LCT
Laue cleaning technology

LCT Round basket cleaning machine

Series HTW

-> Made entirely of stainless steel

-> For acidic, neutral and alkaline environments

-> Electrically driven rotating basket with motor protection

-> Compact design

-> Easy to use

-> High cleaning power

-> Effective and cost-efficient

-> Energy-efficient

-> Spot jet nozzles

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LCT
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LCT HTW 800

Total width with switch cabinet open: 1590 mm

Total depth with lid open: 1460 mm

Height to top edge of lid: 1070 mm

Height with lid open and exhaust air elbow: 1780 mm

Internal wire basket diameter: 800 mm

Maximum usable height: 400 mm

Maximum payload: 350 kg

Usable tank volume: min. 100 litres / max. 140 litres

Cover opening angle: 60°

Total weight when empty: 190 kg

Total electrical connection value, without additional equipment: 5.4 kW

Power supply – three-phase current / frequency: 400 V / 50 Hz

Automatic cleaning pump: Flow rate 4.8 m³/h

Spray pressure: 2.5 bar

Pump power: 0.55 kW

Temperature, digitally adjustable: 10 - 85 °C

Electric heating in wash tank: 4.5 kW

Wire basket driven by gear motor: standard

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LCT HTW 1000

Total width with switch cabinet open: 1780 mm

Total depth with lid open: 1820 mm

Height to top edge of lid: 1235 mm

Height with lid open and exhaust air elbow: 2010 mm

Internal wire basket diameter: 975 mm

Maximum usable height: 450 mm

Maximum payload: 350 kg

Usable tank volume: min. 230 litres / max. 280 litres

Cover opening angle: 60°

Total weight when empty: 300 kg

Total electrical connection value, without additional equipment: 8.5 kW

Power supply – three-phase current / frequency: 400 V / 50 Hz

Automatic cleaning pump: Flow rate 12 m³/h

Spray pressure: 4 bar

Pump power: 2.2 kW

Temperature, digitally adjustable: 10 - 85 °C

Electric heating in wash tank: 6 kW

Wire basket driven by gear motor: standard

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LCT
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LCT HTW 1200

Total width with switch cabinet open: 1990 mm

Total depth with cover open: 2000 mm

Height to top edge of cover: 1440 mm

Height with cover open and exhaust air elbow: 2300 mm

Internal wire basket diameter: 1175 mm

Maximum usable height: 650 mm

Maximum payload: 350 kg

Usable tank volume: min. 345 litres / max. 425 litres

Cover opening angle: 60°

Total weight when empty: 400 kg

Total electrical connection value, without additional equipment: 11.5 kW

Power supply – three-phase current / frequency: 400 V / 50 Hz

Automatic cleaning pump: Flow rate 12 m³/h

Spray pressure: 4 bar

Pump power: 2.2 kW

Temperature, digitally adjustable: 10 - 85 °C

Electric heating in wash tank: 9 kW

Wire basket driven by gear motor: standard

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LCT
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LCT HTW 1500

Total width with switch cabinet open: 2590 mm

Total depth with cover open: 2520 mm

Height to top edge of cover: 1685 mm

Height with cover open and exhaust air elbow: 2700 mm

Internal basket diameter: 1500 mm

Maximum usable height: 700 mm

Maximum payload: 350 kg

Usable tank volume: Min. 620 litres / Max. 720 litres

Cover opening angle: 60°

Total weight when empty: 670 kg

Total electrical connection value, without additional equipment: 21.2 kW

Power supply – three-phase current / frequency: 400 V / 50 Hz

Automatic cleaning pump: Flow rate 14.4 m³/h

Spray pressure: 4 bar

Pump power: 3.0 kW

Temperature, digitally adjustable: 10 - 85 °C

Electric heating in wash tank: 2 x 9 kW

Cage basket driven by gear motor: standard

Pneumatic lid opening: standard

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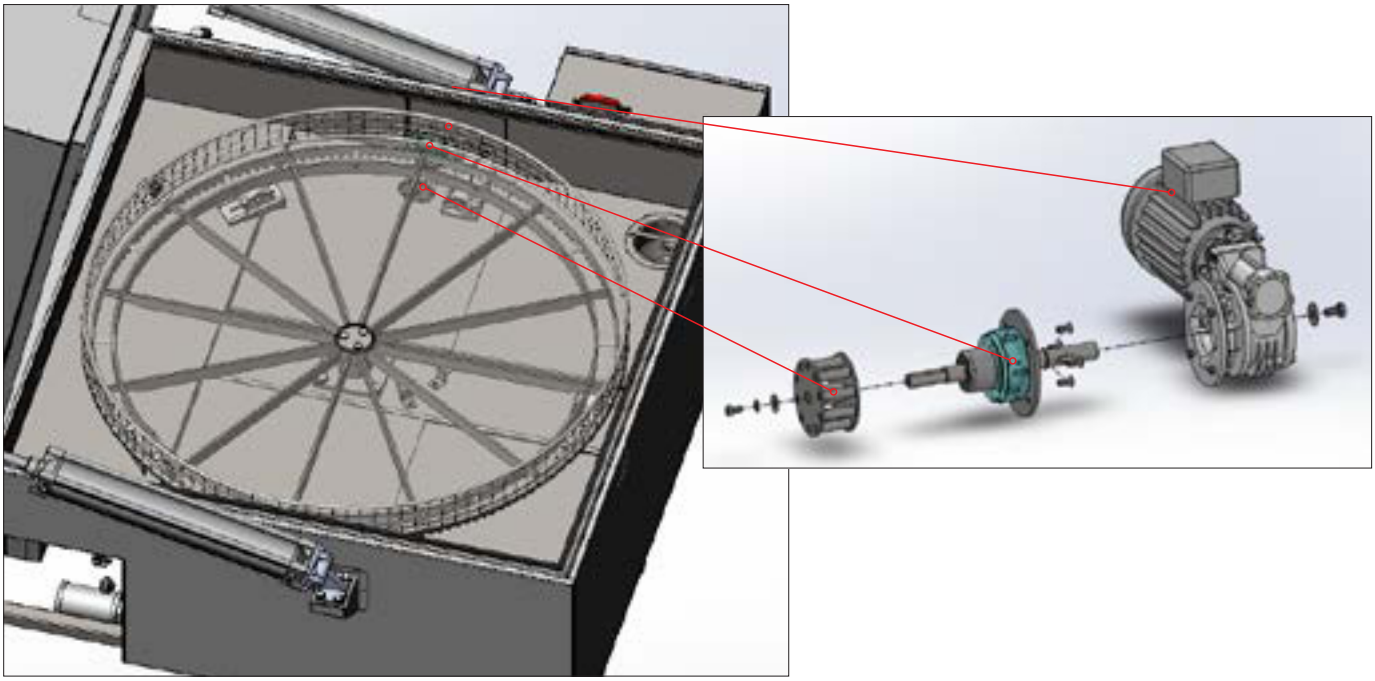
Options and spare parts for the LCT HTW

Automatic rack drive

The devices are equipped with a laterally mounted geared motor witch actuates the rack. This way, the parts are cleaned 360°from all sides; this means that also components with complex geometries will be completeley cleaned/wetted with our cleaning fluid.The steady rotation of the rack allows for optimal cleaning results(one rack rotation per minute)



Pushbutton with two-hand control for rotation the rack outside the cléaning process

This equipment makes loading and unloading of components into and from the washing rack easier. The pushbutton with two-hand control for rotating the rack works with the lid open and also with the lid closed on the HTW models. The rack can be rotated manually using pushbuttons 1.and 2.

The two pushbuttons are positioned in such a way that operating personnel will not pose a hazard when the rack is actuated. Pushbutton no.1 has to be actuated with the one hand, and pushbutton no.2 with the other hand. If one lets go of either pushbutton, manual rotation will stop immediately.

10016 Lid opening 80° with pneumatic cylinder

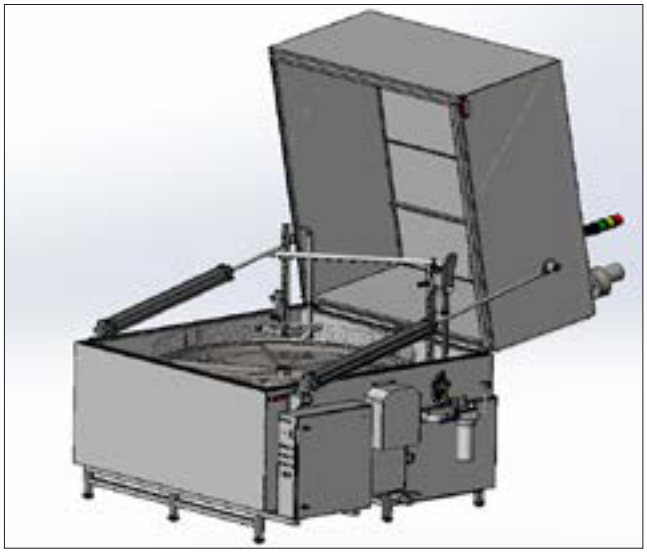
The pneumatic lid opening facilitates safe and easy handling when opening the device lid and loading the device by means of a crane; opening occurs by means of two pneumatic cylinders.

These cylindres are controlled via a two- hand control on the control panel of the device.

This option is only avaiable for device with rack diameters of 1000 mm or more. On devices with a rack diameter of 1500mm and on devices with hot-air drying, pneumatic lid opening is a standard feature

The pneumatic lid opening is not avaiable in combination with the eccentric starp handle.When opening and closing the lid, the oprator has to make sure that there

there are no objects behind the device that might block the lid while opening. For opening, pushbuttons no.1 and mno.3 are pushed at the same time.For closing the lid, pushbuttons no.1 and no.4 are pushed at the same time. If one lets go of either pushbutton, lid opening/ closing will stop immediately.

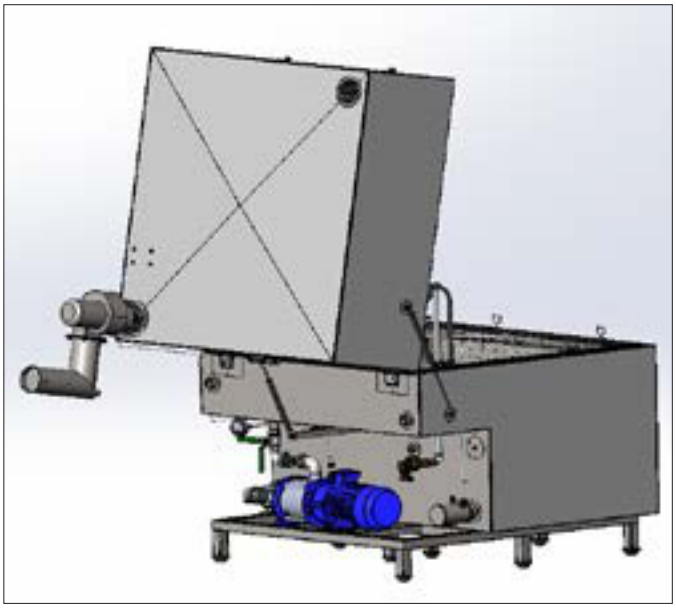


10017 Lid opening 80° with additional gas shock absorber

Not avalable for insulatet LCT HTW 1200

The lid opening 80° with additional gas shock absorber facilitates safe and easy handling when opening the device lid and loading the device by means of a crane; opening occurs by means of 3 gas pressuree springs. The lid is opened and closed manually by operationg personnel.

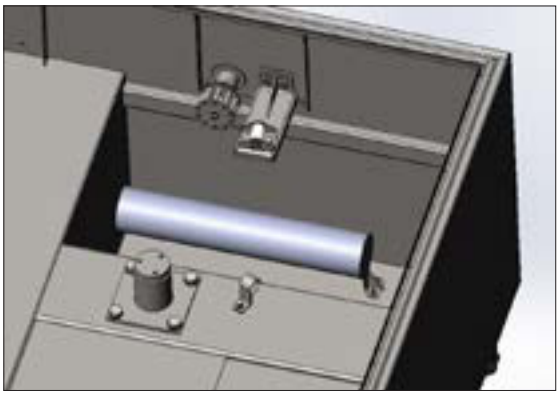
This option is only available for device size of up 1200mm and non-insulated systems.



Stainless - steel suction filter for the pump/s

This equipment prevents ´the nozzle of the spray system from clogging and protects the suction pump from particles bigger than 2mm. The filtration of the cleaning fluid also guarantees better cleaning results.

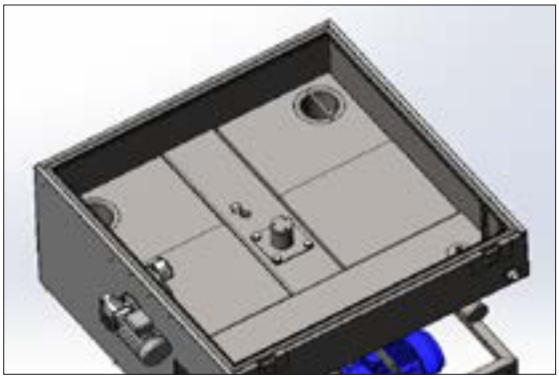
The stainless -steel suction filter is located in the wash tank on the suction side of the pump. The filter should be pulled out and cleaned at regular intervals.



Tank over and sieve filter under the stainless-steel rack

The tank is separated from thetreatment chamber by two cover plates. These cover plates feature one opening and one filter insert(perforated plate, d-2,0 mm) each for fluid return flow; they serve to clean the washing liquid, i.e. They retain the rinsed-off coarse contaminations.

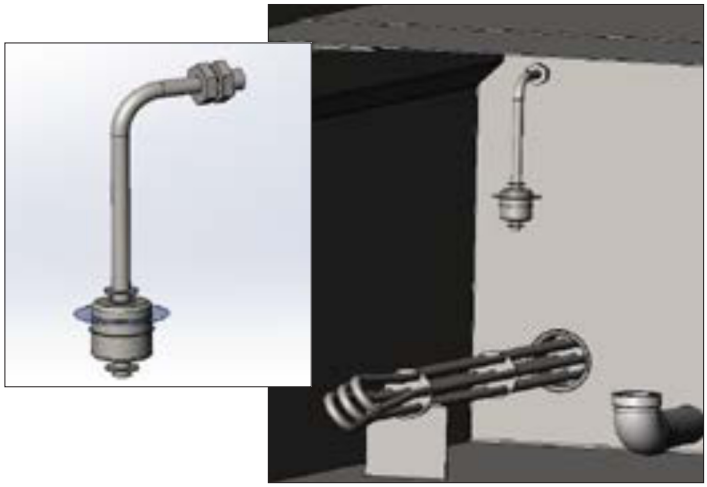
In order to guarantee that the system runs smoothly, the openings of the cover plates need to be checked at regular intervals and cleaned if necessary. If the filter inserts (perforated plate) are damaged, they have to be replaced immediately. After dismounting the rotating rack (3scews), the cover plates are easy to take out and clean.



Dry-run protection

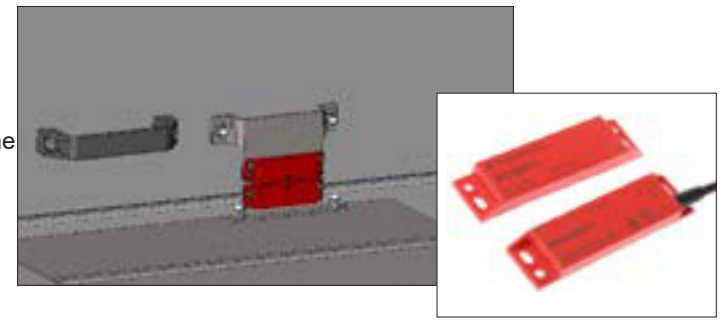
The filling level in the storage tank is monitored by means of a level switch in order to prevent the pump and the heating element from running dry.

If the washing liquid level in the storage tank drops below a pre-set minimum value, the parts washer will switch off automatically.



Lid safety switch

The coded safety switch (magnetic) prevents switching on the device with the lid open; moreover, the device .will immediately switch to standstill if its openend while in full operation.

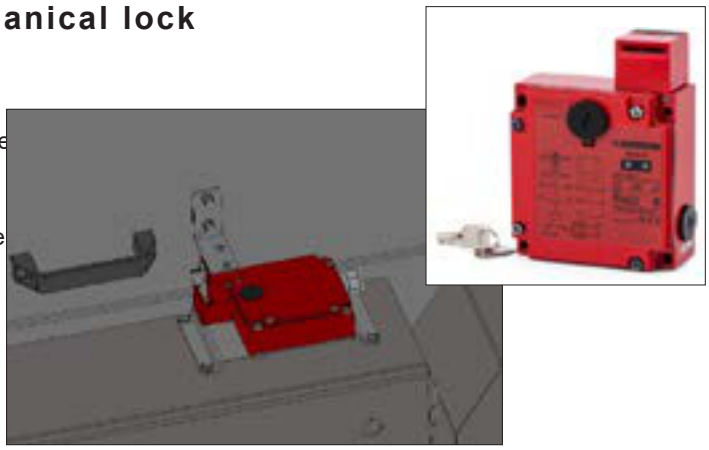


Safety switch with mechanical lock

The safety switch with mchanical lock prevents switching on the device with the lid open; moreover, the device lid can only be opened once the washing cycle has been finished automatically or manually.Being able to protect the device from unauthorized use by means of a lock and key on the safeety switch is another advantage.

Importante note!

Cannot be used on devices with pneumatic lid opening.



Heating element with safety temperature limiter

The cleaning system is equipped with an electrical heating in the wash tank. The heater coils are protected from running dry by means of a level control with automatic freshwater supply (optiona extra). In order to protect the electrical heating and the washing fluid from overheating, a safety temperature limiter has been integrated in the electrical heating, which will switch of the electrical heating at 110°C/230°F

Screw-in heating element with safety temperature limiter:

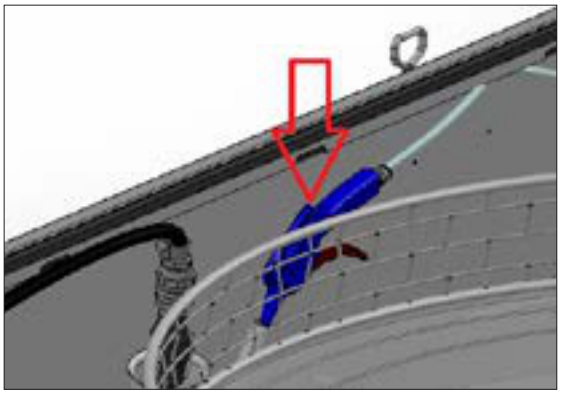
STB: Safety temperature limiter; this safety device is triggered if the surface temperature on the heating element exceeds 110°C/230°F. The temperature excess is signalled by the fault indicator light “Störung Übertemperatur“(high temperature alarm) lighting up in red on the control panel of the device has been a standard feature in our devices. Its protects from overheating or continuous operation of the heating elementif e.g. The float switch(level control) and/or the thermostat will not switch off. In that case, the heating would heat up to maximum temperature.

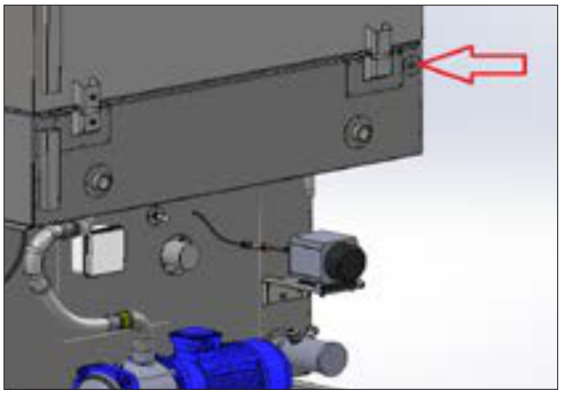
Also, the STB will be triggered if the heating element is clogged with solids (e.g.sludge, grease) and cannot heat up properly. For resetting the STB on the heating element, remove the cover cap on the heating housing (at the back of the device) and actuate the little button (see illustration).

Compressed-air supply and compressed-air pistol with safety nozzle in the cleaning chamber

These functons are only possible with the lid closed.

These equipment serves foe optimal after-treatment (drying) of components that feature e.g. blind holes from which residual fluid needs to be removed.



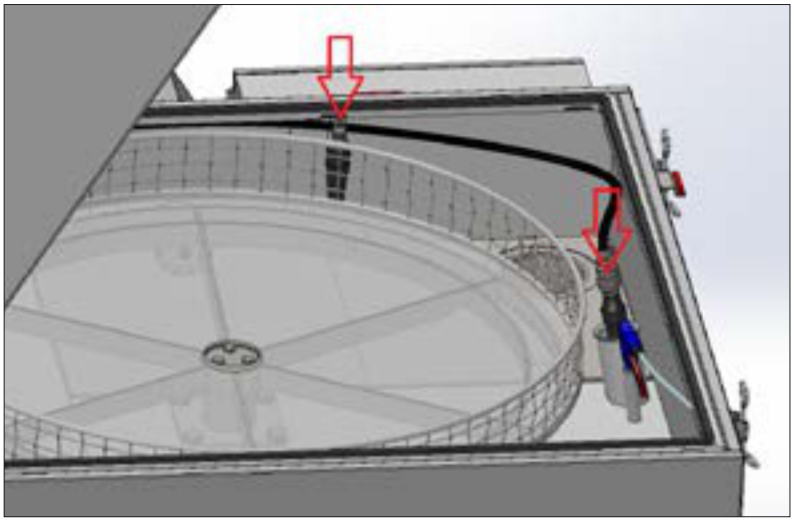


Manual cleaning by means of flow brush or vario nozzle (with quick-release coupling)

These functons are only possible with the lid closed.

This equipment serves for optimal after-treatment of components that feature e.g. very complex geometries, making sure that exiting residual particles will be removed manually.

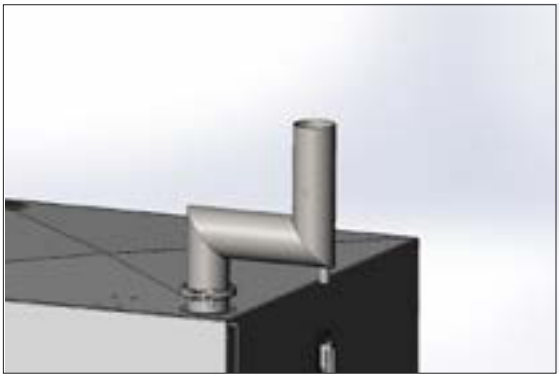
The quick-release coupling facilitates a swift change between the cleaning variants of vario nozzle (spray nozzle with 2,5 bar and variable fan jet) and flow brush.



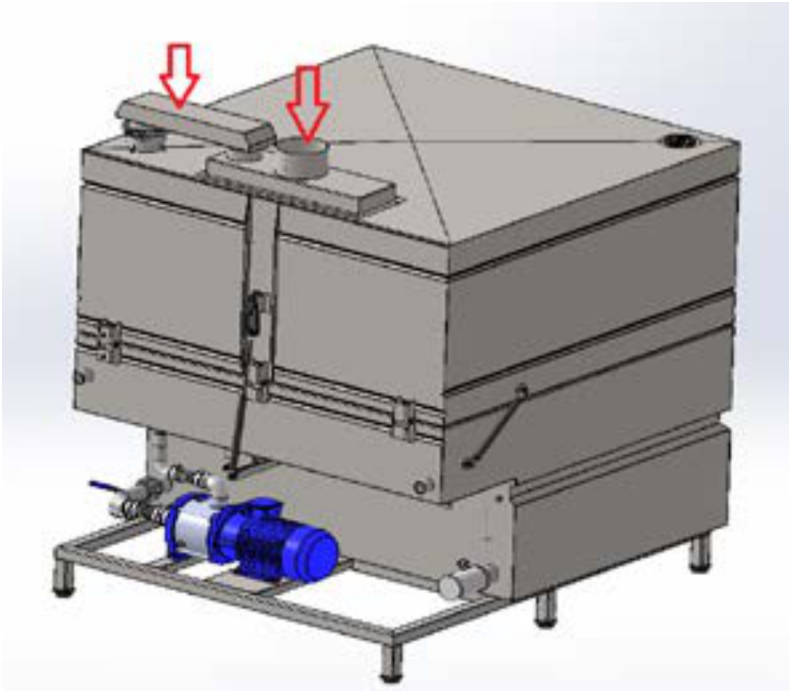
10019 **Condensate recovery arc**

The condensate recovery arc is an exhaust air arc mounted on the device lid.Thanks to its special design, its captures the occurring condensate which will then be automatically redirected into the device via a hose.

Optimal results can be schieved by also installing the exhaust hose.



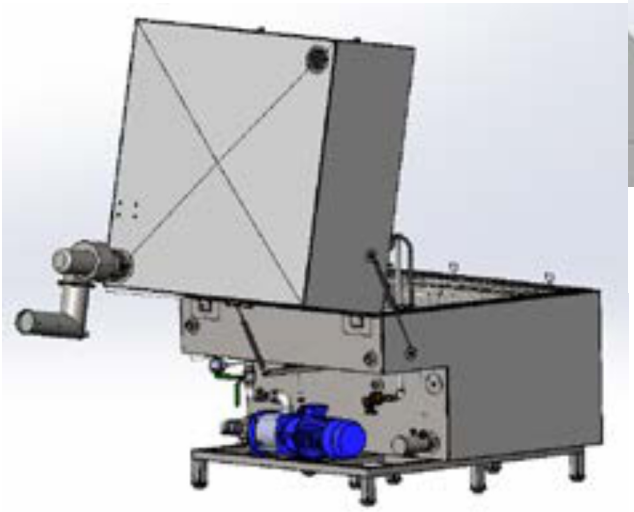
The exhaust air system with integrated condensate recovery is a standard feature on HTW
devices with a size of 1200 or more. (This system is also
integrated in HTW 1000 devices with a 7-bar pump.) The exhaust air system ensures maximum absorption of evaporated water; the condensed
water will be returned to the tank.

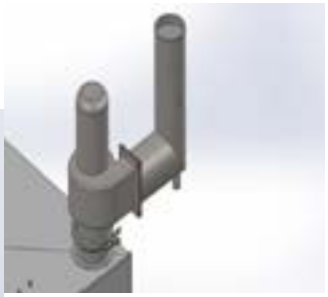


10020 Vapour extraction

An extraction fan can be mounted on the device, which will extract the vapours generated during the cleaning process. Extraction time can be defined continuously (0-3 minutes) by means of a timer in the electric control cabinet. The vapour extraction device, which is available as an optional extra, can be equipped with an appropriate exhaust pipe at the customer's site if the vapours are to be extracted from the room. It is indispensable for the exhaust pipe to be fitted to the inner diameter of the exhaust opening and to be sealed 100 % against condensation water.
It is recommended that the exhaust pipeline consists of customary POLO-KAL® plastic pipes that facilitate optimal sealing around the transitions.

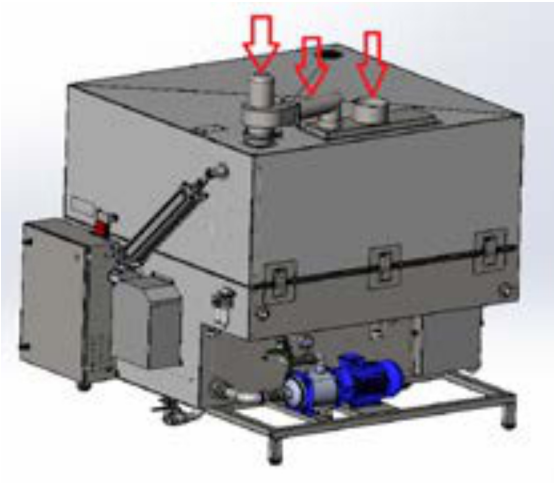
Provide for a flexible connecting line of approx. 2.5 m between the exhaust fan and the actual exhaust pipe (because of the device lid that has to be operated manually). The vapour extraction device extracts the vapours
remaining in the treatment chamber before the device lid is opened and moves them out of the device.
If the vapours are disruptive, they can be moved outside the room by means of an exhaust pipe to be provided by the customer.





The exhaust air system with integrated condensate recovery is a standard feature on HTW devices with a size of 1200 or more. (This system is also integrated in HTW 1000 devices with a 7-bar pump).

The exhaust air system ensures maximum absorption of evaporated water; the condensed water will be returned to the tank.



Insulation(ECO Variante)

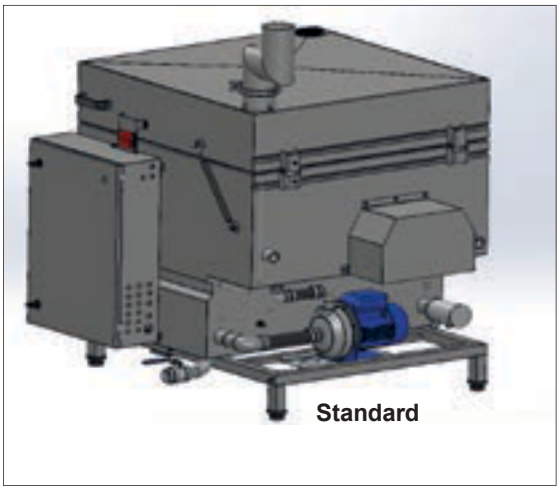
The cleaning devices are fully covered on all sides in non-flammable insulationsheets type XPS-EN 13164-T2-DS (23,90) - CS (10/Y) – TR400 – 20 mm. These insulation sheets are in turn covererd by stainless-steel lining plates made of 1,5-mm stainless-stel sheet so that the insulation is not visible. The benefits of these insulation sheets are that they save energy, lower the noise level, and prevent scalding on the hot surface of the device if it is operated at more than 50°C/122°F

10022

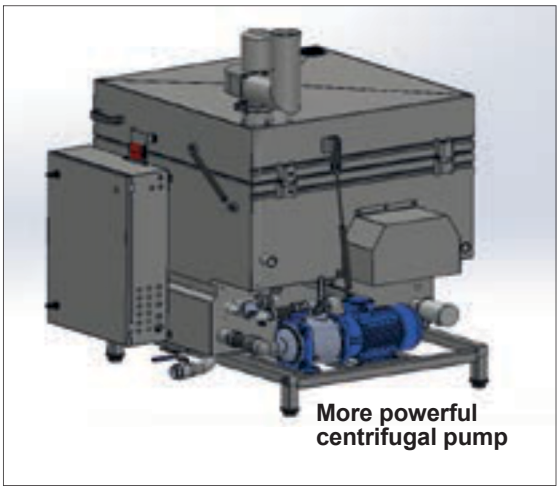
Increase of operating pressure from 2.5 to 4 bar

This option increases the operating pressure of the HTW 800 from 2.5 to 4 bar.This is facilitated by a more powerful centrifugal pump. Optimally suited for heavily contaminated components.

Important note!
Only relevant for the HTW 800!



Standard



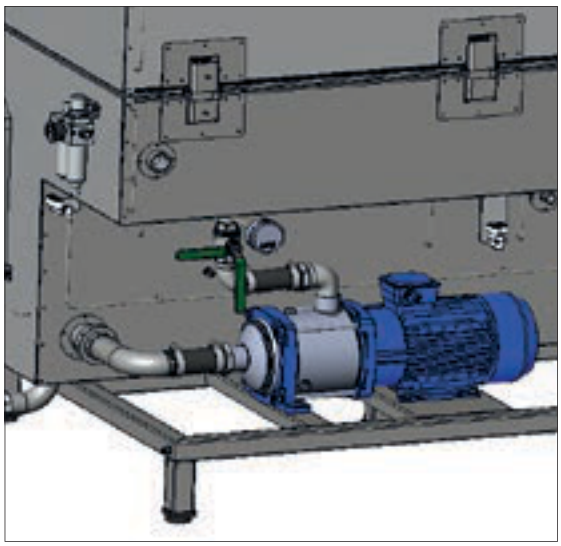
More powerful centrifugal pump

10023

Operating-pressure control 2.5-4 bar

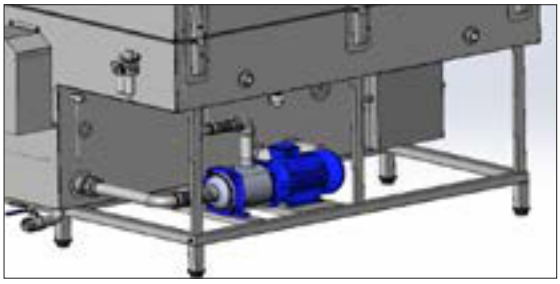
The operating pressure is controlled by means of a ball valve integrated on the discharge side and a glycerine pressure gauge.

This way, by means of this ball valve, the operating pressure can be adjusted between 2.5-4 bar on all models.



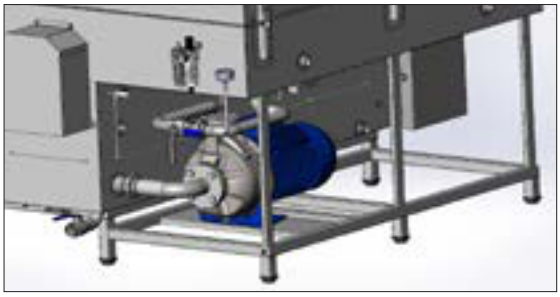
10024 Increase in operating pressure from 4 to 7 bar including soft start

From the HTW 1000 on, the oprating pressure can be increased from 4 bar to 7 bar. The 7-bar pump provides soft starting in order to avoid explorsive overpressure when starting the device. In addition, the pressure of 7 bar can be reduced to 4.5 bar by means of a ball valve with a glycerine pressure gauge.



Important note!

▶This Option cannot be added at a later date.

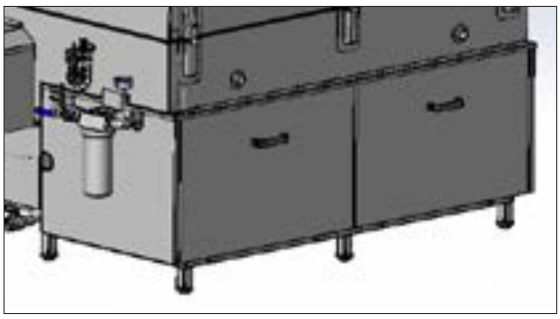


10025 Noise protection cover, recommended with the 7 bar pump

This option minimizes the background noise generated by the more powerful centrifugal pump.

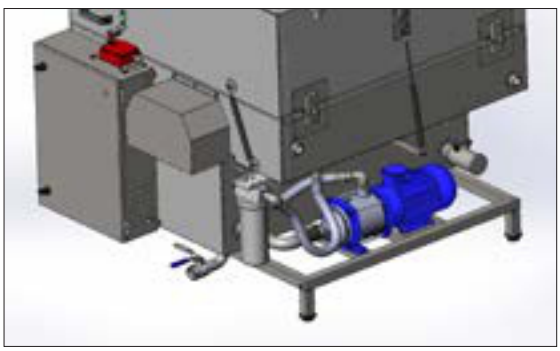
(Important: not more than 70 dB)

This noise level is minimized by means of the noise protection cover.



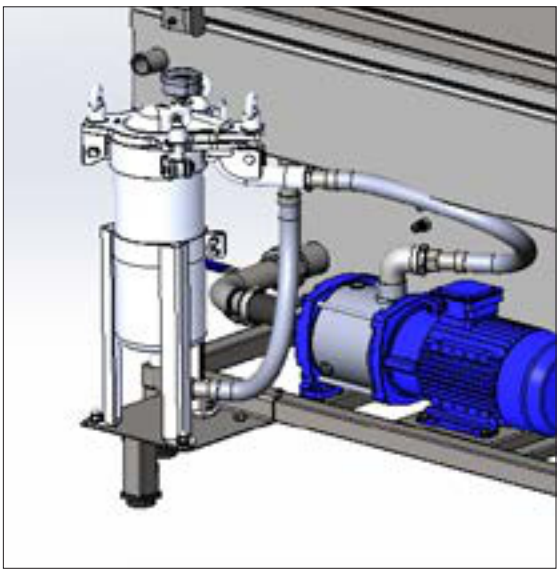
Stainless-steel filter set incl. screw fitting and connection hose

The filter set consists of a VA filter housing that is connected on the discharge side after the pump. The filter unit consists of a VA filter housing that contains a filter cartridge. Depending on the requirements, this filter cartridge can be selected as a 100- µm or 350-µm nylon filter (washable) or as a 25 µm coil cartridge filter(non-washable)



Filter housing for filter bags

The cylindrical stainless-steel container is locked with a hinged lid and eye bolts. The product ingresses laterally via the container housing, and exits at the bottom in the middle. The filter housing is connected on the discharge side after the pump. Depending on the requirements, this filter cartridge can be selected as 100 µm or 350 µm nylon filter (washable) or as a 25µm needle felt bag (non-washable)



GRP grating, mesh size 38x38 mm
for rack diameter 800

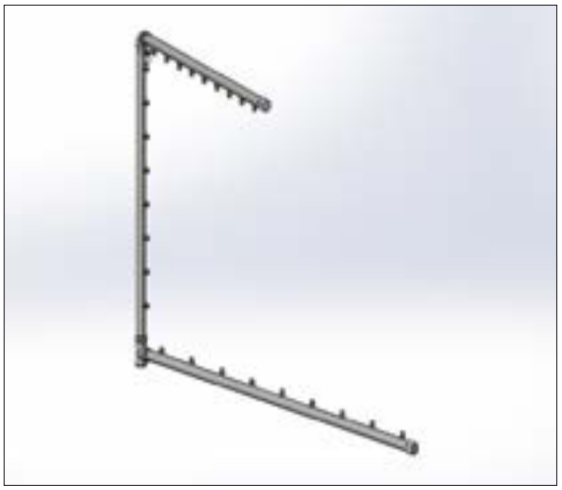
GRP grating, mesh size 38x38 mm
for rack diameter 1000

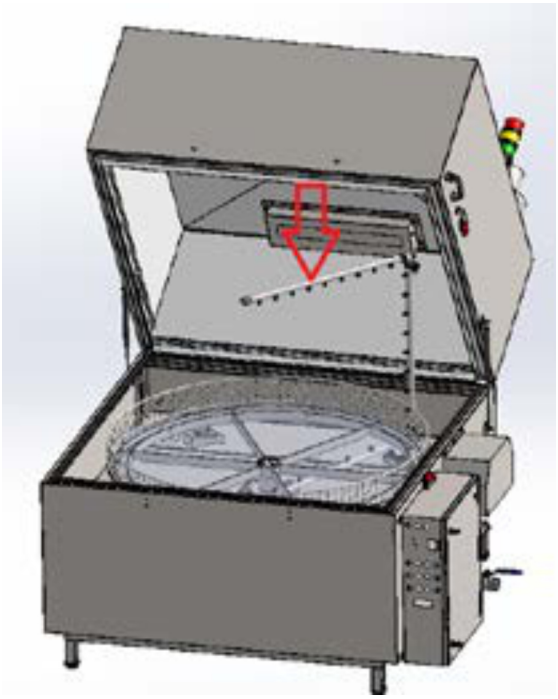
GRP grating, mesh size 38x38 mm
For rack diameter 1200

The GRP gratings are intended for the protection of compounts with delicate surfaces (e.g. Aluminium parts) that may be damaged by the standard stainless-steel washing rack.

Fan nozzles

The nozzle pipe system contains fan nozzles 1/4'' FL 12, 60° . These nozzles increase the cleaning performance of the nozzle fitting. The fan nozzles are positioned in such a way that optimal cleaning and wetting also occurs in the presence of complex geometries (the fluid is sprayed in a fan jet)

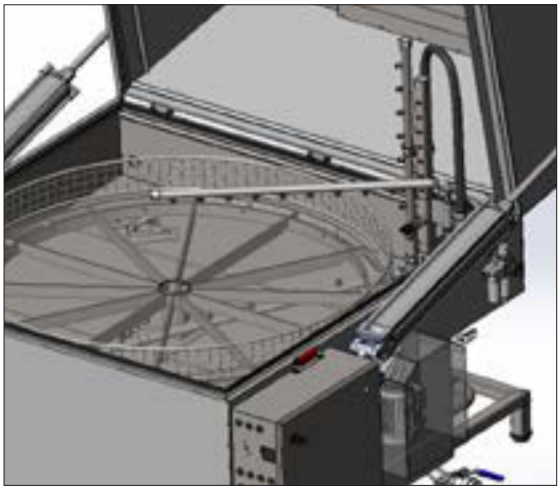




10046

Nozzle fitting height-adjustable for each nozzle system

The height-adjustable nozzle fitting serves for the optimal cleaning of components featuring different heights. The usable height is variable and can be adjusted individually by the user. The setting of the nozzle fitting is determined by mans of a guide tube and a locking pin. This option can be used in the fluid system and in the air system; in the case, please make sure though that you order two height-adjustable nozzlöe fittings.



Rotary nozzle arm

The rotary nozzle arm serves for optimal wetting and cleaning of components with slight to medium contamination levels.The rotary nozzle arm works in such a way that the upper nozzle arm can pivot and is put in rotation by means of the output of the centrifugal pump. This way , also components with many geometries will be cleaned optimally.

10047 Air shower incl. nozzle fitting with solenoid valve

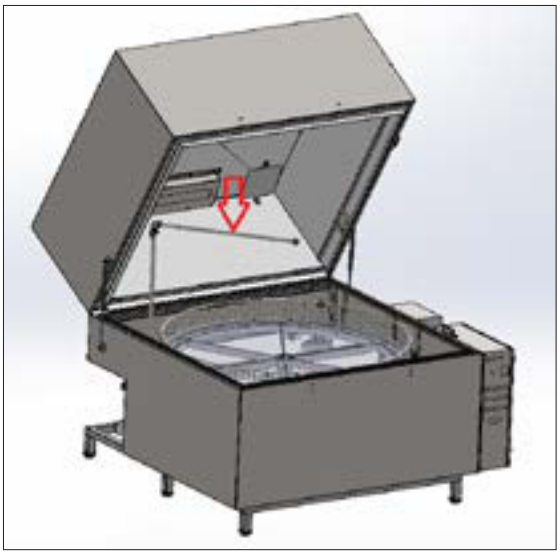
Important note!

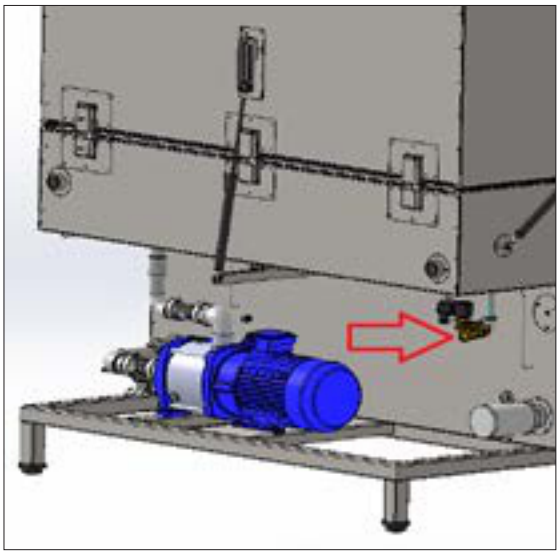
This option requires compressed air.

Spray nozzle system shower. The airshower is intended for easy drying and the removal of fluid residues from eventual blind holes in the cleaned parts. The air shower is actuated directly after the cleaning process.

The nozzle pipe system consists of 3 nozzles pipes with Ø 2 mm openings. The volume flow is 4,6 m³/min.

At a connection pressure of 6 bar; the runnig time of the drying can be determined variable by means of a timer (KT2) that can be found in the switch cabinet, together with an instruction manual.





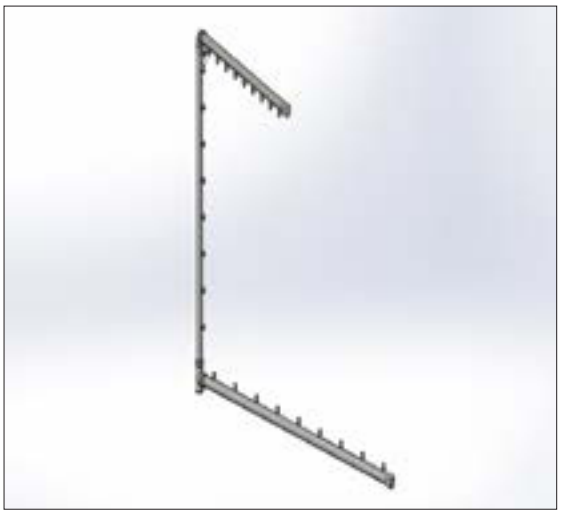
10032

Air shower incl. nozzle fitting with solenoid valve and fan nozzle

Important note!
This option requires compressed air.

The nozzle pipe system contans fan nozzles ¼“ FL 12,60°. These nozzle ingrease drying performance of the nozzle fitting. The fan nozzles are positioned in such a way that optimal drying also occurs in the presence of complex geometries (the air is sprayed in a fan jet)

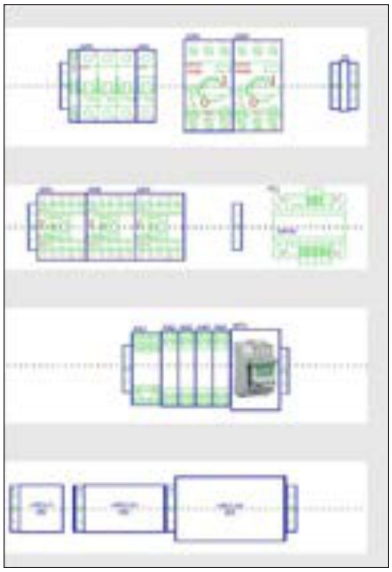
Important note:
Not optimally suited for components with blind holes.



10051 Heating: Timer for pre-programming the heating element

By means of the weekly timer, the times for switching the device heating on/off can be set.
For instance:
On Monday 8:00 a.m.,
Off Monday 5:00 p.m.,
On Tuesday 8:00 a.m.,
Off Tuesday 5:00 p.m.,
On Wednesday 8:00 a.m.,
Off Wednesday 5:00 p.m.,
On Thursday 8:00a.m.,
Off Thursday 5:00 p.m.,
On Friday 8:00 a.m.,
Off Friday 5:00 p.m.,
Saturday --.--,
Sunday --.--

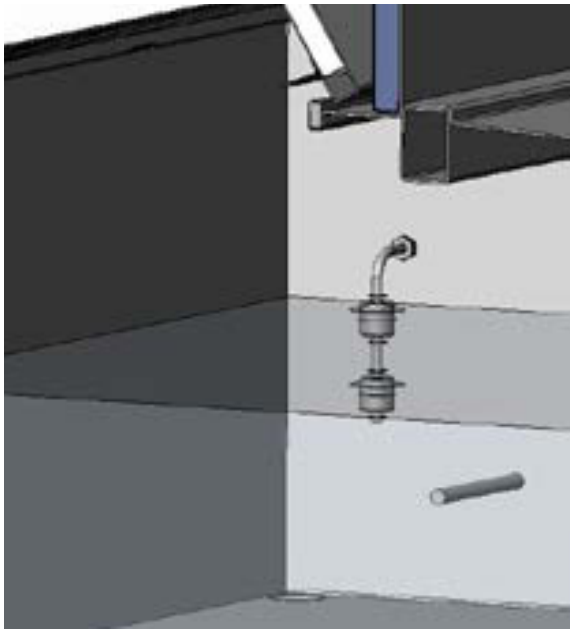
The timer for pre-programming the heating element is located in the switch cabinet.
This position was chosen to hinder any offhanded unauthorized changing of the clock.

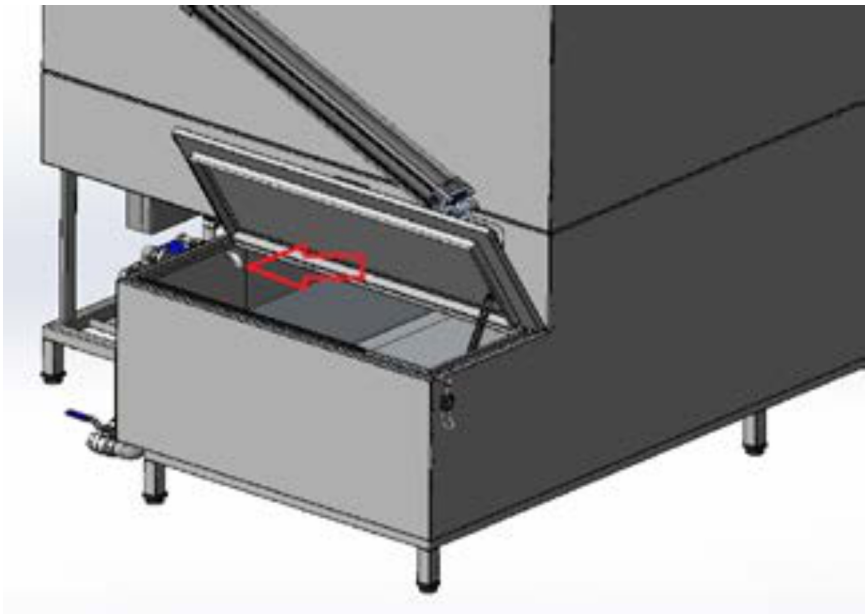


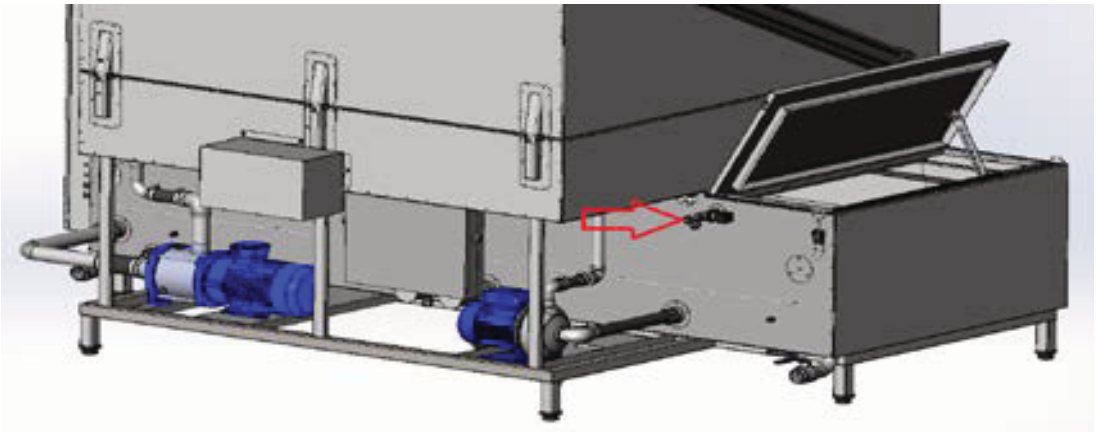
10052 Automatc level control

The level control with automatic fresh water supply prevents dry running of the heating and the pump. The minimum and maximum water level is controlled by the 2-fold level electrodes installed in the tank and their control device, which controls the solenoid valve – dimension R ½" – with dirt trap at the front for the water supply. In special versions, instead of the 2-fold level electrodes, a corresponding float switch (MIN and MAX) is installed for water level monitoring.

Important note:
The level control is connected to the fresh water mains. There is no automatic filling of the cleaning agent.







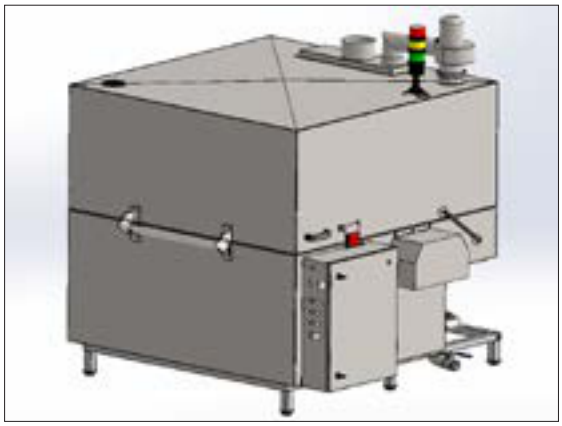
10053 **Light signalling system (without siren)**

10054 **Siren for light signalling system**

The light signalling system indicates the current status of the process that can already be inspected from afar.
The light signalling system includes:

- Green light
  –indicates that the device is ready for operation;
- Amber light
  – indicates that the device's washing cycle is under way;
- Red light
  – indicates an error in the device or that the lid is open

Siren
– indicates that the device has an error message



Digital thermostat with probe EVK401, 230V

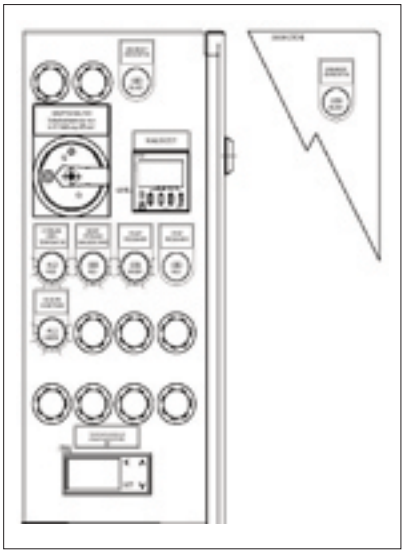
The display of the digital thermostat shows the current temperature of the washing liquid in the water tank. The digital thermostat is placed directly on the control panel of the switch cabinet of the device. If you want the pre-set temperature to be displayed, press the "Set" button. For setting a new temperature value of the washing liquid in the water reservoir, please also press the "Set" button. At the same time, please press the key:

– with the arrow pointing upward for entering a higher temperature,

and

– with the arrow pointing downward for entering a lower temperature.

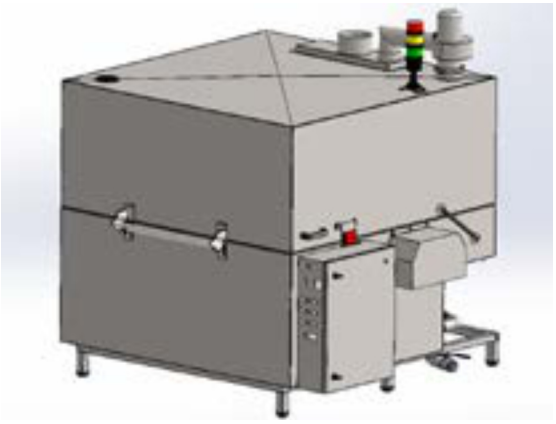
If the temperature of the washing liquid falls below the pre-set temperature, the heating element will be switched on automatically by means of the thermostat.

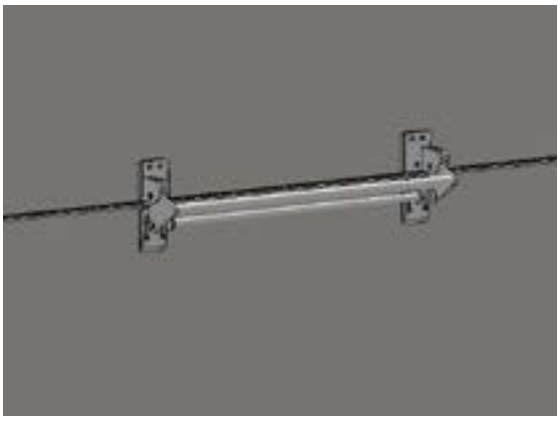


Eccentric strap handle

The eccentric strap handle is mounted on the front of the device and facilitates fast and easy opening and closing of the lid.

Important note!
This option is not available in combination with the lid opening 80° with pneumatic cylinder.

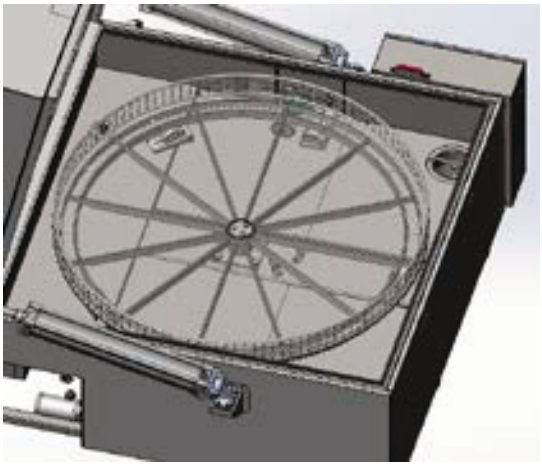


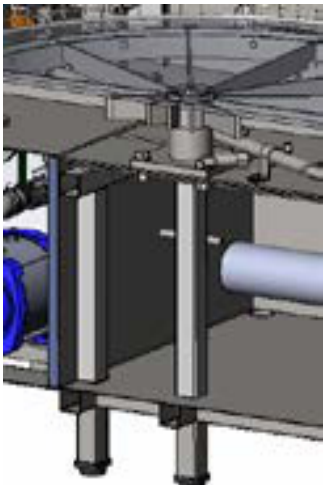


10067

Increase of payload from 350 kg to 1000 kg

The payload is increased by means of a stronger bearing, four support rollers, and twice the number of rack struts. The devices are further reinforced by means of an additional support leg and a vertical support profile under the bearing (only for devices with a rack diameter of 1000 mm or higher).





Stainless-steel retaining frame

Dimensions: 945 x 280 mm for HTW 1000

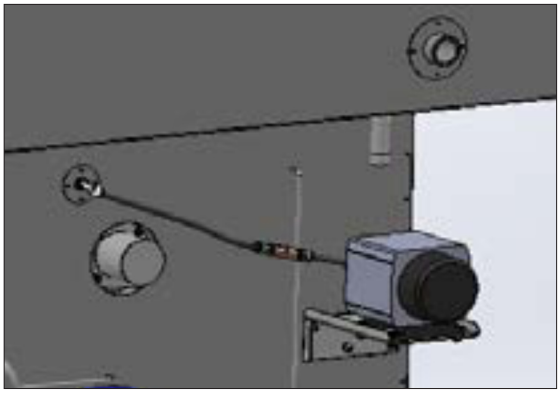
Stainless-steel retaining frame

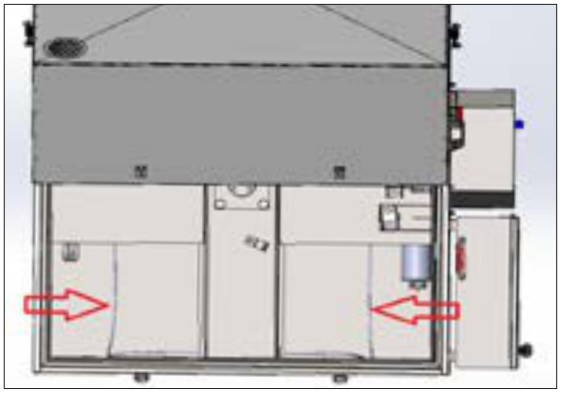
Dimensions: 720 x 280 mm up to HTW 800

The retaining frame is manufactured from VA and serves for the optimal positioning of the components during installation.

10062 **Oxygen diaphragm compressor for oxygen supply via V2A air stones**

The aerator system consists of a compressor, connection hoses, and two special spouts. It ensures the uninterrupted supply of vital oxygen to the microorganisms.





0002-5/a **Pump control of the PPT or filter unit via the control panel with 230 V power outlet**

This option is not available for third-party systems, nor if a filter unit or PPT is ordered separately.

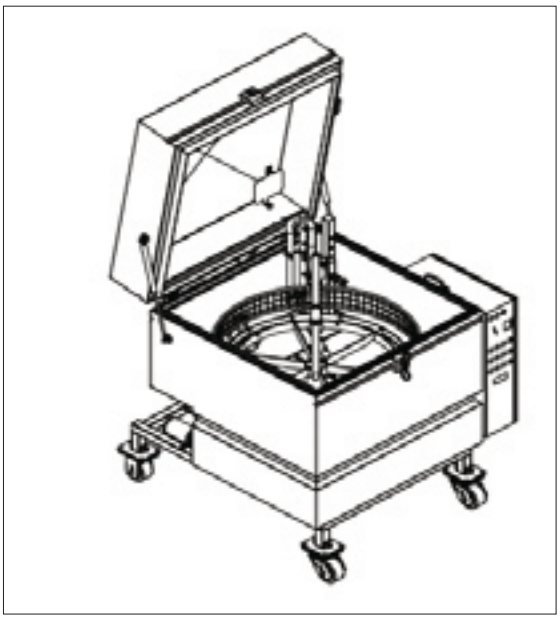
1. Control panel
2. Power outlet

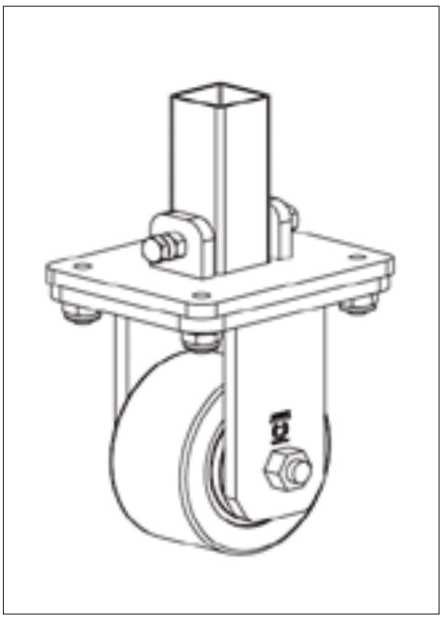
Adapter set for the mobile version of the HTW

With its fixed castors and swivel castors with locking brake, the adapter set for the mobile version of theHTWdevice models facilitates fast and easy mobility of the device. This option has been designed in such a way that it can be mounted and dismounted at will.

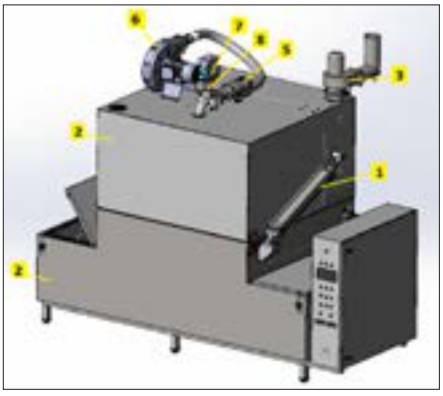
Importnant note!

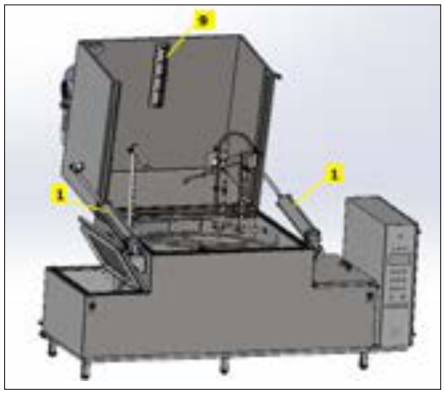
Can only be used with devices of up to 350 kg payload and device sizes with racks of up to 1200 mm rack diameter.

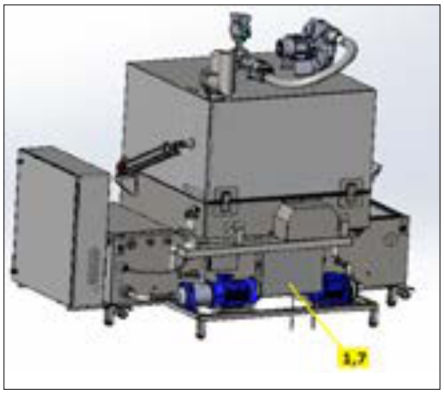




Hot-air drying for HTW Modell 1000, 1200, 1500







The hot-air drying system facilitates excellent parts drying after the washing process.
This option includes:

1.Pneumatic lid openi
2. Insulation of the entire HTW body
3. Vapour extraction device
4. Siemens PLC for process control
5. Air heater
6. Air blower
7. Pneumatic actuator
8. Hot air vent
9. Air knife

Safety key for the electronic locking of the device

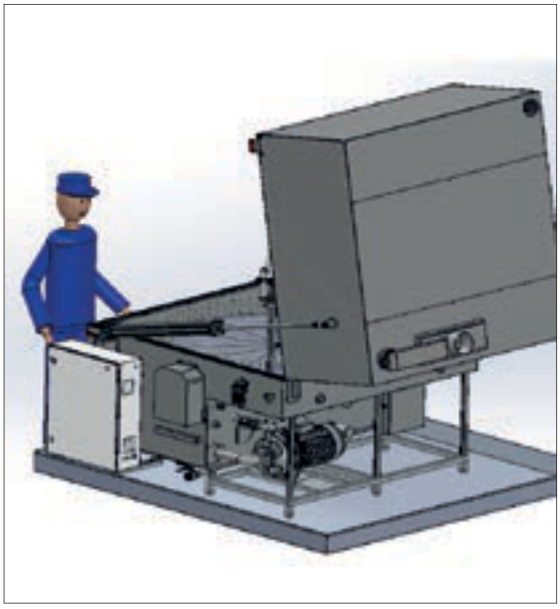
Serves to activate/deactivate
the opening/closing of the device lid.

10075 PE-collection tray for HTW800
1150 x 1400 x 80 mm, 10 mm thick

10074 PE-collection tray for HTW1000
1300 x 1500 x 130 mm, 10 mm thick

10073 PE-collection tray HTW1200
1500 x 2250 x 130 mm, 12 mm thick

10072 PE-collection tray HTW1500
2500 x 2300 x 140 mm, 12 mm thick



All PE collection trays have been manufactured in compliance with the Water Resoures Act (WHG). A collection tray is a safeguard measure when handling liquid substances hazardous to water.

It is designed to collect any substances leaking from the system or the storage container, thus preventing them from being released into the soil or water.

Oxygen compressor retrofit kit

The aerator system consists of a compressor with 230 V plug, retaining plate, connection hoses, and two special V2A aerators. It ensures the uninterrupted supply of vital oxygen to the microorganisms.

Retrofit kit with pressure regulator (compressed air)

The aerator system consists of a pressure regulator with pressure gauge, connection hoses, and two special V2A aerators. It ensures the uninterrupted
supply of vital oxygen to the microorganisms.

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