

CFS-V SERIES - INSTALLATION GUIDE

Information to consider before installing your TERRA Food-Tech[®] autoclave.

INDEX

Electrical connection (Standard)	Page 2
Electrical connection (North America)	Page 3
Connections graph	Pages 4 and 5
Components included	Page 6
Drainage connections	Page 7
Water supply	Page 8
Water softener installation	Page 9
Baskets crane installation	Page 10
Dimensions to consider	Page 14
Environmental conditions	Page 14
Autoclave maintenance	Page 15



ELECTRICAL CONNECTION STANDARD

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.

MODELS	FREQUENCY	POWER	AMPERES / PHASE	VOLTAGE	CONNECTION
CFS-28V	50/60 Hz	2000 W	9 A	230 (1P+N+PE) V	16 A ①
CFS-28V-115V	50/60 Hz	2000 W	17 A	120 (1P+N+PE) V	32 A ⑩
CFS-50V	50/60 Hz	2800 W	12 A	230 (1P+N+PE) V	16 A ①
CFS-50V-115V	50/60 Hz	2800 W	23 A	120 (1P+N+PE) V	32 A ⑩
CFS-75V	50/60 Hz	4500 W	7 A	400 (3P+N+PE) V	16 A ②
CFS-75V-220T	50/60 Hz	4500 W	12 A	230 (3P+PE) V	16 A ⑤
CFS-75V-220M	50/60 Hz	4500 W	20 A	230 (1P+N+PE) V	32 A ④
CFS-110V	50/60 Hz	6000 W	9 A	400 (3P+N+PE) V	16 A ②
CFS-110V-220T	50/60 Hz	6000 W	15 A	230 (3P+PE) V	16 A ⑤
CFS-110V-220M	50/60 Hz	6000 W	26 A	230 (1P+N+PE) V	32 A ④
CFS-150V	50/60 Hz	9000 W	13 A	400 (3P+N+PE) V	16 A ②
CFS-150V-220T	50/60 Hz	9000 W	23 A	230 (3P+PE) V	32 A ⑥
CFS-150V-220M	50/60 Hz	9000 W	39 A	230 (1P+N+PE) V	63 A ⑨



ELECTRIC CONNECTION NORTH AMERICA

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

Attention: The following table lists standard electrical configuration versions. The voltage of each model 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.

MODELS	FREQUENCY	POWER	AMPERES / PHASE	VOLTAGE	CONNECTION
CFS-28V-115V-US	50/60 Hz	2800 W	17 A	120 (1P+N+PE) V	NEMA 5-20P 1
CFS-50V-115V-US	50/60 Hz	2800 W	23 A	120 (1P+N+PE) V	NEMA 5-30P 2
CFS-75V-220T-US	50/60 Hz	4500 W	12 A	230 (3P+PE) V	NEMA L15-20P 3
CFS-110V-220T-US	50/60 Hz	6000 W	15 A	230 (3P+PE) V	NEMA L15-20P 3
CFS-150V-220T-US	50/60 Hz	9000 W	23 A	230 (3P+PE) V	NEMA L15-30P 4

1



5-20R

2



5-30R

3



L15-20R

4

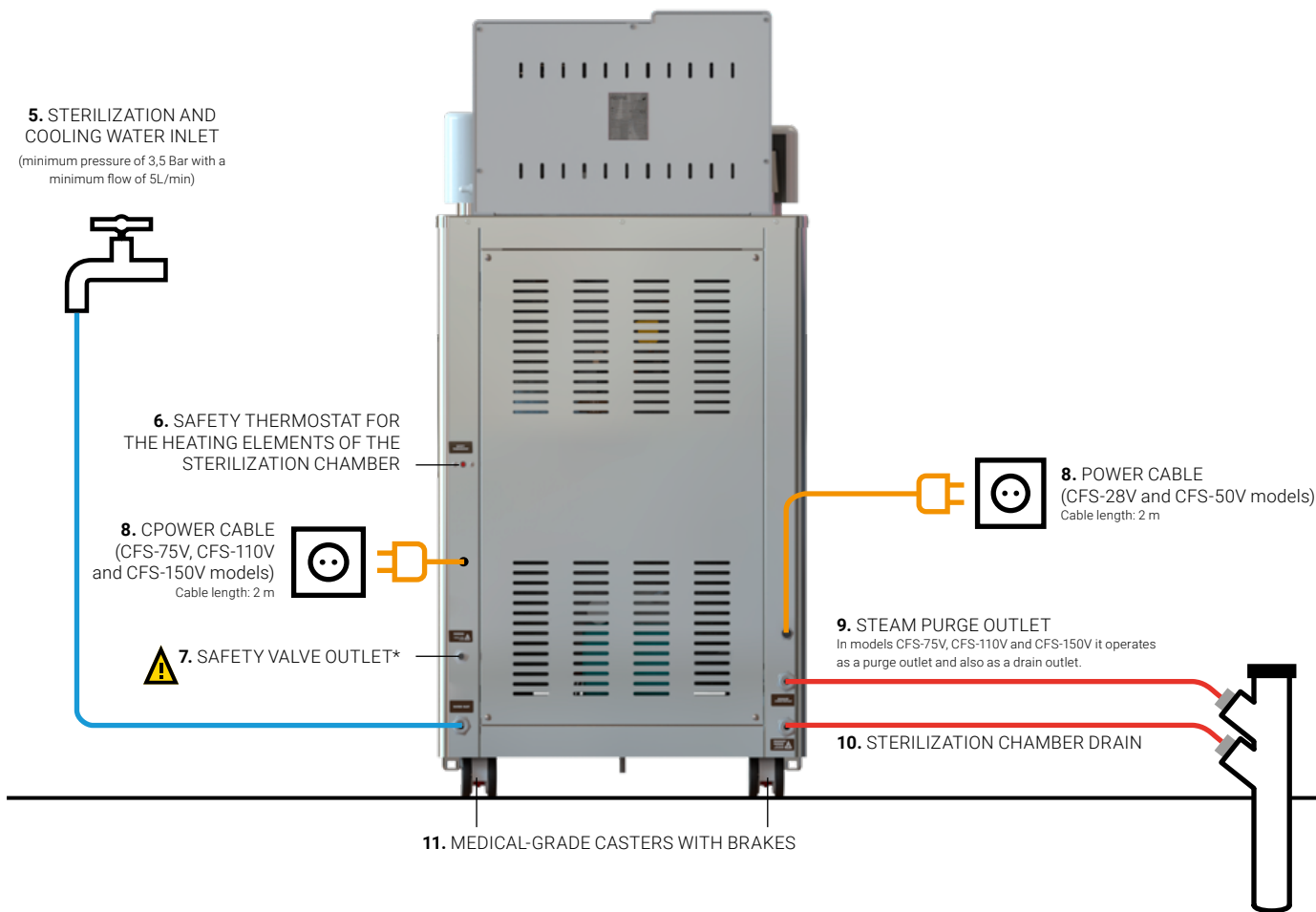


L15-30R

CONNECTIONS GRAPH



CONNECTIONS GRAPH Continuation



*Outlet 7 must be left unobstructed at all times.

ATTENTION!
Outlets 9 and 10 must be driven to the drain separately and properly attached to it. See page 7



COMPONENTS INCLUDED

In addition to the accessories chosen at the time of purchase of the autoclave (baskets, tray support, software kit, baskets crane, water softener, additional drilling kits, etc.), the following components are always included:

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



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

3 reinforced NBR hoses 1,5 m long with 3/4" connection at both ends for threaded connection to the equipment and tap (gaskets included). These hoses are located inside the autoclave upon delivery.



For:
5. STERILIZATION AND COOLING WATER INLET
9. STEAM PURGE OUTLET
10. STERILIZATION CHAMBER DRAIN

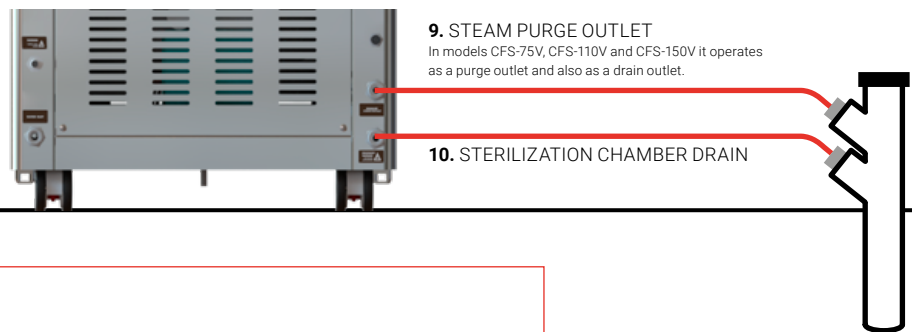
Drilling kit for containers with metallic lids with the following components:



- 1 perforation bore
- 10 Ø4 mm rubber gaskets
- 5 Ø4 mm rubber O-rings
- 5 metallic drill nuts
- 16 plastic spacers, 2 of each of the following sizes: 20, 30, 40, 50, 60, 70, 80 and 90 mm

DRAINAGE CONNECTIONS

CFS-V Series autoclaves have 2 drainage connections to drain steam and liquids, the STEAM PURGE OUTLET (9) and the STERILIZATION CHAMBER DRAIN OUTLET (10). These drain outlets must be connected independently to a drainage using the provided hoses. The autoclave mixes cold water from the mains with hot water coming from inside the sterilization chamber, which drastically reduces the temperature at which water is conducted to the drainage from a maximum of 70 °C to 50 °C depending on the cycle used and the mains water temperature.



9. STEAM PURGE OUTLET
In models CFS-75V, CFS-110V and CFS-150V it operates as a purge outlet and also as a drain outlet.

10. STERILIZATION CHAMBER DRAIN



IMPORTANT:

Outlets **9** and **10** cannot be connected together; they must be connected independently.

Do not connect **drain outlets** to pipe traps or other elements which may difficult water evacuation.

Drainage may be located at an elevation of up to 2 meters, since the equipment expels water from inside using the internal pressure produced during normal product processing.



CONSIDER:

Height and position of the steam purge outlet and sterilization chamber drain connections.

MODELS	HS STEAM PURGE OUTLET HEIGHT	HD STERILIZATION CHAMBER DRAIN HEIGHT
CFS-28V	265 mm	115 mm
CFS-50V	265 mm	115 mm
CFS-75V	185 mm	140 mm
CFS-110V	150 mm	110 mm
CFS-150V	170 mm	120 mm



WATER SUPPLY FOR STERILIZATION AND COOLING

CFS-V Series autoclaves have automatic filling of the sterilization chamber inner base where the heating elements are located, which produce steam during normal operation of the autoclave. They also have automatic filling of the sterilization chamber using water shower during the final fast cooling phase.

Soft water must be used (see table below) to prevent the formation of lime residue deposits inside the sterilization chamber. Input options **A** and **B** are available using the STERILIZATION AND COOLING WATER INLET (5) connection with the provided hose.

A. Using a soft water network that will directly connect to the automatic water supply inlet of the autoclave.



SOFT WATER NETWORK
3/4" GAS TAP
Minimum pressure of 3,5 Bar with a
minimum flow of 5L/min

B. Using a hard water network going through the water softener and connecting this to the automatic water supply inlet of the autoclave.



HARD WATER NETWORK
3/4" GAS TAP
Minimum pressure of 3,5 Bar with a
minimum flow of 5L/min



WATERSOFT-11 water softener
(accessory)



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 (CaCO₃) milligrams per liter of water.

² FH: French hardness (10.0 mg CaCO₃/L).

³ DH: German hardness (17.8 mg CaCO₃/L).

⁴ EH: English hardness (14.3 mg CaCO₃/L).

WATER SOFTENER INSTALLATION

If you don't have a soft water mains available where you intend to install your CFS-V Series autoclave, we recommend using the WATERSOFT-11 water softener.

The WATERSOFT-11 water softener comes with all hoses needed for installation (hoses are 2 meters long), one particle filter equipped with a cartridge and a water hardness measuring kit.

The HARD WATER MAINS INLET (A) must be connected from the water main with the provided 2m hose after going through the included sediment filter (water temperature from the main must be between 5 °C and 38 °C).

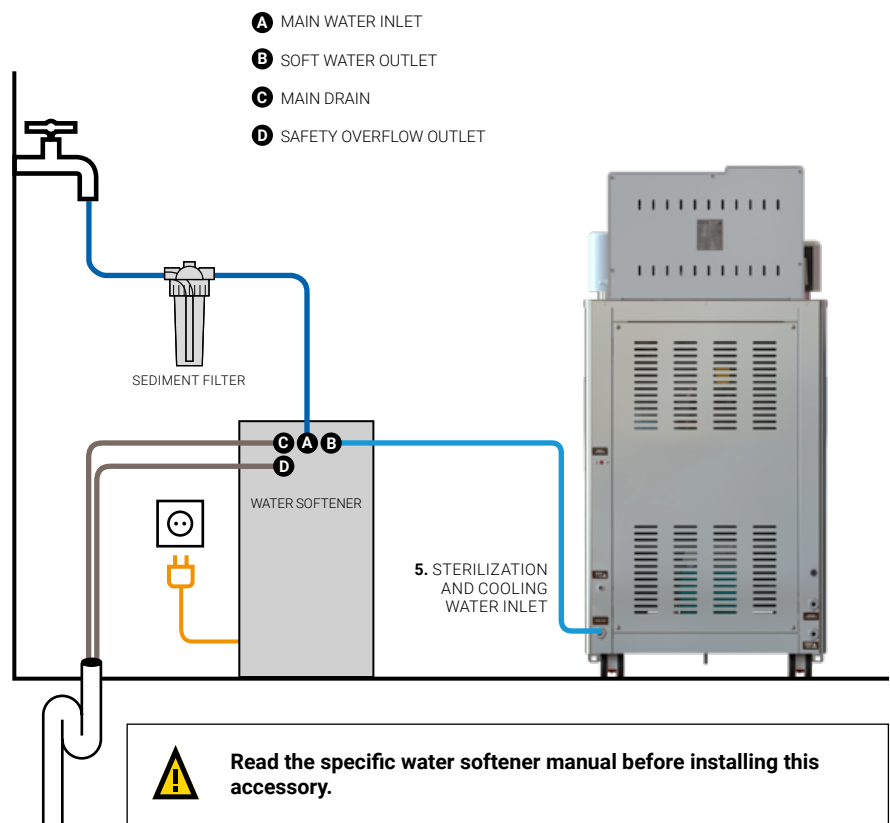
Soft water must be driven from the SOFT WATER OUTLET (B) to the STERILIZATION AND COOLING WATER INLET (5) of the autoclave using the 2m hose included.

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.

Water softener dimensions:
L x D x H: 290 x 530 x 660 mm

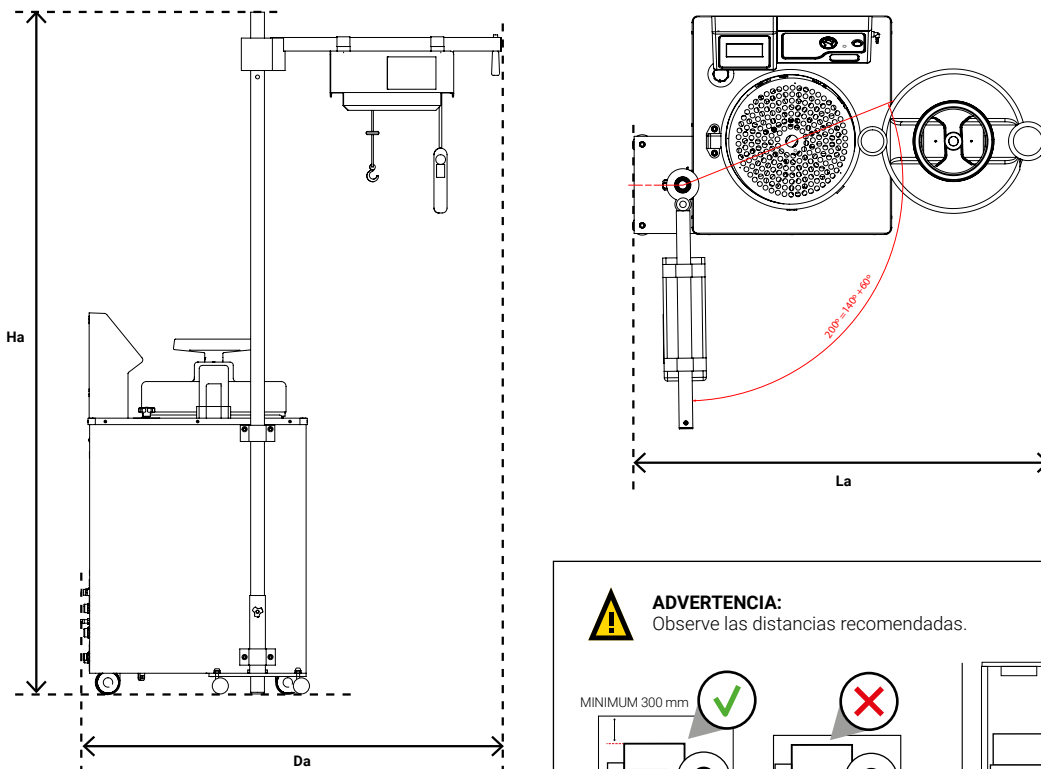
Sediment filter dimensions:
L x D x H: 170 x 140 x 340 mm



BASKETS CRANE INSTALLATION

In order to securely handle fully-loaded autoclave baskets, we recommend the purchase of our baskets crane with a revolving arm. There are two models available: ELEV-CLAV for heavy loads up to 30 kg, or ELEV-CLAV-R for very heavy loads up to 40 kg.

BASKETS CRANE MODEL	MAXIMUM LOAD PER BASKET	CRANE DIMENSIONS L x D x H	AUTOCLAVE MODEL COMPATIBILITY	CRANE + AUTOCLAVE ELIMINAR DIMENSIONS La x Da x Ha
ELEV-CLAV	30 kg	800 x 300 x 2100 mm	CFS-75V	1276 x 1296 x 2100 mm
			CFS-110V	1276 x 1296 x 2100 mm
ELEV-CLAV-R	40 kg	800 x 300 x 2600 mm	CFS-110V	1276 x 1296 x 2600 mm
			CFS-150V	1543 x 1536 x 2600 mm



ADVERTENCIA:
Observe las distancias recomendadas.

MINIMUM 300 mm

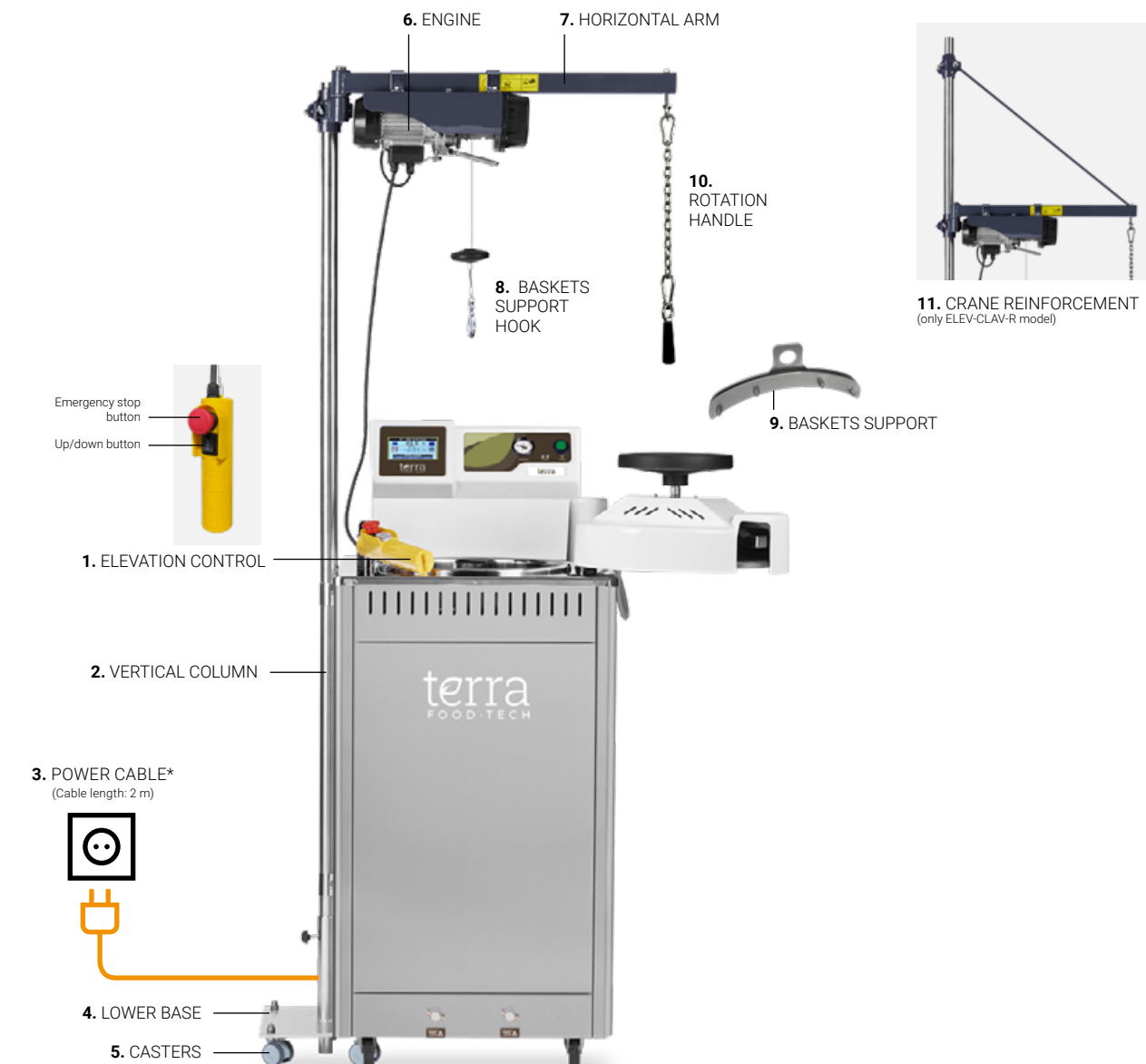
MINIMUM 300 mm



IMPORTANT:

Each crane is factory set to the specific measurements of the autoclave with which it is installed. Should the installation take place *after* purchasing the autoclave, please contact our technical support team.

Description of ELEV-CLAV and ELEV-CLAV-R cranes



*The power cable of the crane is independent from that of the autoclave. The plug can be adjusted according to client requirements.

5-steps installation of ELEV-CLAV or ELEV-CLAV-R baskets crane into your autoclave

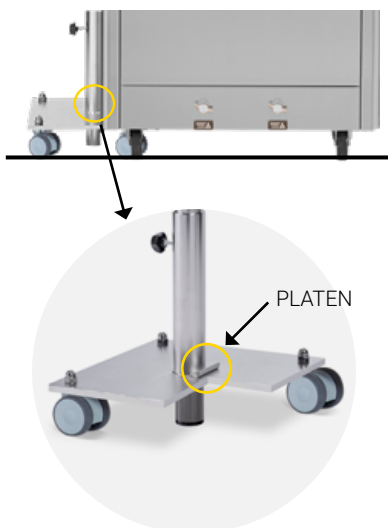
STEP 1

Place your autoclave to the selected working site and be sure to place it on a stable surface.

You should also ensure the autoclave has the necessary boreholes on its left side to install the baskets crane. 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 crane lower base is factory set according to the specific purchased autoclave model.

This operation requires lifting the autoclave laterally a little to introduce the platen beneath.



STEP 2

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



STEP 3

Fasten vertical column to autoclave bodywork using the included metal locking plate and screws.



5-steps installation of ELEV-CLAV or ELEV-CLAV-R baskets crane into your autoclave Continued

STEP 4

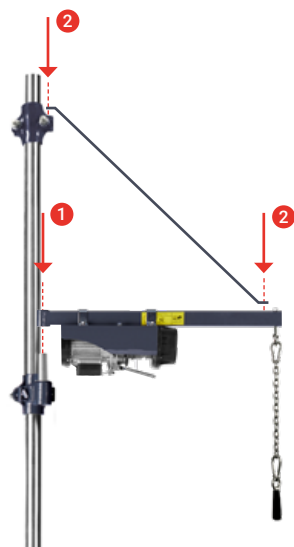
ELEV-CLAV Model

Install horizontal arm with the engine.



ELEV-CLAV-R Model

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



STEP 5

Once mounted, place a basket in the hook and check that the baskets go vertically in and out from inside the autoclave.



Check the specific manual for the baskets crane before installing this accessory.

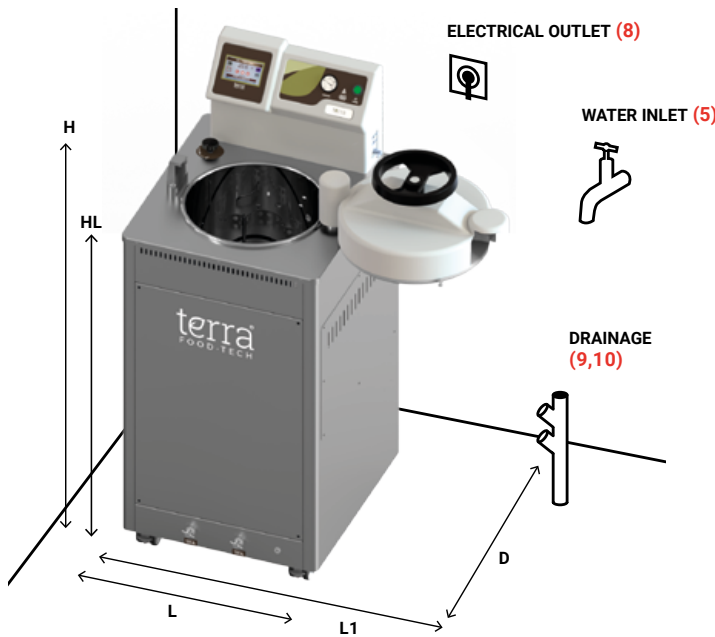




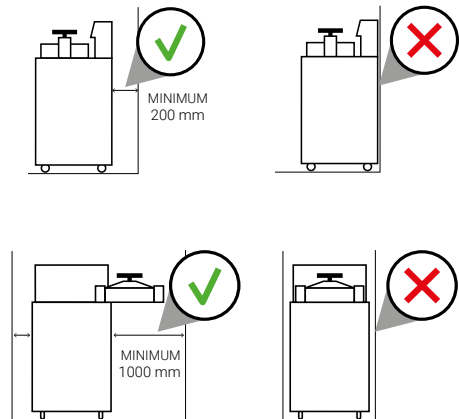
DIMENSIONS TO CONSIDER FOR THE INSTALLATION OF YOUR AUTOCLAVE

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.

MODELS	L LENGTH	L1 LENGTH with maximum door opening	D DEPTH	H HEIGHT	HL LOADING HEIGHT	HS STEAM PURGE OUTLET HEIGHT	HD STERILIZATION CHAMBER DRAIN HEIGHT
CFS-28V	510 mm	890 mm	583 mm	1103 mm	778 mm	265 mm	115 mm
CFS-50V	510 mm	890 mm	583 mm	1282 mm	957 mm	265 mm	115 mm
CFS-75V	617 mm	1097 mm	700 mm	1177 mm	852 mm	185 mm	140 mm
CFS-110V	622 mm	1100 mm	700 mm	1425 mm	1100 mm	150 mm	110 mm
CFS-150V	750 mm	1383 mm	820 mm	1383 mm	1100 mm	170 mm	120 mm



WARNING:
Respect the recommended distances.



ENVIRONMENTAL CONDITIONS

This autoclave can operate under the following maximum conditions:

- Ambient temperature: 30 °C
- Humidity: 75%
- Altitude: 3,000 meters above sea level. Take into account that from 1,000 meters above sea level an adjustment of the purge parameter must be made; consult with our technical team.

AUTOCLAVE 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 production cycles each day or work with high-fat foods we recommend carrying out maintenance and cleaning tasks such as the automatic cleaning program or cleaning of the sterilization chamber more frequently.



DAILY MAINTENANCE

Clean gasket and interior of the lid using a clean cotton towel with a soft vinegar solution (or similar product) to minimize the appearance of lime deposits.

For external surfaces, use a clean cotton towel with a little of water and neutral detergent. Dry all surfaces afterwards. Finally, check for food residues or leftovers before using the autoclave again.



WEEKLY MAINTENANCE

Execute the predefined automatic cleaning program and the inside of the sterilization chamber, the heating elements protective cover and all baskets.

To perform the sterilization chamber cleaning, a small amount of neutral detergent must be added and then start the predefined P1-CLEANING program.

It is important to perform this operation without any product load, only with the baskets and the heating elements protective cover.

For external surfaces, use a clean cotton towel with a little of water or neutral detergent.

If lime deposits appear inside the sterilization chamber, this means the water used for feeding the autoclave is too hard and therefore you must check the status of the water decalcifying system.



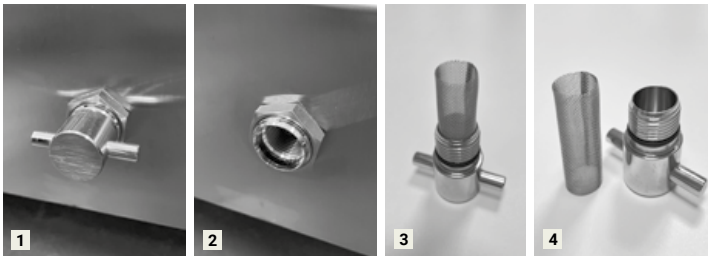
MONTHLY MAINTENANCE

CFS-V Series autoclaves have two particle filters for capturing any detached leftovers from processed product. The first one is used to prevent big particles from entering inside the equipment piping, and it is located at the inner base of the sterilization chamber. The second particle filter is located at the lower front exterior (there are two filters on the CFS-75V, CFS110V and CFS-150V models) and is used to capture small particles.

Depending on application and usage, we recommend a monthly cleaning of all particle filters. With time, and depending on their status, filters must be replaced with new ones.


To clean the **large particles filter located on the lower front exterior**: unscrew the cap (place a container beneath to collect any water it may contain). Then place the filter under a water stream. Use hot water and a scourer to remove any embedded leftovers.

To clean the **small particles filter inside the sterilization chamber**: unscrew and then place filter under a running water stream. Use hot water and a scourer to remove possible embedded leftovers.

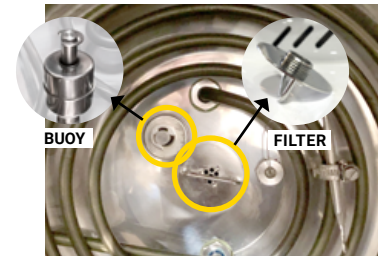


Filter located in the lower front part of the autoclave.

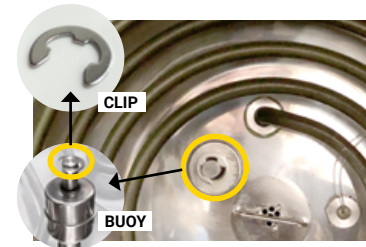
In addition, there is a buoy in the inner base of the sterilization chamber which measures and controls water level during cycles. This is a very important component for correct equipment operation.

The free movement of the buoy (up and down) must be verified each month. Otherwise, clean the buoy and its shaft. To clean the buoy, first remove the upper clip, then lift buoy and clean it. Finally, check that the buoy moves freely up and down. When the buoy is correctly placed, a  symbol (a water drop) is visible on the autoclave screen.

It is important to place the buoy clip in the same direction as it was before manipulation, otherwise the water level detection of the autoclave will be compromised.



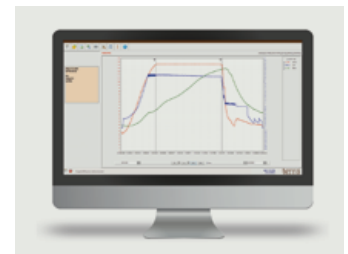
Particle filter and buoy located inside the autoclave sterilization chamber below the heating elements protective cover.



YEARLY MAINTENANCE

Usage of the autoclave causes a slight progressive imbalance in the temperature values measured by the chamber temperature probe and the flexible core temperature probe which is inserted in the reference sample. This is why an annual calibration must be performed to verify and validate the proper operation of both temperature probes.

From the autoclave screen, authorized technicians can calibrate the temperature probes as needed.



TWO-YEAR MAINTENANCE

Replace the silicone gasket of the lid. The gasket loses resistance over time and ensuring a proper hermetic sealing of the sterilization chamber is crucial.

Gasket replacement is a delicate operation, and it must be carried out by authorized technicians, the gasket may break when handling it or, if installed incorrectly, the sterilization chamber hermetic sealing might be compromised.



**COMPACT VERTICAL
AUTOCLAVES FOR
PROCESSING PACKAGED
FOOD
CFS-V SERIES**

TECHNICAL SUPPORT, ORIGINAL SPARE PARTS AND FOOD CONSULTING SERVICES

For an optimal functioning of the autoclave, always use original spare parts and have a specialized technician perform relevant maintenance (temperature probe calibration, or gasket replacement) regularly.

In case of failure, doubts about how to process a product, or for more information about TERRA Food-Tech® autoclave maintenance, remember you can contact our technical support service and nutritional guidance service using the following contact details.



Technical support

sat@terrafoodtech.com
+34 937 830 720



Food consultancy

foodconsultancy@terrafoodtech.com
+34 937 830 720

GENERAL WARNINGS

- Do not perform any maintenance task without previously ensuring the autoclave power is off.
- Do not wash the autoclave using direct water jets; possible water filtrations inside the autoclave may affect its parts and proper operation.
- Do not use sharp or cutting tools either while cleaning the sterilization chamber or cleaning exterior surfaces.
- Do not use metal towels or brushes, or other abrasive materials or products to clean the autoclave and its parts.
- Do not use chemicals or other substances not recommended by the manufacturer for cleaning the sterilization chamber.
- Do not use acid cleansers, bleach solvents or saline solutions for cleaning.
- Try to periodically eliminate lime deposits and food leftovers from the sterilization chamber, cap or gasket.

+ info

YouTube



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THE CFS-V
SERIES
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Learn more about our **CFS-V** autoclaves in our **YouTube channel**



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