BECKMANN
MANAGEMENTSYSTEME

Operating instructions

Disposal tower EMS-CLEAN

Rev 1.1

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1 Notes on using the operating instructions

In this operating manual the user obtains information

- for his own safety,
- for a quicker familiarization with the functional range of the camping tower,
- for safe working with the camping tower,
- for remedying faults and
- for maintaining the camping tower.

In order to maintain the reliability of the camping tower, to increase its useful life and to prevent downtimes, observe the instructions in the operating manual.

Study the "Safety" chapter thoroughly.
The arrangements and functions of all components must be known prior to initial commissioning of the camping tower.
Observe the information provided in the operating manual for all works.

Moreover, always observe the applicable accident prevention and environmental protection regulations as well as the generally recognized technical rules for safe and proper working.

Feel free to contact us if there are any unresolved issues after having read the operating manual.

The illustrations in the operating manual may differ from the actual design. The factual information content remains unaffected.

1.1 Symbols

Particularly important information in this operating manual are marked with the following symbols:

1.1.1 Symbols for personal protective equipment

Wear protective gloves.

Wear safety boots.

1.1.2 Hazard symbols

Danger!
This symbol combined with the signal word indicates an imminent danger to the life and health of persons.
The texts marked with this symbol and signal word provide information on how to prevent personal injury.

Warning!
This symbol combined with the signal word indicates a danger resulting in minor to moderate injuries.
The texts marked with this symbol and signal word provide information on how to prevent personal injury.

Caution!
This symbol indicates the danger of property damage.
The texts marked with this symbol provide information on how to prevent property damage.

If the source of danger can be clearly defined, the corresponding pictogram precedes the hazard warning:

Danger!
Hazardous electric voltage.
This symbol indicates dangers due to electric voltage.

Danger!
Slip hazard.
This symbol indicates situations with a slip hazard.

1.1.3 Prohibition sign

No drinking water!
This symbol indicates that the water from the disposal tower is not potable.

1.1.4 Notice symbol

Note
This symbol indicates application tips or general information.

1.2 Validity of these instructions – name plate

This operating manual is valid for the disposal tower EMS-CLEAN (hereinafter referred to as disposal tower) with the following name plates:

Fig. 1-1 Name plate of disposal tower without trace heating

Fig. 1-2 Name plate of disposal tower with 4 m of trace heating

Fig. 1-3 Name plate of disposal tower with 6 m of trace heating and drainage flushing system

1.3 Limitation of liability

Beckmann GmbH is not liable with respect to the buyer of this product or to third parties for damage, loss, costs or expenses incurred as a result of accidents, misuse of the product, unauthorized changes, repairs or additions. Furthermore, Beckmann GmbH is not liable for losses, costs, malfunctions or consequential damage arising from the use of the control unit. The technical data correspond to the current state at the time of printing. Printing errors, mistakes and amendments reserved.
All of the specifications and information in this manual have been compiled in due consideration of the applicable standards and regulations, the state of the art and our many years of experience and findings.

The manufacturer assumes no liability for damages resulting from:

- the non-observance of these operating instructions
- improper use
- the deployment of unqualified personnel
- unauthorised alterations
- technical changes
- the use of non-approved spare and wear parts
- vandalism

The actual scope of delivery may differ from the descriptions and illustrations in this manual in case of special designs, when making use of additional order options or due to the latest technical modifications.
Apart from that, the obligations agreed upon in the delivery contract, the general terms and conditions as well as the manufacturer's delivery conditions and the legal provisions valid upon conclusion of the contract apply.

1.4 Customer service

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2 Technical information

2.1 Functional description

The disposal tower enables a simple and clean way of emptying toilet cassettes.
Upon insertion of a coin the usage duration is displayed.
The countdown starts when you open the disposal flap: at this moment the flushing system and exhaust fan start also. The cassette can be emptied.
Then the connecting piece of the cassette is held underneath the rinsing tap. The rinsing tap is actuated by means of the foot switch near the ground. Flushing the disposal flap stops and the rinsing water flows into the waste water tank.
When letting go of the foot switch, the water flow stops and flushing is resumed at the disposal flap. The waste water tank can be emptied again. When the disposal is completed, the flap is closed.
The disposal tower is optionally equipped with a drainage flushing system. By this means a gutter or drain can be connected and flushed.

2.2 Equipment

The disposal tower is available with the following equipment versions:

- V2A disposal tower with payment
- V2A disposal tower without payment
- Optional V4A model
- Optional base plate
- Optional LED illumination
- Optional trace heating
- Optional drainage flushing system

2.3 Technical data

Tab. 2-1 Technical data

Parameter		Value
Type designation		EMS-CLEAN
Supply voltage		230 V AC / 50 Hz
Power consumption	during standby without trace heating	max. 5 W
	during operation without trace heating	max. 30.5 W
Output rating		max. 16 A / 230 V
Operating temperature	standard	+10 °C to +40 °C with 30 to 70% RH
	with trace heating	-10 °C to +40 °C with 30 to 70% RH
Trace heating	energy supply	230 V / 50 to 60 Hz
	power consumption and length	max. 32 W with 2 m max. 64 W with 4 m max. 96 W with 6m max. 128 W with 8 m max. 160 W with 10 m
Material housing		V2A stainless steel (V4A optional)
Type of protection		IP44
Dimensions (height x width x depth)		1300 mm x 260 mm x 275 mm
Weight		39 kg

2.3.1 Dimensions

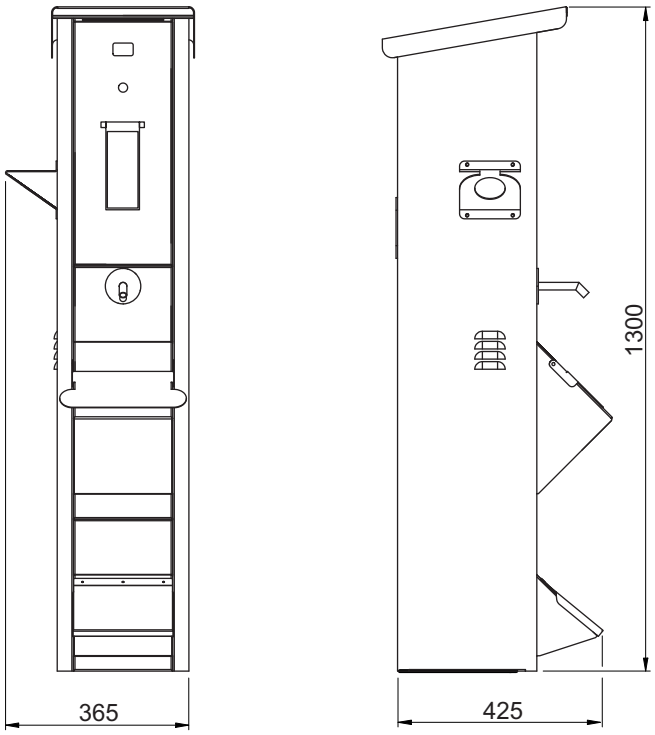


Fig. 2-1 Dimensions

2.4 Device depiction

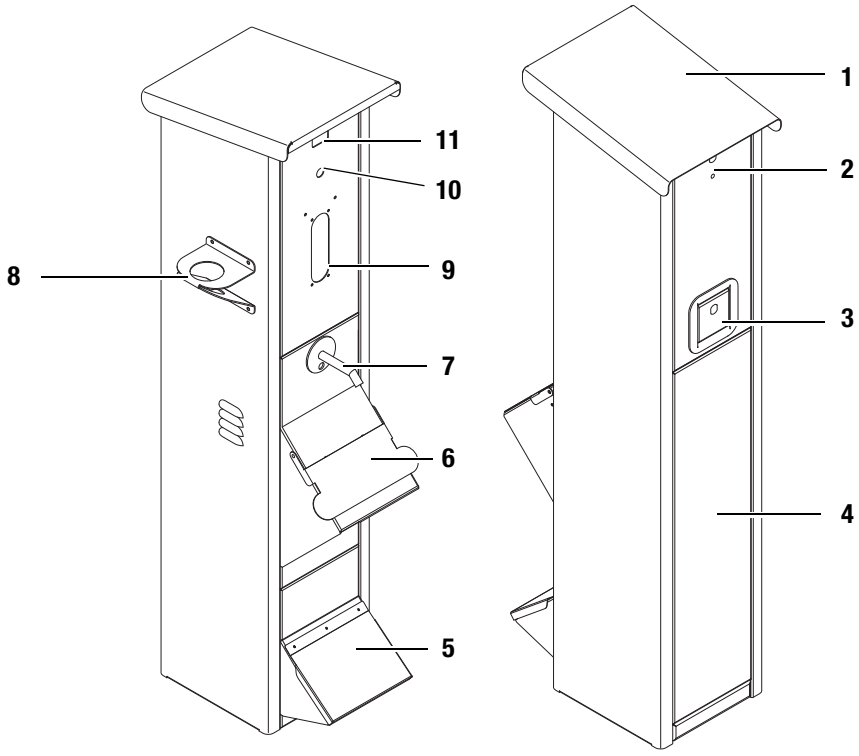


Fig. 2-2 Overview disposal tower

No.	Designation
1	Lid
2	Lock (lid)
3	Coin box with lock
4	Rear cover
5	Foot switch
6	Disposal opening with flap
7	Rinsing tap
8	Storage space for waste water tank cover
9	Coin slot with protective flap
10	Start/stop button drain/gutter (optional)
11	Display

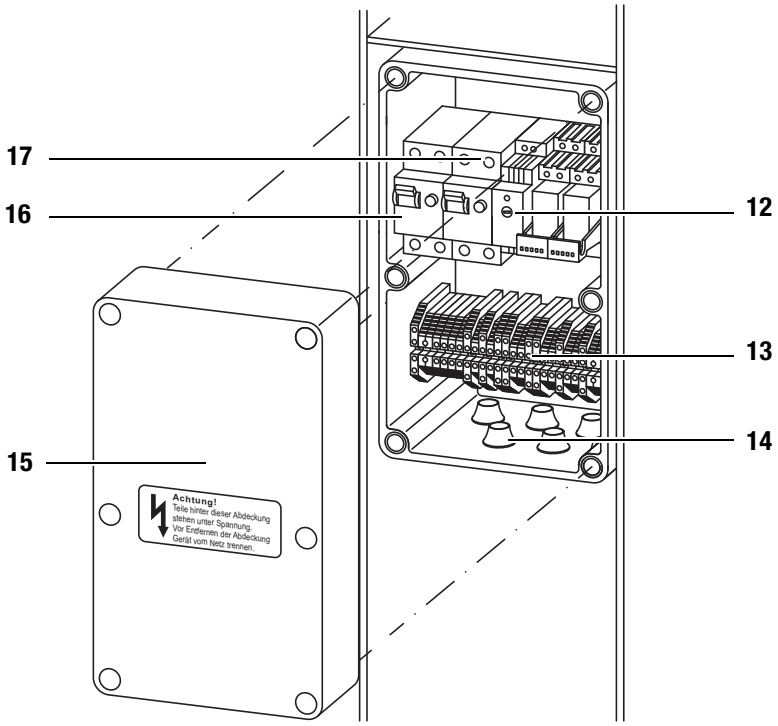


Fig. 2-3 Overview control box Isobox

No.	Designation
12	12 V DC transformer
13	Terminal block
14	Connections supply line
15	Cover with terminal diagram (inside)
16	Fusing control unit
17	Fusing heating

3 Safety

This device complies with the relevant safety regulations for measuring and control technology and has been constructed in accordance with state-of-the-art technology and the recognised safety rules and regulations Nevertheless, its use may result in danger for life and limb of the user or third parties or cause damage to the device and other assets.

Only use this device in perfect condition, in accordance with regulations, fully aware of safety and dangers and observing these operating instructions!

Have all faults, especially those which may jeopardise safety, repaired immediately!

In addition to the operating manual also observe the generally applicable legal and other binding accident prevention and environmental protection regulations!

Do not change or modify the disposal towers without prior consent of the manufacturer!

Spare parts must meet the requirements specified by the manufacturer! This is only guaranteed when using original spare parts.

Observe the deadlines for recurring maintenance intervals specified in this operating manual!

Ensure the safe and environmentally sound disposal of plastic parts and electronic replacement parts!

3.1 Intended use

The disposal tower is only intended for the disposal of the contents of the toilet cassettes and waste water tanks of motor homes and caravans on camping sites and RV parks according to the technical data.

Intended use also includes the observance of these operating instructions and maintenance intervals.

3.2 Improper use

Any use of the disposal tower other than described in chapter 3.1 is considered to be improper use.

3.3 Personnel requirements

The disposal tower may only be operated by personnel who have been instructed by either Beckmann GmbH or authorised specialist companies, their service partners or the operator and who have read and understood the operating manual.

Electrically skilled person
Electrically qualified personnel must be able to read and understand electric circuit diagrams, to commission and maintain electrical systems, to wire switch and control cabinets, to install controlling software, to ensure proper functioning of electrical components and to identify possible hazards in the work with electric and electronic systems.

Instructed person
Instructed persons were informed of the tasks assigned to them as well as of potential hazards of inappropriate behaviour by the operator. The device is to be maintained and looked after by instructed personnel.

Tab. 3-1 Overview of the minimum required personnel qualifications

Activities	Instructed persons	Electrically skilled person
Transportation	X	
Assembly, mounting	X	
Electrical installation		X
Water connection	X	
Start-up		X
Shutdown	X	
Disassembly	X	
Electrical deinstallation		X
Cleaning	X	
Maintaining the electrical installation		X
Maintaining the water lines	X	
Troubleshooting and repair of the electrical installation		X
Troubleshooting and repair of the water connections	X	
Disposal	X	

3.4 Operator responsibilities

The operator is responsible for the regular assignment of safety-related checks, maintenance and service tasks. The operator must also ensure that the personnel has been trained in working with the device and that this operating manual is available at the operating site at all times. The operator must only use this device as intended. The operator may only use this device in perfect condition, this condition is to be checked at regular intervals. In case of any deviations operation is to be stopped immediately.
All faults, especially those which may jeopardise safety, have to repaired immediately.
The operator has to fulfil the legal obligations in terms of occupational safety.
In addition to the information on occupational safety provided in this manual the national safety, accident prevention and environmental protection regulations applicable for the field of application must be complied with.

3.5 Safety information

Danger!
Risk of death due to electrical voltage!
The disposal tower must be de-energized before undertaking any work.

Warning!
Danger of minor injuries due to sharp edges or falling objects!
Wear your personal protective equipment.

Caution!
Property damage owing to the use of wrong cleaning agents
Only use the cleaning agents specified in the maintenance chapter to clean the disposal tower!
Never use a high-pressure cleaner to clean the disposal tower!

3.6 Residual risks

Warning!
Danger of minor to moderate injuries due to slip hazard in front of the disposal tower.
In wintertime there is a danger that the spilled water freezes.
Do not access areas with frozen water!

Caution!
Property damage owing to a contaminated supply line.
BEFORE the installation of the disposal tower you must flush the supply line to remove contaminants.
The solenoid valve may be damaged by the contaminants in the line.

3.7 Protective devices

The residual current devices are located in the Isobox control box:

- Residual current device 1 de-energizes the control unit.
- Residual current device 2 de-energizes the optional heating.

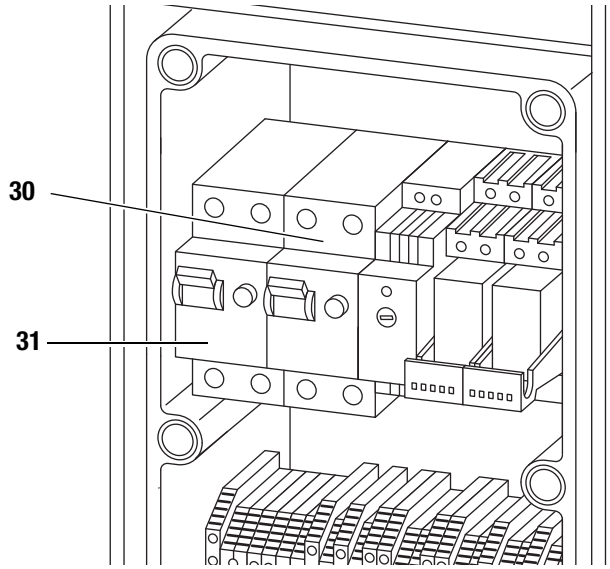


Fig. 3-1 Position of the residual current devices

No.	Designation
30	Residual current device 2 (heating, optional)
31	Residual current device 1 (control unit)

3.8 Safety signs and labels at the disposal tower

The following safety signs and labels at the disposal tower are to be checked on a regular basis. If they are illegible, they must be replaced:

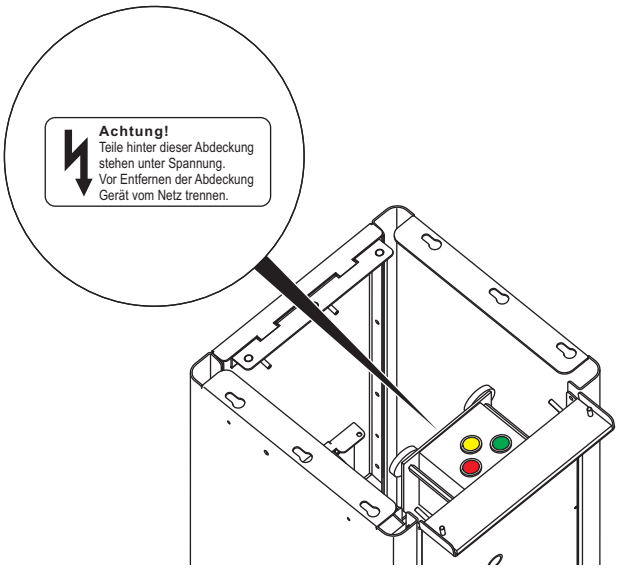


Fig. 3-2 Warning sign PVC cover and Alphabox

Warning sign	Designation
Achtung! Teile hinter dieser Abdeckung stehen unter Spannung. Vor Entfernen der Abdeckung Gerät vom Netz trennen.	Caution! There are live parts behind this cover. Only remove it after having disconnected the device from the mains.

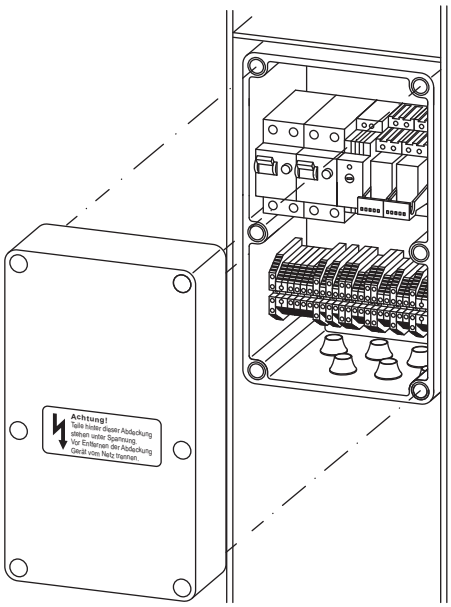


Fig. 3-3 Warning sign Isobox control box

Warning sign	Designation
Achtung! Teile hinter dieser Abdeckung stehen unter Spannung. Vor Entfernen der Abdeckung Gerät vom Netz trennen.	Caution! There are live parts behind this cover. Only remove it after having disconnected the device from the mains.

Fig. 3-4 Prohibition sign "No drinking water"

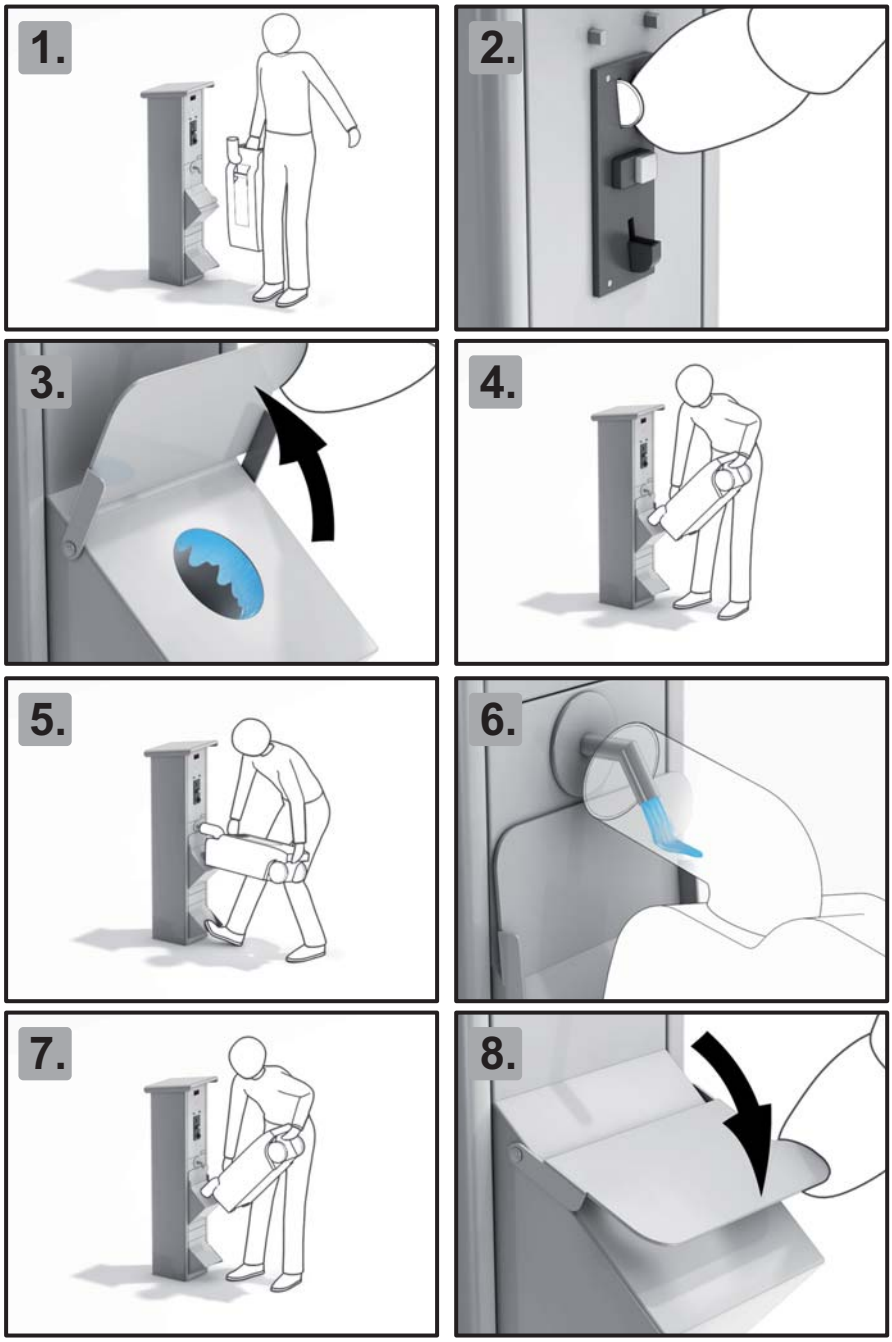


Fig. 3-5 Quick guide

4 Transport and storage

After delivery check the disposal tower for visible transport damages and immediately report these to the supplier and Beckmann GmbH.

4.1 Scope of delivery

The disposal tower delivery consists of the following components:

- disposal tower
- base plate (optional)
- drainage flushing system (optional)
- trace heating (optional)
- installation accessories

4.2 Transportation

The disposal tower is to be transported by 2 people as closely as possible to the installation site.

4.3 Storage

All components of the disposal tower are to be stored in a dry place, under a roof and at an ambient temperature of 10 to 40 °C to prevent the penetration of moisture into the parts' interior.

5 Set-up and installation

Before set-up and installation read the safety chapter.

5.1 Instructions for unpacking

- Remove the packing material from all parts.

5.2 Safety measures prior to installation

- Disconnect the power supply line from the mains.
- Depressurize the water line.
- Turn the main valve to CLOSE.

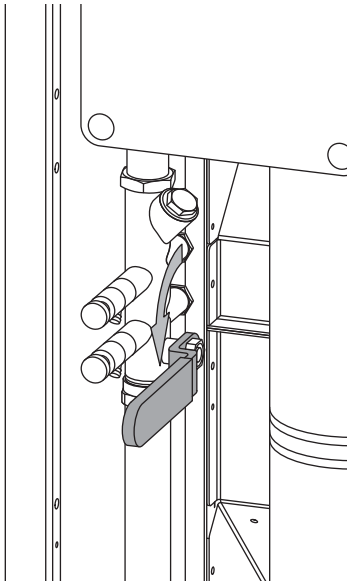


Fig. 5-1 Main valve CLOSED

5.3 Requirements at the installation site

The following requirements must be satisfied before set-up and installation of the disposal tower:

- The foundation is prepared according to the specifications from Beckmann GmbH.
- The base plate is already embedded in the foundation.
- The collar of the drain pipe is seated on the base plated as indicated in the following figure:

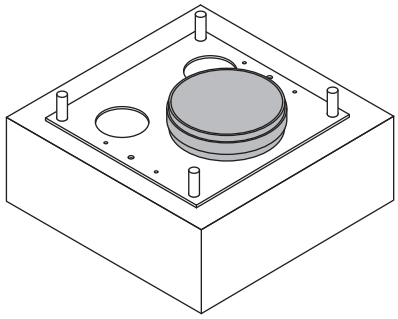


Fig. 5-2 Base plate with drain pipe

- The foundation is level.
- The threaded rods are free of dirt.
- The supply and disposal lines have been laid and prepared according to the length specifications from Beckmann GmbH.
- The pressure from the water connection is limited to 4 bar.
- The on-site water supply line is flushed and free from contaminations.

5.3.1 Foundation

Note!
Place protective caps on top of the threaded rods before pouring the foundation.

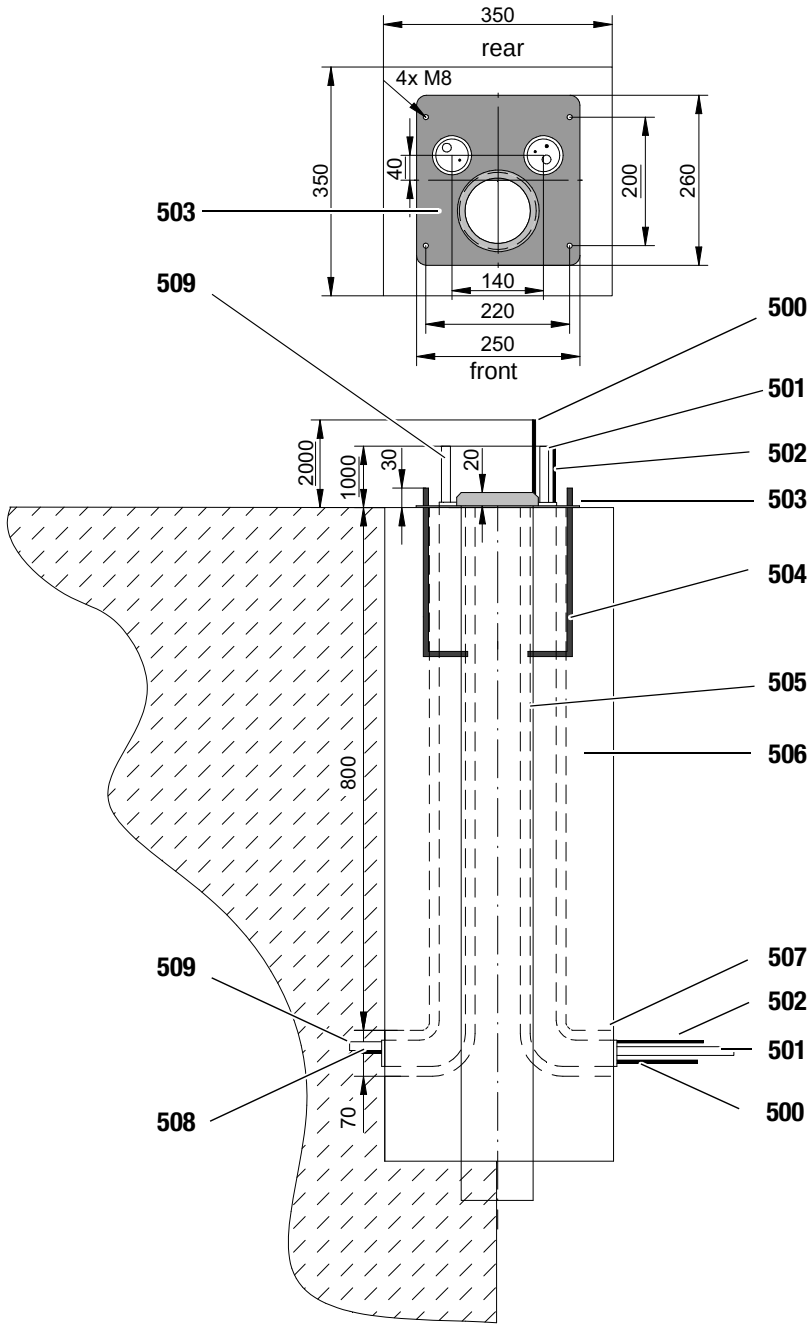


Fig. 5-3 Foundation disposal tower

No.	Designation	No.	Designation
500	network cable (optional)	505	drain pipe (DN 110)
501	fresh water supply line 1/2-inch	506	concrete base
502	power supply line 230 V (NYY 3 x 2.5)	507	cable conduit M 50
503	base plate (optional)	508	trace heating (optional)
504	threaded rods M 8	509	water line drainage flushing system

5.4 Installation

Requirements:

- The foundation is cleaned.
- The base plate is fitted to the foundation.
- The required tools are ready for use:

Tool	Type/size
slotted screwdriver	4.5x125
Phillips screwdriver	PH2, large
Phillips screwdriver	3.5x100, small
torx screwdriver	TX20
stripping tool	
spanner/socket	13-mm
multigrip pliers	

1. Open the lock (30) at the back of the disposal tower.

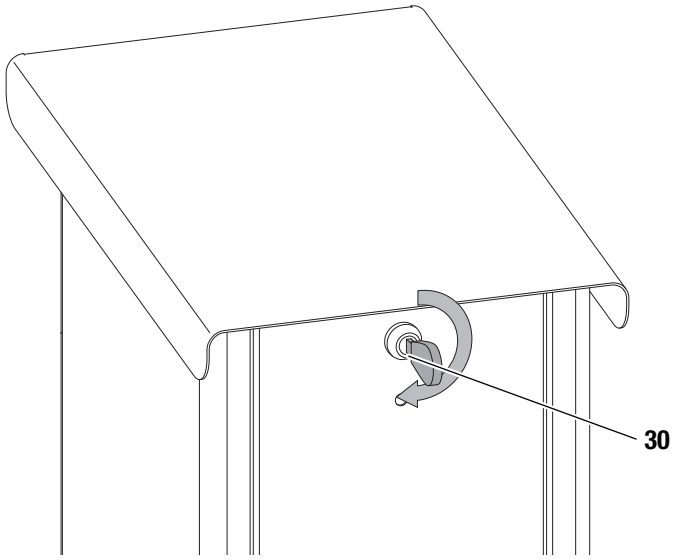


Fig. 5-4 Unlocking lid

2. Remove the cover from the tower.

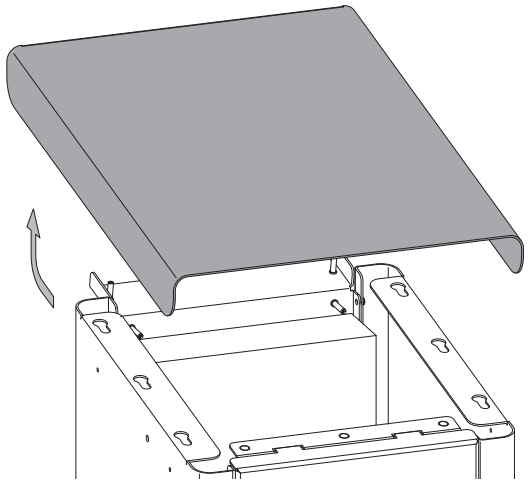


Fig. 5-5 Removing lid

3. Pull the release lever (33) within the device. It is located above the coin collection box at the rear.
   - The rear cover opens.

Note!
When it rains, cover the top section of the disposal tower to prevent water from entering the housing.

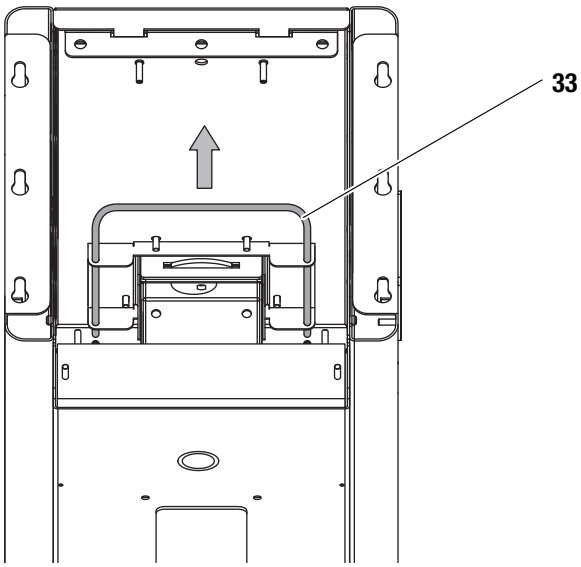


Fig. 5-6 Release lever for rear cover

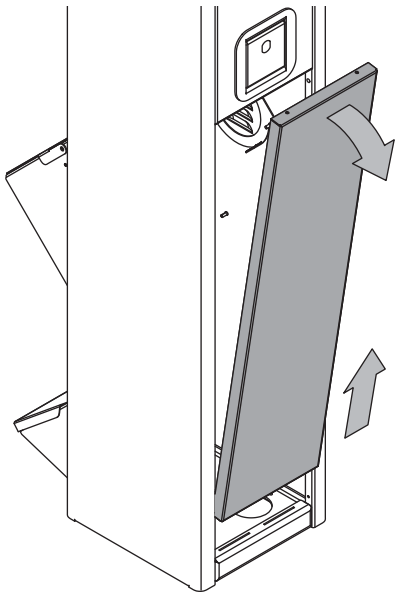


Fig. 5-7 Removing the rear cover

Warning!
Danger of minor injuries due to sharp edges or falling objects!
Wear your personal protective equipment.

4. Remove the cover and put it aside for later.
   - In the later course of the installation a second person is required.
5. Together lift the disposal tower up onto the base plate.
6. Set the disposal tower up on the drain pipe in an upright position and precisely fitting.
7. While one person holds onto the disposal tower, the second feeds the supply cables through the base plate and into the disposal tower interior.
8. Mark the required length for the supply lines.
9. Lift the disposal tower off the base.
10. Shorten the supply lines as required. Make sure they are fitting precisely.

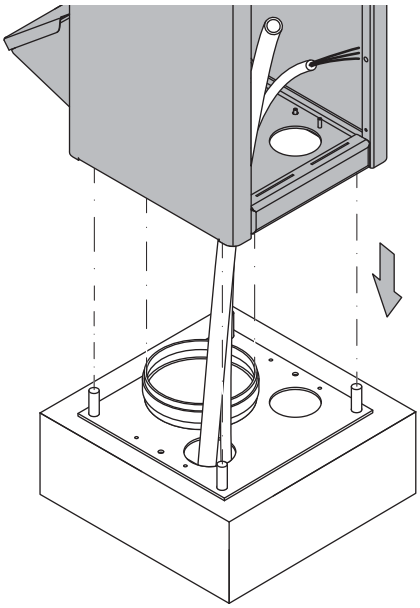


Fig. 5-8 Setting disposal tower down on drain pipe

11. Insert the supplied seal into the drain pipe.
12. Lift the disposal tower onto the base. Ensure that drain pipe and water line are fitting precisely. If required, call in another person to help.
13. Check whether the drain pipe, connector and seal are properly connected.
14. Introduce the optional trace heating fully into the cable conduit of the water line.

15. Place the disposal tower on the foundation and use the supplied nuts to fasten it to the base plate.
    - Check whether the disposal tower is still loose. If there is still play, tighten the nuts.
    - The disposal tower is ready for the connection of water line and power supply.

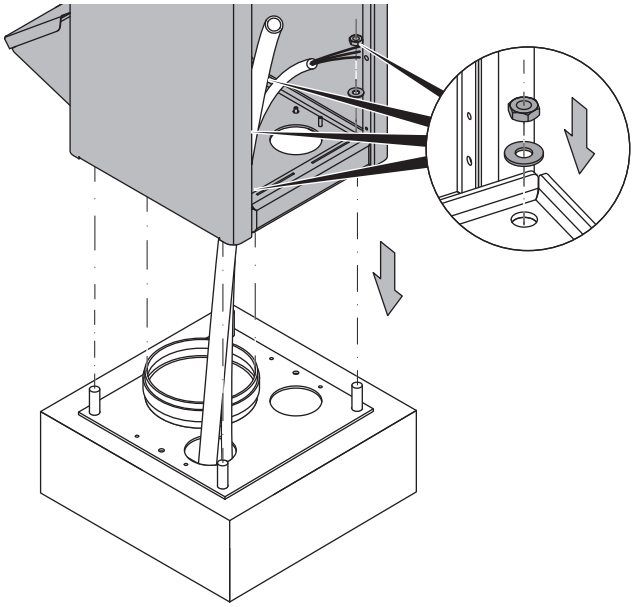


Fig. 5-9 Screwing together disposal tower and foundation

Note!
The electrical connection must be performed by an electrically skilled person.

5.4.1 Connection of the water line

Requirements:

- The disposal tower is set up according to chapter 5.4.
- The supply lines are fed into the disposal tower and shortened appropriately.

1. Set the main valve to CLOSED position, see fig. 5-1, page 5-1.
2. Connect the water line to the main valve of the disposal tower and seal the connection.
   - Connecting the water line is completed.

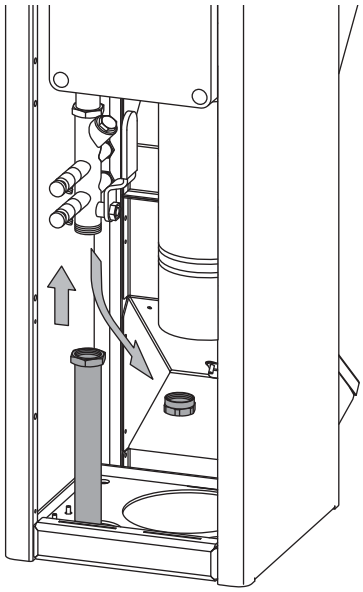


Fig. 5-10 Connecting water line to main valve

5.4.2 Electrical connection

Note!
The electrical connection must be performed by an electrically skilled person.

Requirements:

- The disposal tower is screwed to the foundation.
- The supply lines are fed into the disposal tower and shortened appropriately.

1. Open the Isobox control box within the device.
   - The wiring diagram is located at the cover of the control box.

Fig. 5-11 Wiring diagram Isobox control box

2. Switch the fuse for the control unit to OFF.

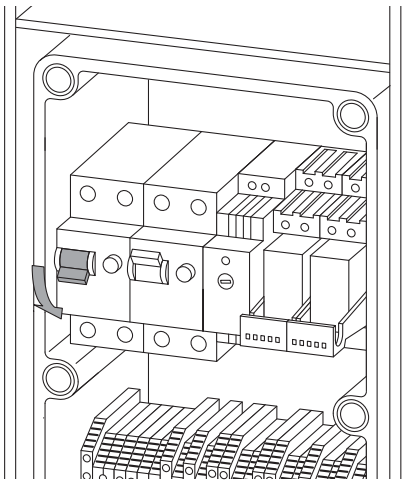


Fig. 5-12 Fuse control unit OFF

3. Connect the power line to the terminals. To do so, observe the wiring diagram.
4. Reattach the cover of the Isobox control box.

5. Close the rear cover of the housing. First insert the bottom section, then close the upper section until it locks into place.
6. Slide the cover back onto the housing.
7. Use the key to lock it.
   - The installation of the disposal tower is now completed.
   - The disposal tower is ready for start-up.

Note!
Before start-up of the disposal tower it must be by inspected and approved by a qualified electrician according to BGV[1] A3 and DIN[2] VDE 0701-0702.

The initial and repeat examinations generally comprise the following test steps:
- inspection
- trial, function test and measurement

It must be checked with appropriate measuring devices. The measured values are to be documented in suitable inspection reports, e.g. a ZVEH[3] test report as per DIN VDE 0701-0702.

A template for an acceptance protocol is provided in the annex on page 11-5.

Should the acceptance not be effected, safe operation of the disposal tower cannot be guaranteed.

1. *German Employers' Liability Insurance Association regulations*
2. *German Association for Electrical, Electronic & Information Technologies*
3. *Central Association of the German Electrical and Information Technology Trade*

6 Start-up and operation

Before start-up read the safety chapter.

6.1 Start-up

Requirements:

- The disposal tower is set up and installed according to chapter 5.
- It has been inspected and approved by a qualified electrician.
- The main valve is closed.
- The fuses are switched off.

1. Switch on the power supply at the supply line.
2. Open the lock (60) at the back of the disposal tower.

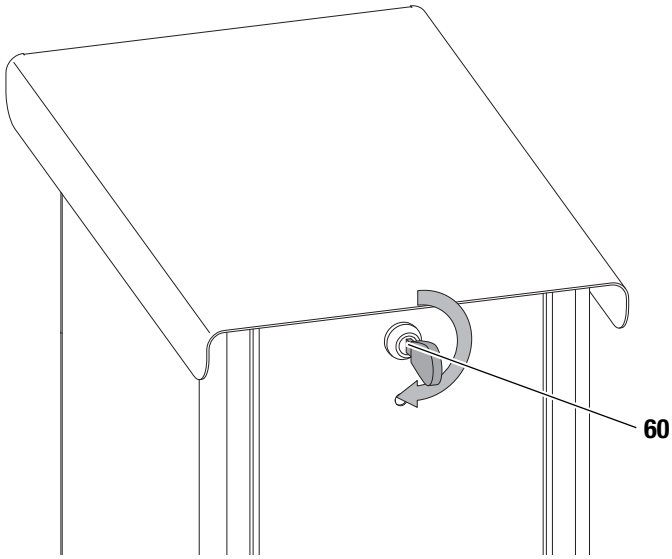


Fig. 6-1 Unlocking lid

3. Remove the cover from the tower.

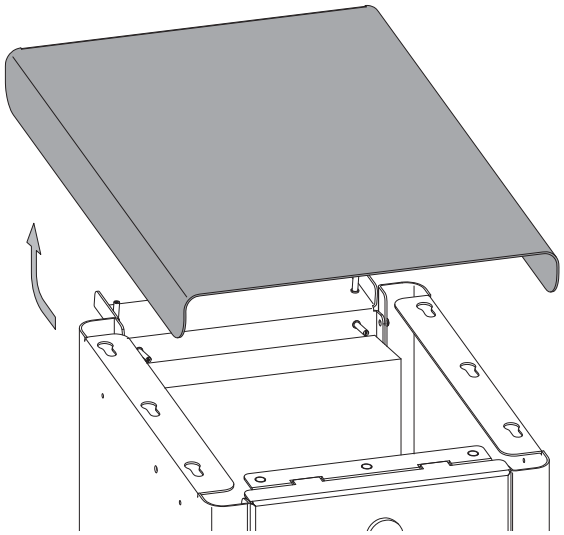


Fig. 6-2 Removing lid

4. Pull the release lever (61) within the device. It is located above the coin collection box at the rear.
   - The rear cover opens.

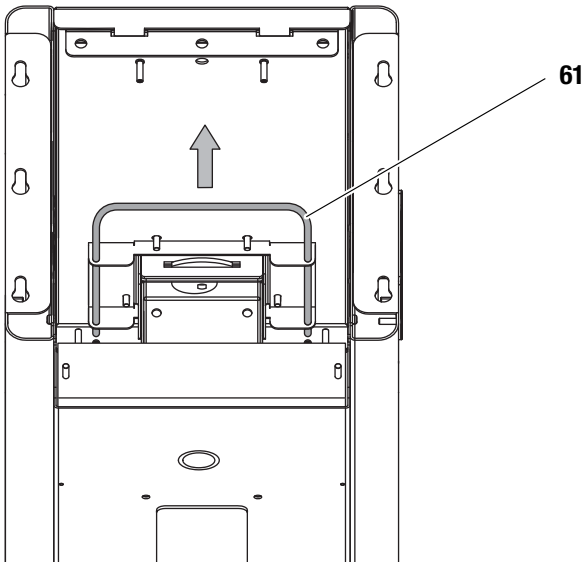


Fig. 6-3 Release lever for rear cover

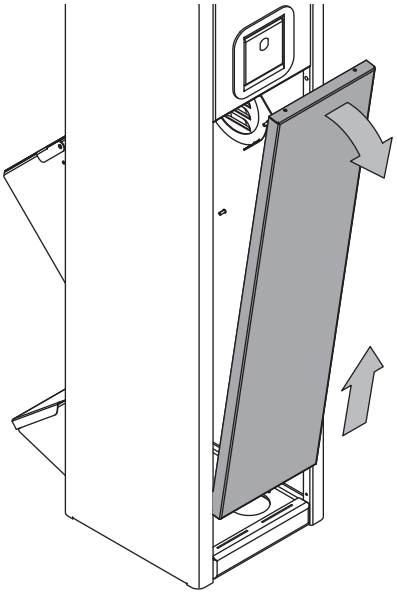


Fig. 6-4 Removing the rear cover

5. Remove the cover.
6. Apply pressure to the water line for the disposal tower.
7. Check the main valve for leakage.
   - Eliminate any leaks.
8. Open the main valve.

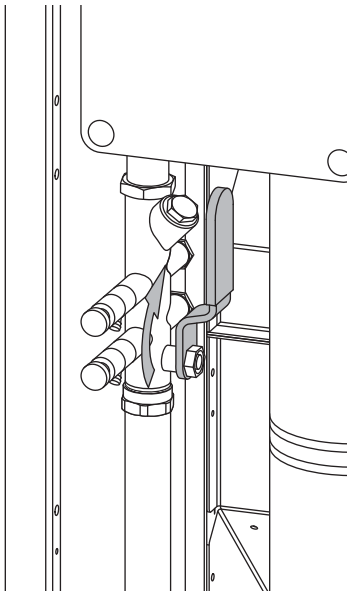


Fig. 6-5 Main valve OPEN

9. Check the connections at the solenoid valve for leakage.
   - Eliminate any leaks.

10. Switch on the fuse of the control unit.
    - The control unit starts.
    - The display switches on.

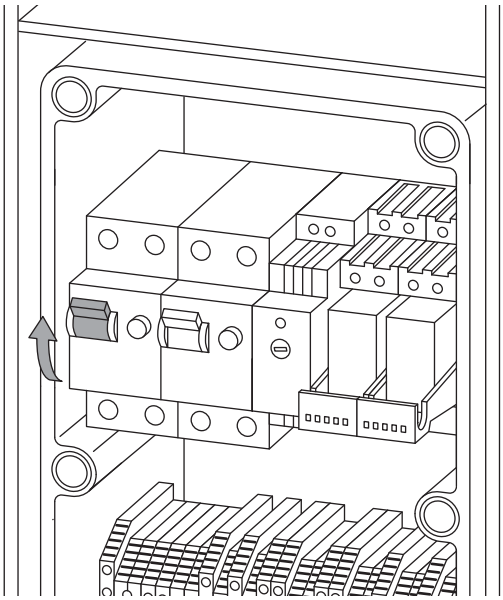


Fig. 6-6 Fuse control unit ON

11. If applicable, carry out the programming of the tower, see chapter 7.
12. Reattach the cover of the Isobox control box.
13. Close the rear cover of the housing. First insert the bottom section, then close the upper section until it locks into place.
14. Slide the cover onto the housing.
15. Use the key to lock it.
    - The disposal tower is ready for operation.

6.1.1 Switching on the trace heating

Requirements:

- The disposal tower is set up and installed according to chapter 5.
- It has been inspected and approved by a qualified electrician.

1. Open the lock (60) at the back of the disposal tower.

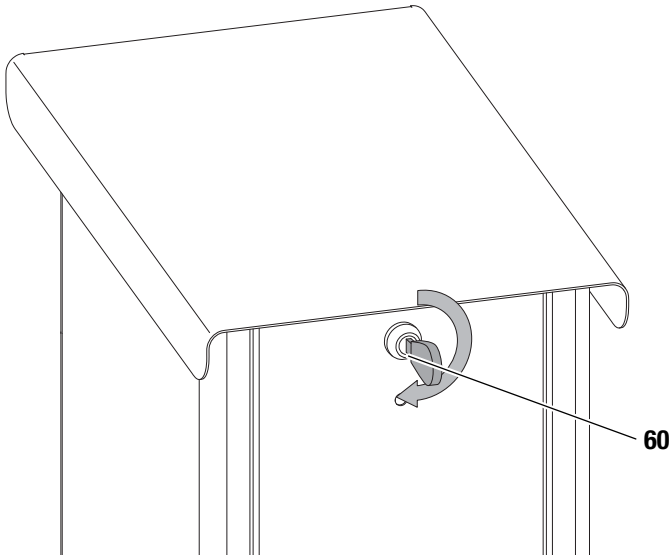


Fig. 6-7 Unlocking lid

2. Remove the cover from the tower.

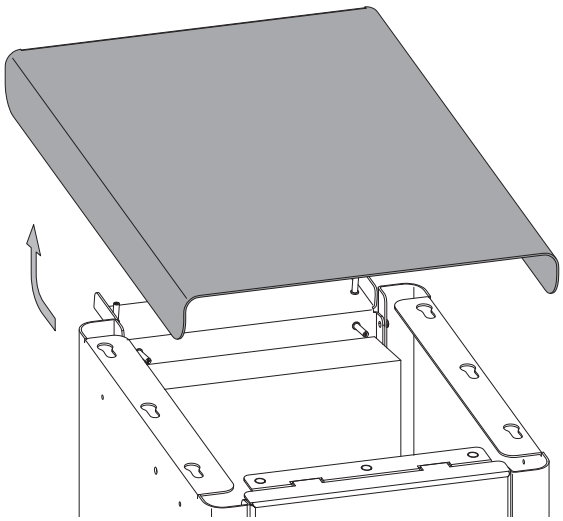


Fig. 6-8 Removing lid

3. Set the temperature sensor to +10 °C.

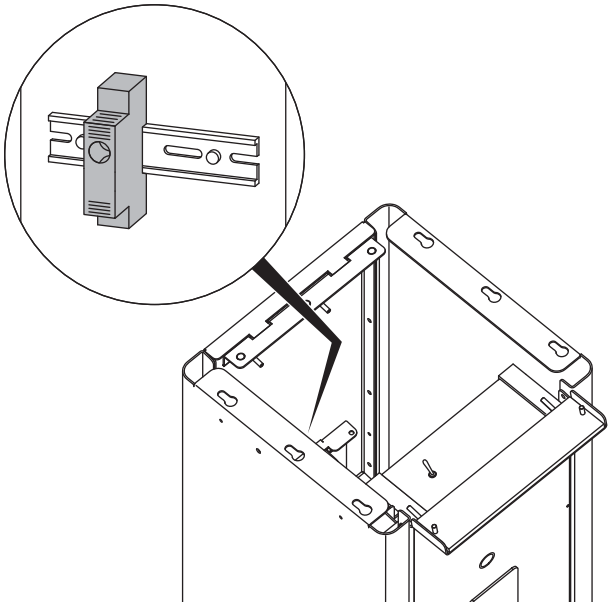


Fig. 6-9 Adjusting the temperature sensor

4. Pull the release lever (61) within the device. It is located above the coin collection box at the rear.
   - The rear cover opens.

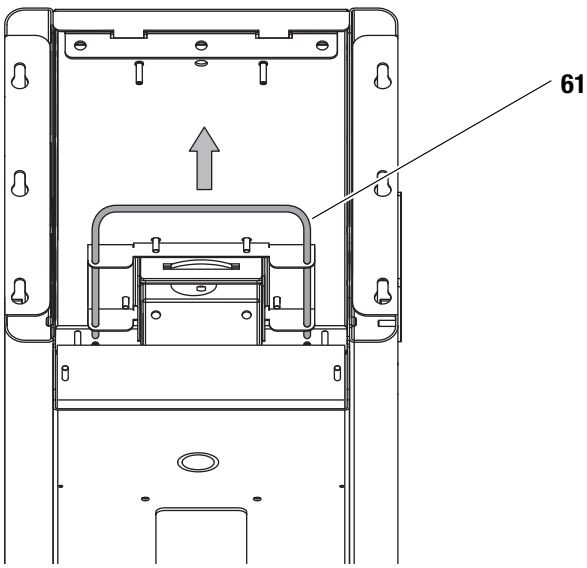


Fig. 6-10 Release lever for rear cover

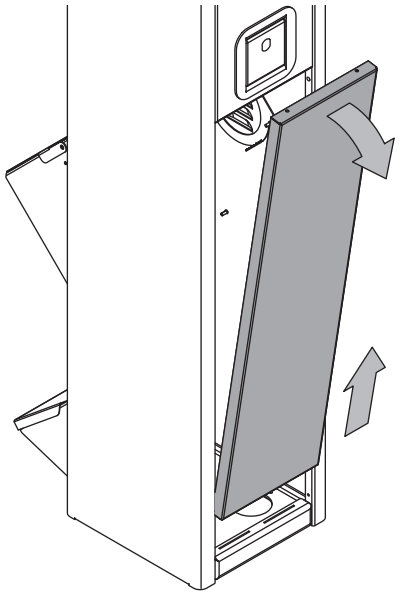


Fig. 6-11 Removing the rear cover

5. Remove the cover and put it aside.
6. Open the Isobox control box.
7. Set the fuse of the heating to ON.

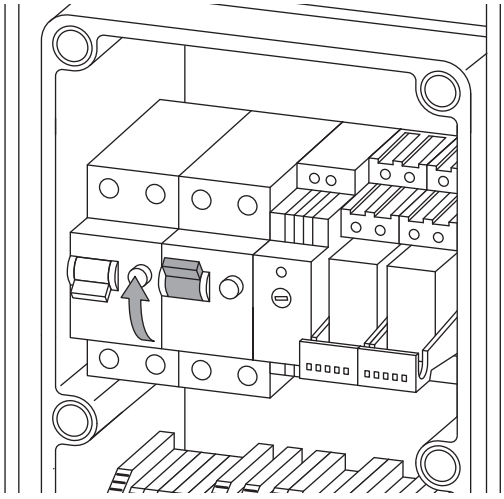


Fig. 6-12 Fusing heating ON

8. Close the Isobox control box, reinsert the rear cover and close the upper lid.
   - The trace heating is switched on.

6.2 Operation

6.2.1 Inserting coins or tokens

1. Insert a coin or token into the coin slot.
   The price for one disposal minute can be gathered from the posting at the disposal tower or inquired of the operator.
   - The flushing time is booked and will be displayed in minutes.
   - The disposal tower is ready.

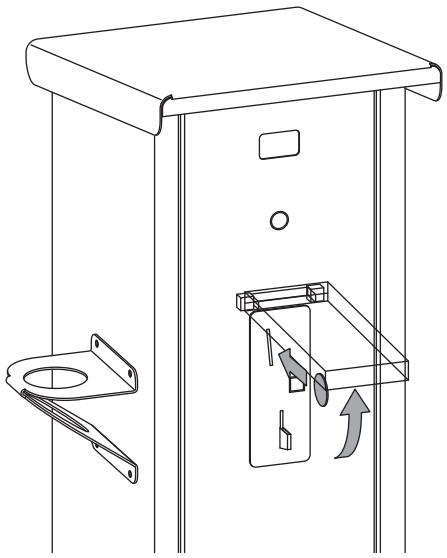


Fig. 6-13 Coin slot

2. If required, insert further coins or tokens to extend the flushing time. This is also possible during operation.

6.2.2 RFID

The RFID reading device at the disposal tower indicates its status by means of illuminated LEDs, their meaning is as follows:

Colour	Status	Meaning
white	illuminated	ready for operation
red	illuminated	fault
with held up RFID card:		
red	illuminated	socket already in use
red	flashing	RFID card invalid or cannot be read
green	illuminated	credit charged

1. Hold your RFID card up against the reader.
   The price for one disposal minute can be gathered from the posting at the disposal tower or inquired of the operator.
   - The flushing time is booked and will be displayed in minutes.
   - The disposal tower is ready.

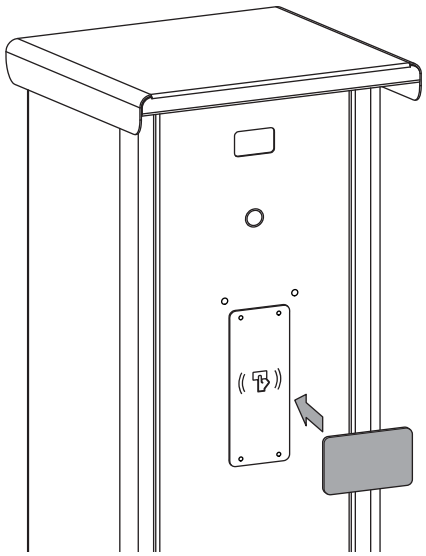


Fig. 6-14 RFID

6.2.3 Disposal at the tower

Requirements:

- You have either booked flushing time or the operation of the disposal tower is free of charge.

Note!
The time credit countdown starts as soon as the flap at the front is opened. This countdown cannot be stopped. Flushing stops, when the time has run out.

1. Open the waste water tank.
   - Use the lateral retainer to put down the cap, so you have both hands free for the draining process.
2. Open the flap at the front.
   - Both the flushing system and the fan are started.
   - The countdown starts as well.

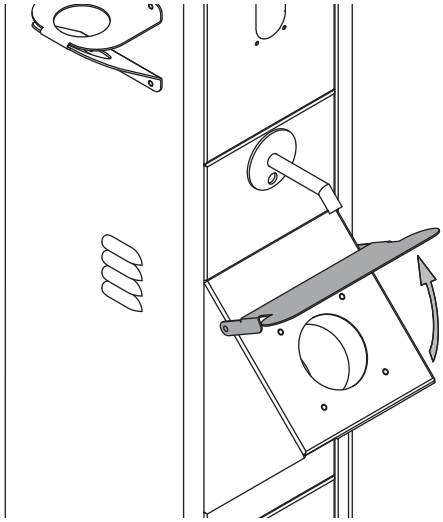


Fig. 6-15 Opening the flap

3. Insert the connecting piece of the waste water tank into the opening of the disposal tower.
   - Wait until the waste water tank is completely drained.

Fig. 6-16 Draining the waste water tank

4. Pull the nozzle of the waste water tank out of the opening.

Warning!
Danger of minor to moderate injuries due to slip hazard in front of the disposal tower.
In wintertime there is a danger that the spilled water freezes.
Do not access areas with frozen water!

5. Position the connecting piece of the waste water tank underneath the water tap. Ensure the correct positioning of the connecting piece to avoid splashing and/or spilling over.

Fig. 6-17 Flushing the waste water tank

6. Actuate the footswitch, see fig. 6-17.
   - The water flow from the tap is activated.
   - During this process, ensure the correct positioning of the connecting piece and observe the filling level of the waste water tank to avoid splashing and/or spilling over.
7. Once the desired amount of water has run into the waste water tank, let go of the footswitch.
8. Repeat the steps 2. to 6. until the waste water tank is clean.

9. Close the flap.

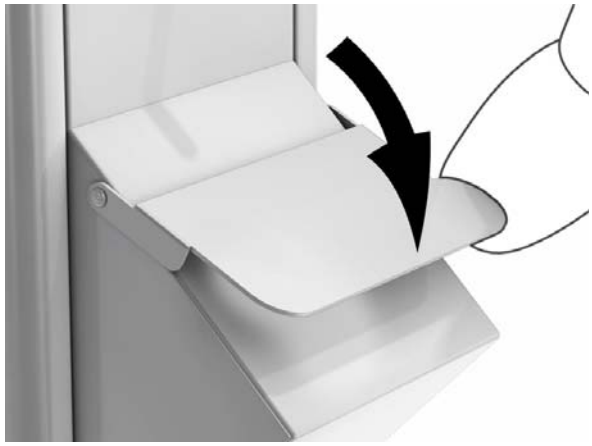


Fig. 6-18 Closing the flap

6.2.4 Starting the drainage flushing system (optional)

Requirements:
You have either booked flushing time or the operation of the disposal tower is free of charge.

1. Move the tower to the marked position above the drain or duly connect the drain hose.
   Always observe the on-site information regarding disposal.
2. If applicable, connect the discharge pipe of the waste water tank.
3. Press the start/stop button of the drainage flushing system.
   - The drainage flushing system starts.
4. Start emptying the waste water tank.
5. When the waste water tank is empty, remove the discharge pipe.
6. Press the start/stop button again to stop the drainage flushing system.

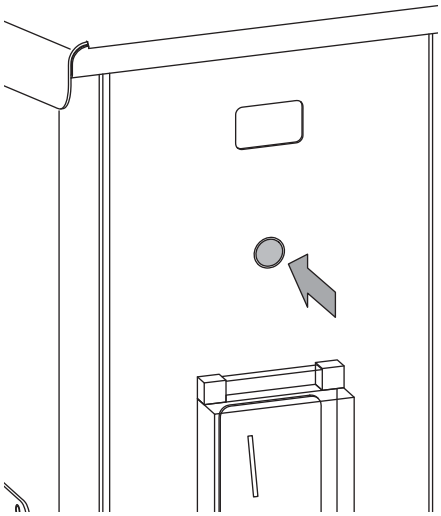


Fig. 6-19 Pressing the start/stop button of the drainage flushing system

6.2.5 Setting the coin validator

1. Open the lock (60) at the back of the fresh water tower.

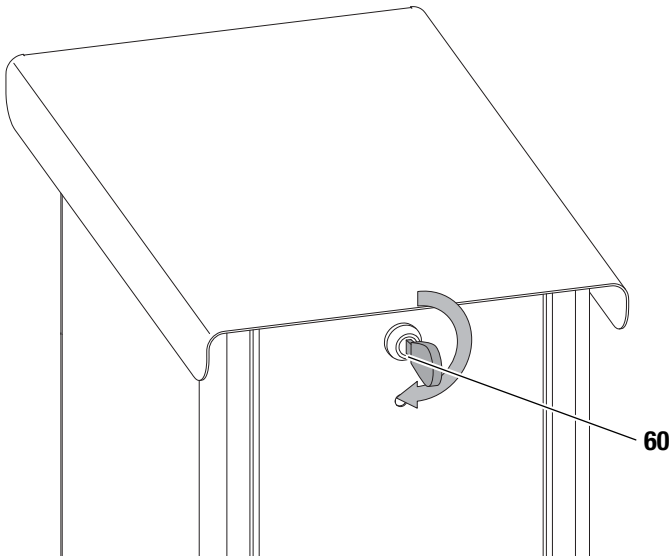


Fig. 6-20 Unlocking lid

2. Remove the cover from the fresh water tower.

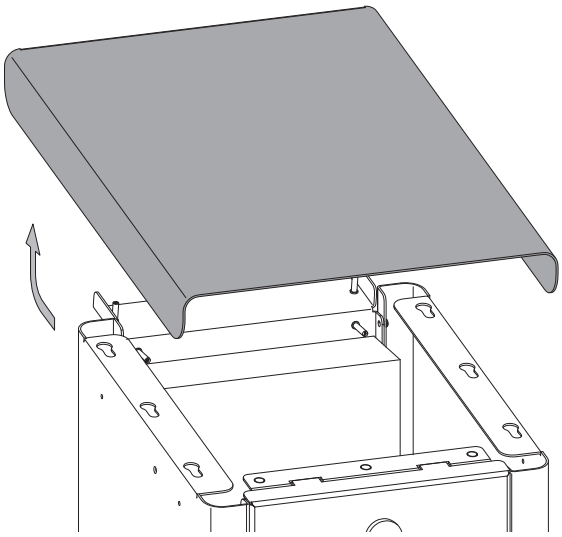


Fig. 6-21 Removing lid

3. Remove the coin validator.
4. For information on how to set the coin validator please consult the coin validator's supplier instructions, see chapter 11.3.1, page 11-7.
5. Place the lid on the tower and lock it using the key.

6.2.6 Emptying the coin box

1. Insert the key into the lock of the coin box.

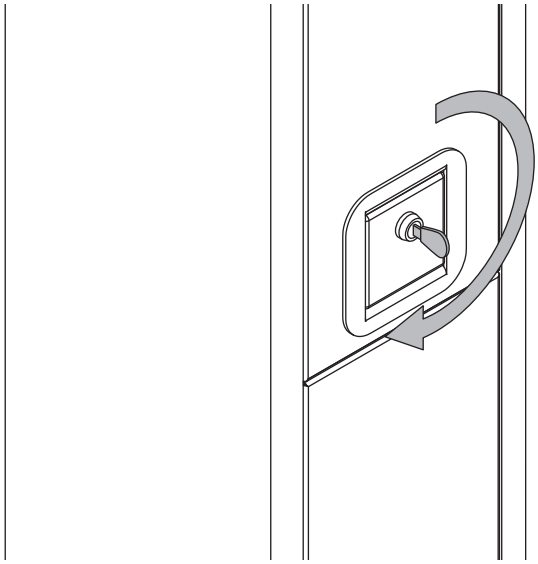


Fig. 6-22 Unlocking coin box

2. Rotate the key by 180°.

Note!
If the key can only be turned by 90°, you used the wrong key.
Do not attempt to force open the lock.

3. Remove the coin box.

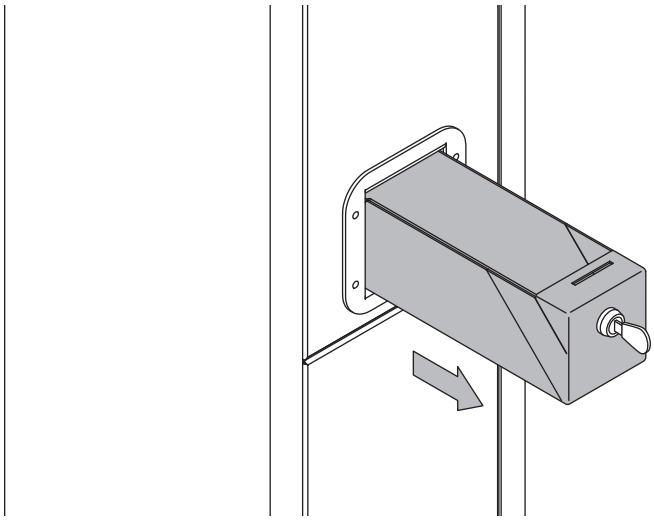


Fig. 6-23 Removing the coin box

4. Empty the contents of the coin box out into a suitable container.
5. Push the coin box back into the disposal tower and lock it up.

6.3 Shutdown

1. Open the lock (30) at the back of the disposal tower.

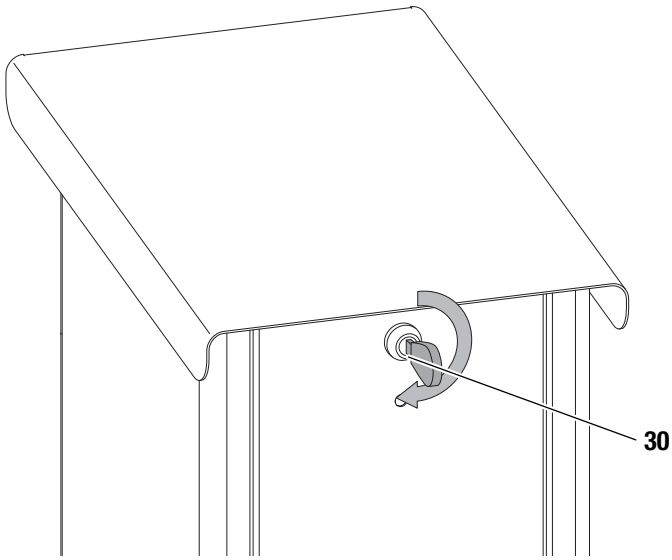


Fig. 6-24 Unlocking lid

2. Remove the cover from the tower.

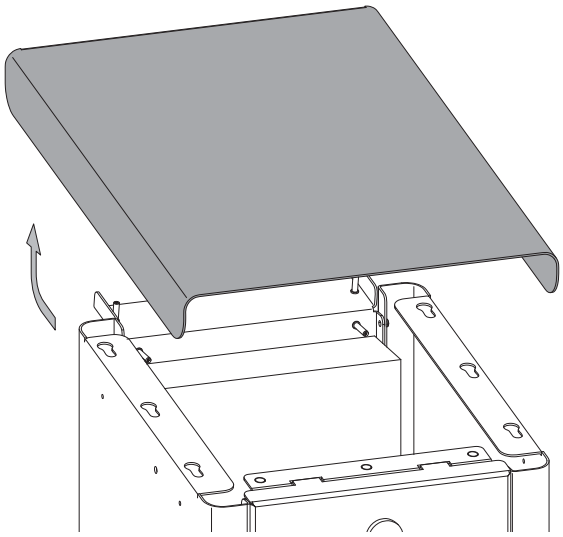


Fig. 6-25 Removing lid

3. Pull the release lever (33) within the device. It is located above the coin collection box at the rear.
   - The rear cover opens.

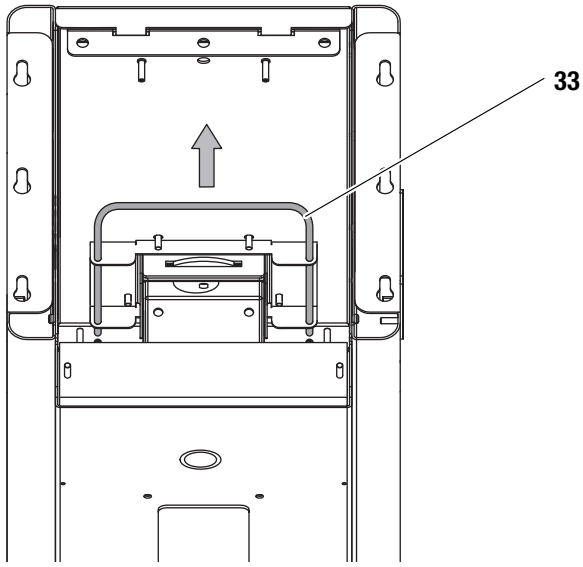


Fig. 6-26 Release lever for rear cover

4. Remove the cover.

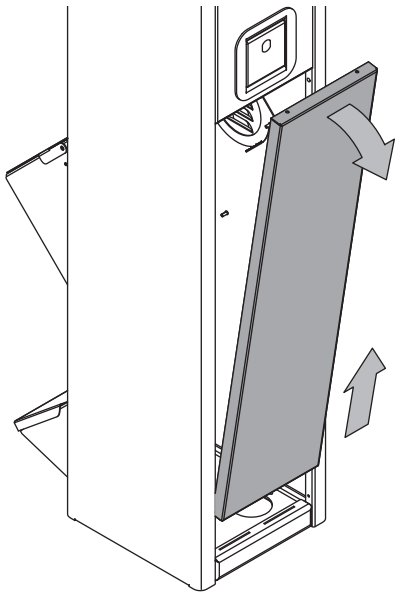


Fig. 6-27 Removing the rear cover

5. Turn off the main valve for the supply line, see fig. 5-1.

6. Open the flap at the front.
   - In order to draw water you have to buy credit – depending on the programming of the tower.

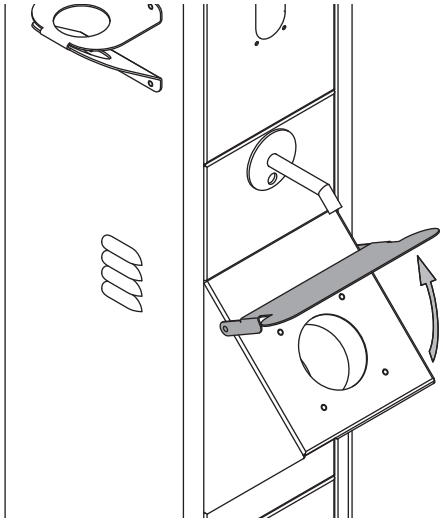


Fig. 6-28 Opening the flap for shutdown

7. Wait until the water flow stops.
8. Actuate the footswitch, see fig. 6-17.
9. Wait until the water flow from the tap stops.
10. Press the start/stop button of the drainage flushing system (optional).
11. Wait until no more water flows into the drain (optional).
12. Close the flap at the front.
13. Open the two vent valves at the main valve.

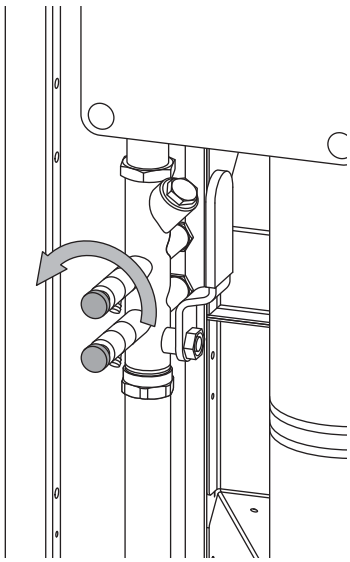


Fig. 6-29 Opening vent valves at main valve

14. Close the tap at the main valve.
15. Close the two vent valves.
16. Unscrew and open the Isobox control box and remove the cover.

17. Set both fuses to OFF.

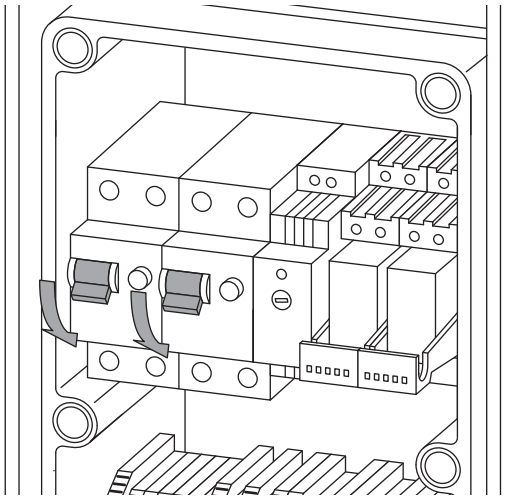


Fig. 6-30 Fuses OFF

18. Reattach the cover of the Isobox control box and fasten it.
19. Close the rear cover of the housing. First insert the bottom section, then close the upper section until it locks into place.
20. Slide the stainless steel cover onto the housing.
21. Use the key to lock it.
    - The disposal tower is rendered inoperative.

7 Programming

Programming the disposal tower enables the setting of different rates and the corresponding flushing times. Furthermore, internal counters can be set.

The programming is either preset by the specialist dealer or may be effected by the operator.

7.1 Requirements

Before you can start with the programming, the disposal tower first has to be set to programming mode. To do so, please proceed as follows:

1. Open the lock at the back of the disposal tower.

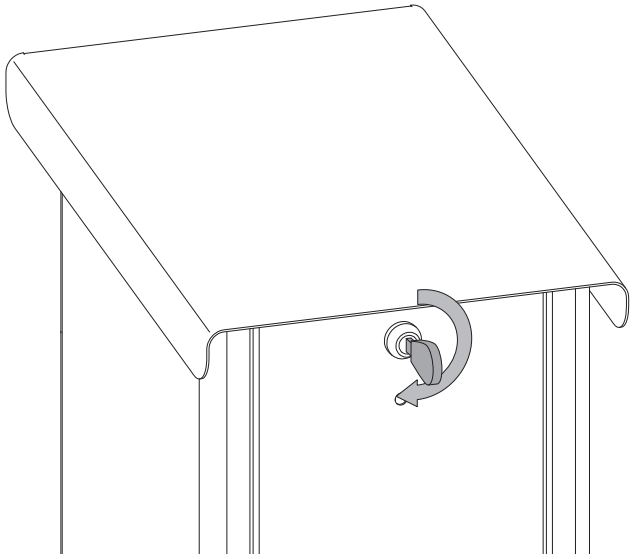


Fig. 7-1 Unlocking lid

2. Remove the cover from the tower.

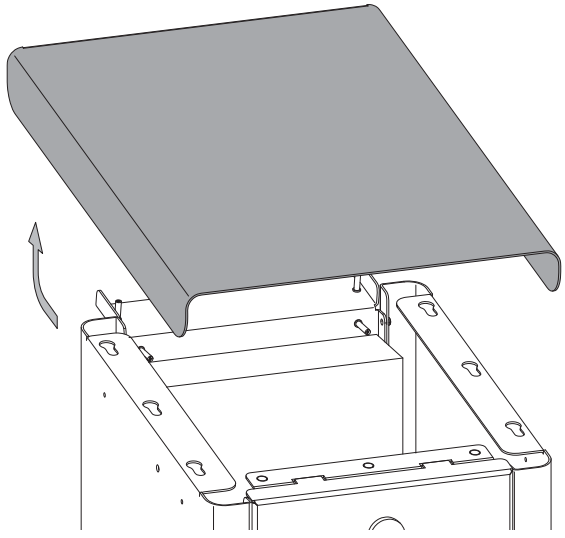


Fig. 7-2 Removing lid

3. Press the yellow button (70).
   - The disposal tower is now in programming mode.
   - Credit balance, that has already been booked, remains unchanged during programming mode.
   - It is not possible to top up your credit while in programming mode.

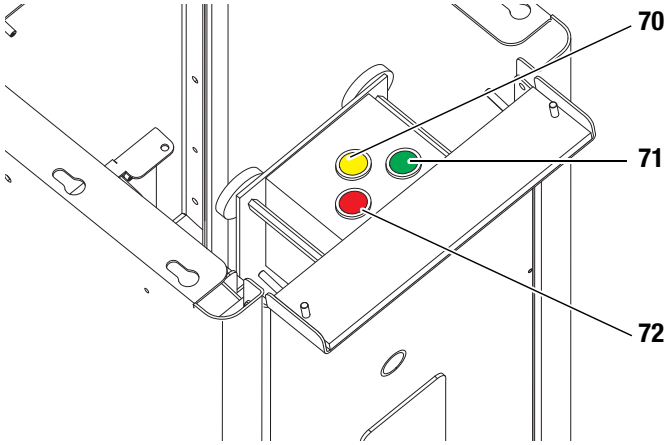


Fig. 7-3 Programming switch

4. To exit programming mode, use the green (71) or red button (72) to select the EXIT PROG menu, then press the yellow button (70).
5. Once the programming is completed, put the lid back on the disposal tower and lock it using the key.

7.2 Navigation

The navigation in programming mode works as follows:

7.2.1 Menu level

On the menu level you can use the green (next, 71) and red (previous, 72) buttons to change between the following menu items: 1-Registers, 2-Op. hours, 3-Settings, 4-Other and 5-Info.

7.2.2 List of parameters

Pressing the yellow button loads the parameter list of the respective menu item. With every subsequent actuation of the yellow button you scroll through the parameters one at a time. You must have completely scrolled through the parameter list by use of the yellow button to be able to return to the menu level.

7.2.3 Changing parameters

By means of the red or green button a displayed parameter can be changed as follows:

- The green button (71) connotes "increase value", when it comes to changing a numeric value.
- The red button (72) connotes "decrease value", when it comes to changing a numeric value.
- The red button (72) connotes "delete", when it comes to resetting a counter to "0".

7.3 Menu structure

The menu structure is made up of five superordinate menus. Each menu comes with parameters that can be set. Further information on the parameters are provided in chapter 7.4.

The following table provides an overview of the entire menu structure:

Menu/ parameter	1 – Registers	2 – Op. hours	3 – Settings	4 – Other	5 – Info
P01	reg. 1 (register 1)	operating hours 1 (erasable)	price	test run	software version
P02	reg. 2 (register 2)	operating hours 2 (non-erasable)	time	operation	-
P03	-	-	maximum time	saving	-
P04	-	-	lead time	second display	-
P05	tokens 1 (token counter 1)	-	-	-	-
P06	tokens 2 (token counter 2)	-	remote start	-	-
P07	customers 1 (counter 1)	-	-	-	-
P08	customers 2 (counter 2)	-	paying extra	-	-
P09	-	-	-	displaying balance	-
P11	-	-	token value	-	-
P12	-	-	counting tokens	LCD contrast	-

7.4 Parameterization

7.4.1 Operating hours 1 & 2

Here the operating hours of the disposal tower are counted. Operating hours denotes the total of booked flushing time.
The operating hours counter 1 can be reset.
The operating hours counter 2 cannot be reset.

7.4.2 Price

This parameter determines the cost of one time unit.
To start a flushing process at least one time unit must be booked.

7.4.3 Time unit

This parameter determines the duration of one time unit.

7.4.4 Maximum time

This parameter determines the maximum duration of a flushing process.

7.4.5 Lead time

This parameter determines the time between booking of the flushing time (inserting the minimum charge) and automatic start.

7.4.6 Paying extra

If this function is enabled, the customer can extend the time by inserting coins even after he has started the process.

7.4.7 Remote start

In case of *"Yes"*: opening the flap starts the flushing process.

7.4.8 Token value

This parameter indicates the value of the token in euros.

7.4.9 Counting tokens

In case of *"Yes"*: the tokens will be added to the registers according to their amount and treated as ordinary money. The token quantity is added to the token counters.

7.4.10 Test run

By means of this parameter you can start a test run. A test run means that the flushing process is started for one minute without having to book flushing time.
By means of the red button you can immediately terminate a test run or a customer's release time.

7.4.11 Operation

Should it be required, that no bookings can be made for a time, set this parameter to "No". The display then reads "OUT OF SERVICE".

7.4.12 Saving

If this parameter is switched on, flushing will be continued or resumed, e.g. after a power failure.
If the Savings function is switched off, the disposal tower will be in "READY" condition after an outage.

7.4.13 Displaying balance

If this parameter is enabled, the remaining balance will be indicated in euros instead of the remaining time.

7.4.14 Software version

Here you can see the software version.

8 Maintenance

Anyone charged with maintenance tasks must have read and understood this operating manual, especially the safety chapter.

For information on which maintenance tasks are required please see chapter 8.2, page 8-2.

If questions arise please contact your specialist dealer or Beckmann GmbH.

For work at the electrical installation consult an electrically skilled person.

8.1 Safety

Take the disposal tower out of operation before starting any maintenance task, see chapter 6.3, page 6-15.

Danger!
Risk of death due to electrical voltage!
The disposal tower must be de-energized before undertaking any work.

Warning!
Danger of minor injuries due to sharp edges or falling objects!
Wear your personal protective equipment.

Caution!
Property damage owing to the use of wrong cleaning agents
Only use the cleaning agents specified in the maintenance chapter to clean the disposal tower!
Never use a high-pressure cleaner to clean the disposal tower!

8.2 Maintenance schedule

Tab. 8-1 Maintenance intervals

Component	Maintenance activity	Maintenance interval				Further information
		daily	weekly	monthly	annually	
housing	visual inspection for damage	X				
water tap	visual inspection for damage	X				
	disinfection	X				Use disinfectant that is suitable for stainless steel.
disposal flap	visual inspection for damage	X				
	disinfection	X				Use disinfectant that is suitable for stainless steel.
main valve	cleaning filter	every 6 months				
residual current device	functional check			X		
coin validator	cleaning coin slot				X	as needed, also see chapter 11.3.1, page 11-7
housing	cleaning	in case of heavy contamination, e.g. when the display is no longer legible				Do not use a high-pressure cleaner. Do not use any aggressive cleaning agents. Use cleaning agents especially suited for stainless steel.

8.3 Maintenance activities

8.3.1 Cleaning the coin validator

1. Open the lock (30) at the back of the disposal tower.

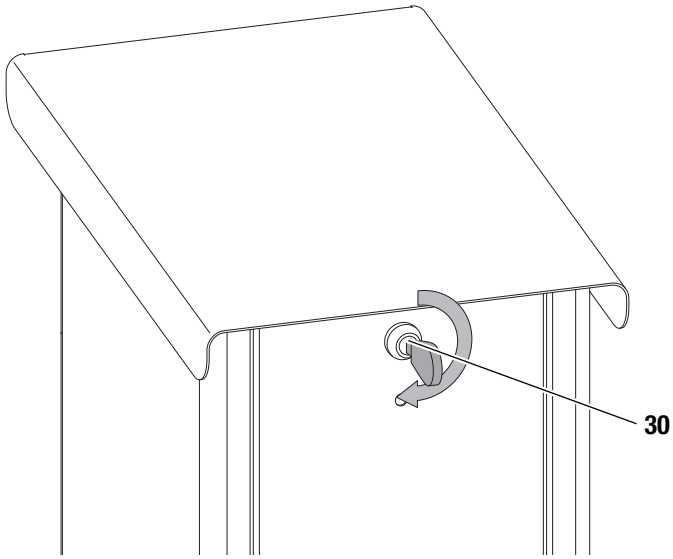


Fig. 8-1 Unlocking lid

2. Remove the cover from the disposal tower.

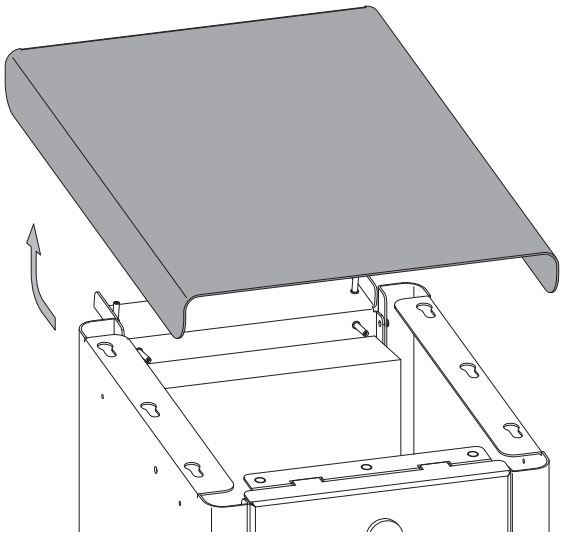


Fig. 8-2 Removing lid

3. Remove and clean the coin validator. For information on how to proceed, please see the supplier instructions in chapter 11.3.1, page 11-7.
4. Place the lid on the tower and lock it using the key.

8.3.2 Cleaning the housing

Clean the housing by means of a damp, soft, lint-free cloth. Ensure that no moisture can enter. Do not use any solvents, alcohol-based cleaning agents or abrasive cleaners. Only use clear water and, if required, a cleaning agent suitable for stainless steel.

8.4 Cleaning the filter

1. Open the lock (30) at the back of the disposal tower.

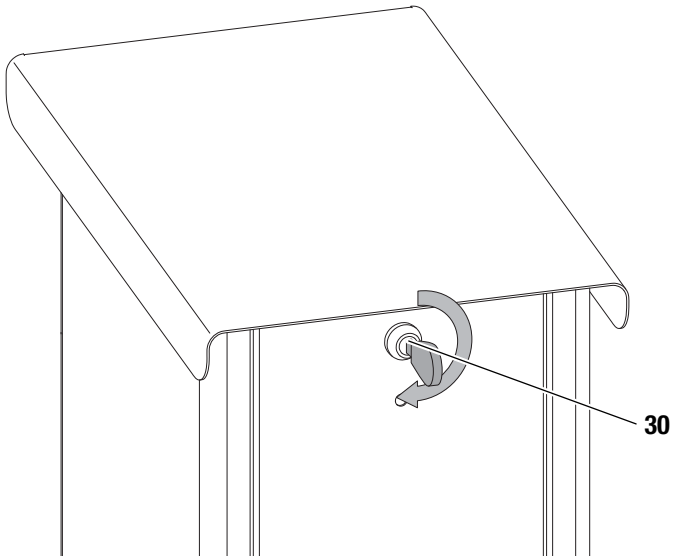


Fig. 8-3 Unlocking lid

2. Remove the cover from the tower.

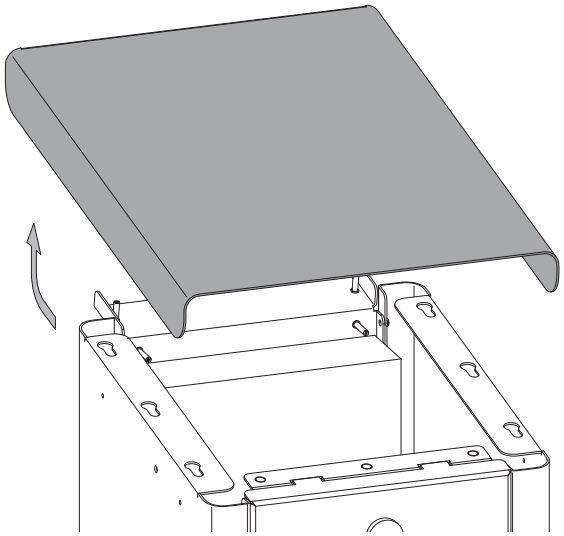


Fig. 8-4 Removing lid

3. Pull the release lever (33) within the device. It is located above the coin collection box at the rear.
   - The rear cover opens.

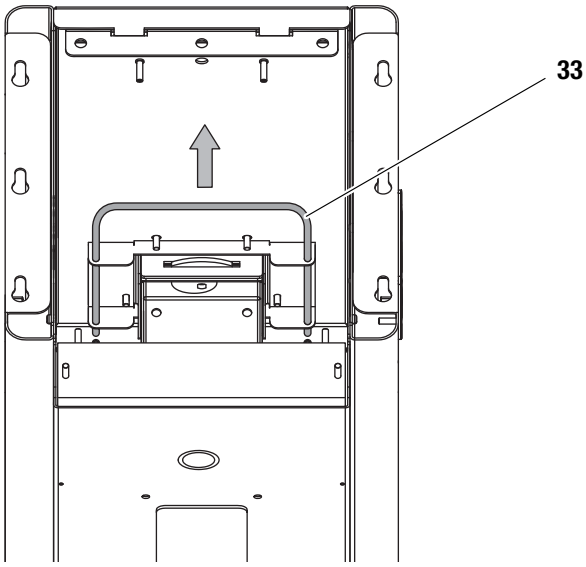


Fig. 8-5 Release lever for rear cover

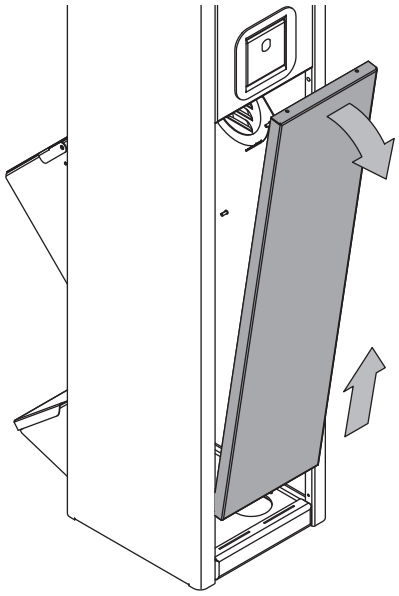


Fig. 8-6 Removing the rear cover

4. Open the valve cap (84) at the main valve.

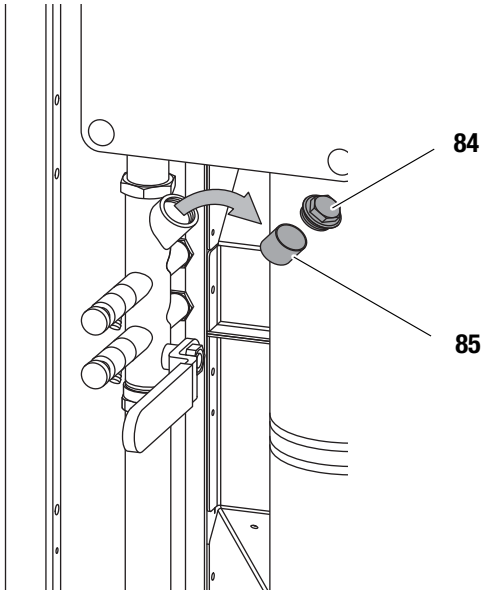


Fig. 8-7 Main valve removing filter

5. Remove the filter (85).
6. Clean the filter with clear water.
7. Reinsert the filter.
8. Screw the valve cap back to the main valve.
9. Close the rear cover of the housing. First insert the bottom section, then close the upper section until it locks into place.
10. Slide the cover onto the housing.
11. Use the key to lock it.

9 Faults

Anyone charged with the task of troubleshooting must have read and understood this operating manual, especially the safety chapter.

Rectify faults immediately to prevent further damage.
Information on how to identify and clear the fault is provided in the fault table on chapter 9.2, page 9-2 as well as in the supplied external operating manuals.

If questions arise please contact your specialist dealer or Beckmann GmbH.

In case of faults at the electrical system, consult an electrically skilled person.

9.1 Safety

Take the disposal tower out of operation before performing troubleshooting, see chapter 6.3, page 6-15.

Danger!
Risk of death due to electrical voltage!
The disposal tower must be de-energized before undertaking any work.

Warning!
Danger of minor injuries due to sharp edges or falling objects!
Wear your personal protective equipment.

Caution!
Property damage owing to the use of wrong cleaning agents
Only use the cleaning agents specified in the maintenance chapter to clean the disposal tower!
Never use a high-pressure cleaner to clean the disposal tower!

9.2 Fault table

The following tables lists a number of faults which can occur during operation and may be rectified by yourself.
If you are not able to clear the fault, immediately notify your specialist dealer or Beckmann GmbH.

Tab. 9-1 Faults

Fault	Cause	Remedial measure
Inadequate water flow.	Insufficient line pressure	Inspection by specialist dealer or system mechanic for sanitary, heating and air-conditioning technology.
Water trickles or keeps running at the end of the flushing time.	Excessive line pressure.	Inspection by specialist dealer or system mechanic for sanitary, heating and air-conditioning technology.
	Defective solenoid valve.	Replacement of solenoid valve by specialist dealer.
Coin cannot be inserted.	Coin validator blocked by foreign object	Clean the coin validator, see chapter 8.3.2, page 8-3.
Coin is not recognized.	Coin is not programmed	Check the programming of the coin validator, see supplier instructions in chapter 11.4.1, page 11-8.
	Dirty coin validator	Clean the coin validator, see chapter 8.3.2, page 8-3.
	Defective coin validator	If after cleaning the coin validator still does not function, have it checked by a qualified electrician and replaced, if required.
Exhaust fan does not start.	Defective fan	Have the fan checked by a qualified electrician and replaced, if required.
Flushing system does not start.	Defective limit switch	Have the limit switch checked by a qualified electrician and replaced, if required.
	Faulty supply line	Inspection by specialist dealer or system mechanic for sanitary, heating and air-conditioning technology.

10 Disposal

Disassemble the disposal tower for disposal and separate it into the individual material groups:

- plastics
- non-ferrous metals (e. g. copper scrap)
- aluminium
- electronic scrap
- steel

Dispose of the materials according to the national regulations.

11 Annex

11.1 Declaration of Conformity

in accordance with the EC Low Voltage Directive 2006/95/EC, Annex III, Section B

Herewith we declare that the following disposal tower has been declared in conformity with the EC Low Voltage Directive 2006/95/EC.

Description of the electrical equipment:	Disposal tower EMS-CLEAN
Year of manufacture:	as of 2014
Relevant EC directives:	Low Voltage Directive 2006/95/EC as of 12 December 2006
	Directive 2004/108/EC on electromagnetic compatibility as of 15 December 2004
Applied harmonised standards:	
Other applied technical standards and specifications:	Safety standards: DIN EN 61010-1:2011-07 EMC standards: DIN EN 61326-1:2013-06
Manufacturer:	Beckmann GmbH Brandtstr. 1 33161 Hövelhof Germany

Place, date: Hövelhof, 01 September 2014

Signature: _____

Identification of signer: Jürgen Beckmann, Managing Director

11.2 Acceptance protocol template

BECKMANN MANAGEMENTSYSTEME

Protokoll Nr.:
000000028949

Prüfprotokoll

Stammdaten

Kunden Nr.:		**Auftrags Nr.:**	20140630134816
Kunde:		Auftragnehmer:	Fa. Beckmann GmbH Brandtstrasse 1a 33161 Hövelhof
Beauftragter:		*Prüfer:*	nicht definiert

Gerät

Identnummer:	000000028949	**Bezeichnung:**	000000028949
Seriennr.:		Typ:	
Hersteller:		Schutzklasse:	I
Anwendungsteile:		Netzanschluss:	
Zubehör:			

Prüfung

Beginn der Prüfung:	26.06.2013	Ende der Prüfung:	26.06.2013
Durchgeführt nach:	IEC 61010	Grund der Prüfung:	Wiederholung
Verwendete Messgeräte:	Gossen Metrawatt;Secutest SIII+H A06 D00;YB 513723 0001;GMC V 7.39 08		

Besichtigung

Ok	n.OK	
☒	☐	Schutzleiter
☒	☐	Isolierteile
☒	☐	Gehäuse
☒	☐	Anschlussleitung
☒	☐	Typenschild
☒	☐	Sonstiges

Protokollierung

Ja	Nein	
☐	☒	Brandgefahr, Gefahr durch elektrischen Schlag, mechanische Gefahr
☐	☒	Gerät kann nicht mehr instand gesetzt werden
☒	☐	Prüfergebnis mängelfrei
☒	☐	Prüfplakette aufgeklebt
☒	☐	Unterlagen sind vollständig verfügbar und entsprechen dem aktuellen Stand des ME-Geräts oder ME-Systems

Nächste Prüfung	26.06.2014	☐ Gerät ist bis zum folgenden Termin instandzusetzen
Prüfzyklus (Monate):	12	
Bemerkung:		

Unterschrift

Beauftragter:			**Prüfer:**		
Paderborn	30.06.2014		Paderborn	30.06.2014	☒
Ort	*Datum*	*Unterschrift*	*Ort*	*Datum*	*Unterschrift*

Protokoll Nr.: 000000028949 1 / 2

Messwerte					
Nr.	**Art**	**Text**	**Messwert**	**Grenzwert**	**Bestanden**
001	RSL	Schutzleiterwiderstand	0,08 Ohm	< 0,2 Ohm	Ja
002	RISO	Isolationswiderstand	> 310 MOhm	> 0,5 MOhm	Ja
003	BS	Berührstrom	0,2 µA	< 0,5 mA	Ja
004	BS SFC	Berührungsstrom SFC	1,5 µA	< 3,5 mA	Ja
005	PSPG	Prüfspannung	233,7 V	230 V	Ja

11.3 Supplier documentation

11.3.1 EMP coin validator

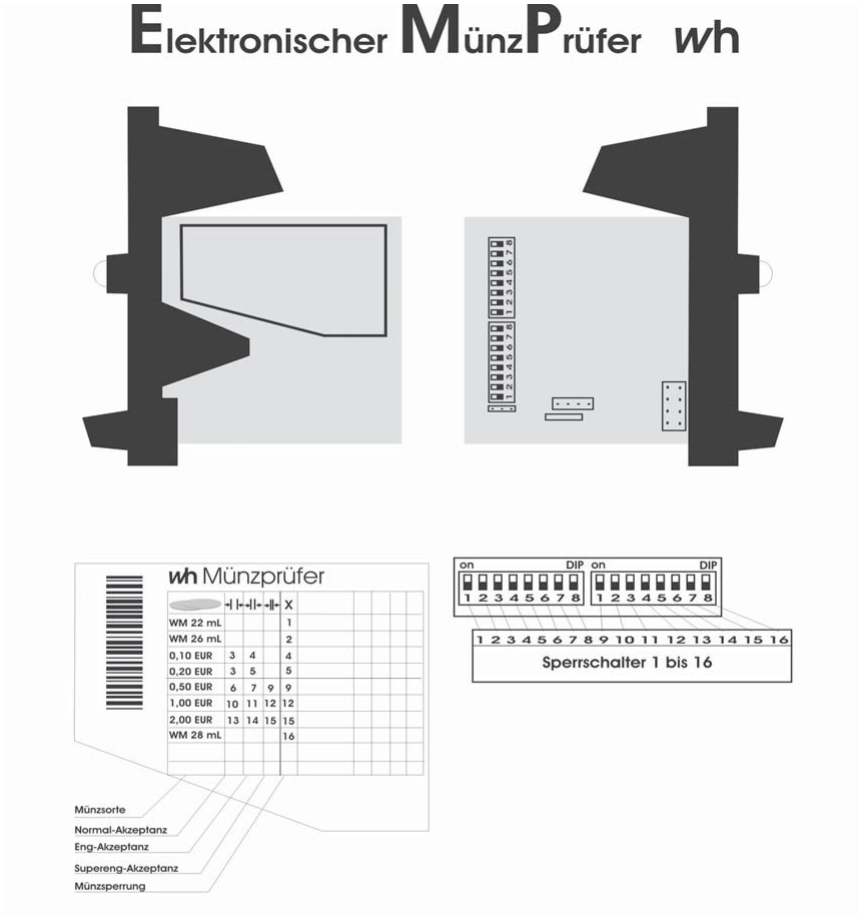
11.3.1.1 Coin validator settings

- **P9 Aus mit WM**

  Ist dieser Parameter aktiviert, wird bei Einwurf einer Wertmarke der gewählte Ausgang freigegeben und die Restenergiemenge wird gelöscht. Wenn diese Option genutzt wird, können Wertmarken grundsätzlich nicht mehr zum Bezahlen genutzt werden.

7 Der elektronische Münzprüfer

Abbildung 2 :Der elektronische Münzprüfer (WH)



Um eine bestimmte Münzsorte zu sperren, bringen Sie den (die) entsprechenden Sperrschalter in die ON-Position

Beachten Sie, dass bei Problemen mit Fremdwährungen, bestimmte Münzen auf engere Akzeptanz eingestellt werden können. Dazu muss der Normal-Akzeptanz Kanal gesperrt werden (enge Akzeptanz).
Für superenge Akzeptanz muss zusätzlich der Eng-Akzeptanz Kanal gesperrt werden.
Soll die Münzsorte überhaupt nicht mehr akzeptiert werden, so muss die Münzsperre(X) aktiviert werden.

7.1 Programmieren der Münzkanäle des EMP

Die elektronischen Münzprüfer (EMP) von wh sind werksseitig auf die in der Tabelle 9 angegebenen Münzen in unterschiedlichen Toleranzen programmiert. Jede dieser Münzen kann durch Setzen eines Sperrschalters separat verriegelt werden.

Die nachfolgende Tabelle zeigt die Belegung der Kanäle der EURO EMP - Version.

Münzart EURO	Bezeichnung (normal)	Bezeichnung (eng)	Bezeichnung (extra eng)	Sperrschalter
WM 22mm mit Loch	1	-	-	1 links
WM 26mm mit Loch	2	-	-	2 links
10 Cent normal	3	4	-	4 links
20 Cent normal	3	5	-	5 links
50 Cent normal	6	7	9	1 rechts
1 EURO	10	11	12	4 rechts
2 EURO	13	14	15	7 rechts
WM 28mm mit Loch	16			8 rechts

Tabelle 1 :Belegung der Münzkanäle

Bei der Einstellung des EMP ist folgendes zu beachten:

- Sperrschalter auf ON (nach oben) sperrt den entsprechenden Kanal, Sperrschalter auf OFF (nach unten) gibt den entsprechenden Kanal frei.
- Die Münzen können teilweise in verschiedenen Stufen freigeschaltet werden, wobei bedeuten:
  - **normal:** Der EMP prüft die Münzen in normalen Toleranzbereichen. Diese Einstellung ist werksseitig eingestellt.
  - **Eng:** Die Toleranzbereiche werden eingeengt. Dadurch können Falschmünzen besser aussortiert werden. Die Akzeptanz für die eingestellte Münzart geht leicht zurück. Um eine Münze “eng” zu prüfen, muß der Sperrschalter “normal” für diese Münzart auf ON stehen.
  - **Supereng:** Weiter verbessertes Erkennen von Falschmünzen. Die Akzeptanz für die engestellte Münzart geht weiter zurück. Die Sperrschalter “normal” und “eng” müssen auf ON stehen.
- Nach Umstellen eines Schalters muss die Energiesäule aus- und wieder eingeschaltet werden, um die neuen Einstellungen zu aktivieren.

Es ist darauf zu achten, dass der freie Fall der Münzen aus dem EMP nicht behindert wird (z.B. durch eine zu volle Münzbox), da sonst eine einwandfreie Münzerkennung nicht gewährleistet ist, und durchfallende Münzen nicht gewertet werden können.

11.3.1.2 EMP coin validator, label, maintenance, troubleshooting

5. Münzprüfer-Label

Auf dem Label des Münzprüfers sind alle notwendigen Angaben zu den Münzen, den Ausgängen und den Sperrschaltern enthalten. Im einzelnen sind folgende Informationen dem Label zu entnehmen:

Abb. 17 Beispiel eines EMP 800 v7 Labels

Oben in der Mitte steht die vollständige Typenbezeichnung des Münzprüfers:

EMP 800.00 v7

Am Ende der gleichen Zeile sind alle Optionen durch einen „/"-Strich getrennt aufgeführt, im Beispiellabel:

/E erweiterter Temperatur- und Feuchtigkeitsbereich

Links neben dem Barcode (90° gedreht), ist die Seriennummer, die Herstellungswoche und das Herstellungsjahr zu finden. Die gleichen Angaben enthält auch der Barcode. Ganz links außen ist die Nummer der Liefervorschrift, mit der das Gerät im Werk programmiert wurde, aufgedruckt.

Alle weiteren Angaben beziehen sich auf die programmierten Münzen, welche in Form einer Tabelle dargestellt sind. Die einzelnen Spalten haben folgende Bedeutung:

 Münzsorte (Wert und Währung)
Teachmode Kanäle werden mit TKn gekennzeichnet. Das „n" steht für die Nummer des Sperrschalters, mit dem der Teachmode für diesen Kanal aktiviert wird.

Sperrschalter für den weiten Kanal

Sperrschalter für den mittleren Kanal

Sperrschalter für den engen Kanal

Sperrschalter für eine Münze oder Münzgruppe (ggf. eine Währung)

Ausgangsleitung

Für den EMP 8x0.00 v7 werden die Ausgangsleitungen (1 bis 6) direkt angegeben. Beim EMP 8x0.04 v7 mit binär codierten Ausgängen, erfolgt die Angabe in hexadezimaler Form (Zum Beispiel ist bei 2,- € der Eintrag „0E" zu finden. Dieser entspricht dem Binärcode 001110, also werden bei 2,- € die Ausgangsleitungen 2, 3 und 4 aktiviert).

6. Wartung

6.1. Reinigung

Der EMP 800 v7 ist ein sehr robuster Münzprüfer und arbeitet im Wesentlichen wartungsfrei. Bei starker Beanspruchung oder bei Betrieb an Orten mit hoher Luftverunreinigung, wie z.B. durch Staub, Reinigungsmitteln, Chemikalien, Nikotin etc. sollte der Münzprüfer in regelmäßigen Abständen gereinigt werden. Die erforderlichen Intervalle hängen sehr stark von den jeweiligen Einsatzbedingungen ab.

Bei einer mittleren Umweltbelastung und mechanischen Beanspruchung genügt es, den Münzprüfer einmal pro Jahr bei geöffneter Klappe innen mit einem weichen, mit einer alkoholischen Flüssigkeit getränkten Lappen auszuwischen. Es kann auch lauwarmes Wasser mit etwas Spülmittel verwendet werden. Es ist unbedingt darauf zu achten, dass bei der Reinigung kein Schmutz in die Bohrungen des optischen Messsystems eingetragen wird. Die Lichtschranken am Münzaustritt sollten mit einem weichen Pinsel gereinigt oder mit Druckluft ausgeblasen werden.

Stellen Sie sicher, dass der Münzprüfer während der Reinigung stromlos ist.

Achten Sie darauf, dass das Tuch feucht, nicht nass ist. Es darf keinesfalls Flüssigkeit in das Gerät laufen.

Vermeiden Sie Lösungs- oder Scheuermittel die den Kunststoff angreifen können.

Verwenden Sie niemals einem öligen Lappen! Ölen Sie niemals den Weichenmagneten, Scharniere etc.!

6.2. Beseitigung von Störungen

Nicht jede Funktionsstörung muss ihre Ursache in einem Defekt des Münzprüfers haben. Die Ursachen liegen oftmals auch in beschädigten oder losen Anschlussleitungen, falschen Einstellungen oder einer zu schwachen Stromversorgung.

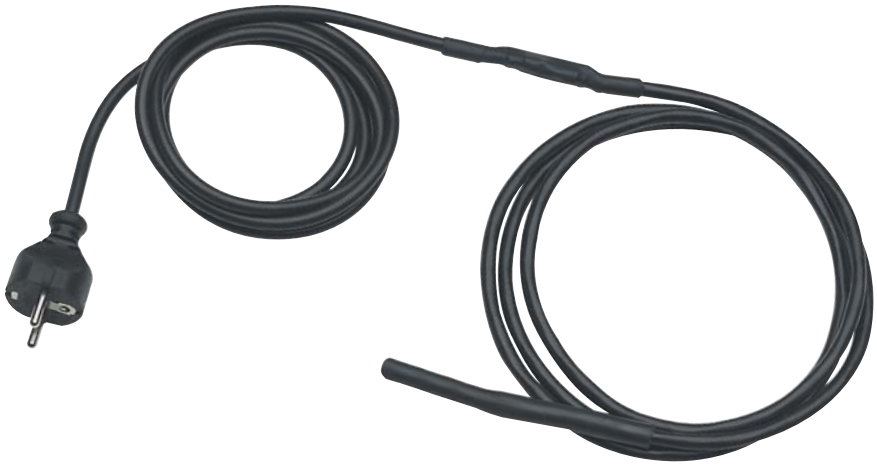
Die nachfolgende Tabelle gibt Ihnen einen Überblick über die häufigsten Fehlerursachen. Prüfen Sie daher bitte zuerst an Hand der nachfolgenden Tabelle, ob Sie die Störung nicht ganz einfach selbst beseitigen können.

Fehler-bild	mögliche Ursachen	Fehlerbeseitigung
Münz-prüfer nimmt Münze nicht an	keine Versorgungs-spannung	• Automat mit Spannung versorgen, prüfen ob das Netzteil auch wirklich Spannung liefert • Zustand des Kabels kontrollieren, Kabel richtig am Münzprüfer und Automaten anschließen
	Versorgungsspan-nung zu schwach	• Wenn das Netzteil unterdimensioniert ist, kann es zum Zusammenbrechen der Stromversorgung kommen, wenn der Weichenmagnet anzieht und damit der kurzzeitige Stromverbrauch des Münzprüfers stark ansteigt. Stellen Sie sicher, dass bei einer Last von 400 mA die Versorgungsspannung nicht unter 8 Volt zusammenbricht!
	Münze gesperrt	• Prüfen ob die Münzen nicht über die Sperrschalter gesperrt sind • Sicherstellen, dass der Münzprüfer nicht über das Signal „Generalsperre“ (Pin 6) durch den Automaten gesperrt ist. • Sicherstellen, dass Pin 5 (Rückgabesignal) nicht durch den Automaten auf Masse gezogen wird.
	Münzprüfer verschmutzt	• Münzprüfer reinigen
	Rückgabehebel bzw. Rückgabetaste klemmt	• Sicherstellen, dass der Rückgabehebel bzw. die Rückgabetaste nicht dauerhaft betätigt ist. Die Rückgabebetätigung wird mit einem Mikroschalter detektiert (Ausnahme Option/P) und dem Münzprüfer gemeldet. Dieser nimmt so lange keine Münzen an, wie das Rückgabesignal anliegt. Der Mikroschalter wird bereits betätigt, bevor sich die Klappe beginnt zu öffnen!
	Lichtschranke im Münzaustritt verschmutzt oder durch einen Gegenstand blockiert	• Lichtschranke reinigen • Fremdkörper im Münzaustritt entfernen

Münz-prüfer nimmt Münze an, gibt aber kein Kassier-signal aus	Münzaustritt wird behindert, so dass sich die Münze zu lange in der Licht-schranke befindet oder nach dem Austritt aus der Lichtschranke wieder in ihren Bereich zurückspringt	• Sicherstellen, dass der Münzaustritt nicht durch Fremdkörper oder nach geschaltete Konstruktionselemente behindert wird

11.3.2 Trace heating

Selbstlimitierendes Frostschutzkabel SBF



Selbstlimitierendes Heizkabel SBF

DE

4. Sicherheits- und Gefahrenhinweise

- Als Stromquelle darf nur eine 230 V -, 50/60 Hz Netzsteckdose des öffentlichen
- Versorgungsnetzes verwendet werden. Versuchen Sie nie das Gerät mit einer anderen Spannung zu betreiben.
- Wenden Sie sich an eine Fachkraft, wenn Sie Zweifel über die Arbeitsweise, die Sicherheit oder den Anschluss des Gerätes haben.
- Schließen Sie das Heizkabel nie im aufgewickelten Zustand an die Netzspannung an. Dies kann durch Überhitzung zu Beschädigungen am Kabel oder zu einem Brand führen.
- Die Länge des Heizkabels darf nicht verändert werden.
- Der minimale Biegeradius der Heizkabel von 2,5 cm darf nicht unterschritten werden.
- Bei Arbeiten am Heizkabel oder in der Nähe des Heizkabels muss das Gerät vom Versorgungsnetz getrennt werden.
- Der Netzstecker darf nie mit nassen Händeri ein- oder ausgesteckt werden.
- Ziehen Sie nie an der Netzleitung selbst, ziehen Sie stets nur an den Griffflächen den Netzstecker aus der Steckdose.
- Auf der Steckverbindung darf kein Zug, Druck oder Drehmoment lasten.
- Aus Sicherheitsgründen müssen Metallrohre geerdet sein. Dies kann (muss aber nicht) standardmäßig vorliegen.
- Beachten Sie bei der Montage, dass die Anschlussleitung nicht gequetscht oder durch scharfe Kanten beschädigt wird. Sollten durch solche Beschädigungen irgendwelche offenen Stellen entstanden sein, darf das Gerät auf keinen Fall mehr ans Versorgungs-netz angeschlossen werden. **Lebensgefahr!**
- Ziehen Sie immer den Netzstecker aus der Steckdose bevor Sie das Gerät reinigen. Nur mit einem feuchten (nicht nass) Tuch reinigen.
- Wird das Gerät für längere Zeit außer Betrieb genommen, immer den Netzstecker abziehen.
- Bewahren Sie Ihr Heizkabel in dieser Zeit an einem geschützten und trockenen Ort auf.
- Wenn anzunehmen ist, dass ein gefahrloser Betrieb nicht mehr möglich ist, so ist das Gerät außer Betrieb zu setzen und gegen unbeabsichtigten Betrieb zu sichern. Dies ist der Fall wenn:

    - das Gerät oder die Netzleitung sichtbare Beschädigungen aufweisen
    - das Gerät nicht mehr arbeitet
    - nach längerer Lagerung unter ungünstigen Verhältnissen
    - nach schweren Transportbeanspruchungen

- Geräte, die an Netzspannung betrieben werden, gehören nicht in Kinderhände.
- Diese Gebrauchsanweisung ist Bestandteil des Geräts und sollte sorgfältig aufbewahrt werden.
- Wird das Gerät an Dritte weiter gegeben, so sollte diese Gebrauchsanweisung mitgegeben werden.
- In gewerblichen Einrichtungen sind die Unfallverhütungsvorschriften des Verbandes der gewerblichen Berufsgenossenschaft für elektrische Anlagen und Betriebsmittel zu beachten.Sollten Sie sich über den korrekten Anschluss nicht im Klaren sein oder sollten sich Fragen ergeben, die nicht im Laufe der Bedienungsanleitung geklärt werden, setzen Sie sich mit dem Hersteller oder einem Fachmann in Verbindung.
- Dieses Gerät ist nicht zur Benutzung von Personen (Kinder inbegriffen) mit eingeschränkten körperlichen, sensorischen oder mentalen Fähigkeiten bestimmt, gleichermaßen auch nicht für Personen, die nicht genügend Erfahrung oder Wissen im Umgang mit dem Produkt haben, es sei denn, diese werden von einer für ihre Sicherheit verantwortlichen Person bei der Nutzung des Gerätes überwacht oder angewiesen.