USER MANUAL
MEDIAPUMP

CE

Declaration of conformity | Konformitätserklärung | Déclaration de conformité
Systec GmbH – 35440 Linden

declares on its own responsibility that the product | erklärt in alleiniger Verantwortung,dass das Produkt | déclare sous sa responsabilité exclusive, que le produit

Mediapump

in accordance with the EC directives | gemäß der EU-Richtlinien | est conforme au termes de la directives CE

2014/35/EU	Low Voltage Directive
2014/30/EU	Electromagnetic Compatibility
2011/65/EU	Restriction of Hazardous Substances
2012/19/EU	Waste Electrical and Electronic Equipment

is in compliance with the following normative documents: | mit den folgenden normativen Dokumenten übereinstimmt: | aux documents normatifs ci-après:

EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements - General requirements.

Legal notice

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Content

1 Introduction

This user manual describes all operations concerning the handling of the Mediapump.

1.1 General safety guidelines

The Mediapump corresponds to state-of-art technology and to the recognized safety rules. The Mediapump must only be operated in faultless condition and in compliance with the user manual as well as with the generally valid safety regulations.

The Mediapump might still pose residual risks if it is used improperly or operated by untrained personnel.

Every user of the Mediapump must have read and understood the user manual and in particular, the safety guidelines.

Further regulations and provisions, e.g. by professional associations or public health departments and the regulatory framework of FDA, GLP, GMP are to be considered.

Hazard notes on the device and in the user manual are to be considered.

The reconstruction and modification of the Mediapump is prohibited and leads to a loss of all claims and guarantees.

1.2 Proper use

The Mediapump is a peristaltic pump for laboratory processes and must not be used for medical purposes.
The device should be used for the filling, aspirating, dilution and mixing of culture media.
A usage which differs from or goes beyond this usage is considered improper.
The device is not suitable to fill other media than the culture media which is commonly used in microbiological laboratories.
Unsuitable media are e.g. combustible, explosive or caustic fluids.

The company Systec GmbH does not bear liability for resulting damages.

Proper use includes

- considering all information in the user manual and
- compliance with inspection and maintenance operations and
- operation by properly instructed persons who had been trained by specialized personnel and
- compliance with the valid labor and safety regulations of the operator.

CAUTION: Media may be only pumped into or be pumped off containers with atmospheric pressure balance. By filling of closed containers these can burst and lead to violations.

Systec GmbH does not bear any liability for damages caused by improper or inadmissible use.

1.3 Constructional changes to the device

It is forbidden to execute any constructional changes without the prior written consent of Systec GmbH.

- parts of the machine or accessories which are not in perfect condition have to be replaced immediately.
- only use original spare parts. Only these parts guarantee the faultless functioning of the Mediapump.

1.4 Warranty and liability

Basically, our "general terms and condition of sale and delivery" are valid. Claims of warranty and liability concerning personal damage and damage to property are ruled out when they can be ascribed to one or more of the following reasons:

- improper use of the device.
- improper operation and maintenance of the device and non-observance of the industrial safety regulations (BetrSichV).
- operation of the device with defective safety installations or improperly attached or non-functioning safety and protection devices.
- ignorance of the information in the user manual.
- transport, storage, installation, commissioning, operation and decommissioning are not executed by authorized personnel.
- unauthorized constructional changes to the device.
- insufficient monitoring of machine parts and accessories which are subject to wear and tear.
- improperly executed repair work.
- catastrophes, external influences or force majeure.

1.5 Guarantee and service

Your Systec dosing peristaltic pump is a high-quality product.

We hereby declare that this device is free from defects in material and workmanship and was in perfect condition after our final inspection and testing.

We grant a one-year guarantee.

Under no circumstances should you attempt to repair the device yourself!

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2 Security

2.1 Considering all information in the user manual

This user manual

- informs about safe handling and trouble-free operation,
- informs about the basic safety remarks and safety regulations,
- contains important remarks on how to operate the Mediapump safely,
- is to be considered by all people working with the Mediapump.

Furthermore, the safety regulations valid at the operating site and UVV regulations about risk and accident prevention are to be considered.

2.2 Obligations of the operator

The operator is obliged to

- operate the device with the necessary technical safeguarding.
- only allow other people to work with the device if they are familiar with the basic regulations about operational safety and accident prevention, were instructed in the handling of the device, have thoroughly read and understood the user manual and have confirmed this with their signature.
- control the safety-conscious work of the personnel regularly.

2.3 Obligations of the personnel

All persons who are assigned to work with the device are obliged to:

- consider the basic regulations about operational safety and accident prevention.
- use the mandatory personal protective equipment.
- only execute the tasks assigned to them.
- thoroughly read this user manual and confirm, with their signatures, that they understood it.

2.4 Residual risks while operating the device

The Mediapump was built in accordance with state-of-art technology and the recognized safety rules. However, its operation can still pose a danger to life and limb of the operator or of third parties and impairments to the device or other tangible assets might occur.
Thus, the device is only to be used:

- for the intended use and
- in a faultless condition in terms of safety.

Disturbances which might impair safety are to be eliminated immediately.

The following residual risks result from the functioning of the device and are always to be considered:

Danger to life from electric shock

The client must install a house connection with a residual current device and all phase connections must be disconnected if a short-circuit occurs. For servicing purposes and cleaning purposes you separate the Mediapump always from the power supply. Works on electric components are to be carried out only by an electric expert.

Crushing hazard

There is a danger of crushing in the range of the roller pump head. Do not touch to the roller pump head by hand, do not reach into the opening of the roller pump head and do not reach into the locking mechanism while inserting the hose kit and closing the roller pump head.

Fire and explosion hazard

When filling media which is contaminated with combustible or explosive substances, it is obligatory to follow the procedure which is mandatory when dealing with combustible or explosive substances.
A regulation on the filling or pumping off containers with rests of ignitable or explosive materials is company-sided to construct. Around resigning these materials to prevent the hoses are to be taken only in emptied condition from the roller pump head.

Hazardous material

When filling media which is contaminated with hazardous substances,
it is obligatory to use the personal protective equipment which is mandatory
when dealing with the respective hazardous substances.
The safety regulations in the laboratory and official cleaning regulations are to be followed. To prevent exit of hazardous substances the tubes are to be taken only in emptied condition from the roller pump head.

Danger from burns

When filling hot media the danger of burns exists in the area of the tubes. Hot surfaces first let cool down or touch only with suitable personal protective equipment. The tubes are to be taken only in emptied condition from the roller pump head.

Danger of breakage - exit of media

Damages and uncontrolled wear can lead to a breakage of the tubes and an exit of media. Control the tubes, therefore, regularly on damages and wear and exchange this if necessary.

Maintenance

Always disconnect the Mediapump from all electricity sources during maintenance and cleaning.

Operation

After the usage of the device, it is important that the device is being turned off properly by means of the ON/OFF switch. When the work with the Mediapump is finished, open the roller pump head and relieve the hose bed.

2.5 Warnings and safety symbols

In addition to the basic and specific safety remarks, risks can result from dangerous working methods.
These working methods are indicated in the following:

WARNING: These sorts of remarks warn against possible serious personal injuries or even death. A safety symbol which is designed in correspondence to the kind of danger additionally warns against the danger.

- follow the instructions to avert dangers.

CAUTION: These sort of remarks indicate a possible damage to the device or a damage to the medium.

- **Precisely follow the instructions to avert a malfunction or the destruction of the device**.

3 Commissioning

3.1 Installation and instructions

- Prior to the commissioning, the device has to become acclimatized to the operational site.
- The operator must have read and understood the user manual.
- Only the original hose kits delivered by the manufacturer are to be used.
- The correct electrical connection for the Mediapump must be at hand.

WARNING: Danger to life from electric shock!
The client must install a house connection with a residual current device and all phase connections must be disconnected when a short-circuit occurs.

3.2 Operating elements

Prior to your first operations, you should become familiar with the operation and the operating elements of the device.

3.2.1 ON/OFF-switch

The ON/OFF-switch turns the power supply to the device on and off. Always turn the device off with the ON/OFF-switch after operation or if the device poses a danger.

In case of a power failure during operation, the current process is canceled. In that case, the operation can only be continued through a controlled restart.

3.3 Description of the device

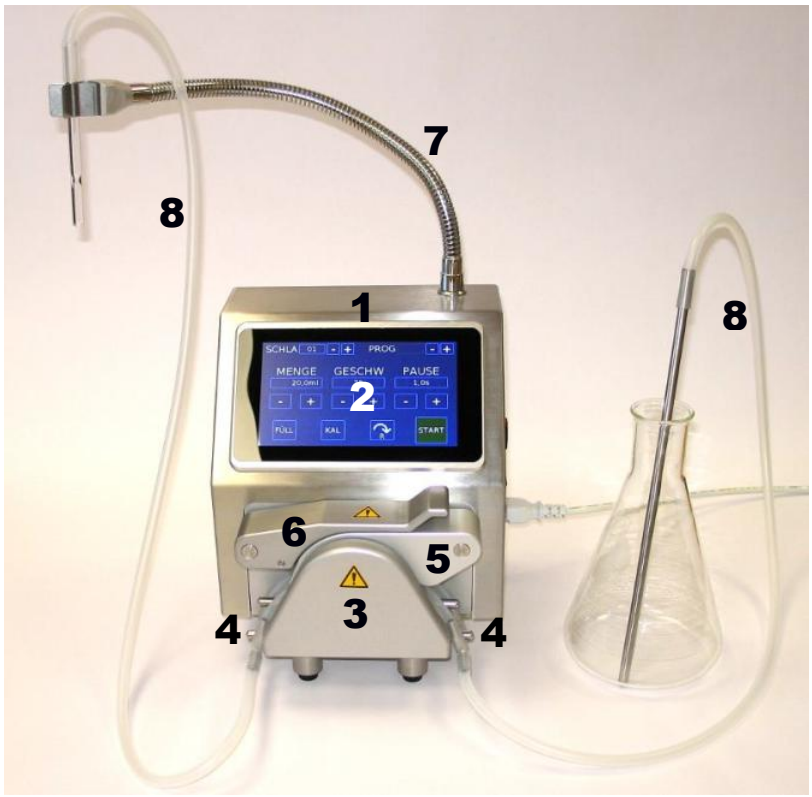
The Mediapump is a high-performance multifunctional pump for the laboratory.

3.3.1 Scope of delivery

- Mediapump peristaltic pump
- silicone hose kit, autoclavable, 5 mm interior diameter (ID)
- silicone hose kit, autoclavable, 8 mm interior diameter (ID)
- 2 x suction lance or filling nozzle, cylindrical, antidroping, borosilicate glass, 6 mm ID,
- suction lance, stainless steel, 6 mm ID, notched at one end
- flexible stand with nozzle holder
- foot switch
- user manual

3.3.2 Overview Mediapump

components:



1. housing front view
2. touch with display and control panel
3. front panel with internally roller pump head
4. holder for the hose
5. hose bed
6. clamping lever
7. flexible stand with nozzle holder
8. hose kit with suction lance and filling nozzle
9. power cord
10. foot switch

side view Mediapump:

1. Power cable connector
2. ON/OFF-switch
3. Footswitch connector

3.4 Commissioning

The Mediapump is a high-performance multifunctional peristaltic pump with intuitive menu navigation according to the plug and play principle.

NOTE:

Prior to the installation, the content of the package should be compared with the listed cope of delivery. If anything is missing or damaged, please contact your local shop for laboratory equipment.

3.4.1 Operating environment

Mediapump is designed for the use in laboratories. It should be placed on a flat surface in a dry and dust-free environment.

- room temperature: 15 - 35 °C.
- relative humidity: 30 - 80 % (at up to 35°C), not condensing.

3.4.2 Power supply

Plug in the power cord in the housing and connect it with the electric circuit.

WARNING: The voltage must correspond to the following defaults: 100-240 VAC, 50-60 Hz.

3.4.3 Flexible stand rod and clamp for filling nozzle

Crew the stand rod by hand on the housing by hand.

4 Operation

After unpacking your Mediapump, make sure that there is no visible transport damage. Now, place your Mediapump on a solid and plane surface and connect the power cable.

The Mediapump has the following operating modes:

- continuous operation
- dispensing operation
- dilution
- suctioning/aspirating

customer-specific processes can be set.

4.1 Menu navigation and first operation

Switch on your Mediapump with the ON/OFF switch on the side of the device (3.3.2). The boot screen should appear. Please wait until the device has finished the boot process.

Boot screen of the Mediapump

As soon as the device finished booting, you will see the main screen and your Mediapump is ready to use.

4.2 Inserting the hose in the roller pump head

WARNING: Always turn off the Mediapump when you insert the hose or work at the open roller pump head.

CAUTION: When the pump is turned on while inserting a hose/hose kit in the roller pump head, there is a danger of crushing or entanglement.

The tubes are to be taken only in emptied condition.

4.2.1 Open the roller pump head

Open the roller pump head by turning the clamping lever to the left until it snaps into place.

Then put the hose bed to the right until it also snaps into place.

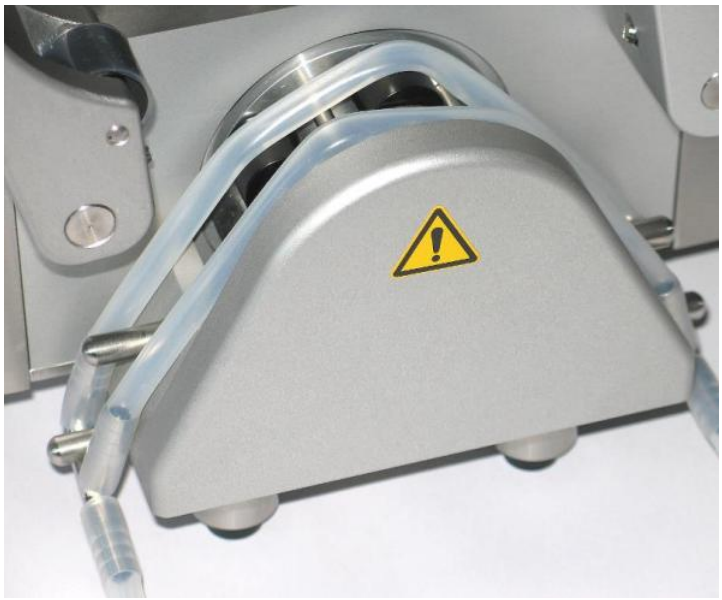
The roller pump head is now open and you can easily and quickly insert the filling hose/kit.

If the roller pump head is opened while it is running, the roller head stops automatically (emergency stop). The message "WARNING: Cover open!" appears on the screen. If the roller pump head is closed again, the pump returns to the program used before the opening. The program has to be restarted again now.

Mediapump after opening of the roller pump head While the roller head was running (emergency stop).

4.2.2 Inserting the hose

Now, place the hose/kit with the two parallel hose pieces on the rolls of the roller pump head.



Fix the hoses in the lower hose holders on the left and right side of the roller pump head by slightly stretching the hose and hooking the F-pieces into the hose holders.

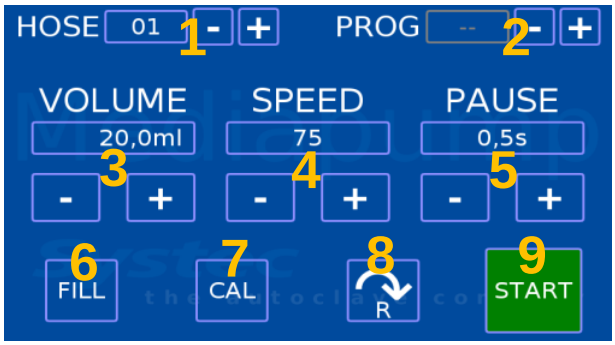
4.2.3 Close the roller pump head

Close the roller pump head by turning the hose bed to the left until it rests on the hose kit.

Then, turn the clamping lever to the right until it rests on the hose bed.

Now the roller Pump head is closed.

5 Main screen showing



Mediapump main screen showing:

1. Selected hose
2. Selected program
3. Volume to fill
4. Speed of the mechanic
5. Pause time between runs
6. Manual fill button
7. Calibration button
8. Direction button
9. START/STOP button

In the main sreen of the Mediapump “no program” is selected. This becomes indicated with two lines (--) in the suitable program field.

6 Select a hose

When selecting a hose, you have to consider the following criteria:

- volume to fill
- speed of the filling
- desired accuracy

The higher the interior diameter, the higher the speed at which a bigger volume is delivered. The smaller the interior diameter of the hose, the higher the desired accuracy.

Interior diameter of the hose	**1**	**3**	**5**	**8**
volume to fill (ml)	0,1 -10 ml	2 - 25 ml	5 - 50 ml	10-1000 ml
accuracy +/-	< 1%	< 1%	< 1%	< 1%

WARNING: The displayed values of the volume refer to empirical values and only indicate the specific reproducibility and not the actual limits of the system. The values were determined experimentally and might vary according to the experimental set-up. The compatibility with the pump head and the specific reproducibility can only be guaranteed when using original hose kits.

The first thing you will have to do is adding a new hose. Click on the enabled box next to "HOSE" to get to the hose menu.

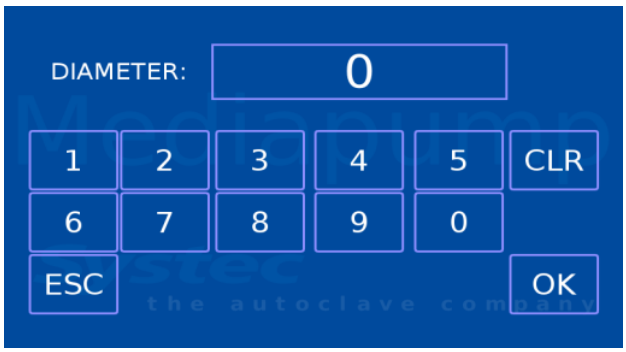
Mediapump hose menu showing:

1. List of hoses
2. Escape button
3. Delete button
4. Edit button
5. OK button

Your Mediapump is capable of storing up to 25 different hoses. In order to add a new hose, select a hose from the list by clicking on it (the text will turn red and the border will be enabled).

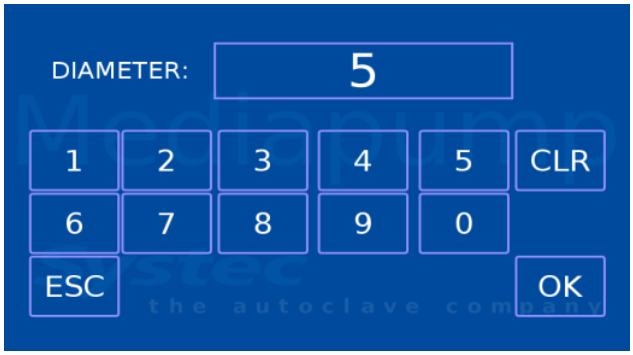
Mediapump hose menu showing a selected but uninitialized hose.

Now click on "EDIT" to enter the hose's diameter.



Mediapump hose diameter selection menu.

Now enter the diameter of your hose. This will lead to a basic calibration. Click on "CLR" to clear the input field.

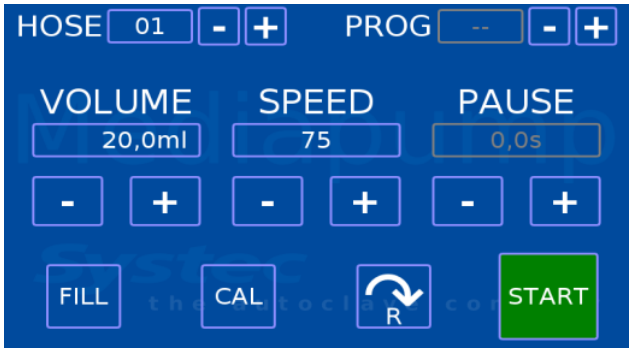


Mediapump hose diameter selection menu with a new diameter entered.

Once you've entered the correct diameter, click on "OK" to commit the value or "ESC" to go back without committing.

Mediapump hose menu showing a selected and initialized hose.

Now that you have entered a diameter, the hose is initialized and ready to use. Click on "OK" to go back to the main screen or enter more hoses if you like. You can still add, edit and delete hoses later on. The hose menu is always accessible except during motor motion.
The "DEL" button will delete the selected hose's calibration data, making it uninitialized again. This can be useful to keep the list of hoses small when a given diameter is no longer needed. Using the "EDIT" button, you can always change the diameter of the hose. However, you should be careful as it will not change the calibration data. This feature is mainly intended for correcting misentered diameters for an already calibrated hose.



Mediapump main screen with a selected and initialized hose.
The Mediapump is now ready to run.

Now that you have initialized a hose, you can start using your Mediapump.
Using the "FILL" button, you can fill your mounted hose as long as you keep the button pressed. You can change the direction in which the mechanic will move and pump your fluids with the direction button.

7 Insert a volume

By pressing the -/+ buttons below "VOLUME", "SPEED" and "PAUSE" or next to "HOSE" and "PROG", you can decrease or increase the values according to the buttons pressed. When you click on "VOLUME", "SPEED" or "PAUSE", a number pad will open which will help you to determine big changes more quickly. All number pads are used in the same way. The "VOLUME" number pad, however, has a special button, "CONTIN", which will enable a continuous infinite flow.

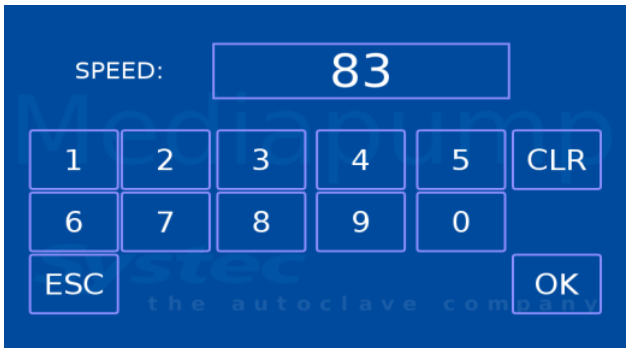
Mediapump number pad showing selection for volume.

In order to change the value, just click on the numbers. "CLR" will clear the input field. "OK" will take you back to the previous screen.

Mediapump number pad showing selection for volume with a changed value.

8 Insert the “SPEED”

Click on the "SPEED" label to change the speed. Again, you will see the number pad.



Mediapump number pad showing selection for speed.

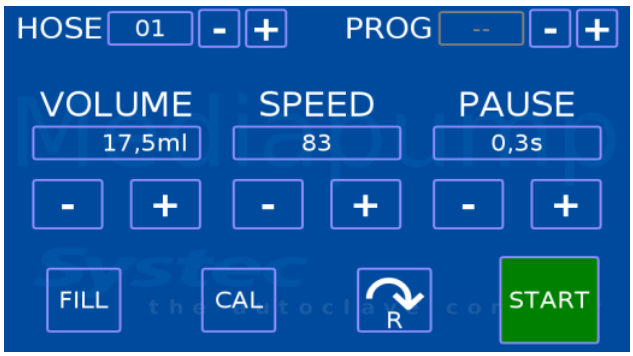
9 Insert the “PAUSE”

After you have selected a hose, a volume and a speed, you can additionally enter a pause between successive pump cycles.

The "PAUSE" selection works just as simple.

Mediapump number pad showing selection for pause time. If you put 0,0 as a “PAUSE” the pump run in the single step mode. Without a number in the “PAUSE” every pumps cycle must be started with the foot switch or the start button.

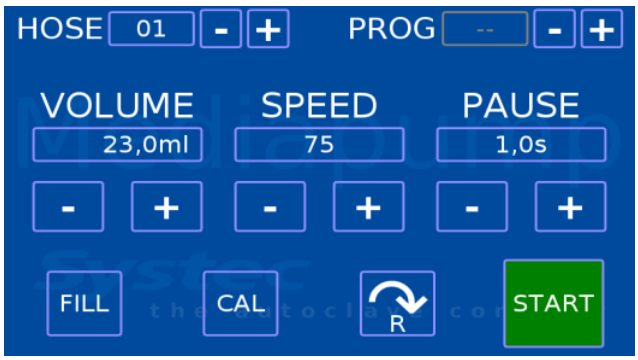
10 Fill up the hose



Mediapump with a pressed "FILL" button.

Now use "FILL" to fill your hose until the first drop is dispensed.

11 Start or Stop the pump in the standard or in the automatic mode



Mediapump main menu with enabled 1,0 second pause between successive pump cycles.

Once you have entered all desired data, you can start the pump procedure by pressing the "START" button. It will immediately turn red and change its label to "STOP".

Mediapump running and offering "STOP".

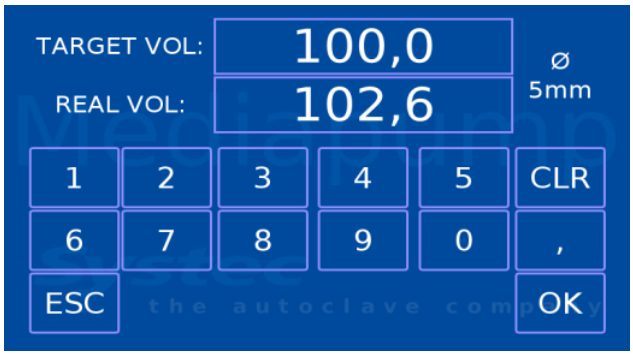
A single click on "STOP" will issue a stop after the current run is completed. When you double click "STOP", the motor will stop immediately. This serves as sort of a panic stop. If the foot switch is connected, it can be used in the same way as the "START"/"STOP" button.

If you have created a sequence of several pump cycles in the program mode **(see chapter 13)** the device stops after the running pump cycle is completed by pressing the “STOP” button once. Now the "START" button flashes orange.
The sequence of the pump cycles is continued by pressing the button repeatedly.

When you're using a hose for the first time, you should fill the hose and pump a definitive volume of at least 10ml with it and calibrate the hose (see chapter 12). In order to do so, you have to disable the pause and enter a volume of at least 10 ml (lower values will also work, but not as accurate) and a speed (any speed will do, but best results can be expected when using speeds around 50)

12 Calibrate the hose which is in using

Once the filling cycle is finished and the pumped volume is different to the select volume in the display, you can click on the "CAL" button and you will get to the calibration menu.



Mediapump calibration screen showing a target volume of 100.0 ml and a real volume of 102.6 ml.

In this example, we entered 100.0 ml as the desired volume, but due to an uncalibrated hose, we ended up with 102.6 ml in our measuring cup. In order to calibrate the hose, we thus enter 102.6 ml for the real volume and click on "OK".

If you have wrong calibrated in mistakenly by enter a real volume which is clearly to low, the Mediapump will accordingly longer pump in the defined filling sequence than you expected. In this case the pumping process can be broken off by pressing the button "STOP" and the pump as follows can be postcalibrated. Press "START" and fill a separate vessel with any volume of your liquid. The filling process is finished by pressing the button "STOP". Determine now the volume of the bottled liquid. Press afterwards the calibration button "CAL" and enter the ascertained volume as the real volume ("REAL VOL") in the control panel. Conclude the calibration process by pressing the button "OK". If the desired volume did not be reached now yet the calibration must be carried out again like at the beginning described.

13 Create a “PROGRAM”

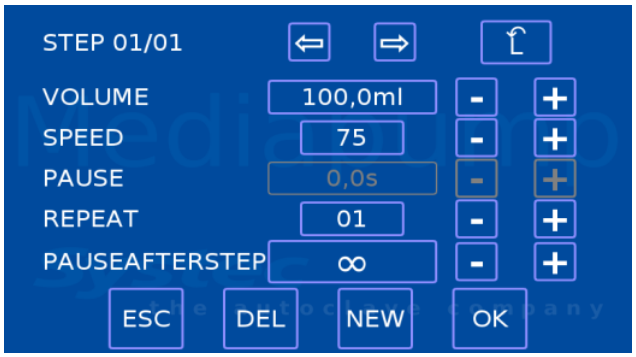
The first 25 programs are normal programs – they permit the filling of a certain volume at an eligible speed. The programs from the 26 to the 35 enable to pump a certain volume within a specific time span (see chapter 13.1). In the programs from the 36 to the 45 the speed and the time span of the filling process are determinable (see chapter 13.2).

Mediapump program menu.

The program menu works similar to the hose menu. Just select a free slot to create a new program and click on "EDIT". The first 25 programs are normal programs, the last ten can be used to pump a volume over a specified time.

Mediapump program menu with an uninitialized program selected.

The editor for the work steps offers the possibility to change each individual work step with the “STEP” button, to add new steps and to delete existing ones.



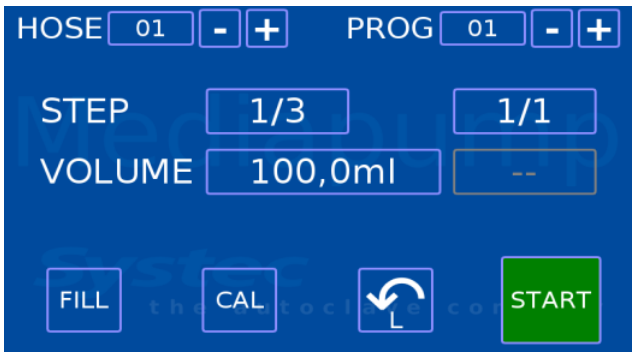
Mediapump program step editor showing the default step from a newly added program.

Just like in the main menu, you can change the values with the -/+ buttons or by clicking on the values to open the number pad.
By pressing "NEW", you can add a new work step with the same settings as the previous one. You can change this again as described above. The steps are numbered serially from 01. On the touchscreen the information of the currently opened step appears together with the number of the whole steps. Both figures are separated by a slash (e.g., "STEP 01/02").

Each step can perform multiple repeats. Between each repeat, there will be a pause which is given about the button “PAUSEAFTERSTEP“. Should the pump wait between the work steps the number "0" is to be given about the button “PAUSEAFTERSTEP“. On the display appears accordingly the sign “∞“. Now the next work step in the program can be started by a manual signal of the user about the "START" button or the foot switch. Through this you have time to switch test tubes or take a deep breath before you are busy with the next step.
After you have entered all desired data into your program, press "OK" to go back to the program menu.

Mediapump program menu showing a selected program with three steps.

Select a program and go back to the main screen by pressing "OK".



Mediapump main screen with a selected program running ready for step 1 of 3.

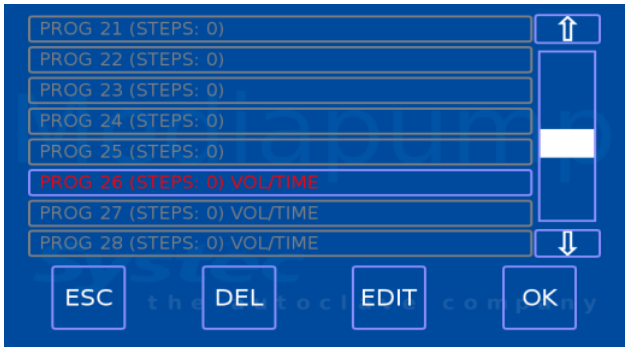
You will see a slightly different main screen now, since you are in program mode. You can see the current step, the number of repeats already performed and total in this step as well as the volume. It is still possible to edit the direction from this screen in case you are holding the hose the wrong way. All other values have to be changed with the step editor in the program menu.

Mediapump during a program run, performing step 2 of 3, repetition 3 of 5.

Using the program feature, you can easily perform complex tasks without putting your hand on the Mediapump, once the program has been entered. When you are using the foot switch, your hands are free and you can concentrate on your movements and equipment.

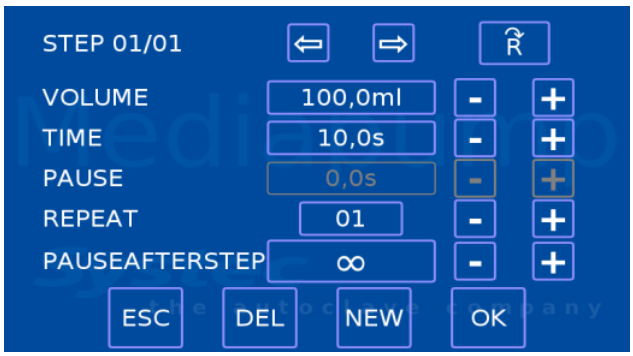
13.1 Create a “Volume/time-PROGRAM”

In cases like filter disinfection, when a certain amount of fluids has to be pumped in a given time, the Mediapump offers the volume per time mode. Go to the program menu and select one of the program from 26 to 35.



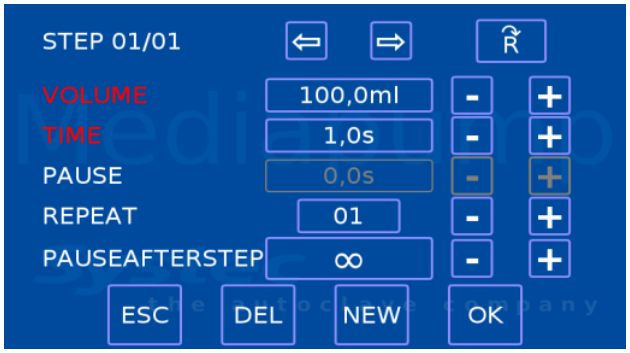
Mediapump program menu with the first volume per time program selected.

Just like in normal programs (see chapter 13) you have to click on "EDIT” to set the values.



Mediapump step editor for volume per time programs.

If you have already calibrated your current hose, the Mediapump will warn you when you enter values that the pump cannot fulfill. In that case, the words "VOLUME" and "TIME" will turn red and the program can not be started. One example for this: through the selected hose, the pump can not pump 100 ml in 1 second.

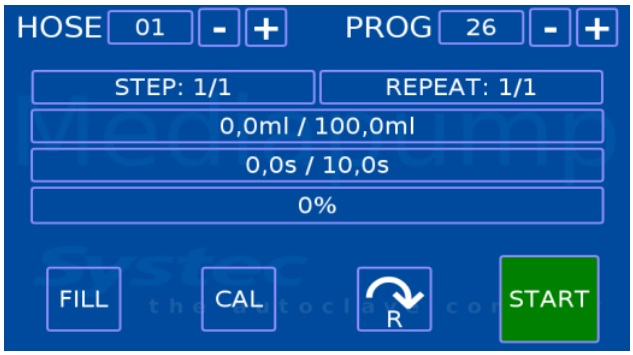


Mediapump step editor for volume over time programs with an invalid volume/time combination.

If you have entered an invalid volume/time combination and you starts the program anyway, the message "Invalid time/volume parameters, start denied" appears on the display.

Mediapump with a selected volume over time program with one step.

Select a volume over time program and click "OK" to go back to the main screen.



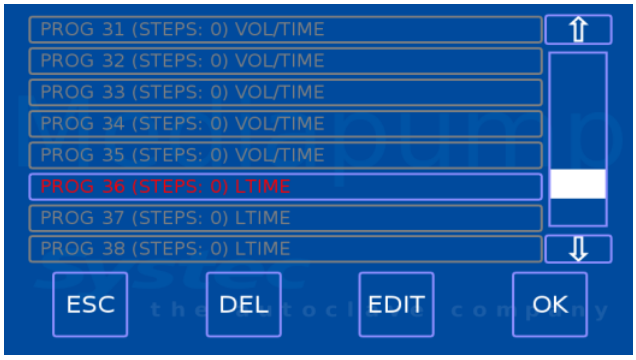
Mediapump ready to run a volume over time program.

Mediapump during a volume over time program run.

13.2 Create a “Speed/time-PROGRAM”

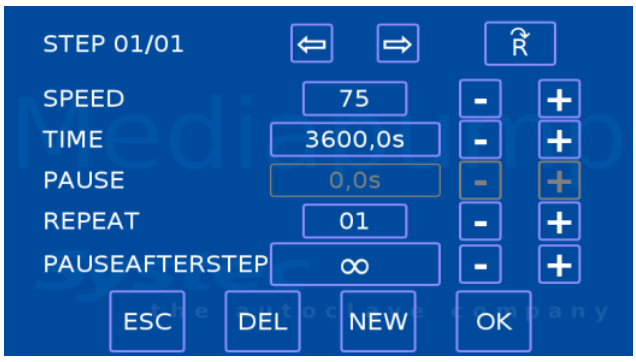
For applications with those for a defined time span liquids a given speed are supposed to be pumped off are available with the Mediapump programs with a speed/time-mode. With these programs more than 24 hours can be pumped permanently.

Go to the program menu and select one of the program from 36 to 45.



Mediapump program menu with the first speed per time program selected.

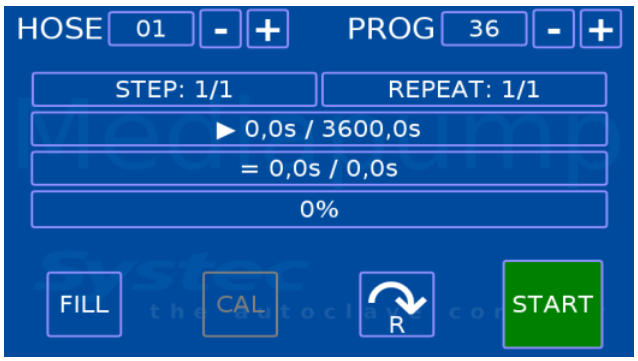
Just like in normal programs (see chapter 13) you have to click on "EDIT” to set the values.



Mediapump step editor for speed per time programs.

Mediapump with a selected speed over time program with one step.

Select a speed over time program and click "OK" to go back to the main screen.



Mediapump ready to run a speed over time program.

Mediapump during a speed over time program run.

In the speed/time-mode the calibration is switched off, because no filling volume is determined. The Greater the diameter of the selected tube in the speed / time program the greater is the pumped filling volume.

14 Configurations menu

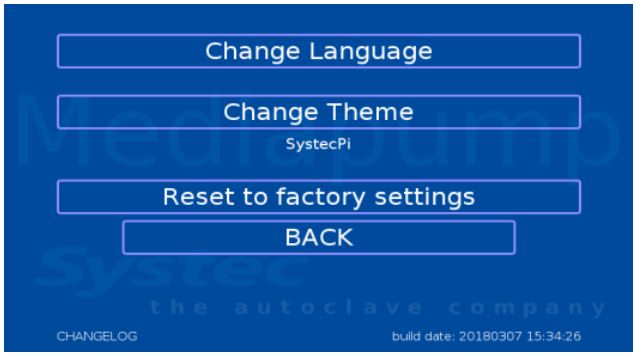
Apart from the everyday menus there is also a configuration menu for the basic settings of the Mediapump. The configuration menu offers you the possibility to change the language and the look of your Mediapump user interface and to reset the device to factory settings.

You can access the configuration menu by tapping the smily of the screen saver.

Mediapump showing the screen saver with the smily.

The screen saver will either start automatically after a long period of inactivity or you can manually activate it.

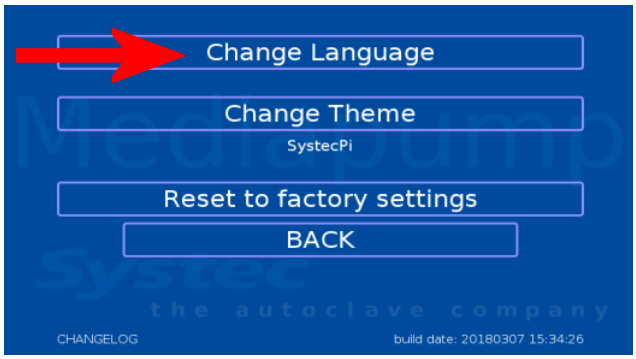
To activate the screensaver manually, touch the display in the main menu with your finger between "HOSE" and "VOLUME" and then swipe to the right horizontally on the display.



After you have tapped the smily,of the screen saver the start page of the configuration menu appears.

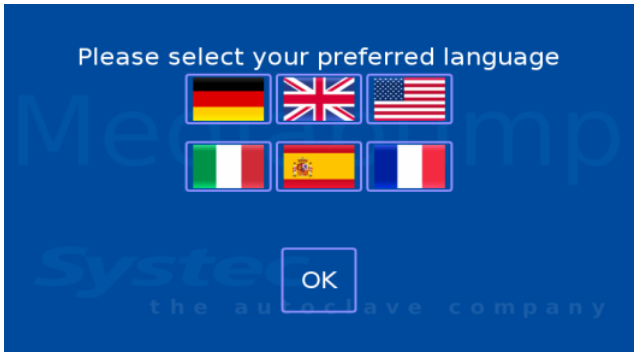
In the lower right corner you can see the creation date of the software being played.

14.1 Select the language



In order to select a language, press "Change Language" in the configuration menu.

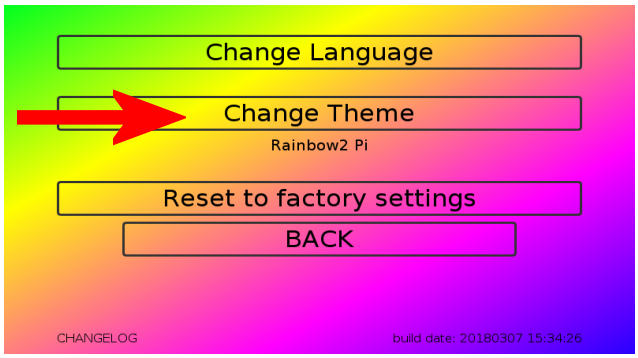
After selecting "Change Language", the menu for language selection opens.



Now select your desired language by tapping on the appropriate flag. Confirm with "OK".

14.2 Change the theme screen colure ore the display contrast

In order to change the wallpaper, tap "Change Theme" in the configuration menu. Click through the available wallpapers by repeatedly pressing the button until the desired wallpaper appears.



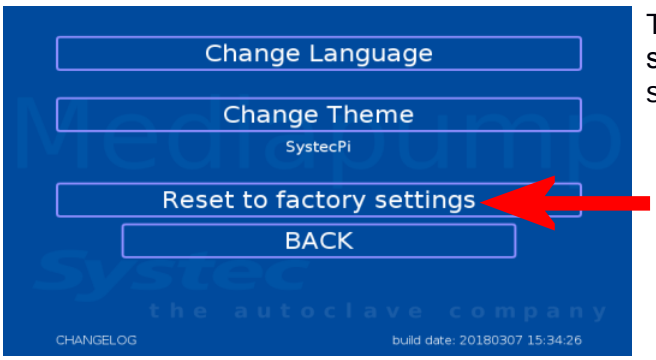
Mediapump configuration menu with a different wallpaper.

Just click on "BACK" to go back to the main menu.

14.3 Reset to factory settings

Resetting to factory settings resets all settings and parameters of the Mediapump to their initial state on delivery. Please note that this will delete all the programs you have created and calibrations made.

Resetting to the factory settings is done via the configuration menu.



To reset the Mediapump to the factory settings, press “Reset to factory settings” in the configuration menu.

After you press the “Reset to factory settings” button, the screen turns black and your device reboots. This may take a while. The process is complete when the control panel of the main menu appears on your screen.

15 Screen saver “bouncing smily”

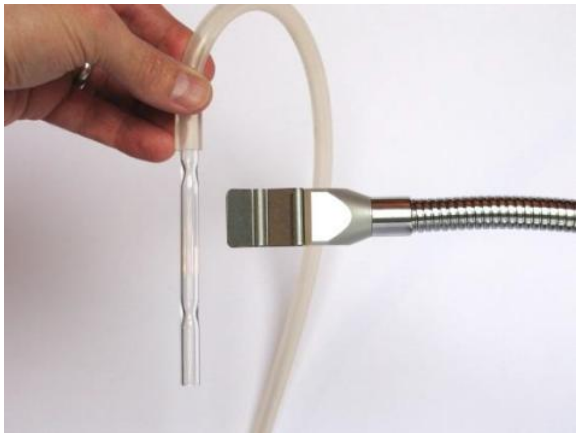
If your control panel is not used for a long time, the Mediapump switches to the bouncing-smily screen saver. Touching the screen returns the Madiapump to the previous menu.

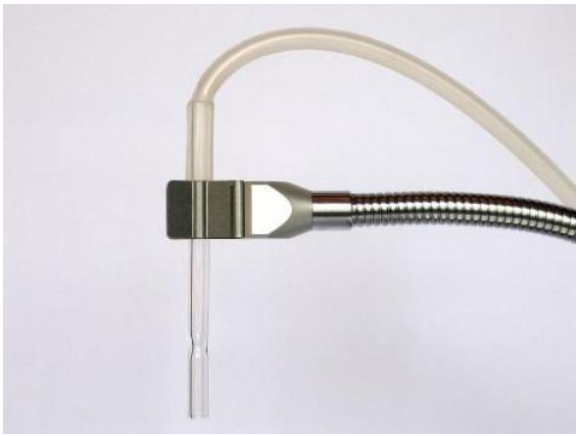
Mediapump showing the sreen saver.

By pressing the smile you get in turn to the configuration menu of the pump (see chapter 14).

16 Connecting the filling nozzle with the clamp on the flexible stand

There is a clamp for the filling nozzle at the top of the stand. Exert a light pressure to insert the filling nozzle into the clamp, thus fixing the filling nozzle. Slightly pull on the filling nozzle to once again remove it from the clamp of the nozzle holder.





The stainly-steel-pipe which are included in the delivery can serve as suction lances or as filling nozzles.

17 Parameter settings

17.1 Basic parameters

Basic parameter	Description
language selection	setting of the desired language
wallpaper	changing the background of the display
factory settings	reset to factory settings

General information about the device:

- software version
- electronics
- serial number
- manufacturer

17.2 Program parameters

Some of the described parameters are not displayed in every program type.

parameter	area
program	dispensing pumping individualized
hose ID	1,0 - 12,0 mm
flow rate	0,1 - 40 ml/s
dosing time	0,1 - 99999 s
volume	0,1 - 99999 ml
repetitions	1 - 9999
pause	0 - 99999 s
direction of rotation	L/R
direction of dispensing	L/R
step	1 - 50

Program type “individualized”

The program "individualized" enables you to program a customer-specific application, comprising up to 20 individual steps:

step	Parameters
dispensing	Volume repeat speed pause
aspirating	volume repeat speed pause
pumping	direction speed time
waiting	pauseafterstep
cycles	1 - 99

18 Maintenance

18.1 Cleaning and maintenance

WARNING: Before executing maintenance work, the Mediapump always has to be disconnected from the power supply.

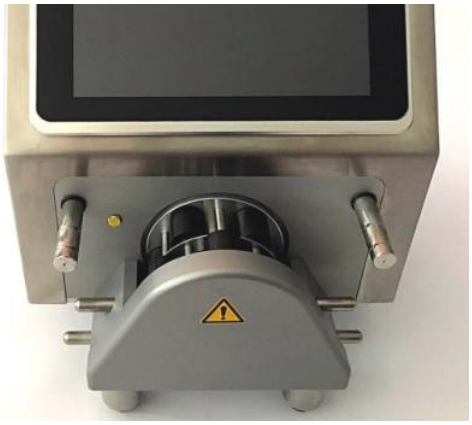
Please follow the official cleaning regulations.

If the Mediapump is soiled, you can clean it with a cloth moistened with soapy water or a 70 % ethanol solution. Every now and then, you should control the flexibility of the movable parts of the pump head. Occasionally, the rollers should be lubricated with Teflon lubricating oil. The rotor axis operates on sealed bearings which do not have to be lubricated.

Regular maintenance of the Mediapump by a qualified partner of the Systec GmbH is recommended.

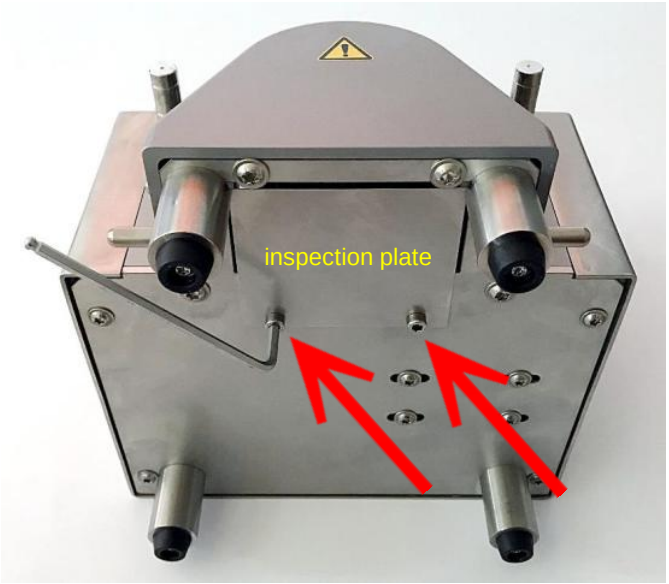
Cleaning of the roller pump head

To clean the roller pump head, the clamping lever and the hose bed can be removed from the housing of the pump.

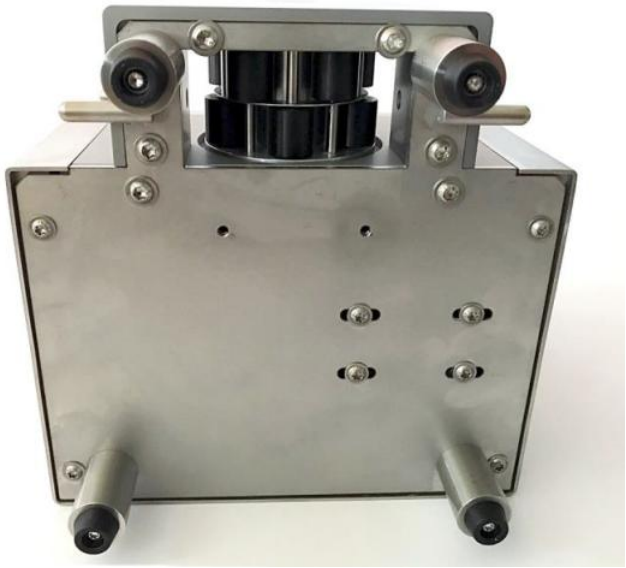


To do this, open the roller head by moving the clamping lever to the left and the hose bed to the right (see chapter 4.2.1). Then pull the clamping lever and the hose bed at the guide bolt forward from the housing.

From the serial number 258 (D-00258-02), the Mediapump also has a removable inspection plate on the underside, under the roller pump head, for cleaning purposes.



To do this, remove the 2 fixing screws of the inspection plate on the underside of the Mediapump and remove the plate.



View of the unserside of the media pump after removing the inspection plate.

Now the roller pump head can be reached easily from below and the inspection plate can be cleaned separately.

18.2 Maintenance service

Contact us prior to any planned maintenance work. You will then receive a rental pump for free. For maintenance, send the pump to our factory in its transport packaging. After a short minimum time, you will receive your maintained pump.

18.3 Disposal

The symbol of the crossed-out wheelie bin on the Mediapump indicates that it is not allowed to dispose of the device together with unsorted general waste. Instead, it is your responsibility to dispose of the waste in a correct manner. You have to hand it over to an authorized disposal facility for separate waste collection and recycling. You are also responsible for the decontamination of the products if they are biologically, chemically or radioactively contaminated, so that the persons who recycle or dispose of the products are protected from any health risks.

For further information about where you can hand over your waste products for recycling, please contact the local dealer who sold the product to you or to a local authority. Thereby, you're contributing to the preservation of natural resources and making sure that your waste products are recycled in a way that protects our human health and our environment.

Thank you very much!

19 Technical data

dosing volume	**0,01 ml - 99999 ml**
flow rate at 10-550 rpm with different tubes	**0,1 ml/s to >2500 ml/min**
interior diameter of the hose	**1 - 12 mm**
thickness of the hose wall	**2,0 mm**
measurements (without flexible stand)	**240 x 290 x 230 (mm) (height x length x width)**
weight	**10,5 kg**
input voltage	**85 - 264 VAC (47 - 63 Hz)**
power	**100 W**
main fuse	**2 x 2,5 A**