23 GB

WURLITZER®

CE

MULTI BL / SL / SSL

OPERATING INSTRUCTIONS

1 Machine description Multi SSL / SL / BL

The machine is designed to vend snacks or any other suitable articles. Standard specification is five product trays although it is possible to change the number of product trays and the type of spirals to suit different applications. The product area is illuminated by three fluorescent tubes. The standard cooling unit is designed to hold the product area 18°C below the ambient temperature. The higher specification food cooling unit is designed to hold the product area down to 3°C with an ambient not greater than 31°C.

1.1 Details about equipment

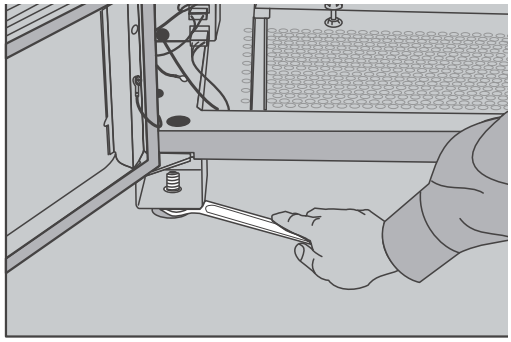
- Standard:
  - Programmable microprocessor control unit IVC2 with data storage
  - Test programs
  - Alphanumeric display
  - Double glazed showcase window
  - Stainless steel trays, tiltable for filling
  - Easily changeable spirals for different product shapes
  - Central lock with triple interlocking
  - Robust locking mechanism with lever
  - Powder coated steel cabinet
  - Extra-low voltage supply for internal functions
- Coin systems with change MDB standard
- Credit card systems
- Electronic purse
- Bill acceptor

1.2 Technical details

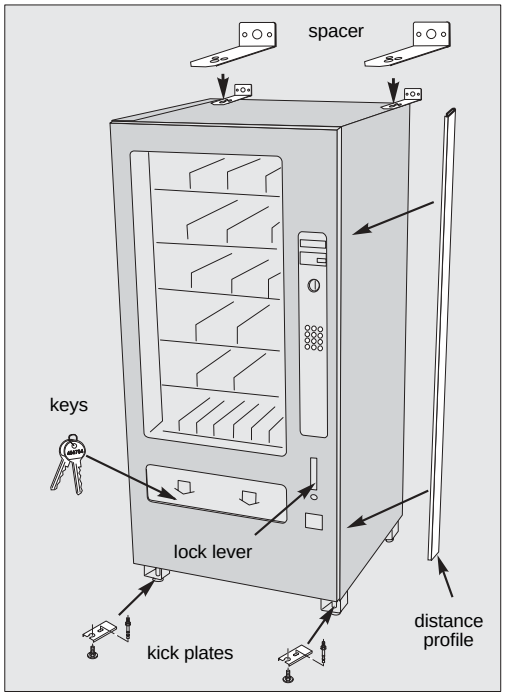
• Supply	230v 50cps 16/13amps		
• Power consumption	70w		
• standard cooling unit	300w		
• super cooling unit	600w		
• Cooling units	Standard cooling unit	Food cooling unit	
• Type	KKW VKD 4126	KKW VKD 5119	
• Refrigerant	R134A	R134A	
• Quantity	250g	450g	
• Weight	BL models	SL models	SSL models
• without cooling unit	319kg	293,5kg	268kg
• with standard cooling unit	346.5kg	321kg	295,5kg
• with food cooling unit	353kg	327,5kg	302kg
• Dimensions	BL models	SL models	SSL models
• Height	183cm	183cm	183cm
• Width	100.3cm	85.3cm	70cm
• Depth without design element	83.5cm	83.5cm	83.5cm
• Depth including design element	88.5cm	88.5cm	88.5cm

- Illumination
- Position of fluorescent tubes — horizontal under the top of the cabinet and LH inside
- Power consumption of fluorescent tubes — 1 x 18w and 2 x 8w
- Length of fluorescent tubes — 18w: 59cm, 26mm diameter; 8w: 28.8cm, 16mm diameter
- Ballast — SG 18/230/50 (SSL: D15-22.2K3)
- Noise level — lower than 70db(A)

2 Unpacking and installation



- Level the machine.
  This is important for the proper operation of the coin system and the door. Adjustment can be made with the 4 leveling screws (spanner 17mm) under the feet.
  Procedure:
  Adjust the rear screws first and secure the upright positioning of the machine by means of the two front screws. Adjustment is easier if the machine is tilted slightly.
- Mount the front plate and tighten the screws.
- The key is in the delivery box.
- To open the door turn the key clockwise and press the handle gently. Pull the handle forwards.
- For machines with cooling unit, take out delivery box and set temperature, see page 17.
- Mains switch in position 'ON'.
- Mains cable and plug positioned at the rear wall of the cabinet.
- Power supply is 230v, 50 to 60cps. Supply the main connection with a 16/13amps fuse. Make sure that the main plug can not be removed by unauthorised people.
- If cooling system attached: **distance of 80mm** between wall and machine is absolutely necessary.



Part numbers for installation accessories (not part of standard delivery):

Spacer (1 pair)	0034870
	0036312 special colour
Kick plate (1 piece)	0064602
Dowel (1 piece)	0053296
Distance profile	0050929 (only for machines standing side by side)

ATTENTION!
During transport it is possible that the trays may loosen. Therefore the shipping guards have to be fixed before transport. Carry out automatic motor test after every transport.

2.1 Design elements

Some machines are equipped with design elements. Then there is an additional cover on top of the door made from polycarbonate. To open the cover, e.g. for cleaning, loosen both wings positioned at the outer top corner. Push the two bars outwards, then you can open the design element.

You should use only mild, suitable detergent in order not to damage the polycarbonat surface.

locking of design elements

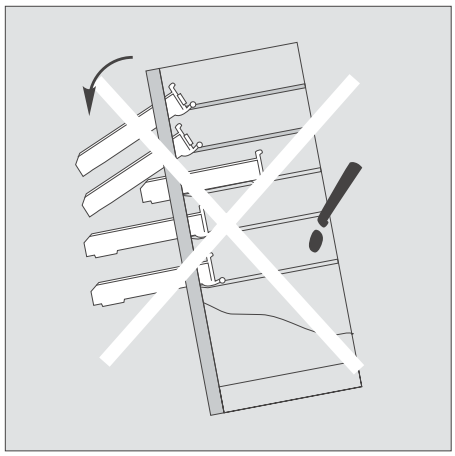
3 Taking into operation

3.1 Package check

- Different spirals for 4 up to max. 35 products mean it is possible to vend packages with depth of 9 up to 105mm.
- There is no max. use when thick and large items are vended, see point 3.7 on page 10.

3.2 Filling of the compartments

- Always start from the front.
- Put one product in every turn of a spiral.
- The products should rest freely on the tray bottom.
- Never squeeze the products into the spiral turns.



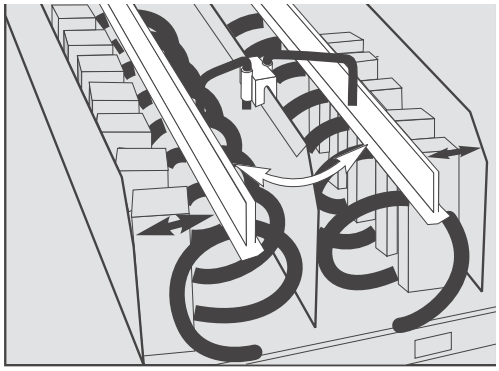
TIP
The upper trays (over 1.20m) are easier to fill if you tilt them slightly downwards.

ATTENTION!
If you pull out several full trays at the same time there is a danger of the machine tilting over!

Remedy
After filling push back each tray fully.

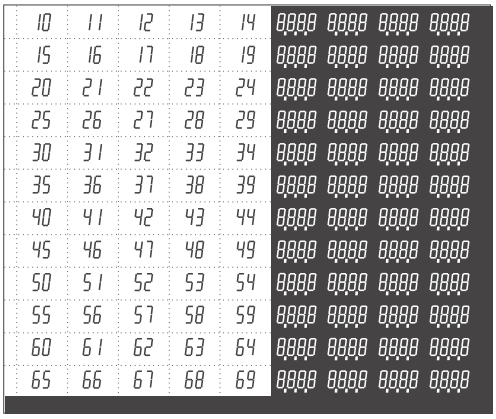
3.3 Distribution of merchandise

- For very narrow products use the guide rails, part no. 0044593.
- Mount guide rails on the separating walls.
- Move the guide rails towards the articles to prevent them from tilting.

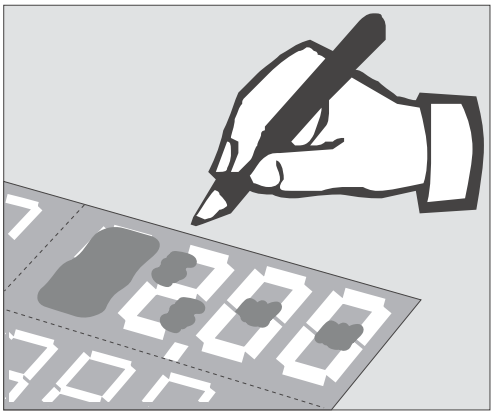


3.4 Variable set of price labels

- In addition to prepared price labels a variable set of price labels is supplied to each machine. This can be ordered under part no. 0039529.
  The printed Euro price labels (0.25 - 2.50) can be ordered under part no. 0063980.
- You can also use the back of the price label to cover any price field not used.



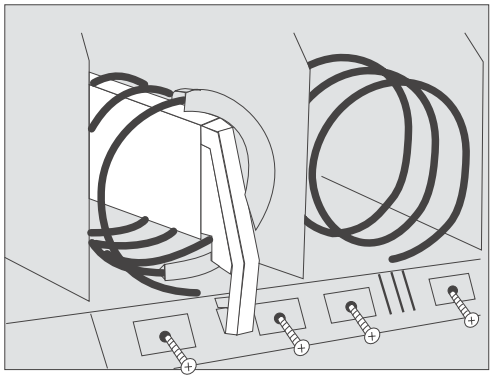
- You can make any price label by coating those segments not needed.
- Recommended pen is 'Staedtler Lumocolor 317 M - black' (part no. 0046091).



3.5 Duomat mode

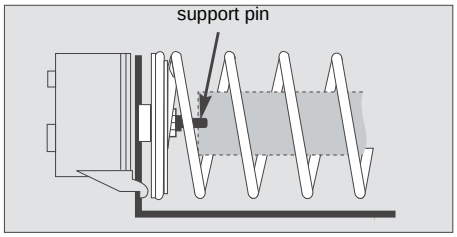
To increase vend capacity of a single spiral compartment you can set it to 1/2 turn mode. Therefore you have to mount the guide rail, part no. 002713, in the middle of the spiral.

For some row products (e.g. Mars) that should be vend in Duomat mode operation, special spirals for 18 products and a wire diameter of 5mm are availbale (part. no. 0061118 LH and 0061117 RH spiral). These spirals will be inserted in connection with a guide rail, part. no. 0061211.

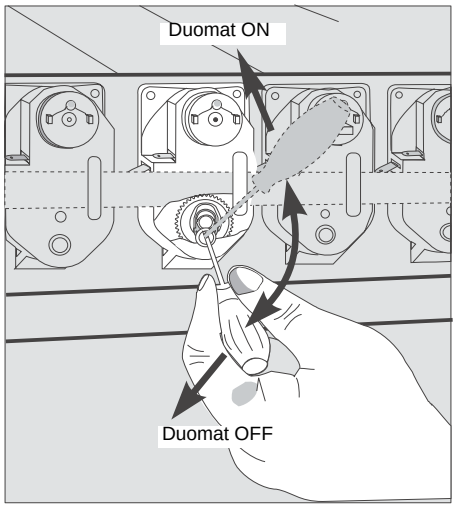


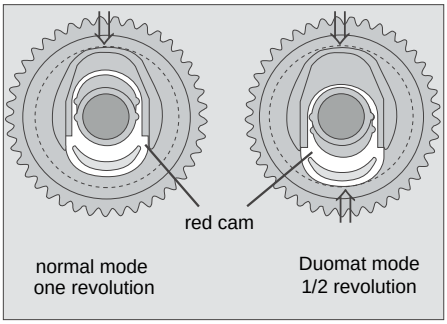
Establish Duomat

- Remove the price labels.
- Unscrew the label holder.
- Insert the support pin, part no. 0045235, into the shaft stump of the spiral drive.
- Fit the guide rail, part no. 0045890, onto this pin.
- Insert the rail support (grey), part no. 0045890, with the guide rail.
- Fix the label holder again.

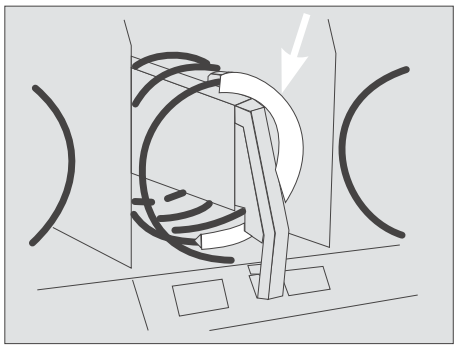


- Pull the tray fully out.
- Take a small screw driver and push the red cam of the gear concerned downwards until there is a noticeable click.
- Replace the tray again.



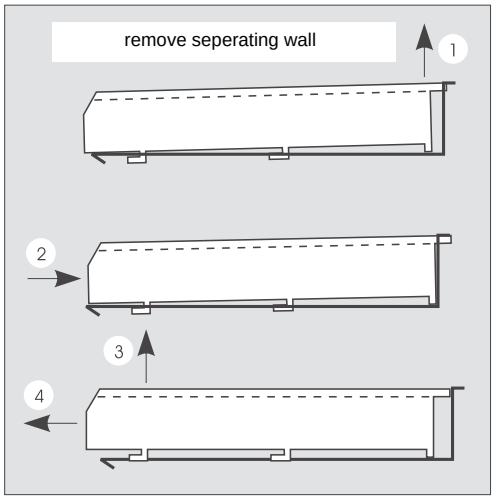


- It is recommended to place added end pieces half a turn in front of the spiral ends for safe delivery of the products. Part no. of end pieces LH is 0045892, RH is 0045891.
- Reset to normal mode is done in reverse order.
- Notice that the red cam is available at every second half turn. If necessary, you can make a re-selection.



3.6 Parallel operation

- When vending wider merchandise, two adjacent compartments can be joined by removing the separating wall (each spiral has its own motor).
- The LH spiral (turns anti clockwise) needs a white, the RH spiral (turns clockwise) needs a grey motor.
  Therefore:
  - Remove the separating wall.
  - Programme the same price for both compartments in service program 08.
  - Programme the spiral with the even number (e.g. 10) to operate in parallel (service program 10; +0004).



ATTENTION!
Both of the spirals ends have to stand in the same position with respect to each other. Make any correction needed!

NOTE: Pay attention to the fact that always one left motor (even number) and one right motor (odd number) have to be connected for parallel operation, even if these motors are not adjacent. It is also absolutely necessary that you programme the same price to both selections.

3.7 Spirals

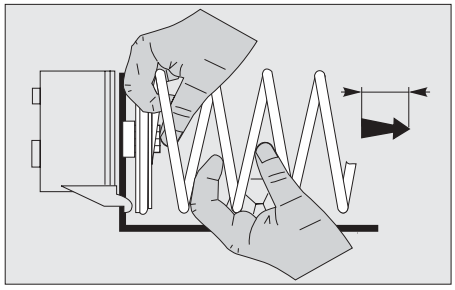
- Spirals with the same revolution in the same direction can freely be changed with each other.
- Spirals with 4, 5, 6, 9, 13, 16, 18, 19, 22 and 35 turns can be ordered.

Remove spiral:
- You can remove a spiral by pulling it forwards till it clicks twice.

NOTE: Always check proper machine operation with test runs.

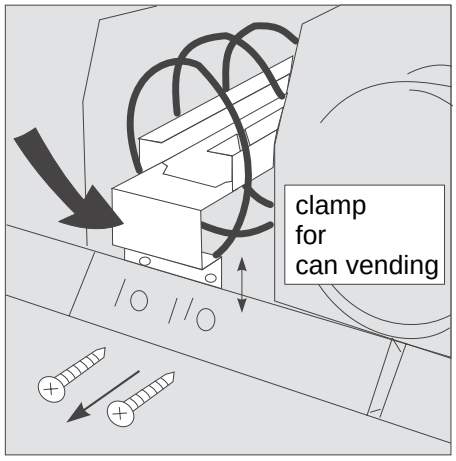
products	spiral distance in mm/ inch	LH	RH	max. depth of packs in mm/ inch
4	120 / 4.72	0063834	0063833	105 / 4.13
5	95 / 3.74	0051990	0051989	80 / 3.15
6	80 / 3.15	0059070	0059068	68 / 2.68
8	60 / 2.44	0066968	0066966	50 / 1.97
9	55 / 2.17	0045527	0045520	45 / 1.77
13	39 / 1.54	0045528	0045521	30 / 1.18
16	32 / 1.26	0045529	0045522	24 / 0.94
18*	28.5 / 1.12	0061118	0061117	19.5 / 0.77
19	27 / 1.06	0045530	0045523	18.5 / 0.73
22	24 / 0.94	0045531	0045524	16 / 0.63
35	14.8 / 0.58	0045532	0045525	9 / 0.35
Mentioned data are standard values. According to constitution of products real values can be different.				
* The spiral with 18 turns is a special spiral with a wire diameter of 5mm/0.2inch for vending products in Duomat mode in connection with the duo rail, part no. 0061211 and guide bolt, part no. 0045235.				

Spiral adjustment



- Adjustment is correct when the spiral end is in the 6 o'clock position (factory preset). Minor deviations are unimportant.
- Small products require individual adjustment to enable the selected article to be ejected correctly, but at the same time locating the next product securely.
  Re-adjustment, if necessary:
  - Pull the spiral back until it gives a noticeable click while pressing your thumb against the central shaft.
  - You can now turn the spiral ten steps during each revolution.
  - Change the position of the spiral and push it back.
  - The spirals end should project some one half to one whole thickness of the wire over the tray front. If corrections are deemed necessary, either strech or compress the spirals.

3.8 Vending cans



- Insert support pin and push the guide rail, part no. 0002713, into the spiral in a horizontal position. Secure the clamp for can vending, part no. 0009704, between label holder and the front edge of the tray.
- You should vend cans from the lower trays only.

3.9 Vending of sandwiches

For vending of sandwiches you can use spirals with 4 or 5 turns. Fill the sandwiches as shown in the pictures.
For vending sandwiches with spirals for 4 products special separating sheets are required.

spirals with 5 turns

spirals with 4 turns

3.10 High temperature warner (Health switch) (optional)

The temperature sensor is situated at the RH bottom rear side of the machine. If the temperature exceeds the adjusted warner temperature of 7.5°C, a time countdown of 30 min. starts. The LED of the warner starts to flash during the countdown, but not visible from outside. The countdown will be stopped as soon as the inside temperature falls under the adjusted trip temperature. Otherwise the machine will be set to 'out of order' and no money will be accepted.
In case the cabinet door will then be opened a door switch cuts the temperature warner from the power supply. After the door has been closed the warner is reset.

3.11 Conveyor drive for tube products

It is possible to convert SSL/SL/BL trays with a special conveyor drive, part no. 0053600, to vend tube products. Therefore you have to remove two spirals, a separating wall and corresponding gears. Hook the front of the insert into the separating wall slot and secure the back with two screws. On a ten motor tray one wire has to be shut down.
This insert offers the possiblity to vend products like e.g. Mentos or Vivil.

3.12 Connecting rod / tipper bar for high products

For the vending of high products Deutsche Wurlitzer GmbH offers special kits, which shall prevent a turnover of the product, thus optimizing the delivery of the goods by e.g. preventing the products to jam.

Two different systems are available:

- Kit with fix connecting rod
  The fix connecting rod with a diameter of 6mm offers a corresponding stability.

- Kit with tipper bar
  The tipper bar allows the vending of products with a different height (within limits) out of the same tray

The decision, which kit to use depends on the products to be sold.

Mounting:

1. The two holder plates will be fixed on the outside of the tray with two screws.

2. The position of the connecting rod or tipper bar respectively will be choosen according to the height of the product and afterwards the connecting rod will be fixed with two screws or the tipper bar with two nuts.

Apart from the decision between connecting rod and tipper bar there are two different lenghts of the holder plates availble.

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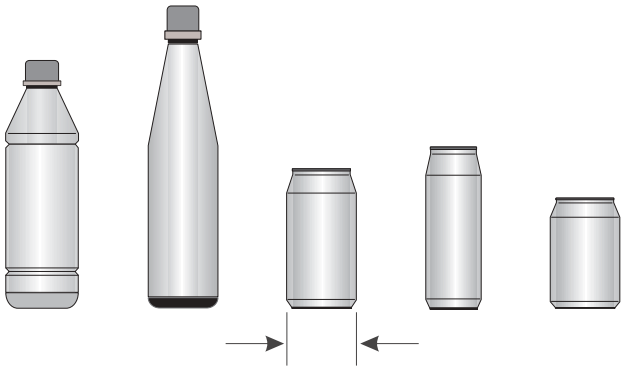
Kit complete	**MULTI BL**	**MULTI SL**	**MULTI SSL**
(medium holder plate)			
• with connecting rod	0054539	0054562	0066169
• with tipper bar	0067006	0067005	0067004
Holder plate, long	0067027	0067027	0067027

3.13 Can/bottle module

Optional a special module for cans and PET bottles is available. This module replaces two standard trays and allows vending of up to max. 5 times 36 cans or PET bottles (Multi BL).

ATTENTION!
Never fill glass bottles in this can/bottle module!

Appropriate products for the can/bottle module.



62 - 67mm / 2.4 - 2.6inches
52 - 57mm / 2.0 - 2.2inches

The drives transport products with a diameter of 62 - 67mm / 2.4 - 2.6inches resp. 52 - 57mm / 2.0 - 2.2inches with an additional can adaptor.
Part no. of the kit for conversion to 52 - 57mm (3 can adaptors + 12 fixing screws) is 0064823.

Filling examples for

Multi BL	**Capacity:**	**and Multi SL**	**Capacity:**
0.33 l can × 6	**6 x 36 = 216**	0.33 l can × 5	**5 x 36 = 180**
0.375 l can × 3, 0.5 l can, 0.33 l can	**5 x 36 = 180**	0.375 l can × 2, 0.5 l can, 0.33 l can	**4 x 36 = 144**
0.33 l PET bottle × 2, 0.5 l can × 2	**4 x 36 = 144**	0.5 l PET bottle, 0.33 l can × 3	**4 x 36 = 144**
0.5 l PET bottle, 0.33 l PET bottle, 0.33 l can × 2	**4 x 36 = 144**	0.5 l PET bottle, 0.33 l PET bottle, 0.5 l can	**3 x 36 =108**
0.5 l PET bottle × 3	**3 x 36 =108**	0.5 l PET bottle × 2, 0.33 l can	**3 x 36 = 108**

3.14 Shortcut buttons (option)

In case the machine is equipped with shortcut buttons you can select single compartments directly. The shortcut buttons simulate selection by normal selection buttons.
To programme the shortcut buttons proceed as follows:

1. Set the slide switch on the interface to position 'learn'.

2. Press one shortcut button (LED flashes once).

3. Enter first digit of the compartment number by means of the selection buttons (LED flashes once).

4. Enter second digit of the compartment number by means of the selection buttons (LED flashes once).

5. Set the slide switch to position 'normal' again.

If you want to programme further shortcut buttons proceed as described above.

3.15 Number of trays and modification

3.15.1 Standard versions are

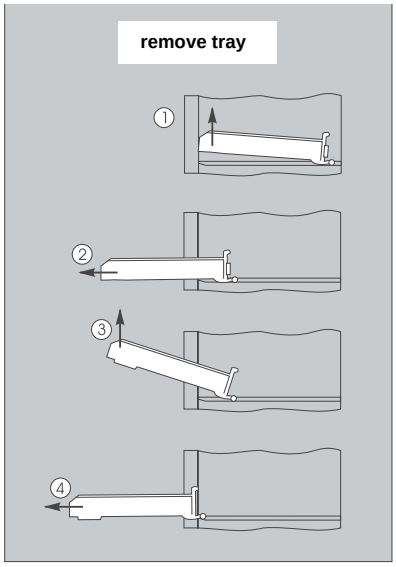
	model BL	model SL	model SSL
4 trays	30 selections	24 selections	18 selections
5 trays	35 selections	28 selections	21 selections
6 trays	45 selections	36 selections	27 selections
7 trays	55 selections	44 selections	33 selections
8 trays	60 selections	48 selections	36 selections

A minimum of 4 trays has to be included in the machine, while the maximum number of trays is 8.

To facilitate the modification, the side walls are equipped with slots, into which the guide rails and also the cross braces can be inserted.

The driving motors for the spirals are plugged in. When modifying the number of trays, the position of the bracings at the rear wall have to be modified accordingly.

When reducing the number of trays, remove those guide rails and cross braces you do not use.



3.15.2 Possible tray combinations

BL 860
SL 848
SSL 836

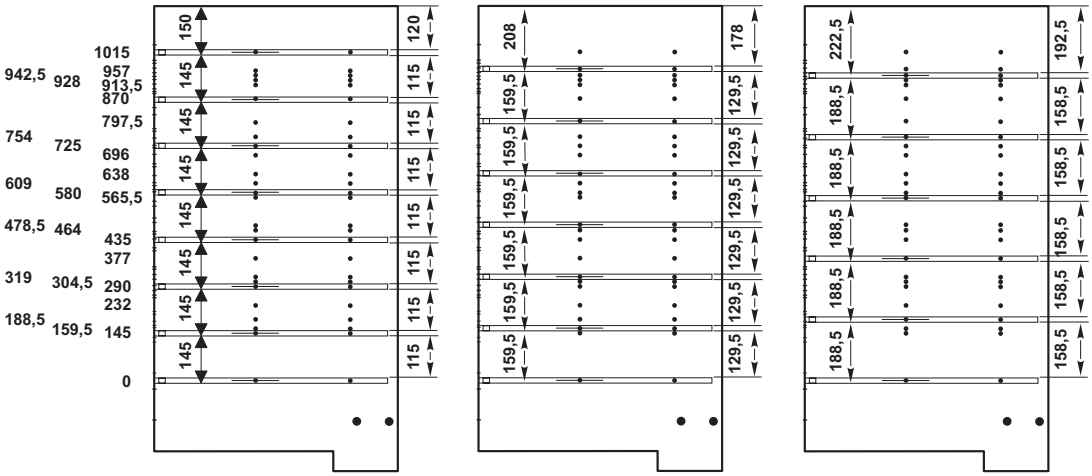
8 trays

BL 755
SL 744
SSL 733

7 trays

BL 645
SL 636
SL 627

6 trays

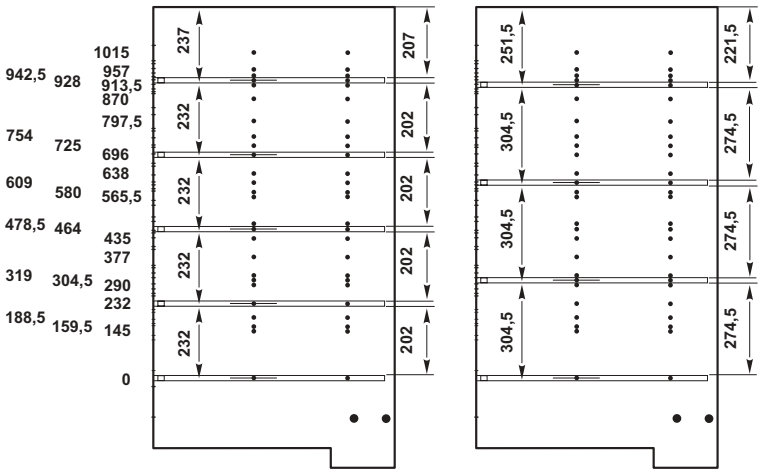


BL 535
SL 528
SSL 521

5 trays

BL 430
SL 424
SSL 418

4 trays



- There are 26 possible positions (see LH side of the drawing).
- The last tray has always the same position.
- The max. height of packs is 274.5mm (see RH side of the drawing).

NOTE: To remove the trays easily, keep a minimum distance of 145mm between each tray.

ATTENTION!
When finished modification you have to programme the new selections (see chapter 8, on page 26 or chapter 9, on page 27).

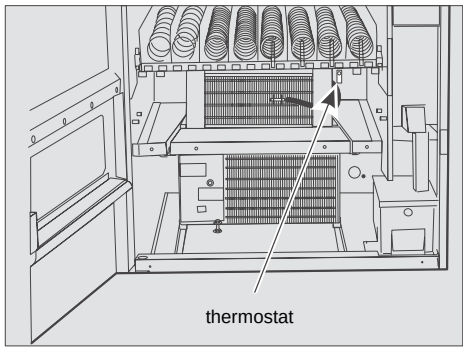
4 The cooling systems

4.1 The standard cooling system

4.1.1 Setting the temperature

For standard cooling unit you can control the inside temperature with a thermostat (position 3 - 4).

This type of cooling units reaches max. temperature difference of 18°C below ambient.



4.2 The food cooling system

The super cooling unit, type 'VKD 5109' (food cooling), is controlled by an electronic cooling controller and is able to set cooling temperature down to 3°C as long as ambient is not higher than 31°C.

electronic cooling controller

4.2.1 The electronic cooling controller

Setting the temperature

1. Press button 2 for 1 second until default (3°C) flashes.
2. Select temperature.
3. Press button 2 shortly to store new setting.

Meaning of the LED display and functions of the buttons

During normal operation the LED shows the cooling temperature (in '°Celsius' or '°Fahrenheit'). In case you change settings the so-called parameter code with corresponding value is displayed. In case of alarm the display shows luminous alarm code and temperature alternately.

Each button is back-lit by a LED with the following meaning

Button 1 with green LED	lights	compressor is in operation
	flashes	request pending for compressor activation

Button 2 with red LED		alarm signal

Button 3 with yellow LED	lights	defrost in operation
	flashes	defrost shall take place, but is disabled by compressor operation, due to the fact that cooling temperature is not reached yet

Functions of the buttons

Button 1	in normal operation	• no function

Button 2	in normal operation	• silences the audible alarm, if programmed • displays and/or sets the set point • if pressed for more than 5 seconds not during an alarm: accesses the menu for setting type 'F' parameters

Button 3	in normal operation	• if pressed for more than 5 seconds: starts a manual defrost

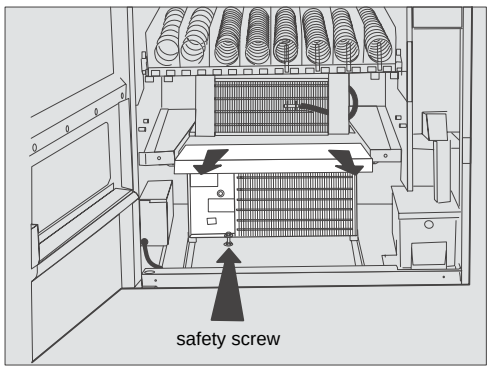
Detailed information about the electronic cooling controller can be ordered under part no. 0066145 (also available as .pdf file).

4.3 Cleaning

The cooling unit itself is virtually free of maintenance. The minimum distance of 80mm between machine and wall is most important for a long life. A wire pipe condenser is used in the cooling unit which is less susceptible against
dust than a lamination condenser.
Nevertheless you should check from time to time.

4.4 Exchange of the cooling unit

The cooling system is a compact unit which is positioned on two slide bars and can easily be removed.



4.4.1 Disassembly of the cooling unit:

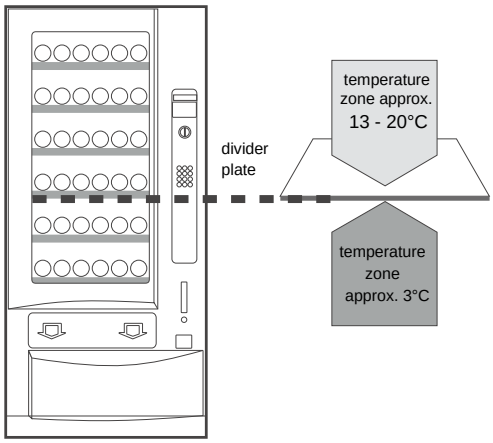
- Pull mains cable of the cooling unit out of the triple-socket LH side at the bottom.
- Remove the cooling unit separating wall to the front.
- Loosen the safety screw.
- Pull the cooling unit on the slide bars to the front.

4.5 Machines equipped with VarioTemp

All Multi SSL/SL/BL models with 4 to 6 trays and a super cooling system can be operated with VarioTemp (different temperature zones).

The areas of temperature zones can be changed within minutes by relocating the divider plate.

Operation without a divider plate creates a single temperature zone adjustable down to 3°C.

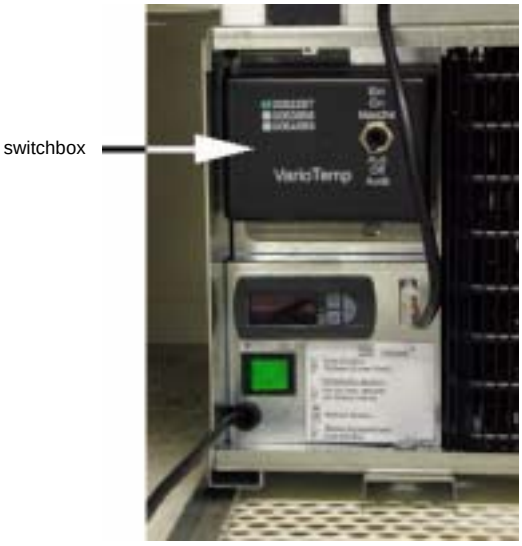


In machines equipped with VarioTemp there's a switchbox installed.

If the toggle switch is in ON position, the operation of different temperature zones is active. Temperature above the divider plate is between 13° and 20°C, below approx. 3°C (factory preset of the thermostat). In this situation the temperature of the upper zone is controlled by the speed of the evaporator fans.

If the toggle switch is in OFF position, the ventilator motors running with maximum power so that complete interior can be adjusted with the thermostat between 3° and 18°C. You don't have to remove the divider plate.

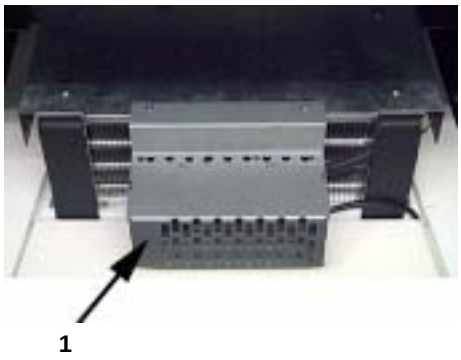
When you dismantle the switchbox, you have to jump connection with a dummy plug (part of accessories).



4.6 Winter heater element

To keep the inside temperature at approx. +5°C during frost periods an additional heater element can be installed.
Depending on the cooling system installed, there are 2 different heaters available:

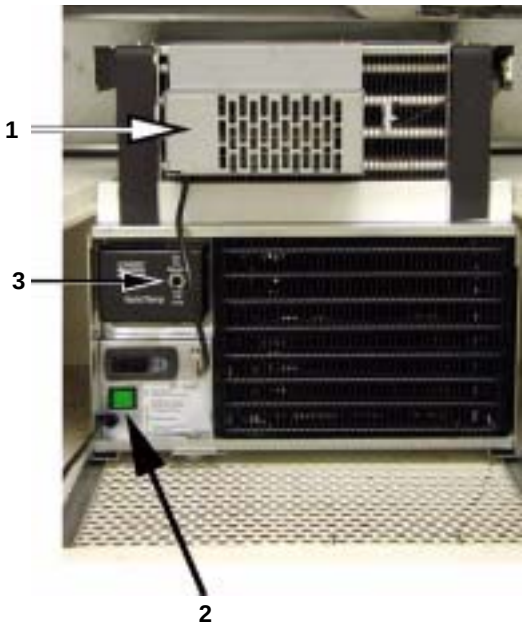
For **standard cooling** systems the winter heater (1), part no. 0056531, can be installed. If the inside temperature drops down below +5°C, the heater is switched on via an internal thermostat. This ensures that the inside temperature is higher than the 0°C point.
During operation of the winter heater the normal cooling system has to be switched off (thermostat in zero position).
Do not unplug the main supply of the cooling unit, because the evaporator fans have to circulate the warm air inside.



NOTE: In case VarioTemp (operation with different temperature zones) is installed, the switch of the VarioTemp control unit has to be in position OFF and the switch of the cooling unit has to be in position 'heat'.

For **food cooling** systems the winter heater (1), part no. 0064660, can be installed. This heater is controlled by an electronic cooling controller and switched on as soon as the rocket switch (2) underneath the electronic cooling controller is in heating position.

Position of the flip switch (3) on the VarioTemp switch box has no effect.



NOTE: The winter heater can not be installed in machines equipped with the SmartWaiter elevator system (see page 48).

5 Vend light gate

Optionally machines with a deep delivery box can be equipped or converted with a vend light gate (part no. 0055383). The vend light gate confirms that a product has entered the delivery tray. Credit is deducted only when the product has passed through the light gate inbetween 1.5 seconds.

The vend light gate is located in the top part of the delivery box.

NOTE: The function of the light gate is only secured for products with a thickness of at least 9mm. Products with less thickness may occasionally not be identlified.

5.1 Test of the vend light gate

Receiver unit of the vend light gate is positioned at the RH side of the delivery box. There's a yellow LED (see arrow) on this printed circuit which goes dark when a product has been identified.

5.1.1 Test of the vend light gate entrance to the IVC control unit

- Press button S until display shows

- Press button 8:Vend light gate can be tested for some 5 sec. now.
  First display shows:

- If an object crosses the light gate, the display will show:

- After some 5 sec. the display changes to:
  The test program is finished.

6 Programming of the machine

6.1 The programming terminal

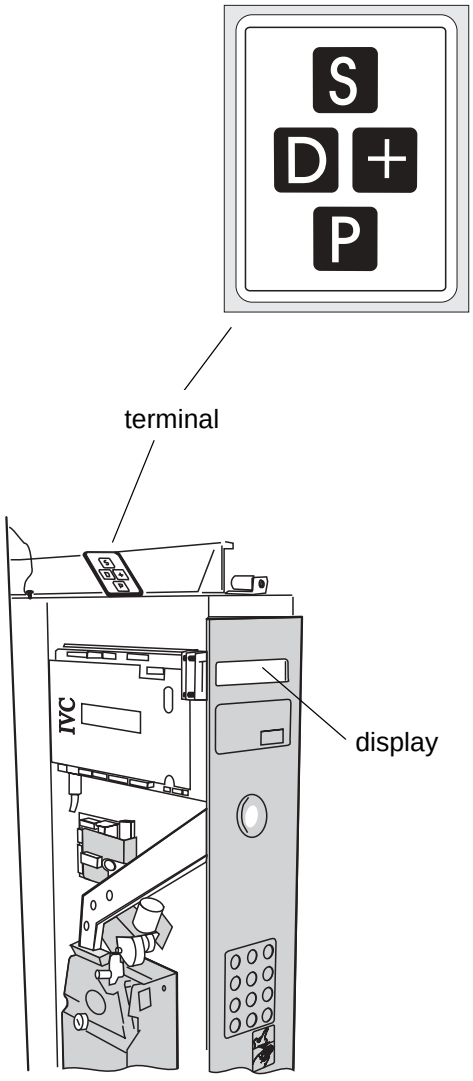
The machine can be programmed by means of the selection buttons. Call up the service programs using the terminal with four programming buttons inside the machine.The four buttons of this panel control the following functions:

(S) SERVICE
Gives you access to the various service levels.

(D) DIGIT
Use to select single display digits during activated service program.

(+) PLUS
Use to set the selected digit with values between 0 and 9.

(P) PROGRAMM
Use to save new inputs into memory.



6.2 The state 'IN OPERATION'

Starting point is the status "IN OPERATION" indicated in the display by message 0 (or message 9 in case the change tubes are not yet filled, (see chapt. 17.7 on page 54).

alterning with

If the text memory is empty, message 0 will appear, programming is still possible.
You can call up 17 service programs with the programming terminal.

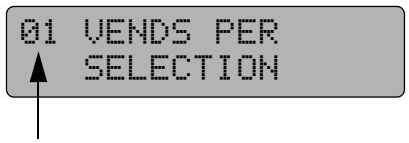
Message 0 factory preset

Example service program call:

- Press button S once. Service program 01 is reached. (see arrow)
- Text: “01_VENDS ___PER_SELECTION” is preset from factory (message 31).
- If text memory is empty, the display shows: “__.01”

(_ = space sign in reality).

text memory preset from factory



empty text memory

NOTE: You can freely programme the LCD display. Therefore the following explanations only refer to the service program numbers and data, which are displayed either through preset by factory or through empty text memory.

6.3 The service programs (overview)

Section 1	**Service programs 1 - 10**
display of:	statistics
	sales
	machine tests
programming of:	vend prices
	vend modes
	selection options

To call up: Press key S until the desired program is found.

If you wish to return to any previous service program, keep key P pressed and press key S, service programs will run back wards.

Section 2	**Service programs 11 - 17**
programming of:	data transfer (only for NRI Simplex 0 or MDB)
	coin options
	change giver programming
	maschine configuration

To call up:

- Press key S until display shows 7.
- Hold key P while pressing selection button 8 to display service program 11.
- Press S to call up service programs 12 to 17.

OR:

- You can take the steps in reverse order, too. Call up service program 17 by keeping key P down and by simultaneously pushing key S until you have the service program displayed.

ATTENTION!
Programs 11 to 17 should only be called up by those who have expert knowledge of the programs involved or who have been properly trained to apply them. After any change in configuration, the machine does not revert to the previous mode of operation.

6.4 How to leave the service program:

Press key S until the display starts counting backwards (end of service program). The display will show alternately "IN OPERATION" and "MACHINE ACCEPTS 0.05 - 2.00 EURO" or, in case the change giver tubes are empty, "PLEASE INSERT EXACT MONEY" and "MACHINE ACCEPTS 0.05 - 0.50 EURO".

Second possibility:

Wait for some 60 seconds after that the machine automatically reverts to standard vending mode.

7 Programming of vend prices

7.1 Different selections with different prices

1. Push key S to call up service program 08, which is displayed as

2. Enter the desired compartment (selection) number (e.g. 10). The display shows the current vending price of selection no.10, e.g. 0.50 EURO

3. When you want to change the price, keep key P pressed while setting the new price e.g. 1.10 EURO. Always use four digits. Enter 0 1 1 0, display shows

4. When you wish to proceed to the following compartment or when you have made an incorrect input, press key C which displays the following data:

5. Enter the number of the following compartment which displays the price of the product concerned. Proceed by pressing key P etc.

7.2 Several selections with identical prices

1. Push key S to call up service program 08 until display shows

2. Enter the desired selection number, e.g. 10. The current vending price for the said product is displayed, e.g. 1.00 EURO

3. To programme a different price keep key P pressed, display shows

4. Then enter the new price, e.g. 1.50 EURO, applying all four digits (0 1 5 0). The display shows the new price.
Release key P.

5. When another compartment should vend at the same (above) price, enter the number of the compartment. The display indicates the current (old) price, e.g. 1.90 EURO

6. Press key P once, display shows

7. Continue the same manner: enter the selection number(s) and press key P once. The display always shows, e.g. 1.50 EURO.

ATTENTION! After entering the compartment (selection) numbers do not touch key C, this act automatically cancels the current (new) price just entered.

8. When price programming is completed leave the service program (see page 24).

Price check:
Press any selection number, the current vending price flashes for a few seconds. Press button C to proceed to the next compartment.Repeat as many times as needed.

8 Selection options - service program 10

The I.V.C. can accomodate selection numbers between 10 and 89 (maximum). Each of these selection numbers is allocated a status number within service program 10. The status number dictates the mode of operation of the selection, or it disables the selection.

The status number can be set within program 10, but it is also possible for the machine to change the number automatically to disable a selection during self test or in operation if a fault occurs. The possible status numbers are:

8.1 Standard vending (factory pre-set) Enter: 00

Each selection is activated individually by its own selection number.

8.2 Parallel vending Enter: 04

Adjacent compartments are activated for vending. Whether you choose the left or the right spiral selection number, both run together.

NOTE: The prerequisite of parallel vending is the left-side compartment having an even selection number. You should only programme the left-side spiral (input 04). Make sure that the prices in the two compartments are identical.

8.3 How to lock a compartment Enter: 80

This is may be used when a compartment is empty or cannot be used for some reason (cleaning, repairing, etc.). If a fault is detected by the IVC the compartment is locked automatically.

8.4 How to re-activate a locked compartment Enter: 00

This option is applied only to re-activate a locked vending compartment.

Notice: If the compartment was locked automatically due to a fault you have to eliminate the reason first otherwise compartment will be locked again.

Programming:
Press key S until display shows

Enter selection to be programmed.

Display shows current status
This indicates machine operating in standard vending mode - one of the above mentioned options 1. up to 4.

To alter this status hold key P and enter the new option, e.g. to lock a compartment.

In case of further selections to be re-programmed, press key C ("clear"), enter the new number and continue as described above.

Finally leave the service program (see page 24).

9 Machine test - service program 07

You can start a test run to make sure your machine operates without a hitch.

- Press button S until display shows

Press button 1: Display shows program version.
First the IVC-program version (EPROM) is displayed, e.g. 4.53 or higher, afterwards date of release.
Then the display test starts in the four right-hand digits. Press button C to return to test program

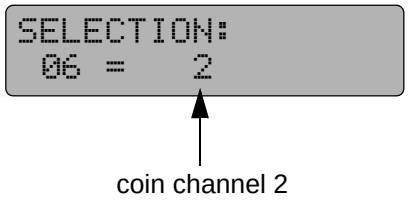
Press button 2: With a change giver or coin system each motor solenoid or motor is activated once. To complete the test press key C.

Press button 4: Cash flap opens once (machines with escrow unit only). Then press button C.

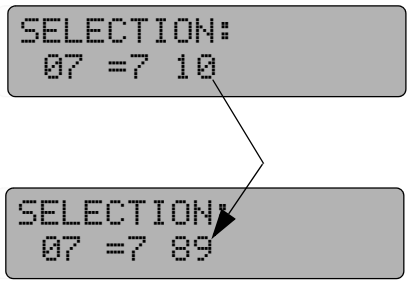
Press button 5: Return flap opens once (machines with escrow unit only). Then press button C.

Press button 6: Coins accepted now for some 5 seconds.

When inserting the coins, the coin channel involved is displayed.
To complete the job press key C.



Press button 7: Motor test
All available selections (max. 89) are operated once. This test tries to run also all selections which are not available like disconnected motors or trays and disables them if noted. The same applies after adding trays the relevant trays will be enable. The compartment being tested is shown in the display in the last two digits.



NOTE:
If two motors operate in parallel mode they will be tested separatly. That is no problem with empty spirals, but if these are filled with wide products for double spirals it may cause a blockage.

If the motor test does not run the 'spiral single shut down' mode in service program 15, button 9 may not be programmed, see page 74 and page 77.
Press key C to complete the job.

- Press button 7:Leave the service program (see page 24).

10 Operation with MDB

10.1 Filling the tubes

Before you fill the tubes, check that the counters for "coin per tube" and "total stock" are set to show 0000 (service program 04 button 1, 2, 3 and service program 06 button 7/8 (see page 35 and page 37).
We recommend the insertion of not less than 20 coins into each tube using the standard coin slot for the purpose so that the display shows "MACHINE ACCEPTS 0.05 - 2.00 EURO".
To cancel the credit thus established, call up service programs 1 to 10 by pressing key S eleven times.

No coin acceptance?
To fill the tubes machine should state "IN OPERATION" (see page 22). Otherwise you have to repeat "transfer of data" (SP 11 button 1 to be programmed 9999, see also see chapt. 10.9 on page 33). To leave service program press key S seven times.

Still no success?
Check machine configuration in service program 15 (see chapt. 22 on page 67).

10.2 Display shows: "PLEASE INSERT EXACT MONEY"

If the coin tube containing the lowest-denomination coins (0.05 EURO) has insufficient stock (less than some 15 coins) the display shows "PLEASE INSERT EXACT MONEY" or "MACHINE ACCEPTS 0.05 - 0.50 EURO" (message 9).
If the coin tube containing the lowest-denomination coins is filled with some 15 coins (0.05 EURO) and in addition one of the next higher-denomination coin tubes is filled (i.e. 15 x 0.10, 15 x 0.20 or 15 x 0.50 EURO) display changes to "MACHINE ACCEPTS 0.05 - 2.00 EURO" or "IN OPERATION".

10.3 How to empty the tubes - service program 07

10.3.1 Emptying all the tube

Press key S seven times, display shows:

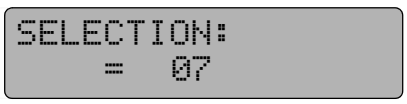
Then press button 2, display shows

then

then

then

then



One coin is delivered out of each tube. If you press selection button 2 again the three coin pushers make a new delivery.

Finally leave the service program (see page 24).

10.3.2 Emptying single tubes - service program 07

For stocktaking purposes the tubes can be individually activated. Therefore:

Press key S seven times, display shows:

Press button P - hold it - and press selection button 2, display shows:
Release both buttons.

Press button 1, the first tube now ejects and counts coins.

Press button 1 to stop ejection.

When you operate button 2, 3 or 4, coins are collected from the second, third or fourth tube.

NOTE: Press key C to interrupt the collecting program. To call it up again press key P, hold it and press selection button 2.

10.4 Programming max. change - service program 08

Press key S eight times, display shows:

Press button R (or enter selection 90),display shows maximum change, e.g. 5.00 EURO

For alteration press button P, hold it, and enter the desired change amount in four digits, for example sum to be 10.00 EURO enter 1 0 0 0.

Finally leave the service program (see page 24).

10.5 Vend mode - service program 10, button R

Possible options are:

1. Multivend WITHOUT obligation to buy
The money inserted can be used for several vends. To get your change, press the return button. Use service program 08 to enter the maximum return amount.
However:
In this vending mode, the two higher-value coins (1.00/2.00 EURO) are delivered as "change without any vend". The four lower-denomination coins (0.05/0.10/0.20/0.50 EURO) are ejected the same as inserted.

2. Multivend WITH obligation to buy
Same properties as above.
However:
For the two higher-value coins (EURO 1.00/2.00) obligation to buy exists, that means you have to buy min. once before you can get your change with return button.

3. Single vend WITHOUT obligation to buy with automatic return of change
The functions are the same as decribed in item a., but with an automatic return of change after the first buy (pay attention to max. change).
Attention: Machine can be used as change giver.

4. Single vend WITH obligation to buy
Automatic return of change after a buy. The money inserted can be used for one vend only. Change returns automatically after delivery, if below max. change.

5. Single vend WITH obligation to buy - automatic return of change with possible loss of full change
This is a single-vend operation where change return is automatic after a vend, but there is a possibility that the return sum falls short or that you don't get any change. This applies when the display states "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.05 - 0.50 EURO" due to insufficient contents of the change tubes.

6. Exact money
The money inserted has to be equal to the sales price. This mode is indicated by the message "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.05 - 0.50 EURO" appearing on the display.

7. Multivend with a possibilty of the change falling short
You get the change by pressing button R (return).

Multivend, but the customer might lose change if message "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.05 - 0.50 EURO" appears on the display because return tubes have not enough change.

Programming:
Press key S ten times, display shows

Press button R (or enter selection 90) , display shows the current option

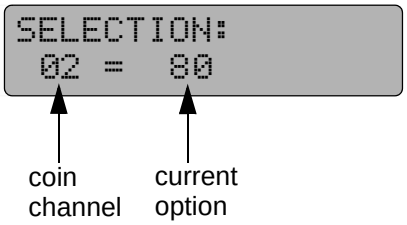
When you wish to change the option, keep pressing key P while entering the new digits as decribed above.

Finally leave the service program (see page 24).

10.6 Coin acceptance options - Cancellation of individual coins - service program 12

Press button P - hold it - and press key S six times, display shows

In this service program each button 1 - 8 is assigned to a coin channel. When pushing the corresponding button the current option is displayed. Press button C to get to the next channel.



Standard settings:

Coin channel 1 =	button 1	= 0.05 EURO	display shows	= 00
Coin channel 2 =	button 2	= 0.10 EURO	display shows	= 00
Coin channel 3 =	button 3	= 0.20 EURO	display shows	= 00
Coin channel 4 =	button 4	= 0.50 EURO	display shows	= 00
Coin channel 5 =	button 5	= 1.00 EURO	display shows	= 08
Coin channel 6 =	button 6	= 2.00 EURO	display shows	= 08

The figures displayed indicating the following:
00 -> Coin is accepted and falls into the corresponding tube.

08 -> Coin is accepted and falls straight into the cash box.

80 -> Coin is disabled or coin is not used, except of the lowest coin (value 0.05 EURO), it can not be disabled.

09 -> Coin is accepted to the cash box even if the return tubes empty.

Programming: Press the respective coin channel button, press key P, hold it and enter the desired option, i.e. 80. Use two digits as decribed above.

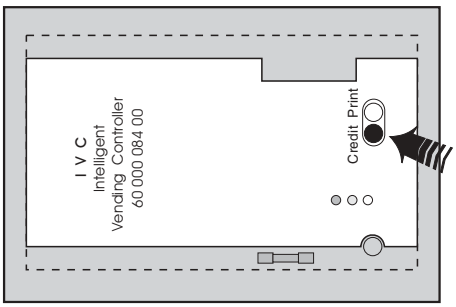
How to check:
Press key C, display shows:

Press the re-programmed button (e.g. 1), the new option (e.g. 80) should be displayed now.

NOTE: If you carry out a data block transfer in service program 11, button 1 (input 9999), the changed acceptance options are cancelled and the standard settings are again in force.

10.7 Test credit - service program 11

The IVC control unit is equipped with a test credit button to facilitate test vends. When it has been operated, the GREEN LED at the control unit is on. Credits that are granted by applying the credit button are not registered in the operation counters.



Test credit

Programming of the test credit:
Press key P - hold it - press button S seven times, display shows

```
11 COIN CHANNEL
   SETTINGS
```

Press button 0, display shows
indicating that the current test credit comes to 0.20 EURO.

```
SELECTION:
 10 =0020
```

Change the test credit:
Press key P and keep it pushed. Display shows

```
SELECTION:
 10 =
```

Enter the desired new credit, e.g. 0.50 EURO, applying four digits. Display shows
Release button P.

```
SELECTION:
    =0050
```

Finally leave the service program (see page 24).

10.8 Number of coins to be accepted - service program 14

You can program the maximum number of coins to be accepted before a vend.

Programming:
Press key P - hold it - press key S four times, display shows

```
14 CHANGER
   OPTIONS
```

Press button 7 which shows the current number of coins accepted, e.g.
Always one more coin than displayed will be accepted (here 30 coins).

```
SELECTION:
 07 =  29
```

Change the number:
Press key P and hold it. Display is

```
SELECTION:
 07 =
```

Enter the desired number (e.g. 99) using two digits, display shows

```
SELECTION:
    =  99
```

Any settings between 00 and 99 are possible. One more coin than the number programmed will always be accepted.

Finally leave the service program (see page 24).

10.9 "Data block" transfer - service program 11, button 1

A certain data block has to be transfered from the MDB to the memory of the IVC control unit (compressed data over coin denominations, coin options and basic coins). Whenever necessary, for example after alterations or changes in the coin system, carry out the following programming steps or control that the data stored is correct and valid:

ATTENTION! For MDB systems the data block transfer should be carried out 30 seconds after machine has been taken into operation. In case you don't keep this limit faulty functions in communication between the IVC control unit and the MDB system may arise.

Press key P - hold it - and press key S seven times, display shows

```
11 COIN CHANNEL
   SETTINGS
```

Press button 1, display shows the value of the lowest coin: 0.05 EURO

```
SELECTION:
 01 =0005
```

Press key P - hold it - display is

```
SELECTION:
 01 =
```

Enter the digits 9999, then display shows
Release key P.

```
SELECTION:
    =0010
```

Finally leave the service program (see page 24).

10.10 Programming of the bill input - service programs 11, 12, 14

You can connect a bill acceptor, which sends serial impluses according to accepted bill values, to P8 of the IVC control unit.

NOTE: For bill validators accepting different bills, you have to programme the value of the lowest bill (i.e. 5.00 EURO). Bills of higher values will be simulated through a certain number of impulses, i.e. 4 impulses of value 5.00 EURO for a 20.00 EURO-bill. In case this 20.00 EURO bill should be accepted, you have to programme the number of bills to be accepted to 4.

You should carry out following programming in succession:

10.10.1 Programming of the bill value - service program 11, button 9

Press button P - hold it - and press button S 7 times, display shows:

```
11 COIN CHANNEL
   SETTINGS
```

Press button 9, display shows i.e.
indicating that the current programmed value of the bill is 10.00 EURO.

```
SELECTION:
 09 =1000
```

Alteration:
Press button P - hold it - display shows

```
SELECTION:
 09 =
```

Enter the new basic value in 4 digits, i.e. 0500 for 5.00 EURO, display shows

```
SELECTION:
    =2000
```

Release button P.

10.10.2 Programming of bill options - service program 12, button 9

Running service program 11 you have to press button S once, display shows

Press button 9, display shows i.e.

The RH code number means:

08 -> bill will be accepted if the change tubes are filled sufficient

09 -> bill will be accepted although the change tubes are empty

80 -> bill is disabled

Programming:

Press button P - hold it - display shows

Enter new option, i.e. 09, in 2 digits, display shows

Release button P.

10.10.3 Programming number of bills to be accepted before a vend - service program 14, button 6

Running service program 12 you have to press button S twice, display shows

Press button 6, display for i.e.
The RH number indicating that currently 50 + 1 bills will be accepted before a vend.

Programming:

Press button P - hold it - display shows

Enter new number of bills to be accepted (-1), i.e. 09 for 10 bills, in 2 digits, display shows

Release button P.

Finally leave the service program (see page 24).

11 MDB coin system - statistics

11.1 Sales per selection - service program 01 (resetable)

Press key S once, display shows

Enter a selection number. The display shows the total number of vends completed.

Before every following data retrieval press key C.
Display shows:

Resetting:
Press key P - hold it - display shows

Enter the digits 0000 then display shows

Finally leave the service program (see page 24) or press key C to re-start the process for another compartment (selection).

11.2 Total sales of all selections - service program 03 (resetable)

Press key S three times, display shows

Press selection button 0 which displays the total vends of all selections since the latest reset, for example the digits 2560 means that 2560 products have been sold.

Resetting:
Press key P - hold it - and enter the digits 0000.

Finally leave the service program (see page 24).

11.3 How to call up statistical data - service program 05 - 06

The information of service programs 05 and 06 are displayed in eight digits. Since the display can only comprise a four-digit number, the numerical information must be shown in two parts as shown below. As an example we give you the sum of 9352.70 EURO.

Display 1 (higher value 9300 EURO)

Display 2 (lower value 52.70 EURO)

EXAMPLE: Display of total sales of all selections (SP 5, button 1 + 2):

Press key S five times, display shows

Press selection button 1.

The four higher-value digits of the sales counter are displayed, e.g.
This display means that the total sales at this time is still below 100.00 EURO.

Push key C, then selection button 2.

The display shows, for example
This means that the current turnover comes to 35.80 EURO.

Finally leave the service program (see page 24).

Further data can be displayed in the same way:
(SP = service program)

	not resetable	resetable	general reset possible
Total sales	SP 5, button 1/2	SP 6, button 1/2	yes
Cash box contents	SP 5, button 3/4	SP 6, button 3/4	yes
Total of change delivered	SP 5, button 5/6	SP 6, button 5/6	yes
Stocktaking (coin tubes)	SP 5, button 7/8	SP 6, button 7/8	no
Change giver tube A		SP 4, button 1	yes
Change giver tube B		SP 4, button 2	yes
Change giver tube C		SP 4, button 3	yes
Change giver tube D		SP 4, button 4	yes
Change giver tube E		SP 4, button 5	yes

11.4 Individual counter reset

When the total sum is displayed by pushing the corresponding button, only press key P, which sets the display to 0000. Complete the process by pressing key C. Then proceed to the next counter.

Please notice that the statistics counters take two displays, one for the lower and the other for the higher figures, and that the displays have to be individually reset.

11.5 Reset of all counters - service program 04, button 8

Press key S four times, display shows

Press selection button 8 and hold it, display shows

Press key P. The digits 08 disappear.

All statistics counters pertaining to service programs 1 to 4 and 6 are reset.
The counter for current supply interruptions (service program 4, button 6) and that for the tube stock-taking in service program 6, button 7/8 are not reset. The data has to be reset separately. The reset of the counter for current supply interruptions is described in see chapt. 15.1 on page 47.

ATTENTION! In case infrared data transfer according to BDTA standard is activated these counters can not be reset manually. This will be done by the BDTA terminal (see page 74 and page 77).

Finally leave the service program (see page 24).

12 Operation with coin systems according to Executive standard

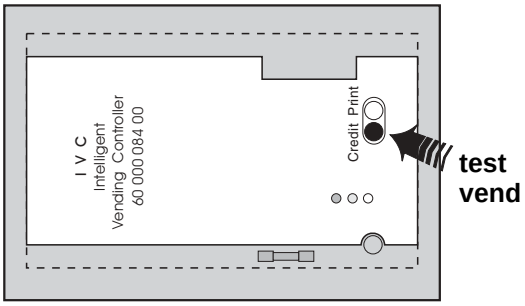
When applying one of these coin systems, the data relating to the maximum value of change and to the vending options have to be entered in the respective coin system.

The programming steps are described in detail in the manuals supplied by the coin system manufacturers. Use the coin slot to insert not less than 20 coins of each denomination into the change giver tubes.

To delete the credit please refer to the manufacturers operating instructions.

If the coin system does not work with the IVC unit (error code77), a re-programming of the IVC unit may be necessary (see chapt. 22 on page 67).

Test vend:
When you wish to make a test vend, push button "Credit" of the IVC control unit. The test vend has no effect on the vend counters.



13 Operation with coin systems according to BDV standard

13.1 Filling the change tubes

Prior to filling the tubes make sure that the counters for the change tubes display 0000 (service program 06, button 7/8). Further information can be found in chapt. 14.3 on page 44. We suggest insertion of not less than 20 coins into each tube so that the display changes from "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.10 - 0.50 EURO" to "MACHINE ACCEPTS 0.05 - 2.00 EURO".

You can insert the coins via the standard coin slot in which case the display shows either "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.10 - 0.50 EURO" or "MACHINE ACCEPTS 0.05 - 2.00 EURO". The credit displayed is erased by calling up service program 1 - 10 (pressing key S ten times).

If none of these messages "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.10 - 0.50 EURO" or 'MACHINE ACCEPTS 0.05 - 2.00 EURO" is displayed call up service programs 1 to 10 (push key S ten times) and check machine configuration (see chapt. 22 on page 67).

13.2 Display "PLEASE INSERT EXACT MONEY"

If the tube containing the lowest-denomination coin is not sufficiently full then the display shows "PLEASE INSERT EXACT MONEY " or "MACHINE ACCEPTS 0.05 - 0.50 EURO" - message 9.

If the tube with the lowest-denomination coins is filled with some 15 coins and in addition one of the higher-denomination tubes is filled sufficiently (i.e. 15 x 0.10 EURO, 15 x 0.20 Euro or 15 x 0.50 Euro) display changes to "MACHINE ACCEPTS 0.05 - 2.00 EURO" - message 0.

13.3 Manual coin dispense - service program 07

Press key S seven times, display shows

```
07 TEST PROGRAM
```

Press selection button 2, display shows

```
SELECTION:
 02 =2 01
```

then

```
SELECTION:
 02 =2 02
```

then

```
SELECTION:
 02 =2 03
```

then

```
SELECTION:
 02 =2 04
```

then

```
SELECTION:
    =  07
```

One coin is delivered out of each tube. If you operate selection button 2 again, the coin pushers deliver another coin out of each tube.

Finally leave the service program (see page 24).

13.4 Dispense of single tubes - service program 07

For stocktaking purposes the tubes can be individually operated as shown below:

Press key S seven times, display shows

Press key P - hold it - press selection button 2, display shows

Release both buttons.

Press button 1. Coins from the first tube will be ejected and counted.

Press button 1 to stop ejection.

Pressing button 2, 3 or button 4 will eject coins from the second, third or fourth tube respectively.

NOTE: The program is interrupted if you touch selection button C. To call it up again keep pressing key P and push selection button 2.

13.5 Programming maximum change - service program 08, button R

Press key S eight times, display shows

Press button R or enter selection 90 display indicates current maximum change

To change the sum of money press key P - hold it - and enter the desired amount in four digits, e.g. 10.00 EURO enter 1000 which is displayed

Finally leave the service program (see page 24).

13.6 Programming maximum coin insertion - service program 11, button 1

If the programmed maximum coin insertion sum is exceeded, the machine rejects any insertion of further coins.

Programming:

Press key P - hold it - press key S seven times, display shows

Press button 1, display shows (factory preset)

The maximum insertion sum is set at 90.00 EURO. If you want to change that, press key P, hold it and enter the new desired maximum insertion in four digits.

13.7 BDV vend mode - service program 11, button 7

Press key P - hold it - press key S seven times, display shows

Press button 7, display shows current vend mode

Possible options are:

1. Multivend WITHOUT obligation to buy
You can make serveral vends with the money inserted. Change is given after pressing return button if below "max. change". Enter the maximum amount of change as described in service program 08. The BDV audit feature is switched on.
However:
When no vend has been made, the two higher-denomination coins (1.00/2.00 EURO) are retrieved as change while the four lower-denomination coins (0.05/0.10/0.20/0.50 EURO) are retrieved just as inserted.

2. Multivend WITH obligation to buy
Same properties as above.
However:
For the two higher-denomination coins (1.00/2.00 EURO) it is programmed that at least one buy has to be made before the machine returns the change when you press return button.

3. Single vend WITHOUT obligation to buy, automatic return of change
The functions are the same as described in item a. with the exception that the change is returned automatically after the first vend. (Please pay attention to the maximum change sum!) The machine can also be used as a change giver. The BDV audit feature is switched on.

4. Single vend WITH obligation to buy, automatic return of change
You can buy the products by inserting the exact amount or when inserting a higher amount you will get the change after you have received the product, if sum is lower than max. change. The BDV audit feature is switched on.

Programming:
Press key P and hold it while entering the above digit combination.

Finally leave the service program (see page 24).

13.8 Test vend

If you press the "Credit" button of the IVC control unit, you can make one free-of-charge vend which has no effect on the counters.

13.9 Disabling single coins - service program 11, button 5

The total coin stock (coin channel 1 to 7) is accepted in this manner. Should one or several coin types not be accepted, enter another configuration in accordance with the table below:

disabling coin A	(coin channel 1)	=>	0001
disabling coin B	(coin channel 2)	=>	0002
disabling coin C	(coin channel 3)	=>	0004
disabling coin D	(coin channel 4)	=>	0008
disabling coin E	(coin channel 5)	=>	0016
disabling coin F	(coin channel 6)	=>	0032
disabling coin G	(coin channel 7)	=>	0064

The order of the coins in the tracks is marked on the coin validator in the MMS coin system, for example:

Coin	A	B	C	D	E	F
	0.05 EURO	0.10 EURO	0.20 EURO	0.50 EURO	1.00 EURO	2.00 EURO

If you wish to exclude for example coins C and D:

0.20 EURO coin (coin C) = 0004

0.50 EURO coin (coin D) = +0008

New configuration = 0012

Programming:

Press key P - hold it - press key S seven times, display shows

Press selection button 5 to bring the current option on display, e.g.

When you wish to change the reading, press button P, hold it, and enter the new option.
Use four digits, e.g. 0012, which gives the display

How to check the present status:

Press key C, display shows service program

Press button 5, display shows the new option, e.g.

Finally leave the service program (see page 24).

NOTE: Applying button 6 in service program 11 you can disable coins in extended coin stock system (coin channels 8 to 14, respectively coins H to N).

13.10 Programming those coins to be disabled immediately after the display shows "PLEASE INSERT EXACT MONEY"

Service program 11, button 3 resp. button 4 concerning the extended coin stock system (coin tracks 8 to 14, coins H to N)

The coins are arranged according to the table decribed in chapt. 13.9 on page 41 - disabling of single coins.

As an example: No coins of denominations E (1.00 EURO) and F (2.00 EURO) are accepted when the display indicates "PLEASE INSERT EXACT MONEY".

1.00 EURO coin (coin E) = 0016

2.00 EURO coin (coin F) = +0032

New configuration = 0048

Programming:

Press key P - hold it - and press key C seven times, display shows

Press button 3, display shows the current option

When you want to change the option press key P, hold it, and enter the new option in four digits, e.g. 0 0 4 8

How to check:

Press selection button C, display shows service program

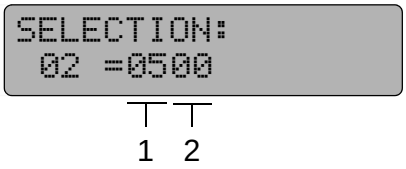
Press selection button 3 which displays the new option, e.g.

Finally leave the service program (see page 24).

13.11 Modifying responses to "tube empty" messages - service program 11, button 2

In this service program:

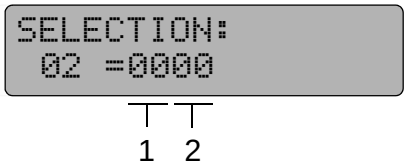
- you can modify the system response to the message "PLEASE INSERT EXACT MONEY". In standard cases, this message is displayed when there are less than 15 coins in a coin return tube. You can increase the total of the change stock contained in all the coin tracks by a maximum total of 15 coins before the “NO CHANGE" message is displayed (coin offset).
- you can also determine which coin return tubes will be applied to indicate the "Empty" message.



1	2		
coin offset	’NO CHANGE’ display to be activated when there are not enough coins in the following tubes:		
	left	middle	right
	A or	(B and	c) = 00 (factory preset)
	A and	B and	C = 01
	A and	B	= 02
	A and	(B or	C) = 03
	A		= 04
	A or	B	= 05
	A or	(B or	C) = 06
	A and		C = 07
	A or		C = 08
		B and	C = 09
		B	= 10
		B or	C = 11
			C = 12

Programming:
Press key P - hold it - press key S seven times, display shows

Press selection button 2, display shows current option, e.g.



1 - no coin offset

2 - Empty message appears when the actual number of coins in tube A or B and C is less than 15.

Programming: Press key P - hold it and enter desired option.

NOTE: With a 4-tube-changer the tube D will not be affected.

14 Vend statistics with coin systems acc. to BDV standard

14.1 Sales per compartment (selection) - service program 01 (resetable)

Press key S once, display shows

Enter the number of the desired compartment, display indicates number of vends made, e.g.

Before proceeding to the next compartment press selection button C. Display is

Resetting:
Press key P and hold it, display is

Enter the digits 0000, display shows
Repeat the reset procedure for another selection by pressing button C and entering a new compartment (selection) number.

Finally leave the service program (see page 24).

14.2 Total sales of all compartments - service program 03 (resetable)

Press key C three times, display shows:

Press selection button 0 which displays the total sales sum of all product compartments since the last reset of counters, e.g. 2560 = 2560 products have been sold

Resetting:
Press key P - hold it - and enter the digits 0000.

Finally leave the service program (see page 24).

14.3 Statistical data (BDV standard) - service programs 05 - 06

The information of service programs 05 and 06 are displayed in eight digits. Since the display can only comprise a four-digit number, the numerical information must be shown in two parts as shown below. As an example we give you the sum of 9352.70 EURO.

Display 1 (higher value 9300 EURO)

Display 2 (lower value 52.70 EURO)

EXAMPLE: Display of total turnover (SP 5, button 1 + 2):
Press key S five times, display shows

Press selection button 1.
The four higher value digits of the total are displayed, e.g.
The display indicates that the current total comes to less than 100.00 EURO.

Push key C and then selection button 2.

This display shows
This indicates that the turnover comes to 35.80 EURO.

Finally leave the service program (see page 24).

You can call up other data in the same manner (SP stands for service programme):

	not resetable	resetable
Turnover	SP 5, button 1/2	SP 6, button 1/2
Cash box contents	SP 5, button 3/4	SP 6, button 3/4
Change paid out	SP 5, button 5/6	SP 6, button 5/6
Inventory of change return tubes	SP 5, button 7/8	SP 6, button 7/8
Sales during ‘INSERT EXACT MONEY‘		SP 3, button 1/2
Vends with discount		SP 3, button 3/4
Credit invloved in unclear issues		SP 3, button 5/6
Manually filled tube contents		SP 3, button 7/8
Manually gathered change		SP 4, button 1/2
Total of change paid in excess		SP 4, button 3/4

ATTENTION! The IVC unit retrieves this data from the BDV coin system. It only will update the counters shown in the table if the 'BDV audit' feature is switched on. Therefore it should be set at least 04 in service program 11, button 7 (05 is factory preset), see chapt. 13.7 on page 40 and table on page 76.

14.4 Individual resetting of counters

When the sum concerned is displayed by pushing the respective button you only need to press key P to reset the counter. The display is set to 0000. To complete the job, press key C and proceed to the next issue.

Please remember that the statistics counters are displayed in two parts, which means you have to reset both, the higher-value display and the lower-value display, individually.

14.5 Overall resetting of counters - service program 04, button 8

Press key S four times, display shows

Press selection button 8 and hold it, display shows

Press key P, the digits 08 disappear

All statistical counters in service programs 1 to 4 and 6 are reset.
The counters for current supply interruptions (service program 4, button 6) and for the tube stocktaking in service program 6, button 7/8 are not reset. The data has to be reset separately. The reset of the counter for current supply interruptions is described in see chapt. 15.1 on page 47.

Finally leave the service program (see page 24).

15 Operating information

NOTE: This information applies to all the coin systems

15.1 Counter, current supply interruptions - service program 04 (resetable)

Indicates the number of switch-ons and power failures, also change of fuse F1 - 3.15 A

Press key S four times, display shows

```
04 COUNTER
   RESET
```

Then press selection button 6, display shows, e.g.
indicating that there have been eight breaks since the last reset.

```
SELECTION:
 06 =0008
```

Resetting:
Press key P and hold it, display is

```
SELECTION:
 06=
```

Enter the digits 0000, display is

```
SELECTION:
    =0008
```

Finally leave the service program (see page 24).

15.2 Entering customer number or machine number - service program 05

Applying service program 5, button 9, a customer or location number can be indicated. If this number is displayed with 0 0 0 0, any desired four digit numbers can be entered (hold P and enter 4 digits over keyboard).

ATTENTION! You can enter the number only once (when the display is 0000). Once entered, you can neither change nor delete the number.

15.3 Security number in four digits - service program 05

Call up service program 05, button 0:

The IVC control unit is furnished with a battery-buffered RAM (IC2) for storing data like prices, statistics and options. The security number is erased if either the RAM or the lithium battery is replaced or removed for any period of time. An unchanged security number indicates that any relevant data, like that registered by the non-resetable counters for turnover, is retained intact from the moment the machine was taken into operation.

15.4 Operating time - service program 15 (NOT resetable)

The hours of service can be displayed in 8 digits using service program 15, buttons 7 and 8.

Button 7 displays the higher figures and

button 8 the lower figures.

16 Machines equipped with SmartWaiter (elevator system)

In machines with SmartWaiter you will find a flap mechanism causing a separation of the cold from the warm area of the machine. An extra power supply for the gear motor is installed in the cabinet. Additionally you will find the power supply for the drive motor on the pull out assembly similar to the merchandise trays. A compact frame for the drive unit (belt system) and the delivery box are mounted inside the door.

ATTENTION!
Before operating the SmartWaiter make sure that all trays inserted properly!

Lift program:

- You can adjust the position of the lift by means of the service program 7.
- If you stay in service program 7 and press button 9 the program enters the position mode.
- The buttons 1-8 are assigned to the trays 1-8 so far installed.
- If you press one of these buttons the lift goes to the actual assigned position of this tray.
- The actual position of the lift is shown in the display.
- Now you can increase the actual position (one step is 7 mm) by means of button 9. You can decrease the position using button 0.
- Having reached a suitable position you can save this setting by pressing one of the buttons 1 -8 while holding down button P at the same time.
- Now the stop position for the tray is readjusted.
- To quit the programming mode press either button “C” or “R” .

16.1 SmartWaiter for advertising purposes

The SmartWaiter can be triggered for advertising purpose in intervals of 5, 10 or 15 minutes. Then the elevator drives up to the top tray and back to home position.

Programming:
Programme in service program 12 (coin options) on button 0 the number

24 for 5 minutes

44 for 10 minutes

64 for 15 minutes.

NOTE: After exchange of the IVC control unit or in case the lift does not work properly you have to check configuration code ‘4020 or ‘4060’ in service program 15, button 9.

NOTE: You can order detailed information about the SmartWaiter under part no. 0062314 (also available as .pdf file).

17 The LCD display

17.1 Technical data

Up to 49 multi-line messages can be displayed. Each message can consist of a max. of 16 lines. The maximum length of each line is 40 characters.

The display can show 16 characters per line Longer messages are shown as a moving display, starting on the left-hand side. Text memory capacity is max. 1KB. After each line, there is a three-second pause to facilitate the understanding of the message.

If the second line is too long, the first rolls out of sight, when the second line has reached the right edge of the display.

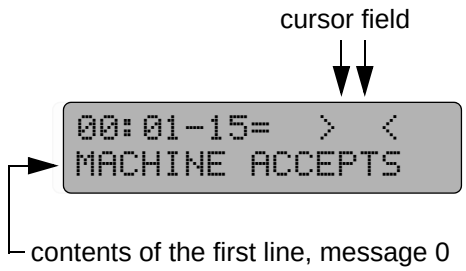
The factory has pre-set standard messages in the language concerned. These texts can be altered or deleted, if necessary.

If you want to alter or delete a message, call up service program key S once.

17.2 Programming

The display may show the following.

You can enter any desired message by applying the selection buttons, whose functions are indicated below:



Button 1	Calls up character font, towards A (backwards)
Button 2	Calls up character font, towards Z (forward)
Button 3	Returns to the previous line of a message, stop on line 1
Button 4	Moves the cursor to the left (within a line)
Button 5	Moves the cursor to the right (within a line)
Button 6	Calls up the next line within a message. When you reach the last line that contains at least one character, a new line is created. You can only add one line at a time. Each line must contain at least one character to make the creating of another line possible. When the last line has no characters, this function stops. You can create up to 16 new lines per message.
Button 7	Calls up the preceding message (starting at 0). The last message is numbered 49.
Button 8	Calls up the next message. After calling the last one, message 0 appears again.

Button 9	Moves the cursor to pre-determined positions within the character font, which makes the programming and locating of any character easier. The following positions are defined: 0 = Numbers A = Capital letters a = Small letters MA = Coin denominations AW = Text attributes K5 = Place holders ☐ = Special characters ! = Special characters
Button 0	Erases the character on the left-hand side of the cursor. Should the cursor be situated at the beginning of a line, the character on the right-hand side of the cursor, is erased. If a line has no characters on it, it is completely deleted. After this the cursor jumps to the beginning of the line 1 of each message.
Button C	Inserts a character to the current text position or adds a character to an existing text. At the same time the inserted character appears on the left side of the cursor. So a continuous sentence is possible.

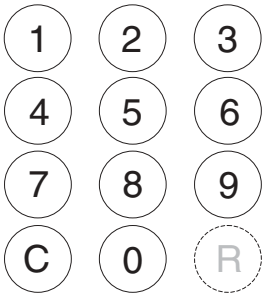
NOTE: An erased character still appears in the cursor field. If erased in error, the charactercan be re-inserted by applying key C. Any character that has been erroneously inserted, can be deleted by applying button 0.

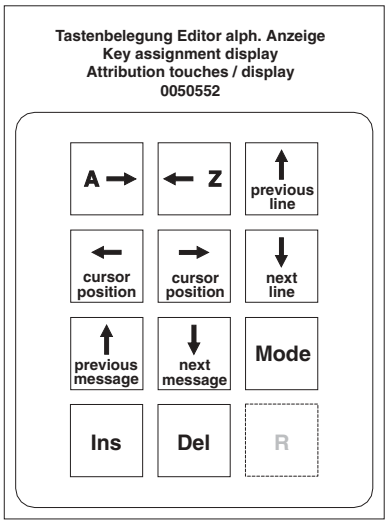
A magnetic foil which shows the functions of the buttons will help you to programme (part no. 0050552).

All the buttons are furnished with an „automatic repeat“ function. As long as you keep pressing the button, the function keeps running.

A character in the cursor field can be programmed applying key C.

A new line can only be inserted if the preceding (last) line has at least one character.





The letters, characters, special signs and place holders are shown in the lefthand table. When you press button 9 (mode), the corresponding head character of each vertical column is displayed. The characters listed under each heading can be called up by pressing button 2 (down) or button 1 (up). If you keep either button 1 or 2 pressed, the function is automatically repeated.

How to enter blank characters:
Keep pressing button 9 (auto repeat) until an exclamation mark (!) is displayed in the cursor field. First press button 1 and then key C.

Head			Control signs			Special characters		
characters =>	0	A	a	MA	AW	K5	□	!
	1	B	b	MC	AT	U5		“
	2	C	c	MC	AL	W2		#
	3	D	d	MD	AS	E2		$
	4	E	e	ME	AB	S2		%
	5	F	f	MF	AN	D2		&
	6	G	g	MG	EO	D4		
	7	H	h	MH	EO	D8		(
	8	I	i	MS	EO	D5		)
	9	J	j		EO	D9		*
	:	K	k		N5	P5		+
	;	L	l		R5			
	<	M	m					-
	=	N	n					.
	>	O	o					/
	?	P	p					
		Q	q					
		R	r					
		S	s					
		T	t					
		U	u					
		V	v					
		W	w					
		X	x					
		Y	y					
		Z	z					
		[						
			l					
		]						
		^						
		-						
		\						

17.3 Messages

The messages displayed by the LCD are designed to guide the user. They have fixed meanings indicating certain operational phases. However you can programme the contents of the messages as you like. The messages 00 - 49 are available.

However at this time only the messages 00 - 22 and 31 - 46 will be used.

Example:
Message 00: indicates optional readiness in stand-by mode
("MACHINE_ACCEPTS_0.05_-_2.00_EURO")

Message 12: indicates a fault. Possible messages shown starting page 54.

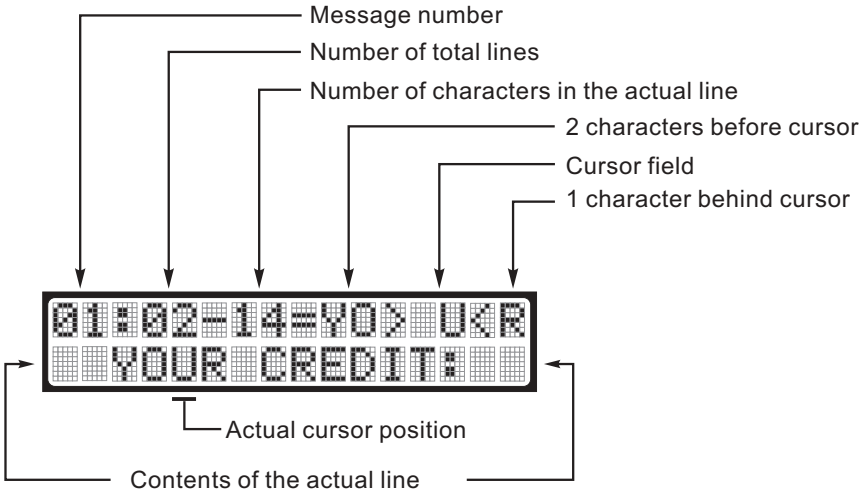
17.4 Message display in the editor

You can create and change messages by means of the editor (service program 17).

The editor does not indicate your actual line position.
However:
After you change a message applying either button 7 or button 8, your actual position is always on line 1.

Another way to get to line 1:

Keep pressing button 3 until the actual character number (number following the hyphen) shows no noticeable change.



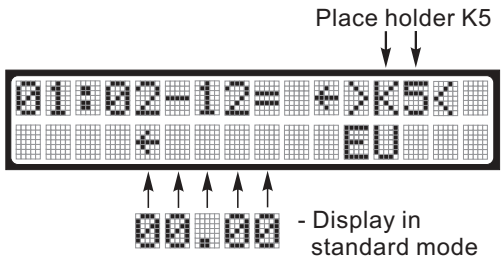
In the picture:
Message 01, having two lines, with an actual line of 14 characters (incl. space characters). The position of the cursor after button 5 has been pressed five times. Character "U" at the cursor can be modified.

The second line comprises the first 16 characters of the chosen line. Any modification (erasure/ addition) are also shown on this line, provided that the changes are located within the area of the first 16 characters.

17.5 Meaning of the place holders

To display actual prices, credits, selections, operation states etc. so called place holders have to be inserted. These parameters will be replaced with the actual numerical data during operation.

When programming, you have to enter as many blank characters as indicated by the figure following the alphabet. The place holder K5, for example, requires another four blank characters to be added.



The place holder involved can only be determined when it is in the cursor field.

ATTENTION! Actual data about credits or error messages etc. can only be displayed when place holders are programmed.

17.6 Description of the used place holders

K5	Credit display	4 figures + decimal point
K9	Credit display for MDB electronic purse	8 figures + decimal point
U5	Time display	4 figures + decimal point (starting version 4.5 not supported)
W2	Selection display	2 figures
E2	Error code display	2 figures
S2	Service program number	2 figures
P5	Price display	4 figures + decimal point
R5	Max. change	4 figures + decimal point
MA	Coin contact 1	4 figures + decimal point
MB	Coin contact 2	4 figures + decimal point
MC	Coin contact 3	4 figures + decimal point
MD	Coin contact 4	4 figures + decimal point
ME	Coin contact 5	4 figures + decimal point
MF	Coin contact 6	4 figures + decimal point
MG	Coin contact 7	4 figures + decimal point
MH	Coin contact 8	4 figures + decimal point
MS	Bill acceptance	4 figures + decimal point
D2	Data display (e.g. selection options)	
D4	Data display (e.g. statistics)	
D5	Data display	4 figures + decimal point
D8	Data display counter	8 figures
D9	Data display	8 figures + decimal point

17.7 What the messages tell you

No. of message	Meaning of the message	Used place holder
0	Machine in readiness	K5, U5, R5, MA, MH, MS, K9
1	Available credit (K5)	K5
2	Display of selection at keyboard	W2
3	Display of selection and credit at keyboard	W2, K5
4	Display of vend in progress	
5	Empty column, another selection	
6	Insufficient credit	K5, P5, W2
7	Display of maximum amount of change	R5
8	Coin return in progress	R5
9	Machine in stand-by mode but change return empty	
10	Too much credit, change return impossible	R5, U5, R5, MA, MH, MS
11	Credit is equal to 0, vend completed	
12	Machine fault	E2
13	Service program (general)	D4, S2, E2, W2
14	Printer in operation	
15	Fatal error, machine out of order	E2
16	Warning	
17	Waiter key activated D2=NUMBER D9=COUNTER	D2, D9
18	Operating voltage is too low	
19	Test credit	K5
20	Common error (user error)	
21	Credit display with an empty change giver	K5
22	Insertion of exact money (empty and vend)	P5
23..30	Reserved	
31..45	Help functions to service programs	

17.8 Suggestions to programme

Message	Text/Place holder 16 character fields	
00	MACHINE_ACCEPTS 0.05_-_2.00 EURO IN_OPERATION	Display changes between 'MACHINE ACCEPTS 0.05 - 2.00 EURO' and 'IN OPERATION'
01	YOUR_CREDIT: K5_____EURO	NOTICE: Place holders to be programmed are shown in the table like '_'. To keep selected figuure displayed for some longer, you have to programme at the beginning 'X4XX' in service program 15 with button 5 (not for BDV systems).
02	YOUR_SELECTION: W2	
03	SELECTION: W2__=_P5_____EURO	
04	PLEASE_TAKE YOUR_PRODUCT!	
05	ANOTHER SELECTION	
06	NOT_ENOUGH CREDIT_P5_____EURO	
07	MAXIMUM_CHANGE R5_____EURO	
08	TAKE_YOUR CHANGE!	
09	MACHINE_ACCEPTS 0.05_-_0.50 EURO PLEASE_INSERT EXACT_MONEY!	Display changes between 'MACHINE ACCEPTS 0.05 - 0.50 EURO' and 'PLEASE INSERT EXACT MONEY'
10	MAKE_NEXT SELECTION! NO CHANGE	
11	THANK_YOU!	
12	OUT_OF_ORDER!	
13	SELECTION: W2__=_D4___	
14	PRINTING!	
15	ERROR_CODE:_E2_	
16	ERROR_!	Error warning
17	WAITER_KEY D2__ _D9_____	Waiter key Cigarette machines only!
18	LOW_POWER_INPUT	
19	TEST_CREDIT: K5_____EURO	
20	WRONG_SELECTION!	
21	NO_CHANGE K5_____EURO	Credit display, if change giver empty
22	INSERT_EXACT MONEY_P5_____EURO	Exact money only (empty and vend)

31	S2_VENDS_PER _SELECTION	Service program 01
32	S2_EMPTY_VENDS	Service program 02 (Cigarette machines only!)
33	S2_TOTAL_VENDS	Service program 03
34	S2_COUNTER _RESET	Service program 04
35	S2_NOT_RESETABLE _COUNTERS_IN_EURO	Service program 05
36	S2_RESETABLE _COUNTERS	Service program 06
37	S2_TEST_PROGRAM	Service program 07
38	S2_PRICE _PROGRAMMING	Service program 08
39	S2_KEY_COLUMN _ALLOCATION	Service program 09 (Cigarette machines only!)
40	S2_VEND_OPTIONS	Service program 10
41	S2_COIN_CHANNEL _SETTING	Service program 11
42	S2_COIN OPTIONS	Service program 12
43	S2_CHANGER_CHAN. _SETTING	Service program 13
44	S2_CHANGER _OPTIONS	Service program 14
45	S2_MAIN _CONFIGURATION	Service program 15
46	S2_WAITER _KEY	Service program 16

17.9 Programming example

In stand-by mode (message 00) the text "**IN OPERATION**" should be displayed.

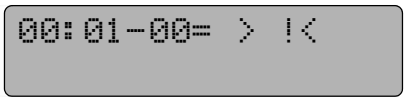
1. Keep pressing key P of the programming terminal while touching key S once. The upper line of the display (editor) may show the following.

This indicates that the actual message 00 comprises one line with 15 characters.

2. Erase the characters by keeping button 0 pressed until the display is

The text to be entered comprises 11 characters and 1 blank one. As earlier described, one line can have a maximum of 16 characters. To have the text in the middle of the display, enter two blank characters at the beginning of the line.

3. Keep pressing button 9 until you have the exclamation mark **!** in the cursor field.



4. Press button 1 once, which makes the character in the cursor field vanish. Now enter the two blank characters by pressing key C twice. The display is now

5. Press button 9 twice, which brings the capital A into the cursor field. Keep pressing button 2 until character **I** is displayed in the cursor field. Now press key C to program the character **I.**

6. Keep pressing button 2 until capital **N** is displayed in the cursor field. Touch key C once to programme the said character.

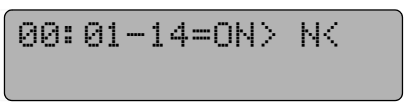
7. Keep pressing button 9 until the exclamation mark (!) is in the cursor field. Press button 1 once, which brings the blank character into the cursor field. Press button C to programme the blank character. The capital **N** has now moved one position left in the computer memory.

8. Press button 9 twice, which brings the capital A into the cursor field. Keep pressing button 2 until the capital **O** is on display in the cursor. To programme the said character, press button C. The display is

9. Push button 2 once to have the capital P in the cursor field. To enter the character into memory, press key C. The display is

We have, so far, produced the characters IN OP. Proceed in the manner described above to produce the rest of the characters. Use button 2 to go forwards and button 1 to go backwards in the alphabetic order. Always complete the job by pressing key C.

After the last data input the display should show



The 2 space characters on the right text side don't have to be programmed. Press key S once to exit the service programme, message "IN OPERATION" is displayed.

17.10 How to format text memory - service program 15

Press key P - hold it - press key S three times, display shows

Press button 6, which displays

While pressing key P enter the digits 4710. Release key P.
The display shows dark rectangle. To complete press key S three times. Display shows

ATTENTION! All the messages stored are wiped out!

In this procedure, you can quickly and easily erase all the texts stored, which reverts the memory to the basic state. The LCD display only indicates an empty text memory (see chapt. 6.2 on page 22 and chapt. 25.4 on page 79). Consequently programming of all service programs is possible.

It may be useful to erase the text memory of a machine with a LED display. For example, if the IVC control unit has been replaced. Those messages that are not necessary for a LED display, may lengthen the computing time of the IVC control unit, which can cause a flickering display.

17.11 How to programme the text memory applying PC

A programming kit (article no. 0046332) is available for the IVC control unit. This kit comprises an adapter, software and a guide leaflet, enabling simple programming of any messages or other options by means of a WindowsTM desktop. A Personal Computer of type 386, DOS 5.0, WINDOWS 3.1 (or higher) is needed to perform the job.

There are two types of kit available:

1. Programming kit for BDV or Executive, part no. 0046332:
- IVC level adapter part no.: 0045390
- Software „IVC-Programmer“ for MS Windows, part no.: 0046333
- Installations instruction (TI-WA-48d) part no.: 0046334

2. Programming kit for MDB, part no. 0059430
- IVC level adapter part no.: 0055413
- Software „IVC-Programmer“ for MS Windows, part no.: 0046333
- Installations instruction (TI-WA-48d) part no.: 0046334

- The software IVC-Programmer contents:
  - programming of messages
  - setting of the four machine configuration codes which normally can be set in service program 15, buttons 1, 2, 5 and 9.
  - price programming and vend options
  - coin and change giver options
  - calling up and erasing of statistic counters
  - as well as error statistics

You can store programming of the IVC unit in memory and then use it to programme further IVC units without change of safety codes or non resetable counters.

With the option 'change text' on the LCD display it is possible to transmit only display messages from other control units or files to further control units. So you can change the language, without influencing to configuration.

18 Statistic print outs

To retrieve data from the statistics counters, a printer can be connected to the IVC control unit via an additional adaptor.

The connection cable of the printer adaptor has to be connected to the receptacle P8 of the IVC unit. The adaptor can be linked with the printer directly via the 9 pole sub-D-plug.

Part numbers:
Printer with adaptor 0061015

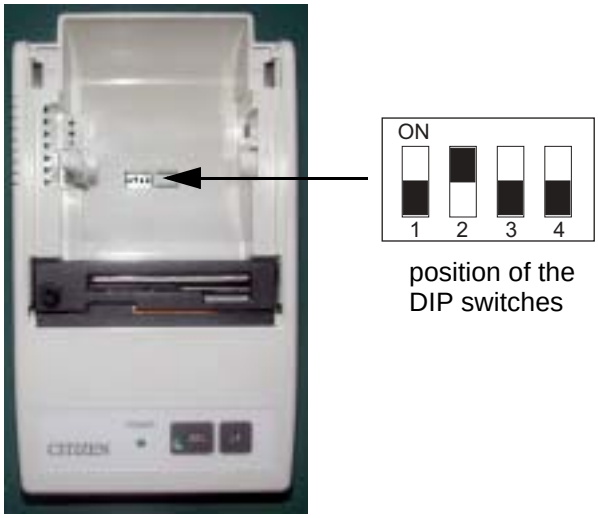
Printer without adaptor 0061014

Adaptor only 0060946

Replacement paper roll 0062778

Typewriter 0061198

Before the first print out make sure that the accu is fully charged. Indicated by a permanent lightning LED ‘POWER’ after power on. Also the settings of the DIP switches have to be checked. Only switch 2 has to be switched on.



position of the DIP switches

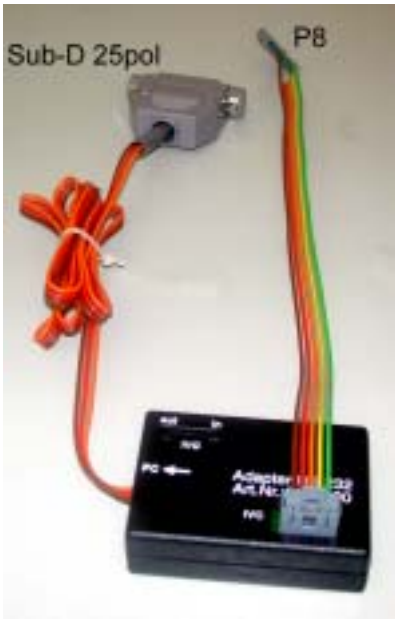
18.1 How to connect the printer

Connect the printer via the level adaptor (0060946) to the terminal P8 of the IVC controller.

Then programme the value 3708 to the service program 15 button 2. Proceed as follows:

- Press button P - hold it - and press button S three times to reach service program 15 'main configuration'.
- Press selection button 2 and release it.
- To programme keep button P pressed and enter the configuration number 3708 via the selection buttons.

NOTE: The LED ‘SET’ has to light for printing the data! If not press button ‘SEL’ once.



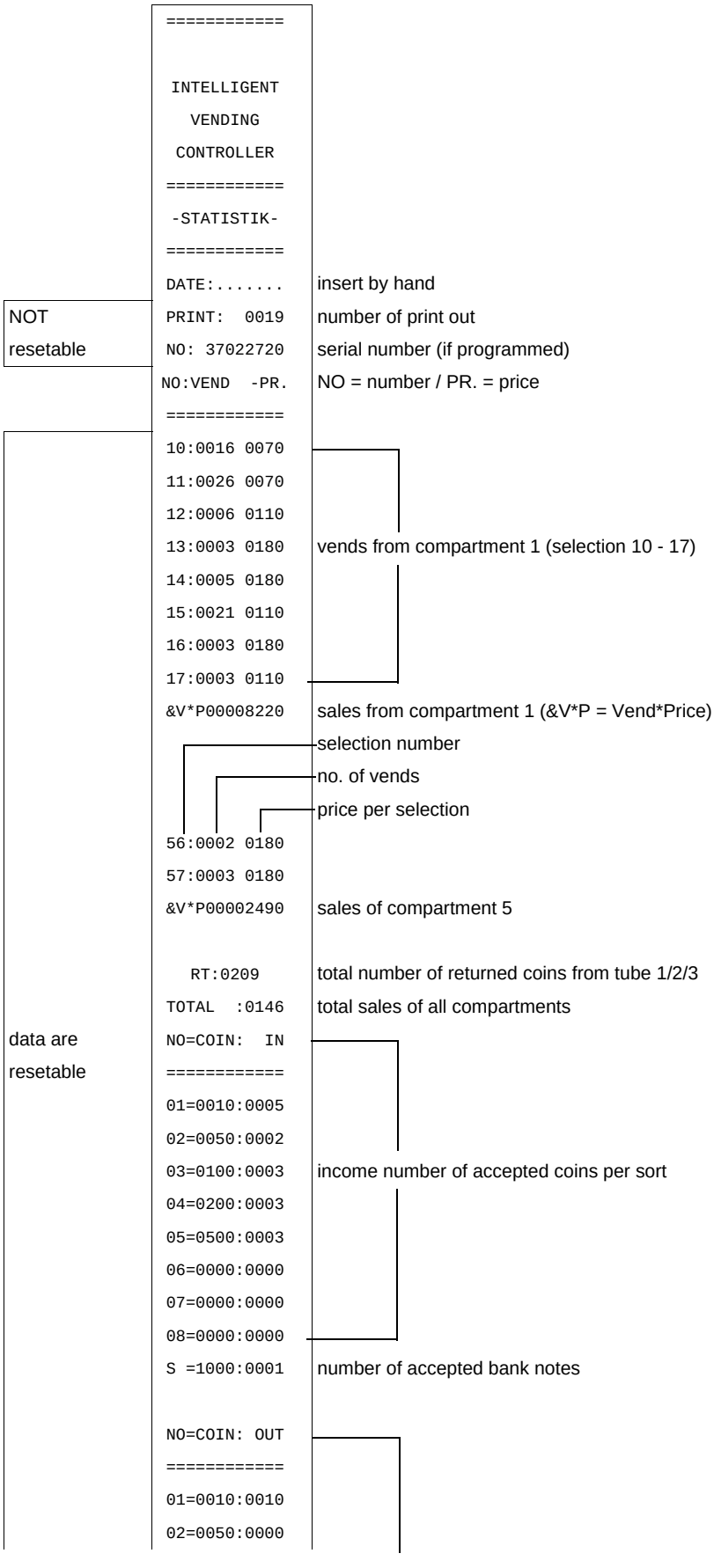
18.2 Print-out of statistics

1. Press key S of the programming panel.
2. Press button “Print” on the IVC unit. The print-out process starts.
3. After printing press button S several times until „In Operation“ is displayed.
4. To move the paper out press button ‘SEL’ once so that the LED goes dark. Then press button ‘LF’ to move the paper out.
5. For a final reset of counters, if required, please refer to chapt. 11.5 on page 37 or chapt. 14.5 on page 46 (BDV).

18.3 Print-out of set commodity prices

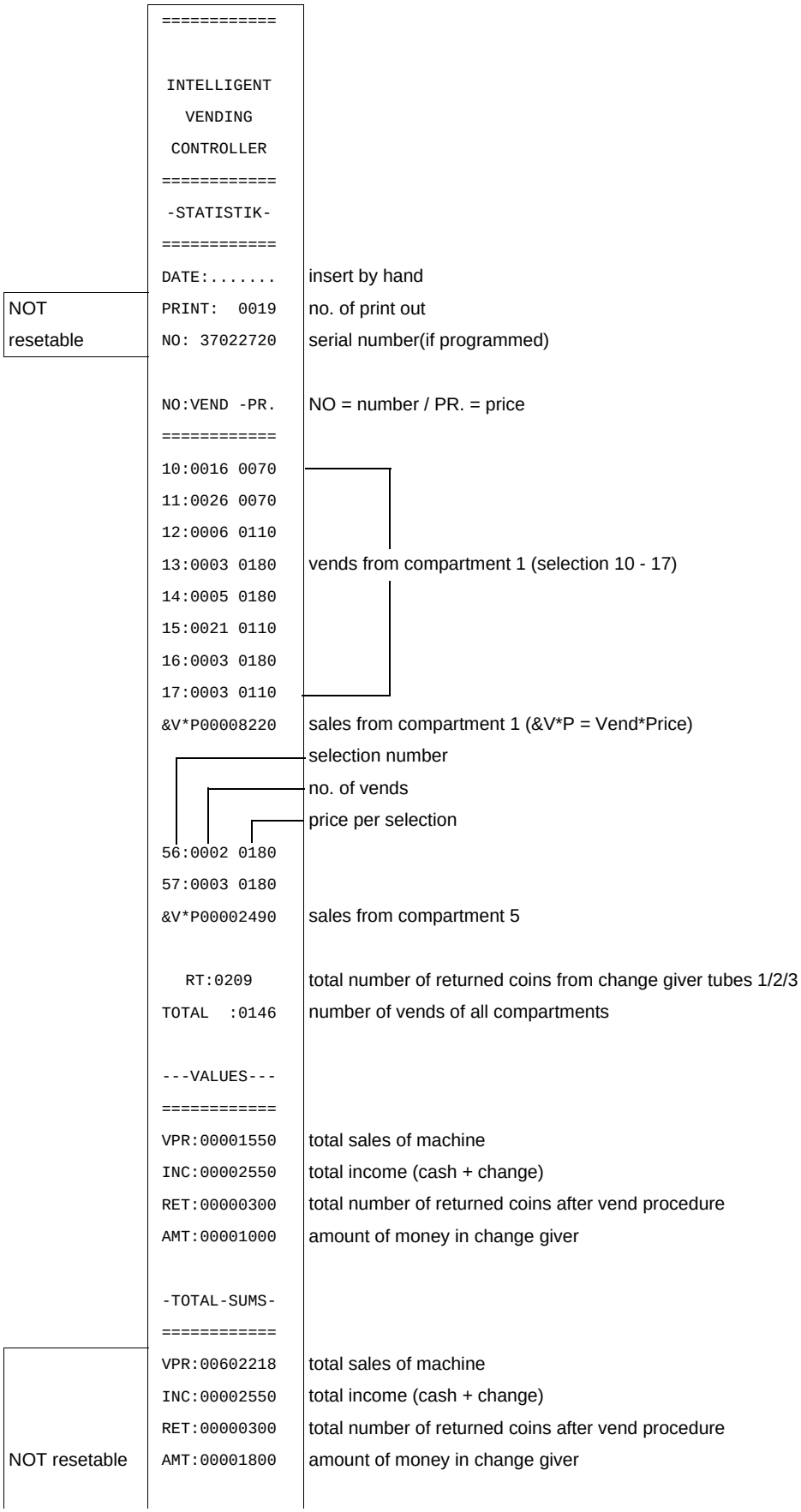
1. Keep pressing key S of the programming panel until the display shows 08 „PRICE PROGRAMMING“.
2. Press button “Print” of the IVC-unit. The print-out process starts (display shows “PRINTING”).
3. After printing press button S several times until „In Operation“ is displayed (see page 24).

19 Statistic print out MDB



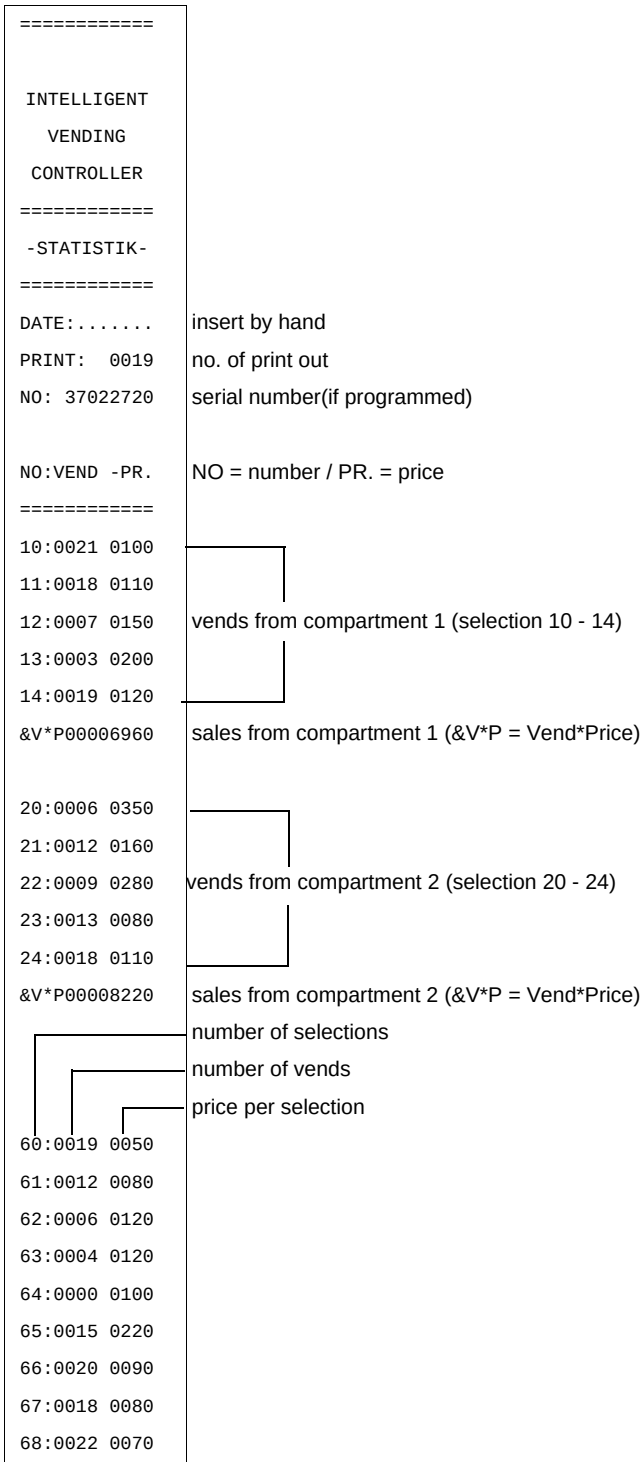
	03=0100:0002	number of returned coins from change giver per coin sort
	04=0000:0000	
	05=0500:0000	
	NO=COIN:REST	
	==========	
	01=0010:0010	
	02=0050:0002	number of coins in change giver per tube
	03=0100:0016	
	04=0000:0000	
	05=0000:0000	
	---VALUES---	
	==========	
	VPR:00001550	total sales of machine
	INC:00002550	total income (cash + change)
	RET:00000300	change from tubes after vend
	AMT:00001000	amount of money in change giver (tubes)
	-TOTAL-SUMS-	
	==========	
	VPR:00602218	total sales of machine
	INC:00002550	total income (cash + change)
	RET:00000300	change from tubes after vend
NOT resetable	AMT:00001800	amount of money in change giver (tubes)
	MACHINE:0000	machine no. only once programmable
	SAFETY :0525	safety number
resetable	ERROR : 02	error code
resetable	OFF-ON :0000	number of ON and OFF switches 8replacement of fuses too)
NOT resetable	H: 00005493	total operation time in hours

20 Statistic print out NRI Simplex 5 or Executive



	MACHINE:0000	machine no. only once programmable
	SAFETY :0525	safety number
resetable	ERROR : 02	error code
resetable	OFF-ON :0000	number of ON and OFF switches 8replacement of fuses too)
NOT resetable	H: 00005493	total operation time in hours

21 Statistic print out BDV standard



69:0029 0100	
&V*P00014090	sales from compartment 6
---VALUES---	
==========	
VPR:00001550	total sales of machine (VPR = Vend PRice)
INC:00002550	total income (INC = INCome)
RET:00000300	return after vend (RET = RETurn)
AMT:00001000	amount of money in change giver (AMT = AMount to Tubes)
MUT:00000300	money paid out in the service program (MUT = ManUal to Tubes)
OVP:00000000	overpaid money (OVP = OVerPay)
EXC:00000000	vends at message 'Insert exact money' (EXC = EXaCt insertion)
DIV:00000000	discount vends (DIV = DIscount Vends)
MIS:00000000	miscellaneous credit (MIS = MIScellaneous)
MIN:00000000	money inserted in the service program (MIN = Manual INcome)
-TOTAL-SUMS-	
==========	
VPR:00842150	
INC:00836550	
RET:00319000	
AMT:00325600	
MUT:00001120	same meanings as above, but counters cannot be reset (NON resetable)
OVP:00000000	
EXC:00035240	
DIV:00000000	
MIS:00000000	
MIN:00000000	
MACHINE:0000	machine no. (service program 05, button 9)
SAFETY :0525	safety number
ERROR : 02	displayed error code during printout
OFF-ON :0000	number of ON and OFF switches
H: 00005493	total operation time in hours

22 Initialisation of an IVC unit after replacement

The factory normally supplies IVC controls with the correct code installed for each machine type.

If the unit shows no response after a replacement has taken place, we recommend that you control and/or re-program some machine codes. Apply key D and + in service program 15 (You can also try entering the four digits while keeping button P pressed. This does not, however, apply in all cases).

NOTE: Initialisation of an I.V.C. unit using a P.C. with I.V.C. programmer software (see chapt. 17.11 on page 59) makes manual programming unnecessary. To achieve this you need the data file of the machine which has to be programmed. The file can be copied from an identical machine and stored on harddisk for use on future initialisations. It is recommended to store data for each machine, so that if an IVC has to be exchanged, then prices do not have to be reprogrammed.

22.1 Preparation for initialisation

Press key P - hold it - and press key S three times, display shows

When you press selection button 1, the display should show the configuration numbers in four digits after the equals sign, e.g. 3480 (code number for machines with Executive system).

If no configuration numbers are displayed when you press button 1, 2, 5 or 9 in service program 15 it is possible that no place holders have been programmed. In this case you should re-programme message 13 as described in chapt. 17.8 on page 55. Another possibility is to delete complete text memory (see chapt. 17.10 on page 58) and then start to re-program.

NOTE: In this case all messages including place holders have to be re-programmed.

22.2 Programming of configuration numbers

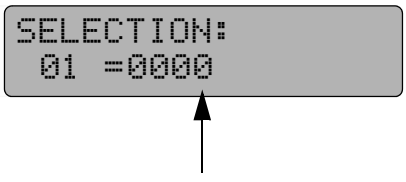
In this example the control unit should be programmed to 7620 (MDB sysrem) in service program 15, button 1:

Press key P - hold it - and press key S three times, display shows service program 15 "Main Configuration"

Press selection button 1, display is

or with an empty text memory shows

Press button D, number 0 outside is blinking
With button + you can change the blinking 0 to a number between 1 and 9. In this case (7620) the character stays 0.



Press button D again, the blinking character changes one digit to the left. Press button + until display shows

Press button D again, the blinking character changes one further digit to the left. Press button + until display shows

Press button D again, the blinking character changes one digit to the left. Press button + until display shows
(If you hold key P button + counts backwards)

Press key P - hold it - and press button 1, the left side blinking stops. Display shows

Apply the same procedure in service program 15, button 2, 5 and 9 which are for the different coin systems as shown in the following table.

For machines with	button 1	button 2	button 5	button 9
• coin system MDB	**7620**	**3107**	**0020**	**0060**
• coin system MDB and vend light gate	**7320**	**3107**	**0020**	**0070**
• coin system MDB and SmartWaiter (elevator system)	**7620**	**3107**	**0020**	**4060**
• coin system Executive Standard	**3480**	**3107**	**0000**	**0060**
• coin system Executive Standard and vend light gate	**3180**	**3107**	**0000**	**0060**
• coin system Executive Standard and SmartWaiter (elevator system)	**3480**	**3107**	**0000**	**4060**
• coin system acc. to BDV standard	**3480**	**3107**	**9000**	**0060**
• coin system acc. to BDV standard with vend light gate	**3180**	**3107**	**9000**	**0070**
• electronic coin acceptor (ECA) and 5 tube changer	**3660**	**3107**	**0000**	**0060**
• electronic coin acceptor (ECA) only (exact money)	**3460**	**3107**	**0000**	**0060**
• CCI-System	**3480**	**3107**	**1000**	**0060**

22.3 For machines with MDB - carry out 'data block transfer' Service program 11, button 1

ATTENTION!
The data block tranfer has to be carried out, if the MBD system had been changed, otherwise it is possible that display shows wrong value for inserted coins.
Wait for some 30 sec. then you can carry out data block transfer. In case you don't keep this limit faulty functions in communication with the MDB system will arise.

Press key P - hold it - press key S seven times, display shows

```
11 COIN CHANNEL
   SETTING
```

Press key 1, display should show lowest denomination coin = £ 0.10

```
SELECTION:
 01 =0010
```

Press key P and hold it, display is

```
SELECTION:
 01 =
```

Enter the digits 9999, then display shows

```
SELECTION:
    =0010
```

Release key P.

Finally leave the service program (see page 24).

22.4 Control of coin acceptance and change adjustment

22.4.1 Machines with MDB system

Service program 14 - Enter the maximum number of coins which should be accepted before a vend.

Programming:

Press key P - hold it - press key S four times, display shows

```
14 CHANGER
   OPTIONS
```

Press button 7, display shows current programmed number of coins, e.g.

```
SELECTION:
 07 =  29
```

Alteration:

Press key P and hold it, display shows

```
SELECTION:
 07 =
```

Enter new number of coins (e.g. 99), display shows

```
SELECTION:
    =  99
```

Possible number of coins is between 00 and 99. Always one more coin than programmed will be accepted.

Finally leave the service program (see page 24).

Service program 8

Enter maximum change. Press key S eight times, display shows

Press key R (or enter selection 90) display shows current maximum change, e.g. £ 5.00

To alter the sum press key P - hold it - and enter the new sum in four digits, e.g. £ 10.00, enter 1 0 0 0. Display shows

Finally leave the service program (see page 24).

22.4.2 Machines with coin system acording to BDV standard

Service program 11 - Enter the maximum coin insertion sum which should be accepted before a vend.

Programming:

Press key P - hold it - press key S seven times, display shows

Press button 1, display shows the current programmed sum, e.g. 9000 (= 90.00 Euro)

Alteration:

Press key P and hold it. Display is

Enter the new number in four digits (e.g. for 20.00 EURO)

Finally leave the service program (see page 24).

Service program 8

Enter the maximum change. Press key S eight times, display is

Press key R (or enter selection 90) display shows current maximum change, e.g. for 5.00 EURO

To alter the sum press key P - hold it - and enter new sum in four digits, e.g. 10.00 EURO, enter 1 0 0 0. Display is

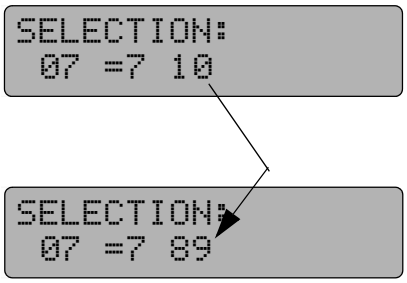
Finally leave the service program (see page 24).

22.5 Machine specification self-test (trays/spirals)

ATTENTION! At the end of the initialistion, the IVC unit has to run a self-test to identify the spiral motors. You can carry out this test in service program 07, button 7 (see chapt. 9 on page 27).
Therefore:

Press key S until display shows

Press button 7 Motor test starts



All available selections are operated once. This test tries also to run all selections which are not available such as disconnected motors or trays and disables them if noted. The same applies after adding trays the relevant selections will be enabled. The current tested compartment is shown in the last two characters.

Press key C.

Finally leave the service program (see page 24).

22.6 Setting an IVC unit to 'Snack basics'

It is recommended to reset an IVC unit to "snack basics" after having made a program-update (change of eprom, especially from versions lower than 3.5 to later versions). By means of this procedure the memory of the IVC will be configured for use in a Multi. Non-resetable counters and safety code numbers are not involved, but text messages are all deleted.

Therefore reset should only be done, if normal programming, as described starting chapt. 22.1 on page 67 to chapt. 22.5 on page 71, were not accepted and if versions have been changed from lower than 3.51.

Reset:
Press key P - hold it - press key S three times, display shows

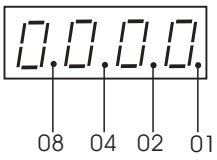
Press button 6, display is

Enter the digits 4713 with buttons D and + then press button P - hold it - and press selection button 6. Displays fills with dark rectangles. To complete press key S three times. Display shows

23 Service programs (in tabular form)

23.1 MDB and Executive coin systems

Service program	Function * valid only for MDB!	Call with button	with P
01	• Vend counter per compartment • Return runs *	selection buttons return button	reset reset
02	• Selection if column empty	only for cigarette machines!	
03	• Coin counter per channel * • Total vends (items)	1 - 8 0	reset reset
04	• Returned coins per tube * • On/Off switches of the machine • Number of price memory copies • Reset of ststistical counters	1 - 5 6 7 8	reset +0000 reset reset reset
05	• Total sales • Cash box contents * • Total change delivered * • Stocktaking (coin tubes) * • Customer number • Safety number	1 + 2 3 + 4 5 + 6 7 + 8 9 0	NON RESETABLE '' '' programme
06	• Total sales • Cash box contents * • Total change delivered * • Stocktaking (coin tubes) *	1 + 2 3 + 4 5 + 6 7 + 8	reset reset - reset
07	• Display test, display of software version • Each change giver motor starts once * • Pay out of single tubes * • Coin acceptance for 5 seconds with indication of coin channel * • Motor test of each spiral • Access to service programs 11 - 17	1 2 P + 2, then 1 - 3 6 7 P + 8	 STOP with button C
08	• Price programming • Max. change *	selection buttons return button	reset -
09	• Free button column allocation	only for cigarette machines!	

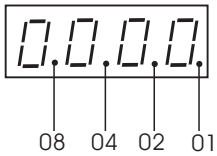
Service program	Function * valid only for MDB!	Call with button	with P
10	• Operating options: • 00 = normal • 01 = free vend • 04 = parallel • 08 = alternate • 80 = disable	selection buttons	programme
	• Vend options: * • 00 = Multivend • 01 = Multivend with vend required • 10 = Multivend with possible loss of change • 40 = Automatic change after vend • 80 = Exact money required	return button	programme
11	• Coin value * • Bank note value * • Simplex 0, MDB 'data block transfer' * • Test credit *	selection buttons 1 - 8 selection button 9 selection button 1 selection button 0	programme programme +9999 programme
12	• Coin options per channel: * • 01 = Acceptance although change giver empty • 08 = Coin into cash box • 80 = Coin disable	selection buttons 1 - 8	programme
	• Bill options: * • 08 = Acceptance if change giver is filled sufficient • 09 = Acceptance although change giver empty • 40 = MDB bill acceptor • 80 = Bill disable	selection button 9	programme
	Position of decimal point for place holders containing decimal point, for example D5, P5, K5, MA...  00 = no point	selection button 0	programme
13	• Coin value of a change tube *	selection buttons 1 - 5	programme
14	• Change giver options: * • 00 = tube exists • 80 = tube not exists	selection buttons 1 - 5	programme
	Max. bill acceptance (piece + 1)	selection button 6	programme
	Max. coin acceptance (piece +1)	selection button 7	programme

Service program	Function * valid only for MDB!	Call with button	with P
15	• Main machine configuration • 7620 = MDB (*) without vend light gate • 7320 = MDB (*) with vend light gate • 7620 = MDB (*) with SmartWaiter (elevator system) • 3480 = Executive without vend light gate • 3180 = Executive with vend light gate • 3480 = Executive with SmartWaiter (elevator system)	selection button 1	programme
	• 3107 = Printer port • 3708 = Citizen printer iDp3111	selection button 2	programme
	• Machine options: • 0020 = NRI Simplex 0 or MDB * • 0000 = Executive system • 0200 = BDTA active	selection button 5	programme
	• 4710 = formate text memory • 4713 = Snack reset	selection button 6	programme
	• Extended machine configuration: • 0020 = Spiral single shut down • 0060 = Spiral single shut down + LSCD display, as from program version 4.51 no extra programming of the LCD display is necessary, you only have to enter 0020. • add 2000 for electronic purse reader	selection button 9	programme
16	• Waiter key	only for cigarette machines!	
17	• LCD display editor	see chapt. 17 on page 49	

ATTENTION! The programming options marked with an asterisk *** only apply to MDB systems**. For machines with Executive coin systems these options have to be programmed on the coin system itself.

23.2 Coin systems according to BDV standard

Service program	Function	Call with button	with P
01	• Vend counter per compartment • Change giver runs	selection buttons return button	reset reset
02	• Selections if column empty	only for cigarette machines!	
03	• Total vends (items) • Vends made with 'Please insert exact mony' • Credit not clear • Manually filled money	0 1 - 2 5 - 6 7 - 8	reset reset reset reset
04	• Manually gathered change • Total of change paid in excess • Number of power on/off • Number of price memory copies • Reset of statistical counters	1 - 2 3 - 4 6 7 8	reset reset +0000 reset reset reset
05	• Turnover • Cash box contents • Change paid out • Money into tubes • Customer number • Safety number	1 - 2 3 - 4 5 - 6 7 - 8 9 0	NON RESETABLE “ ” programme
06	• Turnover • Cash box contents • Change paid out • Money into tubes	1 + 2 3 + 4 5 + 6 7 + 8	programme programme programme
07	• Display test, display of software version • Each change giver motor starts once • Pay out of single tubes • Coin acceptance for 5 seconds with indication of coin channel • Motor test of each spiral • Access to service programs 11 - 17	1 2 P + 2, then 1 - 3 6 7 P + 8	 STOP with button C
08	• Price programming • Max. change	selection buttons return button	reset
09	• Free button column allocation	only for cigarette machines!	
10	• Vend options: ◦ 00 = normal ◦ 01 = free vend ◦ 04 = parallel ◦ 08 = alternate ◦ 80 = disable	selection buttons	programme

Service program	Function	Call with button	with P
11	• Max. allowed credit	1	programme
	• Offset to empty detection (both LH digits) / mask for tube combinations (both RH digits)	2	programme
	• Mask for tube combinations: • 0 = A or (B and C) • 1 = A and B and C • 2 = A and B • 3 = A and (B or C) • 4 = A • 5 = A or B • 6 = A or (B or C) • 7 = A and C • 8 = A or C • 9 = B and C • 10 = B • 11 = B or C • 12 = C		
	• Coin disabled at 'Insert exact money only' 1 - 7	3	programme
	• Coin disabled at 'Insert exact money only' 8 - 14	4	programme
	• Disabling of single coins, channels 1 - 7	5	programme
	• Disabling of single coins, channels 8 - 14	6	programme
	• Channel identity coin channel • 1 = 0001 • 2 = 0002 • 3 = 0004 • 4 = 0008 • 5 = 0016 • 6 = 0032 • 7 = 0064 • to disable several coins add the single values.		
	• BDV options: • Multivend = 0001 • Obligation to buy = 0002 • BDV-Audit ON = add 0004 • BDV-Audit OFF 0 add 0008 • Credit card units = add 0016	7	programme
	• Values Token A, B, C	8, 9, 0	programme
12	Position of decimal point for place holders containing decimal point, for example D5, P5, K5, MA...  00 = no decimal point	0	programme (0004 factory preset)
13	• Value of the relevant tube	selection buttons 1 - 5	programme
	• BDV value of the discount	6	programme
	• BDV limit of the discount	7	programme
14	• Change giver options: • 00 = tube exists • 80 = tube does not exist, disabled	selection buttons 1 - 5	programme
	• Max. bill acceptance (piece + 1)	selection button 6	programme
	• Max. bill acceptance (piece + 1)	selection button 7	programme

Service program	Function	Call with button	with P
15	• Main machine configuration: • 3480 = Machine with coin system acc. to BDV and Executive standard	selection button 1	programme
	• 3107 = Printer port • 3708 = Citizen printer iDp3111	selection button 2	programme
	• Machine options: • 0000 = Executive standard • 9000 = BDV instead of Executive standard • 0200 = BDTA	selection button 5	programme
	• 4710 = formate text memory • 4713 = Snack reset	selection button 6	programme
	• Extended machine configuration: • 0020 = Spiral single shut down • 0060 = Spiral single shut down + LCD display (from program version 4.51 no extra programming of the LCD display is necessary, you only have to enter 0020)	selection button 9	programme
16	• Waiter key	only for cigarette machines!	
17	• LCD display editor	see chapt. 17 on page 49	

24 Overview EPROM letter codes

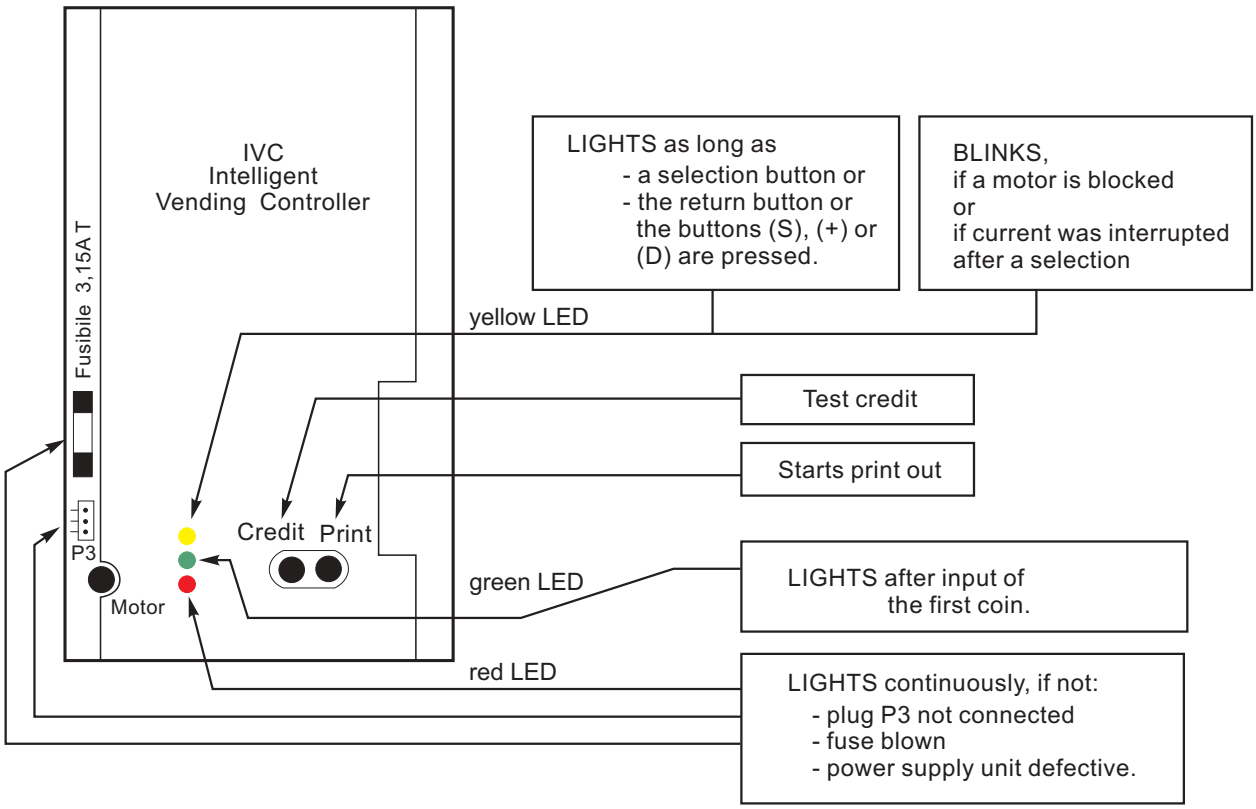
Starting EPROM version 5.xx we marked the different versions for coin systems and credit card systems with additional letters on the EPROM itself.

Possible options are:

HC11	**H**	Code for HC11 CPU
MDB	**M**	MDB coin system, in connection with HC11 only
SEITZ	**S**	Option BDV filetyp 23/24 for LEGIC system
PROTON	**P**	Cardreader Proton, with HC11 only, without coin system
NSO	**N**	NRI Simplex 0, without HC11 only, MDB
ELEER	**L**	Empty lights
CPC	**C**	Card system MDB, with HC11 only and MDB, no BDV !
MDBBIL	**O**	Bank note acceptor MDB Protokoll, only HC11 and MDB
SLAVE	**V**	Slave machine
BDV	**B**	BDV or Executive coin system
LIFT	**F**	Machine with SmartWaiter (elevator system)

25 Error messages

25.1 IVC unit



25.2 LED yellow on the IVC unit

25.2.1 CONTINUOUS yellow light:

Substained contact of a button. A selection button, the return button or buttons of the programming terminal (except P) are closed continuously. If one of these contacts is closed longer than 7 seconds, the machine is out of order.

25.2.2 BLINKING yellow light:

One or more motors are blocked. Which?

Exit the service program via level 10.
While the display counts backwards, each motor runs once.
If a motor is detected not in its home position it will be powered up for 12 seconds. During this time its number will be displayed.

25.3 Extension cable

An extension cable to facilitate the finding of any fault at the spiral motors of the trays is available under part-no. 0005057. The cable enables you to check any tray outside the machine or to put a new tray into operation.

25.4 The state ’OUT OF ORDER’

In case of a fault the LCD display shows "OUT OF ORDER!" (message 12).

With an empty text memory the state "Out of order!" can only be recognised by the missing decimal point com-pared to the state "Machine accepts 0.05 - 2.00 EURO"!

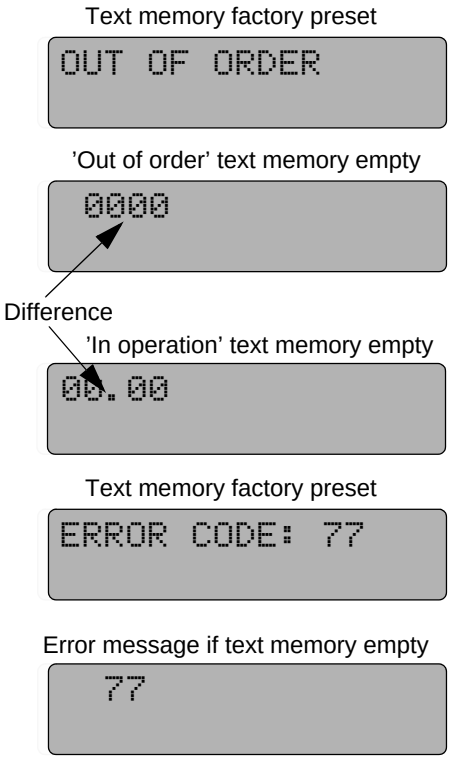
After you have entered a valid selection number (for example 11 but not 99), an error code is displayed (message 15).

The meaning of the error codes and how to clear them are all explained on the following pages.

After clearing the fault you also have to erase the error code, which you can perform by pressing button S until "MACHINE ACCEPTS 0.05 - 2.00 EURO" is displayed (see also page 24).

When you remove the error and leave the service program the error code is cancelled automatically.

When an uncleared fault is involved, the control unit re-displays the message "OUT OF ORDER!".



25.5 The LCD display does not show anything

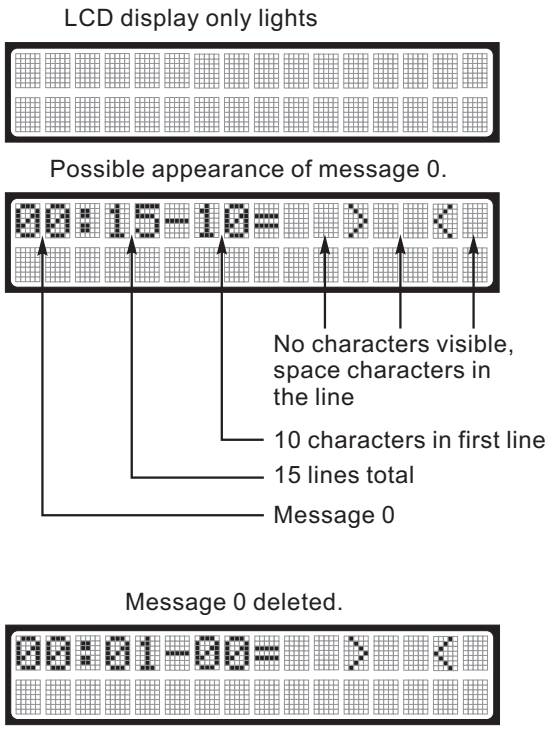
Reason:
With message 0, 9 or 12 (standby and 'out of order' messages) indicating that blank characters have been programmed by mistake.

Remedy:

- Keep pressing button P.
- Touch button S once.
- Keep pressing button 0 as many times as needed until the display shows 00-01-00 (indicating that the message 0 has been erased completely).

To check:
Exit the service program whereby the display shows: "00.00".

Enter the new text messages (see chapt. 17.9 on page 57) or programme with software IVC-Programmer (see chapt. 17.11 on page 59).



25.6 List of errors

ATTENTION! In case error numbers, which are not mentioned in following tables, appear in the display, the IVC control unit either has to be reprogrammed or to be exchanged.

Warning no.	Warning	Possible reason and remedy
02	One or several change tubes are empty.	Fill change tubes or, if no success, change the coin system.
03	Hopper empty.	Either the hopper is empty or the indicator sensor is defective.
04 **05** **06** **07** **08**	Error in vend statistics memory, Error in empty vend statistics memory, Error in memory for prices and cashox contents, Error in price memory but restored by copy, Error in resetable vend memory	The statistics counters may show wrong readings. If such messages appear frequently, it indicates that the machine has been switched on or off during a vending process. See service program 04,
09	Return signal from vend motor missing after a selection.	One or several motors have an open circuit. Any such commodity compartment is automatically blocked (by the control unit), which makes it impossible to buy from that compartment. The other compartments can be used normally. - There is a possibility that some trays are not properly inserted. -

Notice: Error codes 02 to 09 only serve as warnings and they have no drastic effect on the functions of the whole machine.

Error no.	Error	Possible reason and remedy
11	No return signal from the return flap.	Return flap jammed or contact between flaps not closed.
12	Return signal from return flap too long.	Return flap open more than 5s or jammed, contact between flaps not opening after return signal.
13	No return signal from the cash flap.	Cash flap jammed or contact between flaps not closed.
14	Return signal from the cash flap too long.	Cash flap open more than 5s or jammed, contact between flaps not opening after return signal.

Notice: Error codes 11 to 14 only apply to machines with a Deutsche Wurlitzer GmbH escrow. In case they are displayed in machines without escrow, you have to check configuration.

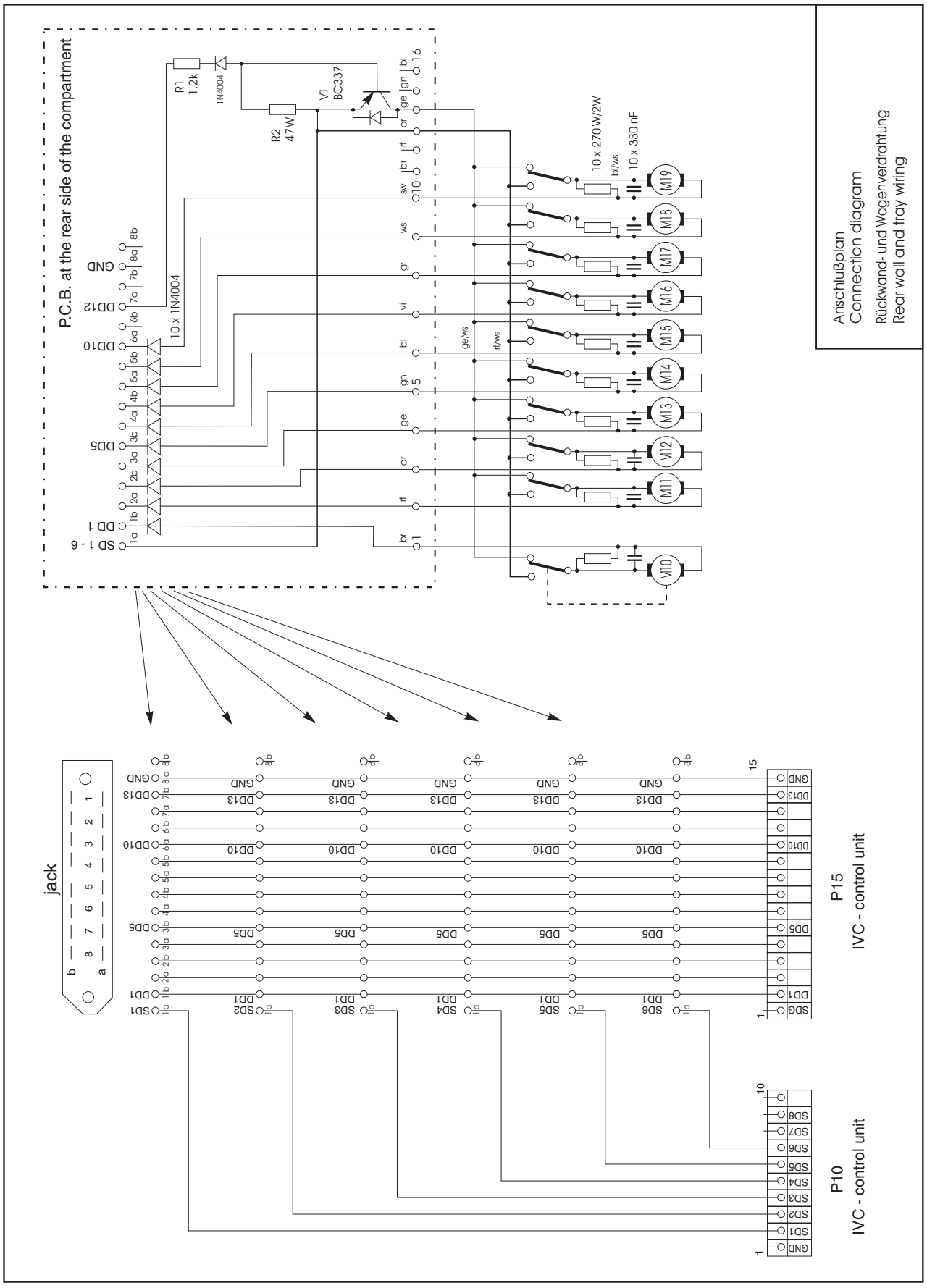
15	Machines without vend light gate: IVC unit has no correct configuration after change or lost data for Multi.	Initialisation of IVC necessary. If fault code re-appears frequently check battery voltage for RAM supply (>2,8V) on IVC or battery has an intermittent contact.
15	Machines with vend light gate: cash pulse longer than 5 sec.	Check light gate and change, if necessary.

Error no.	Error	Possible reason and remedy
33	One or several drain drivers have short-circuited.	One or several connections DD1 to DD10 (Plug P15 IVC) shorted to ground. This fault may appear at the control unit, in the cable loom of the tray connectors or in the commodity tray. Fault can be found in service program 7 - button 7 - (self-test). Several spirals have not reached their end position.
40	Coin input activated too long	Two coin entry channels are simultaneously active.
41	Coin input 1	
42	2	In a machine with a mechanical coin acceptance system, a contact has been made either constantly or for longer than 500 msecs closed.
43	3	
44	4	
45	5	In a machine with an electronic coin system, one output has been either too long or continuously active.
46	6	
47	7	
48	8 activated too long.	Change the coin validator.
Notice: Error codes 40 to 48 mainly apply to machines with a Deutsche Wurlitzer GmbH escrow unit. In case this error codes appear in machines with MDB systems, you have to carry out data block transfer (see chapt. 10.9 on page 33).		
49	Bill input activated too long.	Only for machines with bill validator.
50	One of the source drivers 1 to 8 (IC 216) of the control unit has short circuited.	Change IVC unit.
51	Selection 1 (10...14...19)	The auxiliary transistor to the printed circuit board of the tray is defective or a source driver (plug P10) shorted to ground.
52	2 (20...24...29)	
..	...	
56	5 (50...54...59)	
59	Motor drive transistor on the IVC unit is shorted.	Replace the IVC unit.
61	Error in price memory, original not to be recovered	If this error code appears frequently, check the battery voltage fed to the RAM (>2.8V). If deemed advisable, re-initialize or replace the IVC control unit.
63	Error in machine state memory	
64	Error in empty-stop memory for selections	
65	Error in empty-stop memory for change giver	

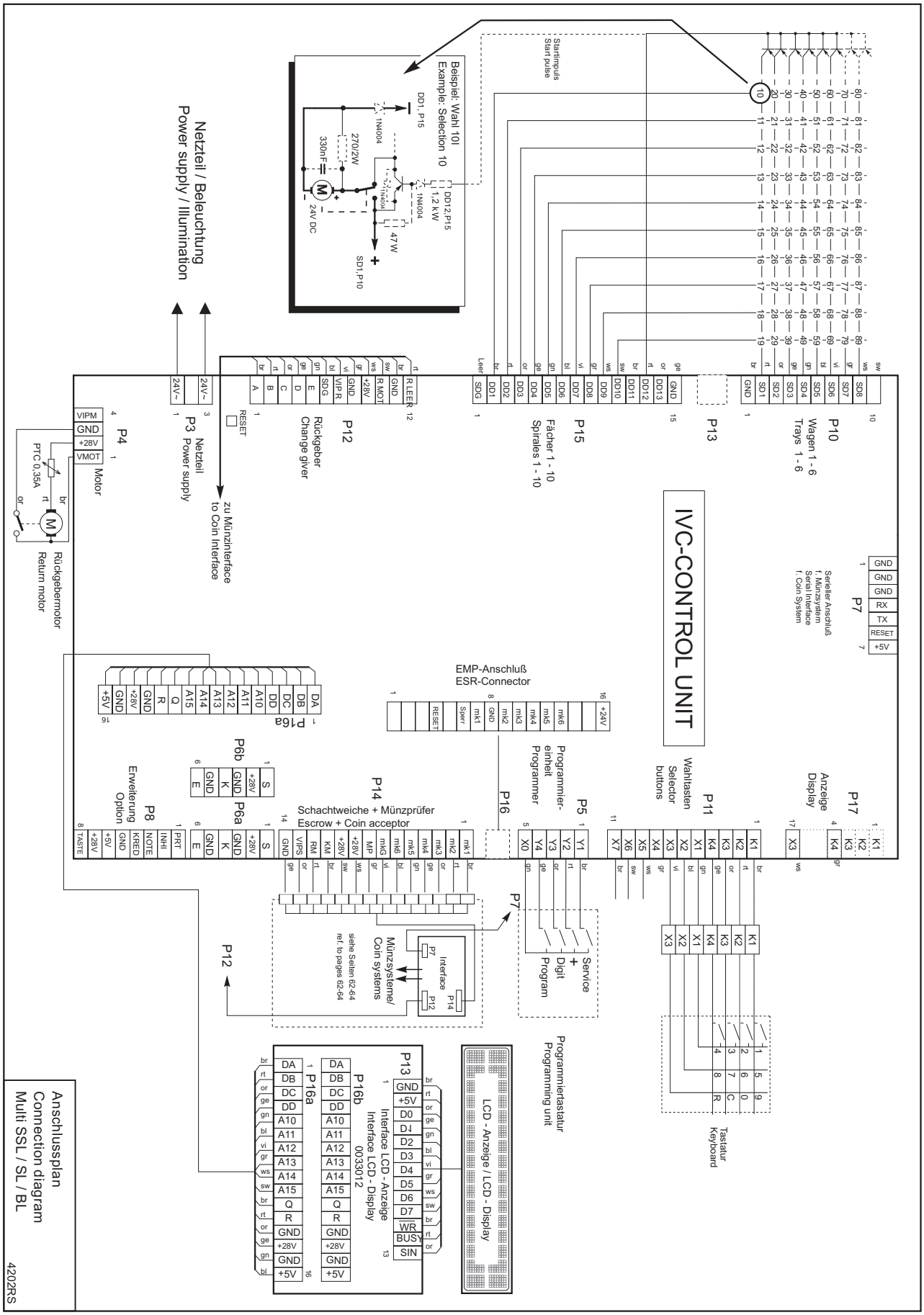
Error no.	Error	Possible reason and remedy
71	Hex number in price memory (RAM).	Check all the prices and make any necessary correction. In case of the error code appearing frequently replace the IVC control unit.
72	Credit has turned negative.	Fault in credit calculation. Change IVC.
73	A basic price of 0 is transmitted to the control system from an external coin system (Executive or similar) MDB: coin separation fault.	Coin unit faulty - change.
74	Selection price in connection with Executive is higher than 250 times basic price or not entered in basic price units. MDB: sensor is faulty.	Check prices and correct if 250 times higher than basic price.
75	Fault in selection/column allocation. MDB: coin acceptor gives no response.	
76	Data in coin validator Simplex 0 not corresponding to programmed data in IVC. MDB: coin jammed	This error code may appear after you have either replaced a coin validator or a complete coin mechanism. To rectify, call up service program 11, button 1 to re-programme. Carry out transfer of a data block (digits 9999) see chapt. 10.9 on page 33.
77	Interruption in data transmission between coin validator and IVC. Valid for all coin systems.	There is a break in communication between the control unit and the coin system (or coin validator). This break is most likely due to a defective communication cable between the coin validator/coin system and the IVC control unit, or a re-programming has to be carried out.
78	MDB checksum fault.	

26 Circuit diagrams

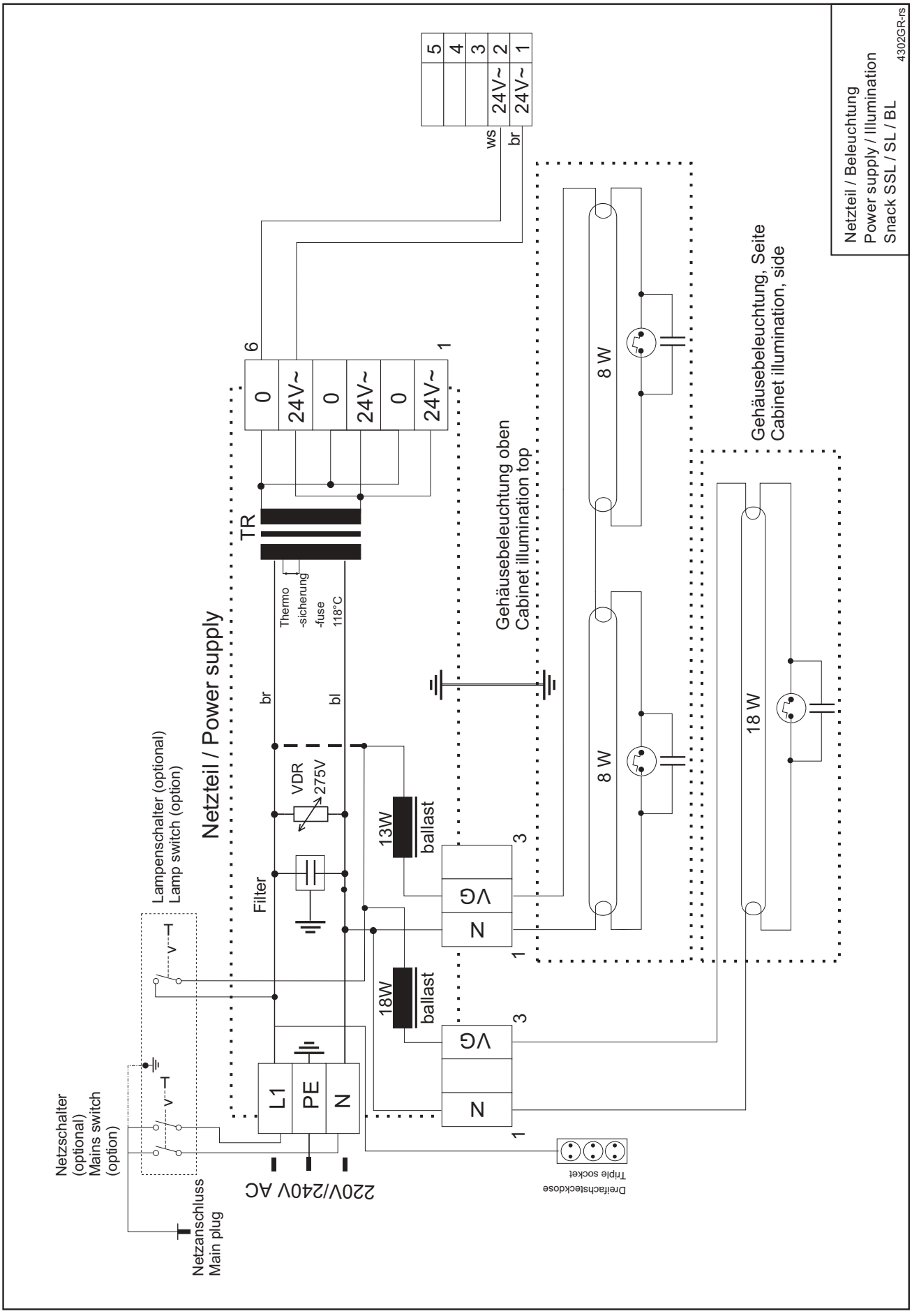
26.1 Rear wall and tray wiring



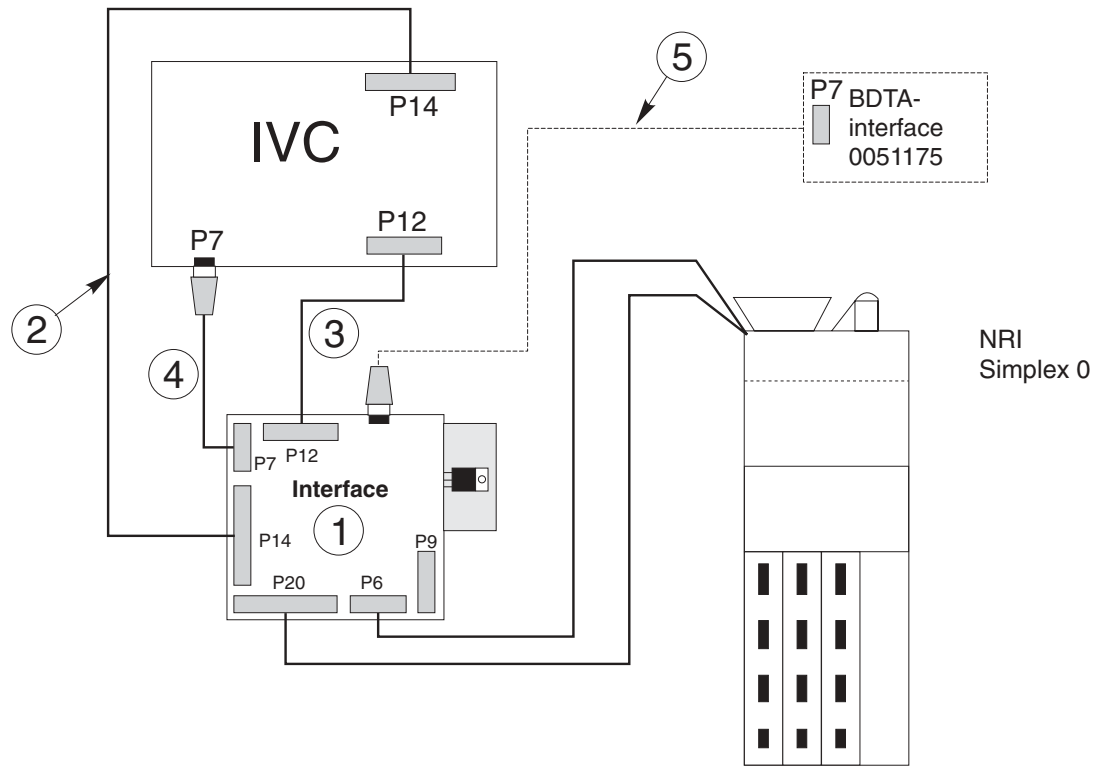
26.2 Connection diagram Multi SSL/SL/BL



26.3 Wiring diagram power supply / illumination



26.4 Wiring diagram IVC unit with coin system acc. to NRI Simplex 0



(1) Interface for NRI Simplex 0, Executive and BDV
part no. 0049665

(1) Interface for NRI Simplex 0, Executive, BDV and BDTA
part no. 0043962

(1) Interface for NRI Simplex 0, Executive, BDV, BDTA and RS232
part no. 0047399

(2) Loom interface - IVC control unit P14,
part no. 0050129

(3) Loom interface - IVC control unit P12,
part no. 0050134

(4) Loom interface - IVC control unit P7,
part no. 0003834

(5) Loom interface - BDTA interface P7,
part no. 0050137

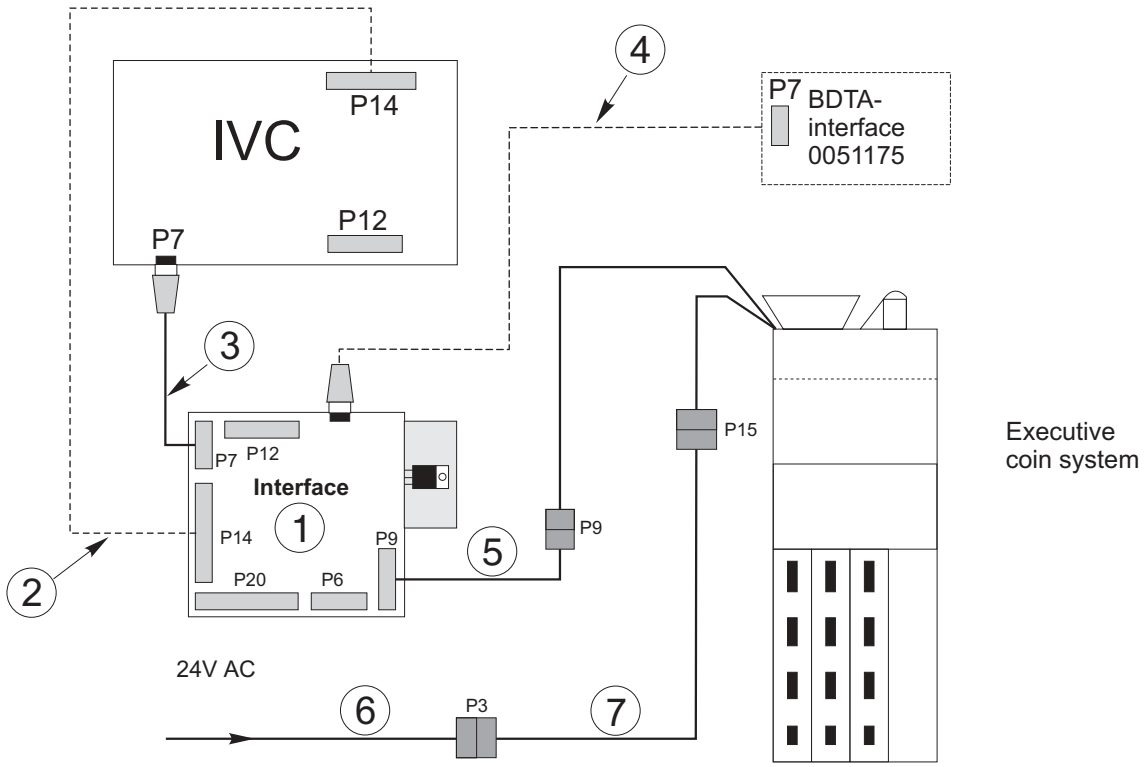
Verdrahtungsplan
IVC mit Münzschaltsystem

NRI SIMPLEX 0

Wiring Diagram
IVC unit with coin system acc. to

01.97

26.5 Wiring diagram IVC unit with Executive coin system



(1) Interface for Executive and BDV
part. no. 0049665

(1) Interface for Executive, BDV and BDTA
part no. 0043962

(1) Interface for Executive, BDV, BDTA and RS232
part no. 0047399

(2) Loom interface - IVC control unit P14,
part no. 0050129
(only required in connection with BDTA interface)

(3) Loom interface - IVC control unit P7,
part no. 0003834

(4) Loom interface - BDTA interface P7,
part no. 0050137

(5) Loom interface - P9 Executive,
part no. 0033658

(6) Loom 24V AC - P3 Executive,
part no. 0050124

(7) Loom
P3 Executive - P15 Executive,
part no. 0009339

Verbindungskabel für:
Connection cable for:

Executive,
Credit Card
System

P9
Interface

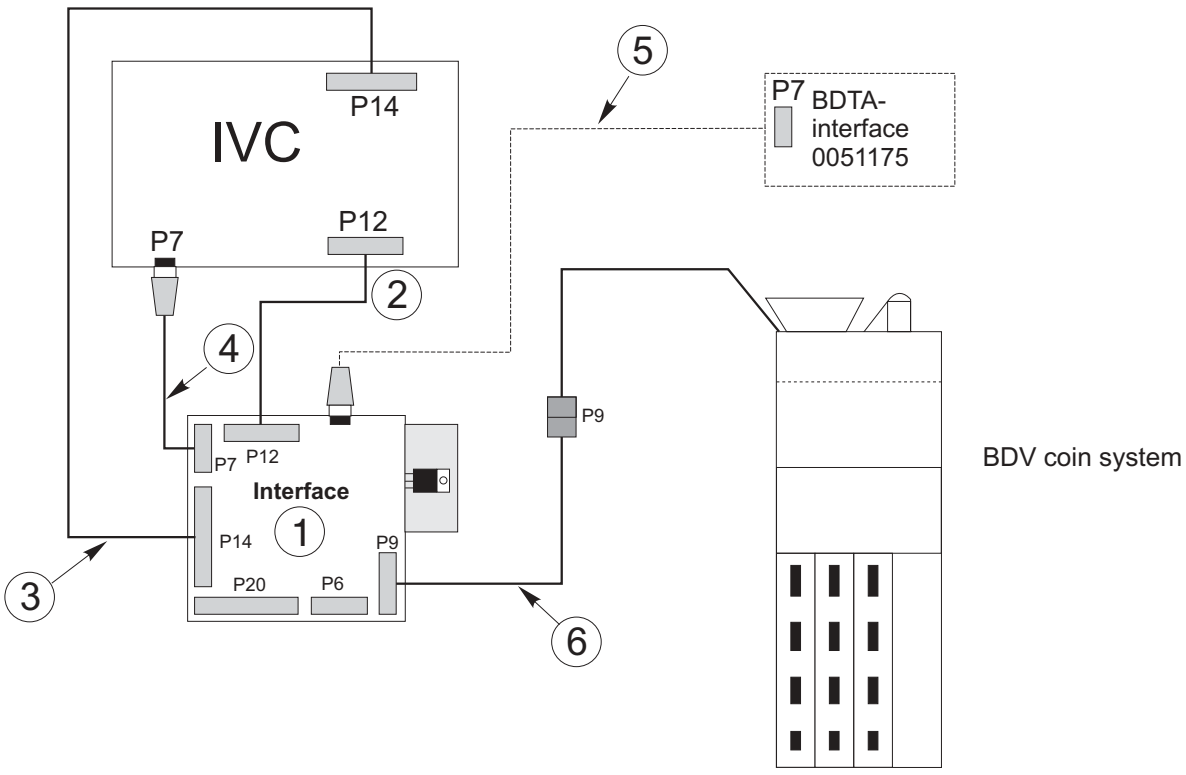
Verdrahtungsplan
IVC mit Münzschaltsystemen

EXECUTIVE STANDARD

Wiring Diagram
IVC unit with coin system acc. to

4302-rs

26.6 Wiring diagram IVC unit with BDV coin system



(1) Interface for Executive and BDV
part no. 0049665

(1) Interface for Executive, BDV and BDTA
part no. 0043962

(1) Interface for Executive, BDV, BDTA and RS232
part no. 0047399

(2) Loom interface - IVC control unit P12,
part no. 0050134

(3) Loom interface - IVC control unit P14,
part no. 0050129

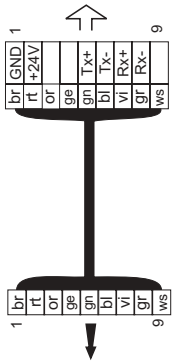
(4) Loom interface - IVC control unit P7,
part no. 0003834

(5) Loom interface - BDTA interface P7,
part no. 0050137

(6) Loom interface - BDV coin system P9,
part no. 0033659

Verbindungskabel für:
Connection cable for:

Münzsystem
nach BDV-Stand.
Coin System acc.
to BDV standard

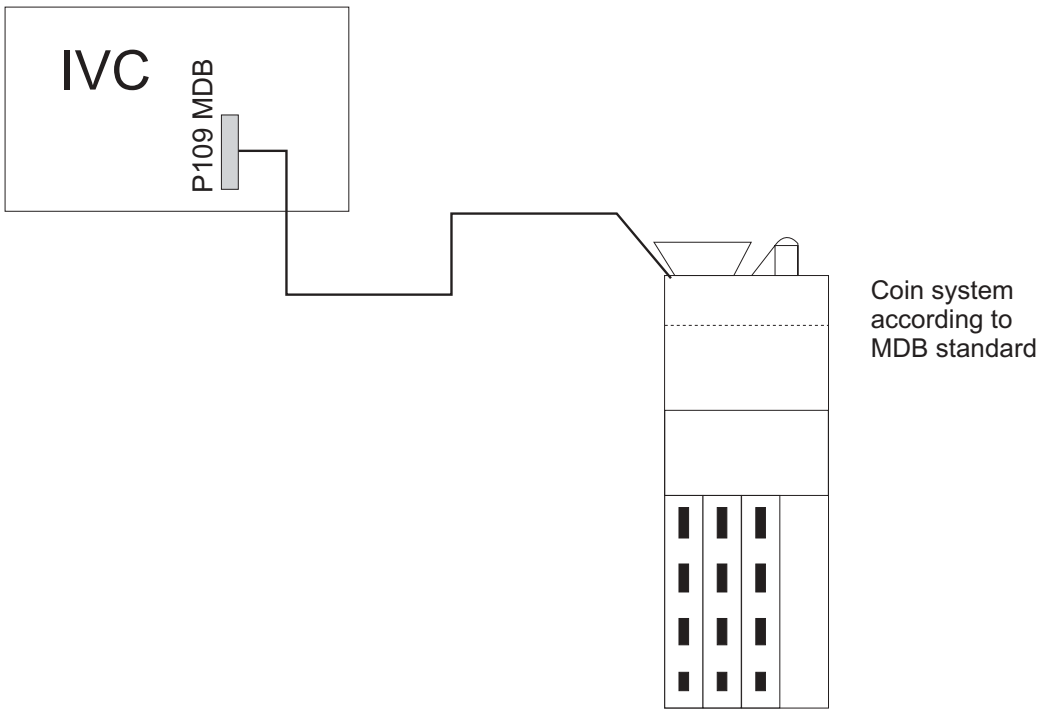


Verdrahtungsplan
IVCmit Münzschaltsystem nach
Wiring Diagram
IVC unit with coin system acc. to

BDV STANDARD

4302-rs

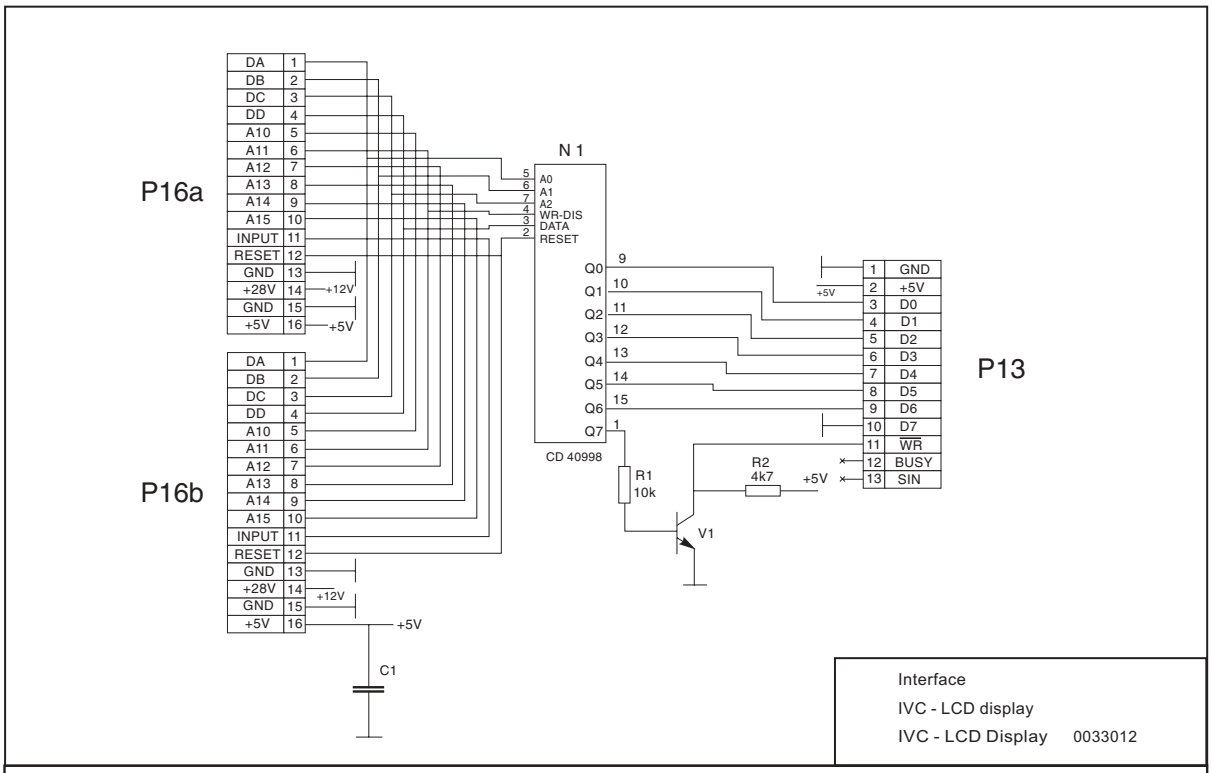
26.7 Wiring diagram IVC unit with MDB coin system

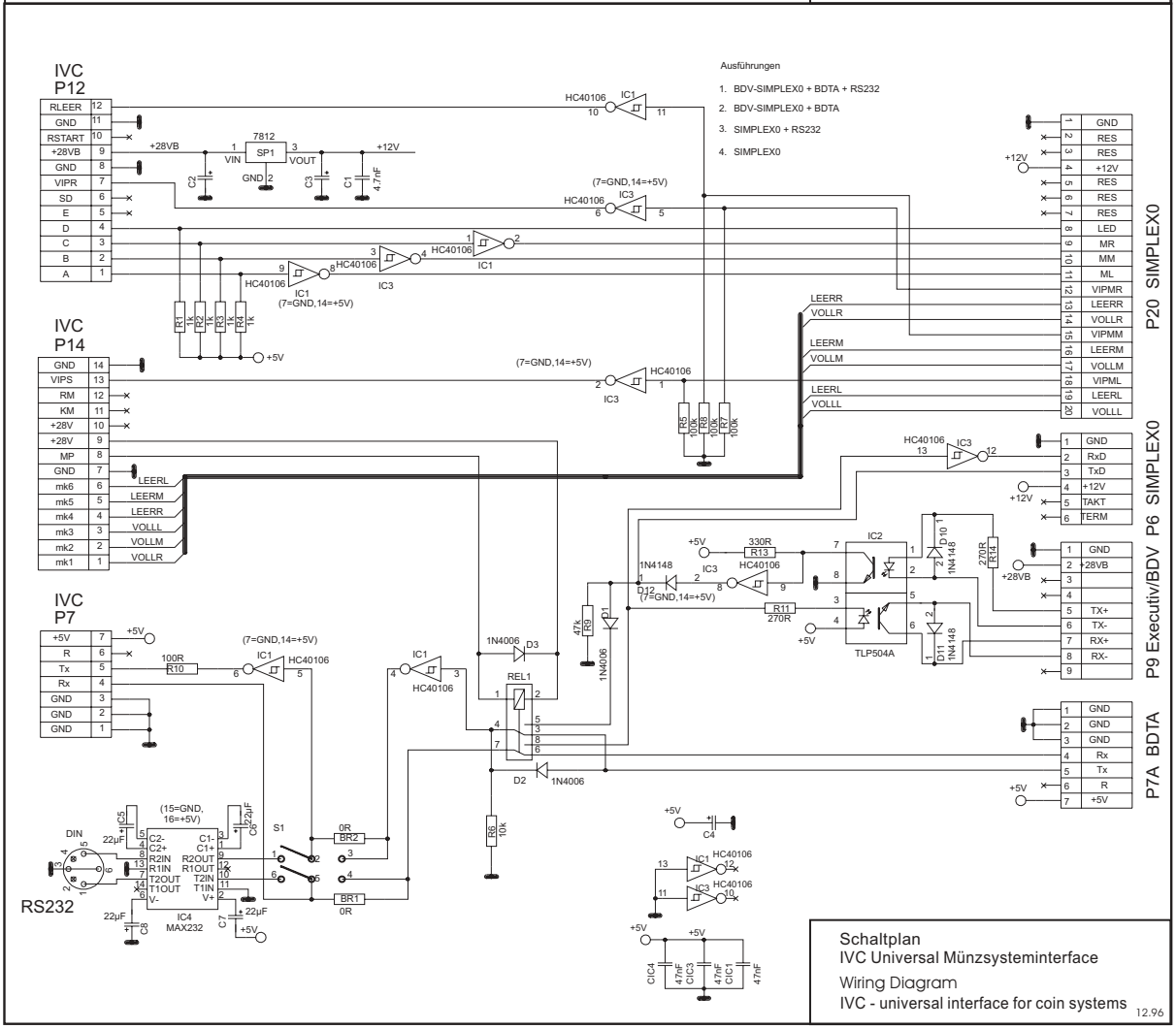


IVC control unit with HC11processor for MDB, part no.: 0055122

Wiring diagram
IVC unit with coin system acc. to
MDB-STANDARD
09.98

26.8 Interface IVC - LCD display / wiring diagram IVC - universal interface



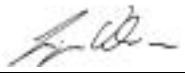


27 Declarations of conformity

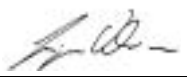
27.1 MULTI BL

Konformitätserklärung – Declaration of Conformity – Déclaration de Conformité		
Geräteart:Überschrift Product Description: Description Du Produit:	Warenautomat Vending Machine Distributeur De Marchandises	
Typenbezeichnung: Model No.: Modèle No.:	**Snack BL** Standardkühlung oder Lebensmittelkühlung / Standard Cooling Unit Or Refrigerated Food Cooling Unit / Groupe De Réfrigeration Ou Groupe De Réfrigeration Renforcée Pour Conservation De Produits Frais	
Angewandte EG-Richtlinien: Directives Complied with: Directives de la CE:	73/23/EEC	Niederspannungsrichtlinie Low voltage directive Directive relaative aux appareils à basse tension
	89/336/EEC	Elektromagnetische Verträglichkeit EMC Directive Directive Relative à la compatibilité electromagnétique
Technische Vorschriften: Standards used: Régulation Technique:	EN 60335-1 EN 60335-75	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke Safety of household and similar Electrical appliances Sécurité des appareils electrodomestiques et analogues
	EN 55014-1	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte... Teil 1: Störaussendung - Produktfamiliennorm Electromagnetic compatibility; requirements for household appliance... Part 1: Emission - Product Family Standard Compatibilité Electromagnétique; exigences pour les appareils électrodomestiques... Partie 1: Emission - norme de famille de produits
	EN 55014-2	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte, Elektrowerkzeuge... Teil 2: Störfestigkeit - Produktfamiliennorm Electromagnetic compatibility; Requirements for household appliance, electric tools... Part 2: Immunity - Product Family Standard Compatibilité Electromagnétique; exigences d'Immunité pour les appareils électrodomestiques outillages... Partie 2: Immunité - norme de famille de produits
	EN 61000-3-2	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 2: Grenzwerte für Oberschwingungsströme Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 2: Limites pour les emissions de courant harmonique
Technische Vorschriften: Standards used: Régulation Technique:	EN 61000-3-3	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 3: Grenzwerte für Spannungsschwankungen... Electromagnetic Compatibility (EMC) Part 3: Limits Section 3: Limitation of voltage fluctuations... Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 3: Limitation des fluctuations de tension...
	EN 61000-4-3	Elektromagnetische Verträglichkeit (EMV) Teil 4: Prüf- und Meßverfahren Hauptabschnitt 3: Prüfung der Störfestigkeit gegen... Electromagnetic Compatibility (EMC) Part 4: Testing and measurement Technical Section 3: Radiated, radio-frequency... Compatibilité Electromagnétique (CEM) Partie 4: Techniques d'essai et de mesure Section 3: Essai d'Immunité aus champs electromagnétiques...
Unterschrift/Signature/Signature		
Gedruckter Name/Print name/ nom	Jürgen Obermeier	
Position/Position/Position	Chief Engineer/Technischer Leiter/Directeur Technique	
Datum/Date/Date	2. Mai 1998 / 2. May 1998 / 2. Mars 1998	

27.2 MULTI SL

Konformitätserklärung – Declaration of Conformity – Déclaration de Conformité		
Geräteart:Überschrift Product Description: Description Du Produit:	Warenautomat Vending Machine Distributeur De Marchandises	
Typenbezeichnung: Model No.: Modèle No.:	**Snack SL** Standardkühlung oder Lebensmittelkühlung / Standard Cooling Unit Or Refrigerated Food Cooling Unit / Groupe De Réfrigeration Ou Groupe De Réfrigeration Renforcée Pour Conservation De Produits Frais	
Angewandte EG-Richtlinien: Directives Complied with: Directives de la CE:	73/23/EEC	Niederspannungsrichtlinie Low voltage directive Directive relaative aux appareils à basse tension
	89/336/EEC	Elektromagnetische Verträglichkeit EMC Directive Directive Relative à la compatibilité electromagnétique
Technische Vorschriften: Standards used: Régulation Technique:	EN 60335-1 EN 60335-75	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke Safety of household and similar Electrical appliances Sécurité des appareils electrodomestiques et analogues
	EN 55014-1	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte... Teil 1: Störaussendung - Produktfamiliennorm Electromagnetic compatibility; requirements for household appliance... Part 1: Emission - Product Family Standard Compatibilité Electromagnétique; exigences pour les appareils électrodomestiques... Partie 1: Emission - norme de famille de produits
	EN 55014-2	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte, Elektrowerkzeuge... Teil 2: Störfestigkeit - Produktfamiliennorm Electromagnetic compatibility; Requirements for household appliance, electric tools... Part 2: Immunity - Product Family Standard Compatibilité Electromagnétique; exigences d'Immunité pour les appareils électrodomestiques outillages... Partie 2: Immunité - norme de famille de produits
	EN 61000-3-2	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 2: Grenzwerte für Oberschwingungsströme Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 2: Limites pour les emissions de courant harmonique
Technische Vorschriften: Standards used: Régulation Technique:	EN 61000-3-3	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 3: Grenzwerte für Spannungsschwankungen... Electromagnetic Compatibility (EMC) Part 3: Limits Section 3: Limitation of voltage fluctuations... Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 3: Limitation des fluctuations de tension...
	EN 61000-4-3	Elektromagnetische Verträglichkeit (EMV) Teil 4: Prüf- und Meßverfahren Hauptabschnitt 3: Prüfung der Störfestigkeit gegen... Electromagnetic Compatibility (EMC) Part 4: Testing and measurement Technical Section 3: Radiated, radio-frequency... Compatibilité Electromagnétique (CEM) Partie 4: Techniques d'essai et de mesure Section 3: Essai d'Immunité aus champs electromagnétiques...
Unterschrift/Signature/Signature		
Gedruckter Name/Print name/ nom	Jürgen Obermeier	
Position/Position/Position	Chief Engineer/Technischer Leiter/Directeur Technique	
Datum/Date/Date	2. Mai 1998 / 2. May 1998 / 2. Mars 1998	

27.3 MULTI SSL

Konformitätserklärung – Declaration of Conformity – Déclaration de Conformité		
Geräteart:Überschrift Product Description: Description Du Produit:	Warenautomat Vending Machine Distributeur De Marchandises	
Typenbezeichnung: Model No.: Modèle No.:	**Snack SSL** Standardkühlung oder Lebensmittelkühlung / Standard Cooling Unit Or Refrigerated Food Cooling Unit / Groupe De Réfrigeration Ou Groupe De Réfrigeration Renforcée Pour Conservation De Produits Frais	
Angewandte EG-Richtlinien: Directives Complied with: Directives de la CE:	73/23/EEC	Niederspannungsrichtlinie Low voltage directive Directive relaative aux appareils à basse tension
	89/336/EEC	Elektromagnetische Verträglichkeit EMC Directive Directive Relative à la compatibilité electromagnétique
Technische Vorschriften: Standards used: Régulation Technique:	EN 60335-1 EN 60335-75	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke Safety of household and similar Electrical appliances Sécurité des appareils electrodomestiques et analogues
	EN 55014-1	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte... Teil 1: Störaussendung - Produktfamiliennorm Electromagnetic compatibility; requirements for household appliance... Part 1: Emission - Product Family Standard Compatibilité Electromagnétique; exigences pour les appareils électrodomestiques... Partie 1: Emission - norme de famille de produits
	EN 55014-2	Elektromagnetische Verträglichkeit; Anforderungen an Haushaltgeräte, Elektrowerkzeuge... Teil 2: Störfestigkeit - Produktfamiliennorm Electromagnetic compatibility; Requirements for household appliance, electric tools... Part 2: Immunity - Product Family Standard Compatibilité Electromagnétique; exigences d'Immunité pour les appareils électrodomestiques outillages... Partie 2: Immunité - norme de famille de produits
	EN 61000-3-2	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 2: Grenzwerte für Oberschwingungsströme Electromagnetic compatibility (EMC) Part 3: Limits Section 2: Limits for harmonic current emissions Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 2: Limites pour les emissions de courant harmonique
Technische Vorschriften: Standards used: Régulation Technique:	EN 61000-3-3	Elektromagnetische Verträglichkeit (EMV) Teil 3: Grenzwerte Hauptabschnitt 3: Grenzwerte für Spannungsschwankungen... Electromagnetic Compatibility (EMC) Part 3: Limits Section 3: Limitation of voltage fluctuations... Compatibilité Electromagnétique (CEM) Partie 3: Limites Section 3: Limitation des fluctuations de tension...
	EN 61000-4-3	Elektromagnetische Verträglichkeit (EMV) Teil 4: Prüf- und Meßverfahren Hauptabschnitt 3: Prüfung der Störfestigkeit gegen... Electromagnetic Compatibility (EMC) Part 4: Testing and measurement Technical Section 3: Radiated, radio-frequency... Compatibilité Electromagnétique (CEM) Partie 4: Techniques d'essai et de mesure Section 3: Essai d'Immunité aus champs electromagnétiques...
Unterschrift/Signature/Signature		
Gedruckter Name/Print name/ nom	Jürgen Obermeier	
Position/Position/Position	Chief Engineer/Technischer Leiter/Directeur Technique	
Datum/Date/Date	9. Dezember 1998 / 9. December 1998 / 2. Décembre 1998	

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Symbols

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