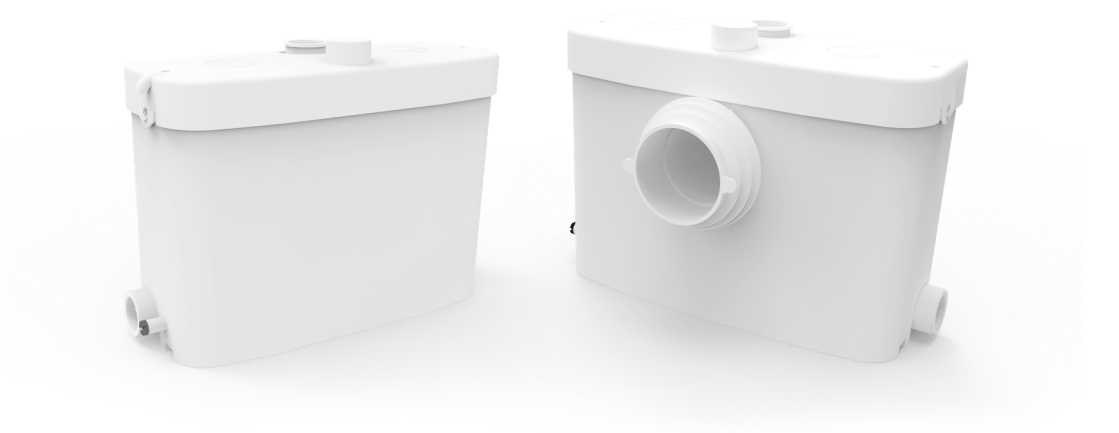
# COMPUTHERM

# MP400/MP420

## Sewage lifting unit



*Operating instructions*

# 1. GENERAL DESCRIPTION OF THE DEVICE

The ***COMPUTHERM MP400*** (for faecal-free wastewater) and ***MP420*** (for faecal and faecal-free wastewater) type drain lift pumps are designed for indoor sewage drainage where the sewage is far and/or deeper than the sewage mains level and its delivery to the sewer network cannot be ensured by gravity.

The drain lift pump with its 450 W power and 100 l/min water delivery capacity, allows the household (toilet, sink, washing machine, shower, etc.) generated (non-industrial polluted) wastewater delivered to the pump by gravity to deliver to a maximum vertical height of 8 m, and / or maximum distance of 80 m, according to the figures below.

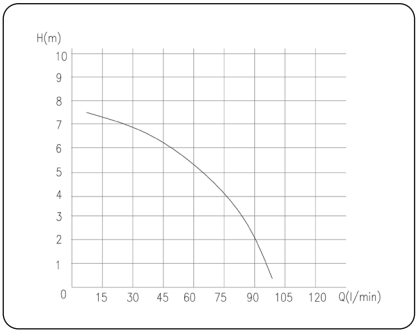



Figure 1.

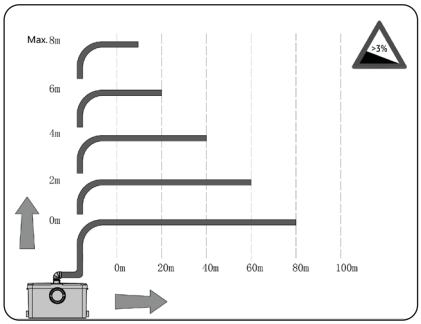



Figure 2.

The operation of the pump is intermittent, a pressure switch automatically switches it ON/OFF depending on the current amount of wastewater produced. The non-return valve which is built into the pressure side line, prevents the sewage from flowing back into the device housing by gravity from the vertical pipeline after the pump has stopped.

## 2. AREAS OF USE

**The *COMPUTHERM MP400*** model is used to transport wastewater from the sink, shower and washing machine, the ***MP420*** model is used to transport wastewater from the toilet, sink, shower and washing machine.

**Attention!**

- **The device is not suitable to transporting flammable, explosive, or chemically aggressive liquids, their discharge into the sewage system is forbidden, and DO NOT use for other pumping purposes!**
- **The installation of the device is only permitted in places where there is no risk of frost.**

## 3. TYPES AND SIZES OF THE COMPUTHERM MP400 AND MP420

***COMPUTHERM MP400*** drain lift pump for faecal-free wastewater:

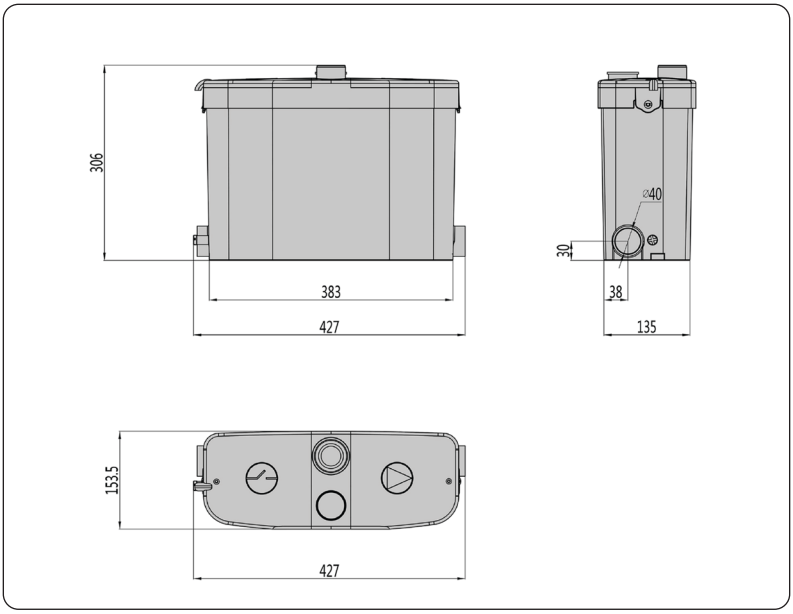



Figure 3.

***COMPUTHERM MP420*** drain lift pump for faecal-free and faecal wastewater:

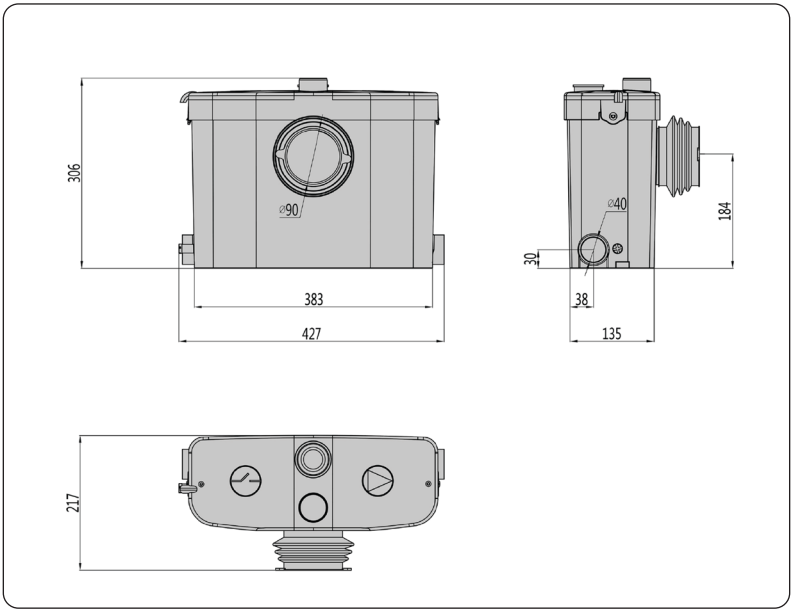



Figure 4.

## 4. STRUCTURE OF THE DRAIN LIFT PUMP, ITS MAIN UNITS, COMPONENTS, ACCESSORIES

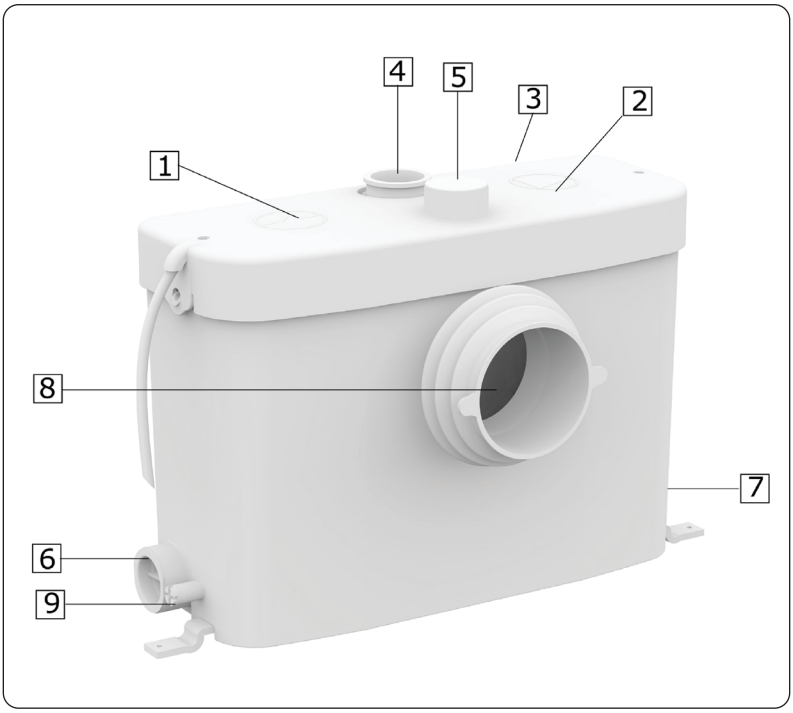



Figure 5.

**The main units, parts and connectors:**

1. pressure switch housing cover
2. pump housing cover
3. venting valve
4. pressure side connector (Ø23/28/32/44 mm)
5. inlet connector Ø40 mm
6. inlet connector Ø40 mm
7. inlet connector Ø40 mm
8. toilet connector Ø100 mm (only for the ***MP420*** model)
9. drain plug

**Equipment accessories:**

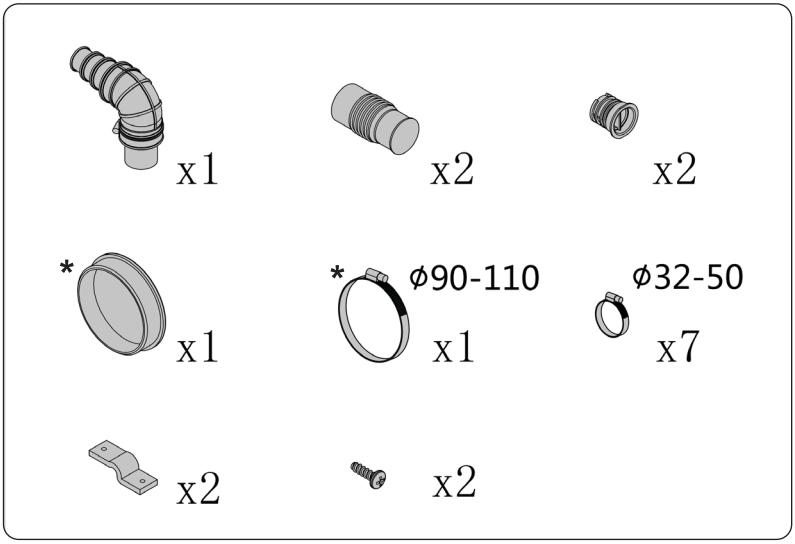



Figure 6.

*only for the ***MP420*** model

## 5. SAFETY INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

Installation and maintenance may only be carried out in full compliance with the following safety instructions:

- **The device may only be assembled when it is out of operation and disconnected from the electrical network. Electrical work should only be carried out by a qualified electrician! Improper installation or incorrect electrical connection can be life-threatening.**
- The drain lifting pump is equipped with an electrical cord and plug with protective earthing. **The electrical connector of the device must be connected to a grounded socket.** In order to prevent electrical accidents and possible overloading of the pump motor, a 5 A small circuit breaker (fuse) and a high-sensitivity residual current protection switch (30 mA Fi relay) must be installed in the electrical connection line feeding the device. When designing the electrical connection, the safety regulations and standards for bathrooms and wet rooms must be followed.

- Only connect the plug of the device to the mains voltage after the HVAC and electrical network has been fully installed. Before commissioning, check that the mains connection is easily accessible. If the power cord is damaged, it must be completely replaced to avoid the risk of electric shock.
- **The operator is obliged to ensure that assembly and installation work is carried out exclusively by authorized and suitably qualified professionals who have obtained sufficient information from the installation and operating instructions according to the regulations.**
- **Accident prevention rules must be observed during assembly and maintenance work.**
- The equipment must be located to be easily accessible for cheking and maintenance.
- The established network and the operation of the equipment must comply with local regulations and standards.
- When choosing the location of the device, it is necessary to ensure that the noise generated during its operation cannot be transferred to the building structure. To do this, make sure that the housing of the device is not in direct contact with the walls of the room and that it is placed on a horizontal, flat surface so that it can operate without vibration.
- The pipelines connected to the device must be fixed in such a way that there should be maximum one meter distance between the fixing points. Use flexible clamps with anti-vibration pads to secure the pipelines.

  It is advisable to design the route of the sewage pressure pipeline in such a way that no air cushions can form in the pipeline, as this can cause flow problems. The water delivery of the sewage pump is also affected by the vertical and horizontal distance between the generated sewage and the main pipe of the sewer, as well as the diameter and route of the constructed pipeline. After building the device's network and **before actually putting it into use**, check that the amount of wastewater generated when all the sanitary equipment connected to the device does not exceed the water delivery of the wastewater pump. The design of the network is suitable if the built in pump can operate intermittently even when all sanitary equipment connected and used together, so it can transport more wastewater than produced in the equipments connected to it.
- The device is designed for household (non-industrial) use only.
- The established network and the operation of the equipment must comply with local regulations and EN 12056-4 standard.
- Keep the device dry and do not use it in a high humidity environment.

## 6. INSTALLATION OF THE EQUIPMENT

In order to proper connection of the shower tray, sink, toilet, etc. wastewater, carefully study the installation instructions, advice and figures below:

- At ***COPMUTHERM MP420*** model, which is also suitable for the removal of toilet wastewater, install the toilet in such a way that its outlet connector should be at least 210 mm from the plane of the wall behind it, and the center line of the outlet connector should be at a height of 180 mm. For easier installation, coat the outlet of the toilet and the inlet of the sewage pump with liquid soap or silicone. Next, place the flexible connector on the pump connector and secure it with the pipe clamp provided as an accessory.

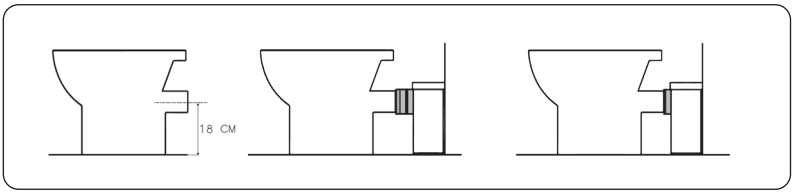



Figure 7.

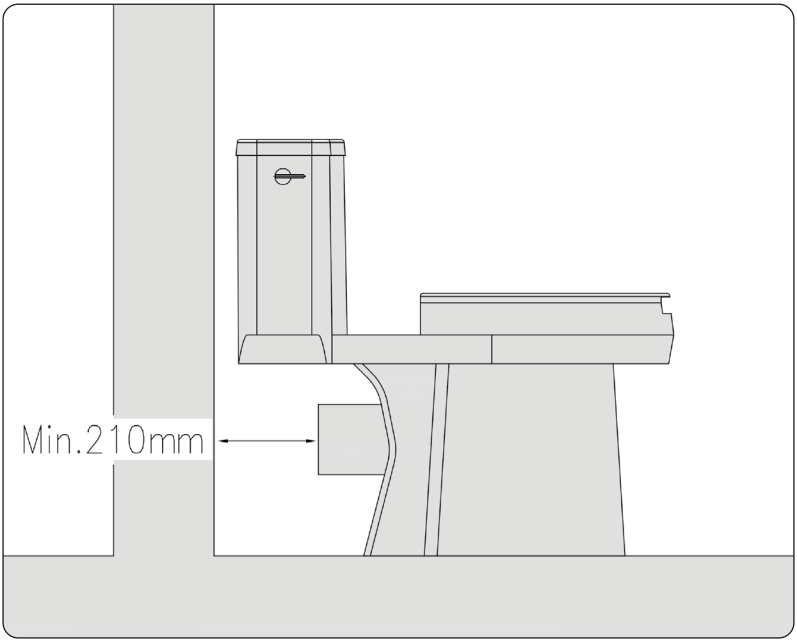



Figure 8.

- After placing the equipment, fasten it to the floor using the attached fixing tabs and screws, then connect the sanitary units to it.

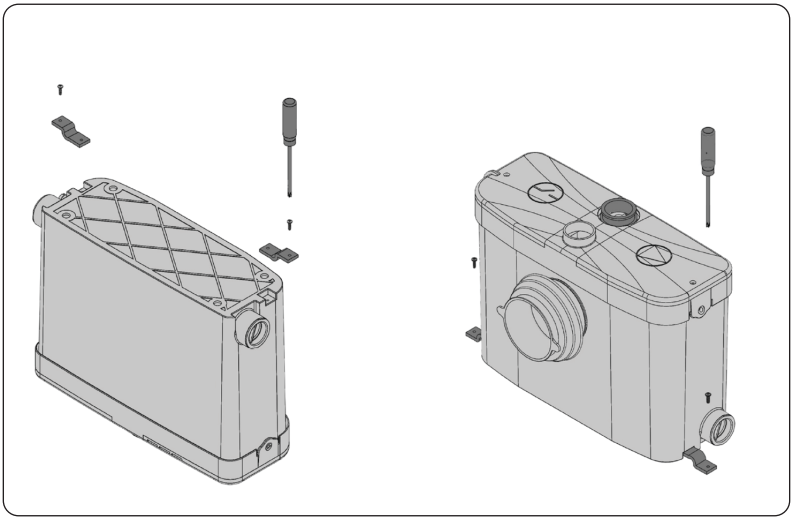


Figure 9.

- If you do not want to use an input connection, plug it with the supplied plug. If you have purchased a sewage pump (***MP420***) with a toilet connection, but you do not want to connect a toilet to the device, close the connection point using the supplied flexible connector and pipe clamps, closing plug as shown in the figure below.

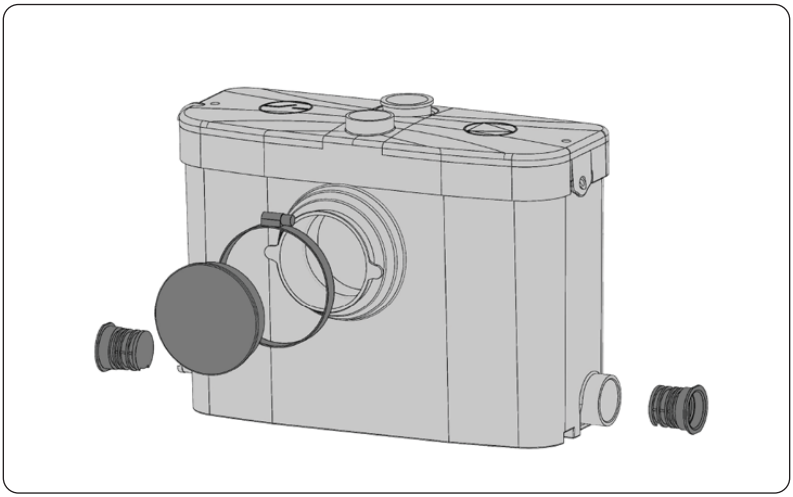


Figure 10.

- We recommend the use of a Ø40 mm sewage pipe for the pipe(s) connected by gravity to the equipment, and for the pressure pipe a Ø32 mm cased PVC pipe.

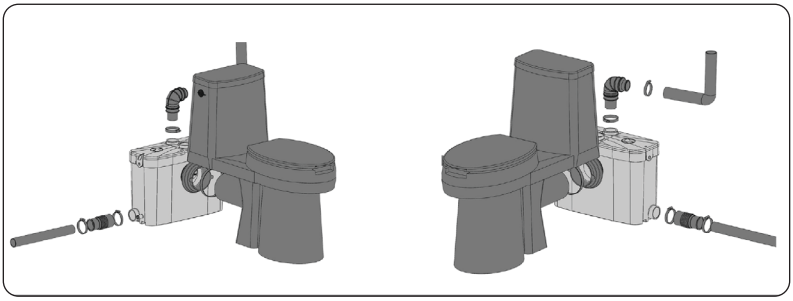


Figure 11.

- Cut the pressure-side connector in a place corresponding to the size of the sewage pipe you want to use.

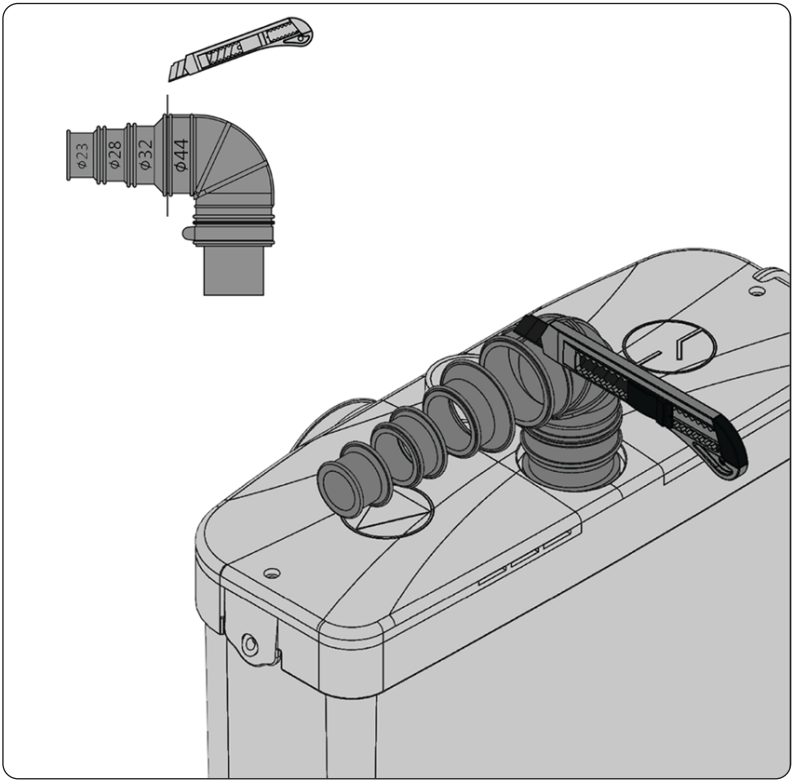



Figure 12.

- If you want to connect 3 sanitary units to the device regardless of the toilet connection point, then cut the top of the input socket marked 5,with a saw shown in Figure 5 in Chapter 4. You can connect the sewage pipe of the third sanitary unit to this inlet.

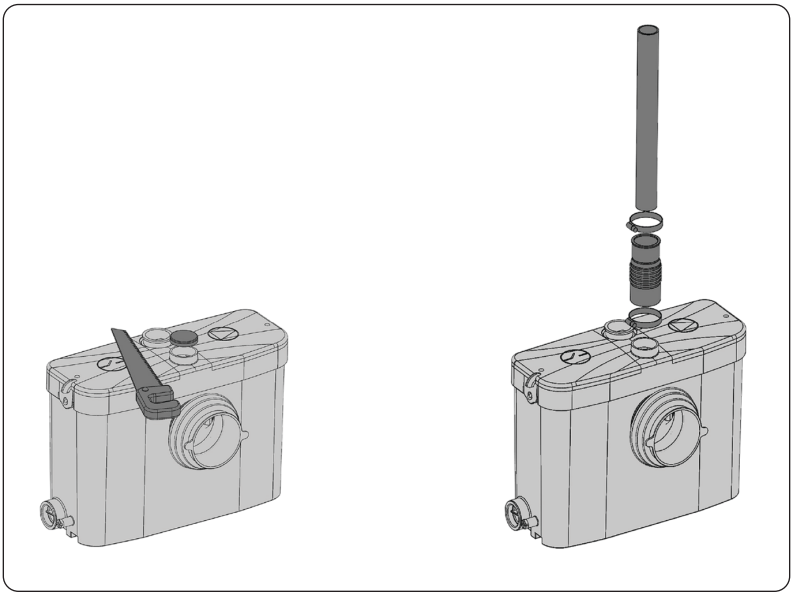


Figure 13.

- Horizontally installed sewage pipes must have a fall of at least 3 cm/m (>3%) on the inlet side for toilets, at least 2 cm/m (>2%) in other cases, and at least 5 cm/m (>5%) on the outlet side to assemble. The drain of the shower tray must be at least 13 cm high. Use a filter in the shower and sink drain to reduce the amount of dirt entering the equipment. Avoid getting hair into the sewage pump. We recommend installing a shut-off fitting or a drain plug in the pressure line, so that you can prevent the backflow of wastewater from the vertical section of the pressure line when the equipment is repaired.
  If the connection point of the pressure line to the sewage tube is at a significantly lower level than the equipment, we recommend installing an air intake valve at the highest point of the pressure line in order to prevent the network from draining by gravity.

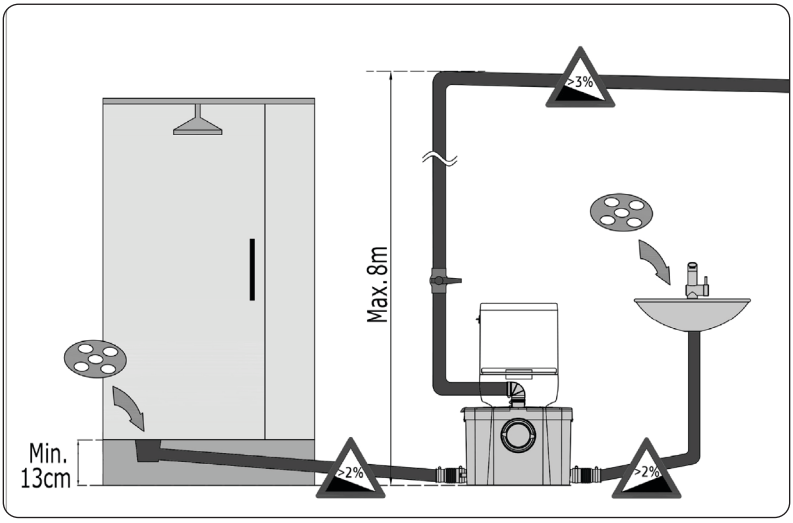



Figure 14.

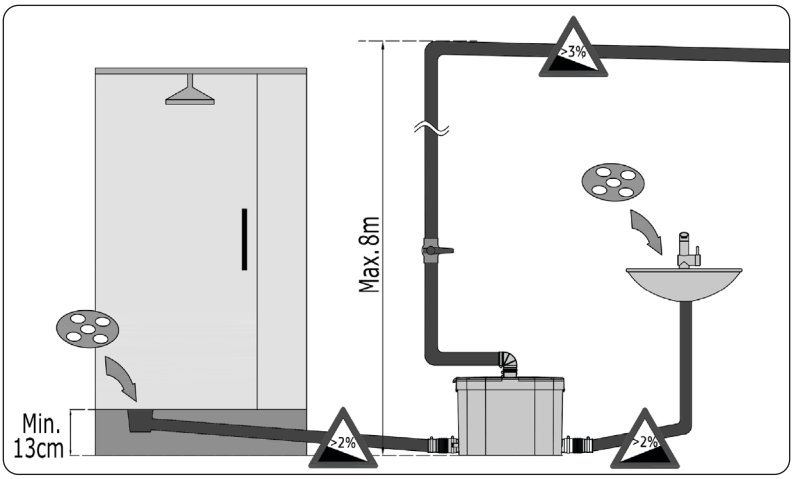



Figure 15.

- Avoid creating sharp corners and changes in direction, use 2 piece of 45° fittings instead of 90° elbows. Bends in the pressure line cause flow losses, which reduce the vertical transport height by approx. 50 cm.

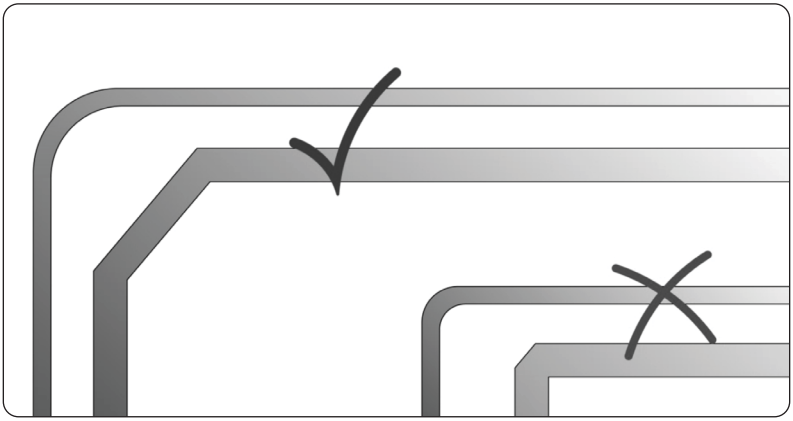


Figure 16.

- If it is necessary for the wastewater to get to the gravity sewage network a vertical installation of the pressure pipe, then it must be provided at the beginning of the pressure pipe route. When planning the route of sewage pipes, take care to avoid the risk of frost.

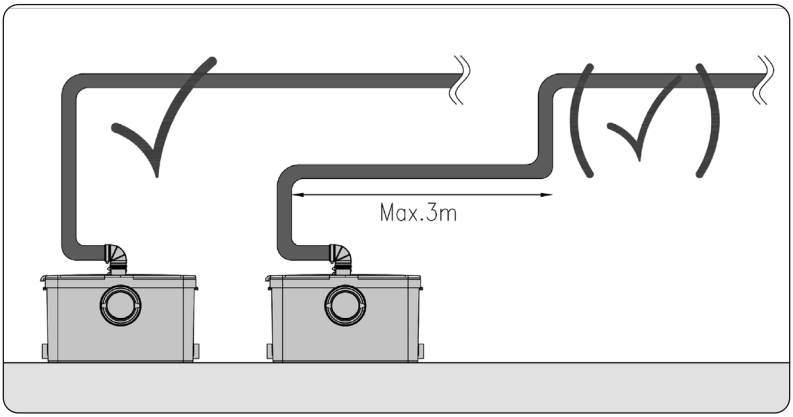



Figure 17.

- If you want to connect the pressure lines of several sewage pumps to a sewage collection main pipe, never connect them together, connect them all independently to the main sewage pipe to avoid backflows.

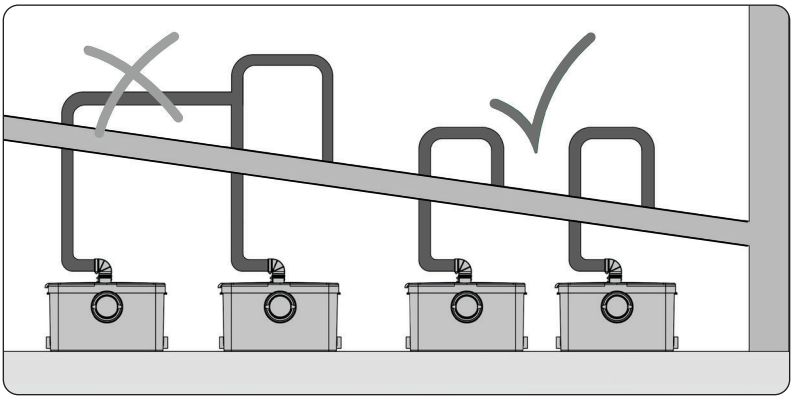


Figure 18.

- If you want to connect more sanitary ware to the pump than the number of inlet connections, you can also connect multiple sanitary wares to one inlet by considering the maximum volume flow and installing non-return valves.

## 7. COMMISSIONING THE DEVICE

After according to the above instructions and advices the equipment and the wastewater network is installed, connect the pump to the electrical network with a protective earth. After that, release water through one of the inlets. The sewage pump must start as soon as its tank is filled with water and, depending on the route of the pressure pipe (level difference, distance, number of bends, etc.), the sewage must be delivered to the main sewer within 5-10 seconds. After the trial operation, check whether the connections of the sewage pipes are waterproof.

## 8. USE OF THE EQUIPMENT

- The connected toilet and all sanitary wares must be used according to their normal operation. The device operates automatically, the built-in pressure switch switches the pump motor ON/OFF as the water level rises/falls.
- The pump motor is equipped with a thermal protection switch, which prevents the pump from overheating and stops it automatically. If the engine has overheated and stopped, unplug the equipment from the electric socket and only reconnect it to the electrical network after waiting 30-60 minutes. During this, do not use the connected sanitary facilities.
- If you do not use the equipment for a longer period of time (e.g. on holidays or during your vacation), we recommend that you temporarily cut off the water supply to the sanitary units connected to the sewage pump.

**Attention!**

- **The device is only suitable for delivering normal household wastewater to the sewer network. The device equipped with a toilet connection point is also suitable for delivering faeces and toilet paper into the sewer network.**
- **Foreign object, e.g. cotton, condoms, sanitary towels, wet wipes, food, hair, metal, wooden or plastic objects, etc. may cause malfunctions. These problems are not covered by the warranty.**
- **Solvents, acids and corrosive chemicals can damage the device. These problems are not covered by the warranty.**

## 9. MAINTENANCE

Any maintenance or repair work may only be done by authorized and qualified personnel!

**ATTENTION! Risk of electric shock!** Before maintenance and installation work, the equipment **MUST BE DISCONNECTED** from the electrical network and protected against unauthorized reconnection. If the equipment is not to be used for a long period of time, disconnect it from the power supply and protect it from frost.

To clean or replace the pressure switch, check its operation, remove the cover of the pressure switch housing. To do this, unscrew the fixing screw on the cover of the pressure switch, on the top of the product.

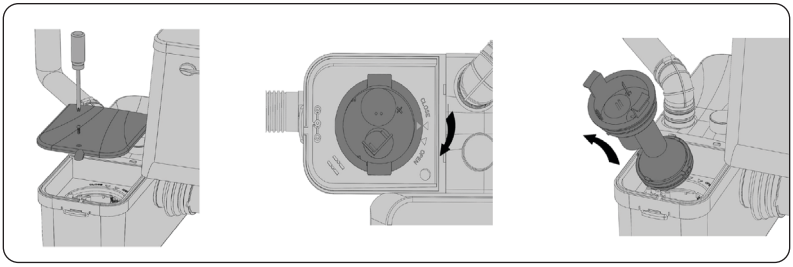


Figure 19.

To remove a foreign object from the device, open the cover of the pump housing and check its operability. To do this, unscrew the fixing screw on the top of the product, on the pump cover.

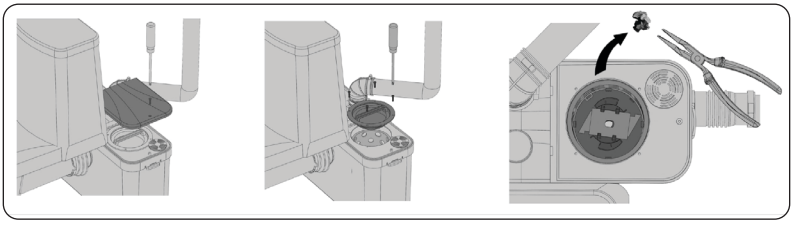


Figure 20.

To clean the device and remove the limescale, only use cleaning and descaling chemical that does not damage the internal components of the device.

## 10. UNAUTHORIZED USE

The operational safety of the sewage pump is ensured only if the installation, and operating rules are fully coplied with. The limit values given in the technical data must not be deviated or exceed under any circumstances.

## 11. TROUBLESHOOTING

**Attention!** Before troubleshooting disconnect the device from the power supply.

| FAILURES | POSSIBLE CAUSES | POSSIBLE SOLUTIONS |
|---|---|---|
| pump does not start | • no power supply<br>• the engine is broken<br>• the pressure switch is broken<br>• the water level in the pump does not reach the level required for switching on | • Connect the plug of the device to the network!<br>• Check the power supply!<br>• Contact the service department!<br>• Check that there is enough water in the tank! |
| pump swiches on and off | • the pressure side pipeline is clogged<br>• the non-return valve leaks | • Eliminate the blockage!<br>• Clean the non-return valve! |
| pump works too long period/ continuously | • hydraulic problem | • Check that the pressure line is not too long!<br>• Check that the pressure difference is not too large!<br>• Check that the pressure line is not blocked!<br>• Check that the amount of incoming wastewater is not too much! |
| dirty water flows back into the shower tray | • design or installation error<br>• clogging in the suction-side line | • Raise the level of the shower tray!<br>• Unclog the suction side connection line! |
| a rattling noise is coming from the equipment, but the water drains | • a foreign object collides with the impeller | • Remove the object! |

## 12. TECHNICAL DATA

- **Hydraulic data:**
  - Maximum flow: 100 l/min
  - Maximum vertical delivery: 8 m
  - Maximum horizontal delivery: 80 m
  - Nominal width of suction pipe: 1 x Ø100 mm (for MP420 model) and 3 x Ø40 mm
  - Nominal width of delivery pipe: Ø23/28/32/44 mm
  - Maximum medium temperature: 75 °C (85 °C for 1 hour)
  - Maximum liquid salt content: 15%
  - Environment temperature: Max. +40 °C
  - Heat protection temperature: 100 °C

- **Electrical data:**
  - Motor performance: 450 W
  - Supply voltage: 230 V AC; 50 Hz
  - Protection against environmental impacts: IPX4
  - Insulation class: Class I
  - Mains connection method: plug with protective ground contact
  - Overload protection method: 5 A small circuit breaker (fuse; not included)
  - Touch protection method: high-sensitivity residual current protection switch (30 mA RCD; not included)

The ***COMPUTHERM MP400*** **and** ***MP420*** **type drain lift pumps** comply with EN12050-3 , EN12050-4 standards and 305/2011/EU, EMC 2014/30/EU, LVD 2014/35/EU, and RoHS 2011/65/EU directives.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