nothing to waste

D000074998-1
Revision date 10 Sep 2025

Installation, Operation and Maintenance Manual

Evac Vacuconvert

(N11822233)

1. General

It is important that this manual is reviewed by all relevant personnel and all procedures are fully understood before the installation, operation, and maintenance of the Evac Vacuconvert 10 Sep 2025 . All activities must be completed safely and correctly.

This IOM manual D000074998-1 applies to the product numbers below:

Table 1: Product numbers (PN)

EVAC PN	PRODUCT NAME/PRODUCT MODEL
N11822233	Evac Vacuconvert

1.1 Scope

This manual provides instructions and notices for the installation, operation, and maintenance of the Evac Vacuconvert as supplied by Evac. This manual also includes important safety instructions.

1.2 Abbreviations

Add and update Abbreviations for the specific product range.
The abbreviations used in this document are listed in Table 2 below.

ABBREVIATION	TERM	DESCRIPTION
IOM	Installation, Operation, and Maintenance	It is a manual that contains instructions on the proper installation, operation and maintenance of a system or equipment.
PID	Piping and Instrumentation Diagram	A piping and instrumentation diagram is a detailed diagram of the process which shows the piping and process equipment together with the instrumentation and control devices.
PN	Product Number	Evac Product Number

Table 2 Abbreviations and definitions

1.3 Virtual patent marking notice by Evac

The following products may be protected by patents in the U.S. and elsewhere for Evac Oy. A website is provided to satisfy the virtual patent marking provisions of various jurisdictions including the virtual patent marking provisions of the America Invents Act and provide notice under 35 U.S.C. §287(a) for products that are protected by patents. The list of products and patents on the website may not be all inclusive. For example, some products listed may be covered by patents in the United States and elsewhere that are not listed, and other products not listed here may be protected by one or more patents in the United States and elsewhere.
For more info visit: https://evac.com/patent-notice/

1.4 References

Use this table template to refer to all documents of a product mentioned in this document such as Technical Specification, Bill of Materials, GA drawing, PID with component list, etc.

Table 3 Reference documents

DOCUMENT NAME	DOCUMENT TYPE	DOCUMENT NUMBER
VacuConvert	GA drawing	N11838023
VacuConvert (N11822233) Technical Data Sheet	Technical data sheet	D000074401

Each toilet has its own GA drawing, Spare Parts List, Illustrated Parts List and Technical specification, which can be provided on request.

1.5 Product description

Figure 1: N11822233 – Evac Vacuconvert

The Vacuconvert is a system that couples with a conventional gravity toilet bowl, but now the waste in the toilet bowl is removed with the aid of vacuum pressure. Because of the vacuum-assisted removal of waste, the Vacuconvert achieves a non-standard flush. The water being fed to the bowl is gravity-fed which comes from the cistern. The flush volume ranges approximately from 2.1 to 2.3 L. The Vacuconvert is to be connected to a piping network which is under vacuum pressure. Other piping and the Discharge Valve is to be connected to a system under vacuum pressure, most likely a Vacuum Collection Station. The cistern has an integrated air gap to prevent any possible waste to enter the water supply.

2. Safety procedure

2.1 General

Are pointed out in this manual as follows:

DANGER!
Denotes an imminent danger. If not prevented, death or most severe injuries will be the consequence. The notes indicated by this symbol are given to prevent personal injury. Disregarding these notes may result in serious injury or death.

CAUTION!
Denotes a possibly dangerous situation. If not prevented, slight or minor injuries may be the consequence.

NOTE!
Denotes useful advice and other important information. The notes indicated by this symbol must be treated as general operating information. Disregarding these notes may result in undesirable results or conditions.

These operating instructions contain the procedures to be followed during installation, operation, and maintenance of the equipment. Please keep the manual in a safe and accessible location near the unit. Carefully read these instructions before operating the system. Always comply with the safety instructions listed in this document, the existing shipboard accident prevention regulations and any internal Work Health and Safety rules.
Persons could be endangered and damage to equipment may result if the machinery is not used for the intended purpose. An inadequately trained person and incorrectly performed work may also cause harm.

NOTE!
A first aid kit must always be available.

2.2 Personnel qualification and training

Ensure that all personnel involved in the installation, commissioning, operation, and maintenance of the Evac units are properly qualified and trained to carry out these tasks. Work on the electrical system and electric parts of the Evac supplied equipment must only be carried out by a properly qualified electrician. Lack of personnel's skills and knowledge of the operation instructions can cause risk to life and damage to the equipment. Evac systems must be used according to the following instructions, and only by authorized personnel who are fully aware of the risks involved in the operation of the unit.
Moreover, the operating company has the responsibility to ensure that personnel fully comprehend the contents of the operating instructions.
The Evac unit receives, macerates and discharges sewage waste. Personnel must, always, observe safety regulations while performing maintenance or repairs which carries certain hazards. Every practical safety feature has been incorporated into the design and manufacture of this equipment; however, personnel must be aware of the potential hazards.

2.3 Disease hazard

Sewage is a common mode of transmission for parasitic organisms such as bacteria, fungi, protozoa, viruses, and worms. Some of these may be pathogenic; they can cause serious communicable diseases. Most diseases associated with sewage result from hand-to-mouth transfer of the pathogenic organisms. After coming into contact with sewage or any contaminated equipment items, personnel must thoroughly wash infected areas of themselves with a disinfectant soap solution. This precaution is an absolute requirement before eating, drinking, or performing hand-to-mouth functions. Skin abrasions, punctures or any other wounds require immediate and proper medical attention. Additionally, it must be avoided to perform maintenance work on the Evac units if there are any kinds of wounds on the skin in areas that can get into contact with the wastewater or sludge.

2.4 Chemical hazard

When using chemicals which are hazardous and/or dangerous for ground water or marine biology, it is essential to follow the corresponding regulations and laws regarding hazardous substances and water balance. Such dangerous chemicals are, for example, solvents, cleaning agents, care agents etc.

CAUTION!
ALWAYS refer to official Safety Data Sheets (SDS) provided for hazardous materials when handling chemicals. These must always be provided by the chemical supplier.

2.5 Electrical hazards

Before maintenance is performed on any electrical equipment, disconnect the power supply, and perform electrical lock-out/tag-out (LO/TO) as per local regulations. Prevent the equipment from switching on unexpectedly. Motors must also be labelled “OUT OF SERVICE”. Only authorized maintenance personnel must make repairs to this equipment.

CAUTION!
Safety devices may only be opened, dismantled, or removed by authorized personnel and when the machine is standstill, safety secured and isolated.

Evac equipment is supplied with high voltages. The high voltages of the electricity and the available electrical current are dangerous and potentially fatal. To avoid electrical shock, cut the electrical current by placing the main circuit breaker in OFF position. Do this before performing any maintenance work on electrical equipment or motors. Personnel must exercise extreme caution when opening the electrical cabinet door although the main circuit breaker is in OFF position; the terminals of incoming electrical current are still live.

2.6 Hazard during installation

Proper placement can extend equipment lifetime. The equipment are to be installed on a straight and steady base. The unit is to be levelled horizontally. There must be sufficient space reserved around the unit for operation and maintenance. The machine must be anchored securely to the foundation or supporting structure.
Ensure that in case of a leak any surrounding equipment is not damaged. Before installation, operators must be aware of the contents of this manual. Mechanical installation must be completed before any electrical work commences.
Switching the machine on for operational check, trial run, wet testing, etc. may only be performed by skilled electricians performing the electrical connection work.

DANGER!
The combination of water and electricity can be fatal.

2.7 Operation and maintenance hazards

Evac equipment must be operated and maintained by authorized and trained personnel only. All work and modifications to the system must be approved by the manufacturer. Under no circumstances, the equipment power is switched on, or the equipment is pressurized when work is performed. Be aware of the rotating parts of pumps.
Before the start-up of the Evac unit, ensure that no one is in danger. Take all necessary measures to ensure that the Evac unit is used only in a safe and reliable state.
Once per day check the Evac unit for visual and auditory signs of damage and/or defects. In case of abnormalities, damage, or a change in the normal operation of the unit, stop the unit immediately and refer to the troubleshooting section. In case the ship's crew is unable to bring the system to its normal operation, please contact Evac service representative.
The electrical parts of the unit must be inspected at regular intervals. Defects such as loose connections or scorched cables must be repaired without delay. Inspection, servicing, and maintenance work is only allowed to be carried out when the machine is at standstill and safety secured. Ensure that the unit is completely switched off before any maintenance and repair work is undertaken.
Restart is only permitted after malfunctions, faults and/or damages have been completely rectified. Never use the Emergency-Stop push button for normal stopping of the machine, malfunctions/damages may be the result.

CAUTION!
Before starting up, ensure that no unauthorized persons are close to the machine, either working on it or at risk from its start-up.

2.8 Disposal and environmental protection

The operator is responsible for disposing of materials which result from maintenance. This may involve wastewater and solid residue, cleaning and care agents, auxiliary material, lubricants, and other waste materials of all sorts, including worn machine components.
Disposal must be performed according to local legislation for protection of emissions, waste disposal, protection of water resources, etc.

2.9 Evac component nameplates and tag numbering

All Evac units and components are identified and marked according to the SFI Group numbering system. Marking equipment and pipes is of the utmost importance to safety at all times. Accidents, injuries and damage to machines and equipment can be caused by ignorance of substances that flow through pipes. Do not remove component tag plates during maintenance and if removed they must be attached back to the correct place after maintenance work. The nameplates with equipment tag number, label plates, caution plates, marking notice boards, instruction plates, safety markings etc. are supplied by Evac and engraved with letters in the English language.

3. Installation

This chapter provides an understanding of the product installation. Safe installation practices must be followed

3.1 Step 1

Before to start the installation, check that all the components are available and in a good shape.
Check the **engineering drawing N11822233** and see that all components that are in the Bill of Materials are in the delivered box.

In addition to the components received in the package where Vacuconvert is, the installer must also have:

- **Non-return valve** (Evac PN: 6540549)
- Vacuum-rated piping and appropriate fittings/connectors

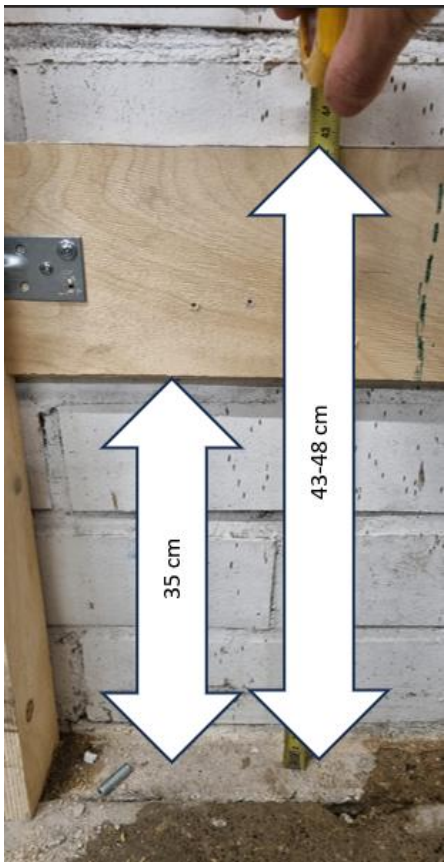
3.2 Step 2

There are two options for mounting the VT controller:

1) Mount directly on wall (concrete wall, brick wall, etc).
2) Build a horizontal wooden board connected between two wooden framing posts or framing studs. The VT controller holder will be attached to this horizontal wooden board.

3.2.1 Step 2.1

If the wooden board is built, it can be attached to the framing posts or framing studs with an L bracket, for example.
The board thickness should be less than 1.5 cm.
The bottom edge of the board should be around 30-35 cm from the floor, and the top edge can be around 43-48 cm from the floor.
If the VT controller is to be connected to the wall directly, skip this step.



3.2.2 Step 2.2

Position the frame in the appropriate area.

3.2.3 Step 2.3

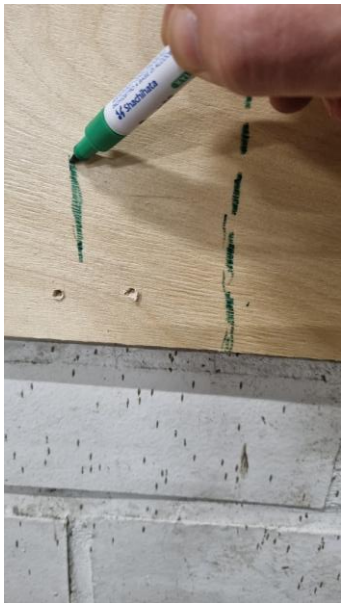
Get near the floor to see this view.

3.2.4 Step 2.4

Mark a vertical centerline that is near the center of the frame. Mark it directly on the wall, OR on the wooden.

3.2.5 Step 2.5

1) **IF** discharge pipe will be on the **right side** of the frame, the discharge valve will also be on the **right side** of the frame. Therefore the VT controller will be **left** of the centreline. In this case, draw a vertical line to the **LEFT of the centreline**, as shown. **Draw this line 6 cm from the vertical centreline**. This line will indicate where to install the VT controller holder.
2) IF discharge pipe will be on the left side of the frame, draw a vertical line.



3.2.6 Step 2.6

Draw a horizontal line 5 cm from the bottom of edge of the horizontal board. Or 40 cm from the floor.

3.2.7 Step 2.7

Use these lines to create a corner.
Place the top corner of the VT controller holder in the corner that was drawn.
Attach the VT controller to the wooden board or wall will screws. If the holder is attached to the wall, drill holes in the wall to place a wall anchor for a screw.
It is sufficient if two screws are used. But if attaching to the wall or if the space allows it, attach the VT controller holder with screws.

3.2.8 Step 2.8

Then, attach the VT controller to the holder.

3.3 Step 3. Preparing the frame installation

3.3.1 Step 3.1

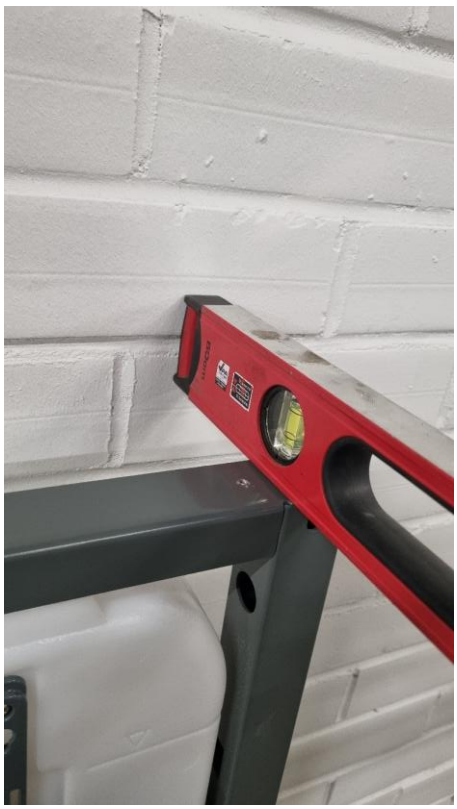
Place the frame at some distance from the wall. Measure the distance from the front of the frame to the wall. **This distance should be minimum 17.5 cm**. Less than that and the discharge valve may not fit well in the cavity.

Make sure that the distance is the same at the top right corner, top left corner, bottom right corner, and bottom left corner of the frame.

Use a level to ensure the frame is plumb and level.

Adjust height of frame. There should be around **42 cm from the top surface of the finished bathroom floor to the top surface of the toilet bowl** (not the top surface of the seat and/or cover of the bowl).

Use a level to ensure the frame is plumb and level again.



3.3.2 Step 3.2

Once the frame is plumb, level and at the correct distances from the previous step, trace the slotted hole onto the floor.

Drill holes in the center of the traced mark.

3.3.3 Step 3.3

Attach frame to the floor with anchor bolts. **DO NOT TIGHTEN** bolts **yet**. This will be done after the frame is attached to the wall.


3.3.4 Step 3.4

Mark a horizontal line on the wall to match the height of the frame.

3.3.5 Step 3.5

Mark a vertical line on the wall to match the width of the frame.

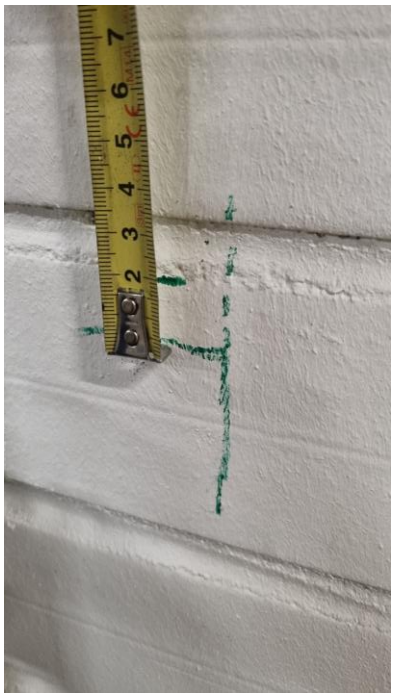
3.3.6 Step 3.6

Draw a corner to match the corner of the frame, and the same height and width of the frame.

Extend the vertical line higher.

3.3.7 Step 3.7

Draw a horizontal line that is 2 cm higher than the first horizontal line.



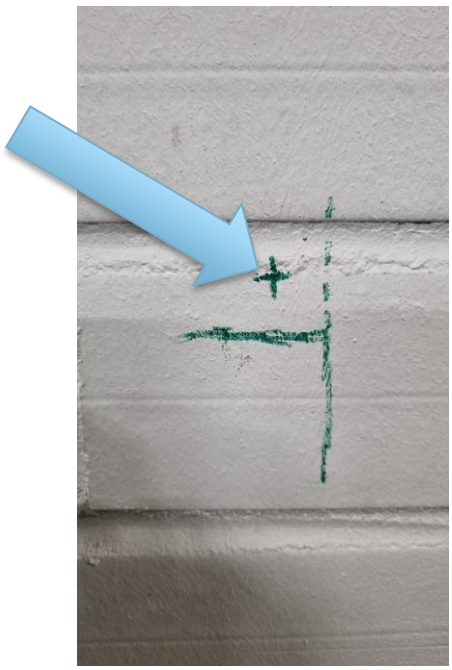
3.3.8 Step 3.8

Draw a vertical line that is 1.5 cm to the left of the first vertical line.

3.3.9 Step 3.9

The lines from the previous step should mark the spot to drill holes for wall anchors to go in.

Drill holes at the mark.

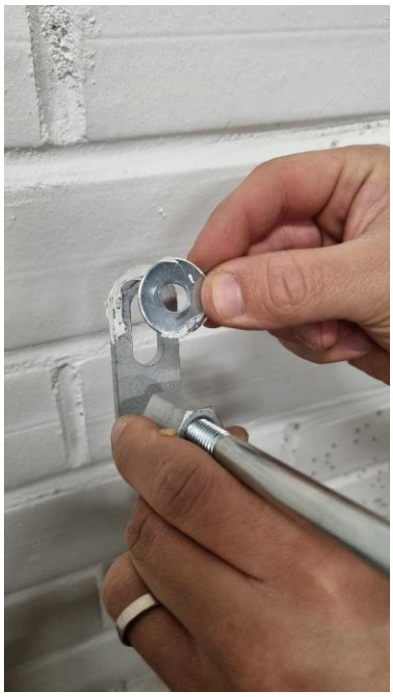
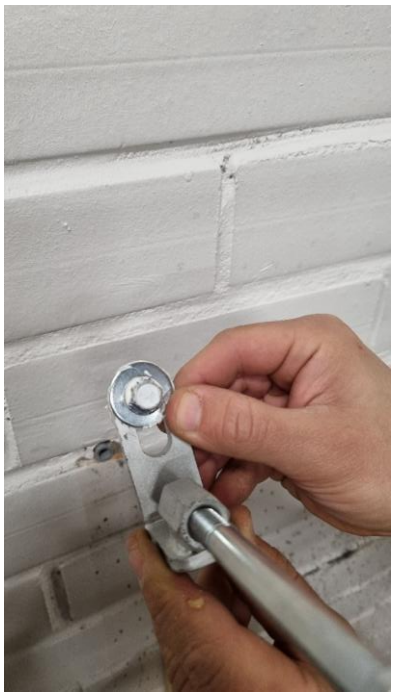


3.3.10 Step 3.10

Place a wall anchor in the hole.

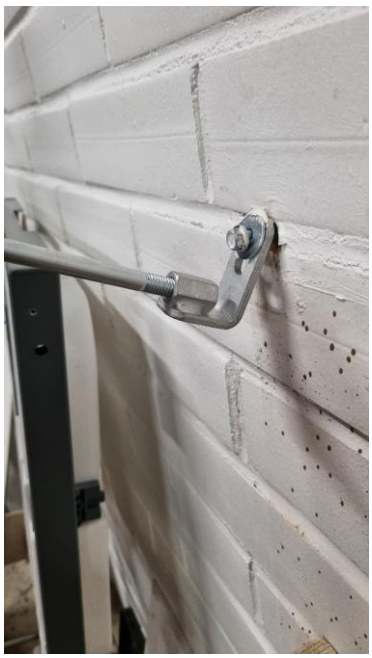
3.3.11 Step 3.11

Place the washer provided on top of the wall bracket.
Place the wall bolt in the hole of the washer.

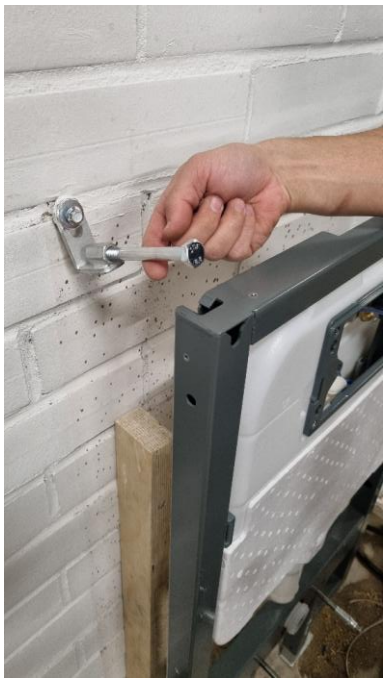
3.3.12 Step 3.12

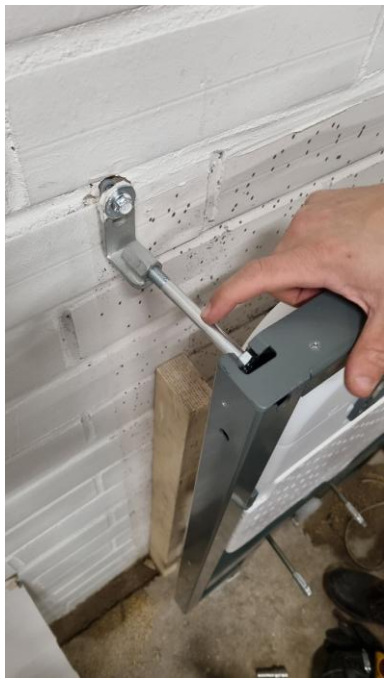
Insert the bolt in the hole, but **DO NOT TIGHTEN** yet. Leave a gap of around 1 cm, so that the long bolt and bracket can be moved up and down.

3.3.13 Step 3.13

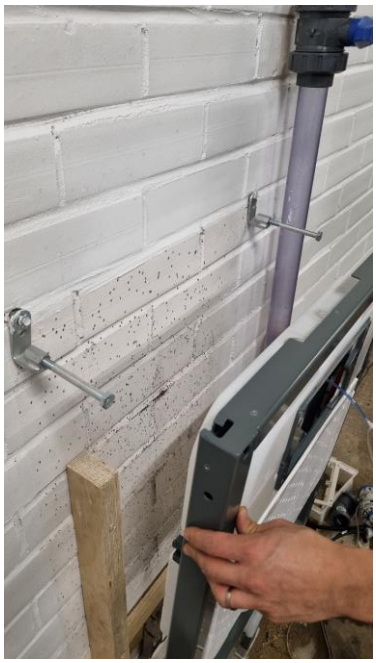
Lift the long bolt and place the frame near the head of the long bolt.
Lower the long bolt so that it is inserted in the groove of the frame, as shown.
Ensure that the bolts are the necessary length. Adjust nuts or bracket, or use longer bolts if necessary.



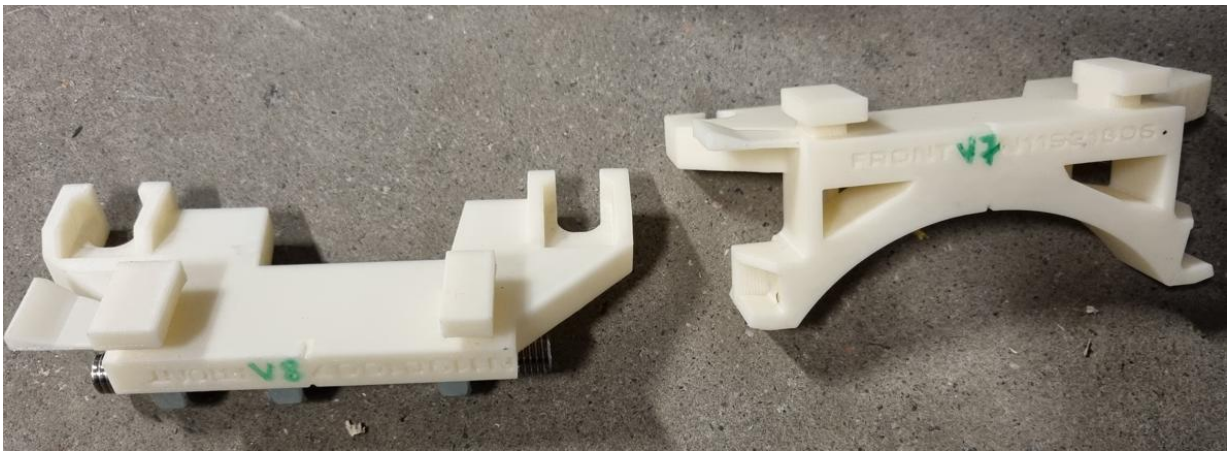


3.3.14 Step 3.14

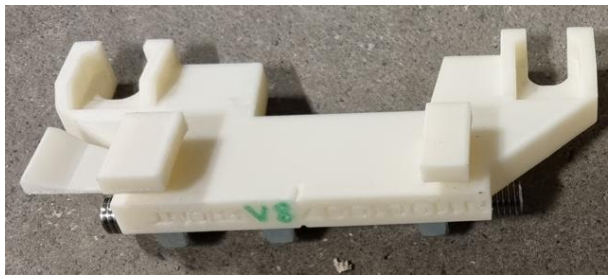
Raise bolts and remove frame from the area.

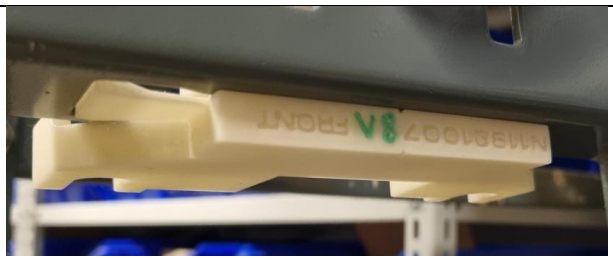


3.4 Step 4. Installing the OUTLET adaptor



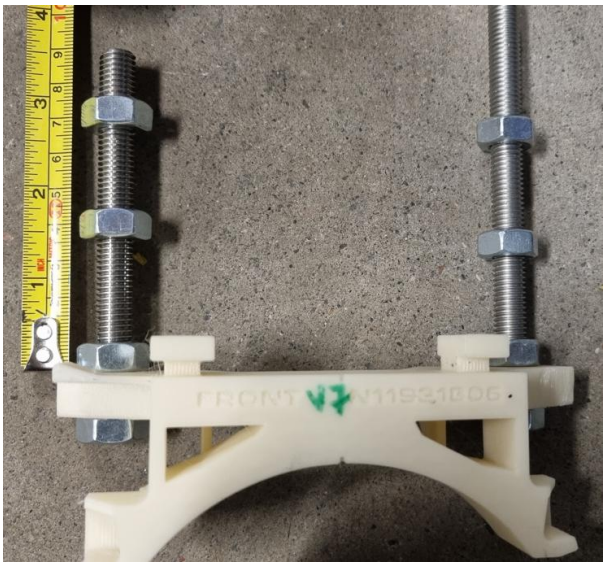
CHECK TOILET BOWL DIMENSIONS:

OPTION 1	**OPTION 2**
If toilet bowl outlet-inlet dimension is **135 mm** then use: 	IF your outlet position needs ADJUSTABILITY, then toilet outlet-inlet dimension are **greater than 135 mm,** therefore use: 
Look at the holes and install this on frame. Make sure there is a click, or tab is inside of hole. IMPORTANT: move adapter side to side, ensuring it doesn't move out of place: 	Look at the holes and install this on frame. Make sure there is a click, or tab is inside of hole. IMPORTANT: move adapter side to side, ensuring it doesn't move out of place: 



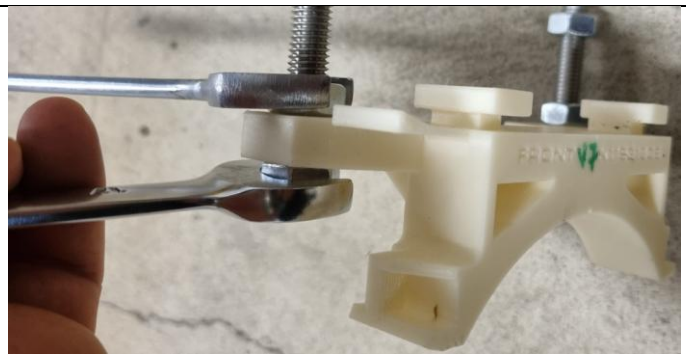
Install rubber connector and ring:

Get the other plastic piece and attach threaded M10 rods and nuts. Leave gaps as shown:



DONE

Tighten bottom 2 x M10 nuts on each side:

	
	Place this adapter close to the top piece and hook it together. 

	The nuts must be seated in the pocket as shown: 
	Tighten the top 2 nuts on each side by tightening nut as shown:

	
	Measure the height to make sure you have correct distance according to toilet bowl drawings. Loosen nuts and adjust height if needed:

	
	DONE

3.4.1 Step 4.1 How to install adapters

Examine these holes. Place adapter near holes.

3.4.2 Step 4.2

Insert the legs of the adapter counterpart here. And slide the counterpart forward and to the right.


3.4.3 Step 4.3

The tab MUST be inside the hole as shown. The bottom face of the tab should be parallel to the bottom horizontal surface of the frame. The tab, once inserted in the hole, may make a CLICK sound, thus indicating of a tight fit.
ENSURE that the adapter counterpart DOES NOT move out of place when trying to move it side to side. This part should be rigidly connected to the frame.


3.5 Step 5. Installing the rubber connector adapter counterpart and rubber connector

Items and tools needed for next step.

Items and tools needed for next step.

3.5.1 Step 5.1

Place pipe claim around rubber connector. Do not fully tighten yet.

3.5.2 Step 5.2

Attach the plastic clamp to the rubber connector. Ensure that the plastic is inside the wide groove of the connector.

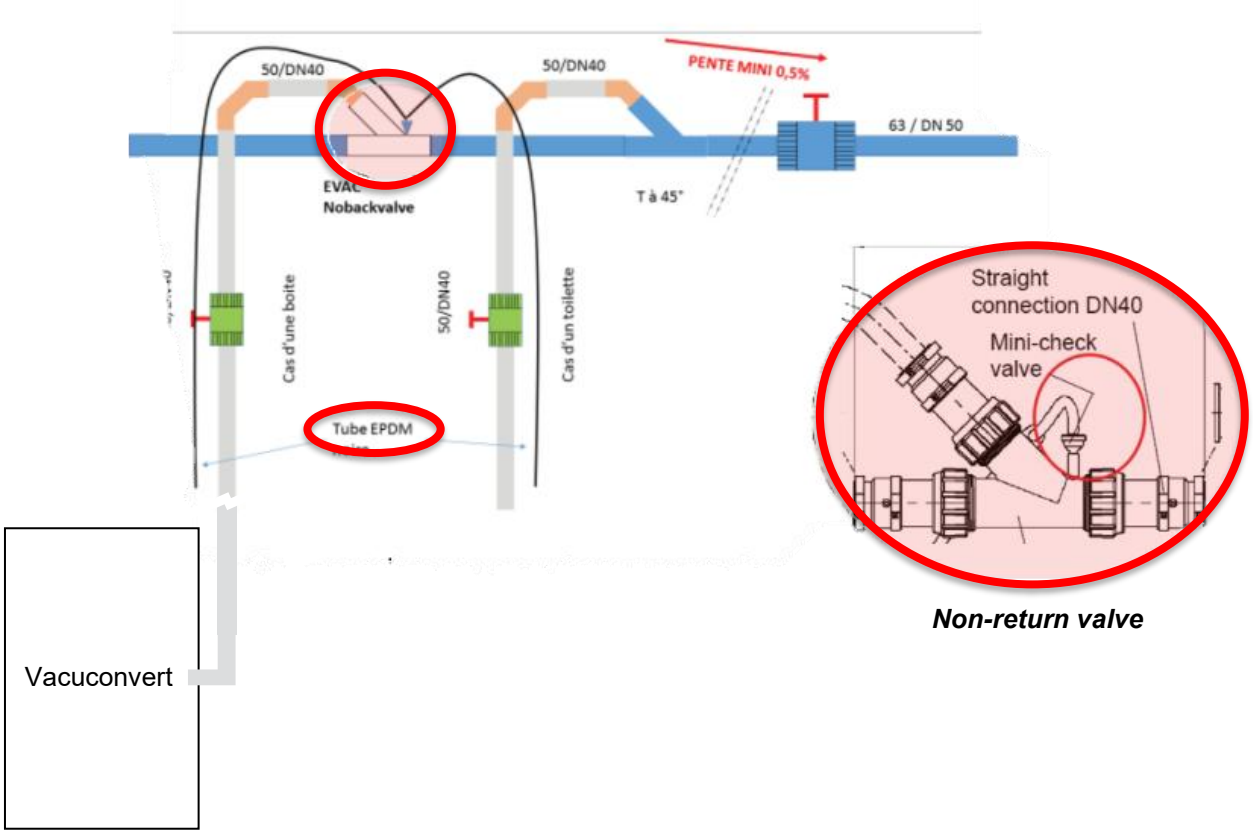
3.5.3 Step 5.3

Attach the large plastic clamp to the small plastic clamp (located on the frame). This will secure the rubber connector to the frame.
Ensure that the pieces are well connected. Sometimes there is a snap noise to ensure that they are connected well.

3.6 Step 6. Non-Return Valve, Discharge valve, VT controller and EPDM black hoses

3.6.1 Step 6.1

Install the **Non-return valve** (Evac PN: 6540549) at the top of the riser pipe as shown here. Also connect long **EPDM hose with mini check valve**:



Non-return valve

3.6.2 Step 6.2

Put a screwdriver or similar object in the hole of Discharge Valve. Make sure that there is an opening and access to the piping.

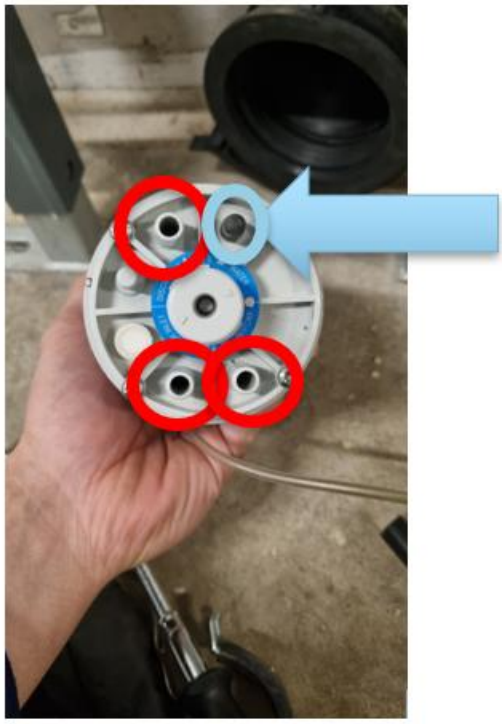
(On the opposite side of the discharge valve, this hole is plugged).

3.6.3 Step 6.3

Place the discharge valve (with the 90 degree connector) near the rubber connector.

3.6.4 Step 6.4

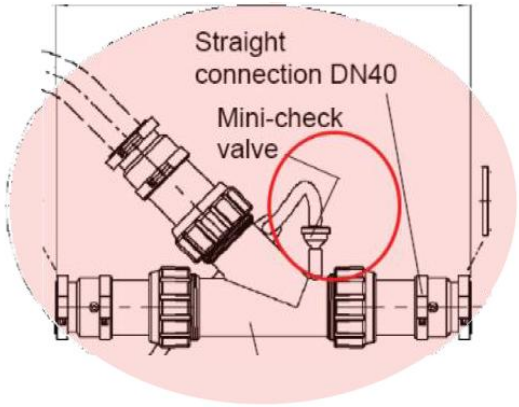
See the connections for the black EPDM hoses. Connect these hoses on the VT controller and the discharge valve.
Also, make sure the **hole is plugged** as seen in the blue arrow.



- The “AIR INLET” connection goes to the blue cap in the **discharge valve**
- The “DISCHARGE” connection goes to the **discharge valve** just below the black rubber
- The “VACUUM” connection is the **long EPDM** hose that connects to the **Non-return valve with a mini check valve**

Discharge valve with “AIR INLET” and “DISCHARGE” EPDM hose connections

Connect the EPDM hose from the “VACUUM” connection on the VT controller to the **NON-RETURN VAVLE** at the top of **the riser pipe as shown below**. Use a mini check valve as shown. DO NOT connect the EPDM hose coming from the “VACUUM” connection on the VT controller to the discharge valve.



Non-Return valve and EPDM connection with mini-check valve

3.6.5 Step 6.5

Attach the **clear push button hose** to the VT controller. Attach the VT controller to the VT controller holder which is on the wall or wooden board.

Use the CORRECT COLOR PLUG in the upper section for the VT controller (see two blue plugs in picture, one in upper section and one in middle section of the VT controller).

The following color of plug can be used in the upper section:
RED, BLUE (0.4 mm hole) OR WHITE.

Consult Evac to see what is the appropriate color plug according to the installation.

3.6.6 Step 6.6

Guide the other end of the push button hose behind the frame and to the top of the tank. Place the push button hose in this hole at the top of the tank.

3.6.7 Step 6.7

Join the discharge valve to the rubber connector and tighten the pipe clamp. Ensure that the discharge valve (in grey) is fully inside the rubber connector as shown above. Ensure the pipe clamp is visible from the front of the frame, this is to ensure proper removal of rubber connector for maintenance.

3.6.8 Step 6.8

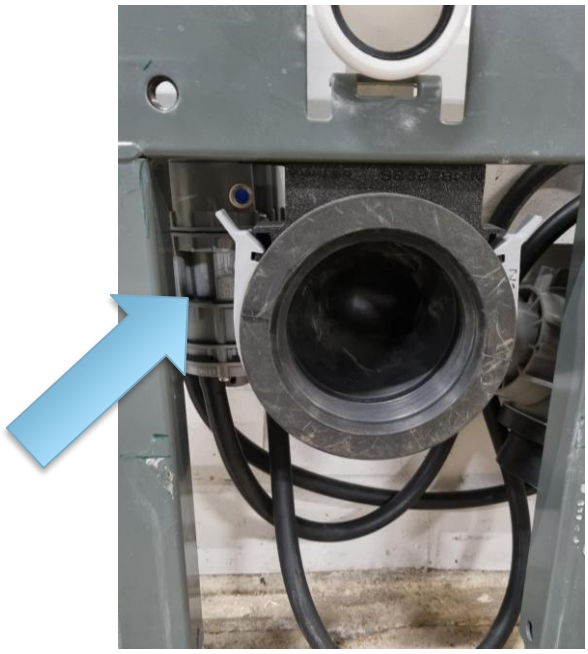
Attach appropriate piping (50 mm OD) to the 90 degree elbow.

3.6.9 Step 6.9

Connect the 90 degree elbow to the wall with a pipe clamp.

3.6.10 Step 6.9

Ensure that the VT controller is visible from the front of the frame as shown above so that the VT controller can be accessed later (by removing the bowl and the rubber connector).



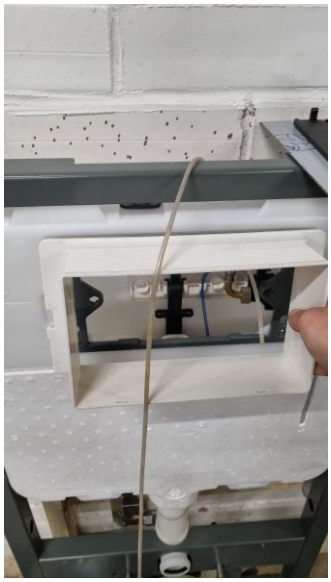
3.6.11 Step 6.10

Also ensure that the VT controller is not touching the rubber connector. Ensure that the VT controller is not in the way of the rubber connector. If so, then reinstall the VT controller holder to the left slightly, until the rubber connector is no longer touching the VT controller.

3.7 Step 7. Assembling the push button assembly box

3.7.1 Step 7.1

Place the white box near the tank opening.



3.7.2 Step 7.2

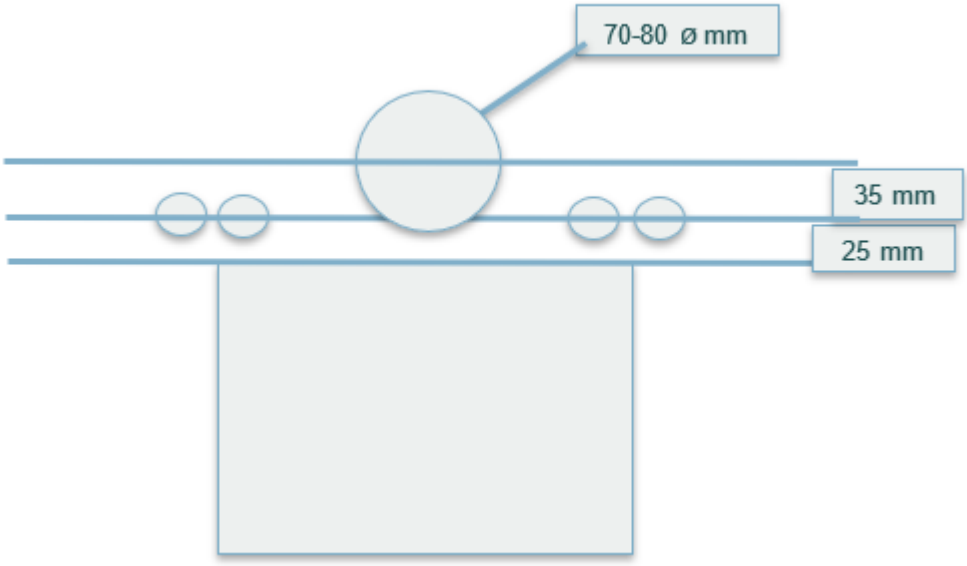
Push the box down so there is a snap fit and a click to ensure good connection.

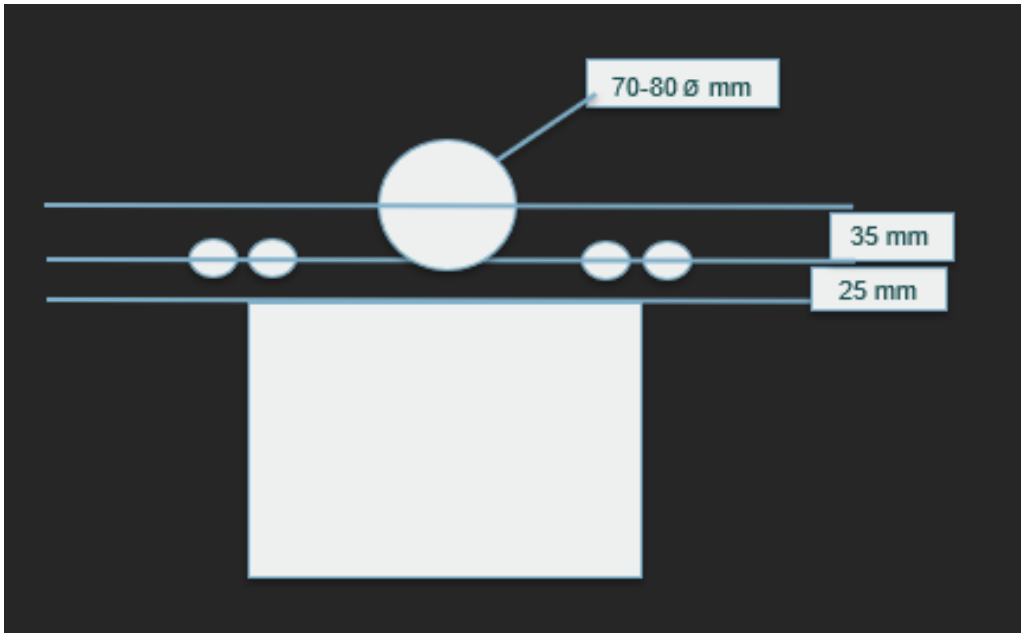
3.8 Step 8. Installing the plaster board and tile

3.8.1 Step 8.1

Make the following markings on the frame.

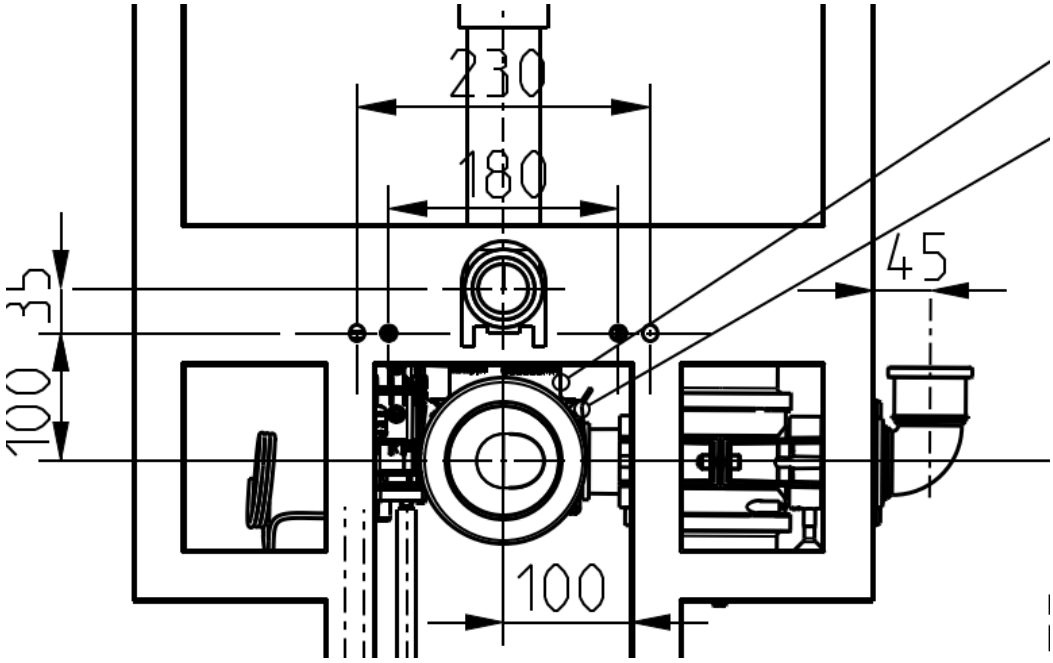
Draw centerlines to mark the holes and lines from the centerline.





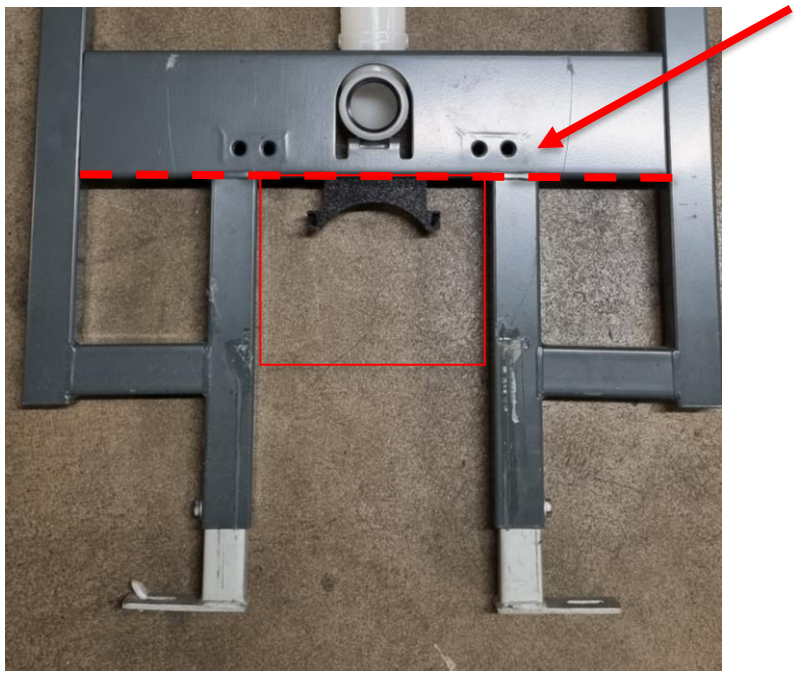
3.8.2 Step 8.2

The rectangular hole is where the discharge valve is taken out of for maintenance.

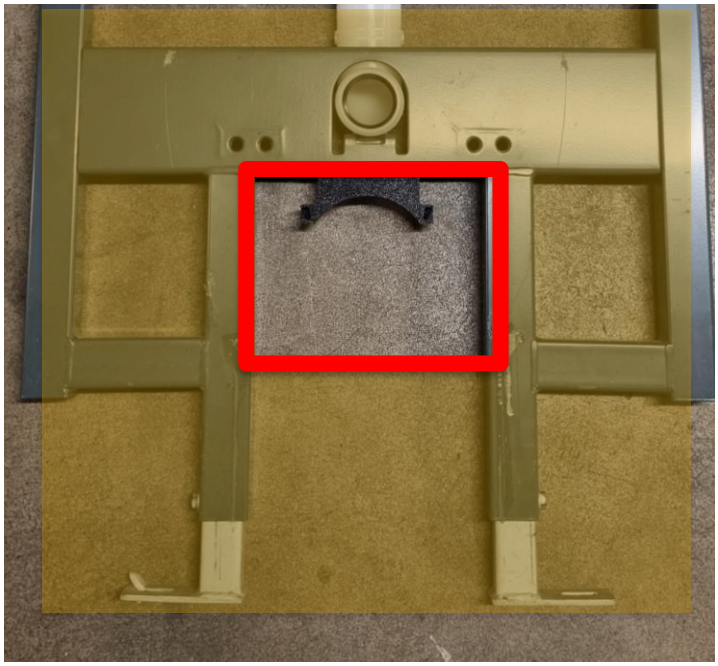


This rectangular hole MUST have the following dimensions:
13.5 cm of height
20 cm wide

The top edge of the rectangular hole must be 0 cm from the bottom edge of the shown edge of this crossbar:

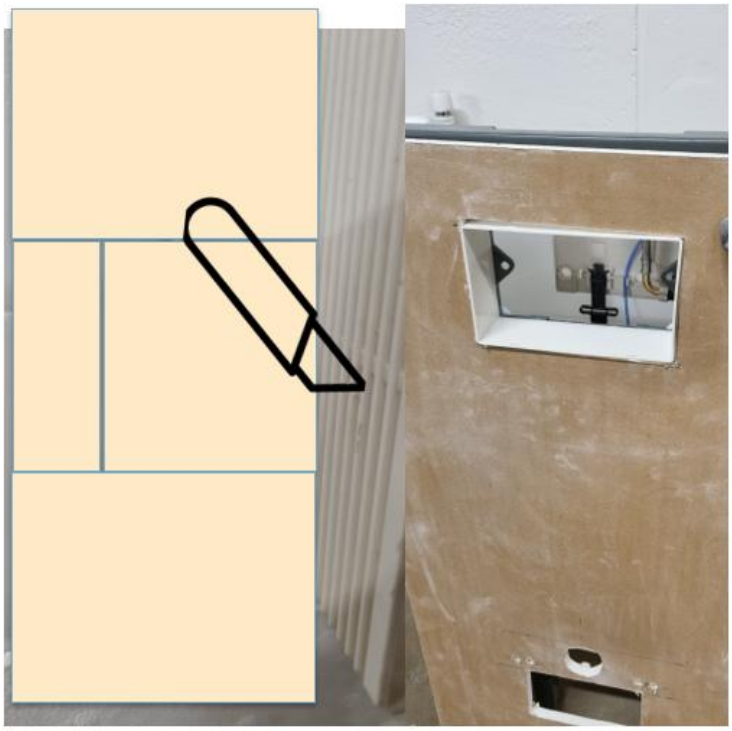


To make it clear there must be a hole as shown here:



3.8.3 Step 8.3

Install the tile on top of the plaster board and frame. Ensure that no tile covers the bottom rectangular hole. This ensures that the VT controller and discharge valve can be removed via this hole for maintenance.

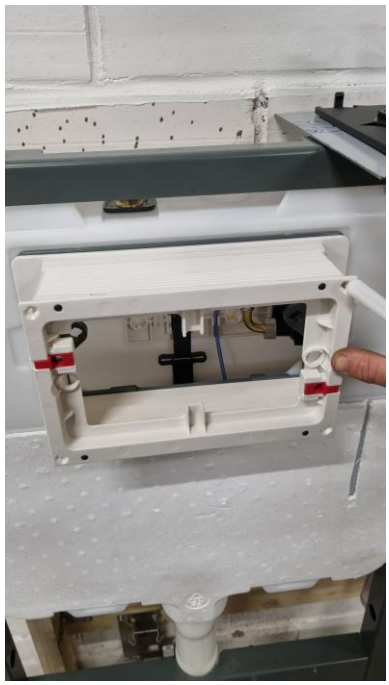


Then cut the box at the ridges so that it is flush with the tile wall.

3.9 Step 9. Installing other push button plate components

3.9.1 Step 9.1

Place this plastic piece near the box as shown.

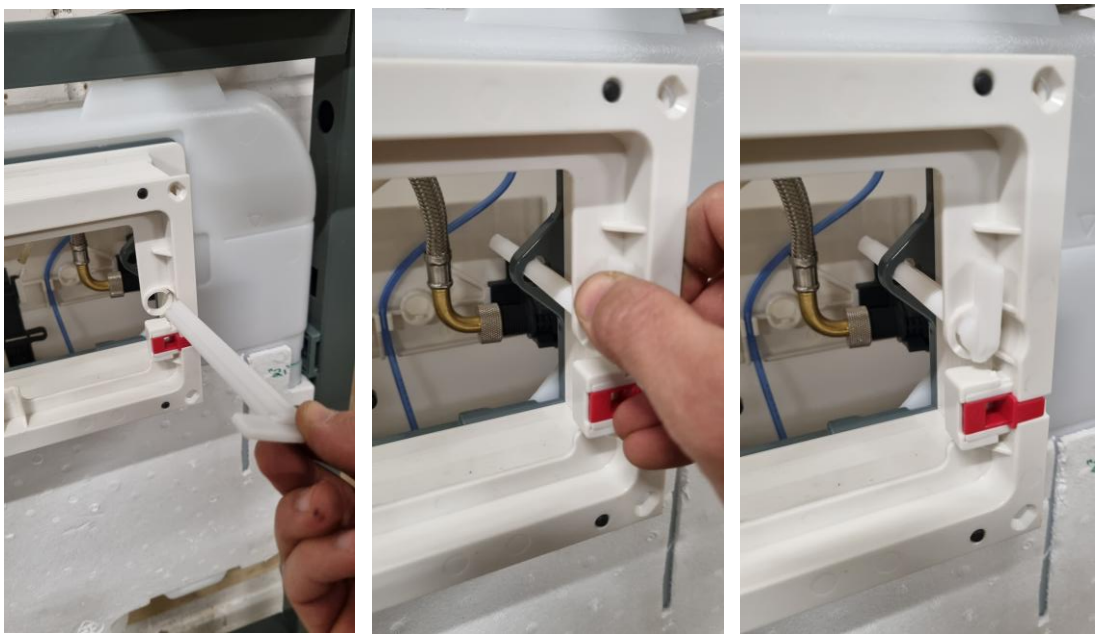



3.9.2 Step 9.2

Place this screws in the holes. Notice the angle of the flap.

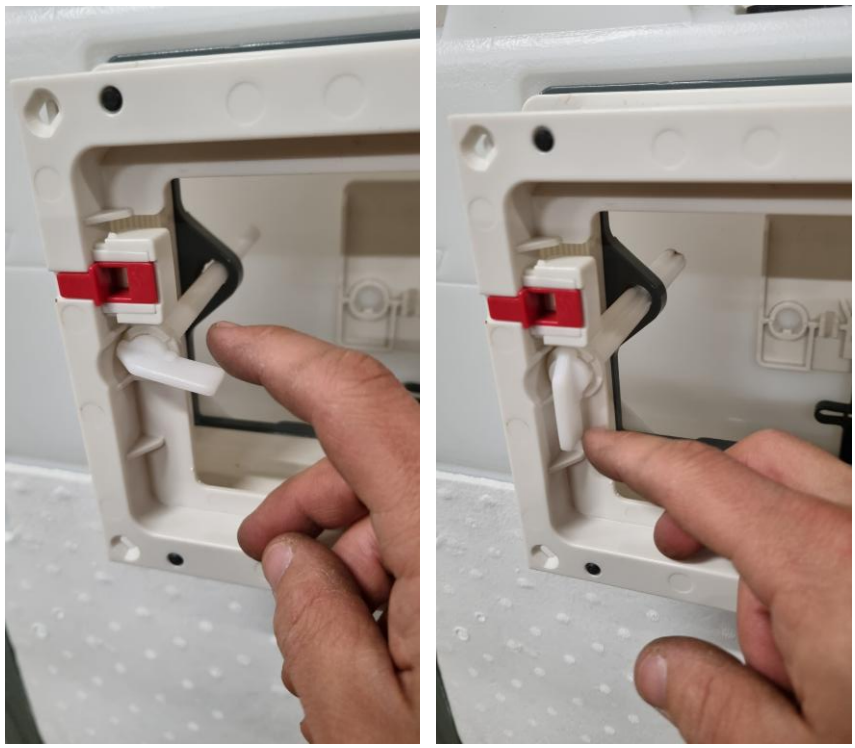
3.9.3 Step 9.3

Rotate the flap to lock the screw to lock it place.



3.9.4 Step 9.4

Do the same for the other side.



3.10 Step 10. Assembling the push button and the push button plate

3.10.1 Step 10.1

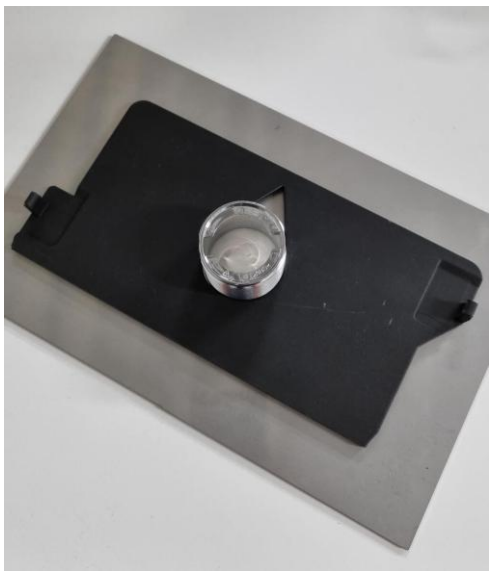
Peel the protective film from the push button plate to reveal the brushed front side.

3.10.2 Step 10.2

Place this part in the hole in the push button plate. This view shows the front side of the plate, which has a brushed surface

3.10.3 Step.10.3

Place the plastic rectangular adapter (the one in image is black) on the back side of the push button plate. Screw in the black plastic nut. Tighten the nut by hand. Ensure that the tiny squares of the plastic adapter are fitted into the notches of the push button plate. Also ensure that the rectangular adapter is unable to rotate relative to the push button plate.



3.10.4 Step 10.4

Install the push button body to the threaded part (image on left). Twist the body until it clicks.
On the front side of the plate, install the cover for the button (image on right)

3.10.5 Sep 10.5

At the T, one hose goes to the flush valve in the tank, and the other hose goes to the VT controller.

Connect the third hose (short hose) to the push button.

3.10.6 Step 10.6

With the push button attached to the hosing, attach the push button plate to the red snap fits. (For later removal of the push button plate, use a flat head screwdriver to push the red tabs and release the snap fits).

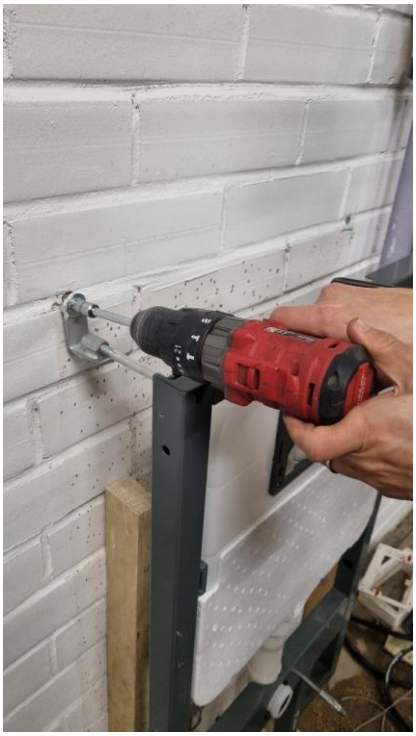
Final look of push button plate:

3.10.7 Step 10.7

Ensure that this red part is exposed and tile does not cover it

3.10.8 Step 10.8

Tighten the wall mounted bolts on the left and right side of the frame, so that the frame is secured to the wall.



3.10.9 Step 10.9

Tighten the floor anchor bolts so that the frame is secured to the floor. The frame and Vacuconvert components are ready.

3.11 Step 11

Install the toilet bowl according to manufacturer's instructions.

3.12 Step 12

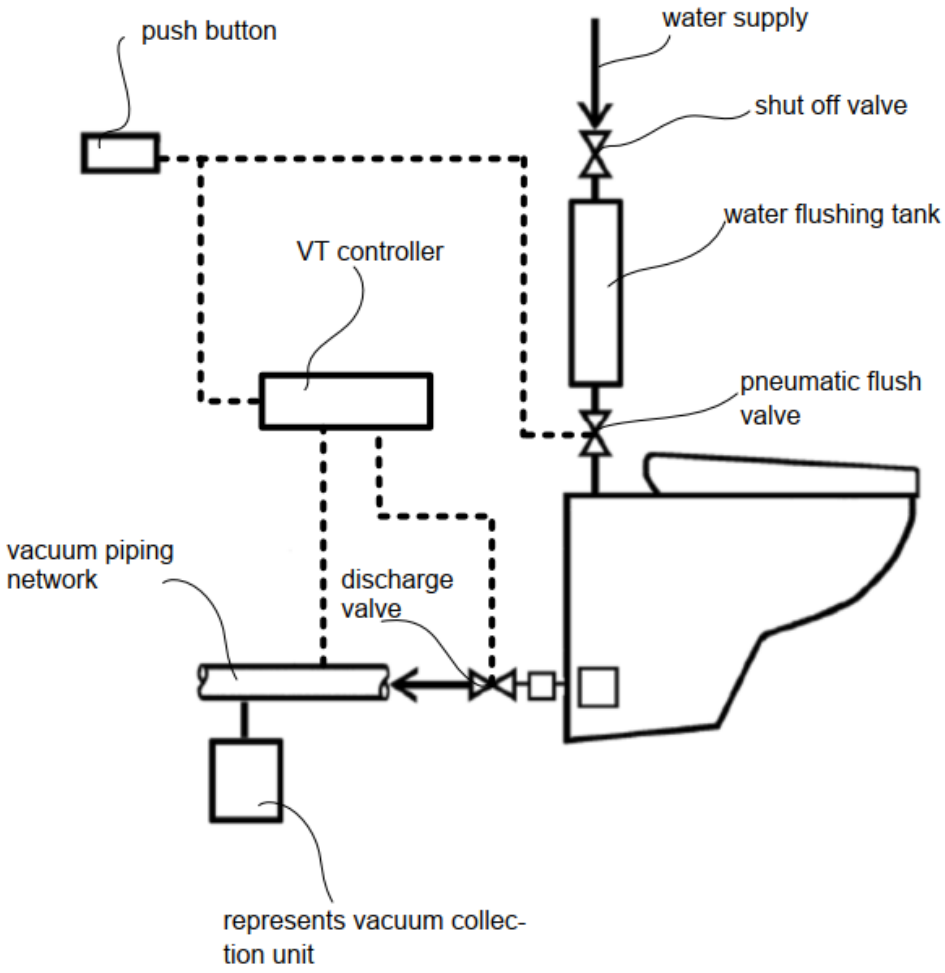
Complete the final installation checklist:

Task	Completed? (Y / N)	Notes
Open ball valves		
Check ball valves open and close appropriately, and that they do not leak.		
IMPORTANT: Check that the float valve does not leak while water level is at upper level		
Check float valve opens when appropriate/when water level in the tank is lowering		
Check float valve closes when float is interacting with rising water level		
Check float valve remains closed as water level remains at upper level		
Check flush valve opens when push button is activated		
Check flush valve does not leak when closed		
Check push button activates both the flush valve and the VT controller (thus opening the discharge valve)		

4. Operation

This chapter describes the operation of the Evac Vacuconvert unit. These instructions are to be thoroughly studied and understood by the operators prior to commencing operation of the unit.

4.1 Operation



The toilet is flushed by pressing the push button. By pressing the push button air is pushed into two components via hoses: the VT controller and the pneumatic flush valve. When air goes into the VT controller, the activates the discharge valve to open. When air goes into the pneumatic flush valve, the pneumatic flush valve is raised thus opening the flushing valve in the water tank. Therefore when the push button is pressed, the valve in the tank opens, thus allowing water flow into the toilet bowl, and simultaneously the discharge valve opens thus allowing waste, water and possibly air to be transported from the toilet bowl to the vacuum piping network. The waste eventually goes to the vacuum collection unit.

4.2 Operation for VT controller and Jet selection

The functioning of the discharge valve is entirely controlled by the control mechanism, also known as the VT controller.

Air that is pushed into the VT controller “activates” the discharge valve. This means that discharge valve opens when the VT controller is activated. The operation of the VT controller is based on the vacuum levels in the sewage piping system and by the type of Jet. The type of Jet in the upper chamber of the VT controller is differentiated by color. See below for opening times of discharge valve determined by the different color jet:

Jet 1 (located in upper chamber of VT controller, see figure above) (document D003930-3, pos.5) controls the discharge valve opening time:

Jet 1	Short discharge period	Red jet	1.5 sec.
	Normal discharge period	Blue jet	2.0 sec.
	Longer discharge period	White jet	2.5 sec.

Also the correct jet to use may be determined by the type of installation: height of riser, minimum and maximum values of vacuum pressure, capacity of vacuum pumps, etc.
Therefore, it is important to contact EVAC to determine the correct jet to use in the upper chamber of the VT controller.

4.3 Riser height

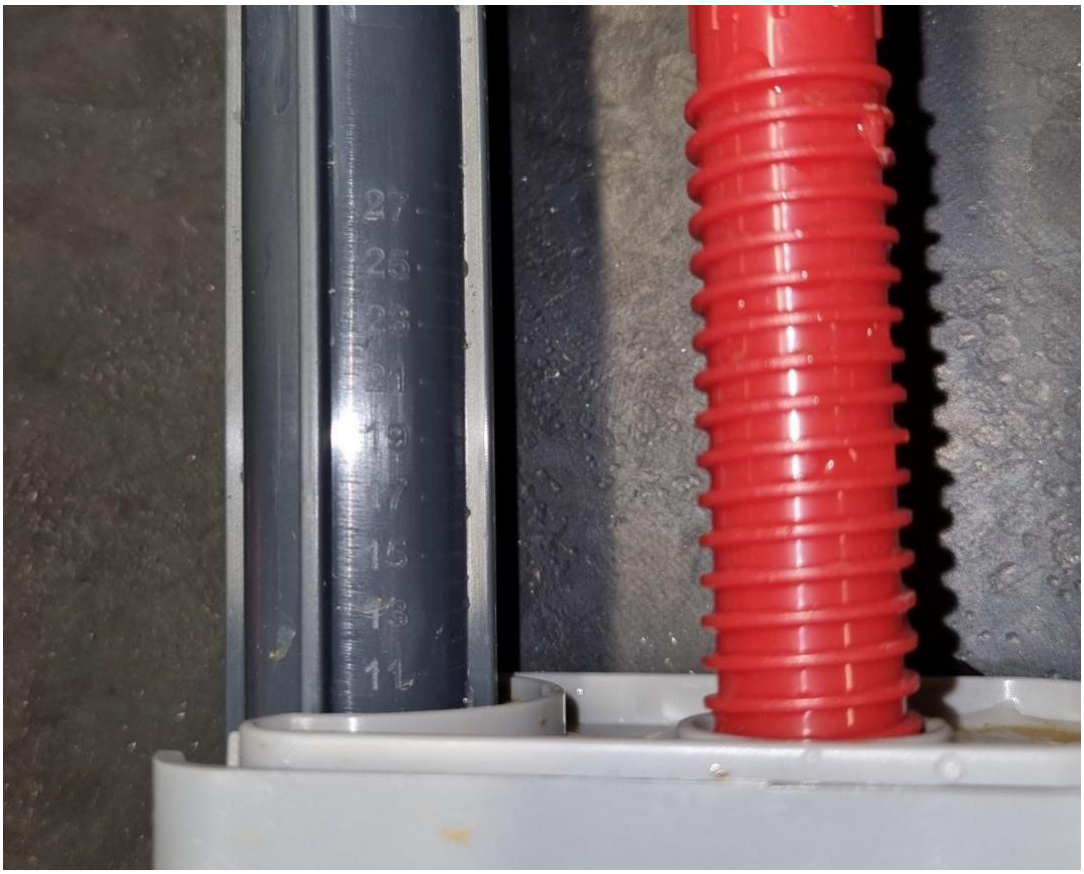
According to the installation, there is a certain height of the riser pipe. This will determine whether a riser kit is needed. The kit mainly includes a long EPDM hose so that the “vacuum” connection on the VT controller is connected on the horizontal pipe near the top of the riser pipe (instead of the discharge valve). If the long EPDM hose is used for extra rise, make sure to plug the hole on the discharge valve where the “vacuum” connection usually goes.

Where extra rise is not needed the “vacuum” hose connection is between the VT controller and the discharge valve.

4.1 Adjusting tank flush volume

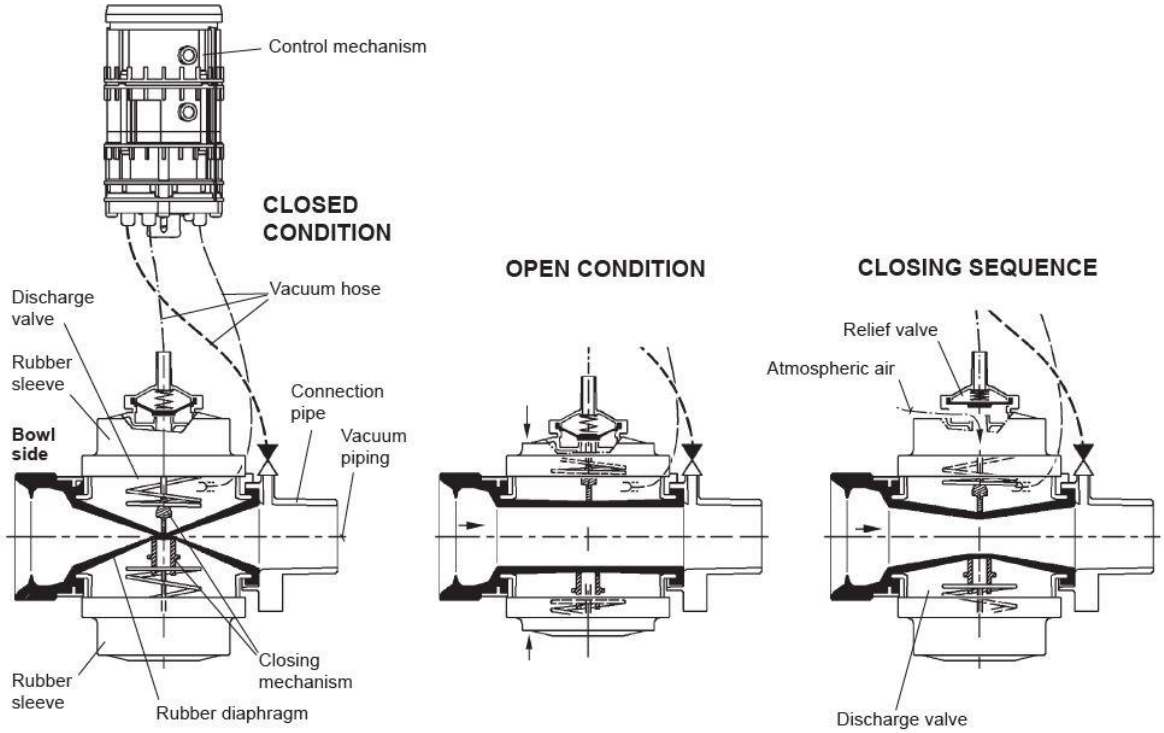
The flush coming from the tank can be adjusted in terms of volume:

- Remove the push button plate,
- Turn of the water supply by turning the red knob
- Access the float/fill valve. Unscrew the connection between the water hose and the float/fill valve
- There are some snap fit connection you may need to remove.
- Remove the float valve
- If more flush volume is desired, set the float valve to a higher number by twisting the red rod. The setting should come already as 6 (while the float part is lowered, see image below).



Float level between 9 and 11. The correct position for reading the level

4.2 Operation for Discharge valve



Closed condition:
The control mechanism shuts off connection between the vacuum piping and the discharge valve housing. As the valve housing is under atmospheric pressure the spring-loaded closing mechanism closes the rubber diaphragm and isolates the bowl from the vacuum piping.

Open condition:
As the control mechanism opens the discharge valve, the housing is subjected to vacuum, thus forcing the closing mechanism to open. This in turn allows the rubber diaphragm to open and connects the bowl to the vacuum pipeline.

Closing sequence:
The vacuum pulse enters to the relief valve. The relief valve opens the port between atmospheric air and the discharge valve. Atmospheric air enters to the discharge valve which closes immediately. After a short delay, the atmospheric air pulse reaches to the water valve and the relief valve.

4.3 Start-up

- Clean the bottom of the toilet bowl.
- Check the mini-check valve and the discharge valve are clean and working correctly.
- Check the water supply hose is not blocked up.
- Check sufficient vacuum (-0.3 bar) is available.
- Open the water supply valve in the water supply piping.
- Press the toilet push button. Pressing the button starts the flushing sequence. The discharge valve opens, and the contents of the bowl are extracted by vacuum. At the same time the bowl is rinsed by water.
- When the discharge valve has been closed water level is restored in the bowl.

4.4 Monitoring

Monitoring the vacuum toilet in the normal operation:

- Check flushing valve provides the rinse water to the bowl at the same time as the discharge valve extracts the bowl contents when the push button is pressed.
- Check the push button returns to its non-activated state.
- Ensure the float valve is at the correct setting (that is reads 11 on the vertical stick on the float).
- Check that there should be a pool of water at the bottom of the bowl. Check that there is a consistent volume of water at the bottom of the bowl after several flushes (before flushing again, wait for the water tank to fill up to the determined volume)
- Check there are no water or air leaks.

NOTE!
Water consumption may be dependent on the type of jet and the vacuum level.

4.5 Preparing a toilet for long-term non-use

In case the toilet won’t be used for a long period, please perform the following steps:

- Close the water supply valve.
- Run a flush cycle by pressing the push button.
- Close the toilet seat cover.

5. Maintenance

The Evac Vacuconvert needs to be serviced at regular intervals according to the operating and maintenance instructions to guarantee reliable functionality over a long period of time. Therefore, these maintenance instructions must always be available and followed by operators and maintenance staff. By doing these preventive actions, trouble free operation is guaranteed.

5.1 Preparation for maintenance

5.1.1 Isolation, draining and vacuum release

Prior to undertaking any maintenance work, the unit must be shut down, isolated from the process as well as the power supply, the vacuum in the system released and the unit drained.

5.2 Access to components for maintenance

5.2.1 Access to discharge valve, VT controller and related components

To access the discharge valve and VT controller, first remove the bowl.

Then remove the rubber connector by removing the two plastic parts holding the rubber connector and by loosening the pipe ring as shown below:

The discharge valve and VT controller can be taken out from this rectangular hole shown below. That is why it's essential to not cover any part of this hole with tile during installation.

5.2.2 Access to fill valve, float valve, tank and other tank components

To access the fill valve, float valve, tank and other tank components, first remove the push button plate. This is done by pressing, with a flat head screwdriver, on the red tabs on the sides and right behind the push button plate (red tab shown below).

Now, the internal parts of the tank can be accessed. If more space is needed, take out the white plastic frame by removing the two white holding screws.

5.3 Maintenance schedule

Maintenance program is based on 20 toilet flushes per day and 20 years operation. Refer to engineering drawing for component identification.

Follow the maintenance actions per given frequency in Table 4 to maintain functioning components. The components subject to wear and tear are:

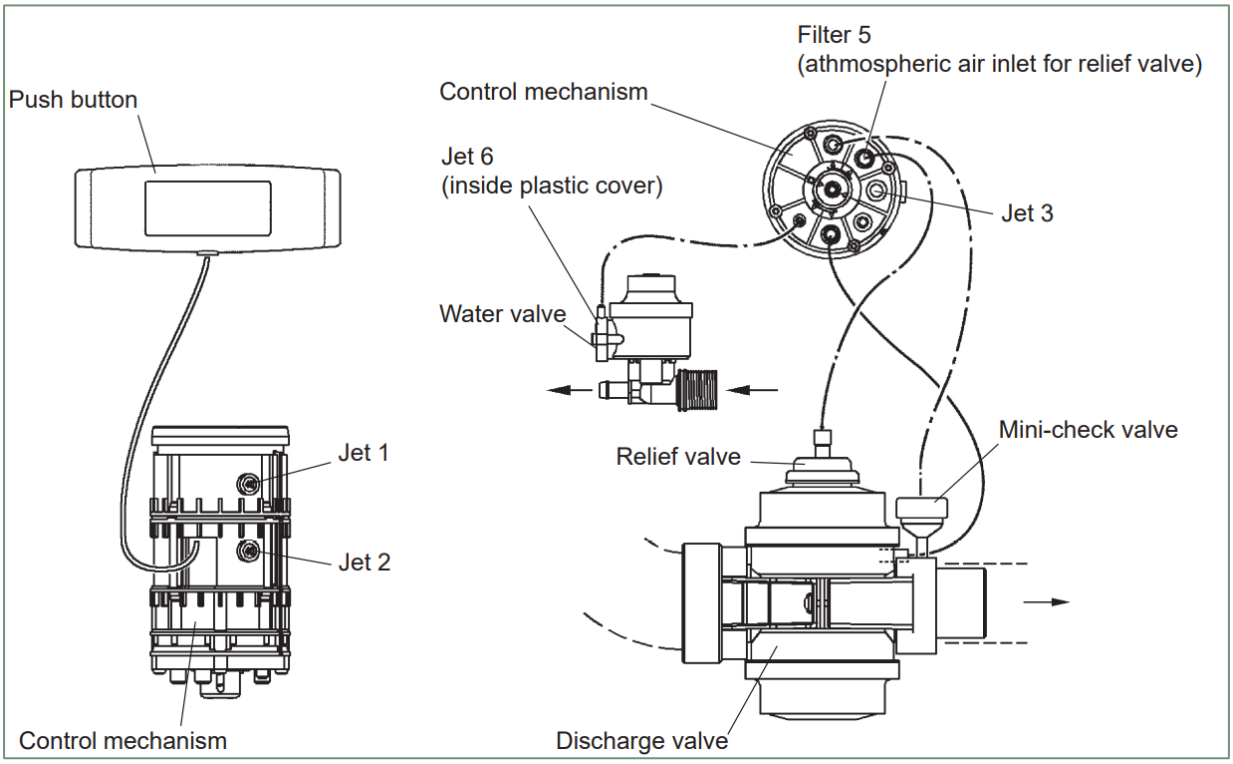
- Push button
- VT controller
- Discharge valve
- Flush valve
- Float valve
- Rubber connector

Table 4. Scheduled maintenance

FREQUENCY	MAINTENANCE ACTION
Every year	Change the mini-check valve in every toilet. Check operation, the push button, the seat and cover, rinse pattern, discharge pattern. Check possible water and vacuum leakage. Check whether there is leakage of any valve, namely: flush valve, float valve, discharge valve, shut-off valves. Fix or replace if leakage occurs. Fix or replace components if there is visible wear and tear in component, especially if wear and tear is visible on valve/gasket/O-ring.
Every 5 years	Check flushing operation. Check the **discharge valve**. Check the rubber sleeve (6562975, 2 pcs) and the rubber diaphragm (6562653) of the discharge valve and the diaphragm (6543134) of the relief valve, change if needed. **Replace** **N11939435 (flush valve)** (supplier ID: B3230-D-1004) (comes in the spare kit) **Replace N11939434 (float valve)** (supplier ID: K4030-Q w 1K1990 base) (comes in the spare kit) Check that the water is filling to the correct level in the water tank.
Every 10 years	Change the rubber sleeve (6562975, 2 pcs) and the rubber diaphragm (6562653) of the discharge valve and the diaphragm (6543134) of the relief valve. Replace EB check valve (N11722013)

NOTE!
Use only genuine Evac spare parts.

5.4 Maintenance for Control mechanism



Check that the air filter (5) is not blocked.
Check hoses and pipe connections for leaks.

Check that the discharge valve opens for the determined amount of time. For example, if a blue jet is used in the upper chamber of the VT controller, the discharge valve should be open for 2 seconds during a flush sequence.

Toilet discharge time

Jet 1	Short discharge period	Red jet	1.5 sec.
	Normal discharge period	Blue jet	2.0 sec.
	Longer discharge period	White jet	2.5 sec.
	Less restriction shortens the time		

5.5 Troubleshooting

Table 5: Troubleshooting table.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Toilet is discharging continuously (discharge valve open).	Foreign object in bowl or in discharge valve. Blocked air relief tubing. Quick relief valve malfunction	Shut off the problematic branch line valve. Remove foreign object. Change discharge valve. Check and if necessary change control mechanism. Check relief valve operation
Bowl does not become empty when flushed.	Discharge valve blocked. Leak in discharge valve housing. Discharge pipe blocked. Rubber sleeves leaking.	Clear stoppage, if any, in discharge valve. Sharp tools may damage rubber. Check that rubber sleeves are undamaged and correctly fitted. Check relief valve operation.
No water or too little rinsing water.	Water shut-off valve closed. Faulty float valve. Discharge valve open for too long	Open valve. Check float valve for proper function Change jet to a different color which opens valve for less time
Toilet is overflowing.	Bowl clogged or discharge valve not operating. Misuse (buckets of water thrown in the bowl). Too low vacuum (less than 30kPa) to flush.	Clean / change discharge valve nozzles, springs, rubbers. Discharge bowl, valve and piping with normally flushing.
Toilet does not flush.	No vacuum or low vacuum (less than 30 kPa). Clogged mini-check valve. No impulse from push button. Jammed control mechanism. Jammed quick relief valve.	Check vacuum level, remove blockage in piping. Clean / change mini-check valve. Check hoses and membrane of push button. Change control mechanism. Check air filter condition. It should be place. Check relief valve operation.

5.6 Storage and preservation

5.6.1 Short term preservation instructions

- All manual valves must be closed, and all open pipe ends etc. must be covered.
- The entire package unit must be covered by a waterproof overlapping material.
- The bottom edges of all waterproof covers must be left open and sufficient ventilation must be provided to prevent condensation under the coverings.

NOTE!
If the package unit is stored inside a covered storehouse, waterproof covers are not required, but the entire plant must be protected against dust with a lightweight covering.

5.6.2 Long term preservation instructions

- Inspect and list any damage to the equipment.
- Check that dust blinds are fitted on nozzles in and out from skids on single items of equipment and on free pipe ends and ducts.
- Check that painted and machined surfaces, which should be coated with a rust preventive wax or oil are maintained.
- Check that the protective covers are maintained.
- Sensitive equipment must be stored indoor in heated and humidity-controlled storage areas.
- All in/outlets from units/skids shall be plugged/blanked. Flanges shall be blanked with oil resistant rubber gaskets and steel or water-resistant plywood plate with 4 off galvanized bolts sufficient to provide mechanical protection and water/dust tight sealing.
- Threaded openings shall have metal plugs of metallurgy equal to the component being capped or plugged. If the IP rating is maintained, plastic plugs are acceptable for non-hydraulic/pneumatic systems.
- Flush through system with preservation medium. Drain out ensuring that no water is trapped in the system.
- All exposed unpainted-machined surfaces shall be coated with rust preventive wax.
- Aluminium sheeted glass fibre cloth shall be used to envelop pressure gauges, panels, junction boxes, instruments, pushbuttons, and connection boxes.
- Apply a thin layer of acid free Vaseline or equivalent to elastomer parts.
- All ball valves shall be locked in the open position.
- All exposed valves' spindles shall be covered with grease tape, PTFE lubricant or vulcanizing tape, or equal.
- General clean up routine and good housekeeping is a prerequisite for successful execution of preservation.
- Desiccative material shall not be in direct contact with metallic surfaces.

5.6.3 Special instructions for instrument equipment

- Instrument equipment containing electronics must be protected with desiccant or a vapor corrosion inhibitor.
- Gaskets / O-rings on instrument equipment must be greased with acid free Vaseline or equivalent.
- All non-terminated cable ends shall be fitted with a shrinking shroud.
- All spare cable entrances in panels and boxes must be plugged.

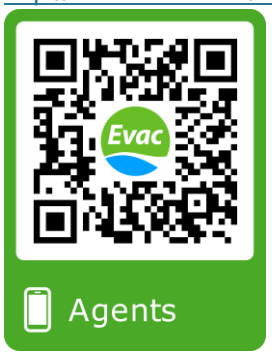
6. Customer support and warranty

6.1 Customer support

6.1.1 Web site access

Evac Service web site:
http://www.evac.com/services

Evac Agents and distributors:
http://www.evac.com/contactsearchtool



6.1.2 E-mail requests

All requests for After-Sales Service intervention must be sent to the following email address:

Technical support:
evac.technicalsupport@evac.com

Specifying:

- Type of unit
- Serial no.
- Defect found
- Evac part number
- Vessel name and /or IMO number.

Replacement parts:
evac.spareparts@evac.com

Specifying:

- Type of unit
- Serial no.
- Evac part number
- Required quantity
- Manner of transport
- Vessel name and /or IMO number.

6.2 Warranty and liability

6.2.1 Warranty

Warranties are defined in the general terms and conditions of sale.
evac.warranty@evac.com

6.2.2 Liability

Evac cannot be held liable for operation faults or generic failures caused by improper use of the unit or operations carried out by persons not authorized by Evac.

Revision history

REV	DESCRIPTION	AUTHOR	APPROVER	DATE
1	First release	Samuel Moy and Andrii Kalyta	Samuel Moy	16 Apr 2025
2	Second release	Samuel Moy	Samuel Moy	10 Sep 2025

Evac is the world's leading provider of integrated water and waste management systems, as well as corrosion-protection systems for the marine, offshore, and building industries. With offices in 13 countries across four continents and representatives in more than 70 countries, we are close to our customers wherever they are. We contribute to a better environment and cleaner seas by helping our customers eliminate waste, conserve water, and mitigate emissions. Our ambitious target is to enable a future with no waste.

Read more about our solutions
evac.com

evac
nothing to waste

Innovative water and waste technologies on land and sea driving a future with no waste.