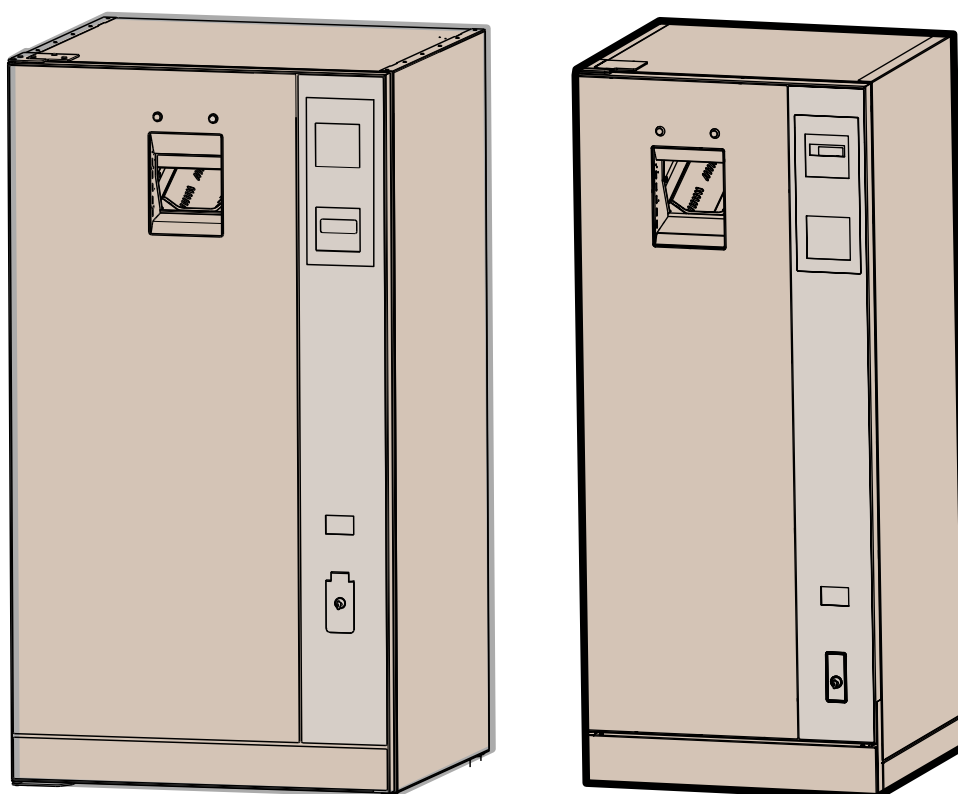


RV SiOne 03

RV SiOne EO03

RV SIONE SMALL

Reverse vending machine



Original Operating Instructions
with Technical Manual

GB

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1. General

1.1 Introduction

1.1.1 Copyright

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SIELAFF does not accept responsibility in respect of the contents of this operating manual and cannot be held liable for any claims made based on information not contained therein.

In addition SIELAFF reserves the right to update this publication and make changes to it, without being obliged to inform any person of these changes.

1.1.2 Modifications

The texts, pictures and data in this manual reflect the technical status of the machine at the time of printing. We reserve the right to make changes in order to develop the machine further.

1.1.3 Note on versions, software version

Please note that these instructions apply to different vending machine versions. For this reason some of the information may not apply to your vending machine.

The **Software Version V50IC329.pat** is described in this document. If an older version is installed on your machine, there may be some differences.

Enter service code [21L] to view the software version.

1.1.4 Number of pages/ Complete document

This document consists of 84 pages.

If all the pages are in consecutive order, your document is complete.

1.1.5 Availability of instructions

In order to ensure safe use of the machine, the operating instructions must always be accessible to the operator. These should be easily accessible for referral at all times.

The technical part of the document (Technical Manual) should only be used by trained service technicians. You should therefore ensure that you are only consulting the relevant part of the manual.

1.1.6 Alternative source of reference

Registered users can also download this document from our website at www.sielaff.de/download-center.

1.1.7 Versions

Please note that these operating instructions cover different machine versions. For this reason some of the information may not apply to your machine.

This manual covers the following versions:

RV SiOne 03.....685 00 000 03
RV SiOne EO03685 00 000 13
RV SIONE SMALL.....698 00 000 10

1.2 Features of the SiOne and SiOne Small

The SiOne / SiOne Small are machines designed for the return of non-refillable and refillable PET bottles, cans and cups. Recognition is enabled using a barcode scanner.

The refund is dispensed from up to two integrated coin hoppers. Various card systems for transferring refund values onto a card may be fitted as an option. Alternatively, the refund can be paid as a receipt using a printer.

The empties drop into a collection bag. This allows the machine to be emptied easily and quickly. As an option two separate collection bags can be used. By doing so it is possible to separate cans, bottles, vending cups, refillable and non-refillable packaging.

The uniform depth of the SiOne / SiOne Small machines permits them to be easily integrated into a machine bank. Their flexibility enables them to be installed in various locations. In addition they can be easily transported using a pallet truck. The modular design facilitates cleaning and machine maintenance.

Programming new empties and amending refund values can be carried out seamlessly while the machine is in operation. The machine can accept up to 10,000 different empties.

1.3 Customer Service, Service-Hotline

If malfunctions should occur which cannot be operator-rectified, our Customer Service Department will be pleased to help. Please have the model, machine number and software version to hand.

This information is necessary for warranty claims.

SIELAFF GmbH & Co. KG Automatenbau

Münchener Straße 20

D - 91567 Herrieden

Tele- phone:	+49 9825 18 -0	Switchboard
	+49 9825 18-31 51 06	Service-Hotline
Telefax:	+49 9825 18-31 54 99	Service
	+49 9825 18-31 52 99	Spare parts ordering
Email:	info@sielaff.de	
www:	sielaff.de	

1.4 Machine identification plate

The identification plate is located inside the housing - top right - and is visible when the door is open.

1.5 Technical Data

	SiOne 685 00 000 13	SiOne Small 698 00 000 10
Dimensions (H x W x D)	1830 x 990 x 880 mm	1830 x 780 x 711 mm
Weight	approx. 150 kg	approx. 140 kg
Electrical connection	230 V AC 50 Hz	
Electrical connection value	see type plate	
Ambient temperature	+2°C / +45°C	
Operating temperature	+2°C / +32°C (specified normal operation)	
Storage temperature	-20°C / +70°C	
Fuse protection	16 A Characteristic B	
Recognition	Barcode scanner Recognition range approx. 170 mm	
Packaging size	Diameter max. 140 mm Diameter with mounted ingress protection 82 mm (see chap. 4.6) Length 380 mm max.	
Acceptance speed	up to 30 empties (bottles/cans) per minute	
Hopper capacity	up to 2,000 coins	
Capacity of collection bag	up to 500 bottles (0.5 l)	
Product delivery sound level	$L_{pA} < 65 \text{ dB(A)}$	
Operating sound level	$L_{pA} < 45 \text{ dB(A)}$	
Expected life cycle with a daily operating time: based on daily operating cycles (average) Minimum operating life	24h 500 5 years	

1.6 Safety information

- Before commissioning the machine, the operating instructions should be read and understood.
- When transporting, setting up, servicing and repairing the vending machine, strict adherence to the following rules and guidelines - in their latest version - is required: Regulations of the responsible utility company, accident prevention regulations, trade association guidelines, industrial code, EU guidelines, VDE regulations (Association of German Electrotechnical Engineers), country-specific regulations.
- This machine can be used by children from 8 years and above and by people with limited physical, sensory or mental abilities or lack of experience and/or knowledge, provided that they are supervised by another person responsible for their safety, or if they have received instructions on how to use the machine and are able to comprehend the dangers resulting thereof. Cleaning and maintenance work on the machine should not be carried out by children without supervision. Children should be supervised to ensure that they do not play with the machine. The machine is not suitable for children under 3 years old.
- The machine must be in a level position. It has to be secured to the wall or to the floor.
- Do not install the machine in places where water hoses or a high-pressure cleaner is used.
- Machine installation and repairs should only be carried out by trained service engineers.
- Damaged power cables must only be replaced by the manufacturer, authorised service centre or equally qualified person in order to prevent serious accidents.
- The mains plug must be easily accessible.
- Never insert damp appliance plugs into sockets or touch with wet hands.
- It is imperative that an FI-safety cut-out switch with 30 mA maximum leakage current is provided for the machine. No higher than a 16A fuse should be used.
- The indoor-version of the machine is only suited for indoor use in dry and heated rooms.
- Use original spare parts only.
- Only products approved by SIELAFF should be used.
- The machine must not be converted or modified in any way.
- SIELAFF disclaims any liability for any defect claims resulting from the afore-mentioned not being adhered to!

1.7 Intended use

The machine must only be used for the return of non-refillable and refillable PET bottles, cans and cups. Any other use will be deemed to be not as intended. The manufacturer is not liable for any damage resulting from this stipulation not being adhered to. The operator must bear total responsibility for the risk.

1.8 Manipulation or misuse of the machine

Sielaff will assume no liability for damage due to manipulation or misuse of the machine.

1.9 Explanation of signs and symbols

This vending machine was manufactured in accordance with state-of-the-art technology standards. Nevertheless, even the most expertly designed machine, cannot be without risks.

In order to ensure the highest possible level of operator safety, additional safety guidelines are highlighted by using the following symbols with accompanying detailed definitions.

Adequate safety during operation is ensured only when these safety precautions are observed.

**DANGER!**

Risk which could result in death or severe injury.

**CAUTION!**

Possible hazardous situation which could result in death or severe injury.

**ATTENTION!**

Hazardous situation which could result in injury or damage to the vending machine.

**WARNING electricity! Danger to life!**

This symbol warns that electrically live components are installed in this area. Covers marked with these symbols should only be removed by authorised electricians.

**Observe handling regulations when dealing with electro-statically sensitive components and modules (ESD)**

Parts and components that are susceptible to electrical discharge are behind covers marked with this symbol.

It is imperative that plug connections, electrical leads and component pins are not touched. Only specialist personnel with ESD knowledge are authorised to work on the machine!

**TIP**

Information to facilitate handling and use of the vending machine.

**NOTE**

Information to facilitate handling and use of the vending machine.

**ATTENTION! Risk of injury!**

When carrying out any maintenance work on the machine suitable protective gloves should be worn as the edges inside the machine may be sharp.

2. Installing

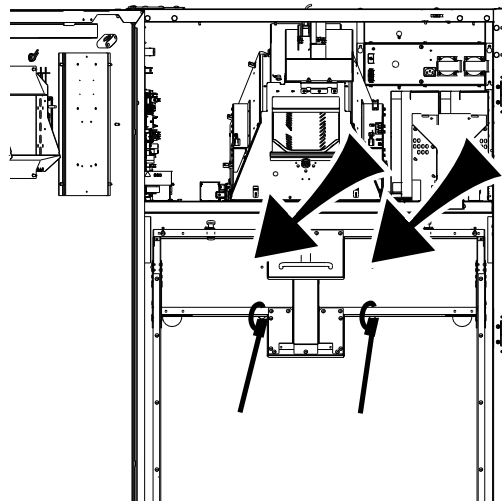
2.1 Choosing the location

When you choose the location for the machine please observe the following criteria:

- The machine must not be installed outdoors (except for the outdoor version under a canopy or similar)
- The ambient temperature at the machine location must not fall below 2°C.
- The machine must not be installed in air containing salt or chlorine, such as in an indoor swimming pool.
- Do not install the machine in places where water hoses or a high-pressure cleaner is used.

2.2 Transportation lock

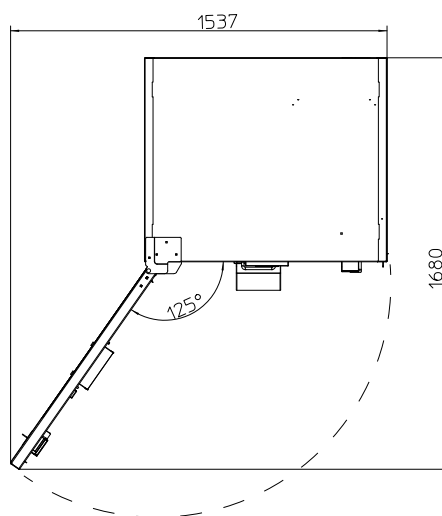
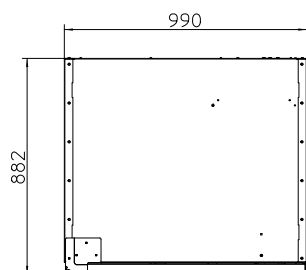
Before commissioning for the first time the transportation safety device for securing the collection bag holder (using cable ties) to the rear panel must be removed.



2.3 Machine dimensions, distances to be adhered to on installation

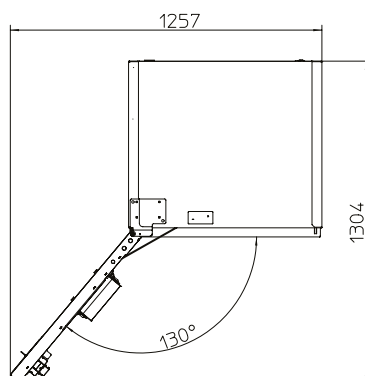
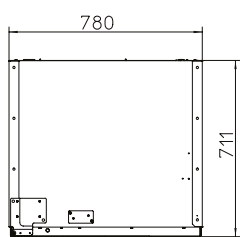
RN SiOne 03

RN SiOne EO03



There must be enough space in front of the door for opening.

RV SiOne Small



There must be enough space in front of the door for opening.

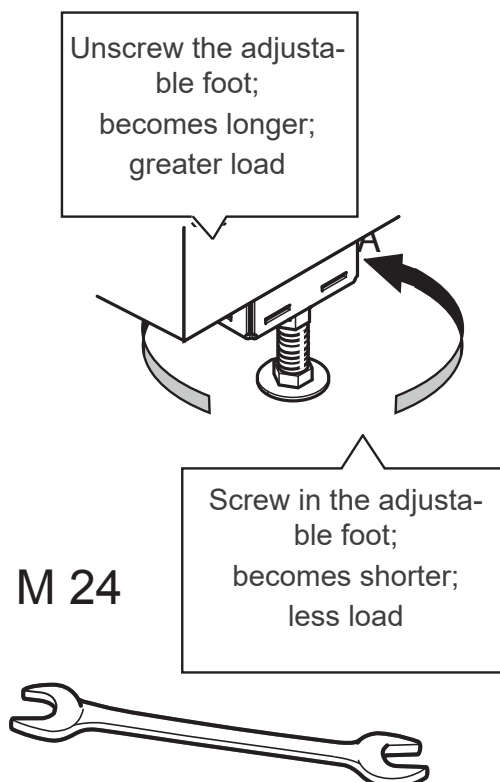
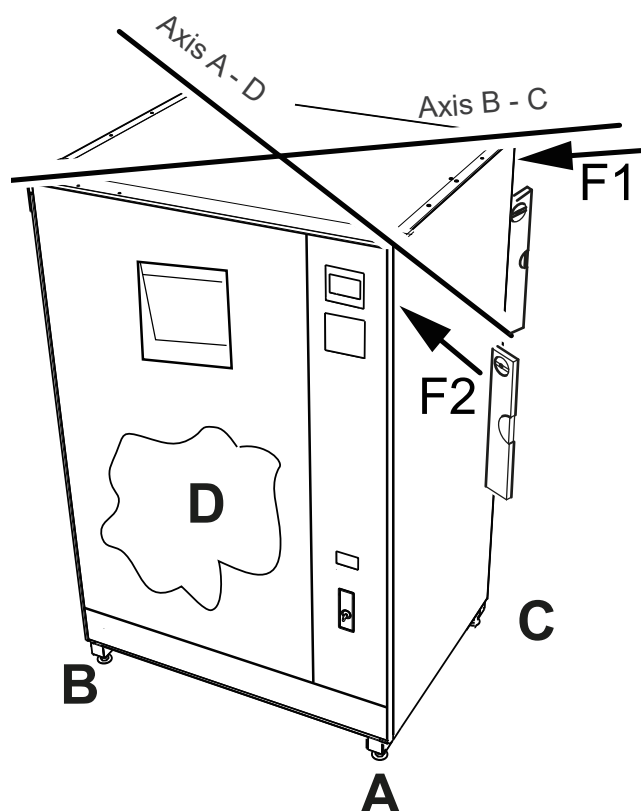
2.4 Levelling the machine

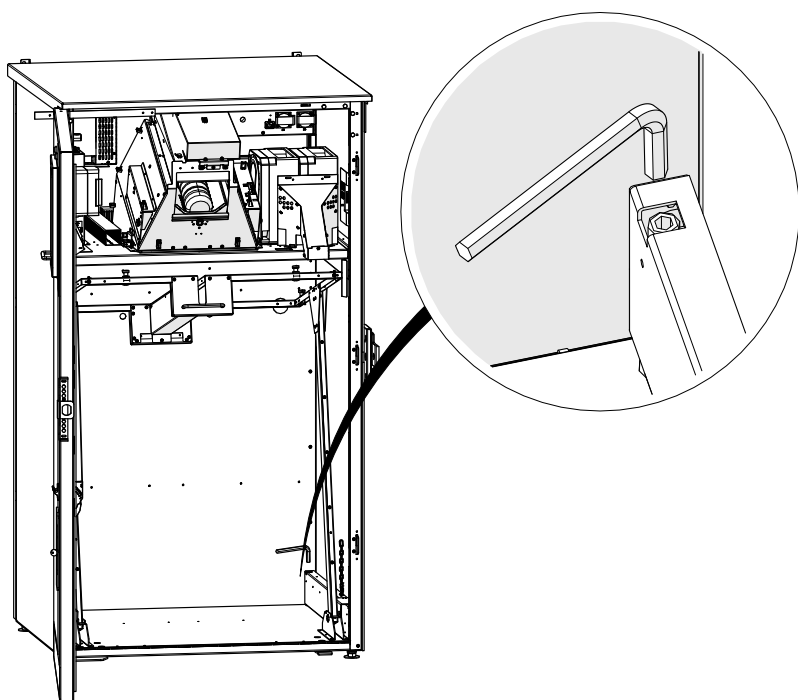
The vending machine must be levelled, and it is essential that the following criteria is adhered to:

- Horizontal, stable position.
- Correct height adjustment if part of a vending machine station.
- The machine door can be opened and closed without it dragging.
- When the machine door is closed, the door contact switch is correctly closed by the actuator!

How to proceed

1. Place the machine in its designated location.
2. Lift the machine if a pallet truck is available.
3. Screw the four feet out evenly. The distance between the floor and the lower edge of the side wall must be approx. 9 cm.
4. Remove the pallet truck.
5. Check if the machine rocks over the axis B - C, when the corner F2 is pressed. If it rocks, screw in foot B until it stops.
6. Check if the machine rocks over the axis A - D when the corner F1 is pressed down. If it rocks, screw in foot A until it stops.
7. Place the spirit level on the rear wall and level by adjusting foot A.
8. Check if the machine rocks over the axis B - C, when the corner F2 is pressed. If it rocks, screw in foot B until it stops.
9. Place the spirit level on the side wall and level by adjusting foot C.

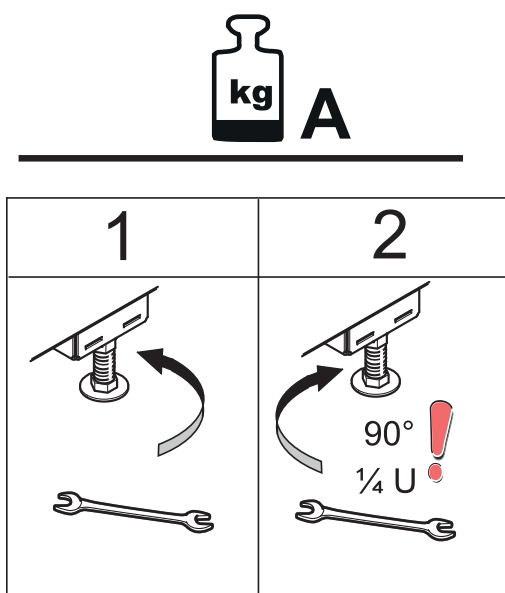
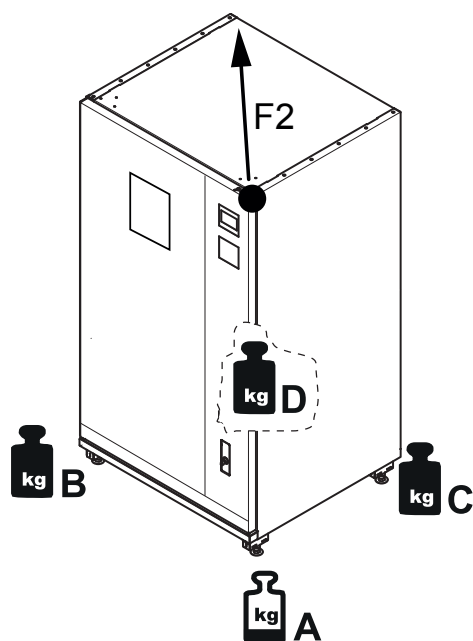




Only for SiOne, not SiOne Small:
The rear feet can be adjusted from the inside using an 8mm Allen key.

The following **fine adjustment** must still be made once the machine has been levelled:

- Screw adjustable foot A inwards until the machine rocks over axis B - C. Press several times on the corner at F2 to check if the machine rocks.
- Exert strong pressure on the corner at F2 while manually unscrewing foot A until it touches the floor.
- Finally, using a size 24 spanner, make a $\frac{1}{4}$ to $\frac{1}{2}$ turn to foot A. This results in less weight load on foot A than on the other feet. Consequently the machine does not wobble on the corner, the machine door does not drag and the door contact switch works correctly.



2.5 Wall spacing bracket/ Wall fixing kit

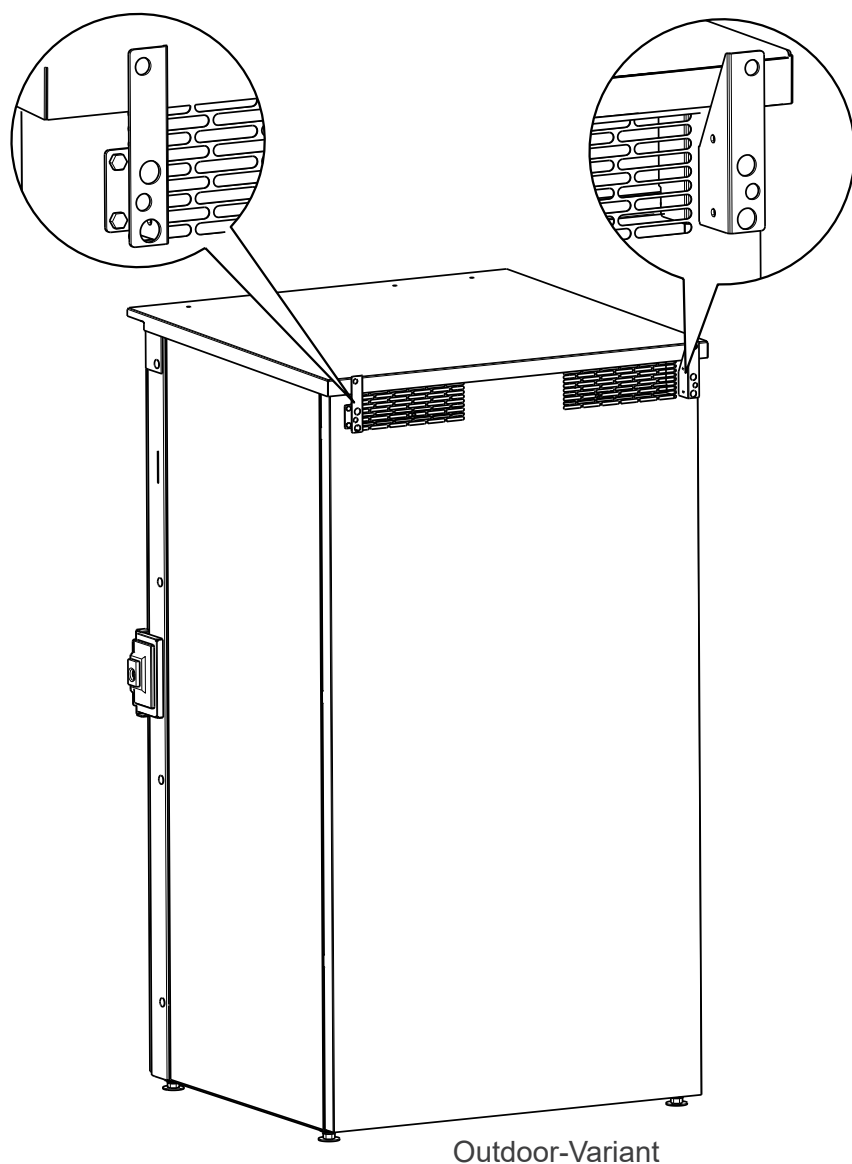
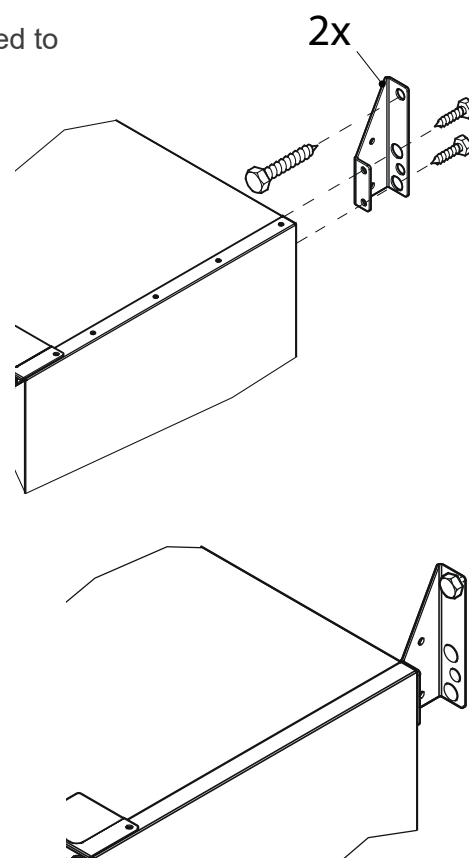


CAUTION! Risk of tipping! Risk to life!
Fix vending machines to the wall or floor:

In order to ensure proper and reliable operation, the machine must stand upright. The feet are height-adjustable and can therefore compensate for any unevenness in the floor.

The wall brackets supplied must be used to fix the machine to the wall. They must be fastened to the machine using the screws provided. Use appropriate screws and dowels for the wall.

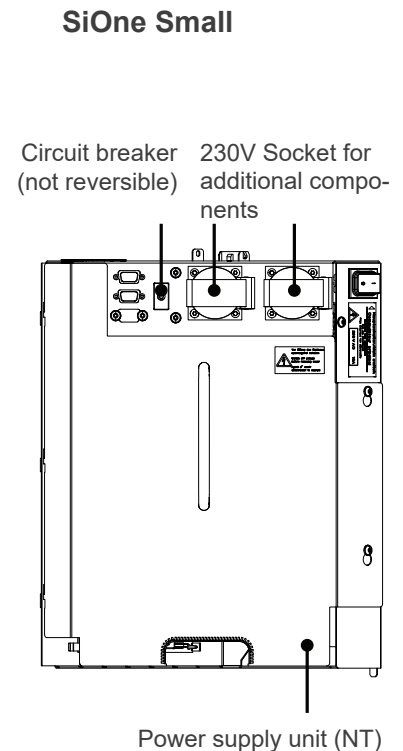
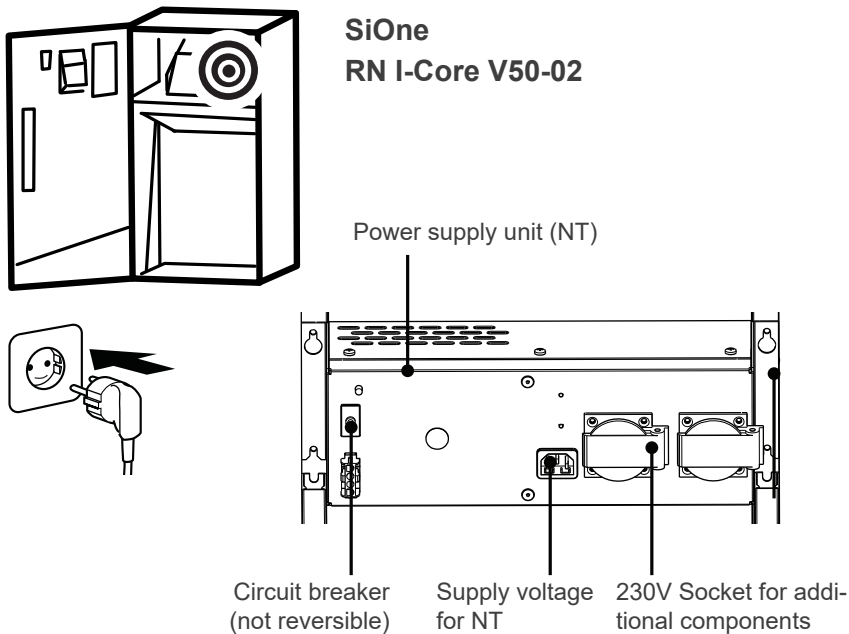
If it is not possible to secure the machine to the wall, it must be anchored to the floor.



2.6 Electrical connection

2.6.1 Indoor-machines

- The machine is delivered ready for connection, with cable and shock-proof plug for a single-phase AC supply of 230 V/50 Hz. It must be plugged into a properly installed socket with earth connection.
- Do not use extension cables and multiple sockets!
- The circuit must be fuse-protected by a B16A safety cut-out.
- A permanent installation should only be carried out by a qualified electrician.
- The plug must be accessible after the machine has been installed so that it can be easily removed.



2.6.2 Outdoor machines (SiOne only)



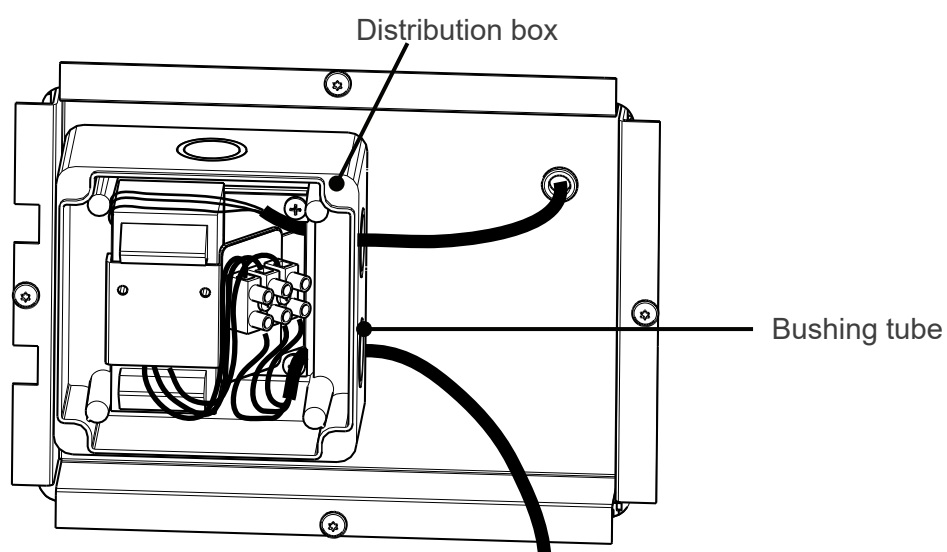
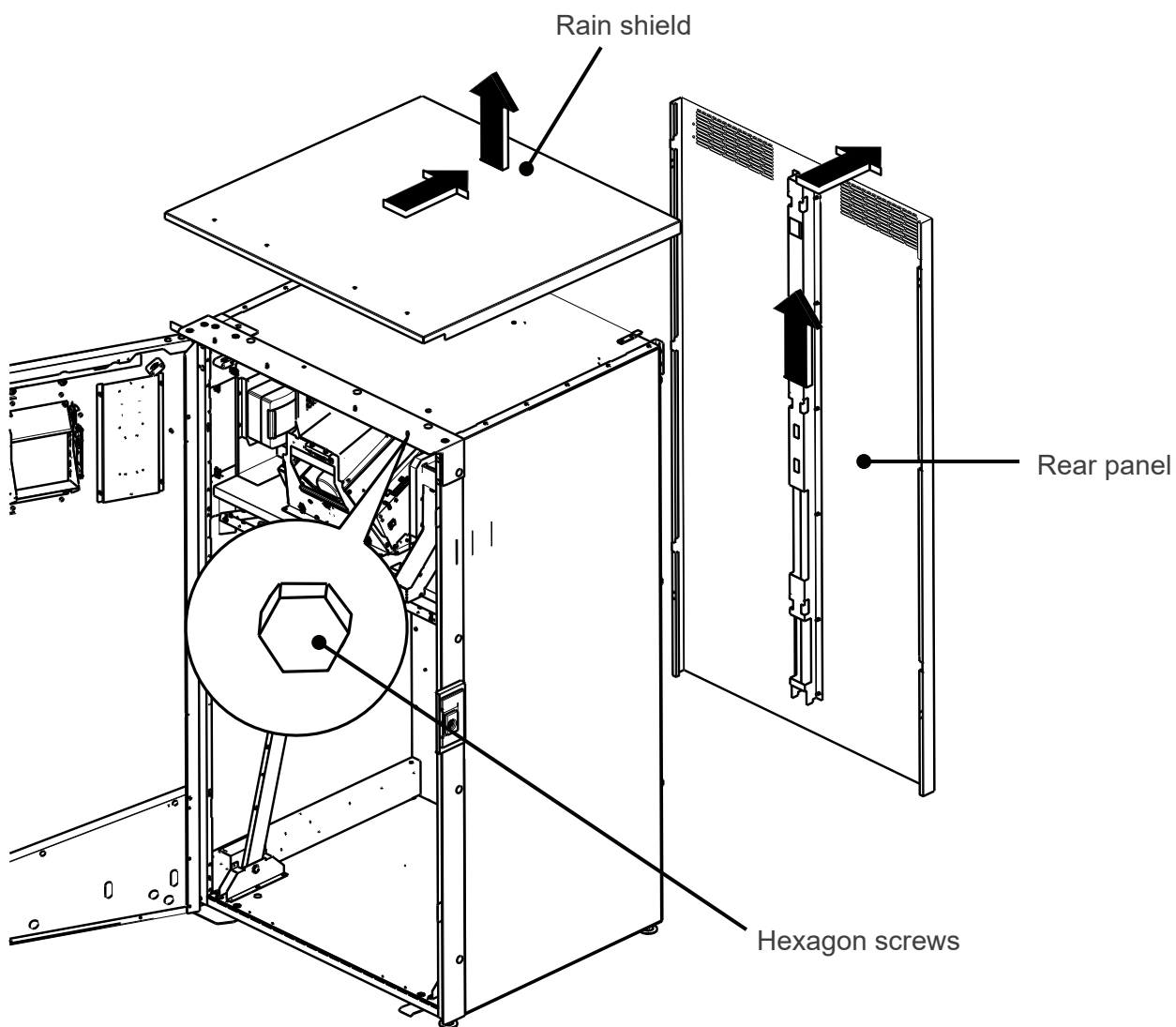
DANGER! Live electrical components
Risk to life!

- Install a separator with at least 3 mm contact opening width all-poles
- The connection cable has to be installed in a way that it cannot be damaged from the outside.
- The electric connection must be carried out only by a qualified electrician.

Outdoor machines must only be connected via a permanent connection.
The distribution box is accessible after removing the rear wall.

How to proceed

- Remove the rain shield
Remove the 4 hexagonal screws, Slide the rain shield backwards and detach it
- Remove the back panel.
Remove the screws, lift back panel, unhook and remove.
- Remove the lid on the distributor box (back of the machine bottom left)
- Insert connection cable through the bushing tube and connect to L1, N and PE.
Tighten bushing tube
- Re-fit rain shield and rear panel in reverse order.

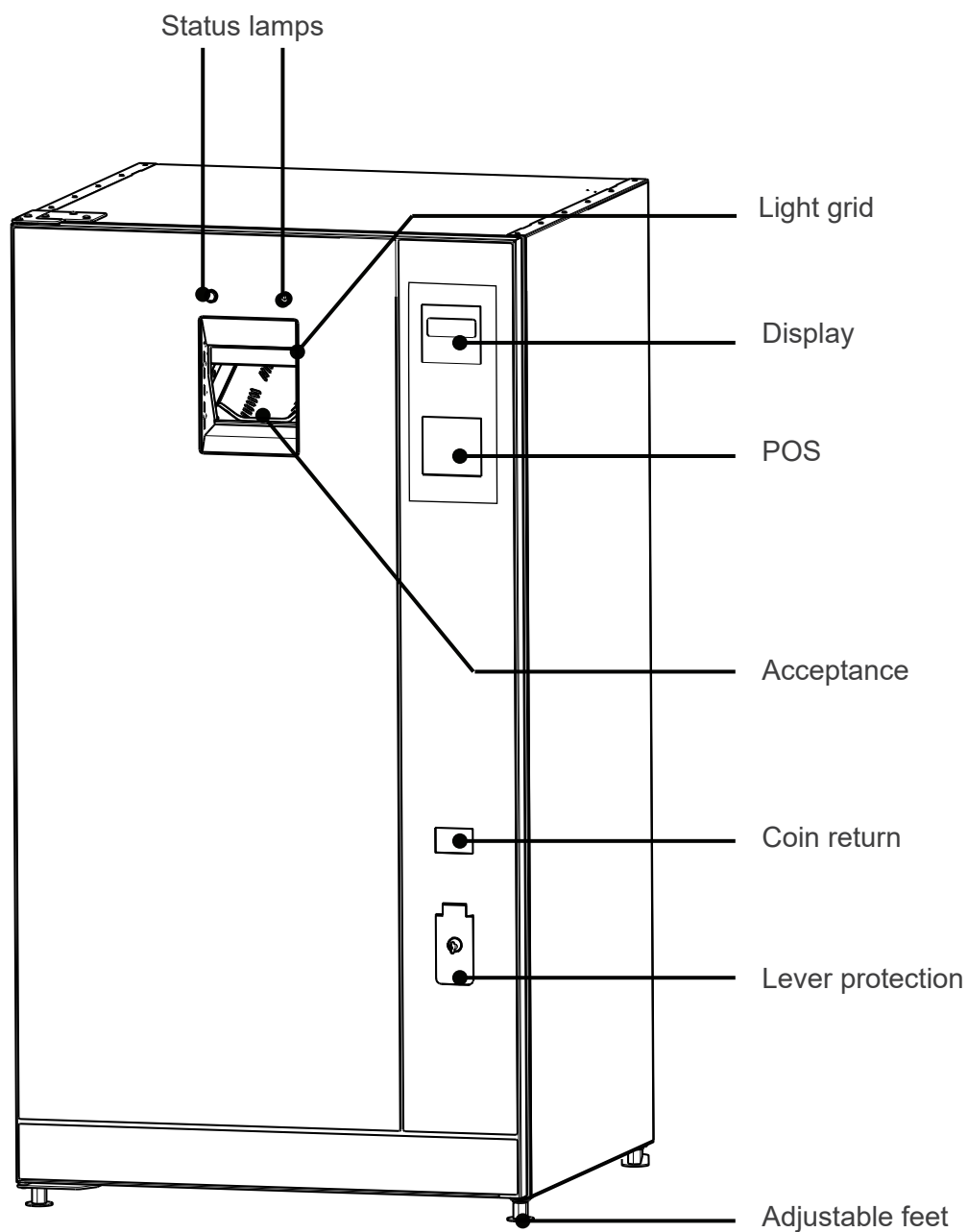


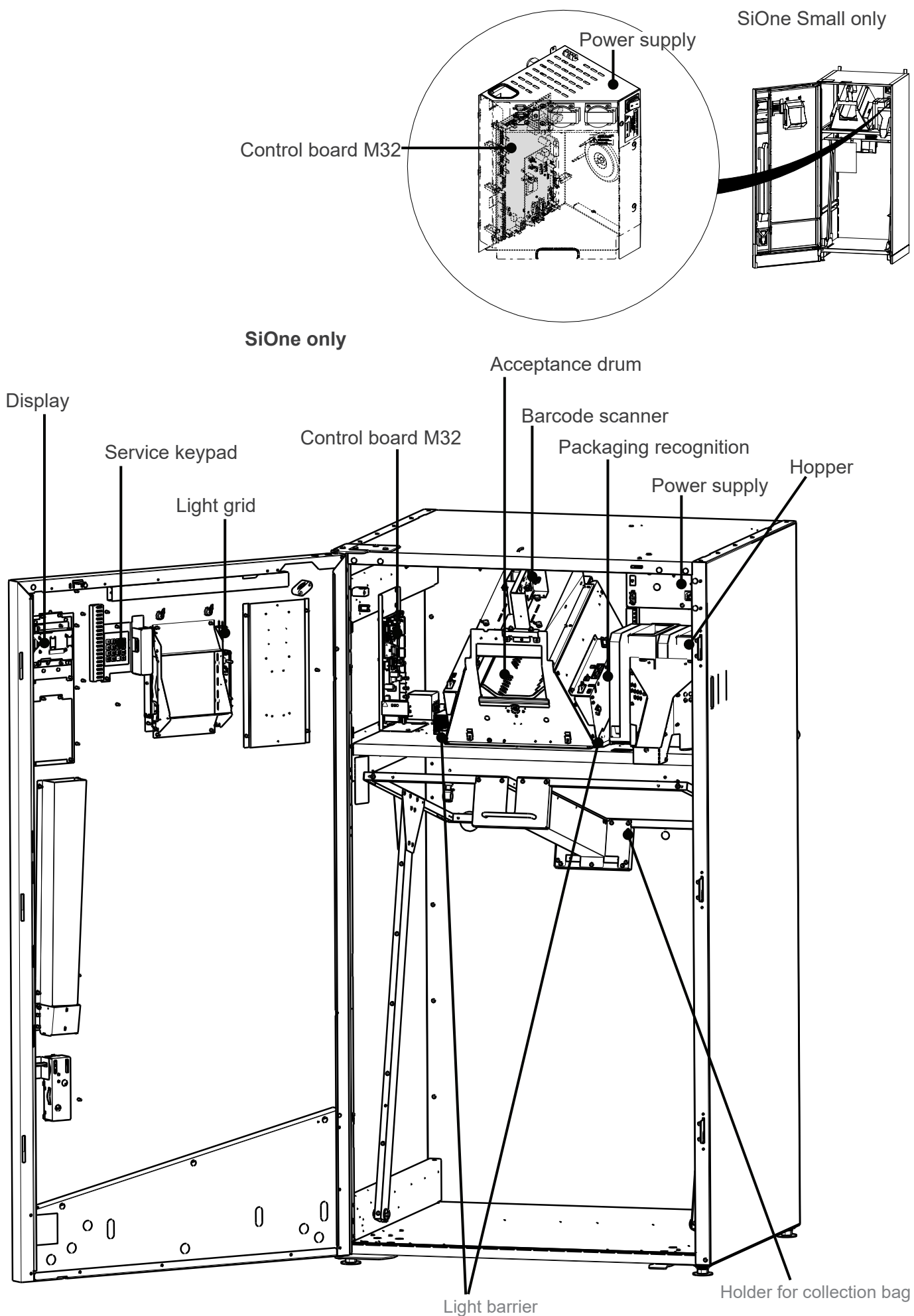
Rear wall junction box
(Cables in the diagram are incomplete)

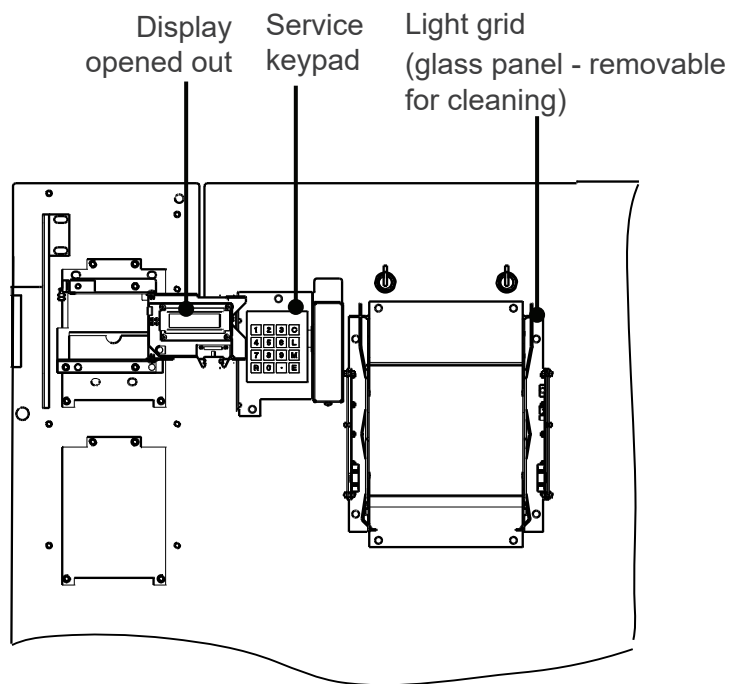
3. Construction and Features

3.1 Machine diagram

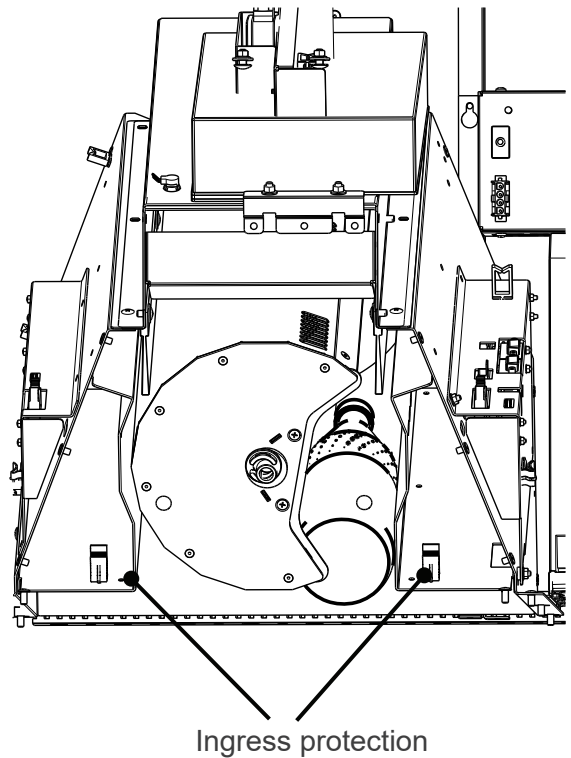
The only difference between the SiOne and SiOne small is their dimensions



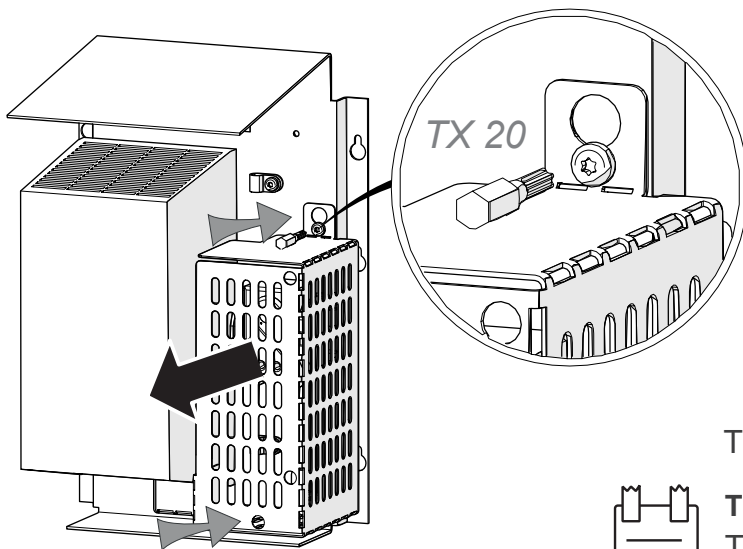




Ingress protection is optional:



3.2 Heater for outdoor vending machines

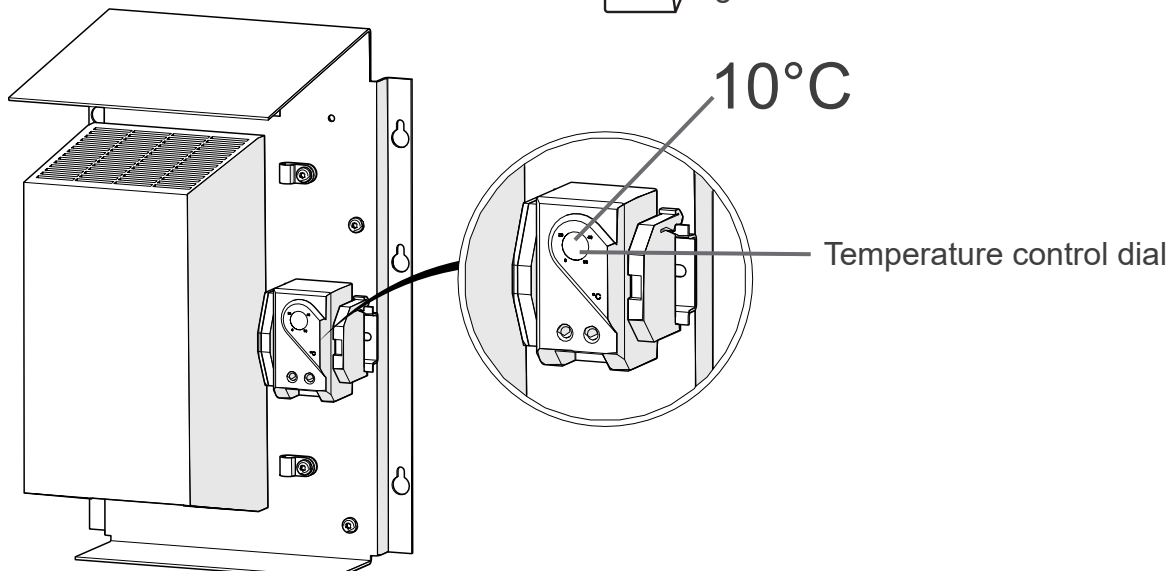


The factory setting for the temperature is 10°C.



TIPP!

The temperature setting should not be changed.

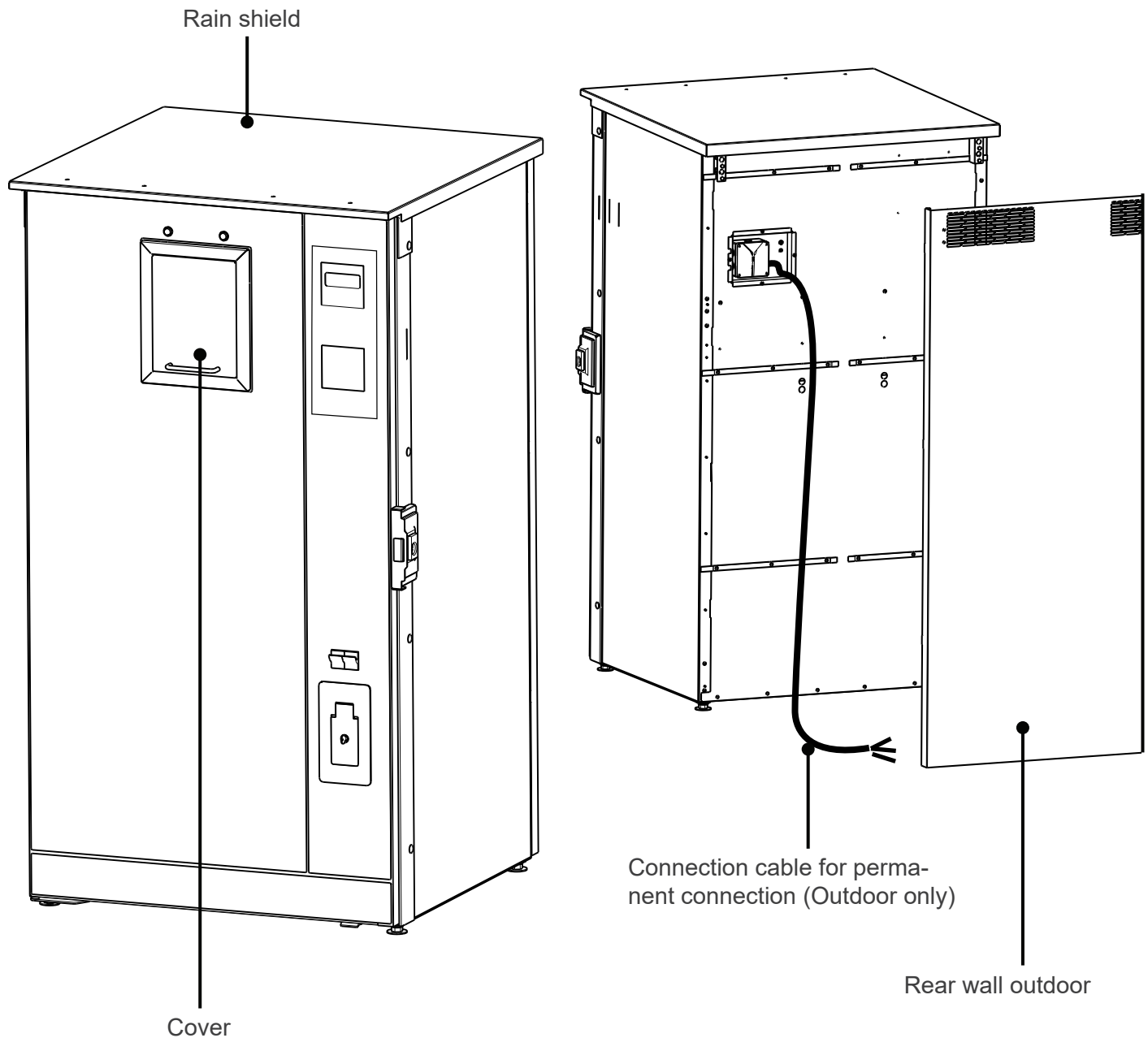


3.3 Variants / features of the SiOne and SiOne Small

The SiOne can be equipped as follows:-

- Outdoor variant (rain shield, rear wall ...)
- Collection bag holder for sorting empties into either 1 or two types
- Container on castors for sorting empties into 1 or 2 types

Outdoor variant (SiOne only)

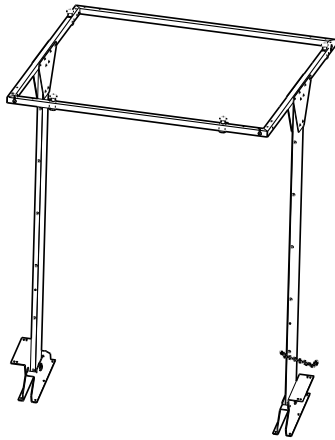


Different types of collection receptacles

1 section holder for collection bag

Part no. 685 02 036 00 (SiOne only)

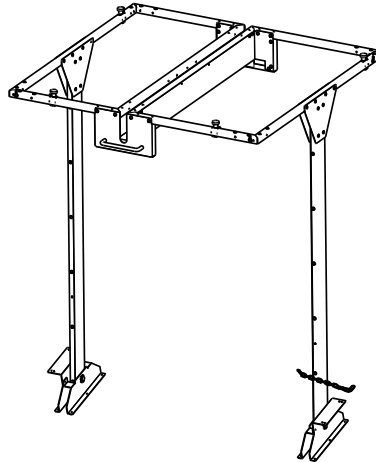
Part no. 698 01 012 00 (SiOne Small only)



2 section holder for collection bag

Part no. 685 02 044 00 (SiOne only)

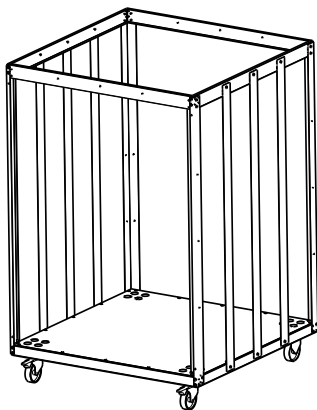
Part no. 698 01 011 00 (SiOne Small only)



1 section collection container on castors

Part no. 685 03 033 00 (SiOne only)

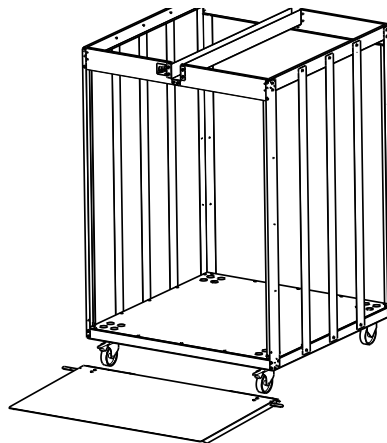
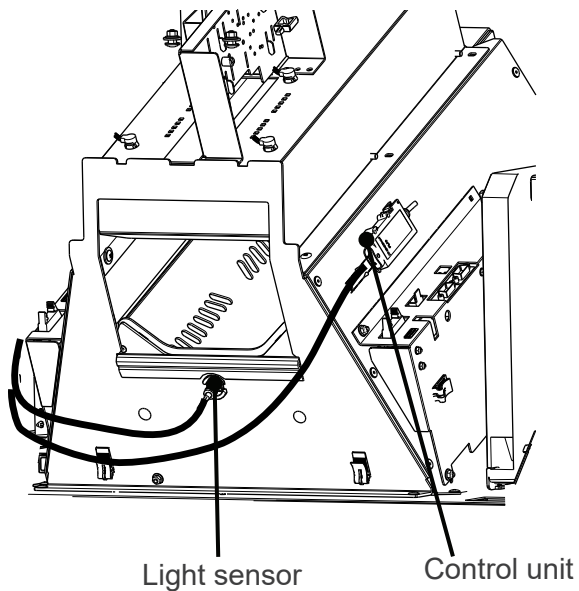
Part no. 698 01 016 00 (SiOne Small only)



Two-section collection container on castors

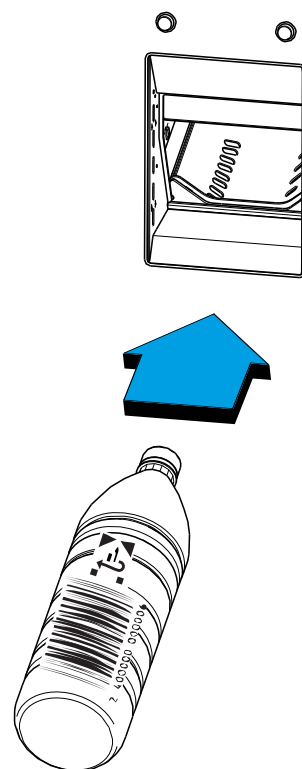
Part no. 685 02 033 00 (SiOne only)

Part no. 698 01 015 00 (SiOne Small only)

**Product recognition (optional)**

3.4 Operation

- The green status lamp indicates that the machine is ready for use. The empty must be placed in the acceptance area with **the barcode facing upwards**. When doing this the user's hand interrupts the light grid.
- Once the hand has been removed, the recognition process is activated. The barcode scanner tries to recognise the barcode.
- Once the barcode and / or one of the other security features has been identified, the drum rotates in its programmed direction and the packaging falls into the collection sack.
- If [High Security] = [No] the refund programmed is processed as soon as the product passes the light barrier.
If [High Security] = [Yes] the refund programmed is only processed when the product has passed the light barrier, the drum is back to home position and an empty acceptance has been acknowledged.
- If the barcode has not been recognised or the safety test has refused the product, the red status lamp flashes briefly several times. The empty can be taken out and re-inserted.



3.5 Status lamps

Status lamp	Signal	Meaning	Comments
green 	lit up	Machine operational, the next product can be inserted	
red 	lit up	Do not reach into the acceptance area during the acceptance process.	When putting your hand in too early the refund may be lost.
red 	flashes constantly	Machine out of service	possible causes: Collection bag is full All hoppers are empty The drum cannot reach home position
red 	flashing 3x	empty not accepted	possible causes: Barcode not detected Product not programmed in Safety check negative

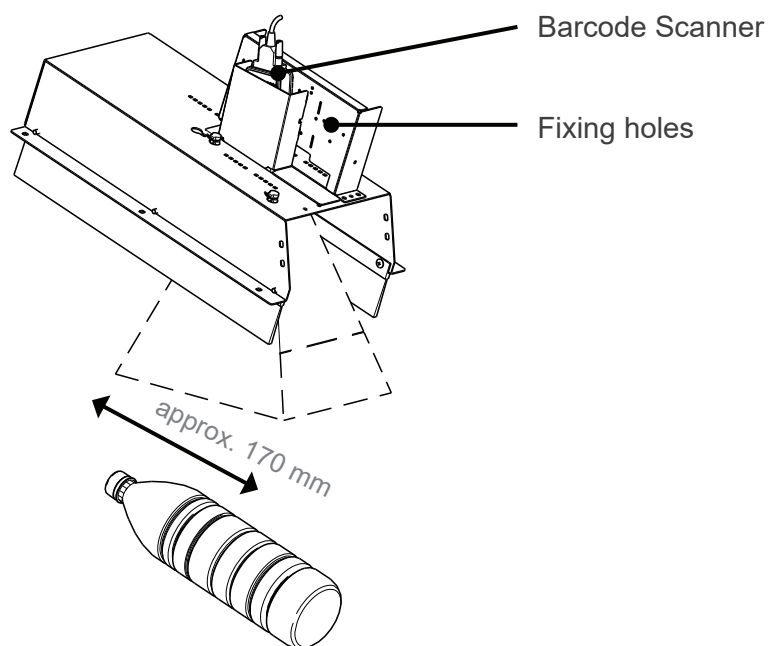


NOTE

The red and green status lamps are not available for the machines with the glass panel on the door. The corresponding messages will be displayed.

3.6 Packaging recognition (Barcode scanner)

- The barcode scanner is located above the acceptance area. The scanning area is approx. 170 mm. That means that in order to be accepted the barcode of all packaging must be within this range.
- The scanning area can be enlarged by using a second scanner. This is available as an option.
- The barcode scanner can be positioned using various mounting holes. This allows recognition of different packaging sizes.



There are two types of barcode scanner (refer to on page 44

Barcode scanner (made by Honeywell)

Barcode scanner and SIKE safety symbol (can register both types)



Barcode
EAN13-Barcode



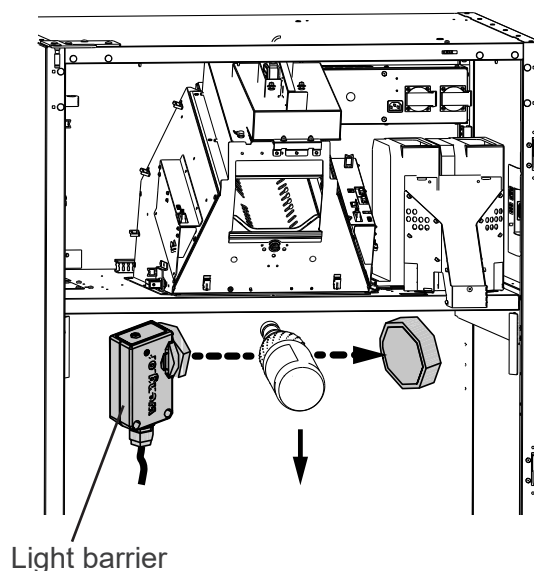
SIKE
(Safety symbol)

3.7 Light barrier

The light barrier has the following two functions:

It recognises whether the empty packaging has dropped and releases the refund payment.

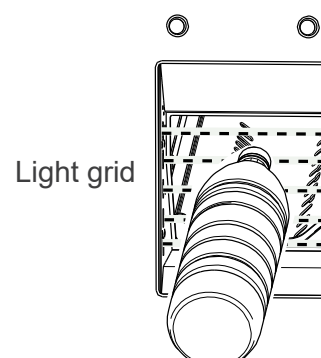
If the light barrier is constantly interrupted, the collection bag is probably full. The machine goes out of operation and the red status light flashes



3.8 Light grid

The light grid monitors the acceptance opening and blocks the movement of the drum if somebody reaches into the acceptance area.

The light grid fulfils an important safety function

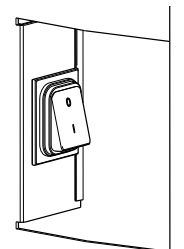


4. Daily operation

4.1 Turning the machine on

Press "0" - Machine switched off

Press "I" - Machine is switched on; after a short start procedure it will be operational if the machine door is closed.

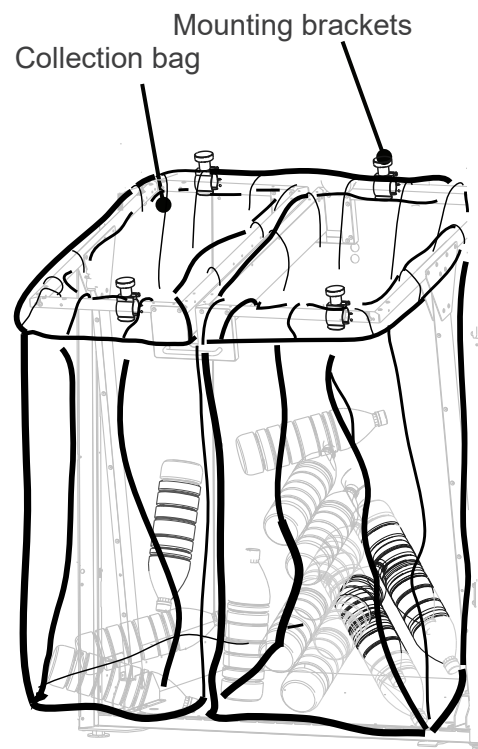
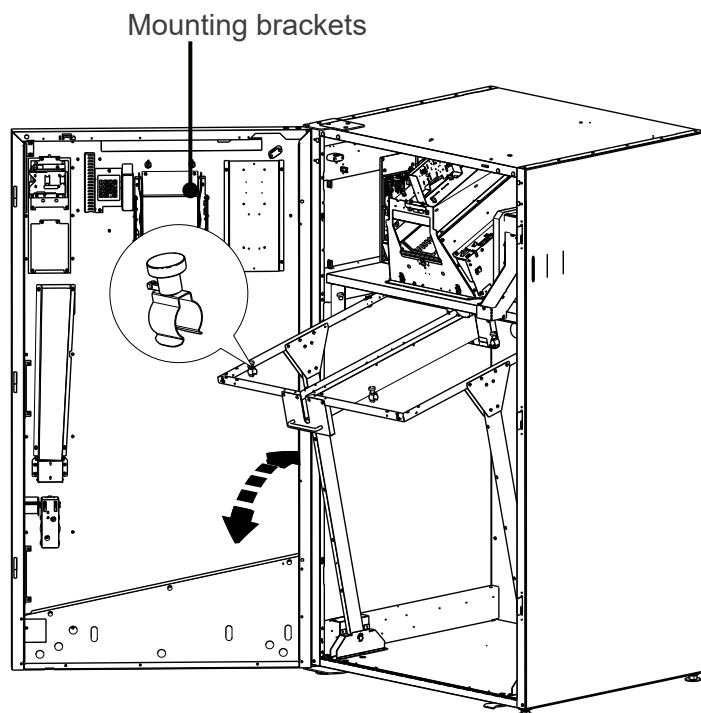


4.2 Changing the collection bag

There may be sharp edges and stains inside the machine . For this reason, wear protective gloves when carrying out cleaning and maintenance jobs.



- Open the machine door
- Pull the collection bag holder forwards
- Remove the securing clips
- Remove the full collection bag.
- Place the new bag, starting from from the inside, over the frame
- Fix the bag using the securing clips.
- Push the collection bag holder back into the machine
- Close the machine door.
- Note: Instead of a collection bag holder, a ramp or container on castors may be used.



4.3 Cleaning

**Risk of injury!**

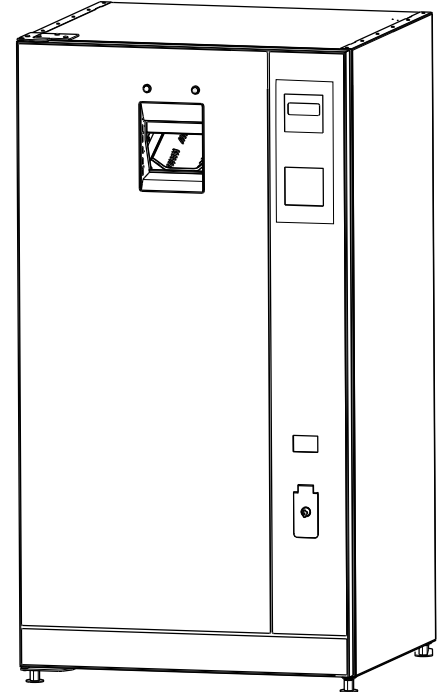
There may be sharp edges and stains inside the machine .

Wear protective gloves when carrying out cleaning and maintenance jobs.

4.3.1 Cleaning the front of the machine

Clean the front of the machine and the acceptance drum using a damp, lint-free cloth and a mild cleaning solution.

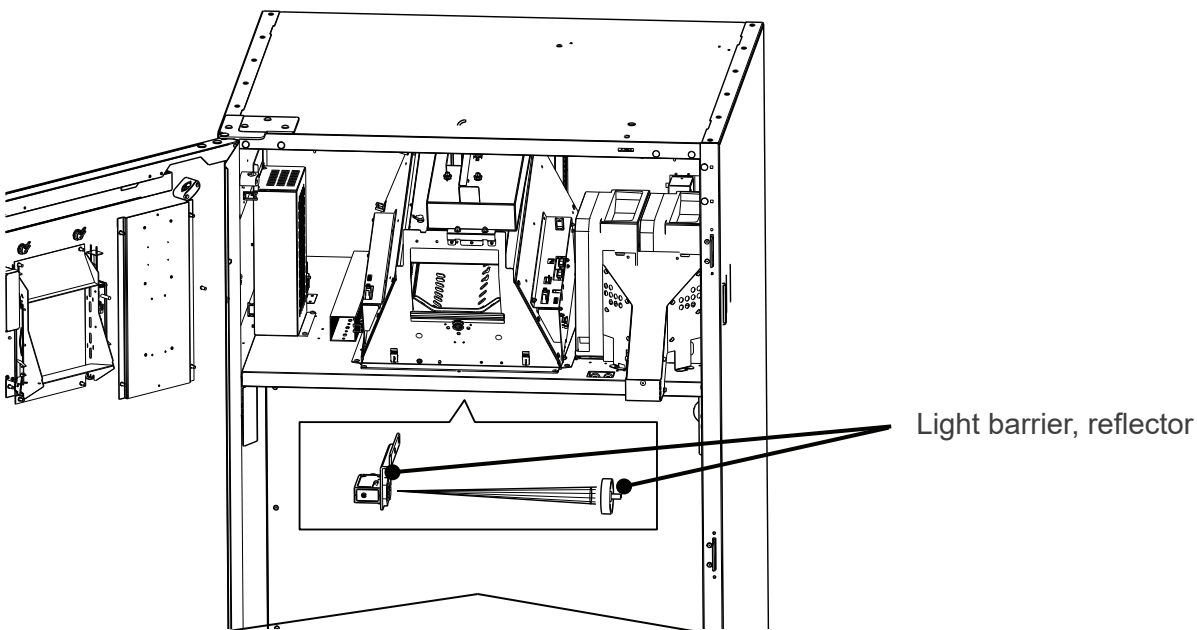
Do not use aggressive cleaning agents.



4.3.2 Cleaning the light barrier

Clean the lens of the light barrier and the reflector with a slightly damp cloth and water. Should clear water not be sufficient, you may also use a mild washing-up liquid.

The use of aggressive cleaning agents may lead to stress in the lens (risk of damage).

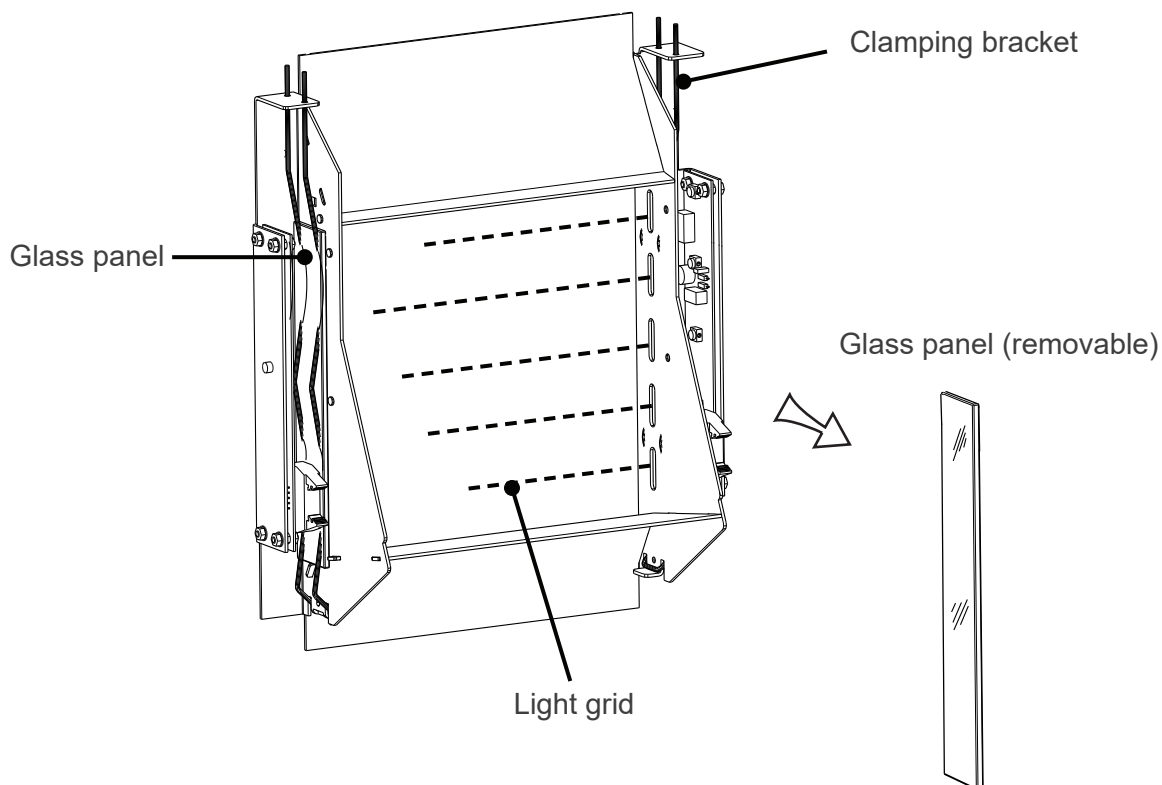


4.3.3 Cleaning the light grid

When a product is placed inside the acceptance area, the light grid transmits the information to the control board. In order to ensure perfect functioning of the light grid the glass panels must be clean!

Two versions have been installed in the machine: with or without clamping bracket.

If the glass panel is held via clamping brackets, it can simply be pulled out of the clamping position. The glass panels in the version without clamping brackets are cleaned with compressed air.



4.3.4 Cleaning the storage space around the collection bag



ATTENTION! Risk of injury!

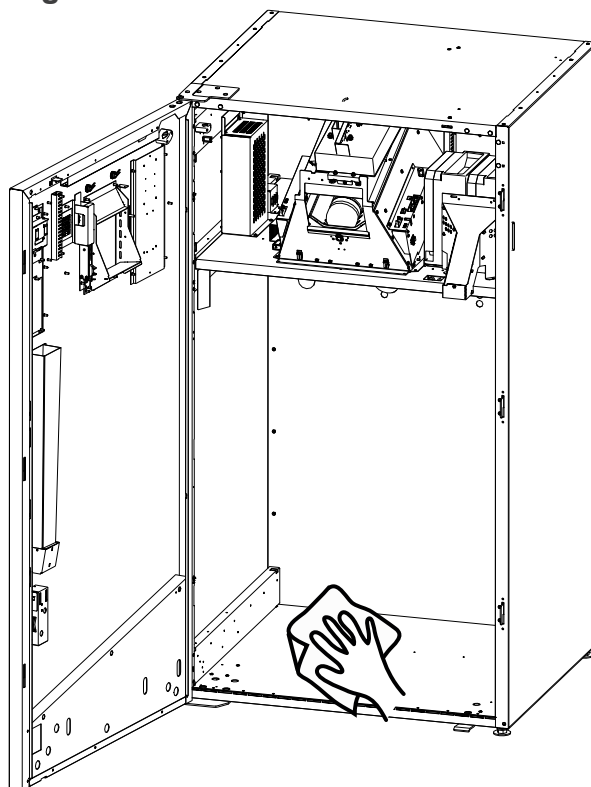
Make sure not to hit anything and hurt yourself when straightening up.



Risk of injury

There may be sharp edges inside the machine. Wear protective gloves when carrying out cleaning and maintenance jobs.

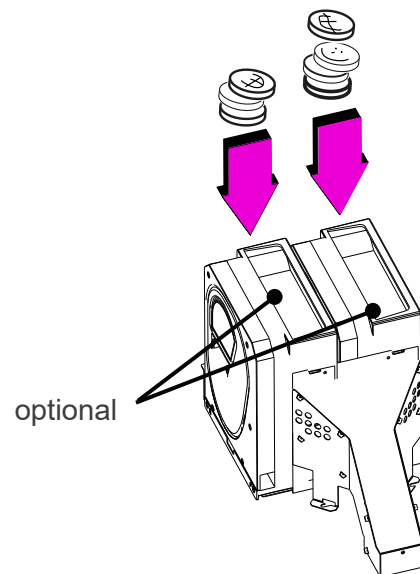
Remove the collection bags and swing the bag holder back inside. Then remove the dirt in the storage area with a broom or a vacuum cleaner.



4.4 Filling the hopper

Insert the desired number of coins into the hopper.

The hopper must be filled above the sensor. Otherwise it will be reported to the control board as being empty.



4.5 Door contact switch with service key



CAUTION! Risk to life!

When the door contact switch is activated with the service key, all machine functions are active even though the machine door is open.

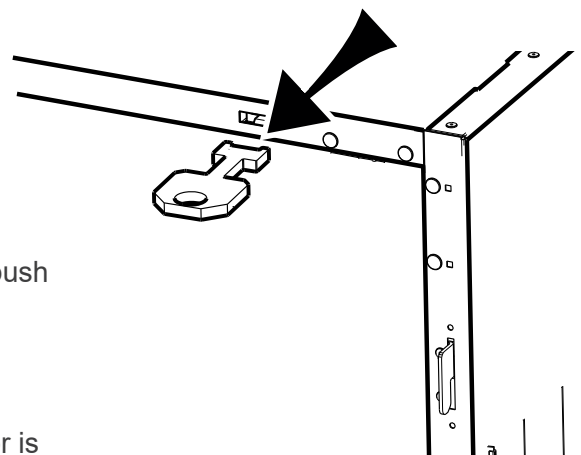
How does the door contact switchwork?

- The machine is automatically switched off when the door is opened. When the door contact switch connection is broken, the control voltage (24V) switches off. .
- By using the service key the door contact switch can be by-passed (switched on).
- For safety reasons only a service engineer or a trained operator may bridge the door contact switch using the service key.

Using the service key

(service technicians, operators only)

- Open the machine door
- Insert the service key horizontally into the door contact switch, push in and turn 90° to the right.
- To remove, proceed in reverse order.
- Do not leave the service key in the machine.
- Do not forget to remove the service key before the machine door is closed.



4.6 Measures to prevent manipulation; ingress protection



NOTE

Sielaff will assume no liability for damage due to manipulation or misuse of the machine.



Technical devices / machines are subject to manipulation!

The reverse vending machine SiOne has been designed in a way to render it nearly impossible to reach into the machine and pull out empties.

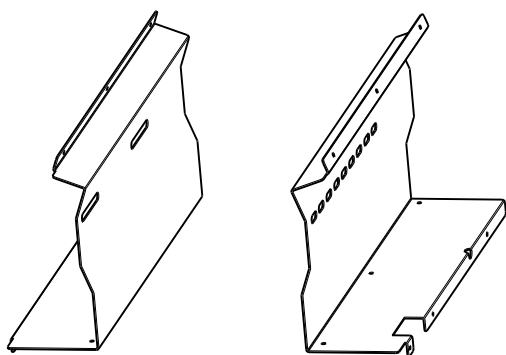
In order to prevent manipulation the machine operator should consider his/her own measures of prevention. This could be a well-frequented installation site for example, or the appropriate configuration of the machine.

Kits are available from Sielaff for mechanical ingress protection. This prevents empties from being pulled out, and also restricts the acceptance of bulky empties.

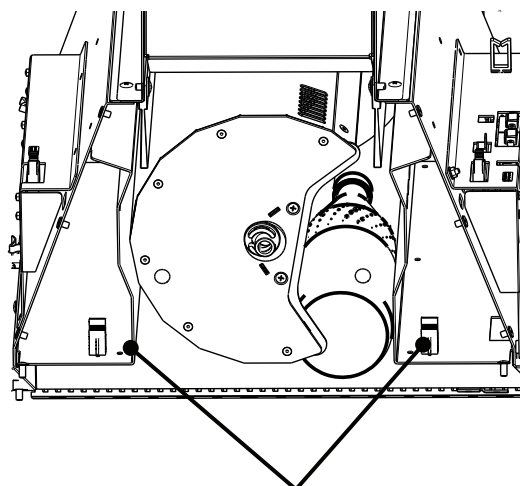
Important: The maximum diameter of containers is 82 mm if the ingress protection is fitted.

Tips to prevent manipulation

- Empty the refuse bags/containers more often (empties will be more difficult for thieves to reach)
- Do not determine the filling level via the light barrier under the drum, but make use of the "Full status signal" from the installation menu M7 (see sec. 6.10.12 on page 45).
- Make plausibility checks on the machine on a regular basis; for this purpose determine the number of accepted empties and compare it with the payments from the hopper or the credits.



Ingress protection



Ingress protection

5. Transportation, Storage, Decommissioning, Disposal

5.1 Transportation information

**ATTENTION!**

Incorrect transportation can damage the machine.

When moving with a pallet truck: unsteady lowering can damage the machine.

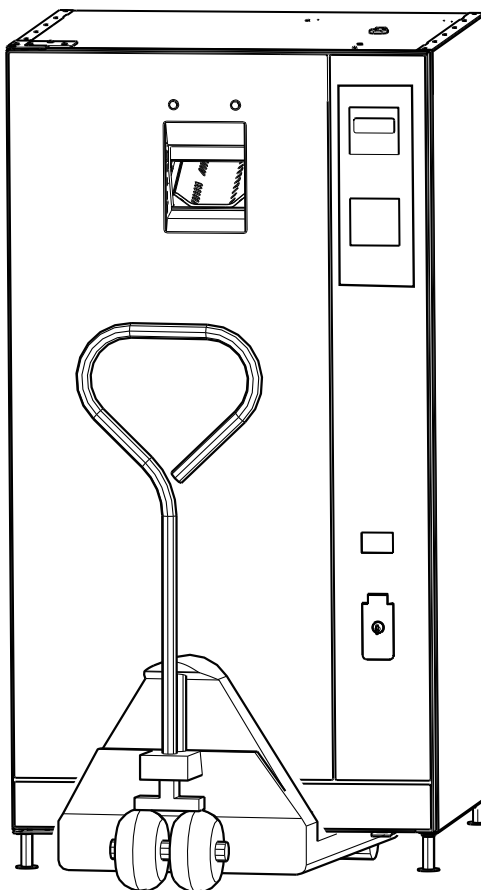
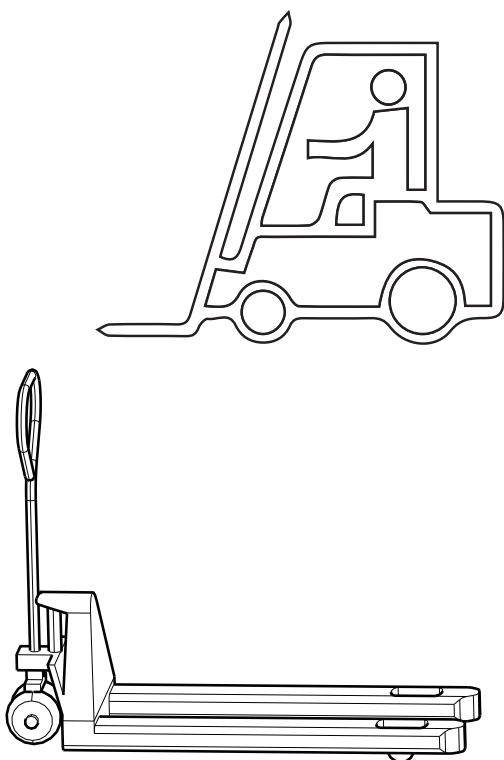
**DANGER! Risk to life!**

Incorrect transportation can result in the machine tilting.

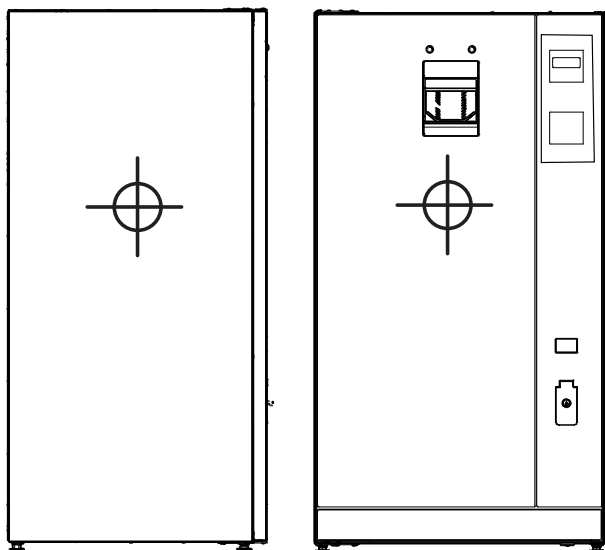
The following safety instructions must be observed during transportation, loading, unloading:

- Transport the machine only with a hand lift truck or a fork lift.
- Do not transport the machine in the air.
- Always move the machine with care and caution.
- Prevent it from sliding sideways.
- Do not move the machine on inclined ramps, use stair-walkers.
- Observe the machine's centre of gravity. Due to its design the centre of gravity can be high. Risk of tipping over, especially the machine variant with glass panel in the door!

5.2 Suitable means of transport



5.3 Machine's centre of gravity



Centre of gravity

5.4 Storage

The vending machine should be stored in a clean and dry location. Remove the collection bag if the vending machine has already been in operation. Use a suitable cover to protect it from dirt, humidity and damage.

5.5 Temporary shutdown

The machine may be shut down temporarily.

How to proceed

- Switch off the machine
- Remove the power plug
- Remove the empties
- Clean the machine
- The power supply of Outdoor variants should only be disconnected by an electrician.

5.6 Decommissioning and Disposal

If the machine cannot be operated any longer, it must be decommissioned:

- Switch off the machine
- Disconnect the mains plug or the power supply (electrician)
- Disable the power supply

For correct disposal of the machine please contact our Customer Service Dept. on +49 9825 18-31 51 06

The machine can be sent at your own expense to the manufacturer (headquarters in Herrieden, Germany), who will arrange for proper disposal.

If required, you can ask the manufacturer to provide details on appropriate waste management companies to take care of the complete machine disposal process on your behalf.

6. Machine control board, Software



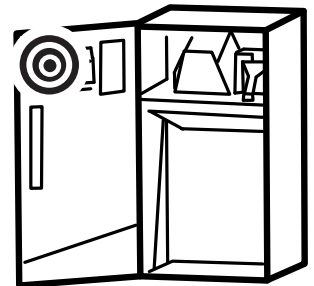
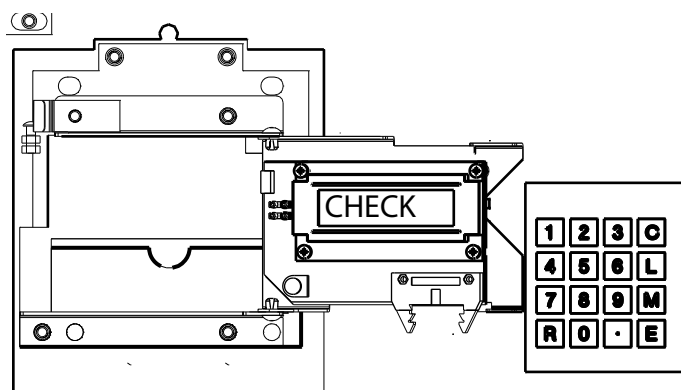
ATTENTION! Electro-statically sensitive components and modules (ESD)

Risk of damage to components!

Do not touch printed circuit boards and pins on the control board!

6.1 Programming keys, Display

The programming keys are accessible after opening the door. The display can be swivelled for ease of programming.

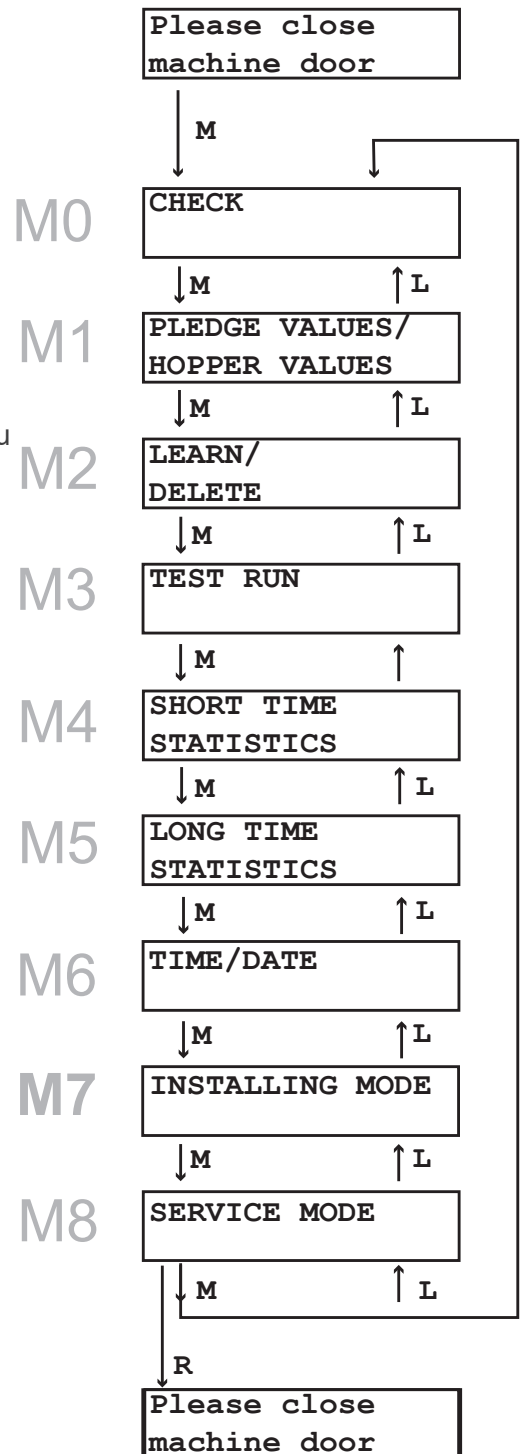


Button	Main menu; Menu M0, M1, M2 ...M8	Sub-menu	Definition
C	-	Deletes an entry	C - Clear
L	Calls up menus in sequence, steps backward	Steps backward within a menu	
M	Calls up a menu in sequence, steps forward	Steps forward within a menu	M - Move
E	Activates a menu in order to use its sub-functions (Jump to sub-menu)	Confirm entry	E - Enter
R	Revert to acceptance mode	Revert to acceptance mode	R - Return
L + M simultaneously	Revert to acceptance mode	Return to main menu	

6.2 Main menu and navigation using the buttons

Setting and amending all modifiable values in the machine.

- The menu is activated by pressing button [M] on the service keypad when the door is open. The [CHECK] menu is displayed.
- Each menu can also be entered directly by pressing the corresponding code number. Example [M0] [M1] [M7]...
Alternatively, you can change between the main menus by pressing buttons [L] and [M].
[L] scroll backwards
[M] scroll forwards
- Press button E to activate one of the sub-menus.
- Press buttons [L] and [M] simultaneously to reach a higher menu level.
If both keys are pressed again, the machine reverts to acceptance mode.
- To exit the menu completely you must press [R].
- If no button is pressed for one minute, the machine returns to acceptance mode automatically.
- The menu structure is shown in the following figure:



**NOTE**

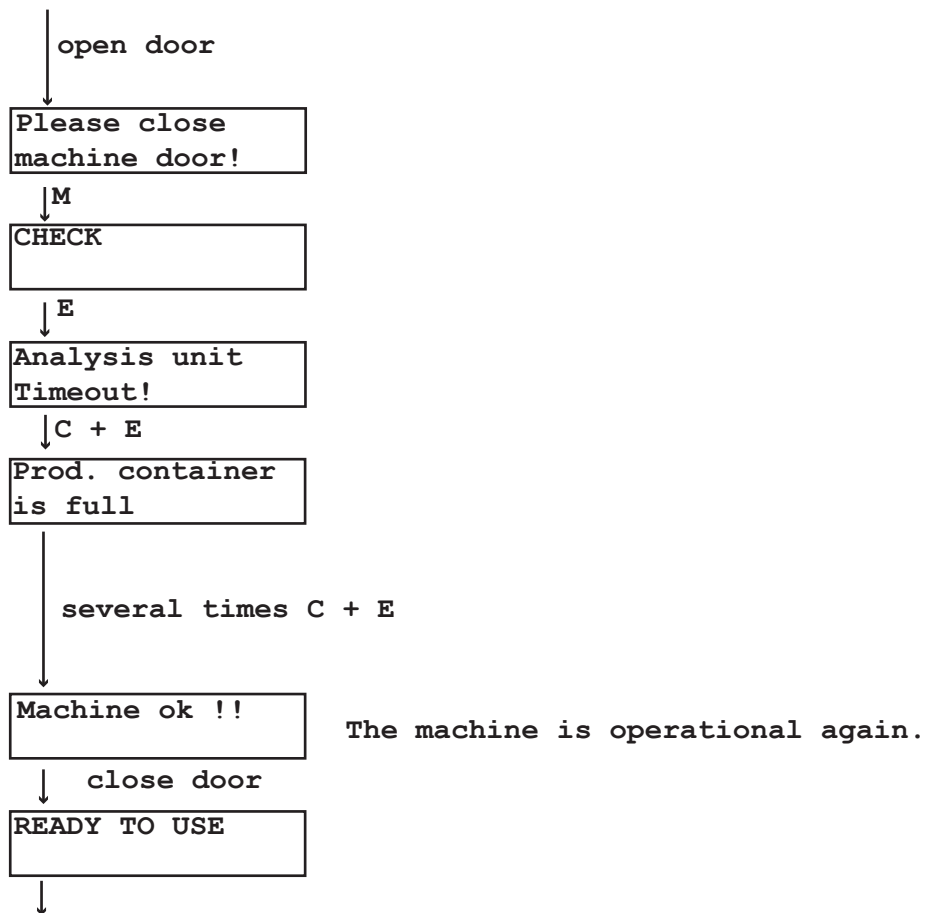
Please note that by making programme changes, basic parameters that significantly affect machine operation are also changed.

Any settings entered should be noted down before making a change or saved on an SD-card. This then enables any old values to be re-entered as required.

Buttons	Display message		Function
[M]	CHECK		Error display, Clearing error messages
[M] + [1]	PLEDGE VALUES/ HOPPER VALUES		Setting of deposit and hopper values
[M] + [2]	LEARN/ DELETE		Enter and delete empties
[M] + [3]	TEST RUN		Test acceptance function
[M] + [4]	SHORT TIME STATISTICS		Show statistics Clear short-term statistics
[M] + [5]	LONG TIME STATISTICS		Show statistics The full statistics can only be deleted by the manufacturer.
[M] + [6]	TIME/DATE		Set time and date
[M] + [7]	INSTALLING MODE		Setting of country, currency, machine number, credit system, machine options, service telephone number etc.
[M] + [8]	SERVICE MODE		Testing machine components Reading out machine parameters Call up service functions

6.3 [CHECK] [M0]

Current machine errors are displayed in words in the [CHECK] menu.



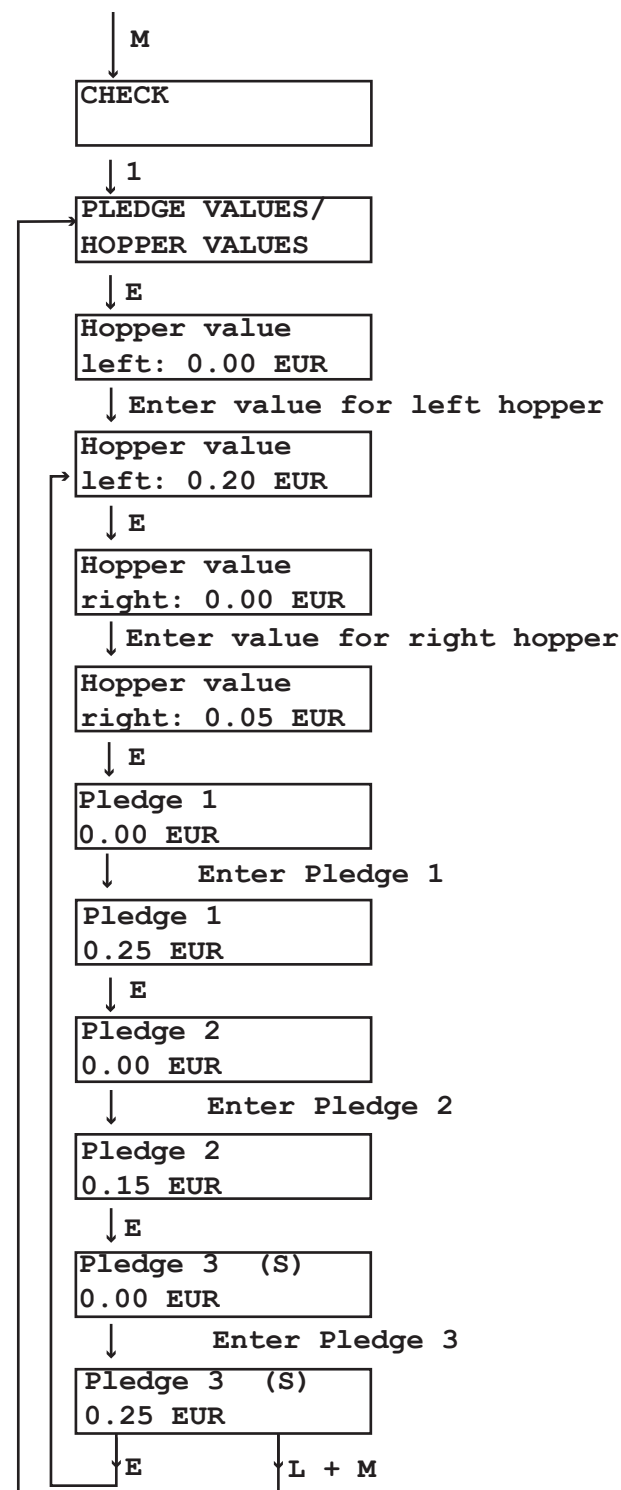
- Button [E] acknowledges the error messages.
 - Button [C] deletes the error messages.
- If several faults occur at the same time, the next message will be displayed once the previous error has been acknowledged.

6.4 [PLEDGE VALUES/HOPPER VALUES] [M1]

In this menu you can enter up to **two different[HOPPER VALUES]** and up to **three different [PLEDGE VALUES]**. All values must be between 0.01 and 2.00 Euros in the EU.

For foreign currencies with lots of zeros for small amounts the deposit value must be divisible by 200.

- [PLEDGE VALUE 1] and [PLEDGE VALUE 2] can be freely assigned.
- [Pledge value 3] is intended for packaging which does not need to be programmed individually.
The deposit value programmed here is automatically paid out if in the installation menu under [Check only SIKE.] [Yes] is programmed, or if in [Product rec.] anything other than [Without] is programmed.
- Set the value for hoppers that are not installed to 0.00 EUR!



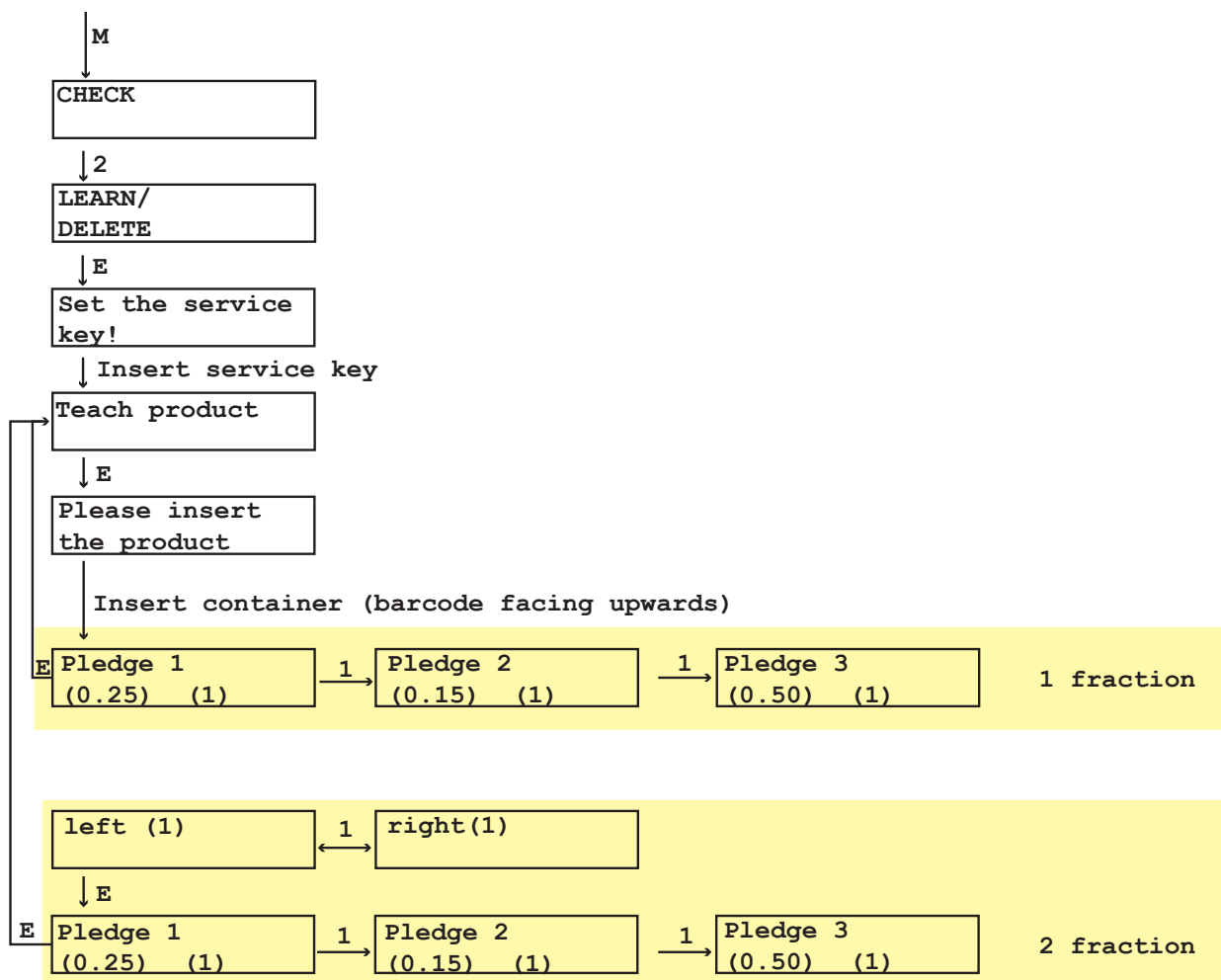
Type	Your programming
Hopper left	
Hopper right	
Pledge value 1	
Pledge value 2	
Pledge value 3	

6.5 [LEARN / DELETE] [M2]

6.5.1 [TEACH PRODUCT]

Please note

- Only use empty containers for teaching
- Only containers which can easily be programmed are properly accepted
- Use undamaged empty with cap for teaching
- Make sure that the empty is placed in the acceptance unit with the barcode facing upwards and in the middle



Step 1:

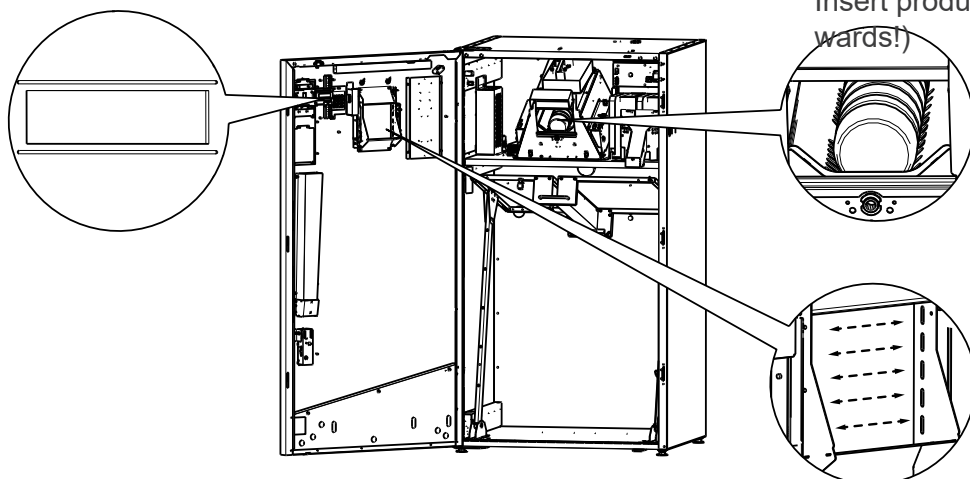
Display: [Please insert product]

Step 2:

Insert product (barcode facing upwards!)

Step 3:

Break through the light grid with your hand



6.5.2 [Delete product]

The following modes are available for deleting:

- delete by inserting an empty
- delete by entering a barcode
- delete all programmed empties

When inserting a SD-card the following modes are also available:

Read products from SD-card

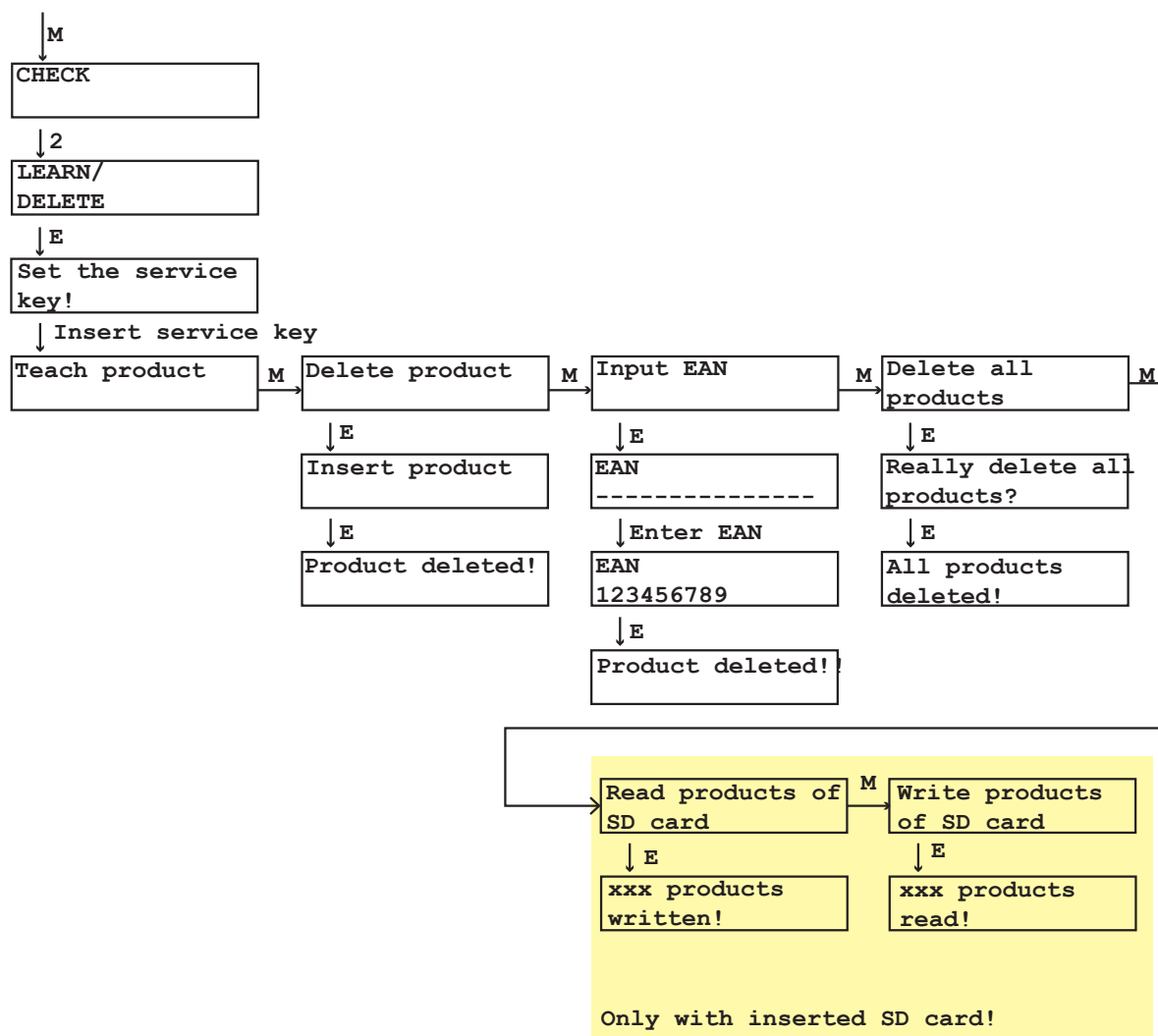
Using this function the machine loads all the products and their product parameters from the SD card. The file must be called either **wProd.csv** or **dwProd.csv**. When files with both names exist, file **wProd.csv** precedes.

- The difference between the files is that with **wProd.csv** the products on the SD card will be added to the products in the vending machine.
- With **dwProd.csv** all stored products are deleted first, then the products on the file are loaded into the vending machine (delete old and add new).

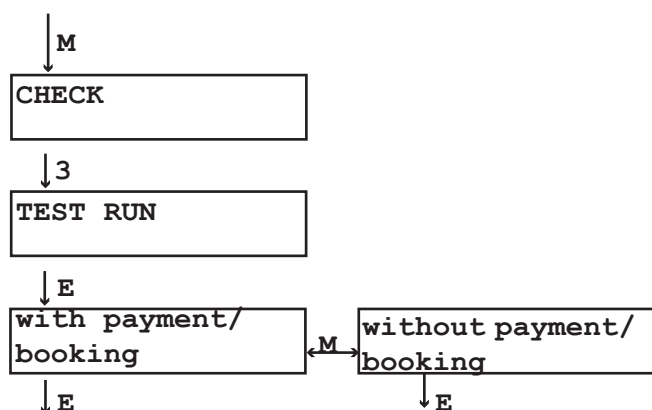
Write parameters to SD-card

This function is for writing all products and product parameters stored in the vending machine to the SD card.

A CSV file is created in folder <prod> on the SD card. The file must be called either **wProd.csv** or **dwProd.csv**. Afterwards these products can be loaded onto another reverse vending machine.



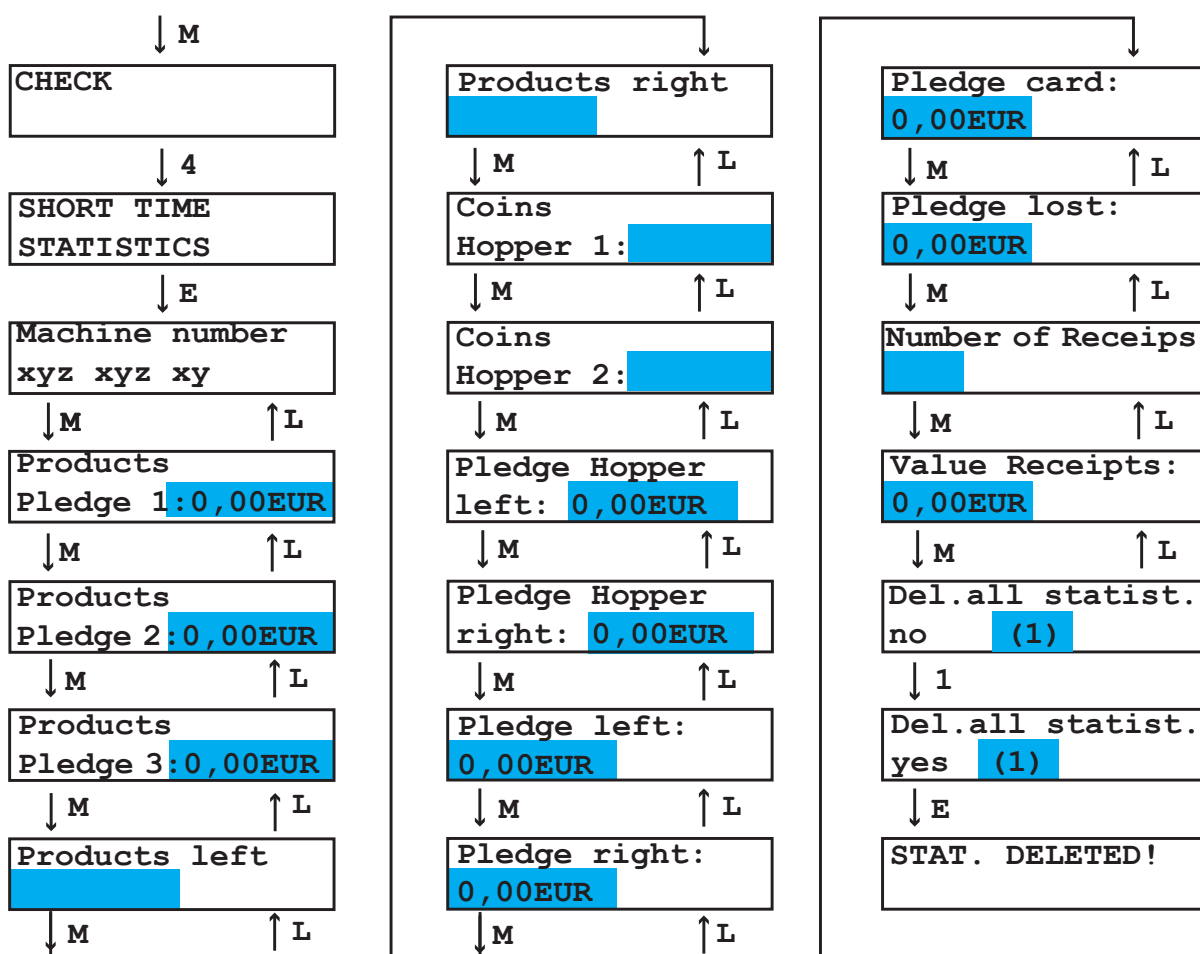
6.6 [TEST RUN] [M3]



A [TEST RUN] allows the drum to rotate once after hand insertion and removal.
If a barcode is recognised, one coin is disbursed from a hopper.

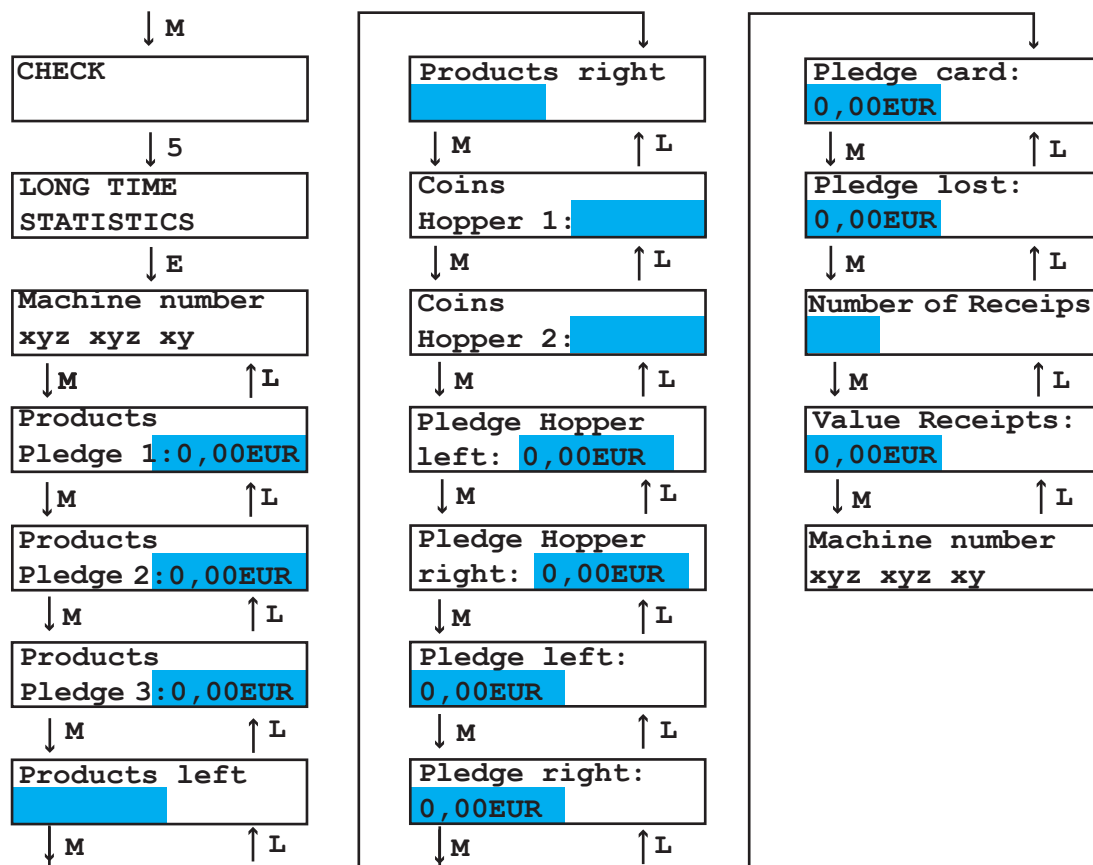
6.7 [SHORT TIME STATISTICS] [M4]

The [SHORT TIME STATISTICS] are accessed as follows:



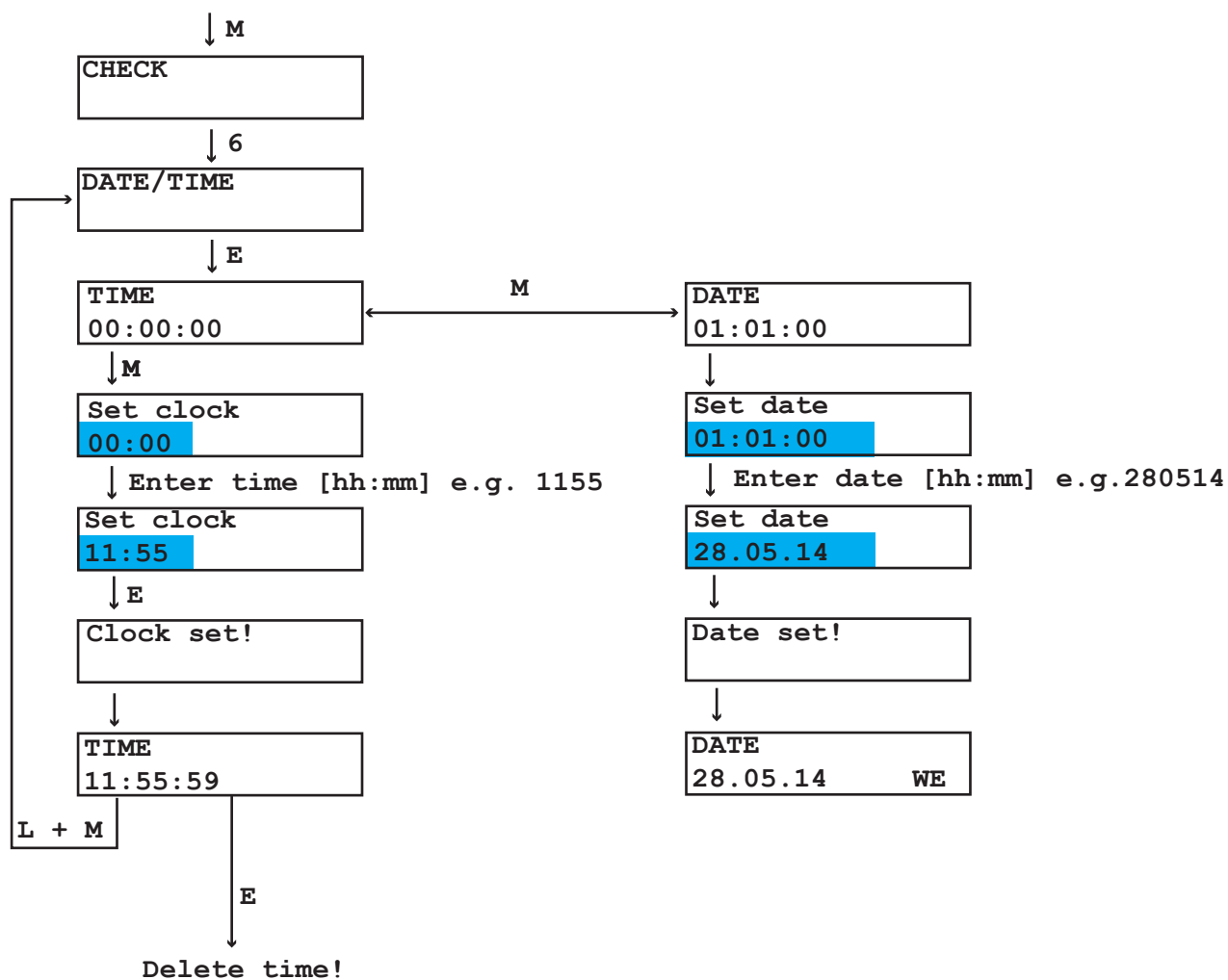
6.8 [LONG TIME STATISTICS] [M5]

In the long time statistics sub-menu statistics from when the machine was first commissioned are displayed. The long time statistics cannot be cleared.



6.9 [TIME/DATE] [M6]

In the [TIME/DATE] menu [TIME] is set to local time. Data is entered via the numerical keypad. The [DATE] is generated by the control board.

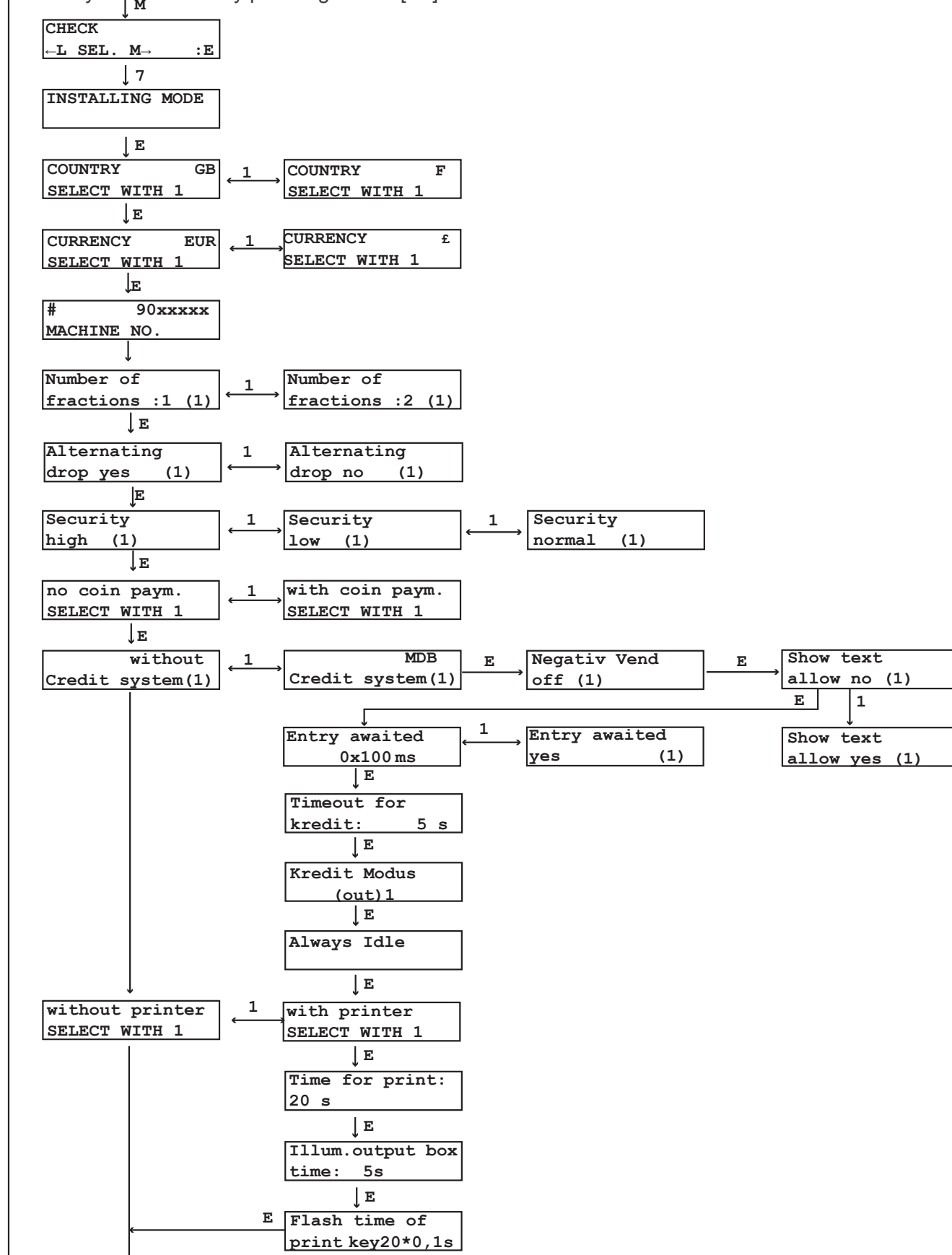


6.10 [INSTALLING MODE] [M7]

In [INSTALLING MODE] menu the machine parameters such as [COUNTRY], [CURRENCY], [MACHINE NUMBER] (see machine identification plate), [CREDIT SYSTEM], machine options and Service telephone number are programmed.

In the selection fields the next option can be selected by pressing [1].

Confirm your selection by pressing button [E].





Setting or selecting in a menu is done via the key [1]. There are two different types of display in the software.



- Text messages (errors, instructions, menu ...) are now shown in the respective language.
- Languages are in this order: D - GB - F - I D
- Press [1] to select.
- Press [E] to save.
- Set the appropriate currency: €, EUR, CHF, PLN ...

6.10.2 [MACHINE NUMBER]

The number assigned by the factory may be replaced by an internal number selected by the customer as part of an in-house control system. The factory machine number is located on the machine identification plate.

6.10.3 [NUMBER OF FRACTIONS]

The machine can collect one or two types of empties. The machine has been fitted with either one or two collection bag holders.

Option	Meaning
Number of sections 1	one collection bag holder or one container on castors available
Number of sections 2	Two-part collection bag holder or two-part container on castors available

6.10.4 [ALTERNATING DROP]

The setting [Alternating drop] only appears if [Number of sections] is set to [1].

Empties are dropped to the left and right alternately.

6.10.5 [SECURITY]

Option	Meaning
High	The deposit is only paid out when the container has passed the light barrier, the acceptance drum is back in its home position, and the acceptance area has been detected as empty. Recommendation: yes
Low	The deposit is paid out as soon as the container has passed the light barrier and was not previously caught in the acceptance.
Normal	The deposit is paid immediately once the empty has passed the light barrier. Reaching into the acceptance again has no consequences.

6.10.6 [Coin payment]

Programme here if coins are to be dispensed to refund the deposit. One or two hoppers must be installed for this.

6.10.7 [CREDIT SYSTEM]

If a component is connected to the MDB slot, [MDB] must be selected.

The following options can be customised:

- [Negativ Vend] Alternative MDB command to post the loan amount.
- [Wait for booking], default [no]
This function refers to the interaction of the machine being ready for use (green light status) and the credit system notification of a transaction being executed.
If set to [yes] the credit system has to have acknowledged the entry before another product can be deposited. This can lead to delays with some credit systems.
- [Timeout for Creditc.:]
If a credit is to be made to a card, the machine only waits for this time for the transaction to be made. After this the amount is forfeited so that the machine is ready for the next customer.
- [Credit mode]
If the credit system command is ignored, the instruction will be resent [Repeat crediting]
- [Always Idle]
This function enables the adding-up of deposit refunds. If at the end e.g. the card is held to the credit system, the total is transacted in one go.
Products can also be accepted without having presented a transaction medium (e.g. card).

6.10.8 [PRINTER]

If no receipt printer is installed, [without printer] must be set.

The following functions only appear if the machine has previously been set to [with printer].

- [Time for print]
If the time has expired, a receipt will automatically be printed even though the customer has not pressed the receipt button.
- [Illum. output box] Numerical entry in s
This time specifies how long the illumination in the receipt box should remain on following the production of a receipt.
- [Flash time of print key]; Numerical entry in ms
This time indicates the flashing frequency of the print button.

With a printer installed, additional functions are available via the SD-card. The receipt layout is loaded onto the control board via the SD-card and can be replaced by a new layout, which has been stored on the SD card.



NOTE

We recommend setting [high tolerance] (3). With this setting empties are generally accepted and attempts to defraud are rare.

Tolerance limit	Display
Low tolerance ▪ only accepts empties that are recognised exactly ▪ programmed containers may be rejected, e. g. if they are soiled ▪ most attempts to defraud are recognised	Tolerance 1 SELECT WITH (1)
normal tolerance	Tolerance 2 SELECT WITH (1)
high tolerance	Tolerance 3 SELECT WITH (1)
very high tolerance Many types of empties are accepted even though they have not been recognised exactly Attempts to defraud are rare	Tolerance 4 SELECT WITH (1)

6.10.9 [ANALYSIS UNIT] and [TOLERANCE]

The [Tolerance] function only appears if previously settings have been entered [with analysis unit] and/or. [analysis unit yes].

6.10.10 [SCANNER]

Set here which type of scanner is installed in the machine.

Example:

- Honeywell MS4980
- 2x Honeywell MS4980 (if two scanners are installed to improve sorting accuracy)
- InsensitiveSIKE / (no longer offered)
- InsensitiveSIKE+EAN

6.10.11 [SEESAW]

Default: no (i. e. without rocking)

With this setting the drum moves back and forth slightly when a product is inserted. This helps to define the EAN code more easily.

Products with different security values in different positions might not be accepted so easily if rocking is active.

6.10.12 [MESSAGE FULL]

Default: 0

Here a value from 0 to 999 can be entered.

0 deactivates this function.

This function gives a full status signal before the light barrier. You can programme when the collection bags are full so that manual counting is not required.

Once the programmed number of empties has been reached, a full notification appears and the machine must be emptied.

When the door is opened the following appears in the display [Keep product counter] or [Delete product counter]. Press [1] to select. Does not need to be confirmed as the setting becomes effective when the door is closed.

6.10.13 [Product rec.]

The functions [Pattern] and [EAN + pattern] are for accepting all products, which correspond to a certain pattern stored on the SD-card.

For this purpose a file called pattern.csv must be stored in the folder <prod>.

Afterwards you must set the direction for the collection of the corresponding empties.

If choosing anything other than but [without] here, you have to set [no] under [Check only SIKE.].

6.10.14 [CASE OF DEFECT: PHONE]

The number keys can be used to enter a telephone number. This phone number is displayed in the event of malfunction, recommending that this number is called.

6.10.15 [DEFAULT VALUES]

Reset to factory settings. Your own settings will be lost; you will have to re-programme.

6.10.16 [DRUM ILLUM. TIME]

This is where the period of illumination of the drum is set in seconds.

Default: 10 sec.

6.10.17 [Lottery system]

Default: 0

Please ask for separate instructions if required.

6.11 SERVICE MODE [M8] (Service functions)

Service function	Function/ Action	Comments
00M	Turn motor right	
01M	Turn motor left	
02M	Scanner on/off	
03M	Illumination drum on/off	
04M	Green front lamp on/off	
05M	Red front lamp on/off	
06M	Test light barrier	
07M	Test light grid	
08M	Empty hopper L	Only for machines with hopper
09M	Empty right R	Only for machines with hopper
10M	Test print	Only for machines with printer
11M	Test print button	Only for machines with printer
12M	Illumination delivery outlet on/off	Only for machines with printer
13M	Rocking (Seesaw)	
14M	Keyboard test	Stop by activating the light barrier in the machine
15M	Send logos to printer	Only for machines with printer
16M	Send font types to printer	Only for machines with printer
17M	Send firmware to printer	Only for machines with printer
18M	Send template of receipt to machine	Only for machines with printer
19M	Send example to machine	"Material recognition" programming necessary
20M	Display analogue value of the light barrier	
21M	Display analogue value of the light grid	
22M	Display middle switch position	
85M	Save statistics data on SD card	
89M	Save machine configuration onto SD card	
90M	Calibrate empties recognition	Code must be entered
91M	Display product patterns	Code must be entered
92M	Print all product details	Code must be entered
93M	Display number of saved products	Code must be entered
94M	Reset deposit receipt!	Code must be entered
96M	Reset lotto system	Code must be entered
99M	Load machine configuration from SD card	Code must be entered
21L	Show machine software	
22L	Show analysis unit software	
23L	Show scanner software	
24L	Show card system software	
25L	Show printer software	
26L	Show machine software PLD*	

*Programmable Logic Device

6.12 Reading out the software version

Service code 21L Display machine software	SW Machine: v50Gc705.pat
Service code 22L Display analyser software	SW Analysisunit: -----
Service code 23L Display scanner software	SW Scanner: BY000014BAA
Service code 24L Display cardreader software	SW Card system: -----
Service code 25L Display printer software	SW Printer: -----
Service code 26L Display machine software PLD (Programmable Logic Device)	SW PLD: 06.05

Revision status: currently
(July 2016) it is 05

06 is the code for SiOne!
Any other number here would be
incorrect.

6.13 Important note regarding the circuit board/ control board

The machine software PLD indicates if the version of hardware configuration on the control board is correct. Under no circumstances should the larger circuit board from a different machine type (e. g. hot drinks vendor HG) be used to mount the required plug-on board.

An incorrect assembly may lead to problems or damage the control board!

This might further imply that the PLD version is a wrong one and the machine might not work correctly or not work at all. If the message **"Wrong Hardware"** is displayed after switching on the machine, please return the control board to us and order a new one in exchange (chargeable).

Chapters 7 to 10:

Technical manual

Please note that this part of the manual is intended for service engineers or trained specialists only.

7. Maintenance work

During all repair and maintenance work greatest care and attention must be exercised.
Safety instructions must be adhered to.
Only original SIELAFF replacement parts should be used and fitted.



DANGER! Live electrical components

Risk to life!

Switch off machine and disconnect mains plug prior to carrying out any maintenance and repair work



Caution, ESD-sensitive components

Components may be damaged if not handled properly!

Only specialist personnel with ESD knowledge are authorized to work on the machine!



NOTE

Maintenance and repair work should only be carried out by a service engineer or trained specialists.

7.1 Maintenance plan

Machine Type SiOne Cabinet	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
Machine is safe, no tilting, fixings available?,		2	2	2	
Door closes easily?		2	2	2	
Cabinet exterior		1	1	1	
Upper and lower coach bolts on glass door	Special lubricant e.g.. Microlube GL 261 Part no. 998 90 037 01	2+3	2+3	2+3	
Locking pins	Special lubricant e.g.. Microlube GL 261 Part no.. 998 90 037 01	3	3	3	
Lock	As per manufacturer's instructions	2+3	2+3	2+3	

Illumination	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
LED working green/red? (optional)	Visual check	2	2	2	

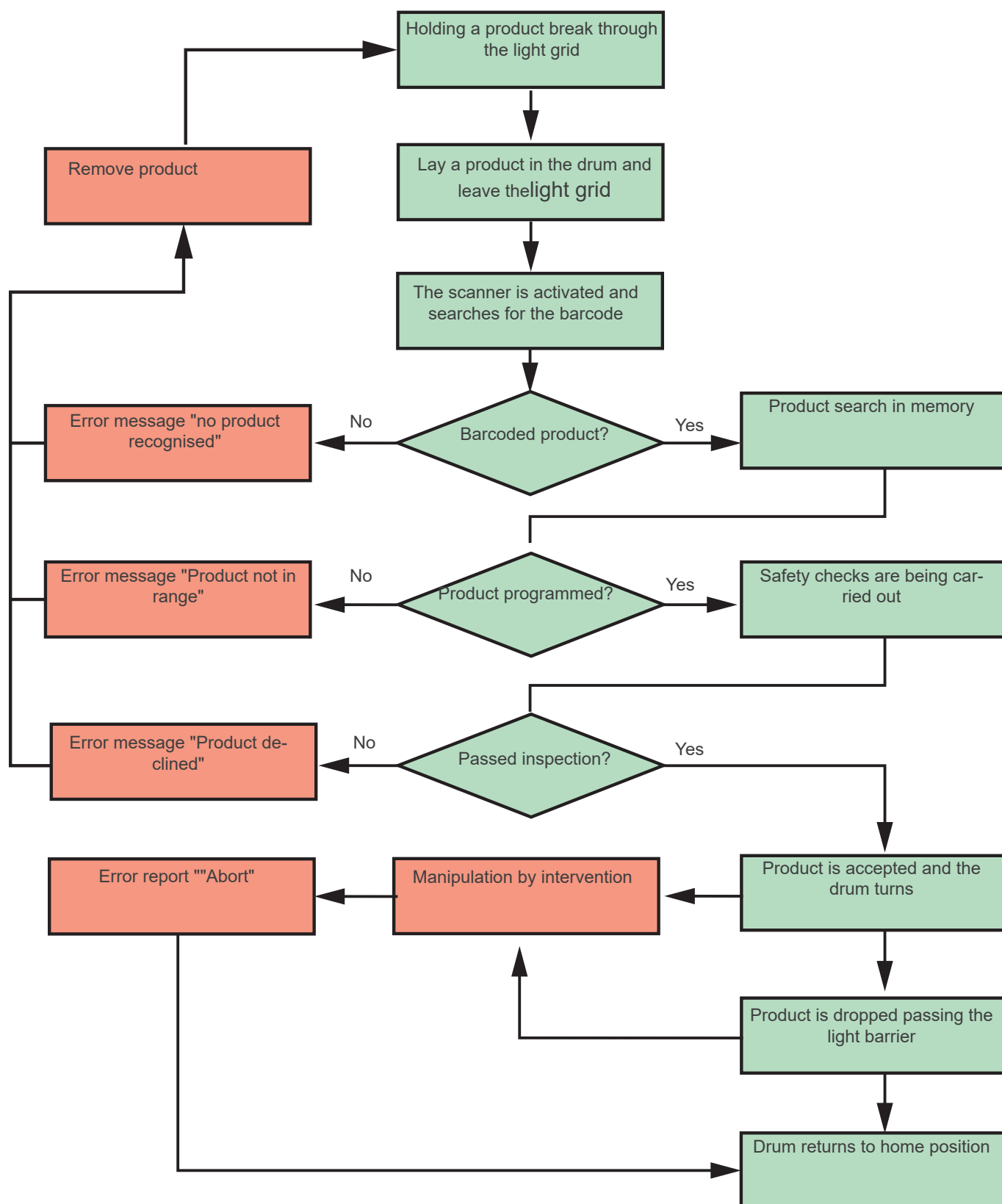
Acceptance area	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
Acceptance drum	Check it is clean, and clean if necessary	1+2	1+2	1+2	
Light grid (in the door)	Clean the glass panel	1	1	1	
Light barrier (Reflector)	clean	1	1	1	

Payment systems	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
Coin mechanism	As per manufacturer's instructions	2	2	2	
Card reader		2	2	2	
Banknote reader		2	2	2	

Container storage area	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
Storage area	Broom, vacuum cleaner, damp cloth if necessary	1	1	1	

Electrics check	Description Part number	Action 1 = clean 2 = examine/check 3 = lubricate 4 = replace			OK
		12 Mth.	24 Mth.	36 Mth.	
Electrical retesting	Test in acc. with VDE 0701 (every 2 years)	-	2	-	

7.2 SiOne processing procedure (Structure chart)



7.3 SD card

To copy product data from the machine easily or to make special settings each machine has an SD card slot on the control board

SD card requirements

- Maximum 4GB storage capacity (from Software version V50Ec617.pat or higher)
- SDHC-card possible (from Software version V50Ec617.pat or higher)
- Support of high data transfer rates not necessary
- Mini SD cards may be used with an adapter (SD-card provided recommended)
- FAT32 (for SD-cards with 2 GB or less FAT)

7.3.1 Structure of folders

To create folders on the SD card it must be connected to a PC or laptop with suitable slot

The following folders must be created on the SD card:

Folder	Function
Prod	Folder for product data files
stat	Folder for statistics files
config	Folder for configuration files

When a receipt printer is installed the following folders must also be created:

Folder	Function
printer	File for logos, character font and firmware
Voucher	Folder for voucher file (receipt layout)

7.3.2 Functions

The product functions are displayed additionally in menu M2 (→ see chap. 6.5.2 on page 37) after inserting the SD card. The following table lists the necessary file names and folders for these functions:

Function	Folder	File name
Read products from SD-card	prod	wProd.csv, dwProd.csv
Write parameters to SD-card	prod	*.csv

7.3.3 Printer functions:

If a receipt printer is installed, further functions are available in menu M8 via service numbers. The machine reads the files from the appropriate folders.

The following table lists the file names necessary and folders for these functions:

Function	Folder	File name
Load own print layout	receipt	receipt.txt
Load own logos	printer	logos.bin
Load new font	printer	fonts.bin
Copy firmware from the SD card:	printer	MCSptr.prt

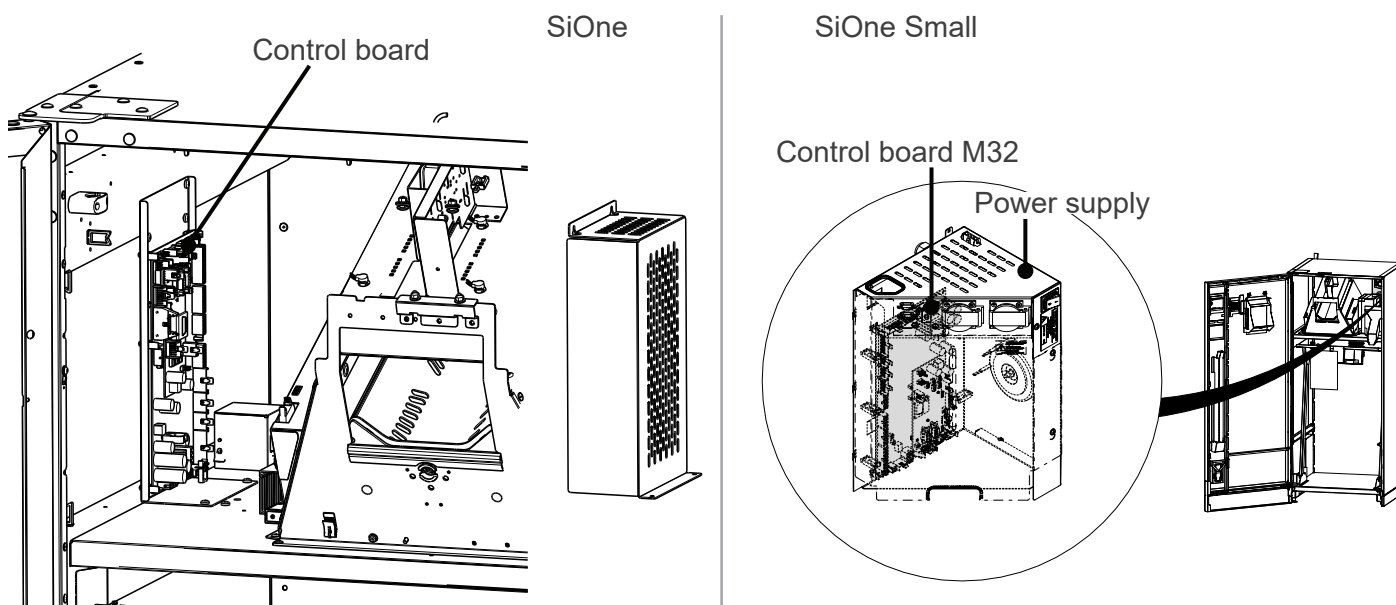
7.3.4 Other functions

The following functions are available in menu M8 using service numbers. See chap. 6.11

Function	Folder	File name
Load configuration data	config	cfg.dts
Save configuration file onto SD card	config	
Save statistics on SD card	stat	
Copy pattern from SD card	prod	pattern.csv

7.3.5 Insert SD-card

1. Open the machine door.
2. Remove the control board cover
3. Insert the SD card into the SD slot. [SD-card is detected] is shown in the display. Afterwards the display changes back to the previous message.
4. Fit the control board cover.
5. Close the machine door.



7.4 Memory overview

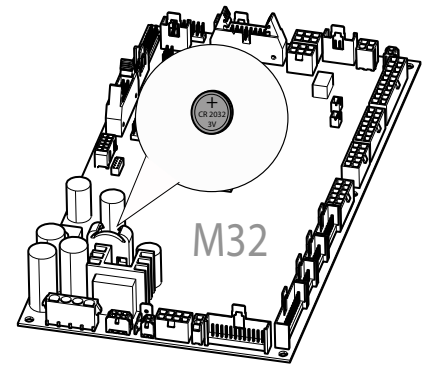
The machine control board has a re-programmable Flash-memory, which mainly stores programming data and also a random access memory (RAM). The programme data contains all necessary default values required for machine operation.

Variable data such as deposit values, direction for collection of products, statistics data etc. are saved in the RAM. This has battery-backup so that data remains unchanged when the machine is switched off and on again.

10000 products with their EAN codes can be stored.

7.5 Back-up battery

- There is a lithium back-up battery on the control board. Its function is to retain data while the vending machine is being transported, or in case of a power failure.
- Fault-free operation is only possible if this battery has sufficient capacity for storing programming and statistical data.
- Check the battery's voltage if a data error occurs after a long power failure. If this is less than 2.8V, install a new battery CR 2032 (Part No. 985 26 436 02).
- Check battery voltage at regular intervals.
- Batteries are consumable parts. No claims can be upheld due to a defective battery.



Notes on battery disposal

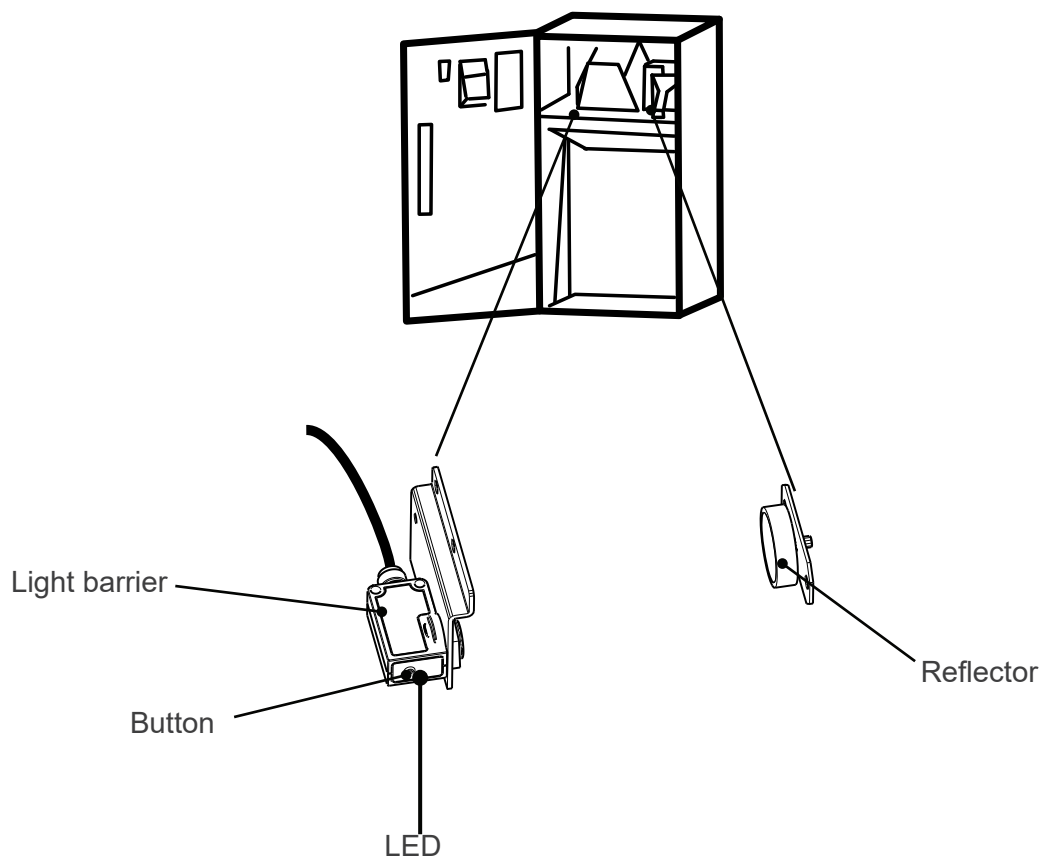
The crossed out symbol over the refuse bin means that the battery must not be disposed of in household waste. Make sure to dispose of drained batteries properly.



7.6 Maintaining the light barrier/ Reflector

Cleaning and calibrating the light barrier

Clean the reflector and the lens of the light barrier with lint-free cleaning cloths and weak washing-up liquid. Be careful, aggressive cleaning agents may destroy the lens.



7.5.1 Resetting the light barrier (teaching)

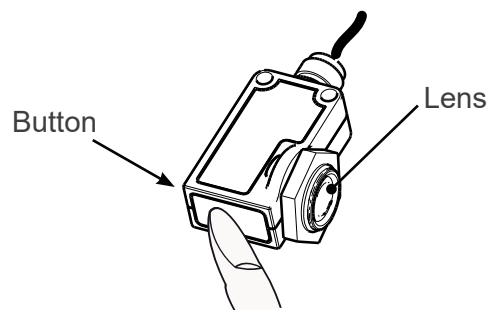
The light barrier must be aligned after cleaning. This ensures correct operation. Important: There should be no objects between the light barrier and reflector.

How to proceed:

1. Press the key briefly (2 sec.) until the LED flashes quickly
2. Release the key
3. The LED must go out.

If the LED flashes slowly and the LED does not go out immediately after the button has been released, programming the operating mode has been selected in error.

Refer to following chapter.



7.7 Light barrier without teach button

The light barrier has already been set prior to despatch for the SiOne acceptance units. A re-adjust time of the light barrier without a teach button is only possible with the separate teach button.

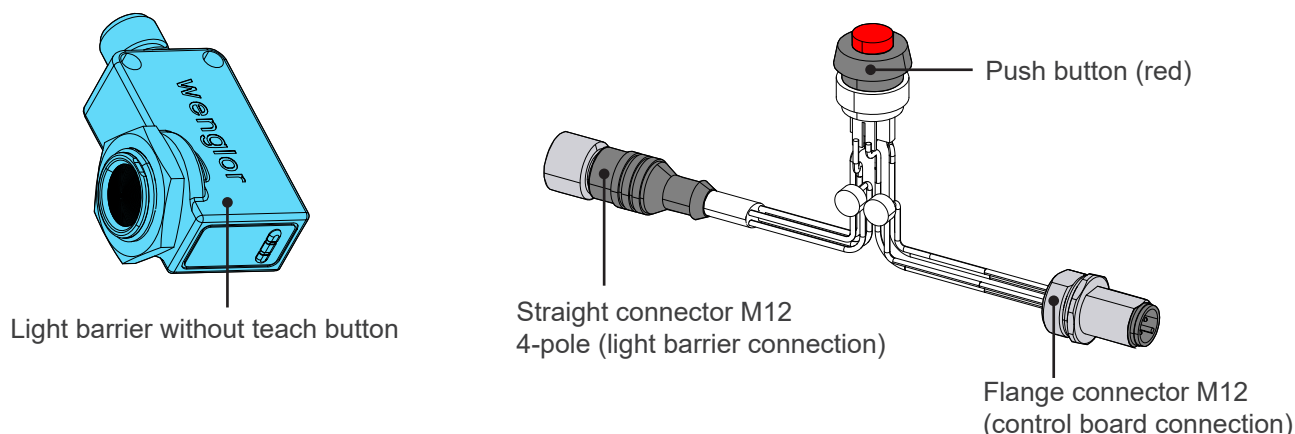
Teaching the light barrier can only be carried out via a separate teach button. This can be ordered later together with the assembly instructions.



Tip

To teach the light barrier press the red button briefly until the light beam flashes quickly.

Illustration: Separate teach button



7.8 Adjusting the light barrier

The light barrier is set to a readjustment time of 15 minutes (Standard)

That means that the light barrier recalibrates itself every 15 minutes.

To set the light barrier proceed as follows:

1. Press the Teach button on the light barrier or separate teach button and keep it pressed for at least 10 seconds until the flashing of the LED changes from quick to slow.

The flashing indicates what readjusting time the light barrier is set to. The light barrier is set correctly when the LED flashes five times.

If the light barrier is not set correctly, press the Teach button several times until the LED flashes five times.

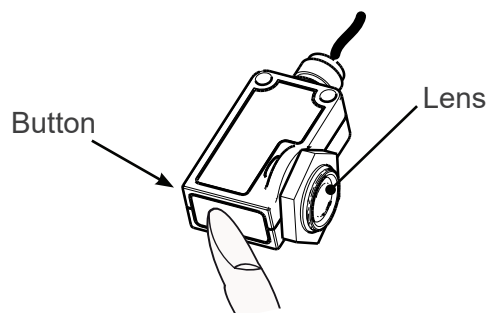
When the Teach button is not pressed for 15 seconds, the light barrier automatically reverts to normal display mode and the LED goes out.

2. Finally the light barrier should always be programmed:

Press the Teach button until the LED flashes quickly.

The new LED has now been re-programmed.

Blinking	Normally closed/ Normally open	Readjustment time
1x	NO	1 min
2x		15 min
3x		60 min
4x	NC	1 min
5x		15 min*
6x		60 min



8. Questions and answers, FAQ

8.1 The light barrier trips although the collection bag is not full:

- Check if the reflector is clean and free of scratches.
- Check if the light spot is properly directed onto the reflector.
- Check if the connected cable (light barrier - control board) is undamaged and if the plug connections are inserted correctly.
- Check if mode 5 (flash 5x) is correctly displayed on the light barrier.
- Calibrate the light barrier. This is important every time after the mode has been changed.
- Check if the right reflector is correctly mounted.
- If none of the measures proves successful, the control board or the light barrier should be exchanged.

8.2 Programmed products are not properly accepted or not accepted at all.

- Check if the product has really been stored on the control board.
If the barcode has been read but [Product not in assortment] or [Wrong product] is shown in the display, the product information has not been saved.
It should be programmed properly.
- Check if various products of the same type provide very different data. Service code [91M] helps to check the data.
If the data varies substantially and the setting [Tolerance 4] (refer to chapt. 6.10.9 on page 44) does not help, there is usually too much deviation in the product quality. Contact the manufacturer of the products.
- If the message [No product detected] or [Not identified] is displayed shortly after the product has been inserted, the barcode cannot be read.
Either the barcode is damaged, inaccurately printed or turned too far sideways or the scanner cannot detect the code as it is too far away or out of visual range. This problem can be solved by positioning the scanner differently or by installing a second scanner.
- Check if the drum is correctly positioned in the middle. If service code [91M] is entered and the drum is empty, the data showing an empty drum 0x0000 must be displayed.
If you are not sure whether the drum is in mid-position, enter service code [00M] or [01M] to re-position. If the acceptance head is not correctly aligned using the service code, it must be re-adjusted by a service technician.

Service technicians/qualified personnel only!

- If all these measures do not solve the problem, the cause could also be a fault with product recognition or the control board. In such a case exchange the product recognition or the control board.

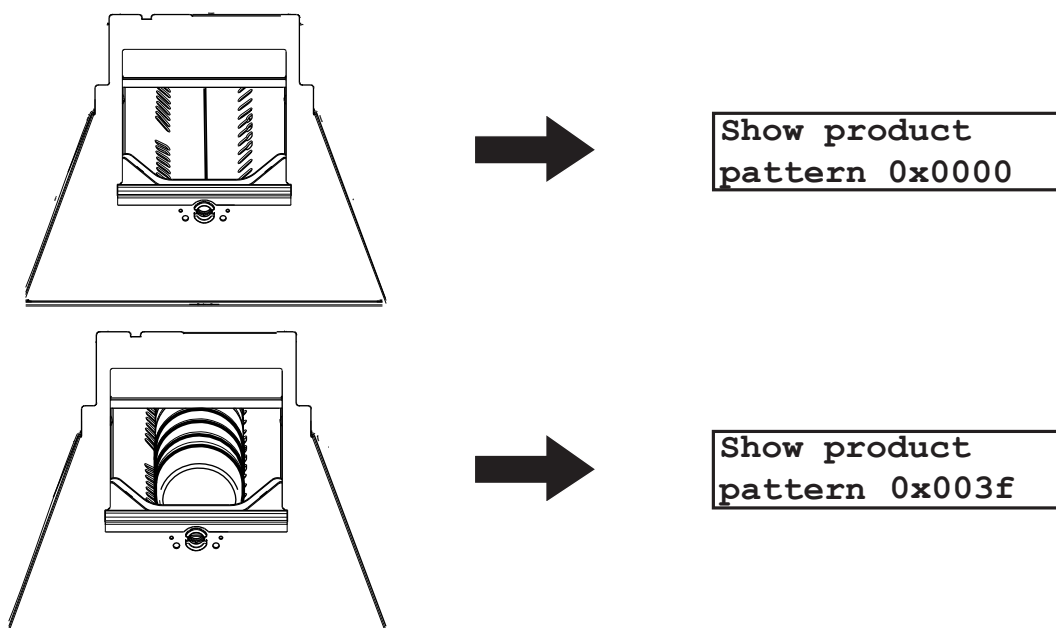
8.3 Deposit values are not paid out correctly or not paid out at all.

- Check if the settings in menu M1 Pledge values/Hopper values are correct (see sec. 6.4 on page 35). Set the value for hoppers that are not installed to 0.00 EUR and make sure that the programmed deposit values are divisible by the coin value set for a hopper.
- If your credit system is coin payment, check if the hopper or the cable connection to the control board are defective.
- If your credit system is card reader, check if the additional settings in the Installation menu M7 such as [Time-out for card], [Credit mode] and [Always Idle] are correct. In addition check the settings for the card system and adjust them if necessary.
- If your credit system is Printer, check if the printer is working properly. Check the paper, the printer head lever and the connection.
- Check if the product passes the light barrier correctly and always triggers the light barrier briefly in both sort directions.
- If [High Security] in the Installation menu M7 is set to [Yes], check correct return to middle position. See also chap. 8.2 point 4.

9. Application example: Monitoring and checking

Display the product features via 91M

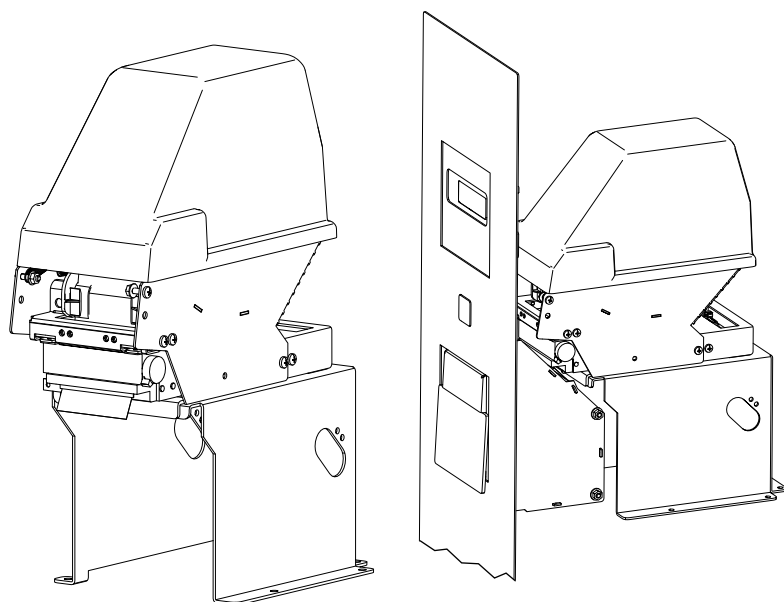
1. Open the machine door
2. Select service code [91M] [Show product features]
3. Insert service key
4. The display must read 0x0000 when the drum is in home position (the last Bit may deviate by approx. 1 or 2!).
If 0x0000 is displayed, continue with the next step.
5. Insert a product with the barcode facing upwards, a certain value (coding) for this product will be displayed.
Insert a second product, the result must be the same value. If this is the case, the machine works correctly!



10. Receipt printer (optional)

The machine can be fitted with an optional receipt printer. The printer is designed for universal usage and can print out receipts (deposit receipts), which can be produced if required by the customer. Logos and barcodes can be printed on the refund receipts.

A new barcode is generated for each print out .



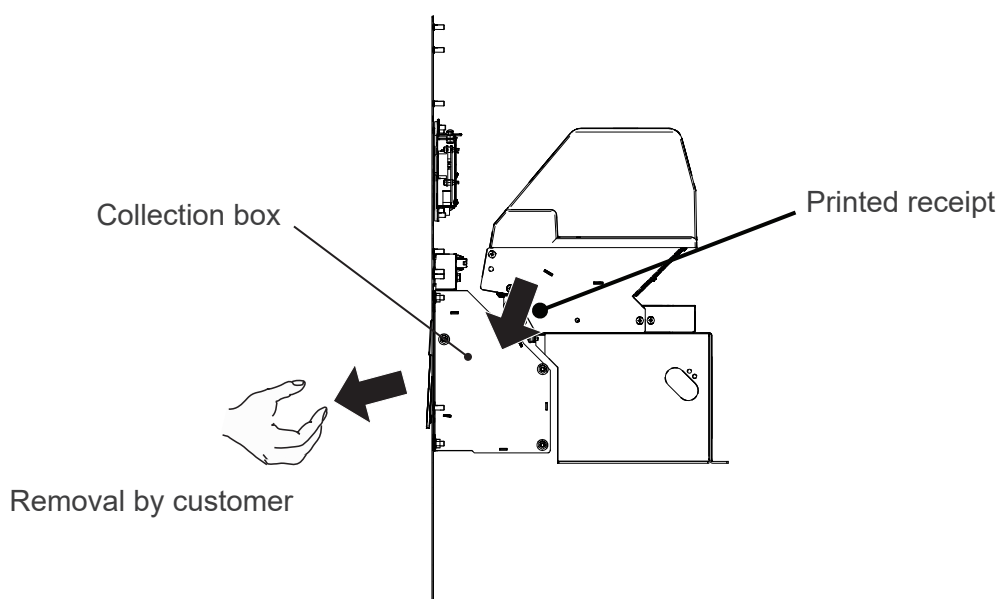
Receipt printer



Refund receipt

10.1 Positioning in the machine

The printer is mounted on the right hand side of the machine when the door is open so that the printed receipt falls after cutting into an illuminated collection box

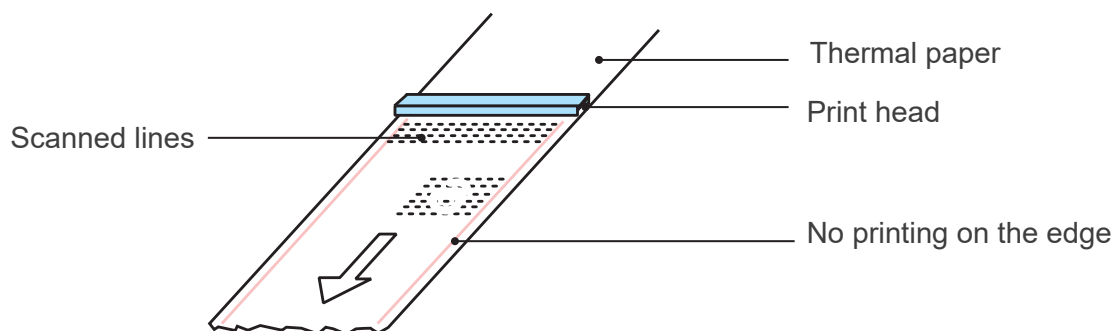


10.2 Facts worth knowing about the printer

The printer is a matrix printer. The thermal paper passes by the print head and writing appears across the complete width of the paper at the same time.

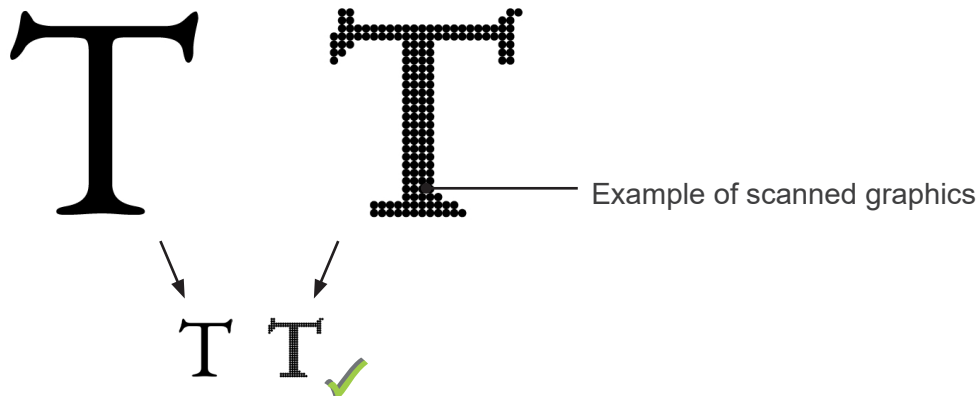
The paper has a heat sensitive side. A logo is usually printed on the back. It is most important that the paper is loaded correctly into the printer!

The resolution is 8 pixel per millimetre.



Note

If there are too many black dots, the thermal loading of the print head is very high. From a technical print point of view it is completely adequate to print every second or third or fourth dot in order to maintain the black. The bitmap graphics should be scanned using a graphics programme.



10.3 Thermal paper

Only suitable thermal paper must be used.

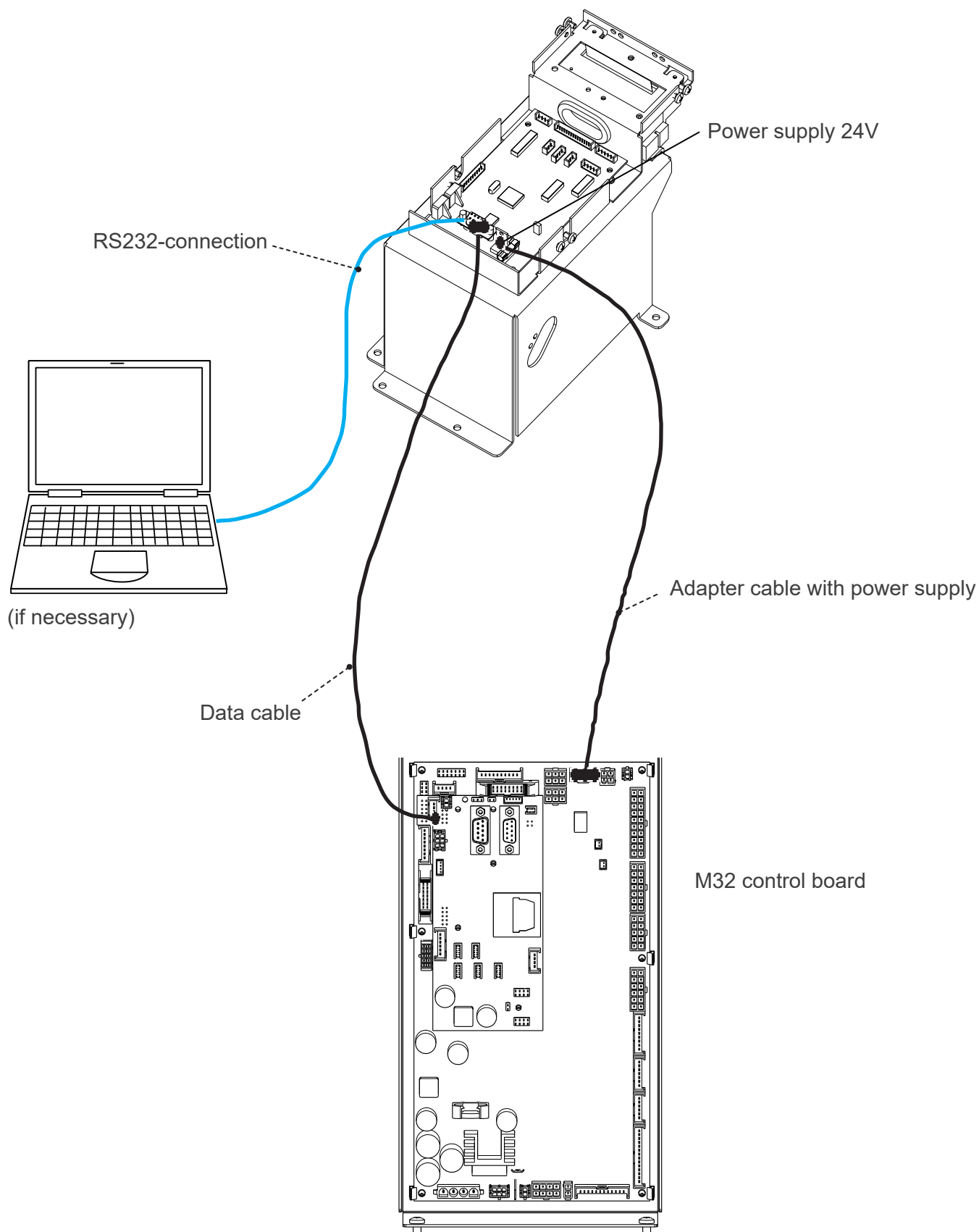
Suitable thermal paper	
Sielaff part number for the paper roll	998.00.209.00
Width	60 mm to 58 mm
External diameter	150 mm
Internal diameter	50 mm
Paper thickness	80µm
Length of end marking	1.00 m

10.4 Connections

The printer is connected to the control board via the data cable supplied. In addition a power supply cable is connected.

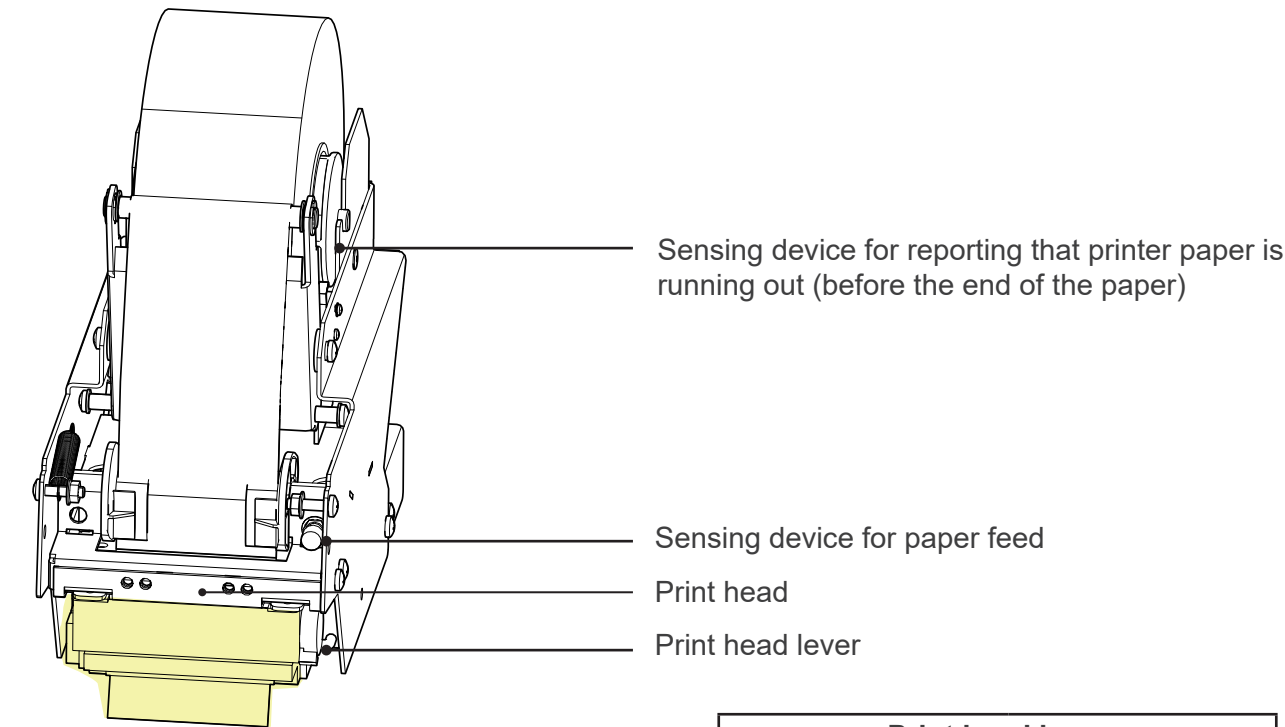
A laptop with RS232-connection (serial interface) is advantageous when setting up and checking the printer. The printer can still be fitted even if a laptop is not available.

The laptop should have software printer config 1.54 or higher.

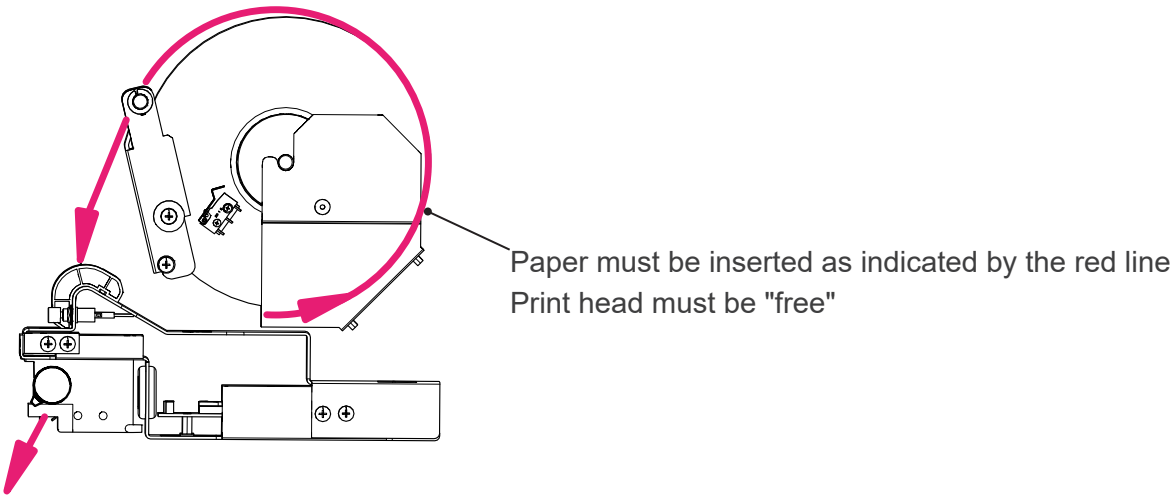
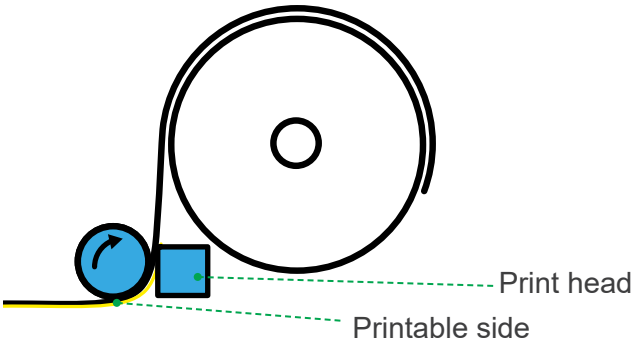


10.5 Keys, Functions, Print head

 Do not touch the coloured area on the print head!
Sensitive components!



Print head lever	
	
Print head set	Print head free
Printing process	Paper can be inserted



10.6 Configuring the machine to printer

If the printer is retrospectively fitted, the machine must be informed that a printer has been installed. In addition specific adjustments must be made,

In the [Installing mode] menu M7 and sub-menu [Printer], you must set [with printer].

The following functions only appear if the machine has previously been set to [with printer].

Time for print (receipt):

The refund receipt must be printed out every time, so that the customer receives a voucher for his deposit. If the customer does not request the deposit refund, after a pre-determined time the machine produces the print out .

Length of time the collection box is illuminated:

When the receipt is being dispensed, the light automatically switches on. The length of time the light is on is determined by this setting.

Flash time for receipt button;

Numerical input in 0.1 second steps (adjustment x 100 ms): The flashing frequency of the print key is set here, the purpose of which is to make the customer aware of the button.

10.7 Functions of the SD card

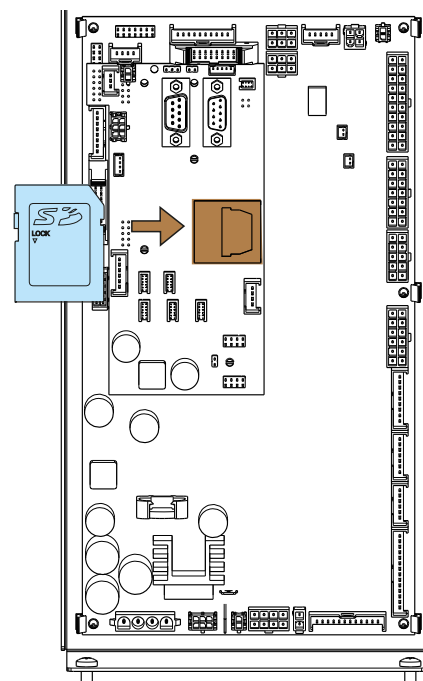
To easily copy product data from the machine or to make special settings each machine will have an SD card slot.

When the card is inserted the message [SD card is detected!] is displayed.

Afterwards all functions with SD card are available.

The functions are listed below!.

- Product functions
- Printer functions:
- Other functions



10.7.1 Product functions

All product functions which are possible with SD card appear in Menu M2[LEARN/DELETE] after the SD card has been inserted.

To use these functions the SD card must contain a folder <prod> in its main directory. The machine writes data to this folder and also reads data from this folder.

Read parameters from SD-card:

With this function all products and their parameters, which are stored in a special file on the SD card, are transferred to the machine. The name of the file is therefore very important.

The file must be called either **wProd.csv** or **dwProd.csv**.

If files with different names are in the folder the file wProd.csv has priority!

The difference between the files is that with wProd.csv **w = write** the products on the SD card will be added to the products in the vending machine.

When using **dwProd.csv**, **dw = delete-write** all saved products are deleted first and then the products from the file are loaded up. The formatting of the files is detailed below.

Write parameters to SD-card

This function is for writing all products and product parameters stored in the machine to the SD card.

A CSV file in the folder <prod> is created. The formatting of this file is detailed below.

EAN of product | Direction | Pledge | SIKE | Pattern | Transmitting power | Bottom flag

An exact description of the individual parameters is not covered here.

```
400135413071; 0; 2; 1; 256; 1; 0
42175049; 1; 0; 1; 3517; 2; 0
```

Example of CSV-data

10.7.2 Printer functions:

If a receipt printer is installed in the vending machine, further functions are available with an SD card. The receipt layout **can be changed** and the printer can receive **new firmware, fonts and logos**.

To use these function the folders <receipt> and <printer> should be in the main directory on the SD card.

The printer functions are in menu M8 [SERVICE MODE]. The machine reads the files from the appropriate folders.

Option	Explanation
Copy Bonfile from SD card: 18M + Code	The receipt file BonFile.txt in folder <bon> can be transferred to the printer via service code in [SERVICE MODE] menu. The Bonfile is a sample which defines the design of the receipt.
Copy logos from the SD card: 15M + Code	A function in the menu [SERVICE MODE] enables self-designed logos to be loaded up from the SD card to the printer in the vending machine. Therefore a file called logos.bin must be in the <printer> folder .
Copy fonts from the SD card: 16M + Code	A function in the [SERVICE MODE] menu enables new fonts to be loaded up from the SD card to the printer in the machine. Therefore a file called logos.bin must be in the <printer> folder .
Copy firmware from the SD card 17M + Code	If the machine printer receives new firmware, this is loaded via a function in the [SERVICE MODE] menu. Therefore a file called MCSptr.prt must be in the <printer> folder.

10.7.3 Other functions

Some very special functions are detailed below. The required folders and files are described directly with the appropriate function.

Option	Explanation
Copy config. from SD card:	To copy a configuration file from the SD card, the folder <config> is required in the main directory. This must contain a file cfg.dat . Afterwards copying can be carried out by a service code in the [SERVICE MODE] menu.
Write config. to SD card:	In addition the existing machine configuration can be saved onto the SD card. This can also be done via a service code in menu [SERVICE MODE]. After successful transfer the file is saved in the <config> folder. This then makes it very simple to transfer one configuration from one machine to another.
Write statistics to SD card	Machine statistics can be written to the SD card via a code in the [SERVICE MODE] menu. The main directory must contain a <stat> folder which is where the file is saved after successful transfer.
Copy pattern from SD card	In the M7 menu [INSTALLING MODE] the setting [Material recog.] is located, which allows different selection options. One of these options is [Pattern] or [EAN + pattern]. This function serves to accept all products, corresponding to a specific pattern, which is stored on the SD card. For this purpose a file called pattern.csv must be stored in the <prod> folder. This is exactly the same folder as used for the product functions. How these patterns must look, is described in a special file named "Einst. Mat.Erk.doc".

10.8 Designing a receipt

Designing a receipt must be carried out by the customer himself i.e. be programmed. Sielaff supplies the data for a standard receipt on the SD-card. This programming can be changed and adapted to suit the individual customer

Here is an example:

Refund receipt



Programming

```

BON_ID 03
###BEGIN_BON_FORMAT
\Q\0J1\F0\L01

Sielaff GmbH & Co. KG
Münchener Str. 20
91567 Herrieden
\L02
\J2Products accepted:
\J1-----
Barcode  No. Value
@@SECTION_START@@7330
@@PROD_BARCODE@@ @@PROD_BARCODE_
CNT@@ @@PROD_DEPOSIT_VAL_DOT_2@@€

tot. No. Products: @@PRODUCT_CNT@@
-----
tot. Refund amount: @@BON_DEPOSIT_VAL_SUM_
DOT_2@@€
-----

Refund paid out on:
@@DATE_DD@@.@@DATE_MM@@.@@DATE_
YYYY@@, @@TIME_HH@@:@@TIME_MM@@:@@
TIME_SS@@ TIME
Machine no.: @@MACHINE_NR@@
\J2Bon-Nr.: @@BON_NR@@
J1
@@CFG_BARCODE_TYPE_EAN13@@@@CFG_BAR-
CODE_SIZE_2@@@@CFG_BARCODE_TEXT@@
@@BON_BARCODE@@

@@ADD_WARNINGS@@

\C
\1
###END_BON_FORMAT

```

Explaining the individual lines of receipt programming

Consecutive number	Script	Explanation
1	BON_ID 03	Fixed guideline; Begin programming see chapter 10.8.1 on page 68
2	###BEGIN_BON_FORMAT	
3	\Q\J1\F0\L01	Control characters see chapter 10.8.2 on page 68
4		Empty line
5	Sielaff GmbH & Co. KG	Own text
6	Münchener Str. 20	Own text
7	91567 Herrieden	Own text
8	\L02	The Bitmap (Logo) which is stored in the second line should be printed. See right column in chap. 10.8.3 on page 68
9	\J2Products accepted:	Control characters Change font width; Own text see chapter 10.8.2 on page 68
10	\J1-----	Control characters change font width; Own text
11	Barcode No. Value	Own text
12	@@SECTION_START@@7330	Variable field Display all products see chapter 10.8.3 on page 68
13	@@PROD_BARCODE@@ @@PROD_BARCODE_CNT@@ @@PROD_DEPOSIT_VAL_DOT_2@@€	Variable fields Product EAN ; Number of products with the same EAN Refund value of product
14		Empty line
15	tot. No. Products: @@PRODUCT_CNT@@	Own text; Variable field; Number of all products
16	-----	Own text
17	tot. Refund amount: @@BON_DEPOSIT_VAL_SUM_DOT_2@@€	Own text; Variable field; Number of all products
18	-----	Own text
19		Empty line
20	Refund paid out on:	Own text
21	@@DATE_DD@@.@@DATE_MM@@.@@DATE_YYYY@@, @@TIME_HH@@:@@TIME_MM@@:@@TIME_SS@@ TIME	Variable fields Date and time are generated (Format depends on the configuration)

Explaining the individual lines of receipt programming

Consecutive number	Script	Explanation
22	Machine no.: @@MACHINE_NR@@	Own text, Variable fields (Machine no. as stated in the installation menu)
23	\J2Bon-Nr.: @@BON_NR@@	Control characters (change font width) Variable fields Consecutive receipt number
24	J1	Control characters (Change font width)
25	@@CFG_BARCODE_TYPE_EAN13@@ @@CFG_BARCODE_SIZE_2@@ @@CFG_BARCODE_TEXT@@ @@BON_BARCODE@@	Variable fields; Type EAN 13, Height 13, Produces legible barcode numbers Products EAN barcode
26		Empty line
27		
28		
29	@@ADD_WARNINGS@@	Variable field; Warning messages may be printed at the end
30		Empty line Note: Always leave some lines empty before the paper cut-off !
31		
32		
33	\C	control characterPaper cut-off 34
34	\1	control characterPrint immediately
35	###END_BON_FORMAT	fixed specification, end of programming

Colour purple: fixed specification

Control characters

Variable field

10.8.1 Fixed guideline;

The programming must be started and ended using the following fixed guidelines:

```
###BEGIN_BON_FORMAT
###END_BON_FORMAT
```

10.8.2 Control characters

Here are some of the most important control characters. A complete list can be found in the printer information. You can obtain the document from Sielaff (PDF-Document part no. 459 01 120 00).

```
\1      (immediately) Print
\0      (immediately) Flush Buffer
\C      ( in print) cut
\Fx     (in print) change the font (from version A14)
\Fx     (in print) change the font width (from version A14)
\Q      (immediately) receipt
\L      (im PRINT) print logo
```

10.8.3 Variable field

Date & Time:

@@DATE_DD@@	Day of date in format:	dd
@@DATE_MM@@	Month of date in format:	mm
@@DATE_YYYY@@	Year of date in format:	yyyy
@@TIME_HH@@	Hours of time in format:	hh
@@TIME_MM@@	Minutes of time in format:	mm
@@TIME_SS@@	Seconds of time in format:	ss

Product characteristics:

@@PROD_BARCODE@@	EAN of the product as EAN8 or EAN13
@@PROD_BARCODE_CNT@@	Number of products with the same EAN
@@PROD_DEPOSIT_VAL_DOT_2@@	Refund value of the product
@@PRODUCT_CNT@@	Number of all returned products
@@BON_DEPOSIT_VAL_SUM_DOT_2@@	Refund value of all returned products

Barcode:

Service technicians/qualified personnel only!

@@CFG_BARCODE_TYPE_EAN13@@	Barcode on the receipt in format:	EAN13
@@CFG_BARCODE_TYPE_CODE128C@@	Barcode on the receipt in format:	CODE128
@@CFG_BARCODE_TYPE_INTER@@	Barcode on the receipt in format:	2/5 INT
@@CFG_BARCODE_SIZE_1@@	Height of barcode:	7.5mm
@@CFG_BARCODE_SIZE_2@@	Height of barcode:	15mm
@@CFG_BARCODE_SIZE_3@@	Height of barcode:	22.5mm
@@CFG_BARCODE_SIZE_4@@	Height of barcode:	30mm
@@CFG_BARCODE_TEXT@@	The code is written as text under the barcode.	
@@BON_BARCODE@@	The code print starts	

Others:

@@ADD_SECCODES@@	Print security code on the receipt
@@ADD_WARNINGS@@	Print warning messages on the receipt
@@MACHINE_NR@@	Display of preset machine number
@@BON_NR@@	Consecutive receipt number
@@SECTION_START@@7330	Display of all products
@@SECTION_START@@7310	Display of all products with SIKE
@@SECTION_START@@7320	Display of all products without SIKE
@@SECTION_START@@7230	Display of all products dropped to the right
@@SECTION_START@@7130	Display of all products dropped to the left
@@SECTION_START@@1330	Display of all products with Refund1
@@SECTION_START@@2330	Display of all products with Refund2
@@SECTION_START@@4330	Display of all products with Refund3
###BEGIN_BON_FORMAT	Start of receipt design
###END_BON_FORMAT	End of receipt design

Refund values_3_BIT	4
Refund values_2_BIT	2
Refund values_1_BIT	1
Direction for collection_right_BIT	2
Direction for collection_left_BIT	1
No_Sike_BIT	2
Sike_BIT	1

10.9 Create logos

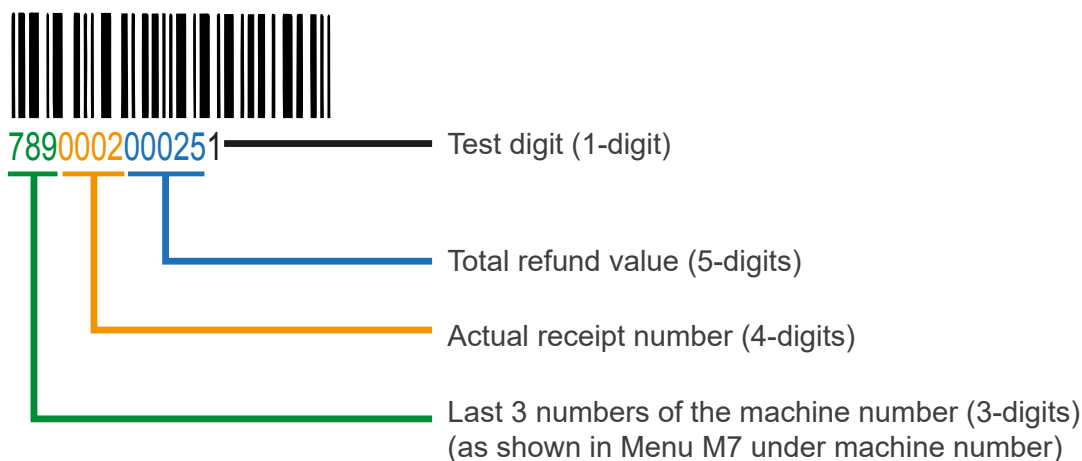
Store the graphics compiled under "Logos" in chapt. 10.12.2 on page 73

- The printer can print out simple logos.
- The logo must be stored as a Bitmap file (BMP)
- 2 colour bitmap: black/white
- Width of logo: 384 pixels
- Height: free
- Max. size 13 Kbytes
- 3 Flash banks each with 5 logos (in total 15 logos can be stored)
- Resolution of the picture when printed: 8 pixels per millimetre in height and width
- Only use black and white
- Avoid continuous black lines; therefore scan pictures!

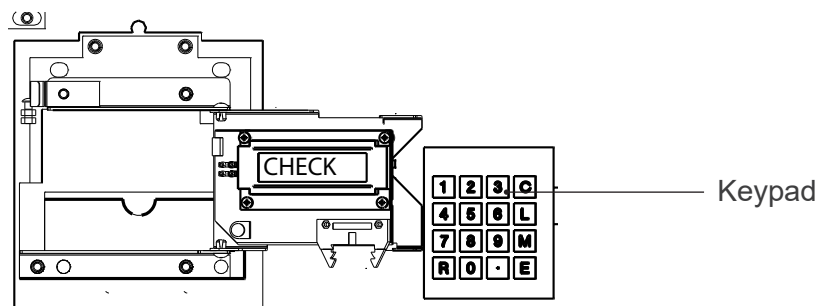


10.10 EAN barcode / barcode printing

The EAN-barcode generated by the printer is compiled in the following way (default: EAN13):



10.11 Commands sent to the printer from the machine (Service codes)



To navigate and familiarise yourself with the keypad, refer to instructions in chapter „6.10 [INSTALLING MODE] [M7]“ on page 41

Service code	Meaning	Note
00M	Turn motor right	
01M	Turn motor left	
02M	Scanner on/off	default 1
03M	Illumination drum on/off	default 1
04M	Green front lamp on/off	default 1
05M	Red front lamp on/off	default 1
06M	Test light barrier	
07M	Test light grid	
08M	Empty hopper L	
09M	Empty hopper R	
10M	Test print	
11M	Test print button	As long as the receipt button is pressed the key lights up and "Pressed" is displayed.
12M	Illumination delivery outlet on/off	default 1
13M	Rocking (Seesaw)	
14M	Keyboard test	
15M	Send logos from the SD-card to the printer	important!
16M	Send font types from the SD-card to the printer	important!
17M	Send firmware from the SD-card to the printer	important!
18M	Send receipt file from the SD-card to the printer	important!
19M	Read pattern from SD-card	
20M - 84 M	free.	
85M	Save statistics data onto SD-card	
86M - 88M	free.	
89M	Save machine configuration onto SD card	
90M	Calibrate empties recognition	Requires code
91M	Display product patterns	Requires code
92M	Print all product details	Requires code
96M -98M	free	Requires code
99M	Read machine configuration from SD-card	Requires code

10.12 Printer config programme

Here are some tips when using the programme:

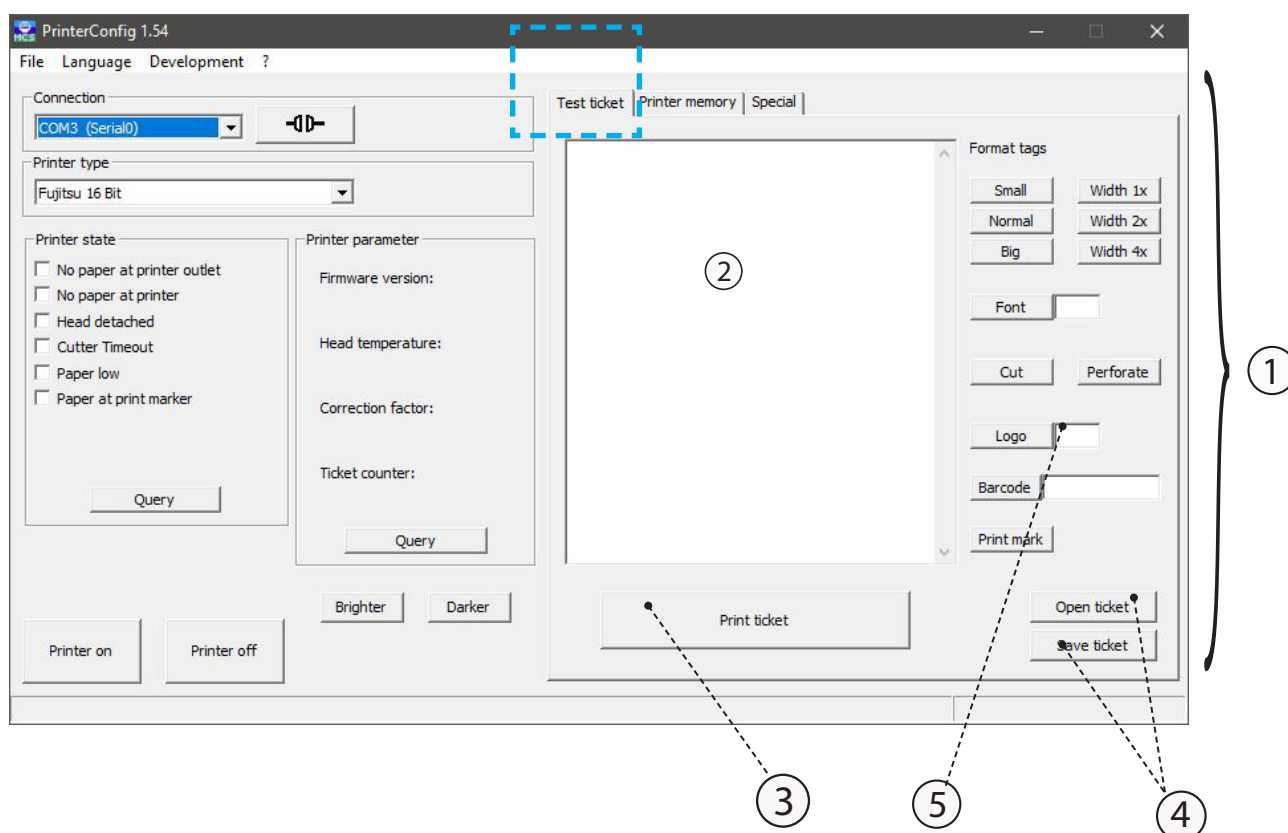
There are various tabs on the right hand side:

- Test ticket:
- Printer memory
- Special



10.12.1 Menu test ticket

The menu is compiled as follows:



① Various format tags can be selected, which then appear immediately in the preview screen② .

By pressing the key ③ „print ticket” the programming in the preview window is sent ② to the printer.

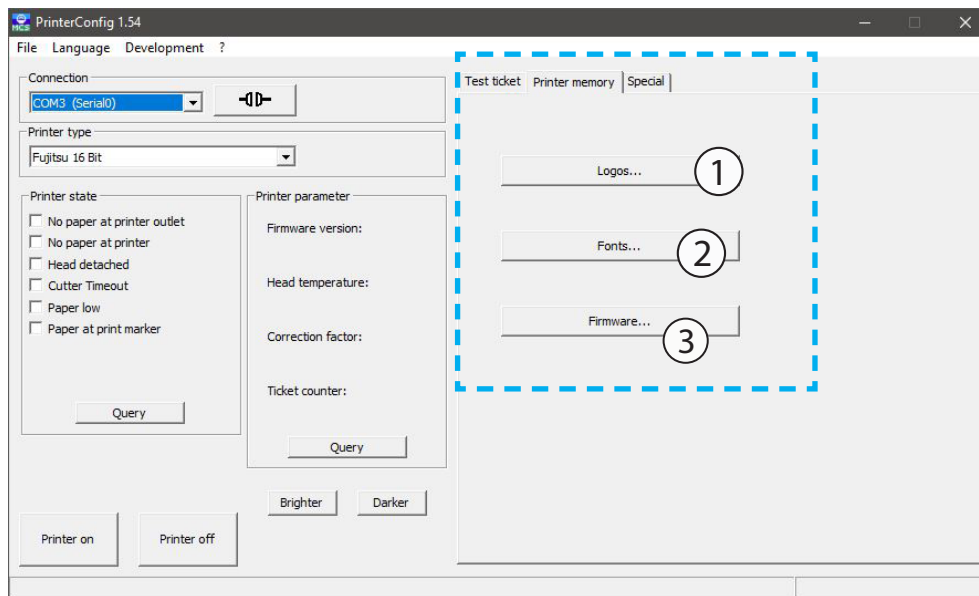
By pressing the key④ "open ticket" and "save ticket" a programme which has already been compiled can be opened and saved.

By pressing key ⑤ a logo which is in the printer memory is incorporated on the test ticket

10.12.2 Menu for printer memory

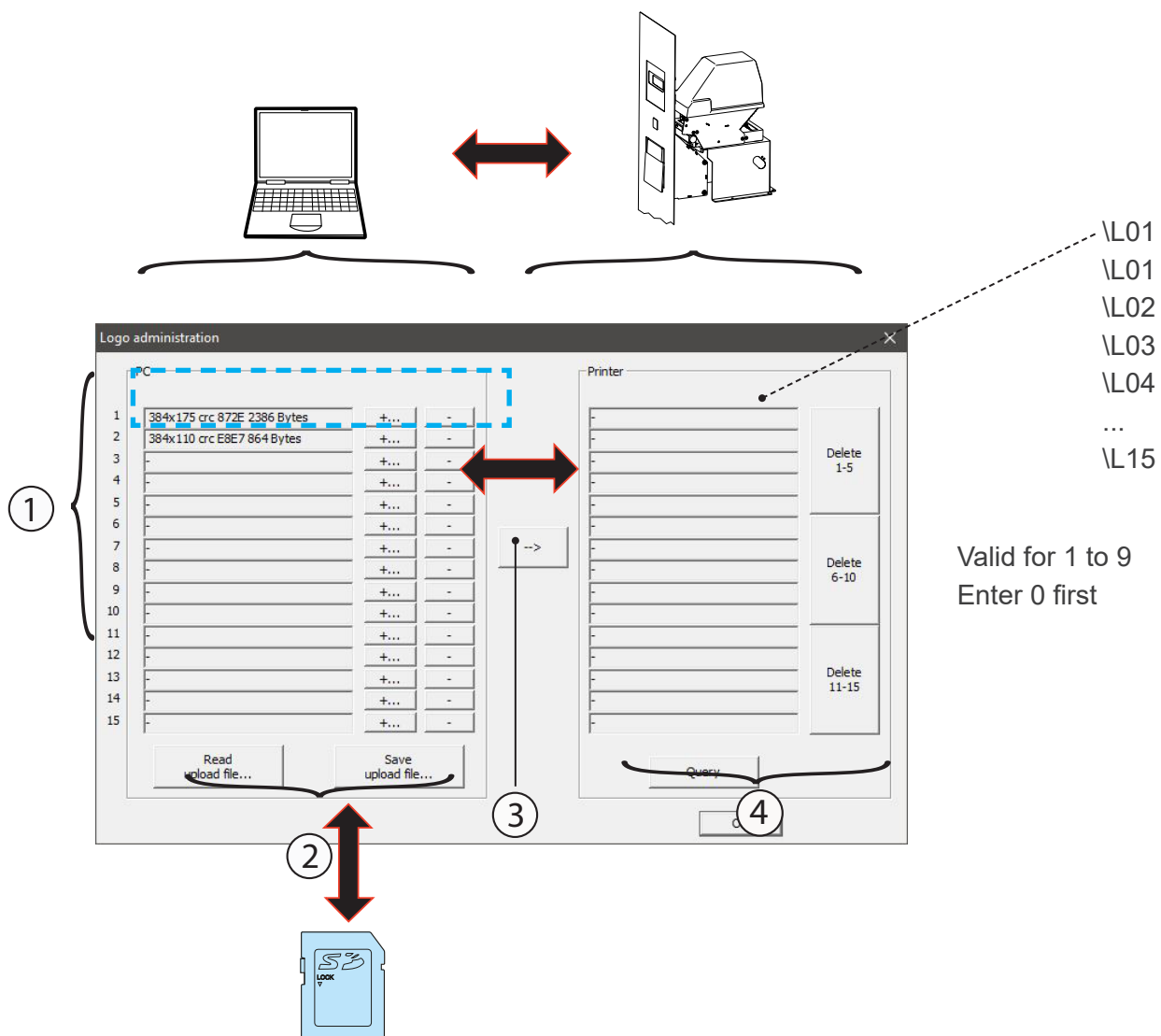
Logos (Bitmap-graphics), fonts (typefaces) or a new firmware (software update) can be loaded into the printer memory.

Conversely, data from the printer memory can also be transferred back to the PC. This makes sense where several units are installed, if a configuration is to be transferred to other machines.



- ① Load logos i.e Bitmap graphics
- ② Fonts; load character types, i.e. make available to the printer
- ③ Transfer firmware (software upload) to the printer.

Logo administration (=administration of Bitmap graphics)



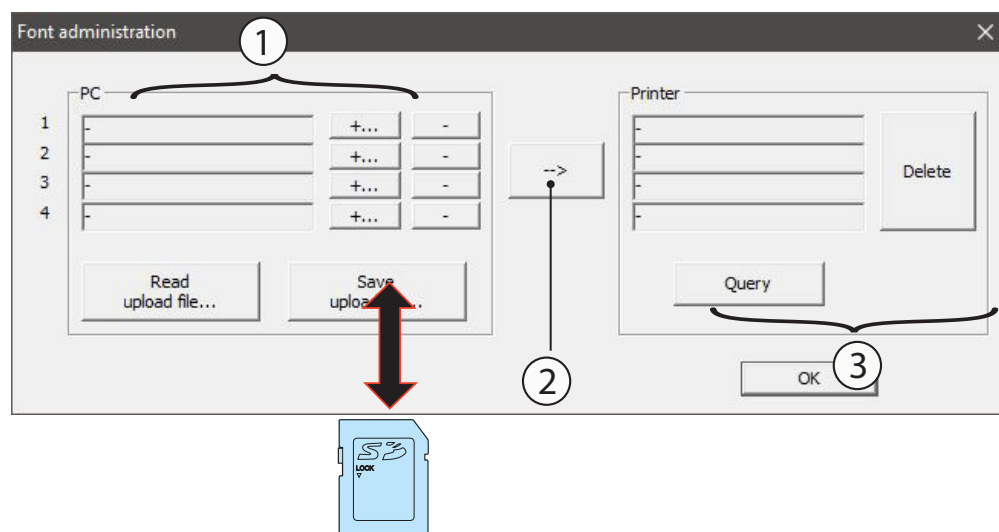
- ① Left window; Add data from PC here. Press key "+" and add data file out of a file with the ending ".xxx.bmp".
- ② To transfer logos and fonts directly onto an SD-card press the key "Store upload data file". A data file is then produced which contains all logos and fonts. Then copy this data file into the "printer" file. The SD-card is inserted into the M32 control board on the machine and assigned using a service code. See section 10.7.2 on page 63 for service codes
- ③ Cursor left/right window:: Using the cursor the data file can be transferred from right to left. This is how data is transferred to the printer
- ④ Right window: The data listed here is available for the printer to print out. Using key "Delete 1-5" the first five Bitmap graphics listed are deleted.



NOTE

If problems occur when writing the printer memory, we would recommend completely deleting the memory files. Then re-write the printer memory.

Character types administration (Fonts)



① Left window; Add data from PC here. Press "+" key and add data file out of a file with the ending ".xxx.fonts".

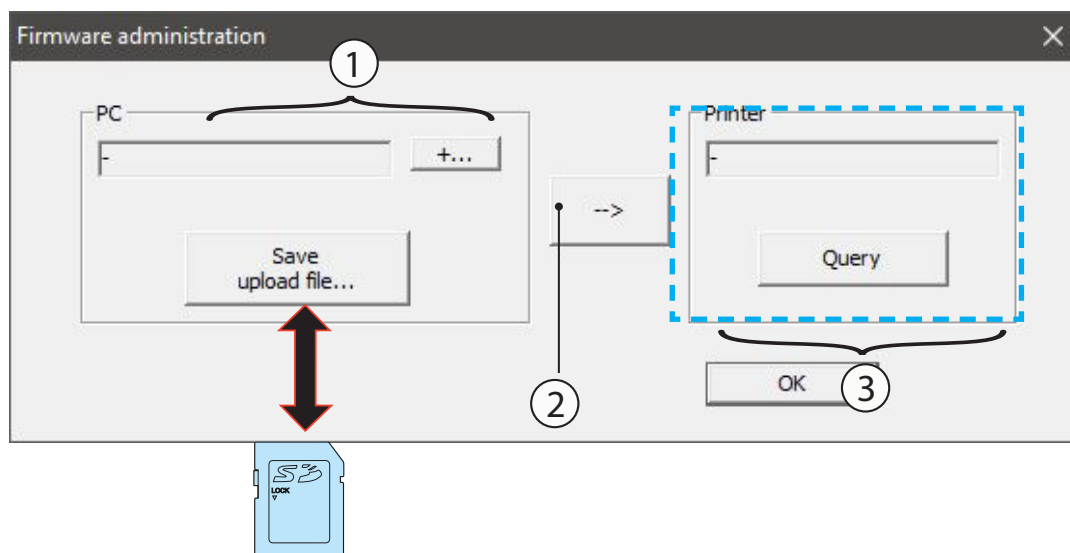
② Cursor left/right window:: Using the cursor the data file can be transferred from right to left. This is how we transfer the data file to the printer.

③ Right window: The data listed here are available for the printer to print out. The "delete" key deletes font types



Important: only use legally-approved and licence-free fonts

Firmware maintenance



① Left window; Add data from PC here. Press "+" key and add data file from a file.

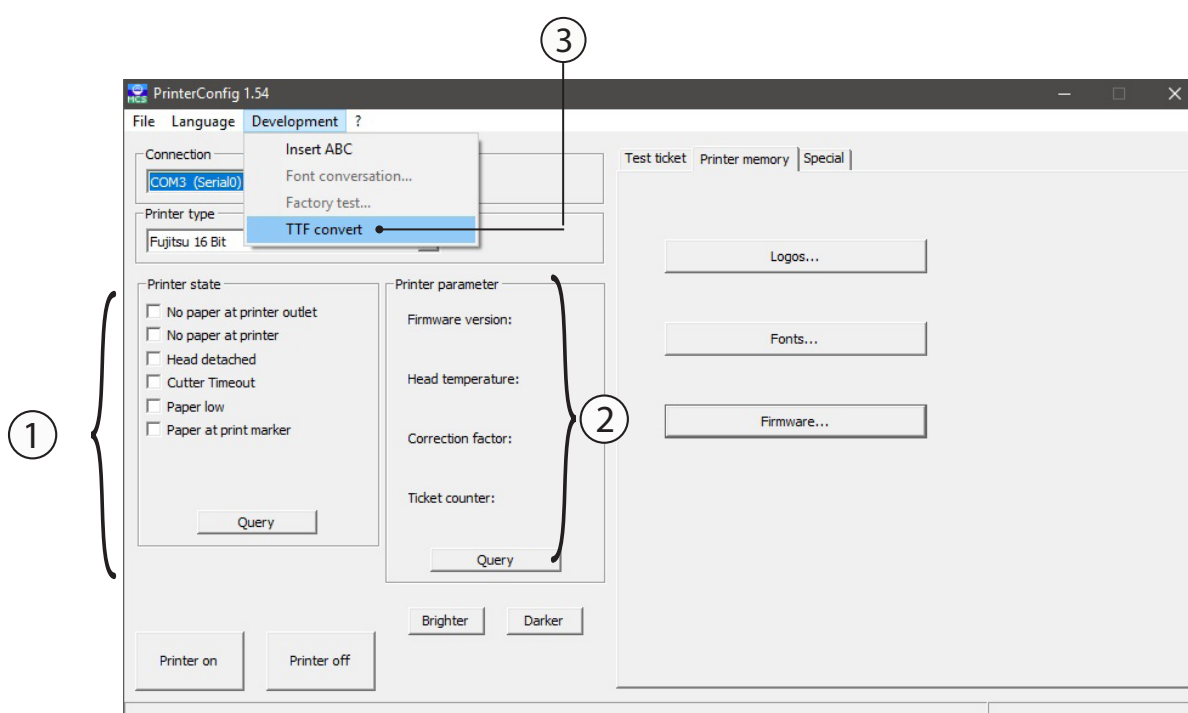
② Cursor left/right window:: Using the cursor the data can be transferred from right to left. This is how the data is transferred to the printer..

③ Right window: By pressing the "enquiry" key the current printer software version can be requested.

10.12.3 Printer status request

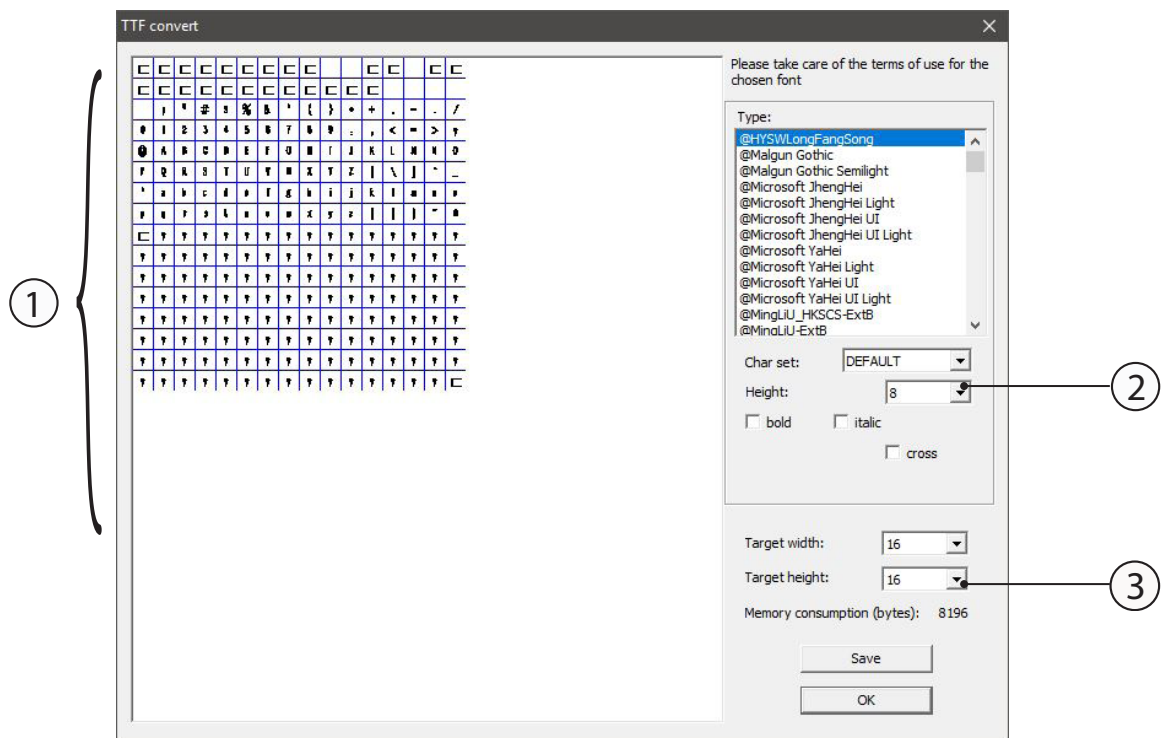


The status request between PC and printer only functions with serial port connection (RS232-connection).



- ① Printer status indicator. If the lever for the print head is adjusted and subsequently queried by way of the Query key, the check mark is set or deleted.
- ② Information relating to the firmware, temperature on the print head, receipt counter etc. can be found here.
- ③ At this part of the menu a font can be selected and customised, The typesets generated can be kept in a specific location in the typeset memory.

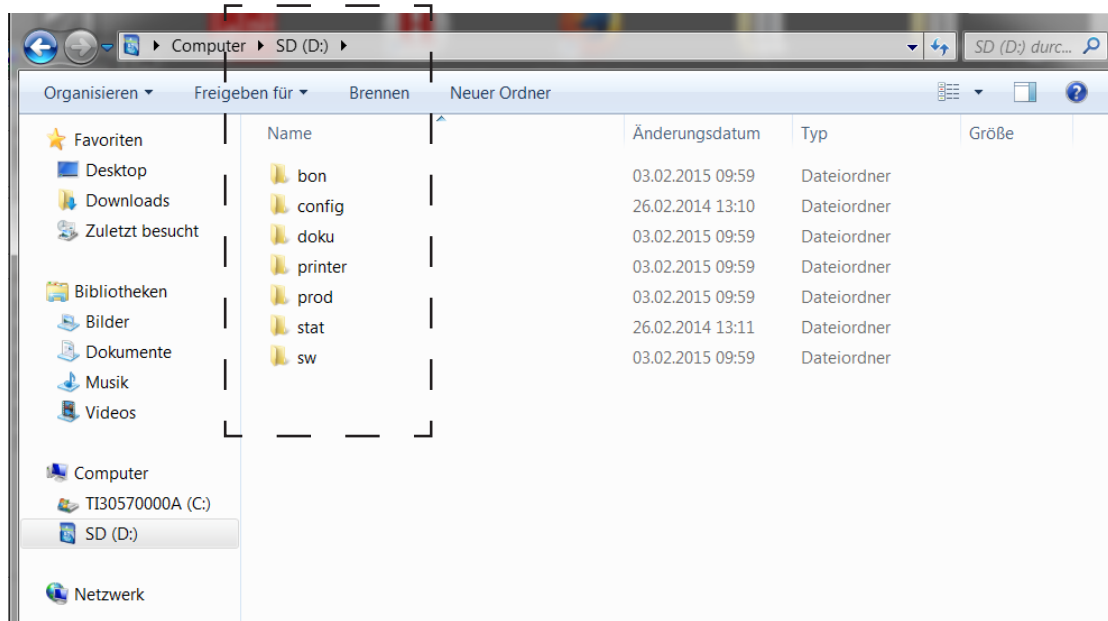
10.12.4 Menu, TTF convert



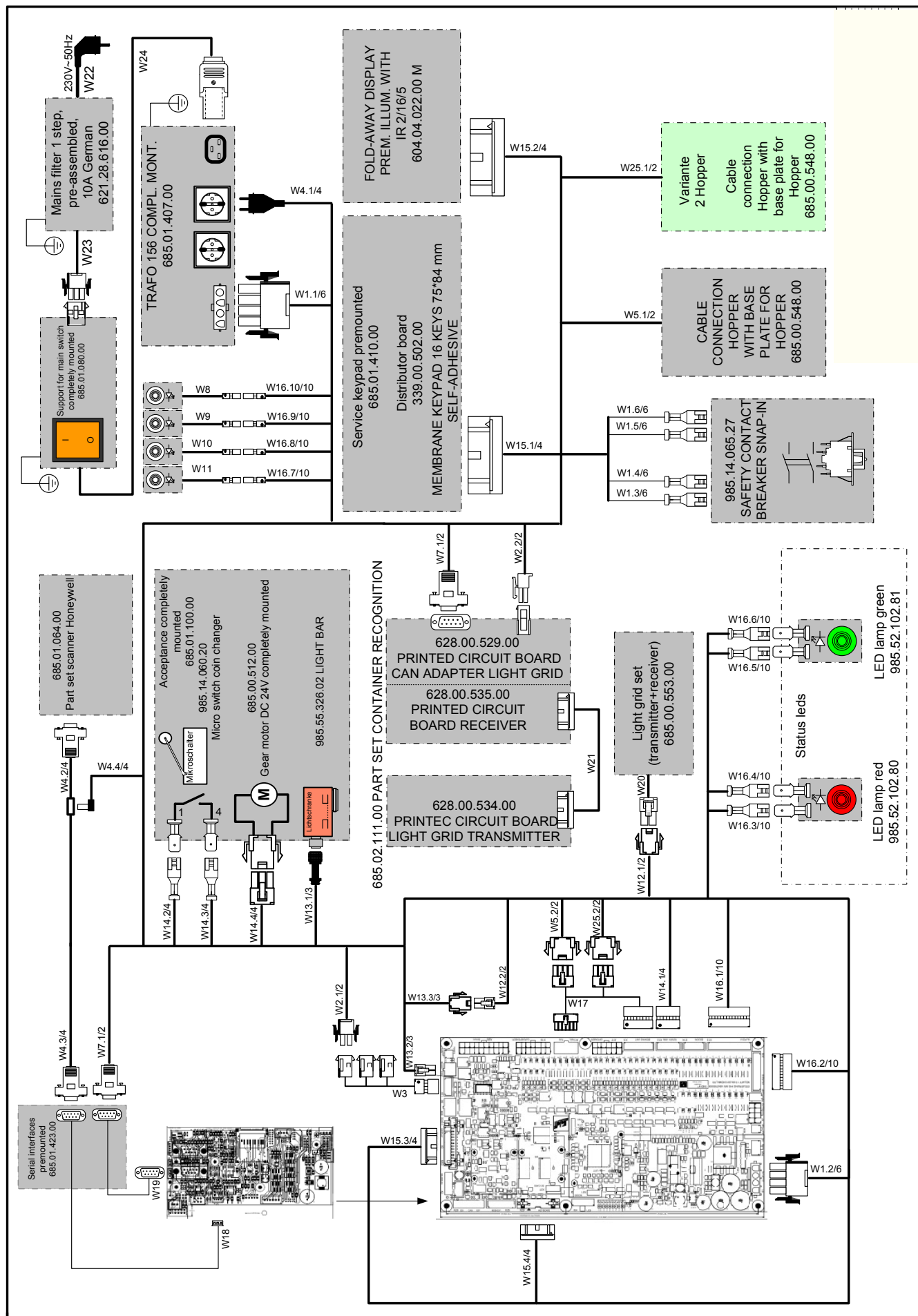
- ① Preview of the selected font on the right hand side
- ② Select font size
- ③ Adjust the border to the font size, so that the characters are completely visible. A narrow border saves space in the printer memory.

10.12.5 Structure of folders

The following folder structure must be stored on the SD-card.

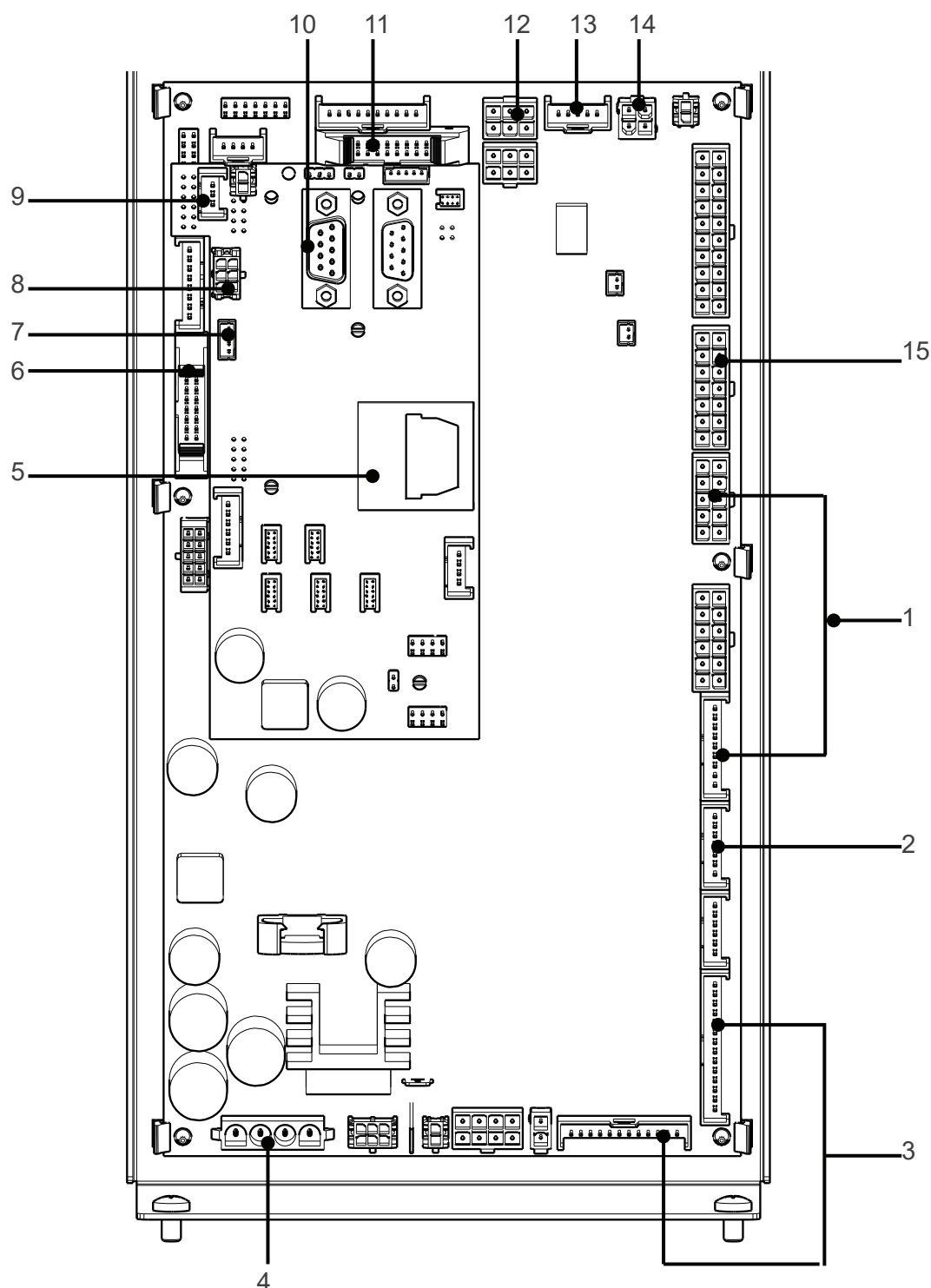


11. Wiring diagram



W1	685.00.547.00	Cable connection feed-in 24V control board
W2	685.00.563.00	Cable connection power supply 24V - product recognition
W3	685.00.557.00	CABLE CONNECTION POWER SUPPLY 24V - PRODUCT RECOGNITION
W4	985.55.000.33	Scanner for barcode
W5	685.00.548.00	CABLE CONNECTION HOPPER WITH BASE PLATE FOR HOPPER
W6	685.01.423.00	Serial interfaces premounted
W7	676.00.551.00	Cable connection CAN BUS
W8	685.00.538.00	CABLE CONNECTION LED COMPLETELY MOUNTED
W9	685.00.538.00	CABLE CONNECTION LED COMPLETELY MOUNTED
W10	685.00.538.00	CABLE CONNECTION LED COMPLETELY MOUNTED
W11	685.00.538.00	CABLE CONNECTION LED COMPLETELY MOUNTED
W12	685.00.551.00	Cable connection extension light grid
W13	685.00.549.00	Cable connection light bar
W14	685.00.550.00	CABLE CONNECTION DRUM MOTOR
W15	685.00.554.00	CABLE CONNECTION BOARD - KEYBOARD / DISPLAY
W16	685.00.546.00	Cable connection status LED
W17	685.00.552.00	CABLE CONNECTION Y-CABLE HOPPER
W18	685.00.564.00	Cable connection RS232 - barcode scanner
W19	685.00.565.00	CABLE CONNECTION CAN ADAPTER
W20	685.00.553.00	Light grid set (transmitter+receiver)
W21	685.00.534.00	CABLE CONNECTION PRODUCT RECOGNITION
W22	274.00.576.00	CABLE CONNECTION MAINS - MAINS FILTER
W23	685.00.527.00	CABLE CONNECTION MAINS FILTER - MAIN SWITCH
W24	685.00.532.00	CABLE CONNECTION MAIN SWITCH - POWER SUPPLY UNIT
W25	685.00.548.00	CABLE CONNECTION HOPPER WITH BASE PLATE FOR HOPPER

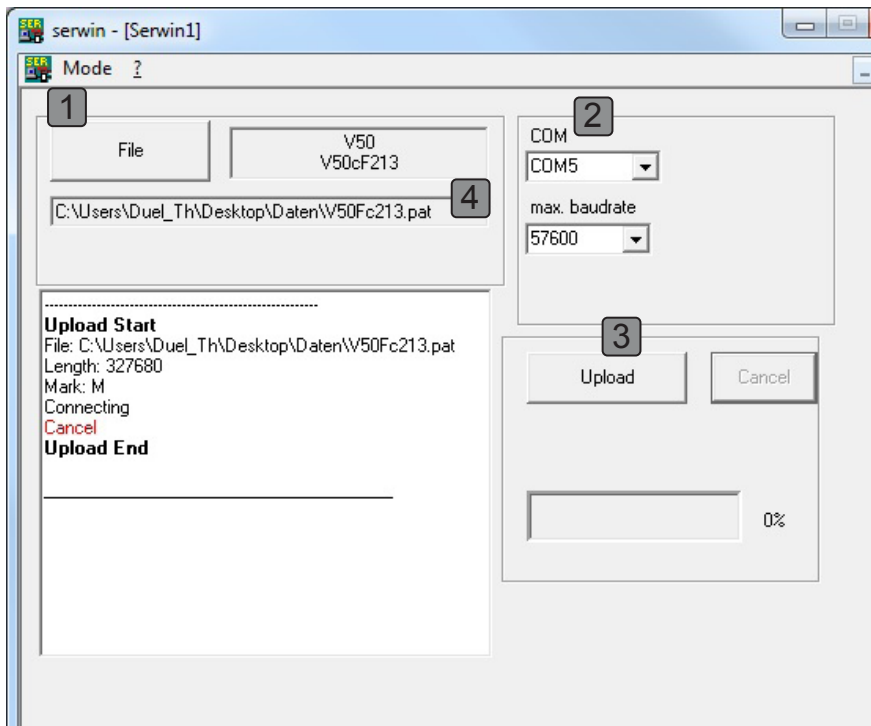
12. Slots on the (M32) control board



- | | |
|--------------------------------------|---|
| 1 Hopper | 10 CAN-connection empties recognition |
| 2 Drum motor and drum switch | 11 Display |
| 3 Drum illumination and front lights | 12 MDB-connection for software update and MDB components |
| 4 Control board power supply | 13 Power supply 24 V (printer, empties recognition) |
| 5 SD-slot | 14 Light barrier and light grid |
| 6 Keypad | 15 Receipt button and delivery illumination (only with printer) |
| 7 Scanner | |
| 8 Scanner 2 (optional) | |
| 9 Data connection printer (optional) | |

13. Software update

1. The products entered remain in the memory when updating the software. So the products do not need to be entered again after the update.
2. Switch the machine off.
3. Connect the MDB-cable to the control board and the USB-dongle.
4. Insert the service key.
5. Switch the machine on.
6. Connect the USB-dongle to a free USB-interface on the PC.
7. Start the programme „serwin.exe“ on the PC
8. Click on "select file".
Select the directory where the new software is stored. Select the software version and click on "Open".
9. In the "Interface" selection box a list of all COM-interfaces available are listed. The virtual interface to which the dongle is connected, has the appendix "USB".
10. After all settings have been completed, click on "Start upload" in order to start the software upload.
When the upload is finished, a message is displayed accordingly.
11. Only switch off the machine when ready to use is shown in the display
12. Remove the MDB-cable.
13. Switch on the machine.



- 1 Select software version
- 2 Select COM-interface
- 3 Start upload
- 4 Display selected software version

14. Index

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15. Glossary

Hopper [engl.]	Dispensing device for coins		
Flash time	Flash time for refund payout key		
SIKE	Safety symbols		
EAN	European Article Number, a product identification for commercial articles		
Escrow	Temporary storage; provision for dispensing notes in the bank note reader.		



EU/EC Declaration of Conformity for Machines

Sielaff GmbH & Co. KG
Automatenbau
Münchener Straße 20
D-91567 Herrieden

We, the manufacturer, hereby confirm that the reverse vending machine type specified below complies to the EC directive for machinery and the EU directive to electromagnetic compatibility in its design and manufacture relating to health and safety requirements as well as in conformity on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Any modification without our prior written consent to the machine specified herein, will automatically invalidate this declaration.

Description: Reverse vending machine for bottles and crates

Machine type: SiVario ..., SiCompact ..., RV

EU/EC directives applicable:

EC machinery directive: 2006/42/EC

The following standards also apply:

EN 60335-1:2012

EN ISO 12100:2011

EN ISO 13857:2008

EN 60204-1:2006

EN 619:2002

EU directive to electromagnetic compatibility: 2014/30/EU

The following standards also apply:

EN 62233:2008

EN 61000-6-1:2007

EN 61000-6-3:2007 + A1:2010

EU directive RoHS: 2011/65/EU

The objectives of the low voltage directive 2014/35/EU will be fulfilled in accordance with Appendix I, No. 1.5.1 of machine directive 2006/42/EC.

Authorised representative responsible for the documentation:

Mr. Dipl.-Ing. Manfred Murr, Head of Development, Sielaff GmbH & Co. KG, Münchener Str. 20, D-91567 Herrieden.

Aufkleber für Seriennummer

Aufkleber für Typenschild

Herrieden, 22.07.2019

Place, Date

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