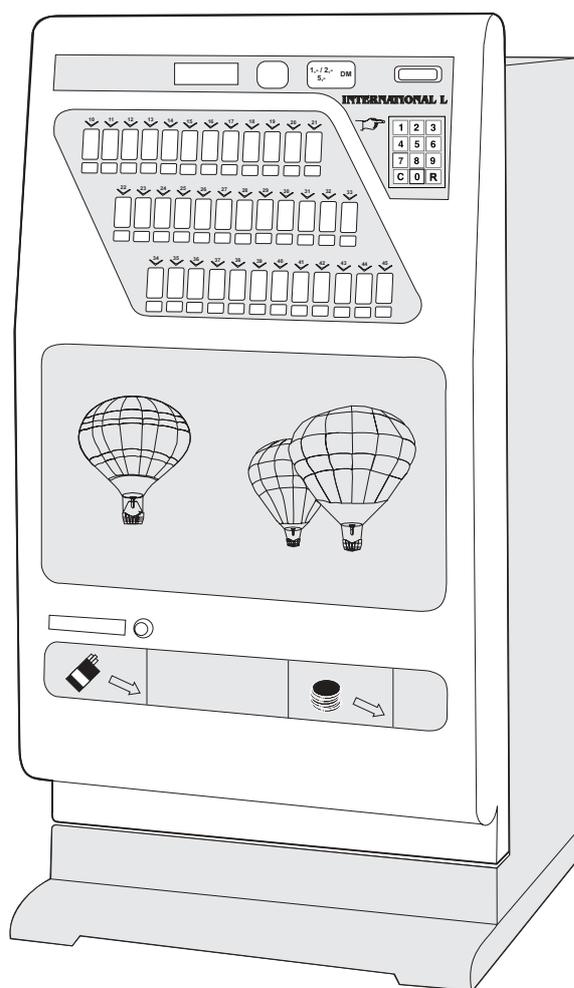


# International L



## Operating Instructions



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# 1 Description of the Vending Machine

## 1.1 General Description

The vending machine is a dispenser for hard and soft packs.

International L	35/27	35/35
selections	27	35
long columns 30 packs each	18	18
long columns 24 packs each	9	1
short columns 10 packs each	-	16
columns for 100 mm cigarettes	2	2
total capacity of packs *)	756	724

\*) standard packs of 20 cigarettes

The width and length of the product columns and the clearance height can be adjusted according to the size of the packs. All columns are equipped with single drive units and with sensors for indicating that the columns are empty.

### 1.1.1 Standard Equipment

- Programmable microprocessor controller with data capture
- Alphanumeric display in two lines
- Closing mechanism with multiple locking
- Steel cabinet for increased protection against burglary
- Showcase with illuminated advertising, picture can be exchanged
- Strong metal keyboard with integrated return button for motor-driven change return
- Illuminated brands and price labels
- Display indicating that the columns are empty
- Infrared sensor for reading statistical data by means of a mobile data capture device. You can purchase this device separately at specialized distributors – the infrared sensor is the interface which is necessary for reading the data.

### 1.1.2 Optional Equipment



**NOTE: If you are interested in optional equipment, please contact your distributor of Deutsche Wurlitzer GmbH machines.**

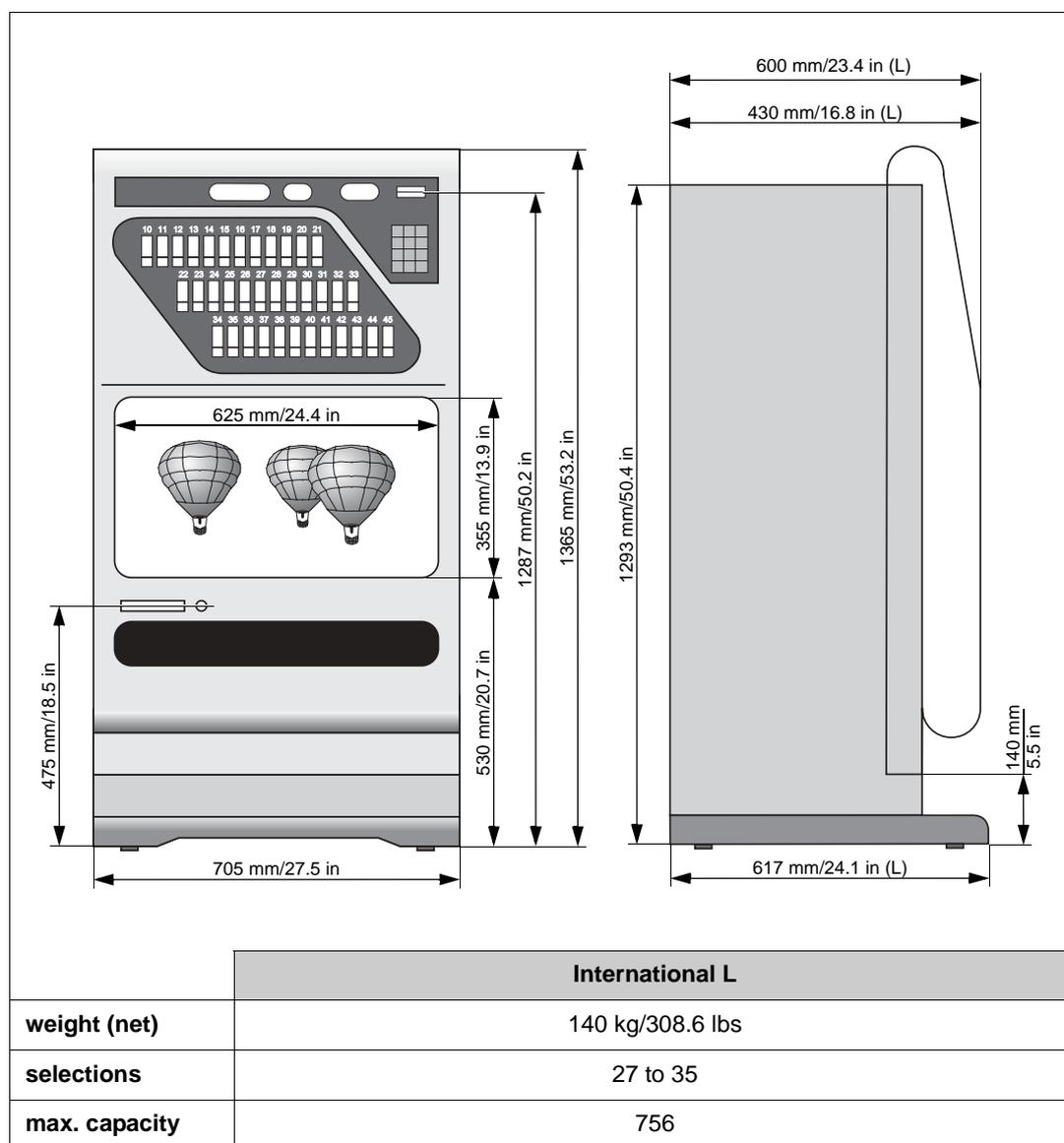
#### Accessories and Assemblies for Conversion

- Printer for statistical data
- Safe cash box
- Tobacco columns
- Long dividers to convert short columns to long columns

### Payment Systems

- ECA (Electronic Coin Acceptor)
- Coin systems
- Credit card systems  
payment by means of a charged chip on the credit card
- Change giver over a separate 5 tubes change giver
- Bill acceptor
- Change return with hopper

## 1.2 Dimensions, Weight and Capacity



## 2 Unpacking, Transport and Installation

### 2.1 Unpacking and Transport

The vending machine is delivered on a pallet, boxed.

1. Remove packaging.
2. Take the vending machine off the pallet.



**WARNING! Danger of injury!**

The vending machine has a weight of 140 kg/308.6 lbs. Do not transport the vending machine on your own. Use appropriate equipment or call on a second person's help.

On the rear side of the vending machine you can find two handles for carrying the vending machine. To do so, four persons are needed.

The transport with a sack trolley is easier and more comfortable.



**NOTE: Wheels are installed at the bottom of the vending machine. For short distances, the vending machine can be transported by means of these wheels on even surfaces without obstacles.**

### 2.2 Package Contents

The package contents includes:

- Keys for the vending machine  
The keys are placed on the front of the vending machine in the product delivery bin.
- Operating instructions  
Place the operating instructions in the lower part of the vending machine. Thus, it is available to all users.
- Square for reducing the clearance height  
The square (1 x) is placed in a bag in the cash box of the vending machine. It is needed to adjust the clearance height according to the size of the packs.
- Fuses  
An extra fuse (T3.15amps) is placed in the bag in the cash box.
- Adjusting divider for converting a column  
The adjusting divider for a short column (1x) is placed in a bag in the cash box of the vending machine.

## 2.3 Installation of the Vending Machine

The correct installation of the vending machine is a decisive factor for the correct functioning. The vending machine can only be operated safely for a long time if the place of installation is dry.

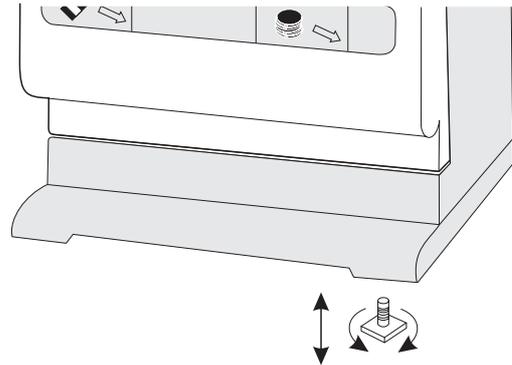


### **WARNING! Danger to life from electric shock!**

Be sure that a socket with a ground conductor is available.

In order to install the vending machine correctly, follow the steps below:

1. Install the vending machine at a place which is freely accessible. Thus, the vending machine can easily be filled and cleaned.
2. Align the vending machine with the aid of a spirit level. The vending machine must be in a vertical position in order to guarantee that the coin acceptor functions correctly and that the door of the vending machine can be opened without any problems. Use the square plastic screws to adjust and to fix the vending machine. Be sure that the vending machine is placed on an even surface.



3. Take the bag with the accessories out of the cash box of the vending machine.
  4. Pass the power cable through the round hole on the rear side of the vending machine; then, close the hole by means of the cover. The cover is primarily used to relieve the power cable from tension.
- The vending machine is now installed correctly. Let's now take the vending machine into operation, [see page 18](#).

## 2.4 Inserting Brand Labels

The brand labels for the selling products are not included in the package contents.

In order to insert brand labels, follow the steps below:

1. Open the door of the vending machine.
  2. Open the inner door by pulling the red handle.
  3. Insert the brand labels into the transparent films corresponding to the different products.
  4. Close the inner door and the door of the vending machine.
- The insertion of brand and price labels is completed.



## 2.5 Exchange of the Picture Display

The vending machine is delivered with a standard picture. It is easy to replace it by another.



**NOTE: You would like to change the picture?  
Deutsche Wurlitzer GmbH or your distributor offers a selection of pictures.**

In order to exchange the picture, follow the steps below:

1. Open the door of the vending machine.
  2. Open the inner door by pulling the red handle.
  3. Unscrew the thumb screw and turn the glass clamp.
  4. Remove the acrylic glass pane by pulling it upwards.
  5. Take the acrylic glass pane as model for cutting the new picture.
  6. Exchange the picture.
  7. Replace the acrylic glass pane and install it.
  8. Close the inner door and the door of the vending machine.
- The exchange of the picture is completed.



## 3.1 Adjusting Product Columns

### 3.1.1 Adjusting the Width of a Product Column

After delivery, all the product columns are adjusted to a width of 63 mm/2.5 inches. This adjustment corresponds to the width of standard packs and in general does not need to be adjusted.

The width of the product columns can be extended by moving the dividers to the side in intervals of 3 mm/0.12 inches. For a safe functioning of the vending machine, the width of the product columns should be "width of packs + 2 mm/0.08 inches".



**NOTE: If you extend a product column, another column must be dropped as the minimum width of 63 mm/2.5 inches cannot be maintained for all columns.**

In order to adjust the width of the product columns, follow the steps below:

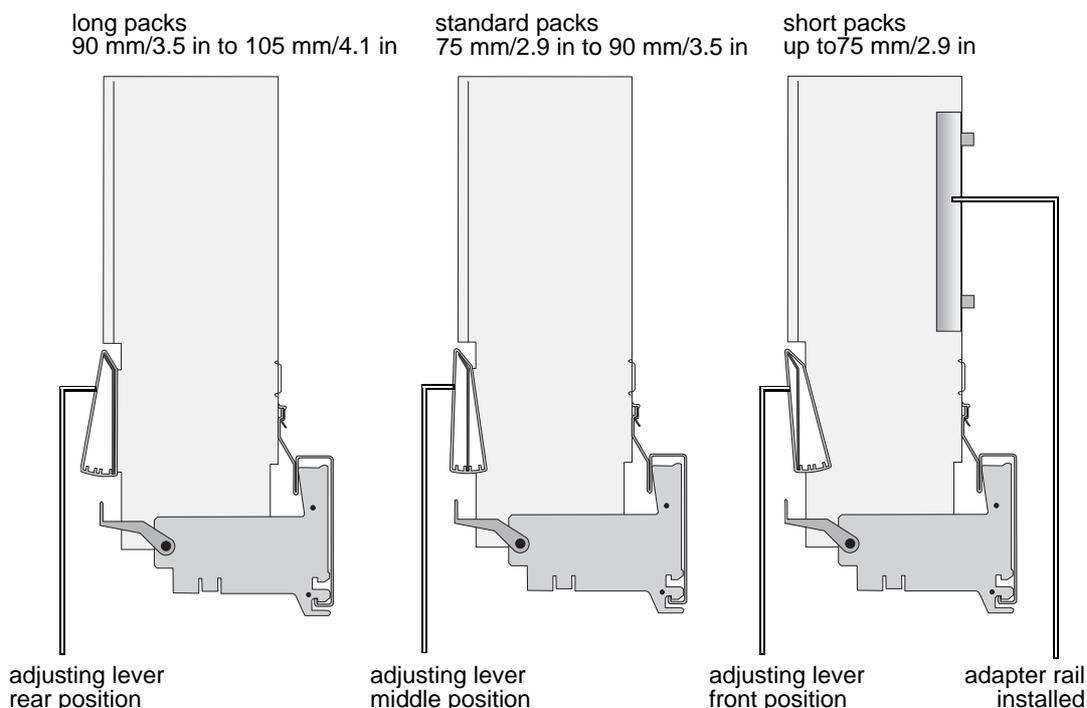
1. Open the door.
  2. Determine the product column which should be extended and the product column which should be dropped.
  3. Take the corresponding divider at the top and the bottom and pull it upwards until the locking is released.
  4. Remove the motor of the product column which should be dropped. To do so, loosen the cable connection at the motor, pull the locking lever at the motor and remove the motor.
  5. Move the divider according to the width of the products and press the divider downwards until the locking locks in place.
  6. Adjust the assignment of product selection and motor according to the conversion.
  7. Change the selling price if necessary, [QQQ](#).
  8. Check whether the settings of the product columns for the length and height of the products correspond to the new format of the packs, adjust the settings if necessary.
    - Adjusting the depth of a product column, [see page 14](#).
    - Adjusting the clearance height of a product column, [see page 15](#).
  9. Fill products into the product columns.
  10. Perform some test vend. Adjust the settings for the product column if problems occur during the test vend.
  11. Update the corresponding brand and price labels, [see page 10](#).
  12. Update the filling plan of the vending machine, [see page 85](#).
  13. Close the door.
- The adjustment of the width of the product column is completed and the vending machine is ready for operation again.

### 3.1.2 Adjusting the Depth of a Short Product Column – Length of Packs 75 mm/2.9 inches to 105 mm/4.1 inches

International L: middle column  
 International M: rear column  
 Vision: columns 10 to 14 and 20 to 24

- The short columns in the rear of the International M have different heights.
  - The "short" short columns have a height of 225 mm/8.7 inches.
  - The "longer" short columns have a height of 355 mm/13.9 inches.
- The short columns of the Vision have different heights.
  - The columns 10 to 14 have a height of 230 mm/9.0 inches.
  - The columns 20 to 24 have a height of 430 mm/16.8 inches.

For long and standard packs you have to position the adjusting lever as shown in the picture below. In case you want to vend short packs from the short columns you have to insert the adapter rail from the accessories bag (see picture RH side).



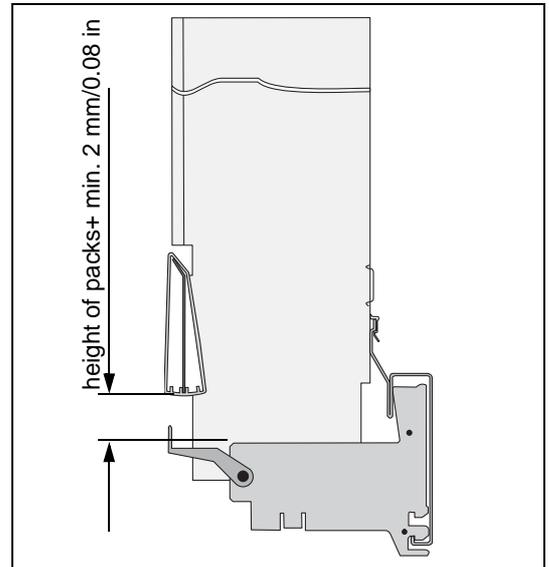
**Setting for:**

- long packs:                      without adapter rail, install adjusting lever in rear position
- standard packs:                      without adapter rail, install adjusting lever in middle position
- short packs:                      install adapter rail, install adjusting lever in front position

### 3.1.3 Adjusting the Clearance Height of a Product Column

The clearance height of the product columns has to be adjusted according to the height of packs. The vending machine is set to a clearance height of 18 mm/0.7 inches to 26 mm/1.0 inches by default.

Optimum clearance height = height of packs + 2 mm/  
0.08 inches.



Two possibilities exist to adjust the clearance height:

- Adjusting the clearance height by displacing the motor, [see page 16](#).
- Adjusting the clearance height by moving the square, [see page 16](#).

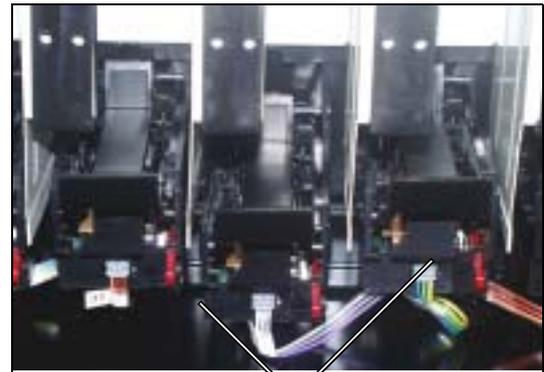
By combining the two possibilities, it is possible to adjust the clearance height for all common width of packs. The following pages will help you with this task.

Width of packs[mm]	Position of the motor	Square for reducing the clearance height
10 mm/0.4 in to 18 mm/0.7 in	motor installed in upper position	square for reducing the clearance height
18 mm/0.7 in to 26 mm/1.0 in	motor installed in upper position	without square for reducing the clearance height
26 mm/1.0 in to 32 mm/1.3 in	motor installed in lower position	square for reducing the clearance height
32 mm/1.3 in to 40 mm/1.6 in	motor installed in lower position	without square for reducing the clearance height

### Adjusting the Clearance Height by Displacing the Motor

Install the motor in the upper or lower position.

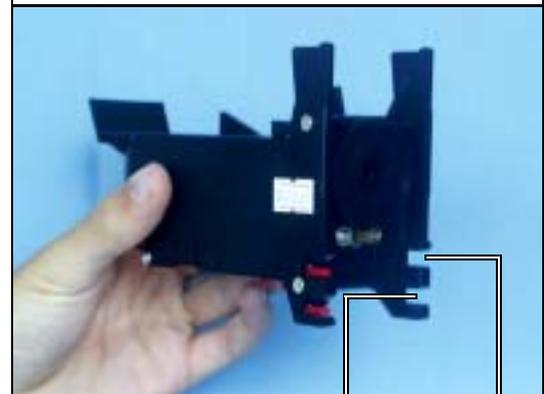
- Pull the red locking lever and remove the motor.



locking lever

The motor can be installed in the upper or lower position again.

- Upper position (lower slot):  
clearance height 18 mm/0.7 inches to 26 mm/1.0 inches
- Lower position (upper slot):  
clearance height 32 mm/1.3 inches to 40 mm/1.6 inches

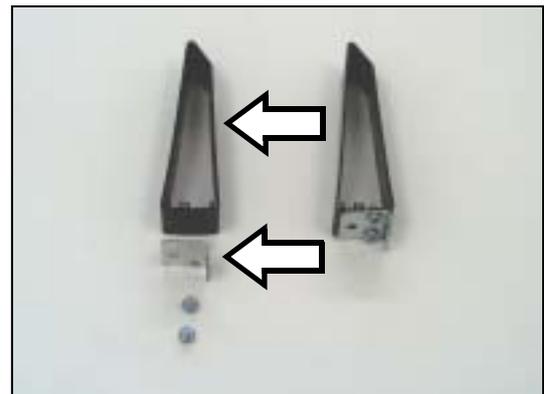


lower slot upper slot

### Adjusting the Clearance Height by Moving the Square Positions

The squares for reducing the clearance reduce the clearance of the corresponding product column by 8 mm/0.3 inches – if they are screwed to the adjusting levers.

The accessories contain the square for reducing the clearance (1 x).



## 3.2 Conversion Long Column/Short Column

If you want to extend your product selections, you can convert the long columns of the vending machine into two short columns respectively. To do so, special dividers and additional motors are needed.



**NOTE: Deutsche Wurlitzer GmbH or your distributor offer dividers for short columns and motors.**

**Part numbers:**

long column (0047402)  
short column (0048839)

Different from the standard settings after delivery, the long columns 21 to 31 can be converted into short columns and the short columns 32 to 37 can be converted into long columns, [see page 17](#).

**Follow the steps below in order to convert short columns into long columns and vice versa:**



**NOTE: Detailed information about installing and removing the dividers, motors etc. can be found in chapter "Adjusting Product Columns", [see page 13](#).**

- Remove the dividers of the product columns which should be converted.
- Remove the motors of the upper short columns if they are to be converted into long columns.
- Install the new dividers.
- Install the motors of the upper short columns if they were long columns before conversion.
- Adjust the new product columns according to the format of the packs ([see page 13](#)) and update the assignment of product selection and motor.

## 4 Taking the Vending Machine into Operation

### 4.1 Connection and First Steps

The vending machine is pre-configured (basic configuration) so that it can easily be taken into operation.

In order to take the vending machine into operation with its basic configuration, follow the steps below:

1. Connect the vending machine to the socket.  
⇒ Message shown in the display:
- IN OPERATION
2. Determine the filling of the product columns and write the assignment of product/product column down in the filling plan, [see page 85](#).
  3. Be sure that the pack size of the selling products corresponds to the adjustments of the product columns. If necessary, adjust the product columns again.  
⇒ Adjusting the width of a product column, [see page 13](#).  
⇒ Adjusting the depth of a product column, [see page 14](#).  
⇒ Adjusting the height for passage of a product column, [see page 15](#).
  4. Fill the products into the product columns (min. two packs per column).
- 
5. **IMPORTANT!** Perform a motor test, [see page 36](#).
  6. Programme the vend prices, [see page 29](#).
  7. Perform some test vends with money when the door is open.
  8. Close the machine door.
- The machine is now ready to work.

## 5 Programming of the machine

### 5.1 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

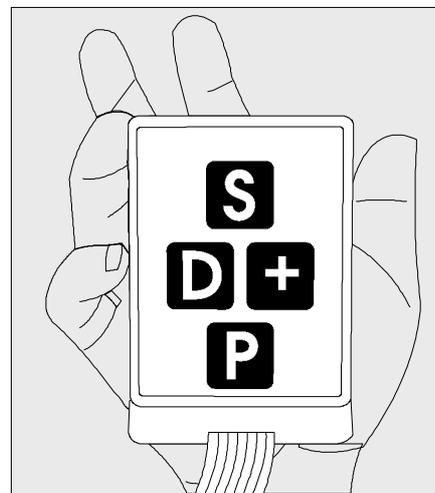
Use to select single display digits during activated service program.

(+) PLUS

Use to set the selected digit with values between 0 and 9.

(P) PROGRAMM

Use to save new inputs into memory.



### 5.2 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. 15.7 on page 54](#)).

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.

#### 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).



**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.

MACHINE ACCEPTS  
0.05 - 2.00 EURO

alternating with

IN OPERATION

Message 0 factory preset

00.00

text memory preset from factory

01 VENDS PER  
SELECTION

empty text memory

.01

## 5.3 The service programs (overview)

<b>Section 1</b>	<b>Service programs 1 - 10</b>
display of:	statistics sales machine tests
programming of:	vend prices vend modes selection options
<b>To call up:</b> 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.

<b>Section 2</b>	<b>Service programs 11 - 17</b>
programming of:	data transfer (only for NRI Simplex 0 or MDB) coin options change giver programming maschine configuration
<b>To call up:</b>	
<ul style="list-style-type: none"> <li>• Press key S until display shows 7.</li> <li>• Hold key P while pressing selection button 8 to display service program 11.</li> <li>• Press S to call up service programs 12 to 17.</li> </ul>	
<b>OR:</b>	
<ul style="list-style-type: none"> <li>• 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.</li> </ul>	



### 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.

## 5.4 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.

## 6 Programming of vend prices

### 6.1 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.

```
08 PRICE
PROGRAMMING
```

```
SELECTION:
10 =0050
```

```
SELECTION:
=0110
```

```
SELECTION:
= 08
```

### 6.2 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.

```
08 PRICE
PROGRAMMING
```

```
SELECTION:
10 =0100
```

```
SELECTION:
10 =
```

```
SELECTION:
=0150
```

```
SELECTION:
12 =0190
```

```
SELECTION:
=0150
```

```
SELECTION:
=0150
```



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 20](#)).

**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.

## 7 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



07 TEST PROGRAM

- 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



SELECTION:  
01 =0453



SELECTION:  
01 =1511

- 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.



SELECTION:  
06 = 06



SELECTION:  
06 = 2

coin channel 2

- Press button 7: Motor test  
All available selections 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.



SELECTION:  
07 =7 10



SELECTION:  
07 =7 89



### NOTE:

If two motors operate in parallel mode they will be tested separately. 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 20](#)).

## 8 Optional button/column allocation - service program 09

Normally packs are delivered from the column with corresponding selection number. This can be re-programmed. Before starting reprogramming it is strictly recommended to put in brands into the door and columns and to prepare a filling plan. With that you can see which button belongs to which column in case of single reset or reprogramming.

### 8.1 Following button/column allocations are possible

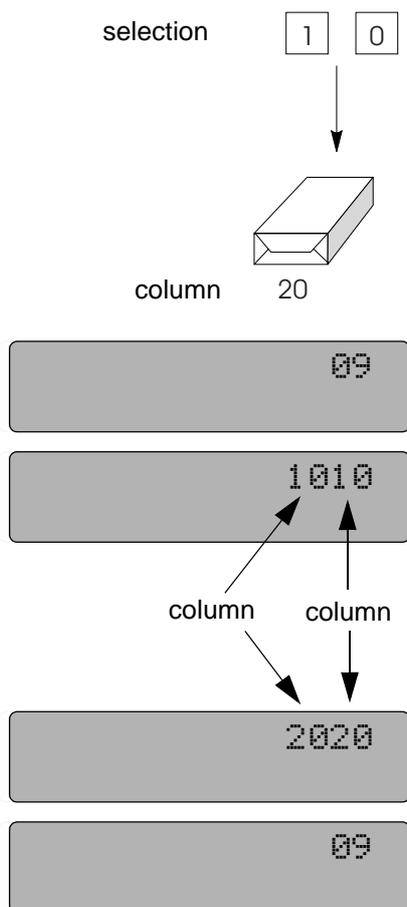
#### 8.1.1 One selection drives one column with different number

**Example:**

When 10 is selected column no. 20 delivers

**Programming:**

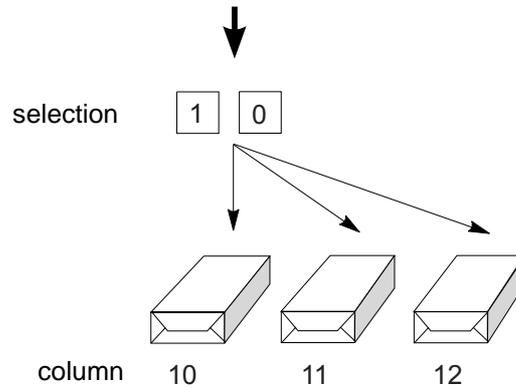
1. Press button S until display shows
  2. Enter selection 10, display shows
  3. Press button P - hold it - display goes dark, enter the figures 2 0 2 0, display shows
  4. Press button C, display shows
- Finally press button S until display shows "Ready".



### 8.1.2 One selection drives different columns alternately

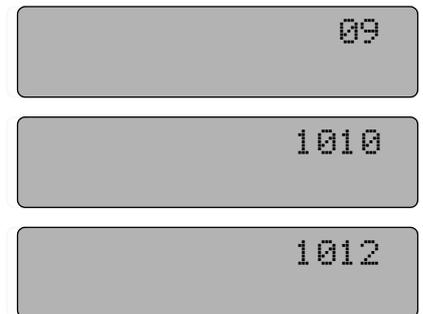
**Example:**

In case selection 10 is made columns no. 10 - 11 - 12 should deliver alternately (regular vending)



**Programming:**

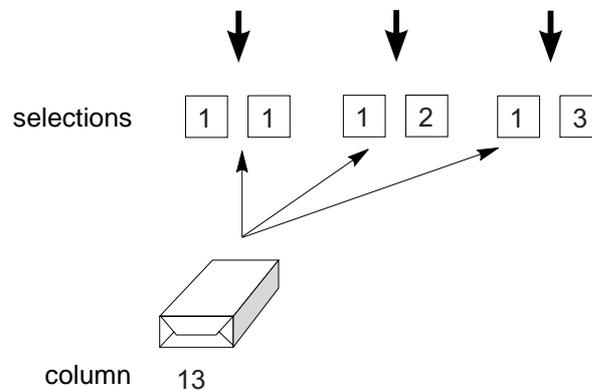
1. Press button S until display shows
  2. Enter selection 10, display shows
  3. Press button P - hold it - display goes dark and enter the figures 1 0 1 2. Display shows
- Finally press button S until display shows "Ready".



### 8.1.3 Several selections driving one column

**Example:**

If one of selections 11, 12 or 13 is made, always column no. 13 delivers.

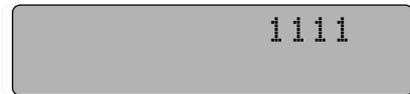


**Programming:**

1. Press button S until display shows



2. Enter selection 11, display shows



3. Press button P - hold it - display goes dark and enter the figures 1 3 1 3, display shows



4. Enter selection 12, display shows



5. Press button P , display shows

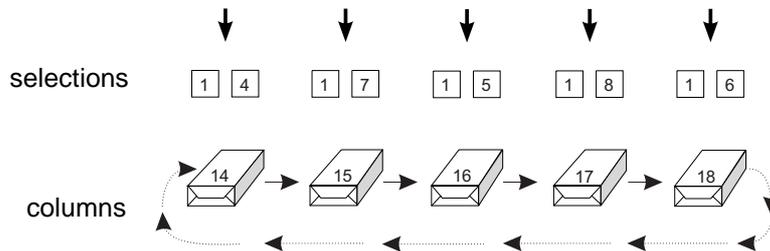


Finally press button S until display shows "Ready".

**8.1.4 Several selections driving alternately same number of columns, i.e. columns deliver evenly no matter which column was selected.**

**Example:**

Columns no. 14 to 18 should deliver consecutively no matter which column between 14 and 18 was selected.



**Programming:**

1. Press button S until display shows



2. Enter selection 14, display shows



3. Press button P - hold it - display goes dark and enter the figures 1 4 1 8, display shows



4. Enter selection 15, display shows



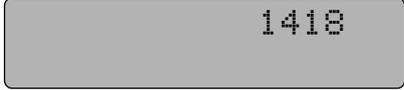
5. Press button P, display shows



- |   |   |
|---|---|
| 6. Enter selection 16, display shows  |  |
| 7. Press button P, display shows  |  |
| 8. Enter selection 17, display shows  |  |
| 9. Press button P, display shows  |  |
| 10. Enter selection 18, display shows   |  |
| 11. Press button P, display shows   |  |
| <input checked="" type="checkbox"/> Finally press button S until display shows "Ready". |   |

### 8.1.5 Reset of this button/column allocation shown in example 8.1.4

Reset can be done without cancellation of programming done in part 8.1.1, 8.1.2 and 8.1.3.

- |   |   |
|---|---|
| 1. Reset - call up service program 09   |  |
| 2. Enter selection 14, display shows  |  |
| 3. Press button P - hold it - display goes dark. Enter the figures 1 4 1 4, display shows |  |
| 4. Press button C, display shows  |  |
| 5. Enter selection 15, display shows  |  |
| 6. Press button P - hold it - display goes dark. Enter the figures 1 5 1 5, display shows |  |
| 7. Press button C, display shows  |  |
| 8. Continue the same manner up to selection 18.   |   |
| <input checked="" type="checkbox"/> Finally press button S until display shows "Ready".   |   |

### 8.1.6 Reset of a II button/column allocations in service program 09

1. Call up service program 09, display shows



2. Enter any selection, e.g. 11, display shows



3. Press button P - hold it - display goes dark. Enter 4 times figure 9, display shows first



then



4. Press button C, display shows



Finally press button S until display shows "Ready".

## 9 Operation with MDB

### 9.1 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 36 and page 38)).

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 19). Otherwise you have to repeat "transfer of data" (SP 11 button 1 to be programmed 9999, see also see chapt. 9.9 on page 34). To leave service program press key S seven times.

Still no success?

Check machine configuration in service program 15 (see chapt. 20 on page 67).

### 9.2 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".

### 9.3 How to empty the tubes - service program 07

#### 9.3.1 Emptying all the tube

Press key S seven times, display shows:

```
07 TEST PROGRAM
```

Then press 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 press selection button 2 again the three coin pushers make a new delivery.

Finally leave the service program (see page 20).

### 9.3.2 Emptying single tubes - service program 07

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

Press key S seven times, display shows:

```
07 TEST PROGRAM
```

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

```
SELECTION:
=0000
```

Release both buttons.

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

```
SELECTION:
=0003
```

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.

### 9.4 Programming max. change - service program 08

Press key S eight times, display shows:

```
08 PRICE
PROGRAMMING
```

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

```
SELECTION:
90 =0500
```

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.

```
SELECTION:
=1000
```

Finally leave the service program ([see page 20](#)).

## 9.5 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.

```
SELECTION:
90 = 00
```

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.

```
SELECTION:
90 = 01
```

3. Single vend WITHOUT obligation to buy with automatic return of change  
The functions are the same as described 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.

```
SELECTION:
90 = 40
```

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.

```
SELECTION:
90 = 41
```

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.

```
SELECTION:
90 = 51
```

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.

```
SELECTION:
90 = 80
```

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

```
SELECTION:
90 = 10
```

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 described above.

Finally leave the service program (see page 20).

**9.6 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 described above.



**How to check:**

Press key C, display shows:



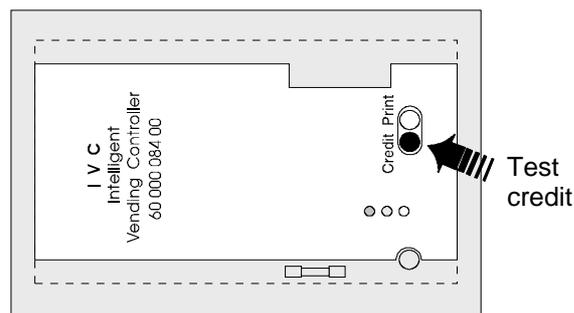
Press the re-programmed button (e.g. 1), the new option (e.g. 80) should be displayed now.



**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.

## 9.7 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.



### 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 20](#)).

## 9.8 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 20](#)).

## 9.9 "Data block" transfer - service program 11, button 1

A certain data block has to be transferred 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 20](#)).

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

You can connect a bill acceptor, which sends serial impulses 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:

### 9.10.1 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.

**9.10.2 Programming of bill options - service program 12, button 9**

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

```
12 COIN OPTIONS
```

Press button 9, display shows i.e.

```
SELECTION:
09 = 08
```

**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

```
SELECTION:
09 =
```

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

```
SELECTION:
= 09
```

Release button P.

**9.10.3 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

```
14 CHANGE GIVER
OPTIONS
```

Press button 6, display for i.e.

The RH number indicating that currently 50 + 1 bills will be accepted before a vend.

```
SELECTION:
06 = 50
```

**Programming:**

Press button P - hold it - display shows

```
SELECTION:
06 =
```

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

```
SELECTION:
= 09
```

Release button P.

Finally leave the service program ([see page 20](#)).

## 10 MDB coin system - statistics

### 10.1 Sales per selection - service program 01 (resetable)

Press key S once, display shows

```
01 VENDS PER
SELECTION
```

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

```
SELECTION:
10 =0253
```

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

```
SELECTION:
= 01
```

**Resetting:**

Press key P - hold it - display shows

```
SELECTION:
10 =
```

Enter the digits 0000 then display shows

```
SELECTION:
=0000
```

Finally leave the service program ([see page 20](#)) or press key C to re-start the process for another compartment (selection).

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

Press key S three times, display shows

```
03 TOTAL VENDS
```

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.

```
SELECTION:
10 =2560
```

**Resetting:**

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

Finally leave the service program ([see page 20](#)).

### 10.3 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)

```
SELECTION:
01 =0093
```

Display 2 (lower value 52.70 EURO)

```
SELECTION:
02 =5270
```

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

Press key S five times, display shows

```
05 NOT RESETABLE
COUNTERS IN £
```

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.

```
SELECTION:
01 =0000
```

Push key C, then selection button 2.

The display shows, for example

This means that the current turnover comes to 35.80 EURO.

```
SELECTION:
02 =3580
```

Finally leave the service program ([see page 20](#)).

**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

**10.4 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.

## 10.5 Reset of all counters - service program 04, button 8

Press key S four times, display shows



04 COUNTER  
RESET

Press selection button 8 and hold it, display shows



SELECTION:  
08 =9999

Press key P. The digits 08 disappear.



SELECTION:  
=9999

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. 14.1 on page 48](#).



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 20](#)).

## 11 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.

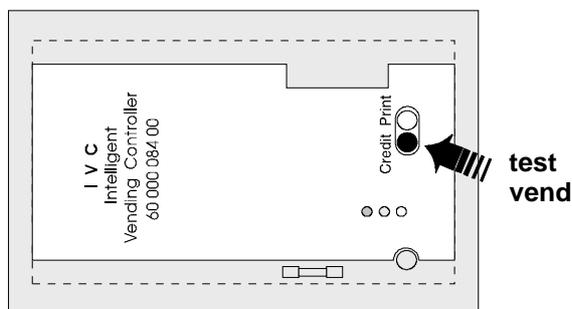
The programming steps are described in detail in the manuals supplied by the coin system manufacturers. Use the coin slot to insert not less than 20 coins of each denomination into the change giver tubes.

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. 20 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.



## 12 Operation with coin systems according to BDV standard

### 12.1 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. 13.3 on page 45](#). 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. 20 on page 67](#)).

### 12.2 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.

### 12.3 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 20](#)).

## 12.4 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

```
07 TEST PROGRAM
```

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

```
SELECTION:
=0000
```

Release both buttons.

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

```
SELECTION:
=0003
```

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.

## 12.5 Programming maximum change - service program 08, button R

Press key S eight times, display shows

```
08 PRICE
PROGRAMMING
```

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

```
SELECTION:
90 =0500
```

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

```
SELECTION:
=1000
```

Finally leave the service program ([see page 20](#)).

## 12.6 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

```
11 COIN CHANNEL
SETTING
```

Press button 1, display shows (factory preset)

```
SELECTION:
01 =9000
```

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.

## 12.7 BDV vend mode - service program 11, button 7

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

```
11 COIN CHANNEL
SETTING
```

Press button 7, display shows current vend mode

### Possible options are:

```
SELECTION:
07 =0005
```

1. Multivend WITHOUT obligation to buy  
You can make several 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.

```
SELECTION:
07 =0005
```

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.

```
SELECTION:
07 =0007
```

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.

```
SELECTION:
07 =0004
```

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.

```
SELECTION:
07 =0006
```

### Programming:

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

Finally leave the service program ([see page 20](#)).

## 12.8 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.

## 12.9 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

```
11 COIN CHANNEL
SETTING
```

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

```
SELECTION:
05 =0000
```

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

```
SELECTION:
=0012
```

### How to check the present status:

Press key C, display shows service program

```
SELECTION:
= 11
```

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

Finally leave the service program ([see page 20](#)).

```
SELECTION:
05 =0012
```



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).

## 12.10 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 described in [chapt. 12.9 on page 42](#) - 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

```
11 COIN CHANNEL
SETTING
```

Press button 3, display shows the current option

```
SELECTION:
03 =0000
```

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

```
SELECTION:
=0048
```

### How to check:

Press selection button C, display shows service program

```
SELECTION:
= 11
```

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

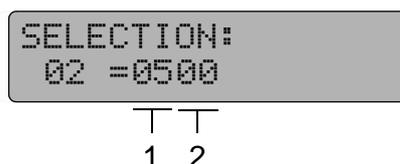
Finally leave the service program ([see page 20](#)).

```
SELECTION:
03 = 48
```

## 12.11 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:

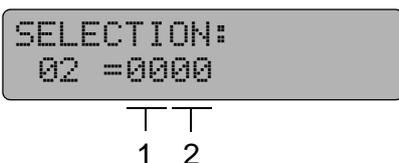
Press key P - hold it - press key S seven times, display shows



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.

## 13 Vend statistics with coin systems acc. to BDV standard

### 13.1 Sales per compartment (selection) - service program 01 (resetable)

Press key S once, display shows

```
01 VENDS PER
SELECTION
```

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

```
SELECTION:
10 =0253
```

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

```
SELECTION:
= 01
```

#### Resetting:

Press key P and hold it, display is

```
SELECTION:
10 =
```

Enter the digits 0000, display shows

Repeat the reset procedure for another selection by pressing button C and entering a new compartment (selection) number.

```
SELECTION:
=0000
```

Finally leave the service program ([see page 20](#)).

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

Press key C three times, display shows:

```
03 TOTAL VENDS
```

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

```
SELECTION:
10 =2560
```

#### Resetting:

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

Finally leave the service program ([see page 20](#)).

### 13.3 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)

```
SELECTION:
01 =0093
```

Display 2 (lower value 52.70 EURO)

```
SELECTION:
02 =5270
```

**EXAMPLE: Display of total turnover (SP 5, button 1 + 2):**

Press key S five times, display shows

05 NOT RESETABLE  
COUNTERS

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.

SELECTION:  
01 =0000

Push key C and then selection button 2.

This display shows

This indicates that the turnover comes to 35.80 EURO.

SELECTION:  
02 =3580

Finally leave the service program (see page 20).

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. 12.7 on page 41](#) and table on [page 76](#).

### 13.4 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.

## 13.5 Overall resetting of counters - service program 04, button 8

Press key S four times, display shows



```
04 COUNTER
RESET
```

Press selection button 8 and hold it, display shows



```
SELECTION:
08 =9999
```

Press key P, the digits 08 disappear



```
SELECTION:
=9999
```

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. 14.1 on page 48](#).

Finally leave the service program ([see page 20](#)).

## 14 Operating information



NOTE: This information applies to all the coin systems

### 14.1 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 20](#)).

### 14.2 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.

### 14.3 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.

### 14.4 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.

## 15 The LCD display

### 15.1 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.

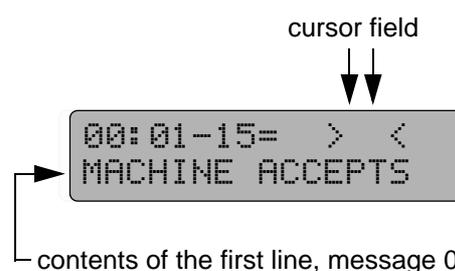
The factory has pre-set standard messages in the language concerned. These texts can be altered or deleted, if necessary.

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

### 15.2 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	<p>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:</p> <p>0 = Numbers</p> <p>A = Capital letters</p> <p>a = Small letters</p> <p>MA = Coin denominations</p> <p>AW = Text attributes</p> <p>K5 = Place holders</p> <p>☐ = Special characters</p> <p>! = Special characters</p>
Button 0	<p>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.</p>
Button C	<p>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.</p>



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

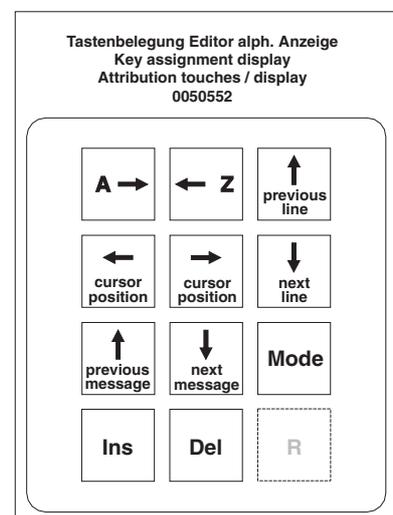
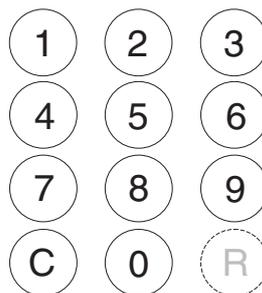
A magnetic foil which shows the functions of the buttons will help you to programme (part no. 0050552).

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					
		]						
		^						
		-						
		\						

### 15.3 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](#).

## 15.4 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.

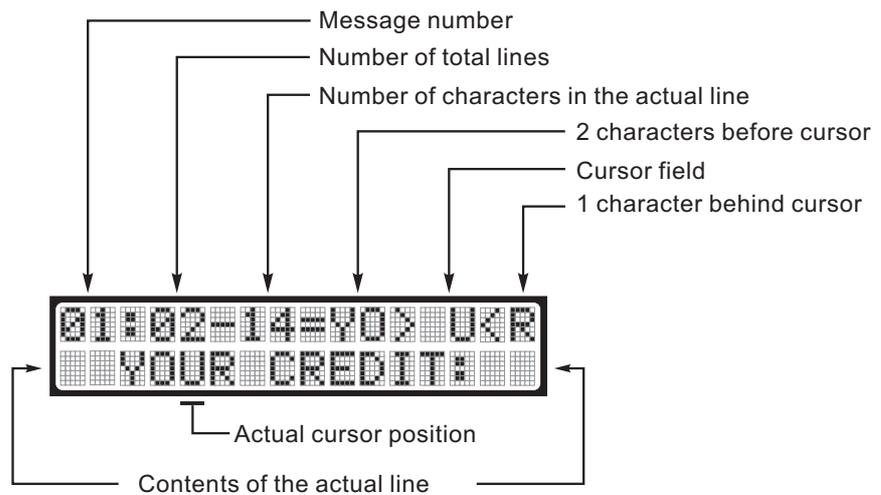
Another way to get to line 1:

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.

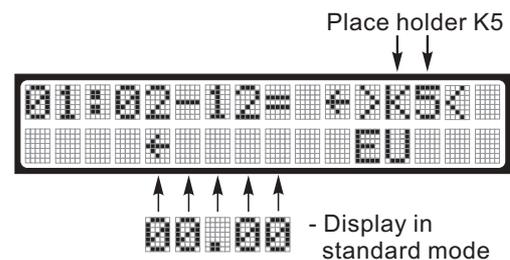
The second line comprises the first 16 characters of the chosen line. Any modification (erasure/ addition) are also shown on this line, provided that the changes are located within the area of the first 16 characters.



## 15.5 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.

## 15.6 Description of the used place holders

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

## 15.7 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	

## 15.8 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 figure 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_RESETTABLE _COUNTERS_IN_EURO	Service program 05
36	S2_RESETTABLE _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

## 15.9 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.

```
00: 01-15= > <
```

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.

```
00: 01-00= > <
```

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

```
00: 01-00= > !<
```

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

```
00: 01-02= > <
```

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.

```
00: 01-03=I> I<
```

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

```
00: 01-04=IN> N<
```

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.

```
00: 01-05=N> <
```

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

```
00: 01-06=O> O<
```

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

```
00: 01-07=OP> P<
```

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.

```
00: 01-14=ON> N<
```

## 15.10 How to format text memory - service program 15

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

```
15 MAIN
CONFIGURATION
```

Press button 6, which displays

```
SELECTION:
06 =0000
```

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

```
00.00
```



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. 5.2 on page 19](#) and [chapt. 23.4 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.

## 15.11 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 Windows™ 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.



## 16 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

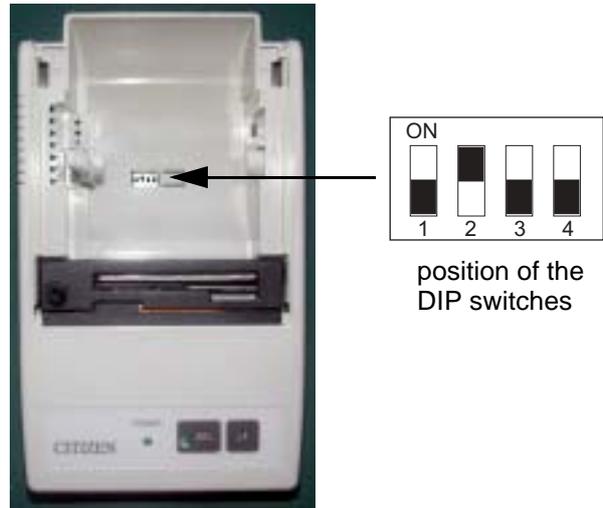
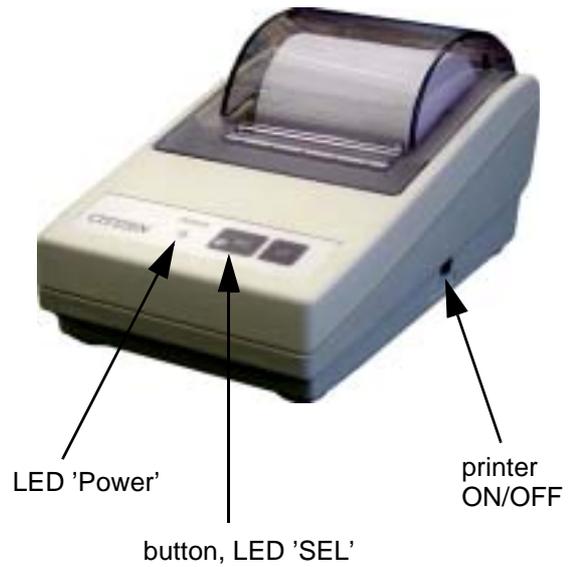
Printer without adaptor 0061014

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.



### 16.1 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.



## 16.2 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. 10.5 on page 38](#) or [chapt. 13.5 on page 47](#) (BDV).

## 16.3 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 20](#)).

# 17 Statistic print out MDB

	=====	
	INTELLIGENT	
	VENDING	
	CONTROLLER	
	=====	
	-STATISTIK-	
	=====	
	DATE: . . . . .	insert by hand
NOT	PRINT: 0019	number of print out
resetable	NO: 37022720	serial number (if programmed)
	NO:VEND -PR.	NO = number / PR. = price
	=====	
	10:0016 0070	<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div>
	11:0026 0070	
	12:0006 0110	
	13:0003 0180	
	14:0005 0180	
	15:0021 0110	
	16:0003 0180	
	17:0003 0110	vends from compartment 1 (selection 10 - 17)
	&V*P00008220	sales from compartment 1 (&V*P = Vend*Price)
		selection number
		no. of vends
		price per selection
	56:0002 0180	
	57:0003 0180	
	&V*P00002490	sales of compartment 5
	RT:0209	total number of returned coins from tube 1/2/3
	TOTAL :0146	total sales of all compartments
data are	NO=COIN: IN	<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div>
resetable	=====	
	01=0010:0005	
	02=0050:0002	
	03=0100:0003	
	04=0200:0003	
	05=0500:0003	
	06=0000:0000	
	07=0000:0000	
	08=0000:0000	
	S =1000:0001	number of accepted bank notes
	NO=COIN: OUT	<div style="border: 1px solid black; width: 100px; height: 100px; margin: 0 auto;"></div>
	=====	
	01=0010:0010	
	02=0050:0000	

	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 (replacement of fuses too)
NOT resetable	H: 00005493	total operation time in hours

# 18 Statistic print out NRI Simplex 5 or Executive

	=====	
	INTELLIGENT	
	VENDING	
	CONTROLLER	
	=====	
	-STATISTIK-	
	=====	
	DATE: . . . . .	insert by hand
NOT resetable	PRINT: 0019	no. of print out
	NO: 37022720	serial number(if programmed)
	NO:VEND -PR.	NO = number / PR. = price
	=====	
	10:0016 0070	<div style="border: 1px solid black; width: 50px; height: 100px; display: inline-block; vertical-align: middle;"></div> vends from compartment 1 (selection 10 - 17)
	11:0026 0070	
	12:0006 0110	
	13:0003 0180	
	14:0005 0180	
	15:0021 0110	
	16:0003 0180	
	17:0003 0110	
	&V*P00008220	sales from compartment 1 (&V*P = Vend*Price)
		selection number
		no. of vends
		price per selection
	56:0002 0180	
	57:0003 0180	
	&V*P00002490	sales from compartment 5
	RT:0209	total number of returned coins from change giver tubes 1/2/3
	TOTAL :0146	number of vends of all compartments
	---VALUES---	
	=====	
	VPR:00001550	total sales of machine
	INC:00002550	total income (cash + change)
	RET:00000300	total number of returned coins after vend procedure
	AMT:00001000	amount of money in change giver
	-TOTAL-SUMS-	
	=====	
NOT resetable	VPR:00602218	total sales of machine
	INC:00002550	total income (cash + change)
	RET:00000300	total number of returned coins after vend procedure
	AMT:00001800	amount of money in change giver

	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 8(replacement of fuses too)
NOT resetable	H: 00005493	total operation time in hours

## 19 Statistic print out BDV standard

=====	
INTELLIGENT	
VENDING	
CONTROLLER	
=====	
-STATISTIK-	
=====	
DATE:.....	insert by hand
PRINT: 0019	no. of print out
NO: 37022720	serial number(if programmed)
NO:VEND -PR.	NO = number / PR. = price
=====	
10:0021 0100	
11:0018 0110	
12:0007 0150	
13:0003 0200	
14:0019 0120	vends from compartment 1 (selection 10 - 14)
&V*P00006960	sales from compartment 1 (&V*P = Vend*Price)
20:0006 0350	
21:0012 0160	
22:0009 0280	
23:0013 0080	
24:0018 0110	vends from compartment 2 (selection 20 - 24)
&V*P00008220	sales from compartment 2 (&V*P = Vend*Price)
	number of selections
	number of vends
	price per selection
60:0019 0050	
61:0012 0080	
62:0006 0120	
63:0004 0120	
64:0000 0100	
65:0015 0220	
66:0020 0090	
67:0018 0080	
68:0022 0070	

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	

## 20 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. 15.11 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.

### 20.1 Preparation for initialisation

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

```
15 MAIN
  CONFIGURATION
```

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).

```
SELECTION:
01 =3480
```

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. 15.8 on page 55](#). Another possibility is to delete complete text memory ([see chapt. 15.10 on page 58](#)) and then start to re-program.



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

### 20.2 Programming of configuration numbers

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

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

```
15 MAIN
  CONFIGURATION
```

Press selection button 1, display is

```
SELECTION:
01 =3480
```

or with an empty text memory shows

```
34.80
```

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.

```
SELECTION:
01 =0000
```



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

```
SELECTION:
01 =0020
```

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

```
SELECTION:
01 =0620
```

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)

```
SELECTION:
01 =7620
```

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

```
SELECTION:
=7620
```

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

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



### ATTENTION!

The data block transfer has to be carried out, if the MDB 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 20](#)).

## 20.4 Control of coin acceptance and change adjustment

### 20.4.1 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 20](#)).

**Service program 8**

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

08 PRICE  
PROGRAMMING

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

SELECTION:  
90 =0500

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

SELECTION:  
=1000

Finally leave the service program ([see page 20](#)).

**20.4.2 Machines with coin system according 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

11 COIN CHANNEL  
SETTING

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

SELECTION:  
01 =9000

**Alteration:**

Press key P and hold it. Display is

SELECTION:  
01 =

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

Finally leave the service program ([see page 20](#)).

SELECTION:  
=2000

**Service program 8**

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

08 PRICE  
PROGRAMMING

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

SELECTION:  
90 =0500

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

SELECTION:  
=1000

Finally leave the service program ([see page 20](#)).

## 20.5 Machine specification self-test



ATTENTION! At the end of the initialisation, 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. 7 on page 23](#)). Therefore:

Press key S until display shows

```
07 TEST PROGRAM
```

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.

```
SELECTION:
07 =7 10
```

Press key C.

```
SELECTION:
07 =7 89
```

Finally leave the service program (see [page 20](#)).

## 21 Service programs (in tabular form)

### 21.1 MDB and Executive coin systems

Service program	Function * valid only for MDB!	Call with button	with P
01	<ul style="list-style-type: none"> <li>• Vend counter per compartment</li> <li>• Return runs *</li> </ul>	selection buttons return button	reset reset
02	<ul style="list-style-type: none"> <li>• Selection if column empty</li> </ul>	only for cigarette machines!	
03	<ul style="list-style-type: none"> <li>• Coin counter per channel *</li> <li>• Total vendes (items)</li> </ul>	1 - 8 0	reset reset
04	<ul style="list-style-type: none"> <li>• Returned coins per tube *</li> <li>• On/Off switches of the machine</li> <li>• Number of price memory copies</li> <li>• Reset of ststistical counters</li> </ul>	1 - 5 6 7 8	reset +0000 reset reset reset
05	<ul style="list-style-type: none"> <li>• Total sales</li> <li>• Cash box contents *</li> <li>• Total change delivered *</li> <li>• Stocktaking (coin tubes) *</li> <li>• Customer number</li> <li>• Safety number</li> </ul>	1 + 2 3 + 4 5 + 6 7 + 8 9 0	NON RESETABLE " " programme
06	<ul style="list-style-type: none"> <li>• Total sales</li> <li>• Cash box contents *</li> <li>• Total change delivered *</li> <li>• Stocktaking (coin tubes) *</li> </ul>	1 + 2 3 + 4 5 + 6 7 + 8	reset reset - reset
07	<ul style="list-style-type: none"> <li>• Display test, display of software version</li> <li>• Each change giver motor starts once *</li> <li>• Pay out of single tubes *</li> <li>• Coin acceptance for 5 seconds with indication of coin channel *</li> <li>• Motor test of each spiral</li> <li>• Access to service programs 11 - 17</li> </ul>	1 2 P + 2, then 1 - 3 6 7 P + 8	STOP with button C
08	<ul style="list-style-type: none"> <li>• Price programming</li> <li>• Max. change *</li> </ul>	selection buttons return button	reset -
09	<ul style="list-style-type: none"> <li>• Free button column allocation</li> </ul>	only for cigarette machines!	





## 21.2 Coin systems according to BDV standard

Service program	Function	Call with button	with P
01	<ul style="list-style-type: none"> <li>• Vend counter per compartment</li> <li>• Change giver runs</li> </ul>	selection buttons return button	reset reset
02	<ul style="list-style-type: none"> <li>• Selections if column empty</li> </ul>	only for cigarette machines!	
03	<ul style="list-style-type: none"> <li>• Total vends (items)</li> <li>• Vends made with 'Please insert exact money'</li> <li>• Credit not clear</li> <li>• Manually filled money</li> </ul>	0 1 - 2 5 - 6 7 - 8	reset reset reset reset
04	<ul style="list-style-type: none"> <li>• Manually gathered change</li> <li>• Total of change paid in excess</li> <li>• Number of power on/off</li> <li>• Number of price memory copies</li> <li>• Reset of statistical counters</li> </ul>	1 - 2 3 - 4 6 7 8	reset reset +0000 reset reset reset
05	<ul style="list-style-type: none"> <li>• Turnover</li> <li>• Cash box contents</li> <li>• Change paid out</li> <li>• Money into tubes</li> <li>• Customer number</li> <li>• Safety number</li> </ul>	1 - 2 3 - 4 5 - 6 7 - 8 9 0	NON RESETABLE “ ” programme
06	<ul style="list-style-type: none"> <li>• Turnover</li> <li>• Cash box contents</li> <li>• Change paid out</li> <li>• Money into tubes</li> </ul>	1 + 2 3 + 4 5 + 6 7 + 8	programme programme programme
07	<ul style="list-style-type: none"> <li>• Display test, display of software version</li> <li>• Each change giver motor starts once</li> <li>• Pay out of single tubes</li> <li>• Coin acceptance for 5 seconds with indication of coin channel</li> <li>• Motor test of each spiral</li> <li>• Access to service programs 11 - 17</li> </ul>	1 2 P + 2, then 1 - 3 6 7 P + 8	STOP with button C
08	<ul style="list-style-type: none"> <li>• Price programming</li> <li>• Max. change</li> </ul>	selection buttons return button	reset
09	<ul style="list-style-type: none"> <li>• Free button column allocation</li> </ul>	only for cigarette machines!	
10	<ul style="list-style-type: none"> <li>• Vend options:               <ul style="list-style-type: none"> <li>• 00 = normal</li> <li>• 01 = free vend</li> <li>• 04 = parallel</li> <li>• 08 = alternate</li> <li>• 80 = disable</li> </ul> </li> </ul>	selection buttons	programme

Service program	Function	Call with button	with P
11	<ul style="list-style-type: none"> <li>● Max. allowed credit</li> <li>● Offset to empty detection (both LH digits) / mask for tube combinations (both RH digits)</li> <li>● Mask for tube combinations:                             <ul style="list-style-type: none"> <li>● 0 = A or (B and C)</li> <li>● 1 = A and B and C</li> <li>● 2 = A and B</li> <li>● 3 = A and (B or C)</li> <li>● 4 = A</li> <li>● 5 = A or B</li> <li>● 6 = A or (B or C)</li> <li>● 7 = A and C</li> <li>● 8 = A or C</li> <li>● 9 = B and C</li> <li>● 10 = B</li> <li>● 11 = B or C</li> <li>● 12 = C</li> </ul> </li> <li>● Coin disabled at 'Insert exact money only' 1 - 7</li> <li>● Coin disabled at 'Insert exact money only' 8 - 14</li> <li>● Disabling of single coins, channels 1 - 7</li> <li>● Disabling of single coins, channels 8 - 14</li> <li>● Channel identity coin channel                             <ul style="list-style-type: none"> <li>● 1 = 0001</li> <li>● 2 = 0002</li> <li>● 3 = 0004</li> <li>● 4 = 0008</li> <li>● 5 = 0016</li> <li>● 6 = 0032</li> <li>● 7 = 0064</li> </ul> </li> <li>● to disable several coins add the single values.</li> <li>● BDV options:                             <ul style="list-style-type: none"> <li>● Multivend = 0001</li> <li>● Obligation to buy = 0002</li> <li>● BDV-Audit ON = add 0004</li> <li>● BDV-Audit OFF 0 add 0008</li> <li>● Credit card units = add 0016</li> </ul> </li> <li>● Values Token A, B, C</li> </ul>	1	programme
		2	programme
		3	programme
		4	programme
		5	programme
		6	programme
		7	programme
8, 9, 0	programme		
12	Position of decimal point for place holders containing decimal point, for example D5, P5, K5, MA...  	0	programme (0004 factory preset)
13	<ul style="list-style-type: none"> <li>● Value of the relevant tube</li> <li>● BDV value of the discount</li> <li>● BDV limit of the discount</li> </ul>	selection buttons 1 - 5	programme
		6	programme
		7	programme
14	<ul style="list-style-type: none"> <li>● Change giver options:                             <ul style="list-style-type: none"> <li>● 00 = tube exists</li> <li>● 80 = tube does not exist, disabled</li> </ul> </li> <li>● Max. bill acceptance (piece + 1)</li> <li>● Max. bill acceptance (piece + 1)</li> </ul>	selection buttons 1 - 5	programme
		selection button 6 selection button 7	programme programme

Service program	Function	Call with button	with P
15	<ul style="list-style-type: none"> <li>• Main machine configuration:               <ul style="list-style-type: none"> <li>• 3480 = Machine with coin system acc. to BDV and Executive standard</li> </ul> </li> <li>• 3107 = Printer port</li> <li>• 3708 = Citizen printer iDp3111</li> <li>• Machine options:               <ul style="list-style-type: none"> <li>• 0000 = Executive standard</li> <li>• 9000 = BDV instead of Executive standard</li> <li>• 0200 = BDTA</li> </ul> </li> <li>• 4710 = formate text memory</li> <li>• 4713 = Snack reset</li> <li>• Extended machine configuration:               <ul style="list-style-type: none"> <li>• 0020 = Spiral single shut down</li> <li>• 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)</li> </ul> </li> </ul>	selection button 1  selection button 2  selection button 5  selection button 6  selection button 9	programme  programme  programme  programme  programme
16	<ul style="list-style-type: none"> <li>• Waiter key</li> </ul>	only for cigarette machines!	
17	<ul style="list-style-type: none"> <li>• LCD display editor</li> </ul>	<a href="#">see chapt. 15 on page 49</a>	

## 22 Overview EPROM letter codes

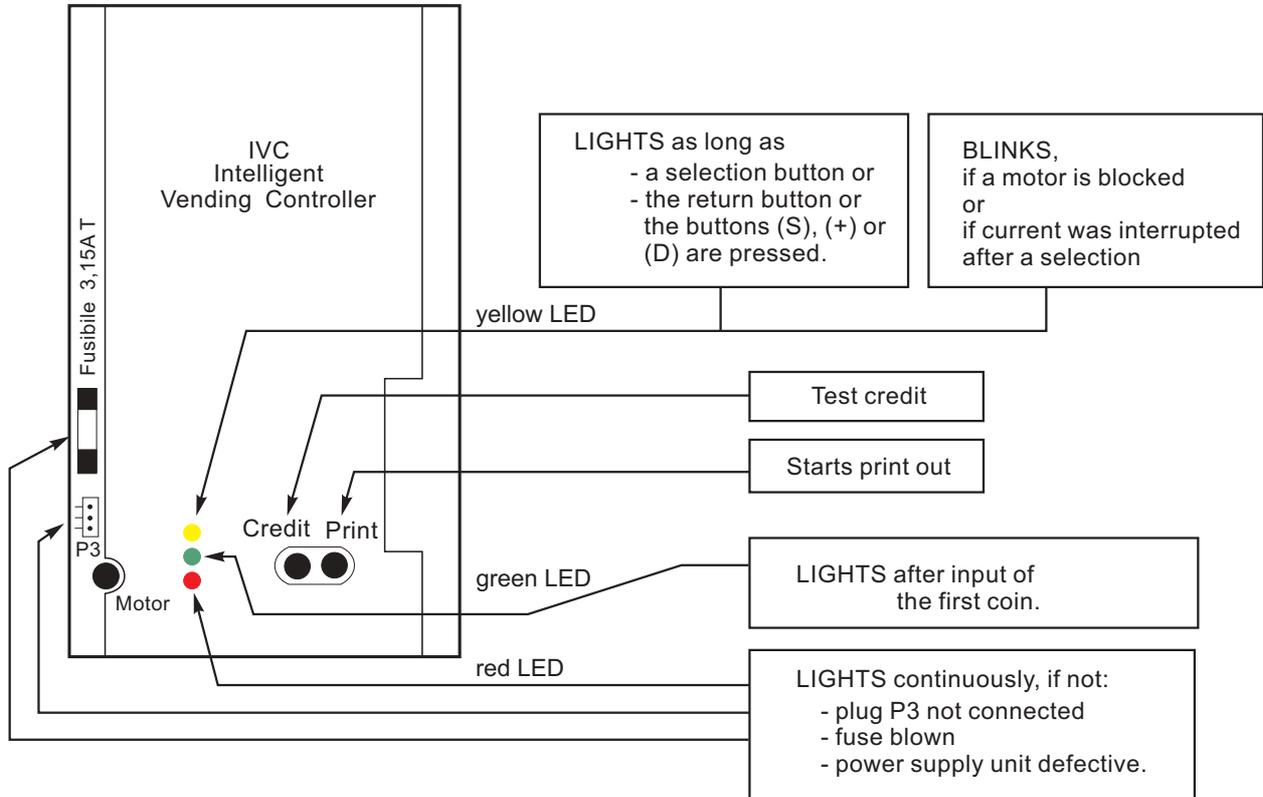
Starting EPROM version 5.xx we marked the different versions for coin systems and credit card systems with additional letters on the EPROM itself.

Possible options are:

<b>HC11</b>	<b>H</b>	Code for HC11 CPU
<b>MDB</b>	<b>M</b>	MDB coin system, in connection with HC11 only
<b>SEITZ</b>	<b>S</b>	Option BDV filetyp 23/24 for LEGIC system
<b>PROTON</b>	<b>P</b>	Cardreader Proton, with HC11 only, without coin system
<b>NSO</b>	<b>N</b>	NRI Simplex 0, without HC11 only, MDB
<b>ELEER</b>	<b>L</b>	Empty lights
<b>CPC</b>	<b>C</b>	Card system MDB, with HC11 only and MDB, no BDV !
<b>MDBBIL</b>	<b>O</b>	Bank note acceptor MDB Protokoll, only HC11 and MDB
<b>BDV</b>	<b>B</b>	BDV or Executive coin system

## 23 Error messages

### 23.1 IVC unit



### 23.2 LED yellow on the IVC unit

#### 23.2.1 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.

#### 23.2.2 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.

### 23.3 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.

## 23.4 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 compared to the state "Machine accepts 0.05 - 2.00 EURO!"

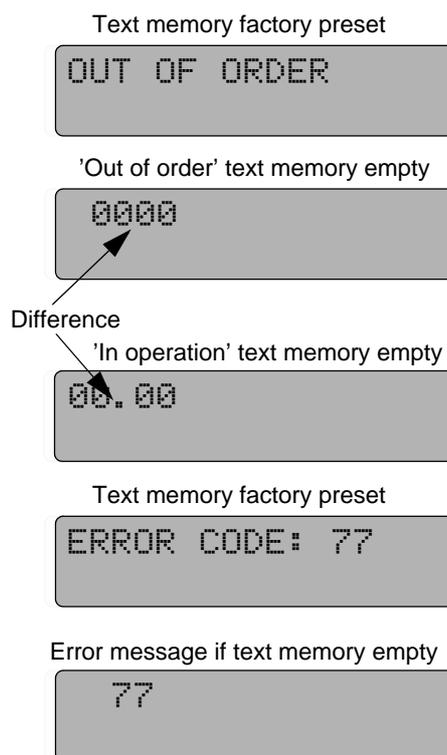
After you have entered a valid selection number (for example 11 but not 99), an error code is displayed (message 15).

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 20](#)).

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!".



## 23.5 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.

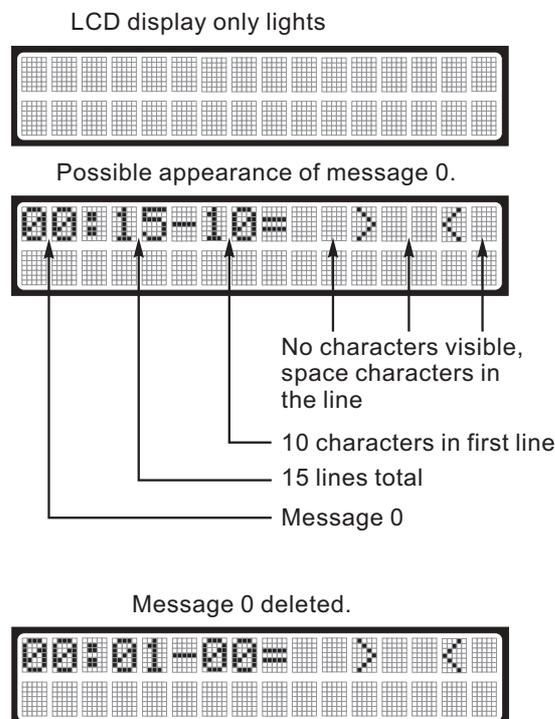
### Remedy:

- 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. 15.9\*\* on \*\*page 57\*\*](#)) or programme with software IVC-Programmer ([see \*\*chapt. 15.11\*\* on \*\*page 59\*\*](#)).



## 23.6 List of error



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	Error in vend statistics 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,
05	Error in empty vend statistics memory,	
06	Error in memory for prices and cashox contents,	
07	Error in price memory but restored by copy,	
08	Error in resetable vend memory	
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.

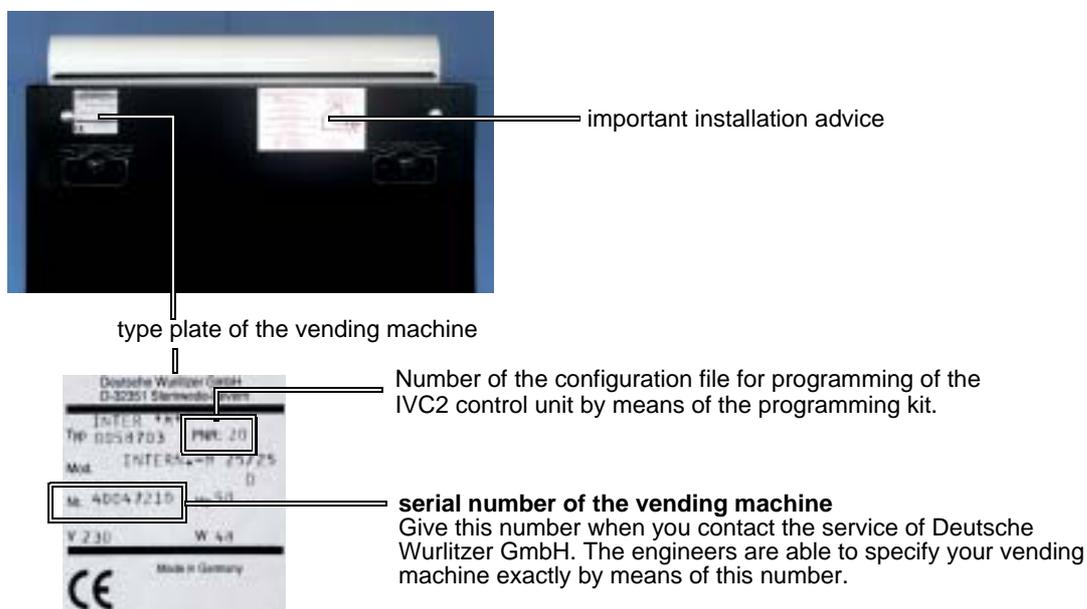
<b>Error no.</b>	<b>Error</b>	<b>Possible reason and remedy</b>
<b>33</b>	One or several drain drivers have short-circuited.	One or several connections DD1 to DD10 (Plug P15 IVC) shorted to ground. This fault may appear at the control unit, in the cable loom of the tray connectors or in the commodity tray. Fault can be found in service program 7 - button 7 - (self-test). Several spirals have not reached their end position.
<b>40</b>	Coin input activated too long	Two coin entry channels are simultaneously active.
<b>41</b>	Coin input 1 2 3 4 5 6 7 8 activated too long.	In a machine with a mechanical coin acceptance system, a contact has been made either constantly or for longer than 500 msec closed.
<b>42</b>		
<b>43</b>		
<b>44</b>		
<b>45</b>		
<b>46</b>		
<b>47</b>		
<b>48</b>		
		In a machine with an electronic coin system, one output has been either too long or continuously active.  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 ( <a href="#">see chapt. 9.9 on page 34</a> ).		
<b>49</b>	Bill input activated too long.	Only for machines with bill validator.
<b>50</b>	One of the source drivers 1 to 8 (IC 216) of the control unit has short circuited.	Change IVC unit.
<b>51</b>	Selection 1 (10...14...19) 2 (20...24...29) .. 5 (50...54...59)	The auxiliary transistor to the printed circuit board of the tray is defective or a source driver (plug P10) shorted to ground.
<b>52</b>		
<b>56</b>		
<b>59</b>		
<b>59</b>	Motor drive transistor on the IVC unit is shorted.	Replace the IVC unit.
<b>61</b>	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.
<b>63</b>	Error in machine state memory	
<b>64</b>	Error in empty-stop memory for selections	
<b>65</b>	Error in empty-stop memory for change giver	

<b>Error no.</b>	<b>Error</b>	<b>Possible reason and remedy</b>
<b>71</b>	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.
<b>72</b>	Credit has turned negative.	Fault in credit calculation. Change IVC.
<b>73</b>	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.
<b>74</b>	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.
<b>75</b>	Fault in selection/column allocation. MDB: coin acceptor gives no response.	
<b>76</b>	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) <a href="#">see chapt. 9.9 on page 34</a> .
<b>77</b>	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.
<b>78</b>	MDB checksum fault.	

## 24 Technical Data

### 24.1 Type Plate/Signboards

Important signs are mounted on the back of the vending machine (here: International M).



### 24.2 Technical / Electrical Data

	International L
<b>connection</b>	230v/50cps/16amps
<b>power consumption</b>	50watts
<b>weight (empty)</b>	140 kg/308.6 lbs
<b>dimensions</b> height width depth	136 cm/53.5 inches 70.5 cm/27.7 inches 60 cm/23.6 inches
<b>selections max.</b>	35
<b>max. capacity</b>	756
<b>noise level</b>	below 70 dB (A)
<b>illumination</b>	1 fluorescent lamp: 18 W, length 590 mm/23.2 in, diameter 26 mm/1.0 in

### 24.3 Fuse on the IVC2 Control Unit

All the circuits within the device work with low voltage (24 or 26 volts). This low voltage is supplied by a transformer which converts the mains current. A fuse T3.15amps is installed on the IVC2 control unit.

# 25 Technical Appendix

## 25.1 Filling Plan International L

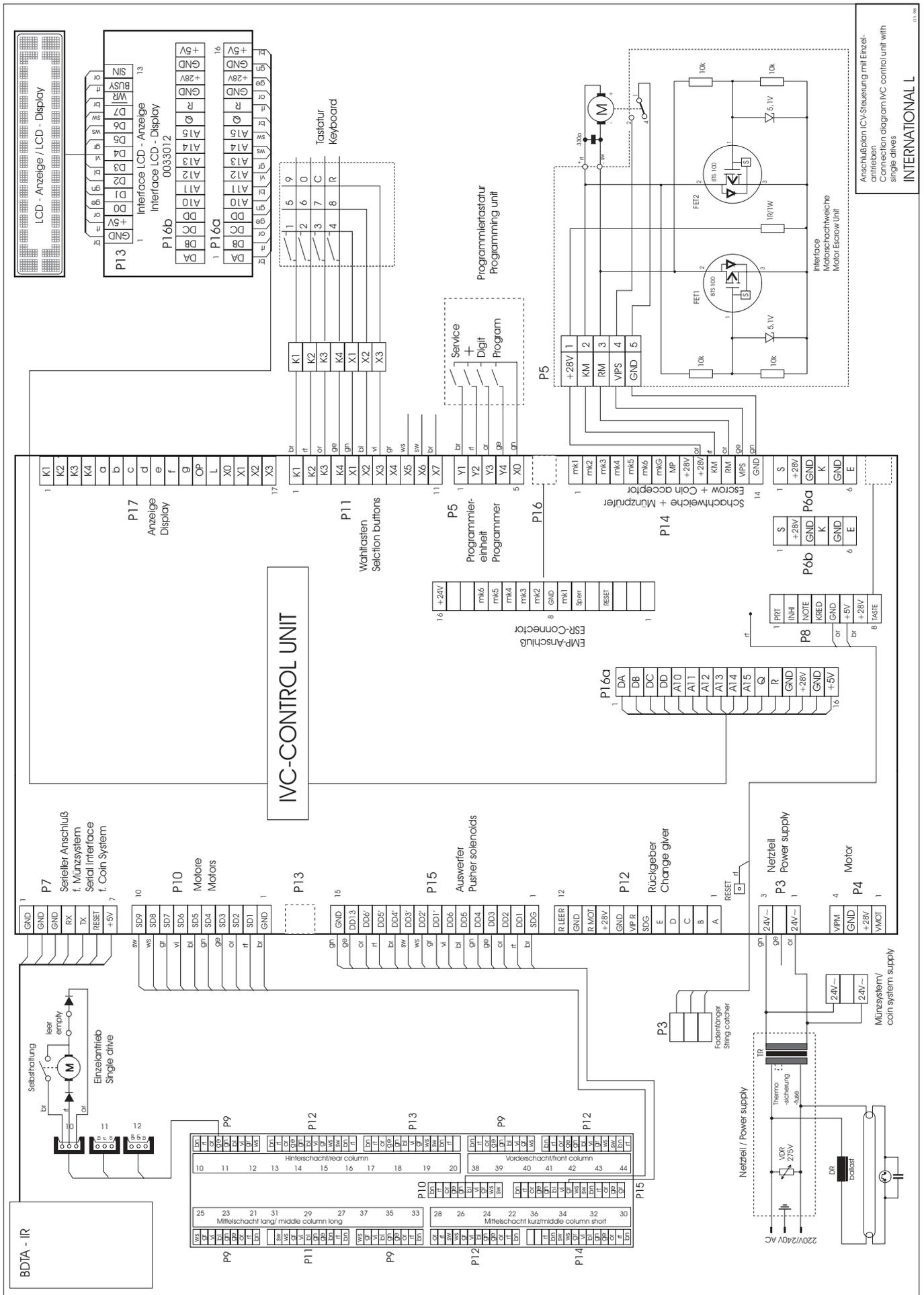
Rear Columns											
<b>Brand Name</b>											
<b>Selection</b>	10	11	12	13	14	15	16	17	18	19	20
<b>Column No.</b>	10	11	12	13	14	15	16	17	18	19	20
											
<b>Selection</b>											
<b>Brand</b>											
<b>Price</b>											

Middle Columns											
<b>Brand Name</b>											
<b>Selection</b>	21	22	23	24	25	26	27	28	29	30	31
<b>Column No.</b>	21	22	23	24	25	26	27	28	29	30	31
											
<b>Selection</b>											
<b>Brand</b>											
<b>Price</b>											

Middle Columns											
<b>Brand Name</b>											
<b>Selection</b>	32	33	34	35	36	37					
<b>Column No.</b>	32	33	34	35	36	37					
											
<b>Selection</b>											
<b>Brand</b>											
<b>Price</b>											

Door Columns											
<b>Brand Name</b>											
<b>Selection</b>	38	39	40	41	42	43	44	45			
<b>Column No.</b>	38	39	40	41	42	43	44	44			
											
<b>Selection</b>											
<b>Brand</b>											
<b>Price</b>											

# 25.2 Connecting Diagram



## 26 Declarations of Conformity

Konformitätserklärung – Declaration of Conformity – Déclaration de Conformité		
<b>Geräteart:</b> <b>Product Description:</b> <b>Description Du Produit:</b>	Zigarettenautomat Cigarette Vending Machine Distributeur Automatique de Cigarettes	
<b>Typenbezeichnung:</b> <b>Model No.:</b> <b>Modèle No.:</b>	<b>International L</b>	
<b>Angewandte EG-Richtlinien:</b> <b>Directives Complied with:</b> <b>Directives de la CE:</b>	73/23/EEC	Niederspannungsrichtlinie Low voltage directive Directive relative aux appareils à basse tension
	89/336/EEC	Elektromagnetische Verträglichkeit EMC Directive Directive Relative à la compatibilité électromagnétique
<b>Technische Vorschriften:</b> <b>Standards used:</b> <b>Régulation Technique:</b>	EN 50081-1	Elektromagnetische Verträglichkeit Fachgrundnorm Störaussendung Electromagnetic compatibility Generic Emissions Requirements Compatibilité électromagnétique Norme générique émission
	EN 50082-2	Elektromagnetische Verträglichkeit Fachgrundnorm Störaussendung Electromagnetic Compatibility Generic Emissions Requirements Compatibilité électromagnétique Norme générique émission
	EN 60335-1	Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke Safety of household and similar Electrical appliances Sécurité des appareils électrodomestiques et analogues
	EN 60335-75	Grenzwerte und Messverfahren für Funkstörungen von informationstechnischen Einrichtungen Limits and methods of measurement of radio interference characteristics of information technology equipment Sécurité des appareils électrodomestiques et analogues
Unterschrift/Signature/ Signature		
Gedruckter Name/Print name/nom	Jürgen Obermeier	
Position/Position/Position	Chief Engineer/Technischer Leiter/Directeur Technique	
Datum/Date/Date	2. Januar 1995/2. January 1995/2. Janvier 1995	





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