

AREBOS

Macerator Pump 600 W

AR-HE-HA600

User's Manual



CE

Please follow all security measures in this user's manual to ensure a secure use.

Please read and save these instructions. Read through this user's manual carefully before using product. Protect yourself and others by observing all safety information, warnings and cautions. Failure to comply with instructions could result in personal injury and/ or damage to product or property. Please retain instructions for future reference.

Table of Contents

1. Safety Instructions.....	2
General safety instructions	2
Specific safety instructions.....	3
2. Application Area	4
3. Technical Specifications.....	5
4. Delivery.....	6
5. Parts List	7
6. Operation Principle.....	8
7. Installation	9
WC connection	9
Connections washbasin, shower, washing machine, etc.	10
Connection to the side and upper inlet connection.....	10
Emptying toilets.....	11
Emptying of other sanitary units.....	12
Checking the pressure switch.....	13
8. Commissioning.....	13
9. Operating.....	14
10. Troubleshooting	14
Remaining water in the shower tray	15
Loud noises, engine does not start or runs hard, water is not pumped out.....	15
Macerator pump does not pump down and is in continuous operation	16
11. Cleaning, Maintenance and Storage	16
Cleaning.....	16
Maintenance	16
Storage	16
12. Disposal Instruction.....	17
Disposal of the packaging.....	17
Disposal of waste equipment.....	17
EU Declaration of Conformity	18

1. Safety Instructions

General safety instructions

- Failure to observe the operating instructions - in particular the safety instructions - as well as the unauthorized conversion of the device or the installation of non-original spare parts automatically invalidate the warranty claim. The manufacturer assumes no liability for resulting damages! In particular, non-compliance may, for example, result in the following hazards:
 - Failure of important functions of the system
 - Failure of prescribed methods of maintenance and servicing

- Danger to persons due to electrical, mechanical and chemical influences
- Risk to the environment through leakage of hazardous substances
- The safety instructions in this operating manual, the existing national accident prevention regulations and any internal working, operating and safety regulations of the operator must be observed. Always work with care and the necessary caution and do not use excessive force!
- Hazards due to electrical energy are to be excluded (for details see e.g. in the regulations of the VDE and the local energy supply companies).
- The operator must ensure that all maintenance, inspection and installation work is carried out by authorized and qualified specialist personnel who have sufficiently informed themselves by thoroughly studying the operating instructions. In principle, work on the unit should only be carried out at a standstill. Pumps or gensets that transport hazardous media must be decontaminated. Immediately after completion of the work, all safety and protection equipment must be reinstalled or put into operation. Before recommissioning, the points listed in this operating manual must be observed.
- The operational safety of the delivered aggregate is only guaranteed if it is used as intended in accordance with these operating instructions. The specified limits must never be exceeded. These installation and operating instructions do not invalidate general regulations and standards not mentioned here.

Specific safety instructions

- Check the device for completeness, function and tightness before commissioning!
- Never put a defective or inoperative device into operation!
- Please remove the packaging material inside the macerator pump before starting the installation.
- When installing or removing the system, you must not work alone.
- The device should not be installed in septic tanks or pump shafts.
- The macerator pump must not be thrown, knocked or dropped.
- Never lift the macerator pump by the power cord or move it with the help of the power cord.
- The device is intended for home use. The number of persons is limited to the residents of a private household. Commercial use is not recommended for approval reasons.

- All rotating parts must come to a standstill. The operator must immediately report any incident or irregularity to the responsible person. Immediate shutdown by the operator is mandatory if defects occur which endanger safety. Which includes:
 - Failure of the safety and/or monitoring devices
 - Damage to important parts
 - Damage to electrical equipment, wiring and insulation
 - Tools and other objects should only be stored in designated places to ensure safe operation.
 - When working indoors, ensure adequate ventilation.
 - When welding and/or working with electrical equipment, make sure that there is no danger of explosion.
 - To prevent suffocation and poisoning, ensure that there is sufficient oxygen at the workplace and that there are no toxic gases in the workspace.
 - Immediately after completion of the work, all safety and protection equipment must be reinstalled or put into operation.
 - The accident prevention regulations as well as the generally accepted rules of technology must be observed. We point out that we are not liable under the Product Liability Act for

damage caused by our device if the instructions and regulations in this manual are not adhered to. The same provisions apply to accessory parts.

- Consequential damage caused by flooding of rooms in the event of faults on the device must be excluded by the user by means of suitable measures (e.g. installation of alarm systems, retention basins, reserve pumps or the like). In case of failure of the device, repair work may only be carried out by a qualified electrician.
- In case of prolonged absence, interrupt the water supply.
- The device must never be run dry or with the intake line fully closed. Damage to the device caused by running dry will void the manufacturer's warranty.
- The device must not be used for the operation of swimming pools.
- The device must not be installed in the drinking water circuit.
- The electrical connections must be protected against moisture.
- In frost-prone locations, take frost protection measures. The water temperature must not be lower than 33.8°F (1°C) and should not exceed 194°F (90°C).
- Always move first up and then sideways, as in the other case (e.g. diagonal conveyance) the device must work too hard and the engine overheats.
- Only use normal toilet paper, wet toilet paper can only be crushed very bad and can cause clogging of the system.
- The lifting system must not be used to pump aggressive liquids or substances.
- Never operate the device unattended.
- Do not introduce foreign objects! The shredding function is only for shredding toilet paper and feces from the toilet. Put everything else in the dustbin.
- Avoid exposing the sewage lifting system to a direct jet of water.
- Never stand on the device.
- Only connect the device to a protected circuit.
- Pay attention to sufficient grounding of the device.
- Make sure that children do not play with the macerator pump.
- **ATTENTION:** The knives are very sharp, never insert your hand into the device.
- A defective power cord may only be replaced by the manufacturer, a recognized repair workshop or by authorized specialist personnel with appropriate qualifications.
- To ensure safe and reliable operation, only original spare parts may be used.

2. Application Area

- Lifting systems are needed where there is dirt or sewage in spaces below the sewer backwater level or where there is not enough slope to the nearest sewage collection manhole. They are therefore also ideal for retrofitting an additional bathroom, guest toilet or utility room.
- The sewage lifting plant is not intended for continuous operation, but as a makeshift solution. The user group must have an additional toilet above the back-pressure level. At the macerator pump, a maximum of one hand basin, one bidet or one shower may be connected.

3. Technical Specifications

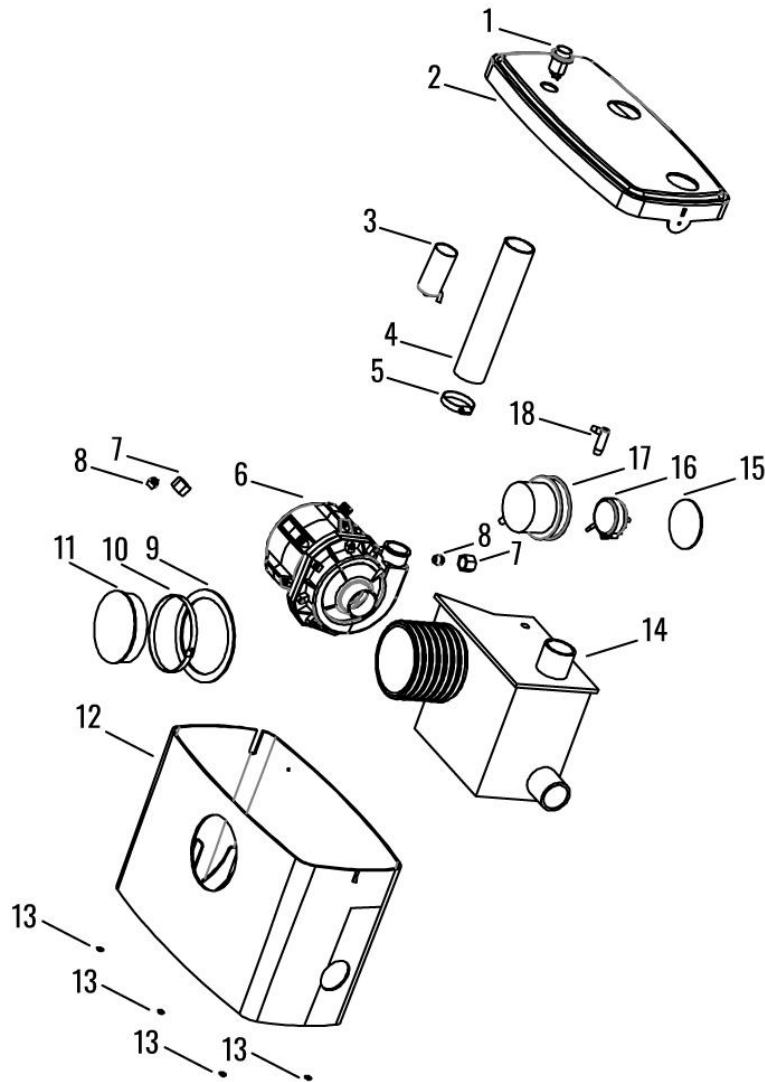
Model	AR-HE-HA600
Power	600 W
Height of maximum evacuation	ca. 23 ft (7 m)
Maximum horizontal evacuation	ca. 230 ft (70 m)
Material	Polypropylen
Idle speed	2850 rpm
Input voltage	230V / 50Hz
Current	2.2 A
Input flow	100 L/min
Start liquid level	3.54 in (90 mm)
Stop liquid level	1.58 in (40 mm)
Power factor	0.65
Control	Automatic/manual
Shaft of pump	Horizontal
Number blades	3
Impeller type	Vane
Water temperature	33.8-194°F (1-90°C)
Motor Heat Protection Level	257°F (125°C)
Sewage Inlet/Outlet	Ø 1.58 in (40 mm)
Sewage Inlet	Ø 3.94 in (100 mm)
Capacitance	10 uF/450V
Degree of protection	IPX4
Deodorize type	Regular
Equipment operation	Interval
Type of the pump	Centrifugal pump

4. Delivery



1. Macerating Pump
2. Toilet Intake Port
3. Power Cable
4. Reflux valves
5. Clamp for Toilet Intake
6. Sealing Plugs
7. Clamps for 1.58 in (40 mm) Intake
8. Intake Pipe Port (e. g. Shower)
9. Intake Pipe Port
10. Outlet Pipe Port
11. Switch

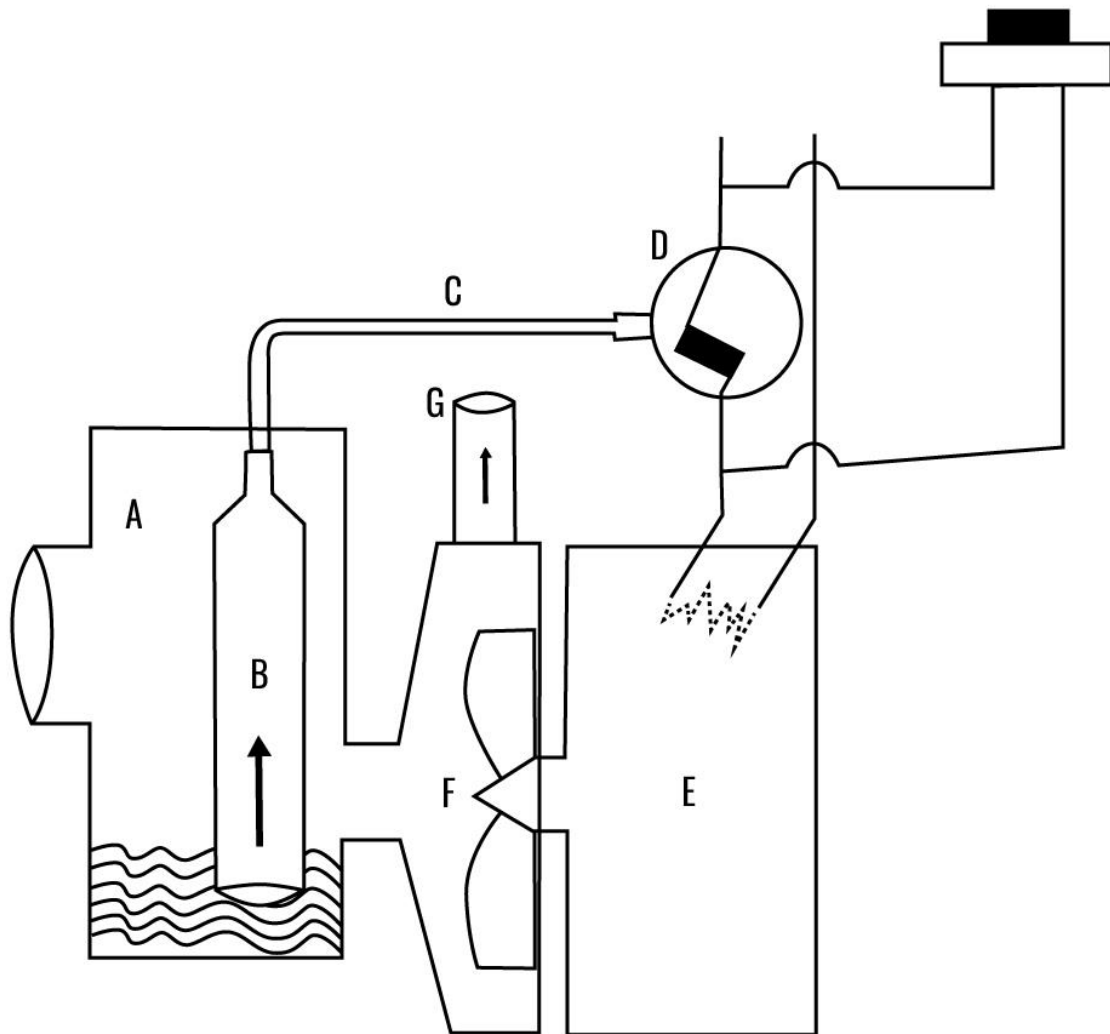
5. Parts List



1. Push switch
2. Box cover
3. Check valve
4. Rubber connecting pipe
5. Hose clamps 1.38-2 in (35-51 mm)
6. Motor
7. Nylon cable gland
8. Rubber cable gland
9. Stop washer
10. Hose clamps 3.54-4.33 in (90-110 mm)
11. Pipe stopper 3.94 in (100 mm)
12. Box
13. Foot pad
14. Tank
15. Seal washer
16. Pressure switch
17. Switch protect cover
18. Ait nozzle

6. Operation Principle

- The macerator pump consists of a container that collects the waste water and an electric pump, which is automatically controlled by a pressure switch.
- The conveying function is triggered when the flushing is done, just like a normal toilet. Always operate the feces disposal unit with a flushing water volume of min. 6 - 9 liters; take the economy buttons as a preventive measure out of operation.
- The substances to be transported away are collected in the container (A). The air chamber (B) measures the air pressure flowing through the pipe (C) to make the pressure switch (D). The pressure switch starts the engine (E), which drives the turbine (F). The sewage is carried away through the outlet (G).
This mechanism is simple and the device is made of high quality materials. The functionality is based on a proven concept.



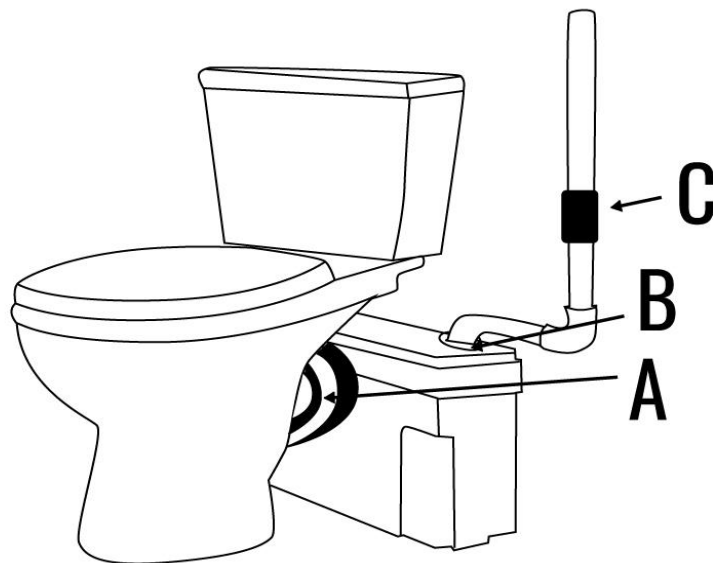
7. Installation

Note!

- The installation work must be carried out by qualified personnel in compliance with the safety regulations.
- The Installation must be frost-proof on level ground.
- According to the standard, sewage lifting units, which are located below the backflow level of the drainage channel, must be connected to the system via a suitable pipe loop of at least 180 mm.
- The systems for fecal wastewater must be installed directly behind or next to the toilet. The inflow from the WC must not be led over a longer distance to the device, since this can lead to the sooting of the pump.
- The macerator pump must be installed so that the cover can be opened. Make sure there is enough space between the side inlets and existing walls.
- During installation, make sure that the pump cannot be freely suspended from the pressure line or the power cable.
- Bear in mind that the drainage pipes must be adequately ventilated so that the sealing water from the siphons is not sucked out by the negative pressure in the pipe system. This would lead to unpleasant odor nuisance and gurgling noises. Air leakage can also occur due to poor installation of the pipes or too many deflections or cross-sectional reductions. For this reason, connecting cables should only be unventilated up to a maximum length of 4 meters. From 4 meters, a maximum of 3 deflections with 90° may be installed. In the case of a single connection line, this can be vented directly at the siphon and, in the case of multiple connection lines, after the last connected sanitary unit (always in the direction of flow).
- Unused intakes must be closed!

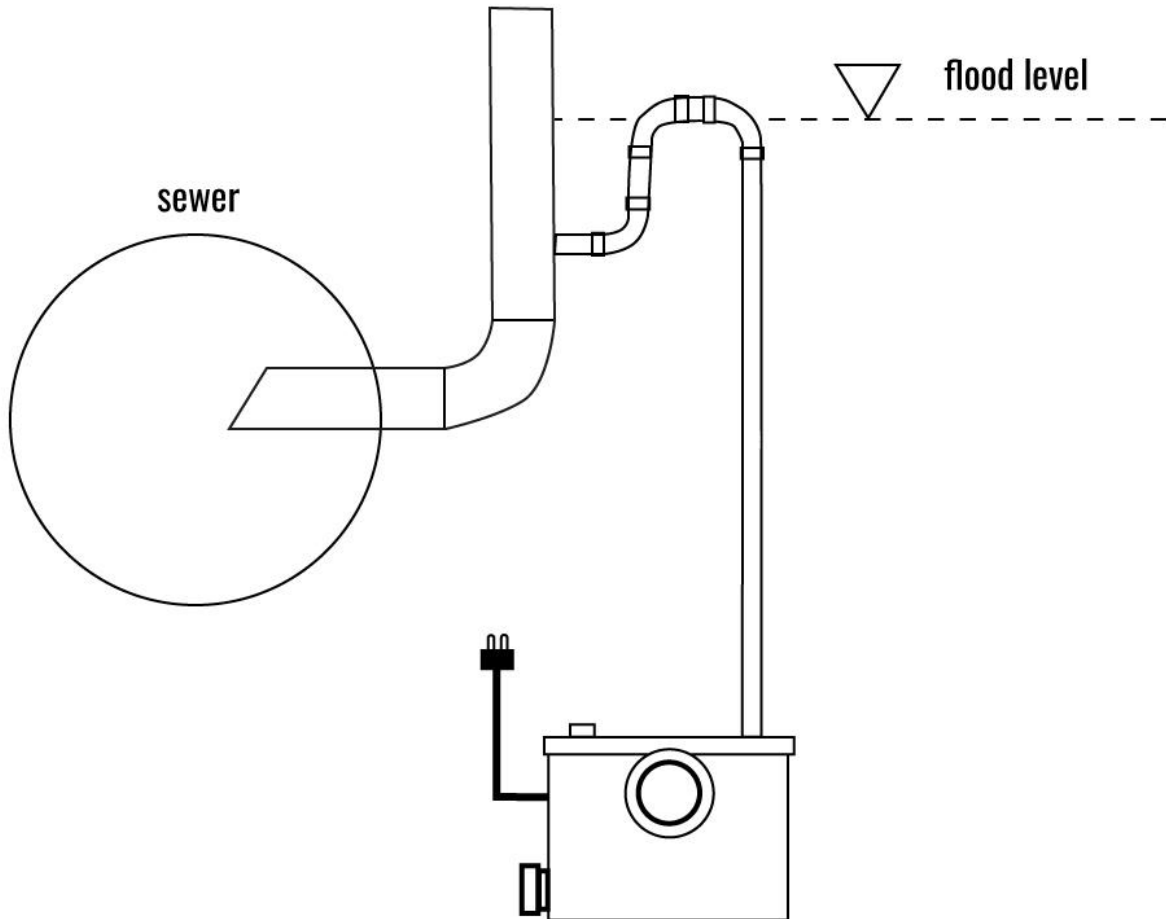
WC connection

- **WC inflow:** Plug the WC toilet drain into the central rubber seal of the macerator pump and fix it with the pipe clamp (a)
- **Drain/pressure line:** The device is connected to the downpipe or sewer pipe of the house with a 1.38-1.58 in (35-40 mm) drainpipe preferably DN40 and a pipe clamp. (see picture)
- The check valve (c) is installed between the lifting system and riser.



Note:

- Lay the pressure line in a continuous rising (ideally first vertically, then horizontally) in a loop above the level of the backflow level of the public sewer.
- This prevents that at an increase in the water level in the sewer, z. B. in heavy rain, waste water is pushed back through the pressure line in the container of the lifting plant. Guide the pressure line directly to the next collection drain. Check all connections and connections again for leaks.
- Freezing the pressure line is to be excluded. It is recommended to sufficiently insulate the complete pressure line.

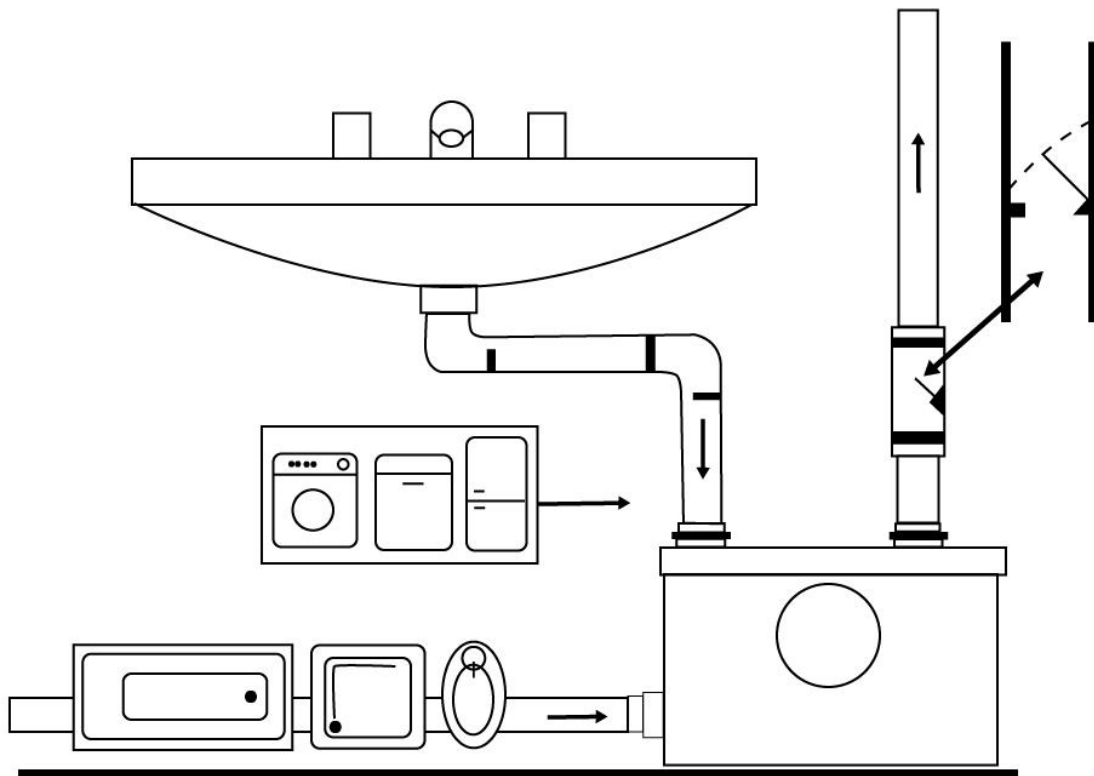


Connections washbasin, shower, washing machine, etc.

- The macerator pump has a further side inlet and an overhead ceiling inlet, which are intended for additional wastewater generators such as shower, sink, washing machine, etc.

Connection to the side and upper inlet connection

- The low-lying inlet on the left serves as ground-level wastewater discharge for connection of a DN 40 pipe. As a secure connection, fit the pipe clamps and tighten!
- The upper inlet serves as drainage of higher-lying consumers, e.g. washbasin.

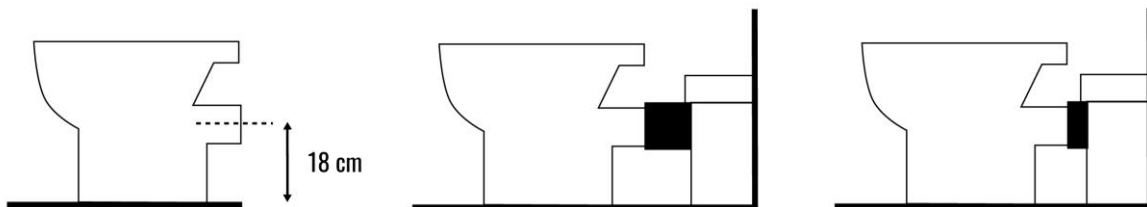


Note:

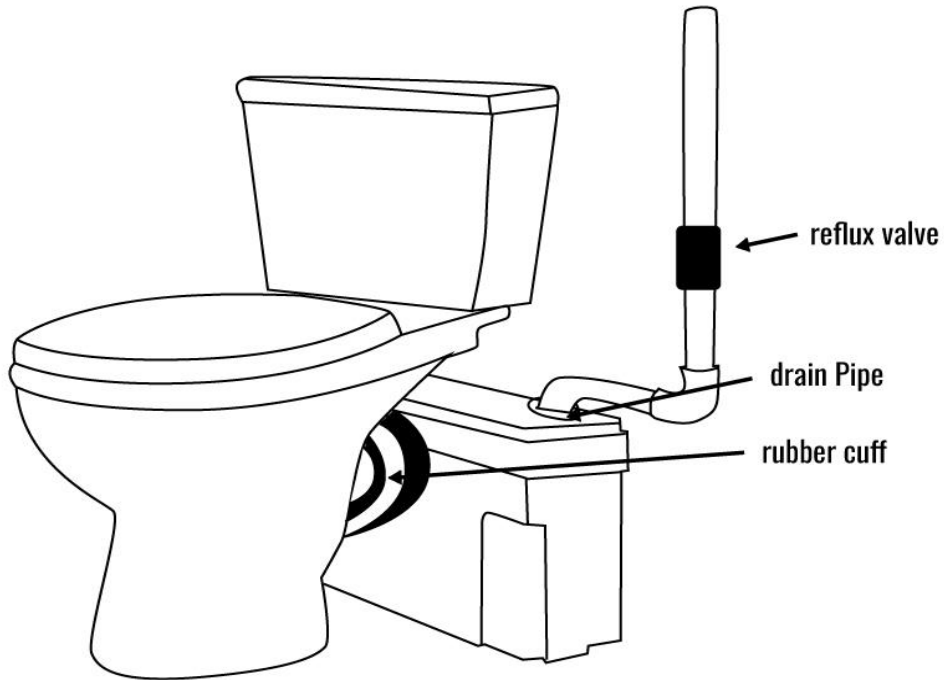
- Make sure that the air chamber of the pressure switch tube does not leak. When the unit is on, the engine should start.
- Before performing these steps, be careful not to obstruct the opening or interior of the pressure chamber.

Emptying toilets

1. Connect the horizontal outlet of the toilet bowl with the rubber cuff of the device and screw the connection to the supplied clamp. Be sure to use a lubricant if necessary to prevent the rubber connection from tearing.
2. Connect the drain pipe to the rubber joint; the pipe should be 1.58 or 1.26 in (40 or 32 mm) in diameter. Seal the connection with the clamp.

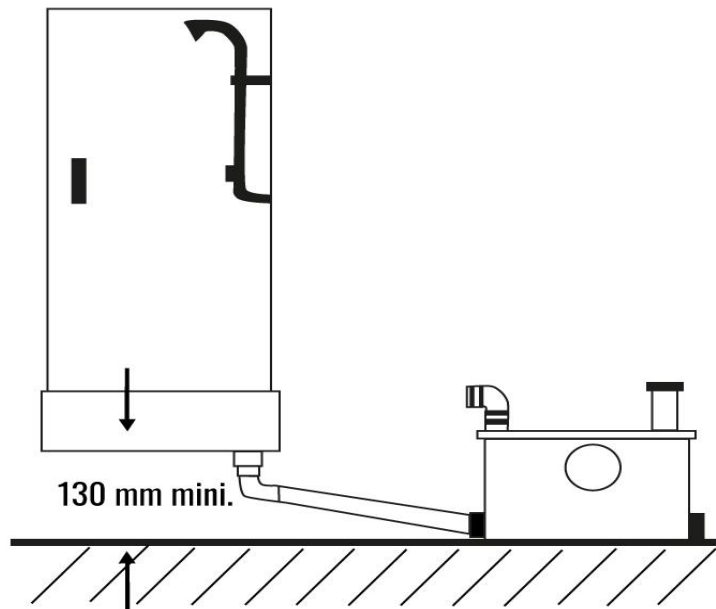


3. The installation of a reflux valve is important if the waste water is to be pumped upwards. In this case, install the reflux valve as close as possible to the device.

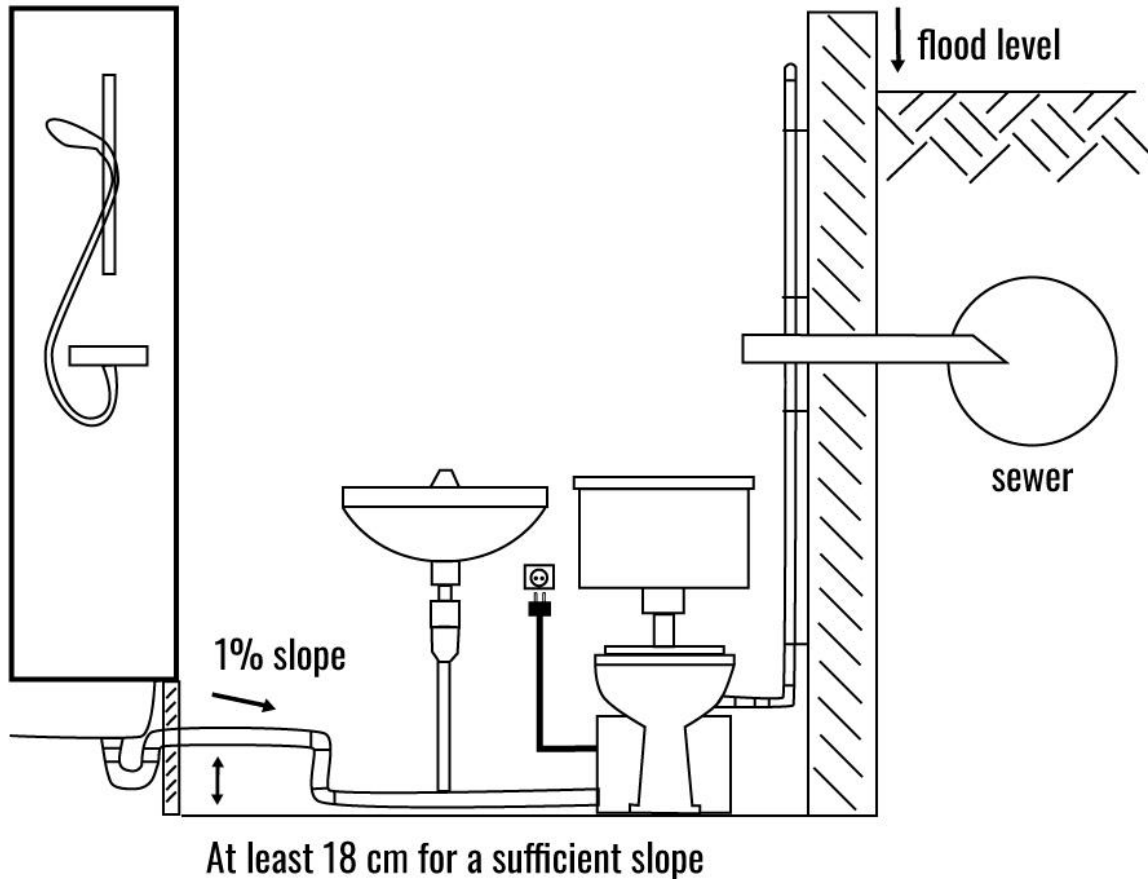


Emptying of other sanitary units

- Connect the drain pipes of the other sanitary units to the inlets with rubber joints and screw them to the clamps.
- For shower and bath waste water, make sure that the slope of the siphon is at least 1% (0.39 in (1 cm) per meter) and the inlet of the macerator pump is at least 5.1 in (13 cm) lower, so that the wastewater flows naturally to the macerator pump (The pump does not suck on itself).



- If other sanitary units are connected along the disposal circuit near the pump, install the check valves in the appropriate drains to prevent backflow. The slope of the horizontal components must be at least 1%.
- In order to avoid a backflow into the shower tray, the drain must be at least 7.1 in (18 cm) above the floor.



Checking the pressure switch

- Connect the pressure measuring gauge to the rubber tank, push the sewage tank down to create pressure inside, and be sure to hear a clicking sound. The click is the switching of the pressure switch, which means that the engine would start. If you do not hear a clicking sound, make sure the air chamber of the pressure switch tube is not leaking or the sewage tank is leaking. You can also trigger the pressure switch by blowing lightly into the transparent hose that leads to the pressure switch, if you hear a click, the switch turns on and the engine must start. NO water should be in the transparent hose and the pressure switch! Otherwise, dry or replace pressure switch.
- When the device is on, the engine should start.

8. Commissioning

ATTENTION!

- The macerator pump is now ready for operation.
- Insert plug and perform function test: allow water to run in. The pump switches on as soon as the electrical supply has been established and the water level in the system is above the switch-on level. When the level reaches the switch-off level, the pump switches off.
- Check all connections/pipes for leaks.
- In addition, the specifications listed in the declaration of conformity (see EU standard) must be observed.

9. Operating

- The macerator pump works automatically by the built-in pressure switch. This means that washed-in sewage/feces are detected and pumped out.
- By means of the manual control ON-button (top right), the pump can also be switched on manually. (keep pressed until wastewater is pumped out)

10. Troubleshooting

If the pump does not pump automatically (pollute pressure switch chamber B), press the manual start button (3-10 sec.) for the manual control (top right) until the waste water is completely drained. Repeat the process by rinsing the macerator pump with clean water.

Error description	Possible causes	Solution
The unit does not have enough power or works too slowly to move the sewage away	<ul style="list-style-type: none"> - The drainpipe is too long or too high - The diameter of the drainpipe is too small - Part of the pipe is clogged 	<ul style="list-style-type: none"> - Adjust the tube of the assembly - Use another tube - Start the pump with the manual button. If the problem persists, the pump is blocked
The device works, but there is a buzzing sound and the sewage is not carried away	<ul style="list-style-type: none"> - The pump is blocked - The check valve was mounted the wrong way round 	<ul style="list-style-type: none"> - Check the pump - Mount the check valve in the correct direction
The pump starts unintentionally	<ul style="list-style-type: none"> - The check valve is defective - A leak in the cistern causes water to flow into the lift and from time to time the carry-away process is triggered 	<ul style="list-style-type: none"> - Check the check valve - Repair the leak
There is no sound of extraction	<ul style="list-style-type: none"> - The power connection is defective - Pressure switch - Engine 	<ul style="list-style-type: none"> - Check the power connection - Press the manual button several times when the device starts up. Check the power connection of the pressure switch and the conduction of the pressure switch. If the operation of the manual control knob does not solve the problem, check the engine.
The engine does not turn	<ul style="list-style-type: none"> - Mains voltage missing or wrong - Impeller blocked 	<ul style="list-style-type: none"> - Check the socket, plug in the mains plug - Press switch (10) several times, otherwise remove cover, remove any foreign substances present in the pump and in the tank, in case of recurrence repair by qualified personnel

The engine does not turn	<ul style="list-style-type: none"> - Engine overloaded - Control defective - Engine defective 	<ul style="list-style-type: none"> - If the motor does not switch on automatically after cooling, repair by qualified personnel - Remedy by qualified personnel - Remedy by qualified personnel
Engine turns, but does not convey water	<ul style="list-style-type: none"> - Pressure line clogged - Reflux valve installed incorrectly 	<ul style="list-style-type: none"> - Eliminate constipation - Turn, check function
Engine is running at short intervals	<ul style="list-style-type: none"> - Reflux valve leaking 	<ul style="list-style-type: none"> - Clean or renew reflux valve
Engine turns very loud	<ul style="list-style-type: none"> - Foreign substances in the device 	<ul style="list-style-type: none"> - Remedy by qualified personnel
The macerator pump runs permanently	<ul style="list-style-type: none"> - The vertical drain has no check valve - The check valve is defective - The pressure switch is defective 	<ul style="list-style-type: none"> - Mount a check valve - Check the check valve - Check the power connection

Remaining water in the shower tray

- So that the macerator pump turns on cleanly when discharging wastewater, the incoming sewage pipe should have a gradient of at least 1% and a difference in height of at least 5.1 in (13 cm) from the siphon to the entrance of the device.
- This is both necessary so that the pressure switch in the toilet lifting system works properly, turns on the pump and pumps off the water. If this is not taken into account, possible errors are that the lifting system does not pump off the water or that too much remains in the pipes or possibly in the shower tray.

Loud noises, engine does not start or runs hard, water is not pumped out

- These symptoms occur when the device is blocked.
- If the system is clogged with toilet paper and fecal matter, it is usually sufficient to gently rinse the system back with water in most cases. For this purpose, simply add a little water pressure to the outlet of the device, e.g. with a garden hose, so that the remains are flushed out of the pump body back into the macerator pump. Please make sure that there is no water pressure on the collecting tank of the pump. Otherwise, the pressure switch of the device will be damaged and the automatic switching ON/OFF will no longer work properly.
- In case of stronger constipation/blockages by solids, which have tilted in the pump body, it may be necessary to open the pump so that the solids can be removed.
- Heavy impact by the solids in the lifting system can even lead to damage to the bearing of the motor. In this case, the engine of the device must be opened and the bearings be exchanged. This error manifests itself mostly after the removal or rinsing of larger solids. The macerator pump can then turn freely by hand, but as soon as you try to start the engine, it blocks and only hums.
- Rinsing the lifting systems requires no technical knowledge. However, opening for cleaning should be left to a skilled technician.

Macerator pump does not pump down and is in continuous operation

- This error occurs in macerator pumps
 - that were switched off (no electricity) and still had inflow or
 - in which wastewater was discharged with pressure from a dishwasher/washing machine or
 - had more inflow than the pump could pump out.As a result, the devices were "crowded".
- Here it can happen that water gets into the pressure switch of the device. As a result, the pressure switch is disturbed in the function. The system then either runs permanently or does not switch on automatically.
- The error is quick to fix and does not affect the warranty. To do this, proceed as follows:
 1. Disconnect the device from the power supply (pull the plug).
 2. Loosen the two screws (narrow sides) of the cover and remove the it.
 3. Empty the small transparent hose connecting the large "tank" to the small black "control box". Also drain the pressure switch in the small black box (put it on the heater or put it in the sun)
 4. After drying, reassemble the unit in the reverse order.
 5. Put the device back into operation, if the pressure switch is not defective, the system will run again without any problems.

11. Cleaning, Maintenance and Storage

Cleaning

- **The device must be cleaned regularly!**
- For cleaning, maintenance and repair work, the device must be easily accessible.
- Never use corrosive or acidic cleaning detergents for cleaning. The macerator pump may only be cleaned with mild detergents and a damp cloth and soapy water from the outside.
- As cleaning access, the front opening is suitable.

Maintenance

- Before carrying out any work on the device, the mains plug must be removed!
- Check all parts of the device regularly and perform regular maintenance.
- If the pump is to be returned for repair, a used unit must be emptied and cleaned before transport for reasons of hygiene. In addition, all parts that can be touched must be disinfected (spray disinfection). The parts must be tightly sealed in tear-proof, sufficiently large plastic bags and packed so that they cannot be spilled. They are to be sent in without delay with known forwarding carriers.

Storage

- Put product safely on a firm surface and secure against falling over.
- It is also important that the device is stored in cool, dry, frost-free and dark rooms.
- For products with suction and/or pressure connection, these must be tightly closed in order to prevent pollution.
- For longer storage, protect the shaft against moisture, sunlight, heat or frost.
- If you follow these rules, your product can be stored for a longer period of time. Note, however, that the elastomer parts and coatings are subject to natural brittleness.

12. Disposal Instruction

Disposal of the packaging

- Please make reference to the guidelines and standards for appropriate disposal of the packaging valid in your region. In part, the package may consist of plastic bags - watch this respect, with special care to ensure that this is not out of the reach of children. There is a risk of suffocation!

Disposal of waste equipment

- Equipment must be disposed of in accordance with the rules and regulations of the local waste disposal.



Meaning of the "dustbin"

Protect our environment; electrical appliances do not belong in household waste. Use the provided for the disposal of electrical equipment collection points and enter your electrical and electronic equipment that you no longer use. They help ensure that the potential effects of incorrect disposal on the environment and human health to be avoided. So do your part to recycle, recycling and other forms of recovery of waste electrical and electronic equipment. Information on where the devices are disposed of, please contact your local authorities or local Governments.

EU Declaration of Conformity

We,
Canbolat Vertriebs GmbH, Gneisenaustraße 10-11, 97074 Würzburg, Germany,
Hereby declare that the product named below, seen its design and construction as well as according
to our sales, has been complied with the relevant and basic health and safety EU-requirements.

Name of the product: Macerator Pump 600 W
Model Nr.: AR-HE-HA600
Art. Nr.: 4260551587689

If the product has any modification not allowed by us, this declaration loses its validity.

Tested acc. to:
EU Standard:
EU-Norm:
EN 62233: 2008
EN 60335-2-84: 2003+A1:08
EN 60335-1: 2012+A11:14
EN 12050-3: 2015
EN 55014-1: 2006/+A1: 2009/+A2: 2011
EN 55014-2: 1997/+A1: 2001/+A2: 2008
EN 61000-3-2: 2017
EN 61000-3-3: 2014

Date/Manufacturer Signature/Location:

Würzburg, 30 June 2020



Identification of the signatory:
Korhan Canbolat, head of the company

Authorised representative for the technical documentation:
Korhan Canbolat

Office address:
Canbolat Vertriebs GmbH
Gneisenaustraße 10-11
D-97074 Würzburg

Return address can be found in the imprint: <https://www.arebos.de/impressum/>

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