LAUDA Puridest Distillation Apparatus models PD 2 R, PD 4 R, PD 8 R and PD 12 R with storage tank produce highly-pure, bacteria and pyrogen free distillate with a very low conductivity (approx 2.3 µS / cm at 25 °C). The distillate is in conformity with DAB regulations and the regulations of many international pharmacopeia..

I II III IV

I Main switch
II Pilot lamp Clean
III Operation pilot lamp
IV Distillate withdrawal

Before installation, please check whether contents of package are in good order and complete.
Should you note any damages or have any reasons for complaint, please contact your supplier or directly.

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Translation of the original operating instructions
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1 Use of the Distillation Apparatus

1.1 Intended Use

In LAUDA Puridest Distillation Apparatus models PD 2 R, PD 4 R, PD 8 R and PD 12 R electric heating elements serve to boil water and evaporate it. The steam is led through steam tubes into the storage tank where it condenses on a water-cooled cooling coil. The produced distillate drips into the storage tank. The storage tank level is electronically monitored, the Distillation Apparatus heating element(s) and cooling water supply will be switched off when the tank is full. Depending on the model, the distillate quantity per hour ranges between 2 litres (PD 2 R), 4 litres (PD 4 R), 8 litres (PD 8 R) and 12 litres (PD 12 R).
Depending on the tap water quality, the produced distillate has a conductivity of approx. 2.3 µS / cm at 25 °C. To feed the Distillation Apparatus, preferably use tap water of drinking quality. Please also observe the information in chapters 16.2 to 16.4 of these instructions on the possible use of filters and cartridges to pretreat the tap water.

The Distillation Apparatus must be operated within the user's field of vision.

The information contained in these operating instructions must by all means be read and observed. Only then a perfect operation of the Distillation Apparatus can be guaranteed. The units may only be installed and operated by persons who have made themselves familiar with these operating instructions.

Caution:
The accessible inner parts of the housing, that can be reached after lifting the outer lid get strongly heated up during operation. These parts may only be touched after they have cooled down, or when wearing suitable safety gloves.

1.2 Improper Use

LAUDA Puridest Distillation Apparatus, operated in a laboratory, are no Medical Devices. They fall neither under national nor international Medical Device Directives and have to be used and applied accordingly. The Distillation Apparatus must not be used in potentially explosive surroundings. The Distillation Apparatus must neither be set up nor operated in laboratory areas with aggressive or corrosive ambient conditions.

2 Warranty conditions

LAUDA offers a standard 12 month manufacturer's warranty from the date of purchase.

3 Before Initiation

Important information are marked in bold letters in these instructions, safety indications are additionally marked by the following warning symbols and mandatory signs.

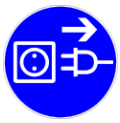
Read and observe the operating instructions

Warning of hot liquids and vapour

Warning of hot surfaces

Warning of dangerous electrical voltage

General warning



Before maintenance and repair disconnect the unit all-pole from the electrical mains (pull the plug from the socket).

4 Set-up and Location of the Distillation Apparatus

Protect yourself and the unit during transport and setup by working carefully and avoid danger of e. g. shifting or tilting the unit as well as risk of injury by lifting heavy loads.
Caution, Distillation Apparatus models PD 4 R (net weight 21.8 kg), PD 8 R (net weight 35.8 kg) and PD 12 R (net weight 40.9 kg) must be lifted, carried and transported to the location by at least two persons. The Distillation Apparatus can be held between the four stands of the unit and lifted for setup.
The unit is suitable for both bench and wall mounting. It is only suitable for indoor use. Table-top setting-up on solid, even and level surfaces only. Make sure to place the unit only on a watertight, temperature-resistant, non-flammable surface.
The location must provide sufficient space as well as the necessary carrying capacity for the total weight of the unit (unit weight as per technical data, chapter 11 of this manual, plus weight of the filling).
For setting-up on the wall, check the carrying capacity of the wall in connection with the total weight of the unit (appliance plus water filling, see Technical Data). Make sure to check the on-site fixing elements in order to guarantee safe hold of the Distillation Apparatus. The fixing material must be suitable for the substrate. Use only tested and proven fixing material.
There are two keyholes for wall mounting at the back of the Distillation Apparatus. Place two fixing screws (not included in the scope of supply) in the wall in the distance of the two keyholes and nest the Distillation Apparatus on the keyholes. The unit is delivered without fixing material.

Model	/	Distance of screws
PD 2 R	/	40 cm
PD 4 R	/	48 cm
PD 8 R	/	64 cm
PD12 R	/	64 cm

The unit is not suitable for use in potentially explosive surroundings, e. g. during anaesthesia with inflammable gas or steam types!

5 Operation Voltage

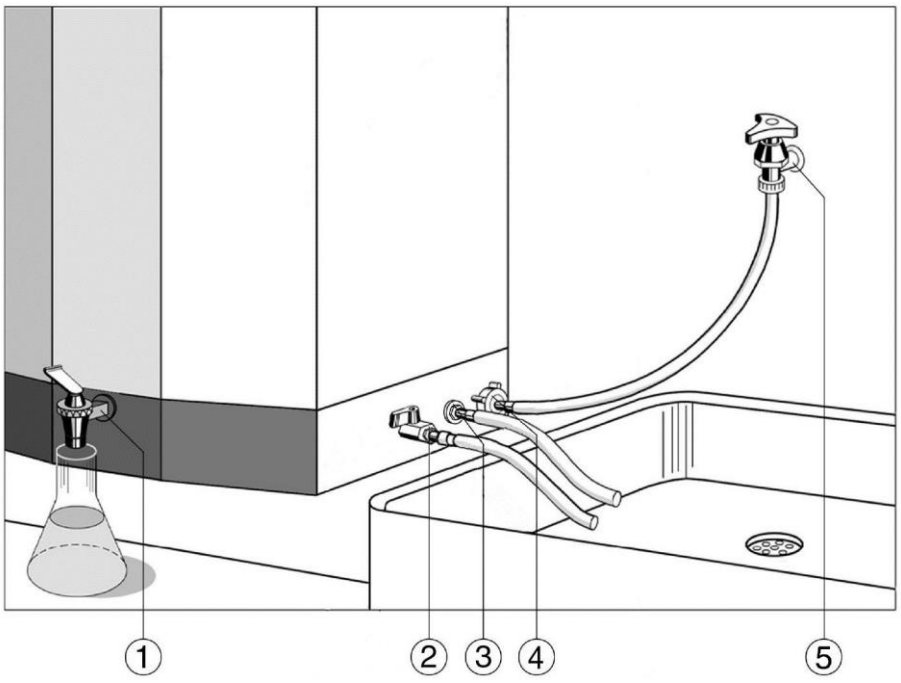
The Distillation Apparatus must be connected to the mains supply either by a correctly installed shock-proof socket, or, with a fixed connection, to an on-site main switch. The Distillation Apparatus is a protection class I electrical appliance, a connection to the earth conductor (PE) must be ensured. For information on the required mains fuse please view Technical Data, chapter 11 of this manual.

The electrical connection must ensure an all-pole separation from the mains at any time. Shock-proof sockets or main switches to separate the Distillation Apparatus from the mains must be installed in such a way as to ensure they can be clearly identified and are easily accessible at any time.

The mains connection cable must not touch any hot surfaces of the unit. It may not lead underneath the unit. The main switch (I) of the Distillation Apparatus must be off (position O). The voltage on the nameplate (at the left-hand side of the unit) must be identical to the mains voltage. If they are identical, connect the unit to the mains. Please also refer to chapter 14 of these operating instructions "Connection to the Mains".

6 Water Connections

All water connections of the Distillation Apparatus, except the distillate withdrawal tap on the front, are situated on the right-hand side of the unit.
Hoses for water inlet and outlet are not included in the standard scope of supply.



6.1 Distillate withdrawal ①

Distillate is withdrawn from the unit through the black plastic tap on the front of the unit. It can be opened in continuous or interval positions. A laboratory hose with an inner diameter of approx. 15 mm can be connected to the tap, the hose has to be secured from slipping off with a hose clip.

Caution:
The distillate leaves the Distillation Apparatus with a temperature of more than 50 °C.
Danger of scaldings!

6.2 Drain boiler ②

Connect a ½" hose to drain the boiler when cleaning the unit and/or carrying out maintenance works.

Caution:
the water leaves the boiler of the Distillation Apparatus with a temperature of up to 100 °C.
Danger of scaldings!

6.3 Cooling water outlet ③

Connect a ¾" temperature-resistant hose to the cooling water outlet. It may have a maximum length of approx. 1.5 m. It must be led into an open drain on a lower level and must have a slope on its complete length.
Make sure the cooling water can drain without back draughts.

Caution:
cooling water leaves the Distillation Apparatus with a temperature of up to 70 °C.
Danger of scaldings!

6.4 Tap water inlet ④

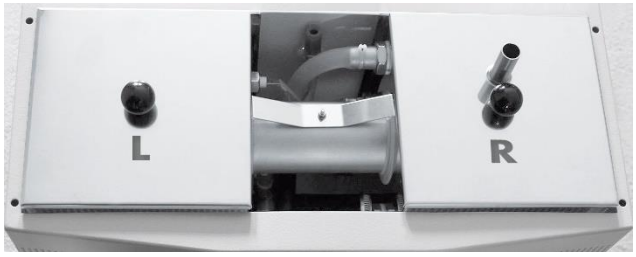
The tap water inlet supplies water to the Distillation Apparatus through a solenoid valve. The hose connection of the valve must be connected with the water mains through a ½" pressure hose and a blockable water connection (⑤, hand stop valve).
It is absolutely essential to use hose clips to secure both hose connections!

7 Initiation

7.1 Before initial starting

Before initial starting, the Distillation Apparatus has to be hand-filled with water. To do so, remove the outer and left-hand inner lids (marked L) as well as the deflector beneath the inner lid. Caution, when working on the deflector, make sure to observe the correct position of the wire electrode in the container. It may neither be bent nor come into contact with the housing. The boiler must now be filled with water until the heating element(s) at the bottom of the container are below water level. The deflector as well as the two individually marked inner lids must be re-assembled and safely nested on the containers before initiation of the unit.

Marking L
front of the
left-hand inner lid
(boiler)



Marking R
front of the
right-hand inner lid
(storage tank)

7.2 Initiation

I II III

To initiate the Distillation Apparatus after assembly of all power and water connections, open the hand-stop valve of the water mains supply ⑤ and switch on the main switch (I). The first few litres of produced distillate should not be used. Discard the first two to three complete fillings of distilled water in the storage tank.

To switch off the unit for longer down-times, first switch the main switch (I) to position O, and disconnect the unit from the mains. Close the on-site hand-stop valves of the water supply, then empty and dry storage tank and boiler in order to avoid germ contamination.

8 Functional Description

LAUDA Puridest Distillation Apparatuses work automatically. After switching on the Distillation Apparatus main switch, the green pilot lamp in the main switch (I) as well as the right-hand, yellow operation pilot lamp (III) will light up. The built-in solenoid valve opens. Water flows through the cooling coil in the storage tank and a mechanical water level regulator that controls the water level in the boiler. Excess water that is not used to evaporate, runs off through the cooling water outlet. The heating elements are powered on and bring the water in the alembic to the boil. A thermostatic low water cut-off protects the heating elements from dry running. The produced steam is led through a steam tube to the cooling coil where it condenses and drips as distillate into the storage tank.

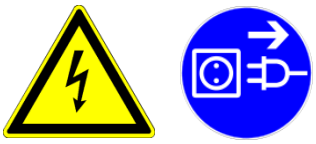
The water level in the storage tank (right-hand container) is controlled through a wire electrode. Once the container is full, the Distillation Apparatus will be switched off by an electronic controller. The solenoid valve interrupts the cooling water supply, the heating elements are switched off and the yellow pilot lamp (III) goes out. Distillate is withdrawn through the black plastic tap at the front of the unit.

After withdrawal of distillate, the unit will be switched on again automatically, so that the storage tank is refilled.

Carbon dioxide is degassed through a vent on the top of the unit.

9 Maintenance, Service and Trouble Shooting

Caution:
Prior to maintenance and service on the unit let the Distillation Apparatus cool down!
Danger of burns!



Caution:
Before opening the Distillation Apparatus as well as prior to cleaning, separate the unit from the mains supply! (Pull the plug or switch off main switch).
Danger of electrical shock!

9.1 Descaling

Depending on the degree of hardness of the tap water, the Distillation Apparatus must be cleaned regularly of scale formations. First remove the outer and the left-hand inner lids (L), then unscrew the deflector and remove it, too. A suitable descaling agent is a mixture of 10 % formic acid, 10 % acetic acid and 80 % distilled water. Fill the solvent into the boiler until it covers the topmost scale deposits and heat up to maximum approx. 70 °C. Make absolutely certain not to bring the mixture to a boil. In order to do so, close the hand-stop valve of the water mains supply ⑤ and switch on the Distillation Apparatus until the temperature is reached. After approx. 30 minutes drain the solvent and scale mixture through the drain cock "drain boiler" ② and rinse the boiler thoroughly with water several times.
Commercial descaling agents, suitable for use with stainless steel, can also be used according to the manufacturer's instructions (e.g. rea-calc® of M/s CHEMOTEC GmbH, 63486 Bruchköbel, Germany). Never use any products containing hydrochloric acid! These will lead to damages to heating element, boiler, temperature sensor and the ducts of the screw connections. Restart the unit as described in chapter 7 Initiation.
After descalings, the first few litres of distillate should not be used as it might contain traces of evaporated descaling agent. Discard the first two to three complete fillings of distilled water in the storage tank.

9.2 Pilot Lamp Clean

9.2.1 Foam formation caused by polluted water in the boiler

I II

Depending on the degree of impurities in the feed water as well as on the growing contamination of the water in the boiler, caused by the distillation process, the boiling water will foam up. Once the foam gets in contact with the electrode in the boiler (L), an electronic impurity detector will switch off the unit, and the red pilot lamp Clean (II) will light up.
The boiler must now be emptied through the drain cock "drain boiler" ② and be rinsed several times with clean water..

The operational interruption "Clean" is reset by switching the unit's main switch off and then on again. The subsequent re-initiation is to be carried out as described in chapter 7.
The "Cleaning" function's purpose is to exchange polluted water in the boiler against clean water.

9.2.2 Back water in the boiler

If the water level in the boiler rises up to the wire electrode in the left-hand container (L), the electronic impurity detector (A1 in the circuit diagram) switches the unit off and the red pilot lamp "Clean" (II) lights up. This means that more water entered the unit than could flow off. Possible causes are tubes outside the unit that are not installed as described (see chapter 6), or scale formations that cause a blockage in the water outlet tube inside the unit. A defective quantity regulator in the outlet of the solenoid valve (see cooling water requirement, chapter 11) might also cause more water to flow into the unit than can flow off. For trouble shooting purposes, an additional function drawing of the internal water flow is available on request.

9.3 Re-initiation after low water

To re-initiate, let the unit cool down and fill in water to cover the heating elements as described in chapter 7 Initiation.
The triggered low water cut-off must be reset. To do so, loosen the black cap nut at the bottom left-hand side of the Distillation Apparatus. Inside the thread a small white plastic pin can be seen that has to be gently pressed inside (e.g. with a pen) until a clicking sound can be heard.
Only then switch the unit back on again.

The LAUDA Puridest Distillation Apparatus is made of first-class material. Nevertheless, the unit should only be subjected to mechanical strain within sensible limits.

9.4 Technical support

You can call our customer service at any time for technical support relating to LAUDA Puridest Distillation Apparatuses appliances.

Phone : +49 (0) 9343 / 503-350

Fax : +49 (0)9343 503-283

Email : service@lauda.de

Maintenance, repairs and modifications must be carried out by a qualified electrician (section 2 (3) DGUV Regulation 3) according to the General Rules of Technology (section 2 (2) DGUV Regulation 3). Only original spare parts may be used. Request that the person performing the work provides written confirmation of the type and scope of the work carried out (company, date, signature).

10 Disposal of Old Units

LAUDA will take responsibility, within the scope of the legal directives, for an environmentally sound handling and disposal of all used LAUDA units as of the production year 1995 that are returned to us free of charge and will have it materially recycled. Before the unit is returned, a legally binding declaration must be provided from the sender confirming that the unit is free from harmful and/or hazardous contaminations as well as from hazardous substances caused by the previous use of the unit.
LAUDA laboratory apparatus are exclusively designed for industrial use and may not be disposed of through public waste disposal authorities.
EAR Registration Number WEEE-ID.NO.DE 67770231

11 Technical Data

11.1 Distillation Apparatus Puridest models PD 2 R, PD 4 R

	PD 2 R	PD 4 R
Exterior dimensions (W x D x H)	530 mm x 280 mm x 455 mm	615 mm x 320 mm x 495 mm
Storage tank	4 litres distillate	8 litres distillate
Distillation capacity	2 l / h distillate	4 l / h distillate
Distillate quality	Mono distillate approx. 2.3 µS / cm at 25 °C in conformity with DAB, bacteria and pyrogen free, low gas content	Mono distillate approx. 2.3 µS / cm at 25 °C in conformity with DAB, bacteria and pyrogen free, low gas content
The conductivity of the distilled water is directly related to the chemical composition of the raw water. Components of the raw water having the same or a lower evaporation point than water may deteriorate the conductivity.		
Cooling water requirement	30 l / h	48 l / h
Low water cut-off	Electromechanical temperature limiter, with capillary tube sensor. Switch-off temperature 135 °C / -15 K	Electromechanical temperature limiter, with capillary tube sensor. Switch-off temperature 135 °C / -15 K
Water pressure min. / max.	> 3 bar / 7 bar > 43.5 psi / 101.5 psi	> 3 bar / 7 bar > 43.5 psi / 101.5 psi
Electrical connection Mains supply	230 V +/-10 %, 50 / 60 Hz, 1.5 kW shock-proof plug	230 V +/-10 %, 50 / 60 Hz, 3.0 kW shock-proof plug
Caution! Mains voltage deviations, even with the mentioned limits, influence the quantity of distillate produced.		
Fuses		
On-site fuse	16 Amp.	16 Amp.
Internal mains fuse	10 Amp. T	16 Amp. T
Protection class / - type	I / IP20	I / IP20
Surrounding conditions	Use only inside buildings (not in potentially explosive areas).	Use only inside buildings (not in potentially explosive areas).
Height above MSL	up to 2000 m MSL	up to 2000 m MSL
Ambient temperature	+10 °C to +40 °C	+10 °C to +40 °C
Humidity	max. 80 % rel. humidity to 31 °C, decreasing to 40 % rel. humidity at 40 °C	max. 80 % rel. humidity to 31 °C, decreasing to 40 % rel. humidity at 40 °C
Net Weight	16.0 kg	21.8 kg
Weight with water filling	22.0 kg	32.4 kg

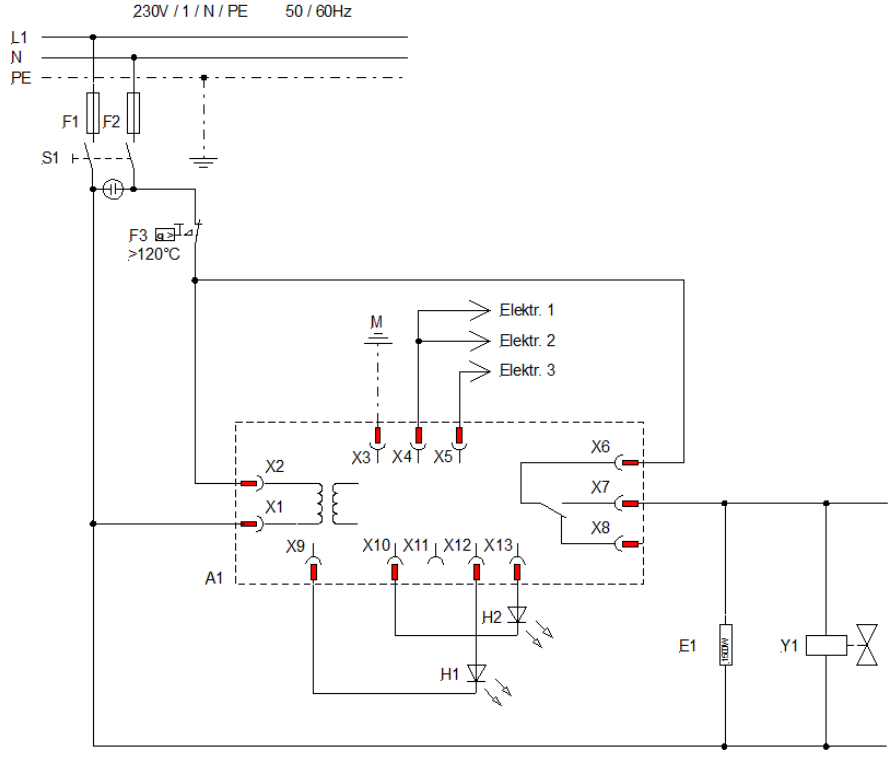
11.2 Distillation Apparatus Puridest models PD 8 R, PD 12 R

	PD 8 R	PD 12 R
Exterior dimensions (W x D x H)	780 mm x 405 mm x 575 mm	780 mm x 405 mm x 705 mm
Storage tank	16 litres distillate	24 litres distillate
Distillation capacity	8 l / h distillate	12 l / h distillate
Distillate quality	Mono distillate approx. 2.3 µS / cm at 25 °C in conformity with DAB, bacteria and pyrogen free, low gas content	Mono distillate approx. 2.3 µS / cm at 25 °C in conformity with DAB, bacteria and pyrogen free, low gas content
The conductivity of the distilled water is directly related to the chemical composition of the raw water. Components of the raw water having the same or a lower evaporation point than water may deteriorate the conductivity.		
Cooling water requirement	72 l / h	198 l / h
Low water cut-off	Electromechanical temperature limiter, with capillary tube sensor. Switch-off temperature 135 °C / -15 K	Electromechanical temperature limiter, with capillary tube sensor. Switch-off temperature 135 °C / -15 K
Water pressure min. / max.	> 3 bar / 7 bar > 43.5 psi / 101.5 psi	> 3 bar / 7 bar > 43.5 psi / 101.5 psi
Electrical connection Mains supply On-site fuse	230 V +/-10 %, 50 / 60 Hz, 6.0 kW Connection box for permanent connection to the mains Netzsicherung / on-site-fuse 35 Amp.	220 V / 3 ~ / PE +/-10 %, 50 / 60 Hz, 9.0 kW Mains connection cable for permanent connection to the mains / on-site-fuse 3 x 25 Amp.
	220 V / 3 ~ / PE +/-10 %, 50 / 60 Hz, 6.0 kW Mains connection cable for permanent connection to the mains / on-site-fuse 3 x 16 Amp.	400 V / 3 ~ / N / PE +/-10 %, 50 / 60 Hz, 9.0 kW Mains connection cable for permanent connection to the mains / on-site-fuse 3 x 16 Amp.
	400 V / 3 ~ / N / PE +/-10 %, 50 / 60 Hz, 6.0 kW Mains connection cable for permanent connection to the mains / on-site-fuse 3 x 16 Amp.	
Caution! Mains voltage deviations, even with the mentioned limits, influence the quantity of distillate produced.		
Protection class / - type	I / IP20	I / IP20
Surrounding conditions	Use only inside buildings (not in potentially explosive areas).	Use only inside buildings (not in potentially explosive areas).
Height above MSL	up to 2000 m MSL	up to 2000 m MSL
Ambient temperature	+10 °C to +40 °C	+10 °C to +40 °C
Humidity	max. 80 % rel. humidity to 31 °C, decreasing to 40 % rel. humidity at 40 °C	max. 80 % rel. humidity to 31 °C, decreasing to 40 % rel. humidity at 40 °C
Net Weight	35.8 kg	40.9 kg
Weight with water filling	56.5 kg	70.4 kg

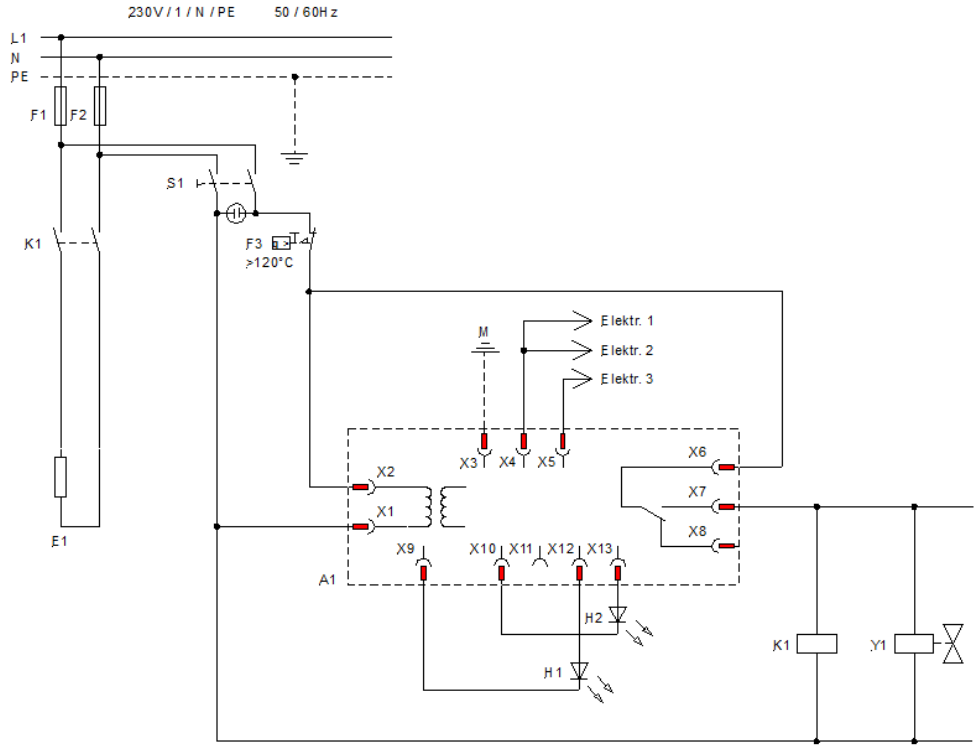
12 Circuit Diagram

A1	Electronic level switch
E1	Tubular heating element
E2	Tubular heating element
E3	Tubular heating element
H1	LED red "cleaning"
H2	LED yellow "operation"
Elektr. 1	Electrode "cleaning in boiler"
Elektr. 2	Electrode "water blocking"
Elektr. 3	Electrode "max. level storage tank"
F1	Mains fuse internal, Model PD 2 R, 10 Amp. inert
	Model PD 4 R, 15 Amp. inert
F2	Mains fuse internal, Model PD 2 R, 8 Amp. inert
	Model PD 4 R, 15 Amp. inert
F3	Low water cut-off (thermostat)
K1	Contactor
M	Earth (housing)
S1	Main switch
Y1	Solenoid valve

12.1 PD 2 R

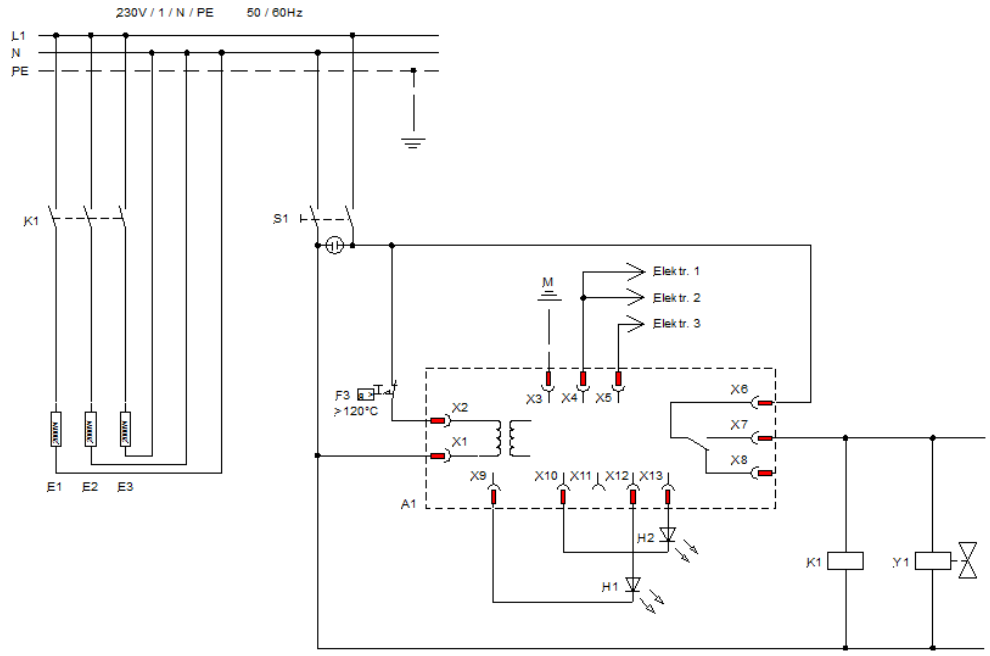


12.2 PD 4 R



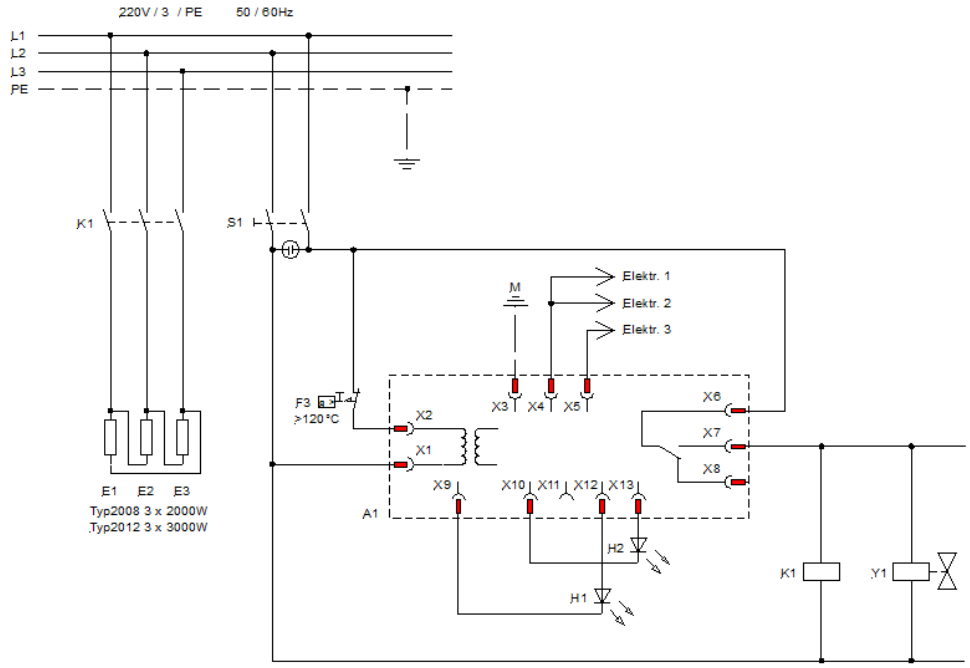
12.3 PD 8 R - version 230 V / 1 ~ for permanent connection to the mains

(see nameplate)



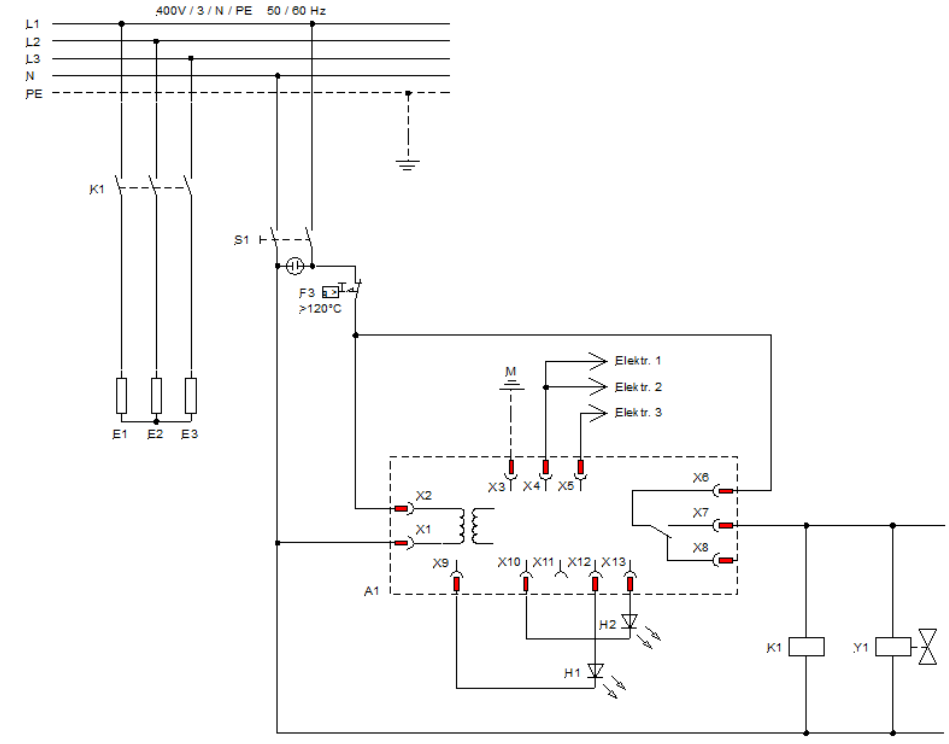
12.4 PD 8 R / PD 12 R - version 220 V / 3 ~ for permanent connection to the mains

(see nameplate)



12.5 PD 8 R / PD 12 R – version 400 V / 3 ~ for permanent connection to the mains

(see nameplate)



13 Connection to the Mains

The electrical connection must ensure an all-pole separation from the mains supply. Installed assembly parts, such as shock-proof sockets or main switches, must be installed so as to ensure clear identification and they must be within easy reach in an emergency case. Distillation Apparatus models PD 8 R and PD 12 R must have a permanent connection with the mains. This may only be implemented through an on-site main switch or through a CEE plug in conformity with IEC standard 60309-2 (see examples for connection to the mains in chapter 13.1).

Colour decoding of the individual leads of the mains connection cables for models PD 8 R and PD 12 R:

Colour decoding	Mains supply 220 V / 3 ~ / PE 50 / 60 Hz	Mains supply 400 V / 3 ~ / N / PE 50 / 60 Hz
ge/gr – gelb/grün	PE (Protective earth)	PE (Protective earth)
bl – blue		N
sw – black	L1	L1
br – brown	L2	L2
gra – grey	L3	L3

Distillation Apparatuses can be supplied in different versions for connection to different mains supplies.

Models PD 2 R and PD 4 R for connection to 230 V (see nameplate) can be connected to all mains supplies with 220 V or 230 V.

Models PD 8 R and PD 12 R for connection to 220 V / 3 ~ (see nameplate) can only be connected to mains supplies with 220 V / 3. ~ / PE.

Models PD 8 R and PD 12 R for connection to 400 V / 3 ~ (see nameplate) can only be connected to mains supplies with 400 V / 3. ~ / N / PE.

Electrical fuses

Model	Power	Power consumption at mains voltage *	Mains fuse (F2 –F4)
PD 2 R	1.5 kW	6.5 A at 230 V	10 Amp
PD 4 R	3.0 kW	13.0 A at 230 V	16 Amp
PD 8 R	6.0 kW	26.1 A at 230 V	35 Amp
	6.0 kW	15.8 A at 220 V / 3 ~ / PE	16 Amp
	6.0 kW	8.7 A at 400 V / 3 ~ / N / PE	10 Amp
PD 12 R	9.0 kW	23.6 A at 230 V / 3 ~ / PE	25 Amp
	9.0 kW	13.0 A at 400 V / 3 ~ / N / PE	16 Amp

* see nameplate

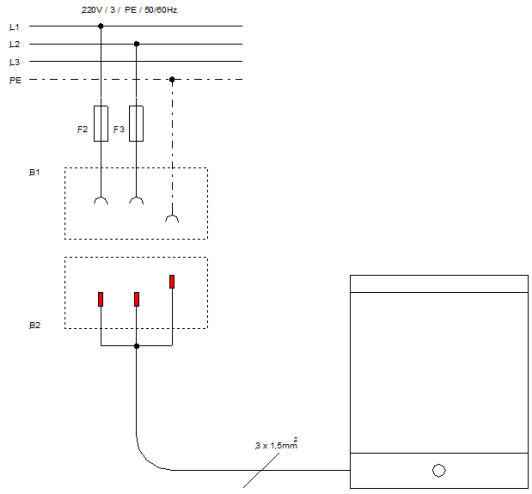
13.1 Examples for connection to the mains supply

Components

B1 Shock-proof socket (on-site)
B2 Shock-proof plug (mounted on the unit)
B3 CEE plug, not mounted, in conformity with IEC standard 60309-2
B4 Connection box, mounted on the unit
F2 Mains fuse (on-site)
F3 Mains fuse (on-site)
F4 Mains fuse (on-site)
S4 Main switch (on-site)

13.1.1 PD 2 R and PD 4 R for 230 V for a mains supply of 220 V / 3 ~ / PE / 50 / 60 Hz

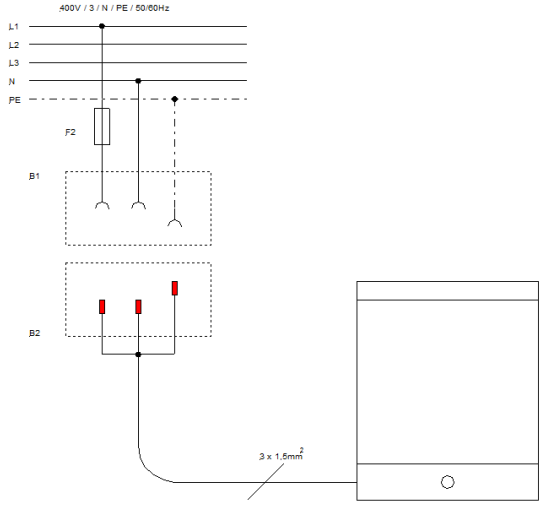
(see nameplate)



PD 2 R and PD 4 R
Mains connection through shock-proof plug CEE 7/7 (pre-assembled), all-pole separable from the mains.

13.1.2 PD 2 R / PD 4 R for 230 V for a mains supply of 400 V / 3 ~ / N / PE / 50 / 60 Hz

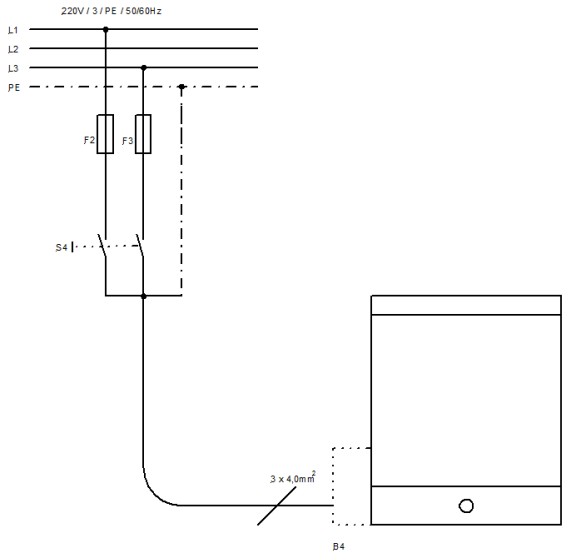
(see nameplate)



PD 2 R and PD 4 R
Mains connection through shock-proof plug CEE 7/7 (pre-assembled), all-pole separable from the mains.

13.1.3 PD 8 R for 230 V / 1 ~ for a mains supply of 220 V / 3 ~ / PE / 50 / 60 Hz

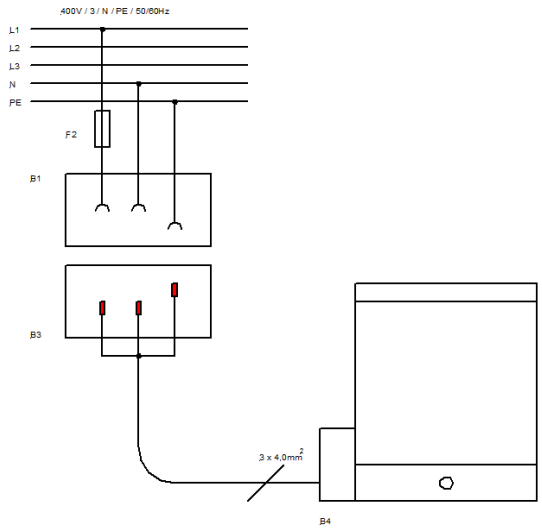
(see nameplate)



PD 8 R
Mains connection through on-site switch S4, all-pole separable from the mains. Connection cable not in scope of supply.

13.1.4 PD 8 R for 230 V / 1 ~ for a mains supply of 400 V / 3 ~ / N / PE / 50 / 60 Hz

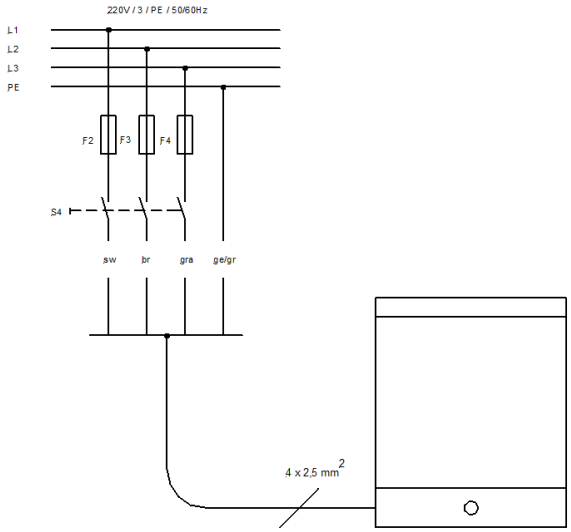
(see nameplate)



PD 8 R
Mains connection through CEE plug in conformity with IEC standard 60309-2, all-pole separable from the mains. Connection cable and CEE plug not in scope of supply.

13.1.5 PD 8 R and PD 12 R for 220 V / 3 ~ for a mains supply of 220 V / 3 ~ / PE / 50 / 60 Hz

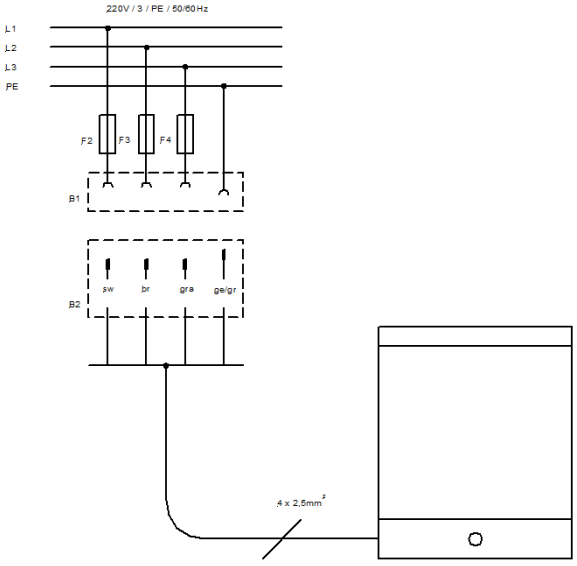
(see nameplate)



PD 8 R, PD 12 R
Mains connection through on-site switch S4, all-pole separable from the mains.

13.1.6 PD 8 R and PD 12 R for 220 V / 3 ~ for a mains supply of 220 V / 3 ~ / PE / 50 / 60 Hz

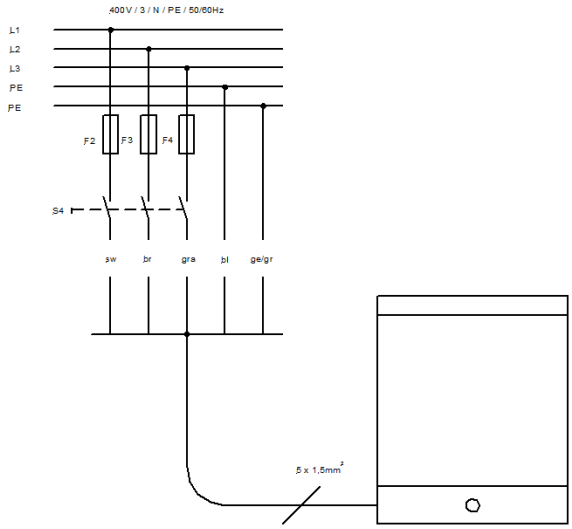
(see nameplate)



PD 8 R, PD 12 R
Mains connection through CEE plug in conformity with IEC standard 60309-2 (plug not pre-assembled), all-pole separable from the mains.

13.1.7 PD 8 R and PD 12 R for 400 V / 3 ~ for a mains supply of 400 V / 3 ~ / N / PE 50 / 60 Hz

(see nameplate)

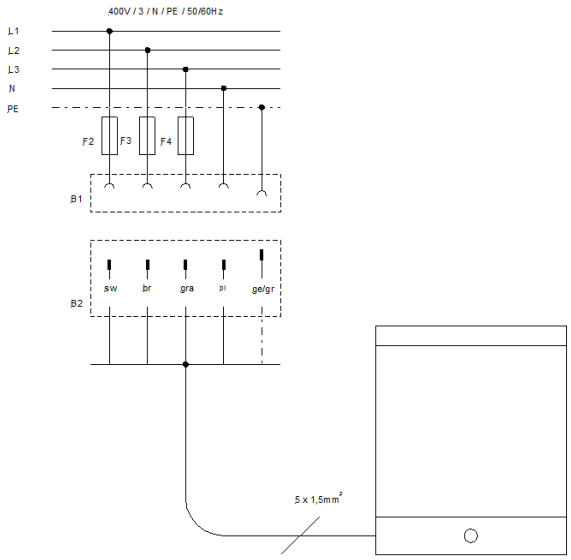


PD 8 R, PD 12 R

Mains connection through on-site switch S4, all-pole separable from the mains.

13.1.8 PD 8 R and PD 12 R for 400 V / 3 ~ for a mains supply of 400 V / 3 ~ / N / PE 50 / 60 Hz

(see nameplate)



PD 8 R, PD 12 R

Mains connection through CEE plug in conformity with IEC standard 60309-2 (plug not pre-assembled), all-pole separable from the mains.

14 Accessories and Options

Separate Water Supply, to feed the boiler with softened or desalinated water (pressure > 1 bar / 14.5 psi) and the cooling coil with phosphatised or normal tap water (pressure > 3 bar / 43.5 psi). Accessory must be installed in our works. When a separate water supply is installed, the hourly capacity of distilled water is reduced by approx. 10-15 %.

Separate Water Supply
Only factory installation into models PD 2 R to PD 12 R is possible.
When the storage is full, the inlet of pretreated water is not automatically switched off. Part-No. is depending on the Model of the Distillation Apparatus (without illustration).

Separate Water Supply with solenoid valve
Only factory installation into models PD 2 R to PD 12 R is possible.
When the storage tank is full, the solenoid valve switches off pretreated water automatically. Part-No. is depending on the Model of the Distillation Apparatus (without illustration).

Dechlorite Filter, eliminates chlorine particles in tap water added by the local waterworks. Complete with connections for pressure hose ½ inch, with first filling.

Dechlorite-Filter
Part-No. A000129

Spare filling
Part-No. A000130

Phosphate cartridge, prevents scale formation in the condenser by phosphatising of tap water. Can be used from 4 to 15 °dH (German hardness), equivalent to approx. 0.7 to 2.7 mMol / l. With connection for pressure hose ½ inch, with first filling.

Phosphate cartridge
Part-No. A000131

Spare filling
Part-No. A000132

Pre-Filter 1 µm, for pre-cleaning the tap water, and to protect the unit from premature contamination. Complete with connections for pressure hose ½" (inner diameter 12.7 mm), including filter candle. The candle should be replaced at least every six months.

Pre-Filter with candle
Part-No. A000133

Spare candle
Part-No. A000134

Wall bracket, for one filter or for filter combinations of two or three filters, including sleeves to connect the filters as well as screws to fix the filters to the wall bracket.

A data sheet on possible connection variants of articles A000129, A000131 and A000133 can be supplied on request.

Wall bracket for one filter
Part-No. A000136

Set of all 3 filters, incl. wall bracket and fillings, mounted completely
Part-No. A000135

Hose Set, consisting of hoses for water inlet and outlet (length 1.5 m), including hose clips.

Hose Set
Part-No. A000138

Level Control Switch
Only factory installation into models PD 2 R to PD 12 R is possible.
When connecting an external storage tank (not included in the scope of supply) to the Distillation Apparatus, it is recommended to equip the unit with a Level Control Switch which controls the water level in the external storage tank and switches off power and water when the external storage tank is full. When using an external storage tank in connection with Level Control Switch, the internal storage tank is only usable to a limited extent due to different levels of the internal and external tanks. Part-No. is depending on the Model of the Distillation Apparatus.

Level Control Switch

15 Notes

16 Ordering spare parts / LAUDA Service

When ordering spare parts, please state the serial number (type plate) to avoid queries and wrong deliveries.

Your partner for maintenance and competent service support:

LAUDA Service
Phone: +49 (0)9343 503-350
Fax: +49 (0)9343 503-283
Email: service@lauda.de

We are always at your disposal for questions and suggestions!

LAUDA DR. R. WOBSER GMBH & CO. KG
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Email info@lauda.de
Internet: http://www.lauda.de/

17 Product Returns and Clearance Declaration

LAUDA

Product Returns and Clearance Declaration

Product Returns

Would you like to return a LAUDA product you have purchased to LAUDA? For the return of goods, e.g. for repair or due to a complaint, you will need the approval of LAUDA in the form of a *Return Material Authorization (RMA)* or *processing number*. You can obtain the RMA number from our customer service department at *+49 (0) 9343 503 350* or by email service@lauda.de.

Return address

LAUDA DR. R. WOBSER GMBH & CO. KG

Laudaplatz 1

97922 Lauda-Königshofen

Deutschland/Germany

Clearly label your shipment with the RMA number. Please also enclose this fully completed declaration.

RMA number	Product serial number
Customer/operator	Contact name
Contact email	Contact telephone
Zip code	Place
Street & house number	
Additional explanations	

Clearance Declaration

The customer/operator hereby confirms that the product returned under the above-mentioned RMA number has been carefully emptied and cleaned, that any connections have been sealed to the farthest possible extent, and that there are no explosive, flammable, environmentally hazardous, biohazardous, toxic, radioactive or other hazardous substances in or on the product.

Place, date	Name in block letters	Signature

Version 02 - EN

18 EC Declaration of Conformity and certificates

EC DECLARATION OF CONFORMITY

Manufacturer: LAUDA DR. R. WOBSER GMBH & CO. KG
Schulze-Delitzsch-Straße 4+5, 30938 Burgwedel, Germany

We hereby declare under our sole responsibility that the machines described below

Product Line: Puridest **Serial number:** from 220____

Types: PD 2, PD 4,
PD 2 D, PD 4 D, PD 8 D,
PD 2 G, PD 2 DG, PD 4 G, PD 4 DG, PD 8 G,
PD 2 R, PD 4 R, PD 8 R and PD 12 R

comply with all relevant provisions of the EC Directives listed below due to their design and type of construction in the version brought on the market by us:

Machinery Directive	2006/42/EC
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU in connection with (EU) 2015/863

The protective objectives of the Machinery Directive with regard to electrical safety are complied with in accordance with Annex I Paragraph 1.5.1 in conformity with the Low Voltage Directive 2014/35/EU.

Applied standards:

- EN 61326-1:2013
- EN 61010-1:2010/A1:2019/AC:2019-04
- EN IEC 61010-2-010:2020

Authorized representative for the composition of the technical documentation:

Dr. Jürgen Dirscherl, Head of Research & Development

Burgwedel, 05.06.2023

A. Dinger

Dr. Alexander Dinger,
Head of Quality and Environmental Management

Q5WA-QA13-030-EN-01

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