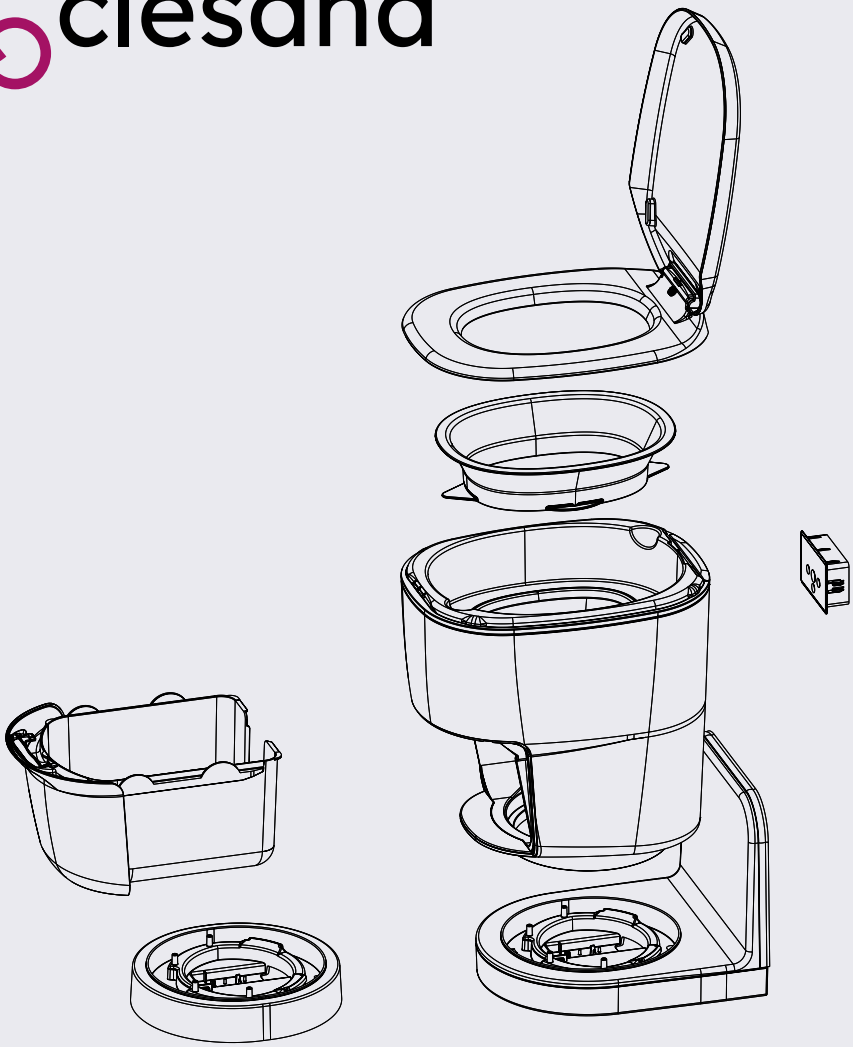
clesana™



All documents and information on proper installation of the Clesana C1 are available in Clesana manufacturer/dealer area at clesana.com/retailersection.

Installation instructions

Clesana C1

Version 2
22.08.22

Clesana AG
Werdenstrasse 72
CH-9472 Grabs
Email: info@clesana.com

Contents

1. Introduction

1.1. About this manual

These installation instructions are intended for qualified persons authorised for the installation of the Clesana C1.

- ▶ Read the documents carefully before the installation and start-up.
- ▶ Observe all safety and warning instructions.

This manual is continuously improved, but it may happen that document enclosed with Clesana C1 does not correspond to the current version. We recommend that you check on our website https://clesana.com/retailersection whether a newer version of this manual is available.

1.2. Symbols

Symbol	Meaning
	Important information, e.g. for better comprehension or for facilitating work processes
▶	Action steps that you must perform
1., 2.	Several action steps that you must perform in the order specified
	Result indication of an action step or several action steps
	Important details in graphics
	Motion sequences in graphics

2. Safety

This chapter contains important information on safety of the device. Read the safety instructions thoroughly before installation and start-up.

2.1. Proper use

The waterless toilet Clesana C1 is used for sanitary bagging of excrements and personal hygiene articles. The Clesana C1 is exclusively intended for use in mobile recreational vehicles in non-public areas. A different use is not allowed.

2.2. Qualification

Unqualified personnel cannot recognise the risks and can put themselves and others in danger. The Clesana C1 must be installed and put into operation exclusively by qualified persons trained and authorised for this purpose.
The fitter is responsible to ensure that the Clesana C1 is installed according to the specifications of the manufacturer and the applicable regulations.

- ▶ Comply with locally applicable regulations for safe and risk-aware working.
- ▶ Works on electrical systems must be carried out exclusively by an electrician.
- ▶ Contact the dealer in case of ambiguities.

2.3. Technical condition, modifications and spare parts

Installation of defective or faulty parts impairs the safety and function of the toilet.

- ▶ Ensure the perfect condition of the individual parts before installation.
- ▶ Do not install any additional components.
- ▶ Do not modify the toilet and its parts.
- ▶ Use only original parts and materials approved by Clesana.

2.4. Residual risks

2.4.1 Electric shock

Work on live parts of the toilet or vehicle can result in death by electrocution. As long as the base body is open, live components may be exposed.

- ▶ Before work on the electrical system perform the following measures according to the electrical engineering rules:
  - – Disconnect power supply.
  - – Check for no voltage.
  - – Earth and short-circuit.
- ▶ Repair defective insulations on the electrical wiring immediately.

2.4.2 Fire hazard

Cables with a too small cross-section and loose or defective clamping and screw connections can lead to cable fire. Reverse-poled and incorrectly laid cable can cause fires. This can result in property damage and personal injury.

- ▶ Choose the cable cross-section according to the cable length.
  - – up to 8 m: 10 mm²
  - – from 8 m: 16 mm²
- ▶ Check the clamping and screw connections for correct installation before switching on the power supply.
- ▶ Do not clamp or excessively bend the cables.

2.4.3 Component damage due to short circuit

Reversing the polarity of the power cable can damage the electrical components. A short circuit can result in fire.

- ▶ Ensure the correct polarity of the power cable before switching on the power supply.

2.4.4 Moving parts

The Clesana C1 has a rotating mechanism for optimal positioning. If the area around the toilet is obstructed by objects, the rotating of the toilet may result in crushing of fingers.

- ▶ Keep the surroundings of the toilet free of objects.

2.4.5 Water damages

The water line must be shut-down professionally if a toilet with water flushing is to be dismantled. Faulty sealing of the water line can result in water damages in the vehicle. Incorrect installation of the L-Adapter can result in water damages in the vehicle.

- ▶ Make the system pressureless before working on the water lines.
- ▶ Check the shut-down water lines for leaks.
- ▶ Ensure correct sealing of the L-Adapter.

2.4.6 Health hazards from contaminated water

Stagnant water promotes the formation of bacteria, which can penetrate into the water circulation of the vehicle and contaminate it.

- ▶ Shut-down the water line as close as possible, ideally directly at the pipe connection e.g. on a manifold or a T-piece.
- ▶ Ensure that the shut-down water line does not allow any standing water in the line.

3. Delivery scope

No.	Part
1	Base body Clesana C1
1	L-Adapter or round base
1	Control panel with cable
2	Crimp contact, Anderson SB50 50 Amp Contact 5952
1	Connector housing 2-pin, Anderson SB50 connector housing 992G1
1	Clesana C1 Operating Instructions
1	Label with operating instructions
1	Clesana C1 Installation Instructions

Barrier foil liner not included in the scope of delivery.

- ▶ Foil liner is required for functional check after installation.

4. Tools and installation material

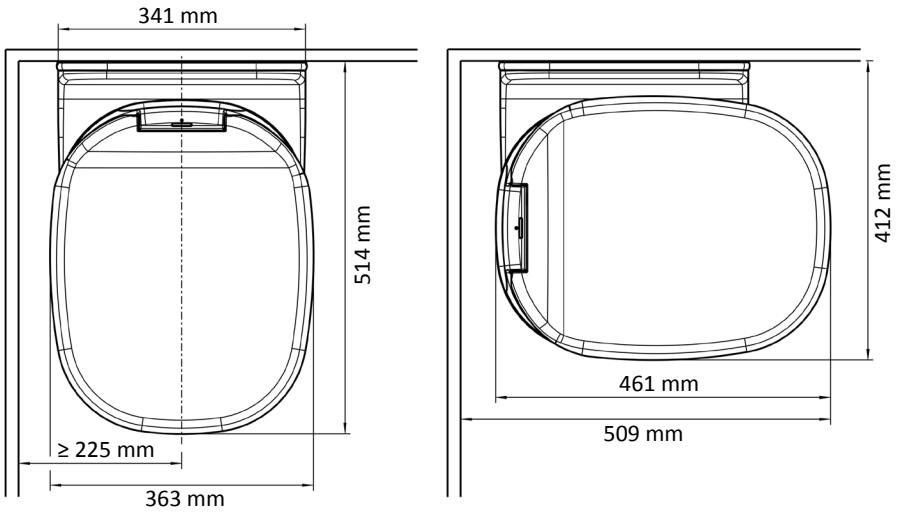
No.	Tools
1	Screwdriver Torx TX20
1	Wood drill Ø 4.5 mm
1	With wall mounting of the control panel: Wood drill Ø 16 mm
1	Multimeter
1	Press tool for cable lug and connector

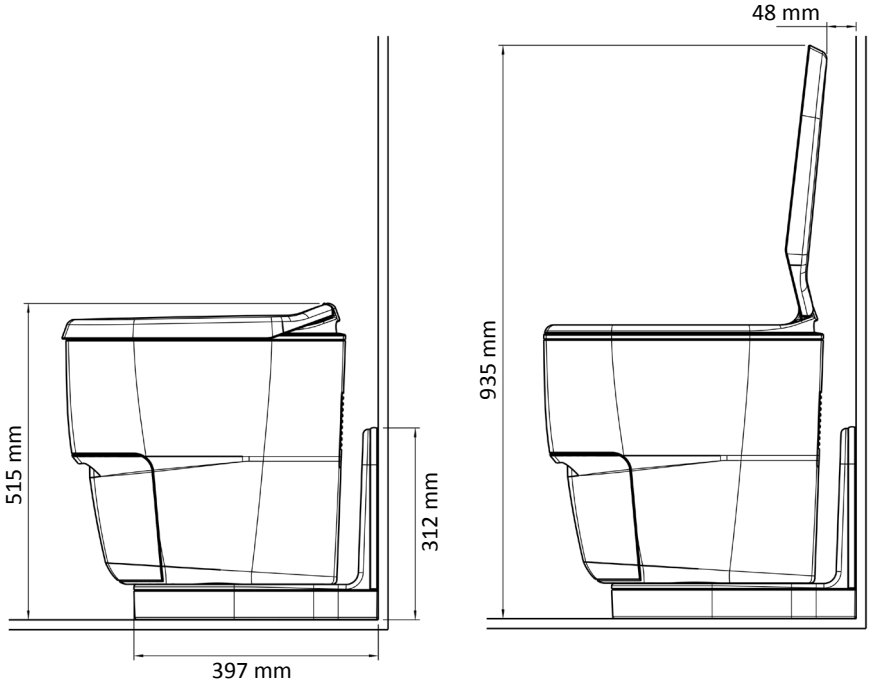
No.	Installation material
1	< 8 m Cable route: 10 mm² power cable red/black > 8 m cable route: 16 mm² power cable red/black
—	Shrinking tube
—	Ring cable lug
—	Cable strap
3	Wood screw half-round head/plate head Ø 4.5 mm Length according to installation situation
4	With wall mounting of the control panel: Wood screw half-round head/plate head Ø 4.5 mm Length according to installation situation
5	Wood screw countersunk Ø 4.5 mm Length according to installation situation

5. Overview

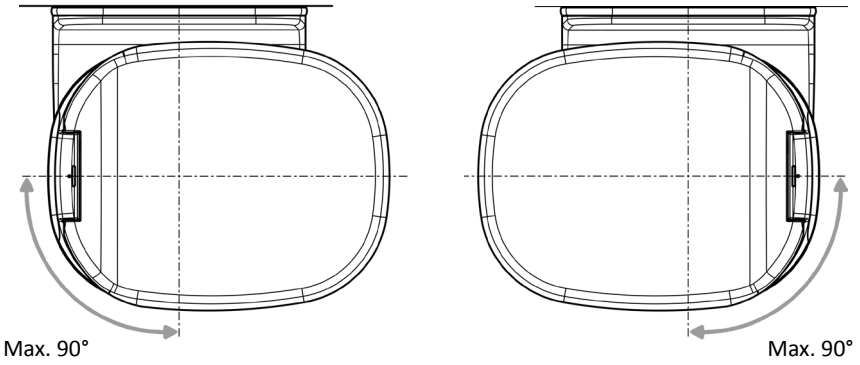
5.1. Measurements Clesana C1 with L-Adapter

Main dimensions

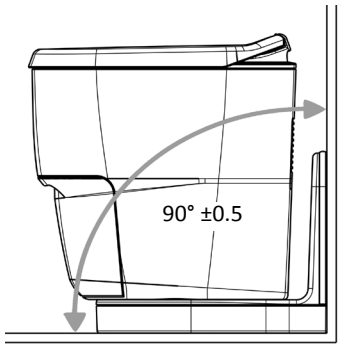




Rotating the toilet

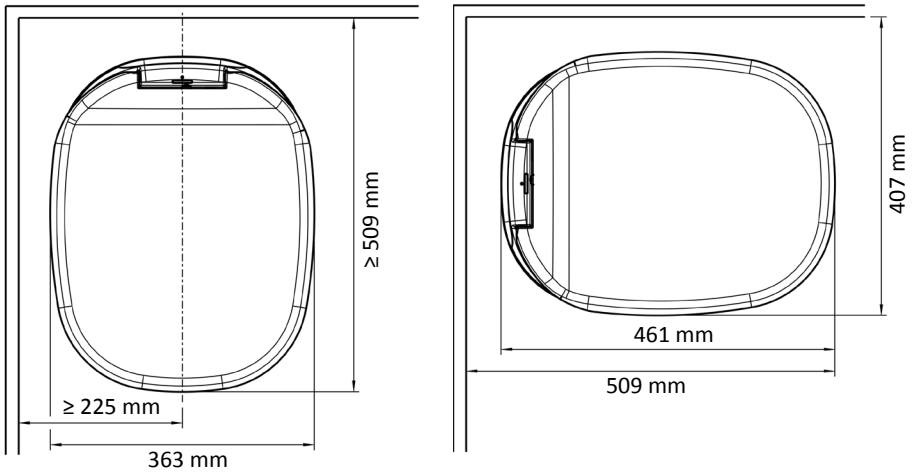


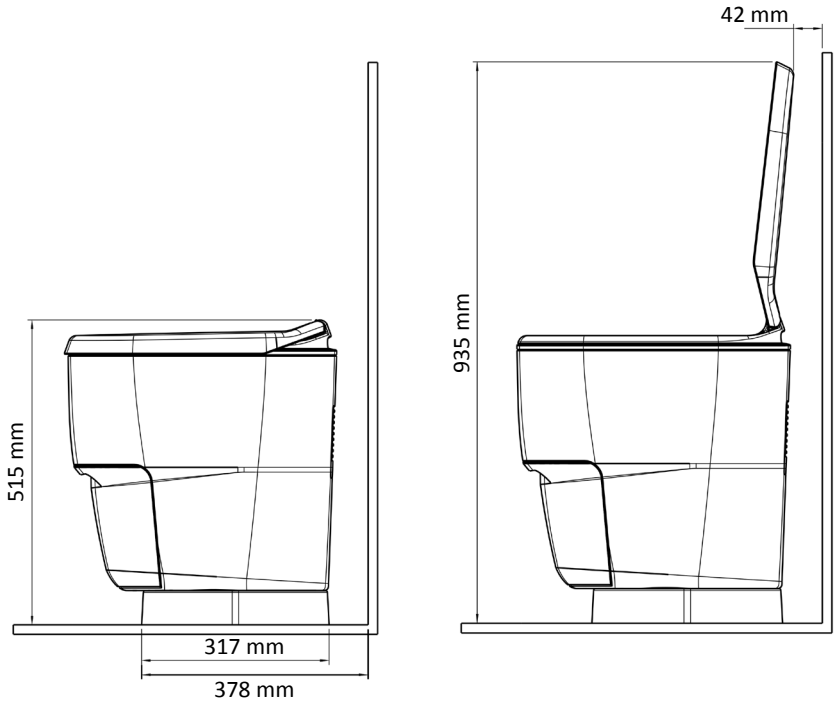
Bracket: Floor - wall



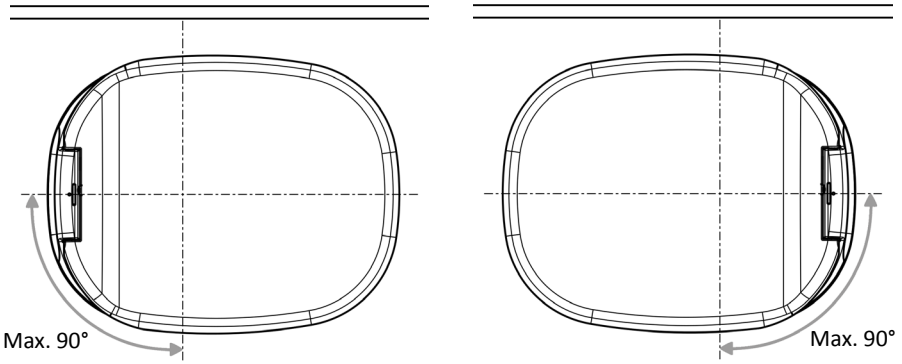
5.2. Measurements Clesana C1 with round base

Main dimensions





Rotating the toilet



6. Preparation

6.1. First steps

- ▶ Check scope of delivery.
- ▶ Have tools and consumables ready.

6.2. Choose the installation location

The Clesana C1 can be installed both with the round base and with the L-Adapter. The L-Adapter is used to cover existing openings in the wall, e.g. due to a previously installed toilet. The toilet is positioned freely in the room with the round base.

The retrofit matrix on clesana.com/info-area contains further information on installation situation and installation of the Clesana C1 when retrofitting and existing toilet.

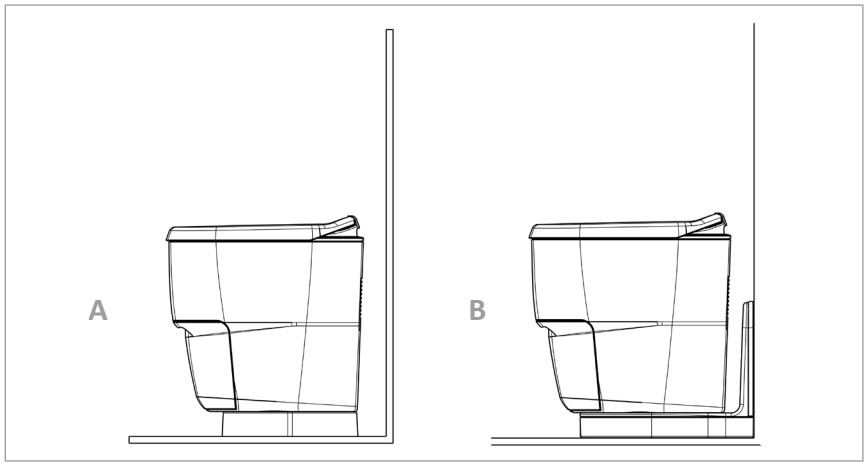


Fig. 1: Choose the installation location

A Installation with round base B Installation with L-Adapter

- ▶ Using the measurements of the Clesana C1 ensure the following points on the installation location:
  - – The toilet lid can be fully opened in the use position, without falling down under its own weight.
  - – The toilet can be turned in the use position.
  - – The toilet can be turned in the stow position.

6.3. Dismantle the existing toilet

1. If needed, dismantle the existing toilet.

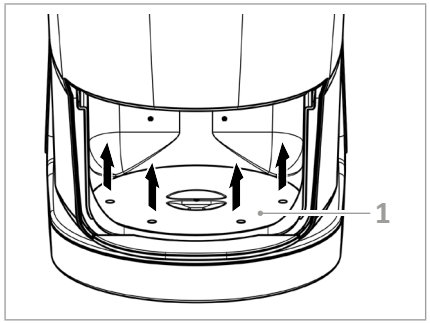
When shutting down a water line a T-piece can be replaced with a straight hose connector. A plug specially provided for this purpose can be used for a distributor.

2. Shut down the water line as close as possible at the pipe connection.
3. Ensure that the shut-down water line does not allow any standing water in the line.
4. Check the shut-down water lines for leaks.

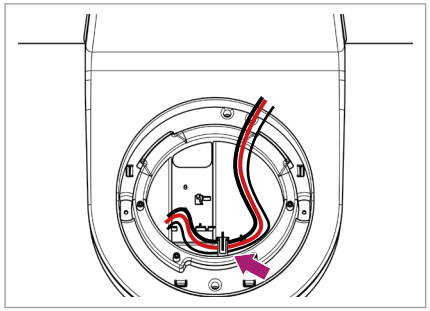
6.4. Prepare L-Adapter or round base

No.	Tools and consumables
1	Screwdriver Torx TX20

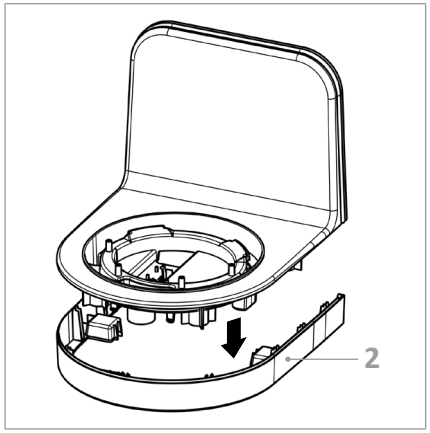
1. Take off the lid unit, remove foil cassette and tray.
2. 4 × Loosen the screws with screwdriver Torx TX20 and remove the rotation discs (1).



3. Loosen the exposed cable from the cable duct of the L-Adapter or the round base.
4. Push back the base body approx. 1 cm and remove from the L-Adapter or round base.



5. If the toilet is installed in a shower tray, remove the aperture (2) of the L-Adapter.



7. Electrical installation

7.1. Overview

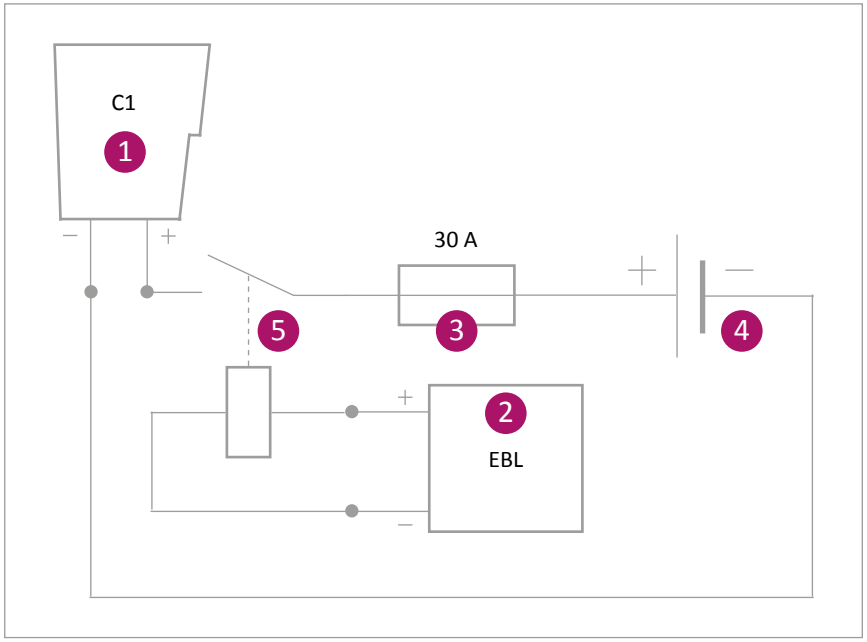
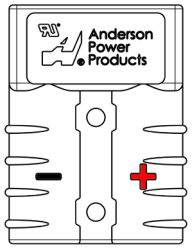


Fig. 2: Connection diagram Clesana C1

No.	Description	Function
1	Clesana C1	User
2	Electro-block (EBL)	• Central unit for power distribution in the electrical system • Controls the relay.
3	Fuse 30A	Interrupts the circuit in case of overload or short circuit
4	Board-battery/body battery	Living space power supply
5	Relay	Switches off the toilet, if the wiring system is switched off via the electro-block.

Specifications

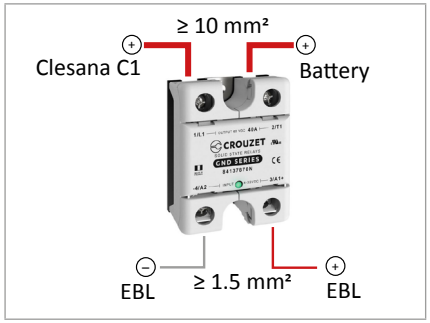
Specification	Value
Operating voltage	11,8–15 V (the power supply must ensure 22A at rated voltage)
Connection	2-pin connector housing
Position of the electrical lines in the connector housing	
2-pin connection plug on the toilet	Anderson SB50 connector housing 992G1
Crimp contact	Anderson SB50 50 Amp Contact 5952
Cable diameter	up to 8 m: 10 mm² from 8 m: 16 mm²
Relay	12VDC, >30A with screw contacts e.g. Crouzet GND Series 84137870N or car Relays Type RL/180-12

7.2. Perform the electrical installation

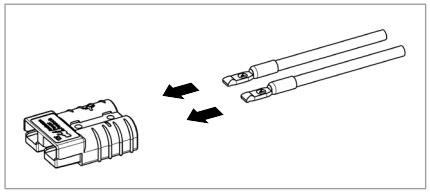
No.	Tools and consumables
1	Multimeter
1	Press tool for cable lug and connector
—	Shrinking tube
—	Cable strap
—	< 8 m Cable route: 10 mm² power cable red/black > 8 m cable route: 16 mm² power cable red/black
—	Ring cable lug
1	Relay

If a toilet has been removed, the power supply for the relay can be made e.g. via the previous connection of the toilet flushing.

1. Locate the 12-V power supply for the relay control using the multimeter.
2. Lay the power cable from the board-battery to the Clesana C1.
3. Install and secure the 30-A fuse as close as possible behind the board-battery, such as to ensure subsequence access to the fuse.
4. Crimp the end of the power cable for the connection to the board-battery with the ring cable lug.
5. Position and secure the relay near the Clesana C1, so as to ensure subsequent access to the relay.
6. Connect the relay with the power cable (≥ 10 mm²) and the control cable (≥ 1.5 mm²) as shown in the image. (here Crouzet GND Series 84137870N) Note: The control cable requires a 12-V continuous voltage e.g. directly from the electro-block (EB).



7. Crimp the ends of the power cable to the Clesana C1 with crimp contacts Anderson SB50 and route in the connector housing Anderson SB50.



8. Install the L-Adapter

8.1. Screw the L-Adapter on the floor

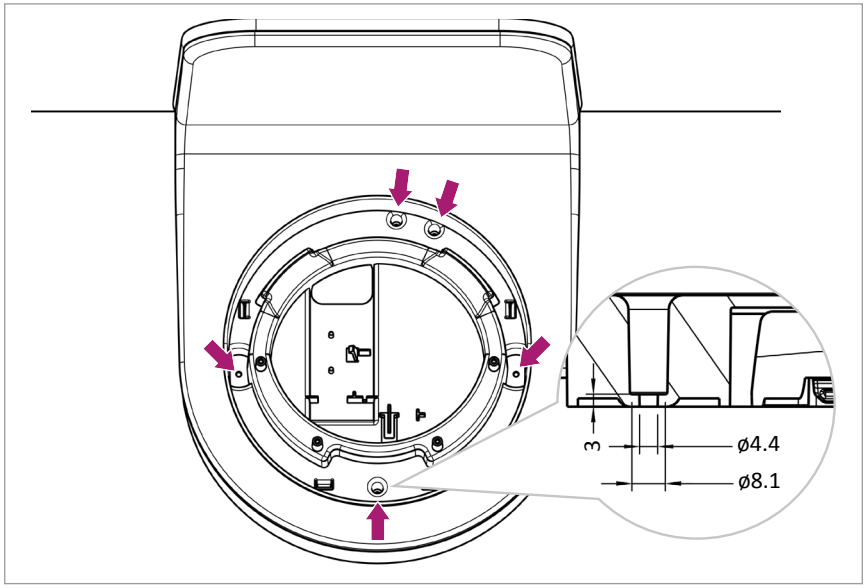


Fig. 3: Installation bores for screwing on the floor

No.	Tools and consumables
1	Screwdriver
5	Wood screw countersunk Ø 4.5 mm Length according to installation situation

1. Align the L-Adapter to the wall.
2. Mount the L-Adapter hand-tight with 5 screws.

8.2. Screw the L-Adapter to the wall

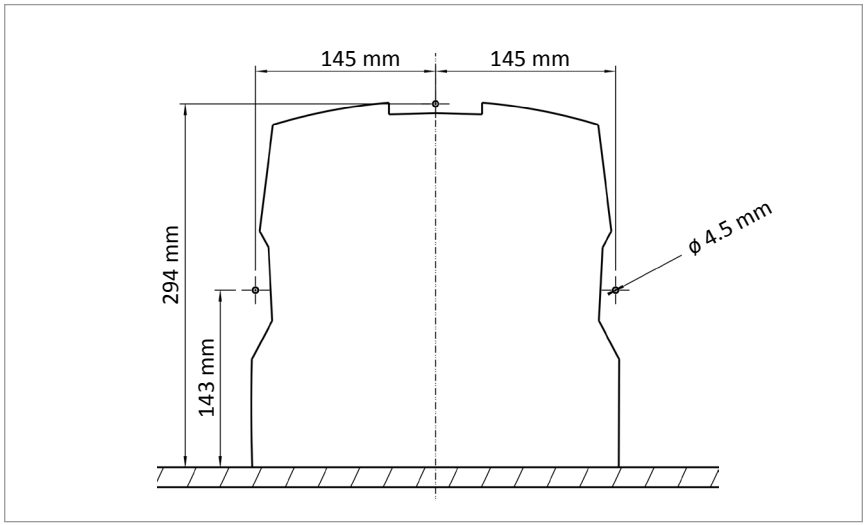
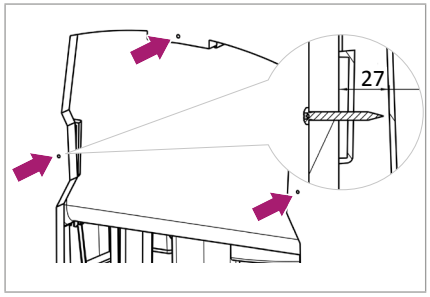


Fig. 4: Bores for screwing on the wall

If C263-S or C223-S Thetford toilettes have been previously installed, you can use the same bores for mounting on the wall.

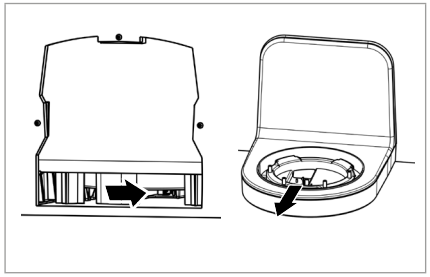
No.	Tools and consumables
1	Wood drill Ø 4.5 mm
1	Screwdriver
3	Wood screw half-round head/plate head Ø 4.5 mm Length according to installation situation

1. Bore 3 holes in the wall according to the template.
2. Choose the length of the wood screws according to the wall thickness +25 mm.
3. Position the L-Adapter in front of the bore holes.
4. Screw 3 wood screws from behind through the wall in the flange of the backpiece of the L-Adapter.
5. Check the correct sealing of the sealing lip of the L-Adapter with the wall.

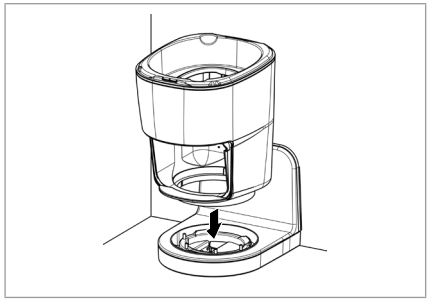


8.3. Finishing works

1. Pull the power cable and the control cable for the control panel into the L-Adapter from behind.



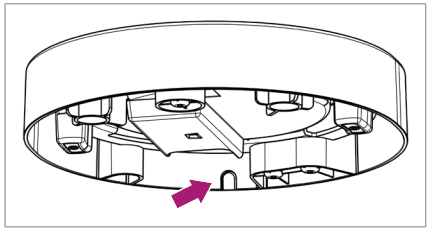
2. Place the base body on the L-Adapter.



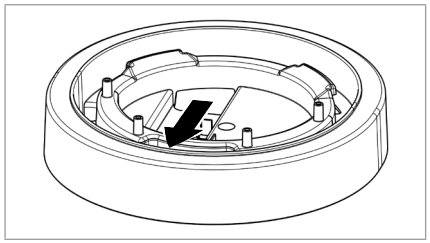
9. Install the round base

9.1. Prepare the round base

1. Break out the covering at the specified breaking point.



2. Pull the ends of the power cable and the control cable for the control panel through the opening into the round base.



9.2. Mount the round base

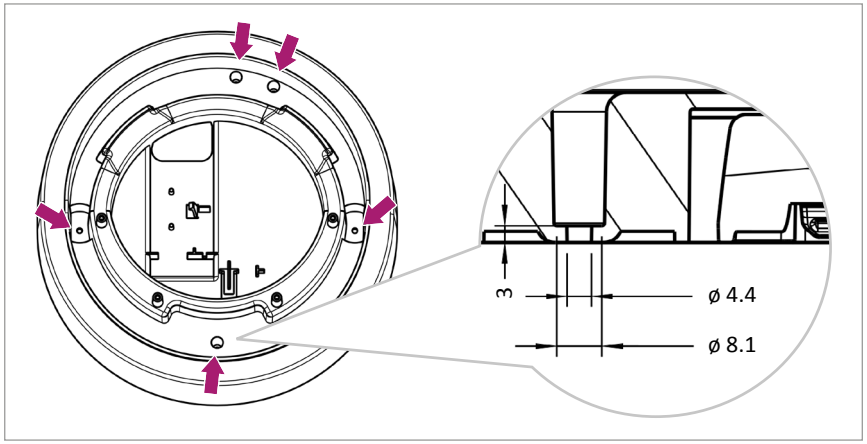
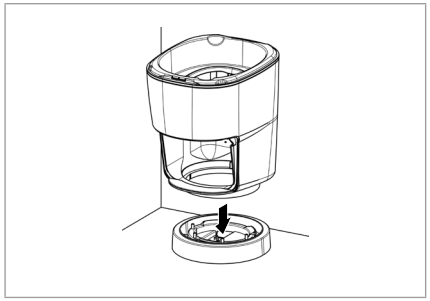


Fig. 5: Installation bores for screwing on the floor

No.	Tools and consumables
1	Screwdriver
5	Wood screw countersunk Ø 4.5 mm Length according to installation situation

1. Place the round base on the floor.
2. Mount the round base hand-tight with 5 screws.

3. Place the round base on the L-Adapter.



10. Install the control panel

10.1. Flush mounting

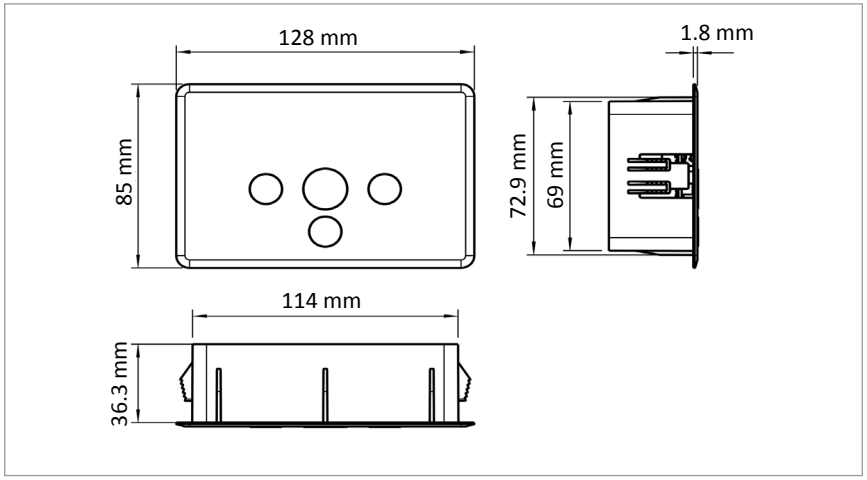


Fig. 6: Control panel measurements

If a Thetford toilette has been previously installed, you can use the same opening in the wall to install the control panel.

1. Choose a suitable installation location for the control panel, ensure the following points:
   - The display is clearly legible.
   - The control panel can be easily operated.
   - The wall thickness on the installation location is 10–16 mm.
   - The distances between the control panel and the L-Adapter is smaller than the length of the connection cable (useful length approx. 1.77 m).

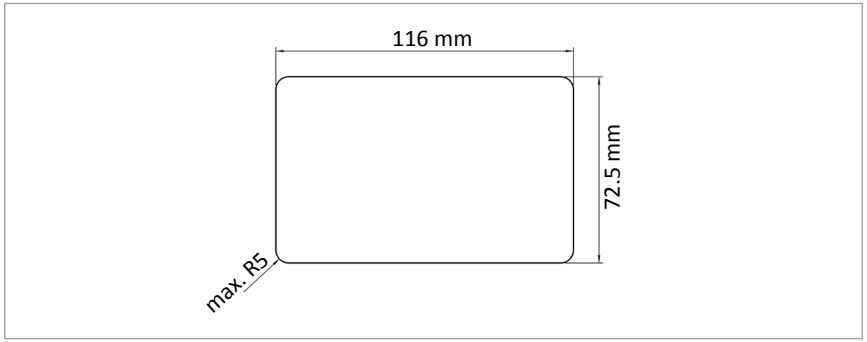


Fig. 7: Required dimension of the wall opening

2. Create the wall opening according to the dimensions in the Fig. 7.
3. Lay the cable ends from L-Adapter or round base to the control panel.

4. Connection the cable to the control panel.
5. Push the control panel into the wall opening until it fully snaps into place and is flush.

10.2. Wall mounting

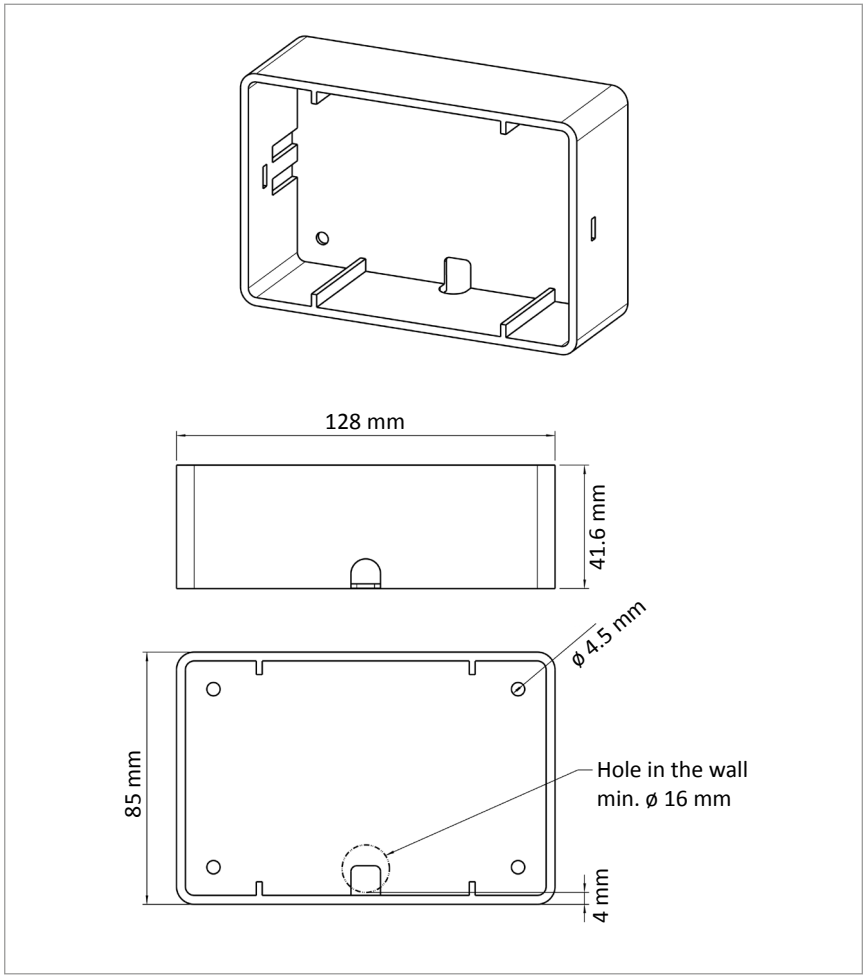


Fig. 8: Measurements of the wall-mounted housing

We do not carry out the wall-mounted housing as component. If needed, you can make the housing yourself. The design data (CAD and design drawings) are available in the dealer area https://clesana.com/retailersection.

No.	Tools and consumables
1	Wood drill Ø 16 mm
1	Screwdriver
4	Wood screw half-round head/plate head Ø 4.5 mm Length according to installation situation

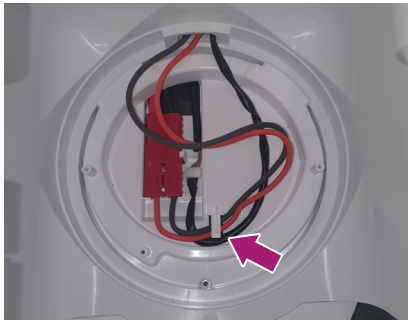
1. Choose a suitable installation location for the wall-mounted housing, ensure the following points:
   - The display is clearly legible.
   - The control panel can be easily operated.
   - The distances between the control panel and the L-Adapter is smaller than the length of the connection cable (useful length approx. 1.77 m).
2. Bore hole (Ø 16 mm) for cable routing according the dimensions in Fig. 8.
3. Lay the cable ends from L-Adapter or round base to the control panel.
4. Mount the wall-mounted housing hand-tight with 4 screws.
5. Connection the cable to the control panel.
6. Push the control panel on the housing until it fully snaps into place and is flush.

11. Connection and functional test

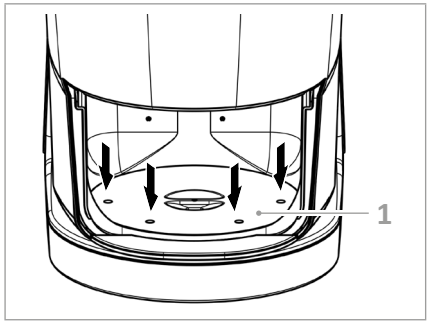
11.1. Connect the Clesana C1

No.	Tools and consumables
1	Screwdriver Torx TX20

1. Connect the control cable of the control panel with the control cable from the base body.
2. Connect the power cable coming from the board-battery with the power cable of the base body.
3. Snap the housing plug (red) into the mounting.
4. Lay the power and control cable in the cable mounting.



5. Mount the rotation disc (1) hand tight with 4 x screws and screwdriver Torx TX20.
6. Insert the tray and the foil cassette.
7. Put on the lid unit.



11.2. Check the function

1. Check the following points:
   - Clesana C1 can be rotated.
   - The lid of the Clesana C1 can be opened in the use position.
   - The tray snaps into place upon closing.
   - The lid unit can be locked and unlocked.
2. Switch on the voltage.

   ↳ Start the Clesana C1.
3. Insert the Clesana foil liner and carry out the test welding, see operating instructions.
4. Check whether the Clesana C1 correctly welds and separates.

12. Technical specifications

Characteristic	Value	Unit
Height Width L-Adapter/round base length	515 363 516/461	mm mm mm
Seat height	478	mm
Weight of C1 with L-Adapter/with round base	13.8/13.1	kg
Supply voltage	11.8–15	V
Rated voltage	12	V
Current consumption (max.)	22	A
Power consumption in standby	0.28	W
Power consumption (max.)	265	W
Energy consumption in separation process	1.7 ±0.17	Wh
Energy consumption in welding process	0.55 ±0.06	Wh
Usage temperature	5–40	°C
IP protection class	X4 (splash water protection)	—

Declaration of conformity

Manufacturer: Clesana AG
Werdenstrasse 72
9472 Grabs
Switzerland

hereby declares that the following product
Waterless toilet
Clesana C1 Series

based on the following applied standard:

- EN 50498-2010 EMC Aftermarket Electronic Equipments in Vehicles

meets the basic requirements of the following directives:

- 2011/65/EU RoHS 2
- Motor Vehicle EMC Directive 2004/104/EC

The product in question does not have any disruptive functions in accordance with Vehicle EMC Directive 2004/104/EG.

Signature
Markus Erb
Executive Director

Grabs, 20 December 2021

Placer, date

clesana™

Operating instructions

Clesana C1

Version 2
07.09.22

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Contents

1. Introduction

1.1. About this manual

These operating instructions familiarise you with the characteristics and functions of the waterless toilet Clesana C1. The manual contains important information for the correct and safe handling of the toilet.

- ▶ Read these operating instructions carefully before the initial start-up.
- ▶ Keep this manual safe so that the information is available at all times.

This manual is continuously improved, but it may happen that document enclosed with Clesana C1 does not correspond to the current version. We recommend that you check on our website https://clesana.com/info-area whether there a newer version of this manual is available.

1.2. Warning signs and symbols

Warning signs are used in this manual in order to alert you against property damage and personal injuries.

Warning symbol	Warning word	Meaning
	CAUTION	Hazards for persons. Non-compliance can result in minor injuries.
–	NOTE	Information for avoiding property damage.

Symbol	Meaning
	Important information, e.g. for better comprehension or for facilitating work processes
▶	Action steps that you must perform
▷	Measures for avoiding hazard in a warning sign
1., 2.	Several action steps that you must perform in the order specified
	Result indication of an action step or several action steps
(⇨ page, “Chapter”)	Reference to a chapter of the manual
	Important details in graphics
	Motion sequences in graphics

2. Safety

This chapter contains important information on safety of the device. Read the safety instructions thoroughly before start-up and operation.

2.1. Proper use

The waterless toilet Clesana C1 is intended to be used for sanitary bagging of excrements and personal hygiene articles. Bagging of nappies or biowaste is also possible. Different uses are not allowed. The device is intended exclusively for non-public areas.

Possible misuse

Not intended use of the device can result in property damage and personal injuries. For example, the device is not suitable for the following uses:

- Bagging of pointed or sharp-edged objects (e.g. broken glass, needles, razor blades
- Bagging of burning or red hot objects (e.g. Ashes, cigarettes, matches)
- Bagging of liquids and chemicals that could react with the bag
- Bagging of foodstuffs or organisms
- Use as climbing aid

2.2. User qualification

Persons, children and people with physical, sensory or mental disabilities not familiar with the device should use the Clesana C1 only under the supervision or according to the instructions of a responsible person.

Maintenance works must be carried out by authorised qualified persons. Contact your dealer if needed.

2.3. Operation

- ▶ Regularly check that all functions are carried out correctly.
- ▶ After each use and before leaving the Clesana C1 unattended, make sure that the flushing process is completed and that the toilet is ready for use.
- ▶ Never operate the Clesana C1 without correctly mounted lid and fully inserted tray.

The Soft-Close mechanism closes the toilet lid automatically. This mechanism will be damaged if the lid is manually pressed downwards.

- ▶ Never press the toilet lid downwards.
- ▶ Never use the toilet without inserted foil liner.

2.4. Cleaning and maintenance

- ▶ Perform only the cleaning works described in these operating instructions and note the associated safety instructions.
- ▶ Do not clean the toilet with running water.

Clesana foil liners ensure a reliable functioning of your Clesana C1. The use of other foil liners can result in malfunctions.

- ▶ Use only Clesana foil liner.

2.5. Modifications and repairs

Repairs not properly carried out can result in accidents and property damage.

- ▶ Do not open the base body.
- ▶ Do not install any additional components and do not make any modifications to the device.
- ▶ Contact your dealer if a defect is suspected.

2.6. Residual risks

2.6.1 Live parts

Opening the base body can expose the live parts. There is a risk of life threatening electrocution.

- ▶ Do not open the base body.

2.6.2 Burning or pointed objects

Burning objects ignite the foil bag and cause fires. Pointed objects damage the foil bag, soiling the tray.

- ▶ Do not dispose of any burning materials such as cigarettes, matches or hot ashes in the toilet.
- ▶ Do not dispose of pointed or shape-edged objects in the toilet.

2.6.3 Water ingress

Water can penetrate in the inside of the toilet through a not closed lid or a not correctly inserted tray, cause a short-circuit and damage the electronic control or the welding mechanism. This may result in malfunctions and damage to the components.

- ▶ Do not expose the Clesana C1 to jet water (e.g. when taking a shower).
- ▶ Use the toilet only when seated.
- ▶ Never operate the Clesana C1 in a wet room without the lid properly placed and fully inserted tray.
- ▶ If the welding unit comes into contact with water: Let the toilet to dry for 24 hours without inserted foil liner.

2.6.4 Moving parts

The Clesana C1 has a rotating mechanism for optimal positioning. If the area around the toilet is obstructed by objects, the rotating of the toilet may result in crushing of fingers.

- ▶ Keep the surroundings of the toilet free of objects.

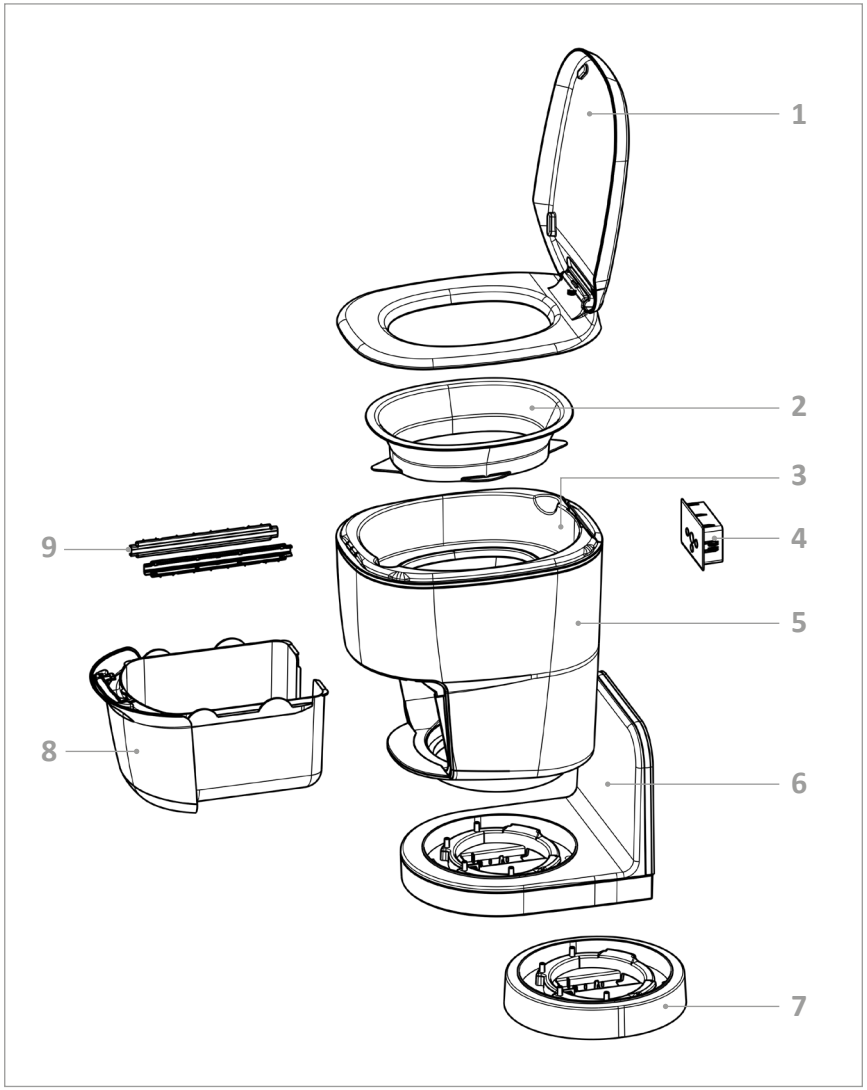
2.6.5 Harmful substances

Swallowing the absorber can lead to nausea and stomach discomfort. Eye contact can pose the risk of sever eye irritation.

- ▶ Keep the absorber away from the reach of children.
- ▶ Note the safety data sheet of the absorber, available on the website: https://clesana.com/info-area.
- ▶ In the event of eye contact, rinse the eyes with running water for several minutes.
- ▶ If you have swallowed the absorber, rinse your mouth with water and drink up plenty of water.
- ▶ See a physician in case of persistent discomfort.

3. Design and function

3.1. Overview

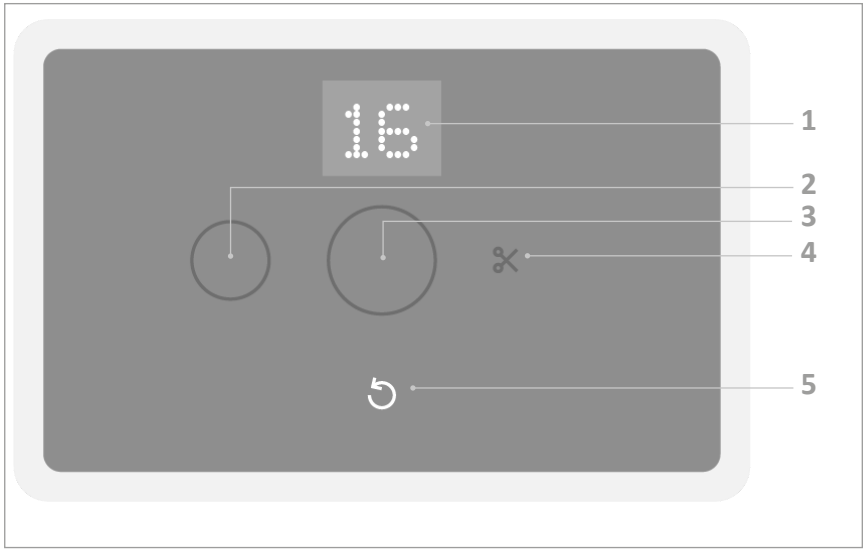


No.	Description	Function
1	Lid/Seat	• Covering of the foil compartment • Protection against entry of jet water
2	Foil cassette	Mounting of the foil liner
3	Foil compartment	• Replica of a toilet bowl • Guiding the foil to the welding mechanism
4	Control Panel/Display	• Toilet control • Display of the remaining toilet uses with the inserted foil liner • Display of operating status and error codes
5	Housing/Base body	Mounting of lid/seat, foil cassette, Teflon tape and tray
6	L-Adapter	• Placing the toilet on the wall • Mounting the toilet on the floor • Covering the existing openings in the wall, e.g. due to a previously installed toilet
7	Round base	Placing and free mounting of the toilet in the room
8	Tray	Collects up to 6 bags. This corresponds to 2 bag chains with 3 bags each.
9	Teflon tape ((PTFE Tapes)	Preventing the sticking and tearing of welding seam in the welding process

The Clesana C1 is the first mobile waterless toilet which operates based on the bag-welding principle. After each toilet trip the toilet welds the toilet content in a separate foil bag.
The foil bag is made of a multiple-folded continuous foil, the foil liner, previously mounted on the foil cassette (2) and is inserted in the foil compartment (3). The foil bag replicates a toilet bowel.
Once the flushing process is triggered via the control panel (4) the toilet pulls the foil from the foil cassette (2) automatically, welds it and prepares for the next use of the toilet.

The odour-proof closed foil bags are collected in the tray (8).

3.2. Control panel



No.	Description	Function
1	Display	Display of the remaining large flushing processes
2	“Small flushing process” button	• Press once: Triggering of a small flushing process • Press twice: Triggering of an extra small flushing process
3	“Large flushing process” button	• Press once: Triggering a large flushing process • Press twice: Triggering of an extra large flushing process
4	“Separate” button	Creating a single bag with subsequent pressing of buttons (2) or (3)
5	Arrow button	• Resetting the counter/display after replacing the foil liner • Interruption of the flushing process

3.3. Display

	**The toilet is ready for operation.** • Displayed numbers stand for the still available “Large flushing processes”. • From a number of “3”, the display lights up in red to indicate the imminent ending of the foil liner.
	**The toilet is not ready for operation.** The toilet lid is not properly closed. ▶ Close the toilet lid. ▶ If the display persists, perform a troubleshooting (⇨ Page 24, “9. Troubleshooting”).
	**The toilet is not ready for operation.** There is not enough foil available. ▶ Insert a new foil liner (⇨ Page 14, “Insert or change the foil liner”). ▶ If the display still persists preform a troubleshooting (⇨ Page 24, “9. Troubleshooting”).
	**The toilet is not ready for operation.** There is a fault in the welding unit. ▶ Perform a Troubleshooting (⇨ Page 24, “9. Troubleshooting”).
	**The toilet is not ready for operation.** The tray must be emptied. ▶ Empty the tray. ▶ If the display persists, perform a troubleshooting (⇨ Page 24, “9. Troubleshooting”).
	**The toilet is not ready for operation.** The battery voltage is too low. ▶ Perform a Troubleshooting (⇨ Page 24, “9. Troubleshooting”).
	**The toilet is not ready for operation.** ▶ Perform a troubleshooting using the error codes (⇨ Page 26, “10. Error codes”).
	**Status display of the process flow** The process is stopped if the lid or the tray is opened during the running process. ▶ Wait until the process is completed.

4. Preparation

4.1. Check the status of the toilet

The display shows the theoretically available number of large bags. If the content in the foil compartment is heavier than 500 g, the weight can pull down the foil liner and falsify the number on the display.

For technical reasons, a low residual foil always remains on the foil liner.

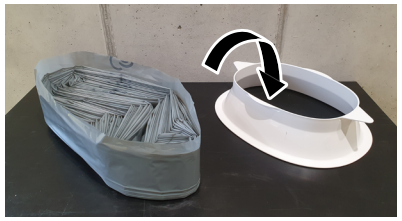
- ▶ Check that there is enough foil for a complete bag before each use of the toilet and in particular when the display shows less than 5 available bags.
- ▶ Make sure that there is always enough refill foil liner near the Clesana C1.

4.2. Insert or change the foil liner

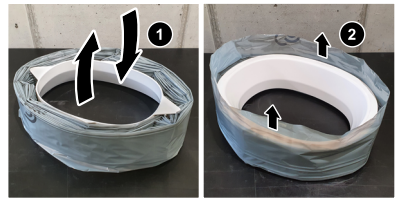
1. Press the rear tab of the lid unit forward (2) and lift it upwards with both hands (2).


2. Take the foil cassette out of the toilet and lay it upside down on an even surface.

3. Place the foil liner over the foil cassette. The protruding part of the foil liner points downwards.



4. Rotate the foil cassette and pull the protruding foil approx. 10 cm upwards.



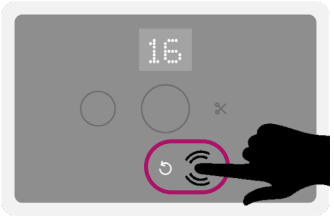
5. Reinsert the foil cassette with the protruding foil pointing upwards in the foil compartment. Make sure no foil is jammed between the foil compartment and the foil cassette.

6. Pull the foil upwards until you see at least 4 visible folds.

7. Fold the foil inwards and distribute it evenly in the foil compartment.

8. Place the lid unit by fixing it in the front area (1) and then snapping it in the groove in the rear area of the Clesana C1 (2).

9. Press and hold the arrow button on the control panel for 3 seconds.
   - The foil tube is welded.
   - The counter is reset.
   - The toilets is ready for operation.



5. Operating steps after using the toilet

5.1. Use the absorber for fluid binding

CAUTION! Health impairment through improper use.

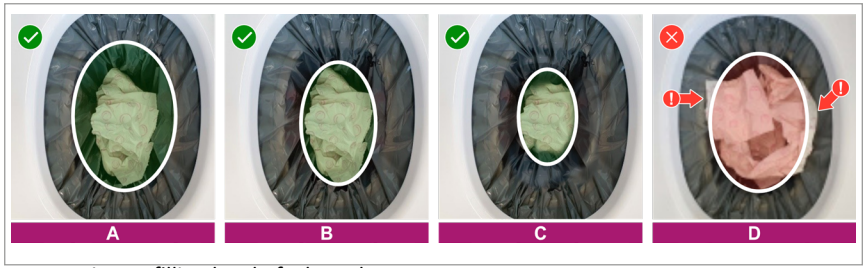
- ▷ Do not swallow the absorber.
- ▷ Do not allow the absorber to come into contact with the eyes.

For binding the fluids (e.g. urine) we recommend the use of Clesana Super Absorber. The powder shell dissolves upon coming into contact with the fluids. The powder binds the fluids in the foil bag.

▶ Insert a bag in the foil compartment before or after toilet trip.

5.2. Note the filling level

Toilet paper should not be over the prescribed maximum filling level, otherwise the welding can be interrupted.



A Maximum filling level of a large bag
B Maximum filling level of a small bag
C Maximum filling level of an extra small bag
D Exceeding the maximum filling level

▶ Note the correct position of the toilet paper:

- **A:** With large bags below the white plastic ring shining through the foil
- **B:** With small bags bellow the upper transport rollers
- **C:** With extra small bags bellow the welding jaws

5.3. Start flushing process

During the flushing process the individual bags are separated from each other by welding. After three bags the bag chain is automatically separated from the foil liner and falls into the tray.

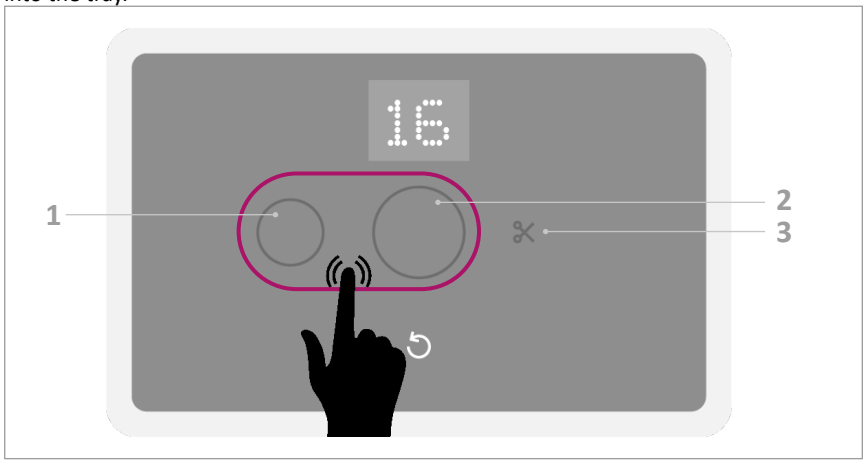


Fig. 1: Select small or large flushing process on the control panel

1 "Small flushing process" button
2 "Large flushing process" button
3 "Separate" button

1. Check the filling level of the toilet (⇨ Page 16, "5.2. Note the filling level").
2. Close the toilet lid.
3. Select the bag size on the control panel with button (1) or (2):

Bag size	Button	Bag length	Max. bag per liner	Recommended
"Small"	1 x Flushing process small	approx. 20cm	38	"Small business" and "large business" with less paper
"Large"	1 x Flushing process large	approx. 30cm	26	"Large business" with normal paper quantity
"Extra small"	2 x small flushing process, within 2 s	approx. 15cm	50	"Small business" without paper
"Extra large"	2 x large flushing process, within 2 s	approx. 40cm	19	"Large business" with lots of paper. Is separated automatically.

↳ The flushing process is started.

↳ Selected button (1) or (2) flashes.

↳ The additional button (3) is flashing while the bag chain is separated automatically.

4. Wait until all buttons of the control panel light up.
   ↳ The flushing process is completed.

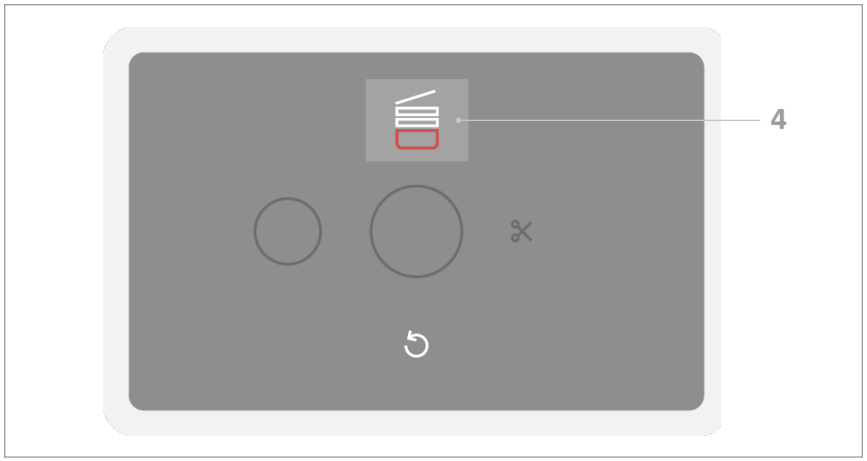


Fig. 2: Empty the tray after the separation of the second bag chain

5. If the second bag chain is separated automatically, follow the prompt on the display (4) and empty the tray.

6. Optional operating steps

6.1. Perform manual bag separation

With this function you can separate the bag from the foil liner after flushing process and can remove it directly out of the tray.

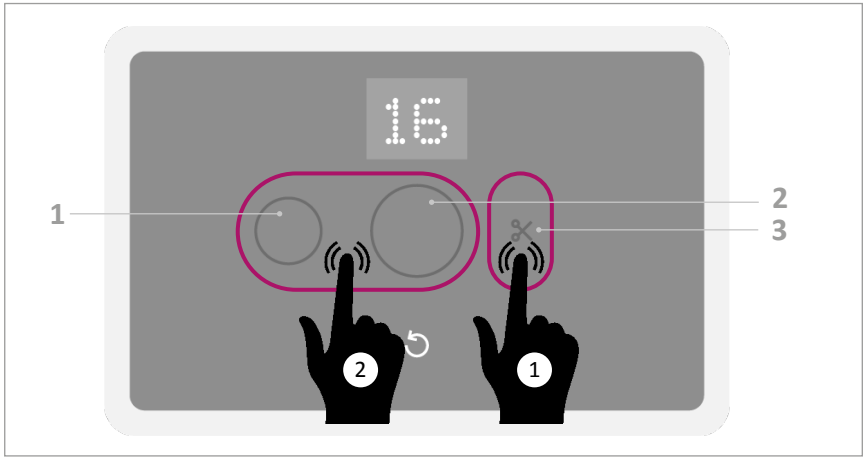


Fig. 3: Perform manual bag separation

1. Check the filling level of the toilet (⇨ Page 16, “5.2. Note the filling level”).
2. Close the toilet lid.
3. Press and hold for 3 seconds one after the other the button (3), followed by button (1) or (2), depending on the bag size you wish to use.
   ↳ The flushing process is started.
   ↳ Button (3) and selected button (1) or (2) flashes.
4. Wait until all buttons of the control panel light up.
   ↳ The flushing process is completed.
   ↳ The filled and welded bag is separated and is in the tray.

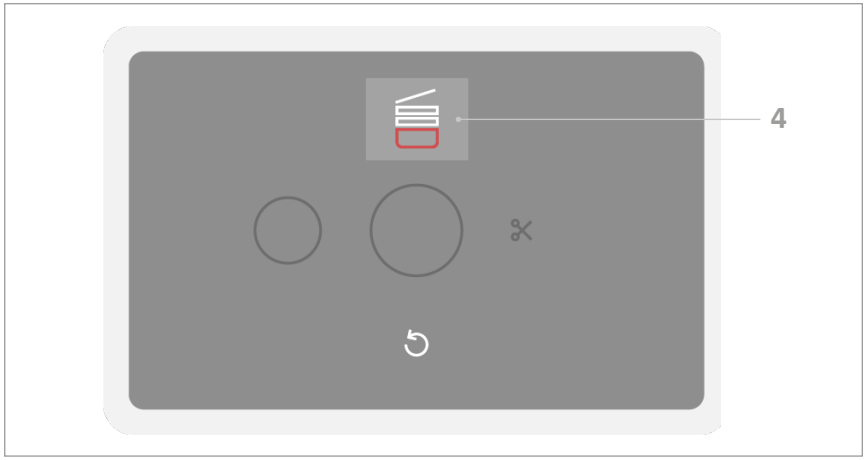


Fig. 4: Empty the tray after manual separation of the bag chain

5. Follow the prompt on the Display (4) and empty the tray.

6.2. Interrupt the flushing process

With this function you can interrupt the welding or separation process any time, e.g. if you have selected the incorrect bag size on the control panel. The welding jaws return to the start position after the interruption.

If the foil has been transported before the program interruption, the counter on the Display is adjusted accordingly.

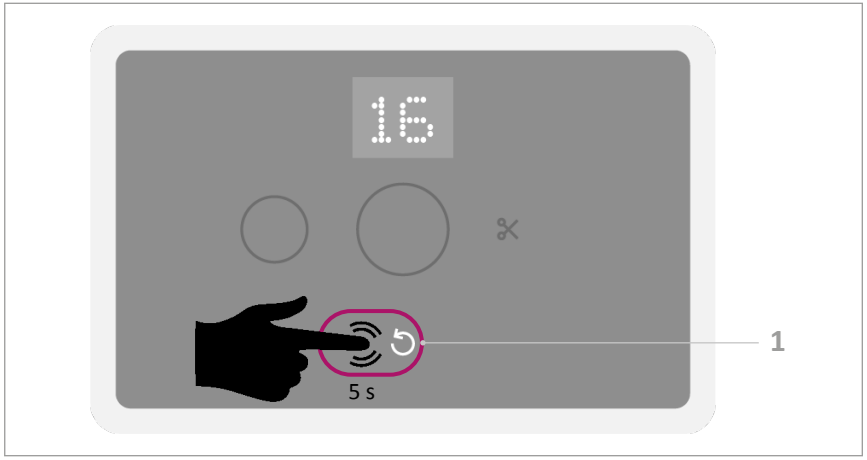


Fig. 5: Interrupt the flushing process

1. Press and hold the arrow button (1) for 5 seconds, while a process is in progress.
   ↳ Message “E6” appears on the Display.
2. Confirm the message by pressing the arrow button (1).
3. Wait until all buttons of the control panel light up.
   ↳ The program interruption is completed.

6.3. Restart the toilet

You can restart the toilet if the control panel does not respond or if there is an error. The number of remaining toilet trips is stored.

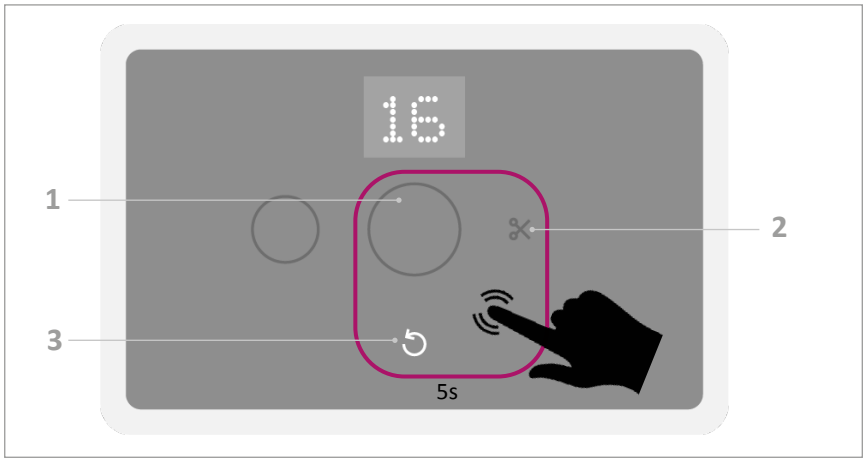


Fig. 6: Restart the toilet

1. Press and hold for 5 seconds simultaneously the arrow button (3), the “Flushing process” button (1) and the “Separate” button (2).
   ↳ The toilet restarts.
2. Wait until all buttons of the control panel light up.
3. If the error persists, preform a troubleshooting (⇨ Page 24, “9. Troubleshooting”).

7. Cleaning and maintenance

7.1. Cleaning

NOTE! Damage to the toilet through improper cleaning.

- ▷ Do not clean the toilet with running water (e.g. With a hose).
- ▷ If the welding unit comes into contact with water: Let the toilet to dry for 24 hours without inserted foil liner.
- ▷ Do not use bleach.

Since the Clesana C1 operates without water, and the “Foil bowl” is renewed with each use, it is very low maintenance. We recommend however to clean the following components regularly with a moist cloth and commercially available cleaning materials:

- Toilet seat
- Toilet lid
- Foil compartment
- Base body

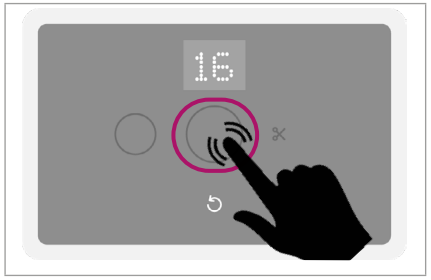
7.2. Change the Teflon tapes

Both Teflon tapes must always be changed at the same time.

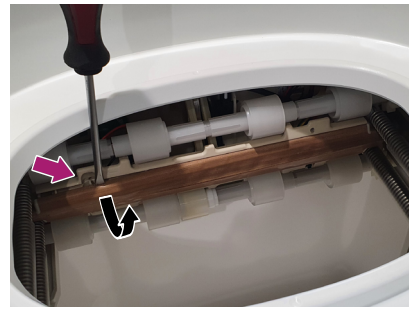
After approx. 1500 weldings resp. separations the non-stick coating of the Teflon tapes over the welding wires looses its effectiveness. The loss of the non-sticking effect leads to problems in the transport and the welding of the plastic foil.

Remove the Teflon tapes

1. Take the foil cassette out of the toilet.
2. Close the toilet lid.
3. Press the “Flushing process” button on the control panel and open the toilet lid after approx. 2 seconds.
   - The flushing process is interrupted.
   - The distance between the welding jaws is 6 to 10 cm.



4. Insert the tip of a slotted screwdriver in the recess and lever the first Teflon tape out of the guide.
5. Repeat the process for the second Teflon tape.
6. Dispose of the removed Teflon tap in the household waste.

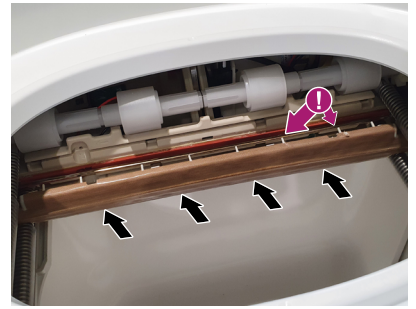


Insert the Teflon tapes

NOTE! Damage to the welding mechanism due to falling off of the Teflon tape
If previously removed Teflon tapes are used again they can fall off due to the worn retaining lug. The welding mechanism might be damaged if the welding process is performed without Teflon tapes.

- ▷ Do not use any previously removed Teflon tapes.

1. Make sure that when mounting the Teflon tapes all retaining lugs are snapped into place and are not damaged.
2. Click the first Teflon tape in the guide rail.
3. Repeat the process for the second Teflon tape.
4. Close the toilet lid.
   - The welding jaws return to their original position.
   - The toilets is ready for use.



8. Maintenance

- ▶ Maintenance should be carried out only by authorised qualified personnel, ideally by the dealer / manufacturer from whom you have purchased the Clesana C1.

9. Troubleshooting

Fault	Display	Possible Cause	Remedy
The toilet cannot be used		Battery voltage < 11.8 V	▶ Charge the vehicle battery.
		The lid is open or is not mounted.	▶ Close or mount the lid or the lid unit.
		The magnets of the lower rubber pads of the lid are missing.	▶ Reinsert the magnets.
		The tray is not inserted or is full.	▶ Close or empty the tray (the tray must be open more than 2 seconds).
		The magnets behind the tray have fallen out of their seat.	▶ Reinsert the magnets.
		No more foil in the foil compartment.	▶ Replace the foil liner ((⇨ Page 14, “Insert or change the foil liner”)).
The control panel does not light up	—	The toilet is in standby.	▶ Open/close the lid or press any button.
		There is no voltage.	▶ Check the circuit breaker or the relay and the battery voltage.
		The control panel or the toilet is defective.	▶ Contact your dealer.
The bag is leaking	—	There is foreign object in the welding seam e.g. Toilet paper.	▶ Use less paper or press it further downwards ((⇨ Page 16, “5.2. Note the filling level”)).
		The Teflon tape is defective, worn or loose.	▶ Press on the Teflon tape. ▶ Replace the Teflon tape if needed (⇨ Page 22, “7.2. Change the Teflon tapes”).
		Defective welding rod	▶ Contact your dealer.
Separation not successful	—	There is foreign object in the welding seam e.g. Toilet paper.	▶ Remove object or use less paper or press it further downwards.
		The welding rod is defective.	▶ Contact your dealer.
The bag sticks to the Teflon tape	—	The Teflon tape is worn out.	▶ Replace both Teflon tapes (⇨ Page 22, “7.2. Change the Teflon tapes”).
The length of the bag is irregular	—	The foil is jammed between the foil compartment and the cassette.	1. Remove the foil cassette. 2. Check the foil cassette and reinstall properly.
		The bag length varies with content and filing process.	▶ No correction needed.
The bag wraps itself around the transport rollers	—	The bags accumulate in the tray and are pulled upwards and in the transport rollers.	1. Remove the foil from the transport rollers. 2. Empty the tray and pull new foil downwards. 3. Press the “Small flushing process” button.
	—	The foil sticks to the Teflon tape.	1. Loose the foil from the Teflon tape. 2. Replace the Teflon tape if needed (⇨ Page 22, “7.2. Change the Teflon tapes”).

10. Error codes

Error	Cause	Troubleshooting
E1	The toilet does not initialize.	▶ Switch the power off and on again.
E2	The toilet lid has been opened during the process.	▶ Close the lid. ↳ The process continues.
E3	The tray has been opened during the process.	▶ Close the tray. ↳ The process is continued.
E4	Voltage drop bellow 8.4V on the printed circuit board	1. Press the arrow button to confirm. 2. Have the C1 power supply checked by your dealer.
E5	The battery voltage is less than 11.8V	1. Press the arrow button to confirm. 2. Charge the battery.
E6	Confirm program abort	▶ Press the arrow button to confirm.
E8 **E9**	Light barrier error	▶ Restart the toilet (⇨ Page 21, “6.3. Restart the toilet”).
E10 **E11**	Motor error	▶ Restart the toilet (⇨ Page 21, “6.3. Restart the toilet”).
E12	Overcurrent on the left welding jaw motor, possible object between the welding jaws	1. Press the arrow button to confirm. 2. Open the lid and check for jammed objects.
E13 **E14**	Error on the left welding jaw motor	▶ Press the arrow button to confirm.
E15	Overcurrent on the right welding jaw motor, possible object between the welding jaws	1. Press the arrow button to confirm. 2. Open the lid and check for jammed objects.
E16 **E17**	Error on the right welding jaw motor	▶ Press the arrow button to confirm.
E18	Overcurrent on upper roller motor, possible foil wrapping	1. Open the lid and check the upper rollers. 2. If needed, remove the wrapped foil from the roller. 3. Close the lid.
E19 **E20**	Error on the upper roller motor	▶ Press the arrow button to confirm.

Error	Cause	Troubleshooting
E21	Overcurrent on lower roller motor, possible foil wrapping	1. Open the lid and check the lower rollers. 2. If needed, remove the wrapped foil from the roller. 3. Close the lid.
E22	Error on the lower roller motor	▶ Press the arrow button to confirm.
E23	Error on the lower roller motor	▶ Press the arrow button to confirm.
E24 **E25**	Safety Timer On	The error is automatically corrected by the system.
E26	Welding overcurrent	▶ Contact your dealer.
E27	Interruption of the welding current	▶ Contact your dealer.
E28	Overtemperature when welding	▶ Contact your dealer.
E29	Printed circuit board error	▶ Contact your dealer.
E30	Fan overcurrent	1. Press the arrow button to confirm. 2. Contact your dealer.
E31	Fan error	▶ Press the arrow button to confirm.
E32	No foil	1. Open the lid 2. Pull the foil 15 cm downwards. 3. Close the lid.

11. FAQ

All FAQ & Information are available at clesana.com.

Can the bags be put in the compost (biowaste)?
No, the bags must be disposed of with the household waste. A biologically degradable variant is currently being evaluated.

Can the bags be disposed of in commercially available waste containers (residual waste)?
Yes, unless there are separate regulations in this respect.

Are the bags odour-proof?
In room temperature the bags are odour-proof for at least 2 weeks. With higher temperatures it is recommended to dispose of the bags within 2 days.

Can I use the toilet again immediately after the triggering of the flushing process?
No, the previous “Flushing process” must be completed first. Opening the lid earlier can cause a malfunction.

Can I weld other things in the bag?
Yes, basically biowaste, nappies or feminine hygiene products can be welded. However, no sharp-edged objects or hot ashes should be put in the bag. Note the maximum filling level!

Does the toilet function only with a 12V voltage?
Yes, only this power supply is currently possible. Operation over mains voltage of 230 volts is not possible.

How stable is the toilet?
The load-bearing capacity of the toilet with closed lid is 150 kg (sitting person).

12. Disposal and the environment

The Clesana C1 meets the requirements of EU Directive “Restriction of Hazardous Substances” (2002/95/EC). It is largely free of environmentally hazardous substances such as lead, cadmium, mercury or chromium VI.

In accordance with EU Directives, the device is considered electrical and electronic equipment waste for disposal purpose and must not be disposed of as household waste.

- Dispose of the device in accordance with local regulations.
- Dispose of the used batteries at the collection points provided for this purposes.

13. Technical specifications

Characteristic	Value	Unit
Height Width L-Adapter/round base length	515 363 516/461	mm mm mm
Seat height	478	mm
Weight of C1 with L-Adapter/with round base	13.8/13.1	kg
Supply voltage	11.8–15	V
Rated voltage	12	V
Current consumption (max.)	22	A
Power consumption in standby	0.28	W
Power consumption (max.)	265	W
Energy consumption in separation process	1.7 ±0.17	Wh
Energy consumption in welding process	0.55 ±0.06	Wh
Usage temperature	5–40	°C
IP protection class	X4 (splash water protection)	—

Declaration of conformity

Manufacturer: Clesana AG
Werdenstrasse 72
9472 Grabs
Switzerland

hereby declares that the following product
Waterless toilet
Clesana C1 Series

based on the following applied standard:

- EN 50498-2010 EMC Aftermarket Electronic Equipments in Vehicles

meets the basic requirements of the following directives:

- 2011/65/EU RoHS 2
- Motor Vehicle EMC Directive 2004/104/EC

The product in question does not have any disruptive functions in accordance with Vehicle EMC Directive 2004/104/EG.

Signature
Markus Erb
Executive Director

Grabs, 20 December 2021

Placer, date