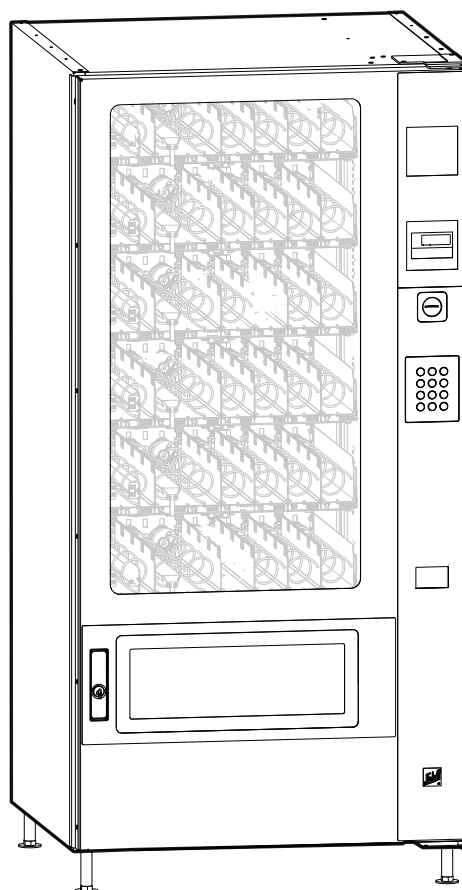




Technical handbook

SN 48 EB03; SN 48 RB03



GB

27.10.2022

339 66 020 11 _ 021



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1. Variants and identification

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

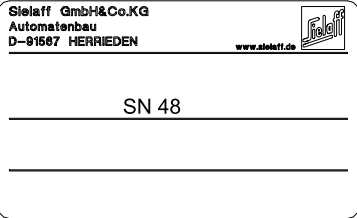
This manual covers the following versions:

Model	Part No.
SN 48 EB03.....	339 00 000 13
SN 48 RB03.....	339 00 000 33

Identification

	1 Manufacturer 2 Machine type 3 Electrical supply ratings
--	---

Identification

	 If chiller unit uses R290: Symbol for "Warning flammable substances"
--	---

2. Safety information

2.1 Repairs

- The inside of the machine may have sharp edges and corners. Always wear protective gloves when carrying out maintenance work.
- Damaged power cables must only be replaced by the manufacturer, authorised service centre or equally qualified person in order to prevent serious accidents.
- Use only genuine replacement parts.
- Only products approved by SIEMENS should be used.
- The machine must not be converted or modified in any way. SIEMENS disclaims any liability for any defect claims resulting from the afore-mentioned not being adhered to!

2.2 Requirements for maintenance and repairs

- Before carrying out any repairs on the machine the mains plug must always be removed from the mains power supply. The mains plug must be so positioned that it can be monitored during the repair to ensure that no one inadvertently puts it back into the socket.

2.3 Explanation of signs and symbols

The machine was manufactured in accordance with the latest technical standards. Nevertheless, even the most expertly designed machine, cannot be without risks.

In order to ensure the machine operator a sufficient level of safety, additional safety tips are detailed below.

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

Text highlighted below symbolises the following:

**Danger**

Immediate danger which could result in death or severe injury.

**WARNING**

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

**CAUTION**

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

**NOTE**

Information to avoid causing damage to the machine.

**TIP**

Information to facilitate handling and use of the vending machine.

The following danger symbols may also be used in certain instances:

**WARNING electrical energy! 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)**

Behind covers marked with this symbol are parts and components that are susceptible to electrical discharge.

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!

**DANGER! Flammable materials!**

This symbol warns about flammable materials. May cause serious injury or death. Sources of ignition such as burning cigarettes or lighters must be distanced before opening the machine door.

3. Machine maintenance

3.1 Maintenance schedule

To keep unexpected machine down-time to as low a level as possible, we recommend that the following maintenance schedule is adhered to. Depending on the environmental conditions on site it may be necessary to adapt the maintenance intervals.

Every 30,000 vends - or every 12 months

Housing, machine door

OK	Component	Cleaning aids	Action/ procedure
	Safe machine position		Check
	Machine exterior	Care and cleaning products	Clean
	Machine door closes properly		Check
	Insulating glass panel	Glass cleaner	Clean
	Coach bolts at top and bottom of machine door	998 90 023 00	Lubricate
	Door seal, all around		Check clean, maintain if necessary
	Catch	998 90 023 00	Lubricate
	Hinge pin, locking bolts		Lubricate
	Lock	According to manufacturer's instructions	Lubricate
	Product illumination		Check
	Min 2.8V back-up battery for machine control board	Voltmeter	Check

Product container

OK	Component	Cleaning aids	Action/ procedure
	Legibility of the price/selection labels		Check
	Inside the product container	Rinsing water	Clean
	Product container locking function		Check

Payment system

OK	Component	Cleaning aids	Action/ procedure
	Coin mechanism (optional)		According to manufacturer's instructions
	Card reader (optional)		According to manufacturer's instructions
	Banknote reader (optional)		According to manufacturer's instructions

Product delivery unit

OK	Component	Cleaning aids	Action/ procedure
	Delivery outlet flap, freedom of movement		Check
	Light grid (optional)	Flashing mode green LED at 0.5 seconds cycle / red box	Check

Chiller unit

OK	Component	Cleaning aids	Action/ procedure
	Compressor	Brush, compressed air	Clean
	Condenser	Brush, compressed air	Clean
	Base plate ventilation slots		Clean
	Seals and sealing strips		Check
	Plugs and connectors		Check
	Fan	Brush, compressed air	Clean
	Gas sensor (no visible damage)		Check
	Gas inlet on gas sensor: Dust, dirt, moisture deposits	Brush, cloth	Clean
	Initiate self test		Check
	Test gas sensor using test gas	Test gas	Check

If required

OK	Component	Cleaning aids	Action/ procedure
	Electrical routine check in accordance with VDE 0701		Carry out

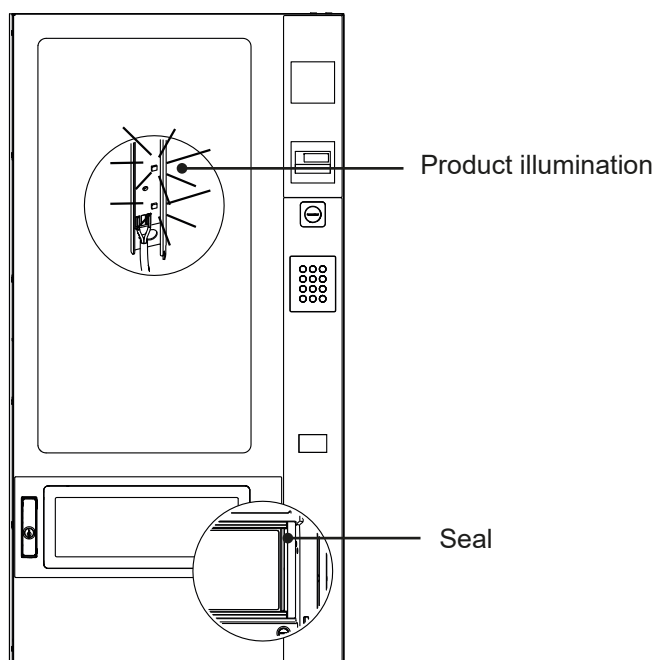
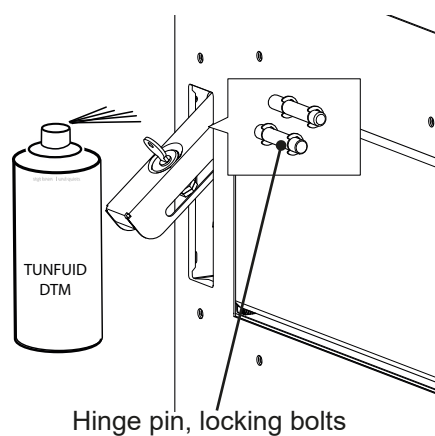
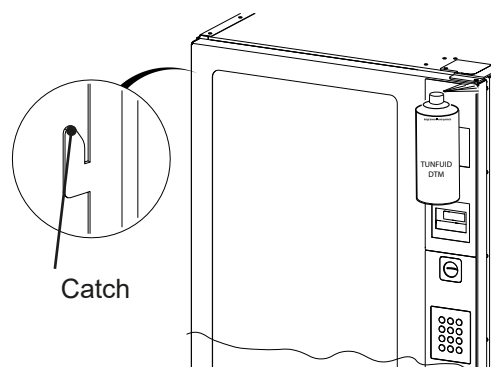
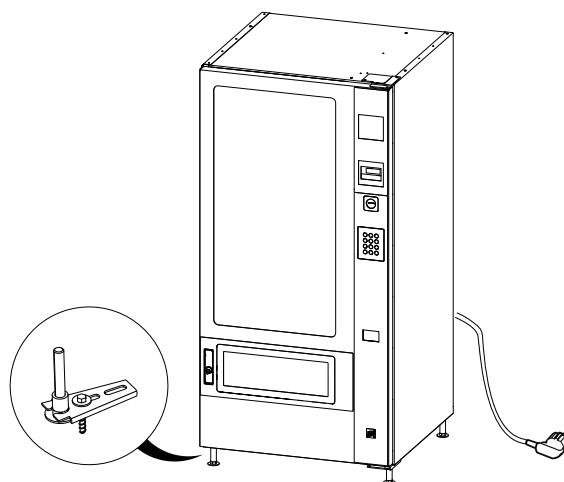
3.2 Housing, machine door

Cleaning aids

- Lubricant Tunfluid DAB Aerosol, spray can Part no. 998 90 023 00

Proceed as follows

- Check that the machine location is safe and secured.
- Check the machine connection cable.
- Check the operation and position of the closed machine door.
- Lubricate the bearing on the machine door to make sure it is intact and lubricate with Tunfluid DAB .
- Lubricate the catch on the contact surfaces.
- Check for correct functioning of bearing, locking bolts and lubricate.
- Check the seal on the door to ensure it is intact and take any necessary action.
- Maintain the door lock as per manufacturer's instructions.
- Check that the insulating glass panel is intact.
- Clean the insulating glass panel inside and out.
- Check that all the individual LEDs for the product illumination are working.



3.3 Clean the product container

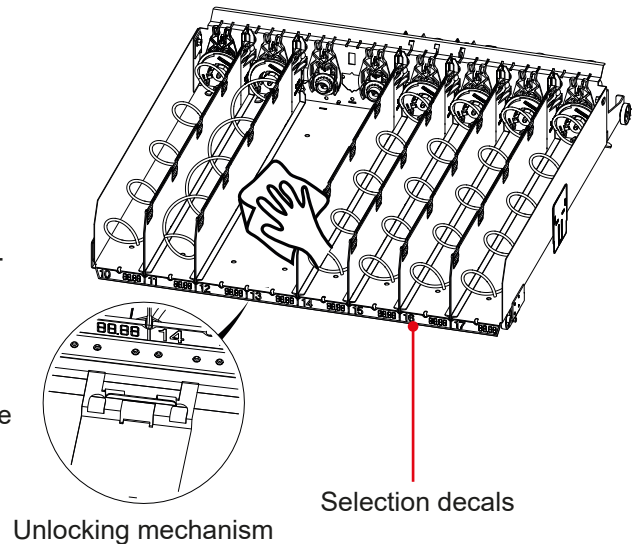
Cleaning aids

Cleaning agent

Cleaning cloths

Proceed as follows

- Press the unlocking mechanism and pull out the product container.
- Remove the products
- Clean the product container
- When the container is pushed back there should be an audible "click".



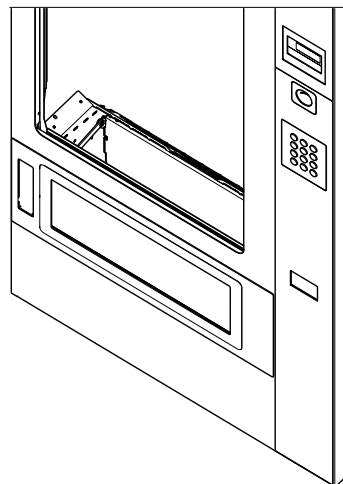
3.4 Product delivery unit flap, light barrier

Proceed as follows

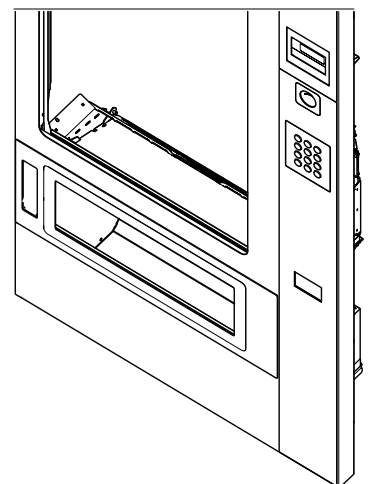
- Check that it is working
- Clean

Push the product delivery unit flap open from the outside. The ingress protection is positioned horizontally to prevent access to the products in the machine.

When released the product delivery unit flap must return to its home position in alignment with the seals on the machine door.



Delivery unit flap in closed position



Delivery unit flap in open position, ingress protection activated

Proceed as follows

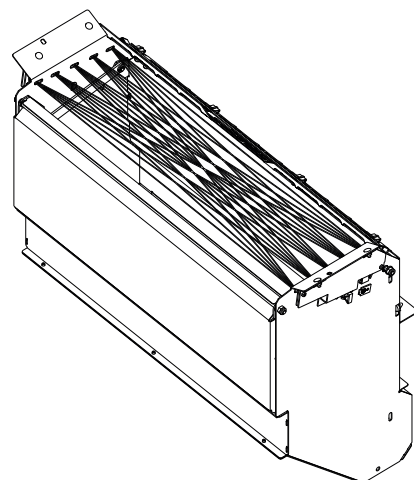
- Check that it is working
- Clean

The light grid on the light barrier should recognise the products in the delivery unit.

Two LEDs on the receiver board show the current status:

- LED 1 flashes green: everything OK
- LED 2 bright red: Light barrier interrupted (object recognised).

Clean the holes for the IR-beams with compressed air.



3.5 Removing the chiller unit

- The chiller unit can be damaged if it is tilted.
- Only store and transport the chiller unit in its installation position.
- If the chiller unit has been tilted over, it must be stored in installation position for at least 24 hours before it is switched on again.
- Do not start the compressor more than 5 times in one hour. Do not reduce the 5 minute minimum period of idleness for the compressor.
- There may be sharp edges inside the machine. Wear protective gloves when cleaning the machine.

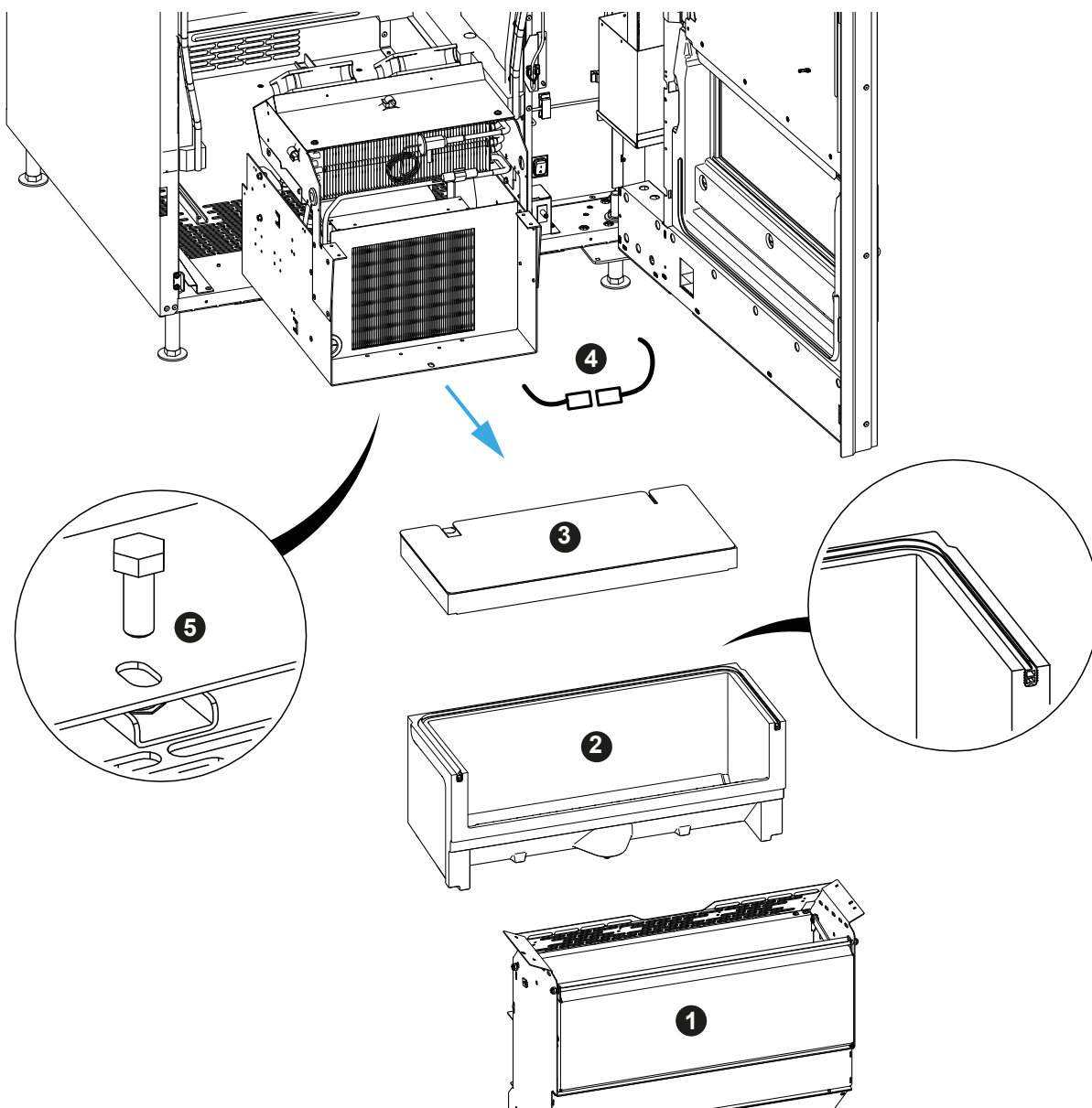
Cleaning aids

Open-ended spanner SW17

Proceed as follows

1. Remove the complete product delivery unit
2. Remove the delivery unit insulation
3. Remove the intermediate shelf
4. Disconnect the plug connectors
5. Take out the screws and pull the chiller unit forwards

✓ The chiller unit has now been removed



3.6 Maintaining the chiller unit

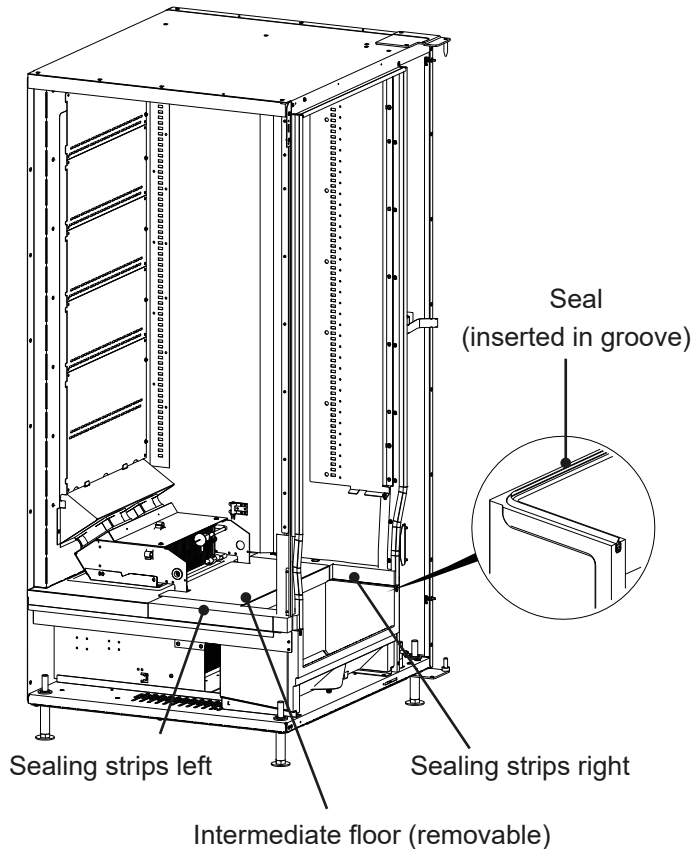
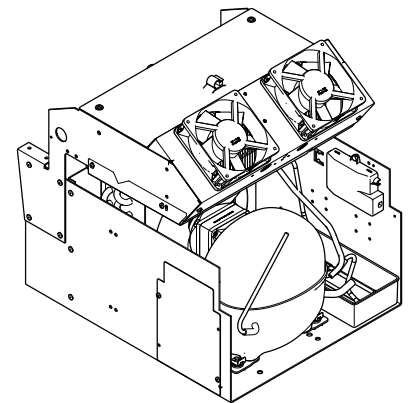
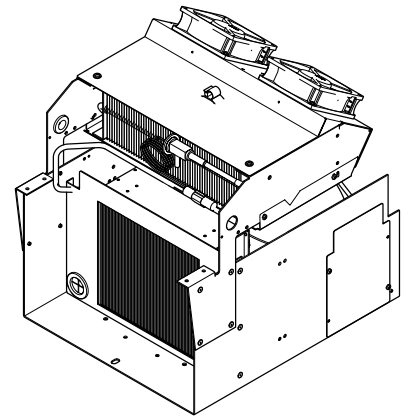
Cleaning aids

Brush

Pressurised air

Proceed as follows

- Clean the condenser, evaporator and fan with pressurised air.
- Check that plug and connections are intact.
- Check that seals and sealing strips are in good condition and correctly positioned.

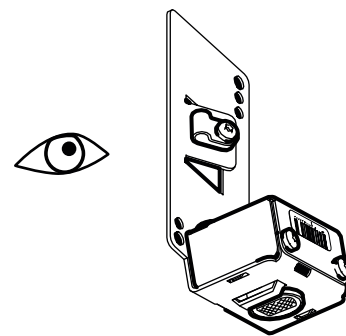


3.7 Electrical re-testing

To maintain safety levels the operator is to determine and specify when repeat tests are to be carried out (Electrical re-testing in accordance with DIN VDE 0701-0702).

3.8 Checking the gas sensor

Check the gas sensor visually for possible damage.



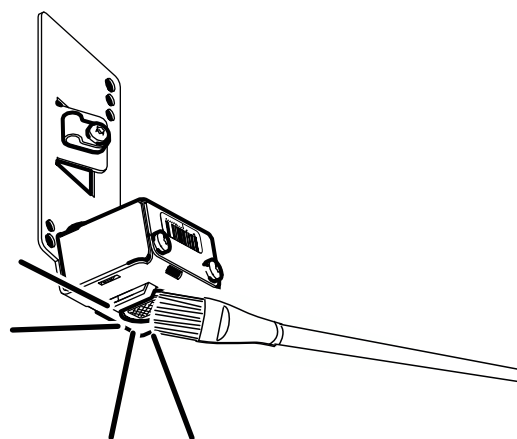
3.9 Cleaning the gas sensor

Clean the glass inlet only using a brush. The gas inlet must never be obstructed.



NOTE

Never clean the gas sensor with compressed air. Compressed air damages the sensor.



3.10 Initiate self test

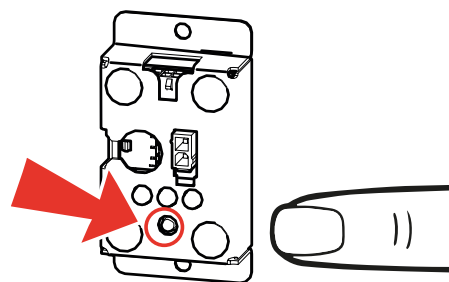
To carry out the test the machine must be switched on and operational.

Press the button on the service board for at least 2 seconds. When the button is pressed the machine is disconnected from the mains supply, the **yellow LED** goes out and a self-test is activated.

→ During this test the machine is checked for dual pole mains disconnection via both cut-off relays. If the self-test is successful the **green LED** lights up.

If the **red LED** is permanently on, repeat the test. If the **red LED** is permanently on, the switch-off device must be replaced.

→ When the button is released there is still voltage for operating the machine in the power supply and the **yellow LED** is on. The machine is operational.



3.11 Testing the sensor

Requirements

- The gas sensor must be accessible (gas inlet)
- commercial universal lighter

How to proceed

1. *Switch on the machine*
 2. *Ignite the lighter outside the machine (flameheight 2 cm)*
 3. *Extinguish the lighter flame, whilst holding down the actuator on the lighter.*
 4. *Hold the opening of the lighter for approx. 20 seconds in front of the gas inlet opening on the gas sensor.*
 5. *Put the lighter to one side and wait a few seconds.*
- Safety switch-off device disconnects the machine from mains power. Display, machine illumination etc. goes out.
- ✓ Safety switch-off device is working.

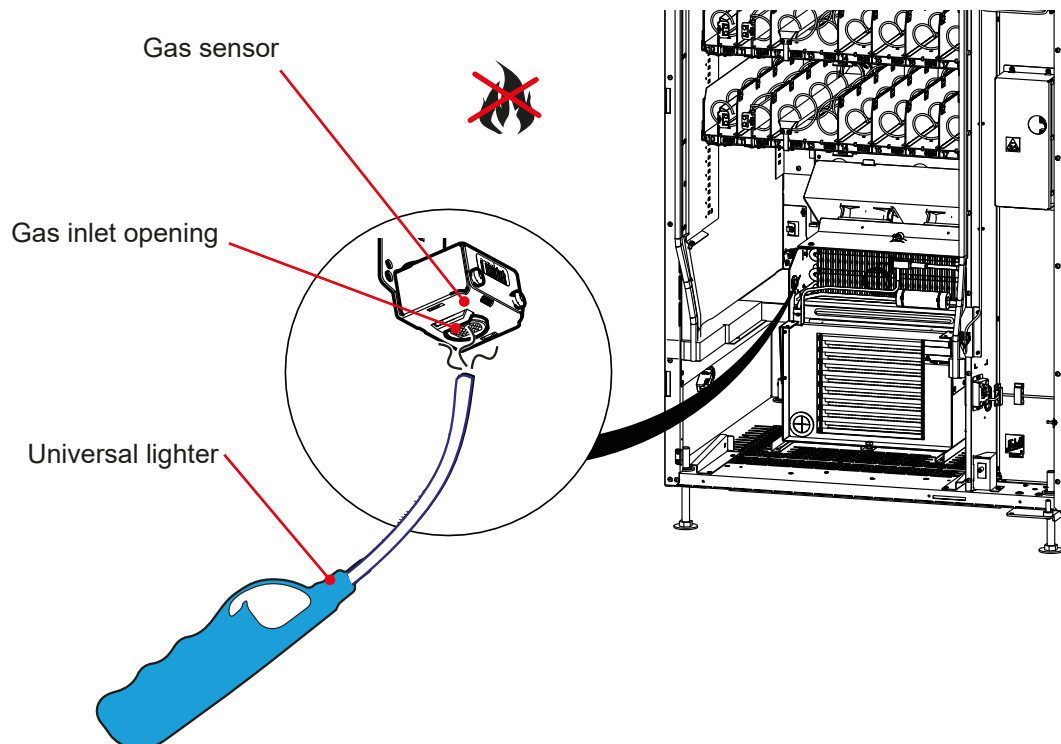
If the machine does not switch off automatically, proceed as follows:

- Check the contents of the lighter as well as the flame height (2cm). Repeat the sensor test.
- If the test does not work again the gas sensor must be replaced.
The machine must be put out of operation. The switch-off device and chiller unit must be tested.

After testing

It can take several minutes for the gas to escape from the sensor head and for the concentration in the sensor to be below the maximum permitted. The process can be accelerated by adding air to the sensor.

The machine switches back on.



3.12 Change the gas sensor

1. Remove the screw on the mounting and unhook the gas sensor
2. Disconnect the plug connection
3. Remove the electric cable to the gas sensor from the cable duct

✓ The existing gas sensor has been removed.

To install a new gas sensor follow the instructions in reverse order.

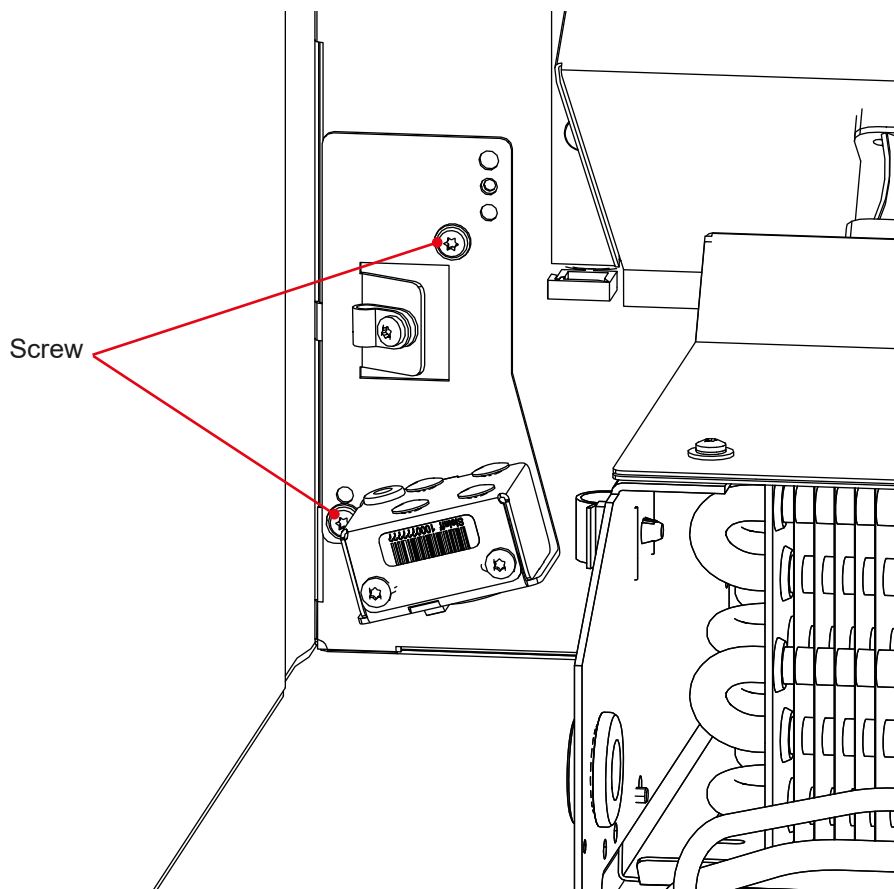


Diagram does not show electrical wiring

4. Converting and repairing the machine

4.1 Removing the door

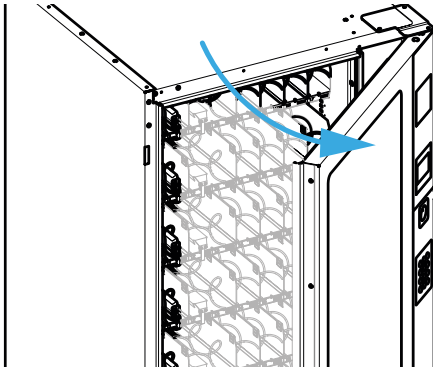
By removing the machine door the machine can be pushed through an 800 mm wide gap.

Requirements

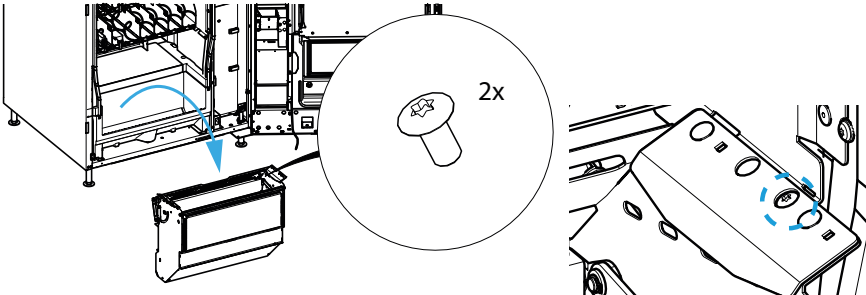
- 2 Persons
- TX 20 Screwdriver
- SW10
- Cable tie
- Pallet truck

Proceed as follows

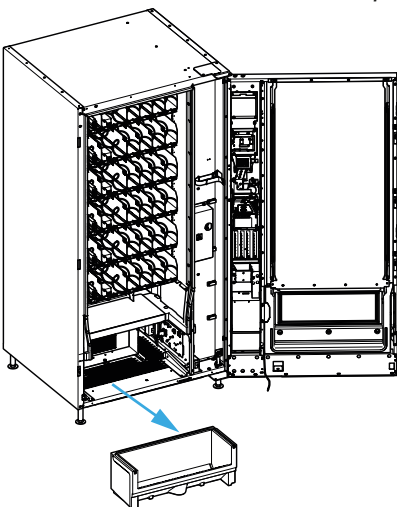
1. Open the machine door.



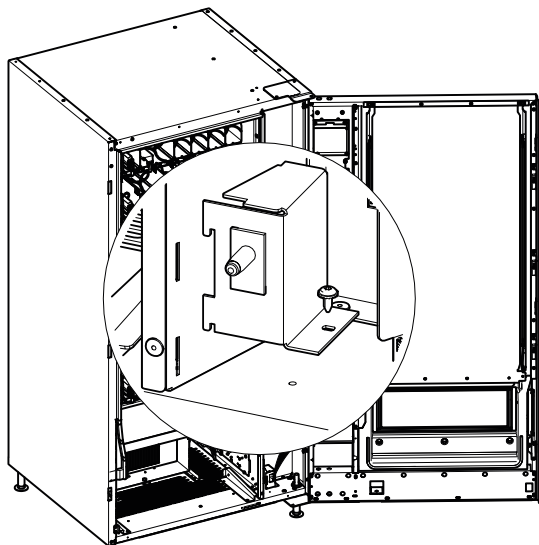
2. To lift out the product delivery unit remove the screws on the left and right hand side.



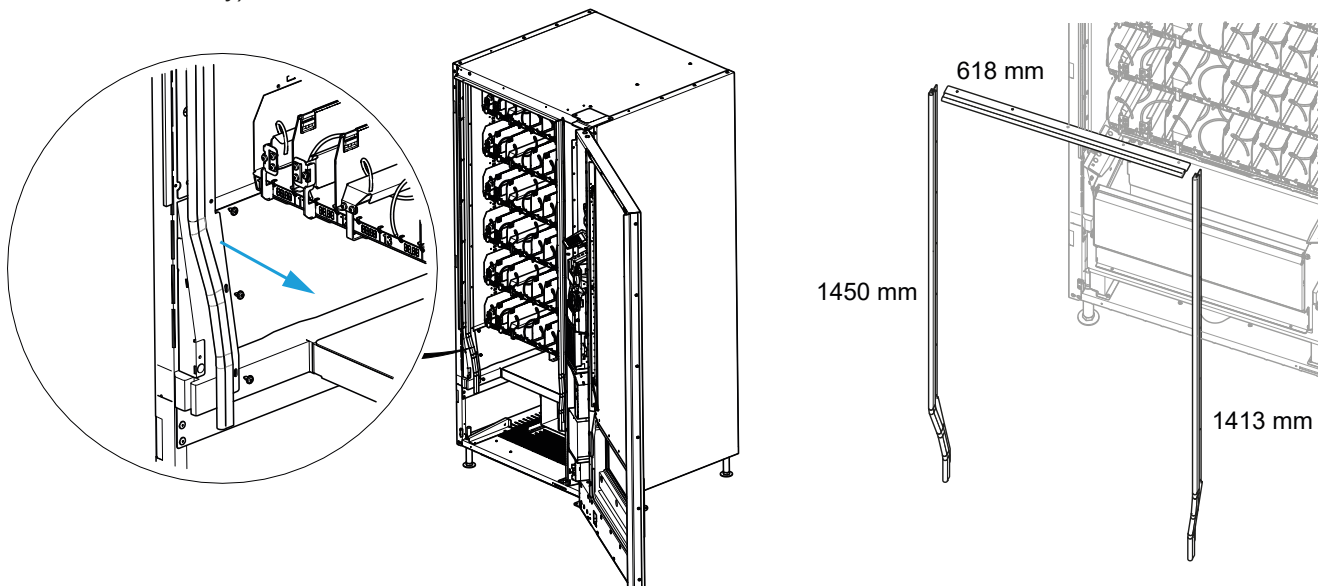
3. Pull the insulation out of the product delivery unit.



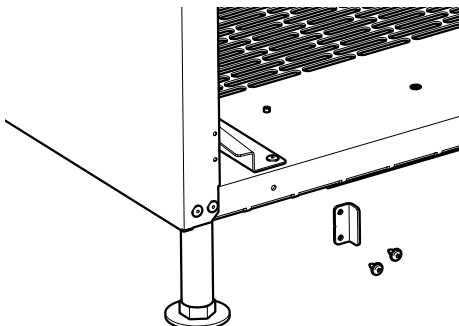
4. Remove the screw on the door contact switch, lift the door contact switch and place it to the back.



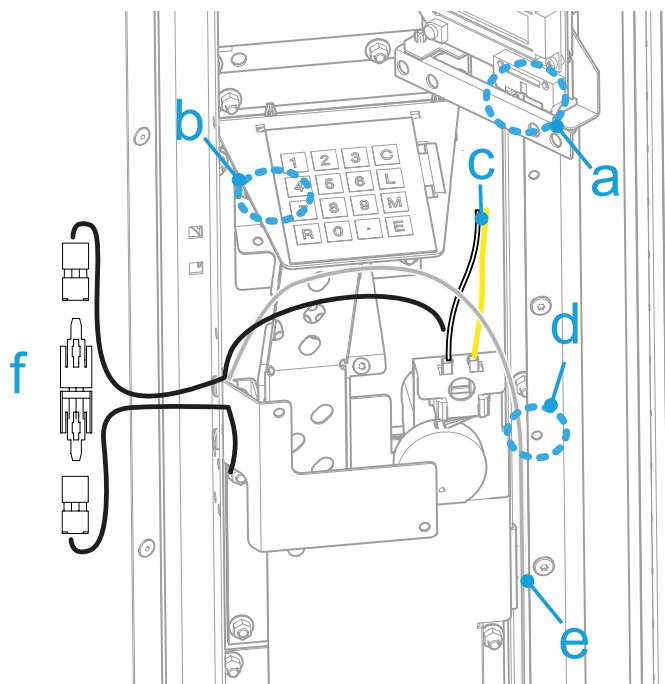
5. Unscrew the seal carrier assembly running around the machine and remove (the sealing strip can be left on the carrier assembly).



6. Remove the door bracket.



7. Separate the wiring loom on the door as follows:



a Remove the flat connector on the folded-back display

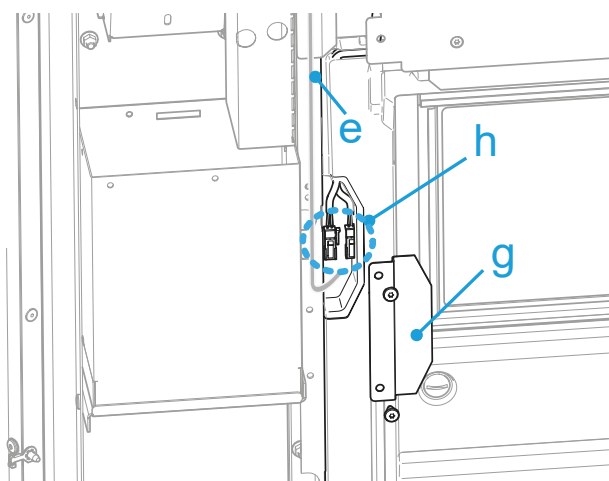
b Remove the flat connector under the membrane keypad

c Remove the terminal connectors from the switch.

d Remove the cable ties to expose the cables.

e Cable to LED illumination

f Remove insulating push-on contact from the Stocko contact housing (return motor cable)

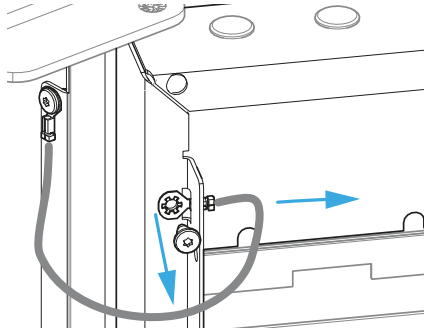


e Cable to LED illumination

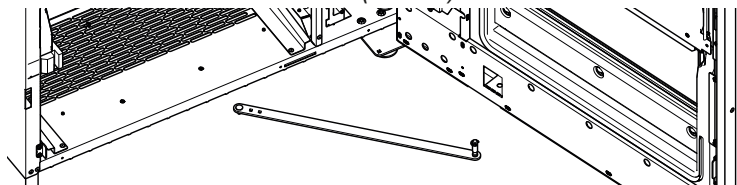
g Take out the screws, remove the cover

h Disconnect the plug connection

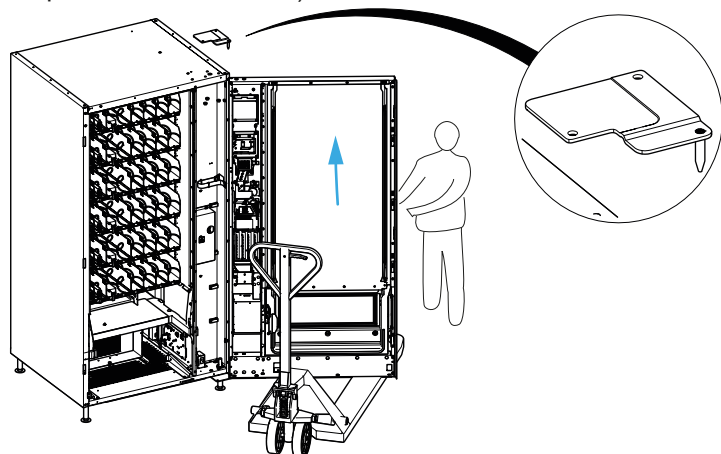
8. Remove the Torx screw on the door and expose the flat connectors for the earth connection (top and bottom)



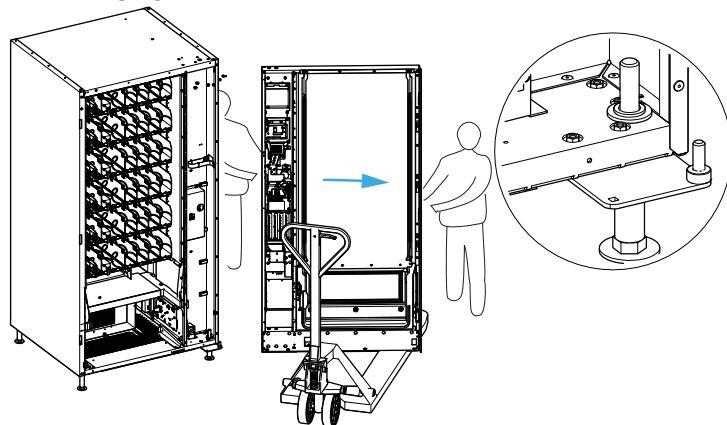
9. Remove the door restraint (if fitted)



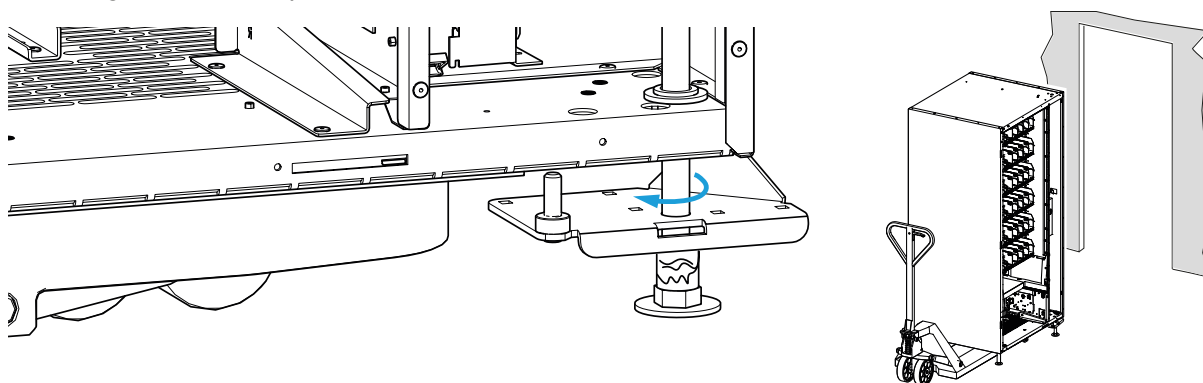
10. Remove the nuts from inside, lift the hinge plate and hold the door (approx. 60 kg) (use of a pallet truck for support is recommended)



11. Unhinging the door



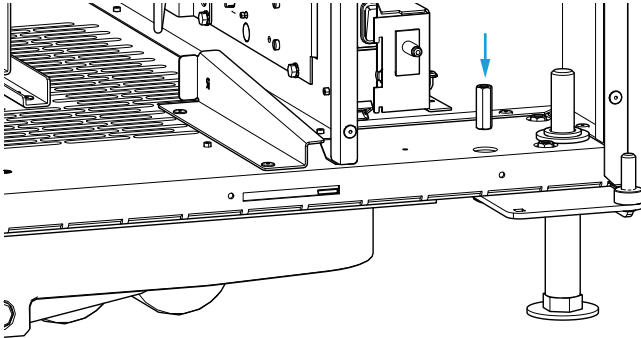
12. Use a pallet truck to lift the machine, press the hinge plate down and turn it 90°; the machine can now be moved through the narrow space



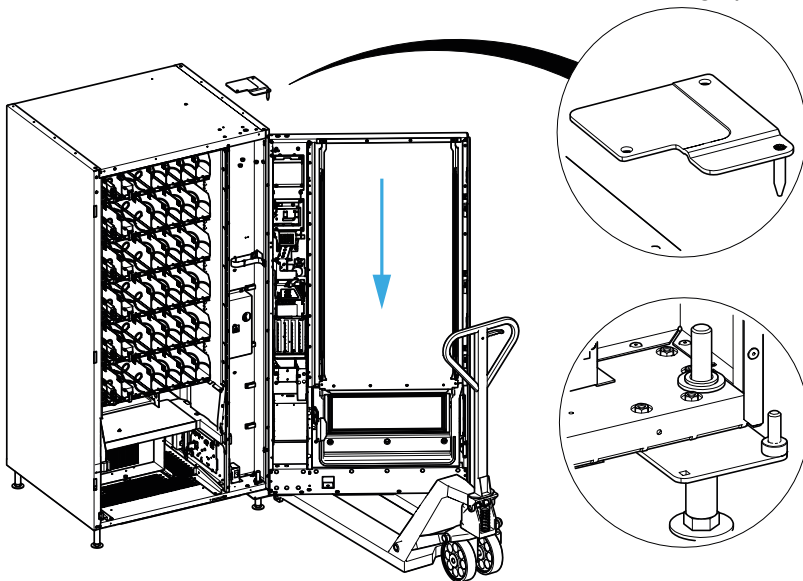
✓ The door has been removed.

4.2 Mounting the door

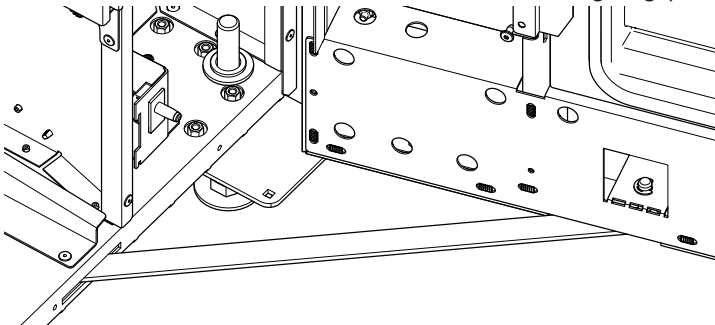
1. Turn back the hinge plate and secure with threaded bolts



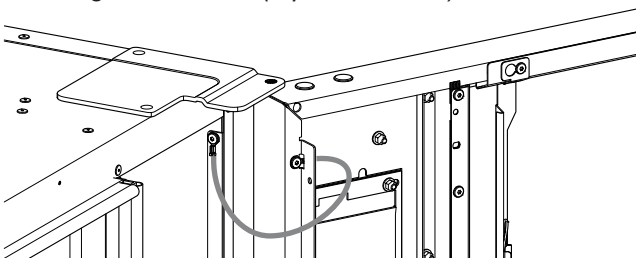
2. Place the door on the bolts at the bottom and on the hinge plate at the top Use screws to secure the hinge plate



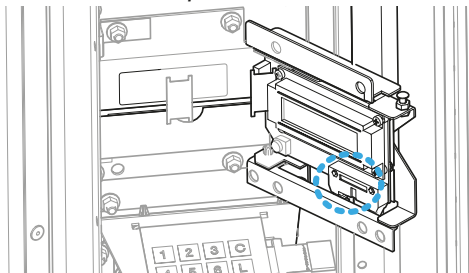
3. Fit the door restraint and secure with a retaining ring (if fitted)



4. Run the earth connection in a large curve, insert flat connector from the right through the recess and secure using Torx screws (top and bottom)



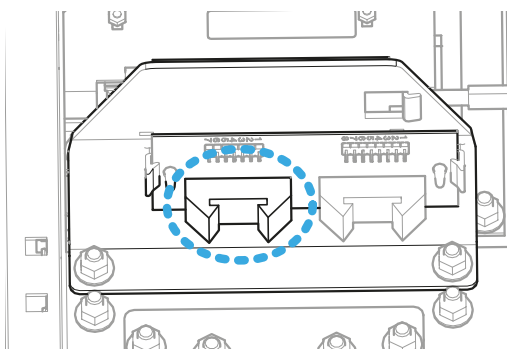
5. Connect the 16-pole flat connector on the display



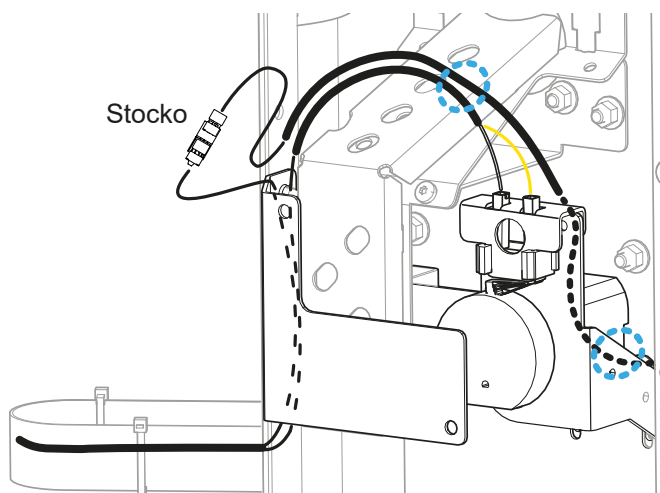
6. Lay the ribbon cable on the back of the display as shown in the diagram



7. Plug in the 10-pole flat connector under the keypad as shown in the diagram



8. Connect the cables from the button and return motor



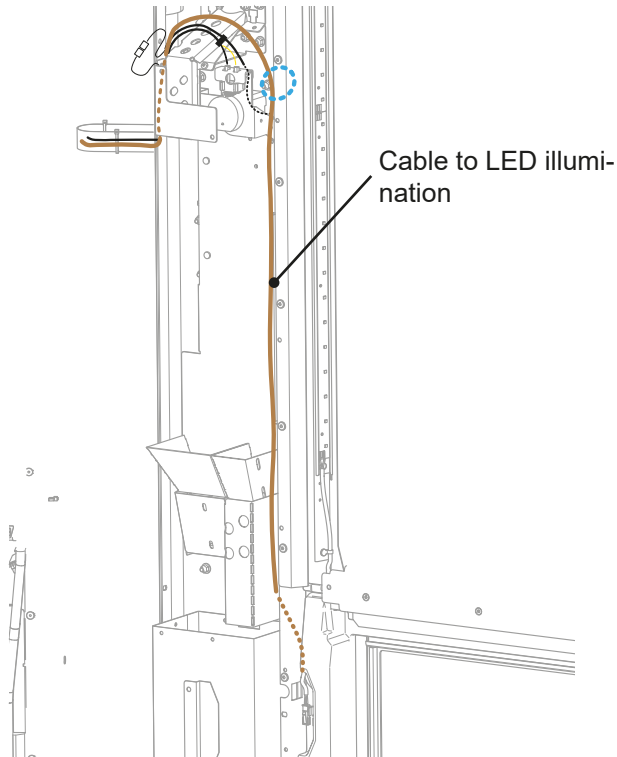
Connect the terminal connectors on the switch (white and yellow cable)

Lay the cable from the return motor (white and red cable)

Insert the insulated push-on contact into the Stocko connector housing

Secure using cable ties (blue circles)

9. Laying the cable for the LED-illumination

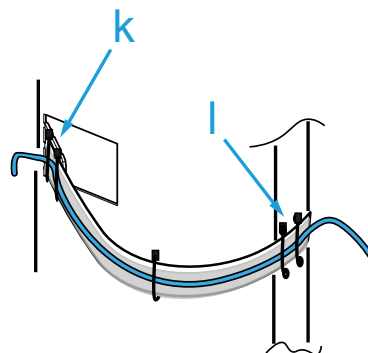


Lay the cable to the LED-illumination as per the diagram and secure using cable ties (brown cable)

Plug in the connector at the bottom

Fit the cover and secure with screws

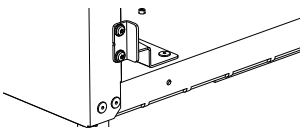
10. In the area of the door hinge the cable should be in large loops as shown in the diagram. By opening and closing the door the cables are subjected to mechanical stress.



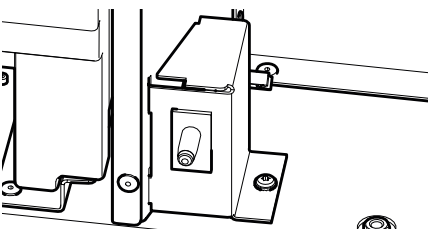
Secure k with 2 cable ties

Secure l with 2 cable ties

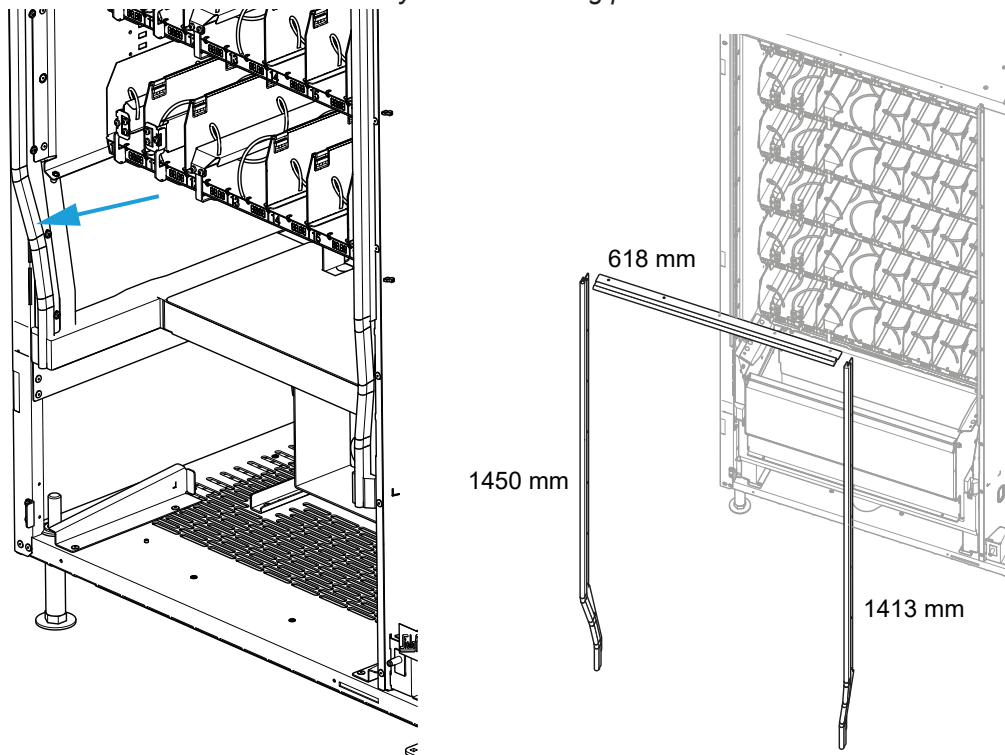
11. Fit the door bracket and secure with screws



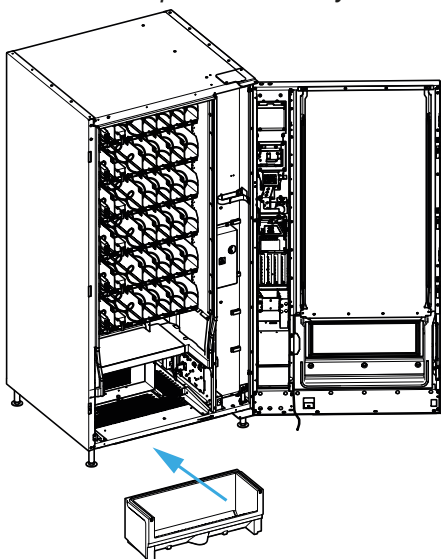
12. Fit the door contact switch and secure with a screw



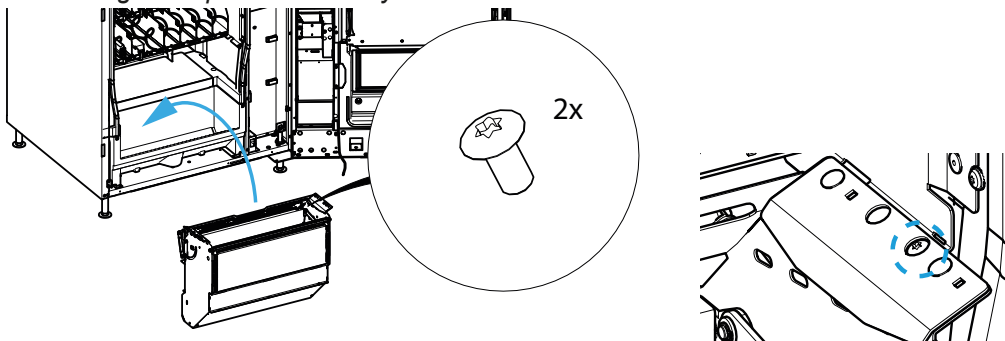
13. Insert the seal carrier assembly with the sealing profile fitted and secure with screws



14. Insert the product delivery unit insulation



15. Holding the top of the delivery unit insert and secure with a screw on the left and right hand side



✓ The machine has been put back together.

4.3 Temperature-controlled version (fresh-food version)


CAUTION! Perishable foodstuffs

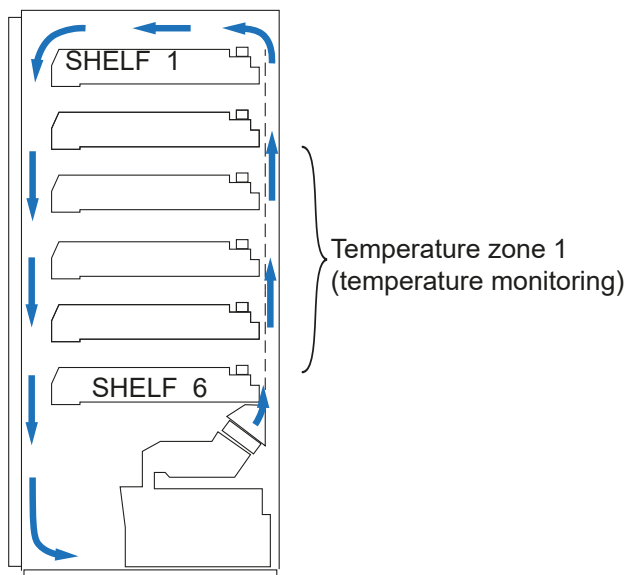
- Risk of food poisoning and illness!
- Adhere to the "use by date" specified by the product manufacturer.
- Replace expired products promptly with products having a valid use by date
- Do not use products where the "use by date" has expired.
- Do not use products that are about to reach their use by date.
- Products removed from a disabled chilled area must be disposed of.

4.4 Food safety product storage

- The vending area of the machine can be split into two different temperature zones by using a separation shelf.
- The machine is an LM-version if no separation shelf is fitted.
- The machines can be subsequently converted to food safety product storage (higher-rated chiller unit necessary, fitting of parts, software programming).
- For food safety product storage the legal requirements regarding food product safety must be adhered to. The products' chilling cycle must not be interrupted.

Fresh-food version

For food safety product storage the legal requirements regarding food product safety must be adhered to. The products' chilling cycle must not be interrupted.



1: Monitoring switched on
0: Monitoring switched off

```
INSTALLING MODE
>COOLING CONTROL
```

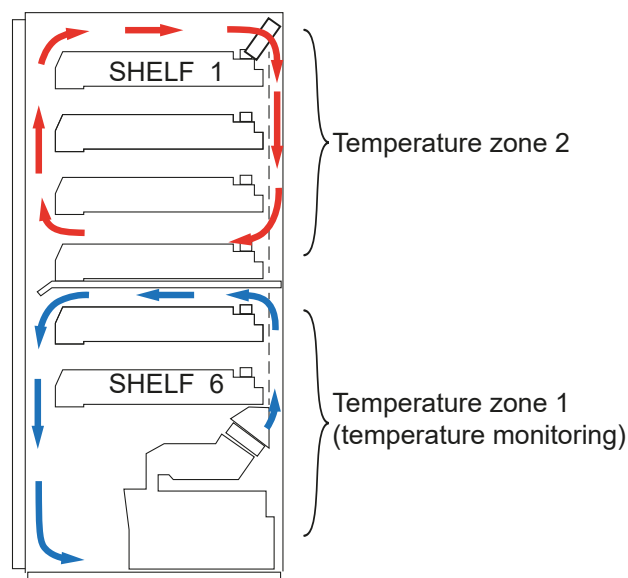
```
TEMP.MONITORING
SHELF 1:      1
```

```
TEMP.MONITORING
SHELF 1:      0
```

2T LM-specification

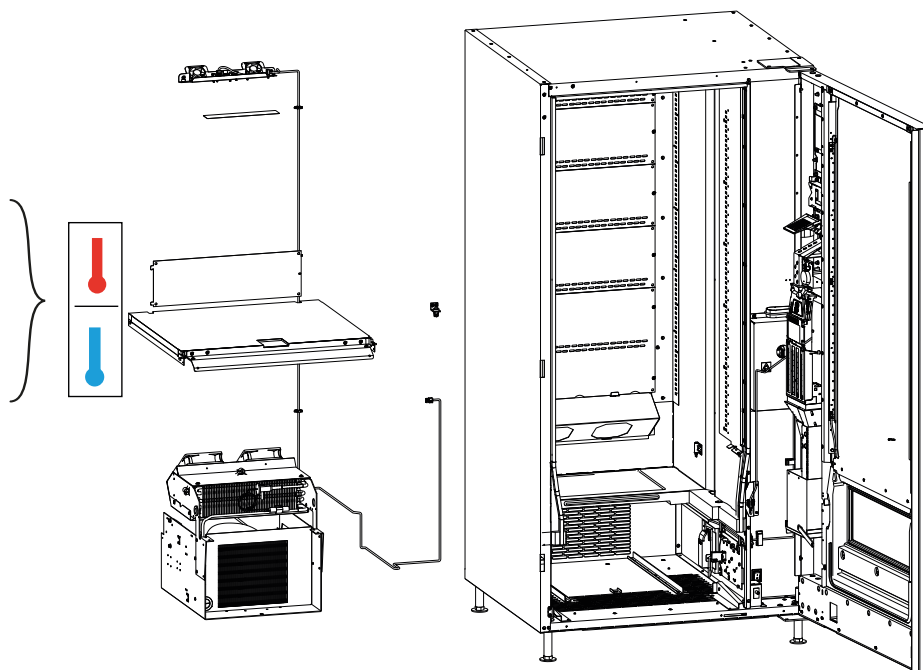
For food safety product storage the legal requirements regarding food product safety must be adhered to. The products' chilling cycle must not be interrupted.

The chilled area is split into two temperature zones by a separation shelf.



The sticker showing the red and blue thermometer marks the installation height of the separation shelf.

The blue temperature zone fulfils the requirement for food safety product storage.



4.5 Food labelling directive

- To sell fresh food products, which come under the labelling of foodstuffs directive, machines are available in a special LM-version which is fitted with a higher-rated chiller unit. An additional door contact switch is fitted in these machines, which monitors the time the door is open.
- If the criteria for turn-off conditions, as programmed in the software, is fulfilled, no sales can be made from any of the shelves which have temperature monitoring activated.
- Following automatic turn-off the machine can be reinstated for vending by pressing the red button. Before doing so any spoiled foodstuffs must be removed.

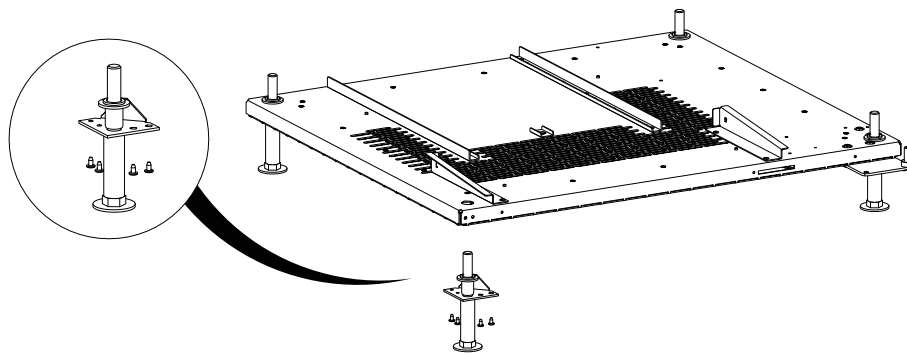
4.6 LM-version explanations

- The relevant shelves must be identified using "1" for fresh food monitoring in the [COOLING CONTROL] menu.
- The monitoring temperature is set in the [COOLING] menu on the machine control board. The minimum temperature is 4°C.
- Product sale is automatically blocked, if during regular operation the permissible chilling temperature is exceeded.
- If the refrigerated area has been disabled, it must be enabled before vending is again possible. To enable press the unlocking button for at least 20 seconds. This also re-activates the temperature monitoring function.

4.7 Changing the adjustable feet

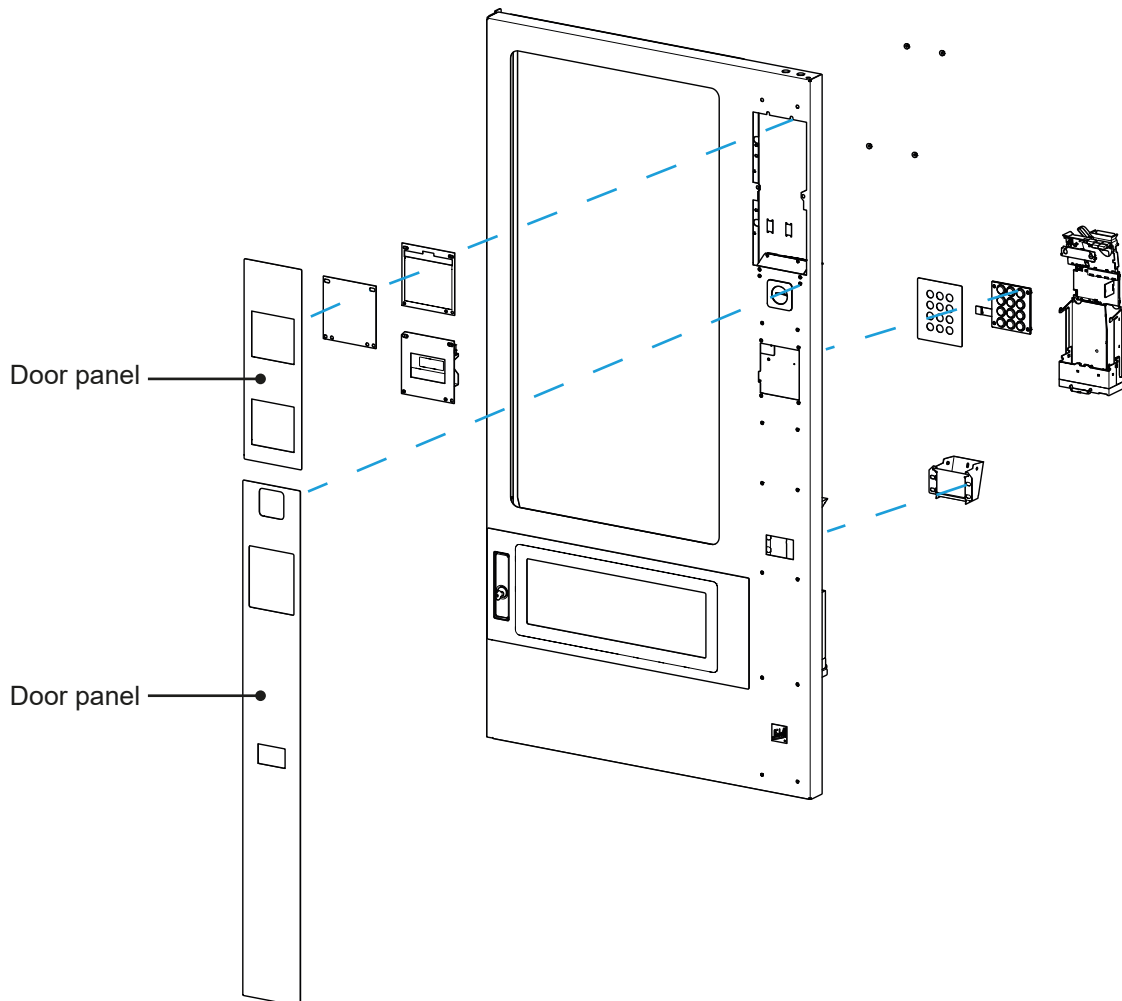
The adjustable feet are fixed to the floor of the housing using screws and a base plate. There are bolts on the hinged side of the door.

If a foot is bent, it is easy to change.



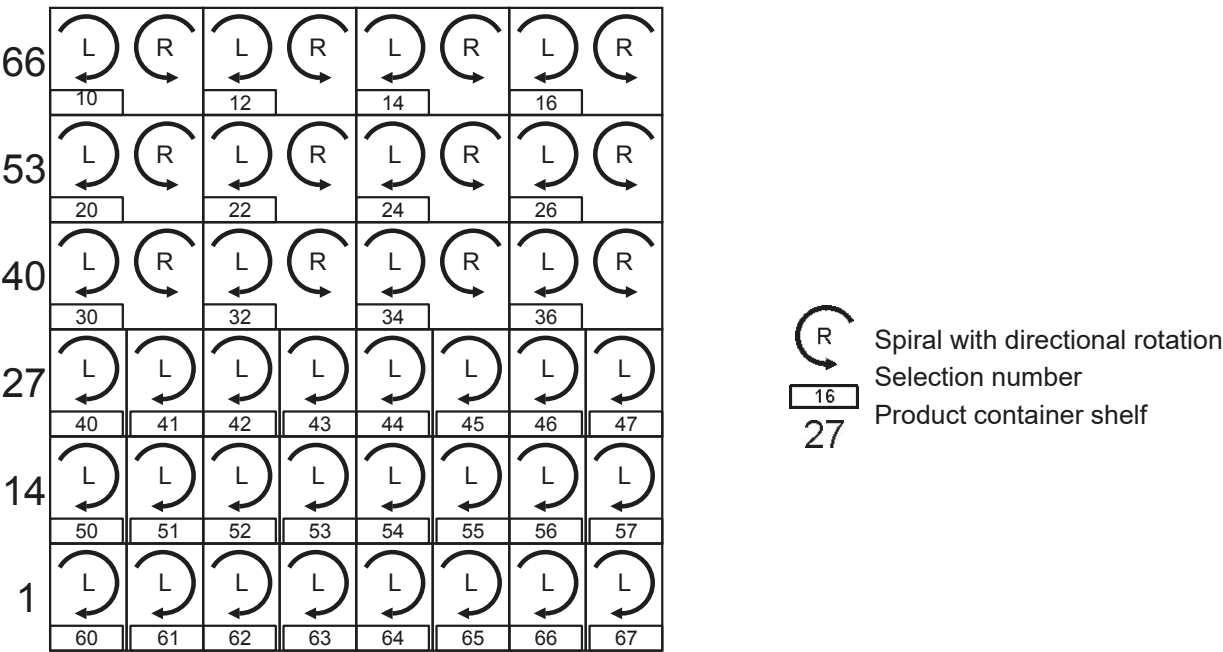
4.8 Segmented operator panel

The segmented panel enables payment systems to be fitted with ease.



4.9 Standard configuration

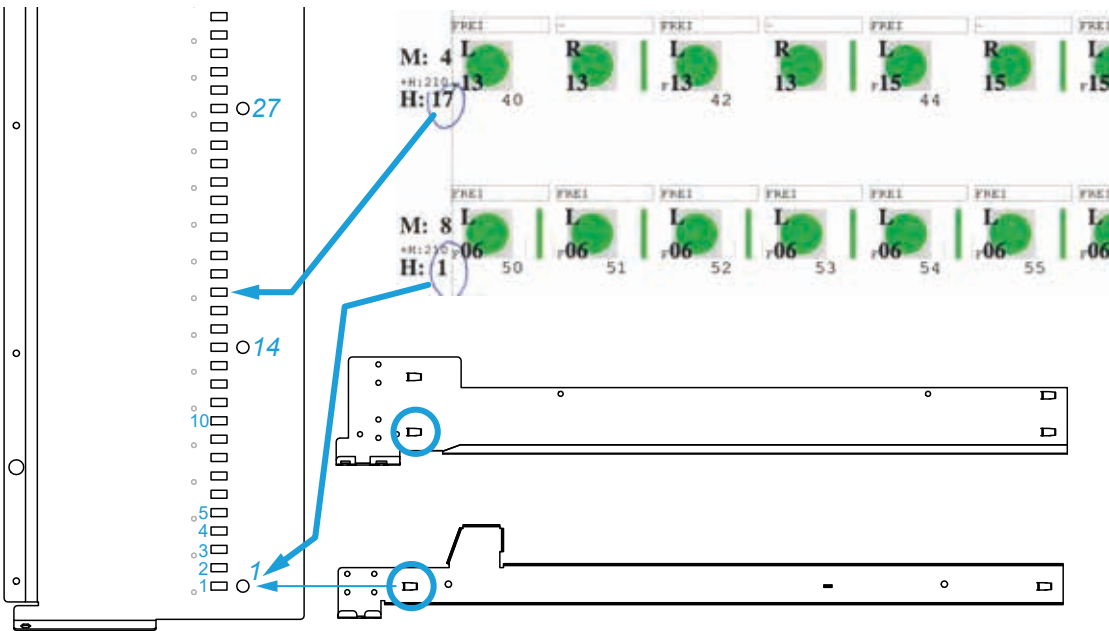
- The machine is delivered with the following standard configuration:
- If a different spiral configuration to the standard layout is required, spirals with the same direction of rotation are interchangeable. Spirals not in the machine can be ordered as spare parts.
- In single spiral containers a left hand spiral is always required.
- In double spiral containers a left and right hand spiral is always required.



4.10 Container layout counting method

The container shelves are counted from bottom to top. To determine the shelves in the layout as well as the number the distance in mm between the shelves is also specified.

As a counting tool the round imprint is number 14 from the bottom. The lock-in position is at 14mm.



4.11 Height adjustment

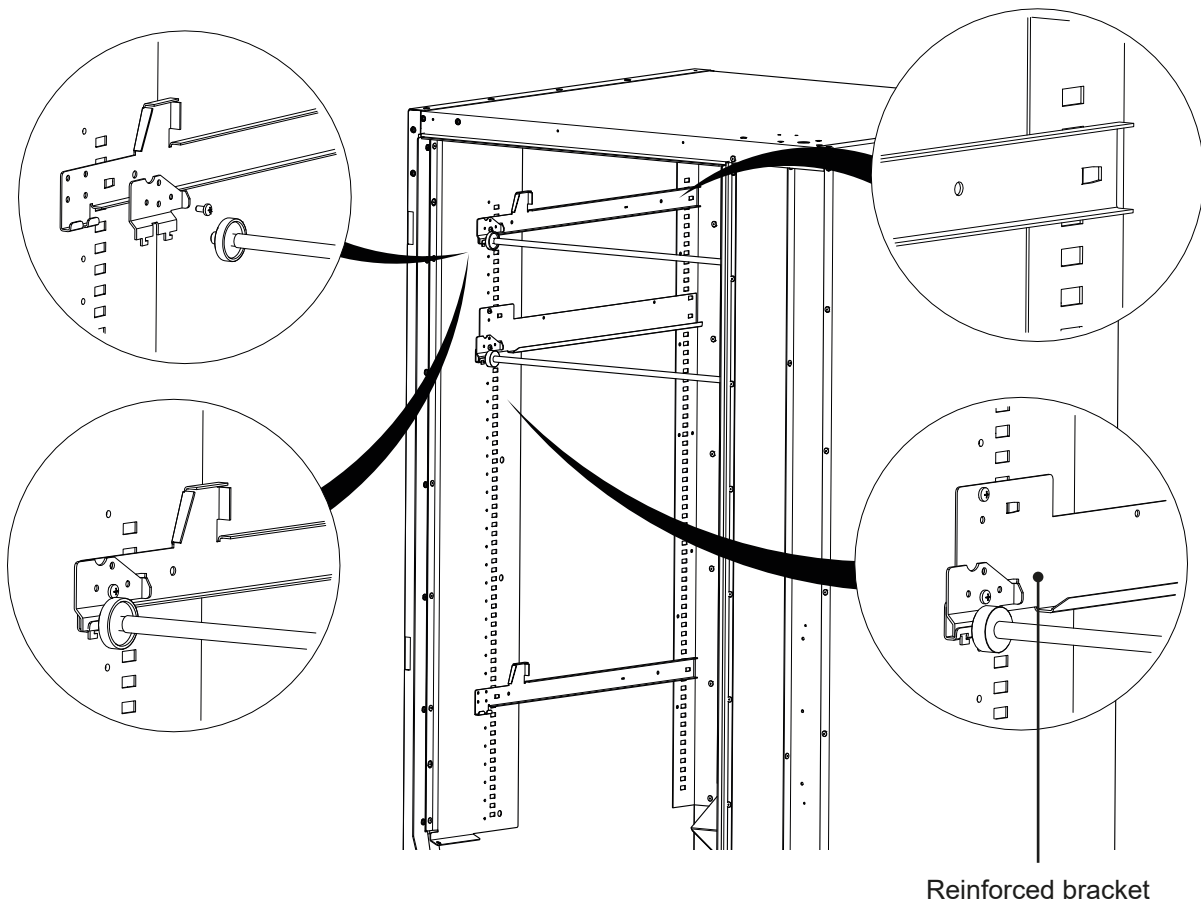
The height of some product shelves might have to be adjusted if products are taller than the allocated space. The minimum distance between two product shelves is 150 mm.

Requirements

- Torx screwdriver

Proceed as follows

1. Pull out the container until it stops.
 2. Unplug the ribbon cables on the back of the container.
 3. Lift the container at the front and remove.
 4. Remove stop brackets left and right by loosening the screws.
 5. Lift the axis with runners to remove.
 6. Remove the guide rails.
 7. Re-insert the guide rails in the required position and push backwards. Ensure that the guide rails are level.
 8. Fit the individual parts in reverse order. Make sure that the stop brackets are correctly positioned in the guide rails.
- ✓ The height of the containers has been adjusted.

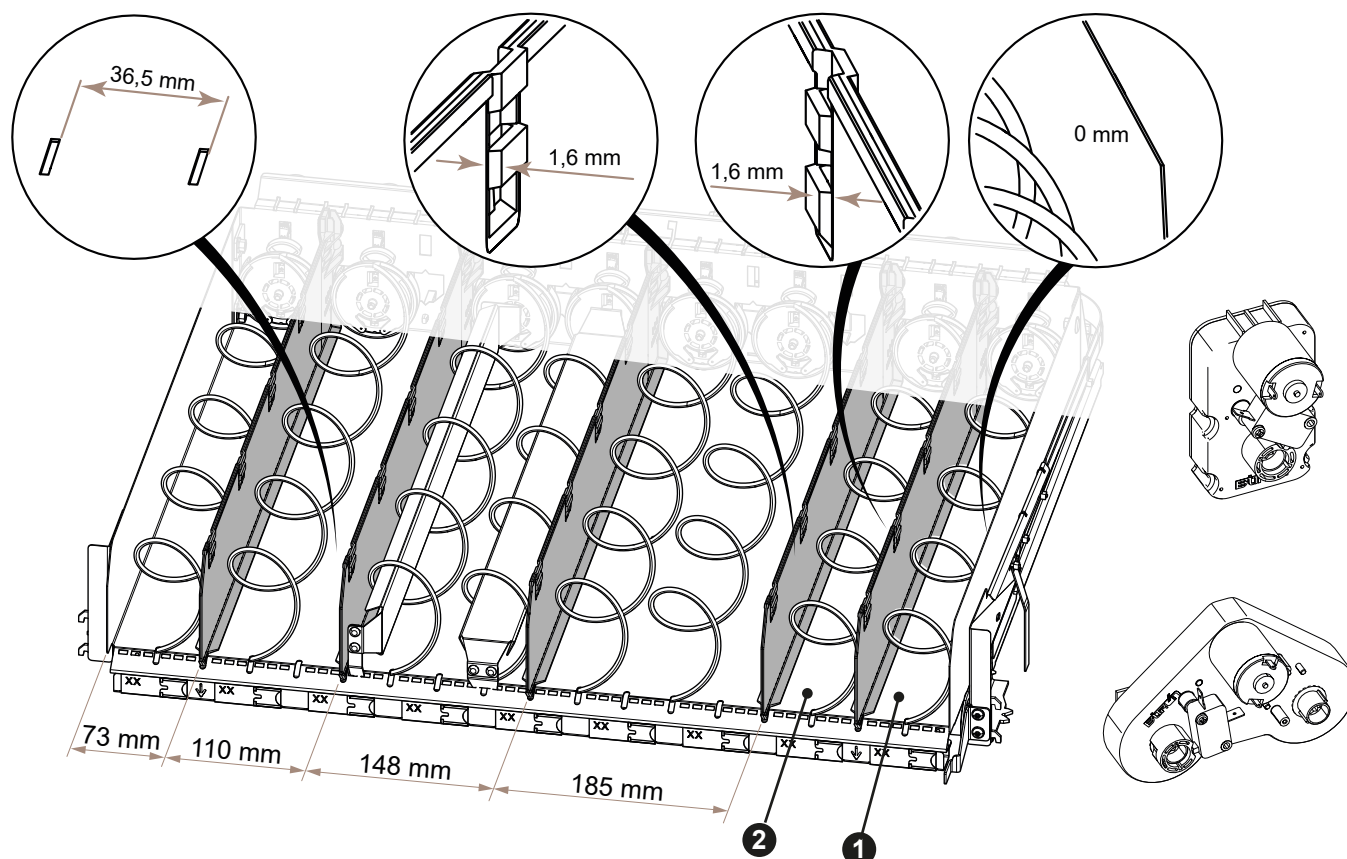


4.12 Container dividers

- The spiral containers are supplied from the factory in a standard configuration. The spiral containers can subsequently be adapted to new layouts.
- Horizontal and vertical dividers are available.
- The dividing wall is easy to push back and unhook. By re-positioning the following sizes can be achieved:

Factor	Width of container catch mechanism	Product width
1.0	73 mm *	67.8 mm
1.5	110 mm	-
2.0	148 mm	-
2.5	185 mm	-
3.0	222 mm	-

* 0.5 of the divider: 73 mm/ 2 = 36.5 mm



1. The theoretical container width is 73.0 mm minus 1.6 mm.
2. On both sides of the divider are two risers each 1.6 mm. The divider wall is 2 mm wide. This gives a container width of 73.0 minus 5.20 mm = 67.8 mm.



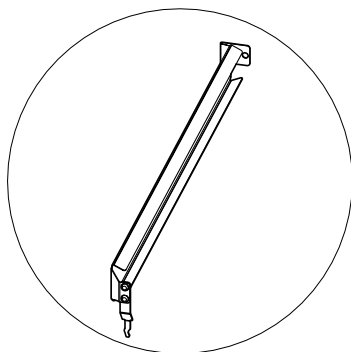
NOTE

The products must always be smaller than the width stated. Products which catch or stick do not reliably vend from spirals.

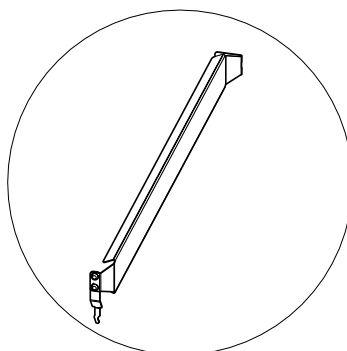
4.13 Dividers, vertical/horizontal

Dividers are fitted for improved product positioning. Vertical dividers are suitable for narrower, vertically standing products.

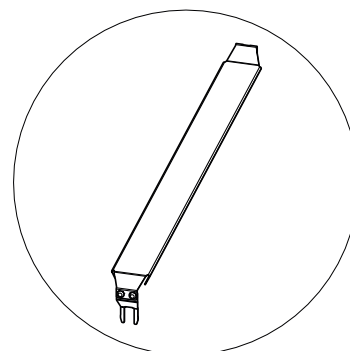
Horizontal dividers fitted in the spirals are suitable for small, square-shaped products.



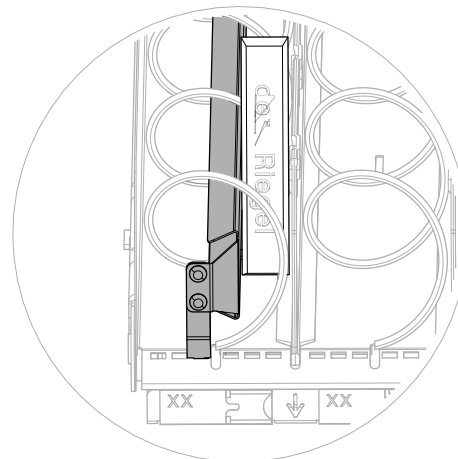
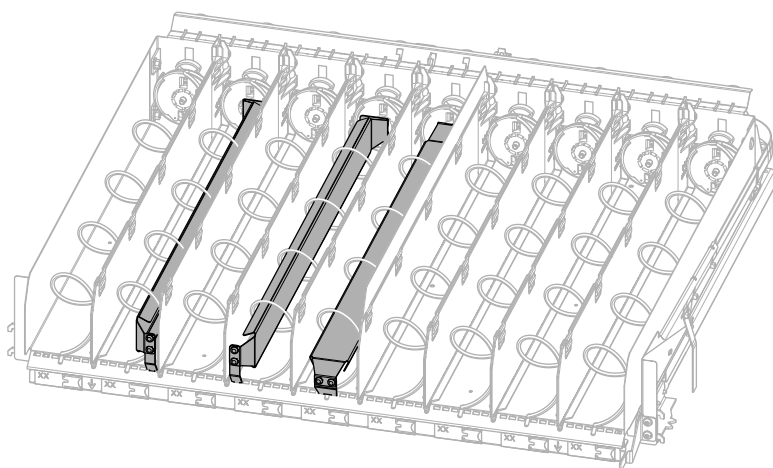
Vertical divider right



Vertical divider left

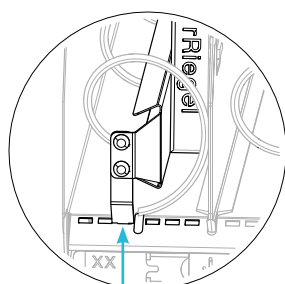


Horizontal divider

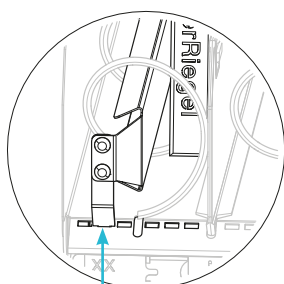


The vertical divider can be placed in three positions which means on a left handed spiral you can make more space for a product to the right of the bracket.

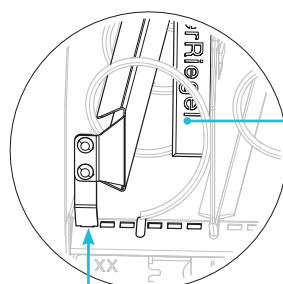
The diagram below shows a left handed spiral containing a bar product. The positioning of the bracket in the plastic wheel at the back of the spiral must correspond to the front, so that the bracket runs parallel.



Pos.1

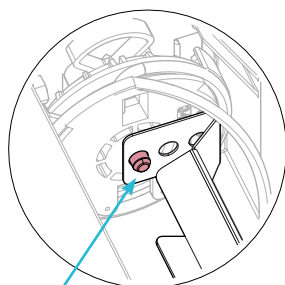


Pos.2

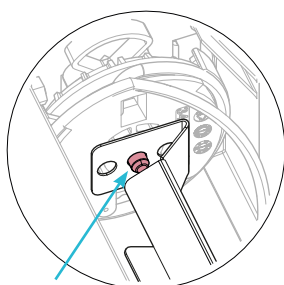


Pos.3

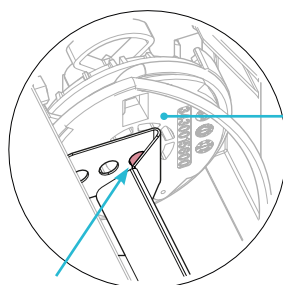
Additional product space



Pos.1



Pos.2

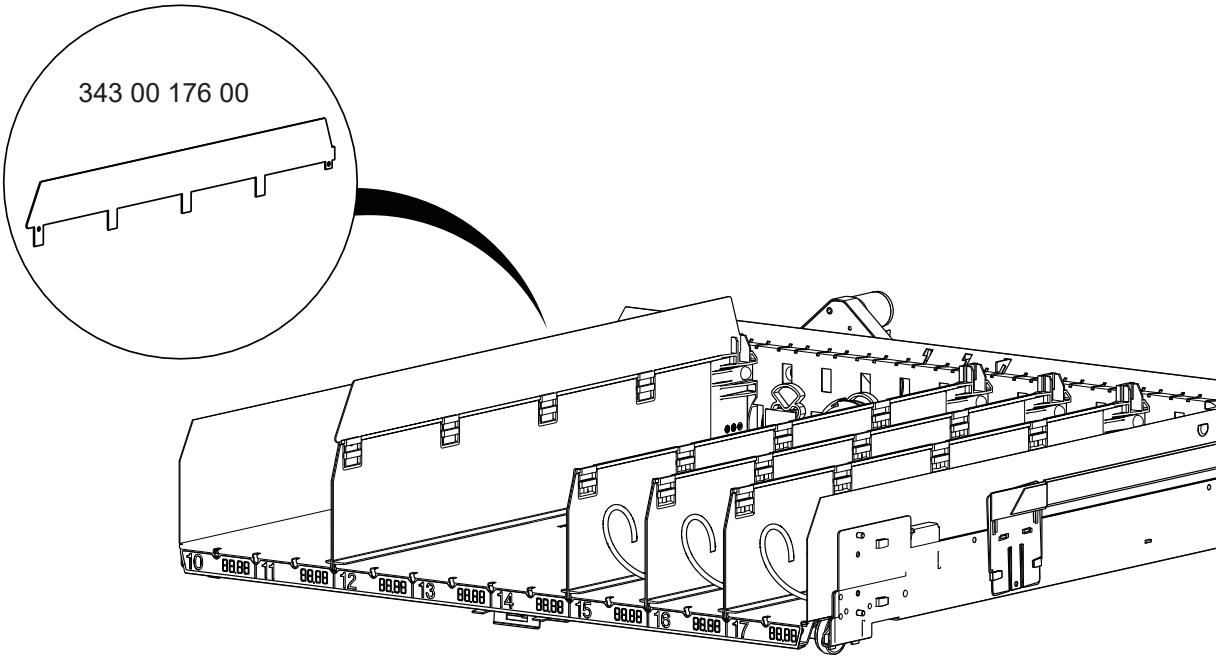


Pos.3

Plastic holder

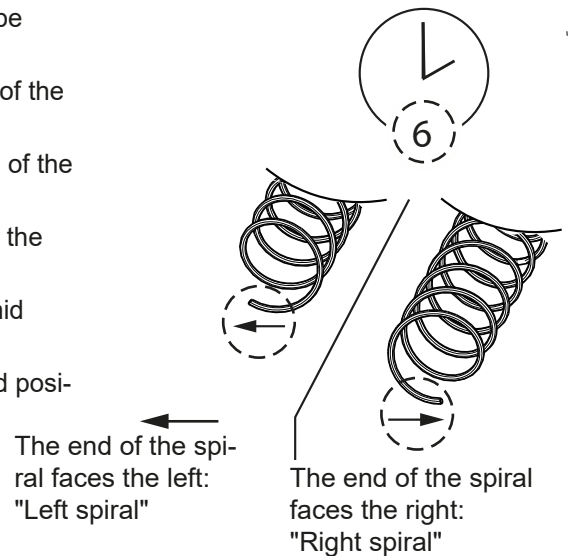
4.14 Raising the height of the product compartment

Part no.	Increase by
343 00 175 00	25 cm
343 00 176 00	40 cm



4.15 Golden rules for filling spirals

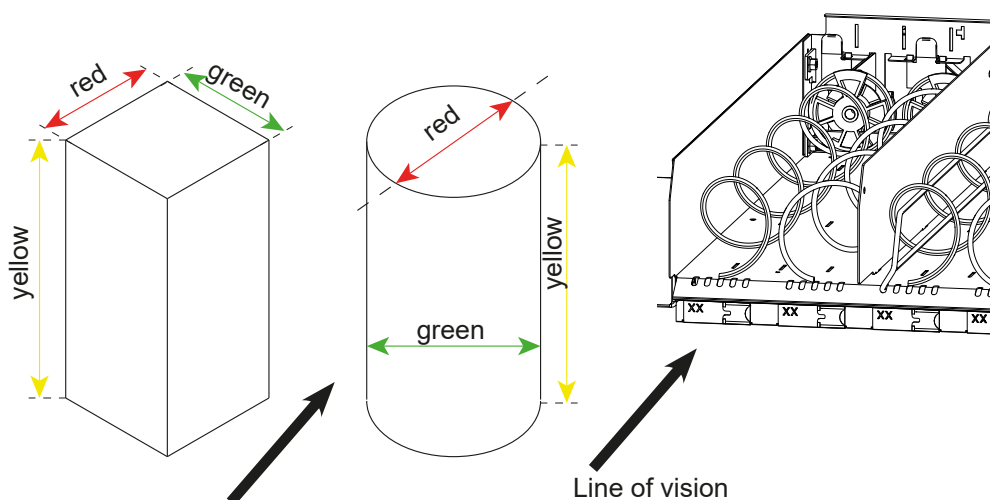
- All products must be free to move in the spirals, no product should be squashed into the spiral.
- All products should fall out of the product container after a half-turn of the spiral.
- The thicker the product, the closer it must be positioned to the edge of the product container.
- The thinner the product, the further away it must be positioned from the edge of the product container.
- If the product is quite thick, the spiral end must finish in the upper-mid position.
- If the product is quite thin, the spiral end must finish in the lower-mid position.
- In its standard setting the spiral end is at 6 o'clock.
- The products must not touch the container above.

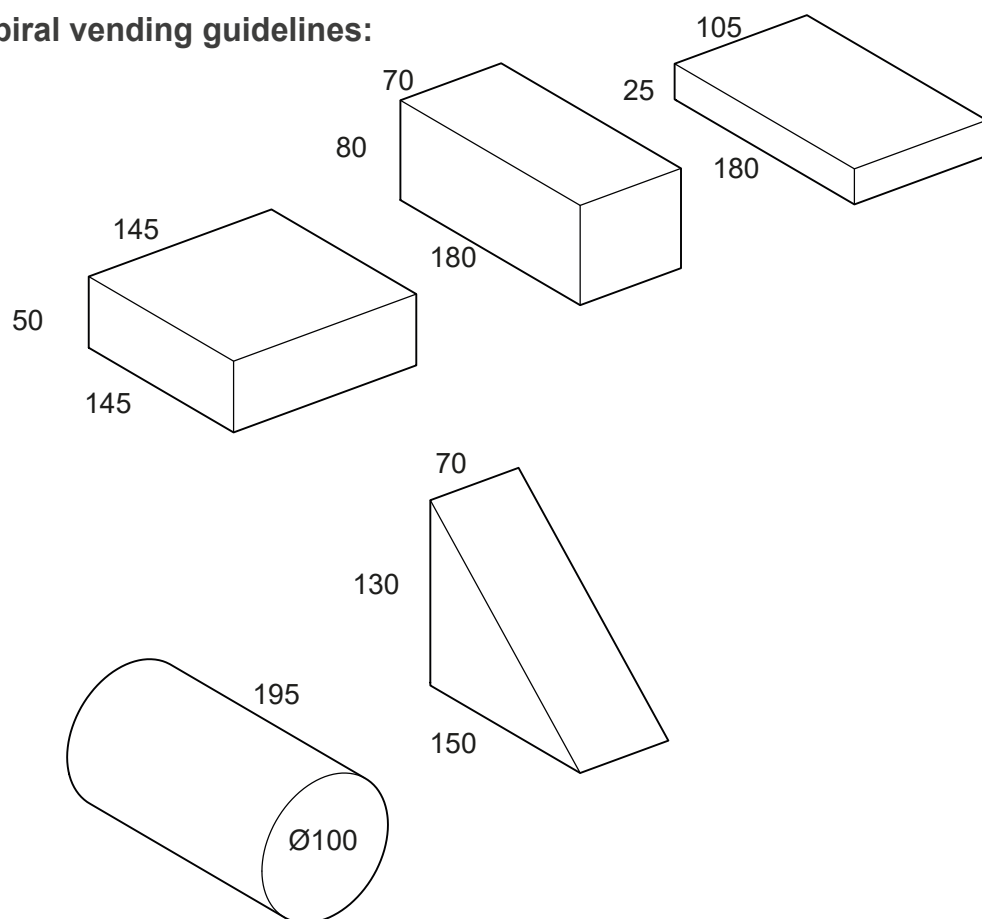


4.16 Product dimensions

You must take into consideration the external dimensions of the individual products when filling the containers.

Colour	Product dimension	Influencing factor
green	Product width / product diameter	Type of container
red	Product thickness / product diameter	Spiral pitch
yellow	Product height	Number of product shelves



Spiral vending guidelines:

These figures can be up to 35% bigger in one or several dimensions on account of the product composition, however such products must always be tested beforehand.

4.17 Product configurations

These instructions for determining the best possible product delivery should be considered as a guideline only. With the many different product containers and possible combinations, it is not possible to make general statements about functionality.

The following information is based on years of practical experience.

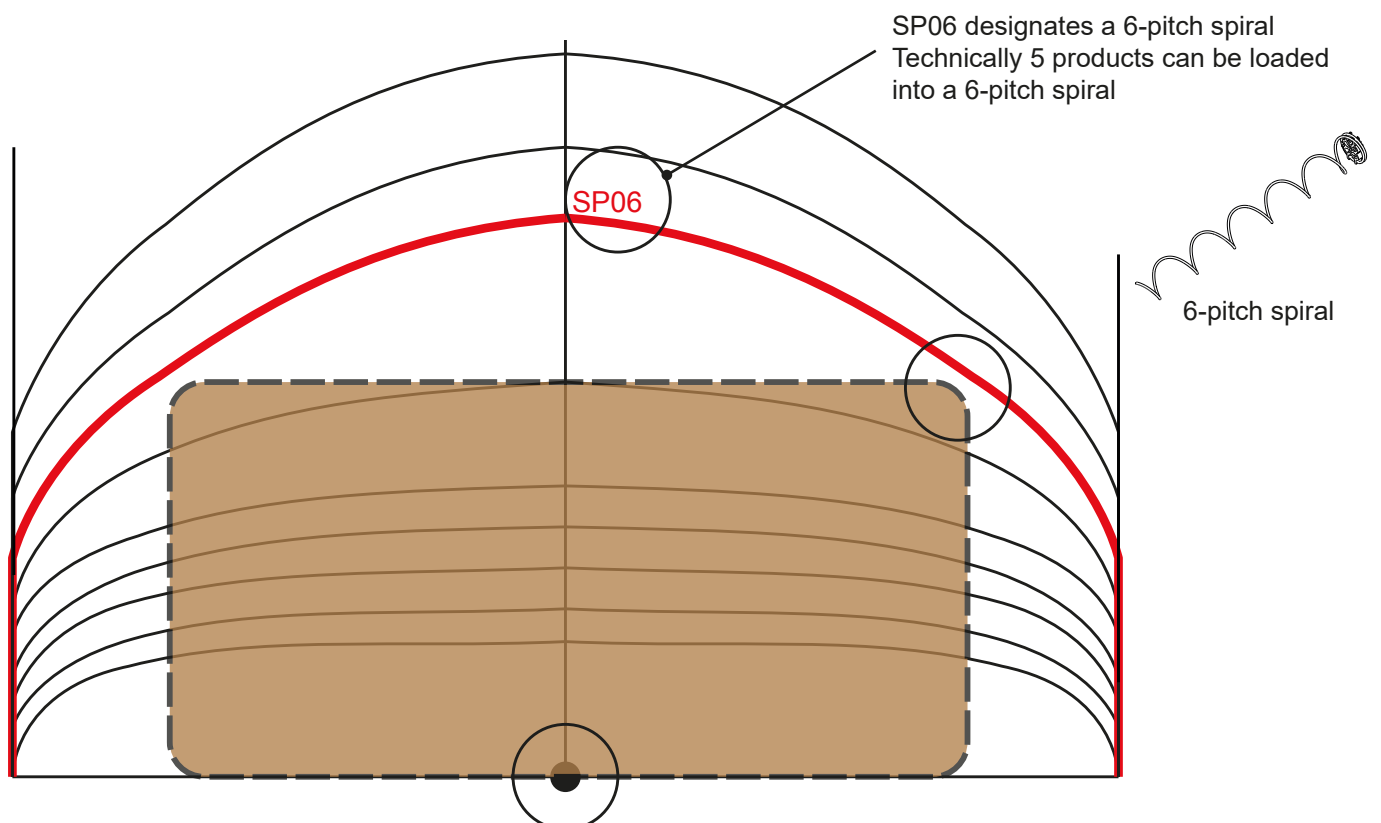
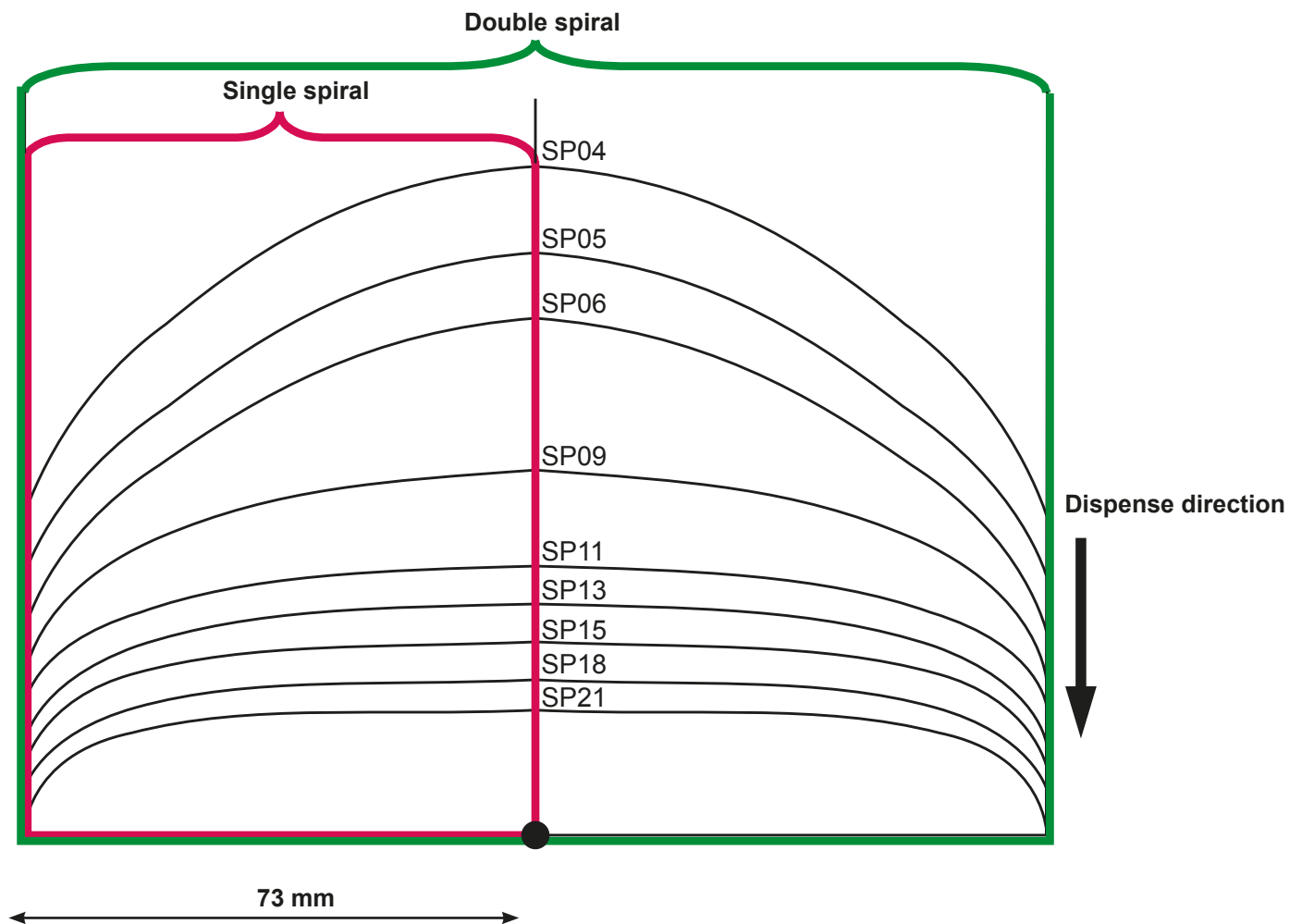
4.18 Determining the spiral size

The left side of the diagram (on the next page) corresponds to the product space in a single spiral. Both diagram halves together represent the space of a double spiral delivery.

Place the product vertically into the left half of the spiral calculation diagram with the front right corner at zero position.

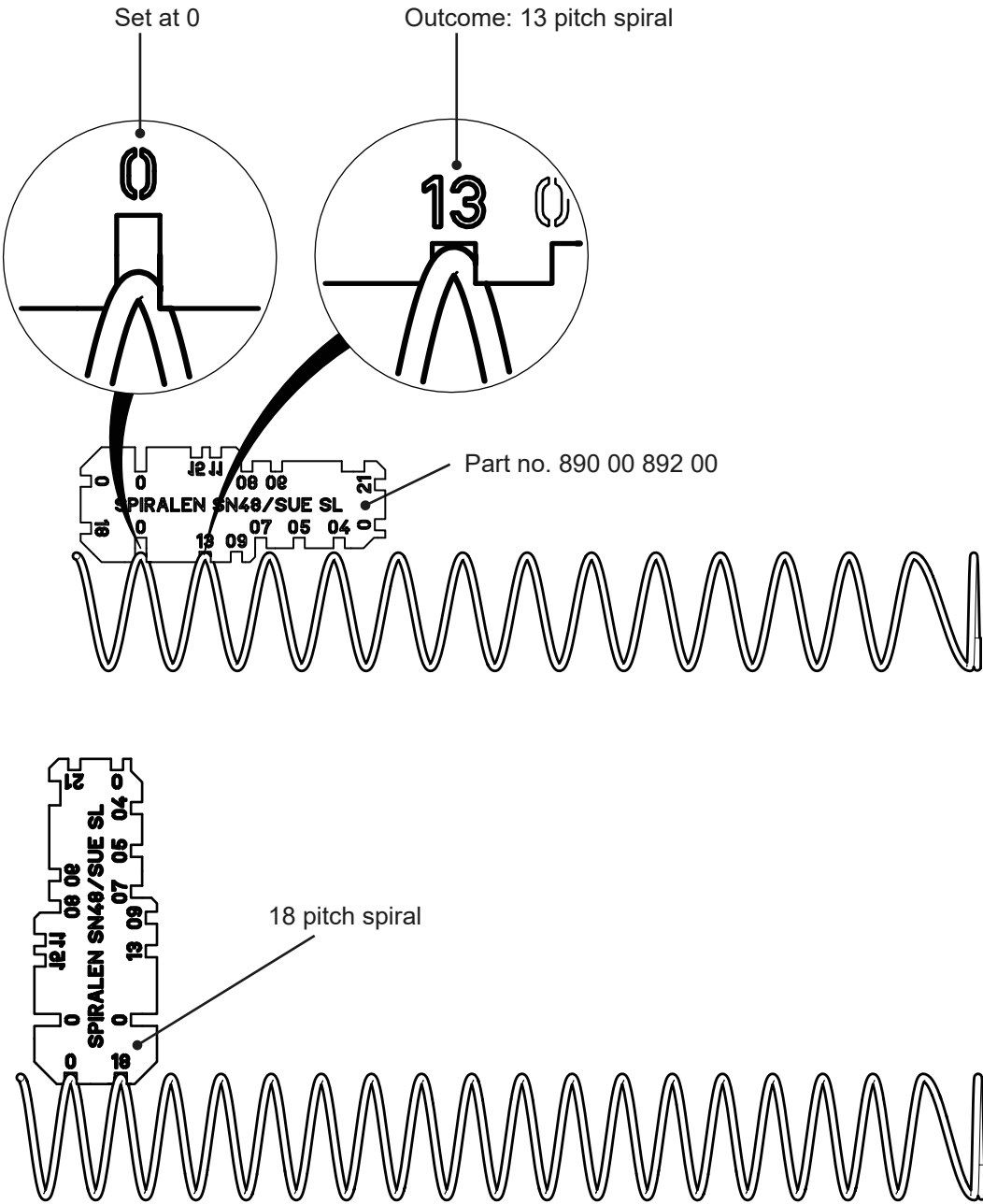
The product can be dispensed by the spiral size indicated as long as one of the back corners of the product does not protrude the spiral size line. The clearance required for the product has already been taken into consideration. If there is not enough space for the product in a single spiral, check the possibility of a double spiral delivery.

For this purpose place the product vertically on the whole spiral calculation with the zero point in the middle of the product as shown in the calculation diagram.



4.19 Determining spiral sizes

A gauge is used to determine the number of spiral turns.

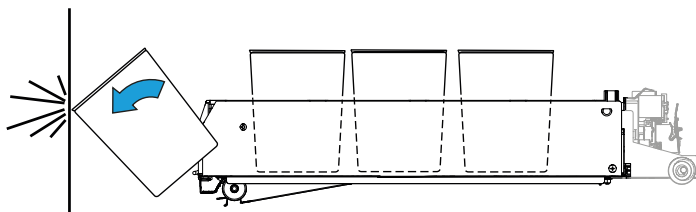
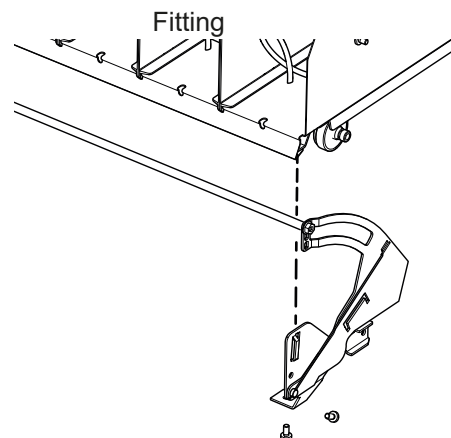
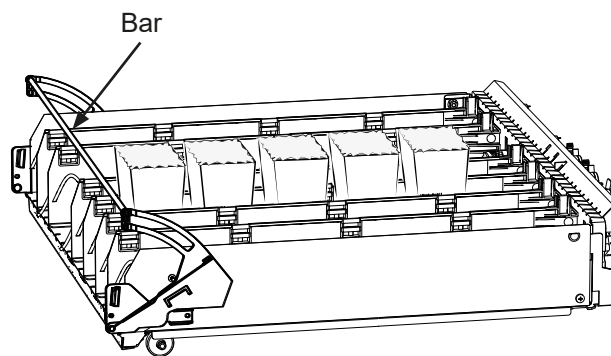


4.20 Product diverter

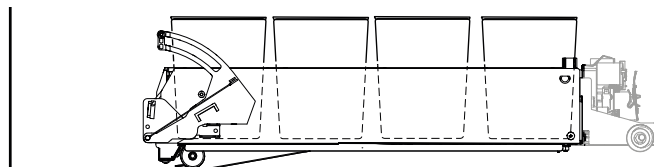
Certain products do not fall correctly when being dispensed from a spiral as they catch on the glass panel of the machine door and become wedged. This can be remedied by fitting a product diverter which determines how the product tilts.

When using a product diverter every product must be test-vended.

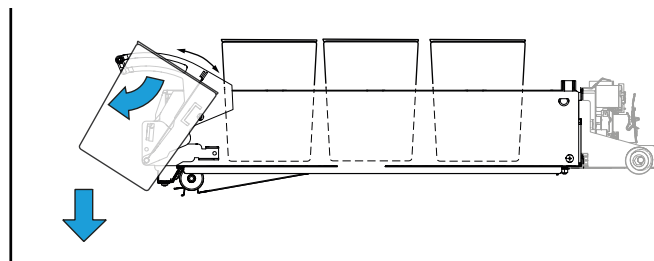
To suit the product height the bar for the product diverter can be set to 3 positions.



Without product diverter: when products tilt they can hit the glass door panel



The product diverter is depicted in home position

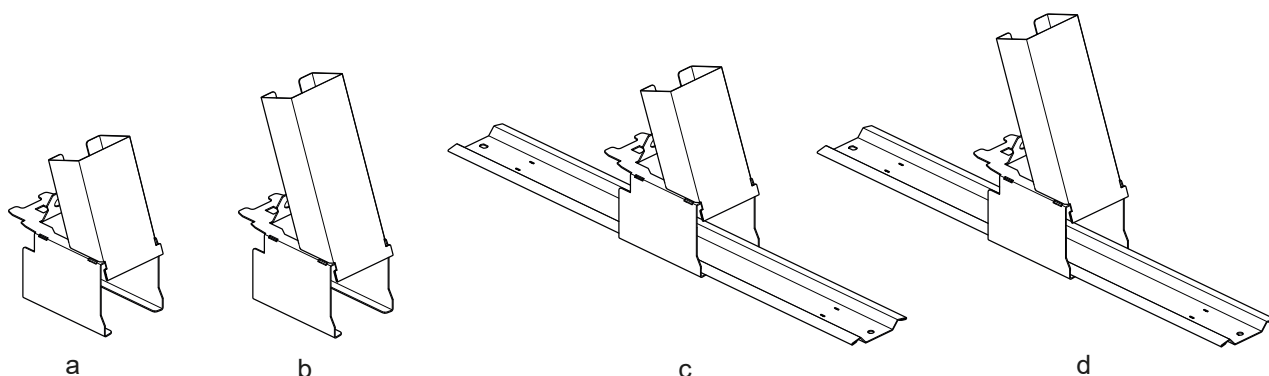


If the product is to be dispensed using a spiral, for a short time it is held firmly by the bar at the top, whilst it is moved at the bottom. In this way the product falls correctly.

The bracket moves slightly and afterwards must spring back to home position.

4.21 Product support for spiral containers

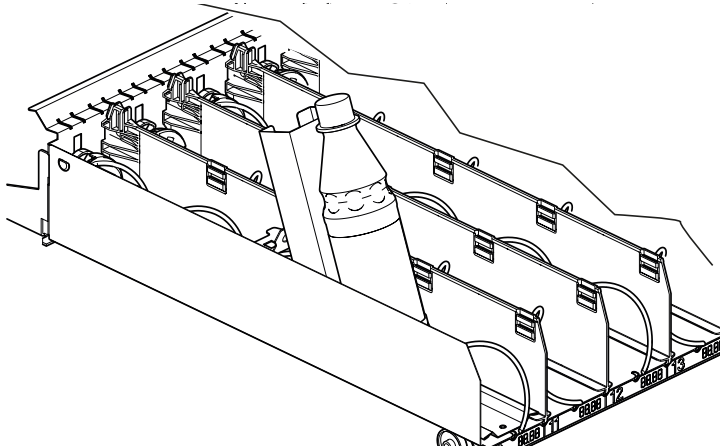
Various product supports are available for dispensing tall products from spirals. This prevents the products from falling backwards or slipping due to the high centre of gravity.



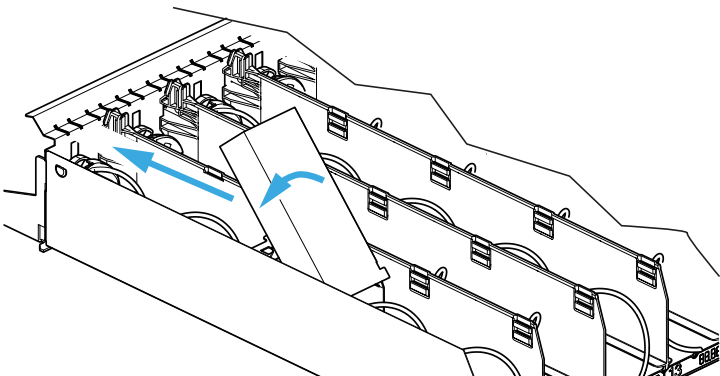
4 types of product support:

a Product support 160 mm (small)	Part no. 343 01 345 00
b Product support 215 mm (large)	Part no. 343 02 345 00
c Product support 160 mm with rail	part no. 343 03 345 00
d Product support 215 mm with rail	part no. 343 04 345 00

Example of an application



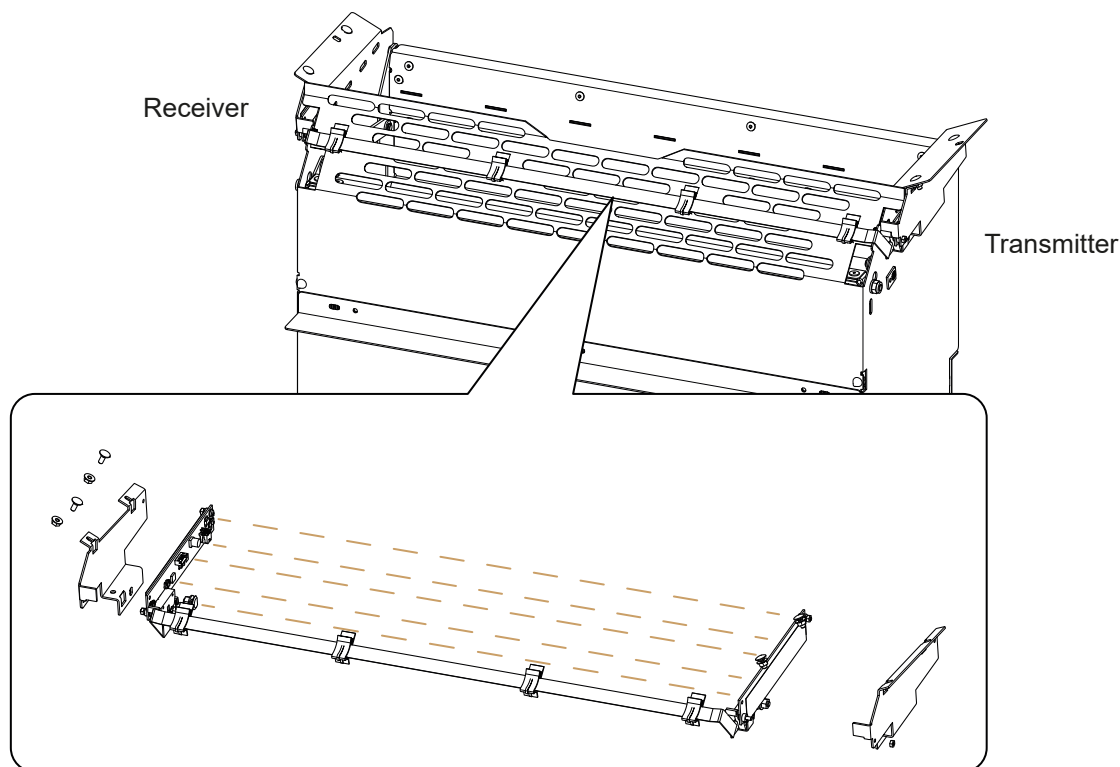
Pushing the product support back



Move the product support backwards to release it. It can then be pushed easily to the back.

4.22 Light grid (optional)

- The light barrier ensures that a product has actually been delivered into the delivery pocket. It can be retro-fitted. The light grid detects whether a product has fallen into the delivery pocket.
- If no product is recognised in the delivery pocket, [SORRY SOLD OUT!] is displayed.
- The light grid must be set in [INSTALLING MODE] M7 - [MACHINE] -[LIGHT GRID] to [with].

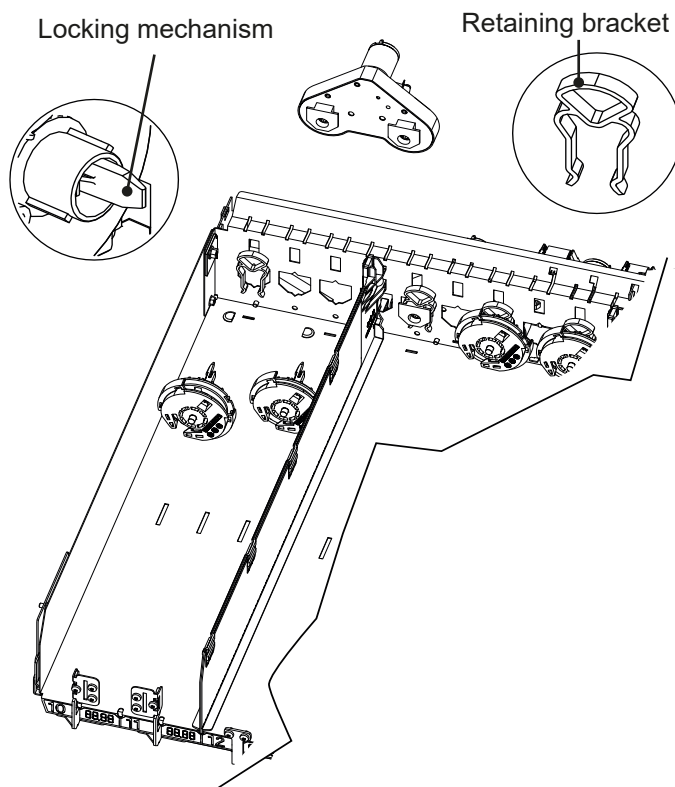


4.23 Changing dispense motors

(single motor, double motor)

- Unplug the motor on the distribution board.
 - Remove the spiral
 - Press the catch and pull out the motor coupling
 - Lift out the holding bracket
- The motor is free and can be removed.

Install the new motor in reverse order.

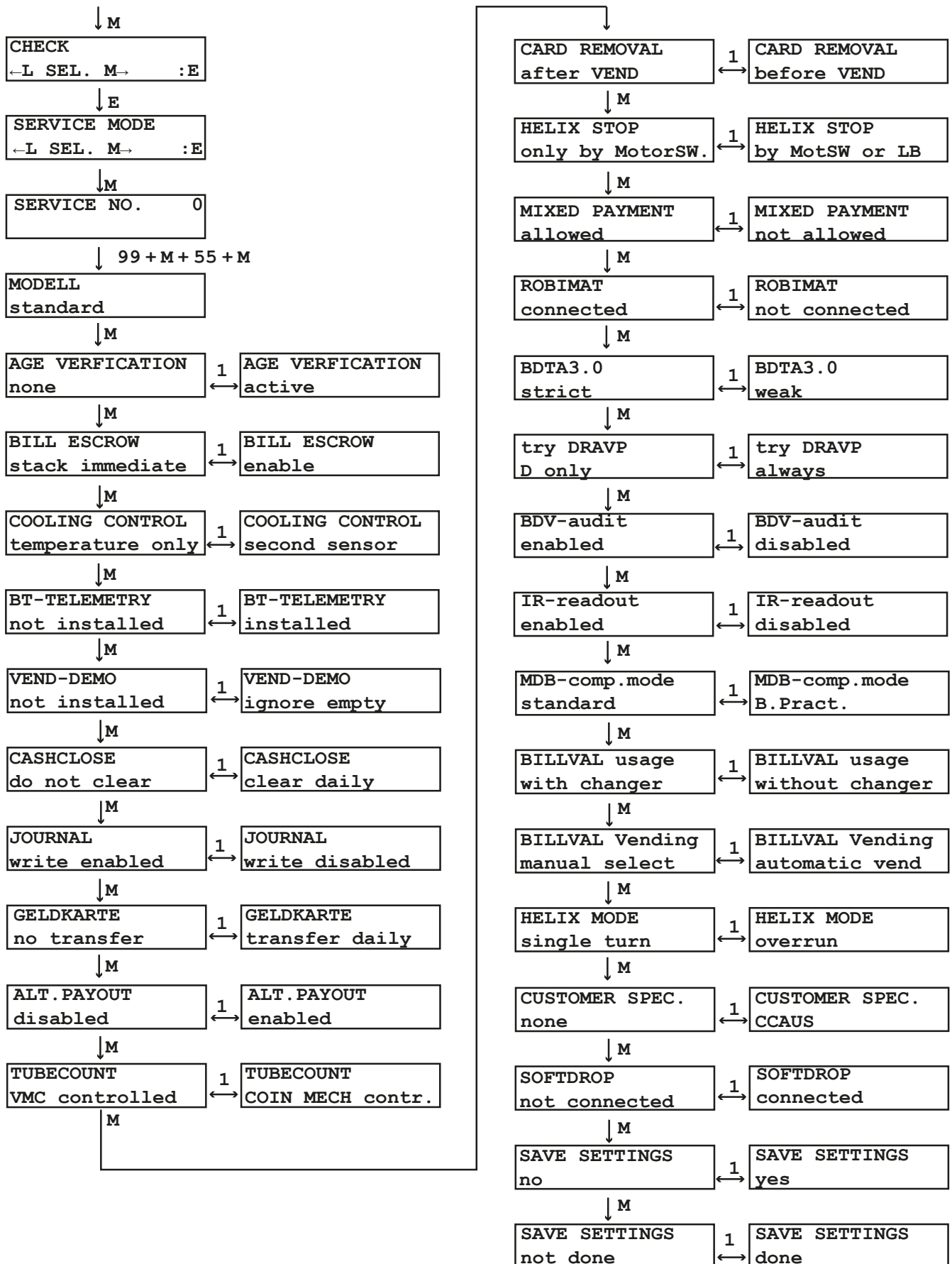


5. Service functions

Service numbers are divided into functional categories M, double M and L.

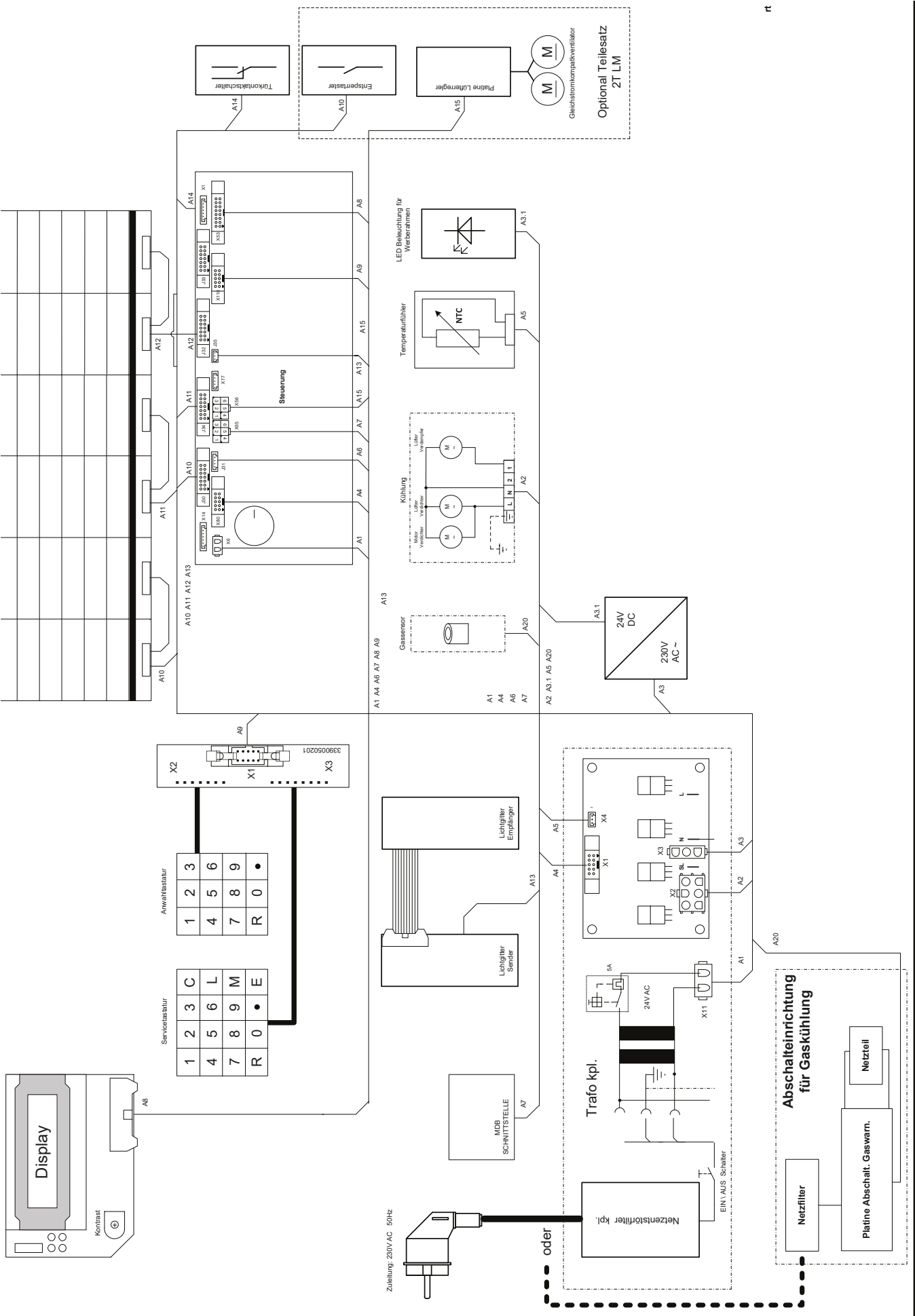
Number	Display	Comments
1 – 85M	Checking the spiral containers	
90M – 99M	Checking the bottle chutes	
101 - 103M	Empty individual coins from the tubes of a 3-tube coin mechanism	If coins remain in the tubes, they must be emptied via the service keypad on the coin mechanism. The information about which coin is assigned to which tube is shown by the manufacturer on the identification plate on the coin mechanism.
105 - 109M	Empty single coins from the tubes of a 4- or 5-tube coin mechanism	
111 – 113M	Empty all coins from the tubes of a 3-tube coin mechanism	
115 – 119M	empty all coins from the tubes of a 4- or 5-tube coin mechanism	
201M	Check chiller unit 	CAUTION: Do not carry out this test several times in succession, because the compressor will no longer start against the pressure build-up.
202M	Check heater	
203M	Check illumination	
204M	Check evaporator fan	
214M	Configuration-Reset	The containers are assigned to the motors in accordance with the machine type entered.
1L	Processor voltage display	
5L	Check temperature and temperature sensor	If a temperature of 99°C is displayed, the sensor or the lead from the control board is faulty. The reason could be a short-circuit or break.
21L	Software version display	
22L	Control board run-time display	
24L	The compressor run time is displayed in hours and minutes	
29L	Display shows password entered	
91L	Display shows all active MDB-equipment	
99M57M	All products are sold to a person with a minimum age of 16 years following age verification.	This function depends on the document reader in use.
99M58M	Products are only sold following age verification for a minimum age of 18.	
99M59M	All products are sold without age verification.	
99M81M	Generates a data reset	CAUTION: Clear this manually caused error and re-program the control board.
99M91M	Restore to factory settings	Same as data error 81, but the serial flash is also deleted. This means all changes on the machine are reset, including patches and manual flash backups. Only the patches and default values set in the software at the factory, including customer specific settings will remain.

6. Patch Menu



Menu text	Explanation	Possible settings
[MODEL]		[standard]
[AGE VERIFICATION]	see Menu M7/ [MACHINE]	[none], [active]
[BILL ESCROW]	see Menu M7/ [BANKNOTES]	[stack immediate] [enabled]
[COOLING CONTROL]	activates 2nd Temperature sensor in FK 178 GB	[temperature only] [second sensor]
[BT-TELEMETRY]	Activates special handling of BT telemetry	[not installed][installed]
[VEND-DEMO]	Only for demonstration purposes! Do not activate!	[not installed] [ignore empty]
[CASH CLOSE]	Activates deletion of statistics when cashing-up at midnight	[do not clear] [clear daily]
[JOURNAL]	Deactivates journal writing with Executive and BDV	[write enabled] [write disabled]
[CASH CARD]	Activates transmission of sales using pay cards when cashing-up at midnight	[no transfer] [transfer daily]
[ALT. PAYOUT]	see Menu M7/ [COIN MECHANISM]	[Disabled] [enabled]
[TUBECOUNT]	see Menu M7/ [COIN MECHANISM]	[VMC controlled] [COIN MECH contr.]
[CARD REMOVAL]	see Menu M7/ [COIN MECHANISM]	[after VEND] [before VEND]
[HELIX STOP]	-	[only by MotorSW] [by MotSW or LB]
[MIXED PAYMENT]	see Menu M7/ [CARD READER]	[allowed] [not allowed]
[ROBIMAT]	Robimat lift control board is recognised automatically	[not connected] [connected]
[BDTA3.0]	Display texts do not strictly follow BDTA 3.0 any longer	[strict] [weak]
[try DRAVP]	Age verification is performed in accordance with DRAVP protocol.	[D only] [always]
[BDV-audit]	Deactivates audit function in BDV	[enabled] [disabled]
[IR-readout]	Deactivates IR data transmission	[enabled] [disabled]
[MDB-comp.mode]	see Menu M7/ [CARD READER]	[standard] [B.Pract.]
[BANKNOTE usage]	No function	-
[BANKNOTE Vending]	No function	-
[HELIX MODE]	No function	-
[CUSTOMER SPEC.]	Activates customer-specific settings or customer-specific software behaviour	[none] [CCAUS]
[SOFTDROP]	Activates / deactivates Softdrop	[not connected] [connected]

7. Wiring diagram



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