLING

Decalcified water is recommended to supply the cooling coils to prevent the formation of lime residue deposits inside the system.

The COOLING WATER INLET **(20)** must be connected with the hose to a 3/4" GAS tap from a water main with a minimum pressure of 1Bar.

WATER TYPE	MG/L[1]	FH[2]	DH[3]	EH[4]
Soft water	≤17	≤1,7	≤0,95	≤1,19
Slightly hard water	≤60	≤6,0	≤3,35	≤4,20
Moderately hard water	≤120	≤12,0	≤6,70	≤8,39
Hard water	≤180	≤18,0	≤10,05	≤12,59
Very hard water	>180	>18,0	>10,05	>12,59

[1] Mg/L: calcium carbonate ($CaCO_3$) milligrams per liter of water.
[2] FH: French hardness (10,0mg $CaCO_3$/L).
[3] DH: German hardness (17,8mg $CaCO_3$/L).
[4] EH: English hardness (14,3mg $CaCO_3$/L).



USE OF WATERSOFT-MP IN COMBINATION WITH TLV-MP

If you don't have a soft water main available where you intend to install your TLV-MP media preparator, we recommend using the WATERSOFT-MP water softener.

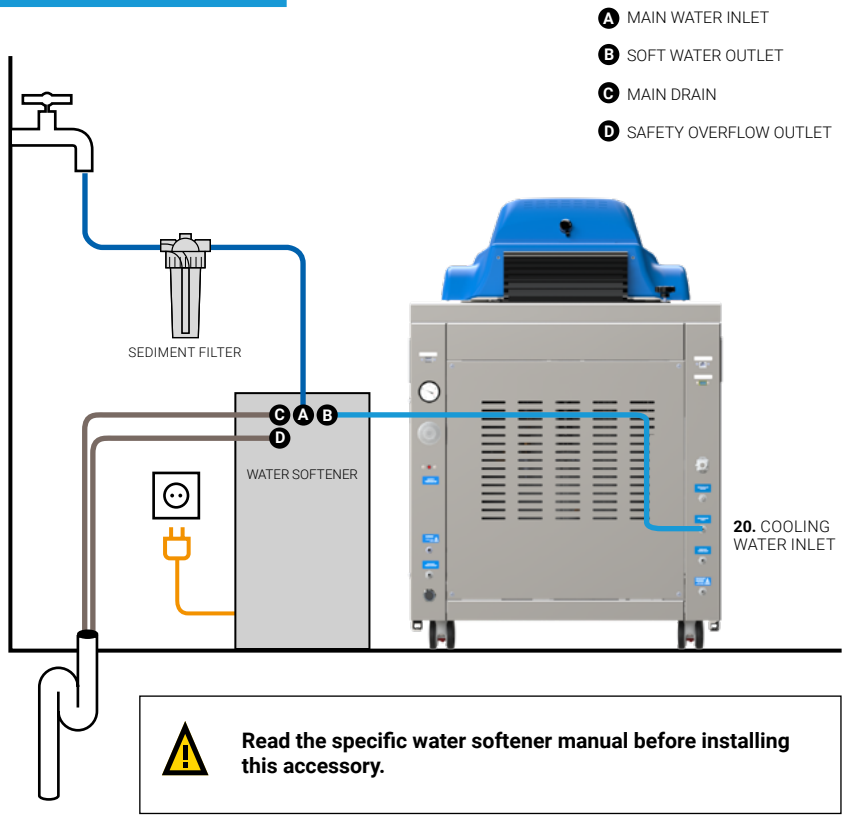
The WATERSOFT-MP water softener comes with all hoses needed for installation (hoses are 2 meters long), one particle filter equiped with a cartridge and a water hardness measuring kit.

The MAIN WATER INLET **(A)** must be connected from the water softener to the water main with the provided 2m hose after going through the included sediment filter (water temperature from the main must be between 5 ºC and 38 ºC).

Soft water must be driven from the SOFT WATER OUTLET **(B)** to the COOLING WATER INLET **(20)** of the media preparator using the 2m long included hose.

The pre-installed drainage hoses: MAIN DRAIN **(C)** and SAFETY OVERFLOW OUTLET **(D)** must be driven to the drain.

Water softener inlet and drainage hoses must always be visible and in good condition.



Read the specific water softener manual before installing this accessory.

WATER SUPPLY FOR STERILIZATION

MANUAL SUPPLY OPTIONAL

Purified water is essential for filling the sterilization chamber, as using harder water can lead to long-term deposits of lime residue on the heating elements. While there are several automatic methods for performing this task, water can also be manually poured into the sterilization chamber until the water sensor is completely submerged.

Electrode located on the inner wall of the sterilization chamber, just above the water coil.

IMPORTANT NOTE:

PURIFIED WATER
Water used to feed the media preparator must be free of contaminants and meet the following hardness and conductivity requirements:

- Hardness: ≤ 0,02mmol/L
- Conductivity: between 5µS/cm and 15µS/cm

Multiple systems may be used to obtain water which fulfills these requirements: osmosis, demineralization, decalcified water, etc*.

*Note: Take into account that distilled water that is too pure (conductivity less than 5µS/cm) is not recommended as it may cause corrosion on stainless steel in the long term and water level detection problems in some models.

WATER SUPPLY FOR STERILIZATION

AUTOMATIC SUPPLY RECOMMENDED

All TLV-MP Series media preparators can be optionally equipped with a water pump to make the water supply to the sterilization chamber completely automatic.

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

A. Use a water main (3,5Bar minimum pressure) connected to a ECOPUR-MP water purifier and connect the purifier to a tank which will be connected to the sterilization water inlet of the media preparator.

3/4" GAS TAP
NON-PURIFIED MAIN WATER
(pressure from 1 to 5bar)

ECOPUR-MP ACCESSORY

TANK-KLL ACCESSORY

The KLL-MP accessory
is already installed

B. Use a purified water tank.

PURIFIED WATER TANK
3/4" GAS TAP
(pressure from 1 to 5Bar)

The KLL-MP accessory
is already installed

C. In case you have a previously purified water main with pressure below 3,5 bar.

3/4" GAS TAP
PURIFIED MAIN WATER
(pressure below 3,5Bar)

TANK-KLL ACCESSORY

The KLL-MP accessory
is already installed

In case you have a previously purified water main with a pressure of at least 3,5Bar, supply option D is available.

D. The device can be connected directly to the water main and the filling of the sterilization chamber can be automated, if the following conditions are met:

- If the water main supplies purified water.
- If the supplied water has a pressure >3,5Bar.

3/4" GAS TAP
PURIFIED MAIN WATER
(pressure above 3,5Bar)

The KLL-MP accessory is not required

USE OF ECOPUR-MP IN COMBINATION WITH TLV-MP

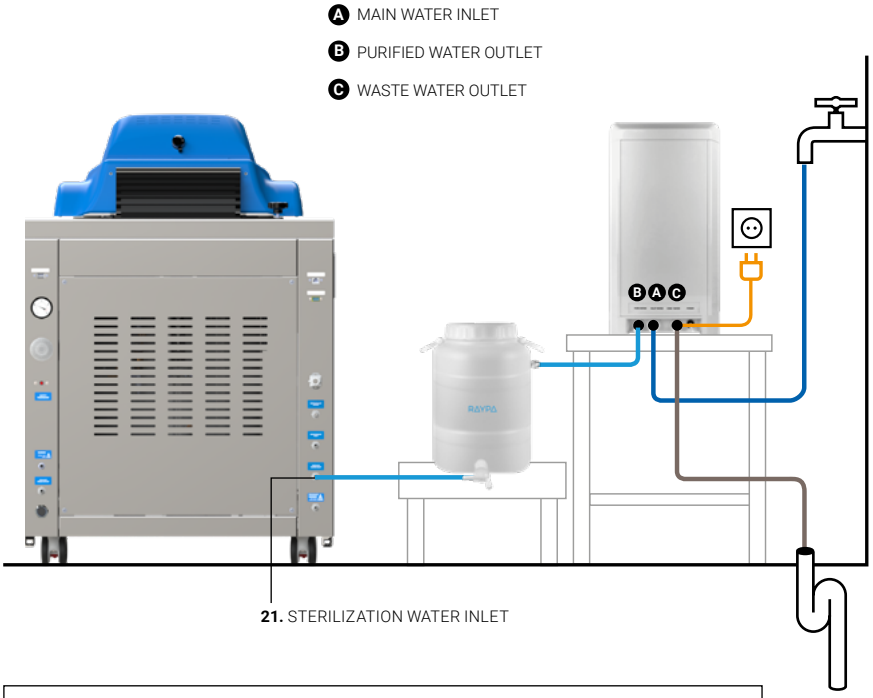
If you don't have a purified water main available where you intend to install the media preparator, we recommend using our ECOPUR-MP water purifier.

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 a tank and from it to the STERILIZATION WATER INLET **(21)** of the media preparator using the provided 1,2m hose.

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

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



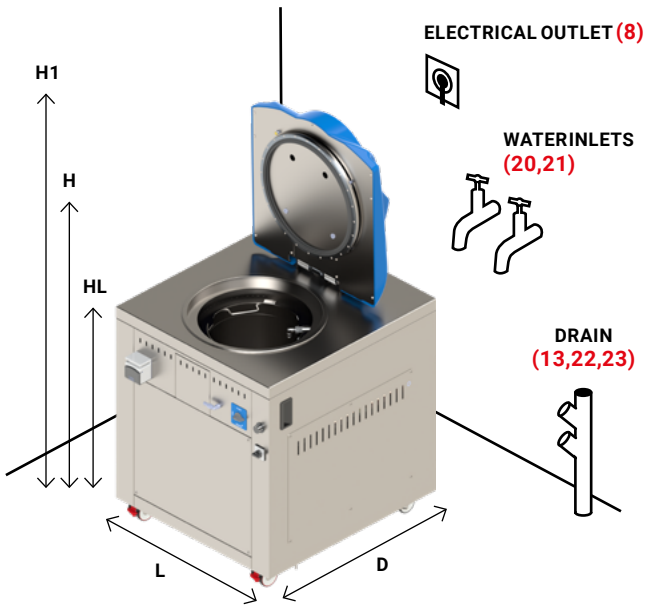
Read the water purifier manual before installing this accessory.

EXPERT MEDIA PREPARATORS
TLV-MP SERIES

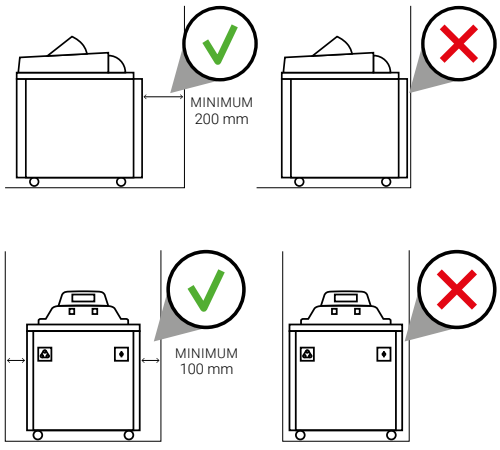
DIMENSIONS TO CONSIDER FOR THE INSTALLATION OF YOUR EQUIPMENT

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

MODELS	H HEIGHT with closed door	H1 HEIGHT with maximum door opening	HL LOADING HEIGHT	L LENGTH	D DEPTH	HP STEAM PURGE OUTLET HEIGHT	HD STERILIZATION CHAMBER DRAIN HEIGHT	HE COOLING WATER OUTLET HEIGHT
TLV-40MP	1080 mm	1480 mm	835 mm	750 mm	980 mm	180 mm	140 mm	365 mm
TLV-60MP	1300 mm	1700 mm	1060 mm	750 mm	980 mm	180 mm	140 mm	365 mm
TLV-80MP	1200 mm	1690 mm	950 mm	850 mm	1080 mm	180 mm	140 mm	365 mm
TLV-100MP	1340 mm	1930 mm	1090 mm	850 mm	1080 mm	180 mm	140 mm	365 mm



WARNING:
Respect the recommended distances.



CONSIDER:
Height and position of drain connections.

ENVIRONMENTAL CONDITIONS

This equipment can operate under the following maximum conditions:

- Ambient temperature: 30 ºC
- Humidity: 75%
- Altitude: 3.000 meters above sea level.*

*In case of higher altitudes, contact with our technical team.

RECOMMENDED MAINTENANCE

Media preparators 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 media preparators work at high pressures and temperatures and are therefore subject to a high level of stress.

For clients that perform multiple production cycles each day or work with high-density media, we recommend carrying out maintenance and cleaning tasks such as the automatic cleaning program more frequently.

DAILY MAINTENANCE

Clean the gasket using a clean cotton cloth with a soft vinegar solution (or similar product) to minimize the appearance of lime deposits. Clean the external surfaces using a clean cotton cloth with a little of water and neutral detergent. Dry all surfaces afterwards.

Moreover, at the end of the working day or when changing media type, activate the P1 CLEANING program. By generating continuous steam, this program performs a deep cleaning inside the circuit, ensuring that the lines and conduits of the media preparator are completely clean. To perform this action, you must follow the steps below:

1. Set the dosing selector to "CLOSED" mode.

2. Check that the dispensing line is not pinched by the peristaltic pump or the external dosing station.

3. Place the metal nozzle of the dispensing line inside of the supplied bottle.

4. Select the P1 CLEANING program.

WEEKLY MAINTENANCE

Clean the inner vessel, the sterilization chamber and the accessories.

1. Extract the inner vessel, rinse it with water and clean it using a clean cotton cloth with a little of water and neutral detergent. Dry it afterwards.

2. Clean the sterilization chamber using a clean cotton cloth with a little of water and neutral detergent. Dry it afterwards.

3. Clean all the components, such as the magnetic stirrer, using a clean cotton cloth with a little of water and neutral detergent. Dry it afterwards.

EXPERT MEDIA PREPARATORS
TLV-MP SERIES

ANNUAL MAINTENANCE

TLV-MP Series media preparators are equipped with a bacteriological filter. The replacement of the bacteriological filter should occur either upon reaching the designated interval or whenever 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 minimum limits.

TECHNICAL SUPPORT, ORIGINAL SPARE PARTS AND EXPERIENCED CONSULTING SERVICES

For an optimal functioning of the media preparator, always use original spare parts and have a specialized technician perform relevant maintenance tasks, such as temperature probe calibration or gasket replacement, on a regular basis.

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 documentation management.

Should you encounter any issues, have questions, or require further information regarding maintenance of the TLV-MP Series media preparator, 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)

NEW VIDEO!

Expert and standard media preparators

REV 07.2024